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

19 Oct 20

Colonel Ryan S. Nye
Vice Commander
377th Air Base Wing
2000 Wyoming Blvd SE
Kirtland Air Force Base, New Mexico 87117

Kevin Pierard
Hazardous Waste Bureau
New Mexico Environment Department
Harold Runnels Building
1190 St. Francis Drive, Suite N2050
Santa Fe, New Mexico 87502

Dear Mr. Pierard:

This report is submitted pursuant to the reporting requirements in Resource Conservation and Recovery Act Permit NM9570024423 (RCRA Permit), Part 1.27 (1) for a water release at the groundwater treatment system (GWTS) associated with the Bulk Fuels Facility Interim Measure at Kirtland Air Force Base (AFB). Verbal notification was made by Kirtland AFB via voice mail within 24 hours of the release to Mr. Stephen Connolly of the New Mexico Environment Department (NMED) at approximately 4:20 p.m. on October 6, 2020, in accordance with the RCRA Permit. A follow-up email notification from Kirtland AFB was sent to Mr. Connolly on October 6, 2020 at 4:57 p.m. (Attachment 1). The release occurred due to a failure to shut down extraction wells KAFB-106233 and KAFB-106234 during a power outage. These extraction wells are part of an Interim Measure under Kirtland AFB's RCRA Permit. The objectives of this Interim Measure are to collapse and treat the dissolved-phase ethylene dibromide (EDB) plume that extends north of Ridgecrest Drive Southeast (SE). Currently, only residual concentrations of EDB are present within the plume, particularly in the vicinity of wells KAFB-106233 and KAFB-106234 (Attachment 2, Figure 1).

The U.S. Air Force Contacted Mr. Dave Cobrain, Program Manager, NMED Hazardous Waste Bureau, to request an extension for the submittal of the 15-day reporting required in RCRA Permit Section 1.27 (2). The extension request was approved by NMED via email on October 8, 2020 at 11:33 a.m. (Attachment 1). The time on target date for submission of the report to NMED is October 20, 2020. As detailed below, based upon the absence of EDB and benzene, ethylbenzene, toluene, and total xylenes (BTEX), the depth to groundwater (approximately 450 feet below ground surface), and the fact that there are no surface waters in the area of the release, there is no reasonable potential for the accidental release due to equipment failure to injure or be detrimental to human health, animal or plant life, or property or unreasonably interfere with public welfare or use of property.

RELEASE BACKGROUND

GWTS personnel received a call from the Kirtland AFB fire department notifying them that water was observed in the vicinity of the GWTS building at approximately 11:30 p.m. on October 5, 2020. At that time, GWTS personnel mobilized and, upon arrival, discovered the overflow of the Train 1 influent tank inside the building. Personnel manually shut down the KAFB-106233 and KAFB-106234 extraction well

pumps in the well control house at approximately 11:45 p.m. Water within the building and the external sump was processed through the treatment system in manual mode. A photo log is included as Attachment 3.

An assessment of the system indicated that the uninterrupted power supply failed at the GWTS plant when a power outage occurred between approximately 6:45 and 9:00 p.m. on Monday, October 5, 2020. When the power outage occurred, Train 2 extraction wells KAFB-106228 and KAFB-106239 shut off automatically because they are wired directly into the control panel. Train 1 extraction wells KAFB-106233 and KAFB-106234, however, continued to pump extracted water to the GWTS, which had shut down because they are on a separate power supply than the GWTS. Water then overflowed the Train 1 influent tank. Although some of the overflow water was contained within the building and associated sumps, excess water was released onto the adjacent street and into a nearby stormwater drain that discharged to a nearby ditch to the northwest of the GWTS. All released water remained on Kirtland AFB.

The release occurred at the GWTS building located at the southeast corner of the intersection between Perimeter Circle SE and Ridgecrest Drive SE on Kirtland AFB. The release was mapped out on the morning of October 6, 2020 by personnel who walked the area and noted the wet areas on an aerial photograph. The released water primarily flowed to the west to Perimeter Circle SE then north to Ridgecrest Drive SE (Attachment 2 Figures 2 and 3). Some of the water flowed north along Ridgecrest Drive SE to the intersection with Conner Avenue SE. The majority of the release flowed southwest along Ridgecrest Drive SE then west into a storm drain that discharged to a nearby ditch and along a drainage pathway on the north side of Randolph Road SE. The released water terminated approximately 2,140 feet west of Ridgecrest Drive SE (Attachment 2, Figure 2). Based on the approximate flow rate of Train 1 and the estimated time period that the release could have occurred, it is estimated that between 38,000 and 83,000 total gallons of water could potentially have been released.

The water that was released is from extraction wells that are located outside of the distal EDB plume (Attachment 2, Figure 1). The extraction wells for the Interim Measure are regularly sampled and analyzed for EDB and BTEX. Analytical data from KAFB-106233 and KAFB-106234 indicate that EDB concentrations in these wells have been below the U.S. Environmental Protection Agency (EPA) Maximum Contaminant Level (MCL) of 0.05 micrograms per liter (µg/L) since January 2019 (Attachment 4, Table 1). Concentrations of BTEX have not been detected in these wells since March 2017. In addition, the treatment trains are sampled monthly. Concentrations of EDB in Train 1 have been below the reporting limit (0.019 µg/L) or not detected since May 2019, and been below the EPA MCL since September 2017 (Attachment 4, Table 2).

SAMPLE COLLECTION

On October 6, 2020, 14 surface soil samples were collected along the release pathways at approximate depths ranging from 0 to 3 inches to assess potential EDB concentrations in the soil (Attachment 2, Figures 2 and 3). Five of the samples were also analyzed for BTEX, iron, and manganese (potential constituents of concern identified for treatment at the GWTS). The samples were analyzed in accordance with EPA Methods SW8260B (volatile organic compounds), SW8011/504.1 modified (EDB), and SW6010B (iron and manganese). One grab water sample was also collected from standing water at the outflow of the culvert located along Ridgecrest Drive SE. The sample was analyzed for EDB by EPA Method SW8011. The analytical laboratory selected (Hall Environmental Analysis Laboratory in Albuquerque, New Mexico) was able to provide EDB and BTEX results on a 2-day turnaround time.

A second round of soil samples was collected on October 13, 2020 from the same locations as the October 6, 2020 samples. The second set of samples was submitted to Eurofins TestAmerica in Arvada, Colorado. Eurofins TestAmerica is a Department of Defense Environmental Laboratory Accreditation Program-certified laboratory and can provide all of the requirements listed in Section 6.5.18.1 of the RCRA Permit. This laboratory was unable to provide the rush turn-around time required to meet the 15-day reporting requirement. The results of this sampling event will be provided in an addendum to this report once the data become available.

LABORATORY ANALYTICAL RESULTS

Results of the soil sample analyses are provided in the analytical results tables (Attachment 4, Table 3) and the analytical report is provided in Attachment 5. Analytical results for the soil samples were reported as non-detect for EDB and BTEX. Iron concentrations ranged from 6,700 to 8,600 milligrams per kilogram and manganese concentrations ranged from 70 to 90 milligrams per kilogram. All iron and manganese concentrations were below the regional screening levels. The water sample result was also reported as non-detect for EDB (Attachment 4, Table 4).

Based on these results, the absence of EDB and BTEX, the depth to groundwater (approximately 450 feet below ground surface), there are no surface waters in the area of the release, there is no reasonable potential for the discharge to injure or be detrimental to human health, animal or plant life, or property or unreasonably interfere with public welfare or use of property, the U.S. Air Force is requesting that no further action be required.

A document certification page is included as Attachment 6. If you have any questions or concerns, please contact Mr. Sheen Kottkamp at commercial line 505-846-7674 or email sheen.kottkamp.1@us.af.mil.

Sincerely,

RYAN S. NYE, Colonel, USAF
Vice Commander

Attachments:
Attachment 1 – Notification Emails
Attachment 2 – Figures
Attachment 3 – Photo Log
Attachment 4 – Analytical Data Tables
Attachment 5 – Laboratory Analytical Reports
Attachment 6 – Document Certification Page

cc: NMED HWB (Cobrain), letter
NMED GWQB (Pullen), letter
SAF-IEE (Lynnes), electronic only
AFCEC/CZ (Renaghan, Clark, Kottkamp, Segura, Cash), electronic only
USACE-ABQ District Office (Moayyad, Phaneuf, Kunkel, Dreeland, Cordova, Lovato), electronic only
Public Info Repository, Administrative Record/Information Repository (AR/IR) and File

Attachment 1

Notification Emails

Brandon, Alan

From: KOTTKAMP, SHEEN T GS-13 USAF AFCEC AFCEC/CZOW <sheen.kottkamp.1@us.af.mil>
Sent: Wednesday, October 7, 2020 10:11 AM
To: Dreeland, Linda E CIV USARMY CESPA (USA); Moayyad, Behnaum CIV USARMY CESPA (USA)
Subject: FW: 24- Hour Oral Notification

See below. Sheen

From: SEGURA, CHRISTOPHER G GS-14 USAF AFCEC/CZO <christopher.segura.2@us.af.mil>
Sent: Tuesday, October 6, 2020 4:57 PM
To: stephen.Connolly@state.nm.us
Cc: KOTTKAMP, SHEEN T GS-13 USAF AFCEC AFCEC/CZOW <sheen.kottkamp.1@us.af.mil>
Subject: 24- Hour Oral Notification

Sir,

In accordance with the Kirtland Air Force Base Hazardous Waste Permit and pursuant to NMAC 20.6.2.1203, a voice message was left on your office line at approximately 1620 to notify you of a discharge from the Bulk Fuels Facility Groundwater Treatment System. The oral notification provided meets the 24-hour condition contained in both the permit and the NMAC. Please note that an additional notification was made to the environmental emergency line communicating the discharge at approximately 1700. A follow-on report will be provided in accordance with the permit conditions and NMAC. However, the permit states that a 5-day written report is required, while the NMAC states the report is required within one week. At your earliest convenience, could you please clarify what condition applies to the release?

If you have any questions or concerns, please feel free to contact me at your earliest convenience.

V/R

Chris G. Segura, GS-14, DAF
Chief, Kirtland Installation Support Section
Air Force Civil Engineer Center
DSN 263-5443 Comm (505) 853-5443

Bockisch, Bernard

From: KOTTKAMP, SHEEN T GS-13 USAF AFCEC AFCEC/CZOW <sheen.kottkamp.1@us.af.mil>
Sent: Thursday, October 8, 2020 11:40 AM
To: Behnaum.Moayyad (Behnaum.Moayyad@usace.army.mil); Phaneuf, Mark J SPA; Phil Lovato; Dreeland, Linda E CIV USARMY CESPA (USA); Bockisch, Bernard
Cc: LYNNES, KATHRYN D HQE USAF AFGSC 377 MSG/SAF/IEE; SEGURA, CHRISTOPHER G GS-14 USAF AFCEC/CZO; WORTMAN, RYAN J GS-13 USAF AFCEC AFCEC/CZO; CASH, CYNTHIA J GS-13 USAF AFMC AFCEC/CZRX
Subject: FW: GWTS Release Reporting Extension Request

FYI and file. Sheen

From: KOTTKAMP, SHEEN T GS-13 USAF AFCEC AFCEC/CZOW
Sent: Thursday, October 8, 2020 11:37 AM
To: Cobrain, Dave, NMENV <dave.cobrain@state.nm.us>
Subject: RE: GWTS Release Reporting Extension Request

Thank you Sir. Sheen

From: Cobrain, Dave, NMENV <dave.cobrain@state.nm.us>
Sent: Thursday, October 8, 2020 11:33 AM
To: KOTTKAMP, SHEEN T GS-13 USAF AFCEC AFCEC/CZOW <sheen.kottkamp.1@us.af.mil>; Pierard, Kevin, NMENV <Kevin.Pierard@state.nm.us>
Subject: [Non-DoD Source] RE: GWTS Release Reporting Extension Request

Sheen,

In accordance with Permit Section 1.27 Item 2, your request is hereby approved. The report summarizing the release and related response action conducted at the Groundwater Treatment System must be submitted no later than October 20, 2020.

