ACRONYMS AND ABBREVIATIONS

%	percent
%D	percent difference
BFF	Bulk Fuels Facility
CCV	continuing calibration verification
DoD	U.S. Department of Defense
EDB	1,2-dibromoethane/ethylene dibromide
EPA	U.S. Environmental Protection Agency
ICP	inductively coupled plasma
ICS	interference check sample
ICV	initial calibration verification
KAFB	Kirtland Air Force Base
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
LOQ	limit of quantitation
mL	milliliter
MS	matrix spike
MSD	matrix spike duplicate
QAPjP	Quality Assurance Project Plan
QC	quality control
QSM	Quality Systems Manual
RPD	relative percent difference
SDG	sample delivery group
SM	Standard Method
SOP	standard operating procedure
USACE	U.S. Army Corps of Engineers
VFA	volatile fatty acid
VOC	volatile organic compound

I-1. DATA QUALITY EVALUATION REPORT – GROUNDWATER JUNE 2017 – JANUARY 2019

1. LABORATORY DATA QUALITY SUMMARY

This Data Quality Evaluation Report describes the findings of the review of data for the 1,2-dibromomethane (EDB) in situ biodegradation pilot test (hereby referred to as the Pilot Test) groundwater monitoring conducted between June 29, 2017 and January 21, 2019, and is provided to document the quality of the analytical data used in the *Ethylene Dibromide In Situ Biodegradation Pilot Test Report, Bulk Fuels Facility, Solid Waste Management Unit ST-106/SS-111, Kirtland Air Force Base, New Mexico*. Groundwater monitoring activities were conducted in accordance with the requirements specified in the *Ethylene Dibromide in Situ Biodegration Pilot Test Work Plan, Bulk Fuels Facility, Kirtland Air Force Base, New Mexico* (U.S. Army Corps of Engineers [USACE], 2016, Pilot Test Work Plan). Sampling procedures and overall quality control (QC) and quality assurance protocols for the groundwater monitoring activities are presented in the *Quality Assurance Project Plan, Bulk Fuels Facility Spill, Solid Waste Management Units ST-106 and SS-111, Kirtland Air Force Base, Albuquerque, New Mexico* (USACE, 2011).

The Pilot Test consisted of four phases:

- Phase 1: Evaluation of Baseline Conditions and Conservative Tracer Testing
- Phase 2: Evaluation of Biostimulation
- Phase 3: Additional Biostimulation
- Phase 4: Rebound Monitoring

During each of the four phases, multiple sampling events were conducted at the frequencies specified in the Pilot Test Work Plan. Groundwater samples were collected from six monitoring wells (Kirtland Air Force Base [KAFB]-106063, KAFB-106064, KAFB-106MW1-I, KAFB-106MW1-S, KAFB-106MW2-I, and KAFB-106MW2-S), two extraction wells (KAFB-106EX1 and KAFB-106EX2), and one injection well (KAFB-106IN1). Specific sampling locations and parameter analyzed for each sampling event are presented in the Pilot Test Work Plan. During each sampling event, groundwater and field QC samples were collected and submitted to off-site laboratories and analyzed for the following list of parameters:

- Volatile organic compounds (VOCs) – U.S. Environmental Protection Agency (EPA) Method SW8260B
- EDB – EPA Method SW8011
- Dissolved iron and manganese – EPA Method SW6010C
- Anions (chloride, sulfate, bromide, nitrate, and nitrite) – EPA Method SW9056A
- Dissolved o-phosphate – EPA Method SW9056A or Standard Method (SM) 4500PE
- Nitrate and nitrite as nitrogen – EPA Method 353.2
- Alkalinity – SM2320B
- Iodide – EPA Method 300.0
- volatile fatty acids (VFAs)– EPA Method 300.0 M (modified)
- Dissolved gases – RSK 175

During the entire sampling period, the VFAs and dissolved gases analyses were conducted by Aptim Federal Services, LLC (APTIM) laboratory in Lawrenceville, New Jersey, while the iodide analysis was performed by Test America in Earth City, Missouri. Between the baseline event in June 2017 and Phase 2 groundwater monitoring event in July 2018, samples were shipped to Empirical Laboratories LLC in Nashville, Tennessee for the remaining listed analyses. In August 2018, after the primary laboratory Empirical went out of business groundwater samples were shipped to Test America in West Sacramento, California for dissolved o-phosphate and alkalinity analyses, and Test America in Savannah for VOC, EDB, dissolved metals, and anions analyses. Empirical Laboratories and Test America in all three locations hold a current U.S. Department of Defense (DoD) Environmental Laboratory Accreditation Program certification to perform the listed analyses.

In addition to above, groundwater samples were collected at the frequencies specified in the Pilot Test Work Plan and analyzed for the following parameters by the listed laboratories:

- QuantArray Chlor – Microbial Insights Laboratory Standard Operating Procedure (SOP)
- Fluorescein– Crawford Hydrology Laboratory SOP (Spectrofluorophotometry)
- Hydrogen stable isotope – Reston Stable Isotope Laboratory SOP (Hydrogen/H_2O Equilibration Isotope Ratio Mass Spectrometry)
- EDB stable isotope – University of Oklahoma SOP (Kuder et al. 2012)

All analytical results from each sampling event were reported by off-site laboratories and were received in sample delivery groups (SDGs). Appendix I-1 – Table 1 (provided at the end of this report) summarizes sample collection dates, sample numbers, sample locations, laboratories, sample types, analysis methods, and SDG numbers. An EPA Level III data review was performed for all groundwater samples submitted for VOCs, EDB, dissolved metals, wet chemistry parameters, VFAs, and dissolved gases analyses. The review was performed in accordance with the guidelines and control criteria specified in the following documents:

- The Bulk Fuels Facility (BFF) Spill Quality Assurance Project Plan (QAPjP) (USACE, 2011)
- *DoD Quality Systems Manual for Environmental Laboratories, Version 5.1* (2017)
- *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (2006), SW-846* (EPA, 1996 and updates)
- *Standard Methods for the Examination of Water and Wastewater (21st Edition)* (American Public Health Association et al., 2005)
- *Environmental Quality – Guidance for Evaluating Performance-Based Chemical Data,* EM 200-1-10 (USACE, 2005)
- *USEPA Contract Laboratory Program, National Functional Guidelines for Organic Superfund Methods Data Review, Final* (EPA, 2017)
- *USEPA Contract Laboratory Program*, *National Functional Guidelines for Inorganic Superfund Methods Data Review*, *Final* (EPA, 2017)

The following QC elements were included in the EPA Level III data review:

- Sample preservation and sample extraction and analysis holding times
- Laboratory method blanks
- Initial and continuing calibration blanks (metals and anions analyses only)
- Surrogate recoveries (organic analyses only)
- Laboratory control sample (LCS)/laboratory control sample duplicate (LCSD) recoveries
- Matrix spike (MS)/matrix spike duplicate (MSD) recoveries
- Relative percent differences (RPDs)
- Initial calibration and initial calibration verifications (ICVs)
- Continuing calibration verifications (CCVs)
- Inductively coupled plasma (ICP) interference check samples (ICS) (metal analysis only)
- ICP serial dilutions (metal analysis only)
- Sample confirmation (EDB analysis only)
- Field blanks
- Field duplicates

In addition to the above EPA Level III review, an EPA Level II review was completed for the results of chlorinated QuantArray-Chlor, fluorescein dye, hydrogen stable isotope, and EDB stable isotope analyses. The following QC elements, when applicable, were included in the EPA Level II data review:

- Sample preservation and analysis holding times
- Laboratory method blanks
- LCS recoveries
- Laboratory duplicates
- Analytical completeness

Analytical data were reviewed in terms of precision, bias, representativeness, comparability, and completeness as follows:

- *Bias* is demonstrated by recovery of target analytes from fortified blank and sample matrices, LCS/LCSD, and MS/MSD, respectively. For organic methods, bias is also demonstrated through recovery of surrogates from each field and QC sample. The recovery of target analytes from fortified samples is compared with the acceptance criteria defined in the site-specific QAPjP (USACE, 2011) and DoD 2017 Quality Systems Manual (QSM). When the acceptance criteria are not available in the site-specific QAPjP or DoD QSM, results are compared with the laboratory in-house control limits. When these criteria are not met, the data are qualified accordingly.
- *Precision* is expressed as the RPD between the results of replicate sample analyses: sample duplicates, LCSDs, and MSDs. When analyte RPDs exceed the acceptance criteria, the data are qualified accordingly.
- *Representativeness* of the samples submitted for analysis is ensured by adherence to standard sampling techniques and protocols.
- *Comparability* of sample results is ensured through the use of approved sampling and analysis methods.
- *Completeness* is expressed as a ratio of the number of usable data points to the total number of analytical data results.

The following sections present the EPA Level III and Level II data review findings. The discussion summarizes data quality exceedances and their potential impact on the quality and usability of analytical results. Appendix I-1 – Table 2 presents definitions of data qualification and reason codes applied to the analytical results. Appendix I-1 – Table 3 summarizes the qualified data. For informational purposes, qualified field QC data are also presented in this table.

1.1 Data Quality Outliers

1.1.1 Sample Preservation and Sample Extraction and Analysis Holding Times (Reason Code H)

The sample coolers and samples contained within were received intact at the laboratories and were held within the required 0 to 6 degrees Celsius, and when required, were chemically preserved in accordance with EPA and SM preservation requirements.

On June 14, 2018, 6 groundwater samples and 1 duplicate were collected and shipped to Lawrenceville, New Jersey for VFAs and dissolved gases analyses. Samples were stored on ice and chemically preserved (when applicable) after sampling and during shipping; however, due to UPS shipping delays the cooler was not delivered to the laboratory until June 18, 2018. The temperature of the cooler was recorded at 23 degree Celsius upon sample receipt exceeding the upper cooler temperature limit of 6 degree Celsius. The affected samples were analyzed as soon as they were received and completed within the holding time requirements. The results of VFAs and dissolved gases in all samples were qualified as estimated (J-/UJ) because of the non-complaint cooler temperature.

On August 7 and 8, 2018, samples for VOCs, EDB, anions, and dissolved metals analyses were shipped to the primary laboratory Empirical. Samples were received in good condition and stored in a refrigerator at the laboratory. After Empirical went out of business in mid-August 2018, samples collected on August 8, 2018 were re-directed to Test America in Savannah and West Sacramento for analysis. Samples were received by Test America on August 16, 2018 in good condition and within the temperature preservation requirement and within the holding time requirements with the exception of o-phosphate and nitrate and nitrite as nitrogen. Samples from August 7, 2018 sample date were not recovered from Empirical and were not analyzed and reported by either Empirical or Test America.

Sample holding times were evaluated by comparing the sample collection dates to the sample extraction and analysis dates. Extraction and analysis holding times were reviewed for all samples to determine the validity of the sample results. Holding time exceedances were reported for VOCs and wet chemistry samples. The affected sample numbers, methods, target analytes, holing time outliers, and holding time requirements are summarized below.

Table 1.1.1a: Summary of Holding Time Exceedance

Sample Number	Analytical Method	Target Analyte	Holding Time Outlier	Holding Time Requirement	Data Qualification
106IN1-BL-062917	SW9056A	Bromide	18 days for analysis	14 days	J- for detected results and UJ for non-detected results
106EX1-BL-062917		Bromide	18 days for analysis	14 days	
106EX2-BL-062917		Bromide	18 days for analysis	14 days	
106MW1S-P2P-061418	SM2320	Alkalinity	28 days for analysis	14 days	
106MW2S-P2P-061418		Alkalinity	28 days for analysis	14 days	
106064-P2P-061418		Alkalinity	28 days for analysis	14 days	
106064-P2P-061418-FD		Alkalinity	28 days for analysis	14 days	
106IN1-P2P-061418		Alkalinity	28 days for analysis	14 days	
106EX1-P2P-061418		Alkalinity	28 days for analysis	14 days	
106EX2-P2P-061418		Alkalinity	28 days for analysis	14 days	
106064-P2P-030718	SM4500PE	O-phosphate	52 hrs for analysis	48 hours	J- for detected results
106MW2S-P2P-030718		O-phosphate	52 hrs for analysis	48 hours	
106064-P3R-080818	SW9056A	O-phosphate	192 hrs for analysis	48 hours	
106063-P3R-080818		O-phosphate	192 hrs for analysis	48 hours	R for non-detected results
106EX1-P3R-080818		O-phosphate	192 hrs for analysis	48 hours	
106EX2-P3R-080818		O-phosphate	192 hrs for analysis	48 hours	
106EX2-P3R-080818-FD		O-phosphate	192 hrs for analysis	48 hours	
106064-P3R-080818		Nitrate/Nitrite as N	192 hrs for analysis	48 hours	
106063-P3R-080818		Nitrate/Nitrite as N	192 hrs for analysis	48 hours	
106EX1-P3R-080818		Nitrate/Nitrite as N	192 hrs for analysis	48 hours	
106EX2-P3R-080818		Nitrate/Nitrite as N	192 hrs for analysis	48 hours	
106EX2-P3R-080818-FD		Nitrate/Nitrite as N	192 hrs for analysis	48 hours	
106064-P3R-080818	SW8260B	VOCs	15 days for analysis	14 day	J- for toluene
106EX1-P3R-080818		VOCs	15 days for analysis	14 day	J- for toluene
106EX2-P3R-080818		VOCs	15 days for analysis	14 day	J- for toluene
106EX2-P3R-080818-FD		VOCs	15 days for analysis	14 day	J- for toluene

Notes: Data qualification definitions are included in Table 2.
FD field duplicate.
VOC volatile organic compound.

The original bromide analysis for the 3 listed samples met the holding time requirement. The samples were re-analyzed due to non-compliant calibrations; however, the re-analysis was completed 4 days after the samples had expired. The results of bromide from the second analysis were similar to those results from the original analysis and were qualified as estimated (J-) due to the holding time exceedance.

Due to laboratory errors, the 14-day analysis holding time requirement was missed for 7 alkalinity samples collected during the June 2018 sampling event. Alkalinity was detected in the affected samples and the reported concentrations should be considered as estimated with a potential low bias (J-).

Two groundwater samples (106064-P2P-030718 and 106MW2S-P2P-030718) were collected for anions and o-phosphate analysis. Sample containers, preservatives and requested analyses are presented below:

Table 1.1.1b: Summary of Sample Identification Errors

Sample Number	Sample Container and Analysis		Sample Container and Analysis	
106064-P2P-030718	250 ml PE	Anions by EPA SW9056	250 ml PE	o-phosphate (field filtered) by SM4500 PE
106MW2S-P2P-030718	250 ml PE	Anions by EPA SW9056	250 ml PE	o-phosphate (field filtered) by SM4500 PE

Both anions and o-phosphate samples were collected in 250 mL PE containers. Samples for o-phosphate analysis were field filtered. Both anions and o-phosphate sample containers were clearly labeled and analysis was requested on the chain of custody form. Due to an analyst error, two o-phosphate samples (106064-P2P-030718 and 106MW2S-P2P-030718) from March 7, 2018 sample date were initially analyzed from the anions sample containers. After the error was identified, the laboratory re-analyzed the samples from the field filtered containers; however, the 48-hour analysis holding time was marginally missed by 4 hours. The results of o-phosphate in the two samples from the re-analysis were qualified as estimated (J-) due to the minor holding time outlier. The data usability of the qualified results is not affected.

The sample identification error was an isolated error. Every sample container was labeled with sample number, preservative, and requested analysis. All collected samples were documented on the sample collection logs and chains of custody forms. Sample containers in the coolers were checked against the chain of custody forms before shipping to the laboratories. Upon sample receipt, the laboratories checked the sample containers against the chain of custody forms and notified APTIM if discrepancies between the sample containers and chain of custody forms were identified. Discrepancies were resolved before the laboratories started analysis. Sample conditions were documented on the sample receipt form and included in the laboratory data packages (Appendix I-2). After analysis, department managers reviewed the data to verify that method requirements were followed and target analytes were correctly identified and quantified. Prior to data reporting, the laboratories performed internal QC review to ensure the accuracy and completeness of analytical results.

The five listed o-phosphate and nitrate and nitrite as nitrogen samples from August 8, 2018 sample date were shipped to Empirical and then re-directed to Test America after the primary laboratory Empirical went out of business. The o-phosphate and nitrate and nitrite as nitrogen samples were already expired when Test America in Savannah and West Sacramento received the samples. The o-phosphate and nitrate and nitrite as nitrogen samples were analyzed on the same day as the samples were received; however, the 48-hour analysis holding time requirement was missed by 6 days. O-phosphate in one sample (106064-P3P-081818) was detected and its reported result was qualified as estimated (J-). O-phosphate in the remaining four samples and nitrate and nitrite as nitrogen in all five samples were not detected. Because the degree of the holding time exceedance for the five samples was severe, the non-detected results were considered not usable and consequently rejected (R).

The original VOCs analysis for the above four samples was completed within the 14 day analysis holding time requirement. Because the concentrations of toluene in the samples exceeded the instrument upper calibration range, the affected samples were diluted until the results of toluene fell within in the instrument range. The re-analysis was completed in 15 days after the sample collection date exceeding the 14-day analysis holding time requirement by 1 day. The results of toluene in the four samples were reported from the diluted run and were qualified as estimated (J-) due to the holding time exceedance. As the degree of the holding time exceedance was minor, the qualified data is considered usable. Except for toluene, the results of the remaining VOC target analytes were reported from the original analysis that met the holding time requirement, and therefore no data qualification was applied to the remaining VOC results.

Except as discussed above, the analysis holding time requirements were achieved for all other samples and for all other methods.

1.1.2 Laboratory Method Blanks (Reason Code B1)

The field sample results were evaluated with respect to the laboratory method blank prepared and analyzed for each analytical batch, and for each analytical method. Positive analyte detections in a few laboratory method blanks were observed for EPA Method SW8260B and SM4500PE. Specific contaminants, the detected levels, and the limits of quantitation (LOQs) are summarized as follows:

Table 1.1.2: Summary of Laboratory Method Blank

Analytical Method	Lab Batch Number	Contaminant	Contaminant Level (mg/L)	LOQ (mg/L)	Data Qualification
SM4500 PE	7I17205	o-Phosphate	0.0205	0.04	U at the LOQ or reported concentration
	8A10010	o-Phosphate	0.0118	0.04	U at the LOQ or reported concentration

Note: Data qualification definitions are included in Table 2.
LOQ limit of quantitation.
mg/L milligram(s) per liter.

Based on the DoD QSM requirements (2017), laboratory method blank concentrations are considered acceptable when contaminant levels in the blank are less than one-half the LOQ for target analytes and less than the LOQ for common laboratory contaminants, such as acetone and methylene chloride. As indicated in the preceding table, the laboratory method blank levels for o-phosphate in both batches were below one-half the LOQ, and thus met the blank acceptance criteria.

As a result of the low-level laboratory method blank contamination, the detected results of o-phosphate in the affected samples were qualified as not detected (U) at the LOQ or reported value when the concentrations of o-phosphate in samples were less than or equal to 5 times the level observed in the associated laboratory method blank. This blank qualification has no impact on the data usability.

In addition to above, naphthalene, acetone, and methylene chloride were detected in several other laboratory method blanks. The associated sample results were not affected by the laboratory method blank detections as naphthalene, acetone, and methylene chloride in samples were either not detected or their detected levels in samples were well above 5 times (or ten times for common laboratory contaminants such as acetone and methylene chloride) the concentrations reported in the associated laboratory method blanks.

Except where noted, no other target analytes were detected in any laboratory method blanks for all other analyses.

1.1.3 Initial and Continuing Calibration Blanks (Reason Code B2)

In addition to the laboratory method blanks for metals and anions analyses, initial and continuing calibration blank results were reviewed to ensure that the instrument was free of contamination prior to the analyses. The review indicated that all the initial and continuing calibration blanks were free of any target analytes.

1.1.4 Surrogate Recoveries (Reason Code S)

Surrogate standards are organic compounds added to field and laboratory QC samples for organic analysis to evaluate the matrix effect and method performance on an individual sample basis. Surrogates in samples were recovered either below the lower control limits or above the upper control limits for VOCs and EDB analyses. The affected sample numbers, surrogate recovery outliers, and surrogate acceptance criteria are presented in the table below:

Table 1.1.4a: Summary of Surrogate Recovery Exceedances

Analytical Method	Sample Number	Surrogate Recovery Outlier (%)	Control Limit (%)	Data Qualification
EPA SW 8260B	106064-BL-081617	Toluene-d8: 87%	89-112%	J- for detected results and UJ for non-detected results
	106MW1S-BL-091917	Toluene-d8: 85%	89-112%	J- for detected results and UJ for non-detected results
	106064-P3P-081818	Toluene-d8: 88%	89-112%	J- for detected results and UJ for non-detected results
	106064-P3R-081818	4-Bromofluorbenzene: 124%	85-114%	J+ for detected results
	106064-P3P-081818	1,2-Dichloroethane-d4: 79%	81-118%	J- for detected results and UJ for non-detected results

Analytical Method	Sample Number	Surrogate Recovery Outlier (%)	Control Limit (%)	Data Qualification
EPA SW 8260B	106063-P3P-081818	4-Bromofluorobenzene: 121%	85-114%	J+ for detected results
	106EX1-P3P-081818	4-Bromofluorobenzene: 131%	85-114%	J+ for detected results
	106EX2-P3P-081818	4-Bromofluorobenzene: 142%	85-114%	J+ for detected results
	106EX2-P3P-081818FD	4-Bromofluorobenzene: 147%	85-114%	J+ for detected results
	106064-P3P-082218	Toluene-d8: 113%	89-112%	J+ for detected results
	106064-P3P-082918	4-Bromofluorobenzene: 126%	85-114%	J+ for detected results
	106063-P3P-082918	4-Bromofluorobenzene: 127%	85-114%	J+ for detected results
	106EX1-P3P-082918	4-Bromofluorobenzene: 127%	85-114%	J+ for detected results
	106EX2-P3P-082918	4-Bromofluorobenzene: 141%	85-114%	J+ for detected results
EPA SW8011	106063-BL-071817	1,3-Dibromoproane: 44%	61-130%	J- for detected results and UJ for non-detected results
	106MW1I-BL-071817	1,3-Dibromoproane: 52%	61-130%	J- for detected results and UJ for non-detected results
	106MW2I-BL-072417	1,3-Dibromoproane: 52%	61-130%	J- for detected results and UJ for non-detected results
	106MW2I-BL-FD-072417	1,3-Dibromoproane: 50%	61-130%	J- for detected results and UJ for non-detected results
	106064-BL-081617	1,3-Dibromoproane: 315%	61-130%	J+ for detected results
	106064-BL-091917	1,3-Dibromoproane: 1280%	61-130%	J+ for detected results
	106MW2S-BL-091917	1,3-Dibromoproane: 1010%	61-130%	J+ for detected results
	106MW1S-BL-091917	1,3-Dibromoproane: 1360%	61-130%	J+ for detected results
	106IN-BL-092617	1,3-Dibromoproane: 463%	61-130%	J+ for detected results
	106EX1-BL092617	1,3-Dibromoproane: 417%	61-130%	J+ for detected results
	106EX2-BL-092617	1,3-Dibromoproane: 420%	61-130%	J+ for detected results
	106064-P2R-012518	1,3-Dibromoproane: 2350%	45-152%	J+ for detected results
	106063-P2R-012518	1,3-Dibromoproane: 195%	45-152%	J+ for detected results
	106EX1-P2R-012518	1,3-Dibromoproane: 2880%	45-152%	J+ for detected results
	106EX2-P2R-012518	1,3-Dibromoproane: 3820%	45-152%	J+ for detected results
	106MW2I-P2P-030618	1,3-Dibromoproane: 183%	45-152%	J+ for detected results
	106MW2I-P2P-030618-FD	1,3-Dibromoproane: 183%	45-152%	J+ for detected results
	106MW1I-P2P-030618	1,3-Dibromoproane: 1090%	45-152%	J+ for detected results
	106MW1S-P2P-030618	1,3-Dibromoproane: 2540%	45-152%	J+ for detected results
	106063-P2P-030618	1,3-Dibromoproane: 935%	45-152%	J+ for detected results
	106064-P2P-030718	1,3-Dibromoproane: 1040%	45-152%	J+ for detected results
	106MW2S-P2P-030718	1,3-Dibromoproane: 991%	45-152%	J+ for detected results
	106-EX1-P2P-030718	1,3-Dibromoproane: 1030%	45-152%	J+ for detected results
	106EX2-P2P-030718	1,3-Dibromoproane: 2590%	45-152%	J+ for detected results
	106064-P2P-041018	1,3-Dibromoproane: 774%	45-152%	J+ for detected results
	106063-P2P-041018	1,3-Dibromoproane: 815%	45-152%	J+ for detected results
	106MW1I-P2P-041018	1,3-Dibromoproane: 930%	45-152%	J+ for detected results
	106MW1S-P2P-041118	1,3-Dibromoproane: 830%	45-152%	J+ for detected results
	106MW2I-P2P-041118	1,3-Dibromoproane: 43%	45-152%	J- for detected results and UJ for non-detected results
	106EX1-P2P-041118	1,3-Dibromoproane: 840%	45-152%	J+ for detected results
	106EX2-P2P-041118	1,3-Dibromoproane: 40%	45-152%	J- for detected results and UJ for non-detected results
EPA SW8011	106MW2I-P3P-100218	Pentachloroethane: 165%	60-114%	J+ for detected results
	106064-P3P-100418	Pentachloroethane: 186%	60-114%	J+ for detected results

Note: Data qualification definitions are included in Table 2.
% percent.
FD field duplicate.
EPA U.S. Environmental Protection Agency.

As shown above, one or more surrogates in the listed VOC samples was recovered outside the control range while recoveries of the remaining surrogates in the same VOC samples met the accuracy requirements. As a result of the low biased surrogate recoveries, the detected results and the LOQ for non-detected data in the entire sample were qualified as estimated (J-) and (UJ), respectively. Due to the high biased surrogate recoveries, the detected results in the listed VOC samples were qualified as estimated (J+); however, the high biased surrogate recoveries did not affect the data quality of the non-detected results in the same sample and did not lead to any data qualification of the non-detected data.

In Table 1.1.4- Summary of Surrogate Recovery Exceedances, the listed surrogate recovery exceedances were associated with the final EDB reported results.

Surrogate spiking is not a requirement for EPA Method SW8011 and therefore surrogate control limits are advisory and are based on laboratory in-house control limits. During the Second Quarter 2012, CB&I Federal Services (currently APTIM) requested that Empirical laboratory add a surrogate to the EDB samples analyzed by EPA Method SW8011 as an additional QC control. As requested, the laboratory spiked the field and QC samples with the surrogate 1,3-dibromopropane for the quarterly groundwater monitoring program and continued to use this surrogate for this EDB pilot test project.

As discussed in this report, elevated concentrations of EDB and/or other VOC compounds such as benzene, toluene, ethylbenzene, and xylenes were reported in the same groundwater samples with elevated surrogate recoveries. The elevated sample concentrations do indicate the presence of matrix interference with the surrogate 1,3-dibromopropane recovery in the EPA Method SW8011 analysis. For all affected analytical batches, the data review indicated the following:

- EDB in the associated LCS/LCSD analyses met the accuracy requirements for both columns;
- The surrogate 1,3-dibromopropane in the LCS/LCSD samples associated with the groundwater sample surrogate recovery exceedances, was recovered within the accuracy requirements for both columns; and

- The surrogate 1,3-dibromopropane in the laboratory method blanks associated with the groundwater sample surrogate recovery exceedances, was recovered within the accuracy control limits for both columns.

Multiple analytical batches (LCS/LCSD and method blanks) indicated that the analytical system was in control. The acceptable LCS/LCSD results, and acceptable LCS/LCSD and laboratory method blank surrogate recoveries in the blank water matrix also indicated a matrix interference introduced during sample analysis.

In addition, each groundwater sample was analyzed for EDB by two separate methods and by two different EDB quantitation techniques; EDB by EPA Method SW8011 and EDB by EPA Method SW8260B. When EDB was detected by both EPA Methods SW8011 and SW8260B, EDB results were generally comparable. The following table summarizes the results of EDB from both columns by EPA Method SW8011 and by EPA Method SW8260B, for samples with elevated surrogate recoveries.

Table 1.1.4b: Summary of EDB Results from EPA Methods 8011 and 8260B

Sample Number	EPA 8011 Surrogate % Recovery (1,3-Dibromopropane)	SW8260 (µg/L)	SW8011 (µg/L) column 1	SW8011 (µg/L) column 2
106064-BL-081617	315%	9.65	6.27	6.27
106064-BL-091917	1280%	148	143	130
106MW2S-BL-091917	1010%	106	84.9	78
106MW1S-BL-091917	1360%	415	432	427
106IN-BL-092617	463%	28.6	19	20.1
106EX1-BL-092617	417%	40.1	30.2	31.3
106EX2-BL-092617	420%	146	140	143
106064-P2R-012518	2350%	62.8	77.1	80.3
106063-P2R-012518	195%	<25 (DF at 50)*	2.47	2.44
Sample Number	**EPA 8011 Surrogate % Recovery (1,3-Dibromopropane)**	**SW8260 (µg/L)**	**SW8011 (µg/L) column 1**	**SW8011 (µg/L) column 2**
106EX2-P2R-012518	3820%	122	90.9	83.7
106MW2I-P2P-030618	183%	<5 (DF at 5)*	1.98	1.58
106MW2I-P2P-030618FD	183%	<5 (DF at 5)*	1.61	1.35
106MW1I-P2P-030618	1090%	16.9	22.9	21.7
106MW1S-P2P-030618	2540%	128	92.5	75.4
106063-P2P-030618	935%	<25 (DF at 50)*	4.4	4.4
106064-P2P-030718	1040%	<100 (DF at 200)*	26.8	25.5
106MW2S-P2P-030718	991%	<50 (DF at 100)*	8.25	7.87
106EX1-P2P-030718	1030%	<50 (DF at 100)*	13.7	12.5
106EX2-P2P-030718	2590%	116	94.8	75.2
106064-P2P-041018	774%	<50 (DF at 100)*	11.1	12.6

106063-P2P-041018	815%	<25 (DF at 50)*	3.4	3.78
106MW1I-P2P-041018	930%	9.78	15.1	16.2
106MW1S-P2P-041118	830%	62.9	76.4	85.5
106EX1-P2P-041118	840%	<50 (DF at 100)*	3.45	3.74
106064-P3P-100418	186%	<44 (DF at 100)*	0.32	0.27

*EDB in the VOC analysis by SW8260B was not detected at the limit of detection. VOC samples were analyzed at the listed dilution factor due to elevated concentrations of VOC target analytes in the samples.
DF: dilution factor

Empirical was the primary laboratory supporting the Kirtland AFB quarterly groundwater monitoring project and the EDB pilot test project. During the pilot test, APTIM had ongoing communications with the laboratory. When there was a QC issue or data concern with the EDB analysis by EPA Method SW8011, APTIM requested that the laboratory investigate the issues and take corrective actions, as summarized below:

- Review sample preparation logs to verify if there were spiking errors and if there were dilution errors;
- Review instrument raw data and chromatograms to verify if EDB sample results and associated QC results were calculated correctly and adjusted for the dilution factor;
- Re-prepare and re-analyze the affected samples (if there was sufficient sample) to verify the QC exceedance

APTIM re-reviewed the laboratory case narrative. As stated in the case narrative, the concentrations of EDB were high and exceeding the instrument linear range. The affected samples were analyzed at multiple dilutions. The surrogate recoveries in the diluted analysis exceeded the acceptance criteria. APTIM also re-calculated surrogate recoveries to verify the reported recoveries. The re-calculated surrogate recoveries matched the reported values.

The National Functional Guidelines for Superfund Organic Methods Data Review (EPA, January 2017), the EPA provides the following data qualification guidelines when surrogates are recovered outside the control criteria:

- *If the surrogate recovery% is greater than the upper acceptance limit, qualify detects as estimated high (J+). Non-detects should not be qualified.*

In the DoD QSM (Version 5.1.1, 2018) Appendix B-1 for organic analysis by gas chromatography, the DoD provides the following flagging criteria when surrogates are recovered outside the control:

- *Apply Q-fag to all associated analytes if acceptance criteria are not met and explain in the case narrative*.

The *National Functional Guidelines for Superfund Organic Methods Data Review* (EPA, January 2017), the EPA further recommends that we evaluate other QC information when assessing overall data quality and usability. As discussed in the data quality evaluation report, all other QC elements associated with the EDB samples in question met the acceptance criteria. Other QC elements that met the QC requirements included the following:

<u>EDB analysis by EPA Method SW8011:</u>

- Sample preservation
- Analysis holding time
- Laboratory method blanks; and surrogate recoveries for both columns in the laboratory method blanks
- LCS/LCSD recoveries; and surrogate recoveries for both columns in the LCS/LCSD samples
- Precision results between the primary column and secondary column

Based on a combination of indicators discussed above, the qualified EDB results by EPA Method SW8011 are considered estimated with a high bias (J+) and are usable for project decisions. The concentrations of EDB in two samples (106MW2S-BL-080717 and 106MW1S-P2R-011818) exceeded the instrument's upper calibration limit and were qualified as estimated (J, reason code E). Since the affected samples were already expired when the issue was discovered, no dilutions were performed to quantify the concentrations of EDB within the instrument range. There is no impact on the data usability because of this data quality issue.

EDB by EPA Method SW8011 is identified and quantified by a dual-column gas chromatography technique. As required by the DoD QSM (2017) and site-specific QAPjP (USACE 2011), the accuracy of the EDB analysis is demonstrated through spiking surrogates into samples. Recoveries of surrogates from both the primary and secondary columns were reviewed to verify the accuracy of the analysis. The review indicated that the surrogate 1,3-dibromopropane from the secondary column in several EDB samples analyzed by EPA Method SW8011 was recovered outside the accuracy control criteria; however, the surrogate 1,3-dibromopropane from the primary column in the same EDB samples was recovered within the control criteria. Since the EDB results in the affected samples were reported from the compliant column with acceptable surrogate recovery data, the data quality of the EDB results from the compliant column was not affected, and no data qualification was warranted.

Except where noted above, surrogates in all other VOC and EDB samples were recovered with the acceptance criteria.

1.1.5 Laboratory Control Sample/Laboratory Control Sample Duplicate Recoveries and Precisions (Reason Codes L, D3, and D1)

The LCS is an aliquot of analyte-free matrix spiked with target analytes that is prepared with each analytical batch for each analytical method. The recovery of target analytes from the LCS analysis is a measurement of method performance in an interference-free sample matrix. Non-compliant LCS biases were reported for EPA Methods SW8260B, SW9056A and SW6010C as presented below:

Table 1.1.5: Summary of LCS Recovery Exceedances

Analytical Method	Laboratory Batch Number	LCS Recovery Outlier (%)	Control Limit (%)	Data Qualification
EPA SW8260B	680-549803	Naphthalene: 153/147%	61-128%	J+ for detected results
EPA SW9056A	8A24009	Sulfate: 120%	87-112%	J+ for detected results
EPA SW6010C	8A31003	Iron: 85%	87-115%	J- for detected results and UJ for non-detected results
	8A31003	Manganese: 81%	90-114%	J- for detected results and UJ for non-detected results
	8D17017	Manganese: 118%	90-114%	J+ for detected results

Note: Data qualification definitions are included in Table 2.
% percent.
EPA U.S. Environmental Protection Agency.
LCS laboratory control sample.

As presented above, naphthalene, sulfate, and manganese (batch 8D17017) in the LCS analysis were recovered higher than their respective upper control limits. The LCS recovery outliers led to qualification of the detected results as estimated (J+); however, the high biased recoveries did not affect the non-detected data. Low biased LCS recoveries were also observed for iron and manganese (batch 8A31003). As a result of the low biased LCS recoveries, the detected results and LOQ for non-detected data were qualified as estimated (J-) and (UJ), respectively. This qualification was applied to the results of the listed analytes in all samples in the non-compliant batch. As shown above, the reported LCS recovery outliers were minor and thus the data usability of the qualified results is not affected.

The LCS results meet the acceptance criteria for all other analyses.

In addition to the LCS analysis, the laboratory performed a sample duplicate analysis on project-specific groundwater samples to assess precisions of sample results. The laboratory duplicate analysis was performed on samples submitted for anions and metals analyses. Acceptable precisions results were reported for both analyses.

1.1.6 Matrix Spike/Matrix Spike Duplicate Recoveries and Precisions (Reason Codes M and D2)

The MS and MSD samples are a portion of a field sample spiked with target analytes that are prepared with each analytical batch and with each method. The MS/MSD results are used to evaluate any bias introduced to the method due to matrix interference, and to measure bias and precision for each analytical batch.

In accordance with the site-specific QAPjP requirements (USACE, 2011), the MS/MSD samples are to be collected at a rate of 1 per 20 groundwater samples or 5 percent (%). During each sampling event, one MS/MSD sample was collected from a Pilot Test well thus achieving the 5% MS/MSD sample frequency requirement. MS/MSD samples were analyzed for VOCs, EDB, dissolved metals, dissolved gases, VFAs, and wet chemistry parameters to verify the presence of a matrix effect and its potential impact on the precision and bias of the analytical results.

The majority of the MS results meet the established bias and precision requirements; however, MS recoveries and/or precision outliers were observed for VFAs, dissolved gases, wet chemistry parameters, and VOC analyses, which are summarized as follows:

Table: 1.1.6: Summary of MS Recovery or Precision Exceedances

Analytical Method	Spiked Sample	MS Recovery or Precision Outlier (%)	Control Limit (%)	Data Qualification
EPA 300.0M	106MW2I-P2R-010918	Lactic acid: 76/65%, RPD: 15.5%	66-130%, RPD: 9.9%	J for detected results
	106MW2I-P2R-010918	Acetic acid: RPD: 17.1%	RPD: 16.1%	J for detected results
	106MW2I-P2R-010918	Propionic acid RPD: 14.7%	RPD: 12.6%	J for detected results
	106IN1-P2R-011018	Lactic acid: RPD: 11.3%	RPD: 9.9%	J for detected results
	106IN1-P2R-012418	Lactic acid: RPD: 11%	RPD: 9.9%	J for detected results
	1061N1-P2P-061418	Lactic acid: RPD: 33.4%	RPD: 9.9%	J for detected results
	1061N1-P2P-061418	Acetic acid: RPD: 36.7%	RPD: 16.1%	J for detected results
	1061N1-P2P-061418	Propionic acid RPD: 35.2%	RPD: 12.6%	J for detected results
	1061N1-P2P-061418	Formic acid RPD: 39.8%	RPD: 14.6%	J for detected results
	1061N1-P2P-061418	Pyruvic acid RPD: 40.6%	RPD: 20.8%	J for detected results
	1061N1-P2P-061418	Valeric acid RPD: 21%	RPD: 17.2%	J for detected results
EPA 300.0	106IN1-P2P-010218	Iodide: 142%	90-110%	J+ for detected results

Analytical Method	Spiked Sample	MS Recovery or Precision Outlier (%)	Control Limit (%)	Data Qualification
	106064-P2P-041018	Iodide: 84%	90-110%	J- for detected results and UJ for non-detected results
	106064-P3P-111418	Iodide: 115%	90-110%	J+ for detected results
	106MW1S-P4P-011619	Iodide: 116%	90-110%	J+ for detected results
RSK 175	106063-P2R-012518	Methane: 109/126%	80-120%	J+ for detected results
EPA SW 9056A	106063-P1P-102417	Bromide: 84/84%	91-110%	J- for detected results and UJ for non-detected results
	106EX1-P2R-011018	Bromide: 82/88%	91-110%	J- for detected results and UJ for non-detected results
	106MW2S-P2R-011618	Chloride: 114/113%	87-111%	J+ for detected results
	106MW2I-P2R-011818	Chloride: 115/115%	87-111%	J+ for detected results
	106MW2I-P2P-012518	Bromide: 86/87%	91-110%	J- for detected results and UJ for non-detected results
	106063-P2P-041018	Bromide: 83/84%	91-110%	J- for detected results and UJ for non-detected results
	106MW1I-P2P-050818	Bromide: 88/89%	91-110%	J- for detected results and UJ for non-detected results
	106064-P2P-050818	Bromide: 88/88%	91-110%	J- for detected results and UJ for non-detected results
	106064-P2P-091218	Nitrate/Nitrite as N: 72/72%	88-111%	J- for detected results and UJ for non-detected results
	106064-P2P-091218	Bromide: 136/139%	91-110%	J+ for detected results
	106064-P2P-091218	Sulfate: 123/127%	87-112%	J+ for detected results
	106MW2I-P3P-100218	O-Phosphate: 34%	80-116%	J- for detected results and UJ for non-detected results
	106MW1I-P3P-100318	O-Phosphate: 69/69%	80-116%	J- for detected results and UJ for non-detected results
	106063-P3P-111518	O-Phosphate: 40/43%	80-116%	J- for detected results and UJ for non-detected results
	106IN1-P3P-111918	O-Phosphate: 65/60%	80-116%	J- for detected results and UJ for non-detected results
	106064-P4P-011619-FD	Nitrate/Nitrite as N: 79/78%	88-111%	J- for detected results and UJ for non-detected results
EPA SW 9056A	106063-P4P-011719	O-phosphate: 63/60%	80-116&	J- for detected results and UJ for non-detected results
	106063-P4P-011719	Nitrate/Nitrite as N: 86/81%	88-111%	J- for detected results and UJ for non-detected results
	106EX1-P4P-012119	O-phosphate: 54/55%	80-116&	J- for detected results and UJ for non-detected results
	106EX2-P4P-012119	Nitrate/Nitrite as N: 87/87%	88-111%	J- for detected results and UJ for non-detected results
EPA SW6010C	106064-BL-081617	Iron: 67/72%	87-115%	J- for detected results and UJ for non-detected results
	106064-BL-081617	Manganese: 60/69%	90-114%	J- for detected results and UJ for non-detected results
	106MW1I-BL-091817	Iron: 78/72%	87-115%	J- for detected results and UJ for non-detected results
	106MW1I-BL-091817	Manganese: 80/80%	90-114%	J- for detected results and UJ for non-detected results
	106MW2S-P2R-010918	Iron: 86/88%	87-115%	J- for detected results and UJ for non-detected results
	106EX1-P3P-111918	Manganese: 173/114%	90-114%	J+ for detected results
SM2320	106MW2S-BL-080717	Alkalinity: 73/74%	75-125%	J- for detected results and UJ for non-detected results
	106MW2S-P2R-010918	Alkalinity: 59/60%	75-125%	J- for detected results and UJ for non-detected results
	106EX1-P2R-011018	Alkalinity: 58/60%	75-125%	J- for detected results and UJ for non-detected results

Analytical Method	Spiked Sample	MS Recovery or Precision Outlier (%)	Control Limit (%)	Data Qualification
SM2320	106MW1I-P2P-050818	Alkalinity: 62/71%	75-125%	J- for detected results and UJ for non-detected results
EPA SW8260B	106IN1-P2P-041118	Toluene: 66/55%	80-121%	J- for detected results and UJ for non-detected results
	106IN1-P2P-041118	Xylenes: 90/77%	79-121%	J- for detected results and UJ for non-detected results
	106MW2S-P2P-050918	Ethylbenzene: 77/73%	79-121%	J- for detected results and UJ for non-detected results
	106MW2S-P2P-050918	Xylenes: 67/59%	79-121%	J- for detected results and UJ for non-detected results

Note: Data qualification definitions are included in Table 2.
% percent.
EPA U.S. Environmental Protection Agency.
MS matrix spike.
RPD relative percent difference.

As a result of the MS recoveries and precisions outliers, the detected results and the LOQ for non-detected results were qualified as estimated. This data qualification was applied to the results of the listed analytes in all samples in the batch. With the exceptions of o-phosphate in 3 spiked samples (106MW2I-P3P-100218, 106063-P3P-111518, and 106EX1-P4P-012119), the reported MS and MSD recoveries did not significantly deviate from the lower or upper control criteria, and thus the data usability of the qualified data is not affected. The LCS results associated with the non-complaint batches met the bias and precision control criteria, which demonstrated that acceptable batch bias and precision were achieved for VFAs, dissolved gases, anions, alkalinity, metals, and VOC analyses.

In addition to above, the reported MS recoveries were outside the accuracy specifications for dissolved iron and manganese, EDB and VOCs in a few spiked samples. These non-compliant MS results could be attributed to a matrix effect. In the spiked samples, the parent concentrations of metals, EDB, and VOCs exceeded four times their respective spiked levels. These elevated sample concentrations produced matrix interference, which affected the accuracy of the MS analysis. Because the sample concentrations were greater than four times the spiked levels, no data qualification was applied to the results of the metals, EDB, and VOCs.

Except as noted, the MS precision and bias results are acceptable for all other analyses.

1.1.7 Initial Calibration (Reason Code G)

Instrument calibration is performed for VOC, EDB, dissolved gases, VFAs, metals, and anions analyses according to the EPA method requirements (EPA, 1996). The linear analytical range is established for each method by analysis of calibration standards prepared at increasing concentrations that cover the expected sample concentrations. The acceptability of the initial calibration is determined by calculation of a percent relative standard deviation or coefficient. The initial calibration results were acceptable for all the listed analyses.

Immediately after the initial calibration for each analysis, ICV was conducted at the mid-point of instrument calibration range by using a second-source calibration standard to verify the accuracy of the initial calibration. The review indicated acceptable ICV results for all target analytes.

1.1.8 Continuing Calibration Verification (Reason Code C)

Routinely during sample analysis, the stability of the analytical system is monitored by analysis of continuing calibration standards at concentrations near the mid-point of the instrument calibration range. The percent difference (%D) values between the relative response factor in the initial calibration and the relative response factor in the continuing calibration exceeded the acceptance criteria for VOC, EDB, metals, and anions analyses. The CCV outliers that resulted in data qualification are summarized as follows:

Table 1.1.8: Summary of Continuing Calibration Verification Exceedances

Analytical Method	Calibration ID	CCV Outlier, D (%)	Control Limit (%)	Data Qualification
EPA SW8260B	7G18602	Isopropylbenzene: 20.5	<20%	J+ for detected results
	7G18602	Naphthalene: 24.6	<20%	J+ for detected results
	7H22101-CC11	Naphthalene: 26.3%	<20%	J+ for detected results
	7i26801-CCV1	2-Butanone: -20.8%	<20%	J- for detected results and UJ for non-detected results

Analytical Method	Calibration ID	CCV Outlier, D (%)	Control Limit (%)	Data Qualification
	7i26801-CCV1	2-Hexahnoe: -24.9%	<20%	J- for detected results and UJ for non-detected results
	7i26801-CCV1	4-Methyl-2-Pentanone: -20.6%	<20%	J- for detected results and UJ for non-detected results
	7H22101-CC11	Acetone: 28.3%	<20%	J+ for detected results
	7K33101	Acetone: -22.7%	<20%	J- for detected results and UJ for non-detected results
	8C06802-CCV1	Acetone: 31	<20%	J+ for detected results
	8C06802-CCV1	2-Butanone: 26.9%	<20%	J+ for detected results
	8C06802-CCV1	2-hexanone: 37%	<20%	J+ for detected results
	8C07201-CCV1	2-Hexanone: 24.2%	<20%	J+ for detected results
EPA SW8011	7I26314	EDB: -20.1%	<20%	J- for detected results and UJ for non-detected results
	680-555834	EDB: -23.3%	<20%	J- for detected results and UJ for non-detected results
EPA SW6010C	8D10706-CCV1	Iron: 89.9%	90-110%	J- for detected results and UJ for non-detected results
SM4500 PE	7I27105-CCV1	O-phosphate: 111%	90-110%	J+ for detected results
EPA SW9056A	8A01909-CCV2	Sulfate: 112%	90-110%	J+ for detected results
	8A024010-CCV1	Sulfate: 117%	90-110%	J+ for detected results

Note: Data qualification definitions are included in Table 2.
% percent.
CCV continuing calibration verification.
EPA U.S. Environmental Protection Agency.
ID identification.

As a result of the low biased %D values, the detected results and the LOQs for the non-detected analytes were qualified as estimated (J-) and (UJ), respectively. The high biased %D values led to qualification of detected results as estimated (J+), but did not affect the non-detected data. This data qualification was applied to the results of the listed analytes in all samples associated with the non-compliant CCVs. In all cases, the degree of the CCV outliers was minor and did not affect the data usability.

1.1.9 Interference Check Samples (Reason Code O)

The ICS verifies the inter-element and background correction factors. An ICS was analyzed at the required frequencies, and all ICS results were within the established control limit for EPA Method SW6010C for the Pilot Test groundwater sampling events.

1.1.10 ICP Serial Dilutions (Reason Code A)

The ICP serial dilution determines whether significant physical or chemical interferences exist due to sample matrix. When the concentration of an analyte exceeds 50 times the method detection limit, an ICP serial dilution is performed at a five-fold dilution and the results between the original analysis and the diluted analysis are compared. The results of the ICP serial dilution are deemed acceptable when a %D between the original analysis and the diluted analysis is less than or equal to 10%. An ICP serial dilution was performed on groundwater samples collected during the Pilot Test groundwater sampling period. ICP serial dilution results that exceed the 10% accuracy goal are presented below:

Table 1.1.10: Summary of ICP Serial Dilution Exceedances

Analytical Method	Sample Number	ICP Serial Dilution Outlier (%)	Control Limit (%)	Data Qualification
EPA SW6010C	106064-BL-081617	Iron: 22%	10%	J for detected results
	106064-P2P-041018	Iron: 14.1%	10%	J for detected results

Note: Data qualification definitions are included in Table 2.
% percent.
EPA U.S. Environmental Protection Agency.
ICP inductively coupled plasma.

The results of iron in the affected samples were qualified as estimated (J) as a result of the non-compliant ICP serial dilution. The data usability of the qualified results is not affected. The ICP serial dilution results met the accuracy goal for all other samples and for all other metals.

1.1.11 Sample Confirmation (Reason Code D)

As required by the DoD and EPA, when samples are analyzed by either a gas chromatography or high-performance liquid chromatography method, all positive results, with the exception of total petroleum hydrocarbons as gasoline and diesel, must be confirmed by a second column or a different detector. As indicated in all SDGs for the entire Pilot Test sampling period, all positive EDB results analyzed by EPA Method SW8011 were confirmed by a second column, and the precision results between the primary and secondary columns were within the precision control limit for all the detected samples with the following exceptions:

Table 1.1.11: Summary of EDB Precision Exceedances

Analytical Method	Sample Number	Precision Outlier (%)	Control Limit (%)	Data Qualification
EPA SW8011	106MW2S-P2P-050918	RPD: 50%	<40%	J for detected results
	106064-P3P-111418	RPD: 106%	<40%	J for detected results
	106MW2S-P3P-111518	RPD: 83%	<40%	J for detected results
	106IN1-P3P-111918	RPD: 67%	<40%	J for detected results

Note: Data qualification definitions are included in Table 2.
% percent.
EPA U.S. Environmental Protection Agency.
RPD relative percent difference.

As indicated above, the reported precisions for the listed samples exceeded the acceptable precision control limit of less than or equal to 40%. As a result of the non-compliant precisions, the detected EDB results in the affected samples were qualified as estimated (J). In the listed samples, the reported EDB concentrations were low and slightly below the LOQ. Precision cannot be accurately measured as sample results are approaching the LOQ. There is no impact on the data usability because of this data quality outlier. It should be noted that the LCSD RPD associated with the listed EDB samples met the precision requirement, thus indicating acceptable laboratory batch precision. It should be also noted that both the EPA Method SW8011 and DoD QSM (2017) do not require laboratory corrective actions due to the non-compliant precision results between the two columns.

The analyte EDB was analyzed for all groundwater samples by both EPA Methods SW8011 and SW8260B. During the data review, the EDB results for the analysis by EPA Method SW8011 were also compared with the EDB results analyzed by EPA Method SW8260B. In cases where the analyte was detected by both EPA Methods SW8011 and SW8260B, the detected EDB results between the two methods were generally comparable and in agreement.

1.1.12 Trip Blanks (Reason Code K3)

Trip blanks were prepared by the laboratory and stored with the groundwater samples collected for VOCs analysis. In accordance with the site-specific QAPjP requirements (USACE, 2011), one trip blank is to be collected at a rate of one per cooler when sampling groundwater samples for VOC analysis.

During each sampling event, one trip blank per cooler was submitted with VOC samples collected on each day, achieving the trip blank collection frequency requirement. Appendix I-1 – Table 4 summarizes the detected trip blank results and associated sample results. Positive results in the trip blank are presented as follows:

Table 1.1.12: Summary of Trip Blank Detections

Analytical Method	Trip Blank	Contaminants	Detected Level (µg/L)	LOQ (µg/L)
EPA SW8260B	TB-081617	Acetone	2.53	10
	TB-091817	Carbon disulfide	0.279	1
	TB-091917	Carbon disulfide	0.256	1
	TB-092617	Carbon disulfide	0.289	1
	TB-102517	Acetone	3.27	10
	TB-111617	Acetone	4.17	10

Note: Data qualification definitions are included in Table 2.
µg/L microgram(s) per liter.
EPA U.S. Environmental Protection Agency.
LOQ limit of quantitation.

The detected result for acetone in one groundwater sample associated with the trip blank (TB-081617) was qualified as non-detected (U) at the LOQ due to low-level trip blank detection. Acetone and carbon disulfide in groundwater samples shipped with the remaining listed trip blanks were not detected or their detected levels far exceeded 5 times (or 10 times for common laboratory contaminant such as acetone) the levels observed in the trip blanks, and thus the trip blank detections did not affect the sample results and did not lead to any data qualification of any sample results. Except where noted above, the remaining trip blanks were free of VOCs. Overall, the trip blank results were acceptable and demonstrated that valid sample storage and shipping procedures were being implemented.

1.1.13 Equipment Rinse Blanks (Reason Code K1)

Equipment rinse blanks are designed to check for contamination from sampling equipment, and the results for the equipment rinse blanks are used to evaluate the efficiency of equipment decontamination procedures.

In accordance with the site-specific QAPjP requirements (USACE, 2011), no equipment rinse blanks will be collected when dedicated or disposable sampling equipment is used to collect groundwater samples. When non-dedicated or non-disposable sampling equipment is used, one equipment rinse blank will be collected at a rate of one per day. During the Pilot Test groundwater sampling events, dedicated sampling equipment was used to collect the majority of the groundwater samples. A stainless steel bailer was used to collect samples from the injection well (KAFB-106IN1) in October, November, and January 2019. As no cross-contamination between wells or samples could occur, no equipment rinse blanks were necessary in these cases.

1.1.14 Field Duplicates

In accordance with the site-specific QAPjP requirements (USACE, 2011) and Pilot Test Work Plan, field duplicate samples are to be collected at a minimum rate of 10% of the total number of groundwater samples. Field duplicate samples are evaluated by calculating the RPD between the parent sample and its duplicate. The RPD is calculated using the following equation:

$$RPD = |(S-D)/[(S+D)/2]| \times 100$$

Where:

S = sample result
D = duplicate result

Acceptable precision control criteria are established at less than or equal to 35% for water samples. The RPD is calculated between pairs of field duplicate samples when both results are reported at or above the LOQ.

During each sampling event, one duplicate pair was collected from a Pilot Test well, thereby achieving the 10% of the field duplicate frequency requirement. All duplicate pairs were analyzed for VOCs, EDB, dissolved gases, VFAs, dissolved metals, and wet chemistry parameters. In addition, groundwater samples from the selected sampling events were analyzed for tracers (hydrogen stable isotope and fluorescein dye). Field duplicates were not collected for QuantArray-Chlor or EDB stable isotope analysis.

Appendix I-1 – Table 5 presents the field duplicate results for the entire Pilot Test groundwater monitoring period. As presented on the table, field duplicate results of VOCs, EDB, VFAs, and wet chemistry parameters in one or more wells exceeded the field precision goal, which are summarized below:

<u>EPA Method SW8260B</u>

- Toluene: 69.71% (106MW2I-BL-091917)
- Trichloroethene: 96.3% (106MW2I-P3P-111518)

<u>EPA Method SW8011</u>

- EDB: 51.55% (106MW2I-BL-091917)
- EDB: 52.38% (106064-P2P-050918)

<u>EPA Method SW9056A</u>

- O-phosphate:129.1% (106064-P2P-061418)
- Bromide: 35.29% (106064-P4P-011619)

<u>EPA Method 300.0M</u>

- Acetic acids: 64.74% and propionic acids: 73.86% (106EX2-P2P-011018)
- Acetic acids: 45.87% and lactic acid: 48.34% (106MW2I-P2P-030618)
- Valeric acid: 70.59% (106MW2S-P2P-041018)

Except where noted above, the majority of the field duplicate results met the precision goal. The field duplicate results demonstrate acceptable overall field sampling and analytical precision for all methods.

1.2 Completeness

The following sections present a discussion of contractual, analytical, technical, and holding time completeness for the Pilot Test groundwater monitoring events. Completeness calculations were performed only for the groundwater samples that are used for project decisions. Completeness results are presented in Appendix I-1 – Table 6.

1.2.1 Contractual Completeness

Contractual completeness is a quantitative determination of the number of unqualified results compared to the total number of sample results expressed as a percentage, based on data qualified for QC outliers related to method performance. These include data qualified for calibration or preparation blank contamination, missed holding times, and non-compliant LCS recovery and/or precision. The contractual completeness goal for each method is 95%. Contractual completeness is calculated as follows:

$$\%\ \text{Contractual Completeness} = \frac{\text{Number of Unqualified Results}}{\text{Total Number of Results}} \times 100$$

With the exceptions listed below, the 95% analytical completeness objective was achieved for all the methods for the Pilot Test groundwater monitoring events.

- O-Phosphate by SM Method 4500PE – 93.1%
- Dissolved metals by EPA Method SW6010C – 92.5%

Largely due to low-level laboratory method blank contamination for o-phosphate and non-compliant LCS recoveries for dissolved metals, the 95% contractual completeness goal was not achieved for the above two methods. The affected results were qualified as estimated or non-detetected, the data usability however is not affected.

1.2.2 Analytical Completeness

Analytical completeness is a quantitative measure of the number of unqualified data results compared to the total number of results expressed as a percentage, based on the target analytes qualified for missed holding times and exceedances of QC requirements based on calibration, LCS, MS/MSD, surrogate, method precision, and laboratory method blank contamination results. The analytical completeness goal for each method is 90% for the project. Analytical completeness is calculated as follows:

$$\%\ \text{Analytical Completeness} = \frac{\text{Number of Unqualified Results}}{\text{Total Number of Results}} \times 100$$

The 90% analytical completeness objective was met for the majority of the analyses. Exceptions are summarized below:

- Dissolved metals by EPA Method SW6010C – 88.4%
- EDB by EPA Method SW8011– 77.4%

While the results of dissolved metals and EDB in some samples were qualified as estimated due to QC outliers discussed in the previous sections, the data usability of the qualified data is not affected. Qualified data are still usable to achieve the project data quality objectives.

1.2.3 Technical Completeness

Technical completeness is a quantitative measure of the data usability based on the number of rejected data compared to the total number of sample results. The technical completeness goal for each method is equal to or greater than 95%. The technical completeness calculation considers all data that are not rejected to be usable. The technical completeness is calculated as follows:

$$\% \text{ Technical Completeness} = \frac{\text{Number of Usable Results}}{\text{Total Number of Results}} \times 100$$

As discussed in the previous section, the non-detected results were not usable and rejected for nitrate and nitrite as nitrogen in five samples and o-phosphate in four samples due to the holding time exceedances. The technical completeness for EPA Method SW9056A was 98.8% and 100% for all other methods exceeding the 95% technical completeness objective. Therefore, the project data quality objectives were achieved for all methods for the Pilot Test groundwater monitoring events.

1.2.4 Holding Time Completeness

Holding time completeness is defined as the ratio of the number of samples analyzed within the analysis holding time to the total number of samples collected. The holding time completeness goal for each method is 100%. For the Pilot Test groundwater monitoring events, the holding time completeness was 100% for all methods with the following exceptions:

- Alkalinity by SM 2320B – 96.2%
- O-phosphate by SM 4500 PE – 98.3%
- VOCs by EPA Method SW8260B – 99.9%
- Anions by EPA Method 9056A – 98.3%

As discussed in the previous sections, alkalinity in 7 samples, bromide in 3 samples, o-phosphate in 7 samples, nitrate and nitrite as nitrogen in 5 samples, and toluene in 4 VOC samples were analyzed outside their respective holding time requirements. The results of alkalinity, bromide and toluene in the affected samples were qualified as estimated, the data usability of these qualified results however is not affected. While the non-detected results for o-phosphate in 4 samples and nitrate and nitrite as nitrogen in 5 samples were rejected, the technical completeness for EPA Method 9056A was 98.3% and met the 95% technical completeness objective.

1.3 Analysis Completeness

As a part of the data review process, APTIM reviewed chain-of-custody forms against the laboratory data packages and electronic data deliverables to ensure that analytical results were reported for all the requested methods and samples. On August 7, 2018, four groundwater samples were collected from wells KAFB-106MW1-I, KAFB-106MW2-I, KAFB-106MW1-S, and KAFB-106MW2-S and shipped to Empirical laboratory for VOCs, EDB, dissolved metals, and anions analyses. Due to Empirical laboratory closure, these four samples were not recovered from the laboratory and were not analyzed and reported from either Empirical or Test America. The listed four wells were re-sampled for VOCs, EDB, dissolved metals and anions on August 15, 2018 and were analyzed and reported by Test America. With the exception of the four samples from August 7, 2018, the review indicated that analytical results were reported for all methods and for all samples as planned.

1.4 Representativeness and Comparability

During sampling, samplers followed the approved Pilot Test Work Plan, site-specific QAPjP requirements (USACE, 2011) and established sampling SOPs to collect, preserve, document, and ship samples to off-site laboratories, thus ensuring the representativeness of the groundwater samples collected for the Pilot Test groundwater monitoring period.

From each groundwater monitoring well, VOC samples were collected in three 40-milliliter (mL) volatile organic analysis (VOA) vials preserved with hydrochloric acid, and EDB samples by EPA Method SW8011 were stored in three 40-mL VOA vials preserved with ice only. Upon sample receipt, the laboratory reviewed sample conditions to ensure that sample containers, preservatives (when applicable), and requested analyses matched the chain-of-custody requirements. The laboratory also reviewed VOA vials to verify the presence or absence of any headspace. As documented on the laboratory case narratives and sample receipt forms, a pea-size headspace was present in a few VOC and EDB samples. Following EPA guidance and laboratory SOP requirements, the laboratory selected available vials without any headspace for the requested analysis to ensure that the reported data were representative. As the VOA vial selected for the analysis was bubbles free, there is no impact on the data quality and usability.

The primary laboratories Empirical and Test America in Savannah, West Sacramento, and Earth City are DoD Environmental Laboratory Accreditation Program-certified and adhered to the most current EPA Method and SM requirements, site-specific QAPjP (USACE, 2011), and DoD QSM (2017) requirements to prepare, analyze, and report the data. This ensures the comparability of the analytical results between different samples and different sampling events. An EPA Level III data review was performed on 100% of the samples submitted for VOCs, EDB, dissolved metals, dissolved gases, VFAs, and wet chemistry analyses to verify that the laboratories complied with the DoD QSM, site-specific QAPjP, and method requirements. Limited data review was also performed for the results of QuantArray-Chlor, fluorescein dye, hydrogen and EDB stable isotope. Analytical results that were outside the established QC requirements were qualified and the data quality and usability were discussed in the previous sections. Based on a review of the completed sample collection logs, chain-of-custody forms, sample receipt forms, and laboratory data packages, the analytical results reported for the Pilot Test groundwater monitoring events have met the comparability requirements.

1.5 Summary

The analytical data reported for the Pilot Test groundwater monitoring events have been reviewed for precision, bias, representativeness, comparability, and completeness. Data quality exceedances consisted of holding time outliers, biased surrogate, LCS, and MS/MSD recoveries and precisions, non-compliant precisions between primary and secondary columns, CCV and ICP serial dilution outliers, and low-level laboratory and field blank contamination. The affected data were qualified as estimated or not detected.

With the exception of holding time violations for four o-phosphate samples and five nitrate and nitrite as nitrogen samples, the degree of these data quality exceedances was considered minor, and the data usability was not affected. As a result of the holding time violations, the non-detected results for o-phosphate in four samples and nitrate and nitrite as nitrogen in five samples were rejected and not usable. The 95% technical completeness goal was exceeded for all methods for the Pilot Test groundwater monitoring events. All data are usable for their intended purposes.

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TABLES

List of Appendix I-1 Tables

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
06/29/2017	160-23091-1	KAFB-106EX1	106EX1-BL-062917	REG	E300	TASTL
		KAFB-106EX2	106EX2-BL-062917	REG	E300	TASTL
		KAFB-106IN1	106IN1-BL-062917	REG	E300	TASTL
	71_144OF	KAFB-106EX1	106EX1-BL-062917	REG	QUANTARRAY	MI
		KAFB-106EX2	106EX2-BL-062917	REG	QUANTARRAY	MI
		KAFB-106IN1	106IN1-BL-062917	REG	QUANTARRAY	MI
	9720	KAFB-106EX1	106EX1-BL-062917	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106EX2	106EX2-BL-062917	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106IN1	106IN1-BL-062917	REG	E300M	APTIM
					RSK-175	APTIM
	FLUOR	KAFB-106EX1	106EX1-BL-062917	REG	FLUORIMETRIC	CHL
		KAFB-106EX2	106EX2-BL-062917	REG	FLUORIMETRIC	CHL
		KAFB-106IN1	106IN1-BL-062917	REG	FLUORIMETRIC	CHL
	KAFB_001	KAFB-106EX1	106EX1-BL-062917	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106EX2	106EX2-BL-062917	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106IN1	106IN1-BL-062917	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
	USGS	KAFB-106EX1	106EX1-BL-062917	REG	IRMS	USGS
		KAFB-106EX2	106EX2-BL-062917	REG	IRMS	USGS
		KAFB-106IN1	106IN1-BL-062917	REG	IRMS	USGS
7/18/2017	160-23091-1	KAFB-106063	106063-BL-071817	REG	E300	TASTL
	160-23091-1	KAFB-106MW1-I	106MW1I-BL-071817	REG	E300	TASTL
	56_056OG	KAFB-106063	106063-BL-071817	REG	QUANTARRAY	MI
		KAFB-106MW1-I	106MW1I-BL-071817	REG	QUANTARRAY	MI
	9722	KAFB-106063	106063-BL-071817	REG	E300M	APTIM
					RSK-175	APTIM

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Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
7/18/2017	9722	KAFB-106MW1-I	106MW1I-BL-071817	REG	E300M	APTIM
					RSK-175	APTIM
	FLUOR	KAFB-106063	106063-BL-071817	REG	FLUORIMETRIC	CHL
		KAFB-106MW1-I	106MW1I-BL-071817	REG	FLUORIMETRIC	CHL
	KAFB_001	KAFB-106063	106063-BL-071817	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106MW1-I	106MW1I-BL-071817	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
	USGS	KAFB-106063	106063-BL-071817	REG	IRMS	USGS
		KAFB-106MW1-I	106MW1I-BL-071817	REG	IRMS	USGS
7/24/2017	160-23530-1	KAFB-106MW2-I	106MW2I-BL-072417	REG	E300	TASTL
			106MW2I-BL-FD-072417	FD	E300	TASTL
	56_056OG	KAFB-106MW2-I	106MW2I-BL-072417	REG	QUANTARRAY	MI
	9725	KAFB-106MW2-I	106MW2I-BL-072417	REG	E300M	APTIM
					RSK-175	APTIM
			106MW2I-BL-FD-072417	FD	E300M	APTIM
					RSK-175	APTIM
	FLUOR	KAFB-106MW2-I	106MW2I-BL-072417	REG	FLUORIMETRIC	CHL
			106MW2I-BL-FD-072417	FD	FLUORIMETRIC	CHL
	KAFB_001	KAFB-106MW2-I	106MW2I-BL-072417	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN

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Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
7/24/2017	KAFB_001	KAFB-106MW2-I	106MW2I-BL-FD-072417	FD	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
	USGS	KAFB-106MW2-I	106MW2I-BL-072417	REG	IRMS	USGS
			106MW2I-BL-FD-072417	FD	IRMS	USGS
08/07/2017	160-23826-1	KAFB-106MW2-S	106MW2S-BL-080717	REG	E300	TASTL
	30_031OH	KAFB-106MW2-S	106MW2S-BL-080717	REG	QUANTARRAY	MI
	9731	KAFB-106MW2-S	106MW2S-BL-080717	REG	E300M	APTIM
					RSK-175	APTIM
	FLUOR	KAFB-106MW2-S	106MW2S-BL-080717	REG	FLUORIMETRIC	CHL
	KAFB_002	KAFB-106MW2-S	106MW2S-BL-080717	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
	USGS	KAFB-106MW2-S	106MW2S-BL-080717	REG	IRMS	USGS
08/16/2017	160-23826-1	KAFB-106064	106064-BL-081617	REG	E300	TASTL
	20_063OH	KAFB-106064	106064-BL-081617	REG	QUANTARRAY	MI
	9737	KAFB-106064	106064-BL-081617	REG	E300M	APTIM
					RSK-175	APTIM
	FLUOR	KAFB-106064	106064-BL-081617	REG	FLUORIMETRIC	CHL
	KAFB_002	KAFB-106064	106064-BL-081617	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
	USGS	KAFB-106064	106064-BL-081617	REG	IRMS	USGS
9/18/2017	160-24564-1	KAFB-106063	106063-BL-091817	REG	E300	TASTL
		KAFB-106MW1-I	106MW1I-BL-091817	REG	E300	TASTL
	9743	KAFB-106063	106063-BL-091817	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW1-I	106MW1I-BL-091817	REG	E300M	APTIM
					RSK-175	APTIM
9/18/2017	FLUOR	KAFB-106063	106063-BL-091817	REG	FLUORIMETRIC	CHL
9/18/2017	FLUOR	KAFB-106MW1-I	106MW1I-BL-091817	REG	FLUORIMETRIC	CHL
	KAFB_003	KAFB-106063	106063-BL-091817	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN

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Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
9/18/2017	KAFB_003	KAFB-106063	106063-BL-091817	REG	SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106MW1-I	106MW1I-BL-091817	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
	USGS	KAFB-106063	106063-BL-091817	REG	IRMS	USGS
		KAFB-106MW1-I	106MW1I-BL-091817	REG	IRMS	USGS
9/19/2017	160-24564-1	KAFB-106064	106064-BL-091917	REG	E300	TASTL
		KAFB-106MW1-S	106MW1S-BL-091917	REG	E300	TASTL
		KAFB-106MW2-I	106MW2I-BL-091917	REG	E300	TASTL
			106MW2I-BL-FD-091917	FD	E300	TASTL
		KAFB-106MW2-S	106MW2S-BL-091917	REG	E300	TASTL
	160-24580-1	KAFB-106064	106064-BL-091917	REG	E300	TASTL
		KAFB-106MW2-S	106MW2S-BL-091917	REG	E300	TASTL
	86_066OI	KAFB-106MW1-S	106MW1S-BL-091917	REG	QUANTARRAY	MI
	9744	KAFB-106064	106064-BL-091917	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW1-S	106MW1S-BL-091917	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW2-I	106MW2I-BL-091917	REG	E300M	APTIM
					RSK-175	APTIM
			106MW2I-BL-FD-091917	FD	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW2-S	106MW2S-BL-091917	REG	E300M	APTIM
					RSK-175	APTIM
	FLUOR	KAFB-106064	106064-BL-091917	REG	FLUORIMETRIC	CHL
		KAFB-106MW1-S	106MW1S-BL-091917	REG	FLUORIMETRIC	CHL
		KAFB-106MW2-I	106MW2I-BL-091917	REG	FLUORIMETRIC	CHL

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
9/19/2017	FLUOR	KAFB-106MW2-I	106MW2I-BL-FD-091917	FD	FLUORIMETRIC	CHL
		KAFB-106MW2-S	106MW2S-BL-091917	REG	FLUORIMETRIC	CHL
	KAFB_003	KAFB-106064	106064-BL-091917	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106MW1-S	106MW1S-BL-091917	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106MW2-I	106MW2I-BL-091917	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
			106MW2I-BL-FD-091917	FD	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106MW2-S	106MW2S-BL-091917	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
	USGS	KAFB-106064	106064-BL-091917	REG	IRMS	USGS
		KAFB-106MW1-S	106MW1S-BL-091917	REG	IRMS	USGS
		KAFB-106MW2-I	106MW2I-BL-091917	REG	IRMS	USGS
			106MW2I-BL-FD-091917	FD	IRMS	USGS
		KAFB-106MW2-S	106MW2S-BL-091917	REG	IRMS	USGS
9/26/2017	160-24706-1	KAFB-106EX1	106EX1-BL-092617	REG	E300	TASTL
		KAFB-106EX2	106EX2-BL-092617	REG	E300	TASTL
		KAFB-106IN1	106IN1-BL-092617	REG	E300	TASTL

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
9/26/2017	9746	KAFB-106EX1	106EX1-BL-092617	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106EX2	106EX2-BL-092617	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106IN1	106IN1-BL-092617	REG	E300M	APTIM
					RSK-175	APTIM
	FLUOR	KAFB-106EX1	106EX1-BL-092617	REG	FLUORIMETRIC	CHL
		KAFB-106EX2	106EX2-BL-092617	REG	FLUORIMETRIC	CHL
		KAFB-106IN1	106IN1-BL-092617	REG	FLUORIMETRIC	CHL
	KAFB_003	KAFB-106EX1	106EX1-BL-092617	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106EX2	106EX2-BL-092617	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106IN1	106IN1-BL-092617	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
	USGS	KAFB-106EX1	106EX1-BL-092617	REG	IRMS	USGS
		KAFB-106EX2	106EX2-BL-092617	REG	IRMS	USGS
		KAFB-106IN1	106IN1-BL-092617	REG	IRMS	USGS
10/02/2017	FLUOR	KAFB-106IN1	106IN1-P1R-100217-1	REG	FLUORIMETRIC	CHL
			106IN1-P1R-100217-2	REG	FLUORIMETRIC	CHL
	USGS	KAFB-106IN1	106IN1-P1R-100217-1	REG	IRMS	USGS
			106IN1-P1R-100217-2	REG	IRMS	USGS
10/03/2017	FLUOR	KAFB-106IN1	106IN1-P1R-100217-3	REG	FLUORIMETRIC	CHL
	USGS	KAFB-106IN1	106IN1-P1R-100317-3	REG	IRMS	USGS
10/4/2017	FLUOR	KAFB-106063	106063-P1R-100417	REG	FLUORIMETRIC	CHL
		KAFB-106064	106064-P1R-100417	REG	FLUORIMETRIC	CHL
10/4/2017	FLUOR	KAFB-106064	106064-P1R-100417-FD	FD	FLUORIMETRIC	CHL
		KAFB-106EX1	106EX1-P1R-100417	REG	FLUORIMETRIC	CHL
		KAFB-106EX2	106EX2-P1R-100417	REG	FLUORIMETRIC	CHL

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
10/4/2017	FLUOR	KAFB-106MW1-I	106MW1I-P1R-100417	REG	FLUORIMETRIC	CHL
		KAFB-106MW1-S	106MW1S-P1R-100417	REG	FLUORIMETRIC	CHL
		KAFB-106MW2-I	106MW2I-P1R-100417	REG	FLUORIMETRIC	CHL
		KAFB-106MW2-S	106MW2S-P1R-100417	REG	FLUORIMETRIC	CHL
	USGS	KAFB-106063	106063-P1R-100417	REG	IRMS	USGS
		KAFB-106064	106064-P1R-100417	REG	IRMS	USGS
			106064-P1R-100417-FD	FD	IRMS	USGS
		KAFB-106EX1	106EX1-P1R-100417	REG	IRMS	USGS
		KAFB-106EX2	106EX2-P1R-100417	REG	IRMS	USGS
		KAFB-106MW1-I	106MW1I-P1R-100417	REG	IRMS	USGS
		KAFB-106MW1-S	106MW1S-P1R-100417	REG	IRMS	USGS
		KAFB-106MW2-I	106MW2I-P1R-100417	REG	IRMS	USGS
		KAFB-106MW2-S	106MW2S-P1R-100417	REG	IRMS	USGS
10/6/2017	FLUOR	KAFB-106063	106063-P1R-100617	REG	FLUORIMETRIC	CHL
		KAFB-106064	106064-P1R-100617	REG	FLUORIMETRIC	CHL
		KAFB-106EX1	106EX1-P1R-100617	REG	FLUORIMETRIC	CHL
		KAFB-106EX2	106EX2-P1R-100617	REG	FLUORIMETRIC	CHL
		KAFB-106MW1-I	106MW1I-P1R-100617	REG	FLUORIMETRIC	CHL
		KAFB-106MW1-S	106MW1S-P1R-100617	REG	FLUORIMETRIC	CHL
			106MW1S-P1R-100617-FD	FD	FLUORIMETRIC	CHL
		KAFB-106MW2-I	106MW2I-P1R-100617	REG	FLUORIMETRIC	CHL
		KAFB-106MW2-S	106MW2S-P1R-100617	REG	FLUORIMETRIC	CHL
	USGS	KAFB-106063	106063-P1R-100617	REG	IRMS	USGS
		KAFB-106064	106064-P1R-100617	REG	IRMS	USGS
10/6/2017	USGS	KAFB-106EX1	106EX1-P1R-100617	REG	IRMS	USGS
		KAFB-106EX2	106EX2-P1R-100617	REG	IRMS	USGS
		KAFB-106MW1-I	106MW1I-P1R-100617	REG	IRMS	USGS
		KAFB-106MW1-S	106MW1S-P1R-100617	REG	IRMS	USGS
			106MW1S-P1R-100617-FD	FD	IRMS	USGS
		KAFB-106MW2-I	106MW2I-P1R-100617	REG	IRMS	USGS

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
10/6/2017	USGS	KAFB-106MW2-S	106MW2S-P1R-100617	REG	IRMS	USGS
10/09/2017	FLUOR	KAFB-106063	106063-P1R-100917	REG	FLUORIMETRIC	CHL
		KAFB-106064	106064-P1R-100917	REG	FLUORIMETRIC	CHL
		KAFB-106EX1	106EX1-P1R-100917	REG	FLUORIMETRIC	CHL
		KAFB-106EX2	106EX2-P1R-100917	REG	FLUORIMETRIC	CHL
		KAFB-106MW1-I	106MW1I-P1R-100917	REG	FLUORIMETRIC	CHL
			106MW1I-P1R-100917-FD	FD	FLUORIMETRIC	CHL
		KAFB-106MW1-S	106MW1S-P1R-100917	REG	FLUORIMETRIC	CHL
		KAFB-106MW2-I	106MW2I-P1R-100917	REG	FLUORIMETRIC	CHL
		KAFB-106MW2-S	106MW2S-P1R-100917	REG	FLUORIMETRIC	CHL
	USGS	KAFB-106063	106063-P1R-100917	REG	IRMS	USGS
		KAFB-106064	106064-P1R-100917	REG	IRMS	USGS
		KAFB-106EX1	106EX1-P1R-100917	REG	IRMS	USGS
		KAFB-106EX2	106EX2-P1R-100917	REG	IRMS	USGS
		KAFB-106MW1-I	106MW1I-P1R-100917	REG	IRMS	USGS
			106MW1I-P1R-100917-FD	FD	IRMS	USGS
		KAFB-106MW1-S	106MW1S-P1R-100917	REG	IRMS	USGS
		KAFB-106MW2-I	106MW2I-P1R-100917	REG	IRMS	USGS
		KAFB-106MW2-S	106MW2S-P1R-100917	REG	IRMS	USGS
10/12/2017	FLUOR	KAFB-106063	106063-P1R-101217	REG	FLUORIMETRIC	CHL
		KAFB-106064	106064-P1R-101217	REG	FLUORIMETRIC	CHL
10/12/2017	FLUOR	KAFB-106EX1	106EX1-P1R-101217	REG	FLUORIMETRIC	CHL
		KAFB-106EX2	106EX2-P1R-101217	REG	FLUORIMETRIC	CHL
		KAFB-106MW1-I	106MW1I-P1R-101217	REG	FLUORIMETRIC	CHL
		KAFB-106MW1-S	106MW1S-P1R-101217	REG	FLUORIMETRIC	CHL
		KAFB-106MW2-I	106MW2I-P1R-101217	REG	FLUORIMETRIC	CHL
		KAFB-106MW2-S	106MW2S-P1R-101217	REG	FLUORIMETRIC	CHL
			106MW2S-P1R-101217-FD	FD	FLUORIMETRIC	CHL
	USGS	KAFB-106063	106063-P1R-101217	REG	IRMS	USGS
		KAFB-106064	106064-P1R-101217	REG	IRMS	USGS