Dave Cobrain
New Mexico Environment Department
Hazardous Waste Bureau
2905 Rodeo Park Drive East Bldg 1
Santa Fe, NM 87505-6313
Main Office Phone 505-476-6000
Direct Line 505-476-6055
Fax 505-476-6030

From: KOTTKAMP, SHEEN T GS-13 USAF AFCEC AFCEC/CZOW <sheen.kottkamp.1@us.af.mil>
Sent: Thursday, October 8, 2020 11:21 AM
To: Pierard, Kevin, NMENV <Kevin.Pierard@state.nm.us>; Cobrain, Dave, NMENV <dave.cobrain@state.nm.us>
Subject: [EXT] GWTS Release Reporting Extension Request

Good morning gentlemen. In accordance with the Kirtland AFB Resource Conservation and Recovery Act Permit NM9570024423, Section 1.27, I am formally requesting a 15 day extension request regarding the release of influent water from the Kirtland bulk fuels facility ground water treatment system that occurred Monday October 5th 2020. The request will allow for adequate time to receive the analytical data from sampling of media, compiling the report, and staffing the report for Wing CC signature. Upon approval of the request, Kirtland AFB will submit the written report to the New Mexico Environment Department October 20th 2020 meeting the requirements as specified in Section 1.27 of the permit. Thank you.

Respectfully,

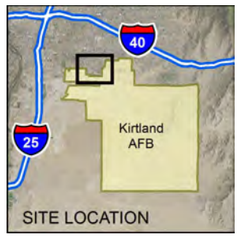
Sheen T. Kottkamp GS-13
Environmental Program Manager/Scientist
Kirtland ISS, AFCEC/CZO
505-846-7674
DSN 246-7674
Cell 806-463-0811

Attachment 2

Figures

Legend

- Drinking Water Supply Well
- Extraction Well
- Groundwater Treatment System Influent Piping
- Groundwater Treatment System Effluent Piping
- Former Buried Fuel Transfer Line
- Former Aboveground Fuel Transfer Line
- Installation Fence Boundary
- Bulk Fuels Facility (SWMU ST-106/SS-111)
- Former Aboveground Storage
- Q2 2020 EDB Concentration 0.05 µg/L (EPA MCL)
- Groundwater Treatment System Release Location



N

0 500 1,000 2,000

Feet

1 inch = 1,000 feet

Projection: NAD83 State Plane New Mexico Central FIPS3002 Feet

GROUNDWATER TREATMENT SYSTEM
WATER RELEASE REPORT
BULK FUELS FACILITY
SOLID WASTE MANAGEMENT UNITS ST-106/SS-111
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 1

LOCATION MAP

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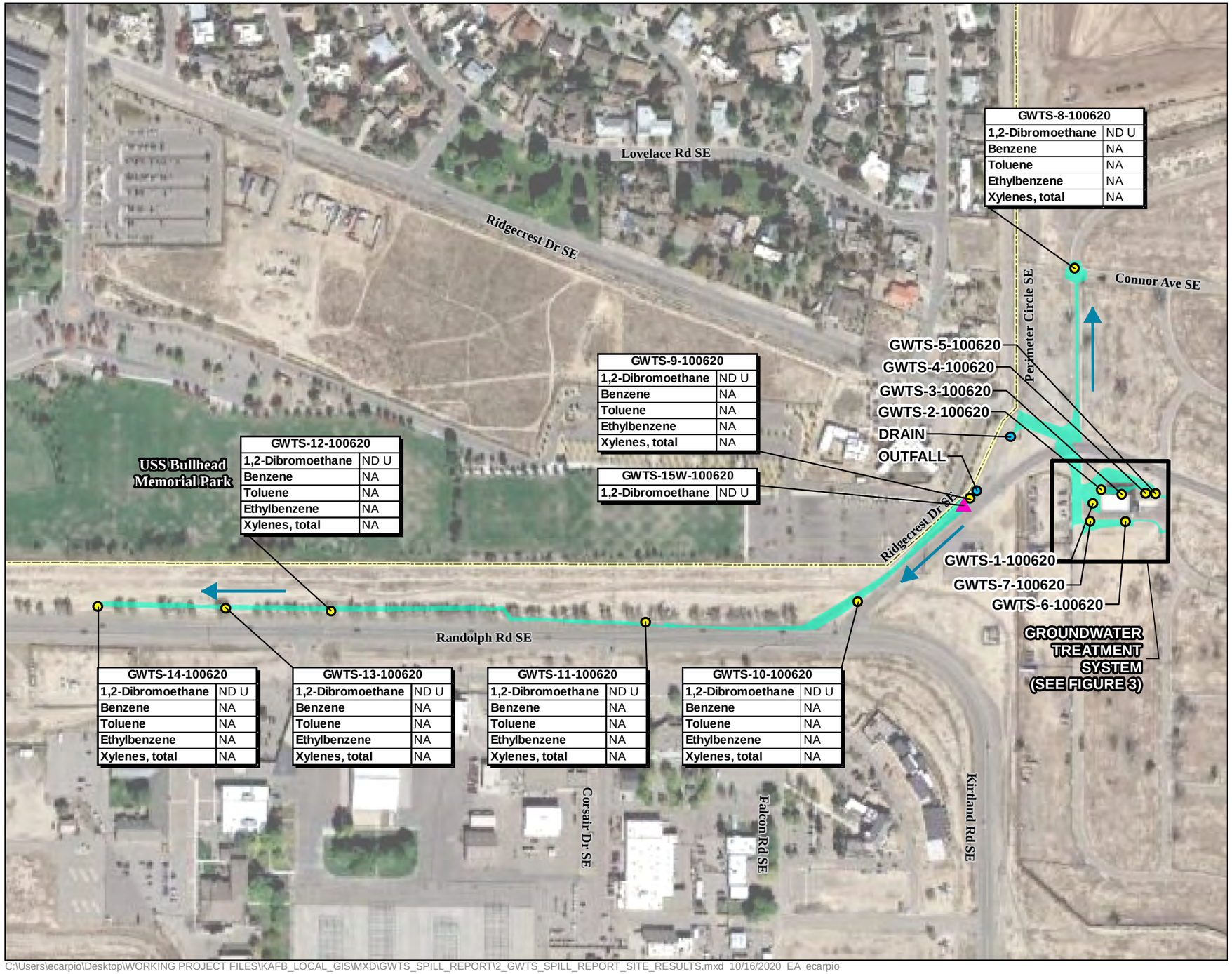

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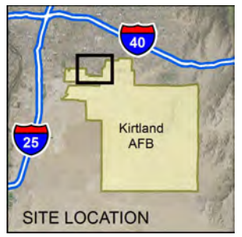
Legend

- Soil Sample Location and Identification
- Groundwater Sample Location and Identification
- Infrastructure
- Groundwater Treatment System Release Location
- Approximate Extent of Release
- Installation Fence Boundary
- Flow Direction

Notes:
1,2-Dibromoethane results are in µg/kg
BTEX results are in mg/kg
Water sample GWTS-15W-100620 reporting in micrograms per liter
µg/kg = micrograms per kilogram
mg/kg = milligrams per kilogram
NA = not analyzed
ND = not detected
U = qualifier denotes the analyte was analyzed but not detected above the detection limit.



N

0 150 300 600

Feet

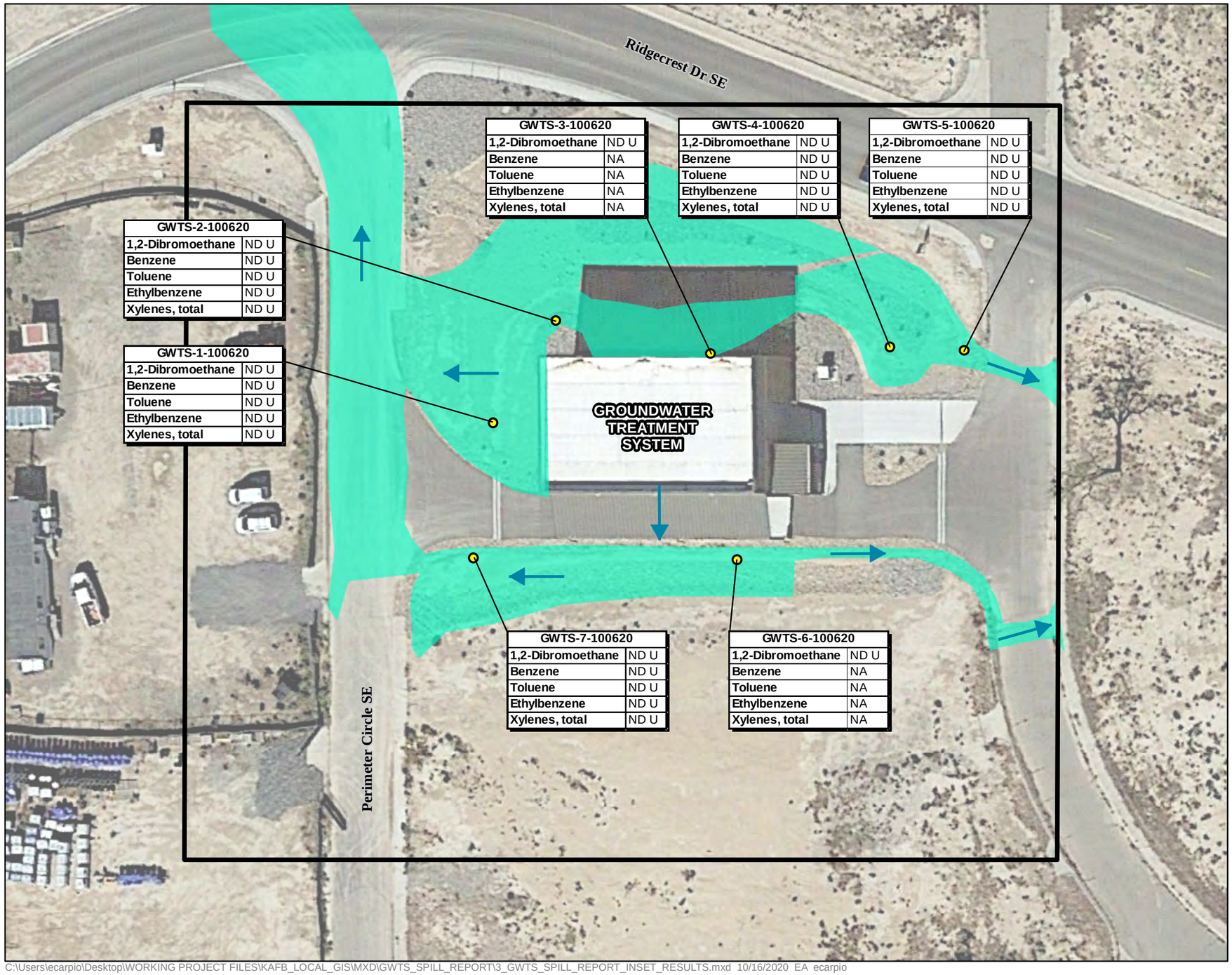
1 inch = 300 feet

Projection: NAD83 State Plane New Mexico Central FIPS3002 Feet

GROUNDWATER TREATMENT SYSTEM
WATER RELEASE REPORT
BULK FUELS FACILITY
SOLID WASTE MANAGEMENT UNITS ST-106/SS-111
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 2

SITE MAP



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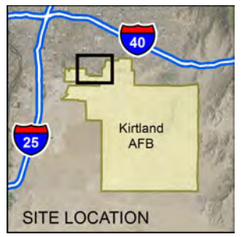
Legend

- Soil Sample Location and Identification
- Groundwater Treatment System Release Location
- Apprximate Extent of Release
- Installation Fence Boundary
- Flow Direction

Notes:
1,2-Dibromoethane results are in µg/kg
BTEX results are in mg/kg
µg/kg = micrograms per kilogram
mg/kg = milligrams per kilogram
NA = not analyzed
ND = not detected
U = qualifier denotes the analyte was analyzed but not detected above the detection limit.



N

0 20 40 80

Feet

1 inch = 40 feet

Projection: NAD83 State Plane New Mexico Central FIPS3002 Feet

GROUNDWATER TREATMENT SYSTEM
WATER RELEASE REPORT
BULK FUELS FACILITY
SOLID WASTE MANAGEMENT UNITS ST-106/SS-111
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 3

SITE MAP

Attachment 3

Photo Log

Location: Looking South at stormwater drain.
Date: 10/6/2020 Direction: South

Location: Looking west at outflow along Ridgecrest Drive SE
Date: 10/6/2020 Direction: West

Looking north at Perimeter Circle SE from Ridgecrest Drive SE.
Date: 10/6/2020 Direction: North

Description: Looking east along a portion of the release pathway.
Date: 10/6/2020 Direction: East

Description: Looking east at the end of the release pathway.
Date: 10/6/2020 Direction: East

Attachment 4

Analytical Data Tables

Table 1
Extraction Well Analytical Results

			Well Location ID:				KAFB-106233			KAFB-106233			KAFB-106233		
			Sample Date:				GW233-042517			GW233-173			GW233-183		
			Field Sample ID:				4/25/2017			7/27/2017			7/18/2018		
			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**	**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	**0.090**	--	0.019	0.048	--	0.019	0.034	--	0.019
BTEX	Method SW8260C (µg/L)	Benzene	10	5	4.5	5	ND	U	1	--	--	--	ND	U	1
		Ethylbenzene	750	700	15	700	ND	U	1	--	--	--	ND	U	1
		Toluene	1,000	1,000	1,100	1,000	ND	U	1	--	--	--	ND	U	1
		Xylenes, total	620	10,000	190	620	ND	U	1	--	--	--	ND	U	1
Metals	Method SW6010C (mg/L)	Calcium	NS	NS	NS	NS	--	--	--	--	--	--	--	--	--
		Iron, dissolved	1.0	NS	NS	1.0	ND	U	0.200	--	--	--	ND	U	0.100
		Magnesium	NS	NS	NS	NS	--	--	--	--	--	--	--	--	--
		Manganese, dissolved	0.2	NS	NS	0.2	0.0318	--	0.0050	--	--	--	ND	U	0.0025
		Potassium	NS	NS	NS	NS	--	--	--	--	--	--	--	--	--
		Sodium	NS	NS	NS	NS	--	--	--	--	--	--	--	--	--
	Method SW6020A (mg/L)	Arsenic	0.01	0.01	0.00052	0.01	--	--	--	--	--	--	--	--	--
		Lead	0.015	0.015	0.015	0.015	--	--	--	--	--	--	--	--	--

Table 1
Extraction Well Analytical Results

			Well Location ID:				KAFB-106233			KAFB-106233			KAFB-106234			KAFB-106234		
			Sample Date:				GW233-191			GW233-201			GW234-171			GW234-173		
			Field Sample ID:				1/24/2019			1/14/2020			3/2/2017			7/27/2017		
			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	0.05	0.05	0.075	0.05	0.013	J	0.019	ND	U	0.019	**0.085**	--	0.019	**0.064**	--	0.019
BTEX	Method SW8260C (µg/L)	Benzene	10	5	4.5	5	ND	U	0.5	ND	U	0.5	ND	U	1	--	--	--
		Ethylbenzene	750	700	15	700	ND	U	0.8	ND	U	0.8	ND	U	1	--	--	--
		Toluene	1,000	1,000	1,100	1,000	ND	U	0.5	ND	U	0.5	ND	U	1	--	--	--
		Xylenes, total	620	10,000	190	620	ND	U	2	ND	U	2	ND	U	1	--	--	--
Metals	Method SW6010C (mg/L)	Calcium	NS	NS	NS	NS	51.8	--	0.1	61.5	--	0.150	--	--	--	--	--	--
		Iron, dissolved	1.0	NS	NS	1.0	ND	U	0.1	ND	U	0.103	ND	U	0.2	--	--	--
		Magnesium	NS	NS	NS	NS	7.07	--	0.05	9.10	--	0.0751	--	--	--	--	--	--
		Manganese, dissolved	0.2	NS	NS	0.2	ND	U	0.0025	ND	U	0.0052	ND	U	0.005	--	--	--
		Potassium	NS	NS	NS	NS	2.77	--	0.375	2.89	--	0.375	--	--	--	--	--	--
		Sodium	NS	NS	NS	NS	26.3	--	0.5	29.1	--	0.500	--	--	--	--	--	--
	Method SW6020A (mg/L)	Arsenic	0.01	0.01	0.00052	0.01	0.00099	J	0.0016	0.0011	J	0.0016	--	--	--	--	--	--
		Lead	0.015	0.015	0.015	0.015	ND	U	0.0024	0.0016	--	0.00025	--	--	--	--	--	--

Table 1
Extraction Well Analytical Results

			Well Location ID:				KAFB-106234			KAFB-106234			KAFB-106234			KAFB-106234		
			Sample Date:				GW234-183			GW234-191			GW234-062119			GW234-201		
			Field Sample ID:				7/18/2018			1/24/2019			6/21/2019			1/14/2020		
			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	0.05	0.05	0.075	0.05	0.050	--	0.019	0.022	J	0.019	0.023	J	0.019	0.017	J	0.019
BTEX	Method SW8260C (µg/L)	Benzene	10	5	4.5	5	ND	U	1	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Ethylbenzene	750	700	15	700	ND	U	1	ND	U	0.8	ND	U	0.8	ND	U	0.8
		Toluene	1,000	1,000	1,100	1,000	ND	U	1	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Xylenes, total	620	10,000	190	620	ND	U	1	ND	U	2	ND	U	2	ND	U	2
Metals	Method SW6010C (mg/L)	Calcium	NS	NS	NS	NS	--	--	--	53.6	--	0.1	--	--	--	54.5	--	0.150
		Iron, dissolved	1.0	NS	NS	1.0	ND	U	0.100	ND	U	0.1	--	--	--	ND	U	0.103
		Magnesium	NS	NS	NS	NS	--	--	--	7.32	--	0.05	--	--	--	7.64	--	0.0751
		Manganese, dissolved	0.2	NS	NS	0.2	ND	U	0.0025	ND	U	0.0025	--	--	--	ND	U	0.0052
		Potassium	NS	NS	NS	NS	--	--	--	2.76	--	0.375	--	--	--	2.90	--	0.375
		Sodium	NS	NS	NS	NS	--	--	--	26.7	--	0.5	--	--	--	29.1	--	0.500
	Method SW6020A (mg/L)	Arsenic	0.01	0.01	0.00052	0.01	--	--	--	0.00093	J	0.0016	--	--	--	0.00094	J	0.0016
		Lead	0.015	0.015	0.015	0.015	--	--	--	ND	U	0.0024	--	--	--	0.00043	J	0.00025

Table 1
Extraction Well Analytical Results

[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 40CFR Part 141, 143 (May 2018).

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

[d] The project screening level was selected to satisfy the requirements of the Kirtland AFB Hazardous Waste Permit Number NM9570024423 as the lowest of (1) 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
BTEX = benzene, toluene, ethylbenzene, 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 = milligrams per liter
ND = not detected
NMAC = New Mexico Administrative Code
NMWQCC = New Mexico Water Quality Control Commission
NS = not specified
REG = normal field sample
RSL = regional screening level
Val Qual = validation qualifier
VOC = volatile organic compound
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 2
Train 1 Influent Analytical Results

					Well Location ID:		GWTS-BFF-INF1			GWTS-BFF-INF1			GWTS-BFF-INF1			GWTS-BFF-INF1		
					Field Sample ID:		GWTS-INF			GWTS-INF-052016			GWTS-INF-062116			GWTS-INF-072116		
					Sample Date:		4/21/2016			5/20/2016			6/21/2016			7/21/2016		
					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	**0.067**		0.019	**0.072**		0.02	ND	U	0.19	**0.075**		0.019
VOCs	Method SW8260C (µg/L)	Benzene	5	5	4.5	5	ND	U	1	ND	U	1	ND	U	1	ND	U	1
		Ethylbenzene	700	700	15	700	ND	U	1	ND	U	1	ND	U	1	ND	U	1
		Toluene	1,000	1,000	1,100	1,000	ND	U	1	ND	U	1	ND	U	1	ND	U	1
		Xylenes, total	620	10,000	190	620	ND	U	1	ND	U	1	ND	U	1	ND	U	1
Dissolved Metals	Method SW6010C (mg/L)	Iron, dissolved	1.0	NS	NS	1	ND	UJ	0.05	ND	U	0.05	ND	U	0.2	ND	U	0.2
		Manganese, dissolved	0.2	NS	NS	0.2	0.0012	J-	0.0025	ND	U	0.0025	ND	U	0.005	ND	U	0.005

Table 2
Train 1 Influent Analytical Results

					Well Location ID:		GWTS-BFF-INF1			GWTS-BFF-INF1			GWTS-BFF-INF1			GWTS-BFF-INF1		
					Field Sample ID:		GWTS-INF-082216			GWTS-INF-092016			GWTS-INF-102016			GWTS-INF-112116		
					Sample Date:		8/22/2016			9/20/2016			10/20/2016			11/21/2016		
					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	**0.09**		0.019	**0.078**		0.019	**0.072**		0.019	**0.074**		0.019
VOCs	Method SW8260C (µg/L)	Benzene	5	5	4.5	5	ND	U	1	ND	U	1	ND	U	1	ND	U	1
		Ethylbenzene	700	700	15	700	ND	U	1	ND	U	1	ND	U	1	ND	U	1
		Toluene	1,000	1,000	1,100	1,000	ND	U	1	ND	U	1	ND	U	1	ND	U	1
		Xylenes, total	620	10,000	190	620	ND	U	1	ND	U	1	ND	U	1	ND	U	1
Dissolved Metals	Method SW6010C (mg/L)	Iron, dissolved	1.0	NS	NS	1	ND	U	0.2	ND	U	0.2	ND	U	0.200	ND	U	0.200
		Manganese, dissolved	0.2	NS	NS	0.2	ND	U	0.005	ND	U	0.005	ND	U	0.0050	ND	U	0.0050