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
10/12/2017	USGS	KAFB-106EX1	106EX1-P1R-101217	REG	IRMS	USGS
		KAFB-106EX2	106EX2-P1R-101217	REG	IRMS	USGS
		KAFB-106MW1-I	106MW1I-P1R-101217	REG	IRMS	USGS
		KAFB-106MW1-S	106MW1S-P1R-101217	REG	IRMS	USGS
		KAFB-106MW2-I	106MW2I-P1R-101217	REG	IRMS	USGS
		KAFB-106MW2-S	106MW2S-P1R-101217	REG	IRMS	USGS
			106MW2S-P1R-101217-FD	FD	IRMS	USGS
10/16/2017	FLUOR	KAFB-106063	106063-P1R-101617	REG	FLUORIMETRIC	CHL
		KAFB-106064	106064-P1R-101617	REG	FLUORIMETRIC	CHL
		KAFB-106EX1	106EX1-P1R-101617	REG	FLUORIMETRIC	CHL
			106EX1-P1R-101617-FD	FD	FLUORIMETRIC	CHL
		KAFB-106EX2	106EX2-P1R-101617	REG	FLUORIMETRIC	CHL
		KAFB-106MW1-I	106MW1I-P1R-101617	REG	FLUORIMETRIC	CHL
		KAFB-106MW1-S	106MW1S-P1R-101617	REG	FLUORIMETRIC	CHL
		KAFB-106MW2-I	106MW2I-P1R-101617	REG	FLUORIMETRIC	CHL
		KAFB-106MW2-S	106MW2S-P1R-101617	REG	FLUORIMETRIC	CHL
	USGS	KAFB-106063	106063-P1R-101617	REG	IRMS	USGS
		KAFB-106064	106064-P1R-101617	REG	IRMS	USGS
10/16/2017	USGS	KAFB-106EX1	106EX1-P1R-101617	REG	IRMS	USGS
			106EX1-P1R-101617-FD	FD	IRMS	USGS
		KAFB-106EX2	106EX2-P1R-101617	REG	IRMS	USGS
		KAFB-106MW1-I	106MW1I-P1R-101617	REG	IRMS	USGS
		KAFB-106MW1-S	106MW1S-P1R-101617	REG	IRMS	USGS
		KAFB-106MW2-I	106MW2I-P1R-101617	REG	IRMS	USGS
		KAFB-106MW2-S	106MW2S-P1R-101617	REG	IRMS	USGS
10/20/2017	FLUOR	KAFB-106063	106063-P1R-102017	REG	FLUORIMETRIC	CHL
		KAFB-106064	106064-P1R-102017	REG	FLUORIMETRIC	CHL
		KAFB-106EX1	106EX1-P1R-102017	REG	FLUORIMETRIC	CHL
		KAFB-106EX2	106EX2-P1R-102017	REG	FLUORIMETRIC	CHL
		KAFB-106MW1-I	106MW1I-P1R-102017	REG	FLUORIMETRIC	CHL

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
10/20/2017	FLUOR	KAFB-106MW1-S	106MW1S-P1R-102017	REG	FLUORIMETRIC	CHL
		KAFB-106MW2-I	106MW2I-P1R-102017	REG	FLUORIMETRIC	CHL
		KAFB-106MW2-S	106MW2S-P1R-102017	REG	FLUORIMETRIC	CHL
	USGS	KAFB-106063	106063-P1R-102017	REG	IRMS	USGS
		KAFB-106064	106064-P1R-102017	REG	IRMS	USGS
		KAFB-106EX1	106EX1-P1R-102017	REG	IRMS	USGS
		KAFB-106EX2	106EX2-P1R-102017	REG	IRMS	USGS
		KAFB-106MW1-I	106MW1I-P1R-102017	REG	IRMS	USGS
		KAFB-106MW1-S	106MW1S-P1R-102017	REG	IRMS	USGS
		KAFB-106MW2-I	106MW2I-P1R-102017	REG	IRMS	USGS
			106MW2I-P1R-102017-FD	FD	IRMS	USGS
		KAFB-106MW2-S	106MW2S-P1R-102017	REG	IRMS	USGS
10/24/2017	160-25239-1	KAFB-106063	106063-P1R-102417	REG	E300	TASTL
		KAFB-106064	106064-P1R-102417	REG	E300	TASTL
		KAFB-106EX1	106EX1-P1R-102417	REG	E300	TASTL
	160-25239-1		106EX1-P1R-102417-FD	FD	E300	TASTL
		KAFB-106MW1-S	106MW1S-P1R-102417	REG	E300	TASTL
	9757	KAFB-106063	106063-P1R-102417	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106064	106064-P1R-102417	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106EX1	106EX1-P1R-102417	REG	E300M	APTIM
					RSK-175	APTIM
			106EX1-P1R-102417-FD	FD	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW1-S	106MW1S-P1R-102417	REG	E300M	APTIM
					RSK-175	APTIM
	FLUOR	KAFB-106063	106063-P1R-102417	REG	FLUORIMETRIC	CHL
		KAFB-106064	106064-P1R-102417	REG	FLUORIMETRIC	CHL
		KAFB-106EX1	106EX1-P1R-102417	REG	FLUORIMETRIC	CHL
		KAFB-106MW1-S	106MW1S-P1R-102417	REG	FLUORIMETRIC	CHL
	KAFB_004	KAFB-106063	106063-P1R-102417	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106064	106064-P1R-102417	REG	E353.2	EPLN
					SM2320B	EPLN

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
10/24/2017	KAFB_004	KAFB-106064	106064-P1R-102417	REG	SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106EX1	106EX1-P1R-102417	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
			106EX1-P1R-102417-FD	FD	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106MW1-S	106MW1S-P1R-102417	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
	KAFB_004				SW8260B	EPLN
					SW9056A	EPLN
	USGS	KAFB-106063	106063-P1R-102417	REG	IRMS	USGS
		KAFB-106064	106064-P1R-102417	REG	IRMS	USGS
		KAFB-106EX1	106EX1-P1R-102417	REG	IRMS	USGS
			106EX1-P1R-102417-FD	FD	IRMS	USGS
		KAFB-106MW1-S	106MW1S-P1R-102417	REG	IRMS	USGS
10/25/2017	160-25239-1	KAFB-106EX2	106EX2-P1R-102517	REG	E300	TASTL
		KAFB-106MW1-I	106MW1I-P1R-102517	REG	E300	TASTL
		KAFB-106MW2-I	106MW2I-P1R-102517	REG	E300	TASTL
		KAFB-106MW2-S	106MW2S-P1R-102517	REG	E300	TASTL
	9758	KAFB-106EX2	106EX2-P1R-102517	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW1-I	106MW1I-P1R-102517	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW2-I	106MW2I-P1R-102517	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW2-S	106MW2S-P1R-102517	REG	E300M	APTIM
					RSK-175	APTIM
	FLUOR	KAFB-106EX2	106EX2-P1R-102517	REG	FLUORIMETRIC	CHL
		KAFB-106MW1-I	106MW1I-P1R-102517	REG	FLUORIMETRIC	CHL
		KAFB-106MW2-I	106MW2I-P1R-102517	REG	FLUORIMETRIC	CHL
		KAFB-106MW2-S	106MW2S-P1R-102517	REG	FLUORIMETRIC	CHL

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
10/25/2017	KAFB_004	KAFB-106EX2	106EX2-P1R-102517	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106MW1-I	106MW1I-P1R-102517	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106MW2-I	106MW2I-P1R-102517	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
	KAFB_004	KAFB-106MW2-I	106MW2I-P1R-102517	REG	SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106MW2-S	106MW2S-P1R-102517	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
	USGS	KAFB-106EX2	106EX2-P1R-102517	REG	IRMS	USGS
		KAFB-106MW1-I	106MW1I-P1R-102517	REG	IRMS	USGS
		KAFB-106MW2-I	106MW2I-P1R-102517	REG	IRMS	USGS
		KAFB-106MW2-S	106MW2S-P1R-102517	REG	IRMS	USGS
11/1/2017	FLUOR	KAFB-106063	106063-P1R-110117	REG	FLUORIMETRIC	CHL
		KAFB-106064	106064-P1R-110117	REG	FLUORIMETRIC	CHL
		KAFB-106EX1	106EX1-P1R-110117	REG	FLUORIMETRIC	CHL
		KAFB-106EX2	106EX2-P1R-110117	REG	FLUORIMETRIC	CHL
			106EX2-P1R-110117-FD	FD	FLUORIMETRIC	CHL
		KAFB-106MW1-I	106MW1I-P1R-110117	REG	FLUORIMETRIC	CHL
		KAFB-106MW1-S	106MW1S-P1R-110117	REG	FLUORIMETRIC	CHL
		KAFB-106MW2-I	106MW2I-P1R-110117	REG	FLUORIMETRIC	CHL
		KAFB-106MW2-S	106MW2S-P1R-110117	REG	FLUORIMETRIC	CHL
	USGS	KAFB-106063	106063-P1R-110117	REG	IRMS	USGS
		KAFB-106064	106064-P1R-110117	REG	IRMS	USGS
		KAFB-106EX1	106EX1-P1R-110117	REG	IRMS	USGS

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
11/1/2017	USGS	KAFB-106EX2	106EX2-P1R-110117	REG	IRMS	USGS
11/1/2017	USGS	KAFB-106EX2	106EX2-P1R-110117-FD	FD	IRMS	USGS
11/1/2017	USGS	KAFB-106MW1-I	106MW1I-P1R-110117	REG	IRMS	USGS
11/1/2017	USGS	KAFB-106MW1-S	106MW1S-P1R-110117	REG	IRMS	USGS
11/1/2017	USGS	KAFB-106MW2-I	106MW2I-P1R-110117	REG	IRMS	USGS
11/1/2017	USGS	KAFB-106MW2-S	106MW2S-P1R-110117	REG	IRMS	USGS
11/15/2017	160-25627-1	KAFB-106063	106063-P1P-111517	REG	E300	TASTL
11/15/2017	160-25627-1	KAFB-106064	106064-P1P-111517	REG	E300	TASTL
11/15/2017	160-25627-1	KAFB-106MW1-I	106MW1I-P1P-111517	REG	E300	TASTL
11/15/2017	160-25627-1	KAFB-106MW1-S	106MW1S-P1P-111517	REG	E300	TASTL
11/15/2017	160-25627-1	KAFB-106MW2-I	106MW2I-P1P-111517	REG	E300	TASTL
11/15/2017	9761	KAFB-106063	106063-P1P-111517	REG	E300M	APTIM
11/15/2017	9761	KAFB-106063	106063-P1P-111517	REG	RSK-175	APTIM
11/15/2017	9761	KAFB-106064	106064-P1P-111517	REG	E300M	APTIM
11/15/2017	9761	KAFB-106064	106064-P1P-111517	REG	RSK-175	APTIM
11/15/2017	9761	KAFB-106MW1-I	106MW1I-P1P-111517	REG	E300M	APTIM
11/15/2017	9761	KAFB-106MW1-I	106MW1I-P1P-111517	REG	RSK-175	APTIM
11/15/2017	9761	KAFB-106MW1-S	106MW1S-P1P-111517	REG	E300M	APTIM
11/15/2017	9761	KAFB-106MW1-S	106MW1S-P1P-111517	REG	RSK-175	APTIM
11/15/2017	9761	KAFB-106MW2-I	106MW2I-P1P-111517	REG	E300M	APTIM
11/15/2017	9761	KAFB-106MW2-I	106MW2I-P1P-111517	REG	RSK-175	APTIM
11/15/2017	FLUOR	KAFB-106063	106063-P1P-111517	REG	FLUORIMETRIC	CHL
11/15/2017	FLUOR	KAFB-106064	106064-P1P-111517	REG	FLUORIMETRIC	CHL
11/15/2017	FLUOR	KAFB-106MW1-I	106MW1I-P1P-111517	REG	FLUORIMETRIC	CHL
11/15/2017	FLUOR	KAFB-106MW1-S	106MW1S-P1P-111517	REG	FLUORIMETRIC	CHL
11/15/2017	FLUOR	KAFB-106MW2-I	106MW2I-P1P-111517	REG	FLUORIMETRIC	CHL
11/15/2017	KAFB_005	KAFB-106063	106063-P1P-111517	REG	E353.2	EPLN
11/15/2017	KAFB_005	KAFB-106063	106063-P1P-111517	REG	SM2320B	EPLN
11/15/2017	KAFB_005	KAFB-106063	106063-P1P-111517	REG	SM4500PE	EPLN
11/15/2017	KAFB_005	KAFB-106063	106063-P1P-111517	REG	SW6010C	EPLN
11/15/2017	KAFB_005	KAFB-106063	106063-P1P-111517	REG	SW8011	EPLN
11/15/2017	KAFB_005	KAFB-106063	106063-P1P-111517	REG	SW8260B	EPLN
11/15/2017	KAFB_005	KAFB-106063	106063-P1P-111517	REG	SW9056A	EPLN
11/15/2017	KAFB_005	KAFB-106064	106064-P1P-111517	REG	E353.2	EPLN
11/15/2017	KAFB_005	KAFB-106064	106064-P1P-111517	REG	SM2320B	EPLN
11/15/2017	KAFB_005	KAFB-106064	106064-P1P-111517	REG	SM4500PE	EPLN
11/15/2017	KAFB_005	KAFB-106064	106064-P1P-111517	REG	SW6010C	EPLN
11/15/2017	KAFB_005	KAFB-106064	106064-P1P-111517	REG	SW8011	EPLN
11/15/2017	KAFB_005	KAFB-106064	106064-P1P-111517	REG	SW8260B	EPLN
11/15/2017	KAFB_005	KAFB-106064	106064-P1P-111517	REG	SW9056A	EPLN
11/15/2017	KAFB_005	KAFB-106MW1-I	106MW1I-P1P-111517	REG	E353.2	EPLN
11/15/2017	KAFB_005	KAFB-106MW1-I	106MW1I-P1P-111517	REG	SM2320B	EPLN
11/15/2017	KAFB_005	KAFB-106MW1-I	106MW1I-P1P-111517	REG	SM4500PE	EPLN
11/15/2017	KAFB_005	KAFB-106MW1-I	106MW1I-P1P-111517	REG	SW6010C	EPLN
11/15/2017	KAFB_005	KAFB-106MW1-I	106MW1I-P1P-111517	REG	SW8011	EPLN

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
11/15/2017	KAFB_005	KAFB-106MW1-I	106MW1I-P1P-111517	REG	SW8260B	EPLN
	KAFB_005	KAFB-106MW1-I	106MW1I-P1P-111517	REG	SW9056A	EPLN
11/15/2017		KAFB-106MW1-S	106MW1S-P1P-111517	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
	KAFB_005	KAFB-106MW1-S	106MW1S-P1P-111517	REG	SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106MW2-I	106MW2I-P1P-111517	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
	USGS	KAFB-106063	106063-P1P-111517	REG	IRMS	USGS
		KAFB-106064	106064-P1P-111517	REG	IRMS	USGS
		KAFB-106MW1-I	106MW1I-P1P-111517	REG	IRMS	USGS
		KAFB-106MW1-S	106MW1S-P1P-111517	REG	IRMS	USGS
		KAFB-106MW2-I	106MW2I-P1P-111517	REG	IRMS	USGS
11/16/2017	160-25627-1	KAFB-106EX1	106EX1-P1P-111617	REG	E300	TASTL
		KAFB-106EX2	106EX2-P1P-111617	REG	E300	TASTL
		KAFB-106IN1	106IN1-P1P-111617	REG	E300	TASTL
			106IN1-P1P-111617-FD	FD	E300	TASTL
		KAFB-106MW2-S	106MW2S-P1P-111617	REG	E300	TASTL
	9762	KAFB-106EX1	106EX1-P1P-111617	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106EX2	106EX2-P1P-111617	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106IN1	106IN1-P1P-111617	REG	E300M	APTIM
					RSK-175	APTIM
			106IN1-P1P-111617-FD	FD	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW2-S	106MW2S-P1P-111617	REG	E300M	APTIM
					RSK-175	APTIM
	FLUOR	KAFB-106EX1	106EX1-P1P-111617	REG	FLUORIMETRIC	CHL
		KAFB-106EX2	106EX2-P1P-111617	REG	FLUORIMETRIC	CHL
		KAFB-106IN1	106IN1-P1P-111617	REG	FLUORIMETRIC	CHL
		KAFB-106MW2-S	106MW2S-P1P-111617	REG	FLUORIMETRIC	CHL
	KAFB_005	KAFB-106EX1	106EX1-P1P-111617	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
11/16/2017	KAFB_005	KAFB-106EX1	106EX1-P1P-111617	REG	SW8260B	EPLN
					SW9056A	EPLN
11/16/2017	KAFB_005	KAFB-106EX2	106EX2-P1P-111617	REG	E353.2	EPLN
					SM2320B	EPLN
11/16/2017					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106IN1	106IN1-P1P-111617	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
	KAFB_005		106IN1-P1P-111617-FD	FD	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106MW2-S	106MW2S-P1P-111617	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
	USGS	KAFB-106EX1	106EX1-P1P-111617	REG	IRMS	USGS
		KAFB-106EX2	106EX2-P1P-111617	REG	IRMS	USGS
		KAFB-106IN1	106IN1-P1P-111617	REG	IRMS	USGS
			106IN1-P1P-111617-FD	FD	IRMS	USGS
		KAFB-106MW2-S	106MW2S-P1P-111617	REG	IRMS	USGS
11/28/2017	160-25791-1	KAFB-106063	106063-P1P-112817	REG	E300	TASTL
		KAFB-106064	106064-P1P-112817	REG	E300	TASTL
		KAFB-106MW1-I	106MW1I-P1P-112817	REG	E300	TASTL
		KAFB-106MW1-S	106MW1S-P1P-112817	REG	E300	TASTL
		KAFB-106MW2-S	106MW2S-P1P-112817	REG	E300	TASTL
	6_106OK	KAFB-106063	106063-P1P-112817	REG	QUANTARRAY	MI
		KAFB-106064	106064-P1P-112817	REG	QUANTARRAY	MI
		KAFB-106MW1-I	106MW1I-P1P-112817	REG	QUANTARRAY	MI
11/28/2017		KAFB-106MW1-S	106MW1S-P1P-112817	REG	QUANTARRAY	MI
		KAFB-106MW2-S	106MW2S-P1P-112817	REG	QUANTARRAY	MI

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
11/28/2017	9764	KAFB-106063	106063-P1P-112817	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106064	106064-P1P-112817	REG	E300M	APTIM
11/28/2017	9764	KAFB-106064	106064-P1P-112817	REG	RSK-175	APTIM
		KAFB-106MW1-I	106MW1I-P1P-112817	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW1-S	106MW1S-P1P-112817	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW2-S	106MW2S-P1P-112817	REG	E300M	APTIM
					RSK-175	APTIM
	FLUOR	KAFB-106063	106063-P1P-112817	REG	FLUORIMETRIC	CHL
		KAFB-106064	106064-P1P-112817	REG	FLUORIMETRIC	CHL
		KAFB-106MW1-I	106MW1I-P1P-112817	REG	FLUORIMETRIC	CHL
11/28/2017	FLUOR	KAFB-106MW1-S	106MW1S-P1P-112817	REG	FLUORIMETRIC	CHL
		KAFB-106MW2-S	106MW2S-P1P-112817	REG	FLUORIMETRIC	CHL
	KAFB_006	KAFB-106063	106063-P1P-112817	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106064	106064-P1P-112817	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106MW1-I	106MW1I-P1P-112817	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106MW1-S	106MW1S-P1P-112817	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106MW2-S	106MW2S-P1P-112817	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
11/28/2017	KAFB_006	KAFB-106MW2-S	106MW2S-P1P-112817	REG	SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
	USGS	KAFB-106063	106063-P1P-112817	REG	IRMS	USGS
		KAFB-106064	106064-P1P-112817	REG	IRMS	USGS
		KAFB-106MW1-I	106MW1I-P1P-112817	REG	IRMS	USGS
		KAFB-106MW1-S	106MW1S-P1P-112817	REG	IRMS	USGS
		KAFB-106MW2-S	106MW2S-P1P-112817	REG	IRMS	USGS
11/29/2017	160-25791-1	KAFB-106EX1	106EX1-P1P-112917	REG	E300	TASTL
		KAFB-106EX2	106EX2-P1P-112917	REG	E300	TASTL
		KAFB-106IN1	106IN1-P1P-112917	REG	E300	TASTL
		KAFB-106MW2-I	106MW2I-P1P-112917	REG	E300	TASTL
			106MW2I-P1P-112917-FD	FD	E300	TASTL
	6_106OK	KAFB-106EX1	106EX1-P1P-112917	REG	QUANTARRAY	MI
		KAFB-106EX2	106EX2-P1P-112917	REG	QUANTARRAY	MI
		KAFB-106IN1	106IN1-P1P-112917	REG	QUANTARRAY	MI
		KAFB-106MW2-I	106MW2I-P1P-112917	REG	QUANTARRAY	MI
	9765	KAFB-106EX1	106EX1-P1P-112917	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106EX2	106EX2-P1P-112917	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106IN1	106IN1-P1P-112917	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW2-I	106MW2I-P1P-112917	REG	E300M	APTIM
					RSK-175	APTIM
			106MW2I-P1P-112917-FD	FD	E300M	APTIM
					RSK-175	APTIM
	FLUOR	KAFB-106EX1	106EX1-P1P-112917	REG	FLUORIMETRIC	CHL
		KAFB-106EX2	106EX2-P1P-112917	REG	FLUORIMETRIC	CHL
		KAFB-106IN1	106IN1-P1P-112917	REG	FLUORIMETRIC	CHL
		KAFB-106MW2-I	106MW2I-P1P-112917	REG	FLUORIMETRIC	CHL
	KAFB_006	KAFB-106EX1	106EX1-P1P-112917	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
11/29/2017	KAFB_006	KAFB-106EX2	106EX2-P1P-112917	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106IN1	106IN1-P1P-112917	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106MW2-I	106MW2I-P1P-112917	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
			106MW2I-P1P-112917-FD	FD	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
	USGS	KAFB-106EX1	106EX1-P1P-112917	REG	IRMS	USGS
		KAFB-106EX2	106EX2-P1P-112917	REG	IRMS	USGS
		KAFB-106IN1	106IN1-P1P-112917	REG	IRMS	USGS
		KAFB-106MW2-I	106MW2I-P1P-112917	REG	IRMS	USGS
			106MW2I-P1P-112917-FD	FD	IRMS	USGS
01/02/2018	160-26240-1	KAFB-106IN1	106IN1-P2R-010218-01	REG	E300	TASTL
			106IN1-P2R-010218-02	REG	E300	TASTL
	9767	KAFB-106IN1	106IN1-P2R-010218-02	REG	E300M	APTIM
1/9/2018	160-26240-1	KAFB-106MW1-I	106MW1I-P2R-010918	REG	E300	TASTL
		KAFB-106MW1-S	106MW1S-P2R-010918	REG	E300	TASTL
		KAFB-106MW2-I	106MW2I-P2R-010918	REG	E300	TASTL
		KAFB-106MW2-S	106MW2S-P2R-010918	REG	E300	TASTL
	9768	KAFB-106MW1-I	106MW1I-P2R-010918	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW1-S	106MW1S-P2R-010918	REG	E300M	APTIM
					RSK-175	APTIM

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
1/9/2018	9768	KAFB-106MW2-I	106MW2I-P2R-010918	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW2-S	106MW2S-P2R-010918	REG	E300M	APTIM
					RSK-175	APTIM
	KAFB_007	KAFB-106MW1-I	106MW1I-P2R-010918	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106MW1-S	106MW1S-P2R-010918	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106MW2-I	106MW2I-P2R-010918	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106MW2-S	106MW2S-P2R-010918	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
1/10/2018		KAFB-106IN1	106IN1-P2R-011018	REG		
	160-26240-1	KAFB-106063	106063-P2R-011018	REG	E300	TASTL
		KAFB-106064	106064-P2R-011018	REG	E300	TASTL
		KAFB-106EX1	106EX1-P2R-011018	REG	E300	TASTL
		KAFB-106EX2	106EX2-P2R-011018	REG	E300	TASTL
			106EX2-P2R-011018-FD	FD	E300	TASTL
		KAFB-106IN1	106IN1-P2R-011018-03	REG	E300	TASTL
	9769	KAFB-106063	106063-P2R-011018	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106064	106064-P2R-011018	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106EX1	106EX1-P2R-011018	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106EX2	106EX2-P2R-011018	REG	E300M	APTIM
					RSK-175	APTIM
			106EX2-P2R-011018-FD	FD	E300M	APTIM
					RSK-175	APTIM
1/10/2018	9769	KAFB-106IN1	106IN1-P2R-011018-03	REG	E300M	APTIM
	KAFB_007	KAFB-106063	106063-P2R-011018	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
1/10/2018	KAFB_007	KAFB-106063	106063-P2R-011018	REG	SW6010C	EPLN
1/10/2018	KAFB_007	KAFB-106063	106063-P2R-011018	REG	SW8011	EPLN
1/10/2018	KAFB_007	KAFB-106063	106063-P2R-011018	REG	SW8260B	EPLN
1/10/2018	KAFB_007	KAFB-106063	106063-P2R-011018	REG	SW9056A	EPLN
1/10/2018	KAFB_007	KAFB-106064	106064-P2R-011018	REG	E353.2	EPLN
1/10/2018	KAFB_007	KAFB-106064	106064-P2R-011018	REG	SM2320B	EPLN
1/10/2018	KAFB_007	KAFB-106064	106064-P2R-011018	REG	SM4500PE	EPLN
1/10/2018	KAFB_007	KAFB-106064	106064-P2R-011018	REG	SW6010C	EPLN
1/10/2018	KAFB_007	KAFB-106064	106064-P2R-011018	REG	SW8011	EPLN
1/10/2018	KAFB_007	KAFB-106064	106064-P2R-011018	REG	SW8260B	EPLN
1/10/2018	KAFB_007	KAFB-106064	106064-P2R-011018	REG	SW9056A	EPLN
1/10/2018	KAFB_007	KAFB-106EX1	106EX1-P2R-011018	REG	E353.2	EPLN
1/10/2018	KAFB_007	KAFB-106EX1	106EX1-P2R-011018	REG	SM2320B	EPLN
1/10/2018	KAFB_007	KAFB-106EX1	106EX1-P2R-011018	REG	SM4500PE	EPLN
1/10/2018	KAFB_007	KAFB-106EX1	106EX1-P2R-011018	REG	SW6010C	EPLN
1/10/2018	KAFB_007	KAFB-106EX1	106EX1-P2R-011018	REG	SW8011	EPLN
1/10/2018	KAFB_007	KAFB-106EX1	106EX1-P2R-011018	REG	SW8260B	EPLN
1/10/2018	KAFB_007	KAFB-106EX1	106EX1-P2R-011018	REG	SW9056A	EPLN
1/10/2018	KAFB_007	KAFB-106EX2	106EX2-P2R-011018	REG	E353.2	EPLN
1/10/2018	KAFB_007	KAFB-106EX2	106EX2-P2R-011018	REG	SM2320B	EPLN
1/10/2018	KAFB_007	KAFB-106EX2	106EX2-P2R-011018	REG	SM4500PE	EPLN
1/10/2018	KAFB_007	KAFB-106EX2	106EX2-P2R-011018	REG	SW6010C	EPLN
1/10/2018	KAFB_007	KAFB-106EX2	106EX2-P2R-011018	REG	SW8011	EPLN
1/10/2018	KAFB_007	KAFB-106EX2	106EX2-P2R-011018	REG	SW8260B	EPLN
1/10/2018	KAFB_007	KAFB-106EX2	106EX2-P2R-011018	REG	SW9056A	EPLN
1/10/2018	KAFB_007	KAFB-106EX2	106EX2-P2R-011018-FD	FD	E353.2	EPLN
1/10/2018	KAFB_007	KAFB-106EX2	106EX2-P2R-011018-FD	FD	SM2320B	EPLN
1/10/2018	KAFB_007	KAFB-106EX2	106EX2-P2R-011018-FD	FD	SM4500PE	EPLN
1/10/2018	KAFB_007	KAFB-106EX2	106EX2-P2R-011018-FD	FD	SW6010C	EPLN
1/10/2018	KAFB_007	KAFB-106EX2	106EX2-P2R-011018-FD	FD	SW8011	EPLN
1/10/2018	KAFB_007	KAFB-106EX2	106EX2-P2R-011018-FD	FD	SW8260B	EPLN
1/10/2018	KAFB_007	KAFB-106EX2	106EX2-P2R-011018-FD	FD	SW9056A	EPLN
1/16/2018	160-26240-1	KAFB-106EX1	106EX1-P2R-011618	REG	E300	TASTL
1/16/2018	160-26240-1	KAFB-106EX1	106EX1-P2R-011618-FD	FD	E300	TASTL
1/16/2018	160-26240-1	KAFB-106EX2	106EX2-P2R-011618	REG	E300	TASTL
1/16/2018	160-26240-1	KAFB-106MW1-I	106MW1I-P2R-011618	REG	E300	TASTL
1/16/2018	160-26240-1	KAFB-106MW2-S	106MW2S-P2R-011618	REG	E300	TASTL
1/16/2018	9772	KAFB-106EX1	106EX1-P2R-011618	REG	E300M	APTIM
1/16/2018	9772	KAFB-106EX1	106EX1-P2R-011618	REG	RSK-175	APTIM
1/16/2018	9772	KAFB-106EX1	106EX1-P2R-011618-FD	FD	E300M	APTIM
1/16/2018	9772	KAFB-106EX1	106EX1-P2R-011618-FD	FD	RSK-175	APTIM
1/16/2018	9772	KAFB-106EX2	106EX2-P2R-011618	REG	E300M	APTIM
1/16/2018	9772	KAFB-106EX2	106EX2-P2R-011618	REG	RSK-175	APTIM
1/16/2018	9772	KAFB-106MW1-I	106MW1I-P2R-011618	REG	E300M	APTIM
1/16/2018	9772	KAFB-106MW1-I	106MW1I-P2R-011618	REG	RSK-175	APTIM
1/16/2018	9772	KAFB-106MW2-S	106MW2S-P2R-011618	REG	E300M	APTIM
1/16/2018	9772	KAFB-106MW2-S	106MW2S-P2R-011618	REG	RSK-175	APTIM

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
1/16/2018	KAFB_008	KAFB-106EX1	106EX1-P2R-011618	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
			106EX1-P2R-011618-FD	FD	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106EX2	106EX2-P2R-011618	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106MW1-I	106MW1I-P2R-011618	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106MW2-S	106MW2S-P2R-011618	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
1/18/2018	160-26240-1	KAFB-106063	106063-P2R-011818	REG	E300	TASTL
		KAFB-106064	106064-P2R-011818	REG	E300	TASTL
		KAFB-106MW1-S	106MWIS-P2R-011818	REG	E300	TASTL
		KAFB-106MW2-I	106MW2I-P2R-011818	REG	E300	TASTL
	9775	KAFB-106063	106063-P2R-011818	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106064	106064-P2R-011818	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW1-S	106MW1S-P2R-011818	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW2-I	106MW2I-P2R-011818	REG	E300M	APTIM
					RSK-175	APTIM
	KAFB_008	KAFB-106063	106063-P2R-011818	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
1/18/2018	KAFB_008	KAFB-106064	106064-P2R-011818	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106MW1-S	106MW1S-P2R-011818	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106MW2-I	106MW2I-P2R-011818	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
1/24/2018	160-26515-1	KAFB-106IN1	106IN1-P2R-012418-04	REG	E300	TASTL
		KAFB-106MW1-I	106MW1I-P2R-012418	REG	E300	TASTL
			106MW1I-P2R-012418-FD	FD	E300	TASTL
		KAFB-106MW1-S	106MW1S-P2R-012418	REG	E300	TASTL
		KAFB-106MW2-I	106MW2I-P2R-012418	REG	E300	TASTL
		KAFB-106MW2-S	106MW2S-P2R-012418	REG	E300	TASTL
	59_055pa	KAFB-106MW1-I	106MW1I-P2R-012418	REG	QUANTARRAY	MI
		KAFB-106MW1-S	106MW1S-P2R-012418	REG	QUANTARRAY	MI
		KAFB-106MW2-I	106MW2I-P2R-012418	REG	QUANTARRAY	MI
		KAFB-106MW2-S	106MW2S-P2R-012418	REG	QUANTARRAY	MI
	9777	KAFB-106IN1	106IN1-P2R-012418	REG	E300M	APTIM
		KAFB-106MW1-I	106MW1I-P2R-012418	REG	E300M	APTIM
					RSK-175	APTIM
			106MW1I-P2R-012418-FD	FD	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW1-S	106MW1S-P2R-012418	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW2-I	106MW2I-P2R-012418	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW2-S	106MW2S-P2R-012418	REG	E300M	APTIM
					RSK-175	APTIM
	KAFB_009	KAFB-106IN1	106IN1-P2R-012418-04	REG	SM4500PE	EPLN
		KAFB-106MW1-I	106MW1I-P2R-012418	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
1/24/2018	KAFB_009				SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
1/24/2018	KAFB_009	KAFB-106MW1-I	106MW1I-P2R-012418-FD	FD	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106MW1-S	106MW1S-P2R-012418	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106MW2-I	106MW2I-P2R-012418	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106MW2-S	106MW2S-P2R-012418	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
1/25/2018	160-26515-1	KAFB-106063	106063-P2R-012518	REG	E300	TASTL
		KAFB-106064	106064-P2R-012518	REG	E300	TASTL
		KAFB-106EX1	106EX1-P2R-012518	REG	E300	TASTL
		KAFB-106EX2	106EX2-P2R-012518	REG	E300	TASTL
	59_055pa	KAFB-106063	106063-P2R-012518	REG	QUANTARRAY	MI
		KAFB-106064	106064-P2R-012518	REG	QUANTARRAY	MI
		KAFB-106EX1	106EX1-P2R-012518	REG	QUANTARRAY	MI
		KAFB-106EX2	106EX2-P2R-012518	REG	QUANTARRAY	MI
	9778	KAFB-106063	106063-P2R-012518	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106064	106064-P2R-012518	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106EX1	106EX1-P2R-012518	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106EX2	106EX2-P2R-012518	REG	E300M	APTIM
					RSK-175	APTIM

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
1/25/2018	KAFB_009	KAFB-106063	106063-P2R-012518	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106064	106064-P2R-012518	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106EX1	106EX1-P2R-012518	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106EX2	106EX2-P2R-012518	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
3/6/2018	160-27155-1	KAFB-106063	106063-P2P-030618	REG	E300	TASTL
		KAFB-106MW1-I	106MW1I-P2P-030618	REG	E300	TASTL
		KAFB-106MW1-S	106MW1S-P2P-030618	REG	E300	TASTL
		KAFB-106MW2-I	106MW2I-P2P-030618	REG	E300	TASTL
			106MW2I-P2P-030618-FD	FD	E300	TASTL
	9788	KAFB-106063	106063-P2P-030618	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW1-I	106MW1I-P2P-030618	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW1-S	106MW1S-P2P-030618	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW2-I	106MW2I-P2P-030618	REG	E300M	APTIM
					RSK-175	APTIM
			106MW2I-P2P-030618-FD	FD	E300M	APTIM
					RSK-175	APTIM
	KAFB_010	KAFB-106063	106063-P2P-030618	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106MW1-I	106MW1I-P2P-030618	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
3/6/2018	KAFB_010	KAFB-106MW1-I	106MW1I-P2P-030618	REG	SW6010C	EPLN
3/6/2018	KAFB_010	KAFB-106MW1-I	106MW1I-P2P-030618	REG	SW8011	EPLN
3/6/2018	KAFB_010	KAFB-106MW1-I	106MW1I-P2P-030618	REG	SW8260B	EPLN
3/6/2018	KAFB_010	KAFB-106MW1-I	106MW1I-P2P-030618	REG	SW9056A	EPLN
3/6/2018	KAFB_010	KAFB-106MW1-S	106MW1S-P2P-030618	REG	E353.2	EPLN
3/6/2018	KAFB_010	KAFB-106MW1-S	106MW1S-P2P-030618	REG	SM2320B	EPLN
3/6/2018	KAFB_010	KAFB-106MW1-S	106MW1S-P2P-030618	REG	SM4500PE	EPLN
3/6/2018	KAFB_010	KAFB-106MW1-S	106MW1S-P2P-030618	REG	SW6010C	EPLN
3/6/2018	KAFB_010	KAFB-106MW1-S	106MW1S-P2P-030618	REG	SW8011	EPLN
3/6/2018	KAFB_010	KAFB-106MW1-S	106MW1S-P2P-030618	REG	SW8260B	EPLN
3/6/2018	KAFB_010	KAFB-106MW1-S	106MW1S-P2P-030618	REG	SW9056A	EPLN
3/6/2018	KAFB_010	KAFB-106MW2-I	106MW2I-P2P-030618	REG	E353.2	EPLN
3/6/2018	KAFB_010	KAFB-106MW2-I	106MW2I-P2P-030618	REG	SM2320B	EPLN
3/6/2018	KAFB_010	KAFB-106MW2-I	106MW2I-P2P-030618	REG	SM4500PE	EPLN
3/6/2018	KAFB_010	KAFB-106MW2-I	106MW2I-P2P-030618	REG	SW6010C	EPLN
3/6/2018	KAFB_010	KAFB-106MW2-I	106MW2I-P2P-030618	REG	SW8011	EPLN
3/6/2018	KAFB_010	KAFB-106MW2-I	106MW2I-P2P-030618	REG	SW8260B	EPLN
3/6/2018	KAFB_010	KAFB-106MW2-I	106MW2I-P2P-030618	REG	SW9056A	EPLN
3/6/2018	KAFB_010	KAFB-106MW2-I	106MW2I-P2P-030618-FD	FD	E353.2	EPLN
3/6/2018	KAFB_010	KAFB-106MW2-I	106MW2I-P2P-030618-FD	FD	SM2320B	EPLN
3/6/2018	KAFB_010	KAFB-106MW2-I	106MW2I-P2P-030618-FD	FD	SM4500PE	EPLN
3/6/2018	KAFB_010	KAFB-106MW2-I	106MW2I-P2P-030618-FD	FD	SW6010C	EPLN
3/6/2018	KAFB_010	KAFB-106MW2-I	106MW2I-P2P-030618-FD	FD	SW8011	EPLN
3/6/2018	KAFB_010	KAFB-106MW2-I	106MW2I-P2P-030618-FD	FD	SW8260B	EPLN
3/6/2018	KAFB_010	KAFB-106MW2-I	106MW2I-P2P-030618-FD	FD	SW9056A	EPLN
3/7/2018	160-27155-1	KAFB-106064	106064-P2P-030718	REG	E300	TASTL
3/7/2018	160-27155-1	KAFB-106EX1	106EX1-P2P-030718	REG	E300	TASTL
3/7/2018	160-27155-1	KAFB-106EX2	106EX2-P2P-030718	REG	E300	TASTL
3/7/2018	160-27155-1	KAFB-106IN1	106IN1-P2P-030718	REG	E300	TASTL
3/7/2018	160-27155-1	KAFB-106MW2-S	106MW2S-P2P-030718	REG	E300	TASTL
3/7/2018	9788	KAFB-106064	106064-P2P-030718	REG	E300M	APTIM
3/7/2018	9788	KAFB-106064	106064-P2P-030718	REG	RSK-175	APTIM
3/7/2018	9788	KAFB-106EX1	106EX1-P2P-030718	REG	E300M	APTIM
3/7/2018	9788	KAFB-106EX1	106EX1-P2P-030718	REG	RSK-175	APTIM
3/7/2018	9788	KAFB-106EX2	106EX2-P2P-030718	REG	E300M	APTIM
3/7/2018	9788	KAFB-106EX2	106EX2-P2P-030718	REG	RSK-175	APTIM
3/7/2018	9788	KAFB-106IN1	106IN1-P2P-030718	REG	E300M	APTIM
3/7/2018	9788	KAFB-106IN1	106IN1-P2P-030718	REG	RSK-175	APTIM
3/7/2018	9788	KAFB-106MW2-S	106MW2S-P2P-030718	REG	E300M	APTIM
3/7/2018	9788	KAFB-106MW2-S	106MW2S-P2P-030718	REG	RSK-175	APTIM
3/7/2018	KAFB_010	KAFB-106064	106064-P2P-030718	REG	E353.2	EPLN
3/7/2018	KAFB_010	KAFB-106064	106064-P2P-030718	REG	SM2320B	EPLN
3/7/2018	KAFB_010	KAFB-106064	106064-P2P-030718	REG	SM4500PE	EPLN
3/7/2018	KAFB_010	KAFB-106064	106064-P2P-030718	REG	SW6010C	EPLN
3/7/2018	KAFB_010	KAFB-106064	106064-P2P-030718	REG	SW8011	EPLN
3/7/2018	KAFB_010	KAFB-106064	106064-P2P-030718	REG	SW8260B	EPLN
3/7/2018	KAFB_010	KAFB-106064	106064-P2P-030718	REG	SW9056A	EPLN
3/7/2018	KAFB_010	KAFB-106EX1	106EX1-P2P-030718	REG	E353.2	EPLN
3/7/2018	KAFB_010	KAFB-106EX1	106EX1-P2P-030718	REG	SM2320B	EPLN
3/7/2018	KAFB_010	KAFB-106EX1	106EX1-P2P-030718	REG	SM4500PE	EPLN
3/7/2018	KAFB_010	KAFB-106EX1	106EX1-P2P-030718	REG	SW6010C	EPLN
3/7/2018	KAFB_010	KAFB-106EX1	106EX1-P2P-030718	REG	SW8011	EPLN
3/7/2018	KAFB_010	KAFB-106EX1	106EX1-P2P-030718	REG	SW8260B	EPLN
3/7/2018	KAFB_010	KAFB-106EX1	106EX1-P2P-030718	REG	SW9056A	EPLN

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
3/7/2018	KAFB_010	KAFB-106EX2	106EX2-P2P-030718	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106IN1	106IN1-P2P-030718	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106MW2-S	106MW2S-P2P-030718	REG	E353.2	EPLN
					SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
4/10/2018	160-27760-1	KAFB-106063	106063-P2P-041018	REG	E300	TASTL
		KAFB-106064	106064-P2P-041018	REG	E300	TASTL
		KAFB-106MW1-I	106MW1I-P2P-041018	REG	E300	TASTL
		KAFB-106MW2-S	106MW2S-P2P-041018	REG	E300	TASTL
			106MW2S-P2P-041018-FD	FD	E300	TASTL
	9798	KAFB-106063	106063-P2P-041018	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106064	106064-P2P-041018	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW1-I	106MW1I-P2P-041018	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW2-S	106MW2S-P2P-041018	REG	E300M	APTIM
					RSK-175	APTIM
			106MW2S-P2P-041018-FD	FD	E300M	APTIM
					RSK-175	APTIM
	KAFB_011	KAFB-106063	106063-P2P-041018	REG	SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106064	106064-P2P-041018	REG	SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106MW1-I	106MW1I-P2P-041018	REG	SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
4/10/2018	KAFB_011	KAFB-106MW2-S	106MW2S-P2P-041018	REG	SM2320B	EPLN
					SM4500PE	EPLN
4/10/2018	KAFB_011	KAFB-106MW2-S	106MW2S-P2P-041018	REG	SW6010C	EPLN
4/10/2018	KAFB_011	KAFB-106MW2-S	106MW2S-P2P-041018	REG	SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
			106MW2S-P2P-041018-FD	FD	SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
4/11/2018	160-27760-1	KAFB-106EX1	106EX1-P2P-041118	REG	E300	TASTL
		KAFB-106EX2	106EX2-P2P-041118	REG	E300	TASTL
		KAFB-106IN1	106IN1-P2P-041118	REG	E300	TASTL
		KAFB-106MW1-S	106MW1S-P2P-041118	REG	E300	TASTL
		KAFB-106MW2-I	106MW2I-P2P-041118	REG	E300	TASTL
	9799	KAFB-106EX1	106EX1-P2P-041118	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106EX2	106EX2-P2P-041118	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106IN1	106IN1-P2P-041118	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW1-S	106MW1S-P2P-041118	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW2-I	106MW2I-P2P-041118	REG	E300M	APTIM
					RSK-175	APTIM
	KAFB_011	KAFB-106EX1	106EX1-P2P-041118	REG	SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106EX2	106EX2-P2P-04118	REG	SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106IN1	106IN1-P2P-041118	REG	SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106MW1-S	106MW1S-P2P-041118	REG	SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106MW2-I	106MW2I-P2P-041118	REG	SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
4/11/2018	KAFB_011	KAFB-106MW2-I	106MW2I-P2P-041118	REG	SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
05/08/2018	160-28253-1	KAFB-106063	106063-P2P-050818	REG	E300	TASTL
		KAFB-106MW1-I	106MW1I-P2P-050818	REG	E300	TASTL
		KAFB-106MW1-S	106MW1S-P2P-050818	REG	E300	TASTL
		KAFB-106MW2-I	106MW2I-P2P-050818	REG	E300	TASTL
	94_038PE	KAFB-106063	106063-P2P-050818	REG	QUANTARRAY	APTIM
		KAFB-106MW1-I	106MW1I-P2P-050818	REG	QUANTARRAY	APTIM
		KAFB-106MW1-S	106MW1S-P2P-050818	REG	QUANTARRAY	APTIM
		KAFB-106MW2-I	106MW2I-P2P-050818	REG	QUANTARRAY	APTIM
	9812	KAFB-106063	106063-P2P-050818	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW1-I	106MW1I-P2P-050818	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW1-S	106MW1S-P2P-050818	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW2-I	106MW2I-P2P-050818	REG	E300M	APTIM
					RSK-175	APTIM
	KAFB_012	KAFB-106063	106063-P2P-050818	REG	SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106MW1-I	106MW1I-P2P-050818	REG	SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106MW1-S	106MW1S-P2P-050818	REG	SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106MW2-I	106MW2I-P2P-050818	REG	SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
5/9/2018	160-28253-1	KAFB-106064	106064-P2P-050918	REG	E300	TASTL
			106064-P2P-050918-FD	FD	E300	TASTL
		KAFB-106EX1	106EX1-P2P-050918	REG	E300	TASTL
		KAFB-106EX2	106EX2-P2P-050918	REG	E300	TASTL

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
5/9/2018	160-28253-1	KAFB-106IN1	106IN1-P2P-050918	REG	E300	TASTL
		KAFB-106MW2-S	106MW2S-P2P-050918	REG	E300	TASTL
	94_038PE	KAFB-106064	106064-P2P-050918	REG	QUANTARRAY	APTIM
5/9/2018	94_038PE	KAFB-106EX1	106EX1-P2P-050918	REG	QUANTARRAY	APTIM
	94_038PE	KAFB-106EX2	106EX2-P2P-050918	REG	QUANTARRAY	APTIM
		KAFB-106IN1	106IN1-P2P-050918	REG	QUANTARRAY	APTIM
		KAFB-106MW2-S	106MW2S-P2P-050918	REG	QUANTARRAY	APTIM
	9813	KAFB-106064	106064-P2P-050918	REG	E300M	APTIM
					RSK-175	APTIM
			106064-P2P-050918-FD	FD	E300M	APTIM
					RSK-175	APTIM
		KAFB-106EX1	106EX1-P2P-050918	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106EX2	106EX2-P2P-050918	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106IN1	106IN1-P2P-050918	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW2-S	106MW2S-P2P-050918	REG	E300M	APTIM
					RSK-175	APTIM
	KAFB_012	KAFB-106064	106064-P2P-050918	REG	SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
			106064-P2P-050918-FD	FD	SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106EX1	106EX1-P2P-050918	REG	SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106EX2	106EX2-P2P-050918	REG	SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106IN1	106IN1-P2P-050918	REG	SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106MW2-S	106MW2S-P2P-050918	REG	SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
	KAFB_012				SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
6/12/2018	160-28933-1	KAFB-106063	106063-P2P-061218	REG	E300	TASTL
6/12/2018	160-28933-1	KAFB-106MW1-I	106MW1I-P2P-061218	REG	E300	TASTL
		KAFB-106MW2-I	106MW2I-P2P-061218	REG	E300	TASTL
6/12/2018	9820	KAFB-106063	106063-P2P-061218	REG	E300M	APTIM
					RSK-175	APTIM
6/12/2018		KAFB-106MW1-I	106MW1I-P2P-061218	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW2-I	106MW2I-P2P-061218	REG	E300M	APTIM
					RSK-175	APTIM
	KAFB_013	KAFB-106063	106063-P2P-061218	REG	SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106MW1-I	106MW1I-P2P-061218	REG	SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
		KAFB-106MW2-I	106MW2I-P2P-061218	REG	SM2320B	EPLN
					SM4500PE	EPLN
					SW6010C	EPLN
					SW8011	EPLN
					SW8260B	EPLN
					SW9056A	EPLN
6/14/2018	160-28933-1	KAFB-106064	106064-P2P-061418	REG	E300	TASTL
			106064-P2P-061418-FD	FD	E300	TASTL
		KAFB-106EX1	106EX1-P2P-061418	REG	E300	TASTL
		KAFB-106EX2	106EX2-P2P-061418	REG	E300	TASTL
		KAFB-106IN1	106IN1-P2P-061418	REG	E300	TASTL
		KAFB-106MW1-S	106MW1S-P2P-061418	REG	E300	TASTL
		KAFB-106MW2-S	106MW2S-P2P-061418	REG	E300	TASTL
	9822	KAFB-106064	106064-P2P-061418	REG	E300M	APTIM
					RSK-175	APTIM
			106064-P2P-061418-FD	FD	E300M	APTIM
					RSK-175	APTIM
		KAFB-106EX1	106EX1-P2P-061418	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106EX2	106EX2-P2P-061418	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106IN1	106IN1-P2P-061418	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW1-S	106MW1S-P2P-061418	REG	E300M	APTIM
					RSK-175	APTIM

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
6/14/2018	9822	KAFB-106MW2-S	106MW2S-P2P-061418	REG	E300M	APTIM
6/14/2018	9822	KAFB-106MW2-S	106MW2S-P2P-061418	REG	RSK-175	APTIM
6/14/2018	KAFB_013	KAFB-106064	106064-P2P-061418	REG	SM2320B	EPLN
6/14/2018	KAFB_013	KAFB-106064	106064-P2P-061418	REG	SM4500PE	EPLN
6/14/2018	KAFB_013	KAFB-106064	106064-P2P-061418	REG	SW6010C	EPLN
6/14/2018	KAFB_013	KAFB-106064	106064-P2P-061418	REG	SW8011	EPLN
6/14/2018	KAFB_013	KAFB-106064	106064-P2P-061418	REG	SW8260B	EPLN
6/14/2018	KAFB_013	KAFB-106064	106064-P2P-061418	REG	SW9056A	EPLN
6/14/2018	KAFB_013	KAFB-106064	106064-P2P-061418-FD	FD	SM2320B	EPLN
6/14/2018	KAFB_013	KAFB-106064	106064-P2P-061418-FD	FD	SM4500PE	EPLN
6/14/2018	KAFB_013	KAFB-106064	106064-P2P-061418-FD	FD	SW6010C	EPLN
6/14/2018	KAFB_013	KAFB-106064	106064-P2P-061418-FD	FD	SW8011	EPLN
6/14/2018	KAFB_013	KAFB-106064	106064-P2P-061418-FD	FD	SW8260B	EPLN
6/14/2018	KAFB_013	KAFB-106064	106064-P2P-061418-FD	FD	SW9056A	EPLN
6/14/2018	KAFB_013	KAFB-106EX1	106EX1-P2P-061418	REG	SM2320B	EPLN
6/14/2018	KAFB_013	KAFB-106EX1	106EX1-P2P-061418	REG	SM4500PE	EPLN
6/14/2018	KAFB_013	KAFB-106EX1	106EX1-P2P-061418	REG	SW6010C	EPLN
6/14/2018	KAFB_013	KAFB-106EX1	106EX1-P2P-061418	REG	SW8011	EPLN
6/14/2018	KAFB_013	KAFB-106EX1	106EX1-P2P-061418	REG	SW8260B	EPLN
6/14/2018	KAFB_013	KAFB-106EX1	106EX1-P2P-061418	REG	SW9056A	EPLN
6/14/2018	KAFB_013	KAFB-106EX2	106EX2-P2P-061418	REG	SM2320B	EPLN
6/14/2018	KAFB_013	KAFB-106EX2	106EX2-P2P-061418	REG	SM4500PE	EPLN
6/14/2018	KAFB_013	KAFB-106EX2	106EX2-P2P-061418	REG	SW6010C	EPLN
6/14/2018	KAFB_013	KAFB-106EX2	106EX2-P2P-061418	REG	SW8011	EPLN
6/14/2018	KAFB_013	KAFB-106EX2	106EX2-P2P-061418	REG	SW8260B	EPLN
6/14/2018	KAFB_013	KAFB-106EX2	106EX2-P2P-061418	REG	SW9056A	EPLN
6/14/2018	KAFB_013	KAFB-106IN1	106IN1-P2P-061418	REG	SM2320B	EPLN
6/14/2018	KAFB_013	KAFB-106IN1	106IN1-P2P-061418	REG	SM4500PE	EPLN
6/14/2018	KAFB_013	KAFB-106IN1	106IN1-P2P-061418	REG	SW6010C	EPLN
6/14/2018	KAFB_013	KAFB-106IN1	106IN1-P2P-061418	REG	SW8011	EPLN
6/14/2018	KAFB_013	KAFB-106IN1	106IN1-P2P-061418	REG	SW8260B	EPLN
6/14/2018	KAFB_013	KAFB-106IN1	106IN1-P2P-061418	REG	SW9056A	EPLN
6/14/2018	KAFB_013	KAFB-106MW1-S	106MW1S-P2P-061418	REG	SM2320B	EPLN
6/14/2018	KAFB_013	KAFB-106MW1-S	106MW1S-P2P-061418	REG	SM4500PE	EPLN
6/14/2018	KAFB_013	KAFB-106MW1-S	106MW1S-P2P-061418	REG	SW6010C	EPLN
6/14/2018	KAFB_013	KAFB-106MW1-S	106MW1S-P2P-061418	REG	SW8011	EPLN
6/14/2018	KAFB_013	KAFB-106MW1-S	106MW1S-P2P-061418	REG	SW8260B	EPLN
6/14/2018	KAFB_013	KAFB-106MW1-S	106MW1S-P2P-061418	REG	SW9056A	EPLN
6/14/2018	KAFB_013	KAFB-106MW2-S	106MW2S-P2P-061418	REG	SM2320B	EPLN
6/14/2018	KAFB_013	KAFB-106MW2-S	106MW2S-P2P-061418	REG	SM4500PE	EPLN
6/14/2018	KAFB_013	KAFB-106MW2-S	106MW2S-P2P-061418	REG	SW6010C	EPLN
6/14/2018	KAFB_013	KAFB-106MW2-S	106MW2S-P2P-061418	REG	SW8011	EPLN
6/14/2018	KAFB_013	KAFB-106MW2-S	106MW2S-P2P-061418	REG	SW8260B	EPLN
6/14/2018	KAFB_013	KAFB-106MW2-S	106MW2S-P2P-061418	REG	SW9056A	EPLN
08/07/2018	160-30041-1	KAFB-106MW1-I	106MW1I-P3P-080718	REG	E300	TASTL
08/07/2018	160-30041-1	KAFB-106MW1-S	106MW1S-P3P-080718	REG	E300	TASTL
08/07/2018	160-30041-1	KAFB-106MW2-I	106MW2I-P3P-080718	REG	E300	TASTL
08/07/2018	160-30041-1	KAFB-106MW2-S	106MW2S-P3P-080718	REG	E300	TASTL
08/07/2018	9827	KAFB-106MW1-I	106MW1I-P3P-080718	REG	E300M	APTIM
08/07/2018	9827	KAFB-106MW1-I	106MW1I-P3P-080718	REG	RSK-175	APTIM
08/07/2018	9827	KAFB-106MW1-S	106MW1S-P3P-080718	REG	E300M	APTIM
08/07/2018	9827	KAFB-106MW1-S	106MW1S-P3P-080718	REG	RSK-175	APTIM
08/07/2018	9827	KAFB-106MW2-I	106MW2I-P3P-080718	REG	E300M	APTIM
08/07/2018	9827	KAFB-106MW2-I	106MW2I-P3P-080718	REG	RSK-175	APTIM
08/07/2018	9827	KAFB-106MW2-S	106MW2S-P3P-080718	REG	E300M	APTIM
08/07/2018	9827	KAFB-106MW2-S	106MW2S-P3P-080718	REG	RSK-175	APTIM

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
08/08/2018	160-30041-1	KAFB-106063	106063-P3P-080818	REG	E300	TASTL
		KAFB-106064	106064-P3P-080818	REG	E300	TASTL
		KAFB-106EX1	106EX1-P3P-080818	REG	E300	TASTL
		KAFB-106EX2	106EX2-P3P-080818	REG	E300	TASTL
			106EX2-P3P-080818-FD	FD	E300	TASTL
	680-156637-1	KAFB-106063	106063-P3P-080818	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
		KAFB-106064	106064-P3P-080818	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
		KAFB-106EX1	106EX1-P3P-080818	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
		KAFB-106EX2	106EX2-P3P-080818	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
			106EX2-P3P-080818-FD	FD	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
	9828	KAFB-106063	106063-P3P-080818	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106064	106064-P3P-080818	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106EX1	106EX1-P3P-080818	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106EX2	106EX2-P3P-080818	REG	E300M	APTIM
					RSK-175	APTIM
			106EX2-P3P-080818-FD	FD	E300M	APTIM
					RSK-175	APTIM
8/15/2018	160-30197-1	KAFB-106MW1-I	106MW1I-P3P-081518	REG	E300	TASTL
		KAFB-106MW1-S	106MW1S-P3P-081518	REG	E300	TASTL
		KAFB-106MW2-I	106MW2I-P3P-081518	REG	E300	TASTL
		KAFB-106MW2-S	106MW2S-P3P-081518	REG	E300	TASTL

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
8/15/2018	680-156725-1	KAFB-106MW1-I	106MW1I-P3P-081518	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
		KAFB-106MW1-S	106MW1S-P3P-081518	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
		KAFB-106MW2-I	106MW2I-P3P-081518	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
		KAFB-106MW2-S	106MW2S-P3P-081518	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
	9829	KAFB-106MW1-I	106MW1I-P3P-081518	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW1-S	106MW1S-P3P-081518	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW2-I	106MW2I-P3P-081518	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW2-S	106MW2S-P3P-081518	REG	E300M	APTIM
					RSK-175	APTIM
8/16/2018	160-30197-1	KAFB-106063	106063-P3P-081618	REG	E300	TASTL
		KAFB-106064	106064-P3P-081618	REG	E300	TASTL
		KAFB-106EX1	106EX1-P3P-081618	REG	E300	TASTL
			106EX1-P3P-081618-FD	FD	E300	TASTL
		KAFB-106EX2	106EX2-P3P-081618	REG	E300	TASTL
	680-156725-1	KAFB-106063	106063-P3P-081618	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
		KAFB-106064	106064-P3P-081618	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
		KAFB-106EX1	106EX1-P3P-081618	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
8/16/2018	680-156725-1	KAFB-106EX1	106EX1-P3P-081618-FD	FD	SM2320B	TASAC
8/16/2018	680-156725-1	KAFB-106EX1	106EX1-P3P-081618-FD	FD	SW9056A	TASAC
8/16/2018	680-156725-1	KAFB-106EX1	106EX1-P3P-081618-FD	FD	SW6010C	TASAV
8/16/2018	680-156725-1	KAFB-106EX1	106EX1-P3P-081618-FD	FD	SW8011	TASAV
8/16/2018	680-156725-1	KAFB-106EX1	106EX1-P3P-081618-FD	FD	SW8260B	TASAV
8/16/2018	680-156725-1	KAFB-106EX1	106EX1-P3P-081618-FD	FD	SW9056A	TASAV
8/16/2018	680-156725-1	KAFB-106EX2	106EX2-P3P-081618	REG	SM2320B	TASAC
8/16/2018	680-156725-1	KAFB-106EX2	106EX2-P3P-081618	REG	SW9056A	TASAC
8/16/2018	680-156725-1	KAFB-106EX2	106EX2-P3P-081618	REG	SW6010C	TASAV
8/16/2018	680-156725-1	KAFB-106EX2	106EX2-P3P-081618	REG	SW8011	TASAV
8/16/2018	680-156725-1	KAFB-106EX2	106EX2-P3P-081618	REG	SW8260B	TASAV
8/16/2018	680-156725-1	KAFB-106EX2	106EX2-P3P-081618	REG	SW9056A	TASAV
8/16/2018	9830	KAFB-106063	106063-P3P-081618	REG	E300M	APTIM
8/16/2018	9830	KAFB-106063	106063-P3P-081618	REG	RSK-175	APTIM
8/16/2018	9830	KAFB-106064	106064-P3P-081618	REG	E300M	APTIM
8/16/2018	9830	KAFB-106064	106064-P3P-081618	REG	RSK-175	APTIM
8/16/2018	9830	KAFB-106EX1	106EX1-P3P-081618	REG	E300M	APTIM
8/16/2018	9830	KAFB-106EX1	106EX1-P3P-081618	REG	RSK-175	APTIM
8/16/2018	9830	KAFB-106EX1	106EX1-P3P-081618-FD	FD	E300M	APTIM
8/16/2018	9830	KAFB-106EX1	106EX1-P3P-081618-FD	FD	RSK-175	APTIM
8/16/2018	9830	KAFB-106EX2	106EX2-P3P-081618	REG	E300M	APTIM
8/16/2018	9830	KAFB-106EX2	106EX2-P3P-081618	REG	RSK-175	APTIM
8/21/2018	0_093PH	KAFB-106MW1-I	106MW1I-P3P-082118	REG	QUANTARRAY	MI
8/21/2018	0_093PH	KAFB-106MW1-S	106MW1S-P3P-082118	REG	QUANTARRAY	MI
8/21/2018	0_093PH	KAFB-106MW2-I	106MW2I-P3P-082118	REG	QUANTARRAY	MI
8/21/2018	0_093PH	KAFB-106MW2-S	106MW2S-P3P-082118	REG	QUANTARRAY	MI
8/21/2018	160-30327-1	KAFB-106MW1-I	106MW1I-P3P-082118	REG	E300	TASTL
8/21/2018	160-30327-1	KAFB-106MW1-I	106MW1I-P3P-082118-FD	FD	E300	TASTL
8/21/2018	160-30327-1	KAFB-106MW1-S	106MW1S-P3P-082118	REG	E300	TASTL
8/21/2018	160-30327-1	KAFB-106MW2-I	106MW2I-P3P-082118	REG	E300	TASTL
8/21/2018	160-30327-1	KAFB-106MW2-S	106MW2S-P3P-082118	REG	E300	TASTL
8/21/2018	680-156910-1	KAFB-106MW1-I	106MW1I-P3P-082118	REG	SM2320B	TASAC
8/21/2018	680-156910-1	KAFB-106MW1-I	106MW1I-P3P-082118	REG	SW9056A	TASAC
8/21/2018	680-156910-1	KAFB-106MW1-I	106MW1I-P3P-082118	REG	SW6010C	TASAV
8/21/2018	680-156910-1	KAFB-106MW1-I	106MW1I-P3P-082118	REG	SW8011	TASAV
8/21/2018	680-156910-1	KAFB-106MW1-I	106MW1I-P3P-082118	REG	SW8260B	TASAV
8/21/2018	680-156910-1	KAFB-106MW1-I	106MW1I-P3P-082118	REG	SW9056A	TASAV
8/21/2018	680-156910-1	KAFB-106MW1-I	106MW1I-P3P-082118-FD	FD	SM2320B	TASAC
8/21/2018	680-156910-1	KAFB-106MW1-I	106MW1I-P3P-082118-FD	FD	SW9056A	TASAC
8/21/2018	680-156910-1	KAFB-106MW1-I	106MW1I-P3P-082118-FD	FD	SW6010C	TASAV
8/21/2018	680-156910-1	KAFB-106MW1-I	106MW1I-P3P-082118-FD	FD	SW8011	TASAV
8/21/2018	680-156910-1	KAFB-106MW1-I	106MW1I-P3P-082118-FD	FD	SW8260B	TASAV
8/21/2018	680-156910-1	KAFB-106MW1-I	106MW1I-P3P-082118-FD	FD	SW9056A	TASAV
8/21/2018	680-156910-1	KAFB-106MW1-S	106MW1S-P3P-082118	REG	SM2320B	TASAC
8/21/2018	680-156910-1	KAFB-106MW1-S	106MW1S-P3P-082118	REG	SW9056A	TASAC
8/21/2018	680-156910-1	KAFB-106MW1-S	106MW1S-P3P-082118	REG	SW6010C	TASAV
8/21/2018	680-156910-1	KAFB-106MW1-S	106MW1S-P3P-082118	REG	SW8011	TASAV
8/21/2018	680-156910-1	KAFB-106MW1-S	106MW1S-P3P-082118	REG	SW8260B	TASAV
8/21/2018	680-156910-1	KAFB-106MW1-S	106MW1S-P3P-082118	REG	SW9056A	TASAV

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
8/21/2018	680-156910-1	KAFB-106MW2-I	106MW2I-P3P-082118	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
		KAFB-106MW2-S	106MW2S-P3P-082118	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
	9832	KAFB-106MW1-I	106MW1I-P3P-082118	REG	E300M	APTIM
					RSK-175	APTIM
			106MW1I-P3P-082118-FD	FD	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW1-S	106MW1S-P3P-082118	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW2-I	106MW2I-P3P-082118	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW2-S	106MW2S-P3P-082118	REG	E300M	APTIM
					RSK-175	APTIM
8/22/2018	0_093PH	KAFB-106063	106063-P3P-082218	REG	QUANTARRAY	MI
		KAFB-106064	106064-P3P-082218	REG	QUANTARRAY	MI
		KAFB-106EX1	106EX1-P3P-082218	REG	QUANTARRAY	MI
		KAFB-106EX2	106EX2-P3P-082218	REG	QUANTARRAY	MI
	160-30327-1	KAFB-106063	106063-P3P-082218	REG	E300	TASTL
		KAFB-106064	106064-P3P-082218	REG	E300	TASTL
		KAFB-106EX1	106EX1-P3P-082218	REG	E300	TASTL
		KAFB-106EX2	106EX2-P3P-082218	REG	E300	TASTL
	680-156910-1	KAFB-106063	106063-P3P-082218	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
		KAFB-106064	106064-P3P-082218	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
		KAFB-106EX1	106EX1-P3P-082218	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
		KAFB-106EX2	106EX2-P3P-082218	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
8/22/2018	680-156910-1	KAFB-106EX2	106EX2-P3P-082218	REG	SW9056A	TASAV
8/22/2018	9833	KAFB-106063	106063-P3P-082218	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106064	106064-P3P-082218	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106EX1	106EX1-P3P-082218	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106EX2	106EX2-P3P-082218	REG	E300M	APTIM
					RSK-175	APTIM
08/28/2018	160-30445-1	KAFB-106MW1-I	106MW1I-P3P-082818	REG	E300	TASTL
		KAFB-106MW1-S	106MW1S-P3P-082818	REG	E300	TASTL
		KAFB-106MW2-I	106MW2I-P3P-082818	REG	E300	TASTL
		KAFB-106MW2-S	106MW2S-P3P-082818	REG	E300	TASTL
	680-157217-1	KAFB-106MW1-I	106MW1I-P3P-082818	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
		KAFB-106MW1-S	106MW1S-P3P-082818	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
		KAFB-106MW2-I	106MW2I-P3P-082818	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
		KAFB-106MW2-S	106MW2S-P3P-082818	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
	9834	KAFB-106MW1-I	106MW1I-P3P-082818	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW1-S	106MW1S-P3P-082818	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW2-I	106MW2I-P3P-082818	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW2-S	106MW2S-P3P-082818	REG	E300M	APTIM
					RSK-175	APTIM
8/29/2018	160-30445-1	KAFB-106063	106063-P3P-082918	REG	E300	TASTL
			106063-P3P-082918-FD	FD	E300	TASTL
		KAFB-106064	106064-P3P-082918	REG	E300	TASTL
		KAFB-106EX1	106EX1-P3P-082918	REG	E300	TASTL
		KAFB-106EX2	106EX2-P3P-082918	REG	E300	TASTL

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
	680-157273-1	KAFB-106063	106063-P3P-082918	REG	SM2320B	TASAC
	680-157273-1	KAFB-106063	106063-P3P-082918	REG	SW9056A	TASAC
	680-157273-1	KAFB-106063	106063-P3P-082918	REG	SW6010C	TASAV
	680-157273-1	KAFB-106063	106063-P3P-082918	REG	SW8011	TASAV
8/29/2018	680-157273-1	KAFB-106063	106063-P3P-082918	REG	SW8260B	TASAV
8/29/2018	680-157273-1	KAFB-106063	106063-P3P-082918	REG	SW9056A	TASAV
8/29/2018	680-157273-1	KAFB-106063	106063-P3P-082918-FD	FD	SM2320B	TASAC
8/29/2018	680-157273-1	KAFB-106063	106063-P3P-082918-FD	FD	SW9056A	TASAC
8/29/2018	680-157273-1	KAFB-106063	106063-P3P-082918-FD	FD	SW6010C	TASAV
8/29/2018	680-157273-1	KAFB-106063	106063-P3P-082918-FD	FD	SW8011	TASAV
8/29/2018	680-157273-1	KAFB-106063	106063-P3P-082918-FD	FD	SW8260B	TASAV
8/29/2018	680-157273-1	KAFB-106063	106063-P3P-082918-FD	FD	SW9056A	TASAV
8/29/2018	680-157273-1	KAFB-106064	106064-P3P-082918	REG	SM2320B	TASAC
8/29/2018	680-157273-1	KAFB-106064	106064-P3P-082918	REG	SW9056A	TASAC
8/29/2018	680-157273-1	KAFB-106064	106064-P3P-082918	REG	SW6010C	TASAV
8/29/2018	680-157273-1	KAFB-106064	106064-P3P-082918	REG	SW8011	TASAV
8/29/2018	680-157273-1	KAFB-106064	106064-P3P-082918	REG	SW8260B	TASAV
8/29/2018	680-157273-1	KAFB-106064	106064-P3P-082918	REG	SW9056A	TASAV
8/29/2018	680-157273-1	KAFB-106EX1	106EX1-P3P-082918	REG	SM2320B	TASAC
8/29/2018	680-157273-1	KAFB-106EX1	106EX1-P3P-082918	REG	SW9056A	TASAC
8/29/2018	680-157273-1	KAFB-106EX1	106EX1-P3P-082918	REG	SW6010C	TASAV
8/29/2018	680-157273-1	KAFB-106EX1	106EX1-P3P-082918	REG	SW8011	TASAV
8/29/2018	680-157273-1	KAFB-106EX1	106EX1-P3P-082918	REG	SW8260B	TASAV
8/29/2018	680-157273-1	KAFB-106EX1	106EX1-P3P-082918	REG	SW9056A	TASAV
8/29/2018	680-157273-1	KAFB-106EX2	106EX2-P3P-082918	REG	SM2320B	TASAC
8/29/2018	680-157273-1	KAFB-106EX2	106EX2-P3P-082918	REG	SW9056A	TASAC
8/29/2018	680-157273-1	KAFB-106EX2	106EX2-P3P-082918	REG	SW6010C	TASAV
8/29/2018	680-157273-1	KAFB-106EX2	106EX2-P3P-082918	REG	SW8011	TASAV
8/29/2018	680-157273-1	KAFB-106EX2	106EX2-P3P-082918	REG	SW8260B	TASAV
8/29/2018	680-157273-1	KAFB-106EX2	106EX2-P3P-082918	REG	SW9056A	TASAV
8/29/2018	9835	KAFB-106063	106063-P3P-082918	REG	E300M	APTIM
8/29/2018	9835	KAFB-106063	106063-P3P-082918	REG	RSK-175	APTIM
8/29/2018	9835	KAFB-106063	106063-P3P-082918-FD	FD	E300M	APTIM
8/29/2018	9835	KAFB-106063	106063-P3P-082918-FD	FD	RSK-175	APTIM
8/29/2018	9835	KAFB-106064	106064-P3P-082918	REG	E300M	APTIM
8/29/2018	9835	KAFB-106064	106064-P3P-082918	REG	RSK-175	APTIM
8/29/2018	9835	KAFB-106EX1	106EX1-P3P-082918	REG	E300M	APTIM
8/29/2018	9835	KAFB-106EX1	106EX1-P3P-082918	REG	RSK-175	APTIM
8/29/2018	9835	KAFB-106EX2	106EX2-P3P-082918	REG	E300M	APTIM
8/29/2018	9835	KAFB-106EX2	106EX2-P3P-082918	REG	RSK-175	APTIM
9/11/2018	160-30672-1	KAFB-106MW1-I	106MW1I-P3P-091118	REG	E300	TASTL
9/11/2018	160-30672-1	KAFB-106MW1-S	106MW1S-P3P-091118	REG	E300	TASTL
9/11/2018	160-30672-1	KAFB-106MW2-I	106MW2I-P3P-091118	REG	E300	TASTL
9/11/2018	160-30672-1	KAFB-106MW2-S	106MW2S-P3P-091118	REG	E300	TASTL
9/11/2018	680-157805-1	KAFB-106MW1-I	106MW1I-P3P-091118	REG	SM2320B	TASAC
9/11/2018	680-157805-1	KAFB-106MW1-I	106MW1I-P3P-091118	REG	SW9056A	TASAC
9/11/2018	680-157805-1	KAFB-106MW1-I	106MW1I-P3P-091118	REG	SW6010C	TASAV
9/11/2018	680-157805-1	KAFB-106MW1-I	106MW1I-P3P-091118	REG	SW8011	TASAV
9/11/2018	680-157805-1	KAFB-106MW1-I	106MW1I-P3P-091118	REG	SW8260B	TASAV
9/11/2018	680-157805-1	KAFB-106MW1-I	106MW1I-P3P-091118	REG	SW9056A	TASAV
9/11/2018	680-157805-1	KAFB-106MW1-S	106MW1S-P3P-091118	REG	SM2320B	TASAC
9/11/2018	680-157805-1	KAFB-106MW1-S	106MW1S-P3P-091118	REG	SW9056A	TASAC
9/11/2018	680-157805-1	KAFB-106MW1-S	106MW1S-P3P-091118	REG	SW6010C	TASAV
9/11/2018	680-157805-1	KAFB-106MW1-S	106MW1S-P3P-091118	REG	SW8011	TASAV
9/11/2018	680-157805-1	KAFB-106MW1-S	106MW1S-P3P-091118	REG	SW8260B	TASAV
9/11/2018	680-157805-1	KAFB-106MW1-S	106MW1S-P3P-091118	REG	SW9056A	TASAV

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
		KAFB-106MW2-I	106MW2I-P3P-091118	REG	SM2320B	TASAC
		KAFB-106MW2-I	106MW2I-P3P-091118	REG	SW9056A	TASAC
		KAFB-106MW2-I	106MW2I-P3P-091118	REG	SW6010C	TASAV
		KAFB-106MW2-I	106MW2I-P3P-091118	REG	SW8011	TASAV
		KAFB-106MW2-I	106MW2I-P3P-091118	REG	SW8260B	TASAV
		KAFB-106MW2-I	106MW2I-P3P-091118	REG	SW9056A	TASAV
9/11/2018	680-157805-1	KAFB-106MW2-S	106MW2S-P3P-091118	REG	SM2320B	TASAC
9/11/2018	680-157805-1	KAFB-106MW2-S	106MW2S-P3P-091118	REG	SW9056A	TASAC
9/11/2018	680-157805-1	KAFB-106MW2-S	106MW2S-P3P-091118	REG	SW6010C	TASAV
9/11/2018	680-157805-1	KAFB-106MW2-S	106MW2S-P3P-091118	REG	SW8011	TASAV
9/11/2018	680-157805-1	KAFB-106MW2-S	106MW2S-P3P-091118	REG	SW8260B	TASAV
9/11/2018	680-157805-1	KAFB-106MW2-S	106MW2S-P3P-091118	REG	SW9056A	TASAV
9/11/2018	9839	KAFB-106MW1-I	106MW1I-P3P-091118	REG	E300M	APTIM
9/11/2018	9839	KAFB-106MW1-I	106MW1I-P3P-091118	REG	RSK-175	APTIM
9/11/2018	9839	KAFB-106MW1-S	106MW1S-P3P-091118	REG	E300M	APTIM
9/11/2018	9839	KAFB-106MW1-S	106MW1S-P3P-091118	REG	RSK-175	APTIM
9/11/2018	9839	KAFB-106MW2-I	106MW2I-P3P-091118	REG	E300M	APTIM
9/11/2018	9839	KAFB-106MW2-I	106MW2I-P3P-091118	REG	RSK-175	APTIM
9/11/2018	9839	KAFB-106MW2-S	106MW2S-P3P-091118	REG	E300M	APTIM
9/11/2018	9839	KAFB-106MW2-S	106MW2S-P3P-091118	REG	RSK-175	APTIM
09/12/2018	160-30672-1	KAFB-106063	106063-P3P-091218	REG	E300	TASTL
09/12/2018	160-30672-1	KAFB-106064	106064-P3P-091218	REG	E300	TASTL
09/12/2018	160-30672-1	KAFB-106064	106064-P3P-091218-FD	FD	E300	TASTL
09/12/2018	160-30672-1	KAFB-106EX1	106EX1-P3P-091218	REG	E300	TASTL
09/12/2018	160-30672-1	KAFB-106EX2	106EX2-P3P-091218	REG	E300	TASTL
09/12/2018	680-157881-1	KAFB-106063	106063-P3P-091218	REG	SM2320B	TASAC
09/12/2018	680-157881-1	KAFB-106063	106063-P3P-091218	REG	SW9056A	TASAC
09/12/2018	680-157881-1	KAFB-106063	106063-P3P-091218	REG	SW6010C	TASAV
09/12/2018	680-157881-1	KAFB-106063	106063-P3P-091218	REG	SW8011	TASAV
09/12/2018	680-157881-1	KAFB-106063	106063-P3P-091218	REG	SW8260B	TASAV
09/12/2018	680-157881-1	KAFB-106063	106063-P3P-091218	REG	SW9056A	TASAV
09/12/2018	680-157881-1	KAFB-106064	106064-P3P-091218	REG	SM2320B	TASAC
09/12/2018	680-157881-1	KAFB-106064	106064-P3P-091218	REG	SW9056A	TASAC
09/12/2018	680-157881-1	KAFB-106064	106064-P3P-091218	REG	SW6010C	TASAV
09/12/2018	680-157881-1	KAFB-106064	106064-P3P-091218	REG	SW8011	TASAV
09/12/2018	680-157881-1	KAFB-106064	106064-P3P-091218	REG	SW8260B	TASAV
09/12/2018	680-157881-1	KAFB-106064	106064-P3P-091218	REG	SW9056A	TASAV
09/12/2018	680-157881-1	KAFB-106064	106064-P3P-091218-FD	FD	SM2320B	TASAC
09/12/2018	680-157881-1	KAFB-106064	106064-P3P-091218-FD	FD	SW9056A	TASAC
09/12/2018	680-157881-1	KAFB-106064	106064-P3P-091218-FD	FD	SW6010C	TASAV
09/12/2018	680-157881-1	KAFB-106064	106064-P3P-091218-FD	FD	SW8011	TASAV
09/12/2018	680-157881-1	KAFB-106064	106064-P3P-091218-FD	FD	SW8260B	TASAV
09/12/2018	680-157881-1	KAFB-106064	106064-P3P-091218-FD	FD	SW9056A	TASAV
09/12/2018	680-157881-1	KAFB-106EX1	106EX1-P3P-091218	REG	SM2320B	TASAC
09/12/2018	680-157881-1	KAFB-106EX1	106EX1-P3P-091218	REG	SW9056A	TASAC
09/12/2018	680-157881-1	KAFB-106EX1	106EX1-P3P-091218	REG	SW6010C	TASAV
09/12/2018	680-157881-1	KAFB-106EX1	106EX1-P3P-091218	REG	SW8011	TASAV
09/12/2018	680-157881-1	KAFB-106EX1	106EX1-P3P-091218	REG	SW8260B	TASAV
09/12/2018	680-157881-1	KAFB-106EX1	106EX1-P3P-091218	REG	SW9056A	TASAV
09/12/2018	680-157881-1	KAFB-106EX2	106EX2-P3P-091218	REG	SM2320B	TASAC
09/12/2018	680-157881-1	KAFB-106EX2	106EX2-P3P-091218	REG	SW9056A	TASAC
09/12/2018	680-157881-1	KAFB-106EX2	106EX2-P3P-091218	REG	SW6010C	TASAV
09/12/2018	680-157881-1	KAFB-106EX2	106EX2-P3P-091218	REG	SW8011	TASAV
09/12/2018	680-157881-1	KAFB-106EX2	106EX2-P3P-091218	REG	SW8260B	TASAV
09/12/2018	680-157881-1	KAFB-106EX2	106EX2-P3P-091218	REG	SW9056A	TASAV