Table 2
Train 1 Influent Analytical Results

					Well Location ID:		GWTS-BFF-INF1			GWTS-BFF-INF1			GWTS-BFF-INF1			GWTS-BFF-INF1		
					Field Sample ID:		GWTS-INF-12016			GWTS-INF-011817			GWTS-INF1-022317			GWTS-INF1DUP-022317		
					Sample Date:		12/20/2016			1/18/2017			2/23/2017			2/23/2017		
					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	**0.082**		0.019	**0.082**		0.019	**0.078**		0.019	**0.074**		0.019
VOCs	Method SW8260C (µg/L)	Benzene	5	5	4.5	5	ND	U	1	ND	U	1	ND	U	1	ND	U	1
		Ethylbenzene	700	700	15	700	ND	U	1	ND	U	1	ND	U	1	ND	U	1
		Toluene	1,000	1,000	1,100	1,000	ND	U	1	ND	U	1	ND	U	1	ND	U	1
		Xylenes, total	620	10,000	190	620	ND	U	1	ND	U	1	ND	U	1	ND	U	1
Dissolved Metals	Method SW6010C (mg/L)	Iron, dissolved	1.0	NS	NS	1	ND	U	0.2	ND	U	0.200	ND	U	0.200	ND	U	0.200
		Manganese, dissolved	0.2	NS	NS	0.2	ND	U	0.005	0.0072	J	0.0050	ND	U	0.0050	ND	U	0.0050

Table 2
Train 1 Influent Analytical Results

					Well Location ID:		GWTS-BFF-INF1			GWTS-BFF-INF1			GWTS-BFF-INF1			GWTS-BFF-INF1		
					Field Sample ID:		GWTS-INF1-032317			GWTS-INF1-041917			GWTS-INF1-051817			GWTS-INF1-062217		
					Sample Date:		3/23/2017			4/19/2017			5/18/2017			6/22/2017		
					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	**0.06**		0.019	**0.074**		0.019	**0.076**		0.019	**0.055**		0.019
VOCs	Method SW8260C (µg/L)	Benzene	5	5	4.5	5	ND	U	1	ND	U	1	ND	U	1	ND	U	1
		Ethylbenzene	700	700	15	700	ND	U	1	ND	U	1	ND	U	1	ND	U	1
		Toluene	1,000	1,000	1,100	1,000	ND	U	1	ND	U	1	ND	U	1	ND	U	1
		Xylenes, total	620	10,000	190	620	ND	U	1	ND	U	1	ND	U	1	ND	U	1
Dissolved Metals	Method SW6010C (mg/L)	Iron, dissolved	1.0	NS	NS	1	ND	U	0.2	ND	U	0.2	ND	U	0.2	ND	U	0.2
		Manganese, dissolved	0.2	NS	NS	0.2	ND	U	0.005	ND	U	0.005	ND	U	0.005	ND	U	0.005

Table 2
Train 1 Influent Analytical Results

					Well Location ID:		GWTS-BFF-INF1			GWTS-BFF-INF1			GWTS-BFF-INF1			GWTS-BFF-INF1		
					Field Sample ID:		GWTS-INF1-072517			GWTS-INF1-082417			GWTS-INF1-092117			GWTS-INF1-101917		
					Sample Date:		7/25/2017			8/24/2017			9/21/2017			10/19/2017		
					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	**0.054**		0.019	**0.062**		0.019	0.047		0.019	0.038		0.019
VOCs	Method SW8260C (µg/L)	Benzene	5	5	4.5	5	ND	U	1	ND	U	1	ND	U	1	ND	U	1
		Ethylbenzene	700	700	15	700	ND	U	1	ND	U	1	ND	U	1	ND	U	1
		Toluene	1,000	1,000	1,100	1,000	ND	U	1	ND	U	1	ND	U	1	ND	U	1
		Xylenes, total	620	10,000	190	620	ND	U	1	ND	U	1	ND	U	1	ND	U	1
Dissolved Metals	Method SW6010C (mg/L)	Iron, dissolved	1.0	NS	NS	1	ND	U	0.2	ND	U	0.2	ND	U	0.2	ND	U	0.2
		Manganese, dissolved	0.2	NS	NS	0.2	ND	U	0.005	ND	U	0.005	ND	U	0.005	ND	U	0.005

Table 2
Train 1 Influent Analytical Results

					Well Location ID:		GWTS-BFF-INF1			GWTS-BFF-INF1			GWTS-BFF-INF1			GWTS-BFF-INF1		
					Field Sample ID:		GWTS-INF1-011818			GWTS-INF1-020518			GWTS-INF1-020618			GWTS-INF1-020718		
					Sample Date:		1/18/2018			2/5/2018			2/6/2018			2/7/2018		
					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	0.03		0.019	0.029		0.019	0.028	J	0.019	0.031		0.02
VOCs	Method SW8260C (µg/L)	Benzene	5	5	4.5	5	ND	U	1	ND	U	1	ND	U	1	ND	U	1
		Ethylbenzene	700	700	15	700	ND	U	1	ND	U	1	ND	U	1	ND	U	1
		Toluene	1,000	1,000	1,100	1,000	ND	U	1	ND	U	1	ND	U	1	ND	U	1
		Xylenes, total	620	10,000	190	620	ND	U	1	ND	U	1	ND	U	1	ND	U	1
Dissolved Metals	Method SW6010C (mg/L)	Iron, dissolved	1.0	NS	NS	1	ND	U	0.2	ND	U	0.2	ND	U	0.2	ND	U	0.2
		Manganese, dissolved	0.2	NS	NS	0.2	0.0025	J	0.005	ND	U	0.005	ND	U	0.005	0.004	J	0.005

Table 2
Train 1 Influent Analytical Results

					Well Location ID:		GWTS-BFF-INF1			GWTS-BFF-INF1			GWTS-BFF-INF1			GWTS-BFF-INF1		
					Field Sample ID:		GWTS-INF1-020818			GWTS-INF1-020918			GWTS-INF1-021018			GWTS-INF1-021118		
					Sample Date:		2/8/2018			2/9/2018			2/10/2018			2/11/2018		
					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	0.029		0.019	0.032		0.019	0.031		0.019	0.029		0.019
VOCs	Method SW8260C (µg/L)	Benzene	5	5	4.5	5	ND	U	1	ND	U	1	ND	U	1	ND	U	1
		Ethylbenzene	700	700	15	700	ND	U	1	ND	U	1	ND	U	1	ND	U	1
		Toluene	1,000	1,000	1,100	1,000	ND	U	1	ND	U	1	ND	U	1	ND	U	1
		Xylenes, total	620	10,000	190	620	ND	U	1	ND	U	1	ND	U	1	ND	U	1
Dissolved Metals	Method SW6010C (mg/L)	Iron, dissolved	1.0	NS	NS	1	ND	U	0.2	ND	U	0.2	ND	U	0.2	ND	U	0.2
		Manganese, dissolved	0.2	NS	NS	0.2	0.0016	J	0.005	ND	U	0.005	ND	U	0.005	ND	U	0.005

Table 2
Train 1 Influent Analytical Results

					Well Location ID:		GWTS-BFF-INF1			GWTS-BFF-INF1			GWTS-BFF-INF1			GWTS-BFF-INF1		
					Field Sample ID:		GWTS-INF1-021518			GWTS-INF1-022218			GWTS-INF1-030118			GWTS-INF1-030818		
					Sample Date:		2/15/2018			2/22/2018			3/1/2018			3/8/2018		
					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	0.02	J	0.019	0.038		0.019	0.028	J	0.019	0.025	J	0.021
VOCs	Method SW8260C (µg/L)	Benzene	5	5	4.5	5	ND	U	1	ND	U	1	ND	U	1	ND	U	1
		Ethylbenzene	700	700	15	700	ND	U	1	ND	U	1	ND	U	1	ND	U	1
		Toluene	1,000	1,000	1,100	1,000	ND	U	1	ND	U	1	ND	U	1	ND	U	1
		Xylenes, total	620	10,000	190	620	ND	U	1	ND	U	1	ND	U	1	ND	U	1
Dissolved Metals	Method SW6010C (mg/L)	Iron, dissolved	1.0	NS	NS	1	ND	U	0.2	ND	U	0.2	ND	U	0.2	ND	U	0.2
		Manganese, dissolved	0.2	NS	NS	0.2	ND	U	0.005	0.0232		0.005	0.0038	J	0.005	0.0025	J	0.005

Table 2
Train 1 Influent Analytical Results

					Well Location ID:		GWTS-BFF-INF1			GWTS-BFF-INF1			GWTS-BFF-INF1			GWTS-BFF-INF1		
					Field Sample ID:		GWTS-INF1-032218			GWTS-INF1-041918			GWTS-INF1-052318			GWTS-INF1-062118		
					Sample Date:		3/22/2018			4/19/2018			5/23/2018			6/21/2018		
					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	0.017	J	0.019	0.024	J	0.019	0.02	J	0.019	0.015	J	0.019
VOCs	Method SW8260C (µg/L)	Benzene	5	5	4.5	5	ND	U	1	ND	U	1	ND	U	1	ND	U	1
		Ethylbenzene	700	700	15	700	ND	U	1	ND	U	1	ND	U	1	ND	U	1
		Toluene	1,000	1,000	1,100	1,000	ND	U	1	ND	U	1	ND	U	1	ND	U	1
		Xylenes, total	620	10,000	190	620	ND	U	1	ND	U	1	ND	U	1	ND	U	1
Dissolved Metals	Method SW6010C (mg/L)	Iron, dissolved	1.0	NS	NS	1	ND	UJ	0.2	ND	U	0.2	ND	U	0.2	ND	U	0.1
		Manganese, dissolved	0.2	NS	NS	0.2	ND	U	0.005	ND	U	0.005	ND	U	0.005	ND	U	0.0025

Table 2
Train 1 Influent Analytical Results

					Well Location ID:		GWTS-BFF-INF1			GWTS-BFF-INF1			GWTS-BFF-INF1			GWTS-BFF-INF1		
					Field Sample ID:		GWTS-INF1-071818			GWTS-INF1-081618			GWTS-INF1-091318			GWTS-INF1-111218		
					Sample Date:		7/18/2018			8/16/2018			9/13/2018			11/12/2018		
					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	0.042		0.018	0.017	J	0.019	0.016	J	0.019	0.022	J	0.019
VOCs	Method SW8260C (µg/L)	Benzene	5	5	4.5	5	ND	U	1	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Ethylbenzene	700	700	15	700	ND	U	1	ND	U	0.8	ND	U	0.8	ND	U	0.8
		Toluene	1,000	1,000	1,100	1,000	ND	U	1	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Xylenes, total	620	10,000	190	620	ND	U	1	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	ND	U	0.0025	ND	U	0.0025	ND	U	0.0025	ND	U	0.0025

Table 2
Train 1 Influent Analytical Results

					Well Location ID:		GWTS-BFF-INF1			GWTS-BFF-INF1			GWTS-BFF-INF1			GWTS-BFF-INF1		
					Field Sample ID:		GWTS-INF1-120318			GWTS-INF1-010919			GWTS-INF1-020719			GWTS-INF1-030719		
					Sample Date:		12/3/2018			1/9/2019			2/7/2019			3/7/2019		
					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	0.024	J	0.019	0.016	J	0.019	0.021	J	0.019	0.013	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	0.1
		Manganese, dissolved	0.2	NS	NS	0.2	ND	U	0.0025	ND	U	0.0025	ND	U	0.0025	ND	U	0.0025

Table 2
Train 1 Influent Analytical Results

					Well Location ID:		GWTS-BFF-INF1			GWTS-BFF-INF1			GWTS-BFF-INF1			GWTS-BFF-INF1		
					Field Sample ID:		GWTS-INF1-040419			GWTS-INF1-050119			GWTS-INF1-060619			GWTS-INF1-061319		
					Sample Date:		4/4/2019			5/1/2019			6/6/2019			6/13/2019		
					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	0.022	J	0.019	0.016	J	0.019	0.015	J	0.019	0.014	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	0.293		0.1	ND	U	0.1	ND	U	0.1
		Manganese, dissolved	0.2	NS	NS	0.2	0.0028	J	0.0025	0.0032	J	0.0025	ND	U	0.0025	0.0023	J	0.0025

Table 2
Train 1 Influent Analytical Results

					Well Location ID:		GWTS-BFF-INF1			GWTS-BFF-INF1			GWTS-BFF-INF1			GWTS-BFF-INF1		
					Field Sample ID:		GWTS-INF1-061419			GWTS-INF1-061519			GWTS-INF1-061619			GWTS-INF1-061719		
					Sample Date:		6/14/2019			6/15/2019			6/16/2019			6/17/2019		
					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	0.014	J	0.019	0.014	J	0.019	0.014	J	0.019	0.013	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	0.1
		Manganese, dissolved	0.2	NS	NS	0.2	0.0018	J	0.0025	0.0016	J	0.0025	0.0016	J	0.0025	0.0016	J	0.0025

Table 2
Train 1 Influent Analytical Results

					Well Location ID:		GWTS-BFF-INF1			GWTS-BFF-INF1			GWTS-BFF-INF1			GWTS-BFF-INF1		
					Field Sample ID:		GWTS-INF1-061819			GWTS-INF1-061919			GWTS-INF1-062019			GWTS-INF1-062619		
					Sample Date:		6/18/2019			6/19/2019			6/20/2019			6/26/2019		
					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	0.014	J	0.019	0.014	J	0.019	0.016	J	0.019	0.0097	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	0.1
		Manganese, dissolved	0.2	NS	NS	0.2	0.0016	J	0.0025	0.0015	J	0.0025	0.0016	J	0.0025	0.002	J	0.0025

Table 2
Train 1 Influent Analytical Results

					Well Location ID:		GWTS-BFF-INF1			GWTS-BFF-INF1			GWTS-BFF-INF1			GWTS-BFF-INF1		
					Field Sample ID:		GWTS-INF1-070219			GWTS-INF1-071219			GWTS-INF1-071619			GWTS-INF1-080819		
					Sample Date:		7/2/2019			7/12/2019			7/16/2019			8/8/2019		
					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	0.014	J	0.019	0.014	J	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	0.100
		Manganese, dissolved	0.2	NS	NS	0.2	0.0012	J	0.0025	ND	U	0.0025	ND	U	0.0025	ND	U	0.0025

Table 2
Train 1 Influent Analytical Results

					Well Location ID:		GWTS-BFF-INF1			GWTS-BFF-INF1			GWTS-BFF-INF1			GWTS-BFF-INF1		
					Field Sample ID:		GWTS-INF1-090519			GWTS-INF1-100919			GWTS-INF1-110719			GWTS-INF1-121019		
					Sample Date:		9/5/2019			10/9/2019			11/7/2019			12/10/2019		
					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	ND	U	0.019	ND	U	0.019	0.014	J	0.019	ND	U	0.019
VOCs	Method SW8260C (µg/L)	Benzene	5	5	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	0.100	ND	U	0.1	ND	U	0.100	ND	U	0.1
		Manganese, dissolved	0.2	NS	NS	0.2	ND	U	0.0025	ND	U	0.005	ND	U	0.0050	ND	U	0.005

Table 2
Train 1 Influent Analytical Results

					Well Location ID:		GWTS-BFF-INF1			GWTS-BFF-INF1			GWTS-BFF-INF1			GWTS-BFF-INF1		
					Field Sample ID:		GWTS-INF1-011420			GWTS-INF1-020520			GWTS-INF1-030520			GWTS-INF1-040220		
					Sample Date:		1/14/2020			2/5/2020			3/5/2020			4/2/2020		
					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	0.016	J	0.019	0.012	J	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	0.103	ND	UJ	0.103	ND	U	0.103
		Manganese, dissolved	0.2	NS	NS	0.2	ND	U	0.005	ND	U	0.0052	ND	U	0.0052	ND	U	0.0052

Table 2
Train 1 Influent Analytical Results

					Well Location ID:		GWTS-BFF-INF1			GWTS-BFF-INF1			GWTS-BFF-INF1			GWTS-BFF-INF1		
					Field Sample ID:		GWTS-INF1-051120			GWTS-INF1-060320			GWTS-INF1-072320			GWTS-INF1-080520		
					Sample Date:		5/11/2020			6/3/2020			7/23/2020			8/5/2020		
					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	ND	U	0.019	ND	U	0.019	ND	U	0.019	ND	U	0.019
VOCs	Method SW8260C (µg/L)	Benzene	5	5	4.5	5	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Ethylbenzene	700	700	15	700	ND	U	0.8	ND	U	0.8	ND	U	0.8	ND	U	0.8
		Toluene	1,000	1,000	1,100	1,000	ND	U	0.5	ND	U	0.5	ND	U	0.5	ND	U	0.5
		Xylenes, total	620	10,000	190	620	ND	U	2	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	0.1	ND	U	0.1	ND	U	0.1
		Manganese, dissolved	0.2	NS	NS	0.2	ND	U	0.0052	0.012		0.0052	ND	U	0.0052	ND	U	0.0052

Table 2
Train 1 Influent Analytical Results

					Well Location ID:		GWTS-BFF-INF1		
					Field Sample ID:		GWTS-INF1-090920		
					Sample Date:		9/9/2020		
					Sample Type:		REG		
Parameter	**Analytical Method**	**Analyte**	**NMAC NMWQCC[a]**	**EPA MCL[b]**	**EPA RSL[c]**	**Project Screening Level[d]**	**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
VOCs	Method SW8260C (µg/L)	Benzene	5	5	4.5	5	ND	U	0.5
		Ethylbenzene	700	700	15	700	ND	U	0.8
		Toluene	1,000	1,000	1,100	1,000	ND	U	0.5
		Xylenes, total	620	10,000	190	620	ND	U	2
Dissolved Metals	Method SW6010C (mg/L)	Iron, dissolved	1.0	NS	NS	1	ND	U	0.1
		Manganese, dissolved	0.2	NS	NS	0.2	ND	U	0.0052

Table 2
Train 1 Influent Analytical Results

[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 (May 2020) for hazard index = 1.0 for noncarcinogens and a 10-5 cancer risk level for carcinogens.

[d] The project screening level was selected to satisfy the requirements of the Kirtland AFB Hazardous Waste Permit Number NM9570024423 as the lowest of (1) 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.

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
mg/L= milligram per liter
ND = nondetect
NMAC = New Mexico Administrative Code
NMWQCC = New Mexico Water Quality Control Commission
NS = not specified
REG = normal field sample
RSL = regional screening level
Val Qual = validation qualifier
VOC = volatile organic compound
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.
J- = Qualifier denotes the analyte was positively identified, but the associated numerical value is estimated and biased low.
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
Groundwater Treatment System Release Soil Samples

		1,2-Dibromoethane			Benzene			Ethylbenzene			Toluene			Xylenes, total			Iron			Manganese		
		106-93-4			71-43-2			100-41-4			108-88-3			1330-20-7			7439-89-6			7439-96-5		
		Method SW8011 (µg/kg)			Method SW8260B (mg/kg)			Method SW8260B (mg/kg)			Method SW8260B (mg/kg)			Method SW8260B (mg/kg)			Method SW6010B (mg/kg)			Method SW6010B (mg/kg)		
Field Sample Name	Sample Date	Result	Val Qual	RL	Result	Val Qual	RL	Result	Val Qual	RL	Result	Val Qual	RL	Result	Val Qual	RL	Result	Val Qual	RL	Result	Val Qual	RL
GWTS-1-100620	10/6/2020	ND	U	0.74	ND	U	0.024	ND	U	0.047	ND	U	0.047	ND	U	0.094	7,900		250	90		0.4
GWTS-2-100620	10/6/2020	ND	U	0.062	ND	U	0.025	ND	U	0.049	ND	U	0.049	ND	U	0.099	8,600		250	81		0.4
GWTS-3-100620	10/6/2020	ND	U	0.058	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
GWTS-4-100620	10/6/2020	ND	U	0.078	ND	U	0.024	ND	U	0.048	ND	U	0.048	ND	U	0.095	7,000		250	70		0.4
GWTS-5-100620	10/6/2020	ND	U	0.086	ND	U	0.024	ND	U	0.047	ND	U	0.047	ND	U	0.095	7,400		250	77		0.39
GWTS-6-100620	10/6/2020	ND	U	0.085	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
GWTS-7-100620	10/6/2020	ND	U	0.85	ND	U	0.024	ND	U	0.048	ND	U	0.048	ND	U	0.095	6,700		250	73		0.4
GWTS-8-100620	10/6/2020	ND	U	0.64	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
GWTS-9-100620	10/6/2020	ND	U	0.066	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
GWTS-10-100620	10/6/2020	ND	U	0.076	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
GWTS-11-100620	10/6/2020	ND	U	0.065	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
GWTS-12-100620	10/6/2020	ND	U	0.086	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
GWTS-13-100620	10/6/2020	ND	U	0.074	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
GWTS-14-100620	10/6/2020	ND	U	0.77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
NMED Residential[a]		672			17.8			75.1			5,230			871			54,800			10,500		
EPA Residential[b]		360			12			58			4,900			580			55,000			1,800		

[a] New Nexico Environment Department (NMED) Risk Assessment Guidance for Site Investigations and Remediation, Appendix A, Table A-1, NMED Soil Screening Levels (SSL). February 2019.

[b] EPA Regional Screening Levels (RSLs) for residential use scenario for hazard index = 1.0 for noncarcinogens and a 10^{-5} cancer risk level for carcinogens. May 2020.

µg/kg = microgram per kilogram
mg/kg = milligrams per kilogram
ND = not detected
RL = reporting limit
U = Qualifier denotes the analyte was analyzed but not detected above the detection limit. The value associated with the U-qualifier is the reporing limit.
— = Compound not analyzed for.