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
	9840	KAFB-106063	106063-P3P-091218	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106064	106064-P3P-091218	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106EX1	106EX1-P3P-091218	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106EX2	106EX2-P3P-091218	REG	E300M	APTIM
					RSK-175	APTIM
10/02/2018	160-31078-1	KAFB-106MW2-I	106MW2I-P3P-100218	REG	E300	TASTL
		KAFB-106MW2-S	106MW2S-P3P-100218	REG	E300	TASTL
	680-158674-1	KAFB-106MW2-I	106MW2I-P3P-100218	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
		KAFB-106MW2-S	106MW2S-P3P-100218	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
	9841	KAFB-106MW2-I	106MW2I-P3P-100218	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW2-S	106MW2S-P3P-100218	REG	E300M	APTIM
					RSK-175	APTIM
10/03/2018	160-31078-1	KAFB-106MW1-I	106MW1I-P3P-100318	REG	E300	TASTL
		KAFB-106MW1-S	106MW1S-P3P-100318	REG	E300	TASTL
			106MW1S-P3P-100318-FD	FD	E300	TASTL
	680-158738-1	KAFB-106MW1-I	106MW1I-P3P-100318	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
		KAFB-106MW1-S	106MW1S-P3P-100318	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
			106MW1S-P3P-100318-FD	FD	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
	9841	KAFB-106MW1-I	106MW1I-P3P-100318	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW1-S	106MW1S-P3P-100318	REG	E300M	APTIM
					RSK-175	APTIM
			106MW1S-P3P-100318-FD	FD	E300M	APTIM
					RSK-175	APTIM

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
10/4/2018	160-31078-1	KAFB-106063	106063-P3P-100418	REG	E300	TASTL
10/4/2018	160-31078-1	KAFB-106064	106064-P3P-100418	REG	E300	TASTL
		KAFB-106EX1	106EX1-P3P-100418	REG	E300	TASTL
		KAFB-106EX2	106EX2-P3P-100418	REG	E300	TASTL
		KAFB-106IN1	106IN1-P3P-100418	REG	E300	TASTL
10/4/2018	680-158847-1	KAFB-106063	106063-P3P-100418	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
		KAFB-106064	106064-P3P-100418	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
		KAFB-106EX1	106EX1-P3P-100418	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
		KAFB-106EX2	106EX2-P3P-100418	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
		KAFB-106IN1	106IN1-P3P-100418	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
	9842	KAFB-106063	106063-P3P-100418	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106064	106064-P3P-100418	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106EX1	106EX1-P3P-100418	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106EX2	106EX2-P3P-100418	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106IN1	106IN1-P3P-100418	REG	E300M	APTIM
					RSK-175	APTIM
11/14/2018	160-31863-1	KAFB-106064	106064-P3P-111418	REG	E300	TASTL
		KAFB-106MW1-I	106MW1I-P3P-111418	REG	E300	TASTL
		KAFB-106MW1-S	106MW1S-P3P-111418	REG	E300	TASTL
	50_057	KAFB-106064	106064-P3P-111418	REG	QUANTARRAY	MI
		KAFB-106MW1-I	106MW1I-P3P-111418	REG	QUANTARRAY	MI
		KAFB-106MW1-S	106MW1S-P3P-111418	REG	QUANTARRAY	MI

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
	680-160761-1	KAFB-106064	106064-P3P-111418	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
		KAFB-106MW1-I	106MW1I-P3P-111418	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
11/14/2018	680-160761-1	KAFB-106MW1-I	106MW1I-P3P-111418	REG	SW8260B	TASAV
					SW9056A	TASAV
		KAFB-106MW1-S	106MW1S-P3P-111418	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
	9843	KAFB-106064	106064-P3P-111418	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW1-I	106MW1I-P3P-111418	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW1-S	106MW1S-P3P-111418	REG	E300M	APTIM
					RSK-175	APTIM
11/15/2018	160-31892-1	KAFB-106063	106063-P3P-111518	REG	E300	TASTL
		KAFB-106MW2-I	106MW2I-P3P-111518	REG	E300	TASTL
			106MW2I-P3P-111518-FD	FD	E300	TASTL
		KAFB-106MW2-S	106MW2S-P3P-111518	REG	E300	TASTL
	50_057	KAFB-106063	106063-P3P-111518	REG	QUANTARRAY	MI
		KAFB-106MW2-I	106MW2I-P3P-111518	REG	QUANTARRAY	MI
		KAFB-106MW2-S	106MW2S-P3P-111518	REG	QUANTARRAY	MI
	680-160831-1	KAFB-106063	106063-P3P-111518	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
		KAFB-106MW2-I	106MW2I-P3P-111518	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
			106MW2I-P3P-111518-FD	FD	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
		KAFB-106MW2-S	106MW2S-P3P-111518	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
11/15/2018	680-160831-1	KAFB-106MW2-S	106MW2S-P3P-111518	REG	SW9056A	TASAV
	9844	KAFB-106063	106063-P3P-111518	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW2-I	106MW2I-P3P-111518	REG	E300M	APTIM
					RSK-175	APTIM
			106MW2I-P3P-111518-FD	FD	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW2-S	106MW2S-P3P-111518	REG	E300M	APTIM
					RSK-175	APTIM
11/19/2018	160-31946-1	KAFB-106EX1	106EX1-P3P-111918	REG	E300	TASTL
		KAFB-106EX2	106EX2-P3P-111918	REG	E300	TASTL
		KAFB-106IN1	106IN1-P3P-111918	REG	E300	TASTL
	50_057	KAFB-106EX1	106EX1-P3P-111918	REG	QUANTARRAY	MI
		KAFB-106EX2	106EX2-P3P-111918	REG	QUANTARRAY	MI
		KAFB-106IN1	106IN1-P3P-111918	REG	QUANTARRAY	MI
	680-160953-1	KAFB-106EX1	106EX1-P3P-111918	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
		KAFB-106EX2	106EX2-P3P-111918	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
		KAFB-106IN1	106IN1-P3P-111918	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
	9845	KAFB-106EX1	106EX1-P3P-111918	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106EX2	106EX2-P3P-111918	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106IN1	106IN1-P3P-111918	REG	E300M	APTIM
					RSK-175	APTIM
1/16/2019	160-32669-1	KAFB-106064	106064-P4P-011619	REG	E300	TASTL
		KAFB-106MW1-I	106MW1I-P4P-011619	REG	E300	TASTL
		KAFB-106MW1-S	106MW1S-P4P-011619	REG	E300	TASTL
	68_038A	KAFB-106064	106064-P4P-011619-FD	FD	QUANTARRAY	MI
		KAFB-106MW1-I	106MW1I-P4P-011619	REG	QUANTARRAY	MI
		KAFB-106MW1-S	106MW1S-P4P-011619	REG	QUANTARRAY	MI
	680-163342-1	KAFB-106064	106064-P4P-	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
1/16/2019	680-163342-1	KAFB-106064	011619	REG	SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
			106064-P4P-011619-FD	FD	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
1/16/2019	680-163342-1	KAFB-106MW1-I	106MW1I-P4P-011619	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
		KAFB-106MW1-S	106MW1S-P4P-011619	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
	9848	KAFB-106064	106064-P4P-011619	REG	E300M	APTIM
					RSK-175	APTIM
			106064-P4P-011619-FD	FD	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW1-I	106MW1I-P4P-011619	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW1-S	106MW1S-P4P-011619	REG	E300M	APTIM
					RSK-175	APTIM
1/17/2019	160-32669-1	KAFB-106063	106063-P4P-011719	REG	E300	TASTL
		KAFB-106MW2-I	106MW2I-P4P-011719	REG	E300	TASTL
		KAFB-106MW2-S	106MW2S-P4P-011719	REG	E300	TASTL
	68_038A	KAFB-106063	106063-P4P-011719	REG	QUANTARRAY	MI
		KAFB-106MW2-I	106MW2I-P4P-011719	REG	QUANTARRAY	MI
		KAFB-106MW2-S	106MW2S-P4P-011719	REG	QUANTARRAY	MI
	680-163418-1	KAFB-106063	106063-P4P-011719	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
		KAFB-106MW2-I	106MW2I-P4P-011719	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
		KAFB-106MW2-S	106MW2S-P4P-0111719	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV

Appendix I-1 - Table 1. Summary of Samples Collected, Sample Date, Sample Location, Analysis Method, and Sample Delivery Group

Sample Date	SDG	Location	Sample ID	Sample Type	Analytic Method	Lab
1/17/2019	9849	KAFB-106063	106063-P4P-011719	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW2-I	106MW2I-P4P-011719	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106MW2-S	106MW2S-P4P-011719	REG	E300M	APTIM
					RSK-175	APTIM
1/21/2019	160-32669-1	KAFB-106EX1	106EX1-P4P-012119	REG	E300	TASTL
		KAFB-106EX2	106EX2-P4P-012119	REG	E300	TASTL
		KAFB-106IN1	106IN1-P4P-012119	REG	E300	TASTL
1/21/2019	68_038A	KAFB-106EX1	106EX1-P4P-012119	REG	QUANTARRAY	MI
		KAFB-106EX2	106EX2-P4P-012119	REG	QUANTARRAY	MI
		KAFB-106IN1	106IN1-P4P-012119	REG	QUANTARRAY	MI
	680-163514-1	KAFB-106EX1	106EX1-P4P-012119	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
		KAFB-106EX2	106EX2-P4P-012119	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
		KAFB-106IN1	106IN1-P4P-012119	REG	SM2320B	TASAC
					SW9056A	TASAC
					SW6010C	TASAV
					SW8011	TASAV
					SW8260B	TASAV
					SW9056A	TASAV
	9850	KAFB-106EX1	106EX1-P4P-012119	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106EX2	106EX2-P4P-012119	REG	E300M	APTIM
					RSK-175	APTIM
		KAFB-106IN1	106IN1-P4P-012119	REG	E300M	APTIM
					RSK-175	APTIM

Notes:
REG : Regular
SDG: Sample Delivery Group
CHL: Crawford Hydrology Lab
EPLN: Empirical Laboratories
MI: Microbial Insights
TASTL: Test America in Earth City
TASAV: Test America in Savannah
TASAC: Test America in West Sacramento
USGS: U.S Geological Survey

Appendix I-1 – Table 2. Data Qualification Flags and Reason Codes

Data Qualifier Definitions for Organic Data Review

Qualifier	Definition
	No Qualifier indicates that the data are acceptable both qualitatively and quantitatively.
U	The analyte was analyzed for but was not detected above the reported limit of quantitation.
J	The analyte was analyzed for and was positively identified, but the reported numerical value may not be consistent with the amount actually present in the environmental sample. Results are estimated, although the data are considered usable and may be used as appropriate to meet project objectives. Results are qualitatively acceptable and quantitatively uncertain.
J-	The analyte was positively identified; the associated numerical value is its approximate concentration with a low bias in the sample.
J+	The analyte was positively identified; the associated numerical value is its approximate concentration with a high bias in the sample.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified," and the associated value represents its approximate concentration.
UJ	The analyte was not detected above the reported limit of quantitation. However, the reported limit of quantitation is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The analyte was analyzed for, but the presence <u>or</u> absence of the analyte has not been verified. Re-sampling and re-analysis may be necessary to confirm or deny the presence of the analyte. Results are rejected, and data are <u>unusable</u> for any purposes.

Data Qualifier Definitions For Inorganic Data Review

Qualifier	Definition
	No Qualifier indicates that the data are acceptable both qualitatively and quantitatively.
U	The analyte was analyzed for but was not detected above the level of the reported value. The reported value is the limit of quantitation for water and soil for all the analytes except cyanide and mercury. For cyanide and mercury, the reported value is the contract-required detection limit.
J	The analyte was analyzed for and was positively identified, but the reported numerical value may not be consistent with the amount actually present in the environmental sample. Results are estimated, although the data are considered usable and may be used as appropriate to meet project objectives. Results are qualitatively acceptable and quantitatively uncertain.
J-	The analyte was positively identified; the associated numerical value is its approximate concentration with a low bias in the sample.
J+	The analyte was positively identified; the associated numerical value is its approximate concentration with a high bias in the sample.
UJ	The analyte was analyzed for but was not detected above the reported value. The reported value may not accurately or precisely represent the sample limit of quantitation.
R	The analyte was analyzed for, but the presence <u>or</u> absence of the analyte has not been verified. Re-sampling and re-analysis may be necessary to confirm or deny the presence of the analyte. Results are rejected, and data are <u>unusable</u> for any purposes.

Appendix I-1 – Table 2. Data Qualification Flags and Reason Codes (concluded)

Reason Codes for Data Review and Validation

Reason Code	Description
A	Serial dilution outside criteria (Level IV).
B1	Method blank contaminants above reporting limit.
B2	Calibration blank contaminants above reporting limit.
B2, Bias Flag "-"	Calibration blank indicates negative interference; false negatives may be present.
C	Calibration outside control limits.
D	Sample results precision between primary and secondary columns outside control limit.
D1	Sample duplicate RPD outside control limit.
D2	Matrix duplicate RPD outside control limit.
D3	Laboratory control sample duplicate RPD outside control limit.
E	The sample results exceed the linear calibration range of the instrument.
F	Hydrocarbon pattern does not match hydrocarbon pattern in the standard.
G1	Initial calibration relative standard deviation outside control limit.
G2	Initial continuing calibration RRF outside control limit.
G3	Continuing calibration RRF outside control limit.
H	Holding time exceeded.
I	Internal standard recovery outside control limit.
K1	Equipment rinsate contamination.
K2	Ambient blank contamination.
K3	Trip blank contamination.
L	LCS outside control limits.
M	MS outside control limits.
O	Interference check sample outside acceptance criteria.
P	Analyte qualified based on the professional judgment of the reviewer.
S	Surrogate recovery outside control limit.
T	Temperature outside acceptance criteria.
Tr	Value reported detected between the detection limit and LOQ.
W	Pesticide breakdown outside criteria (Level IV).
X	Raised reporting limit due to matrix interference or high analyte concentration.
Y	Analyte was not confirmed by a second column.

Notes:
LCS laboratory control sample.
LOQ limit of quantitation.
MS matrix spike.
RPD relative percent difference.
RRF relative response factor.

Appendix I-1 - Table 3. Qualified Data Summary (Field QC Samples)

Sample	Sample Type	Sample Date	Analyte	SDG	Result	LOQ	Units	Qualifier
Reason Code C	**EPA Method SW8260B**							
TB-091917	TB	09/19/2017	2-BUTANONE	KAFB_003	5	10.0	µg/L	UJ
TB-091917	TB	09/19/2017	2-HEXANONE	KAFB_003	2.5	5.00	µg/L	UJ
TB-091917	TB	09/19/2017	4-METHYL-2-PENTANONE	KAFB_003	2.5	5.00	µg/L	UJ
Reason Code C, Tr	**EPA Method SW8260B**							
TB-111617	TB	11/16/2017	ACETONE	KAFB_005	4.17	10.0	µg/L	J-

Notes:

Please see Table 2 for definitions of qualifiers and reason codes.

µg/L - micrograms per liter.

EPA - Unites States Environmental Protection Agency.

LOQ - limit of quantitation.

QC - quality control.

SDG - sample delivery group.

TB - trip blank.

Appendix I-1 - Table 4. Detected Trip Blank Results and Associated Sample Results

SDG	Method	Analyte	Sample Date	Sample Type	Field Sample ID	Result	LOQ	Unit	ValQual	Reason
KAFB_002	SW8260B	ACETONE	08/16/2017	TB	TB-081617	2.53	10.0	µg/L		
		ACETONE	08/16/2017	REG	106064-BL-081617	25	25.0	µg/L	UJ	CK3
KAFB_003	SW8260B	CARBON DISULFIDE	09/18/2017	TB	TB-091817	0.279	1.00	µg/L		
		CARBON DISULFIDE	09/18/2017	REG	106MW1I-BL-091817	ND	2.00	µg/L	U	
		CARBON DISULFIDE	09/19/2017	TB	TB-091917	0.256	1.00	µg/L		
		CARBON DISULFIDE	09/19/2017	REG	106MW1S-BL-091917	ND	200	µg/L	UJ	S
		CARBON DISULFIDE	09/19/2017	FD	106MW2I-BL-FD-091917	ND	2.00	µg/L	U	
		CARBON DISULFIDE	09/26/2017	TB	TB-092617	0.289	1.00	µg/L		
		CARBON DISULFIDE	09/26/2017	REG	106EX1-BL-092617	27.2	100	µg/L	J	Tr
KAFB_004	SW8260B	ACETONE	10/25/2017	TB	TB-102517	3.27	10.0	µg/L	J	Tr
		ACETONE	10/25/2017	REG	106MW2I-P1R-102517	724	500	µg/L		
KAFB_005	SW8260B	ACETONE	11/16/2017	TB	TB-111617	4.17	10.0	µg/L	J-	CTr
		ACETONE	11/16/2017	REG	106MW2S-P1P-111617	272	1000	µg/L	J-	Tr
		ACETONE	11/16/2017	FD	106IN1-P1P-111617-FD	451	1000	µg/L	J-	CTr

Notes:

Please see Table 2 for definitions of qualifiers and reason codes

FD - field duplicate.

ID - identification.

KAFB - Kirtland Air Force Base.

LOQ - limit of quantitation.

ND - not detected.

REG - regular/parent sample.

TB - trip blank.

Appendix I-1 - Table 5 Field Duplicate Summary

Test Group	Parameter	Units	Result	VQ	Result	VQ	Relative Percent Difference
		Location Code	KAFB-106063				
		Sample Number	106063-P3P-082918		106063-P3P-082918-FD		
		Sample Date	08/29/2018		08/29/2018		
		Sample Purpose	REG		FD		
		Sample Type	GW		GW		
		Depth	--		--		
EDB	1,2-DIBROMOETHANE	µg/L	6.4		6.1		4.80
REDUCED GASES	ACETYLENE	µg/L	10	U	10	U	NC
	ETHANE	µg/L	4	U	4	U	NC
	ETHYLENE	µg/L	6.4		8.7		30.46
	METHANE	µg/L	15.5		21.7		33.33
	PROPANE	µg/L	6	U	6	U	NC
GENERAL CHEMISTRY	ACETIC ACID	MG/L	4.8		4.4		8.70
	ALKALINITY	MG/L	400		390		2.53
	BROMIDE	MG/L	0.98		0.87		11.89
	BUTYRIC ACID	MG/L	1	U	1	U	NC
	CHLORIDE	MG/L	52		52		0.00
	FORMIC ACID	MG/L	1	U	1	U	NC
	IODIDE	MG/L	5.3		5		5.83
	LACTIC ACID	MG/L	0.8	J	0.6	J	NC
	NITROGEN, NITRATE-NITRITE	MG/L	0.05	U	0.05	U	NC
	ORTHOPHOSPHATE	MG/L	0.15	U	0.15	U	NC
	PROPIONIC ACID	MG/L	1	U	1	U	NC
	PYRUVIC ACID	MG/L	1	U	1	U	NC
	SULFATE	MG/L	1	U	1	U	NC
	VALERIC ACID	MG/L	1	U	1	U	NC
METALS, DISS	IRON	µg/L	3800		3800		0.00
	MANGANESE	µg/L	4900		4900		0.00
VOLATILES	1,1,2-TRICHLOROETHANE	µg/L	0.5	U	50	U	NC
	1,2,4-TRIMETHYLBENZENE	µg/L	310		330		6.25
	1,2-DIBROMOETHANE	µg/L	8.4	J+	100	U	NC
	1,3,5-TRIMETHYLBENZENE	µg/L	130	J+	140		7.41
	2-BUTANONE	µg/L	6.2	J+	1000	U	NC
	2-CHLOROTOLUENE	µg/L	0.5	U	50	U	NC
	2-HEXANONE	µg/L	38	J+	500	U	NC
	4-METHYL-2-PENTANONE	µg/L	63	J+	500	U	NC
	ACETONE	µg/L	34	J+	1000	U	NC
	BENZENE	µg/L	3000		3100		3.28
	CARBON DISULFIDE	µg/L	2	U	200	U	NC
	CHLOROMETHANE	µg/L	1	U	100	U	NC
	ISOPROPYLBENZENE	µg/L	160	J+	160		0.00
	METHYL TERT-BUTYL ETHER	µg/L	0.48	J+	50	U	NC
	METHYLENE CHLORIDE	µg/L	5	U	270	J	NC
	NAPHTHALENE	µg/L	140	J+	500	U	NC
	N-BUTYLBENZENE	µg/L	20	J+	100	U	NC
	N-PROPYLBENZENE	µg/L	110	J+	120		8.70

Appendix I-1 - Table 5 Field Duplicate Summary

VOLATILES	P-ISOPROPYLTOLUENE	µg/L	160	J+	140		13.33
	SEC-BUTYLBENZENE	µg/L	18	J+	100	U	NC
	TERT-BUTYLBENZENE	µg/L	1.5	J+	100	U	NC
	TOLUENE	µg/L	6700		6800		1.48
	TRICHLOROETHENE	µg/L	1	U	100	U	NC
	TRICHLOROFLUOROMETHANE	µg/L	1	U	100	U	NC
	XYLENES	µg/L	3100		3200		3.17

Notes:
Please see Table 2 for definitions of qualifiers and reason codes.
FD - field duplicate.
GW - groundwater.
KAFB - Kirtland Air Force Base.
µg/L - micrograms per liter.
mg/L - milligram per liter.
NC - not calculated.
REG - regular/parent sample.
VQ - validation qualifier.

Appendix I-1 - Table 5 Field Duplicate Summary

Test Group		Location Code	KAFB-106064				Relative Percent Difference
		Sample Number	106064-P1R-100417		106064-P1R-100417-FD		
		Sample Date	10/04/2017		10/04/2017		
		Sample Purpose	REG		FD		
		Sample Type	GW		GW		
		Depth	--		--		
			Result	VQ	Result	VQ	
FLUORIMETRIC	FLUORESCEIN	PPB	0.01	U	0.01	U	NC
USGS	DELTA2H	PER MIL	-93.39		-94.11		(0.77)

Notes:
Please see Table 2 for definitions of qualifiers and reason codes.
FD - field duplicate.
GW - groundwater.
KAFB - Kirtland Air Force Base.
NC - not calculated.
ppb - parts per billion.
REG - regular/parent sample.
USGS - Unites States Geological Survey.
VQ - validation qualifier.

Appendix I-1 - Table 5 Field Duplicate Summary

	Location Code		KAFB-106064				
	Sample Number		106064-P2P-050918		106064-P2P-050918-FD		
	Sample Date		05/09/2018		05/09/2018		
	Sample Purpose		REG		FD		
	Sample Type		GW		GW		
	Depth		--		--		
Test Group	**Parameter**	**Units**	**Result**	**VQ**	**Result**	**VQ**	**Relative Percent Difference**
EDB	1,2-DIBROMOETHANE	µg/L	6.2		10.6		52.38
GASES	ACETYLENE	µg/L	10	U	10	U	NC
	ETHANE	µg/L	4.5		4.59		1.98
	ETHYLENE	µg/L	11		11.7		6.17
	METHANE	µg/L	601		614		2.14
	PROPANE	µg/L	4.8	J	4.9	J	NC
GEN CHEMISTRY	ACETIC ACID	MG/L	119		122		2.49
	ALKALINITY	MG/L	421		402		4.62
	BROMIDE	MG/L	0.597		0.594		0.50
	BUTYRIC ACID	MG/L	1	U	1	U	NC
	CHLORIDE	MG/L	51.8		52		0.39
	FORMIC ACID	MG/L	0.4	J	0.3	J	NC
	IODIDE	MG/L	22		22		0.00
	LACTIC ACID	MG/L	1	U	1	U	NC
	NITRATE	MG/L	0.2	U	0.2	U	NC
	NITRITE	MG/L	0.2	U	0.2	U	NC
	O-PHOSPHATE (AS P)	MG/L	1.28		1.27		0.78
	PROPIONIC ACID	MG/L	24.3		24.1		0.83
	PYRUVIC ACID	MG/L	0.5	J	1	U	NC
	SULFATE	MG/L	2	U	2	U	NC
	VALERIC ACID	MG/L	1	U	1	U	NC
METALS, DISS	IRON	µg/L	5070		4810		5.26
	MANGANESE	µg/L	5620		5410		3.81
VOLATILES	1,1,2-TRICHLOROETHANE	µg/L	100	U	100	U	NC
	1,2,4-TRIMETHYLBENZENE	µg/L	404		409		1.23
	1,2-DIBROMOETHANE	µg/L	100	U	100	U	NC
	1,2-DICHLOROETHANE	µg/L	100	U	100	U	NC
	1,3,5-TRIMETHYLBENZENE	µg/L	124	J	142	J	NC
	2-BUTANONE	µg/L	1000	U	1000	U	NC
	2-CHLOROTOLUENE	µg/L	100	U	100	U	NC
	2-HEXANONE	µg/L	500	U	500	U	NC
	4-METHYL-2-PENTANONE	µg/L	500	U	500	U	NC
	ACETONE	µg/L	1000	U	1000	U	NC
	BENZENE	µg/L	3490		3620		3.66
	CARBON DISULFIDE	µg/L	100	U	100	U	NC
	CHLOROMETHANE	µg/L	100	U	100	U	NC
	DICHLORODIFLUOROMETHANE	µg/L	200	U	200	U	NC
	ETHYLBENZENE	µg/L	1660		1670		0.60
	ISOPROPYLBENZENE	µg/L	202		207		2.44
	METHYL TERT-BUTYL ETHER	µg/L	100	U	100	U	NC

Appendix I-1 - Table 5 Field Duplicate Summary

VOLATILES	METHYLENE CHLORIDE	µg/L	200	U	200	U	NC
	NAPHTHALENE	µg/L	137	J	137	J	NC
	N-BUTYLBENZENE	µg/L	100	U	100	U	NC
	N-PROPYLBENZENE	µg/L	124	J	117	J	NC
	P-ISOPROPYLTOLUENE	µg/L	56.1	J	56.2	J	NC
	SEC-BUTYLBENZENE	µg/L	100	U	100	U	NC
	TERT-BUTYLBENZENE	µg/L	100	U	100	U	NC
	TOLUENE	µg/L	13900		14000		0.72
	TRICHLOROETHENE	µg/L	100	U	100	U	NC
	TRICHLOROFLUOROMETHANE	µg/L	200	U	200	U	NC
	XYLENES	µg/L	5130		5220		1.74

Notes:
Please see Table 2 for definitions of qualifiers and reason codes.
FD - field duplicate.
GW - groundwater.
KAFB - Kirtland Air Force Base.
µg/L - micrograms per liter.
mg/L - milligram per liter.
NC - not calculated.
REG - regular/parent sample.
VQ - validation qualifier.

Appendix I-1 - Table 5 Field Duplicate Summary

Test Group	Parameter	Units	Result	VQ	Result	VQ	Relative Percent Difference
		Location Code	KAFB-106064				
		Sample Number	106064-P2P-061418		106064-P2P-061418-FD		
		Sample Date	06/14/2018		06/14/2018		
		Sample Purpose	REG		FD		
		Sample Type	GW		GW		
		Depth	--		--		
EDB	1,2-DIBROMOETHANE	µg/L	6.19		6.45		4.11
GASES	ACETYLENE	µg/L	10	UJ	10	UJ	0.00
	ETHANE	µg/L	5.3	J	5.3	J	0.00
	ETHYLENE	µg/L	12.6	J	13.2	J	4.65
	METHANE	µg/L	250	J	266	J	6.20
	PROPANE	µg/L	6	J	6.5	J	8.00
GEN CHEMISTRY	ACETIC ACID	MG/L	141	J	121	J	15.27
	ALKALINITY	MG/L	483	J-	473	J-	2.09
	BROMIDE	MG/L	0.416	J	0.417	J	NC
	BUTYRIC ACID	MG/L	10	UJ	10	UJ	0.00
	CHLORIDE	MG/L	49.3		49.4		0.20
	FORMIC ACID	MG/L	10	UJ	10	UJ	0.00
	IODIDE	MG/L	19		20		5.13
	LACTIC ACID	MG/L	10	UJ	10	UJ	0.00
	NITRATE	MG/L	0.5	U	0.5	U	NC
	NITRITE	MG/L	0.5	U	0.5	U	NC
	O-PHOSPHATE (AS P)	MG/L	1.45		6.73		129.10
	PROPIONIC ACID	MG/L	11.6	J	8.9	J	26.34
	PYRUVIC ACID	MG/L	10	UJ	10	UJ	0.00
	SULFATE	MG/L	5	U	5	U	NC
	VALERIC ACID	MG/L	10	UJ	10	UJ	0.00
METALS, DISS	IRON	µg/L	4230		4110		2.88
	MANGANESE	µg/L	5850		5470		6.71
VOLATILES	1,1,2-TRICHLOROETHANE	µg/L	100	U	100	U	NC
	1,2,4-TRIMETHYLBENZENE	µg/L	367		352		4.17
	1,2-DIBROMOETHANE	µg/L	100	U	100	U	NC
	1,2-DICHLOROETHANE	µg/L	100	U	100	U	NC
	1,3,5-TRIMETHYLBENZENE	µg/L	122	J	123	J	NC
	2-BUTANONE	µg/L	1000	U	1000	U	NC
	2-CHLOROTOLUENE	µg/L	100	U	100	U	NC
	2-HEXANONE	µg/L	500	U	500	U	NC
	4-METHYL-2-PENTANONE	µg/L	500	U	500	U	NC
	ACETONE	µg/L	657	J	657	J	NC
	BENZENE	µg/L	3820		3820		0.00
	CARBON DISULFIDE	µg/L	100	U	100	U	NC
	CHLOROMETHANE	µg/L	100	U	100	U	NC
	DICHLORODIFLUOROMETHANE	µg/L	200	U	200	U	NC
	ETHYLBENZENE	µg/L	1370		1390		1.45
	ISOPROPYLBENZENE	µg/L	149	J	158	J	NC
	METHYL TERT-BUTYL ETHER	µg/L	100	U	100	U	NC

Appendix I-1 - Table 5 Field Duplicate Summary

VOLATILES	METHYLENE CHLORIDE	µg/L	200	U	200	U	NC
	NAPHTHALENE	µg/L	110	J	113	J	NC
	N-BUTYLBENZENE	µg/L	100	U	100	U	NC
	N-PROPYLBENZENE	µg/L	104	J	112	J	NC
	P-ISOPROPYLTOLUENE	µg/L	100	U	56.6	J	NC
	SEC-BUTYLBENZENE	µg/L	100	U	100	U	NC
	TERT-BUTYLBENZENE	µg/L	100	U	100	U	NC
	TOLUENE	µg/L	13000		12900		0.77
	TRICHLOROETHENE	µg/L	100	U	100	U	NC
	TRICHLOROFLUOROMETHANE	µg/L	200	U	200	U	NC
	XYLENES	µg/L	4450		4410		0.90

Notes:
Please see Table 2 for definitions of qualifiers and reason codes.
FD - field duplicate.
GW - groundwater.
KAFB - Kirtland Air Force Base.
µg/L - micrograms per liter.
mg/L - milligram per liter.
NC - not calculated.
REG - regular/parent sample.
VQ - validation qualifier.

Appendix I-1 - Table 5 Field Duplicate Summary

	Location Code		KAFB-106064				
	Sample Number		106064-P3P-091218		106064-P3P-091218-FD		
	Sample Date		09/12/2018		09/12/2018		
	Sample Purpose		REG		FD		
	Sample Type		GW		GW		
	Depth		--		--		Relative Percent
Test Group	Parameter	Units	Result	VQ	Result	VQ	Difference
EDB	1,2-DIBROMOETHANE	µg/L	1.5		1.7		12.50
GASES	ACETYLENE	µg/L	10	U	10.0		NC
	ETHANE	µg/L	4.2		4.2		0.00
	ETHYLENE	µg/L	10.4		10.4		0.00
	METHANE	µg/L	7053.1		7,090.1		0.52
	PROPANE	µg/L	5.7	J	5.7		NC
GEN CHEMISTRY	ACETIC ACID	MG/L	50.6		50.1		0.99
	ALKALINITY	MG/L	450		460		2.20
	BROMIDE	MG/L	0.78	J+	0.77		1.29
	BUTYRIC ACID	MG/L	1	U	1.0		NC
	CHLORIDE	MG/L	51		51		0.00
	FORMIC ACID	MG/L	1	U	1.0		NC
	IODIDE	MG/L	4.5		5.3		16.33
	LACTIC ACID	MG/L	1	U	1.0		NC
	NITROGEN, NITRATE-NITRITE	MG/L	0.05	UJ	0.05	U	0.00
	ORTHOPHOSPHATE	MG/L	3.9		3.9		0.00
	PROPIONIC ACID	MG/L	74.9		76.1		1.59
	PYRUVIC ACID	MG/L	1	U	1.0		NC
	SULFATE	MG/L	1	U	1	U	NC
	VALERIC ACID	MG/L	1	U	1.0		NC
METALS, DISS	IRON	µg/L	3000		3000		0.00
	MANGANESE	µg/L	6500		6600		1.53
VOLATILES	1,1,2-TRICHLOROETHANE	µg/L	50	U	50	U	NC
	1,2,4-TRIMETHYLBENZENE	µg/L	350		360		2.82
	1,2-DIBROMOETHANE	µg/L	100	U	100	U	NC
	1,3,5-TRIMETHYLBENZENE	µg/L	120		120		0.00
	2-BUTANONE	µg/L	1000	U	1000	U	NC
	2-CHLOROTOLUENE	µg/L	50	U	50	U	NC
	2-HEXANONE	µg/L	500	U	500	U	NC
	4-METHYL-2-PENTANONE	µg/L	500	U	500	U	NC
	ACETONE	µg/L	1000	U	1000	U	NC
	BENZENE	µg/L	3300		3400		2.99
	CARBON DISULFIDE	µg/L	200	U	200	U	NC
	CHLOROMETHANE	µg/L	100	U	100	U	NC
	ISOPROPYLBENZENE	µg/L	100		100		0.00
	METHYL TERT-BUTYL ETHER	µg/L	50	U	50	U	NC
	METHYLENE CHLORIDE	µg/L	500	U	500	U	NC
	NAPHTHALENE	µg/L	500	U	500	U	NC
	N-BUTYLBENZENE	µg/L	100	U	100	U	NC
	N-PROPYLBENZENE	µg/L	94	J	92	J	NC

Appendix I-1 - Table 5 Field Duplicate Summary

VOLATILES	P-ISOPROPYLTOLUENE	µg/L	64	J	62	J	NC
	SEC-BUTYLBENZENE	µg/L	100	U	100	U	NC
	TERT-BUTYLBENZENE	µg/L	100	U	100	U	NC
	TOLUENE	µg/L	11000		11000		0.00
	TRICHLOROETHENE	µg/L	100	U	100	U	NC
	TRICHLOROFLUOROMETHANE	µg/L	100	U	100	U	NC
	XYLENES	µg/L	3500		3700		5.56

Notes:
Please see Table 2 for definitions of qualifiers and reason codes.
FD - field duplicate.
GW - groundwater.
KAFB - Kirtland Air Force Base.
µg/L - micrograms per liter.
mg/L - milligram per liter.
NC - not calculated.
REG - regular/parent sample.
VQ - validation qualifier.

Appendix I-1 - Table 5 Field Duplicate Summary

		Location Code	KAFB-106064				
		Sample Number	106064-P4P-011619		106064-P4P-011619-FD		
		Sample Date	01/16/2019		01/16/2019		
		Sample Purpose	REG		FD		
		Sample Type	GW		GW		
		Depth	--		--		Relative Percent Difference
Test Group	Parameter	Units	Result	VQ	Result	VQ	
EDB	1,2-DIBROMOETHANE	µg/L	0.028		0.026		7.41
GASES	ACETYLENE	µg/L	10	U	10	U	NC
	ETHANE	µg/L	4.5		4.5		0.00
	ETHYLENE	µg/L	6.7		6.6		1.50
	METHANE	µg/L	14220.9		15034.6		5.56
	PROPANE	µg/L	5.5	J	5.3	J	NC
GEN CHEMISTRY	ACETIC ACID	MG/L	0.5	J	0.3	J	NC
	ALKALINITY	MG/L	510		510		0.00
	BROMIDE	MG/L	1.1		0.77		35.29
	BUTYRIC ACID	MG/L	1	U	1	U	NC
	CHLORIDE	MG/L	47		48		2.11
	FORMIC ACID	MG/L	1	U	1	U	NC
	IODIDE	MG/L	4		-NA-		0.00
	LACTIC ACID	MG/L	0.8	J	0.8	J	NC
	NITROGEN, NITRATE-NITRITE	MG/L	0.05	UJ	0.05	UJ	0.00
	ORTHOPHOSPHATE	MG/L	0.14	J	0.12	J	NC
	PROPIONIC ACID	MG/L	1	U	1	U	NC
	PYRUVIC ACID	MG/L	1	U	1	U	NC
	SULFATE	MG/L	1	U	1	U	NC
	VALERIC ACID	MG/L	1	U	1	U	NC
METALS, DISS	IRON	µg/L	5100		5000		1.98
	MANGANESE	µg/L	7100		6400		10.37
VOLATILES	1,1,2-TRICHLOROETHANE	µg/L	50	U	50	U	NC
	1,2,4-TRIMETHYLBENZENE	µg/L	470		420		11.24
	1,2-DIBROMOETHANE	µg/L	100	U	100	U	NC
	1,3,5-TRIMETHYLBENZENE	µg/L	160		140		13.33
	2-BUTANONE	µg/L	1000	U	1000	U	NC
	2-CHLOROTOLUENE	µg/L	50	U	50	U	NC
	2-HEXANONE	µg/L	500	U	500	U	NC
	4-METHYL-2-PENTANONE	µg/L	500	U	500	U	NC
	ACETONE	µg/L	1000	U	1000	U	NC
	BENZENE	µg/L	3400		3200		6.06
	CARBON DISULFIDE	µg/L	200	U	200	U	NC
	CHLOROMETHANE	µg/L	100	U	100	U	NC
	ISOPROPYLBENZENE	µg/L	230		210		9.09
	METHYL TERT-BUTYL ETHER	µg/L	50	U	50	U	NC
	METHYLENE CHLORIDE	µg/L	500	U	500	U	NC
	NAPHTHALENE	µg/L	500	U	500	U	NC
	N-BUTYLBENZENE	µg/L	100	U	100	U	NC
	N-PROPYLBENZENE	µg/L	160		130		20.69
	P-ISOPROPYLTOLUENE	µg/L	100	U	100	U	NC
	SEC-BUTYLBENZENE	µg/L	100	U	100	U	NC

Appendix I-1 - Table 5 Field Duplicate Summary

VOLATILES	TERT-BUTYLBENZENE	µg/L	100	U	100	U	NC
	TOLUENE	µg/L	990		930		6.25
	TRICHLOROETHENE	µg/L	100	U	100	U	NC
	TRICHLOROFLUOROMETHANE	µg/L	100	U	100	U	NC
	XYLENES	µg/L	5000		4500		10.53

Notes:
Please see Table 2 for definitions of qualifiers and reason codes.
FD - field duplicate.
GW - groundwater.
KAFB - Kirtland Air Force Base.
µg/L - micrograms per liter.
mg/L - milligram per liter.
NC - not calculated.
REG - regular/parent sample.
VQ - validation qualifier.

Appendix I-1 - Table 5 Field Duplicate Summary

		Location Code	KAFB-106EX1				
		Sample Number	106EX1-P1R-102417		106EX1-P1R-102417-FD		
		Sample Date	10/24/2017		10/24/2017		
		Sample Purpose	REG		FD		
		Sample Type	GW		GW		
		Depth	--		--		
Test Group	Parameter	Units	Result	VQ	Result	VQ	Relative Percent Difference
EDB	1,2-DIBROMOETHANE	µg/L	53.6		50.4		6.15
FLUORIMETRIC	FLUORESCEIN	PPB	2.625		-NA-		0.00
GASES	ACETYLENE	µg/L	10	U	10	U	NC
	ETHANE	µg/L	4	U	4	U	NC
	ETHYLENE	µg/L	3.07	J	3.53	J	NC
	METHANE	µg/L	1.02	J	1.2	J	NC
	PROPANE	µg/L	6	U	6	U	NC
GEN CHEMISTRY	ACETIC ACID	MG/L	1	U	1	U	NC
	ALKALINITY	MG/L	267		268		0.37
	BROMIDE	MG/L	0.264		0.257		2.69
	BUTYRIC ACID	MG/L	1	U	1	U	NC
	CHLORIDE	MG/L	15.4		15.5		0.65
	FORMIC ACID	MG/L	1	U	1	U	NC
	IODIDE	MG/L	0.75	U	0.75	U	NC
	LACTIC ACID	MG/L	1	U	1	U	NC
	NITROGEN, NITRATE-NITRITE	MG/L	0.375	U	0.375	U	NC
	O-PHOSPHATE (AS P)	MG/L	0.0200	U	0.0200	U	NC
	PROPIONIC ACID	MG/L	1	U	1	U	NC
	PYRUVIC ACID	MG/L	1	U	1	U	NC
	SULFATE	MG/L	14.6		14.3		2.08
	VALERIC ACID	MG/L	1	U	1	U	NC
METALS, DISS	IRON	µg/L	248		250		0.80
	MANGANESE	µg/L	1570		1590		1.27
USGS	DELTA2H	PER MIL	-93.32		-94.31		(1.06)
VOLATILES	1,1,2-TRICHLOROETHANE	µg/L	25.0	U	25.0	U	NC
	1,2,4-TRIMETHYLBENZENE	µg/L	255		220		14.74
	1,2-DIBROMOETHANE	µg/L	57.6		67.8		16.27
	1,2-DICHLOROETHANE	µg/L	25.0	U	25.0	U	NC
	1,3,5-TRIMETHYLBENZENE	µg/L	92.3		81.2		12.80
	2-BUTANONE	µg/L	250	U	148	J	NC
	2-CHLOROTOLUENE	µg/L	25.0	U	25.0	U	NC
	2-HEXANONE	µg/L	103	J	106	J	NC
	4-METHYL-2-PENTANONE	µg/L	125	U	68.6	J	NC
	ACETONE	µg/L	719		853		17.05
	BENZENE	µg/L	2910		2680		8.23
	CARBON DISULFIDE	µg/L	25.0	U	25.0	U	NC
	CHLOROMETHANE	µg/L	25.0	U	25.0	U	NC
	DICHLORODIFLUOROMETHANE	µg/L	50.0	U	50.0	U	NC
	ETHYLBENZENE	µg/L	688		620		10.40
VOLATILES	ISOPROPYLBENZENE	µg/L	61.4		53.0		14.69
	METHYL TERT-BUTYL ETHER	µg/L	25.0	U	25.0	U	NC
VOLATILES	METHYLENE CHLORIDE	µg/L	50.0	U	50.0	U	NC

	NAPHTHALENE	µg/L	72.4		68.6		5.39
	N-BUTYLBENZENE	µg/L	14.6	J	12.9	J	NC
	N-PROPYLBENZENE	µg/L	63.9		58.1		9.51
	P-ISOPROPYLTOLUENE	µg/L	25.0	U	13.5	J	NC
	SEC-BUTYLBENZENE	µg/L	25.0	U	13.5	J	NC
	TERT-BUTYLBENZENE	µg/L	25.0	U	25.0	U	NC
	TOLUENE	µg/L	5610		5060		10.31
	TRICHLOROETHENE	µg/L	25.0	U	25.0	U	NC
	TRICHLOROFLUOROMETHANE	µg/L	50.0	U	50.0	U	NC
	XYLENES	µg/L	2470		2240		9.77

Notes:
Please see Table 2 for definitions of qualifiers and reason codes.
FD - field duplicate.
GW - groundwater.
KAFB - Kirtland Air Force Base.
µg/L - micrograms per liter.
mg/L - milligram per liter.
NC - not calculated.
REG - regular/parent sample.
VQ - validation qualifier.

Appendix I-1 - Table 5 Field Duplicate Summary

	Location Code		KAFB-106EX1				
	Sample Number		106EX1-P1R-101617		106EX1-P1R-101617-FD		
	Sample Date		10/16/2017		10/16/2017		
	Sample Purpose		REG		FD		
	Sample Type		GW		GW		
	Depth		--		--		Relative Percent
Test Group	**Parameter**	**Units**	**Result**	**VQ**	**Result**	**VQ**	**Difference**
FLUORIMETRIC	FLUORESCEIN	PPB	0.735		0.773		5.04
USGS	DELTA2H	PER MIL	-92.41		-92.76		(0.38)

Notes:
Please see Table 2 for definitions of qualifiers and reason codes.
FD - field duplicate.
GW - groundwater.
KAFB - Kirtland Air Force Base.
NC - not calculated.
ppb - parts per billion.
REG - regular/parent sample.
USGS - Unites States Geological Survey.
VQ - validation qualifier.

Appendix I-1 - Table 5 Field Duplicate Summary

	Location Code		KAFB-106EX1				
	Sample Number		106EX1-P2R-011618		106EX1-P2R-011618-FD		
	Sample Date		01/16/2018		01/16/2018		
	Sample Purpose		REG		FD		
	Sample Type		GW		GW		
	Depth		--		--		
Test Group	**Parameter**	**Units**	**Result**	**VQ**	**Result**	**VQ**	**Relative Percent Difference**
EDB	1,2-DIBROMOETHANE	µg/L	62.2		80.0		25.04
GASES	ACETYLENE	µg/L	10.0	U	10.0	U	NC
	ETHANE	µg/L	2.66	J	2.71	J	NC
	ETHYLENE	µg/L	8.34		7.83		6.31
	METHANE	µg/L	2.92		2.78		4.91
	PROPANE	µg/L	2.68	J	2.61	J	NC
GEN CHEMISTRY	ACETIC ACID	MG/L	4.45		5.75		25.49
	ALKALINITY	MG/L	280		294		4.88
	BROMIDE	MG/L	0.403		0.383	J	5.09
	BUTYRIC ACID	MG/L	1.0	U	1.0	U	NC
	CHLORIDE	MG/L	29.6		29.1		1.70
	FORMIC ACID	MG/L	1.0	U	1.0	U	NC
	IODIDE	MG/L	0.58	J	0.59	J	NC
	LACTIC ACID	MG/L	0.75	J	0.93	J	NC
	NITROGEN, NITRATE-NITRITE	MG/L	0.375	U	0.375	U	NC
	O-PHOSPHATE (AS P)	MG/L	0.0200	U	0.0200	U	NC
	PROPIONIC ACID	MG/L	0.32	J	0.73	J	NC
	PYRUVIC ACID	MG/L	1.0	U	1.0	U	NC
	SULFATE	MG/L	7.21		7.15		0.84
	VALERIC ACID	MG/L	1.0	U	1.0	U	NC
METALS, DISS	IRON	µg/L	535		518		3.23
	MANGANESE	µg/L	2490		2460		1.21
VOLATILES	1,1,2-TRICHLOROETHANE	µg/L	50.0	U	50.0	U	NC
	1,2,4-TRIMETHYLBENZENE	µg/L	325		300		8.00
	1,2-DIBROMOETHANE	µg/L	51.0	J	45.8	J	NC
	1,2-DICHLOROETHANE	µg/L	50.0	U	50.0	U	NC
	1,3,5-TRIMETHYLBENZENE	µg/L	114		104		9.17
	2-BUTANONE	µg/L	500	U	500	U	NC
	2-CHLOROTOLUENE	µg/L	50.0	U	50.0	U	NC
	2-HEXANONE	µg/L	250	U	250	U	NC
	4-METHYL-2-PENTANONE	µg/L	250	U	250	U	NC
	ACETONE	µg/L	356	J	356	J	NC
	BENZENE	µg/L	3940		3740		5.21
	CARBON DISULFIDE	µg/L	50.0	U	50.0	U	NC
	CHLOROMETHANE	µg/L	50.0	U	50.0	U	NC
	DICHLORODIFLUOROMETHANE	µg/L	100	U	100	U	NC
	ETHYLBENZENE	µg/L	919		842		8.75
	ISOPROPYLBENZENE	µg/L	71.2	J	59.9	J	NC
	METHYL TERT-BUTYL ETHER	µg/L	50.0	U	50.0	U	NC
	METHYLENE CHLORIDE	µg/L	100	U	100	U	NC
	NAPHTHALENE	µg/L	98.7	J	86.5	J	NC
	N-BUTYLBENZENE	µg/L	50.0	U	50.0	U	NC

Appendix I-1 - Table 5 Field Duplicate Summary

VOLATILES	N-PROPYLBENZENE	µg/L	84.6	J	74.5	J	NC
	P-ISOPROPYLTOLUENE	µg/L	36.9	J	30.9	J	NC
	SEC-BUTYLBENZENE	µg/L	50.0	U	50.0	U	NC
	TERT-BUTYLBENZENE	µg/L	50.0	U	50.0	U	NC
	TOLUENE	µg/L	9220		8610		6.84
	TRICHLOROETHENE	µg/L	50.0	U	50.0	U	NC
	TRICHLOROFLUOROMETHANE	µg/L	100	U	100	U	NC
	XYLENES	µg/L	2860		2640		8.00

Notes:
Please see Table 2 for definitions of qualifiers and reason codes.
FD - field duplicate.
GW - groundwater.
KAFB - Kirtland Air Force Base.
µg/L - micrograms per liter.
mg/L - milligram per liter.
NC - not calculated.
REG - regular/parent sample.
VQ - validation qualifier.

Appendix I-1 - Table 5 Field Duplicate Summary

		Location Code	KAFB-106EX1				
		Sample Number	106EX1-P3P-081618		106EX1-P3P-081618-FD		
		Sample Date	08/16/2018		08/16/2018		
		Sample Purpose	REG		FD		
		Sample Type	GW		GW		
		Depth	--		--		Relative Percent
Test Group	Parameter	Units	Result	VQ	Result	VQ	Difference
EDB	1,2-DIBROMOETHANE	µg/L	19		22		14.63
GASES	ACETYLENE	µg/L	10	U	10	U	NC
	ETHANE	µg/L	3.8	J	3.6	J	NC
	ETHYLENE	µg/L	13		12.3		5.53
	METHANE	µg/L	9.3		9		3.28
	PROPANE	µg/L	5.5	J	4.8	J	NC
GEN CHEMISTRY	ACETIC ACID	MG/L	28.5		28.6		0.35
	ALKALINITY	MG/L	320		330		3.08
	BROMIDE	MG/L	0.71		0.69		2.86
	BUTYRIC ACID	MG/L	1	U	1	U	NC
	CHLORIDE	MG/L	33		33		0.00
	FORMIC ACID	MG/L	1	U	1	U	NC
	IODIDE	MG/L	3.9		3.7		5.26
	LACTIC ACID	MG/L	0.7	J	0.9	J	NC
	NITROGEN, NITRATE-NITRITE	MG/L	0.05	U	0.05	U	NC
	ORTHOPHOSPHATE	MG/L	0.15	U	0.15	U	NC
	PROPIONIC ACID	MG/L	1	U	1	U	NC
	PYRUVIC ACID	MG/L	1	U	1	U	NC
	SULFATE	MG/L	6.7		6.7		0.00
	VALERIC ACID	MG/L	1	U	1	U	NC
METALS, DISS	IRON	µg/L	1500		1500		0.00
	MANGANESE	µg/L	4200		4200		0.00
VOLATILES	1,1,2-TRICHLOROETHANE	µg/L	10	U	10	U	NC
	1,2,4-TRIMETHYLBENZENE	µg/L	320		300		6.45
	1,2-DIBROMOETHANE	µg/L	19	J	20		NC
	1,3,5-TRIMETHYLBENZENE	µg/L	110		100		9.52
	2-BUTANONE	µg/L	81	J	73	J	NC
	2-CHLOROTOLUENE	µg/L	10	U	10	U	NC
	2-HEXANONE	µg/L	88	J	92	J	NC
	4-METHYL-2-PENTANONE	µg/L	66	J	70	J	NC
	ACETONE	µg/L	280		280		0.00
	BENZENE	µg/L	3500		3300		5.88
	CARBON DISULFIDE	µg/L	40	U	40	U	NC
	CHLOROMETHANE	µg/L	20	U	20	U	NC
	ISOPROPYLBENZENE	µg/L	79		71		10.67
	METHYL TERT-BUTYL ETHER	µg/L	10	U	10	U	NC
	METHYLENE CHLORIDE	µg/L	100	U	100	U	NC
	NAPHTHALENE	µg/L	130		120		8.00
	N-BUTYLBENZENE	µg/L	14	J	12	J	NC
	N-PROPYLBENZENE	µg/L	76		68		11.11
	P-ISOPROPYLTOLUENE	µg/L	49		44		10.75
	SEC-BUTYLBENZENE	µg/L	15	J	14	J	NC

Appendix I-1 - Table 5 Field Duplicate Summary

VOLATILES	TERT-BUTYLBENZENE	µg/L	20	U	20	U	NC
	TOLUENE	µg/L	9500		9300		2.13
	TRICHLOROETHENE	µg/L	20	U	20	U	NC
	TRICHLOROFLUOROMETHANE	µg/L	20	U	20	U	NC
	XYLENES	µg/L	2900		2700		7.14

Notes:
Please see Table 2 for definitions of qualifiers and reason codes.
FD - field duplicate.
GW - groundwater.
KAFB - Kirtland Air Force Base.
µg/L - micrograms per liter.
mg/L - milligram per liter.
NC - not calculated.
REG - regular/parent sample.
VQ - validation qualifier.

Appendix I-1 - Table 5 Field Duplicate Summary

	Location Code		KAFB-106EX2				
	Sample Number		106EX2-P1R-110117		106EX2-P1R-110117-FD		
	Sample Date		11/01/2017		11/01/2017		
	Sample Purpose		REG		FD		
	Sample Type		GW		GW		
	Depth		--		--		
Test Group	**Parameter**	**Units**	**Result**	**VQ**	**Result**	**VQ**	**Relative Percent Difference**
FLUORIMETRIC	FLUORESCEIN	PPB	8.221		8.337		1.40
USGS	DELTA2H	PER MIL	-84		-83		(1.20)

Notes:
Please see Table 2 for definitions of qualifiers and reason codes.
FD - field duplicate.
GW - groundwater.
KAFB - Kirtland Air Force Base.
NC - not calculated.
ppb - parts per billion.
REG - regular/parent sample.
USGS - Unites States Geological Survey.
VQ - validation qualifier.

Appendix I-1 - Table 5 Field Duplicate Summary

	Location Code		KAFB-106EX2				
	Sample Number		106EX2-P2R-011018		106EX2-P2R-011018-FD		
	Sample Date		01/10/2018		01/10/2018		
	Sample Purpose		REG		FD		
	Sample Type		GW		GW		
	Depth		--		--		Relative Percent
Test Group	**Parameter**	**Units**	**Result**	**VQ**	**Result**	**VQ**	**Difference**
EDB	1,2-DIBROMOETHANE	µg/L	61.4		70.2		13.37
GASES	ACETYLENE	µg/L	10.0	U	10.0	U	NC
	ETHANE	µg/L	1.56	J	1.65	J	NC
	ETHYLENE	µg/L	3.10	J	3.20	J	NC
	METHANE	µg/L	1.60	J	1.89	J	NC
	PROPANE	µg/L	6.0	U	6.0	U	NC
GEN CHEMISTRY	ACETIC ACID	MG/L	3.74		7.32		64.74
	ALKALINITY	MG/L	350		354		1.14
	BROMIDE	MG/L	0.848		0.844		0.47
	BUTYRIC ACID	MG/L	1.0	U	1.0	U	NC
	CHLORIDE	MG/L	87.5		87.2		0.34
	FORMIC ACID	MG/L	1.0	U	1.0	U	NC
	IODIDE	MG/L	0.82	J	0.83	J	NC
	LACTIC ACID	MG/L	0.79	J	1.63		NC
	NITROGEN, NITRATE-NITRITE	MG/L	0.375	U	0.375	U	NC
	O-PHOSPHATE (AS P)	MG/L	0.0172	J	0.0136	J	NC
	PROPIONIC ACID	MG/L	1.52		3.30		73.86
	PYRUVIC ACID	MG/L	1.0	U	1.0	U	NC
	SULFATE	MG/L	23.5	J+	24.0	J+	2.11
	VALERIC ACID	MG/L	1.0	U	1.0	U	NC
METALS, DISS	IRON	µg/L	352		356		1.13
	MANGANESE	µg/L	2870		2870		0.00
VOLATILES	1,1,2-TRICHLOROETHANE	µg/L	50.0	U	50.0	U	NC
	1,2,4-TRIMETHYLBENZENE	µg/L	256		273		6.43
	1,2-DIBROMOETHANE	µg/L	118		112		5.22
	1,2-DICHLOROETHANE	µg/L	50.0	U	50.0	U	NC
	1,3,5-TRIMETHYLBENZENE	µg/L	89.8	J	93.0	J	NC
	2-BUTANONE	µg/L	500	U	500	U	NC
	2-CHLOROTOLUENE	µg/L	50.0	U	50.0	U	NC
	2-HEXANONE	µg/L	231	J	197	J	NC
	4-METHYL-2-PENTANONE	µg/L	250	U	250	U	NC
	ACETONE	µg/L	954	J	829	J	NC
	BENZENE	µg/L	4260		4240		0.47
	CARBON DISULFIDE	µg/L	50.0	U	50.0	U	NC
	CHLOROMETHANE	µg/L	50.5		61.6		NC
	DICHLORODIFLUOROMETHANE	µg/L	100	U	100	U	NC
	ETHYLBENZENE	µg/L	882		871		1.25
	ISOPROPYLBENZENE	µg/L	66.3	J	66.9	J	NC
	METHYL TERT-BUTYL ETHER	µg/L	50.0	U	50.0	U	NC
	METHYLENE CHLORIDE	µg/L	58.0	J	50.4	J	NC
	NAPHTHALENE	µg/L	101		91.5		9.87
	N-BUTYLBENZENE	µg/L	50.0	U	50.0	U	NC

Appendix I-1 - Table 5 Field Duplicate Summary

VOLATILES	N-PROPYLBENZENE	µg/L	69.2	J	67.8	J	NC
	P-ISOPROPYLTOLUENE	µg/L	28.6	J	27.6	J	NC
	SEC-BUTYLBENZENE	µg/L	50.0	U	50.0	U	NC
	TERT-BUTYLBENZENE	µg/L	50.0	U	50.0	U	NC
	TOLUENE	µg/L	8070		8110		0.49
	TRICHLOROETHENE	µg/L	50.0	U	50.0	U	NC
	TRICHLOROFLUOROMETHANE	µg/L	100	U	100	U	NC
	XYLENES	µg/L	2870		2880		0.35

Notes:
Please see Table 2 for definitions of qualifiers and reason codes.
FD - field duplicate.
GW - groundwater.
KAFB - Kirtland Air Force Base.
µg/L - micrograms per liter.
mg/L - milligram per liter.
NC - not calculated.
REG - regular/parent sample.
VQ - validation qualifier.

Appendix I-1 - Table 5 Field Duplicate Summary

	Location Code		KAFB-106EX2				
	Sample Number		106EX2-P3P-080818		106EX2-P3P-080818-FD		
	Sample Date		08/08/2018		08/08/2018		
	Sample Purpose		REG		FD		
	Sample Type		GW		GW		
	Depth		--		--		
Test Group	Parameter	Units	Result	VQ	Result	VQ	Relative Percent Difference
EDB	1,2-DIBROMOETHANE	µg/L	82		74		10.26
GASES	ACETYLENE	µg/L	10	U	10	U	NC
	ETHANE	µg/L	4.9		4.8		2.06
	ETHYLENE	µg/L	9		8.5		5.71
	METHANE	µg/L	10.3		10		2.96
	PROPANE	µg/L	5.3	J	5.4	J	NC
GEN CHEMISTRY	ACETIC ACID	MG/L	13.9		14		0.72
	ALKALINITY	MG/L	380		370		2.67
	BROMIDE	MG/L	1.7		1.7		0.00
	BUTYRIC ACID	MG/L	1	U	1	U	NC
	CHLORIDE	MG/L	91		90		1.10
	FORMIC ACID	MG/L	1	U	1	U	NC
	IODIDE	MG/L	3.9		4.8		20.69
	LACTIC ACID	MG/L	1	U	1	U	NC
	NITROGEN, NITRATE-NITRITE	MG/L	0.05	R	0.05	R	0.00
	ORTHOPHOSPHATE	MG/L	0.15	R	0.15	R	NC
	PROPIONIC ACID	MG/L	1	U	1	U	NC
	PYRUVIC ACID	MG/L	1	U	1	U	NC
	SULFATE	MG/L	28		28		0.00
	VALERIC ACID	MG/L	1	U	1	U	NC
METALS, DISS	IRON	µg/L	1100		1200		8.70
	MANGANESE	µg/L	4400		4700		6.59
VOLATILES	1,1,2-TRICHLOROETHANE	µg/L	0.5	U	0.5	U	NC
	1,2,4-TRIMETHYLBENZENE	µg/L	230		230		0.00
	1,2-DIBROMOETHANE	µg/L	78	J+	85	J+	8.59
	1,3,5-TRIMETHYLBENZENE	µg/L	86	J+	88	J+	2.30
	2-BUTANONE	µg/L	130	J+	130	J+	0.00
	2-CHLOROTOLUENE	µg/L	0.5	U	0.5	U	NC
	2-HEXANONE	µg/L	160	J+	160	J+	0.00
	4-METHYL-2-PENTANONE	µg/L	98	J+	99	J+	1.02
	ACETONE	µg/L	480	J+	490	J+	2.06
	BENZENE	µg/L	3300		3500		5.88
	CARBON DISULFIDE	µg/L	2	U	2	U	NC
	CHLOROMETHANE	µg/L	1	U	1	U	NC
	ISOPROPYLBENZENE	µg/L	70	J+	71	J+	1.42
	METHYL TERT-BUTYL ETHER	µg/L	0.5	U	0.5	U	NC
	METHYLENE CHLORIDE	µg/L	5	U	5	U	NC
	NAPHTHALENE	µg/L	120	J+	130	J+	8.00
	N-BUTYLBENZENE	µg/L	12	J+	13	J+	8.00
	N-PROPYLBENZENE	µg/L	69	J+	71	J+	2.86

Appendix I-1 - Table 5 Field Duplicate Summary

VOLATILES	P-ISOPROPYLTOLUENE	µg/L	32	J+	33	J+	3.08
	SEC-BUTYLBENZENE	µg/L	13	J+	13	J+	0.00
	TERT-BUTYLBENZENE	µg/L	1.2	J+	1.1	J+	8.70
	TOLUENE	µg/L	7600	J-	7100	J-	6.80
	TRICHLOROETHENE	µg/L	1	U	1	U	NC
	TRICHLOROFLUOROMETHANE	µg/L	1	U	1	U	NC
	XYLENES	µg/L	2400		2400		0.00

Notes:
Please see Table 2 for definitions of qualifiers and reason codes.
FD - field duplicate.
GW - groundwater.
KAFB - Kirtland Air Force Base.
µg/L - micrograms per liter.
mg/L - milligram per liter.
NC - not calculated.
REG - regular/parent sample.
VQ - validation qualifier.

Appendix I-1 - Table 5 Field Duplicate Summary

		Location Code	KAFB-106IN1				
		Sample Number	106IN1-P1P-111617		106IN1-P1P-111617-FD		
		Sample Date	11/16/2017		11/16/2017		
		Sample Purpose	REG		FD		
		Sample Type	GW		GW		
		Depth	--		--		
Test Group	**Parameter**	**Units**	**Result**	**VQ**	**Result**	**VQ**	**Relative Percent Difference**
EDB	1,2-DIBROMOETHANE	µg/L	19.9		22.1		10.48
FLUORIMETRIC	FLUORESCEIN	PPB	3.338		-NA-		0.00
GASES	ACETYLENE	µg/L	10	U	10	U	NC
	ETHANE	µg/L	4	U	4	U	NC
	ETHYLENE	µg/L	4.04	J	4.03	J	NC
	METHANE	µg/L	18		17.3		3.97
	PROPANE	µg/L	6	U	6	U	NC
GEN CHEMISTRY	ACETIC ACID	MG/L	108		114		5.41
	ALKALINITY	MG/L	314		289		8.29
	BROMIDE	MG/L	0.676		0.683		1.03
	BUTYRIC ACID	MG/L	9.2		10.1		9.33
	CHLORIDE	MG/L	48.8		49.0		0.41
	FORMIC ACID	MG/L	1	U	1	U	NC
	IODIDE	MG/L	0.75	U	0.75	U	NC
	LACTIC ACID	MG/L	1	U	1	U	NC
	NITROGEN, NITRATE-NITRITE	MG/L	0.375	U	0.375	U	NC
	O-PHOSPHATE (AS P)	MG/L	0.0245	J	0.0171	J	NC
	PROPIONIC ACID	MG/L	21.9		22.7		3.59
	PYRUVIC ACID	MG/L	1	U	1	U	NC
	SULFATE	MG/L	2.00	U	2.00	U	NC
	VALERIC ACID	MG/L	4.34		4.03		7.41
METALS, DISS	IRON	µg/L	25500		24800		2.78
	MANGANESE	µg/L	3090		3060		0.98
USGS	DELTA2H	PER MIL	-88.51		-87.39		(1.27)
VOLATILES	1,1,2-TRICHLOROETHANE	µg/L	50.0	U	50.0	U	NC
	1,2,4-TRIMETHYLBENZENE	µg/L	194		170		13.19
	1,2-DIBROMOETHANE	µg/L	26.5	J	26.4	J	NC
	1,2-DICHLOROETHANE	µg/L	50.0	U	50.0	U	NC
	1,3,5-TRIMETHYLBENZENE	µg/L	68.7	J	58.3	J	NC
	2-BUTANONE	µg/L	500	U	500	U	NC
	2-CHLOROTOLUENE	µg/L	50.0	U	50.0	U	NC
	2-HEXANONE	µg/L	250	U	250	U	NC
	4-METHYL-2-PENTANONE	µg/L	250	U	250	U	NC
	ACETONE	µg/L	466	J-	451	J-	NC
	BENZENE	µg/L	2950		2590		13.00
	CARBON DISULFIDE	µg/L	50.0	U	50.0	U	NC
	CHLOROMETHANE	µg/L	50.0	U	50.0	U	NC
	DICHLORODIFLUOROMETHANE	µg/L	100	U	100	U	NC
	ETHYLBENZENE	µg/L	576		483		17.56
VOLATILES	ISOPROPYLBENZENE	µg/L	57.5	J	49.6	J	NC

Appendix I-1 - Table 5 Field Duplicate Summary

	METHYL TERT-BUTYL ETHER	µg/L	50.0	U	50.0	U	NC
	METHYLENE CHLORIDE	µg/L	100	U	100	U	NC
	NAPHTHALENE	µg/L	73.6	J	77.0	J	NC
	N-BUTYLBENZENE	µg/L	50.0	U	50.0	U	NC
	N-PROPYLBENZENE	µg/L	45.6	J	39.3	J	NC
	P-ISOPROPYLTOLUENE	µg/L	50.0	U	50.0	U	NC
	SEC-BUTYLBENZENE	µg/L	50.0	U	50.0	U	NC
	TERT-BUTYLBENZENE	µg/L	50.0	U	50.0	U	NC
	TOLUENE	µg/L	6210		5140		18.85
	TRICHLOROETHENE	µg/L	50.0	U	50.0	U	NC
	TRICHLOROFLUOROMETHANE	µg/L	100	U	100	U	NC
	XYLENES	µg/L	1790		1520		16.31

Notes:
Please see Table 2 for definitions of qualifiers and reason codes.
FD - field duplicate.
GW - groundwater.
KAFB - Kirtland Air Force Base.
µg/L - micrograms per liter.
mg/L - milligram per liter.
NC - not calculated.
REG - regular/parent sample.
VQ - validation qualifier.

Appendix I-1 - Table 5 Field Duplicate Summary

	Location Code		KAFB-106MW1-I				
	Sample Number		106MW1I-P1R-100917		106MW1I-P1R-100917-FD		
	Sample Date		10/09/2017		10/09/2017		
	Sample Purpose		REG		FD		
	Sample Type		GW		GW		
	Depth		--		--		Relative Percent Difference
Test Group	**Parameter**	**Units**	**Result**	**VQ**	**Result**	**VQ**	
FLUORIMETRIC	FLUORESCEIN	PPB	0.01	U	0.01	U	NC
USGS	DELTA2H	PER MIL	-96.02		-96.54		(0.54)

Notes:
Please see Table 2 for definitions of qualifiers and reason codes.
FD - field duplicate.
GW - groundwater.
KAFB - Kirtland Air Force Base.
NC - not calculated.
ppb - parts per billion.
REG - regular/parent sample.
USGS - Unites States Geological Survey.
VQ - validation qualifier.

Appendix I-1 - Table 5 Field Duplicate Summary

Test Group	Parameter	Units	Result	VQ	Result	VQ	Relative Percent Difference
		Location Code	KAFB-106MW1-I				
		Sample Number	106MW1I-P2R-012418		106MW1I-P2R-012418-FD		
		Sample Date	01/24/2018		01/24/2018		
		Sample Purpose	REG		FD		
		Sample Type	GW		GW		
		Depth	--		--		
EDB	1,2-DIBROMOETHANE	µg/L	44.2		32.1		31.72
GASES	ACETYLENE	µg/L	10.0	U	10.0	U	NC
	ETHANE	µg/L	0.75	J	0.78	J	NC
	ETHYLENE	µg/L	3.55	J	4.05	J	NC
	METHANE	µg/L	1.31	J	1.35	J	NC
	PROPANE	µg/L	6.0	U	6.0	U	NC
GEN CHEMISTRY	ACETIC ACID	MG/L	0.98	J	0.39	J	NC
	ALKALINITY	MG/L	366		360		1.65
	BROMIDE	MG/L	0.529	J-	0.548		3.53
	BUTYRIC ACID	MG/L	1.0	U	1.0	U	NC
	CHLORIDE	MG/L	48.5		48.9		0.82
	FORMIC ACID	MG/L	1.0	U	1.0	U	NC
	IODIDE	MG/L	0.56	J	0.58	J	NC
	LACTIC ACID	MG/L	0.97	J	0.39	J	NC
	NITROGEN, NITRATE-NITRITE	MG/L	0.375	U	0.375	U	NC
	O-PHOSPHATE (AS P)	MG/L	0.0200	U	0.0200	U	NC
	PROPIONIC ACID	MG/L	0.67	J	1.0	U	NC
	PYRUVIC ACID	MG/L	1.0	U	1.0	U	NC
	SULFATE	MG/L	1.73	J	1.75	J	NC
	VALERIC ACID	MG/L	1.0	U	1.0	U	NC
METALS, DISS	IRON	µg/L	6410	J-	6510	J-	1.55
	MANGANESE	µg/L	1090	J-	1050	J-	3.74
VOLATILES	1,1,2-TRICHLOROETHANE	µg/L	25.0	U	25.0	U	NC
	1,2,4-TRIMETHYLBENZENE	µg/L	195		200		2.53
	1,2-DIBROMOETHANE	µg/L	30.7	J	31.1	J	NC
	1,2-DICHLOROETHANE	µg/L	25.0	U	25.0	U	NC
	1,3,5-TRIMETHYLBENZENE	µg/L	98.1		100		1.92
	2-BUTANONE	µg/L	250	U	250	U	NC
	2-CHLOROTOLUENE	µg/L	25.0	U	25.0	U	NC
	2-HEXANONE	µg/L	125	U	125	U	NC
	4-METHYL-2-PENTANONE	µg/L	125	U	125	U	NC
	ACETONE	µg/L	193	J	196	J	NC
	BENZENE	µg/L	1570		1660		5.57
	CARBON DISULFIDE	µg/L	25.0	U	25.0	U	NC
	CHLOROMETHANE	µg/L	25.0	U	25.0	U	NC
	DICHLORODIFLUOROMETHANE	µg/L	50.0	U	50.0	U	NC
	ETHYLBENZENE	µg/L	614		634		3.21
	ISOPROPYLBENZENE	µg/L	51.0		49.5	J	2.99
	METHYL TERT-BUTYL ETHER	µg/L	25.0	U	25.0	U	NC
	METHYLENE CHLORIDE	µg/L	50.0	U	50.0	U	NC
	NAPHTHALENE	µg/L	55.6		50.6		9.42
	N-BUTYLBENZENE	µg/L	25.0	U	25.0	U	NC

Appendix I-1 - Table 5 Field Duplicate Summary

VOLATILES	N-PROPYLBENZENE	µg/L	44.3	J	46.0	J	NC
	P-ISOPROPYLTOLUENE	µg/L	25.0	U	25.0	U	NC
	SEC-BUTYLBENZENE	µg/L	25.0	U	25.0	U	NC
	TERT-BUTYLBENZENE	µg/L	25.0	U	25.0	U	NC
	TOLUENE	µg/L	5000		5090		1.78
	TRICHLOROETHENE	µg/L	25.0	U	25.0	U	NC
	TRICHLOROFLUOROMETHANE	µg/L	50.0	U	50.0	U	NC
	XYLENES	µg/L	1770		1780		0.56

Notes:
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µg/L - micrograms per liter.
mg/L - milligram per liter.
NC - not calculated.
REG - regular/parent sample.
VQ - validation qualifier.

Appendix I-1 - Table 5 Field Duplicate Summary

Test Group	Parameter	Units	Result	VQ	Result	VQ	Relative Percent Difference
	Location Code		KAFB-106MW1-I				
	Sample Number		106MW1I-P3P-082118		106MW1I-P3P-082118-FD		
	Sample Date		08/21/2018		08/21/2018		
	Sample Purpose		REG		FD		
	Sample Type		GW		GW		
	Depth		--		--		
EDB	1,2-DIBROMOETHANE	µg/L	2.7		2.9		7.14
GASES	ACETYLENE	µg/L	10	U	10	U	NC
	ETHANE	µg/L	1.1	J	1.1	J	NC
	ETHYLENE	µg/L	3.7	J	3.8	J	NC
	METHANE	µg/L	13.9		14.8		6.27
	PROPANE	µg/L	1.3	J	1.2	J	NC
GEN CHEMISTRY	ACETIC ACID	MG/L	40.7		39.5		2.99
	ALKALINITY	MG/L	400		410		2.47
	BROMIDE	MG/L	0.81		0.8		1.24
	BUTYRIC ACID	MG/L	1	U	1	U	NC
	CHLORIDE	MG/L	49		49		0.00
	FORMIC ACID	MG/L	0.9	J	1	J	NC
	IODIDE	MG/L	13		13		0.00
	LACTIC ACID	MG/L	0.7	J	1.1		NC
	NITROGEN, NITRATE-NITRITE	MG/L	0.05		0.05		0.00
	ORTHOPHOSPHATE	MG/L	0.15		0.15		NC
	PROPIONIC ACID	MG/L	1	U	1	U	NC
	PYRUVIC ACID	MG/L	1	U	1	U	NC
	SULFATE	MG/L	1.9		2.1		10.00
	VALERIC ACID	MG/L	1	U	1	U	NC
METALS, DISS	IRON	µg/L	6900		7100		2.86
	MANGANESE	µg/L	4200		4300		2.35
VOLATILES	1,1,2-TRICHLOROETHANE	µg/L	2.5	U	2.5	U	NC
	1,2,4-TRIMETHYLBENZENE	µg/L	350		360		2.82
	1,2-DIBROMOETHANE	µg/L	3.9	J	3.4	J	NC
	1,3,5-TRIMETHYLBENZENE	µg/L	110		110		0.00
	2-BUTANONE	µg/L	44	J	49	J	NC
	2-CHLOROTOLUENE	µg/L	2.5	U	2.5	U	NC
	2-HEXANONE	µg/L	90		82		9.30
	4-METHYL-2-PENTANONE	µg/L	73		76		4.03
	ACETONE	µg/L	190		180		5.41
	BENZENE	µg/L	2800		2900		3.51
	CARBON DISULFIDE	µg/L	10	U	10	U	NC
	CHLOROMETHANE	µg/L	5	U	5	U	NC
	ISOPROPYLBENZENE	µg/L	120		120		0.00
	METHYL TERT-BUTYL ETHER	µg/L	2.5	U	2.5	U	NC
	METHYLENE CHLORIDE	µg/L	25	U	25	U	NC
	NAPHTHALENE	µg/L	140		130		7.41
	N-BUTYLBENZENE	µg/L	14		14		0.00
	N-PROPYLBENZENE	µg/L	110		110		0.00
	P-ISOPROPYLTOLUENE	µg/L	41		40		2.47
	SEC-BUTYLBENZENE	µg/L	14		13		7.41

Appendix I-1 - Table 5 Field Duplicate Summary

VOLATILES	TERT-BUTYLBENZENE	µg/L	5	U	5	U	NC
	TOLUENE	µg/L	4900		5100		4.00
	TRICHLOROETHENE	µg/L	5	U	5	U	NC
	TRICHLOROFLUOROMETHANE	µg/L	5	U	5	U	NC
	XYLENES	µg/L	3100		3300		6.25

Notes:
Please see Table 2 for definitions of qualifiers and reason codes.
FD - field duplicate.
GW - groundwater.
KAFB - Kirtland Air Force Base.
µg/L - micrograms per liter.
mg/L - milligram per liter.
NC - not calculated.
REG - regular/parent sample.
VQ - validation qualifier.

Appendix I-1 - Table 5 Field Duplicate Summary

	Location Code		KAFB-106MW1-S				
	Sample Number		106MW1S-P1R-100617		106MW1S-P1R-100617-FD		
	Sample Date		10/06/2017		10/06/2017		
	Sample Purpose		REG		FD		
	Sample Type		GW		GW		
	Depth		--		--		Relative Percent Difference
Test Group	**Parameter**	**Units**	**Result**	**VQ**	**Result**	**VQ**	
FLUORIMETRIC	FLUORESCEIN	PPB	0.01	U	0.01	U	NC
USGS	DELTA2H	PER MIL	-96.06		-95.87		(0.20)

Notes:
Please see Table 2 for definitions of qualifiers and reason codes.
FD - field duplicate.
GW - groundwater.
KAFB - Kirtland Air Force Base.
NC - not calculated.
ppb - parts per billion.
REG - regular/parent sample.
USGS - Unites States Geological Survey.
VQ - validation qualifier.