Table 4
Groundwater Treatment System Water Release Sample

			Field Sample Name:		GWTS-15W-100620		
			Sample Date:		10/6/2020		
Analytical Method	**Analyte**	**NMAC NMWQCC[a]**	**EPA MCL[b]**	**EPA RSL[c]**	**Result**	**Val Qual**	**RL**
Method SW8011 (µg/L)	1,2-Dibromoethane	0.05	0.05	0.075	ND	U	0.0093

[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 NMWCC numeric standard applies to dissolved metals.

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

[c] EPA Region 6 RSL for Tapwater (May 2020) for hazard index = 1.0 for noncarcinogens and a 10^{-5} cancer risk level for carcinogens.
µg/L = microgram per liter
ND = not detected
RL = reporting limit
U = Qualifier denotes the analyte was analyzed but not detected above the detection limit. The value associated with the U-qualifier is the reporing limit.

Attachment 5
Laboratory Analytical Reports

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

October 15, 2020

Bernie Bockisch

EA Engineering Science & Technology
320 Gold Ave SW Suite 1210
Albuquerque, NM 87102
TEL:
FAX:

RE: KAFB BFF OrderNo.: 2010292

Dear Bernie Bockisch:

Hall Environmental Analysis Laboratory received 17 sample(s) on 10/6/2020 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EA Engineering Science & Technology
Client Sample ID: GWTS-1-100620
Project: KAFB BFF
Collection Date: 10/6/2020 10:37:00 AM
Lab ID: 2010292-001 **Matrix:** SOIL
Received Date: 10/6/2020 3:50:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 6010B: SOIL METALS						Analyst: **JLF**	
Iron	7900	250		mg/Kg	100	10/8/2020 2:29:05 PM	55708
Manganese	90	0.40		mg/Kg	2	10/8/2020 2:00:25 PM	55708
EPA METHOD 8011/504.1 MODIFIED: EDB						Analyst: **JME**	
1,2-Dibromoethane	ND	0.74		µg/Kg	10	10/7/2020 12:18:45 PM	55693
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **JMR**	
Benzene	ND	0.024		mg/Kg	1	10/8/2020 1:54:56 PM	55696
Toluene	ND	0.047		mg/Kg	1	10/8/2020 1:54:56 PM	55696
Ethylbenzene	ND	0.047		mg/Kg	1	10/8/2020 1:54:56 PM	55696
Xylenes, Total	ND	0.094		mg/Kg	1	10/8/2020 1:54:56 PM	55696
Surr: 1,2-Dichloroethane-d4	89.2	70-130		%Rec	1	10/8/2020 1:54:56 PM	55696
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	10/8/2020 1:54:56 PM	55696
Surr: Dibromofluoromethane	105	70-130		%Rec	1	10/8/2020 1:54:56 PM	55696
Surr: Toluene-d8	101	70-130		%Rec	1	10/8/2020 1:54:56 PM	55696

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EA Engineering Science & Technology
Client Sample ID: GWTS-2-100620
Project: KAFB BFF
Collection Date: 10/6/2020 10:44:00 AM
Lab ID: 2010292-002 **Matrix:** SOIL
Received Date: 10/6/2020 3:50:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 6010B: SOIL METALS						Analyst: **JLF**	
Iron	8600	250		mg/Kg	100	10/8/2020 2:30:33 PM	55708
Manganese	81	0.40		mg/Kg	2	10/8/2020 2:01:53 PM	55708
EPA METHOD 8011/504.1 MODIFIED: EDB						Analyst: **JME**	
1,2-Dibromoethane	ND	0.062		µg/Kg	1	10/7/2020 12:33:45 PM	55693
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **JMR**	
Benzene	ND	0.025		mg/Kg	1	10/8/2020 2:23:27 PM	55696
Toluene	ND	0.049		mg/Kg	1	10/8/2020 2:23:27 PM	55696
Ethylbenzene	ND	0.049		mg/Kg	1	10/8/2020 2:23:27 PM	55696
Xylenes, Total	ND	0.099		mg/Kg	1	10/8/2020 2:23:27 PM	55696
Surr: 1,2-Dichloroethane-d4	94.5	70-130		%Rec	1	10/8/2020 2:23:27 PM	55696
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	10/8/2020 2:23:27 PM	55696
Surr: Dibromofluoromethane	105	70-130		%Rec	1	10/8/2020 2:23:27 PM	55696
Surr: Toluene-d8	102	70-130		%Rec	1	10/8/2020 2:23:27 PM	55696

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EA Engineering Science & Technology
Client Sample ID: GWTS-3-100620
Project: KAFB BFF
Collection Date: 10/6/2020 10:47:00 AM
Lab ID: 2010292-003 **Matrix:** SOIL
Received Date: 10/6/2020 3:50:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1 MODIFIED: EDB						Analyst: **JME**	
1,2-Dibromoethane	ND	0.058		µg/Kg	1	10/7/2020 12:48:52 PM	55693

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EA Engineering Science & Technology
Client Sample ID: GWTS-4-100620
Project: KAFB BFF
Collection Date: 10/6/2020 10:50:00 AM
Lab ID: 2010292-004 **Matrix:** SOIL
Received Date: 10/6/2020 3:50:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 6010B: SOIL METALS						Analyst: **JLF**	
Iron	7000	250		mg/Kg	100	10/8/2020 2:32:01 PM	55708
Manganese	70	0.40		mg/Kg	2	10/8/2020 2:03:21 PM	55708
EPA METHOD 8011/504.1 MODIFIED: EDB						Analyst: **JME**	
1,2-Dibromoethane	ND	0.078		µg/Kg	1	10/7/2020 1:03:59 PM	55693
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **JMR**	
Benzene	ND	0.024		mg/Kg	1	10/8/2020 2:51:56 PM	55696
Toluene	ND	0.048		mg/Kg	1	10/8/2020 2:51:56 PM	55696
Ethylbenzene	ND	0.048		mg/Kg	1	10/8/2020 2:51:56 PM	55696
Xylenes, Total	ND	0.095		mg/Kg	1	10/8/2020 2:51:56 PM	55696
Surr: 1,2-Dichloroethane-d4	96.1	70-130		%Rec	1	10/8/2020 2:51:56 PM	55696
Surr: 4-Bromofluorobenzene	105	70-130		%Rec	1	10/8/2020 2:51:56 PM	55696
Surr: Dibromofluoromethane	108	70-130		%Rec	1	10/8/2020 2:51:56 PM	55696
Surr: Toluene-d8	102	70-130		%Rec	1	10/8/2020 2:51:56 PM	55696

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EA Engineering Science & Technology
Client Sample ID: GWTS-5-100620
Project: KAFB BFF
Collection Date: 10/6/2020 10:57:00 AM
Lab ID: 2010292-005 **Matrix:** SOIL
Received Date: 10/6/2020 3:50:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 6010B: SOIL METALS						Analyst: **JLF**	
Iron	7400	250		mg/Kg	100	10/8/2020 2:33:28 PM	55708
Manganese	77	0.39		mg/Kg	2	10/8/2020 2:04:48 PM	55708
EPA METHOD 8011/504.1 MODIFIED: EDB						Analyst: **JME**	
1,2-Dibromoethane	ND	0.086		µg/Kg	1	10/7/2020 1:19:11 PM	55693
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **JMR**	
Benzene	ND	0.024		mg/Kg	1	10/8/2020 3:20:31 PM	55696
Toluene	ND	0.047		mg/Kg	1	10/8/2020 3:20:31 PM	55696
Ethylbenzene	ND	0.047		mg/Kg	1	10/8/2020 3:20:31 PM	55696
Xylenes, Total	ND	0.095		mg/Kg	1	10/8/2020 3:20:31 PM	55696
Surr: 1,2-Dichloroethane-d4	90.2	70-130		%Rec	1	10/8/2020 3:20:31 PM	55696
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	10/8/2020 3:20:31 PM	55696
Surr: Dibromofluoromethane	101	70-130		%Rec	1	10/8/2020 3:20:31 PM	55696
Surr: Toluene-d8	99.8	70-130		%Rec	1	10/8/2020 3:20:31 PM	55696

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EA Engineering Science & Technology
Client Sample ID: GWTS-6-100620
Project: KAFB BFF
Collection Date: 10/6/2020 11:01:00 AM
Lab ID: 2010292-006 **Matrix:** SOIL
Received Date: 10/6/2020 3:50:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1 MODIFIED: EDB						Analyst: **JME**	
1,2-Dibromoethane	ND	0.085		µg/Kg	1	10/7/2020 1:34:21 PM	55693

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EA Engineering Science & Technology
Client Sample ID: GWTS-7-100620
Project: KAFB BFF
Collection Date: 10/6/2020 11:04:00 AM
Lab ID: 2010292-007 **Matrix:** SOIL
Received Date: 10/6/2020 3:50:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 6010B: SOIL METALS						Analyst: **JLF**	
Iron	6700	250		mg/Kg	100	10/8/2020 2:53:04 PM	55708
Manganese	73	0.40		mg/Kg	2	10/8/2020 2:06:16 PM	55708
EPA METHOD 8011/504.1 MODIFIED: EDB						Analyst: **JME**	
1,2-Dibromoethane	ND	0.85		µg/Kg	10	10/7/2020 1:49:39 PM	55693
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **JMR**	
Benzene	ND	0.024		mg/Kg	1	10/8/2020 3:49:03 PM	55696
Toluene	ND	0.048		mg/Kg	1	10/8/2020 3:49:03 PM	55696
Ethylbenzene	ND	0.048		mg/Kg	1	10/8/2020 3:49:03 PM	55696
Xylenes, Total	ND	0.095		mg/Kg	1	10/8/2020 3:49:03 PM	55696
Surr: 1,2-Dichloroethane-d4	96.7	70-130		%Rec	1	10/8/2020 3:49:03 PM	55696
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	10/8/2020 3:49:03 PM	55696
Surr: Dibromofluoromethane	111	70-130		%Rec	1	10/8/2020 3:49:03 PM	55696
Surr: Toluene-d8	99.2	70-130		%Rec	1	10/8/2020 3:49:03 PM	55696

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EA Engineering Science & Technology
Client Sample ID: GWTS-8-100620
Project: KAFB BFF
Collection Date: 10/6/2020 11:10:00 AM
Lab ID: 2010292-008 **Matrix:** SOIL
Received Date: 10/6/2020 3:50:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1 MODIFIED: EDB						Analyst: **JME**	
1,2-Dibromoethane	ND	0.64		µg/Kg	10	10/7/2020 2:04:53 PM	55693

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EA Engineering Science & Technology
Client Sample ID: GWTS-9-100620
Project: KAFB BFF
Collection Date: 10/6/2020 11:24:00 AM
Lab ID: 2010292-009 **Matrix:** SOIL
Received Date: 10/6/2020 3:50:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1 MODIFIED: EDB						Analyst: **JME**	
1,2-Dibromoethane	ND	0.066		µg/Kg	1	10/7/2020 2:35:35 PM	55693

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EA Engineering Science & Technology
Client Sample ID: GWTS-10-100620
Project: KAFB BFF
Collection Date: 10/6/2020 11:30:00 AM
Lab ID: 2010292-010 **Matrix:** SOIL
Received Date: 10/6/2020 3:50:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1 MODIFIED: EDB						Analyst: **JME**	
1,2-Dibromoethane	ND	0.076		µg/Kg	1	10/7/2020 2:50:56 PM	55693

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EA Engineering Science & Technology
Client Sample ID: GWTS-11-100620
Project: KAFB BFF
Collection Date: 10/6/2020 11:39:00 AM
Lab ID: 2010292-011 **Matrix:** SOIL
Received Date: 10/6/2020 3:50:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1 MODIFIED: EDB						Analyst: **JME**	
1,2-Dibromoethane	ND	0.065		µg/Kg	1	10/7/2020 3:06:17 PM	55693

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EA Engineering Science & Technology
Client Sample ID: GWTS-12-100620
Project: KAFB BFF
Collection Date: 10/6/2020 11:46:00 AM
Lab ID: 2010292-012 **Matrix:** SOIL
Received Date: 10/6/2020 3:50:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1 MODIFIED: EDB						Analyst: **JME**	
1,2-Dibromoethane	ND	0.086		µg/Kg	1	10/7/2020 3:21:42 PM	55693

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EA Engineering Science & Technology
Client Sample ID: GWTS-13-100620
Project: KAFB BFF
Collection Date: 10/6/2020 11:53:00 AM
Lab ID: 2010292-013 **Matrix:** SOIL
Received Date: 10/6/2020 3:50:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1 MODIFIED: EDB						Analyst: **JME**	
1,2-Dibromoethane	ND	0.074		µg/Kg	1	10/7/2020 3:37:05 PM	55693

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EA Engineering Science & Technology
Client Sample ID: GWTS-14-100620
Project: KAFB BFF
Collection Date: 10/6/2020 11:57:00 AM
Lab ID: 2010292-014 **Matrix:** SOIL
Received Date: 10/6/2020 3:50:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1 MODIFIED: EDB						Analyst: **JME**	
1,2-Dibromoethane	ND	0.77		µg/Kg	10	10/7/2020 3:52:32 PM	55693

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EA Engineering Science & Technology
Client Sample ID: GWTS-15W-100620
Project: KAFB BFF
Collection Date: 10/6/2020 12:45:00 PM
Lab ID: 2010292-015 **Matrix:** AQUEOUS **Received Date:** 10/6/2020 3:50:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1: EDB						Analyst: **JME**	
1,2-Dibromoethane	ND	0.0093		µg/L	1	10/7/2020 10:49:02 AM	55695

NOTES:
No trip blank was included with work order

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EA Engineering Science & Technology
Client Sample ID: GWTS-2-100620DUP
Project: KAFB BFF
Collection Date: 10/6/2020 10:44:00 AM
Lab ID: 2010292-016 **Matrix:** SOIL
Received Date: 10/6/2020 3:50:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1 MODIFIED: EDB						Analyst: **mb**	
1,2-Dibromoethane	ND	0.086		µg/Kg	1	10/13/2020 2:44:00 PM	55780
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Methyl tert-butyl ether (MTBE)	ND	0.093		mg/Kg	1	10/14/2020 9:21:07 AM	55797
Benzene	ND	0.023		mg/Kg	1	10/14/2020 9:21:07 AM	55797
Toluene	ND	0.047		mg/Kg	1	10/14/2020 9:21:07 AM	55797
Ethylbenzene	ND	0.047		mg/Kg	1	10/14/2020 9:21:07 AM	55797
Xylenes, Total	ND	0.093		mg/Kg	1	10/14/2020 9:21:07 AM	55797
Surr: 4-Bromofluorobenzene	99.3	80-120		%Rec	1	10/14/2020 9:21:07 AM	55797

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: EA Engineering Science & Technology
Client Sample ID: GWTS-4-100620DUP
Project: KAFB BFF
Collection Date: 10/6/2020 10:50:00 AM
Lab ID: 2010292-017 **Matrix:** SOIL
Received Date: 10/6/2020 3:50:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8011/504.1 MODIFIED: EDB						Analyst: **mb**	
1,2-Dibromoethane	ND	0.087		µg/Kg	1	10/13/2020 3:14:19 PM	55780
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Methyl tert-butyl ether (MTBE)	ND	0.095		mg/Kg	1	10/14/2020 10:32:17 AM	55797
Benzene	ND	0.024		mg/Kg	1	10/14/2020 10:32:17 AM	55797
Toluene	ND	0.047		mg/Kg	1	10/14/2020 10:32:17 AM	55797
Ethylbenzene	ND	0.047		mg/Kg	1	10/14/2020 10:32:17 AM	55797
Xylenes, Total	ND	0.095		mg/Kg	1	10/14/2020 10:32:17 AM	55797
Surr: 4-Bromofluorobenzene	98.8	80-120		%Rec	1	10/14/2020 10:32:17 AM	55797

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2010292**

15-Oct-20

Client: EA Engineering Science & Technology

Project: KAFB BFF

Sample ID: **MB-55693** SampType: **MBLK** TestCode: **EPA Method 8011/504.1 Modified: EDB**

Client ID: **PBS** Batch ID: **55693** RunNo: **72485**

Prep Date: **10/7/2020** Analysis Date: **10/7/2020** SeqNo: **2543898** Units: **µg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.10								

Sample ID: **MB-55693** SampType: **MBLK** TestCode: **EPA Method 8011/504.1 Modified: EDB**

Client ID: **PBS** Batch ID: **55693** RunNo: **72485**

Prep Date: **10/7/2020** Analysis Date: **10/7/2020** SeqNo: **2543899** Units: **µg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.10								

Sample ID: **LCS-55693** SampType: **LCS** TestCode: **EPA Method 8011/504.1 Modified: EDB**

Client ID: **LCSS** Batch ID: **55693** RunNo: **72485**

Prep Date: **10/7/2020** Analysis Date: **10/7/2020** SeqNo: **2543902** Units: **µg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.72	0.10	1.000	0	72.2	70	130			

Sample ID: **MB-55780** SampType: **MBLK** TestCode: **EPA Method 8011/504.1 Modified: EDB**

Client ID: **PBS** Batch ID: **55780** RunNo: **72615**

Prep Date: **10/13/2020** Analysis Date: **10/13/2020** SeqNo: **2550133** Units: **µg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.10								

Sample ID: **2010292-017AMS** SampType: **MS** TestCode: **EPA Method 8011/504.1 Modified: EDB**

Client ID: **GWTS-4-100620DUP** Batch ID: **55780** RunNo: **72615**

Prep Date: **10/13/2020** Analysis Date: **10/13/2020** SeqNo: **2550134** Units: **µg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.95	0.094	0.9358	0	102	65	135			

Sample ID: **LCS-55780** SampType: **LCS** TestCode: **EPA Method 8011/504.1 Modified: EDB**

Client ID: **LCSS** Batch ID: **55780** RunNo: **72615**

Prep Date: **10/13/2020** Analysis Date: **10/13/2020** SeqNo: **2550137** Units: **µg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	1.1	0.10	1.000	0	108	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2010292**

15-Oct-20

Client: EA Engineering Science & Technology

Project: KAFB BFF

Sample ID: **MB-55780**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1 Modified: EDB**
Client ID: **PBS**	Batch ID: **55780**	RunNo: **72615**
Prep Date: **10/13/2020**	Analysis Date: **10/13/2020**	SeqNo: **2550140** Units: **µg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.10								

Sample ID: **2010292-017AMSD**	SampType: **MSD**	TestCode: **EPA Method 8011/504.1 Modified: EDB**
Client ID: **GWTS-4-100620DUP**	Batch ID: **55780**	RunNo: **72615**
Prep Date: **10/13/2020**	Analysis Date: **10/13/2020**	SeqNo: **2550149** Units: **µg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	1.0	0.10	0.9972	0	103	65	135	7.63	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2010292**

15-Oct-20

Client: EA Engineering Science & Technology

Project: KAFB BFF

Sample ID: **MB-55695**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **55695**	RunNo: **72485**
Prep Date: **10/7/2020**	Analysis Date: **10/7/2020**	SeqNo: **2543891** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **MB-55695**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **PBW**	Batch ID: **55695**	RunNo: **72485**
Prep Date: **10/7/2020**	Analysis Date: **10/7/2020**	SeqNo: **2543892** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.010								

Sample ID: **LCS-55695**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSW**	Batch ID: **55695**	RunNo: **72485**
Prep Date: **10/7/2020**	Analysis Date: **10/7/2020**	SeqNo: **2543893** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	111	70	130			

Sample ID: **LCSD-55695**	SampType: **LCSD**	TestCode: **EPA Method 8011/504.1: EDB**
Client ID: **LCSS02**	Batch ID: **55695**	RunNo: **72485**
Prep Date: **10/7/2020**	Analysis Date: **10/7/2020**	SeqNo: **2543894** Units: **µg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.11	0.010	0.1000	0	105	70	130	5.65	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2010292**

15-Oct-20

Client: EA Engineering Science & Technology

Project: KAFB BFF

Sample ID: **LCS-55696** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **LCSS** Batch ID: **55696** RunNo: **72529**

Prep Date: **10/7/2020** Analysis Date: **10/8/2020** SeqNo: **2545827** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		101	80	120			

Sample ID: **mb-55696** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **PBS** Batch ID: **55696** RunNo: **72529**

Prep Date: **10/7/2020** Analysis Date: **10/8/2020** SeqNo: **2545828** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.99		1.000		98.9	80	120			

Sample ID: **mb-55797** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **PBS** Batch ID: **55797** RunNo: **72630**

Prep Date: **10/13/2020** Analysis Date: **10/14/2020** SeqNo: **2551485** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	0.10								
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		99.7	80	120			

Sample ID: **LCS-55797** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **LCSS** Batch ID: **55797** RunNo: **72630**

Prep Date: **10/13/2020** Analysis Date: **10/14/2020** SeqNo: **2551486** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.94	0.10	1.000	0	94.5	70.9	141			
Benzene	0.90	0.025	1.000	0	90.0	80	120			
Toluene	0.95	0.050	1.000	0	94.6	80	120			
Ethylbenzene	0.96	0.050	1.000	0	95.9	80	120			
Xylenes, Total	2.9	0.10	3.000	0	95.9	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		102	80	120			

Sample ID: **2010292-016ams** SampType: **MS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **GWTS-2-100620DUP** Batch ID: **55797** RunNo: **72630**

Prep Date: **10/13/2020** Analysis Date: **10/14/2020** SeqNo: **2551488** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.90	0.096	0.9588	0	94.1	78.1	153			
Benzene	0.88	0.024	0.9588	0	92.2	76.3	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2010292**
15-Oct-20

Client: EA Engineering Science & Technology
Project: KAFB BFF

Sample ID: **2010292-016ams** SampType: **MS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **GWTS-2-100620DUP** Batch ID: **55797** RunNo: **72630**
Prep Date: **10/13/2020** Analysis Date: **10/14/2020** SeqNo: **2551488** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Toluene	0.94	0.048	0.9588	0	98.3	78.5	120			
Ethylbenzene	0.97	0.048	0.9588	0	102	78.1	124			
Xylenes, Total	2.9	0.096	2.876	0	102	79.3	125			
Surr: 4-Bromofluorobenzene	0.96		0.9588		100	80	120			