Appendix I-1 - Table 5 Field Duplicate Summary

	Location Code		KAFB-106MW1-S				
	Sample Number		106MW1S-P3P-100318		106MW1S-P3P-100318-FD		
	Sample Date		10/03/2018		10/03/2018		
	Sample Purpose		REG		FD		
	Sample Type		GW		GW		
	Depth		--		--		Relative Percent
Test Group	**Parameter**	**Units**	**Result**	**VQ**	**Result**	**VQ**	**Difference**
EDB	1,2-DIBROMOETHANE	µg/L	3.2		3.9		19.72
GASES	ACETYLENE	µg/L	10	U	10	U	NC
	ETHANE	µg/L	4.9		4.7		4.17
	ETHYLENE	µg/L	13.4		13.3		0.75
	METHANE	µg/L	1436.2		1384		3.70
	PROPANE	µg/L	7.2		7		2.82
GEN CHEMISTRY	ACETIC ACID	MG/L	105.1		106.6		1.42
	ALKALINITY	MG/L	460		470		2.15
	BROMIDE	MG/L	2		2.1		4.88
	BUTYRIC ACID	MG/L	1	U	1	U	NC
	CHLORIDE	MG/L	49		50		2.02
	FORMIC ACID	MG/L	1.6	J	1.5	J	NC
	IODIDE	MG/L	5		5.1		1.98
	LACTIC ACID	MG/L	1	U	1	U	NC
	NITROGEN, NITRATE-NITRITE	MG/L	0.05	U	0.05	U	NC
	ORTHOPHOSPHATE	MG/L	0.15	U	0.15	U	NC
	PROPIONIC ACID	MG/L	57.7		60		3.91
	PYRUVIC ACID	MG/L	1	U	1	U	NC
	SULFATE	MG/L	1	U	1	U	NC
	VALERIC ACID	MG/L	1	U	1	U	NC
METALS, DISS	IRON	µg/L	7300		7500		2.70
	MANGANESE	µg/L	7200		7500		4.08
VOLATILES	1,1,2-TRICHLOROETHANE	µg/L	50	U	50	U	NC
	1,2,4-TRIMETHYLBENZENE	µg/L	430		420		2.35
	1,2-DIBROMOETHANE	µg/L	100	U	100	U	NC
	1,3,5-TRIMETHYLBENZENE	µg/L	140		140		0.00
	2-BUTANONE	µg/L	1000	U	1000	U	NC
	2-CHLOROTOLUENE	µg/L	50	U	50	U	NC
	2-HEXANONE	µg/L	500	U	500	U	NC
	4-METHYL-2-PENTANONE	µg/L	500	U	500	U	NC
	ACETONE	µg/L	1000	U	1000	U	NC
	BENZENE	µg/L	4100		4000		2.47
	CARBON DISULFIDE	µg/L	200	U	200	U	NC
	CHLOROMETHANE	µg/L	100	U	100	U	NC
	ISOPROPYLBENZENE	µg/L	110		110		0.00
	METHYL TERT-BUTYL ETHER	µg/L	50	U	50	U	NC
	METHYLENE CHLORIDE	µg/L	500	U	500	U	NC
	NAPHTHALENE	µg/L	500	U	500	U	NC
	N-BUTYLBENZENE	µg/L	100	U	100	U	NC
	N-PROPYLBENZENE	µg/L	130		120		8.00
	P-ISOPROPYLTOLUENE	µg/L	100	U	100	U	NC
	SEC-BUTYLBENZENE	µg/L	100	U	100	U	NC

Appendix I-1 - Table 5 Field Duplicate Summary

VOLATILES	TERT-BUTYLBENZENE	µg/L	100	U	100	U	NC
	TOLUENE	µg/L	11000		11000		0.00
	TRICHLOROETHENE	µg/L	100	U	100	U	NC
	TRICHLOROFLUOROMETHANE	µg/L	100	U	100	U	NC
	XYLENES	µg/L	4400		4200		4.65

Notes:
Please see Table 2 for definitions of qualifiers and reason codes.
FD - field duplicate.
GW - groundwater.
KAFB - Kirtland Air Force Base.
µg/L - micrograms per liter.
mg/L - milligram per liter.
NC - not calculated.
REG - regular/parent sample.
VQ - validation qualifier.

Appendix I-1 - Table 5 Field Duplicate Summary

	Location Code		KAFB-106MW2-I				
	Sample Number		106MW2I-BL-072417		106MW2I-BL-FD-072417		
	Sample Date		07/24/2017		07/24/2017		
	Sample Purpose		REG		FD		
	Sample Type		GW		GW		
	Depth		--		--		Relative Percent
Test Group	Parameter	Units	Result	VQ	Result	VQ	Difference
EDB	1,2-DIBROMOETHANE	µg/L	0.019	UJ	0.0189	UJ	NC
FLUORIMETRIC	FLUORESCEIN	PPB	0.01	U	0.01	U	NC
GASES	ACETYLENE	µg/L	10	U	10	U	NC
	ETHANE	µg/L	4	U	4	U	NC
	ETHYLENE	µg/L	5	U	5	U	NC
	METHANE	µg/L	2	U	2	U	NC
	PROPANE	µg/L	6	U	6	U	NC
GEN CHEMISTRY	ACETIC ACID	MG/L	1	U	1	U	NC
	ALKALINITY	MG/L	190		186		2.13
	BROMIDE	MG/L	0.196		0.193		NC
	BUTYRIC ACID	MG/L	1	U	1	U	NC
	CHLORIDE	MG/L	20.4		20.4		0.00
	FORMIC ACID	MG/L	1	U	1	U	NC
	IODIDE	MG/L	0.2	U	0.2	U	NC
	LACTIC ACID	MG/L	1	U	1	U	NC
	NITROGEN, NITRATE-NITRITE	MG/L	0.375	U	0.375	U	NC
	O-PHOSPHATE (AS P)	MG/L	0.02	U	0.0125		NC
	PROPIONIC ACID	MG/L	1	U	1	U	NC
	PYRUVIC ACID	MG/L	1	U	1	U	NC
	SULFATE	MG/L	23		23.1		0.43
	VALERIC ACID	MG/L	1	U	1	U	NC
METALS, DISS	IRON	µg/L	53		51.4		NC
	MANGANESE	µg/L	154		142		8.11
USGS	DELTA2H	PER MIL	-97.17		-97.04		(0.13)
VOLATILES	1,1,2-TRICHLOROETHANE	µg/L	1	U	1	U	NC
	1,2,4-TRIMETHYLBENZENE	µg/L	1	U	1	U	NC
	1,2-DIBROMOETHANE	µg/L	1	U	1	U	NC
	1,2-DICHLOROETHANE	µg/L	1	U	1	U	NC
	1,3,5-TRIMETHYLBENZENE	µg/L	1	U	1	U	NC
	2-BUTANONE	µg/L	10	U	10	U	NC
	2-CHLOROTOLUENE	µg/L	1	U	1	U	NC
	2-HEXANONE	µg/L	5	U	5	U	NC
	4-METHYL-2-PENTANONE	µg/L	5	U	5	U	NC
	ACETONE	µg/L	19.8	J	15.9	J	NC
	BENZENE	µg/L	1	U	1	U	NC
	CARBON DISULFIDE	µg/L	1	U	1	U	NC
	CHLOROMETHANE	µg/L	1	U	1	U	NC
	DICHLORODIFLUOROMETHANE	µg/L	2	U	2	U	NC
	ETHYLBENZENE	µg/L	1	U	1	U	NC
	ISOPROPYLBENZENE	µg/L	1	U	1	U	NC
	METHYL TERT-BUTYL ETHER	µg/L	1	U	1	U	NC
VOLATILES	METHYLENE CHLORIDE	µg/L	2	U	2	U	NC

Appendix I-1 - Table 5 Field Duplicate Summary

	NAPHTHALENE	µg/L	1	U	1	U	NC
	N-BUTYLBENZENE	µg/L	1	U	1	U	NC
	N-PROPYLBENZENE	µg/L	1	U	1	U	NC
	P-ISOPROPYLTOLUENE	µg/L	1	U	1	U	NC
	SEC-BUTYLBENZENE	µg/L	1	U	1	U	NC
	TERT-BUTYLBENZENE	µg/L	1	U	1	U	NC
	TOLUENE	µg/L	1	U	0.69	J	NC
	TRICHLOROETHENE	µg/L	1	U	1	U	NC
	TRICHLOROFLUOROMETHANE	µg/L	2	U	2	U	NC
	XYLENES	µg/L	3	U	3	U	NC

Notes:
Please see Table 2 for definitions of qualifiers and reason codes.
FD - field duplicate.
GW - groundwater.
KAFB - Kirtland Air Force Base.
µg/L - micrograms per liter.
mg/L - milligram per liter.
NC - not calculated.
REG - regular/parent sample.
VQ - validation qualifier.

Appendix I-1 - Table 5 Field Duplicate Summary

	Location Code		KAFB-106MW2-I				Relative Percent Difference
	Sample Number		106MW2I-BL-091917		106MW2I-BL-FD-091917		
	Sample Date		09/19/2017		09/19/2017		
	Sample Purpose		REG		FD		
	Sample Type		GW		GW		
	Depth		--		--		
Test Group	Parameter	Units	Result	VQ	Result	VQ	
EDB	1,2-DIBROMOETHANE	µg/L	0.072		0.122		51.55
FLUORIMETRIC	FLUORESCEIN	PPB	0.01	U	0.01	U	NC
GASES	ACETYLENE	µg/L	10	U	10	U	NC
	ETHANE	µg/L	4	U	4	U	NC
	ETHYLENE	µg/L	5	U	5	U	NC
	METHANE	µg/L	7.2		6.86		4.84
	PROPANE	µg/L	6	U	6	U	NC
GEN CHEMISTRY	ACETIC ACID	MG/L	0.59	J	0.31	J	NC
	ALKALINITY	MG/L	194		207		6.48
	BROMIDE	MG/L	0.249		0.287		NC
	BUTYRIC ACID	MG/L	1	U	1	U	NC
	CHLORIDE	MG/L	31.6		32.1		1.57
	FORMIC ACID	MG/L	1	U	1	U	NC
	IODIDE	MG/L	0.75	U	0.75	U	NC
	LACTIC ACID	MG/L	1.08		0.97	J	10.73
	NITROGEN, NITRATE-NITRITE	MG/L	0.375	U	0.375	U	NC
	O-PHOSPHATE (AS P)	MG/L	0.0342	U	0.0525	U	NC
	PROPIONIC ACID	MG/L	1	U	1	U	NC
	PYRUVIC ACID	MG/L	1	U	1	U	NC
	SULFATE	MG/L	19.2		19.8		3.08
	VALERIC ACID	MG/L	1	U	1	U	NC
METALS, DISS	IRON	µg/L	955		996		4.20
	MANGANESE	µg/L	392		405		3.26
USGS	DELTA2H	PER MILLE	-96.44		-96.4		(0.04)
VOLATILES	1,1,2-TRICHLOROETHANE	µg/L	2.5	U	1	U	NC
	1,2,4-TRIMETHYLBENZENE	µg/L	2.5	U	1	U	NC
	1,2-DIBROMOETHANE	µg/L	2.5	U	1	U	NC
	1,2-DICHLOROETHANE	µg/L	2.5	U	0.78	J	NC
	1,3,5-TRIMETHYLBENZENE	µg/L	2.5	U	1	U	NC
	2-BUTANONE	µg/L	25	U	10	J-	NC
	2-CHLOROTOLUENE	µg/L	2.5	U	1	U	NC
	2-HEXANONE	µg/L	12.5	U	5	UJ	NC
	4-METHYL-2-PENTANONE	µg/L	12.5	U	5	UJ	NC
	ACETONE	µg/L	24.6	J	11.3	J	NC
	BENZENE	µg/L	2.5	U	1	U	NC
	CARBON DISULFIDE	µg/L	2.5	U	1	U	NC
	CHLOROMETHANE	µg/L	2.5	U	1	U	NC
	DICHLORODIFLUOROMETHANE	µg/L	5	U	2	U	NC
	ETHYLBENZENE	µg/L	2.5	U	0.619	J	NC

VOLATILES	ISOPROPYLBENZENE	µg/L	1.46	J	1.51	J	NC
	METHYL TERT-BUTYL ETHER	µg/L	2.5	U	1	U	NC
	METHYLENE CHLORIDE	µg/L	5	U	2	U	NC
	NAPHTHALENE	µg/L	1.34	J	1	U	NC
	N-BUTYLBENZENE	µg/L	2.5	U	1	U	NC
	N-PROPYLBENZENE	µg/L	2.5	U	1	U	NC
	P-ISOPROPYLTOLUENE	µg/L	1.29	J	1	U	NC
	SEC-BUTYLBENZENE	µg/L	2.5	U	1	U	NC
	TERT-BUTYLBENZENE	µg/L	2.5	U	1	U	NC
	TOLUENE	µg/L	5.61		2.71		69.71
	TRICHLOROETHENE	µg/L	2.5	U	1	U	NC
	TRICHLOROFLUOROMETHANE	µg/L	5	U	2	U	NC
	XYLENES	µg/L	9.02	J	4.36	J	NC

Notes:
Please see Table 2 for definitions of qualifiers and reason codes.
FD - field duplicate.
GW - groundwater.
KAFB - Kirtland Air Force Base.
µg/L - micrograms per liter.
mg/L - milligram per liter.
NC - not calculated.
REG - regular/parent sample.
VQ - validation qualifier.

Appendix I-1 - Table 5 Field Duplicate Summary

Test Group	Parameter	Units	Result	VQ	Result	VQ	Relative Percent Difference
		Location Code	KAFB-106MW2-I				
		Sample Number	106MW2I-P1P-112917		106MW2I-P1P-112917-FD		
		Sample Date	11/29/2017		11/29/2017		
		Sample Purpose	REG		FD		
		Sample Type	GW		GW		
		Depth	--		--		
EDB	1,2-DIBROMOETHANE	µg/L	20.1		17.1		16.13
FLUORIMETRIC	FLUORESCEIN	PPB	7.694		-NA-		0.00
GASES	ACETYLENE	µg/L	10	U	10	U	NC
	ETHANE	µg/L	4	U	4	U	NC
	ETHYLENE	µg/L	2.24	J	1.99	J	NC
	METHANE	µg/L	17.2		16.3		5.37
	PROPANE	µg/L	6	U	6	U	NC
GEN CHEMISTRY	ACETIC ACID	MG/L	20.5		17.6		15.22
	ALKALINITY	MG/L	260		274		5.24
	BROMIDE	MG/L	0.599		0.600		0.17
	BUTYRIC ACID	MG/L	1	U	1	U	NC
	CHLORIDE	MG/L	42.9		42.8		0.23
	FORMIC ACID	MG/L	1	U	1	U	NC
	IODIDE	MG/L	0.75	U	0.75	U	NC
	LACTIC ACID	MG/L	1	U	1	U	NC
	NITROGEN, NITRATE-NITRITE	MG/L	0.375	U	0.375	U	NC
	O-PHOSPHATE (AS P)	MG/L	0.0200	U	0.0200	U	NC
	PROPIONIC ACID	MG/L	1	U	1	U	NC
	PYRUVIC ACID	MG/L	1	U	1	U	NC
	SULFATE	MG/L	2.37	J	2.42	J	NC
	VALERIC ACID	MG/L	1	U	1	U	NC
METALS, DISS	IRON	µg/L	18300		17800		2.77
	MANGANESE	µg/L	2810		2760		1.80
USGS	DELTA2H	PER MILLE	-87.37		-87.91		(0.62)
VOLATILES	1,1,2-TRICHLOROETHANE	µg/L	2.50	U	2.50	U	NC
	1,2,4-TRIMETHYLBENZENE	µg/L	54.9		57.7		4.97
	1,2-DIBROMOETHANE	µg/L	21.7		22.3		2.73
	1,2-DICHLOROETHANE	µg/L	1.72	J	1.93	J	NC
	1,3,5-TRIMETHYLBENZENE	µg/L	28.6		29.5		3.10
	2-BUTANONE	µg/L	16.6	J	16.8	J	NC
	2-CHLOROTOLUENE	µg/L	2.50	U	2.50	U	NC
	2-HEXANONE	µg/L	31.1		34.6		10.65
	4-METHYL-2-PENTANONE	µg/L	32.6		34.0		4.20
	ACETONE	µg/L	97.2		104		6.76
	BENZENE	µg/L	410		411		0.24
	CARBON DISULFIDE	µg/L	2.50	U	2.50	U	NC
	CHLOROMETHANE	µg/L	2.50	U	2.50	U	NC
	DICHLORODIFLUOROMETHANE	µg/L	5.00	U	5.00	U	NC
	ETHYLBENZENE	µg/L	31.3		32.5		3.76
	ISOPROPYLBENZENE	µg/L	16.2		16.9		4.23
	METHYL TERT-BUTYL ETHER	µg/L	2.50	U	2.50	U	NC

VOLATILES	METHYLENE CHLORIDE	µg/L	5.00	U	5.00	U	NC
	NAPHTHALENE	µg/L	29.0		31.9		9.52
	N-BUTYLBENZENE	µg/L	1.72	J	1.89	J	NC
	N-PROPYLBENZENE	µg/L	3.59	J	4.06	J	NC
	P-ISOPROPYLTOLUENE	µg/L	47.0		49.3		4.78
	SEC-BUTYLBENZENE	µg/L	1.55	J	1.67	J	NC
	TERT-BUTYLBENZENE	µg/L	2.50	U	2.50	U	NC
	TOLUENE	µg/L	62.6		63.9		2.06
	TRICHLOROETHENE	µg/L	2.50	U	2.50	U	NC
	TRICHLOROFLUOROMETHANE	µg/L	5.00	U	5.00	U	NC
	XYLENES	µg/L	760		773		1.70

Notes:
Please see Table 2 for definitions of qualifiers and reason codes.
FD - field duplicate.
GW - groundwater.
KAFB - Kirtland Air Force Base.
µg/L - micrograms per liter.
mg/L - milligram per liter.
NC - not calculated.
REG - regular/parent sample.
VQ - validation qualifier.

Appendix I-1 - Table 5 Field Duplicate Summary

Test Group	Location Code		KAFB-106MW2-I				Relative Percent Difference
	Sample Number		106MW2I-P1R-102017		106MW2I-P1R-102017-FD		
	Sample Date		10/20/2017		10/20/2017		
	Sample Purpose		REG		FD		
	Sample Type		GW		GW		
	Depth		--		--		
	Parameter	**Units**	**Result**	**VQ**	**Result**	**VQ**	
FLUORIMETRIC	FLUORESCEIN	PPB	20.097		-NA-		0.00
USGS	DELTA2H	PER MIL	-80.81		-81.53		(0.89)

Notes:
Please see Table 2 for definitions of qualifiers and reason codes.
FD - field duplicate.
GW - groundwater.
KAFB - Kirtland Air Force Base.
NC - not calculated.
ppb - parts per billion.
REG - regular/parent sample.
USGS - Unites States Geological Survey.
VQ - validation qualifier.

Appendix I-1 - Table 5 Field Duplicate Summary

	Location Code		KAFB-106MW2-I				
	Sample Number		106MW2I-P2P-030618		106MW2I-P2P-030618-FD		
	Sample Date		03/06/2018		03/06/2018		
	Sample Purpose		REG		FD		
	Sample Type		GW		GW		
	Depth		--		--		Relative Percent
Test Group	Parameter	Units	Result	VQ	Result	VQ	Difference
EDB	1,2-DIBROMOETHANE	µg/L	1.98	J+	1.61	J+	20.61
GASES	ACETYLENE	µg/L	10	U	10	U	NC
	ETHANE	µg/L	0.51	J	4	U	NC
	ETHYLENE	µg/L	2.84	J	3.2	J	NC
	METHANE	µg/L	211		220		4.18
	PROPANE	µg/L	6	U	6	U	NC
GEN CHEMISTRY	ACETIC ACID	MG/L	26.8		16.8		45.87
	ALKALINITY	MG/L	277		283		2.14
	BROMIDE	MG/L	0.251		0.251		0.00
	BUTYRIC ACID	MG/L	1	U	1	U	NC
	CHLORIDE	MG/L	26.4		26.5		0.38
	FORMIC ACID	MG/L	1	U	1	U	NC
	IODIDE	MG/L	2.2		2.2		0.00
	LACTIC ACID	MG/L	1.31		0.8	J	48.34
	NITROGEN, NITRATE-NITRITE	MG/L	0.375	U	0.375	U	NC
	O-PHOSPHATE (AS P)	MG/L	0.02	U	0.02	U	NC
	PROPIONIC ACID	MG/L	1		1	U	NC
	PYRUVIC ACID	MG/L	1	U	1	U	NC
	SULFATE	MG/L	1.77	J	1.74	J	NC
	VALERIC ACID	MG/L	1	U	1	U	NC
METALS, DISS	IRON	µg/L	12300		11500		6.72
	MANGANESE	µg/L	1920		1860		3.17
VOLATILES	1,1,2-TRICHLOROETHANE	µg/L	5	U	5	U	NC
	1,2,4-TRIMETHYLBENZENE	µg/L	38.7		42.2		8.65
	1,2-DIBROMOETHANE	µg/L	5	U	5	U	NC
	1,2-DICHLOROETHANE	µg/L	5	U	5	U	NC
	1,3,5-TRIMETHYLBENZENE	µg/L	23.9		25.6		6.87
	2-BUTANONE	µg/L	50	U	50	U	NC
	2-CHLOROTOLUENE	µg/L	5	U	5	U	NC
	2-HEXANONE	µg/L	14.9	J+	15	J+	NC
	4-METHYL-2-PENTANONE	µg/L	13.6	J	15.2	J	NC
	ACETONE	µg/L	48.5	J+	36.3	J+	NC
	BENZENE	µg/L	427		439		2.77
	CARBON DISULFIDE	µg/L	5	U	5	U	NC
	CHLOROMETHANE	µg/L	5	U	5	U	NC
	DICHLORODIFLUOROMETHANE	µg/L	10	U	10	U	NC
	ETHYLBENZENE	µg/L	89.8		90.5		0.78
	ISOPROPYLBENZENE	µg/L	44.6		45		0.89
	METHYL TERT-BUTYL ETHER	µg/L	5	U	5	U	NC
	METHYLENE CHLORIDE	µg/L	10	U	10	U	NC
	NAPHTHALENE	µg/L	17.5		18.5		5.56
	N-BUTYLBENZENE	µg/L	2.71	J	2.96	J	NC
	N-PROPYLBENZENE	µg/L	8.66	J	8.99	J	NC
	P-ISOPROPYLTOLUENE	µg/L	5	U	38.2		NC

Appendix I-1 - Table 5 Field Duplicate Summary

VOLATILES	SEC-BUTYLBENZENE	µg/L	2.52	J	2.57	J	NC
	TERT-BUTYLBENZENE	µg/L	5	U	5	U	NC
	TOLUENE	µg/L	217		221		1.83
	TRICHLOROETHENE	µg/L	5	U	5	U	NC
	TRICHLOROFLUOROMETHANE	µg/L	10	U	10	U	NC
	XYLENES	µg/L	356		369		3.59

Notes:
Please see Table 2 for definitions of qualifiers and reason codes.
FD - field duplicate.
GW - groundwater.
KAFB - Kirtland Air Force Base.
µg/L - micrograms per liter.
mg/L - milligram per liter.
NC - not calculated.
REG - regular/parent sample.
VQ - validation qualifier.

Appendix I-1 - Table 5 Field Duplicate Summary

Test Group	Parameter	Units	Result	VQ	Result	VQ	Relative Percent Difference
		Location Code	KAFB-106MW2-I				
		Sample Number	106MW2I-P3P-111518		106MW2I-P3P-111518-FD		
		Sample Date	11/15/2018		11/15/2018		
		Sample Purpose	REG		FD		
		Sample Type	GW		GW		
		Depth	--		--		
EDB	1,2-DIBROMOETHANE	µg/L	0.24		0.27		11.76
GASES	ACETYLENE	µg/L	10	U	10	U	NC
	ETHANE	µg/L	1.1	J	1	J	NC
	ETHYLENE	µg/L	1.1	J	1.1	J	NC
	METHANE	µg/L	2646		2704.5		2.19
	PROPANE	µg/L	1.1	J	1	J	NC
GEN CHEMISTRY	ACETIC ACID	MG/L	1	U	1	U	NC
	ALKALINITY	MG/L	350		350		0.00
	BROMIDE	MG/L	1		1		0.00
	BUTYRIC ACID	MG/L	1	U	1	U	NC
	CHLORIDE	MG/L	47		47		0.00
	FORMIC ACID	MG/L	0.5	J	0.5	J	NC
	IODIDE	MG/L	6.7		6.9		2.94
	LACTIC ACID	MG/L	1.2		1		18.18
	NITROGEN, NITRATE-NITRITE	MG/L	0.5	U	0.5	U	NC
	ORTHOPHOSPHATE	MG/L	0.15	UJ	0.15	UJ	NC
	PROPIONIC ACID	MG/L	1	U	1	U	NC
	PYRUVIC ACID	MG/L	1	U	1	U	NC
	SULFATE	MG/L	1	U	1	U	NC
	VALERIC ACID	MG/L	1	U	1	U	NC
METALS, DISS	IRON	µg/L	22000		21000		4.65
	MANGANESE	µg/L	3900		3800		2.60
VOLATILES	1,1,2-TRICHLOROETHANE	µg/L	50	U	50	U	NC
	1,2,4-TRIMETHYLBENZENE	µg/L	55	J	57	J	NC
	1,2-DIBROMOETHANE	µg/L	100	U	100	U	NC
	1,3,5-TRIMETHYLBENZENE	µg/L	33	J	50	U	NC
	2-BUTANONE	µg/L	1000	U	1000	U	NC
	2-CHLOROTOLUENE	µg/L	50	U	50	U	NC
	2-HEXANONE	µg/L	500	U	500	U	NC
	4-METHYL-2-PENTANONE	µg/L	500	U	500	U	NC
	ACETONE	µg/L	1000	U	1000	U	NC
	BENZENE	µg/L	630		610		3.23
	CARBON DISULFIDE	µg/L	200	U	200	U	NC
	CHLOROMETHANE	µg/L	100	U	100	U	NC
	ISOPROPYLBENZENE	µg/L	94	J	92	J	NC
	METHYL TERT-BUTYL ETHER	µg/L	50	U	50	U	NC
	METHYLENE CHLORIDE	µg/L	500	U	500	U	NC
	NAPHTHALENE	µg/L	500	U	500	U	NC
	N-BUTYLBENZENE	µg/L	100	U	100	U	NC
	N-PROPYLBENZENE	µg/L	100	U	100	U	NC
	P-ISOPROPYLTOLUENE	µg/L	100	U	100	U	NC
	SEC-BUTYLBENZENE	µg/L	100	U	100	U	NC

Appendix I-1 - Table 5 Field Duplicate Summary

VOLATILES	TERT-BUTYLBENZENE	µg/L	100	U	100	U	NC
	TOLUENE	µg/L	410		390		5.00
	TRICHLOROETHENE	µg/L	280		98	J	96.30
	TRICHLOROFLUOROMETHANE	µg/L	100	U	100	U	NC
	XYLENES	µg/L	430		400		7.23

Notes:
Please see Table 2 for definitions of qualifiers and reason codes.
FD - field duplicate.
GW - groundwater.
KAFB - Kirtland Air Force Base.
µg/L - micrograms per liter.
mg/L - milligram per liter.
NC - not calculated.
REG - regular/parent sample.
VQ - validation qualifier.

Appendix I-1 - Table 5 Field Duplicate Summary

	Location Code		KAFB-106MW2-S				
	Sample Number		106MW2S-P1R-101217		106MW2S-P1R-101217-FD		
	Sample Date		10/12/2017		10/12/2017		
	Sample Purpose		REG		FD		
	Sample Type		GW		GW		
	Depth		--		--		
Test Group	**Parameter**	**Units**	**Result**	**VQ**	**Result**	**VQ**	**Relative Percent Difference**
FLUORIMETRIC	FLUORESCEIN	PPB	1.535		1.527		0.52
USGS	DELTA2H	PER MIL	-93.69		-93.42		(0.29)

Notes:
Please see Table 2 for definitions of qualifiers and reason codes.
FD - field duplicate.
GW - groundwater.
KAFB - Kirtland Air Force Base.
NC - not calculated.
ppb - parts per billion.
REG - regular/parent sample.
USGS - Unites States Geological Survey.
VQ - validation qualifier.

Appendix I-1 - Table 5. Field Duplicate Summary

Test Group	Parameter	Units	Result	VQ	Result	VQ	Relative Percent Difference
	Location Code		KAFB-106MW2-S				
	Sample Number		106MW2S-P2P-041018		106MW2S-P2P-041018-FD		
	Sample Date		04/10/2018		04/10/2018		
	Sample Purpose		REG		FD		
	Sample Type		GW		GW		
	Depth		--		--		
EDB	1,2-DIBROMOETHANE	µg/L	0.154		0.139		10.24
GASES	ACETYLENE	µg/L	10	U	10	U	NC
	ETHANE	µg/L	1.02	J	0.97	J	NC
	ETHYLENE	µg/L	5.5		5.02		9.13
	METHANE	µg/L	11800		11600		1.71
	PROPANE	µg/L	1.39	J	1.2	J	NC
GEN CHEMISTRY	ACETIC ACID	MG/L	113.5		118.4		4.23
	ALKALINITY	MG/L	399		382		4.35
	BROMIDE	MG/L	0.561		0.567		1.06
	BUTYRIC ACID	MG/L	1	U	1	U	NC
	CHLORIDE	MG/L	49.5		49.8		0.60
	FORMIC ACID	MG/L	2.1		2.8		28.57
	IODIDE	MG/L	18		19		5.41
	LACTIC ACID	MG/L	1	U	1		NC
	NITRATE	MG/L	0.2	U	0.2	U	NC
	NITRITE	MG/L	0.2	U	0.2	U	NC
	O-PHOSPHATE (AS P)	MG/L	0.623		0.571		8.71
	PROPIONIC ACID	MG/L	25.8		27.9		7.82
	PYRUVIC ACID	MG/L	1	U	1	U	NC
	SULFATE	MG/L	2	U	2	U	NC
	VALERIC ACID	MG/L	1.1		2.3		70.59
METALS, DISS	IRON	µg/L	12300	J-	12100	J-	1.64
	MANGANESE	µg/L	9470	J+	9420	J+	0.53
VOLATILES	1,1,2-TRICHLOROETHANE	µg/L	50	U	50	U	NC
	1,2,4-TRIMETHYLBENZENE	µg/L	194		189		2.61
	1,2-DIBROMOETHANE	µg/L	50	U	50	U	NC
	1,2-DICHLOROETHANE	µg/L	50	U	50	U	NC
	1,3,5-TRIMETHYLBENZENE	µg/L	70.3	J	69.2	J	NC
	2-BUTANONE	µg/L	500	U	500	U	NC
	2-CHLOROTOLUENE	µg/L	50	U	50	U	NC
	2-HEXANONE	µg/L	250	U	250	U	NC
	4-METHYL-2-PENTANONE	µg/L	250	U	250	U	NC
	ACETONE	µg/L	379	J	343	J	NC
	BENZENE	µg/L	2360		2210		6.56
	CARBON DISULFIDE	µg/L	50	U	50	U	NC
	CHLOROMETHANE	µg/L	50	U	50	U	NC
	DICHLORODIFLUOROMETHANE	µg/L	100	U	100	U	NC
	ETHYLBENZENE	µg/L	628		591		6.07
	ISOPROPYLBENZENE	µg/L	150		150		0.00
	METHYL TERT-BUTYL ETHER	µg/L	50	U	50	U	NC

Appendix I-1 - Table 5. Field Duplicate Summary

VOLATILES	METHYLENE CHLORIDE	µg/L	100	U	100	U	NC
	NAPHTHALENE	µg/L	78.6	J	80.1	J	NC
	N-BUTYLBENZENE	µg/L	50	U	50	U	NC
	N-PROPYLBENZENE	µg/L	52.4	J	50.4	J	NC
	P-ISOPROPYLTOLUENE	µg/L	83.4	J	81.7	J	NC
	SEC-BUTYLBENZENE	µg/L	50	U	50	U	NC
	TERT-BUTYLBENZENE	µg/L	50	U	50	U	NC
	TOLUENE	µg/L	5440		5190		4.70
	TRICHLOROETHENE	µg/L	50	U	50	U	NC
	TRICHLOROFLUOROMETHANE	µg/L	100	U	100	U	NC
	XYLENES	µg/L	1870		1810		3.26

Notes:
Please see Table 2 for definitions of qualifiers and reason codes.
FD - field duplicate.
GW - groundwater.
KAFB - Kirtland Air Force Base.
µg/L - micrograms per liter.
mg/L - milligram per liter.
NC - not calculated.
REG - regular/parent sample.
VQ - validation qualifier.

Appendix I-1 - Table 6. Contractual, Analytical,Technical and Holding Time Completeness

Analytical Method	Number of Analytes	Number of Samples	Number of Results	Contractually Incompliant Results	Number of Contract Compliant Results	Number of Rejected Results	Number of Useable Results	Contractual Completeness [Goal = 95 %] (percent)	Analytical Completeness [Goal = 90 %] (percent)	Technical Completeness [Goal = 95 %] (percent)	Holding Time Completeness [Goal = 100 %] (percent)
E300	1	193	193	0	193	0	193	100%	94.8%	100%	100%
E300M	7	193	1,351	0	1,351	0	1,351	100%	96.%	100%	100%
E353.2	1	85	85	0	85	0	85	100%	100%	100%	100%
FLUORIMETRIC	1	110	110	0	110	0	110	100%	100%	100%	100%
IRMS	2	114	116 *	0	116	0	116	100%	100%	100%	100%
QUANTARRAY	30	61	1,715 *	0	1,715	0	1,715	100%	100%	100%	100%
RSK-175	5	189	945	0	945	0	945	100%	96.2%	100%	100%
SM2320B	1	186	186	7	179	0	186	96.2%	94.1%	100%	96.2%
SM4500PE	1	116	116	8	108	0	116	93.1%	90.5%	100%	98.3%
SW6010C	2	186	372	28	344	0	372	92.5%	88.4%	100%	100%
SW8011	1	186	186	0	186	0	186	100%	77.4%	100%	100%
SW8260B	28	186	4,995 *	4	4,991	0	4,995	99.9%	96.4%	100%	99.9%
SW9056A	7	186	760 *	16	744	9	760	97.9%	92.8%	98.8%	98.3%

Notes:

% - percent.

ACRONYMS AND ABBREVIATIONS

%	percent
%D	percent difference
AFB	Air Force Base
ALS	ALS Laboratories
APTIM	Aptim Federal Services, LLC
CCV	continuing calibration verification
DoD	U.S. Department of Defense
EDB	1,2-dibromoethane/ethylene dibromide
ELAP	Environmental Laboratory Accreditation Program
EPA	U.S. Environmental Protection Agency
ICP	inductively coupled plasma
ICS	interference check sample
KAFB	Kirtland Air Force Base
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
LOQ	limit of quantitation
mg/L	milligram per liter
mL	milliliter
MS	matrix spike
MSD	matrix spike duplicate
PDS	post digestion spike
QAPP	Quality Assurance Project Plan
QC	quality control
QSM	Quality Systems Manual
RPD	relative percent difference
RRF	relative response factor
SDG	sample delivery group
SM	Standard Method
SOP	standard operating procedure
USACE	U.S. Army Corps of Engineers
VOA	volatile organic analysis
VOC	volatile organic compound

LABORATORY DATA QUALITY ASSESSMENT

This Data Quality Assessment describes the findings of the review of data for the March, May, August, and October 2020 quarterly groundwater monitoring, and is provided to document the quality of the analytical data used in the *Ethylene Dibromide In Situ Biodegradation Pilot Test Report, Bulk Fuels Facility, Solid Waste Management Units ST-106 and SS-11*. Sampling procedures and overall quality control (QC) and quality assurance protocols for the March, May, August and October 2020 quarterly groundwater monitoring events are presented in the *Final Uniform Federal Policy Quality Assurance Project Plan, Bulk Fuels Facility, Solid Waste Management Units ST-106/SS-111, Kirtland Air Force Base, Albuquerque, New Mexico* (QAPP; Kirtland Air Force Base [AFB], 2020).

The Data Quality Assessment focuses on the data quality and data usability of the samples collected from the following sampling events:

- March 2020 quarterly groundwater monitoring at monitoring wells (KAFB-106064, KAFB- 106063, KAFB-106MW1-I, KAFB-106MWI-S, KAFB-106MW2-I, KAFB- 106MW2-S, KAFB-106IN1, and KAFB-106EX1);
- May 2020 quarterly groundwater monitoring at monitoring wells (KAFB-106064, KAFB- 106063, KAFB-106MW1-I, KAFB-106MWI-S, KAFB-106MW2-I, KAFB- 106MW2-S, KAFB-106IN1, and KAFB-106EX1);
- August 2020 quarterly groundwater monitoring at monitoring wells (KAFB-106064, KAFB- 106063, KAFB-106MW1-I, KAFB-106MWI-S, KAFB-106MW2-I, KAFB- 106MW2-S, KAFB-106IN1, KAFB-106EX1, and KAFB-106EX2); and
- October 2020 quarterly groundwater monitoring at monitoring wells (KAFB-106064, KAFB- 106063, KAFB-106MW1-I, KAFB-106MWI-S, KAFB-106MW2-I, KAFB- 106MW2-S, KAFB-106IN1, KAFB-106EX1, and KAFB-106EX2).

All quarterly groundwater samples from the listed wells were analyzed for the following of parameters:

- Volatile organic compounds (VOCs) – U.S. Environmental Protection Agency (EPA) Method SW8260C
- 1,2-Dibromethane (EDB) – EPA Method SW8011
- Total lead and dissolved iron and manganese – EPA Method SW6020A
- Anions (chloride, sulfate, bromide, nitrate and nitrite as nitrogen) – EPA Method SW9056A
- Dissolved ortho-phosphate by Standard Method (SM) 4500 PE/EPA 365.3
- Alkalinity – SM2320B

- Iodide – EPA Method 300
- Dissolved gases – RSK 175
- Fatty acids – EPA Method 300 Modified
- Quant Array Chlor – Laboratory Standard Operating Procedure (SOP)

All quarterly groundwater samples were shipped to off-site laboratories for analysis. Groundwater samples for quant array chlor analysis were performed by Microbial Insights in Knoxville, Tennessee. The analysis of dissolved gases and fatty acids was conducted by Aptim Federal Services, LLC (APTIM) Lawrenceville, New Jersey; while the analysis of iodide was completed by ALS Laboratories (ALS) in Middletown Pennsylvania. Microbial Insights, Lawrenceville, and ALS in Middletown are not U.S. Department of Defense (DoD) accredited laboratories. The remaining listed analyses for the quarterly groundwater samples were performed by ALS in Houston, Texas. ALS in Houston Texas holds a current DoD Environmental Laboratory Accreditation Program (ELAP) certification version 5.3.

All analytical results from the March, May, August, and October 2020 quarterly groundwater monitoring events were reported by the off-site laboratories and received in sample delivery groups (SDGs). Appendix B-1 – Table 1 (provided at the end of this report) summarizes sample collection dates, sample numbers, sample locations, laboratories, sample types, sample matrix, analysis methods, and SDG numbers. Laboratory data packages for the four quarterly groundwater monitoring events are provided in Appendix B-2. Stage 2B data validation was performed for all analytical results obtained from the March, May, August, and October 2020 quarterly groundwater monitoring events.

The following QC elements were included in the Stage 2B data validation:

- Sample preservation and sample extraction and analysis holding times
- Laboratory method blanks
- Initial and continuing calibration blanks (metals and anions analyses only)
- Surrogate recoveries (organic analyses)
- Laboratory control sample (LCS)/laboratory control sample duplicate (LCSD) recoveries
- Matrix spike (MS)/matrix spike duplicate (MSD) recoveries
- Relative percent differences (RPDs)

- Initial calibration and verifications
- Continuing calibration verifications (CCVs)
- Inductively coupled plasma (ICP) interference check samples (ICS) (metal analysis only)
- ICP serial dilutions (metal analysis only)
- Post digestion spike (PDS) recoveries (metals analysis only)
- Sample confirmation (EDB analysis only)
- Field blanks
- Field duplicates

The Stage 2B data validation was performed in accordance with the guidelines and control criteria specified in the following documents:

- QAPP (Kirtland AFB, 2020)
- *DoD Quality Systems Manual for Environmental Laboratories, Version 5.3* (2019)
- *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (2006), SW-846* (EPA, 1996 and updates)
- *Standard Methods for the Examination of Water and Wastewater (21st Edition)* (American Public Health Association et al., 2005)
- *USEPA Contract Laboratory Program, National Functional Guidelines for Organic Superfund Methods Data Review, Final* (EPA, 2017a)
- *USEPA Contract Laboratory Program*, *National Functional Guidelines for Inorganic Superfund Methods Data Review*, *Final* (EPA, 2017b)
- DoD General Data Validation Guidelines (2018)

Analytical data were reviewed in terms of precision, bias, representativeness, comparability, and completeness as follows:

- *Bias* is demonstrated by recovery of target analytes from fortified blank and sample matrices, LCS/LCSD, and MS/MSD, respectively. For organic methods, bias is also demonstrated through recovery of surrogates from each field and QC sample. The recovery of target analytes from fortified samples is compared with the acceptance criteria defined in the QAPP (USACE, 2020) and DoD Quality Systems Manual (QSM). When the acceptance criteria are not available in the QAPP or DoD QSM, results are compared with the laboratory in-house control limits. When these criteria are not met, the data are qualified accordingly.
- *Precision* is expressed as the RPD between the results of replicate sample analyses: sample duplicates, LCSDs, and MSDs. When analyte RPDs exceed the acceptance criteria, the data are qualified accordingly.
- *Representativeness* of the samples submitted for analysis is ensured by adherence to standard sampling techniques and protocols.

- *Comparability* of sample results is ensured through the use of approved sampling and analysis methods.
- *Completeness* is expressed as a ratio of the number of usable data points to the total number of analytical data results.

The following sections present the Stage 2B data validation findings. The discussion summarizes data quality exceedances and their potential impact on the quality and usability of analytical results. Appendix B-1 – Table 2 presents definitions of data qualification and reason codes applied to the analytical results. Appendix B-1 – Table 3 summarizes the qualified data. For informational purposes, qualified field QC data are also presented in this table.

1.1 Data Quality Outliers

1.1.1 Sample Preservation and Sample Extraction and Analysis Holding Times (Reason Code H)

The sample coolers and samples contained within were received intact at the laboratories and were held within the required 0 to 6 degrees Celsius, and when required, were chemically preserved in accordance with EPA and SM preservation requirements.

Sample holding times were evaluated by comparing the sample collection dates to the sample extraction and analysis dates. Extraction and analysis holding times were reviewed for all samples to determine the validity of the sample results. Holding time exceedances were reported for samples analyzed for VOCs, ortho-phosphate, nitrate and nitrite as nitrogen, and iodide. The affected sample numbers, analyses, holing time outliers, and holding time requirements are summarized below.

May 2020 Quarterly Groundwater Monitoring Event					
Sample Number	EPA Method	Analysis	Holding Time Outlier	Holding Time Requirement	Data Qualification
106064-LTM-051920	SM4500 PE	Ortho-phosphate	51 hours	48 hours	J-
106064-LTM-051920	SW9056A	Nitrate and Nitrite as Nitrogen	56 hours	48 hours	J-/UJ
106063-LTM-051920	SM4500 PE	Ortho-phosphate	51 hours	48 hours	UJ
106063-LTM-051920	SW9056A	Nitrate and Nitrite as Nitrogen	56 hours	48 hours	J-/UJ
106063-LTM-051920-FD	SM4500 PE	Ortho-phosphate	51 hours	48 hours	UJ
106063-LTM-051920-FD	SW9056A	Nitrate and Nitrite as Nitrogen	56 hours	48 hours	J-/UJ
106063-LTM-051920	300	Iodide	49 days	28 days	J-

May 2020 Quarterly Groundwater Monitoring Event					
Sample Number	**EPA Method**	**Analysis**	**Holding Time Outlier**	**Holding Time Requirement**	**Data Qualification**
106063-LTM-051920-FD	300	Iodide	49 days	28 days	J-
TB-052020	SW8260C	VOCs	23 days	14 days	UJ
October 2020 Quarterly Groundwater Monitoring Event					
106MW2I-LTM-101420	SW9056A	Nitrate and Nitrite as Nitrogen	57.5 hours	48 hours	J-/UJ
106IN1-LTM-102820	365.3	Ortho-phosphate	52.5 hours	48 hours	J-
106IN1-LTM-102820	SW9056A	Nitrate and Nitrite as Nitrogen	71.5 hours	48 hours	J-/UJ

On May 19, 2020, four groundwater samples were collected and shipping to the laboratory. Due to a FedEx delivery delay, the coolers were not received by the laboratory until 2 days later. Upon sample receipt, the temperatures of the coolers were recorded by the laboratory at 2 degree Celsius and within the temperature preservation requirement and the samples contained within the coolers were received in good condition. However, the three listed samples for ortho-phosphate and nitrate and nitrite as nitrogen were received outside the holding time requirement. The laboratory analyzed the affected samples as soon as the samples were received. As a result of the holding time exceedances, the detected results of ortho-phosphate and nitrate and nitrite as nitrogen in the affected samples were qualified as estimated (J-) and the non-detected results were qualified as estimated (UJ). The results of ortho-phosphate and nitrate and nitrite as nitrogen in the affected samples were compared to their respective results from the previous sampling events and found to be comparable. The remaining samples in the same shipment met the holding time requirement.

The original analysis of iodide in the listed primary sample and its duplicate was completed within the holding time requirement. During the data review process, it was observed that iodide in the primary sample was detected well above the limit of quantitation (LOQ) but not detected in the duplicate. As requested, the laboratory re-analyzed the duplicate pair after the samples were expired. The re-analysis indicated that the results of iodide the primary sample and its duplicate compared well, and were also consistent with the results reported from the previous sampling events. As a result of the holding time exceedance, the results of iodide from the re-analysis were qualified as estimated (J-) and are presented in this report.

Due to a laboratory oversight, one trip blank from the May 2020 quarterly groundwater monitoring event was not logged into the system for analysis. The trip blank was analyzed as soon as the login error was discovered, however the sample was analyzed after the holding time had expired. Due to the holding time exceedance, the results of the trip blank were qualified as estimated (UJ). The qualified data is considered usable as all other QC results associated with the trip blank met the accuracy, precision and calibration requirements.

The initial analysis of nitrate and nitrite as nitrogen in one groundwater sample (106MW2I-LTM-101420) from the October 2020 quarterly groundwater monitoring event was completed within the holding time requirement. Due to non-compliant calibration results, the sample was re-analyzed after the sample was expired. The results of nitrate and nitrite from the re-analysis were qualified as estimated (J-/UJ) and are reported in this report. With the exception of the holding time exceedance, all other QC results from the re-analysis met the acceptance criteria.

As a result of laboratory capacity issues, the analysis of ortho-phosphate and nitrate and nitrite as nitrogen in one groundwater sample (106IN1-LTM-102820) from the October sampling event was completed a few hours outside the holding time requirement. Consequently, the results of ortho-phosphate and nitrate and nitrite as nitrogen in the affected sample were qualified as estimated (J-/UJ). Ortho-phosphate and nitrate were detected in the sample and their reported concentrations were similar to the previously reported values.

In all cases, the holding time exceedances were within two times their respective holding time requirements. Since other QC results met the acceptance criteria, the qualified data is considered usable.

Except as noted above, the extraction and analysis holding time requirements were achieved for all other samples and for all other methods.

1.1.2 Laboratory Method Blanks (Reason Code B1)

The field sample results were evaluated with respect to the laboratory method blank prepared and analyzed for each analytical batch and for each analytical method. No target compounds were detected above the limit of detection in the laboratory method blanks for all analyses.

1.1.3 Initial and Continuing Calibration Blanks (Reason Code B2)

In addition to the laboratory method blanks for metals and anions analyses, initial and continuing calibration blank results were reviewed to ensure that the instrument was free of contamination prior to the analyses. All initial and continuing calibration blanks were free of metals and anions.

1.1.4 Surrogate Recoveries (Reason Code S)

Surrogate standards are organic compounds added to field and laboratory QC samples for organic analysis to evaluate the matrix effect and method performance on an individual sample basis. With the exception of one sample below, surrogates in all other samples analyzed for VOCs were recovered within the accuracy specifications. The following table presents the affected sample, non-compliant surrogate recovery and surrogate recovery control criteria.

October 2020 Quarterly Groundwater Monitoring Event				
EPA Method	**Sample Number**	**Surrogate Recovery Outlier (%)**	**Surrogate Control Limit (%)**	**Data Qualification**
SW8260C	106IN1-LTM-102820	4-bromofluorobenzene: 116	85-114	J+

VOC in the listed sample was analyzed at one-time and 25-time dilution factors. In the one-time dilution run, the surrogate 4-bromofluorobenzene was recovered marginally above the upper control limit; while the recoveries of the remaining surrogates 1,2-dichloroethane-d4, dibromofluoromethane, and toluene-d8 in the same sample were acceptable. As a result of the minor surrogate recovery exceedance, the detected VOC results from the one-time dilution run were qualified as estimated (J+). The high biased surrogate recovery did not affect the non-detected data and did not lead to any data qualification.

In the same sample, target compounds ethylbenzene, m, p-xylene, o-xylene and total xylenes were re-analyzed at a 25-time dilution factor in order to quantify the sample results within the instrument calibration range. The recoveries for all surrogates in the 25-time run met the acceptance criteria. The results ethylbenzene, m,p-xylene, o-xylene and total xylenes were not qualified and are reported in this report.

1.1.5 Laboratory Control Sample/Laboratory Control Sample Duplicate Recoveries and Precisions (Reason Codes L, D3, and D1)

The LCS is an aliquot of analyte-free matrix spiked with target analytes that is prepared with each analytical batch for each analytical method. The recovery of target analytes from the LCS analysis is a measurement of method performance in an interference-free sample matrix. The LCS results met the bias and precision acceptance criteria for all batches and analyses.

1.1.6 Matrix Spike/Matrix Spike Duplicate Recoveries and Precisions and Post Digestion Spike Recoveries (Reason Codes M and D2)

The MS and MSD samples are a portion of a field sample spiked with target analytes that are prepared with each analytical batch and with each method. The MS/MSD results are used to evaluate any bias introduced to the method due to matrix interference, and to measure bias and precision for each analytical batch.

In accordance with the site-specific QAPP requirements (Kirtland AFB, 2020), the MS/MSD samples are to be collected at a rate of 1 per 20 groundwater samples or 5%. During each quarterly monitoring event, one MS/MSD sample was collected thus achieving the 5% MS/MSD sample frequency. Although additional MS/MSD sample volumes were not provided to the laboratory, the laboratory performed MS/MSD analyses on site-specific samples to meet their internal QC frequency requirements and to verify the presence of a matrix effect and its potential impact on the precision and bias of the analytical results.

The following site-specific groundwater samples were spiked for MS/MSD analysis:

Well Location	Sample Number	MS/MSD Analysis
March 2020 Quarterly Groundwater Monitoring Event		
KAFB-106064	106064-LTM-031120	Dissolved metals and dissolved ortho-phosphate
KAFB-106MW2-I	106MW2I-LTM-031120	Dissolved gases
KAFB-106MW1-S	106MW1S-LTM-031220	VOCs, total and dissolved metals, EDB, anions, and dissolved ortho-phosphate
May 2020 Quarterly Groundwater Monitoring Event		
KAFB-106064	106064-LTM-051920	EDB and dissolved gases
KAFB-106MW1-S	106MW1S-LTM-052020	Fatty acids
KAFB-106MW2-S	106MW2S-LTM-052020	VOCs, total and dissolved metals, EDB, anions, and dissolved ortho-phosphate
August 2020 Quarterly Groundwater Monitoring Event		
KAFB-106IN1	106IN1-LTM-080420	Anions
KAFB-106064	106064-LTM-080420	Dissolved gases and fatty acids
KAFB-106063	106063-LTM-080420	Dissolved ortho-phosphate
KAFB-106MW2-I	106MW2I-LTM-080520	VOCs, EDB, total and dissolved metals, anions, dissolved ortho-phosphate, and iodide
KAFB-106EX2	106EX2-LTM-081220	Anions, dissolved gases and fatty acids
October 2020 Quarterly Groundwater Monitoring Event		
KAFB-106MW1-I	106MW1I-LTM-101320	VOCs
KAFB-106MW2-I	106MW2I-LTM-101420	VOCs, EDB, total and dissolved metals, anions, and dissolved ortho-phosphate, and iodide
KAFB-106IN1	106IN1-LTM-102820	Dissolved metals and iodide
KAFB-106064	106064-LTM-101420	Dissolved gases
KAFB-106MW1-S	106MW1S-LTM-101320	Fatty acids
KAFB-106EX1	106EX1-LTM-101520	Fatty acids
KAFB-106IN1	106IN1-LTM-102820	Dissolved gases and fatty acids

The majority of the MS results met the established bias and precision requirements; however MS recovery biases were observed for VOCs, EDB, metals, and anions analyses, which are summarized as follows:

Analytical Method	Spiked Sample	MS Recovery Outlier (%)	Control Limit (%)	Data Qualification
March Quarterly Groundwater Monitoring Event				
SW6020A	106064-LTM-031120	Manganese: 360/120	83-118	No qualification
SW8260C	106MW1S-LTM-031220	1,2,4-Trichlorobenzene: 66/82	69-120	UJ
		Benzene: 122/91	79-120	J+
	106MW1S-LTM-031220	Toluene: 137/84	80-121	No qualification
SW6020A	106MW1S-LTM-031220	Manganese, 984/1310	83-118	No qualificaition
SW8011	106MW1S-LTM-031220	EDB: 98/174	60-140	No qualificaition
May Quarterly Groundwater Monitoring Event				
SW8260C	106MW2S-LTM-052020	Benzene: 94/61	79-120	No Qualificaition
SW6020A	106MW2S-LTM-052020	Manganese: -233/-329	83-118	No qualificaition
August Quarterly Groundwater Monitoring Event				
SW9056A	106EX2-LTM-081220	Chloride: 59/65	87-111	No qualification
SW9056A	106MW2I-LTM-080520	Chloride: 59/55	87-111	No qualification
SW6020A	106MW2I-LTM-080520	Manganese: 305/316	87-115	No qualification
SW8260C	106MW2I-LTM-080520	Ethylbenzene: 125/116	79-121	UJ
October Quarterly Groundwater Monitoring Event				
SW8260C	106MW1I-LTM-101320	4-isopropyltouene: 149/103	77-127	No qualification
		Benzene: 132/104	79-120	J+

Analytical Method	Spiked Sample	MS Recovery Outlier (%)	Control Limit (%)	Data Qualification
SW8260C	106MW1I-LTM-101320	Ethylbenzene: 145/70.5	79-121	No qualification
		Isopropyl benzene: 138/101	80-121	J+
		m,p-xylene: 132/116	80-121	J+
		Naphthalene: 144/166	61-128	J+
		n-butylbenzene: 141/125	75-128	J+
		n-propyl benzene: 149/125	76-126	J+
		o-xylene: 132/117	78-122	J+
		sec-butylbenzene: 148/128	77-126	J+
		Toluene: 133/123	80-121	J+
		Total xylenes: 132/116	78-122	J+
SW8260C	106MW2I-LTM-101420	Ethylbenzene: 122/118	79-121	J+
		Tert-butyl benzene: 124/126	78-124	J+
SW6020A	106MW2I-LTM-101420	Manganese: -173/-31	83-138	No qualification
SW9056A	106MW2I-LTM-101420	Chloride: 74/98.2	87-111	No qualification
SW6020A	106IN1-LTM-102820	Manganese: -690/618	83-138	No qualification

Due to the above MS/MSD recovery outliers, data qualification was applied to the detected results and non-detected results of the listed VOCs as estimated (J+) and (UJ), respectively. This data qualification was applied to the results of the VOCs in the spiked samples only.

For the August quarterly groundwater monitoring event, high biased MS recovery and trip blank detection were reported for one sample (106MW2I-LTM-080520). As a result of both QC exceedances, the positive result of ethylbenzene was qualified as non-detected with an overall qualifier (UJ). This data qualification was applied to the result of ethylbenzene in the spiked sample only.

In all cases, the degree of the MS recovery exceedances was small, and therefore the data usability of the qualified data is not affected. It should be noted that the LCS results associated with the non-complaint batches met the bias and precision control criteria, which demonstrated that acceptable batch bias and precision were achieved for all VOC samples in the batch.

High biased MS results were also reported for other VOCs for both August and October quarterly groundwater monitoring events. No data qualification was applied to any samples as the VOCs in the spiked samples were not detected and were not affected by the high biased MS/MSD recoveries.

In addition to above, the reported MS recoveries were outside the accuracy specifications for:

- Manganese in the spiked samples (106064-LTM-031120, 106MW1S-LTM-031220, 106MW2S-LTM-052020, 106MW2I-LTM-080520, 106MW2I-LTM-101420, and 106IN1-LTM-102820);
- Toluene in the spiked sample (106MW1S-LTM-031220);
- EDB in the spiked sample (106MW1S-LTM-031220);
- Benzene in the spiked sample (106MW2S-LTM-052020);
- 4-Isoproplybenzene in the spiked sample (106MW1I-LTM-101320);
- Ethylbenzene in the spiked sample (106MW1I-LTM-101320); and
- Chloride in the spiked samples (106EX2-LTM-081220, 106MW2I-LTM-080520, and 106MW2I-LTM-101420).

These non-compliant MS results could be attributed to a matrix effect. In the spiked samples, the parent concentrations of manganese, EDB, VOCs, and chloride exceeded four times their respective spiked levels. The elevated sample concentrations produced matrix interference, which affected the accuracy of the MS analysis. Because the parent concentrations were greater than four times the spiked levels, no data qualification was applied to the results of the manganese, EDB, listed VOCs, and chloride.

Except as noted, the MS precision and bias results were acceptable for all other analyses.

PDS analysis is performed when MS/MSD results for metals analysis are outside the established control range and when the parent sample concentrations are less than four times the spiked levels. The PDS data is used to further evaluate if matrix interference may introduce a bias in sample quantitation. PDS analysis was performed on the following site-specific groundwater samples:

Sampling Event	PDS Sample Number	PDS Analysis
March Quarterly Groundwater Monitoring	106064-LTM-031120	Dissolved metals
	106MW1S-LTM-031220	Total and dissolved metals
May Quarterly Groundwater Monitoring	106MW2S-LTM-052020	Total and dissolved metals
August Quarterly Groundwater Monitoring	106MW2I-LTM-080520	Dissolved metals
October Quarterly Groundwater Monitoring	106MW2I-LTM-101420	Dissolved metals
	106IN1-LTM-102820	Dissolved metals

The review indicated that the results of the PDS analysis met the established accuracy requirements for total and dissolved metals and for all the PDS samples.

1.1.7 Initial Calibration (Reason Code G)

Instrument calibration is performed for VOCs, EDB, metals, anions, dissolved gases, and fatty acids analyses according to the EPA method requirements (EPA, 1996). The linear analytical range is established for each method by analysis of calibration standards prepared at increasing concentrations that cover the expected sample concentrations. The acceptability of the initial calibration is determined by calculation of a percent relative standard deviation or coefficient. The initial calibration results were acceptable for all the listed analyses.

Immediately after the initial calibration for each analysis, initial calibration verification was conducted at the mid-point of instrument calibration range by using a second-source calibration standard to verify the accuracy of the initial calibration. The review indicated acceptable initial calibration verification results for all target analytes.

1.1.8 Continuing Calibration Verification (Reason Code C)

Routinely during sample analysis, the stability of the analytical system is monitored by analysis of continuing calibration standards at concentrations near the mid-point of the instrument calibration range. The percent difference (%D) values between the relative response factor (RRF) in the initial calibration and the RRF in the continuing calibration met the continuing calibration requirements for VOCs, EDB, metals, anions, dissolved gases, and fatty acids analyses.

1.1.9 Interference Check Samples (Reason Code O)

The ICS verifies the inter-element and background correction factors. An ICS was analyzed at the required frequencies, and all ICS results were within the established control limit for EPA Method SW6020A for the Mach, May, August, and October 2020 quarterly groundwater monitoring events.

1.1.10 ICP Serial Dilutions (Reason Code A)

The ICP serial dilution determines whether significant physical or chemical interferences exist due to sample matrix. When the concentration of an analyte exceeds 50 times the method detection limit, an ICP serial dilution is performed at a five-fold dilution and the results between the original analysis and the diluted analysis are compared. The results of the ICP serial dilution are deemed acceptable when a percent difference between the original analysis and the diluted analysis is less than or equal to 10%. ICP serial dilution analysis was performed on the quarterly groundwater samples listed below:

Sampling Event	ICP Serial Dilution Sample Number
March Quarterly Groundwater Monitoring	106064-LTM-031120
	106MW1S-LTM-031220
May Quarterly Groundwater Monitoring	106MW2S-LTM-052020
August Quarterly Groundwater Monitoring	106MW2I-LTM-080520
October Quarterly Groundwater Monitoring	106MW2I-LTM-101420
	106IN1-LTM-102820

The ICP serial dilution results met the accuracy requirement for total and dissolved metals and for the above listed samples.

1.1.11 Sample Confirmation (Reason Code D)

As required by the DoD and EPA, when samples are analyzed by either a gas chromatography or high-performance liquid chromatography method, all positive results, with the exception of total petroleum hydrocarbons as gasoline and diesel, must be confirmed by a second column or a different detector. As indicated in all SDGs for the March, May, August, and October 2020 quarterly groundwater monitoring events, all positive EDB results reported by EPA Method SW8011 were confirmed by a second column, and the precision results between the primary and secondary columns were within the precision control limit for all the detected samples with the following exception:

Analytical Method	Sample Number	Primary/Secondary Column (ug/L)	RPD(%)	Control Limit (%)	Data Qualification
August 2020 Quarterly Groundwater Monitoring Event					
SW8011	106MW2S-LTM-080520	EDB: 0.024/0.045	68.8	40	J

As shown above, EDB was detected above the LOQ in the primary column and its detection was confirmed by the secondary column; however the precision between the two columns was observed at

68.8% exceeding the precision control limit. As a result of the precision outlier, the result of EDB from the primary column was qualified as estimated (J) and reported in this report. The precision outlier did not affect the data usability as all other QC elements such as holding time, method blanks, LCS bias and precision, and calibration results were within their respective control criteria.

1.1.12 Trip Blanks (Reason Code K3)

Trip blanks were prepared by the laboratory and stored with the groundwater samples collected for VOCs analysis. In accordance with the site-specific QAPP requirements (Kirtland AFB, 2020), one trip blank is to be collected at a rate of one per cooler when sampling groundwater samples for VOCs analysis. With the exception of March 11, 2020, one trip blank was submitted with VOCs samples collected on each day during the March, May, August, and October 2020 quarterly monitoring events, which resulted in a total of eight trip blanks. Due to a field oversight, no trip blank was not shipped with the VOCs samples collected on March 11, 2020.

Appendix B-1 – Table 4 presents detected trip blank results and associated groundwater sample results. As shown on the table, VOC contaminants were reported in one trip blank. Specific contaminants in the blank, the detected levels, and the LOQs are summarized as follows:

August 2020 Quarter Groundwater Monitoring Event					
Analytical Method	Sample Number	Contaminant	Contaminant Level (ug/L)	LOQ (ug/L)	Data Qualification
SW8260C	TB-080520	Ethylbenzene	0.69	1	UJ
		Toluene	2	1	U
		M,p-xylene	1.9	2	None
		Total Xylenes	1.9	1	None

As a result of the trip blank detections, the results of toluene in two groundwater samples were qualified as non-detected (U). In addition, due to a combination of non-compliant MS recovery discussed in the previous section and trip blank detections, the result of ethylbenzene in one groundwater sample was qualified as non-detected with an overall qualifier (UJ). This data qualification was applied to all groundwater samples shipped with the trip blank when the concentrations of target compounds in samples were less than or equal to five times (or ten times for common contaminants such as acetone and methylene chloride) the level observed in the trip blank. As presented on Appendix B-1 Table 4, results of ethylbenzene, toluene, m,p-xylene and total xylenes in all other samples were not affected by the trip blank detections as these VOCs were either not detected in samples or their concentrations in samples far exceeded five times the trip blank detections. With the exception of ethylbenzene, toluene, m,p-xylene and total xylenes in the trip blank (TB-080520), no other VOCs were detected in the blank. The remaining seven trip blanks collected from the March, May, August, and October quarterly groundwater monitoring events were free of VOCs and acceptable.

1.1.13 Equipment Rinse Blanks (Reason Code K1)

Equipment rinse blanks are designed to check for contamination from sampling equipment, and the results for the equipment rinse blanks are used to evaluate the efficiency of equipment decontamination procedures.

In accordance with the site-specific QAPP requirements (Kirtland AFB, 2020), no equipment rinse blanks will be collected when dedicated or disposable sampling equipment is used to collect groundwater samples. When non-dedicated or non-disposable sampling equipment is used, one equipment rinse blank will be collected at a rate of one per day. During the March, May, August, and October 2020 quarterly groundwater monitoring events, dedicated sampling equipment was used to collect groundwater samples. As no cross-contamination between wells or samples could occur, no equipment rinse blanks were necessary in these cases.

1.1.14 Field Duplicates

In accordance with the site-specific QAPP requirements (Kirtland AFB, 2020), field duplicate samples are to be collected at a minimum rate of 10% of the total number of groundwater samples. Field duplicate samples are evaluated by calculating the RPD between the parent sample and its duplicate. The RPD is calculated using the following equation:

$$RPD = |(S-D)/[(S+D)/2]| \times 100$$

Where:

S = sample result
D = duplicate result

Acceptable precision control criteria are established at less than or equal to 35% for water samples. The RPD is calculated between pairs of field duplicate samples when both results are reported at or above the LOQ.

One field duplicate pairs were collected during each of the quarterly groundwater monitoring event, thereby achieving the 10% of the field duplicate sample frequency requirement. The duplicate pairs were collected following the same sampling and preservation procedures and analyzed for the same analytical parameters as the associated parent samples. Appendix B-1 – Table 5 presents the field duplicate results from the March, May, August, and October 2020 quarterly groundwater monitoring. The field precision results are also summarized below:

Sampling Event	Well Location	Field RPD(%) for Detected Parameters
March Quarterly Groundwater Monitoring	KAFB-106064	0-14.81
May Quarterly Groundwater Monitoring	KAFB-106063	0-22.22
August Quarterly Groundwater Monitoring	KAFB-106IN1	0-19.96
October Quarterly Groundwater Monitoring	KAFB-106MW1-S	0-26.95

As indicated in Appendix B-1 - Table 5 and above, the field RPDs met the 35% precision goal for all 4 duplicate pairs and for all analyses. The field duplicate results demonstrate acceptable overall field sampling and analytical precisions for all methods.

1.2 Completeness

The following sections present a discussion of technical and holding time completeness for the March, May, August, and October 2020 quarterly groundwater monitoring events. Completeness results are calculated for project samples that will be used for project decisions. For information purposes, completes results are also calculated for field QC samples. Completeness results for both project samples and field QC samples are presented in Appendix B-1 – Table 6.

1.2.1 Technical Completeness

Technical completeness is a quantitative measure of the data usability based on the number of rejected data compared to the total number of sample results. The technical completeness goal for each method is established at equal to or greater than 90%. The technical completeness calculation considers all data that are not rejected to be usable. The technical completeness is calculated as follows:

$$\%\ \text{Technical Completeness} = \frac{\text{Number of Usable Results}}{\text{Total Number of Results}} \times 100$$

Despite the exceedances discussed in the previous sections, all qualified data is still considered usable. The technical completeness was 100% for all methods exceeding the 90% technical completeness objective. Therefore, the project data quality objectives were achieved for all methods for the March, May, August, and October 2020 quarterly groundwater monitoring events.

1.2.2 Holding Time Completeness

Holding time completeness is a quantitative determination of the number of samples extracted and analyzed within their respective holding times to the total number of samples collected. The holding time completeness goal is 100% for each method. Holding time completeness is calculated as follows:

$$\%\ \text{Holding Time Completeness} = \frac{\text{Number of Holding Time Compliant Results}}{\text{Total Number of Results}} \times 100$$

The 100% holding time completeness objective was missed for the following methods:

- Ortho-phosphate by EPA Method 365.3: 95%
- Ortho-phosphate by SM4500 PE: 83.3%
- Anions by SW9056A: 94.7%

- Iodide by EPA Method 300: 94.7%
- VOCs by EPA Method SW8260C: 87.5% (trip blanks)

With the exceptions of above, the 100% holding time completeness objective was achieved for all other methods. As discussed in the previous sections, due to a FedEx delivery delay, laboratory login error, sample precision outlier, and capacity issues, the results of ortho-phosphate in four samples, and nitrate and nitrites nitrogen in five groundwater samples, iodide in two groundwater samples, and VOCs in one trip blank were analyzed outside their respective holding time requirements. The affected results were qualified as estimated, the data usability however is not affected.

1.3 Representativeness and Comparability

During sampling, samplers followed the approved site-specific QAPP requirements (Kirtland AFB, 2020) and established sampling SOPs to collect, preserve, document, and ship samples to off-site laboratories, thus ensuring the representativeness of the groundwater samples collected for the events.

From each groundwater monitoring well, VOCs samples were collected in three 40-milliliter (mL) volatile organic analysis (VOA) vials preserved with hydrochloric acid, and EDB samples by EPA Method SW8011 were stored in three 40-mL VOA vials preserved with ice only. Upon sample receipt, the laboratory reviewed sample conditions to ensure that sample containers, preservatives (when applicable), and requested analyses matched the chain-of-custody requirements. The laboratory also inspected VOA vials to verify the presence or absence of any headspace. As documented on the laboratory sample receipt form, a pea-size headspace was present in 2 VOC vials (106IN1-LTM-031220) and 1 VOC vial (106IN1-LTM-102820). Following EPA guidance and laboratory SOP requirements, the laboratory selected available vials without any headspace for the requested analysis to ensure that the reported data were representative. With the exception of these two VOC sample (106IN1-LTM-031220 and 106IN1-LTM-102820), all other VOA vials were free of headspace.

ALS in Houston is DoD ELAP certified and adhered to the most current EPA Method and SM requirements, project QAPP (Kirtland AFB, 2020), and DoD QSM (2019) requirements to prepare, analyze, and report the data. This ensures the comparability of the analytical results between different samples and different sampling events. The Stage 2B data validation was performed on 100% of the groundwater data to verify that the laboratories complied with the DoD QSM, project QAPP, and method requirements. Analytical results that were outside the established QC requirements were qualified and the data quality and usability were discussed in the previous sections. Based on a review of the completed sample collection logs, chain-of-custody forms, sample receipt forms, and laboratory data packages, the analytical data reported for the March, May, August, and October 2020 quarterly groundwater monitoring events has met the comparability requirements.

1.4 Summary

The analytical data reported for the four quarterly groundwater monitoring events have been reviewed for precision, bias, representativeness, comparability, and completeness. Data quality exceedances consisted of holding time outliers, non-compliant surrogate and MS/MSD recoveries, non-compliant precisions between primary and secondary columns, and low-level field blank contamination. The affected data were qualified as estimated or non-detected. The 90% technical completeness goal was exceeded for all methods for the March, May, August, and October 2020 quarterly groundwater monitoring events. All data are usable for their intended purposes.

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TABLES

List of Appendix B-1 Tables

Appendix I-2 - Table 1.
Summary of Samples Collected, Sample Location, Sample Date, Analysis Method and SDG Number
March, May, August and October 2020 Groundwater Monitoring

Event	Location	Sample Date	Sample ID	Matrix	Purpose	BACTERIA	EDB	FATTY ACIDS	GASES	GEN CHEMISTRY	METALS	METALS, DISS	VOC
					Method	SOP	SW8011	EPA300	RKS175	SW9056A/SM2320B/EPA 300/EPA365.3/SM4500PE	SW6020A	SW6020A	SW8260C
					Lab	MI	ALS	APTIM	APTIM	ALS	ALS	ALS	ALS
March 2020	KAFB-106063	3/11/2020	106063-LTM-031120	WG	REG	057RC	HS20030521	9887	9887	HS20030521	HS20030521	HS20030521	HS20030521
March 2020	KAFB-106064	3/11/2020	106064-LTM-031120	WG	REG	057RC	HS20030521	9887	9887	HS20030521	HS20030521	HS20030521	HS20030521
March 2020	KAFB-106EX1	3/12/2020	106EX1-LTM-031220	WG	REG	057RC	HS20030586	9888	9888	HS20030586	HS20030586	HS20030586	HS20030586
March 2020	KAFB-106IN1	3/12/2020	106IN1-LTM-031220	WG	REG	057RC	HS20030586	9888	9888	HS20030586	HS20030586	HS20030586	HS20030586
March 2020	KAFB-106MW1-I	3/12/2020	106MW1I-LTM-031220	WG	REG	057RC	HS20030586	9888	9888	HS20030586	HS20030586	HS20030586	HS20030586
March 2020	KAFB-106MW1-S	3/12/2020	106MW1S-LTM-031220	WG	REG	057RC	HS20030586	9888	9888	HS20030586	HS20030586	HS20030586	HS20030586
March 2020	KAFB-106MW2-I	3/11/2020	106MW2I-LTM-031120	WG	REG	057RC	HS20030521	9887	9887	HS20030521	HS20030521	HS20030521	HS20030521
March 2020	KAFB-106MW2-S	3/11/2020	106MW2S-LTM-031120	WG	REG	057RC	HS20030521	9887	9887	HS20030521	HS20030521	HS20030521	HS20030521
March 2020	KAFB-106064	3/11/2020	106064-LTM-031120-FD	WG	FD	-	HS20030521	9887	9887	HS20030521	HS20030521	HS20030521	HS20030521
March 2020	FIELDQC	3/12/2020	TRIP BLANK-031220	WQ	TB	-	-	-	-	-	-	-	HS20030586
May 2020	KAFB-106063	5/19/2020	106063-LTM-051920	WG	REG	98_064RE	HS20050793	9897	9897	HS20050793	HS20050793	HS20050793	HS20050793
May 2020	KAFB-106064	5/19/2020	106064-LTM-051920	WG	REG	98_064RE	HS20050793	9897	9897	HS20050793	HS20050793	HS20050793	HS20050793
May 2020	KAFB-106EX1	5/20/2020	106EX1-LTM-052020	WG	REG	98_064RE	HS20050797	9898	9898	HS20050797	HS20050797	HS20050797	HS20050797
May 2020	KAFB-106IN1	5/19/2020	106IN1-LTM-051920	WG	REG	98_064RE	HS20050793	9897	9897	HS20050793	HS20050793	HS20050793	HS20050793
May 2020	KAFB-106MW1-I	5/19/2020	106MW1I-LTM-051920	WG	REG	98_064RE	HS20050793	9897	9897	HS20050793	HS20050793	HS20050793	HS20050793
May 2020	KAFB-106MW1-S	5/20/2020	106MW1S-LTM-052020	WG	REG	98_064RE	HS20050797	9898	9898	HS20050797	HS20050797	HS20050797	HS20050797
May 2020	KAFB-106MW2-I	5/20/2020	106MW2I-LTM-052020	WG	REG	98_064RE	HS20050797	9898	9898	HS20050797	HS20050797	HS20050797	HS20050797
May 2020	KAFB-106MW2-S	5/20/2020	106MW2S-LTM-052020	WG	REG	98_064RE	HS20050797	9898	9898	HS20050797	HS20050797	HS20050797	HS20050797
May 2020	KAFB-106063	5/19/2020	106063-LTM-051920-FD	WG	FD	-	HS20050793	9897	9897	HS20050793	HS20050793	HS20050793	HS20050793
May 2020	FIELDQC	5/20/2020	TB-052020	WQ	TB	-	-	-	-	-	-	-	HS20050797
May 2020	FIELDQC	5/19/2020	TB-0651920	WQ	TB	-	-	-	-	-	-	-	HS20050793
August 2020	KAFB-106063	8/4/2020	106063-LTM-080420	WG	REG	011RH	HS20080125	9906	9906	HS20080125	HS20080125	HS20080125	HS20080125
August 2020	KAFB-106064	8/4/2020	106064-LTM-080420	WG	REG	011RH	HS20080125	9906	9906	HS20080125	HS20080125	HS20080125	HS20080125
August 2020	KAFB-106EX1	8/4/2020	106EX1-LTM-080420	WG	REG	011RH	HS20080125	9906	9906	HS20080125	HS20080125	HS20080125	HS20080125
August 2020	KAFB-106EX2	8/12/2020	106EX2-LTM-081220	WG	REG	011RH	HS20080519	9909	9909	HS20080519	HS20080519	HS20080519	HS20080519
August 2020	KAFB-106IN1	8/4/2020	106IN1-LTM-080420	WG	REG	011RH	HS20080125	9906	9906	HS20080125	HS20080125	HS20080125	HS20080125
August 2020	KAFB-106MW1-I	8/5/2020	106MW1I-LTM-080520	WG	REG	011RH	HS20080198	9907	9907	HS20080198	HS20080198	HS20080198	HS20080198
August 2020	KAFB-106MW1-S	8/5/2020	106MW1S-LTM-080520	WG	REG	011RH	HS20080198	9907	9907	HS20080198	HS20080198	HS20080198	HS20080198
August 2020	KAFB-106MW2-I	8/5/2020	106MW2I-LTM-080520	WG	REG	011RH	HS20080198	9907	9907	HS20080198	HS20080198	HS20080198	HS20080198
August 2020	KAFB-106MW2-S	8/5/2020	106MW2S-LTM-080520	WG	REG	011RH	HS20080198	9907	9907	HS20080198	HS20080198	HS20080198	HS20080198
August 2020	KAFB-106IN1	8/4/2020	106IN1-LTM-080420-FD	WG	FD	-	HS20080125	9906	9906	HS20080125	HS20080125	HS20080125	HS20080125
August 2020	FIELDQC	8/4/2020	TB-080420	WQ	TB	-	-	-	-	-	-	-	HS20080125
August 2020	FIELDQC	8/5/2020	TB-080520	WQ	TB	-	-	-	-	-	-	-	HS20080198
August 2020	FIELDQC	8/12/2020	TB-081220	WQ	TB	-	-	-	-	-	-	-	HS20080519
October 2020	KAFB-106063	10/14/2020	106063-LTM-101420	WG	REG	051RJ	HS20100780	9914	9914	HS20100780	HS20100780	HS20100780	HS20100780
October 2020	KAFB-106064	10/14/2020	106064-LTM-101420	WG	REG	051RJ	HS20100780	9914	9914	HS20100780	HS20100780	HS20100780	HS20100780
October 2020	KAFB-106EX1	10/15/2020	106EX1-LTM-101520	WG	REG	051RJ	HS20100872	9915	9915	HS20100872	HS20100872	HS20100872	HS20100872
October 2020	KAFB-106EX2	10/15/2020	106EX2-LTM-101520	WG	REG	051RJ	HS20100872	9915	9915	HS20100872	HS20100872	HS20100872	HS20100872
October 2020	KAFB-106IN1	10/28/2020	106IN1-LTM-102820	WG	REG	051RJ	HS20101457	9916	9916	HS20101457	HS20101457	HS20101457	HS20101457
October 2020	KAFB-106MW1-I	10/13/2020	106MW1I-LTM-101320	WG	REG	051RJ	HS20100714	9914	9914	HS20100714	HS20100714	HS20100714	HS20100714

Appendix I-2 - Table 1.
Summary of Samples Collected, Sample Location, Sample Date, Analysis Method and SDG Number
March, May, August and October 2020 Groundwater Monitoring

Event	Location	Sample Date	Sample ID	Matrix	Purpose	BACTERIA	EDB	FATTY ACIDS	GASES	GEN CHEMISTRY	METALS	METALS, DISS	VOC
					Method	SOP	SW8011	EPA300	RKS175	SW9056A/SM2320B/EPA 300/EPA365.3/SM4500PE	SW6020A	SW6020A	SW8260C
					Lab	MI	ALS	APTIM	APTIM	ALS	ALS	ALS	ALS
October 2020	KAFB-106MW1-S	10/13/2020	106MW1S-LTM-101320	WG	REG	051RJ	HS20100714	9914	9914	HS20100714	HS20100714	HS20100714	HS20100714
October 2020	KAFB-106MW2-I	10/14/2020	106MW2I-LTM-101420	WG	REG	051RJ	HS20100780	9914	9914	HS20100780	HS20100780	HS20100780	HS20100780
October 2020	KAFB-106MW2-S	10/14/2020	106MW2S-LTM-101420	WG	REG	051RJ	HS20100780	9914	9914	HS20100780	HS20100780	HS20100780	HS20100780
October 2020	KAFB-106MW1-S	10/13/2020	106MW1S-LTM-101320-FD	WG	FD	-	HS20100714	9914	9914	HS20100714	HS20100714	HS20100714	HS20100714
October 2020	FIELDQC	10/13/2020	TB-101320	WQ	TB	-	-	-	-	-	-	-	HS20100714
October 2020	FIELDQC	10/15/2020	TB-101420	WQ	TB	-	-	-	-	-	-	-	HS20100780

Notes:
-: not applicable
ALS: ALS Environmental Laboratories, Inc
EDB: 1,2-dibromoethane
FD: Field duplicate
MI: Microbial Insights Laboratory
REG: regular sample
SDG: sample delivery group
SOP: standard operating procedure
TB: trip blank
VOC: volatile organic compound
WG: groundwater
WQ: water quality

Appendix I-2 – Table 2. Data Qualification Flags and Reason Codes

Data Qualifier Definitions for Organic Data Review

Qualifier	Definition
	No Qualifier indicates that the data are acceptable both qualitatively and quantitatively.
U	The analyte was analyzed for but was not detected above the reported LOQ.
J	The analyte was analyzed for and was positively identified, but the reported numerical value may not be consistent with the amount actually present in the environmental sample. Results are estimated, although the data are considered usable and may be used as appropriate to meet project objectives. Results are qualitatively acceptable and quantitatively uncertain.
J-	The analyte was positively identified; the associated numerical value is its approximate concentration with a low bias in the sample.
J+	The analyte was positively identified; the associated numerical value is its approximate concentration with a high bias in the sample.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification.”
NJ	The analysis indicates the presence of an analyte that has been ”tentatively identified,” and the associated value represents its approximate concentration.
UJ	The analyte was not detected above the reported LOQ. However, the reported LOQ is approximate and may or may not represent the actual LOQ necessary to accurately and precisely measure the analyte in the sample.
X	The analyte was analyzed for, but the presence <u>or</u> absence of the analyte has not been verified. Re-sampling and re-analysis may be necessary to confirm or deny the presence of the analyte. Results are rejected, and data are <u>unusable</u> for any purposes.