Sample ID: **2010292-016amsd** SampType: **MSD** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **GWTS-2-100620DUP** Batch ID: **55797** RunNo: **72630**
Prep Date: **10/13/2020** Analysis Date: **10/14/2020** SeqNo: **2551489** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	0.90	0.093	0.9285	0	96.6	78.1	153	0.565	20	
Benzene	0.90	0.023	0.9285	0	96.4	76.3	120	1.28	20	
Toluene	0.95	0.046	0.9285	0	102	78.5	120	0.740	20	
Ethylbenzene	0.99	0.046	0.9285	0	107	78.1	124	1.54	20	
Xylenes, Total	3.0	0.093	2.786	0	106	79.3	125	0.691	20	
Surr: 4-Bromofluorobenzene	0.92		0.9285		99.6	80	120	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2010292**

15-Oct-20

Client: EA Engineering Science & Technology

Project: KAFB BFF

Sample ID: **lcs-55696**	SampType: **LCS**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **LCSS**	Batch ID: **55696**	RunNo: **72513**
Prep Date: **10/7/2020**	Analysis Date: **10/8/2020**	SeqNo: **2545061** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.025	1.000	0	91.6	70	130			
Toluene	1.0	0.050	1.000	0	105	70	130			
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		93.2	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		99.9	70	130			
Surr: Dibromofluoromethane	0.52		0.5000		105	70	130			
Surr: Toluene-d8	0.51		0.5000		103	70	130			

Sample ID: **mb-55696**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **PBS**	Batch ID: **55696**	RunNo: **72513**
Prep Date: **10/7/2020**	Analysis Date: **10/8/2020**	SeqNo: **2545062** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		93.3	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		99.9	70	130			
Surr: Dibromofluoromethane	0.52		0.5000		104	70	130			
Surr: Toluene-d8	0.49		0.5000		97.7	70	130			

Sample ID: **2010292-001ams**	SampType: **MS**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **GWTS-1-100620**	Batch ID: **55696**	RunNo: **72513**
Prep Date: **10/7/2020**	Analysis Date: **10/8/2020**	SeqNo: **2545810** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.84	0.025	0.9930	0	84.3	67.9	137			
Toluene	0.99	0.050	0.9930	0	99.6	70	130			
Surr: 1,2-Dichloroethane-d4	0.46		0.4965		93.3	70	130			
Surr: 4-Bromofluorobenzene	0.53		0.4965		108	70	130			
Surr: Dibromofluoromethane	0.50		0.4965		101	70	130			
Surr: Toluene-d8	0.50		0.4965		102	70	130			

Sample ID: **2010292-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **GWTS-1-100620**	Batch ID: **55696**	RunNo: **72513**
Prep Date: **10/7/2020**	Analysis Date: **10/8/2020**	SeqNo: **2545811** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.025	0.9901	0	95.6	67.9	137	12.3	20	
Toluene	1.0	0.050	0.9901	0	103	70	130	2.60	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2010292**

15-Oct-20

Client: EA Engineering Science & Technology

Project: KAFB BFF

Sample ID: **2010292-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **GWTS-1-100620**	Batch ID: **55696**	RunNo: **72513**
Prep Date: **10/7/2020**	Analysis Date: **10/8/2020**	SeqNo: **2545811** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.48		0.4950		96.4	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.50		0.4950		101	70	130	0	0	
Surr: Dibromofluoromethane	0.54		0.4950		108	70	130	0	0	
Surr: Toluene-d8	0.49		0.4950		99.2	70	130	0	0	

Sample ID: **lcs-55696**	SampType: **LCS4**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **BatchQC**	Batch ID: **55696**	RunNo: **72548**
Prep Date: **10/7/2020**	Analysis Date: **10/9/2020**	SeqNo: **2546785** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.99	0.025	1.000	0	98.5	80	120			
Toluene	1.0	0.050	1.000	0	103	80	120			
Ethylbenzene	1.0	0.050	1.000	0	105	80	120			
Xylenes, Total	3.2	0.10	3.000	0	107	80	120			
Surr: 1,2-Dichloroethane-d4	0.48		0.5000		95.8	70	130			
Surr: 4-Bromofluorobenzene	0.51		0.5000		102	70	130			
Surr: Dibromofluoromethane	0.54		0.5000		108	70	130			
Surr: Toluene-d8	0.50		0.5000		101	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2010292**
15-Oct-20

Client: EA Engineering Science & Technology
Project: KAFB BFF

Sample ID: **MB-55708**	SampType: **MBLK**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS**	Batch ID: **55708**	RunNo: **72520**
Prep Date: **10/7/2020**	Analysis Date: **10/8/2020**	SeqNo: **2545190** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	ND	2.5								
Manganese	ND	0.20								

Sample ID: **LCS-55708**	SampType: **LCS**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS**	Batch ID: **55708**	RunNo: **72520**
Prep Date: **10/7/2020**	Analysis Date: **10/8/2020**	SeqNo: **2545192** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	25	2.5	25.00	0	101	80	120			
Manganese	24	0.20	25.00	0	97.7	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: **EA Engineering** Work Order Number: **2010292** RcptNo: 1

Received By: **Juan Rojas** **10/6/2020 3:50:00 PM**

Completed By: **Emily Mocho** **10/6/2020 4:12:36 PM**

Reviewed By: 10/6/20

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Client		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: (<2 or >12 unless noted)

Adjusted?

Checked by: JR 10/6/20

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.0	Good	Not Present			

Chain-of-Custody Record

Client: EA ENGINEERING

Mailing Address: 320 GOLD AVE SW
ABQ, NM 87102

Phone #: 505-280-0572

email or Fax#: bbockisch@eanest.com

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☒ Rush 2 DAY

Project Name: KIRTLAND BFF

Project #: 6360401

Project Manager: Bernie Bockisch

Sampler: JRL

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 4.0-0=4.0 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2010292	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)/8011	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	TOTAL Fe, Mn
10/6/2020	1037	Soil	GWTS-1-100620	1x4 oz	NA	001	X			X							X
	1044		GWTS-2-100620			002	X										X
	1047		GWTS-3-100620			003											
	1050		GWTS-4-100620			004	X										X
	1057		GWTS-5-100620			005	X										X
	1101		GWTS-6-100620			006											
	1104		GWTS-7-100620			007	X										X
	1110		GWTS-8-100620			008											
	1124		GWTS-9-100620			009											
	1130		GWTS-10-100620			010											
	1139		GWTS-11-100620			011											
	1146		GWTS-1B2-100620			012											

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
10/6/2020	1530	Josh Livingston		COC	10/6/20	15:50
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

Remarks:

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Chain-of-Custody Record

Client: EA ENGINEERING

Mailing Address: 320 GOLD AVE SW
ABQ, NM 87102

Phone #: 505-280-0572

email or Fax#: bbockisch@eaest.com

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☒ Rush 2 DAY

Project Name: Kirtland BFF

Project #: 6380401

Project Manager: Bernie Bockisch

Sampler: JRL

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 4.0-0=4.0 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2010292	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	
10/6/2020	1153	SOIL	GWTS-14 (13) 100620	1x4 oz	—	013				X							
	1157		GWTS-15 (14) 100620			014											
			GWTS-16 (15) 100620														JL
			GWTS-17-100620														JL
			GWTS-18-100620														JL
			GWTS-19-100620														JL
			GWTS-20-100620														JL
10/6/2020	1245	H2O	GWTS-15W-100620	2x40 ml	Sodium Thiosulfate	015				X							

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
10/6/2020	1530	JOSH LIVINGSTON		COC	10/6/20	15:50
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

Remarks:

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Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: clients.hallenvironmental.com

Sample Log-In Check List

Client Name: **EA Engineering** Work Order Number: **2010292** RcptNo: **1**

Received By: **Juan Rojas** **10/6/2020 3:50:00 PM**

Completed By: **Emily Mocho** **10/6/2020 4:12:36 PM**

Reviewed By: 10/6/20 ENM 10/12/20

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Client		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA?	Yes ☐	No ☐	NA ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: (<2 or >12 unless noted)

Adjusted?

Checked by: JR 10/6/20

2nd label By: DAD 10/12/20

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: Date:

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.0	Good	Not Present			

Chain-of-Custody Record

Client: EA ENGINEERING

Mailing Address: 320 GOLD AVE SW ABQ, NM 87102

Phone #: 505-250-0572

email or Fax#: bbockisch@eaest.com

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☒ Rush 2 DAY

Project Name: Kirtland BFF

Project #: 63B0401

Project Manager: Bernie Bockisch

Sampler: JRL

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 4.0-0=4.0 (°C)

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Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2010292	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1) /80 11	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	Total Fe, Mn ENM 10/12/20	BTEX/EDB only per Bernard Bockisch
10/6/2020	1153	SOIL	GWTS-4 (13 and) 100620	1x4 oz	—	013				X								
	1157		GWTS-15 (AKA 14) 100620			014												
			GWTS-16 (AKA 15) 100620															
			GWTS-17-100620															
			GWTS-18-100620															
			GWTS-19-100620															
			GWTS-20-100620															
10/6/2020	1245	H2O	GWTS-15W-100620	2x40 ml	Sodium Thiosulfate	015				X								
10/6/20	1044	SOIL	GWTS-2-100620 DUP			-016	X			X						X	ENM 10/12/20	
1	1050	1	GWTS-4-100620 DUP			-017	X			X						X		
	ENM 10/12/20 Per Bernard Bockish																	

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
10/6/2020	1530	JOSH LIVINGSTON		COC	10/6/20	15:50
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

Remarks:

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Chain-of-Custody Record

Client: EA ENGINEERING

Mailing Address: 320 GOLD AVE SW
ABQ, NM 87102

Phone #: 505-280-0572

email or Fax#: bbockisch@eaest.com

QA/QC Package:
☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☒ Rush 2 DAY

Project Name: KIRTLAND BFF

Project #: 6360401

Project Manager: Bernie Bockisch

Sampler: JRL

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 4.0-0=4.0 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY
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4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2010292	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)/8011	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	TOTAL Fe, Mn
10/6/2020	1037	Soil	GWTS-1-100620	1x4 oz	NA	001	X			X							X
	1044		GWTS-2-100620			002	X										X
	1047		GWTS-3-100620			003											
	1050		GWTS-4-100620			004	X										X
	1057		GWTS-5-100620			005	X										X
	1101		GWTS-6-100620			006											
	1104		GWTS-7-100620			007	X										X
	1110		GWTS-8-100620			008											
	1124		GWTS-9-100620			009											
	1130		GWTS-10-100620			010											
	1139		GWTS-11-100620			011											
	1146		GWTS-12-100620			012											

Date	Time	Relinquished by	Received by	Via	Date	Time
10/6/2020	1530	Josh Livingston		COO	10/6/20	15:50

Remarks:

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Attachment 6

Document Certification Page

40 CFR 270.11
DOCUMENT CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

RYAN S. NYE, Colonel, U.S. Air Force
Vice Commander, 377th Air Base Wing

19 Oct 20
Date

This document has been approved for public release.

KIRTLAND AIR FORCE BASE
377th Air Base Wing Public Affairs

19 OCT 20
Date