Data Qualifier Definitions For Inorganic Data Review

Qualifier	Definition
	No Qualifier indicates that the data are acceptable both qualitatively and quantitatively.
U	The analyte was analyzed for but was not detected above the level of the reported value. The reported value is the LOQ for water and soil for all the analytes except cyanide and mercury. For cyanide and mercury, the reported value is the contract-required detection limit.
J	The analyte was analyzed for and was positively identified, but the reported numerical value may not be consistent with the amount actually present in the environmental sample. Results are estimated, although the data are considered usable and may be used as appropriate to meet project objectives. Results are qualitatively acceptable and quantitatively uncertain.
J-	The analyte was positively identified; the associated numerical value is its approximate concentration with a low bias in the sample.
J+	The analyte was positively identified; the associated numerical value is its approximate concentration with a high bias in the sample.
UJ	The analyte was analyzed for but was not detected above the reported value. The reported value may not accurately or precisely represent the sample LOQ.
X	The analyte was analyzed for, but the presence <u>or</u> absence of the analyte has not been verified. Re-sampling and re-analysis may be necessary to confirm or deny the presence of the analyte. Results are rejected, and data are <u>unusable</u> for any purposes.

Appendix B-1 – Table 2. Data Qualification Flags and Reason Codes (concluded)

Reason Codes for Data Review and Validation

Reason Code	Description
A	Serial dilution outside criteria (Level IV).
B1	Method blank contaminants above reporting limit.
B2	Calibration blank contaminants above reporting limit.
B2, Bias Flag “-“	Calibration blank indicates negative interference; false negatives may be present.
C	Calibration outside control limits.
D	Sample results precision between primary and secondary columns outside control limit.
D1	Sample duplicate RPD outside control limit.
D2	Matrix duplicate RPD outside control limit.
D3	LCSD RPD outside control limit.
E	The sample results exceed the linear calibration range of the instrument.
F	Hydrocarbon pattern does not match hydrocarbon pattern in the standard.
G1	Initial calibration relative standard deviation outside control limit.
G2	Initial continuing calibration RRF outside control limit.
G3	Continuing calibration RRF outside control limit.
H	Holding time exceeded.
I	Internal standard recovery outside control limit.
K1	Equipment rinsate contamination.
K2	Ambient blank contamination.
K3	Trip blank contamination.
L	LCS outside control limits.
M	MS outside control limits.
O	Interference check sample outside acceptance criteria.
P	Analyte qualified based on the professional judgment of the reviewer.
S	Surrogate recovery outside control limit.
T	Temperature outside acceptance criteria.
Tr	Value reported detected between the detection limit and LOQ.
W	Pesticide breakdown outside criteria (Level IV).
X	Raised reporting limit due to matrix interference or high analyte concentration.
Y	Analyte was not confirmed by a second column.

Appendix I-2 –Table 3.
Qualified Data Summary
March, May, August, and October 2020 Groundwater Monitoring

Sample ID	Sample Type	Sample Date	Analyte	SDG	Result	LOQ	Units	Qualifier
Reason Code D		**Method SW8011**						
106MW2S-LTM-080520	REG	08/05/2020	1,2-DIBROMOETHANE	HS20080198	0.024	0.021	µg/L	J
Reason Code H		**Method E300**						
106063-LTM-051920-FD	FD	05/19/2020	IODIDE	2005546	7	0.20	mg/L	J-
106063-LTM-051920	REG	05/19/2020	IODIDE	2005546	7	0.20	mg/L	J-
Reason Code H		**Method E365.3**						
106IN1-LTM-102820	REG	10/28/2020	PHOSPHORUS	HS20101457	3.68	0.250	mg/L	J-
Reason Code H		**Method SM4500PE**						
106063-LTM-051920	REG	05/19/2020	PHOSPHORUS	HS20050793	0.025	0.0500	mg/L	UJ
106063-LTM-051920-FD	FD	05/19/2020	PHOSPHORUS	HS20050793	0.025	0.0500	mg/L	UJ
Reason Code H, Tr		**Method SM4500PE**						
106064-LTM-051920	REG	05/19/2020	PHOSPHORUS	HS20050793	0.029	0.0500	mg/L	J-
Reason Code H		**Method SW9056A**						
106064-LTM-051920	REG	05/19/2020	NITROGEN, NITRATE-NITRITE	HS20050793	0.1	0.100	mg/L	UJ
106063-LTM-051920	REG	05/19/2020	NITROGEN, NITRATE-NITRITE	HS20050793	0.1	0.100	mg/L	UJ
106063-LTM-051920-FD	FD	05/19/2020	NITROGEN, NITRATE-NITRITE	HS20050793	0.1	0.100	mg/L	UJ
106MW2I-LTM-101420	REG	10/14/2020	NITROGEN, NITRATE-NITRITE	HS20100780	0.1	0.100	mg/L	UJ
106MW2I-LTM-101420	REG	10/14/2020	NITRATE	HS20100780	0.1	0.100	mg/L	UJ
106IN1-LTM-102820	REG	10/28/2020	NITROGEN, NITRATE-NITRITE	HS20101457	0.1	0.100	mg/L	UJ
Reason Code H, Tr		**Method SW9056A**						
106064-LTM-051920	REG	05/19/2020	NITRATE	HS20050793	0.0718	0.100	mg/L	J-
106063-LTM-051920	REG	05/19/2020	NITRATE	HS20050793	0.0668	0.100	mg/L	J-
106063-LTM-051920-FD	FD	05/19/2020	NITRATE	HS20050793	0.0656	0.100	mg/L	J-
106IN1-LTM-102820	REG	10/28/2020	NITRATE	HS20101457	0.052	0.100	mg/L	J-
Reason Code K3		**Method SW8260C**						
106MW2S-LTM-080520	REG	08/05/2020	TOLUENE	HS20080198	5	1.0	µg/L	U
106MW1I-LTM-080520	REG	08/05/2020	TOLUENE	HS20080198	3.4	1.0	µg/L	U
Reason Code K3, M		**Method SW8260C**						
106MW2I-LTM-080520	REG	08/05/2020	ETHYLBENZENE	HS20080198	0.65	1.0	µg/L	UJ
Reason Code M		**Method SW8260C**						

Appendix I-2 –Table 3.
Qualified Data Summary
March, May, August, and October 2020 Groundwater Monitoring

Sample ID	Sample Type	Sample Date	Analyte	SDG	Result	LOQ	Units	Qualifier
106MW1S-LTM-031220	REG	03/12/2020	BENZENE	HS20030586	5300	100	µg/L	J+
106MW1S-LTM-031220	REG	03/12/2020	1,2,4-TRICHLOROBENZENE	HS20030586	5	10	µg/L	UJ
106MW1I-LTM-101320	REG	10/13/2020	BENZENE	HS20100714	65	1.0	µg/L	J+
106MW1I-LTM-101320	REG	10/13/2020	NAPHTHALENE	HS20100714	18	1.0	µg/L	J+
106MW1I-LTM-101320	REG	10/13/2020	M,P-XYLENES	HS20100714	17	2.0	µg/L	J+
106MW1I-LTM-101320	REG	10/13/2020	O-XYLENE	HS20100714	11	1.0	µg/L	J+
106MW1I-LTM-101320	REG	10/13/2020	N-PROPYLBENZENE	HS20100714	23	1.0	µg/L	J+
106MW1I-LTM-101320	REG	10/13/2020	N-BUTYLBENZENE	HS20100714	8	1.0	µg/L	J+
106MW1I-LTM-101320	REG	10/13/2020	XYLENES	HS20100714	28	1.0	µg/L	J+
106MW1I-LTM-101320	REG	10/13/2020	TOLUENE	HS20100714	1.5	1.0	µg/L	J+
106MW1I-LTM-101320	REG	10/13/2020	SEC-BUTYLBENZENE	HS20100714	12	1.0	µg/L	J+
106MW1I-LTM-101320	REG	10/13/2020	ISOPROPYLBENZENE	HS20100714	70	1.0	µg/L	J+
106MW2I-LTM-101420	REG	10/14/2020	TERT-BUTYLBENZENE	HS20100780	1	1.0	µg/L	J+
106MW2I-LTM-101420	REG	10/14/2020	ETHYLBENZENE	HS20100780	7.6	1.0	µg/L	J+
Reason Code S		**Method SW8260C**						
106IN1-LTM-102820	REG	10/28/2020	N-PROPYLBENZENE	HS20101457	72	1.0	µg/L	J+
106IN1-LTM-102820	REG	10/28/2020	SEC-BUTYLBENZENE	HS20101457	12	1.0	µg/L	J+
106IN1-LTM-102820	REG	10/28/2020	P-ISOPROPYLTOLUENE	HS20101457	56	1.0	µg/L	J+
106IN1-LTM-102820	REG	10/28/2020	ACETONE	HS20101457	24	2.0	µg/L	J+
106IN1-LTM-102820	REG	10/28/2020	TOLUENE	HS20101457	5.2	1.0	µg/L	J+
106IN1-LTM-102820	REG	10/28/2020	ISOPROPYLBENZENE	HS20101457	110	1.0	µg/L	J+
106IN1-LTM-102820	REG	10/28/2020	2-BUTANONE	HS20101457	3.5	2.0	µg/L	J+
106IN1-LTM-102820	REG	10/28/2020	1,3,5-TRIMETHYLBENZENE	HS20101457	52	1.0	µg/L	J+
106IN1-LTM-102820	REG	10/28/2020	NAPHTHALENE	HS20101457	68	1.0	µg/L	J+
106IN1-LTM-102820	REG	10/28/2020	METHYL TERT-BUTYL ETHER	HS20101457	1.5	1.0	µg/L	J+

Notes:
Please see Appendix I-2, Table 2 for definitions of qualifiers and reason code
FD: field duplicate
LOQ: limit of quantitation
mg/L: milligrams per liter
REG: regular sample
SDG: sample delivery group
TB: trip blank
ug/L: micrograms per liter

Appendix I-2 – Table 3.
Qualified Data Summary
March, May, August, and October 2020 Groundwater Monitoring

Sample ID	Sample Type	Sample Date	Analyte	SDG	Result	LOQ	Units	Qualifier
Reason Code H		**Method SW8260C**						
TB-052020	TB	05/20/2020	SEC-BUTYLBENZENE	HS20050797	1	1.0	µg/L	UJ
TB-052020	TB	05/20/2020	ACETONE	HS20050797	1	2.0	µg/L	UJ
TB-052020	TB	05/20/2020	1,2-DICHLOROETHANE	HS20050797	0.5	1.0	µg/L	UJ
TB-052020	TB	05/20/2020	TETRACHLOROETHENE	HS20050797	1	1.0	µg/L	UJ
TB-052020	TB	05/20/2020	N-PROPYLBENZENE	HS20050797	1	1.0	µg/L	UJ
TB-052020	TB	05/20/2020	CHLOROMETHANE	HS20050797	0.5	1.0	µg/L	UJ
TB-052020	TB	05/20/2020	TERT-BUTYLBENZENE	HS20050797	1	1.0	µg/L	UJ
TB-052020	TB	05/20/2020	ETHYLBENZENE	HS20050797	1	1.0	µg/L	UJ
TB-052020	TB	05/20/2020	M,P-XYLENES	HS20050797	1	2.0	µg/L	UJ
TB-052020	TB	05/20/2020	METHYLENE CHLORIDE	HS20050797	1	2.0	µg/L	UJ
TB-052020	TB	05/20/2020	BENZENE	HS20050797	0.5	1.0	µg/L	UJ
TB-052020	TB	05/20/2020	O-XYLENE	HS20050797	1	1.0	µg/L	UJ
TB-052020	TB	05/20/2020	2-CHLOROTOLUENE	HS20050797	1	1.0	µg/L	UJ
TB-052020	TB	05/20/2020	TOLUENE	HS20050797	0.5	1.0	µg/L	UJ
TB-052020	TB	05/20/2020	P-ISOPROPYLTOLUENE	HS20050797	1	1.0	µg/L	UJ
TB-052020	TB	05/20/2020	1,1,2-TRICHLOROETHANE	HS20050797	1	1.0	µg/L	UJ
TB-052020	TB	05/20/2020	2-BUTANONE	HS20050797	1	2.0	µg/L	UJ
TB-052020	TB	05/20/2020	2-HEXANONE	HS20050797	2	2.0	µg/L	UJ
TB-052020	TB	05/20/2020	TRICHLOROFLUOROMETHANE	HS20050797	1	1.0	µg/L	UJ
TB-052020	TB	05/20/2020	VINYL CHLORIDE	HS20050797	0.5	1.0	µg/L	UJ
TB-052020	TB	05/20/2020	N-BUTYLBENZENE	HS20050797	1	1.0	µg/L	UJ
TB-052020	TB	05/20/2020	XYLENES	HS20050797	1	1.0	µg/L	UJ
TB-052020	TB	05/20/2020	TRICHLOROETHENE	HS20050797	0.5	1.0	µg/L	UJ
TB-052020	TB	05/20/2020	METHYL TERT-BUTYL ETHER	HS20050797	0.5	1.0	µg/L	UJ
TB-052020	TB	05/20/2020	1,3,5-TRIMETHYLBENZENE	HS20050797	1	1.0	µg/L	UJ
TB-052020	TB	05/20/2020	TRANS-1,2-DICHLOROETHENE	HS20050797	0.5	1.0	µg/L	UJ
TB-052020	TB	05/20/2020	ISOPROPYLBENZENE	HS20050797	1	1.0	µg/L	UJ
TB-052020	TB	05/20/2020	CARBON DISULFIDE	HS20050797	1	2.0	µg/L	UJ

Appendix I-2 – Table 3.
Qualified Data Summary
March, May, August, and October 2020 Groundwater Monitoring

Sample ID	Sample Type	Sample Date	Analyte	SDG	Result	LOQ	Units	Qualifier
TB-052020	TB	05/20/2020	DICHLORODIFLUOROMETHANE	HS20050797	1	1.0	µg/L	UJ
TB-052020	TB	05/20/2020	4-METHYL-2-PENTANONE	HS20050797	2	2.0	µg/L	UJ
TB-052020	TB	05/20/2020	CIS-1,2-DICHLOROETHENE	HS20050797	0.5	1.0	µg/L	UJ
TB-052020	TB	05/20/2020	NAPHTHALENE	HS20050797	1	1.0	µg/L	UJ
TB-052020	TB	05/20/2020	1,2-DIBROMOETHANE	HS20050797	0.5	1.0	µg/L	UJ
TB-052020	TB	05/20/2020	1,2,4-TRICHLOROBENZENE	HS20050797	1	1.0	µg/L	UJ

Notes:
Please see Appendix I-2, Table 2 for definitions of qualifiers and reason code
FD: field duplicate
LOQ: limit of quantitation
mg/L: milligrams per liter
REG: regular sample
SDG: sample delivery group
TB: trip blank
ug/L: micrograms per liter

Appendix I-2 - Table 4.
Detected Trip Blank Results and Associated Sample Results
March, May, August, and October 2020 Groundwater Monitoring

Sample ID	Sample Type	Sample Date	Method	Analyte	Result	LOQ	Units	Qualifier	Reason Code
TB-080520	**TB**	**08/05/2020**	**SW8260C**	**ETHYLBENZENE**	**0.69**	**1.0**	**µg/L**	**J**	**Tr**
106MW1I-LTM-080520	REG	08/05/2020	SW8260C	ETHYLBENZENE	520	10	µg/L		
106MW1S-LTM-080520	REG	08/05/2020	SW8260C	ETHYLBENZENE	1300	10	µg/L		
106MW2I-LTM-080520	REG	08/05/2020	SW8260C	ETHYLBENZENE	ND	1.0	µg/L	UJ	K3
106MW2S-LTM-080520	REG	08/05/2020	SW8260C	ETHYLBENZENE	590	25	µg/L		
TB-080520	**TB**	**08/05/2020**	**SW8260C**	**TOLUENE**	**2**	**1.0**	**µg/L**		
106MW1I-LTM-080520	REG	08/05/2020	SW8260C	TOLUENE	ND	1.0	µg/L	U	K3
106MW1S-LTM-080520	REG	08/05/2020	SW8260C	TOLUENE	4600	100	µg/L		
106MW2I-LTM-080520	REG	08/05/2020	SW8260C	TOLUENE	ND	1.0	µg/L	U	
106MW2S-LTM-080520	REG	08/05/2020	SW8260C	TOLUENE	ND	1.0	µg/L	U	K3
TB-080520	**TB**	**08/05/2020**	**SW8260C**	**XYLENES**	**1.9**	**1.0**	**µg/L**		
106MW1I-LTM-080520	REG	08/05/2020	SW8260C	XYLENES	640	10	µg/L		
106MW1S-LTM-080520	REG	08/05/2020	SW8260C	XYLENES	4500	10	µg/L		
106MW2I-LTM-080520	REG	08/05/2020	SW8260C	XYLENES	ND	1.0	µg/L	U	
106MW2S-LTM-080520	REG	08/05/2020	SW8260C	XYLENES	2000	25	µg/L		
TB-080520	**TB**	**08/05/2020**	**SW8260C**	**M,P-XYLENES**	**1.9**	**2.0**	**µg/L**	**J**	**Tr**
106MW1I-LTM-080520	REG	08/05/2020	SW8260C	M,P-XYLENES	400	20	µg/L		
106MW1S-LTM-080520	REG	08/05/2020	SW8260C	M,P-XYLENES	3100	20	µg/L		
106MW2I-LTM-080520	REG	08/05/2020	SW8260C	M,P-XYLENES	ND	2.0	µg/L	U	
106MW2S-LTM-080520	REG	08/05/2020	SW8260C	M,P-XYLENES	1300	50	µg/L		

Notes:
Please see Appendix I-2, Table 2 for definitions of qualifiers and reason codes.
ID: identifier
LOQ: limit of quantitation
ND: not detected
REG: regular sample
TB: trip blank
ug/L: micrograms per liter

Appendix I-2 - Table 5.
Field Duplicate Summary
March, May, August, and October 2020 Groundwater Monitoring

Test Group	Parameter	Units	Filtered	Result	VQ	Result	VQ	Relative Percent Difference (%)
		Location Code		KAFB-106063				
		Sample Number		106063-LTM-051920		106063-LTM-051920-FD		
		Sample Date		05/19/2020		05/19/2020		
		Sample Purpose		REG		FD		
		Sample Type		WG		WG		
EDB	1,2-DIBROMOETHANE	µg/L	N	0.01	U	0.01	U	NC
FATTY ACIDS	ACETIC ACID	mg/L	N	5.7	J	6.2	J	NC
	BUTYRIC ACID	mg/L	N	10	U	10	U	NC
	FORMIC ACID	mg/L	N	0.5	J	0.2	J	NC
	LACTIC ACID	mg/L	N	10	U	10	U	NC
	PROPIONIC ACID	mg/L	N	10	U	10	U	NC
	PYRUVIC ACID	mg/L	N	10	U	10	U	NC
	VALERIC ACID	mg/L	N	10	U	10	U	NC
GASES	ACETYLENE	µg/L	N	10	U	10	U	NC
	ETHANE	µg/L	N	1.5	J	1.4	J	NC
	ETHYLENE	µg/L	N	14.7		14.8		0.68
	METHANE	µg/L	N	7891.9		7565.4		4.22
	PROPANE	µg/L	N	0.9	J	1	J	NC
GENERAL CHEMISTRY	ALKALINITY, TOTAL	mg/L	N	566		569		0.53
	BROMIDE	mg/L	N	0.929		0.923		0.65
	CHLORIDE	mg/L	N	51.5		50.9		1.17
	IODIDE	mg/L	N	7	J-	7	J-	0.00
	NITRATE	mg/L	N	0.0668	J-	0.0656	J-	NC
	NITROGEN, NITRATE-NITRITE	mg/L	N	0.1	UJ	0.1	UJ	NC
	PHOSPHORUS	mg/L	Y	0.025	UJ	0.025	UJ	NC
	SULFATE	mg/L	N	0.5	U	0.5	U	NC
METALS	LEAD	mg/L	N	0.001	U	0.001	U	NC
METALS, DISS	IRON	mg/L	Y	6.41		6.75		5.17
	MANGANESE	mg/L	Y	6.07		6.62		8.67

Appendix I-2 - Table 5.
Field Duplicate Summary
March, May, August, and October 2020 Groundwater Monitoring

Test Group	Parameter		Location Code	KAFB-106063				Relative Percent Difference (%)
			Sample Number	106063-LTM-051920		106063-LTM-051920-FD		
			Sample Date	05/19/2020		05/19/2020		
			Sample Purpose	REG		FD		
			Sample Type	WG		WG		
		Units	Filtered	Result	VQ	Result	VQ	
VOLATILES	1,1,2-TRICHLOROETHANE	µg/L	N	10	U	10	U	NC
	1,2,4-TRICHLOROBENZENE	µg/L	N	10	U	10	U	NC
	1,2-DIBROMOETHANE	µg/L	N	5	U	5	U	NC
	1,2-DICHLOROETHANE	µg/L	N	5	U	5	U	NC
	1,3,5-TRIMETHYLBENZENE	µg/L	N	160		140		13.33
	2-BUTANONE	µg/L	N	10	U	10	U	NC
	2-CHLOROTOLUENE	µg/L	N	10	U	10	U	NC
	2-HEXANONE	µg/L	N	20	U	20	U	NC
	4-METHYL-2-PENTANONE	µg/L	N	84		83		1.20
	ACETONE	µg/L	N	10	U	10	U	NC
	BENZENE	µg/L	N	5200		5100		1.94
	CARBON DISULFIDE	µg/L	N	10	U	10	U	NC
	CHLOROMETHANE	µg/L	N	5	U	5	U	NC
	CIS-1,2-DICHLOROETHENE	µg/L	N	5	U	5	U	NC
	DICHLORODIFLUOROMETHANE	µg/L	N	10	U	10	U	NC
	ETHYLBENZENE	µg/L	N	1700		1600		6.06
	ISOPROPYLBENZENE	µg/L	N	200		180		10.53
	M,P-XYLENES	µg/L	N	3400		3000		12.50
	METHYL TERT-BUTYL ETHER	µg/L	N	5	U	5	U	NC
	METHYLENE CHLORIDE	µg/L	N	10	U	10	U	NC
	NAPHTHALENE	µg/L	N	150		120		22.22
	N-BUTYLBENZENE	µg/L	N	25		20		22.22
	N-PROPYLBENZENE	µg/L	N	150		130		14.29
	O-XYLENE	µg/L	N	1600		1400		13.33

Appendix I-2 - Table 5.
Field Duplicate Summary
March, May, August, and October 2020 Groundwater Monitoring

Test Group	Parameter		Location Code	KAFB-106063				Relative Percent Difference (%)
			Sample Number	106063-LTM-051920		106063-LTM-051920-FD		
			Sample Date	05/19/2020		05/19/2020		
			Sample Purpose	REG		FD		
			Sample Type	WG		WG		
		Units	Filtered	Result	VQ	Result	VQ	
VOLATILES	P-ISOPROPYLTOLUENE	µg/L	N	10	U	10	U	NC
	SEC-BUTYLBENZENE	µg/L	N	25		21		17.39
	TERT-BUTYLBENZENE	µg/L	N	10	U	10	U	NC
	TETRACHLOROETHENE	µg/L	N	10	U	10	U	NC
	TOLUENE	µg/L	N	18000		17000		5.71
	TRANS-1,2-DICHLOROETHENE	µg/L	N	5	U	5	U	NC
	TRICHLOROETHENE	µg/L	N	5	U	5	U	NC
	TRICHLOROFLUOROMETHANE	µg/L	N	10	U	10	U	NC
	VINYL CHLORIDE	µg/L	N	5	U	5	U	NC
	XYLENES	µg/L	N	4900		4500		8.51

Notes:
Please see Appendix I-2, Table 2 for definitions of qualifiers and reason codes
mg/L: milligrams per liter
µg/L: micrograms per liter
FD: field duplicate
N: not filtered
NC: Not calculated
REG: regular sample
VQ: validation qualifier
WG: groundwater
Y: filtered
Field precision is only calculated when the analyte concentration is reported at or above the limit of quantitation in both the primary and the duplicate sample
Precision formula = 100 x |Primary Result - Duplicate Result| / ((Primary Result + Duplicate Result) / 2)

Appendix B-1, Table 5
Field Duplicate Summary
March, May, August, and October 2020 Groundwater Monitoring

Test Group	Parameter	Units	Filtered	Result	VQ	Result	VQ	Relative Percent Difference (%)
			Location Code	KAFB-106064				
			Sample Number	106064-LTM-031120		106064-LTM-031120-FD		
			Sample Date	03/11/2020		03/11/2020		
			Sample Purpose	REG		FD		
			Sample Type	WG		WG		
EDB	1,2-DIBROMOETHANE	UG/L	N	0.01	U	0.01	U	NC
FATTY ACIDS	ACETIC ACID	MG/L	N	0.5	J	1	U	NC
	BUTYRIC ACID	MG/L	N	1	U	1	U	NC
	FORMIC ACID	MG/L	N	0.9	J	0.5	J	NC
	LACTIC ACID	MG/L	N	1.5	J	1.4	J	NC
	PROPIONIC ACID	MG/L	N	1	U	1	U	NC
	PYRUVIC ACID	MG/L	N	1	U	1	U	NC
	VALERIC ACID	MG/L	N	1	U	1	U	NC
GASES	ACETYLENE	UG/L	N	10	U	10	U	NC
	ETHANE	UG/L	N	1.5	J	1.7	J	NC
	ETHYLENE	UG/L	N	5	U	5	U	NC
	METHANE	UG/L	N	2626.3		2942.2		11.35
	PROPANE	UG/L	N	6	U	6	U	NC
GEN CHEMISTRY	ALKALINITY, TOTAL	MG/L	N	599		607		1.33
	BROMIDE	MG/L	N	0.832		0.837		0.60
	CHLORIDE	MG/L	N	49		48.1		1.85
	IODIDE	MG/L	N	4.1		3.8		7.59
	NITRATE	MG/L	N	0.0572	J	0.0758	J	NC
	NITROGEN, NITRATE-NITRITE	MG/L	N	0.1	U	0.1	U	NC
	PHOSPHORUS	MG/L	D	0.011	J	0.017	J	NC
	SULFATE	MG/L	N	0.5	U	0.5	U	NC
METALS	LEAD	MG/L	N	0.001	U	0.001	U	NC
METALS, DISS	IRON	MG/L	D	6.59		6.51		1.22
	MANGANESE	MG/L	D	6.4		6.17		3.66

Appendix B-1, Table 5
Field Duplicate Summary
March, May, August, and October 2020 Groundwater Monitoring

Test Group	Parameter	Units	Filtered	Result	VQ	Result	VQ	Relative Percent Difference (%)
			Location Code	KAFB-106064				
			Sample Number	106064-LTM-031120		106064-LTM-031120-FD		
			Sample Date	03/11/2020		03/11/2020		
			Sample Purpose	REG		FD		
			Sample Type	WG		WG		
VOLATILES	1,1,2-TRICHLOROETHANE	UG/L	N	2.5	U	2.5	U	NC
	1,2,4-TRICHLOROBENZENE	UG/L	N	2.5	U	2.5	U	NC
	1,2-DIBROMOETHANE	UG/L	N	2.5	U	2.5	U	NC
	1,2-DICHLOROETHANE	UG/L	N	2.5	U	2.5	U	NC
	1,3,5-TRIMETHYLBENZENE	UG/L	N	110		110		0.00
	2-BUTANONE	UG/L	N	5	U	5	U	NC
	2-CHLOROTOLUENE	UG/L	N	2.5	U	2.5	U	NC
	2-HEXANONE	UG/L	N	5	U	5	U	NC
	4-METHYL-2-PENTANONE	UG/L	N	5	U	5	U	NC
	ACETONE	UG/L	N	5	U	5	U	NC
	BENZENE	UG/L	N	2800		2900		3.51
	CARBON DISULFIDE	UG/L	N	5	U	5	U	NC
	CHLOROMETHANE	UG/L	N	2.5	U	2.5	U	NC
	CIS-1,2-DICHLOROETHENE	UG/L	N	2.5	U	2.5	U	NC
	DICHLORODIFLUOROMETHANE	UG/L	N	2.5	U	2.5	U	NC
	ETHYLBENZENE	UG/L	N	1300		1300		0.00
	ISOPROPYLBENZENE	UG/L	N	160		160		0.00
	M,P-XYLENES	UG/L	N	2600		2700		3.77
	METHYL TERT-BUTYL ETHER	UG/L	N	2.5	U	2.5	U	NC
	METHYLENE CHLORIDE	UG/L	N	5	U	5	U	NC
	NAPHTHALENE	UG/L	N	89		100		11.64
	N-BUTYLBENZENE	UG/L	N	14		15		6.90
	N-PROPYLBENZENE	UG/L	N	100		100		0.00
	O-XYLENE	UG/L	N	1200		1200		0.00

Appendix B-1, Table 5
Field Duplicate Summary
March, May, August, and October 2020 Groundwater Monitoring

			Location Code	KAFB-106064				
			Sample Number	106064-LTM-031120		106064-LTM-031120-FD		Relative Percent Difference (%)
			Sample Date	03/11/2020		03/11/2020		
			Sample Purpose	REG		FD		
			Sample Type	WG		WG		
Test Group	**Parameter**	**Units**	**Filtered**	**Result**	**VQ**	**Result**	**VQ**	
VOLATILES	P-ISOPROPYLTOLUENE	UG/L	N	2.5	U	2.5	U	NC
	SEC-BUTYLBENZENE	UG/L	N	15		17		12.50
	TERT-BUTYLBENZENE	UG/L	N	2.5	U	2.5	U	NC
	TETRACHLOROETHENE	UG/L	N	2.5	U	2.5	U	NC
	TOLUENE	UG/L	N	29		25		14.81
	TRANS-1,2-DICHLOROETHENE	UG/L	N	2.5	U	2.5	U	NC
	TRICHLOROETHENE	UG/L	N	2.5	U	2.5	U	NC
	TRICHLOROFLUOROMETHANE	UG/L	N	2.5	U	2.5	U	NC
	VINYL CHLORIDE	UG/L	N	2.5	U	2.5	U	NC
	XYLENES	UG/L	N	3800		3900		2.60

Notes:
Please see Appendix I-2, Table 2 for definitions of qualifiers and reason codes
mg/L: milligrams per liter
µg/L: micrograms per liter
FD: field duplicate
N: not filtered
NC: Not calculated
REG: regular sample
VQ: validation qualifier
WG: groundwater
Y: filtered
Field precision is only calculated when the analyte concentration is reported at or above the limit of quantitation in both the primary and the duplicate sample

Precision formula = 100 x |Primary Result - Duplicate Result| / ((Primary Result + Duplicate Result) / 2)

Appendix I-2 - Table 5.
Field Duplicate Summary
March, May, August, and October 2020 Groundwater Monitoring

		Location Code		KAFB-106IN1				Relative Percent Difference (%)
		Sample Number		106IN1-LTM-080420		106IN1-LTM-080420-FD		
		Sample Date		08/04/2020		08/04/2020		
		Sample Purpose		REG		FD		
		Sample Type		WG		WG		
Test Group	Parameter	Units	Filtered	Result	VQ	Result	VQ	
EDB	1,2-DIBROMOETHANE	µg/L	N	0.011	U	0.01	U	NC
FATTY ACIDS	ACETIC ACID	mg/L	N	10	U	10	U	NC
	BUTYRIC ACID	mg/L	N	10	U	10	U	NC
	FORMIC ACID	mg/L	N	4.1	J	4.6	J	NC
	LACTIC ACID	mg/L	N	10	U	10	U	NC
	PROPIONIC ACID	mg/L	N	10	U	10	U	NC
	PYRUVIC ACID	mg/L	N	10	U	10	U	NC
	VALERIC ACID	mg/L	N	10	U	10	U	NC
GASES	ACETYLENE	µg/L	N	10	U	10	U	NC
	ETHANE	µg/L	N	4	U	4	U	NC
	ETHYLENE	µg/L	N	5	U	5	U	NC
	METHANE	µg/L	N	4693.6		3841.8		19.96
	PROPANE	µg/L	N	6	U	6	U	NC
GENERAL CHEMISTRY	ALKALINITY, TOTAL	mg/L	N	2340		2290		2.16
	BROMIDE	mg/L	N	1.24		1.31		5.49
	CHLORIDE	mg/L	N	75.6		76.9		1.70
	IODIDE	mg/L	N	4.3		5.1		17.02
	NITRATE	mg/L	N	0.0479	J	0.0565	J	NC
	NITROGEN, NITRATE-NITRITE	mg/L	N	0.1	U	0.1	U	NC
	PHOSPHORUS	mg/L	Y	7.39		7.43		0.54
	SULFATE	mg/L	N	1.35		1.48		9.19
METALS	LEAD	mg/L	N	0.00446	J	0.0052		NC
METALS, DISS	IRON	mg/L	Y	5.45		4.6		16.92
METALS, DISS	MANGANESE	mg/L	Y	6.3		5.51		13.38
VOLATILES	1,1,2-TRICHLOROETHANE	µg/L	N	5	U	5	U	NC
	1,2,4-TRICHLOROBENZENE	µg/L	N	5	U	5	U	NC

Appendix I-2 - Table 5.
Field Duplicate Summary
March, May, August, and October 2020 Groundwater Monitoring

Test Group	Parameter	Units	Filtered	Result	VQ	Result	VQ	Relative Percent Difference (%)
		Location Code		KAFB-106IN1				
		Sample Number		106IN1-LTM-080420		106IN1-LTM-080420-FD		
		Sample Date		08/04/2020		08/04/2020		
		Sample Purpose		REG		FD		
		Sample Type		WG		WG		
VOLATILES	1,2-DIBROMOETHANE	µg/L	N	2.5	U	2.5	U	NC
	1,2-DICHLOROETHANE	µg/L	N	2.5	U	2.5	U	NC
	1,3,5-TRIMETHYLBENZENE	µg/L	N	35		37		5.56
	2-BUTANONE	µg/L	N	5	U	5	U	NC
	2-CHLOROTOLUENE	µg/L	N	5	U	5	U	NC
	2-HEXANONE	µg/L	N	10	U	10	U	NC
	4-METHYL-2-PENTANONE	µg/L	N	10	U	10	U	NC
	ACETONE	µg/L	N	38		41		7.59
	BENZENE	µg/L	N	760		780		2.60
	CARBON DISULFIDE	µg/L	N	5	U	5	U	NC
	CHLOROMETHANE	µg/L	N	2.5	U	2.5	U	NC
	CIS-1,2-DICHLOROETHENE	µg/L	N	2.5	U	2.5	U	NC
	DICHLORODIFLUOROMETHANE	µg/L	N	5	U	5	U	NC
	ETHYLBENZENE	µg/L	N	290		300		3.39
	ISOPROPYLBENZENE	µg/L	N	69		73		5.63
	M,P-XYLENES	µg/L	N	460		470		2.15
	METHYL TERT-BUTYL ETHER	µg/L	N	2.5	U	2.5	U	NC
	METHYLENE CHLORIDE	µg/L	N	5	U	5	U	NC
	NAPHTHALENE	µg/L	N	57		57		0.00
	N-BUTYLBENZENE	µg/L	N	5.4		5.9		8.85
	N-PROPYLBENZENE	µg/L	N	44		47		6.59
	O-XYLENE	µg/L	N	240		250		4.08
	P-ISOPROPYLTOLUENE	µg/L	N	33		36		8.70
	SEC-BUTYLBENZENE	µg/L	N	6.5		7		7.41
	TERT-BUTYLBENZENE	µg/L	N	5	U	5	U	NC
	TETRACHLOROETHENE	µg/L	N	5	U	5	U	NC

Appendix I-2 - Table 5.
Field Duplicate Summary
March, May, August, and October 2020 Groundwater Monitoring

Test Group	Parameter	Location Code		KAFB-106IN1				Relative Percent Difference (%)
		Sample Number		106IN1-LTM-080420		106IN1-LTM-080420-FD		
		Sample Date		08/04/2020		08/04/2020		
		Sample Purpose		REG		FD		
		Sample Type		WG		WG		
		Units	Filtered	Result	VQ	Result	VQ	
VOLATILES	TOLUENE	µg/L	N	6.1		6.3		3.23
	TRANS-1,2-DICHLOROETHENE	µg/L	N	2.5	U	2.5	U	NC
	TRICHLOROETHENE	µg/L	N	2.5	U	2.5	U	NC
	TRICHLOROFLUOROMETHANE	µg/L	N	5	U	5	U	NC
	VINYL CHLORIDE	µg/L	N	2.5	U	2.5	U	NC
	XYLENES	µg/L	N	710		730		2.78

Notes:
Please see Appendix I-2, Table 2 for definitions of qualifiers and reason codes
mg/L: milligrams per liter
µg/L: micrograms per liter
FD: field duplicate
N: not filtered
NC: Not calculated
REG: regular sample
VQ: validation qualifier
WG: groundwater
Y: filtered
Field precision is only calculated when the analyte concentration is reported at or above the limit of quantitation in both the primary and the duplicate sample
Precision formula = 100 x |Primary Result - Duplicate Result| / ((Primary Result + Duplicate Result) / 2)

Appendix I-2 - Table 5.
Field Duplicate Summary
March, May, August, and October 2020 Groundwater Monitoring

		Location Code		KAFB-106MW1-S				Relative Percent Difference (%)
		Sample Number		106MW1S-LTM-101320		106MW1S-LTM-101320-FD		
		Sample Date		10/13/2020		10/13/2020		
		Sample Purpose		REG		FD		
		Sample Type		WG		WG		
Test Group	Parameter	Units	Filtered	Result	VQ	Result	VQ	
EDB	1,2-DIBROMOETHANE	µg/L	N	0.01	U	0.011	U	NC
FATTY ACIDS	ACETIC ACID	mg/L	N	10	U	10		NC
	BUTYRIC ACID	mg/L	N	10	U	10	U	NC
	FORMIC ACID	mg/L	N	1.6	J	2.05	J	NC
	LACTIC ACID	mg/L	N	0.6	J	1.08	J	NC
	PROPIONIC ACID	mg/L	N	10	U	10	U	NC
	PYRUVIC ACID	mg/L	N	10	U	10	U	NC
	VALERIC ACID	mg/L	N	10	U	10	U	NC
GASES	ACETYLENE	µg/L	N	10	U	10	U	NC
	ETHANE	µg/L	N	2.1		1.63		NC
	ETHYLENE	µg/L	N	2.9		2.19		NC
	METHANE	µg/L	N	3672		2800		26.95
	PROPANE	µg/L	N	2.9	J	2.37		NC
GENERAL CHEMISTRY	ALKALINITY, TOTAL	mg/L	N	484		482		0.41
	BROMIDE	mg/L	N	1.84		1.89		2.68
	CHLORIDE	mg/L	N	48.6		50.4		3.64
	IODIDE	mg/L	N	4.7		5		6.19
	NITRATE	mg/L	N	0.0764	J	0.531		NC
	NITROGEN, NITRATE-NITRITE	mg/L	N	0.1	U	0.1	U	NC
	PHOSPHORUS	mg/L	Y	0.012	J	0.025	U	NC
	SULFATE	mg/L	N	0.469	J	0.232	J	NC
METALS	LEAD	mg/L	N	0.001	U	0.001	U	NC
METALS, DISS	IRON	mg/L	Y	8.85		8		10.09
	MANGANESE	mg/L	Y	5.72		4.92		15.04

Appendix I-2 - Table 5.
Field Duplicate Summary
March, May, August, and October 2020 Groundwater Monitoring

Test Group	Parameter	Location Code		KAFB-106MW1-S				Relative Percent Difference (%)
		Sample Number		106MW1S-LTM-101320		106MW1S-LTM-101320-FD		
		Sample Date		10/13/2020		10/13/2020		
		Sample Purpose		REG		FD		
		Sample Type		WG		WG		
		Units	Filtered	Result	VQ	Result	VQ	
VOLATILES	1,1,2-TRICHLOROETHANE	µg/L	N	10	U	5	U	NC
	1,2,4-TRICHLOROBENZENE	µg/L	N	10	U	10	U	NC
	1,2-DIBROMOETHANE	µg/L	N	5	U	5	U	NC
	1,2-DICHLOROETHANE	µg/L	N	5	U	5	U	NC
	1,3,5-TRIMETHYLBENZENE	µg/L	N	170		170		0.00
	2-BUTANONE	µg/L	N	10	U	10	U	NC
	2-CHLOROTOLUENE	µg/L	N	10	U	10	U	NC
	2-HEXANONE	µg/L	N	20	U	20	U	NC
	4-METHYL-2-PENTANONE	µg/L	N	20	U	20	U	NC
	ACETONE	µg/L	N	10	U	10	U	NC
	BENZENE	µg/L	N	2700		3100		13.79
	CARBON DISULFIDE	µg/L	N	20	U	20	U	NC
	CHLOROMETHANE	µg/L	N	5	U	5	U	NC
	CIS-1,2-DICHLOROETHENE	µg/L	N	5	U	5	U	NC
	DICHLORODIFLUOROMETHANE	µg/L	N	10	U	5	U	NC
	ETHYLBENZENE	µg/L	N	1200		1200		0.00
	ISOPROPYLBENZENE	µg/L	N	98		100		2.02
	M,P-XYLENES	µg/L	N	2900		2900		0.00
	METHYL TERT-BUTYL ETHER	µg/L	N	5	U	5	U	NC
	METHYLENE CHLORIDE	µg/L	N	10	U	10	U	NC
	NAPHTHALENE	µg/L	N	150		170		12.50
	N-BUTYLBENZENE	µg/L	N	10	U	39		NC
	N-PROPYLBENZENE	µg/L	N	100		100		0.00
	O-XYLENE	µg/L	N	1300		1300		0.00

Appendix I-2 - Table 5.
Field Duplicate Summary
March, May, August, and October 2020 Groundwater Monitoring

		Location Code		KAFB-106MW1-S				Relative Percent Difference (%)
		Sample Number		106MW1S-LTM-101320		106MW1S-LTM-101320-FD		
		Sample Date		10/13/2020		10/13/2020		
		Sample Purpose		REG		FD		
		Sample Type		WG		WG		
Test Group	Parameter	Units	Filtered	Result	VQ	Result	VQ	
VOLATILES	P-ISOPROPYLTOLUENE	µg/L	N	5	U	10	U	NC
	SEC-BUTYLBENZENE	µg/L	N	22		22		0.00
	TERT-BUTYLBENZENE	µg/L	N	5	U	5	U	NC
	TETRACHLOROETHENE	µg/L	N	10	U	5	U	NC
	TOLUENE	µg/L	N	1000		1000		0.00
	TRANS-1,2-DICHLOROETHENE	µg/L	N	5	U	5	U	NC
	TRICHLOROETHENE	µg/L	N	5	U	5	U	NC
	TRICHLOROFLUOROMETHANE	µg/L	N	5	U	10	U	NC
	VINYL CHLORIDE	µg/L	N	5	U	5	U	NC
	XYLENES	µg/L	N	4200		4300		2.35

Notes:
Please see Appendix I-2, Table 2 for definitions of qualifiers and reason codes
mg/L: milligrams per liter
µg/L: micrograms per liter
FD: field duplicate
N: not filtered
NC: Not calculated
REG: regular sample
VQ: validation qualifier
WG: groundwater
Y: filtered
Field precision is only calculated when the analyte concentration is reported at or above the limit of quantitation in both the primary and the duplicate sample
Precision formula = 100 x |Primary Result - Duplicate Result| / ((Primary Result + Duplicate Result) / 2)

Appendix I-2 - Table 6.
Technical and Holding Time Completeness
March, May, August, and October 2020 Groundwater Monitoring

Analytical Method	Number of Analytes	Number of Samples	Number of Results	Number of Useable Results	Number of Noncompliant Holding Time Results	Technical Completeness [Goal = 95%]	Holding Time Completeness [Goal = 100%]
Environmental Samples							
E300	1	38	38	38	2	100.%	**94.7%**
E300M	7	38	266	266	0	100.%	100.%
E365.3	1	20	20	20	1	100.%	**95.%**
QUANTARRAY	29	34	986	986	0	100.%	100.%
RSK-175	5	38	190	190	0	100.%	100.%
SM2320B	1	38	38	38	0	100.%	100.%
SM4500PE	1	18	18	18	3	100.%	**83.3%**
SW6020A	1	38	38	38	0	100.%	100.%
SW6020A-DISS	2	38	76	76	0	100.%	100.%
SW8011	1	38	38	38	0	100.%	100.%
SW8260C	34	38	1292	1292	0	100.%	100.%
SW9056A	5	38	190	190	10	100.%	**94.7%**
Field QC Samples							
SW8260C	34	8	272	272	34	100	**87.5%**

Notes
Results in bold did not meet the completeness objective.
%: percent
QC: quality control

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February 6, 2017

Ms. Katrina Wheelock
377 MSG/CEIE
2050 Wyoming Blvd SE
Kirtland Air Force Base, NM 87117-5270

Subject: Disposal of Soil Drill Cuttings from the Installation of Groundwater Monitoring Well KAFB-106MW1, Kirtland AFB, New Mexico
USACE Contract No. W9128F-12-D-003, Delivery Order 0025

Dear Ms. Wheelock:

CB&I is requesting permission to dispose of nonhazardous soil drill cuttings and plastic liners used in rolloff containers to the Kirtland Air Force Base (AFB) Construction and Demolition (C&D) debris landfill. The generation of and analyses performed on the soil drill cuttings are discussed below.

During January 2017, CB&I began installation on one nested groundwater monitoring well (KAFB-106MW1) for the Kirtland AFB Rapid Response Contract. KAFB-106MW1 is located in a undeveloped lot located just south of Randolph Avenue between Fuels Drive and the National Guard Building. The groundwater monitoring well was drilled using air rotary casing hammer drilling methods. Drill cuttings were containerized in plastic lined steel rolloffs pending laboratory analysis for waste characterization. Approximately 10 to 15 cubic yards of soil drill cuttings were generated for each 20-cubic yard rolloff container. Three rolloffs were sampled for KAFB-106MW1 and included in this letter.

The geologist collected a small amount of soil from each depth as the sediment exited the cyclone separator and was deposited in the rolloff; resulting in one composite sample for each rolloff. Three rolloffs were filled from KAFB-106MW1. The three composite samples were sent to Gulf Coast Analytical Laboratory for testing. The samples were analyzed for the required parameters per the Kirtland AFB Landfill Acceptance Memorandum (January 2009). The analytical results for the composite samples confirm that the drill cuttings are not considered to be hazardous waste and meet the requirements for disposal at the Kirtland C&D landfill.

CB&I requests your review of the attached analytical data and determination for disposal at Kirtland AFB C&D landfill. All three rolloff containers are owned by Advanced Chemical Transport and the numbers on the containers for disposal include –6607 (106MW1-IDW01), 0543 (106MW1-IDW02), and 0128 (106MW1-IDW03). Upon receiving notification of Kirtland AFB's acceptance of the soil and plastic, CB&I will coordinate transport of the rolloffs and disposal of the waste with Advanced Chemical Transport.

If you have any questions regarding this request, please contact me at (303) 486-2503. Thank you for your assistance.

Sincerely,

Caitlin LaChance
Geologist

Enclosures:
Empirical Laboratories, LLC Report No. 1701081 – Analytical Results for Drill Cuttings from Nested Groundwater Monitoring Well KAFB-106MW1 (106MW1-IDW01 through IDW03)

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

9 February 2017

MEMORANDUM FOR: AFCEC/CZO

FROM: 377 MSG/CEIE (Solid Waste Program Manager)

SUBJECT: Landfill Disposal

Reference: CB&I Federal Services, LLC, letter dated: 6 February 2017
USACE Contract No. W9128F-12-D-003, Delivery Order 0025

Disposal of Soil from the Installation of Groundwater Monitoring Well KAFB-106MW1, Kirtland AFB, New Mexico

1. Authorization is granted to CB&I to dispose of soil from the installation of groundwater monitoring well KAFB-106MW1, in support of the Bulk Fuels Facility project, at the Kirtland AFB construction and demolition landfill. Debris will be delivered to the landfill by Advanced Chemical Transport, and will be in three Advanced Chemical Transport roll-offs, numbered 6607, 0543, and 0128. Debris will consist of excavated soil and plastic liners from roll-offs. Lab results are on file in the Solid Waste Management office. CB&I shall be issued a Kirtland AFB landfill pass for this disposal action. A copy of this letter will accompany each roll-off and be left with the gate keeper at the landfill.

2. Please direct questions to me at 853-2486.

KATRINA E. WHEELOCK
Solid Waste Program Manager
Environmental Management

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February 16, 2017

Ms. Katrina Wheelock
377 MSG/CEIE
2050 Wyoming Blvd SE
Kirtland Air Force Base, NM 87117-5270

Subject: Disposal of Soil Drill Cuttings from the Installation of Groundwater Monitoring Wells KAFB-106MW1 and KAFB-106MW2, Kirtland AFB, New Mexico USACE Contract No. W9128F-12-D-003, Delivery Order 0025

Dear Ms. Wheelock:

CB&I is requesting permission to dispose of nonhazardous soil drill cuttings and plastic liners used in rolloff containers to the Kirtland Air Force Base (AFB) Construction and Demolition (C&D) debris landfill. The generation of and analyses performed on the soil drill cuttings are discussed below.

During January 2017, CB&I began installation on two groundwater monitoring wells (KAFB-106MW1 and KAFB-106MW2) for the Kirtland AFB Rapid Response Contract. Both wells are located in an undeveloped lot located just south of Randolph Avenue between Fuels Drive and the National Guard Building. The groundwater monitoring wells were drilled using air rotary casing hammer drilling methods. Drill cuttings were containerized in plastic lined steel rolloffs pending laboratory analysis for waste characterization. Approximately 10 to 15 cubic yards of soil drill cuttings were generated for each 20-cubic yard rolloff container. One additional rolloff was sampled for KAFB-106MW1 and two rolloffs were sampled for KAFB-106MW2, and are included in this letter.

The geologist collected a small amount of soil from each depth as the sediment exited the cyclone separator and was deposited in the rolloff; resulting in one composite sample for each rolloff. One additional rolloff from KAFB-106MW1 and two rolloffs from KAFB-106MW2 were filled. The three composite samples were sent to Empirical Laboratories, LLC for testing. The samples were analyzed for the required parameters per the Kirtland AFB Landfill Acceptance Memorandum (January 2009). The analytical results for the composite samples confirm that the drill cuttings are not considered to be hazardous waste and meet the requirements for disposal at the Kirtland C&D landfill.

CB&I requests your review of the attached analytical data and determination for disposal at Kirtland AFB C&D landfill. All three rolloff containers are owned by Advanced Chemical Transport and the numbers on the containers for disposal include –9926 (106MW1-IDW04), 0129 (106MW2-IDW01), and 9823 (106MW2-IDW02). Upon receiving notification of Kirtland AFB's acceptance of the soil and plastic, CB&I will coordinate transport of the rolloffs and disposal of the waste with Advanced Chemical Transport.

If you have any questions regarding this request, please contact me at (505) 262-8942. Thank you for your assistance.

Sincerely,

Caitlin LaChance
Geologist

Enclosures:
Empirical Laboratories, LLC Report No. 1701168 – Analytical Results for Drill Cuttings from Nested Groundwater Monitoring Wells KAFB-106MW1 (106MW1-IDW04) and KAFB-106MW2 (106MW2-IDW01 and IDW02)

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

23 February 2017

MEMORANDUM FOR: AFCEC/CZO

FROM: 377 MSG/CEIE (Solid Waste Program Manager)

SUBJECT: Landfill Disposal

Reference: CB&I Federal Services, LLC, letter dated: 16 February 2017
USACE Contract No. W9128F-12-D-003, Delivery Order 0025

Disposal of Soil from the Installation of Groundwater Monitoring Wells KAFB-106MW1 and KAFB-106MW2, Kirtland AFB, New Mexico

1. Authorization is granted to CB&I to dispose of soil from the installation of groundwater monitoring well KAFB-106MW1 and KAFB-106MW2, in support of the Bulk Fuels Facility project, at the Kirtland AFB construction and demolition landfill. Debris will be delivered to the landfill by Advanced Chemical Transport, and will be in three Advanced Chemical Transport roll-offs, numbered 9926, 0129, and 9823. Debris will consist of excavated soil and plastic liners from roll-offs. Lab results are on file in the Solid Waste Management office. CB&I shall be issued a Kirtland AFB landfill pass for this disposal action. A copy of this letter will accompany each roll-off and be left with the gate keeper at the landfill.

2. Please direct questions to me at 853-2486.

KATRINA E. WHEELOCK
Solid Waste Program Manager
Environmental Management

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February 21, 2017

Ms. Katrina Wheelock
377 MSG/CEIE
2050 Wyoming Blvd SE
Kirtland Air Force Base, NM 87117-5270

Subject: Disposal of Soil Drill Cuttings from the Installation of Groundwater Monitoring Well KAFB-106MW2, Kirtland AFB, New Mexico
USACE Contract No. W9128F-12-D-003, Delivery Order 0025

Dear Ms. Wheelock:

CB&I is requesting permission to dispose of nonhazardous soil drill cuttings and plastic liners used in rolloff containers to the Kirtland Air Force Base (AFB) Construction and Demolition (C&D) debris landfill. The generation of and analyses performed on the soil drill cuttings are discussed below.

During January 2017, CB&I began installation on one groundwater monitoring well (KAFB-106MW2) for the Kirtland AFB Rapid Response Contract. KAFB-106MW2 is located in an undeveloped lot located just south of Randolph Avenue between Fuels Drive and the National Guard Building. The groundwater monitoring well was drilled using air rotary casing hammer drilling methods. Drill cuttings were containerized in plastic lined steel rolloffs pending laboratory analysis for waste characterization. Approximately 10 to 15 cubic yards of soil drill cuttings were generated and placed in each 20-cubic yard rolloff container. Two additional rolloffs were sampled for KAFB-106MW2 and are included in this letter.

The geologist collected a small amount of soil from each depth as the sediment exited the cyclone separator and was deposited in the rolloff; resulting in one composite sample for each rolloff. Two additional rolloffs from KAFB-106MW2 were filled. The two composite samples were sent to Empirical Laboratories, LLC for testing. The samples were analyzed for the required parameters per the Kirtland AFB Landfill Acceptance Memorandum (January 2009). The analytical results for the composite samples confirm that the drill cuttings are not hazardous waste and meet the requirements for disposal at the Kirtland C&D landfill.

CB&I requests your review of the attached analytical data and determination for disposal at Kirtland AFB C&D landfill. Both rolloff containers are owned by Advanced Chemical Transport and the numbers on the containers for disposal are: 0519 (106MW2-IDW03) and 9901 (106MW2-IDW04). Upon receiving notification of Kirtland AFB's acceptance of the soil and plastic, CB&I will coordinate transport of the rolloffs and disposal of the waste with Advanced Chemical Transport.

If you have any questions regarding this request, please contact me at (505) 262-8942. Thank you for your assistance.

Sincerely,

Caitlin Q. LaChance

Caitlin LaChance
Geologist

Enclosures:
Empirical Laboratories, LLC Report No. 1701242 – Analytical Results for Drill Cuttings from Nested Groundwater Monitoring Well KAFB-106MW2 (106MW2-IDW03 and IDW04)

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

23 February 2017

MEMORANDUM FOR: AFCEC/CZO

FROM: 377 MSG/CEIE (Solid Waste Program Manager)

SUBJECT: Landfill Disposal

Reference: CB&I Federal Services, LLC, letter dated: 21 February 2017
USACE Contract No. W9128F-12-D-003, Delivery Order 0025

Disposal of Soil from the Installation of Groundwater Monitoring Well KAFB-106MW2, Kirtland AFB, New Mexico

1. Authorization is granted to CB&I to dispose of soil from the installation of groundwater monitoring well KAFB-106MW2, in support of the Bulk Fuels Facility project, at the Kirtland AFB construction and demolition landfill. Debris will be delivered to the landfill by Advanced Chemical Transport, and will be in two Advanced Chemical Transport roll-offs, numbered 0519 and 9901. Debris will consist of excavated soil and plastic liners from roll-offs. Lab results are on file in the Solid Waste Management office. CB&I shall be issued a Kirtland AFB landfill pass for this disposal action. A copy of this letter will accompany each roll-off and be left with the gate keeper at the landfill.

2. Please direct questions to me at 853-2486.

KATRINA E. WHEELOCK
Solid Waste Program Manager
Environmental Management

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March 7, 2017

Ms. Katrina Wheelock
377 MSG/CEIE
2050 Wyoming Blvd SE
Kirtland Air Force Base, NM 87117-5270

Subject: Disposal of Soil Drill Cuttings from the Installation of Groundwater Monitoring Well KAFB-106MW2, Kirtland AFB, New Mexico
USACE Contract No. W9128F-12-D-003, Delivery Order 0025

Dear Ms. Wheelock:

CB&I is requesting permission to dispose of nonhazardous soil drill cuttings and plastic liners used in rolloff containers to the Kirtland Air Force Base (AFB) Construction and Demolition (C&D) debris landfill. The generation of and analyses performed on the soil drill cuttings are discussed below.

During January 2017, CB&I began installation on groundwater monitoring well (KAFB-106MW2) for the Kirtland AFB Rapid Response Contract. KAFB-106MW2 is located in an undeveloped lot located just south of Randolph Avenue between Fuels Drive and the National Guard Building. The groundwater monitoring well was drilled using air rotary casing hammer drilling methods. Drill cuttings were containerized in plastic lined steel rolloffs pending laboratory analysis for waste characterization. Approximately 10 to 15 cubic yards of soil drill cuttings were generated and placed in each 20-cubic yard rolloff container. On February 14, 2017, two additional rolloffs were sampled for KAFB-106MW2 and are included in this letter.

The geologist collected a small amount of soil from each depth as the sediment exited the cyclone separator and was deposited in the rolloff; resulting in one composite sample for each rolloff. Two additional rolloffs from KAFB-106MW2 were filled. The two composite samples were sent to Empirical Laboratories, LLC for testing. Empirical Laboratories sent soil samples for total petroleum hydrocarbons – gasoline range organics to Microbac Laboratories for analysis, thus results are included in a separate laboratory report. The samples were analyzed for the required parameters per the Kirtland AFB Landfill Acceptance Memorandum (January 2009). The analytical results for the composite samples confirm that the drill cuttings are not hazardous waste and meet the requirements for disposal at the Kirtland C&D landfill.

CB&I requests your review of the attached analytical data and determination for disposal at Kirtland AFB C&D landfill. Both rolloff containers are owned by Advanced Chemical Transport and the numbers on the containers for disposal are: HTBIN1 (106MW2-IDW05) and 2057 (106MW2-IDW06). Upon receiving notification of Kirtland AFB's acceptance of the soil and plastic, CB&I will coordinate transport of the rolloffs and disposal of the waste with Advanced Chemical Transport.

If you have any questions regarding this request, please contact me at (505) 262-8942. Thank you for your assistance.

Sincerely,

Caitlin LaChance
Geologist

Enclosures:
Empirical Laboratories, LLC Report No. 1702112 – Analytical Results for Drill Cuttings from Nested Groundwater Monitoring Well KAFB-106MW2 (106MW2-IDW05 and IDW06)

Microbac Laboratories Report No. L17021003 – Analytical Results for TPH-GRO Analysis for Drill Cutting from Nested Groundwater Monitoring Well KAFB-106MW2 (106MW2-IDW05 and IDW06)

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

15 March 2017

MEMORANDUM FOR: AFCEC/CZO

FROM: 377 MSG/CEIE (Solid Waste Program Manager)

SUBJECT: Landfill Disposal

Reference: CB&I Federal Services, LLC, letter dated: 7 March 2017
USACE Contract No. W9128F-12-D-003, Delivery Order 0025

Disposal of Soil from the Installation of Groundwater Monitoring Well KAFB-106MW2, Kirtland AFB, New Mexico

1. Authorization is granted to CB&I to dispose of soil from the installation of groundwater monitoring well KAFB-106MW2, in support of the Bulk Fuels Facility project, at the Kirtland AFB construction and demolition landfill. Debris will be delivered to the landfill by Advanced Chemical Transport, and will be in two Advanced Chemical Transport roll-offs, numbered HTBIN1 and 2057. Debris will consist of excavated soil and plastic liners from roll-offs. Lab results are on file in the Solid Waste Management office. CB&I shall be issued a Kirtland AFB landfill pass for this disposal action. A copy of this letter will accompany each roll-off and be left with the gate keeper at the landfill.

2. Please direct questions to me at 853-2486.

KATRINA E. WHEELOCK
Solid Waste Program Manager
Environmental Management

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March 20, 2017

Ms. Katrina Wheelock
377 MSG/CEIE
2050 Wyoming Blvd SE
Kirtland Air Force Base, NM 87117-5270

Subject: Disposal of Soil Drill Cuttings from the Installation of Groundwater Monitoring Well KAFB-106MW2 and Extraction Well KAFB-106EX2, Kirtland AFB, New Mexico
USACE Contract No. W9128F-12-D-003, Delivery Order 0025

Dear Ms. Wheelock:

CB&I is requesting permission to dispose of nonhazardous soil drill cuttings and plastic liners used in rolloff containers to the Kirtland Air Force Base (AFB) Construction and Demolition (C&D) debris landfill. The generation of and analyses performed on the soil drill cuttings are discussed below.

During January and February 2017, CB&I began installation on groundwater monitoring well KAFB-106MW2 and extraction well KAFB-106EX2 for the Kirtland AFB Rapid Response Contract. Both wells are located in an undeveloped lot located just south of Randolph Avenue between Fuels Drive and the Air National Guard Building. Both wells were drilled using air rotary casing hammer drilling methods. Drill cuttings were containerized in plastic lined steel rolloffs pending laboratory analysis for waste characterization. Approximately 10 to 15 cubic yards of soil drill cuttings were generated and placed in each 20-cubic yard rolloff container. On February 23, 2017, two additional rolloffs were sampled for KAFB-106MW2 and one rolloff was sampled for KAFB-106EX2; all three of which are included in this letter.

The geologist collected a small amount of soil from each depth as the sediment exited the cyclone separator and was deposited in the rolloff; resulting in one composite sample for each rolloff. Two additional rolloffs from KAFB-106MW2 and one rolloff from KAFB-106EX2 were filled. The three composite samples were sent to Empirical Laboratories, LLC for testing. The samples were analyzed for the required parameters per the Kirtland AFB Landfill Acceptance Memorandum (January 2009). The analytical results for the composite samples confirm that the drill cuttings are not hazardous waste and meet the requirements for disposal at the Kirtland C&D landfill.

CB&I requests your review of the attached analytical data and determination for disposal at Kirtland AFB C&D landfill. The three rolloff containers are owned by Advanced Chemical Transport and the numbers on the containers for disposal are: 20B-26 (106MW2-IDW07), HTBIN2 (106MW2-IDW08), and 0128 (106EX2-IDW01). Upon receiving notification of Kirtland AFB's acceptance of the soil and plastic, CB&I will coordinate transport of the rolloffs and disposal of the waste with Advanced Chemical Transport.

If you have any questions regarding this request, please contact me at (505) 262-8942. Thank you for your assistance.

Sincerely,

Caitlin Q. LaChance

Caitlin LaChance
Geologist

Enclosures:
Empirical Laboratories, LLC Report No. 1702210 – Analytical Results for Drill Cuttings from Nested Groundwater Monitoring Well KAFB-106MW2 (106MW2-IDW07 and IDW08) and Extraction Well KAFB-106EX2 (106EX2-IDW01)

IDW Soil Analytical Data Table for Samples 106MW2-IDW07, 106MW2-IDW08, and 106EX2-IDW01

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

21 March 2017

MEMORANDUM FOR: AFCEC/CZO

FROM: 377 MSG/CEIE (Solid Waste Program Manager)

SUBJECT: Landfill Disposal

Reference: CB&I Federal Services, LLC, letter dated: 20 March 2017
USACE Contract No. W9128F-12-D-003, Delivery Order 0025

Disposal of Soil Drill Cuttings from the Installation of Groundwater Monitoring Well KAFB-106MW2 and Extraction Well KAFB-106EX2, Kirtland AFB, New Mexico

1. Authorization is granted to CB&I to dispose of soil from the installation of groundwater monitoring well KAFB-106MW2 and extraction well KAFB-106EX2, in support of the Bulk Fuels Facility project, at the Kirtland AFB construction and demolition landfill. Debris will be delivered to the landfill by Advanced Chemical Transport, and will be in three Advanced Chemical Transport roll-offs, numbered 20B-26, HTBIN2, and 0128. Debris will consist of excavated soil and plastic liners from roll-offs. Lab results are on file in the Solid Waste Management office. CB&I shall be issued a Kirtland AFB landfill pass for this disposal action. A copy of this letter will accompany each roll-off and be left with the gate keeper at the landfill.

2. Please direct questions to me at 853-2486.

KATRINA E. WHEELOCK
Solid Waste Program Manager
Environmental Management

Prepared by CB&I Federal Services LLC
2440 Louisiana Blvd. NE, Suite 300
Albuquerque, NM 87110
Tel: +1 505 262 8800
Fax: +1 505 262 8855
www.CBI.com

March 28, 2017

Ms. Katrina Wheelock
377 MSG/CEIE
2050 Wyoming Blvd SE
Kirtland Air Force Base, NM 87117-5270

**Subject: Disposal of Soil Drill Cuttings from the Installation of Extraction Well KAFB-106EX2, Kirtland AFB, New Mexico
USACE Contract No. W9128F-12-D-003, Delivery Order 0025**

Dear Ms. Wheelock:

CB&I is requesting permission to dispose of nonhazardous soil drill cuttings and plastic liners used in rolloff containers to the Kirtland Air Force Base (AFB) Construction and Demolition (C&D) debris landfill. The generation of and analyses performed on the soil drill cuttings are discussed below.

During February 2017, CB&I began installation on extraction well KAFB-106EX2 for the Kirtland AFB Rapid Response Contract. KAFB-106EX2 is located in an undeveloped lot located just south of Randolph Avenue between Fuels Drive and the Air National Guard Building. The extraction well was drilled using air rotary casing hammer drilling methods. Drill cuttings were containerized in plastic lined steel rolloffs pending laboratory analysis for waste characterization. Approximately 10 to 15 cubic yards of soil drill cuttings were generated and placed in each 20-cubic yard rolloff container. On March 2, 2017, two additional rolloffs were sampled for KAFB-106EX2 and are included in this letter.

The geologist collected a small amount of soil from each depth as the sediment exited the cyclone separator and was deposited in the rolloff; resulting in one composite sample for each rolloff. Two additional rolloffs from KAFB-106EX2 were filled. The two composite samples were sent to Empirical Laboratories, LLC for testing. The samples were analyzed for the required parameters per the Kirtland AFB Landfill Acceptance Memorandum (January 2009). The analytical results for the composite samples confirm that the drill cuttings are not hazardous waste and meet the requirements for disposal at the Kirtland C&D landfill.

CB&I requests your review of the attached analytical data and determination for disposal at Kirtland AFB C&D landfill. The two rolloff containers are owned by Advanced Chemical Transport and the numbers on the containers for disposal are: 0543 (106EX2-IDW02) and 0607 (106EX2-IDW03). Upon receiving notification of Kirtland AFB's acceptance of the soil and plastic, CB&I will coordinate transport of the rolloffs and disposal of the waste with Advanced Chemical Transport.

If you have any questions regarding this request, please contact me at (505) 262-8942. Thank you for your assistance.

Sincerely,

Caitlin LaChance
Geologist

Enclosures:
Empirical Laboratories, LLC Report No. 1703043 – Analytical Results for Drill Cuttings from Extraction Well KAFB-106EX2 (106EX2-IDW02 and 106EX2-IDW03)

IDW Soil Analytical Data Table for Samples 106EX2-IDW02 and 106EX2-IDW03

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

06 April 2017

MEMORANDUM FOR: AFCEC/CZO

FROM: 377 MSG/CEIE (Solid Waste Program Manager)

SUBJECT: Landfill Disposal

Reference: CB&I Federal Services, LLC, letter dated: 28 March 2017
USACE Contract No. W9128F-12-D-003, Delivery Order 0025

Disposal of Soil Drill Cuttings from the Installation of Extraction Well KAFB-106EX2, Kirtland AFB, New Mexico

1. Authorization is granted to CB&I to dispose of soil from the installation of extraction well KAFB-106EX2, in support of the Bulk Fuels Facility project, at the Kirtland AFB construction and demolition landfill. Debris will be delivered to the landfill by Advanced Chemical Transport, and will be in two Advanced Chemical Transport roll-offs, numbered 0543 and 0607. Debris will consist of excavated soil and plastic liners from roll-offs. Lab results are on file in the Solid Waste Management office. CB&I shall be issued a Kirtland AFB landfill pass for this disposal action. A copy of this letter will accompany each roll-off and be left with the gate keeper at the landfill.

2. Please direct questions to me at 853-2486.

KATRINA E. WHEELOCK
Solid Waste Program Manager
Environmental Management

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April 5, 2017

Ms. Katrina Wheelock
377 MSG/CEIE
2050 Wyoming Blvd SE
Kirtland Air Force Base, NM 87117-5270

Subject: Disposal of Soil Drill Cuttings from the Installation of Extraction Well KAFB-106EX1, Kirtland AFB, New Mexico
USACE Contract No. W9128F-12-D-003, Delivery Order 0025

Dear Ms. Wheelock:

CB&I is requesting permission to dispose of nonhazardous soil drill cuttings and plastic liners used in rolloff containers to the Kirtland Air Force Base (AFB) Construction and Demolition (C&D) debris landfill. The generation of and analyses performed on the soil drill cuttings are discussed below.

During March 2017, CB&I began installation on extraction well KAFB-106EX1 for the Kirtland AFB Rapid Response Contract. KAFB-106EX1 is located in an undeveloped lot located just south of Randolph Avenue between Fuels Drive and the Air National Guard Building. The extraction well was drilled using air rotary casing hammer drilling methods. Drill cuttings were containerized in plastic lined steel rolloffs pending laboratory analysis for waste characterization. Approximately 10 to 15 cubic yards of soil drill cuttings were generated and placed in each 20-cubic yard rolloff container. On March 13, 2017, four rolloffs were sampled for KAFB-106EX1 and are included in this letter.

The geologist collected a small amount of soil from each depth as the sediment exited the cyclone separator and was deposited in the rolloff; resulting in one composite sample for each rolloff. Four rolloffs from KAFB-106EX1 were filled. The four composite samples were sent to Empirical Laboratories, LLC for testing. The samples were analyzed for the required parameters per the Kirtland AFB Landfill Acceptance Memorandum (January 2009). The analytical results for the composite samples confirm that the drill cuttings are not hazardous waste and meet the requirements for disposal at the Kirtland C&D landfill.

CB&I requests your review of the attached analytical data and determination for disposal at Kirtland AFB C&D landfill. The four rolloff containers are owned by Advanced Chemical Transport and the numbers on the containers for disposal are: 9901 (106EX1-IDW01), 9823 (106EX1-IDW02), 0129 (106EX1-IDW03), and 9926 (106EX1-IDW04). Upon receiving notification of Kirtland AFB's acceptance of the soil and plastic, CB&I will coordinate transport of the rolloffs and disposal of the waste with Advanced Chemical Transport.

If you have any questions regarding this request, please contact me at (505) 262-8942. Thank you for your assistance.

Sincerely,

Caitlin Q. LaChance

Caitlin LaChance
Geologist

Enclosures:
Empirical Laboratories, LLC Report No. 1703136 – Analytical Results for Drill Cuttings from Extraction Well KAFB-106EX1 (106EX1-IDW01 through 106EX1-IDW04)

IDW Soil Analytical Data Table for Samples 106EX1-IDW01 through 106EX1-IDW04

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

06 April 2017

MEMORANDUM FOR: AFCEC/CZO

FROM: 377 MSG/CEIE (Solid Waste Program Manager)

SUBJECT: Landfill Disposal

Reference: CB&I Federal Services, LLC, letter dated: 5 April 2017
USACE Contract No. W9128F-12-D-003, Delivery Order 0025

Disposal of Soil Drill Cuttings from the Installation of Extraction Well KAFB-106EX1, Kirtland AFB, New Mexico

1. Authorization is granted to CB&I to dispose of soil from the installation of extraction well KAFB-106EX1, in support of the Bulk Fuels Facility project, at the Kirtland AFB construction and demolition landfill. Debris will be delivered to the landfill by Advanced Chemical Transport, and will be in four Advanced Chemical Transport roll-offs, numbered 9901, 9823, 0129, and 9926. Debris will consist of excavated soil and plastic liners from roll-offs. Lab results are on file in the Solid Waste Management office. CB&I shall be issued a Kirtland AFB landfill pass for this disposal action. A copy of this letter will accompany each roll-off and be left with the gate keeper at the landfill.

2. Please direct questions to me at 853-2486.

KATRINA E. WHEELOCK
Solid Waste Program Manager
Environmental Management

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April 12, 2017

Ms. Katrina Wheelock
377 MSG/CEIE
2050 Wyoming Blvd SE
Kirtland Air Force Base, NM 87117-5270

Subject: Disposal of Soil Drill Cuttings from the Installation of Injection Well KAFB-106IN1, Kirtland AFB, New Mexico
USACE Contract No. W9128F-12-D-003, Delivery Order 0025

Dear Ms. Wheelock:

CB&I is requesting permission to dispose of nonhazardous soil drill cuttings and plastic liners used in rolloff containers to the Kirtland Air Force Base (AFB) Construction and Demolition (C&D) debris landfill. The generation of and analyses performed on the soil drill cuttings are discussed below.

During March 2017, CB&I began installation on injection well KAFB-106IN1 for the Kirtland AFB Rapid Response Contract. KAFB-106IN1 is located in an undeveloped lot located just south of Randolph Avenue between Fuels Drive and the Air National Guard Building. The injection well was drilled using air rotary casing hammer drilling methods. Drill cuttings were containerized in plastic lined steel rolloffs pending laboratory analysis for waste characterization. Approximately 10 to 15 cubic yards of soil drill cuttings were generated and placed in each 20-cubic yard rolloff container. On March 20, 2017, four rolloffs were sampled for KAFB-106IN1 and are included in this letter.

The geologist collected a small amount of soil from each depth as the sediment exited the cyclone separator and was deposited in the rolloff; resulting in one composite sample for each rolloff. Four rolloffs from KAFB-106IN1 were filled. The four composite samples were sent to Empirical Laboratories, LLC for testing. The samples were analyzed for the required parameters per the Kirtland AFB Landfill Acceptance Memorandum (January 2009). The analytical results for the composite samples confirm that the drill cuttings are not hazardous waste and meet the requirements for disposal at the Kirtland C&D landfill.

CB&I requests your review of the attached analytical data and determination for disposal at Kirtland AFB C&D landfill. The four rolloff containers are owned by Advanced Chemical Transport and the numbers on the containers for disposal are: 2082 (106IN1-IDW01), HTBIN1 (106IN1-IDW02), 2057 (106IN1-IDW03), and 9713 (106IN1-IDW04). Upon receiving notification of Kirtland AFB's acceptance of the soil and plastic, CB&I will coordinate transport of the rolloffs and disposal of the waste with Advanced Chemical Transport.

If you have any questions regarding this request, please contact me at (505) 262-8942. Thank you for your assistance.

Sincerely,

Caitlin LaChance
Geologist

Enclosures:
Empirical Laboratories, LLC Report No. 1703187 – Analytical Results for Drill Cuttings from Injection Well KAFB-106IN1 (106IN1-IDW01 through 106IN1-IDW04)

IDW Soil Analytical Data Table for Samples 106IN1-IDW01 through 106IN1-IDW04

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

14 April 2017

MEMORANDUM FOR: AFCEC/CZO

FROM: 377 MSG/CEIE (Solid Waste Program Manager)

SUBJECT: Landfill Disposal

Reference: CB&I Federal Services, LLC, letter dated: 12 April 2017
USACE Contract No. W9128F-12-D-003, Delivery Order 0025

Disposal of Soil Drill Cuttings from the Installation of Injection Well KAFB-106IN1, Kirtland AFB, New Mexico

1. Authorization is granted to CB&I to dispose of soil from the installation of injection well KAFB-106IN1, in support of the Bulk Fuels Facility project, at the Kirtland AFB construction and demolition landfill. Debris will be delivered to the landfill by Advanced Chemical Transport, and will be in four Advanced Chemical Transport roll-offs, numbered 2082, HTNIB1, 2057, and 9713. Debris will consist of excavated soil and plastic liners from roll-offs. Lab results are on file in the Solid Waste Management office. CB&I shall be issued a Kirtland AFB landfill pass for this disposal action. A copy of this letter will accompany each roll-off and be left with the gate keeper at the landfill.

2. Please direct questions to me at 853-2486.

KATRINA E. WHEELOCK
Solid Waste Program Manager
Environmental Management

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February 9, 2017

Subject: **Corrective Action Report for Accidental Soil Release**
Kirtland Air Force Base, New Mexico

This Corrective Action Report is submitted pursuant to the requirements specified in Section 1.27 of the Kirtland Air Force Base's (AFB) Hazardous Waste Treatment Facility Operating Permit, (Environmental Protection Agency [EPA] Identification Number NM9570024423) and Section 20.6.2.1203 of the New Mexico Administrative Code. This Report describes the release of semi-saturated soil to the ground surface, the corrective actions implemented, and discusses analytical results from the post-removal confirmation and characterization samples.

Background Information

Facility Owner:

Eric H. Froehlich, Colonel, USAF 377 ABW/CC
2000 Wyoming Boulevard SE
Kirtland AFB NM 87117-5600

Facility Operator:

CB&I Federal Services, LLC
Kathleen Romalia, Project Manager; Tara Kunkel, Task Lead; and Bruce Burke, Construction Manager
2440 Louisiana Boulevard NE, Suite 300
Albuquerque, NM 87110
Phone: (505) 262-8800

Facility:

Construction Area, In situ Bioremediation Pilot Test, Kirtland AFB, New Mexico. The construction area is located just south of Randolph Road, between Fuels Drive and the National Guard Building in an undeveloped lot.

Description of Release

On January 25, 2017 at 12:30 p.m. approximately ¼ to ½ cubic yards of semi-saturated soil was released to the ground surface at the Kirtland AFB in situ bioremediation pilot test construction area, located immediately south of Randolph Road. The spilled soil covered an area of approximately 30 inches wide by 10 feet long and 6 inches deep. Attachment 1 shows the pilot test area and location of the spilled soil. The spill was reported both verbally and in written format to the New Mexico Environment Department (NMED) Hazardous Waste Bureau within twenty-four hours.

While attempting to move a roll-off bin, the waste transportation and disposal company tipped up the front end of the bin and the semi-saturated soil spilled over the roll-off tailgate and onto the ground surface within the fenced construction area. The silt fence installed along the southern edge of the construction site stopped the spilled soil from migrating beyond the construction area fencing. Once the spill was noticed, the driver immediately lowered the roll-off bin so that it was parallel to ground surface.

The roll-off bin contained soil cuttings generated during drilling of groundwater monitoring well KAFB-106MW2 and Hydrosorb® polymer material (powdery solid) that was placed in the roll-off bin for the purpose of adsorbing free liquids in the saturated soil prior to disposal. The Safety Data Sheet for the Hydrosorb® is included as Attachment 2. Hydrosorb® is used as an industry standard material for the purpose of dehydrating saturated soil and can be disposed of at any approved solid waste landfill as identified in Section XIII of the attached Safety Data Sheet. A waste characterization sample had been collected previously from the roll-off prior to the soil spill for disposal purposes; however, analytical results are still pending. The chemical composition of the soil cuttings at the time of the spill was unknown. The roll-off bin from which the spill occurred contained soil cuttings from the depth interval of 500 to 557 feet below ground surface. A subsequent characterization sample was collected from the roll-off bin and is discussed in the sections below.

Corrective Action

The spilled soil was removed from the ground surface using a vacuum truck and was placed back into the same lined roll-off bin. The exterior boundary of the spill area was identified and barricaded off. The native soil beneath the spill footprint was excavated to a depth of approximately 2 to 3 inches to ensure any impacted soil was removed. Excavated soil was containerized within the same roll-off. Photos of the spilled soil and cleaned up site are included in Attachment 3. The roll-off was further dehydrated by thoroughly mixing the semi-saturated cuttings with additional drying agents and a secondary internal linear was installed under the roll-off tarp prior to relocating the bin.

Three soil samples were collected using Encore® samplers on January 31, 2017 upon completion of excavation activities. Samples were collected from the following locations: 1) a characterization sample from the roll-off containing the spilled material, 2) a confirmation sample from the excavated spill footprint, and 3) a background sample located parallel to the spill site, outside of the fenced construction area. Attachment 1 shows the location of the confirmation and background samples. The purpose of the confirmation sample was to determine if all potentially impacted soil had been removed. A background soil sample was collected from a location outside of the construction area to determine if there are any existing constituents in the soil unrelated to the spilled soil. The soil samples were submitted to Empirical Laboratories LLC in Nashville, Tennessee for analysis of Volatile Organic Compounds (VOCs) (EPA Method SW8260), Semi-Volatile Organic Compounds (SVOCs) (EPA Method SW8270), and metals (iron, manganese, and lead) (EPA Method SW6010).

Analytical Results

Analytical results are provided in Attachment 4, which includes a summary analytical data table of detected analytes and the final laboratory report. Analytical results from the soil samples were compared to the NMED residential soil screening levels (SSLs) (NMED, 2015).

Roll-off Characterization Soil Sample

A representative soil sample was collected from the roll-off bin from which the spill occurred to characterize any potential constituents of concern. The spilled soil does not contain any constituents that exceed the NMED residential SSLs. Results are presented below.

- No VOCs were detected in the soil sample collected from the spilled soil.
- Two SVOCs, di-n-butylphthalate and bis(2-ethylhexyl)phthalate, were detected in the soil sample with concentrations of 0.379 mg/kg and 0.186 mg/kg, respectively. Both of these results were J-qualified and below NMED residential SSLs.
- Iron, lead, and manganese were all detected in the spilled soil sample with concentrations of 6,120, 2.29, and 109 mg/kg, respectively, which are below respective NMED residential SSLs.

Post-Removal Confirmation Soil Sample

One post-removal confirmation soil sample was collected in the center of the excavated spill footprint. The confirmation soil sample does not contain any constituents that exceed the NMED residential SSLs. Results are presented below.

- No VOCs were detected in the confirmation soil sample.

- Six SVOCs were detected in the confirmation sample: benzo(b)fluoranthene, di-n-butylphthalate, bis(2-ethylhexyl)phthalate, fluoranthene, phenanthrene, and pyrene. All detected SVOC results were J-qualified below NMED residential SSLs.
- Iron, lead, and manganese were all detected in the confirmation soil sample with concentrations of 7,590, 13.5, and 117 mg/kg, respectively, which are below respective NMED residential SSLs.

Background Soil Sample

One background soil sample was collected from a location outside of the fenced construction area, approximately 45 feet to the west of the confirmation sample location. The background soil sample does not contain any constituents that exceed the NMED residential SSLs. Results are presented below.

- No VOCs were detected in the background soil sample.
- Seven SVOCs were detected in the background soil sample: benzo(b)fluoranthene, chrysene, di-n-butylphthalate, bis(2-ethylhexyl)phthalate, fluoranthene, phenanthrene, and pyrene. All detected SVOC results were J-qualified, with the exception of bis(2-ethylhexyl)phthalate, which had no qualifier and was detected at a concentration of 0.685 mg/kg. All detected SVOC results were below NMED residential SSLs.
- Iron, lead, and manganese were all detected in the background soil sample with concentrations of 7,680, 16.5, and 125 mg/kg, respectively, which were below respective NMED residential SSLs.

Analytical Results Conclusions

Two SVOCs, di-n-butylphthalate and bis(2-ethylhexyl)phthalate, were detected with very low concentrations in all three soil samples. These SVOCs are commonly found in many plastic products such as disposable sample gloves, soil scoops, and laboratory equipment.

All detectable SVOCs in the post-removal confirmation soil sample were also detected in the background soil sample. Of the seven detected SVOCs, four are polynuclear aromatic hydrocarbons (PAHs): benzo(b)fluoranthene, chrysene, fluoranthene, and pyrene. Detectable concentrations of PAHs likely originated from an outside source that was not connected with the construction site, as they were not detected in the sample collected from the spilled soil. Randolph Road is located approximately 30 to 40 feet from the northern extent of the construction area. Prior to the initiation of construction activities the undeveloped lot was used as an overflow parking lot for the National Guard during weekend activities. Runoff from the asphalt road or from vehicle exhaust are the likely sources of PAH compounds in the background and confirmation soil samples.

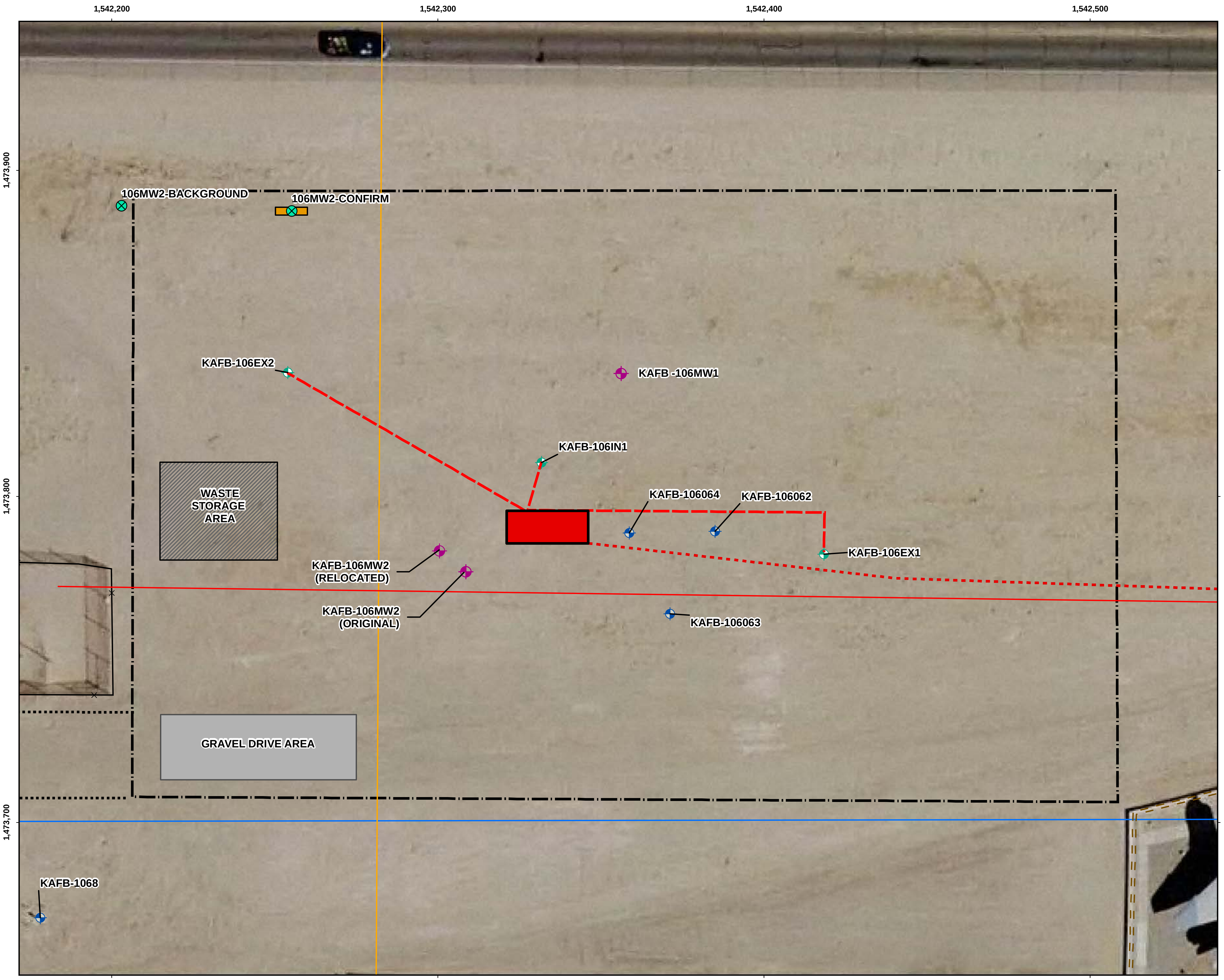
Detected analytes in all samples were below NMED residential SSLs.

Proposed Actions to Further Prevent Discharges of this Nature

All roll-off bins containing saturated soil cuttings must be sufficiently “dewatered” using Hydrosorb® and allowed to stabilize, typically 2 to 3 days, prior to moving the roll-off bins. Additionally, Hydrosorb® will be placed in the roll-off bin prior to placement of saturated soil to begin immediate adsorption of the water once waste is placed in container.

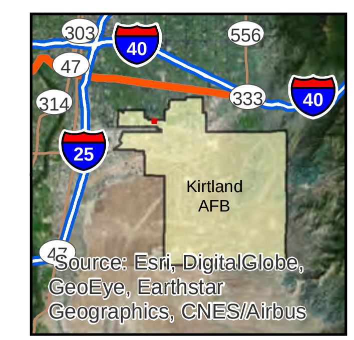
ATTACHMENT 1

Soil Spill and Characterization Sample Locations



Legend

- Spill Characterization Soil Sample Locations
- Monitoring Well
- Pilot Test Injection/Extraction Well
- Pilot Test Monitoring Well
- Wall Line
- Natural Gas Line
- Wastewater Line
- Water Line
- Electrical Cable Line
- Impacted Soil
- Construction Fence Area
- Truck Exit Route
- Pilot Test Trench Location for Water Pipe and Subsurface Electrical
- Pilot Test System Location
- Pilot Test Existing Electrical Tie-in
- Proposed Electrical Service Line



SITE LOCATION

Revision Date: 02/08/17

N

0 7.5 15 30

Feet

1 inch = 30 feet

Projection : NAD83 State Plane New Mexico Central FIPS3002 Feet

ATTACHMENT 1

SOIL SPILL AND SAMPLE LOCATIONS

H:\Kirtland_AFB\GIS_Documents\Project_Maps\ESTCP\ECarpioESRI Data Solutions TeamKAFB_ESTCP010_Attach1_Soilspill.mxd 02/08/17

ATTACHMENT 2

Safety Data Sheet Hydrosorb®

M² Polymer Technologies, Inc.
PO Box 365
West Dundee, IL 60118 USA
Tel. 847-836-1393
Fax. 847-836-6483

SAFETY DATA SHEET: May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.

EFFECTIVE DATE: January 2, 2014

SECTION I CHEMICAL PRODUCT & SUPPLIER'S IDENTIFICATION

Product Name: **Waste Lock® 770**
Chemical Name: Sodium Polyacrylate, Crosslinked

M² Polymer Technologies, Inc.
P.O. Box 365
West Dundee, IL 60118

Telephone Number for Information: 847/836-1393
Last Update : January 2, 2014

SECTION II HAZARD IDENTIFICATION

Component Information/Information on Non-Hazardous Components

The components of this product are not regulated as hazardous under 29 CFR and 49 CFR. However, the manufacturer recognizes the potential for respiratory tract irritation as a result of inhalation of this material as a respirable dust. See Sections 8, 11, 14 and 15 for further information.

Emergency Overview

Sodium polyacrylate is a white, granular, odorless polymer that forms a gel-like material with water. It is insoluble in water and causes slippery conditions when wet. Although not regulated as a hazardous material, the respirable dust is a potential respiratory tract irritant. An eight-hour exposure limit of 0.05 mg/m³ is recommended.

Potential Health Effects - Eyes

Dust may cause burning, drying, itching and other discomfort resulting in reddening of the eyes.

Potential Health Effects - Skin

Dust exposure, such as in manufacturing, may aggravate existing skin conditions due to drying.

Potential Health Effects - Ingestion

Not a likely route of entry. Tests show that polyacrylate absorbents are non-toxic if ingested. However, as in the instance of any non-food consumption, seek medical attention in the event of any adverse symptoms.

Potential Health Effects - Inhalation

Respirable dust exposure may cause respiratory tract & lung irritation and may aggravate existing respiratory conditions.

HMIS Ratings: Health 1 Fire 1 Reactivity 0

Hazard Scale: 0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe *=Chronic Hazard

SECTION III COMPOSITION / INGREDIENT INFORMATION

CAS #	Component	Percent
09003-04-7	Sodium polyacrylate	>99 %
Not Available	Post Treated – Trade Secret	< 0.5 %

HMIS Ratings: Health 1 Fire 1 Reactivity 0

Hazard Scale: 0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe *=Chronic Hazard

SECTION IV FIRST AID MEASURES

First Aid - Eyes

Immediately flush eyes with water for at least 15 minutes.

First Aid - Skin

Remove polyacrylate absorbent dust from skin using soap and water.

First Aid - Ingestion

Non-toxic. However, if adverse symptoms appear, seek medical attention.

Firs Aid - Inhalation

If inhaled, move to source of fresh air. Seek medical attention if symptoms persist.

SECTION V FIRE FIGHTING MEASURES

General Fire Hazards

No recognized fire hazards associated with the product.

Upper Flammable Limit (UFL):	**NE**
Lower Flammable Limit (LFL):	**NE**
Method Used:	**None**
Flash Point:	**None**
Flammability Classification:	**None**

Hazardous Combustion Products

None known.

Extinguishing Media

Dry chemical, foam, carbon dioxide, water fog. Slippery conditions are created if spilled products comes in contact with water.

Fire Fighting Equipment/Instructions

Firefighters should wear full protective clothing including self contained breathing apparatus,

NFPA Ratings: Health=1 Fire=1 Reactivity=0

Hazard Scale: 0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe

SECTION VI ACCIDENTAL RELEASE MEASURES

Containment Procedures

Sweep or vacuum material when possible and shovel into a waste container.

Clean Up Procedures

Use caution if product comes in contact with water as slippery conditions may result. Waste residual may be flushed down a drain with water for normal wastewater treatment. This is a non-hazardous waste suitable for disposal in any approved solid waste landfill.

Evacuation Procedures

None required.

Special Procedures

Avoid respirable dust. Wear a nuisance style dust mask if dusty conditions occur.

SECTION VII HANDLING AND STORAGE

Handling Procedures

Handle as an eye and respiratory tract irritant.

Storage Procedures

Store in a dry, closed container.

SECTION VIII EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

I. **General Product Information**

The product is not regulated as a hazardous material. There is however a potential for respiratory tract irritation and an eight-hour exposure limit of 0.05 mg/m^3 is recommended.

II. **Component Exposure Limits**

No information is available.

Engineering Controls

Provide local exhaust ventilation to maintain exposure to < 0.05 mg/m^3 over eight hours.

Personal Protective Equipment – Eyes & Face

Safety glasses with side shields or goggles.

Personal Protective Equipment – Skin

Use impervious gloves when handling the product in a manufacturing environment.

Personal Protective Equipment – Respiratory

Wear a nuisance style dust mask for mild dusty conditions or a high efficiency filter if particulate concentrations exceed 0.05 mg/m^3.

Personal Protective Equipment – General

Follow normal safety precautions and maintain good housekeeping. Wash thoroughly after handling.

SECTION IX PHYSICAL & CHEMICAL PROPERTIES

Appearance:	White granular powder	**Odor:**	None
Physical State:	**S**olid	**pH:**	5.5 to 6.5 (1% in water)
Vapor Pressure:	**<10 mm Hg**	**Vapor Density:**	N.E.
Boiling Point:	N.A**.**	**Melting Point:**	> 390°F (> 199° C)
Solubility (H_2O):	Not soluble	**Specific Gravity:**	0.4 to 0.7 g/cc
Evaporation Rate:	< 1.0		

SECTION X CHEMICAL STABILITY & REACTIVITY INFORMATION

Chemical Stability
Product is stabile.
Chemical Stability: Conditions to Avoid
None
Incompatibility
None
Hazardous Decomposition
None
Hazardous Polymerization
None

SECTION XI TOXICOLOGICAL INFORMATION

General Product Information
Acute inhalation of respirable dust may cause irritation of upper respiratory tract and lungs.
Acute Toxicity – LD50/LC50
Sodium polyacrylate (CAS 09003-04-7)
LD50: Oral Rat 40 grams/kilogram
Carcinogenicity
None
Component Carcinogenicity
No information is available.
Chronic Toxicity
Chronic exposure to rats for a two-year lifetime using Sodium Polyacrylate that had been micronized to a respirable size (< 10 µm) produced non-specific inflammation and chronic lung injury at 0.2 mg/m³ and 0.8 mg/m³. Also at 0.8 mg/m³, tumors were seen in some test animals. In the absence of chronic inflammation, tumors are not expected. There were no adverse effects detected at 0.05 mg/m³.
Mutagenicity
Sodium polyacrylate had no effect in mutagencity tests.

SECTION XII ECOLOGICAL INFORMATION

Ecotoxicity
General Product Information
Composted polyacrylate absorbents are nontoxic to aquatic or terrestrial organisms at predicted exposure levels from current application rates.
Component Analysis – Ecotoxicity & Aquatic Toxicity
No information available
Environmental Fate
Polyacrylate absorbents are largely inert in aerobic and anaerobic conditions. They are immobile in landfills and soils systems with the mobile fraction showing biodegradability. They are also compatible with incineration of municipal solid waste. Incidental drain disposal of small quantities of polyacrylate absorbents will not affect the performance of wastewater treatment systems.

SECTION XIII DISPOSAL CONSIDERATIONS

US EPA Waste Number & Descriptions
General Product Information
Product is non-hazardous waste material suitable for approved solid waste landfills.
Component Waste Numbers

No EPA Waste Numbers are applicable for this product's components

Disposal Instructions

Dispose of in accordance with Local, State and Federal regulations.

SECTION XIV TRANSPORTATION INFORMATION

International Transportation Regulations

The product is not transport regulated.

SECTION XV REGULATORY INFORMATION

U.S. Federal Regulations

General Product Information

The product is not Federally regulated as a hazardous material.

Clean Air Act

No information available.

Component Analysis

No information available.

Food & Drug Administration

Code of Federal Regulations (CFR) references the following regulated components:

Sodium Polyacrylate (CAS 09003-04-7)

Direct Food Additives: 173.73, 173.310

Indirect Food Additives: 175.105

State Regulations

General Product Information

The product is not regulated by any State as a hazardous material.

Component Analysis - State

None of the components are listed on State lists from CA, FL, MA, MN, NJ or PA.

Component Analysis – WHMIS IDL

None of the components are listed in the WHMIS IDL.

Component Analysis - Inventory

Component	CAS #	TSCA	CAN	EEC
Sodium Polyacrylate	09003-04-7	Yes	DSL	No

SECTION XVI OTHER INFORMATION

Other Information

The information presented in this document is presented in good faith and is believed to be accurate as to the effective date given. However, no warranty, expressed or implied is given. It is the buy's responsibility to ensure that its activities comply with Federal, State or provincial and local laws.

ATTACHMENT 3

Photo Documentation

Photo 1. Site immediately after semi-saturated soil spilled, looking east.

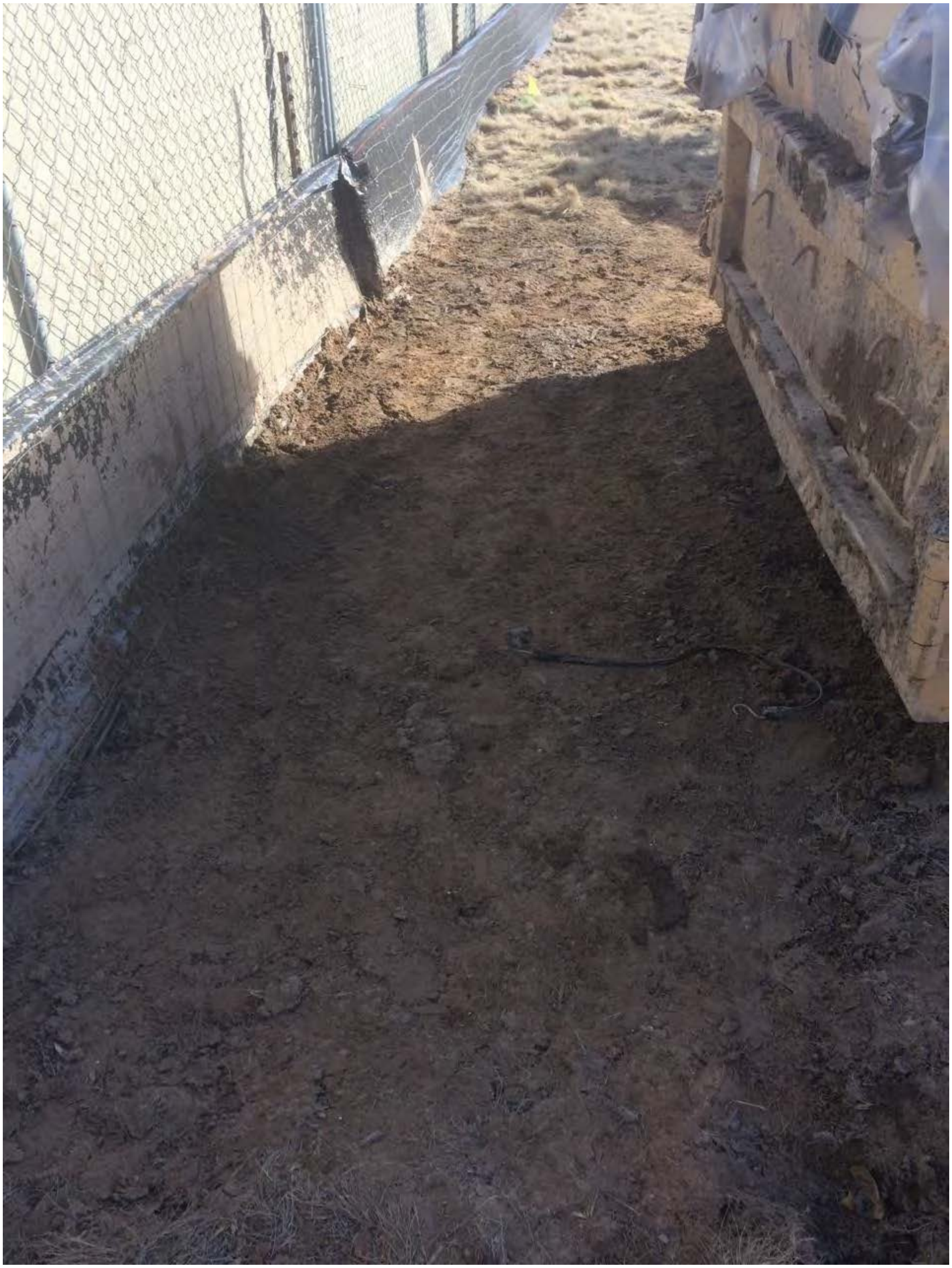


Photo 2. After soil spillage was cleaned up and native soil under spill removed, looking east.

ATTACHMENT 4

Analytical Results Summary Table and Laboratory Analytical Data Package

Attachment 4 - Detected Analytical Results

Chemical Class & Analytical Method	Parameter	Location Name	106MW2-Rolloff				106MW2-Confirm				106MW2-Background			
		Sample ID	1702005-01				1702005-02				1702005-03			
		Sample Date	31-Jan-17				31-Jan-17				31-Jan-17			
		Sample Purpose	Spilled Soil Characterization Sample				Post-Removal Confirmation Sample				Background Ground Sample			
		NMED Residential Soil Screening Level	Result	Validation Qual.	DL	LOQ	Result	Validation Qual.	DL	LOQ	Result	Validation Qual.	DL	LOQ
SVOCs (mg/Kg), Method SW8270D	Di-n-butylphthalate	**6,160**	0.376	J	0.1	0.401	0.346	J	0.0871	0.348	0.333	J	0.0895	0.358
SVOCs (mg/Kg), Method SW8270D	Bis(2-ethylhexyl)phthalate	**380**	0.186	J	0.1	0.401	0.127	J	0.0871	0.348	0.685		0.0895	0.358
SVOCs (mg/Kg), Method SW8270D	Benzo(b)fluoranthene	**1.53**	ND	U	0.1	0.401	0.0895	J	0.0871	0.348	0.116	J	0.0895	0.358
SVOCs (mg/Kg), Method SW8270D	Flouranthene	**2,320**	ND	U	0.1	0.401	0.157	J	0.0871	0.348	0.175	J	0.0895	0.358
SVOCs (mg/Kg), Method SW8270D	Phenanthrene	**1,740**	ND	U	0.1	0.401	0.122	J	0.0871	0.348	0.125	J	0.0895	0.358
SVOCs (mg/Kg), Method SW8270D	Pyrene	**1,740**	ND	U	0.1	0.401	0.15	J	0.0871	0.348	0.176	J	0.0895	0.358
SVOCs (mg/Kg), Method SW8270D	Chrysene	**153**	ND	U	0.1	0.401	ND	U	0.0871	0.348	0.104	J	0.0895	0.358
Metals (mg/kg), Method SW6010C	Iron	**54,800**	6,120		6.64	22.1	7,590		4.86	16.2	7,680		5.4	18
Metals (mg/kg), Method SW6010C	Lead	**400**	2.29		0.332	1.11	13.5		0.243	0.811	16.5		0.27	0.9
Metals (mg/kg), Method SW6010C	Manganese	**10,500**	109		0.664	3.32	117		0.486	2.43	125		0.54	2.7

DL - detection limit
ID - Identification
J - Estimated value, concentration is less than the LOQ but greater than the DL
LOQ - limit of quantitation
mg/kg - milligrams per kilogram
ND - not detected
NMED - New Mexico Environment Department
SVOCs - Semi-volatile organic compounds
U - Analyte was not detected at a value exceeding the DL

Empirical Laboratories, LLC

621 Mainstream Drive, Suite 270
Nashville, TN 37228
615.345.1115 Phone
866.417.0548 Fax

08 February 2017

Susan Huang
CB&I
4005 Port Chicago Highway
Concord, CA 94520

RE: Kirtland Rapid Response (Laboratory WorkOrder # 1702005)

Enclosed are the results of analyses for samples received by the laboratory on 02/01/2017 09:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Data Qualifiers

As applicable and where required, the following general qualifiers are associated with the sample results. Additional qualifiers will be specified within the reporting sections of the data package or within the body of the Case Narrative.

Analytical Report Terms and Qualifiers

DL: The detection limit (DL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. The DL is supported by the method detection limit (MDL) which is determined from analysis of a sample containing the analyte in a given matrix.

LOD: The Limit of Detection is an estimate of the minimum amount of a substance that an analytical process can reliably detect. An LOD is analyte- and matrix-specific and may be laboratory-dependent. This definition is further clarified in the DoD QSM as the smallest amount or concentration of a substance that must be present in a sample in order to be detected at a high level of confidence (99%). At the LOD, the false negative rate (Type II error) is 1%.

LOQ: The Limit of Quantitation is the minimum level, concentration, or quantity of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence. This term is further clarified within the DoD QSM as the lowest concentration that produces a quantitative result within specified limits of precision and bias.

***:** Exceeding quality control criteria are associated with the reported result.

B: The presence of a "B" to the right of an analytical value indicates that this compound was also detected in the method blank and the data should be interpreted with caution. One should consider the possibility that the correct sample result might be less than the reported result and, perhaps, zero.

D: When a sample (or sample extract) is rerun diluted because one of the compound concentrations exceeded the highest concentration range for the standard curve, all of the values obtained in the dilution run will be flagged with a "D".

E: The concentration for any compound found which exceeds the highest concentration level on the standard curve for that compound will be flagged with an "E". Usually the sample will be rerun at a dilution to quantitate the flagged compound. For Metals, the qualifier indicates that the serial dilution was outside of the control limits and the compound should be considered estimated due to the presence of interference.

H1: The result was analyzed outside of the EPA recommended holding time.

H2: The result was extracted outside of the EPA recommended holding time

H3: The sample for this analyte was received outside of the EPA recommended holding time.

J: The presence of a "J" to the right of an analytical result indicates that the reported result is estimated. The mass spectral data pass the identification criteria showing that the compound is present, but the calculated result is less than the LOQ. One should feel confident that the result is greater than zero and less than the LOQ.

M: Indicates that the sample matrix interfered with the quantitation of the analyte. In dual column analysis the result is reported from the column with the lower concentration. In inorganics, it indicates that the parameters DL/LOD/LOQ have been raised.

N: The MS/MSD accuracy and/or precision are outside criteria. The predigested spike recovery is not within control limits for the associated parameter.

P: The associated numerical value is an estimated quantity. There is greater than a 40% difference between the two GC columns for the detected concentrations. The higher of the two values is reported unless matrix interference is obvious or for HPLC analysis where the primary column is reported.

Q: The relative percent difference (RPD) and/or percent recovery exceeded limits in the associated Blank Spike and/or Blank Spike Duplicate.

S: The associated internal standard exceeded criteria.

U: The presence of a "U" indicates that the analyte was analyzed for but was not detected or the concentration of the analyte quantitated below the DL.

X: The parameter shows a potential positive bias on a reported concentration due to an ICV or CCV exceeding the upper control limit on the high side.

Y: The parameter shows a potential negative bias on a reported concentration due to an ICV or CCV exceeding the lower control limit on the low side.

Z: The parameter shows lack of confirmation/detection, which may be due to a negative bias in the ICV or CCV which exceeds the lower control limit.

Laboratory Analytical Results Report

Client Sample ID: 106MW2-Rolloff
Sample Collection Date/Time: 01/31/2017 14:45
Lab Sample ID: 1702005-01
Sample Received Date/Time: 02/01/2017 09:30
Sample Matrix: Solid

Analyte	Result	DL	LOD	LOQ	Units	Dilution	Analyzed	Method	Batch	Notes
Classical Chemistry Parameters										
% Solids	**82**	1.0	1.0	1.0	%	1	02/05/17 12:35	SM2540B	7B03416	
Volatile Organic Compounds by GC/MS										
Acetone	ND	6.33	12.7	25.3	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
Benzene	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
Bromobenzene	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
Bromochloromethane	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
Bromodichloromethane	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
Bromoform	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
Bromomethane	ND	3.16	6.33	12.7	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
2-Butanone	ND	3.16	6.33	12.7	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
n-Butylbenzene	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
sec-Butylbenzene	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
tert-Butylbenzene	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
Carbon disulfide	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
Carbon tetrachloride	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
Chlorobenzene	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
Chloroethane	ND	3.16	6.33	12.7	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
Chloroform	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
Chloromethane	ND	3.16	6.33	12.7	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
2-Chlorotoluene	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
4-Chlorotoluene	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
Cyclohexane	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
1,2-Dibromo-3-chloropropane	ND	3.16	6.33	12.7	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
Dibromochloromethane	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
1,2-Dibromoethane (EDB)	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
Dibromomethane	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
1,2-Dichlorobenzene	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
1,4-Dichlorobenzene	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
1,3-Dichlorobenzene	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
Dichlorodifluoromethane	ND	3.16	6.33	12.7	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
1,1-Dichloroethane	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
1,2-Dichloroethane	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
1,1-Dichloroethene	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
cis-1,2-Dichloroethene	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
trans-1,2-Dichloroethene	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
1,2-Dichloropropane	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
1,3-Dichloropropane	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
2,2-Dichloropropane	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
1,1-Dichloropropene	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
cis-1,3-Dichloropropene	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
trans-1,3-Dichloropropene	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
Ethylbenzene	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U

Laboratory Analytical Results Report

Client Sample ID: 106MW2-Rolloff **Sample Collection Date/Time: 01/31/2017 14:45**

Lab Sample ID: 1702005-01 **Sample Received Date/Time: 02/01/2017 09:30**

Sample Matrix: Solid

Analyte	Result	DL	LOD	LOQ	Units	Dilution	Analyzed	Method	Batch	Notes
Volatile Organic Compounds by GC/MS										
Hexachlorobutadiene	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
2-Hexanone	ND	3.16	6.33	12.7	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
Isopropylbenzene	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
p-Isopropyltoluene	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
Methyl Acetate	ND	3.16	6.33	12.7	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
Methylcyclohexane	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
Methylene chloride	ND	3.16	6.33	12.7	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
4-Methyl-2-pentanone	ND	3.16	6.33	12.7	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
Methyl t-Butyl Ether	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
Naphthalene	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
n-Propylbenzene	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
Styrene	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
1,1,2,2-Tetrachloroethane	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
Tetrachloroethene	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
Toluene	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
1,2,3-Trichlorobenzene	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
1,2,4-Trichlorobenzene	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
1,3,5-Trichlorobenzene	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
1,1,1-Trichloroethane	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
1,1,2-Trichloroethane	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
Trichloroethene	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
Trichlorofluoromethane	ND	3.16	6.33	12.7	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	3.16	6.33	12.7	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
Vinyl chloride	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
m,p-Xylene	ND	3.16	6.33	12.7	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
o-Xylene	ND	1.58	3.16	6.33	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
Xylenes (total)	ND	4.75	9.49	19.0	ug/Kg dry	1	02/07/17 09:17	SW8260B	7B07001	U
Surrogate: Bromofluorobenzene				*98.5 %*	*79-119*		*02/07/17 09:17*	*SW8260B*	*7B07001*	
Surrogate: Dibromofluoromethane				*94.5 %*	*78-119*		*02/07/17 09:17*	*SW8260B*	*7B07001*	
Surrogate: 1,2-Dichloroethane-d4				*93.6 %*	*71-136*		*02/07/17 09:17*	*SW8260B*	*7B07001*	
Surrogate: Toluene-d8				*101 %*	*85-116*		*02/07/17 09:17*	*SW8260B*	*7B07001*	

Laboratory Analytical Results Report

Client Sample ID: 106MW2-Rolloff **Sample Collection Date/Time: 01/31/2017 14:45**

Lab Sample ID: 1702005-01 **Sample Received Date/Time: 02/01/2017 09:30**

Sample Matrix: Solid

Analyte	Result	DL	LOD	LOQ	Units	Dilution	Analyzed	Method	Batch	Notes
Semivolatile Organic Compounds by GC/MS										
Acenaphthene	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
Acenaphthylene	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
Acetophenone	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
Aniline	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
Anthracene	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
Atrazine	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
Benzaldehyde	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
Benzidine	ND	100	2010	4010	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
Benzo(a)anthracene	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
Benzo(a)pyrene	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
Benzo(b)fluoranthene	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
Benzo(g,h,i)perylene	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
Benzoic acid	ND	100	803	1600	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	QNU
Benzo(k)fluoranthene	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
Benzyl alcohol	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
1,1-Biphenyl	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
4-Bromophenyl-phenylether	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
Butylbenzylphthalate	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
Caprolactam	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
Carbazole	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	NU
4-Chloro-3-methylphenol	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
4-Chloroaniline	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	NU
Bis(2-chloroethoxy)methane	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
Bis(2-chloroethyl)ether	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
2,2'-Oxybis-1-chloropropane	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
2-Chloronaphthalene	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
2-Chlorophenol	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
4-Chlorophenyl phenyl ether	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
Chrysene	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
Dibenz(a,h)anthracene	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
Dibenzofuran	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
Di-n-butylphthalate	**376**	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	JB
1,4-Dichlorobenzene	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
1,3-Dichlorobenzene	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
1,2-Dichlorobenzene	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
3,3'-Dichlorobenzidine	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
2,6-Dichlorophenol	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
2,4-Dichlorophenol	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
Diethylphthalate	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
2,4-Dimethylphenol	ND	401	803	1600	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
Dimethyl phthalate	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
4,6-Dinitro-2-methylphenol	ND	1000	2010	4010	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
2,4-Dinitrophenol	ND	1000	2010	4010	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	NU

Laboratory Analytical Results Report

Client Sample ID: 106MW2-Rolloff | **Sample Collection Date/Time: 01/31/2017 14:45**

Lab Sample ID: 1702005-01 | **Sample Received Date/Time: 02/01/2017 09:30**

Sample Matrix: Solid

Analyte	Result	DL	LOD	LOQ	Units	Dilution	Analyzed	Method	Batch	Notes
Semivolatile Organic Compounds by GC/MS										
2,4-Dinitrotoluene	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
2,6-Dinitrotoluene	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
Di-n-octylphthalate	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
1,4-Dioxane	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
1,2-Diphenylhydrazine (as Azobenzene)	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
Bis(2-ethylhexyl)phthalate	**186**	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	J
Fluoranthene	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
Fluorene	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
Hexachlorobenzene	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
Hexachlorobutadiene	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
Hexachlorocyclopentadiene	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
Hexachloroethane	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
Indeno(1,2,3-cd)pyrene	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
Isophorone	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
1-Methylnaphthalene	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
2-Methylnaphthalene	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
2-Methylphenol	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
3-Methylphenol/4-Methylphenol	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
3-Methylphenol	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
4-Methylphenol	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
Naphthalene	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
4-Nitroaniline	ND	401	803	1600	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	NU
3-Nitroaniline	ND	401	803	1600	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	NU
2-Nitroaniline	ND	401	803	1600	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
Nitrobenzene	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
4-Nitrophenol	ND	401	803	1600	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
2-Nitrophenol	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
N-Nitrosodimethylamine	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
N-Nitrosodiphenylamine	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
N-Nitroso-di-n-propylamine	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
Pentachlorophenol	ND	401	803	1600	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
Phenanthrene	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
Phenol	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
Pyrene	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
1,2,4,5-Tetrachlorobenzene	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
2,3,4,6-Tetrachlorophenol	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
1,2,4-Trichlorobenzene	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
2,4,6-Trichlorophenol	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
2,4,5-Trichlorophenol	ND	100	201	401	ug/Kg dry	1	02/07/17 18:23	SW8270D	7B06012	U
Surrogate: 2-Fluorobiphenyl				*76.5 %*	*44-114*		*02/07/17 18:23*	*SW8270D*	*7B06012*	
Surrogate: 2-Fluorophenol				*71.1 %*	*35-115*		*02/07/17 18:23*	*SW8270D*	*7B06012*	
Surrogate: Nitrobenzene-d5				*55.3 %*	*37-122*		*02/07/17 18:23*	*SW8270D*	*7B06012*	

Laboratory Analytical Results Report

Client Sample ID: 106MW2-Rolloff **Sample Collection Date/Time: 01/31/2017 14:45**

Lab Sample ID: 1702005-01 **Sample Received Date/Time: 02/01/2017 09:30**

Sample Matrix: Solid

Analyte	Result	DL	LOD	LOQ	Units	Dilution	Analyzed	Method	Batch	Notes
Semivolatile Organic Compounds by GC/MS										
Surrogate: Phenol-d6				*67.7 %*	*33-122*		*02/07/17 18:23*	*SW8270D*	*7B06012*	
Surrogate: Terphenyl-d14				*79.3 %*	*54-127*		*02/07/17 18:23*	*SW8270D*	*7B06012*	
Surrogate: 2,4,6-Tribromophenol				*65.2 %*	*39-132*		*02/07/17 18:23*	*SW8270D*	*7B06012*	

Laboratory Analytical Results Report

Client Sample ID: 106MW2-Confirm | **Sample Collection Date/Time: 01/31/2017 14:35**

Lab Sample ID: 1702005-02 | **Sample Received Date/Time: 02/01/2017 09:30**

Sample Matrix: Solid

Analyte	Result	DL	LOD	LOQ	Units	Dilution	Analyzed	Method	Batch	Notes
Classical Chemistry Parameters										
% Solids	**95**	1.0	1.0	1.0	%	1	02/05/17 12:35	SM2540B	7B03416	
Volatile Organic Compounds by GC/MS										
Acetone	ND	4.41	8.81	17.6	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
Benzene	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
Bromobenzene	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
Bromochloromethane	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
Bromodichloromethane	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
Bromoform	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
Bromomethane	ND	2.20	4.41	8.81	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
2-Butanone	ND	2.20	4.41	8.81	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
n-Butylbenzene	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
sec-Butylbenzene	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
tert-Butylbenzene	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
Carbon disulfide	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
Carbon tetrachloride	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
Chlorobenzene	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
Chloroethane	ND	2.20	4.41	8.81	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
Chloroform	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
Chloromethane	ND	2.20	4.41	8.81	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
2-Chlorotoluene	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
4-Chlorotoluene	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
Cyclohexane	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
1,2-Dibromo-3-chloropropane	ND	2.20	4.41	8.81	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
Dibromochloromethane	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
1,2-Dibromoethane (EDB)	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
Dibromomethane	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
1,2-Dichlorobenzene	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
1,4-Dichlorobenzene	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
1,3-Dichlorobenzene	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
Dichlorodifluoromethane	ND	2.20	4.41	8.81	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
1,1-Dichloroethane	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
1,2-Dichloroethane	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
1,1-Dichloroethene	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
cis-1,2-Dichloroethene	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
trans-1,2-Dichloroethene	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
1,2-Dichloropropane	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
1,3-Dichloropropane	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
2,2-Dichloropropane	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
1,1-Dichloropropene	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
cis-1,3-Dichloropropene	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
trans-1,3-Dichloropropene	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
Ethylbenzene	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
Hexachlorobutadiene	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U

Laboratory Analytical Results Report

Client Sample ID: 106MW2-Confirm **Sample Collection Date/Time: 01/31/2017 14:35**

Lab Sample ID: 1702005-02 **Sample Received Date/Time: 02/01/2017 09:30**

Sample Matrix: Solid

Analyte	Result	DL	LOD	LOQ	Units	Dilution	Analyzed	Method	Batch	Notes
Volatile Organic Compounds by GC/MS										
2-Hexanone	ND	2.20	4.41	8.81	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
Isopropylbenzene	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
p-Isopropyltoluene	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
Methyl Acetate	ND	2.20	4.41	8.81	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
Methylcyclohexane	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
Methylene chloride	ND	2.20	4.41	8.81	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
4-Methyl-2-pentanone	ND	2.20	4.41	8.81	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
Methyl t-Butyl Ether	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
Naphthalene	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
n-Propylbenzene	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
Styrene	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
1,1,2,2-Tetrachloroethane	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
Tetrachloroethene	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
Toluene	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
1,2,3-Trichlorobenzene	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
1,2,4-Trichlorobenzene	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
1,3,5-Trichlorobenzene	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
1,1,1-Trichloroethane	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
1,1,2-Trichloroethane	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
Trichloroethene	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
Trichlorofluoromethane	ND	2.20	4.41	8.81	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	2.20	4.41	8.81	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
Vinyl chloride	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
m,p-Xylene	ND	2.20	4.41	8.81	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
o-Xylene	ND	1.10	2.20	4.41	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
Xylenes (total)	ND	3.31	6.61	13.2	ug/Kg dry	1	02/07/17 09:43	SW8260B	7B07001	U
Surrogate: Bromofluorobenzene				*94.0 %*	*79-119*		*02/07/17 09:43*	*SW8260B*	*7B07001*	
Surrogate: Dibromofluoromethane				*97.3 %*	*78-119*		*02/07/17 09:43*	*SW8260B*	*7B07001*	
Surrogate: 1,2-Dichloroethane-d4				*97.6 %*	*71-136*		*02/07/17 09:43*	*SW8260B*	*7B07001*	
Surrogate: Toluene-d8				*99.4 %*	*85-116*		*02/07/17 09:43*	*SW8260B*	*7B07001*	

Laboratory Analytical Results Report

Client Sample ID: 106MW2-Confirm **Sample Collection Date/Time: 01/31/2017 14:35**

Lab Sample ID: 1702005-02 **Sample Received Date/Time: 02/01/2017 09:30**

Sample Matrix: Solid

Analyte	Result	DL	LOD	LOQ	Units	Dilution	Analyzed	Method	Batch	Notes
Semivolatile Organic Compounds by GC/MS										
Acenaphthene	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
Acenaphthylene	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
Acetophenone	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
Aniline	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
Anthracene	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
Atrazine	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
Benzaldehyde	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
Benzidine	ND	87.1	1750	3480	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
Benzo(a)anthracene	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
Benzo(a)pyrene	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
Benzo(b)fluoranthene	**89.5**	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	J
Benzo(g,h,i)perylene	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
Benzoic acid	ND	87.1	697	1390	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	QU
Benzo(k)fluoranthene	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
Benzyl alcohol	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
1,1-Biphenyl	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
4-Bromophenyl-phenylether	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
Butylbenzylphthalate	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
Caprolactam	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
Carbazole	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
4-Chloro-3-methylphenol	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
4-Chloroaniline	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
Bis(2-chloroethoxy)methane	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
Bis(2-chloroethyl)ether	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
2,2'-Oxybis-1-chloropropane	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
2-Chloronaphthalene	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
2-Chlorophenol	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
4-Chlorophenyl phenyl ether	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
Chrysene	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
Dibenz(a,h)anthracene	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
Dibenzofuran	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
Di-n-butylphthalate	**346**	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	JB
1,4-Dichlorobenzene	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
1,3-Dichlorobenzene	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
1,2-Dichlorobenzene	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
3,3'-Dichlorobenzidine	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
2,6-Dichlorophenol	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
2,4-Dichlorophenol	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
Diethylphthalate	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
2,4-Dimethylphenol	ND	348	697	1390	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
Dimethyl phthalate	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
4,6-Dinitro-2-methylphenol	ND	871	1750	3480	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
2,4-Dinitrophenol	ND	871	1750	3480	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U

Laboratory Analytical Results Report

Client Sample ID: 106MW2-Confirm **Sample Collection Date/Time: 01/31/2017 14:35**
Lab Sample ID: 1702005-02 **Sample Received Date/Time: 02/01/2017 09:30**
Sample Matrix: Solid

Analyte	Result	DL	LOD	LOQ	Units	Dilution	Analyzed	Method	Batch	Notes
Semivolatile Organic Compounds by GC/MS										
2,4-Dinitrotoluene	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
2,6-Dinitrotoluene	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
Di-n-octylphthalate	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
1,4-Dioxane	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
1,2-Diphenylhydrazine (as Azobenzene)	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
Bis(2-ethylhexyl)phthalate	**127**	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	J
Fluoranthene	**157**	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	J
Fluorene	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
Hexachlorobenzene	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
Hexachlorobutadiene	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
Hexachlorocyclopentadiene	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
Hexachloroethane	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
Indeno(1,2,3-cd)pyrene	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
Isophorone	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
1-Methylnaphthalene	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
2-Methylnaphthalene	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
2-Methylphenol	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
3-Methylphenol/4-Methylphenol	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
3-Methylphenol	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
4-Methylphenol	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
Naphthalene	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
4-Nitroaniline	ND	348	697	1390	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
3-Nitroaniline	ND	348	697	1390	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
2-Nitroaniline	ND	348	697	1390	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
Nitrobenzene	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
4-Nitrophenol	ND	348	697	1390	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
2-Nitrophenol	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
N-Nitrosodimethylamine	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
N-Nitrosodiphenylamine	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
N-Nitroso-di-n-propylamine	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
Pentachlorophenol	ND	348	697	1390	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
Phenanthrene	**122**	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	J
Phenol	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
Pyrene	**150**	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	J
1,2,4,5-Tetrachlorobenzene	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
2,3,4,6-Tetrachlorophenol	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
1,2,4-Trichlorobenzene	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
2,4,6-Trichlorophenol	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
2,4,5-Trichlorophenol	ND	87.1	175	348	ug/Kg dry	1	02/07/17 19:47	SW8270D	7B06012	U
Surrogate: 2-Fluorobiphenyl				*68.1 %*	*44-114*		*02/07/17 19:47*	*SW8270D*	*7B06012*	
Surrogate: 2-Fluorophenol				*63.8 %*	*35-115*		*02/07/17 19:47*	*SW8270D*	*7B06012*	
Surrogate: Nitrobenzene-d5				*49.4 %*	*37-122*		*02/07/17 19:47*	*SW8270D*	*7B06012*	

Laboratory Analytical Results Report

Client Sample ID: 106MW2-Confirm | **Sample Collection Date/Time: 01/31/2017 14:35**

Lab Sample ID: 1702005-02 | **Sample Received Date/Time: 02/01/2017 09:30**

Sample Matrix: Solid

Analyte	Result	DL	LOD	LOQ	Units	Dilution	Analyzed	Method	Batch	Notes
Semivolatile Organic Compounds by GC/MS										
Surrogate: Phenol-d6				*61.4 %*	*33-122*		*02/07/17 19:47*	*SW8270D*	*7B06012*	
Surrogate: Terphenyl-d14				*73.4 %*	*54-127*		*02/07/17 19:47*	*SW8270D*	*7B06012*	
Surrogate: 2,4,6-Tribromophenol				*58.4 %*	*39-132*		*02/07/17 19:47*	*SW8270D*	*7B06012*	

Laboratory Analytical Results Report

Client Sample ID: 106MW2-Background **Sample Collection Date/Time: 01/31/2017 14:55**

Lab Sample ID: 1702005-03 **Sample Received Date/Time: 02/01/2017 09:30**

Sample Matrix: Solid

Analyte	Result	DL	LOD	LOQ	Units	Dilution	Analyzed	Method	Batch	Notes
Classical Chemistry Parameters										
% Solids	**93**	1.0	1.0	1.0	%	1	02/05/17 13:17	SM2540B	7B03417	
Volatile Organic Compounds by GC/MS										
Acetone	ND	5.70	11.4	22.8	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
Benzene	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
Bromobenzene	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
Bromochloromethane	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
Bromodichloromethane	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
Bromoform	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
Bromomethane	ND	2.85	5.70	11.4	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
2-Butanone	ND	2.85	5.70	11.4	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
n-Butylbenzene	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
sec-Butylbenzene	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
tert-Butylbenzene	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
Carbon disulfide	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
Carbon tetrachloride	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
Chlorobenzene	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
Chloroethane	ND	2.85	5.70	11.4	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
Chloroform	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
Chloromethane	ND	2.85	5.70	11.4	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
2-Chlorotoluene	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
4-Chlorotoluene	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
Cyclohexane	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
1,2-Dibromo-3-chloropropane	ND	2.85	5.70	11.4	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
Dibromochloromethane	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
1,2-Dibromoethane (EDB)	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
Dibromomethane	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
1,2-Dichlorobenzene	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
1,4-Dichlorobenzene	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
1,3-Dichlorobenzene	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
Dichlorodifluoromethane	ND	2.85	5.70	11.4	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
1,1-Dichloroethane	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
1,2-Dichloroethane	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
1,1-Dichloroethene	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
cis-1,2-Dichloroethene	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
trans-1,2-Dichloroethene	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
1,2-Dichloropropane	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
1,3-Dichloropropane	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
2,2-Dichloropropane	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
1,1-Dichloropropene	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
cis-1,3-Dichloropropene	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
trans-1,3-Dichloropropene	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
Ethylbenzene	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
Hexachlorobutadiene	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U

Laboratory Analytical Results Report

Client Sample ID: 106MW2-Background | **Sample Collection Date/Time: 01/31/2017 14:55**

Lab Sample ID: 1702005-03 | **Sample Received Date/Time: 02/01/2017 09:30**

Sample Matrix: Solid

Analyte	Result	DL	LOD	LOQ	Units	Dilution	Analyzed	Method	Batch	Notes
Volatile Organic Compounds by GC/MS										
2-Hexanone	ND	2.85	5.70	11.4	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
Isopropylbenzene	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
p-Isopropyltoluene	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
Methyl Acetate	ND	2.85	5.70	11.4	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
Methylcyclohexane	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
Methylene chloride	ND	2.85	5.70	11.4	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
4-Methyl-2-pentanone	ND	2.85	5.70	11.4	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
Methyl t-Butyl Ether	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
Naphthalene	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
n-Propylbenzene	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
Styrene	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
1,1,2,2-Tetrachloroethane	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
Tetrachloroethene	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
Toluene	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
1,2,3-Trichlorobenzene	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
1,2,4-Trichlorobenzene	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
1,3,5-Trichlorobenzene	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
1,1,1-Trichloroethane	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
1,1,2-Trichloroethane	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
Trichloroethene	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
Trichlorofluoromethane	ND	2.85	5.70	11.4	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	2.85	5.70	11.4	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
Vinyl chloride	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
m,p-Xylene	ND	2.85	5.70	11.4	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
o-Xylene	ND	1.42	2.85	5.70	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
Xylenes (total)	ND	4.27	8.55	17.1	ug/Kg dry	1	02/07/17 10:08	SW8260B	7B07001	U
Surrogate: Bromofluorobenzene				*97.1 %*	*79-119*		*02/07/17 10:08*	*SW8260B*	*7B07001*	
Surrogate: Dibromofluoromethane				*99.0 %*	*78-119*		*02/07/17 10:08*	*SW8260B*	*7B07001*	
Surrogate: 1,2-Dichloroethane-d4				*99.1 %*	*71-136*		*02/07/17 10:08*	*SW8260B*	*7B07001*	
Surrogate: Toluene-d8				*101 %*	*85-116*		*02/07/17 10:08*	*SW8260B*	*7B07001*	

Laboratory Analytical Results Report

Client Sample ID: 106MW2-Background | **Sample Collection Date/Time: 01/31/2017 14:55**

Lab Sample ID: 1702005-03 | **Sample Received Date/Time: 02/01/2017 09:30**

Sample Matrix: Solid

Analyte	Result	DL	LOD	LOQ	Units	Dilution	Analyzed	Method	Batch	Notes
Semivolatile Organic Compounds by GC/MS										
Acenaphthene	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
Acenaphthylene	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
Acetophenone	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
Aniline	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
Anthracene	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
Atrazine	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
Benzaldehyde	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
Benzidine	ND	89.5	1790	3580	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
Benzo(a)anthracene	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
Benzo(a)pyrene	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
Benzo(b)fluoranthene	**116**	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	J
Benzo(g,h,i)perylene	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
Benzoic acid	ND	89.5	716	1430	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	QU
Benzo(k)fluoranthene	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
Benzyl alcohol	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
1,1-Biphenyl	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
4-Bromophenyl-phenylether	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
Butylbenzylphthalate	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
Caprolactam	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
Carbazole	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
4-Chloro-3-methylphenol	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
4-Chloroaniline	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
Bis(2-chloroethoxy)methane	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
Bis(2-chloroethyl)ether	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
2,2'-Oxybis-1-chloropropane	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
2-Chloronaphthalene	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
2-Chlorophenol	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
4-Chlorophenyl phenyl ether	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
Chrysene	**104**	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	J
Dibenz(a,h)anthracene	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
Dibenzofuran	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
Di-n-butylphthalate	**333**	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	JB
1,4-Dichlorobenzene	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
1,3-Dichlorobenzene	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
1,2-Dichlorobenzene	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
3,3'-Dichlorobenzidine	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
2,6-Dichlorophenol	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
2,4-Dichlorophenol	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
Diethylphthalate	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
2,4-Dimethylphenol	ND	358	716	1430	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
Dimethyl phthalate	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
4,6-Dinitro-2-methylphenol	ND	895	1790	3580	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
2,4-Dinitrophenol	ND	895	1790	3580	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U

Laboratory Analytical Results Report

Client Sample ID: 106MW2-Background | **Sample Collection Date/Time: 01/31/2017 14:55**
Lab Sample ID: 1702005-03 | **Sample Received Date/Time: 02/01/2017 09:30**
Sample Matrix: Solid

Analyte	Result	DL	LOD	LOQ	Units	Dilution	Analyzed	Method	Batch	Notes
Semivolatile Organic Compounds by GC/MS										
2,4-Dinitrotoluene	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
2,6-Dinitrotoluene	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
Di-n-octylphthalate	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
1,4-Dioxane	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
1,2-Diphenylhydrazine (as Azobenzene)	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
Bis(2-ethylhexyl)phthalate	**685**	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	
Fluoranthene	**175**	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	J
Fluorene	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
Hexachlorobenzene	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
Hexachlorobutadiene	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
Hexachlorocyclopentadiene	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
Hexachloroethane	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
Indeno(1,2,3-cd)pyrene	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
Isophorone	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
1-Methylnaphthalene	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
2-Methylnaphthalene	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
2-Methylphenol	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
3-Methylphenol	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
3-Methylphenol/4-Methylphenol	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
4-Methylphenol	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
Naphthalene	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
4-Nitroaniline	ND	358	716	1430	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
3-Nitroaniline	ND	358	716	1430	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
2-Nitroaniline	ND	358	716	1430	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
Nitrobenzene	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
4-Nitrophenol	ND	358	716	1430	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
2-Nitrophenol	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
N-Nitrosodimethylamine	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
N-Nitrosodiphenylamine	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
N-Nitroso-di-n-propylamine	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
Pentachlorophenol	ND	358	716	1430	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
Phenanthrene	**125**	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	J
Phenol	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
Pyrene	**176**	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	J
1,2,4,5-Tetrachlorobenzene	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
2,3,4,6-Tetrachlorophenol	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
1,2,4-Trichlorobenzene	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
2,4,6-Trichlorophenol	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
2,4,5-Trichlorophenol	ND	89.5	179	358	ug/Kg dry	1	02/07/17 20:16	SW8270D	7B06012	U
Surrogate: 2-Fluorobiphenyl				*57.7 %*	*44-114*		*02/07/17 20:16*	*SW8270D*	*7B06012*	
Surrogate: 2-Fluorophenol				*54.1 %*	*35-115*		*02/07/17 20:16*	*SW8270D*	*7B06012*	
Surrogate: Nitrobenzene-d5				*41.8 %*	*37-122*		*02/07/17 20:16*	*SW8270D*	*7B06012*	

Laboratory Analytical Results Report

Client Sample ID: 106MW2-Background
Sample Collection Date/Time: 01/31/2017 14:55
Lab Sample ID: 1702005-03
Sample Received Date/Time: 02/01/2017 09:30
Sample Matrix: Solid

Analyte	Result	DL	LOD	LOQ	Units	Dilution	Analyzed	Method	Batch	Notes
Semivolatile Organic Compounds by GC/MS										
Surrogate: Phenol-d6				*51.0 %*	*33-122*		*02/07/17 20:16*	*SW8270D*	*7B06012*	
Surrogate: Terphenyl-d14				*64.1 %*	*54-127*		*02/07/17 20:16*	*SW8270D*	*7B06012*	
Surrogate: 2,4,6-Tribromophenol				*48.5 %*	*39-132*		*02/07/17 20:16*	*SW8270D*	*7B06012*	

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	DL	LOD	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7B07001												
Blank					Prepared & Analyzed: 02/07/2017							
Acetone	ND	5.00	10.0	20.0	ug/Kg wet							U
Benzene	ND	1.25	2.50	5.00	ug/Kg wet							U
Bromobenzene	ND	1.25	2.50	5.00	ug/Kg wet							U
Bromochloromethane	ND	1.25	2.50	5.00	ug/Kg wet							U
Bromodichloromethane	ND	1.25	2.50	5.00	ug/Kg wet							U
Bromoform	ND	1.25	2.50	5.00	ug/Kg wet							U
Bromomethane	ND	2.50	5.00	10.0	ug/Kg wet							U
2-Butanone	ND	2.50	5.00	10.0	ug/Kg wet							U
n-Butylbenzene	ND	1.25	2.50	5.00	ug/Kg wet							U
sec-Butylbenzene	ND	1.25	2.50	5.00	ug/Kg wet							U
tert-Butylbenzene	ND	1.25	2.50	5.00	ug/Kg wet							U
Carbon disulfide	ND	1.25	2.50	5.00	ug/Kg wet							U
Carbon tetrachloride	ND	1.25	2.50	5.00	ug/Kg wet							U
Chlorobenzene	ND	1.25	2.50	5.00	ug/Kg wet							U
Chloroethane	ND	2.50	5.00	10.0	ug/Kg wet							U
Chloroform	ND	1.25	2.50	5.00	ug/Kg wet							U
Chloromethane	ND	2.50	5.00	10.0	ug/Kg wet							U
2-Chlorotoluene	ND	1.25	2.50	5.00	ug/Kg wet							U
4-Chlorotoluene	ND	1.25	2.50	5.00	ug/Kg wet							U
Cyclohexane	ND	1.25	2.50	5.00	ug/Kg wet							U
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	10.0	ug/Kg wet							U
Dibromochloromethane	ND	1.25	2.50	5.00	ug/Kg wet							U
1,2-Dibromoethane (EDB)	ND	1.25	2.50	5.00	ug/Kg wet							U
Dibromomethane	ND	1.25	2.50	5.00	ug/Kg wet							U
1,2-Dichlorobenzene	ND	1.25	2.50	5.00	ug/Kg wet							U
1,4-Dichlorobenzene	ND	1.25	2.50	5.00	ug/Kg wet							U

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	DL	LOD	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7B07001												
Blank					Prepared & Analyzed: 02/07/2017							
1,3-Dichlorobenzene	ND	1.25	2.50	5.00	ug/Kg wet							U
Dichlorodifluoromethane	ND	2.50	5.00	10.0	ug/Kg wet							U
1,1-Dichloroethane	ND	1.25	2.50	5.00	ug/Kg wet							U
1,2-Dichloroethane	ND	1.25	2.50	5.00	ug/Kg wet							U
1,1-Dichloroethene	ND	1.25	2.50	5.00	ug/Kg wet							U
cis-1,2-Dichloroethene	ND	1.25	2.50	5.00	ug/Kg wet							U
trans-1,2-Dichloroethene	ND	1.25	2.50	5.00	ug/Kg wet							U
1,2-Dichloropropane	ND	1.25	2.50	5.00	ug/Kg wet							U
1,3-Dichloropropane	ND	1.25	2.50	5.00	ug/Kg wet							U
2,2-Dichloropropane	ND	1.25	2.50	5.00	ug/Kg wet							U
1,1-Dichloropropene	ND	1.25	2.50	5.00	ug/Kg wet							U
cis-1,3-Dichloropropene	ND	1.25	2.50	5.00	ug/Kg wet							U
trans-1,3-Dichloropropene	ND	1.25	2.50	5.00	ug/Kg wet							U
Ethylbenzene	ND	1.25	2.50	5.00	ug/Kg wet							U
Hexachlorobutadiene	ND	1.25	2.50	5.00	ug/Kg wet							U
2-Hexanone	ND	2.50	5.00	10.0	ug/Kg wet							U
Isopropylbenzene	ND	1.25	2.50	5.00	ug/Kg wet							U
p-Isopropyltoluene	ND	1.25	2.50	5.00	ug/Kg wet							U
Methyl Acetate	ND	2.50	5.00	10.0	ug/Kg wet							Y, U
Methylcyclohexane	ND	1.25	2.50	5.00	ug/Kg wet							U
Methylene chloride	ND	2.50	5.00	10.0	ug/Kg wet							U
4-Methyl-2-pentanone	ND	2.50	5.00	10.0	ug/Kg wet							U
Methyl t-Butyl Ether	ND	1.25	2.50	5.00	ug/Kg wet							U
Naphthalene	ND	1.25	2.50	5.00	ug/Kg wet							U
n-Propylbenzene	ND	1.25	2.50	5.00	ug/Kg wet							U
Styrene	ND	1.25	2.50	5.00	ug/Kg wet							U

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	DL	LOD	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7B07001												
Blank					Prepared & Analyzed: 02/07/2017							
1,1,2,2-Tetrachloroethane	ND	1.25	2.50	5.00	ug/Kg wet							U
Tetrachloroethene	ND	1.25	2.50	5.00	ug/Kg wet							U
Toluene	ND	1.25	2.50	5.00	ug/Kg wet							U
1,2,3-Trichlorobenzene	ND	1.25	2.50	5.00	ug/Kg wet							U
1,2,4-Trichlorobenzene	ND	1.25	2.50	5.00	ug/Kg wet							U
1,3,5-Trichlorobenzene	ND	1.25	2.50	5.00	ug/Kg wet							U
1,1,1-Trichloroethane	ND	1.25	2.50	5.00	ug/Kg wet							U
1,1,2-Trichloroethane	ND	1.25	2.50	5.00	ug/Kg wet							U
Trichloroethene	ND	1.25	2.50	5.00	ug/Kg wet							U
Trichlorofluoromethane	ND	2.50	5.00	10.0	ug/Kg wet							U
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	2.50	5.00	10.0	ug/Kg wet							U
Vinyl chloride	ND	1.25	2.50	5.00	ug/Kg wet							U
m,p-Xylene	ND	2.50	5.00	10.0	ug/Kg wet							U
o-Xylene	ND	1.25	2.50	5.00	ug/Kg wet							U
Xylenes (total)	ND	3.75	7.50	15.0	ug/Kg wet							U
Surrogate: Bromofluorobenzene	*29.32*				*ug/Kg wet*	*30.00*		*97.7*	*79-119*			
Surrogate: Dibromofluoromethane	*29.13*				*ug/Kg wet*	*30.00*		*97.1*	*78-119*			
Surrogate: 1,2-Dichloroethane-d4	*28.13*				*ug/Kg wet*	*30.00*		*93.8*	*71-136*			
Surrogate: Toluene-d8	*30.16*				*ug/Kg wet*	*30.00*		*101*	*85-116*			
Blank					Prepared & Analyzed: 02/07/2017							
Acetone	ND	5.00	10.0	20.0	ug/Kg wet							U
Benzene	ND	1.25	2.50	5.00	ug/Kg wet							U
Bromobenzene	ND	1.25	2.50	5.00	ug/Kg wet							U
Bromochloromethane	ND	1.25	2.50	5.00	ug/Kg wet							U
Bromodichloromethane	ND	1.25	2.50	5.00	ug/Kg wet							U
Bromoform	ND	1.25	2.50	5.00	ug/Kg wet							U

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	DL	LOD	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7B07001												
Blank						Prepared & Analyzed: 02/07/2017						
Bromomethane	ND	2.50	5.00	10.0	ug/Kg wet							U
2-Butanone	ND	2.50	5.00	10.0	ug/Kg wet							U
n-Butylbenzene	ND	1.25	2.50	5.00	ug/Kg wet							U
sec-Butylbenzene	ND	1.25	2.50	5.00	ug/Kg wet							U
tert-Butylbenzene	ND	1.25	2.50	5.00	ug/Kg wet							U
Carbon disulfide	ND	1.25	2.50	5.00	ug/Kg wet							U
Carbon tetrachloride	ND	1.25	2.50	5.00	ug/Kg wet							U
Chlorobenzene	ND	1.25	2.50	5.00	ug/Kg wet							U
Chloroethane	ND	2.50	5.00	10.0	ug/Kg wet							U
Chloroform	ND	1.25	2.50	5.00	ug/Kg wet							U
Chloromethane	ND	2.50	5.00	10.0	ug/Kg wet							U
2-Chlorotoluene	ND	1.25	2.50	5.00	ug/Kg wet							U
4-Chlorotoluene	ND	1.25	2.50	5.00	ug/Kg wet							U
Cyclohexane	ND	1.25	2.50	5.00	ug/Kg wet							U
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	10.0	ug/Kg wet							U
Dibromochloromethane	ND	1.25	2.50	5.00	ug/Kg wet							U
1,2-Dibromoethane (EDB)	ND	1.25	2.50	5.00	ug/Kg wet							U
Dibromomethane	ND	1.25	2.50	5.00	ug/Kg wet							U
1,2-Dichlorobenzene	ND	1.25	2.50	5.00	ug/Kg wet							U
1,4-Dichlorobenzene	ND	1.25	2.50	5.00	ug/Kg wet							U
1,3-Dichlorobenzene	ND	1.25	2.50	5.00	ug/Kg wet							U
Dichlorodifluoromethane	ND	2.50	5.00	10.0	ug/Kg wet							U
1,1-Dichloroethane	ND	1.25	2.50	5.00	ug/Kg wet							U
1,2-Dichloroethane	ND	1.25	2.50	5.00	ug/Kg wet							U
1,1-Dichloroethene	ND	1.25	2.50	5.00	ug/Kg wet							U
cis-1,2-Dichloroethene	ND	1.25	2.50	5.00	ug/Kg wet							U

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	DL	LOD	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7B07001												
Blank					Prepared & Analyzed: 02/07/2017							
trans-1,2-Dichloroethene	ND	1.25	2.50	5.00	ug/Kg wet							U
1,2-Dichloropropane	ND	1.25	2.50	5.00	ug/Kg wet							U
1,3-Dichloropropane	ND	1.25	2.50	5.00	ug/Kg wet							U
2,2-Dichloropropane	ND	1.25	2.50	5.00	ug/Kg wet							U
1,1-Dichloropropene	ND	1.25	2.50	5.00	ug/Kg wet							U
cis-1,3-Dichloropropene	ND	1.25	2.50	5.00	ug/Kg wet							U
trans-1,3-Dichloropropene	ND	1.25	2.50	5.00	ug/Kg wet							U
Ethylbenzene	ND	1.25	2.50	5.00	ug/Kg wet							U
Hexachlorobutadiene	ND	1.25	2.50	5.00	ug/Kg wet							U
2-Hexanone	ND	2.50	5.00	10.0	ug/Kg wet							U
Isopropylbenzene	ND	1.25	2.50	5.00	ug/Kg wet							U
p-Isopropyltoluene	ND	1.25	2.50	5.00	ug/Kg wet							U
Methyl Acetate	ND	2.50	5.00	10.0	ug/Kg wet							Y, U
Methylcyclohexane	ND	1.25	2.50	5.00	ug/Kg wet							U
Methylene chloride	ND	2.50	5.00	10.0	ug/Kg wet							U
4-Methyl-2-pentanone	ND	2.50	5.00	10.0	ug/Kg wet							U
Methyl t-Butyl Ether	ND	1.25	2.50	5.00	ug/Kg wet							U
Naphthalene	ND	1.25	2.50	5.00	ug/Kg wet							U
n-Propylbenzene	ND	1.25	2.50	5.00	ug/Kg wet							U
Styrene	ND	1.25	2.50	5.00	ug/Kg wet							U
1,1,2,2-Tetrachloroethane	ND	1.25	2.50	5.00	ug/Kg wet							U
Tetrachloroethene	ND	1.25	2.50	5.00	ug/Kg wet							U
Toluene	ND	1.25	2.50	5.00	ug/Kg wet							U
1,2,3-Trichlorobenzene	ND	1.25	2.50	5.00	ug/Kg wet							U
1,2,4-Trichlorobenzene	ND	1.25	2.50	5.00	ug/Kg wet							U
1,3,5-Trichlorobenzene	ND	1.25	2.50	5.00	ug/Kg wet							U

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	DL	LOD	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7B07001												
Blank					Prepared & Analyzed: 02/07/2017							
1,1,1-Trichloroethane	ND	1.25	2.50	5.00	ug/Kg wet							U
1,1,2-Trichloroethane	ND	1.25	2.50	5.00	ug/Kg wet							U
Trichloroethene	ND	1.25	2.50	5.00	ug/Kg wet							U
Trichlorofluoromethane	ND	2.50	5.00	10.0	ug/Kg wet							U
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	2.50	5.00	10.0	ug/Kg wet							U
Vinyl chloride	ND	1.25	2.50	5.00	ug/Kg wet							U
m,p-Xylene	ND	2.50	5.00	10.0	ug/Kg wet							U
o-Xylene	ND	1.25	2.50	5.00	ug/Kg wet							U
Xylenes (total)	ND	3.75	7.50	15.0	ug/Kg wet							U
Surrogate: Bromofluorobenzene	*27.67*				*ug/Kg wet*	*30.00*		*92.2*	*79-119*			
Surrogate: Dibromofluoromethane	*28.32*				*ug/Kg wet*	*30.00*		*94.4*	*78-119*			
Surrogate: 1,2-Dichloroethane-d4	*29.39*				*ug/Kg wet*	*30.00*		*98.0*	*71-136*			
Surrogate: Toluene-d8	*31.21*				*ug/Kg wet*	*30.00*		*104*	*85-116*			
LCS					Prepared & Analyzed: 02/07/2017							
Acetonitrile	406.1	10.0	25.0	50.0	ug/Kg wet	500.0		81.2	54-143			
Acrolein	216.1	5.00	10.0	20.0	ug/Kg wet	250.0		86.4	47-155			
Acrylonitrile	217.2	5.00	10.0	20.0	ug/Kg wet	250.0		86.9	65-134			
Allyl chloride	50.20	1.25	2.50	5.00	ug/Kg wet	50.00		100	68-135			
Benzene	48.66	1.25	2.50	5.00	ug/Kg wet	50.00		97.3	77-121			
Bromobenzene	50.17	1.25	2.50	5.00	ug/Kg wet	50.00		100	78-121			
Bromochloromethane	48.52	1.25	2.50	5.00	ug/Kg wet	50.00		97.0	78-125			
Bromodichloromethane	49.91	1.25	2.50	5.00	ug/Kg wet	50.00		99.8	75-127			
Bromoform	51.74	1.25	2.50	5.00	ug/Kg wet	50.00		103	67-132			
Bromomethane	55.03	2.50	5.00	10.0	ug/Kg wet	50.00		110	53-143			
2-Butanone	128.3	2.50	5.00	10.0	ug/Kg wet	100.0		128	51-148			
tert-Butyl alcohol	194.9	5.00	10.0	20.0	ug/Kg wet	250.0		78.0	68-133			

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	DL	LOD	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7B07001												
LCS					Prepared & Analyzed: 02/07/2017							
n-Butylbenzene	51.16	1.25	2.50	5.00	ug/Kg wet	50.00		102	70-128			
sec-Butylbenzene	49.89	1.25	2.50	5.00	ug/Kg wet	50.00		99.8	73-126			
tert-Butylbenzene	51.33	1.25	2.50	5.00	ug/Kg wet	50.00		103	73-125			
Carbon disulfide	46.76	1.25	2.50	5.00	ug/Kg wet	50.00		93.5	63-132			
Carbon tetrachloride	49.24	1.25	2.50	5.00	ug/Kg wet	50.00		98.5	70-135			
Chlorobenzene	54.64	1.25	2.50	5.00	ug/Kg wet	50.00		109	79-120			
Chloroethane	48.34	2.50	5.00	10.0	ug/Kg wet	50.00		96.7	59-139			
2-Chloroethyl vinyl ether	145.9	25.0	50.0	100	ug/Kg wet	100.0		146	43-149			
Chloroform	46.17	1.25	2.50	5.00	ug/Kg wet	50.00		92.3	78-123			
1-Chlorohexane	54.04	1.25	2.50	5.00	ug/Kg wet	50.00		108	71-130			
Chloromethane	46.25	2.50	5.00	10.0	ug/Kg wet	50.00		92.5	50-136			
Chloroprene	47.05	1.25	2.50	5.00	ug/Kg wet	50.00		94.1	65-133			
2-Chlorotoluene	49.58	1.25	2.50	5.00	ug/Kg wet	50.00		99.2	75-122			
4-Chlorotoluene	51.48	1.25	2.50	5.00	ug/Kg wet	50.00		103	72-124			
Cyclohexane	48.51	1.25	2.50	5.00	ug/Kg wet	50.00		97.0	67-131			
1,2-Dibromo-3-chloropropane	47.04	2.50	5.00	10.0	ug/Kg wet	50.00		94.1	61-132			
Dibromochloromethane	51.07	1.25	2.50	5.00	ug/Kg wet	50.00		102	74-126			
1,2-Dibromoethane (EDB)	51.44	1.25	2.50	5.00	ug/Kg wet	50.00		103	78-122			
Dibromomethane	48.71	1.25	2.50	5.00	ug/Kg wet	50.00		97.4	78-125			
1,4-Dichloro-2-butene (total)	47.75	2.50	5.00	10.0	ug/Kg wet				43-146			
cis-1,4-Dichloro-2-butene	47.75	1.25	2.50	5.00	ug/Kg wet	50.00		95.5	69-143			
trans-1,4-Dichloro-2-butene	45.58	1.25	2.50	5.00	ug/Kg wet	50.00		91.2	62-136			
1,2-Dichlorobenzene	50.13	1.25	2.50	5.00	ug/Kg wet	50.00		100	78-121			
1,4-Dichlorobenzene	50.90	1.25	2.50	5.00	ug/Kg wet	50.00		102	75-120			
1,3-Dichlorobenzene	51.64	1.25	2.50	5.00	ug/Kg wet	50.00		103	77-121			
Dichlorodifluoromethane	51.37	2.50	5.00	10.0	ug/Kg wet	50.00		103	29-149			

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	DL	LOD	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7B07001												
LCS					Prepared & Analyzed: 02/07/2017							
1,1-Dichloroethane	46.78	1.25	2.50	5.00	ug/Kg wet	50.00		93.6	76-125			
1,2-Dichloroethane	45.98	1.25	2.50	5.00	ug/Kg wet	50.00		92.0	73-128			
1,1-Dichloroethene	49.05	1.25	2.50	5.00	ug/Kg wet	50.00		98.1	70-131			
1,2-Dichloroethene (total)	98.72	2.50	5.00	10.0	ug/Kg wet	100.0		98.7	78-122			
cis-1,2-Dichloroethene	49.72	1.25	2.50	5.00	ug/Kg wet	50.00		99.4	77-123			
trans-1,2-Dichloroethene	49.00	1.25	2.50	5.00	ug/Kg wet	50.00		98.0	74-125			
1,2-Dichloropropane	47.40	1.25	2.50	5.00	ug/Kg wet	50.00		94.8	76-123			
1,3-Dichloropropane	53.04	1.25	2.50	5.00	ug/Kg wet	50.00		106	77-121			
2,2-Dichloropropane	48.95	1.25	2.50	5.00	ug/Kg wet	50.00		97.9	67-133			
1,1-Dichloropropene	46.62	1.25	2.50	5.00	ug/Kg wet	50.00		93.2	76-125			
1,3-Dichloropropene (total)	101.3	2.50	5.00	10.0	ug/Kg wet	100.0		101	77-126			
cis-1,3-Dichloropropene	51.54	1.25	2.50	5.00	ug/Kg wet	50.00		103	74-126			
trans-1,3-Dichloropropene	49.75	1.25	2.50	5.00	ug/Kg wet	50.00		99.5	71-130			
Diethyl ether	45.73	1.25	2.50	5.00	ug/Kg wet	50.00		91.5	71-129			
1,4-Dioxane	866.3	40.0	100	200	ug/Kg wet	1000		86.6	55-138			
Ethylbenzene	53.66	1.25	2.50	5.00	ug/Kg wet	50.00		107	76-122			
Ethyl Methacrylate	51.62	1.25	2.50	5.00	ug/Kg wet	50.00		103	69-129			
Hexachlorobutadiene	45.32	1.25	2.50	5.00	ug/Kg wet	50.00		90.6	61-135			
Hexane	46.52	1.25	2.50	5.00	ug/Kg wet	50.00		93.0	45-142			
2-Hexanone	120.7	2.50	5.00	10.0	ug/Kg wet	100.0		121	53-145			
Iodomethane	45.79	5.00	10.0	20.0	ug/Kg wet	50.00		91.6	71-131			
Isobutyl alcohol	863.1	20.0	40.0	100	ug/Kg wet	1000		86.3	60-135			
Isopropylbenzene	52.08	1.25	2.50	5.00	ug/Kg wet	50.00		104	68-134			
p-Isopropyltoluene	52.07	1.25	2.50	5.00	ug/Kg wet	50.00		104	73-127			
Methacrylonitrile	474.6	10.0	25.0	50.0	ug/Kg wet	500.0		94.9	66-132			
Methyl Acetate	44.44	2.50	5.00	10.0	ug/Kg wet	50.00		88.9	53-144			Y

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	DL	LOD	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7B07001												
LCS					Prepared & Analyzed: 02/07/2017							
Methylcyclohexane	50.83	1.25	2.50	5.00	ug/Kg wet	50.00		102	66-133			
Methylene chloride	44.92	2.50	5.00	10.0	ug/Kg wet	50.00		89.8	70-128			
Methyl Methacrylate	44.71	1.25	2.50	5.00	ug/Kg wet	50.00		89.4	63-134			
4-Methyl-2-pentanone	95.64	2.50	5.00	10.0	ug/Kg wet	100.0		95.6	65-135			
Methyl t-Butyl Ether	47.33	1.25	2.50	5.00	ug/Kg wet	50.00		94.7	73-125			
Naphthalene	44.54	1.25	2.50	5.00	ug/Kg wet	50.00		89.1	62-129			
Propionitrile	434.0	10.0	25.0	50.0	ug/Kg wet	500.0		86.8	68-134			
n-Propylbenzene	51.48	1.25	2.50	5.00	ug/Kg wet	50.00		103	73-125			
Styrene	50.60	1.25	2.50	5.00	ug/Kg wet	50.00		101	76-124			
1,1,1,2-Tetrachloroethane	51.75	1.25	2.50	5.00	ug/Kg wet	50.00		104	78-125			
1,1,2,2-Tetrachloroethane	48.98	1.25	2.50	5.00	ug/Kg wet	50.00		98.0	70-124			
Tetrachloroethene	56.07	1.25	2.50	5.00	ug/Kg wet	50.00		112	73-128			
Tetrahydrofuran	48.36	2.50	5.00	10.0	ug/Kg wet	50.00		96.7	61-135			
Toluene	54.40	1.25	2.50	5.00	ug/Kg wet	50.00		109	77-121			
1,2,3-Trichlorobenzene	46.00	1.25	2.50	5.00	ug/Kg wet	50.00		92.0	66-130			
1,2,4-Trichlorobenzene	46.13	1.25	2.50	5.00	ug/Kg wet	50.00		92.3	67-129			
1,3,5-Trichlorobenzene	48.89	1.25	2.50	5.00	ug/Kg wet	50.00		97.8	71-128			
1,1,1-Trichloroethane	50.11	1.25	2.50	5.00	ug/Kg wet	50.00		100	73-130			
1,1,2-Trichloroethane	50.53	1.25	2.50	5.00	ug/Kg wet	50.00		101	78-121			
Trichloroethene	50.35	1.25	2.50	5.00	ug/Kg wet	50.00		101	77-123			
Trichlorofluoromethane	49.72	2.50	5.00	10.0	ug/Kg wet	50.00		99.4	62-140			
1,2,3-Trichloropropane	50.13	1.25	2.50	5.00	ug/Kg wet	50.00		100	73-125			
1,1,2-Trichloro-1,2,2-trifluoroethane	46.63	2.50	5.00	10.0	ug/Kg wet	50.00		93.3	66-136			
1,2,4-Trimethylbenzene	46.91	1.25	2.50	5.00	ug/Kg wet	50.00		93.8	75-123			
1,3,5-Trimethylbenzene	46.92	1.25	2.50	5.00	ug/Kg wet	50.00		93.8	73-124			
Vinyl acetate	87.99	2.50	5.00	10.0	ug/Kg wet	100.0		88.0	50-151			

Volatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	DL	LOD	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7B07001												
LCS					Prepared & Analyzed: 02/07/2017							
Vinyl chloride	49.45	1.25	2.50	5.00	ug/Kg wet	50.00		98.9	56-135			
m,p-Xylene	109.9	2.50	5.00	10.0	ug/Kg wet	100.0		110	77-124			
o-Xylene	54.04	1.25	2.50	5.00	ug/Kg wet	50.00		108	77-123			
Xylenes (total)	164.0	3.75	7.50	15.0	ug/Kg wet	150.0		109	78-124			
Surrogate: Bromofluorobenzene	*31.43*				*ug/Kg wet*	*30.00*		*105*	*79-119*			
Surrogate: Dibromofluoromethane	*28.90*				*ug/Kg wet*	*30.00*		*96.3*	*78-119*			
Surrogate: 1,2-Dichloroethane-d4	*28.28*				*ug/Kg wet*	*30.00*		*94.3*	*71-136*			
Surrogate: Toluene-d8	*30.61*				*ug/Kg wet*	*30.00*		*102*	*85-116*			
LCS					Prepared & Analyzed: 02/07/2017							
Acetone	70.13	5.00	10.0	20.0	ug/Kg wet	100.0		70.1	36-164			
Surrogate: Bromofluorobenzene	*28.98*				*ug/Kg wet*	*30.00*		*96.6*	*79-119*			
Surrogate: Dibromofluoromethane	*27.70*				*ug/Kg wet*	*30.00*		*92.3*	*78-119*			
Surrogate: 1,2-Dichloroethane-d4	*26.41*				*ug/Kg wet*	*30.00*		*88.0*	*71-136*			
Surrogate: Toluene-d8	*30.81*				*ug/Kg wet*	*30.00*		*103*	*85-116*			

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	DL	LOD	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7B06012												
Blank						Prepared: 02/06/2017 Analyzed: 02/07/2017						
Acenaphthene	ND	83.3	167	333	ug/Kg wet							U
Acenaphthylene	ND	83.3	167	333	ug/Kg wet							U
Acetophenone	ND	83.3	167	333	ug/Kg wet							U
Aniline	ND	83.3	167	333	ug/Kg wet							U
Anthracene	ND	83.3	167	333	ug/Kg wet							U
Atrazine	ND	83.3	167	333	ug/Kg wet							U
Benzaldehyde	ND	83.3	167	333	ug/Kg wet							U
Benzidine	ND	83.3	1670	3330	ug/Kg wet							U
Benzo(a)anthracene	ND	83.3	167	333	ug/Kg wet							U
Benzo(a)pyrene	ND	83.3	167	333	ug/Kg wet							U
Benzo(b)fluoranthene	ND	83.3	167	333	ug/Kg wet							U
Benzo(g,h,i)perylene	ND	83.3	167	333	ug/Kg wet							U
Benzoic acid	ND	83.3	667	1330	ug/Kg wet							Q, U
Benzo(k)fluoranthene	ND	83.3	167	333	ug/Kg wet							U
Benzyl alcohol	ND	83.3	167	333	ug/Kg wet							U
1,1-Biphenyl	ND	83.3	167	333	ug/Kg wet							U
4-Bromophenyl-phenylether	ND	83.3	167	333	ug/Kg wet							U
Butylbenzylphthalate	ND	83.3	167	333	ug/Kg wet							U
Caprolactam	ND	83.3	167	333	ug/Kg wet							U
Carbazole	ND	83.3	167	333	ug/Kg wet							U
4-Chloro-3-methylphenol	ND	83.3	167	333	ug/Kg wet							U
4-Chloroaniline	ND	83.3	167	333	ug/Kg wet							U
Bis(2-chloroethoxy)methane	ND	83.3	167	333	ug/Kg wet							U
Bis(2-chloroethyl)ether	ND	83.3	167	333	ug/Kg wet							U
2,2'-Oxybis-1-chloropropane	ND	83.3	167	333	ug/Kg wet							U
2-Chloronaphthalene	ND	83.3	167	333	ug/Kg wet							U

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	DL	LOD	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7B06012												
Blank						Prepared: 02/06/2017 Analyzed: 02/07/2017						
2-Chlorophenol	ND	83.3	167	333	ug/Kg wet							U
4-Chlorophenyl phenyl ether	ND	83.3	167	333	ug/Kg wet							U
Chrysene	ND	83.3	167	333	ug/Kg wet							U
Dibenz(a,h)anthracene	ND	83.3	167	333	ug/Kg wet							U
Dibenzofuran	ND	83.3	167	333	ug/Kg wet							U
Di-n-butylphthalate	429	83.3	167	333	ug/Kg wet							
1,4-Dichlorobenzene	ND	83.3	167	333	ug/Kg wet							U
1,3-Dichlorobenzene	ND	83.3	167	333	ug/Kg wet							U
1,2-Dichlorobenzene	ND	83.3	167	333	ug/Kg wet							U
3,3'-Dichlorobenzidine	ND	83.3	167	333	ug/Kg wet							U
2,6-Dichlorophenol	ND	83.3	167	333	ug/Kg wet							U
2,4-Dichlorophenol	ND	83.3	167	333	ug/Kg wet							U
Diethylphthalate	ND	83.3	167	333	ug/Kg wet							U
2,4-Dimethylphenol	ND	333	667	1330	ug/Kg wet							U
Dimethyl phthalate	ND	83.3	167	333	ug/Kg wet							U
4,6-Dinitro-2-methylphenol	ND	833	1670	3330	ug/Kg wet							U
2,4-Dinitrophenol	ND	833	1670	3330	ug/Kg wet							U
2,4-Dinitrotoluene	ND	83.3	167	333	ug/Kg wet							U
2,6-Dinitrotoluene	ND	83.3	167	333	ug/Kg wet							U
Di-n-octylphthalate	ND	83.3	167	333	ug/Kg wet							U
1,4-Dioxane	ND	83.3	167	333	ug/Kg wet							U
1,2-Diphenylhydrazine (as Azobenzene)	ND	83.3	167	333	ug/Kg wet							U
Bis(2-ethylhexyl)phthalate	ND	83.3	167	333	ug/Kg wet							U
Fluoranthene	ND	83.3	167	333	ug/Kg wet							U
Fluorene	ND	83.3	167	333	ug/Kg wet							U
Hexachlorobenzene	ND	83.3	167	333	ug/Kg wet							U

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	DL	LOD	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7B06012												
Blank						Prepared: 02/06/2017 Analyzed: 02/07/2017						
Hexachlorobutadiene	ND	83.3	167	333	ug/Kg wet							U
Hexachlorocyclopentadiene	ND	83.3	167	333	ug/Kg wet							U
Hexachloroethane	ND	83.3	167	333	ug/Kg wet							U
Indeno(1,2,3-cd)pyrene	ND	83.3	167	333	ug/Kg wet							U
Isophorone	ND	83.3	167	333	ug/Kg wet							U
1-Methylnaphthalene	ND	83.3	167	333	ug/Kg wet							U
2-Methylnaphthalene	ND	83.3	167	333	ug/Kg wet							U
2-Methylphenol	ND	83.3	167	333	ug/Kg wet							U
3-Methylphenol	ND	83.3	167	333	ug/Kg wet							U
3-Methylphenol/4-Methylphenol	ND	83.3	167	333	ug/Kg wet							U
4-Methylphenol	ND	83.3	167	333	ug/Kg wet							U
Naphthalene	ND	83.3	167	333	ug/Kg wet							U
4-Nitroaniline	ND	333	667	1330	ug/Kg wet							U
3-Nitroaniline	ND	333	667	1330	ug/Kg wet							U
2-Nitroaniline	ND	333	667	1330	ug/Kg wet							U
Nitrobenzene	ND	83.3	167	333	ug/Kg wet							U
4-Nitrophenol	ND	333	667	1330	ug/Kg wet							U
2-Nitrophenol	ND	83.3	167	333	ug/Kg wet							U
N-Nitrosodimethylamine	ND	83.3	167	333	ug/Kg wet							U
N-Nitrosodiphenylamine	ND	83.3	167	333	ug/Kg wet							U
N-Nitroso-di-n-propylamine	ND	83.3	167	333	ug/Kg wet							U
Pentachlorophenol	ND	333	667	1330	ug/Kg wet							U
Phenanthrene	ND	83.3	167	333	ug/Kg wet							U
Phenol	ND	83.3	167	333	ug/Kg wet							U
Pyrene	ND	83.3	167	333	ug/Kg wet							U
1,2,4,5-Tetrachlorobenzene	ND	83.3	167	333	ug/Kg wet							U

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	DL	LOD	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7B06012												
Blank						Prepared: 02/06/2017 Analyzed: 02/07/2017						
2,3,4,6-Tetrachlorophenol	ND	83.3	167	333	ug/Kg wet							U
1,2,4-Trichlorobenzene	ND	83.3	167	333	ug/Kg wet							U
2,4,6-Trichlorophenol	ND	83.3	167	333	ug/Kg wet							U
2,4,5-Trichlorophenol	ND	83.3	167	333	ug/Kg wet							U
Surrogate: 2-Fluorobiphenyl	*2039*				*ug/Kg wet*	*3333*		*61.2*	*44-114*			
Surrogate: 2-Fluorophenol	*3960*				*ug/Kg wet*	*6667*		*59.4*	*35-115*			
Surrogate: Nitrobenzene-d5	*1529*				*ug/Kg wet*	*3333*		*45.9*	*37-122*			
Surrogate: Phenol-d6	*3724*				*ug/Kg wet*	*6667*		*55.9*	*33-122*			
Surrogate: Terphenyl-d14	*2148*				*ug/Kg wet*	*3333*		*64.4*	*54-127*			
Surrogate: 2,4,6-Tribromophenol	*3355*				*ug/Kg wet*	*6667*		*50.3*	*39-132*			
LCS						Prepared: 02/06/2017 Analyzed: 02/07/2017						
Acenaphthene	2834	83.3	167	333	ug/Kg wet	3333		85.0	40-123			
Acenaphthylene	2731	83.3	167	333	ug/Kg wet	3333		81.9	32-132			
Acetophenone	1884	83.3	167	333	ug/Kg wet	3333		56.5	33-115			
Aniline	1828	83.3	167	333	ug/Kg wet	3333		54.8	36-110			
Anthracene	2293	83.3	167	333	ug/Kg wet	3333		68.8	47-123			
Atrazine	2007	83.3	167	333	ug/Kg wet	3333		60.2	47-127			
Benzaldehyde	2057	83.3	167	333	ug/Kg wet	3333		61.7	55-110			
Benzidine	866.3	83.3	1670	3330	ug/Kg wet	3333		26.0	0-110			J
Benzo(a)anthracene	2509	83.3	167	333	ug/Kg wet	3333		75.3	49-126			
Benzo(a)pyrene	2267	83.3	167	333	ug/Kg wet	3333		68.0	45-129			
Benzo(b)fluoranthene	2318	83.3	167	333	ug/Kg wet	3333		69.5	45-132			
Benzo(g,h,i)perylene	2443	83.3	167	333	ug/Kg wet	3333		73.3	43-134			
Benzoic acid	2013	83.3	667	1330	ug/Kg wet	6667		30.2	41-136			
Benzo(k)fluoranthene	2350	83.3	167	333	ug/Kg wet	3333		70.5	47-132			
Benzyl alcohol	2095	83.3	167	333	ug/Kg wet	3333		62.9	29-122			

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	DL	LOD	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7B06012												
LCS						Prepared: 02/06/2017 Analyzed: 02/07/2017						
1,1-Biphenyl	2718	83.3	167	333	ug/Kg wet	3333		81.5	40-117			
4-Bromophenyl-phenylether	2145	83.3	167	333	ug/Kg wet	3333		64.4	46-124			
Butylbenzylphthalate	2742	83.3	167	333	ug/Kg wet	3333		82.3	48-132			
Caprolactam	2073	83.3	167	333	ug/Kg wet	3333		62.2	46-117			
Carbazole	2440	83.3	167	333	ug/Kg wet	3333		73.2	50-123			
4-Chloro-3-methylphenol	3766	83.3	167	333	ug/Kg wet	6667		56.5	45-122			
4-Chloroaniline	2032	83.3	167	333	ug/Kg wet	3333		61.0	17-106			
Bis(2-chloroethoxy)methane	1995	83.3	167	333	ug/Kg wet	3333		59.9	36-121			
Bis(2-chloroethyl)ether	1956	83.3	167	333	ug/Kg wet	3333		58.7	31-120			
2,2'-Oxybis-1-chloropropane	1991	83.3	167	333	ug/Kg wet	3333		59.7	33-131			
2-Chloronaphthalene	2609	83.3	167	333	ug/Kg wet	3333		78.3	41-114			
2-Chlorophenol	4517	83.3	167	333	ug/Kg wet	6667		67.8	34-121			
4-Chlorophenyl phenyl ether	2528	83.3	167	333	ug/Kg wet	3333		75.8	45-121			
Chrysene	2601	83.3	167	333	ug/Kg wet	3333		78.0	50-124			
Dibenz(a,h)anthracene	2432	83.3	167	333	ug/Kg wet	3333		73.0	45-134			
Dibenzofuran	2592	83.3	167	333	ug/Kg wet	3333		77.8	44-120			
Di-n-butylphthalate	2935	83.3	167	333	ug/Kg wet	3333		88.1	51-128			B
1,4-Dichlorobenzene	1950	83.3	167	333	ug/Kg wet	3333		58.5	31-115			
1,3-Dichlorobenzene	1959	83.3	167	333	ug/Kg wet	3333		58.8	30-115			
1,2-Dichlorobenzene	1975	83.3	167	333	ug/Kg wet	3333		59.3	33-117			
3,3'-Dichlorobenzidine	1772	83.3	167	333	ug/Kg wet	3333		53.2	22-121			
2,6-Dichlorophenol	1970	83.3	167	333	ug/Kg wet	3333		59.1	41-117			
2,4-Dichlorophenol	4162	83.3	167	333	ug/Kg wet	6667		62.4	40-122			
Diethylphthalate	2719	83.3	167	333	ug/Kg wet	3333		81.6	50-124			
2,4-Dimethylphenol	3926	333	667	1330	ug/Kg wet	6667		58.9	30-127			
Dimethyl phthalate	2598	83.3	167	333	ug/Kg wet	3333		77.9	48-124			

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	DL	LOD	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7B06012												
LCS						Prepared: 02/06/2017 Analyzed: 02/07/2017						
4,6-Dinitro-2-methylphenol	4420	833	1670	3330	ug/Kg wet	6667		66.3	29-132			
2,4-Dinitrophenol	5572	833	1670	3330	ug/Kg wet	6667		83.6	48-113			
2,4-Dinitrotoluene	2514	83.3	167	333	ug/Kg wet	3333		75.4	48-126			
2,6-Dinitrotoluene	2444	83.3	167	333	ug/Kg wet	3333		73.3	46-124			
Di-n-octylphthalate	2659	83.3	167	333	ug/Kg wet	3333		79.8	45-140			
1,4-Dioxane	1751	83.3	167	333	ug/Kg wet	3333		52.5	43-110			
1,2-Diphenylhydrazine (as Azobenzene)	2077	83.3	167	333	ug/Kg wet	3333		62.3	41-125			
Bis(2-ethylhexyl)phthalate	2827	83.3	167	333	ug/Kg wet	3333		84.8	51-133			
Fluoranthene	2265	83.3	167	333	ug/Kg wet	3333		67.9	50-127			
Fluorene	2657	83.3	167	333	ug/Kg wet	3333		79.7	43-125			
Hexachlorobenzene	2171	83.3	167	333	ug/Kg wet	3333		65.1	45-122			
Hexachlorobutadiene	1975	83.3	167	333	ug/Kg wet	3333		59.2	32-123			
Hexachlorocyclopentadiene	2802	83.3	167	333	ug/Kg wet	3333		84.0	42-110			
Hexachloroethane	1851	83.3	167	333	ug/Kg wet	3333		55.5	28-117			
Indeno(1,2,3-cd)pyrene	2325	83.3	167	333	ug/Kg wet	3333		69.7	45-133			
Isophorone	1895	83.3	167	333	ug/Kg wet	3333		56.9	30-122			
1-Methylnaphthalene	1988	83.3	167	333	ug/Kg wet	3333		59.6	40-119			
2-Methylnaphthalene	2102	83.3	167	333	ug/Kg wet	3333		63.1	38-122			
2-Methylphenol	4246	83.3	167	333	ug/Kg wet	6667		63.7	32-122			
3-Methylphenol/4-Methylphenol	4150	83.3	167	333	ug/Kg wet	6667		62.3	34-119			
3-Methylphenol	4155	83.3	167	333	ug/Kg wet	6667		62.3	34-119			
4-Methylphenol	4152	83.3	167	333	ug/Kg wet	6667		62.3	42-126			
Naphthalene	2143	83.3	167	333	ug/Kg wet	3333		64.3	35-123			
4-Nitroaniline	2921	333	667	1330	ug/Kg wet	3333		87.6	73-112			
3-Nitroaniline	2562	333	667	1330	ug/Kg wet	3333		76.9	33-119			
2-Nitroaniline	2374	333	667	1330	ug/Kg wet	3333		71.2	44-127			

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	DL	LOD	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7B06012												
LCS					Prepared: 02/06/2017 Analyzed: 02/07/2017							
Nitrobenzene	1737	83.3	167	333	ug/Kg wet	3333		52.1	34-122			
4-Nitrophenol	4524	333	667	1330	ug/Kg wet	6667		67.9	30-132			
2-Nitrophenol	4297	83.3	167	333	ug/Kg wet	6667		64.5	36-123			
N-Nitrosodimethylamine	1945	83.3	167	333	ug/Kg wet	3333		58.3	23-120			
N-Nitrosodiphenylamine	1904	83.3	167	333	ug/Kg wet	3333		57.1	38-127			
N-Nitroso-di-n-propylamine	1829	83.3	167	333	ug/Kg wet	3333		54.9	36-120			
Pentachlorophenol	5080	333	667	1330	ug/Kg wet	6667		76.2	25-133			
Phenanthrene	2335	83.3	167	333	ug/Kg wet	3333		70.1	50-121			
Phenol	3668	83.3	167	333	ug/Kg wet	6667		55.0	34-121			
Pyrene	2505	83.3	167	333	ug/Kg wet	3333		75.1	47-127			
1,2,4,5-Tetrachlorobenzene	1849	83.3	167	333	ug/Kg wet	3333		55.5	37-119			
2,3,4,6-Tetrachlorophenol	2121	83.3	167	333	ug/Kg wet	3333		63.6	44-125			
1,2,4-Trichlorobenzene	1980	83.3	167	333	ug/Kg wet	3333		59.4	34-118			
2,4,6-Trichlorophenol	5019	83.3	167	333	ug/Kg wet	6667		75.3	39-126			
2,4,5-Trichlorophenol	5219	83.3	167	333	ug/Kg wet	6667		78.3	41-124			
Surrogate: 2-Fluorobiphenyl	*2323*				*ug/Kg wet*	*3333*		*69.7*	*44-114*			
Surrogate: 2-Fluorophenol	*4537*				*ug/Kg wet*	*6667*		*68.0*	*35-115*			
Surrogate: Nitrobenzene-d5	*1716*				*ug/Kg wet*	*3333*		*51.5*	*37-122*			
Surrogate: Phenol-d6	*4232*				*ug/Kg wet*	*6667*		*63.5*	*33-122*			
Surrogate: Terphenyl-d14	*2397*				*ug/Kg wet*	*3333*		*71.9*	*54-127*			
Surrogate: 2,4,6-Tribromophenol	*4095*				*ug/Kg wet*	*6667*		*61.4*	*39-132*			
Matrix Spike	**Source: 1702005-01**				Prepared: 02/06/2017 Analyzed: 02/07/2017							
Acenaphthene	3674	101	203	404	ug/Kg dry	4044	ND	90.8	40-123			
Acenaphthylene	3520	101	203	404	ug/Kg dry	4044	ND	87.0	32-132			
Acetophenone	2424	101	203	404	ug/Kg dry	4044	ND	59.9	33-115			
Aniline	2232	101	203	404	ug/Kg dry	4044	ND	55.2	36-110			

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	DL	LOD	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7B06012												
Matrix Spike	**Source: 1702005-01**		Prepared: 02/06/2017 Analyzed: 02/07/2017									
Anthracene	3072	101	203	404	ug/Kg dry	4044	ND	76.0	47-123			
Atrazine	2576	101	203	404	ug/Kg dry	4044	ND	63.7	47-127			
Benzaldehyde	2684	101	203	404	ug/Kg dry	4044	ND	66.4	55-110			
Benzidine	ND	101	2030	4040	ug/Kg dry	4044	ND		0-110			U
Benzo(a)anthracene	3369	101	203	404	ug/Kg dry	4044	ND	83.3	49-126			
Benzo(a)pyrene	3042	101	203	404	ug/Kg dry	4044	ND	75.2	45-129			
Benzo(b)fluoranthene	3137	101	203	404	ug/Kg dry	4044	ND	77.6	45-132			
Benzo(g,h,i)perylene	3238	101	203	404	ug/Kg dry	4044	ND	80.1	43-134			
Benzoic acid	505.9	101	809	1610	ug/Kg dry	8089	ND	6.25	41-136			Q, J
Benzo(k)fluoranthene	3185	101	203	404	ug/Kg dry	4044	ND	78.8	47-132			
Benzyl alcohol	2655	101	203	404	ug/Kg dry	4044	ND	65.6	29-122			
1,1-Biphenyl	3494	101	203	404	ug/Kg dry	4044	ND	86.4	40-117			
4-Bromophenyl-phenylether	2880	101	203	404	ug/Kg dry	4044	ND	71.2	46-124			
Butylbenzylphthalate	3756	101	203	404	ug/Kg dry	4044	ND	92.9	48-132			
Caprolactam	2811	101	203	404	ug/Kg dry	4044	ND	69.5	46-117			
Carbazole	2223	101	203	404	ug/Kg dry	4044	ND	55.0	50-123			
4-Chloro-3-methylphenol	4873	101	203	404	ug/Kg dry	8089	ND	60.2	45-122			
4-Chloroaniline	2443	101	203	404	ug/Kg dry	4044	ND	60.4	17-106			
Bis(2-chloroethoxy)methane	2548	101	203	404	ug/Kg dry	4044	ND	63.0	36-121			
Bis(2-chloroethyl)ether	2520	101	203	404	ug/Kg dry	4044	ND	62.3	31-120			
2,2'-Oxybis-1-chloropropane	2542	101	203	404	ug/Kg dry	4044	ND	62.8	33-131			
2-Chloronaphthalene	3299	101	203	404	ug/Kg dry	4044	ND	81.6	41-114			
2-Chlorophenol	5560	101	203	404	ug/Kg dry	8089	ND	68.7	34-121			
4-Chlorophenyl phenyl ether	3285	101	203	404	ug/Kg dry	4044	ND	81.2	45-121			
Chrysene	3548	101	203	404	ug/Kg dry	4044	ND	87.7	50-124			
Dibenz(a,h)anthracene	3236	101	203	404	ug/Kg dry	4044	ND	80.0	45-134			

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	DL	LOD	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7B06012												
Matrix Spike	**Source: 1702005-01**		Prepared: 02/06/2017 Analyzed: 02/07/2017									
Dibenzofuran	3348	101	203	404	ug/Kg dry	4044	ND	82.8	44-120			
Di-n-butylphthalate	3865	101	203	404	ug/Kg dry	4044	375.9	86.3	51-128			B
1,4-Dichlorobenzene	2468	101	203	404	ug/Kg dry	4044	ND	61.0	31-115			
1,3-Dichlorobenzene	2481	101	203	404	ug/Kg dry	4044	ND	61.3	30-115			
1,2-Dichlorobenzene	2489	101	203	404	ug/Kg dry	4044	ND	61.5	33-117			
3,3'-Dichlorobenzidine	985.7	101	203	404	ug/Kg dry	4044	ND	24.4	22-121			
2,6-Dichlorophenol	2531	101	203	404	ug/Kg dry	4044	ND	62.6	41-117			
2,4-Dichlorophenol	5395	101	203	404	ug/Kg dry	8089	ND	66.7	40-122			
Diethylphthalate	3544	101	203	404	ug/Kg dry	4044	ND	87.6	50-124			
2,4-Dimethylphenol	4869	404	809	1610	ug/Kg dry	8089	ND	60.2	30-127			
Dimethyl phthalate	3312	101	203	404	ug/Kg dry	4044	ND	81.9	48-124			
4,6-Dinitro-2-methylphenol	4913	1010	2030	4040	ug/Kg dry	8089	ND	60.7	29-132			
2,4-Dinitrophenol	3751	1010	2030	4040	ug/Kg dry	8089	ND	46.4	48-113			J
2,4-Dinitrotoluene	3303	101	203	404	ug/Kg dry	4044	ND	81.7	48-126			
2,6-Dinitrotoluene	3216	101	203	404	ug/Kg dry	4044	ND	79.5	46-124			
Di-n-octylphthalate	3594	101	203	404	ug/Kg dry	4044	ND	88.9	45-140			
1,4-Dioxane	2076	101	203	404	ug/Kg dry	4044	ND	51.3	43-110			
1,2-Diphenylhydrazine (as Azobenzene)	2721	101	203	404	ug/Kg dry	4044	ND	67.3	41-125			
Bis(2-ethylhexyl)phthalate	3941	101	203	404	ug/Kg dry	4044	186.3	92.8	51-133			
Fluoranthene	3075	101	203	404	ug/Kg dry	4044	ND	76.0	50-127			
Fluorene	3383	101	203	404	ug/Kg dry	4044	ND	83.7	43-125			
Hexachlorobenzene	2911	101	203	404	ug/Kg dry	4044	ND	72.0	45-122			
Hexachlorobutadiene	2495	101	203	404	ug/Kg dry	4044	ND	61.7	32-123			
Hexachlorocyclopentadiene	3427	101	203	404	ug/Kg dry	4044	ND	84.7	42-110			
Hexachloroethane	2310	101	203	404	ug/Kg dry	4044	ND	57.1	28-117			
Indeno(1,2,3-cd)pyrene	3065	101	203	404	ug/Kg dry	4044	ND	75.8	45-133			

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	DL	LOD	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7B06012												
Matrix Spike	**Source: 1702005-01**		Prepared: 02/06/2017 Analyzed: 02/07/2017									
Isophorone	2473	101	203	404	ug/Kg dry	4044	ND	61.1	30-122			
1-Methylnaphthalene	2554	101	203	404	ug/Kg dry	4044	ND	63.1	40-119			
2-Methylnaphthalene	2690	101	203	404	ug/Kg dry	4044	ND	66.5	38-122			
2-Methylphenol	5414	101	203	404	ug/Kg dry	8089	ND	66.9	32-122			
3-Methylphenol	5283	101	203	404	ug/Kg dry	8089	ND	65.3	34-119			
3-Methylphenol/4-Methylphenol	5277	101	203	404	ug/Kg dry	8089	ND	65.2	34-119			
4-Methylphenol	5279	101	203	404	ug/Kg dry	8089	ND	65.3	42-126			
Naphthalene	2722	101	203	404	ug/Kg dry	4044	ND	67.3	35-123			
4-Nitroaniline	2590	404	809	1610	ug/Kg dry	4044	ND	64.0	73-112			
3-Nitroaniline	2241	404	809	1610	ug/Kg dry	4044	ND	55.4	33-119			
2-Nitroaniline	3118	404	809	1610	ug/Kg dry	4044	ND	77.1	44-127			
Nitrobenzene	2238	101	203	404	ug/Kg dry	4044	ND	55.3	34-122			
4-Nitrophenol	5778	404	809	1610	ug/Kg dry	8089	ND	71.4	30-132			
2-Nitrophenol	5596	101	203	404	ug/Kg dry	8089	ND	69.2	36-123			
N-Nitrosodimethylamine	2468	101	203	404	ug/Kg dry	4044	ND	61.0	23-120			
N-Nitrosodiphenylamine	2486	101	203	404	ug/Kg dry	4044	ND	61.5	38-127			
N-Nitroso-di-n-propylamine	2322	101	203	404	ug/Kg dry	4044	ND	57.4	36-120			
Pentachlorophenol	6165	404	809	1610	ug/Kg dry	8089	ND	76.2	25-133			
Phenanthrene	3134	101	203	404	ug/Kg dry	4044	ND	77.5	50-121			
Phenol	4608	101	203	404	ug/Kg dry	8089	ND	57.0	34-121			
Pyrene	3412	101	203	404	ug/Kg dry	4044	ND	84.4	47-127			
1,2,4,5-Tetrachlorobenzene	2355	101	203	404	ug/Kg dry	4044	ND	58.2	37-119			
2,3,4,6-Tetrachlorophenol	2765	101	203	404	ug/Kg dry	4044	ND	68.4	44-125			
1,2,4-Trichlorobenzene	2528	101	203	404	ug/Kg dry	4044	ND	62.5	34-118			
2,4,6-Trichlorophenol	6433	101	203	404	ug/Kg dry	8089	ND	79.5	39-126			
2,4,5-Trichlorophenol	6869	101	203	404	ug/Kg dry	8089	ND	84.9	41-124			

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	DL	LOD	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7B06012												
Matrix Spike	**Source: 1702005-01**		Prepared: 02/06/2017 Analyzed: 02/07/2017									
Surrogate: 2-Fluorobiphenyl	*2969*				*ug/Kg dry*	*4044*		*73.4*	*44-114*			
Surrogate: 2-Fluorophenol	*5695*				*ug/Kg dry*	*8089*		*70.4*	*35-115*			
Surrogate: Nitrobenzene-d5	*2232*				*ug/Kg dry*	*4044*		*55.2*	*37-122*			
Surrogate: Phenol-d6	*5408*				*ug/Kg dry*	*8089*		*66.9*	*33-122*			
Surrogate: Terphenyl-d14	*3292*				*ug/Kg dry*	*4044*		*81.4*	*54-127*			
Surrogate: 2,4,6-Tribromophenol	*5485*				*ug/Kg dry*	*8089*		*67.8*	*39-132*			
Matrix Spike Dup	**Source: 1702005-01**		Prepared: 02/06/2017 Analyzed: 02/07/2017									
Acenaphthene	3632	101	202	402	ug/Kg dry	4026	ND	90.2	40-123	1.16	20	
Acenaphthylene	3594	101	202	402	ug/Kg dry	4026	ND	89.3	32-132	2.09	20	
Acetophenone	2401	101	202	402	ug/Kg dry	4026	ND	59.6	33-115	0.973	20	
Aniline	2030	101	202	402	ug/Kg dry	4026	ND	50.4	36-110	9.49	20	
Anthracene	3059	101	202	402	ug/Kg dry	4026	ND	76.0	47-123	0.437	20	
Atrazine	2414	101	202	402	ug/Kg dry	4026	ND	60.0	47-127	6.51	20	
Benzaldehyde	2682	101	202	402	ug/Kg dry	4026	ND	66.6	55-110	0.0701	20	
Benzidine	ND	101	2020	4020	ug/Kg dry	4026	ND		0-110		20	U
Benzo(a)anthracene	3303	101	202	402	ug/Kg dry	4026	ND	82.1	49-126	1.96	20	
Benzo(a)pyrene	3028	101	202	402	ug/Kg dry	4026	ND	75.2	45-129	0.486	20	
Benzo(b)fluoranthene	3145	101	202	402	ug/Kg dry	4026	ND	78.1	45-132	0.242	20	
Benzo(g,h,i)perylene	3193	101	202	402	ug/Kg dry	4026	ND	79.3	43-134	1.39	20	
Benzoic acid	483.5	101	806	1610	ug/Kg dry	8051	ND	6.01	41-136	4.51	20	Q, J
Benzo(k)fluoranthene	3121	101	202	402	ug/Kg dry	4026	ND	77.5	47-132	2.02	20	
Benzyl alcohol	2648	101	202	402	ug/Kg dry	4026	ND	65.8	29-122	0.253	20	
1,1-Biphenyl	3505	101	202	402	ug/Kg dry	4026	ND	87.1	40-117	0.329	20	
4-Bromophenyl-phenylether	2817	101	202	402	ug/Kg dry	4026	ND	70.0	46-124	2.20	20	
Butylbenzylphthalate	3654	101	202	402	ug/Kg dry	4026	ND	90.8	48-132	2.74	20	
Caprolactam	2717	101	202	402	ug/Kg dry	4026	ND	67.5	46-117	3.40	20	
Carbazole	1559	101	202	402	ug/Kg dry	4026	ND	38.7	50-123	35.1	20	
4-Chloro-3-methylphenol	4940	101	202	402	ug/Kg dry	8051	ND	61.4	45-122	1.37	20	
4-Chloroaniline	1836	101	202	402	ug/Kg dry	4026	ND	45.6	17-106	28.4	20	

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	DL	LOD	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7B06012												
Matrix Spike Dup	**Source: 1702005-01**		Prepared: 02/06/2017 Analyzed: 02/07/2017									
Bis(2-chloroethoxy)methane	2567	101	202	402	ug/Kg dry	4026	ND	63.8	36-121	0.763	20	
Bis(2-chloroethyl)ether	2553	101	202	402	ug/Kg dry	4026	ND	63.4	31-120	1.31	20	
2,2'-Oxybis-1-chloropropane	2547	101	202	402	ug/Kg dry	4026	ND	63.3	33-131	0.194	20	
2-Chloronaphthalene	3344	101	202	402	ug/Kg dry	4026	ND	83.1	41-114	1.35	20	
2-Chlorophenol	5738	101	202	402	ug/Kg dry	8051	ND	71.3	34-121	3.15	20	
4-Chlorophenyl phenyl ether	3329	101	202	402	ug/Kg dry	4026	ND	82.7	45-121	1.33	20	
Chrysene	3458	101	202	402	ug/Kg dry	4026	ND	85.9	50-124	2.57	20	
Dibenz(a,h)anthracene	3196	101	202	402	ug/Kg dry	4026	ND	79.4	45-134	1.27	20	
Dibenzofuran	3351	101	202	402	ug/Kg dry	4026	ND	83.2	44-120	0.0915	20	
Di-n-butylphthalate	3783	101	202	402	ug/Kg dry	4026	375.9	84.6	51-128	2.13	20	B
1,4-Dichlorobenzene	2482	101	202	402	ug/Kg dry	4026	ND	61.6	31-115	0.568	20	
1,3-Dichlorobenzene	2492	101	202	402	ug/Kg dry	4026	ND	61.9	30-115	0.459	20	
1,2-Dichlorobenzene	2539	101	202	402	ug/Kg dry	4026	ND	63.1	33-117	2.00	20	
3,3'-Dichlorobenzidine	950.4	101	202	402	ug/Kg dry	4026	ND	23.6	22-121	3.64	20	
2,6-Dichlorophenol	2542	101	202	402	ug/Kg dry	4026	ND	63.1	41-117	0.418	20	
2,4-Dichlorophenol	5283	101	202	402	ug/Kg dry	8051	ND	65.6	40-122	2.10	20	
Diethylphthalate	3549	101	202	402	ug/Kg dry	4026	ND	88.2	50-124	0.129	20	
2,4-Dimethylphenol	4916	402	806	1610	ug/Kg dry	8051	ND	61.1	30-127	0.971	20	
Dimethyl phthalate	3362	101	202	402	ug/Kg dry	4026	ND	83.5	48-124	1.50	20	
4,6-Dinitro-2-methylphenol	4365	1010	2020	4020	ug/Kg dry	8051	ND	54.2	29-132	11.8	20	
2,4-Dinitrophenol	2111	1010	2020	4020	ug/Kg dry	8051	ND	26.2	48-113	56.0	20	J
2,4-Dinitrotoluene	3348	101	202	402	ug/Kg dry	4026	ND	83.2	48-126	1.37	20	
2,6-Dinitrotoluene	3246	101	202	402	ug/Kg dry	4026	ND	80.6	46-124	0.936	20	
Di-n-octylphthalate	3581	101	202	402	ug/Kg dry	4026	ND	89.0	45-140	0.375	20	
1,4-Dioxane	2033	101	202	402	ug/Kg dry	4026	ND	50.5	43-110	2.07	20	
1,2-Diphenylhydrazine (as Azobenzene)	2675	101	202	402	ug/Kg dry	4026	ND	66.4	41-125	1.73	20	

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	DL	LOD	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7B06012												
Matrix Spike Dup	**Source: 1702005-01**		Prepared: 02/06/2017 Analyzed: 02/07/2017									
Bis(2-ethylhexyl)phthalate	3902	101	202	402	ug/Kg dry	4026	186.3	92.3	51-133	0.984	20	
Fluoranthene	3022	101	202	402	ug/Kg dry	4026	ND	75.1	50-127	1.74	20	
Fluorene	3441	101	202	402	ug/Kg dry	4026	ND	85.5	43-125	1.69	20	
Hexachlorobenzene	2861	101	202	402	ug/Kg dry	4026	ND	71.1	45-122	1.71	20	
Hexachlorobutadiene	2569	101	202	402	ug/Kg dry	4026	ND	63.8	32-123	2.90	20	
Hexachlorocyclopentadiene	3491	101	202	402	ug/Kg dry	4026	ND	86.7	42-110	1.87	20	
Hexachloroethane	2365	101	202	402	ug/Kg dry	4026	ND	58.7	28-117	2.32	20	
Indeno(1,2,3-cd)pyrene	3032	101	202	402	ug/Kg dry	4026	ND	75.3	45-133	1.09	20	
Isophorone	2453	101	202	402	ug/Kg dry	4026	ND	60.9	30-122	0.825	20	
1-Methylnaphthalene	2582	101	202	402	ug/Kg dry	4026	ND	64.1	40-119	1.08	20	
2-Methylnaphthalene	2758	101	202	402	ug/Kg dry	4026	ND	68.5	38-122	2.51	20	
2-Methylphenol	5480	101	202	402	ug/Kg dry	8051	ND	68.1	32-122	1.21	20	
3-Methylphenol/4-Methylphenol	5265	101	202	402	ug/Kg dry	8051	ND	65.4	34-119	0.227	20	
3-Methylphenol	5271	101	202	402	ug/Kg dry	8051	ND	65.5	34-119	0.227	30	
4-Methylphenol	5267	101	202	402	ug/Kg dry	8051	ND	65.4	42-126	0.227	30	
Naphthalene	2774	101	202	402	ug/Kg dry	4026	ND	68.9	35-123	1.88	20	
4-Nitroaniline	2166	402	806	1610	ug/Kg dry	4026	ND	53.8	73-112	17.9	20	
3-Nitroaniline	954.8	402	806	1610	ug/Kg dry	4026	ND	23.7	33-119	80.5	20	J
2-Nitroaniline	3123	402	806	1610	ug/Kg dry	4026	ND	77.6	44-127	0.180	20	
Nitrobenzene	2250	101	202	402	ug/Kg dry	4026	ND	55.9	34-122	0.495	20	
4-Nitrophenol	5749	402	806	1610	ug/Kg dry	8051	ND	71.4	30-132	0.500	20	
2-Nitrophenol	6336	101	202	402	ug/Kg dry	8051	ND	78.7	36-123	12.4	20	
N-Nitrosodimethylamine	2416	101	202	402	ug/Kg dry	4026	ND	60.0	23-120	2.10	20	
N-Nitrosodiphenylamine	2144	101	202	402	ug/Kg dry	4026	ND	53.3	38-127	14.8	20	
N-Nitroso-di-n-propylamine	2323	101	202	402	ug/Kg dry	4026	ND	57.7	36-120	0.0426	20	
Pentachlorophenol	5402	402	806	1610	ug/Kg dry	8051	ND	67.1	25-133	13.2	20	

Semivolatile Organic Compounds by GC/MS - Quality Control

Analyte	Result	DL	LOD	LOQ	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7B06012												
Matrix Spike Dup	**Source: 1702005-01**		Prepared: 02/06/2017 Analyzed: 02/07/2017									
Phenanthrene	3043	101	202	402	ug/Kg dry	4026	ND	75.6	50-121	2.95	20	
Phenol	4580	101	202	402	ug/Kg dry	8051	ND	56.9	34-121	0.606	20	
Pyrene	3336	101	202	402	ug/Kg dry	4026	ND	82.9	47-127	2.26	20	
1,2,4,5-Tetrachlorobenzene	2382	101	202	402	ug/Kg dry	4026	ND	59.2	37-119	1.17	20	
2,3,4,6-Tetrachlorophenol	2710	101	202	402	ug/Kg dry	4026	ND	67.3	44-125	1.99	20	
1,2,4-Trichlorobenzene	2533	101	202	402	ug/Kg dry	4026	ND	62.9	34-118	0.208	20	
2,4,6-Trichlorophenol	6392	101	202	402	ug/Kg dry	8051	ND	79.4	39-126	0.637	20	
2,4,5-Trichlorophenol	6842	101	202	402	ug/Kg dry	8051	ND	85.0	41-124	0.397	20	
Surrogate: 2-Fluorobiphenyl	*3017*				*ug/Kg dry*	*4026*		*74.9*	*44-114*			
Surrogate: 2-Fluorophenol	*5646*				*ug/Kg dry*	*8051*		*70.1*	*35-115*			
Surrogate: Nitrobenzene-d5	*2225*				*ug/Kg dry*	*4026*		*55.3*	*37-122*			
Surrogate: Phenol-d6	*5412*				*ug/Kg dry*	*8051*		*67.2*	*33-122*			
Surrogate: Terphenyl-d14	*3234*				*ug/Kg dry*	*4026*		*80.3*	*54-127*			
Surrogate: 2,4,6-Tribromophenol	*5469*				*ug/Kg dry*	*8051*		*67.9*	*39-132*			

1702005-01 A

CHAIN OF CUSTODY

Reference Document # 500433EDBPT-SoilSpill

CB&I
Shaw Environmental and Infrastructure Inc., a CB&I Co.

106MW2 Soil Investigation

Project Manager: Kathleen Romalia

Send Report To: Susan Huang
Phone Number: 925-288-2099
Address: 4005 Port Chicago Hwy
City: Concord, CA 94520
susan.huang@cbifederalservices.com

Sampler's Name(s): C. LaChance

Project Number: 500433
Project Name / Location: KAFB RAPID Response ESTCP
Purchase Order #: ~~203198~~ P-Card
Shipment Date: 1/31/17
UPS Number: 1Z66V6900190909287

Lab Destination: Empirical
Mon-Sat DELIVERY
621 Mainstream Drive, Suite 270
Nashville, TN 37228
Lab Contact Name: Marianne Walker
Phone #: 615.345.1115

Requested Analyses: VOCs (SW8260); EDB (SW8260); SVOCs (SW8270); Metals (Fe, Mn, Pb) (SW6010)

Preservative: Ice

Sample ID Number	Location	Date	Time	Method	Matrix	# of containers	Container	VOCs (SW8260) 4 oz jar/Encore	EDB (SW8260) 4 oz jar/Encore	SVOCs (SW8270) 4 oz jar	Metals (Fe, Mn, Pb) (SW6010) 4 oz jar				
✓ 106MW2-Rolloff	KAFB-106MW2, R/O# 9901	1/31/17	1445	G	So	2	--	X	X	X	X				01
✓ 106MW2-Confirm	Confirmation, Inside Spill Area	1/31/17	1435	G	SO	4	--	X	X	X	X				02
✓ 106MW2-Background	Background Location	1/31/17	1455	G	SO	4	--	X	X	X	X				03
				CQL 1/31/17											

Turnaround Time: 5 Day ☐ 24-hr ☐ 48-hr
All Methods ☐ 3-day

Level Of QC Required: I II III IV Project Specific: unless IV requested

Relinquished By:	Date: 1/31/17 Time: 1700	Received By:	Date: Time:
Relinquished By:	Date: Time:	Received By:	Date: 2/1/17 Time: 930

II. EMPIRICAL LABORATORIES
COOLER RECEIPT FORM

Cooler Received/Opened On: 2/1/17@~~0850~~930 Work-order# 1702005

1. Tracking # 9287 (last 4 digits, FedEx)

   Courier: ~~FedEx~~ UPS

2. Temperature of rep. sample or temp blank when opened: 5.8 °C + *correction factor (-0.1)* = 5.7 °C
   (Temp Fluke#1 SN17680086)

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

   If yes, how many and where: 1 front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (initial/date) TH 2/1/17

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

   Were these signed and dated correctly? YES...NO...NA

8. Packing material used? Bubble-wrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc.)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13. a. Were VOA vials received? YES...NO...NA

    b. Was there observable headspace present in any VOA vial (>5mm-6mm)? YES...NO...NA

14. Was there a Trip Blank in this cooler (custody seals present/intact)? YES...NO...NA...Comments______
    If multiple coolers, sequence #______

I certify that I unloaded the cooler and answered questions 7-14 (initial/date) TH 2/1/17

15. a. On preserved bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

    b. Did the bottle labels indicate that the correct preservatives were used? YES...NO...NA

16. Was residual chlorine present for Cyanide "Effluent" samples? If so, treated/documented? YES...NO...NA

17. For 608 Pest/PCB samples, was pH <5 or >9? Was residual chlorine present? If either, adjusted/documented? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-17 (initial/date) TH 2/1/17

18. Were custody papers properly filled out (ink, signed, etc.)? YES...NO...NA

19. Did you sign the custody papers in the appropriate place? YES...NO...NA

20. Were correct containers used for the analysis requested? YES...NO...NA If not, PM notified? YES...NO...NA

21. Was sufficient amount of sample sent in each container? YES...NO...NA If not, PM notified? YES...NO...NA

22. Were there Non-Conformance issues at login? YES...NO...NCR#______

I certify that I entered this project into LIMS and answered questions 18-22 (initial/date) TH 2/1/17
I certify that I attached a unique LIMS number label with matching sample name to each container (initial/date) TH 2/1/17

I certify that I notified the laboratory of any short holding time or RUSH parameters (initial/date) TH 2/1/17

Empirical Laboratories, LLC
Certifications/Approvals
(Revised 01/18/2017)

DoD ELAP QSM5.0, Certificate Number L2226
- Aqueous
- Non-aqueous
- Expires: 11/30/2018

State of Florida, Department of Health – NELAP Primary, Lab ID: E87646
- Clean Water Act
- RCRA/CERCLA
- Expires: 06/30/2017

State of Georgia, Environmental Protection Agency – NELAP, Self Certification
- Expires: 06/30/2017

Commonwealth of Kentucky, Energy and Environment Cabinet – WWLCP, Laboratory Number: 98017
- Wastewater
- Expires: 12/31/2017

Commonwealth of Kentucky, Department of Environmental Protection – UST, Certificate Number: 77
- Aqueous
- Non-aqueous
- Expires: 06/30/2017

State of New Jersey, Department of Environmental Protection – NELAP, Lab ID: TN473
- Water Pollution
- Solid and Hazardous Waste
- Expires: 06/30/2017

State of North Carolina, Department of Environment and Natural Resources - Certificate Number: 643
- Aqueous
- Non-aqueous
- Expires: 12/31/2017

State of Texas, Commission on Environmental Quality – NELAP, Certificate Number: T104704307-16-14
- Aqueous
- Non-aqueous
- Expires: 12/31/2017

State of Utah, Department of Health – NELAP, Certificate Number: TN0042016-8
- Aqueous
- Non-aqueous
- Expires: 07/31/2017

Commonwealth of Virginia, Department of General Services – NELAP, Certificate Number: 8924, Lab ID: 460243
- Aqueous
- Non-aqueous
- Expires: 12/14/2017

State of Washington, Department of Ecology – NELAP, Lab ID: C934-16
- Groundwater
- Solid and Hazardous Waste
- Expires: 03/18/2017

PO# 17086362

LIQUID ENVIRONMENTAL SOLUTIONS

NON-HAZARDOUS WASTE MANIFEST

92155

Profile Number
212532

Generator Name	**Name:** Kirtland Air Force Base **Phone:** (505) 846-9017	**Generator Address**	**Address:** 2050 Wyoming Blvd, Bldg 20685 **City:** Kirtland AFB **State:** NM **Zip:** 87117

Check with your state and local regulatory agencies for manifest retention requirements. NOTE: Many regulatory agencies require records to be kept on-site and available to review for up to 3 years.

Waste Type	☐ Grease Trap ☐ Grit Trap ☐ Septic/Chemical Toilet ☒ Non-Industrial ☐ Industrial ☐ Special ☐ Used Cooking Oil ☐ Recyclable Used Oil

I certify that the waste material removed from the above premises does not contain any radioactive, flammable, explosive, toxic or hazardous material ("Excluded Waste"). The term "hazardous material" is defined as any one or more pollutant, toxic substance, hazardous substance, solvent or oil as defined in or pusuant to the Resource Conservation and Recovery Act, the Comprehensive Environmental Response Compensation and Liability Act, the Federal Clean Water Act, or any other federal, state or local environmental law, regulation, ordinance, or rule, whether existing as of the date of this agreement or subsequently enacted. I also acknowledge that the Generator shall be responsible for any costs incurred by the Transporter or Disposal Facility in handling or proper disposal of any hazardous waste and that the Generator expressly agrees to defend, indemnify and hold harmless the Transporter from and against any and all damages, costs, fines and liabilities resulting from or arising out of any such hazardous waste.

Generator Rep. Name (please print)	Scott Clark	**Generator Rep. Signature**	[signature]

Transporter Name	**Name:** Chemical Transport LLC **Phone:** (505) 877-4353	**Transporter Address**	**Address:** 2717 Broadway SE **City:** Albuquerque **State:** NM **Zip:** 87105

Waste Removed (Gallons)	non DOT Regulated Material 4900 (non haz waste water)	**Date** 8/7/17	**Time** 09 30

I certify that the information above is accurate, and that only the waste certified for removal by the Generator is contained in the servicing vehicle. I am aware that falsification of this manifest may result in prosecution.

Driver Name (please print)	Mike White	**Driver Signature**	[signature]

Disposal Facility	Liquid Environmental Solutions of Arizona	**Address**	5159 West Van Buren Street Phoenix, AZ 85043
Waste Received (Gallons)		**Date**	**Time**
Facility Rep. Name (please print)		**Facility Rep. Signature**	

WHITE - Generator Final Copy YELLOW - Liquid Environmental Solutions Copy GOLDENROD - Transporter Copy PINK - Generator 1st Copy

~~FED~~ PO# 170863601

LIQUID ENVIRONMENTAL SOLUTIONS

92156

NON-HAZARDOUS WASTE MANIFEST

Profile Number
212532

Generator Name	Name: Kirtland Air Force Base Phone: (505) 846-9017	**Generator Address**	Address: 2050 Wyoming Blvd Bldg 20055 City: Kirtland Air Force Base State: NM Zip: 87117

Check with your state and local regulatory agencies for manifest retention requirements. NOTE: Many regulatory agencies require records to be kept on-site and available to review for up to 3 years.

Waste Type	☐ Grease Trap ☐ Grit Trap ☐ Septic/Chemical Toilet ☒ Non-Industrial ☐ Industrial ☐ Special ☐ Used Cooking Oil ☐ Recyclable Used Oil

I certify that the waste material removed from the above premises does not contain any radioactive, flammable, explosive, toxic or hazardous material ("Excluded Waste"). The term "hazardous material" is defined as any one or more pollutant, toxic substance, hazardous substance, solvent or oil as defined in or pusuant to the Resource Conservation and Recovery Act, the Comprehensive Environmental Response Compensation and Liability Act, the Federal Clean Water Act, or any other federal, state or local environmental law, regulation, ordinance, or rule, whether existing as of the date of this agreement or subsequently enacted. I also acknowledge that the Generator shall be responsible for any costs incurred by the Transporter or Disposal Facility in handling or proper disposal of any hazardous waste and that the Generator expressly agrees to defend, indemnify and hold harmless the Transporter from and against any and all damages, costs, fines and liabilities resulting from or arising out of any such hazardous waste.

Generator Rep. Name (please print)	Scott Clark	**Generator Rep. Signature**	

Transporter Name	Name: Chemical Transport Inc Phone: (505) 877-4353	**Transporter Address**	Address: 2717 Broadway SE City: Albuquerque State: NM Zip: 87105

Waste Removed (Gallons)	Non DOT Regulated material 4800 Gal (Non Haz waste water)	**Date** 8/9/17	**Time** 08:45

I certify that the information above is accurate, and that only the waste certified for removal by the Generator is contained in the servicing vehicle. I am aware that falsification of this manifest may result in prosecution.

Driver Name (please print)	Mike Wa[illegible]	**Driver Signature**	

Disposal Facility	Liquid Environmental Solutions of Arizona	**Address**	5159 West Van Buren Street Phoenix, AZ 85043
Waste Received (Gallons)		**Date**	**Time**
Facility Rep. Name (please print)		**Facility Rep. Signature**	

WHITE - Generator Final Copy YELLOW - Liquid Environmental Solutions Copy GOLDENROD - Transporter Copy PINK - Generator 1st Copy

Liquid Environmental Solutions of Arizona
5159 West Van Buren Street Phoenix, AZ 85043 (866) 694-7327 www.liquidenviro.com

PO# W1786366

LIQUID ENVIRONMENTAL SOLUTIONS

NON-HAZARDOUS WASTE MANIFEST

92157

Profile Number
212532

Generator Name	Name: Holloman Air Force Base Phone: (505) 846-9017	**Generator Address**	Address: 2050 Wyoming Blvd #555 City: Holloman Air Force Base State: NM Zip: 57117

Check with your state and local regulatory agencies for manifest retention requirements. NOTE: Many regulatory agencies require records to be kept on-site and available to review for up to 3 years.

Waste Type	☐ Grease Trap ☐ Grit Trap ☐ Septic/Chemical Toilet ☒ Non-Industrial ☐ Industrial ☐ Special ☐ Used Cooking Oil ☐ Recyclable Used Oil

I certify that the waste material removed from the above premises does not contain any radioactive, flammable, explosive, toxic or hazardous material ("Excluded Waste"). The term "hazardous material" is defined as any one or more pollutant, toxic substance, hazardous substance, solvent or oil as defined in or pusuant to the Resource Conservation and Recovery Act, the Comprehensive Environmental Response Compensation and Liability Act, the Federal Clean Water Act, or any other federal, state or local environmental law, regulation, ordinance, or rule, whether existing as of the date of this agreement or subsequently enacted. I also acknowledge that the Generator shall be responsible for any costs incurred by the Transporter or Disposal Facility in handling or proper disposal of any hazardous waste and that the Generator expressly agrees to defend, indemnify and hold harmless the Transporter from and against any and all damages, costs, fines and liabilities resulting from or arising out of any such hazardous waste.

Generator Rep. Name (please print)	Scott Clark	**Generator Rep. Signature**	

Transporter Name	Name: Chemical Transport Phone: (505) 577-4353	**Transporter Address**	Address: 777 Broadway SE City: Albuquerque State: NM Zip: 57105

Waste Removed (Gallons)	Non DOT Regulated Material baker tank (EX1) 4800 gal, MW22 [illegible], decon, MW22 [illegible] 12, 13 (Non H/12 Waste water)	**Date** 8/11/17	**Time**

I certify that the information above is accurate, and that only the waste certified for removal by the Generator is contained in the servicing vehicle. I am aware that falsification of this manifest may result in prosecution.

Driver Name (please print)	[illegible]	**Driver Signature**	

Disposal Facility	Liquid Environmental Solutions of Arizona	**Address**	5159 West Van Buren Street Phoenix, AZ 85043
Waste Received (Gallons)		**Date**	**Time**
Facility Rep. Name (please print)		**Facility Rep. Signature**	

WHITE - Generator Final Copy YELLOW - Liquid Environmental Solutions Copy GOLDENROD - Transporter Copy PINK - Generator 1st Copy

Liquid Environmental Solutions of Arizona
5159 West Van Buren Street Phoenix, AZ 85043 (866) 694-7327 www.liquidenviro.com

PO# W1708 68848

LIQUID ENVIRONMENTAL SOLUTIONS

92159

NON-HAZARDOUS WASTE MANIFEST

Profile Number
212532

Generator Name	Name: Kirtland Air Force Base Phone: (505) 846-9617	**Generator Address**	Address: 2050 Wyoming Blvd Bldg 20655 City: Kirtland Air Force Base State: NM Zip: 87117

Check with your state and local regulatory agencies for manifest retention requirements. NOTE: Many regulatory agencies require records to be kept on-site and available to review for up to 3 years.

Waste Type	☐ Grease Trap ☐ Grit Trap ☐ Septic/Chemical Toilet ☒ Non-Industrial ☐ Industrial ☐ Special ☐ Used Cooking Oil ☐ Recyclable Used Oil

I certify that the waste material removed from the above premises does not contain any radioactive, flammable, explosive, toxic or hazardous material ("Excluded Waste"). The term "hazardous material" is defined as any one or more pollutant, toxic substance, hazardous substance, solvent or oil as defined in or pusuant to the Resource Conservation and Recovery Act, the Comprehensive Environmental Response Compensation and Liability Act, the Federal Clean Water Act, or any other federal, state or local environmental law, regulation, ordinance, or rule, whether existing as of the date of this agreement or subsequently enacted. I also acknowledge that the Generator shall be responsible for any costs incurred by the Transporter or Disposal Facility in handling or proper disposal of any hazardous waste and that the Generator expressly agrees to defend, indemnify and hold harmless the Transporter from and against any and all damages, costs, fines and liabilities resulting from or arising out of any such hazardous waste.

Generator Rep. Name (please print)	Scott Clark	**Generator Rep. Signature**	[signature]

Transporter Name	Name: Clean Harbors Env. Serv Phone: (505) 584-2277	**Transporter Address**	Address: 2720 Girard NE City: Albuquerque State: NM Zip: 87107

Waste Removed (Gallons)	Non DOT Regulated Material 2360G (Non Haz waste water)	**Date** 8-17-17	**Time** 9:00 AM

I certify that the information above is accurate, and that only the waste certified for removal by the Generator is contained in the servicing vehicle. I am aware that falsification of this manifest may result in prosecution.

Driver Name (please print)	John Figueroa	**Driver Signature**	[signature]

Disposal Facility	Liquid Environmental Solutions of Arizona	**Address**	5159 West Van Buren Street Phoenix, AZ 85043
Waste Received (Gallons)		**Date**	**Time**
Facility Rep. Name (please print)		**Facility Rep. Signature**	

WHITE - Generator Final Copy YELLOW - Liquid Environmental Solutions Copy GOLDENROD - Transporter Copy PINK - Generator 1st Copy

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No. NM9570024423	Manifest Document No. D235372	2. Page 1 of 1

3. Generator's Name and Mailing Address KIRTLAND AIR FORCE BASE 2050 WYOMING BLVD SE BLDG 20685, ENVIRONMENTAL KIRTLAND AIR FORCE BASE, NM 87117 4. Generator's Phone ( ) 505-846-9017	
5. Transporter 1 Company Name: Advanced Chemical Transport Inc./DBA ACTENVIRO — 6. US EPA ID Number: CAR000070540	A. State Transporter's ID B. Transporter 1 Phone
7. Transporter 2 Company Name — 8. US EPA ID Number	C. State Transporter's ID D. Transporter 2 Phone
9. Designated Facility Name and Site Address Advanced Chemical Treatment 6133 Edith Blvd NE Albuquerque, NM 87107 505-349-5220 10. US EPA ID Number: NMD002208627	E. State Facility's ID F. Facility's Phone

11. WASTE DESCRIPTION	12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
a. Non RCRA/Non DOT Regulated Material Liquid (WATER)		TP		P
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above: Project Number 196759 Document #: D235372
1) ACT94913 KIA-

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
24 HOUR EMERGENCY CONTACT: SCOTT CLARK 505 385 3679

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name	Signature	Date Month Day Year
Scott Clark	[signature]	03 19 19

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month Day Year

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name	Signature	Date Month Day Year

GENERATOR — TRANSPORTER — FACILITY

NON-HAZARDOUS WASTE

American Labelmaster Co. - Chicago, IL 60646

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) SC MA PPW 1/4/2017 Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: NM9570024423
2. Page 1 of
3. Emergency Response Phone: 505-846-8227 ~~(800) 483-3718~~
4. Manifest Tracking Number: 010285044 FLE

5. Generator's Name and Mailing Address:
Kirtland Air Force Base
2050 Wyoming Blvd. Se Bldg. 20685, Environmental Restoratio
Kirtland Air Force Base. NM 87117
Generator's Phone: (505) 846-9017 ATTN: Scott Clark

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: Chemical Transport Inc ~~Clean Harbors Environmental Service, Inc.~~
U.S. EPA ID Number: AZT 050 10008 ~~MAD039322250~~

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address:
Clean Harbors Deer Trail LLC
108555 East Highway 36
Deer Trail. CO 80105
Facility's Phone: 9703862293
U.S. EPA ID Number: COD991300484

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes			
	1. NA3082, HAZARDOUS WASTE, LIQUID, N.O.S., (BENZENE) 9, PG III	1	CM	4500	4500 G	D018			
	2.								
	3.								
	4.								

14. Special Handling Instructions and Additional Information
1. CH1434425
2.
3.
4. Well # 106EX2 / Tank # 20253220

920 - 9950

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Wheelock Katrina E. Signature: K.E. Wheelock Month 05 Day 31 Year 17

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Jeff Pence Signature: Jeff Pence Month 5 Day 31 Year 17
Transporter 2 Printed/Typed Name Signature Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name Signature Month Day Year

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete. DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

Clean Harbors has the appropriate permits for and will accept the waste the generator is shipping.

CleanHarbors ENVIRONMENTAL SERVICES®

Land Disposal Restriction Notification Form

Printed Date :May 31, 2017

MANIFEST INFORMATION

Generator : Kirtland Air Force Base

Address: 2050 Wyoming Blvd. Se Bldg. 20685, Environmental Restoratio Kirtland Afb,NM 87117

EPA ID #: NM9570024423

Manifest Tracking Info.

010285044 FLE

Sales Order No: 1702656397-004

LINE ITEM INFORMATION

Line Item:	Page No:	Profile No:	Treatability Group:	LDR Disposal Category
1.	1	CH1434425	WASTEWATER	4 (Meets LDR Standards)

EPA Waste Code	EPA Waste SubCategory
D018	NONE

LDR Chemical Data

Chemical	Underlying Hazardous Constituents	Constituents of Concern	Contaminants Subject to Treatment
1,2-DIBROMOETHANE	Y	N	~~N~~
ACETONE	Y	N	~~N~~
ACETOPHENONE	Y	N	~~N~~
BENZENE	Y	N	~~N~~ yes KW
ETHYL BENZENE	Y	N	~~N~~
TOLUENE	Y	N	~~N~~
XYLENES (MIXED ISOMERS)	Y	N	~~N~~

Certification	Applies to Manifest Line Items
I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR part 268 subpart D. I believe that the information I submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.	1.

Waste analysis data, where available, is attached.

Signature : Katrina Wheelock Print Name Katrina Wheelock

Title : Physical Scientist Date : 2017-05-31

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) SC MA PPW 1/4/2017 Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number NM9570024423	2. Page 1 of 1	3. Emergency Response Phone 505-846-8022 ~~(800) 483-3718~~	4. Manifest Tracking Number 010285045 FLE

GENERATOR

5. Generator's Name and Mailing Address
Kirtland Air Force Base
2050 Wyoming Blvd. Se Bldg. 20685, Environmental Restoratio
Kirtland Air Force Base. NM 87117
Generator's Phone: (505) 846-9017 ATTN:ScottClark

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name Chemical Transport INC ~~Clean Harbors Environmental Service, Inc.~~
U.S. EPA ID Number AZT050100088 ~~MAD039322250~~

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
Clean Harbors Deer Trail LLC
108555 East Highway 36
Deer Trail. CO 80105
Facility's Phone: 9703862293
U.S. EPA ID Number COD991300484

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1. NA3082, HAZARDOUS WASTE, LIQUID, N.O.S., (BENZENE) 9. PG III	1	CM	4500 ~~4560~~ 4500	G	D018
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1.CH1434425
2.
3.
4. Well # 106EX2 / Tank # 253220
891/9960

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Wheelock Katrina E — Signature: [signature] — Month 05 Day 31 Year 17

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Mike Waite — Signature: [signature] — Month 5 Day 31 Year 17
Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name — Signature — Month Day Year

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete. DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)
Clean Harbors has the appropriate permits for and will accept the waste the generator is shipping.

CleanHarbors
ENVIRONMENTAL SERVICES®

Land Disposal Restriction Notification Form

Printed Date :May 31, 2017

MANIFEST INFORMATION

Generator : Kirtland Air Force Base

Address: 2050 Wyoming Blvd. Se Bldg. 20685,
Environmental Restoratio
Kirtland Afb,NM 87117

EPA ID #: NM9570024423

Manifest Tracking Info.

010285045 FLE

Sales Order No: 1702656397-004

LINE ITEM INFORMATION

Line Item:	Page No:	Profile No:	Treatability Group:	LDR Disposal Category
1.	1	CH1434425	WASTEWATER	4 (Meets LDR Standards)

EPA Waste Code	EPA Waste SubCategory
D018	NONE

LDR Chemical Data

Chemical	Underlying Hazardous Constituents	Constituents of Concern	Contaminants Subject to Treatment
1,2-DIBROMOETHANE	Y	N	~~N~~
ACETONE	Y	N	~~N~~
ACETOPHENONE	Y	N	~~N~~
BENZENE	Y	N	~~N~~
ETHYL BENZENE	Y	N	~~N~~
TOLUENE	Y	N	~~N~~
XYLENES (MIXED ISOMERS)	Y	N	~~N~~

yes KW

Certification	Applies to Manifest Line Items
I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR part 268 subpart D. I believe that the information I submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.	1.

Waste analysis data, where available, is attached.

Signature : Katrina Wheelock Print Name Katrina Wheelock

Title : Physical Scientist Date : 2017-05-31

SC MA PPW 1/4/2017

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: NM9570024423
2. Page 1 of
3. Emergency Response Phone: ~~(800) 483-3718~~ 505-846-8222
4. Manifest Tracking Number: 010285052 FLE

5. Generator's Name and Mailing Address: Kirtland Air Force Base
2050 Wyoming Blvd. Se Bldg. 20685, Environmental Restoratio
Kirtland Air Force Base, NM 87117
Generator's Phone: (505) 846-~~8222~~ 7017 ATTN:ScottClark
Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: Chemical Transport Inc ~~Clean Harbors Environmental Service, Inc.~~
U.S. EPA ID Number: AZT050010008 ~~AZT050010008~~ ~~MAD039322250~~

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
Clean Harbors Deer Trail LLC
108555 East Highway 36
Deer Trail, CO 80105
Facility's Phone: 9703862293
U.S. EPA ID Number: COD991300484

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1. NA3082, HAZARDOUS WASTE, LIQUID, N.O.S., (BENZENE), 9, PG III	1	TT	4,500	G	D018
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1.CH1434425
2.
3. Tank#251237/Well#106IN1
4.

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Wheelock, Katrina E
Signature: Katrina E Wheelock
Month 06 Day 07 Year 17

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Jeff Perez
Signature: Jeff Perez
Month 6 Day 7 Year 17
Transporter 2 Printed/Typed Name
Signature
Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name
Signature
Month Day Year

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.
Clean Harbors has the appropriate permits for and will accept the waste the generator is shipping.
DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

CleanHarbors
ENVIRONMENTAL SERVICES®

Land Disposal Restriction Notification Form

Printed Date :May 31, 2017

MANIFEST INFORMATION

Generator : Kirtland Air Force Base

Address: 2050 Wyoming Blvd. Se Bldg. 20685,
Environmental Restoratio
Kirtland Afb,NM 87117

EPA ID #: NM9570024423

Manifest Tracking Info.

010285052FLE

Sales Order No: 1702656397-004

LINE ITEM INFORMATION

Line Item:	Page No:	Profile No:	Treatability Group:	LDR Disposal Category
1.	1	CH1434425	WASTEWATER	4 (Meets LDR Standards)

EPA Waste Code	EPA Waste SubCategory
D018	NONE

LDR Chemical Data

Chemical	Underlying Hazardous Constituents	Constituents of Concern	Contaminants Subject to Treatment
1,2-DIBROMOETHANE	Y	N	~~N~~
ACETONE	Y	N	~~N~~
ACETOPHENONE	Y	N	~~N~~ Yes KW
BENZENE	Y	N	~~N~~
ETHYL BENZENE	Y	N	~~N~~
TOLUENE	Y	N	~~N~~
XYLENES (MIXED ISOMERS)	Y	N	N

Certification	Applies to Manifest Line Items
I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR part 268 subpart D. I believe that the information I submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.	1.

Waste analysis data, where available, is attached.

Signature : K Wheelock Print Name Katrina E. Wheelock

Title : Physical Scientist Date : 2017-06-07

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) 491702656397-004 SC PPW 5/30/2017 Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
NM9570024423	1	~~(800) 483-3718~~	010285059 FLE

5. Generator's Name and Mailing Address
Kirtland Air Force Base
2050 Wyoming Blvd. Se Bldg. 20685, Environmental Restoratio
Kirtland Air Force Base, NM 87117
Generator's Phone: ~~(505) 846-8222~~

Generator's Site Address (if different than mailing address)
2050 Wyoming Blvd. Se Bldg. 20685, Environmen
Kirtland Afb, NM 87117

6. Transporter 1 Company Name: Clean Harbors Environmental Service, Inc. — U.S. EPA ID Number: MAD039322250

7. Transporter 2 Company Name: — U.S. EPA ID Number:

8. Designated Facility Name and Site Address
Clean Harbors Deer Trail LLC
108555 East Highway 36
Deer Trail, CO 80105
Facility's Phone: (970) 386-2293
U.S. EPA ID Number: COD991300484

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. NA3082, HAZARDOUS WASTE, LIQUID, N.O.S., (BENZENE), 9, PG III	45	TT	4500	G	D018
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1.CH1494925 ERG#171
Truck# 1671
TT# 2055
Tank 252220 / Intl EX2 / 23340 / Intl ...
ordr# 170265397-004

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Rebecca Clines — Signature: Rebecca Clines — Month 6 Day 5 Year 17

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: — Signature: — Month Day Year 17
Transporter 2 Printed/Typed Name: — Signature: — Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H132			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name — Signature — Month Day Year

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete. **GENERATOR'S INITIAL COPY**
Clean Harbors has the appropriate permits for and will accept the waste the generator is shipping.

49 1702656397-004 SC PPW 5/30/2017

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

GENERATOR

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number NM 9570024423	2. Page 1 of	3. Emergency Response Phone ~~(800) 483-3718~~	4. Manifest Tracking Number 010285060 FLE

5. Generator's Name and Mailing Address
Kirtland Air Force Base
2050 Wyoming Blvd. Se Bldg. 20685, Environmental Restoratio
Kirtland Air Force Base, NM 87117
Generator's Phone: (505) 846-~~8828~~

Generator's Site Address (if different than mailing address)
2050 Wyoming Blvd. Se Bldg. 20685, Environmen
Kirtland Afb, NM 87117

6. Transporter 1 Company Name ~~Clean Harbors Environmental Service, Inc.~~ [illegible] Transport Inc
U.S. EPA ID Number ~~MAD039322250~~ AZTC501008

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
Clean Harbors Deer Trail LLC
108555 East Highway 36
Deer Trail, CO 80105
Facility's Phone: (970) 386-2293
U.S. EPA ID Number COD991300484

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. NA3082, HAZARDOUS WASTE, LIQUID, N.O.S., (BENZENE), 9, PG III	1	TT	4500	G	D018
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1.CH1434429 ERG#171
Truck# [illegible] TR# [illegible]
Truck# 253220 / Unit# 106EX2 order# 1702656397-004

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Rebecca Clines
Signature: Rebecca Clines
Month 6 Day 5 Year 17

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: [illegible] Signature: [illegible] Month 6 Day 5 Year 17
Transporter 2 Printed/Typed Name: Signature: Month Day Year

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:

18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H132			

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name Signature Month Day Year

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

GENERATOR'S INITIAL COPY

Clean Harbors has the appropriate permits for and will accept the waste the generator is shipping.

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) SC MA PPW 5/30/2017 Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: NM9570024423
2. Page 1 of 1
3. Emergency Response Phone: ~~(800)483-3718~~ 505-846-8222 RL
4. Manifest Tracking Number: 010285061 FLE

5. Generator's Name and Mailing Address
Kirtland Air Force Base
2050 Wyoming Blvd. Se Bldg. 20685, Environmental Restoratio
Kirtland Air Force Base, NM 87117
Generator's Site Address (if different than mailing address)
Generator's Phone: (505) 846-~~8222~~ 9017 RL ATTN:ScottClark

6. Transporter 1 Company Name: Clean Harbors Environmental Service, Inc. — U.S. EPA ID Number: MAD039322250

7. Transporter 2 Company Name: — U.S. EPA ID Number:

8. Designated Facility Name and Site Address
Clean Harbors Deer Trail LLC
108555 East Highway 36
Deer Trail, CO 80105
Facility's Phone: 9703862293
U.S. EPA ID Number: COD991300484

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1. NA3082, HAZARDOUS WASTE, LIQUID, N.O.S., (BENZENE), 9, PG III	1	TT	4000	G	D018
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1.CH1434425
2.
3.
4. Tank #253410 / Well 106 IN1
Truck # 1914
Trailer # 3052

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Rebecca Clines — Signature: Rebecca Clines — Month 6 Day 6 Year 17

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: MARK NORWOOD — Signature: Mark Norwood — Month 6 Day 6 Year 17
Transporter 2 Printed/Typed Name: — Signature: — Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name — Signature — Month Day Year

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete. DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)
Clean Harbors has the appropriate permits for and will accept the waste the generator is shipping.

CleanHarbors
ENVIRONMENTAL SERVICES®

Land Disposal Restriction Notification Form

Printed Date :Jun 02, 2017

MANIFEST INFORMATION

Generator : Kirtland Air Force Base

Address: 2050 Wyoming Blvd. Se Bldg. 20685,
Environmental Restoratio
Kirtland Afb,NM 87117

EPA ID #: N M 9 5 7 0 0 2 4 4 2 3

Manifest Tracking Info.

010285061 FLE

Sales Order No: 1702656397-004

LINE ITEM INFORMATION

Line Item:	Page No:	Profile No:	Treatability Group:	LDR Disposal Category
1.	1	CH1434425	WASTEWATER	4 (Meets LDR Standards)

EPA Waste Code	EPA Waste SubCategory
D018	NONE

LDR Chemical Data

Chemical	Underlying Hazardous Constituents	Constituents of Concern	Contaminants Subject to Treatment
1,2-DIBROMOETHANE	Y	N	~~N~~ Y
ACETONE	Y	N	~~N~~ Y
ACETOPHENONE	Y	N	~~N~~ Y
BENZENE	Y	N	~~N~~ Y
ETHYL BENZENE	Y	N	~~N~~ Y
TOLUENE	Y	N	~~N~~ Y
XYLENES (MIXED ISOMERS)	Y	N	~~N~~ Y

Ch RC

Certification	Applies to Manifest Line Items
I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR part 268 subpart D. I believe that the information I submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.	1.

Waste analysis data, where available, is attached.

Signature : Rebecca Clines   Print Name: Rebecca Clines

Title : Physical Scientist   Date : 6/6/17

SC MA PPW 5/30/2017

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: NM9570024423
2. Page 1 of 1
3. Emergency Response Phone: ~~(800)483-3718~~ 505-846-8222
4. Manifest Tracking Number: 010285062 FLE

5. Generator's Name and Mailing Address:
Kirtland Air Force Base
2050 Wyoming Blvd. Se Bldg. 20685, Environmental Restoratio
Kirtland Air Force Base, NM 87117
(505) 846-~~8222~~ 9017 ATTN:ScottClark

Generator's Site Address (if different than mailing address)

Generator's Phone:

6. Transporter 1 Company Name: Clean Harbors Environmental Service, Inc. — U.S. EPA ID Number: MAD039322250

7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address:
Clean Harbors Deer Trail LLC
108555 East Highway 36
Deer Trail, CO 80105
Facility's Phone: 9703862293
U.S. EPA ID Number: COD991300484

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1. NA3082, HAZARDOUS WASTE, LIQUID, N.O.S., (BENZENE) ,9, PG III	1	TT	4500	G	D018
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1. CH1434425
2.
3. 253410 / well II
4. Tank 251237 / 106IN1

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Wheelock Katrina E — Signature: [signature] — Month 06 Day 06 Year 17

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: David Rivera — Signature: David Rivera — Month 6 Day 6 Year 17
Transporter 2 Printed/Typed Name — Signature — Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name — Signature — Month Day Year

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete. DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)
Clean Harbors has the appropriate permits for and will accept the waste the generator is shipping.

CleanHarbors
ENVIRONMENTAL SERVICES®

Land Disposal Restriction Notification Form

Printed Date :Jun 02, 2017

MANIFEST INFORMATION

Generator : Kirtland Air Force Base

Address: 2050 Wyoming Blvd. Se Bldg. 20685, Environmental Restoratio Kirtland Afb,NM 87117

EPA ID #: N M 9 5 7 0 0 2 4 4 2 3

Manifest Tracking Info.

010285062 FLE (KW)

Sales Order No: 1702656397-004

LINE ITEM INFORMATION

Line Item:	Page No:	Profile No:	Treatability Group:	LDR Disposal Category
1.	1	CH1434425	WASTEWATER	4 (Meets LDR Standards)

EPA Waste Code	EPA Waste SubCategory
D018	NONE

LDR Chemical Data

Chemical	Underlying Hazardous Constituents	Constituents of Concern	Contaminants Subject to Treatment
1,2-DIBROMOETHANE	Y	N	~~N~~ Y
ACETONE	Y	N	~~N~~ Y
ACETOPHENONE	Y	N	~~N~~ Y
BENZENE	Y	N	~~N~~ Y
ETHYL BENZENE	Y	N	~~N~~ Y
TOLUENE	Y	N	~~N~~ Y
XYLENES (MIXED ISOMERS)	Y	N	~~N~~ Y

cl (KW)

Certification	Applies to Manifest Line Items
I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR part 268 subpart D. I believe that the information I submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.	1.

Waste analysis data, where available, is attached.

Signature : Katrina E. Wheelock (signature)   Print Name Katrina E. Wheelock

Title : Physical Scientist   Date : 2017-06-06

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) SC MA PPW 5/30/2017 Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number	NM9570024423
2. Page 1 of	1
3. Emergency Response Phone	~~(800) 483-3718~~ 505-846-8222
4. Manifest Tracking Number	010285063 FLE

5. Generator's Name and Mailing Address
Kirtland Air Force Base
2050 Wyoming Blvd. Se Bldg. 20685, Environmental Restoratio
Kirtland Air Force Base, NM 87117
Generator's Phone: ~~(505) 846-9389~~ 9017 ~~ATTN:ScottClark~~

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: Clean Harbors Environmental Service, Inc. — U.S. EPA ID Number: MAD039322250

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address
Clean Harbors Deer Trail LLC
108555 East Highway 36
Deer Trail, CO 80105
Facility's Phone: 9703862293
U.S. EPA ID Number: COD991300484

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. NA3082, HAZARDOUS WASTE, LIQUID, N.O.S., (BENZENE), 9, PG III	1	TT	3,300	G	D018
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1. CH1434425
2. Tank / well
3.
4. 251237 / 106IN1

truck 1914

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Wheelan, Katrina E — Signature: Katrina Wheelan — Month 06 Day 08 Year 17

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: MARK NORWOOD — Signature: Mark Norwood — Month 6 Day 8 Year 17
Transporter 2 Printed/Typed Name — Signature — Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name — Signature — Month Day Year

GENERATOR / INT'L / TRANSPORTER / DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete. DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

Clean Harbors has the appropriate permits for and will accept the waste the generator is shipping.

CleanHarbors ENVIRONMENTAL SERVICES®

Land Disposal Restriction Notification Form

Printed Date :Jun 02, 2017

MANIFEST INFORMATION

Generator : Kirtland Air Force Base

Address: 2050 Wyoming Blvd. Se Bldg. 20685, Environmental Restoration
Kirtland Afb,NM 87117

EPA ID #: N M 9 5 7 0 0 2 4 4 2 3

Manifest Tracking Info.

010285063 (JW)

Sales Order No: 1702656397-004

LINE ITEM INFORMATION

Line Item:	Page No:	Profile No:	Treatability Group:	LDR Disposal Category
1.	1	CH1434425	WASTEWATER	4 (Meets LDR Standards)

EPA Waste Code	EPA Waste SubCategory
D018	NONE

LDR Chemical Data

Chemical	Underlying Hazardous Constituents	Constituents of Concern	Contaminants Subject to Treatment
1,2-DIBROMOETHANE	Y	N	~~N~~ Y
ACETONE	Y	N	~~N~~ Y
ACETOPHENONE	Y	N	~~N~~ Y
BENZENE	Y	N	~~N~~ Y
ETHYL BENZENE	Y	N	~~N~~ Y
TOLUENE	Y	N	~~N~~ Y
XYLENES (MIXED ISOMERS)	Y	N	~~N~~ Y

(JW)

Certification	Applies to Manifest Line Items
I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR part 268 subpart D. I believe that the information I submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.	1.

Waste analysis data, where available, is attached.

Signature : [signature] Print Name Katrina E. Wheelock

Title : Physical Scientist Date : 2017-06-08

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) SC MA PPW 5/30/2017 Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: NM9570024423
2. Page 1 of 1
3. Emergency Response Phone: 505-846-8222 ~~(800) 483-3718~~ RC
4. Manifest Tracking Number: 010285065 FLE

5. Generator's Name and Mailing Address:
Kirtland Air Force Base
2050 Wyoming Blvd. Se Bldg. 20685, Environmental Restoratio
Kirtland Air Force Base. NM 87117
Generator's Phone: (505) 846-~~8222~~ 9017 RC ATTN:ScottClark

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: Chemical Transport Inc ~~Clean Harbors Environmental Service, Inc.~~
U.S. EPA ID Number: AZT050010008 ~~MAD039322250~~

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address:
Clean Harbors Deer Trail LLC
108555 East Highway 36
Deer Trail. CO 80105
Facility's Phone: 9703862293
U.S. EPA ID Number: COD991300484

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. NA3082, HAZARDOUS WASTE, LIQUID, N.O.S., (BENZENE), 9, PG III	1	TT	3500	G	D018
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1. CH1434425
2. Tank
3. well
4. 251237/106 INJ

891/9960

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Rebecca Clines | Signature: Rebecca Clines | Month 6 Day 8 Year 17

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Mike Waite | Signature: [signature] | Month 6 Day 8 Year 17
Transporter 2 Printed/Typed Name | Signature | Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name | Signature | Month Day Year

GENERATOR | INT'L | TRANSPORTER | DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.
DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

Clean Harbors has the appropriate permits for and will accept the waste the generator is shipping.

CleanHarbors
ENVIRONMENTAL SERVICES®

Land Disposal Restriction Notification Form

Printed Date :Jun 02, 2017

MANIFEST INFORMATION

Generator : Kirtland Air Force Base

Address: 2050 Wyoming Blvd. Se Bldg. 20685, Environmental Restoration Kirtland Afb,NM 87117

EPA ID #: N M 9 5 7 0 0 2 4 4 2 3

Manifest Tracking Info.

010285065

Sales Order No: 1702656397-004

LINE ITEM INFORMATION

Line Item:	Page No:	Profile No:	Treatability Group:	LDR Disposal Category
1.	1	CH1434425	WASTEWATER	4 (Meets LDR Standards)

EPA Waste Code	EPA Waste SubCategory
D018	NONE

LDR Chemical Data

Chemical	Underlying Hazardous Constituents	Constituents of Concern	Contaminants Subject to Treatment
1,2-DIBROMOETHANE	Y	N	~~N~~ Y
ACETONE	Y	N	~~N~~ Y
ACETOPHENONE	Y	N	~~N~~ Y
BENZENE	Y	N	~~N~~ Y
ETHYL BENZENE	Y	N	~~N~~ Y
TOLUENE	Y	N	~~N~~ Y
XYLENES (MIXED ISOMERS)	Y	N	~~N~~ Y

RC

Certification	Applies to Manifest Line Items
I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR part 268 subpart D. I believe that the information I submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.	1.

Waste analysis data, where available, is attached.

Signature : Rebecca Clines Print Name Rebecca Clines

Title : Physical Scientist Date : 6/8/17

49 1702656397-006 SC PPW 5/30/2017

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: NM 9570024423
2. Page 1 of 1
3. Emergency Response Phone: ~~(800) 483-3718~~ 505-846-8222 KW
4. Manifest Tracking Number: 010285072 FLE

5. Generator's Name and Mailing Address: Kirtland Air Force Base, 2050 Wyoming Blvd. Se Bldg. 20685, Environmental Restoratio, Kirtland Air Force Base, NM 87117

Generator's Site Address (if different than mailing address): 2050 Wyoming Blvd. Se Bldg. 20685, Environmen, Kirtland Afb, NM 87117

Generator's Phone: (505) 846-~~8222~~ 9017 KW Attn Scott Clark

6. Transporter 1 Company Name: Clean Harbors Environmental Services, Inc. — U.S. EPA ID Number: MAD039322250

7. Transporter 2 Company Name: — U.S. EPA ID Number:

8. Designated Facility Name and Site Address: Clean Harbors Deer Trail LLC, 108555 East Highway 36, Deer Trail, CO 80105 — U.S. EPA ID Number: COD991300484

Facility's Phone: (970) 386-2293

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. X NA3082, HAZARDOUS WASTE, LIQUID, N.O.S., (Benzene) KW 9, PG III	1	TT	1000	Glns	D018
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1.CH1449152 ERG#171
KAFB-106MW2-S
KAFB-106MW1-S

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Wheelock Katrina E. — Signature: [signature] — Month 06 Day 21 Year 17

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: David Rivera — Signature: David Rivera — Month 6 Day 21 Year 17
Transporter 2 Printed/Typed Name: — Signature: — Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. H132 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name — Signature — Month Day Year

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete. DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

Clean Harbors has the appropriate permits for and will accept the waste the generator is shipping.

CleanHarbors
ENVIRONMENTAL SERVICES®

Land Disposal Restriction Notification Form

Printed Date :Jun 19, 2017

MANIFEST INFORMATION

Generator : Kirtland Air Force Base

Address: 2050 Wyoming Blvd. Se Bldg. 20685,
Environmental Restoratio
Kirtland Afb,NM 87117

EPA ID #: N M 9 5 7 0 0 2 4 4 2 3

Manifest Tracking Info.

010285092 FLE (ka)

Sales Order No: 1702656397-006

LINE ITEM INFORMATION

Line Item:	Page No:	Profile No:	Treatability Group:	LDR Disposal Category
1.	1	CH1449152	WASTEWATER	2 (This is subject to LDR.)

EPA Waste Code	EPA Waste SubCategory
D018	NONE

LDR Chemical Data

Chemical	Underlying Hazardous Constituents	Constituents of Concern	Contaminants Subject to Treatment
1,2-DIBROMOETHANE	Y	N	~~N~~ Y
ACETONE	Y	N	~~N~~ Y
ACETOPHENONE	Y	N	~~N~~ Y
BENZENE	Y	N	~~N~~ Y
ETHYL BENZENE	Y	N	~~N~~ Y (ka)
METHYL ETHYL KETONE	Y	N	~~N~~ Y
METHYL ISOBUTYL KETONE	Y	N	~~N~~ Y
NAPHTHALENE	Y	N	~~N~~ Y
TOLUENE	Y	N	~~N~~ Y
XYLENES (MIXED ISOMERS)	Y	N	~~N~~ Y

Certification	Applies to Manifest Line Items
Pursuant to 40 CFR 268.7(a), I hereby notify that this shipment contains waste restricted under 40 CFR Part 268.	1.

Waste analysis data, where available, is attached.

Signature : K. Wheelock　　Print Name Katrina Wheelock

Title : Physical Scientist　　Date : 2017-06-21

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) SC MA PPW 8/28/2017 Form Approved. OMB No. 2050-0039

GENERATOR

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: NM9570024423
2. Page 1 of: 1
3. Emergency Response Phone: (505) 846-8222
4. Manifest Tracking Number: 010285148 FLE

5. Generator's Name and Mailing Address
Kirtland Air Force Base
2050 Wyoming Blvd. Se Bldg. 20685, Environmental Restoratio
Kirtland Air Force Base. NM 87117
Generator's Phone: (505) 846-9017 ATTN:ScottClark

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: Clean Harbors Environmental Services, Inc. — U.S. EPA ID Number: MAD039322250

7. Transporter 2 Company Name: — U.S. EPA ID Number:

8. Designated Facility Name and Site Address
Clean Harbors Deer Trail LLC
108555 East Highway 36
Deer Trail. CO 80105
Facility's Phone: 9703862293
U.S. EPA ID Number: COD991300484

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. NA3082, HAZARDOUS WASTE, LIQUID, N.O.S., (BENZENE), 9, PG III	1	TT	1800	G	D018
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1. CH1449152 ERG 171
2.
3.
4.
Job# 1702656397

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Wheelock, Katrina E — Signature: K Wheelock — Month 09 Day 28 Year 17

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Kenny Sanchez — Signature: [signature] — Month 9 Day 28 Year 17
Transporter 2 Printed/Typed Name: ~~Kenny Sanchez~~ KS — Signature: ~~[signature]~~ KS — Month ~~9~~ Day ~~28~~ Year ~~17~~ KS

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) — U.S. EPA ID Number:
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name — Signature — Month Day Year

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete. DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

Clean Harbors has the appropriate permits for and will accept the waste the generator is shipping.

Please print or type. (Form designed for use on elite (12-pitch) typewriter.) SC MA PPW 10/10/2017 Form Approved. OMB No. 2050-0039

GENERATOR

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: NM9570024423
2. Page 1 of: 1
3. Emergency Response Phone: (505) 385-3679
4. Manifest Tracking Number: 010285193 FLE

5. Generator's Name and Mailing Address
Kirtland Air Force Base
2050 Wyoming Blvd. Se Bldg. 20685, Environmental Restoratio
Kirtland Air Force Base, NM 87117
Generator's Phone: (505) 846-9017 ATTN:ScottClark
Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: Clean Harbors Environmental Services, Inc.
U.S. EPA ID Number: MAD039322250

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
Clean Harbors Aragonite LLC
11600 North Aptus Road
Grantsville, UT 84029
Facility's Phone: 4358848100
U.S. EPA ID Number: UTD981552177

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. NA3082, HAZARDOUS WASTE, LIQUID, N.O.S., (BENZENE), 9, PG III	1	TT	825	Glns	D018
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1. CH1555430
2.
3.
4.

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Rebecca Clines
Signature: Rebecca Clines
Month 12 Day 28 Year 17

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: David Rivera
Signature: David Rivera
Month 12 Day 28 Year 17
Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name Signature Month Day Year

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete. DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

Clean Harbors has the appropriate permits for and will accept the waste the generator is shipping.

CleanHarbors ENVIRONMENTAL SERVICES®

Land Disposal Restriction Notification Form

Printed Date :Dec 18, 2017

MANIFEST INFORMATION

Generator : Kirtland Air Force Base

Address: 2050 Wyoming Blvd. Se Bldg. 20685,
Environmental Restoratio
Kirtland Afb,NM 87117

EPA ID #: N M 9 5 7 0 0 2 4 4 2 3

Manifest Tracking Info.

010285193FLE

Sales Order No: 1702656397-008

LINE ITEM INFORMATION

Line Item:	Page No:	Profile No:	Treatability Group:	LDR Disposal Category
1.	1	CH1555430	WASTEWATER	2 (This is subject to LDR.)

EPA Waste Code	EPA Waste SubCategory
D018	NONE

LDR Chemical Data

Chemical	Underlying Hazardous Constituents	Constituents of Concern	Contaminants Subject to Treatment
1,2-DIBROMOETHANE	Y	N	Y
ACETONE	Y	N	Y
ACETOPHENONE	Y	N	Y
BENZENE	Y	N	Y
ETHYL BENZENE	Y	N	Y
METHYL ETHYL KETONE	Y	N	Y
METHYL ISOBUTYL KETONE.	Y	N	Y
NAPHTHALENE	Y	N	Y
TOLUENE	Y	N	Y
XYLENES (MIXED ISOMERS)	Y	N	Y

Certification	Applies to Manifest Line Items
Pursuant to 40 CFR 268.7(a), I hereby notify that this shipment contains waste restricted under 40 CFR Part 268.	1.

Waste analysis data, where available, is attached.

Signature : Rebecca Clines

Print Name Rebecca Clines

Title : Physical Scientist

Date : 12/28/17

Please print or type. Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: NM9570024423
2. Page 1 of: 1
3. Emergency Response Phone: 505 385 3679
4. Manifest Tracking Number: 012267057 FLE

5. Generator's Name and Mailing Address
KIRTLAND AIR FORCE BASE
2050 WYOMING BLVD SE BLDG 20685,
KIRTLAND AIR FORCE BASE, NM 87117
Generator's Phone: 505 846-9017 Scott Clark

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: Advanced Chemical Transport Inc /DBA ACTENVIRO
U.S. EPA ID Number: CAR000070540

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
Advanced Chemical Treatment
8133 Edith Blvd NE
Albuquerque, NM 87107
Facility's Phone: 505 349-5220
U.S. EPA ID Number: NMD002208627

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1. NA3082 Hazardous waste, liquid, n.o.s. (Benzene), 9, PGIII	07	DM	2800	P	D018
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
Project Number: 179156 Document #: D214747
1) ERG#171. ACT76908 KIA 7 55 DM

24 HOUR EMERGENCY CONTACT: SCOTT CLARK 505 385 3679

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Whitlock, Dennis E   Signature: [signature]   Month 10 Day 19 Year 18

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Justin Grier   Signature: [signature]   Month 10 Day 19 Year 18
Transporter 2 Printed/Typed Name   Signature   Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator)   U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator)   Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name   Signature   Month Day Year

GENERATOR | INT'L | TRANSPORTER | DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete.
GENERATOR'S INITIAL COPY

ACT environmental services

LAND DISPOSAL RESTRICTION NOTIFICATION FORM FOR WASTES SUBJECT TO THE TREATMENT STANDARDS FOUND IN 40 CFR 268

GENERATOR NAME				MANIFEST NUMBER		
KIRTLAND AIR FORCE BASE				012267057FLE		
1. PROFILE NUMBER	2. WASTE CODE	3. WASTE SUBCATEGORY	4. UNDERLYING HAZARDOUS CONSTITUENTS	5. NWW or WW	6. SPECIAL CONDITIONS	N/A
ACT76908	D018	BENZENE		WW		
			1,2-DIBROMOETHANE-0.432MG/L			
			ACETOPHENONE-8.24 MG/L			
			2-BUTANONE-0.591 MG/L			
			4-METHYL-2-PENTANONE-0.665 MG/L			
			ACETONE-2.81 MG/L			
			ETHYLBENZENE-1.35 MG/L			
			NAPHTHALENE-0.148 MG/L			
			TOLUENE-13.9 MG/L			
			XYLENES-5.48 MG/L			
			BENZENE-9.16 MG/L (OVER TCLP LIMIT)			

SPECIAL CONDITIONS: PLEASE NOTE ANY SPECIAL CONDITIONS THAT MAY APPLY TO EACH WASTE PROFILE NUMBER IN COLUMN 6 OF THIS FORM. IF NONE OF THE SPECIAL CONDITIONS BELOW EXIST AND THE WASTE MUST BE TREATED TO THE APPLICABLE STANDARDS IN 40CFR268.40, CHECK N/A FOR THE APPROPRIATE WASTE PROFILE.

A. Waste Requiring No Further Treatment

B. Lab Pack Waste Qualifying for Alternative Treatment und 40 CFR 268.40

C. Hazardous Waste Debris subject to standard treatment requirements, 40 CFR 268.40

D. Hazardous Waste Debris subject to alternative standards in 40 CFR 268 (list contaminants)

E. Waste Qualifying for Exemption and not subject to Land Disposal Restriction (Explain)

F. Characteristic waste that are subject to the treatment standards in 268.40 (other than those expressed as a required method of treatment) that are reasonably expected to contain underlying hazardous constituents as defined in 268.2(i); are treated on-site to remove hazardous characteristic; and are sent off-site for treatment underlying hazardous constituents (list constituents)

G. Characteristic wastes that contain underlying hazardous constituents as defined 268.2(i) that are treated on-site to remove the hazardous characteristic and the underlying hazardous constituents to levels in 268.48 Universal Treatment Standards.

H. For Chemical Manufacturers, Petroleum Refineries, Coke By-Product Facilities and RCRA TSDF handling wastes subject to 40 CFR 61 subpart FF ONLY. This waste is "Controlled Benzene Waste" which is subject to the notification requirements of 40 CFR subpart FF.

I. Certification for contaminated soil indicating the presence or absence of characteristic and / or listed hazardous wastes.

ORIGINAL SIGNATURE PAGE TO ACCOMPANY MANIFEST

ACT environmental services

J. Certification for contaminated soil treated in accordance with 40 CFR 268.49

Waste analysis is attached where available; otherwise the information contained herein is based upon my thorough knowledge of the waste(s).

I hereby certify that I believe that the information I have submitted is true, accurate and complete.

SIGNATURE	TITLE	DATE
K. Charlton	Physical Scientist	10/19/18

LAND DISPOSAL RESTRICTION NOTIFICATION FORM FOR WASTES SUBJECT TO THE TREATMENT STANDARDS FOUND IN 40 CFR 268

WASTE STREAMS IDENTIFIED BY SPECIAL CONDITION A

I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR part 268 subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA section 3004(d). I believe that the information I have submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

WASTE STREAMS IDENTIFIED BY SPECIAL CONDITION B

I certify under penalty of law that I personally have examined and am familiar with the waste and that lab pack contains only wastes which have not been excluded under appendix iv to 40 CFR 268. I am aware that there are significant penalties for submitting a false certification, including fine and imprisonment.

WASTE STREAMS IDENTIFIED BY SPECIAL CONDITION F

I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 286.40 to remove the hazardous characteristic. This de-characterized waste contains underlying hazardous constituents that require further treatment to meet universal treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

WASTE STREAMS IDENTIFIED BY SPECIAL CONDITION G

I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 286.40 to remove the hazardous characteristic, and that the underlying hazardous constituents, as defined in 268.2 have been treated on site to the 268.48 Universal Treatment Standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

WASTE STREAMS IDENTIFIED BY SPECIAL CONDITION I

I certify under penalty of law that I personally have examined this contaminated soil and it [DOES/DOES NOT] contain listed hazardous waste and [DOES/DOES NOT] exhibit a characteristic of hazardous waste and requires treatment to meet the soil treatment standards as provided by 268.49(c).

WASTE STREAMS IDENTIFIED BY SPECIAL CONDITION J

I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and believe that it has been maintained and operated properly so as to comply with treatment standards specified in 40 CFR 268.49 without impermissible dilution of the prohibited wastes. I am aware there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

ORIGINAL SIGNATURE PAGE TO ACCOMPANY MANIFEST

Please print or type.

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number NM9570024423	2. Page 1 of 1	3. Emergency Response Phone 505 385 3679	4. Manifest Tracking Number 012267216 FLE

GENERATOR

5. Generator's Name and Mailing Address: [illegible] E BASE
2050 WYOMING BLVD SE BLDG 20635,
KIRTLAND AIR FORCE BASE, NM 87117

Generator's Phone: SCOTT CLARK 505-846-9017

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: Advanced Chemical Transport Inc /DBA ACTENVIRO	U.S. EPA ID Number: CAR000070540
7. Transporter 2 Company Name:	U.S. EPA ID Number:
8. Designated Facility Name and Site Address: Advanced Chemical Treatment, 6133 Edith Blvd NE, Albuquerque, NM 87107. Facility's Phone: 505 349-5220	U.S. EPA ID Number: NMD002208627

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. NA3082 Hazardous waste liquid, n.o.s. (Benzene) 9 PGIII		DM		P	D018
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information   Project Number 102135   Document # 1030002
1) ERG#171, ACT76908 KJA

24 HOUR EMERGENCY CONTACT SCOTT CLARK 505 385 3679

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name	Signature	Month	Day	Year
[illegible]	[illegible]			

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit: ______
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

	Signature	Month	Day	Year
Transporter 1 Printed/Typed Name				
Transporter 2 Printed/Typed Name				

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ [...]on

Manifest Reference Number:

3 DM - 1180#

APTIM

18b. Alternate Facility (or Generator)

Facility's Phone:

18c. Signature of Alternate Facility (or Generator) Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name	Signature	Month	Day	Year

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete.

GENERATOR'S INITIAL COPY

ACT environmental services

LAND DISPOSAL RESTRICTION NOTIFICATION FORM FOR WASTES SUBJECT TO THE TREATMENT STANDARDS FOUND IN 40 CFR 268

GENERATOR NAME	MANIFEST NUMBER
KIRTLAND AIR FORCE BASE	012267216FLE

1. PROFILE NUMBER	2. WASTE CODE	3. WASTE SUBCATEGORY	4. UNDERLYING HAZARDOUS CONSTITUENTS	5. NWW or WW	6. SPECIAL CONDITIONS	N/A
ACT76908	D018	BENZENE		WW		
			1,2-DIBROMOETHANE-0.432MG/L			
			ACETOPHENONE-8.24 MG/L			
			2-BUTANONE-0.591 MG/L			
			4-METHYL-2-PENTANONE-0.665 MG/L			
			ACETONE-2.81 MG/L			
			ETHYLBENZENE-1.35 MG/L			
			NAPHTHALENE-0.148 MG/L			
			TOLUENE-13.9 MG/L			
			XYLENES-5.48 MG/L			
			BENZENE-9.16 MG/L (OVER TCLP LIMIT)			

SPECIAL CONDITIONS: PLEASE NOTE ANY SPECIAL CONDITIONS THAT MAY APPLY TO EACH WASTE PROFILE NUMBER IN COLUMN 6 OF THIS FORM. IF NONE OF THE SPECIAL CONDITIONS BELOW EXIST AND THE WASTE MUST BE TREATED TO THE APPLICABLE STANDARDS IN 40CFR268.40, CHECK N/A FOR THE APPROPRIATE WASTE PROFILE.

A. Waste Requiring No Further Treatment

B. Lab Pack Waste Qualifying for Alternative Treatment und 40 CFR 268.40

C. Hazardous Waste Debris subject to standard treatment requirements, 40 CFR 268.40

D. Hazardous Waste Debris subject to alternative standards in 40 CFR 268 (list contaminants)

E. Waste Qualifying for Exemption and not subject to Land Disposal Restriction (Explain)

F. Characteristic waste that are subject to the treatment standards in 268.40 (other than those expressed as a required method of treatment) that are reasonably expected to contain underlying hazardous constituents as defined in 268.2(i); are treated on-site to remove hazardous characteristic; and are sent off-site for treatment underlying hazardous constituents (list constituents)

G. Characteristic wastes that contain underlying hazardous constituents as defined 268.2(i) that are treated on-site to remove the hazardous characteristic and the underlying hazardous constituents to levels in 268.48 Universal Treatment Standards.

H. For Chemical Manufacturers, Petroleum Refineries, Coke By-Product Facilities and RCRA TSDF handling wastes subject to 40 CFR 61 subpart FF ONLY. This waste is "Controlled Benzene Waste" which is subject to the notification requirements of 40 CFR subpart FF.

I. Certification for contaminated soil indicating the presence or absence of characteristic and / or listed hazardous wastes.

ORIGINAL SIGNATURE PAGE TO ACCOMPANY MANIFEST

J. Certification for contaminated soil treated in accordance with 40 CFR 268.49

Waste analysis is attached where available; otherwise the information contained herein is based upon my thorough knowledge of the waste(s).

I hereby certify that I believe that the information I have submitted is true, accurate and complete.

SIGNATURE	TITLE	DATE
[illegible]	Physical Scientist	20191021

LAND DISPOSAL RESTRICTION NOTIFICATION FORM FOR WASTES SUBJECT TO THE TREATMENT STANDARDS FOUND IN 40 CFR 268

WASTE STREAMS IDENTIFIED BY SPECIAL CONDITION A

I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR part 268 subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA section 3004(d). I believe that the information I have submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

WASTE STREAMS IDENTIFIED BY SPECIAL CONDITION B

I certify under penalty of law that I personally have examined and am familiar with the waste and that lab pack contains only wastes which have not been excluded under appendix iv to 40 CFR 268. I am aware that there are significant penalties for submitting a false certification, including fine and imprisonment.

WASTE STREAMS IDENTIFIED BY SPECIAL CONDITION F

I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 286.40 to remove the hazardous characteristic. This de-characterized waste contains underlying hazardous constituents that require further treatment to meet universal treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

WASTE STREAMS IDENTIFIED BY SPECIAL CONDITION G

I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 286.40 to remove the hazardous characteristic, and that the underlying hazardous constituents, as defined in 268.2 have been treated on site to the 268.48 Universal Treatment Standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

WASTE STREAMS IDENTIFIED BY SPECIAL CONDITION I

I certify under penalty of law that I personally have examined this contaminated soil and it [DOES/DOES NOT] contain listed hazardous waste and [DOES/DOES NOT] exhibit a characteristic of hazardous waste and requires treatment to meet the soil treatment standards as provided by 268.49(c).

WASTE STREAMS IDENTIFIED BY SPECIAL CONDITION J

I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and believe that it has been maintained and operated properly so as to comply with treatment standards specified in 40 CFR 268.49 without impermissible dilution of the prohibited wastes. I am aware there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

ORIGINAL SIGNATURE PAGE TO ACCOMPANY MANIFEST

LAND DISPOSAL RESTRICTION NOTIFICATION FORM FOR WASTES SUBJECT TO THE TREATMENT STANDARDS FOUND IN 40 CFR 268

GENERATOR NAME	MANIFEST NUMBER
KIRTLAND AIR FORCE BASE	011074183FLE

Line	TSD Approval	Waste Code(s)	Subcategory	UHC's	NWW or WW	Special Conditions
1	ACT76908	D018	BENZENE		WW	
				1,2-DIBROMOETHANE-0.432MG/L		
				ACETOPHENONE-8.24 MG/L		
				2-BUTANONE-0.591 MG/L		
				4-METHUL-2-PENTANONE-0.665 MG/L		
				ACETONE-2.81 MG/L		
				ETHYLBENZENE-1.35 MG/L		
				NAPHTHALENE-0.148 MG/L		
				TOLUENE-13.9 MG/L		
				XYLENES-5.48 MG/L		
				BENZENE-9.16MG/L(OVER TCLP LIMIT)		

SPECIAL CONDITIONS:

A. Waste Requiring No Further Treatment
B. Lab Pack Waste Qualifying for Alternative Treatment und 40 CFR 268.40
C. Hazardous Waste Debris subject to standard treatment requirements, 40 CFR 268.40
D. Hazardous Waste Debris subject to alternative standards in 40 CFR 268 (list contaminants)
E. Waste Qualifying for Exemption and not subject to Land Disposal Restriction (Explain)
F. Characteristic waste that are subject to the treatment standards in 268.40 (other than those expressed as a required method of treatment) that are reasonably expected to contain underlying hazardous constituents as defined in 268.2(i); are treated on-site to remove hazardous characteristic; and are sent off-site for treatment underlying hazardous constituents (list constituents)
G. Characteristic wastes that contain underlying hazardous constituents as defined 268.2(i) that are treated on-site to remove the hazardous characteristic and the underlying hazardous constituents to levels in 268.48 Universal Treatment Standards.
H. For Chemical Manufacturers, Petroleum Refineries, Coke By-Product Facilities and RCRA TSDF handling wastes subject to 40 CFR 61 subpart FF ONLY. This waste is "Controlled Benzene Waste" which is subject to the notification requirements of 40 CFR subpart FF.
I. Certification for contaminated soil indicating the presence or absence of characteristic and / or listed hazardous wastes.
J. Certification for contaminated soil treated in accordance with 40 CFR 268.49

Waste analysis is attached where available; otherwise the information contained herin is based upon my thorough knowledge of the waste(s).

I hereby certify that I believe that the information I have submitted is true, accurate and complete:

SIGNATURE	TITLE	DATE
[signature]	Physical Scientist	20180409

WASTE STREAMS IDENTIFIED BY SPECIAL CONDITION A
I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR part 268 subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA section 3004(d). I believe that the information I have submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

WASTE STREAMS IDENTIFIED BY SPECIAL CONDITION B
I certify under penalty of law that I personally have examined and am familiar with the waste and that lab pack contains only wastes which have not been excluded under appendix iv to 40 CFR 268. I am aware that there are significant penalties for submitting a false certification, including fine and imprisonment.

WASTE STREAMS IDENTIFIED BY SPECIAL CONDITION F
I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 286.40 to remove the hazardous characteristic. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet universal treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

WASTE STREAMS IDENTIFIED BY SPECIAL CONDITION G
I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 286.40 to remove the hazardous characteristic, and that the underlying hazardous constituents, as defined in 268.2 have been treated on site to the 268.48 Universal Treatment Standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

WASTE STREAMS IDENTIFIED BY SPECIAL CONDITION I
I certify under penalty of law that I personally have examined this contaminated soil and it [DOES/DOES NOT] contain listed hazardous waste and [DOES/DOES NOT] exhibit a characteristic of hazardous waste and requires treatment to meet the soil treatment standards as provided by 268.49(c).

*****ORIGINAL SIGNATURE PAGE TO ACCOMPANY MANIFEST*****

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number NM9570024423	2. Page 1 of 1	3. Emergency Response Phone 505 385 3679	4. Manifest Tracking Number 011074298 FLE

GENERATOR

5. Generator's Name and Mailing Address
KIRTLAND AIR FORCE BASE
2050 WYOMING BLVD SE BLDG 20685,
KIRTLAND AIR FORCE BASE, NM 87117
Generator's Phone: 505-846-9017 Attn: Scott Clark

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: Advanced Chemical Transport Inc /DBA ACTENVIRO — U.S. EPA ID Number: CAR000070540

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address — U.S. EPA ID Number: NMD002208627
Advanced Chemical Treatment
6133 Edith Blvd NE
Albuquerque, NM 87107
Facility's Phone: 505-349-5220

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. NA3082 Hazardous waste liquid n.o.s (Benzene) 9 PGIII	[illegible]	DM	[illegible]	P	D018
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
Project Number 163966 Document # D195806
1) ERGW171 ACT76908 KIA [illegible]

24 HOUR EMERGENCY CONTACT SCOTT CLARK 505 385 3679

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name	Signature	Month	Day	Year
[illegible handwriting]	[signature]	[illegible]	20	18

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name	Signature	Month	Day	Year
[illegible handwriting]	[signature]			

Transporter 2 Printed/Typed Name	Signature	Month	Day	Year

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator)	Month	Day	Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name	Signature	Month	Day	Year

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

GENERATOR'S INITIAL COPY

LAND DISPOSAL RESTRICTION NOTIFICATION FORM FOR WASTES SUBJECT TO THE TREATMENT STANDARDS FOUND IN 40 CFR 268

GENERATOR NAME	MANIFEST NUMBER
Kirtland Air Force Base	011074298FLE

Line	TSD Approval	Waste Code(s)	Subcategory	UHC's	NWW or WW	Special Conditions
1	ACT76908	D018	BENZENE		WW	
				1,2-DIBROMOETHANE-0.432MG/L		
				ACETOPHENONE-8.24 MG/L		
				2-BUTANONE-0.591 MG/L		
				4-METHYL-2-PENTANONE-0.665 MG/L		
				ACETONE-2.81 MG/L		
				ETHYLBENZENE-1.35 MG/L		
				NAPHTHALENE-0.148 MG/L		
				TOLUENE-13.9 MG/L		
				XYLENES-5.48 MG/L		
				BENZENE-9.16MG/L(OVER TCLP LIMIT)		

SPECIAL CONDITIONS:

A. Waste Requiring No Further Treatment
B. Lab Pack Waste Qualifying for Alternative Treatment und 40 CFR 268.40
C. Hazardous Waste Debris subject to standard treatment requirements, 40 CFR 268.40
D. Hazardous Waste Debris subject to alternative standards in 40 CFR 268 (list contaminants)
E. Waste Qualifying for Exemption and not subject to Land Disposal Restriction (Explain)
F. Characteristic waste that are subject to the treatment standards in 268.40 (other than those expressed as a required method of treatment) that are reasonably expected to contain underlying hazardous constituents as defined in 268.2(i); are treated on-site to remove hazardous characteristic; and are sent off-site for treatment underlying hazardous constituents (list constituents)
G. Characteristic wastes that contain underlying hazardous constituents as defined 268.2(i) that are treated on-site to remove the hazardous characteristic and the underlying hazardous constituents to levels in 268.48 Universal Treatment Standards.
H. For Chemical Manufacturers, Petroleum Refineries, Coke By-Product Facilities and RCRA TSDF handling wastes subject to 40 CFR 61 subpart FF ONLY. This waste is "Controlled Benzene Waste" which is subject to the notification requirements of 40 CFR subpart FF.
I. Certification for contaminated soil indicating the presence or absence of characteristic and / or listed hazardous wastes.
J. Certification for contaminated soil treated in accordance with 40 CFR 268.49

Waste analysis is attached where available; otherwise the information contained herin is based upon my thorough knowledge of the waste(s).

I hereby certify that I believe that the information I have submitted is true, accurate and complete:

SIGNATURE	TITLE	DATE
[signature]	Physical Scientist	20180628

WASTE STREAMS IDENTIFIED BY SPECIAL CONDITION A
I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR part 268 subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA section 3004(d). I believe that the information I have submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

WASTE STREAMS IDENTIFIED BY SPECIAL CONDITION B
I certify under penalty of law that I personally have examined and am familiar with the waste and that lab pack contains only wastes which have not been excluded under appendix iv to 40 CFR 268. I am aware that there are significant penalties for submitting a false certification, including fine and imprisonment.

WASTE STREAMS IDENTIFIED BY SPECIAL CONDITION F
I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 286.40 to remove the hazardous characteristic. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet universal treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

WASTE STREAMS IDENTIFIED BY SPECIAL CONDITION G
I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 286.40 to remove the hazardous characteristic, and that the underlying hazardous constituents, as defined in 268.2 have been treated on site to the 268.48 Universal Treatment Standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

WASTE STREAMS IDENTIFIED BY SPECIAL CONDITION I
I certify under penalty of law that I personally have examined this contaminated soil and it [DOES/DOES NOT] contain listed hazardous waste and [DOES/DOES NOT] exhibit a characteristic of hazardous waste and requires treatment to meet the soil treatment standards as provided by 268.49(c).

WASTE STREAMS IDENTIFIED BY SPECIAL CONDITION J

*****ORIGINAL SIGNATURE PAGE TO ACCOMPANY MANIFEST*****

LAND DISPOSAL RESTRICTION NOTIFICATION FORM FOR WASTES SUBJECT TO THE TREATMENT STANDARDS FOUND IN 40 CFR 268

I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and believe that it has been maintained and operated properly so as to comply with treatment standards specified in 40 CFR 268.49 without impermissible dilution of the prohibited wastes. I am aware there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

*****ORIGINAL SIGNATURE PAGE TO ACCOMPANY MANIFEST*****

Please print or type. Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number NM9570024423	2. Page 1 of 1	3. Emergency Response Phone 505 385 3679	4. Manifest Tracking Number 012264062 FLE

GENERATOR

5. Generator's Name and Mailing Address
KIRTLAND AIR FORCE BASE
2050 WYOMING BLVD SE BLDG 20685,
KIRTLAND AIR FORCE BASE, NM 87117

Generator's Phone: 505-846-9017- Scott Clark

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: Advanced Chemical Transport Inc./DBA ACTenviro — U.S. EPA ID Number: CAR000070540

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address
Advanced Chemical Treatment
6133 Edith Blvd NE
Albuquerque, NM 87107

U.S. EPA ID Number: NMD002208627

Facility's Phone: 505-349-5220

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1. NA3082, Hazardous waste, liquid, n.o.s. (Benzene), 9 , PGIII	05	DM	2200	P	D018
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
1) ERG#171: ACT76908 KIA (5) 55DM   Project Number 237784   Document #: D289447

24 HOUR EMERGENCY CONTACT: SCOTT CLARK 505 385 3679

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Melissa Clark — Signature: Melissa Clark — Month Day Year: 03 31 20

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Chris Eddings — Signature — Month Day Year: 3 31 20
Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name — Signature — Month Day Year

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete. **DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM**

LAND DISPOSAL RESTRICTION NOTIFICATION FORM FOR WASTES SUBJECT TO THE TREATMENT STANDARDS FOUND IN 40 CFR 268

GENERATOR NAME	MANIFEST NUMBER
KIRTLAND AIR FORCE BASE	012264062FLE

Line	TSD Approval	Waste Code(s)	Subcategory	UHC's	NWW or WW	Special Conditions
1	ACT76908	D018	BENZENE		WW	
				1,2-DIBROMOETHANE-0.432MG/L		
				ACETOPHENONE-8.24 MG/L		
				2-BUTANONE-0.591 MG/L		
				4-METHYL-2-PENTANONE-0.665 MG/L		
				ACETONE-2.81 MG/L		
				ETHYLBENZENE-1.35 MG/L		
				NAPHTHALENE-0.148 MG/L		
				TOLUENE-13.9 MG/L		
				XYLENES-5.48 MG/L		
				BENZENE-9.16MG/L(OVER TCLP LIMIT)		

SPECIAL CONDITIONS:

A. Waste Requiring No Further Treatment
B. Lab Pack Waste Qualifying for Alternative Treatment und 40 CFR 268.40
C. Hazardous Waste Debris subject to standard treatment requirements, 40 CFR 268.40
D. Hazardous Waste Debris subject to alternative standards in 40 CFR 268 (list contaminants)
E. Waste Qualifying for Exemption and not subject to Land Disposal Restriction (Explain)
F. Characteristic waste that are subject to the treatment standards in 268.40 (other than those expressed as a required method of treatment) that are reasonably expected to contain underlying hazardous constituents as defined in 268.2(i); are treated on-site to remove hazardous characteristic; and are sent off-site for treatment underlying hazardous constituents (list constituents)
G. Characteristic wastes that contain underlying hazardous constituents as defined 268.2(i) that are treated on-site to remove the hazardous characteristic and the underlying hazardous constituents to levels in 268.48 Universal Treatment Standards.
H. For Chemical Manufacturers, Petroleum Refineries, Coke By-Product Facilities and RCRA TSDF handling wastes subject to 40 CFR 61 subpart FF ONLY. This waste is "Controlled Benzene Waste" which is subject to the notification requirements of 40 CFR subpart FF.
I. Certification for contaminated soil indicating the presence or absence of characteristic and / or listed hazardous wastes.
J. Certification for contaminated soil treated in accordance with 40 CFR 268.49

Waste analysis is attached where available; otherwise the information contained herin is based upon my thorough knowledge of the waste(s).

I hereby certify that I believe that the information I have submitted is true, accurate and complete:

SIGNATURE	TITLE	DATE
Melissa Cull	Chief, Environmental Mgt	3/31/20

WASTE STREAMS IDENTIFIED BY SPECIAL CONDITION A
I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR part 268 subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA section 3004(d). I believe that the information I have submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

WASTE STREAMS IDENTIFIED BY SPECIAL CONDITION B
I certify under penalty of law that I personally have examined and am familiar with the waste and that lab pack contains only wastes which have not been excluded under appendix iv to 40 CFR 268. I am aware that there are significant penalties for submitting a false certification, including fine and imprisonment.

WASTE STREAMS IDENTIFIED BY SPECIAL CONDITION F
I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 286.40 to remove the hazardous characteristic. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet universal treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

WASTE STREAMS IDENTIFIED BY SPECIAL CONDITION G
I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 286.40 to remove the hazardous characteristic, and that the underlying hazardous constituents, as defined in 268.2 have been treated on site to the 268.48 Universal Treatment Standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

WASTE STREAMS IDENTIFIED BY SPECIAL CONDITION I
I certify under penalty of law that I personally have examined this contaminated soil and it [DOES/DOES NOT] contain listed hazardous waste and [DOES/DOES NOT] exhibit a characteristic of hazardous waste and requires treatment to meet the soil treatment standards as provided by 268.49(c).

WASTE STREAMS IDENTIFIED BY SPECIAL CONDITION J

ORIGINAL SIGNATURE PAGE TO ACCOMPANY MANIFEST

LAND DISPOSAL RESTRICTION NOTIFICATION FORM FOR WASTES SUBJECT TO THE TREATMENT STANDARDS FOUND IN 40 CFR 268

GENERATOR NAME	MANIFEST NUMBER
KIRTLAND AIR FORCE BASE	012264243FLE

Line	TSD Approval	Waste Code(s)	Subcategory	UHC's	NWW or WW	Special Conditions
1	ACT76908	D018	BENZENE			
					WW	
				1,2-DIBROMOETHANE – 0.432MG/L		
				ACETOPHENONE – 8.24 MG/L		
				2-BUTANONE – 0.591 MG/L		
				4-METHYL-2-PENTANONE – 0.665 MG/L		
				ACETONE – 2.81 MG/L		
				ETHYLBENZENE – 2.04 MG/L		
				NAPHTHALENE – 0.82 MG/L		
				TOLUENE – 19.5 MG/L		
				XYLENES – 6.0 MG/L		
				BENZENE – 9.8 MG/L (OVER TCLP LIMIT)		
				1,1,2-TRICHLOROETHANE – 0.083 MG/L		
				TRICHLOROETHENE – 0.28 MG/L		
				METHYLENE CHLORIDE – 0.49 MG/L		

SPECIAL CONDITIONS:

A. Waste Requiring No Further Treatment
B. Lab Pack Waste Qualifying for Alternative Treatment und 40 CFR 268.40
C. Hazardous Waste Debris subject to standard treatment requirements, 40 CFR 268.40
D. Hazardous Waste Debris subject to alternative standards in 40 CFR 268 (list contaminants)
E. Waste Qualifying for Exemption and not subject to Land Disposal Restriction (Explain)
F. Characteristic waste that are subject to the treatment standards in 268.40 (other than those expressed as a required method of treatment) that are reasonably expected to contain underlying hazardous constituents as defined in 268.2(i); are treated on-site to remove hazardous characteristic; and are sent off-site for treatment underlying hazardous constituents (list constituents)
G. Characteristic wastes that contain underlying hazardous constituents as defined 268.2(i) that are treated on-site to remove the hazardous characteristic and the underlying hazardous constituents to levels in 268.48 Universal Treatment Standards.
H. For Chemical Manufacturers, Petroleum Refineries, Coke By-Product Facilities and RCRA TSDF handling wastes subject to 40 CFR 61 subpart FF ONLY. This waste is "Controlled Benzene Waste" which is subject to the notification requirements of 40 CFR subpart FF.
I. Certification for contaminated soil indicating the presence or absence of characteristic and / or listed hazardous wastes.
J. Certification for contaminated soil treated in accordance with 40 CFR 268.49

Waste analysis is attached where available; otherwise the information contained herin is based upon my thorough knowledge of the waste(s).

I hereby certify that I believe that the information I have submitted is true, accurate and complete:

SIGNATURE	TITLE	DATE
Melissa Clarke	Chief, Environmental Mgt	8/14/2020

WASTE STREAMS IDENTIFIED BY SPECIAL CONDITION A

I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR part 268 subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA section 3004(d). I believe that the information I have submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

WASTE STREAMS IDENTIFIED BY SPECIAL CONDITION B

I certify under penalty of law that I personally have examined and am familiar with the waste and that lab pack contains only wastes which have not been excluded under appendix iv to 40 CFR 268. I am aware that there are significant penalties for submitting a false certification, including fine and imprisonment.

WASTE STREAMS IDENTIFIED BY SPECIAL CONDITION F

I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 286.40 to remove the hazardous characteristic. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet universal treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

WASTE STREAMS IDENTIFIED BY SPECIAL CONDITION G

I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 286.40 to remove the hazardous characteristic, and that the underlying hazardous constituents, as defined in 268.2 have been treated on site to the 268.48 Universal Treatment Standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

*****ORIGINAL SIGNATURE PAGE TO ACCOMPANY MANIFEST*****

Please print or type.

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Manifest Tracking Number
	NM9570024423	1	505 385 3679	012264243 FLE

5. Generator's Name and Mailing Address
KIRTLAND AIR FORCE BASE
2050 WYOMING BLVD SE BLDG 20685,
KIRTLAND AIR FORCE BASE, NM 87117
Generator's Phone: 505-846-9017 Scott Clark

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name
Advanced Chemical Transport Inc./DBA ACTenviro
U.S. EPA ID Number: CAR000070540

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
Advanced Chemical Treatment
6133 Edith Blvd NE
Albuquerque, NM 87107 505-349-5220
Facility's Phone:
U.S. EPA ID Number: NMD002208627

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. NA3082, Hazardous waste, liquid, n.o.s. (Benzene), 9 , PGIII	04	DM	1300	P	D018
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
Project Number 254768 Document #: D306980
1) ERG#171; ACT76908 KIA- 4x55DM
24 HOUR EMERGENCY CONTACT: SCOTT CLARK 505 385 3679

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Melissa Clark
Signature: Melissa Clark
Month Day Year: 08 14 20

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Date leaving U.S.:
Transporter signature (for exports only):

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: FORREST BOUCHER
Signature: Forrest T. Boucher
Month Day Year: 08 14 20
Transporter 2 Printed/Typed Name
Signature
Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name
Signature
Month Day Year

GENERATOR / INT'L / TRANSPORTER / DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete.

DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM

LABELMASTER (800) 621-5808 www.labelmaster.com

Please print or type.

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number: NM9570024423
2. Page 1 of: 1
3. Emergency Response Phone: 505 385 3679
4. Manifest Tracking Number: 014691030 FLE

5. Generator's Name and Mailing Address
KIRTLAND AIR FORCE BASE
2050 WYOMING BLVD SE BLDG 20685,
KIRTLAND AIR FORCE BASE, NM 87117
Generator's Phone: 505-846-9017 Scott Clark

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name
Advanced Chemical Transport Inc./DBA ACTenviro
U.S. EPA ID Number: CAR000070540

7. Transporter 2 Company Name
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
Advanced Chemical Treatment
6133 Edith Blvd NE
Albuquerque, NM 87107 505-349-5220
Facility's Phone:
U.S. EPA ID Number: NMD002208627

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
X	1. UN1993, Waste Flammable liquids, n.o.s., 3, PGII (Toluene, Benzene)	02	DM	450	P	D001 D018
	2.					
	3.					
	4.					

14. Special Handling Instructions and Additional Information
Project Number 262064 Document #: D316242
1) ERG#128; ACT121443 KIA- (2) 55 DM
24 HOUR EMERGENCY CONTACT: SCOTT CLARK 505 385 3679

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Melissa Clark
Signature: Melissa Clark
Month 9 Day 29 Year 20

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Martin Aranda
Signature:
Month 09 Day 29 Year 20

Transporter 2 Printed/Typed Name
Signature:
Month Day Year

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator)
Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name
Signature
Month Day Year

GENERATOR | INT'L | TRANSPORTER | DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete.

DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM

LAND DISPOSAL RESTRICTION NOTIFICATION FORM FOR WASTES SUBJECT TO THE TREATMENT STANDARDS FOUND IN 40 CFR 268

GENERATOR NAME				MANIFEST NUMBER		
KIRTLAND AIR FORCE BASE				014691030FLE		
1. PROFILE NUMBER	2. WASTE CODE	3. WASTE SUBCATEGORY	4. UNDERLYING HAZARDOUS CONSTITUENTS	5. NWW or WW	6. SPECIAL CONDITIONS	N/A
ACT121443	D018	BENZENE		NWW		X
	D001	IGNITABILITY				
			BENZENE – 750 mg/kg			
			ETHYLBENZENE – 5,400 mg/kg			
			TOLUENE – 11,000 mg/kg			
			NAPHTHALENE – 770 mg/kg			
			XYLENES – 20,000 mg/kg			

SPECIAL CONDITIONS: PLEASE NOTE ANY SPECIAL CONDITIONS THAT MAY APPLY TO EACH WASTE PROFILE NUMBER IN COLUMN 6 OF THIS FORM. IF NONE OF THE SPECIAL CONDITIONS BELOW EXIST AND THE WASTE MUST BE TREATED TO THE APPLICABLE STANDARDS IN 40CFR268.40, CHECK N/A FOR THE APPROPRIATE WASTE PROFILE.

A. Waste Requiring No Further Treatment

B. Lab Pack Waste Qualifying for Alternative Treatment und 40 CFR 268.40

C. Hazardous Waste Debris subject to standard treatment requirements, 40 CFR 268.40

D. Hazardous Waste Debris subject to alternative standards in 40 CFR 268 (list contaminants)

E. Waste Qualifying for Exemption and not subject to Land Disposal Restriction (Explain)

F. Characteristic waste that are subject to the treatment standards in 268.40 (other than those expressed as a required method of treatment) that are reasonably expected to contain underlying hazardous constituents as defined in 268.2(i); are treated on-site to remove hazardous characteristic; and are sent off-site for treatment underlying hazardous constituents (list constituents)

G. Characteristic wastes that contain underlying hazardous constituents as defined 268.2(i) that are treated on-site to remove the hazardous characteristic and the underlying hazardous constituents to levels in 268.48 Universal Treatment Standards.

ORIGINAL SIGNATURE PAGE TO ACCOMPANY MANIFEST

H. For Chemical Manufacturers, Petroleum Refineries, Coke By-Product Facilities and RCRA TSDF handling wastes subject to 40 CFR 61 subpart FF ONLY. This waste is "Controlled Benzene Waste" which is subject to the notification requirements of 40 CFR subpart FF.

I. Certification for contaminated soil indicating the presence or absence of characteristic and / or listed hazardous wastes.

J. Certification for contaminated soil treated in accordance with 40 CFR 268.49

Waste analysis is attached where available; otherwise the information contained herein is based upon my thorough knowledge of the waste(s).

I hereby certify that I believe that the information I have submitted is true, accurate and complete.

SIGNATURE	TITLE	DATE
Melissa Clark	Chief, Environmental Management	9/29/20

LAND DISPOSAL RESTRICTION NOTIFICATION FORM FOR WASTES SUBJECT TO THE TREATMENT STANDARDS FOUND IN 40 CFR 268

WASTE STREAMS IDENTIFIED BY SPECIAL CONDITION A

I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR part 268 subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA section 3004(d). I believe that the information I have submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

WASTE STREAMS IDENTIFIED BY SPECIAL CONDITION B

I certify under penalty of law that I personally have examined and am familiar with the waste and that lab pack contains only wastes which have not been excluded under appendix iv to 40 CFR 268. I am aware that there are significant penalties for submitting a false certification, including fine and imprisonment.

WASTE STREAMS IDENTIFIED BY SPECIAL CONDITION F

I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 286.40 to remove the hazardous characteristic. This de-characterized waste contains underlying hazardous constituents that require further treatment to meet universal treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

WASTE STREAMS IDENTIFIED BY SPECIAL CONDITION G

I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 286.40 to remove the hazardous characteristic, and that the underlying hazardous constituents, as defined in 268.2 have been treated on site to the 268.48 Universal Treatment Standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

WASTE STREAMS IDENTIFIED BY SPECIAL CONDITION I

I certify under penalty of law that I personally have examined this contaminated soil and it [DOES/DOES NOT] contain listed hazardous waste and [DOES/DOES NOT] exhibit a characteristic of hazardous waste and requires treatment to meet the soil treatment standards as provided by 268.49(c).

ORIGINAL SIGNATURE PAGE TO ACCOMPANY MANIFEST

Address: KIRTLAND AIR FORCE BASE

Please print or type.

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

GENERATOR

1. Generator ID Number: NM9570024423
2. Page 1 of: 1
3. Emergency Response Phone: 505 385 3679
4. Manifest Tracking Number: 015484368 FLE

5. Generator's Name and Mailing Address:
KIRTLAND AIR FORCE BASE
2050 WYOMING BLVD SE BLDG 20685,
KIRTLAND AIR FORCE BASE, NM 87117

Generator's Site Address (if different than mailing address):

Generator's Phone: 505-846-9017 SCOTT CLARK

6. Transporter 1 Company Name: Advanced Chemical Transport Inc./DBA ACTenviro — U.S. EPA ID Number: CAR000070540

7. Transporter 2 Company Name: — U.S. EPA ID Number:

8. Designated Facility Name and Site Address:
Advanced Chemical Treatment
6133 Edith Blvd NE
Albuquerque, NM 87107

U.S. EPA ID Number: NMD002208627

Facility's Phone: 505-349-5220

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
X	1. NA3082, Hazardous waste, liquid, n.o.s. (Benzene), 9 , PGIII	2	DM	600	P	D018		
X	2. UN1993, Waste Flammable liquids, n.o.s. (Toluene, Benzene), 3 , PGII	1	DF	15	P	D001	D018	
	3.							
	4.							

14. Special Handling Instructions and Additional Information
1) ERG#171; ACT76908 KIA-2-55 DM Project Number 271306 Document #: D328143
2) ERG#128; ACT128687 KIA-1-5 DF
24 HOUR EMERGENCY CONTACT: SCOTT CLARK 505 385 3679

15. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: Melissa Clark — Signature: Melissa Clark — Month 12 Day 16 Year 20

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Louis Gurule — Signature: Louis Gurule — Month 12 Day 16 Year 20
Transporter 2 Printed/Typed Name: — Signature: — Month Day Year

DESIGNATED FACILITY

18. Discrepancy
18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:
18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1. 2. 3. 4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name — Signature — Month Day Year

EPA Form 8700-22 (Rev. 12-17) Previous editions are obsolete.

DESIGNATED FACILITY TO EPA's e-MANIFEST SYSTEM

LAND DISPOSAL RESTRICTION NOTIFICATION FORM FOR WASTES SUBJECT TO THE TREATMENT STANDARDS FOUND IN 40 CFR 268

GENERATOR NAME	MANIFEST NUMBER
KIRTLAND AIR FORCE BASE	015484368FLE

Line	TSD Approval	Waste Code(s)	Subcategory	UHC's	NWW or WW	Special Conditions
1	ACT76908	D018			WW	
				1,2-DIBROMOETHANE – 0.432MG/L		
				ACETOPHENONE – 8.24 MG/L		
				2-BUTANONE – 0.591 MG/L		
				4-METHYL-2-PENTANONE – 0.665 MG/L		
				ACETONE – 2.81 MG/L		
				ETHYLBENZENE – 2.04 MG/L		
				NAPHTHALENE – 0.82 MG/L		
				TOLUENE – 19.5 MG/L		
				XYLENES – 6.0 MG/L		
				BENZENE – 9.8MG/L (OVER TCLP LIMIT)		
				1,1,2-TRICHLOROETHANE – 0.083 MG/L		
				TRICHLOROETHENE – 0.28 MG/L		
				METHYLENE CHLORIDE – 0.49 MG/L		
2	ACT128687	D001	HIGH TOCs			
		D018				
				BENZENE – 750 MG/KG		
				ETHYLBENZENE – 5400 MG/KG		
				TOLUENE – 11000 MG/KG		
				XYLENES – 20000 MG/KG		

SPECIAL CONDITIONS:

A. Waste Requiring No Further Treatment
B. Lab Pack Waste Qualifying for Alternative Treatment und 40 CFR 268.40
C. Hazardous Waste Debris subject to standard treatment requirements, 40 CFR 268.40
D. Hazardous Waste Debris subject to alternative standards in 40 CFR 268 (list contaminants)
E. Waste Qualifying for Exemption and not subject to Land Disposal Restriction (Explain)
F. Characteristic waste that are subject to the treatment standards in 268.40 (other than those expressed as a required method of treatment) that are reasonably expected to contain underlying hazardous constituents as defined in 268.2(i); are treated on-site to remove hazardous characteristic; and are sent off-site for treatment underlying hazardous constituents (list constituents)
G. Characteristic wastes that contain underlying hazardous constituents as defined 268.2(i) that are treated on-site to remove the hazardous characteristic and the underlying hazardous constituents to levels in 268.48 Universal Treatment Standards.
H. For Chemical Manufacturers, Petroleum Refineries, Coke By-Product Facilities and RCRA TSDF handling wastes subject to 40 CFR 61 subpart FF ONLY. This waste is "Controlled Benzene Waste" which is subject to the notification requirements of 40 CFR subpart FF.
I. Certification for contaminated soil indicating the presence or absence of characteristic and / or listed hazardous wastes.
J. Certification for contaminated soil treated in accordance with 40 CFR 268.49

Waste analysis is attached where available; otherwise the information contained herin is based upon my thorough knowledge of the waste(s).

I hereby certify that I believe that the information I have submitted is true, accurate and complete:

SIGNATURE	TITLE	DATE
Melissa Clark	Chief, Environmental Mgt	12/16/20

WASTE STREAMS IDENTIFIED BY SPECIAL CONDITION A

I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR part 268 subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA section 3004(d). I believe that the information I have submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

ORIGINAL SIGNATURE PAGE TO ACCOMPANY MANIFEST

ACT environmental services
6133 Edith Blvd. NE
Albuquerque, NM 87107
Phone: (505) 349-5220
Fax: (505) 344-7986

GENERATOR WASTE PROFILE SHEET

A. GENERATOR INFORMATION

Profile Number: ACT76908
Generator US EPA ID: NM9570024423
Phone: 505 853 3484
Fax:
Email:

Generator Name: KIRTLAND AIR FORCE BASE
Mailing Address: 2050 WYOMING BLVD SE BLDG 20685, ENVIRONMENTAL RESTORATION
KIRTLAND AIR FORCE BASE, NM 87117
Site Pick-up Address: 5202 RANDOLPH AVE SE
ALBUQUERQUE , NM 87117
Technical Contact: HOLLY O'GRADY Title: MAIN CONTACT
Name of Waste WELL WATER CONTAMINATED WITH BENZENE
Process Generating HAZARDOUS WELL WATER FROM KAFB BFF

NAICS CODE: 928110 **Form Code:** W101 **Source Code:** G39

B. PHYSICAL CHARACTERISTICS OF WASTE AT 25C OF 77F

Physical State: LIQUID **Color:** CLEAR **Clarity:** CLEAR **Phase Separation Number of Layers:** SINGLE **Odor:** NONE

PH: 6 - 8 **Specific Gravity:** 1 - 1 SP.GR. **Flash Point (F):** > 200 F **BTU Value:** BTU/LB NA

C. Chemical Composition / UHC's Range

BASED UPON: ANALYTICAL(INCLUDED) [X] **GENERATOR KNOWLEDGE** [ ]

1,2-dibromoethane (EDB)	0	-	.432	MG/L
2-butanone (MEK) [HZ]	0	-	.591	MG/L
4-methyl-2-pentanone	0	-	.665	MG/L
Acetone	0	-	2.81	MG/L
Acetophenone	0	-	8.24	MG/L
Benzene	0	-	9.16	MG/L
Ethylbenzene	0	-	1.35	MG/L
Naphthalene	0	-	.148	MG/L
Toluene	0	-	13.9	MG/L
Total Xylenes	0	-	5.48	MG/L
Water	99	-	100	%

D. METALS

Total (PPM) EP Toxicity (mg/l)

Arsenic:
Barium:
Cadmium:
Chromium:
Lead:
Mercury:
Chromium, Hexavalent
Selenium:
Silver:
Copper:
Nickel:
Zinc:
Thallium:

E. OTHER COMPONENTS

OXIDIZER:		REACTIVE SULFIDES PPM	N
EXPLOSIVE:	N	REACTIVE CYANIDES PPM	N
SHOCK SENSITIVE:	N	WATER/AIR REACTIVE	N
TIRES:	N	THERMALLY UNSTABLE	N
PYROPHORIC:	N	TSCA REG PCB WASTE:	N
RADIOACTIVE:	N	COMPRESSED GASSES:	N
EXEMPT RAD:	N	CERCLA/SUPERFUND:	N
ETHIOLOGICAL:	N	PESTICIDE MANUFACTURING WASTE:	N

HALOGENATED ORGANIC COMPOUNDS PER 40 CFR 268, APPENDIX III
DEBRIS N <500 PPM VOC as generated YES

Subject to NESHAP Regulations
US EPA Hazardous Waste Y

US EPA Hazardous Waste Codes: ; D018

F. Shipping Information:

DOT Hazardous Material YES Exempted NO

Proper Shipping Name: NA3082, Hazardous waste, liquid, n.o.s. (Benzene), 9 , PGIII

Hazard Class: 9
ID #: NA3082
PG: III

Anticipated Volume (Units): 12 DM

Per: QUARTER

G. Special Handling Instructions:

all VOC and SemiVOC listed no analytical on file ESTCP 10-17-17

H. GENERATOR'S CERTIFICATION:

I hereby certify that all information in this and all the attached documents is complete and accurate, and that all known or suspected hazards have been disclosed. I further certify that any samples submitted with this profile are representative of the waste to be shipped and are taken in accordance with SW 846 or other approved procedures. I agree to notify Advanced Chemical Treatment in writing when the process generating this waste stream changes or when I have reason to believe the data contained herein is not complete and accurate.

Signature [signature] Title Restoration Program Mgr Date 2-28-18

Print Name: Scott Clark

6133 Edith Blvd. NE
Albuquerque, NM 87107
Phone: (505) 349-5220
Fax: (505) 344-7986

GENERATOR WASTE PROFILE SHEET

A. GENERATOR INFORMATION

Profile Number: ACT94913
Generator US EPA ID: NM9570024423
Phone: 505 846 9017
Fax:
Email:

Generator Name: KIRTLAND AIR FORCE BASE
Mailing Address: 2050 WYOMING BLVD SE BLDG 20685, ENVIRONMENTAL RESTORATION
KIRTLAND AIR FORCE BASE, NM 87117
Site Pick-up Address: 2050 WYOMING BLVD SE
KIRTLAND AIR FORCE BASE , NM 87117
Technical Contact: SCOTT CLARK Title: MAIN CONTACT
Name of Waste WATER GENERATED FROM MONITOR WELLS AT KAFB
Process Generating GROUND WATER MONITORING

NAICS CODE: 928110 **Form Code:**W219 **Source Code:** G49

B. PHYSICAL CHARACTERISTICS OF WASTE AT 25C OF 77F

Physical State: LIQUID **Color:** CLEAR **Clarity:** CLEAR **Phase Separation Number of Layers:** 1 **Odor:** NA

PH: 5 - 9 PH **Specific Gravity:** = 1 SP.GR. **Flash Point (F):** > 200 F **BTU Value:** BTU/LB NA

C. Chemical Composition / UHC's Range

BASED UPON: ANALYTICAL(INCLUDED) X **GENERATOR KNOWLEDGE** ☐

1,2-DICHLOROETHANE	0	-	.0005	MG/L
ACETONE	0	-	.371	MG/L
ACETOPHENONE	0	-	1.82	MG/L
BENZENE	0	-	.221	MG/L
BIS(2-ETHYLHEXYL)PHTHALATE	0	-	.159	MG/L
DIETHYL PHTHALATE	0	-	.00206	MG/L
ETHYLBENZENE	0	-	.185	MG/L
LEAD	0	-	.356	MG/L
TOLUENE	0	-	1.39	MG/L
WATER	100	-	100	%
XYLENES	0	-	.431	

D. METALS

Total (PPM) EP Toxicity (mg/l)

Arsenic:
Barium:
Cadmium:
Chromium:
Lead:
Mercury:
Chromium, Hexavalent
Selenium:

Silver:
Copper:
Nickel:
Zinc:
Thallium:

E. OTHER COMPONENTS

OXIDIZER:		REACTIVE SULFIDES PPM	N
EXPLOSIVE:	N	REACTIVE CYANIDES PPM	N
SHOCK SENSITIVE:	N	WATER/AIR REACTIVE	N
TIRES:	N	THERMALLY UNSTABLE	N
PYROPHORIC:	N	TSCA REG PCB WASTE:	N
RADIOACTIVE:	N	COMPRESSED GASSES:	N
EXEMPT RAD:	N	CERCLA/SUPERFUND:	N
ETHIOLOGICAL:	N	PESTICIDE MANUFACTURING WASTE:	N

HALOGENATED ORGANIC COMPOUNDS PER 40 CFR 268, APPENDIX III
DEBRIS N <500 PPM VOC as generated YES

Subject to NESHAP Regulations
US EPA Hazardous Waste

US EPA Hazardous Waste Codes: ;

F. Shipping Information:

DOT Hazardous Material NO Exempted YES

Proper Shipping Name: Non-RCRA/Non-DOT Regulated Material Liquid (WATER)

Hazard Class:
ID #:
PG:

Anticipated Volume (Units): 1 DM

Per: YEAR

G. Special Handling Instructions:

ANALYTICAL TABLE SENT FOR WASTE IDENIFICATION

H. GENERATOR'S CERTIFICATION:

I hereby certify that all information in this and all the attached documents is complete and accurate, and that all known or suspected hazards have been disclosed. I further certify that any samples submitted with this profile are representative of the waste to be shipped and are taken in accordance with SW 846 or other approved procedures. I agree to notify Advanced Chemical Treatment in writing when the process generating this waste stream changes or when I have reason to believe the data contained herein is not complete and accurate.

*Signature*____________ *Title* Restoration Program Manager *Date* 3-7-2019

Print Name: Scott Clark

WASTE MATERIAL PROFILE SHEET

Clean Harbors Profile No. CH1555430

A. GENERAL INFORMATION

GENERATOR EPA ID #/REGISTRATION # **NM9570024423**
GENERATOR NAME: **Kirtland Air Force Base**
GENERATOR CODE (Assigned by Clean Harbors) **KI20261**
CITY **Kirtland Air Force Base** STATE/PROVINCE **NM** ZIP/POSTAL CODE **87117**
ADDRESS **2050 Wyoming Blvd. Se Bldg. 20685, Environmenta**
PHONE: **(505) 846-9017**
CUSTOMER CODE (Assigned by Clean Harbors) **CB11290**
CUSTOMER NAME: **CB&I Federal Services**
ADDRESS **2440 Louisiana Blvd NE Suite 300**
CITY **Albuquerque** STATE/PROVINCE **NM** ZIP/POSTAL CODE **87110**

B. WASTE DESCRIPTION

WASTE DESCRIPTION: **Hazardous Groundwater Combined (BULK)**
PROCESS GENERATING WASTE: **Purge Water from Sampling Activities**
IS THIS WASTE CONTAINED IN SMALL PACKAGING CONTAINED WITHIN A LARGER SHIPPING CONTAINER ? **No**

C. PHYSICAL PROPERTIES (at 25C or 77F)

PHYSICAL STATE
- SOLID WITHOUT FREE LIQUID
- POWDER
- MONOLITHIC SOLID
- ✔ LIQUID WITH NO SOLIDS
- LIQUID/SOLID MIXTURE
- % FREE LIQUID
- % SETTLED SOLID
- % TOTAL SUSPENDED SOLID
- SLUDGE
- GAS/AEROSOL

NUMBER OF PHASES/LAYERS
✔ 1   2   3

% BY VOLUME (Approx.)
TOP **0.00**
MIDDLE **0.00**
BOTTOM **0.00**

VISCOSITY (If liquid present)
- ✔ 1 - 100 (e.g. Water)
- 101 - 500 (e.g. Motor Oil)
- 501 - 10,000 (e.g. Molasses)
- > 10,000

COLOR
varies

ODOR
- ✔ NONE
- MILD
- STRONG

Describe:

BOILING POINT °F (°C)
- <= 95 (<=35)
- 95 - 100 (35-38)
- 101 - 129 (38-54)
- ✔ >= 130 (>54)

MELTING POINT °F (°C)
- < 140 (<60)
- 140-200 (60-93)
- > 200 (>93)

TOTAL ORGANIC CARBON
- ✔ <= 1%
- 1-9%
- >= 10%

FLASH POINT °F (°C)
- < 73 (<23)
- 73 - 100 (23-38)
- 101 -140 (38-60)
- 141 -200 (60-93)
- ✔ > 200 (>93)

pH
- <= 2
- 2.1 - 6.9
- ✔ 7 (Neutral)
- 7.1 - 12.4
- >= 12.5

SPECIFIC GRAVITY
- < 0.8 (e.g. Gasoline)
- 0.8-1.0 (e.g. Ethanol)
- ✔ 1.0 (e.g. Water)
- 1.0-1.2 (e.g. Antifreeze)
- > 1.2 (e.g. Methylene Chloride)

ASH
- ✔ < 0.1
- 0.1 - 1.0
- 1.1 - 5.0
- 5.1 - 20.0
- > 20
- Unknown

BTU/LB (MJ/kg)
- < 2,000 (<4.6)
- ✔ 2,000-5,000 (4.6-11.6)
- 5,000-10,000 (11.6-23.2)
- > 10,000 (>23.2)

Actual:

D. COMPOSITION

(List the complete composition of the waste, include any inert components and/or debris. Ranges for individual components are acceptable. If a trade name is used, please supply an MSDS. Please do not use abbreviations.)

CHEMICAL	MIN	--	MAX	UOM
1,2-DIBROMOETHANE	0.4320000	--	0.4320000	PPM
2-BUTANONE	0.5910000	--	0.5910000	PPM
4-METHYL-2-PENTANONE	0.6650000	--	0.6650000	PPM
ACETONE	2.8100000	--	2.8100000	PPM
ACETOPHENONE	8.2400000	--	8.2400000	PPM
BENZENE	9.1600000	--	9.1600000	PPM
ETHYLBENZENE	1.3500000	--	1.3500000	PPM
NAPHTHALENE	0.1480000	--	0.1480000	PPM
TOLUENE	13.9000000	--	13.9000000	PPM
WATER	99.0000000	--	100.0000000	%

DOES THIS WASTE CONTAIN ANY HEAVY GAUGE METAL DEBRIS OR OTHER LARGE OBJECTS (EX., METAL PLATE OR PIPING >1/4" THICK OR >12" LONG, METAL REINFORCED HOSE >12" LONG, METAL WIRE >12" LONG, METAL VALVES, PIPE FITTINGS, CONCRETE REINFORCING BAR OR PIECES OF CONCRETE >3")?	YES	NO
If yes, describe, including dimensions:		
DOES THIS WASTE CONTAIN ANY METALS IN POWDERED OR OTHER FINELY DIVIDED FORM?	YES	✔ NO
DOES THIS WASTE CONTAIN OR HAS IT CONTACTED ANY OF THE FOLLOWING; ANIMAL WASTES, HUMAN BLOOD, BLOOD PRODUCTS, BODY FLUIDS, MICROBIOLOGICAL WASTE, PATHOLOGICAL WASTE, HUMAN OR ANIMAL DERIVED SERUMS OR PROTEINS OR ANY OTHER POTENTIALLY INFECTIOUS MATERIAL?	YES	✔ NO
I acknowledge that this waste material is neither infectious nor does it contain any organism known to be a threat to human health. This certification is based on my knowledge of the material. Select the answer below that applies:		
The waste was never exposed to potentially infectious material.	YES	NO
Chemical disinfection or some other form of sterilization has been applied to the waste.	YES	NO
I ACKNOWLEDGE THAT THIS PROFILE MEETS THE CLEAN HARBORS BATTERY PACKAGING REQUIREMENTS.	YES	NO
I ACKNOWLEDGE THAT MY FRIABLE ASBESTOS WASTE IS DOUBLE BAGGED AND WETTED.	YES	NO

SPECIFY THE SOURCE CODE ASSOCIATED WITH THE WASTE. **G23**   SPECIFY THE FORM CODE ASSOCIATED WITH THE WASTE. **W219**

J5-3

E. CONSTITUENTS

Are these values based on testing or knowledge? Knowledge ✔ Testing

If constituent concentrations are based on analytical testing, analysis must be provided. Please attach document(s) using the link on the Submit tab.

Please indicate which constituents below apply. Concentrations must be entered when applicable to assist in accurate review and expedited approval of your waste profile. Please note that the total regulated metals and other constituents sections require answers.

RCRA	REGULATED METALS	REGULATORY LEVEL (mg/l)	TCLP mg/l	TOTAL	UOM	NOT APPLICABLE
D004	ARSENIC	5.0				✔
D005	BARIUM	100.0				✔
D006	CADMIUM	1.0				✔
D007	CHROMIUM	5.0				✔
D008	LEAD	5.0				✔
D009	MERCURY	0.2				✔
D010	SELENIUM	1.0				✔
D011	SILVER	5.0				✔
	VOLATILE COMPOUNDS					
D018	BENZENE	0.5	*9.1600*			
D019	CARBON TETRACHLORIDE	0.5				
D021	CHLOROBENZENE	100.0				
D022	CHLOROFORM	6.0				
D028	1,2-DICHLOROETHANE	0.5				
D029	1,1-DICHLOROETHYLENE	0.7				
D035	METHYL ETHYL KETONE	200.0				
D039	TETRACHLOROETHYLENE	0.7				
D040	TRICHLOROETHYLENE	0.5				
D043	VINYL CHLORIDE	0.2				
	SEMI-VOLATILE COMPOUNDS					
D023	o-CRESOL	200.0				
D024	m-CRESOL	200.0				
D025	p-CRESOL	200.0				
D026	CRESOL (TOTAL)	200.0				
D027	1,4-DICHLOROBENZENE	7.5				
D030	2,4-DINITROTOLUENE	0.13				
D032	HEXACHLOROBENZENE	0.13				
D033	HEXACHLOROBUTADIENE	0.5				
D034	HEXACHLOROETHANE	3.0				
D036	NITROBENZENE	2.0				
D037	PENTACHLOROPHENOL	100.0				
D038	PYRIDINE	5.0				
D041	2,4,5-TRICHLOROPHENOL	400.0				
D042	2,4,6-TRICHLOROPHENOL	2.0				
	PESTICIDES AND HERBICIDES					
D012	ENDRIN	0.02				
D013	LINDANE	0.4				
D014	METHOXYCHLOR	10.0				
D015	TOXAPHENE	0.5				
D016	2,4-D	10.0				
D017	2,4,5-TP (SILVEX)	1.0				
D020	CHLORDANE	0.03				
D031	HEPTACHLOR (AND ITS EPOXIDE)	0.008				

OTHER CONSTITUENTS	MAX	UOM	NOT APPLICABLE
BROMINE			✔
CHLORINE			✔
FLUORINE			✔
IODINE			✔
SULFUR			✔
POTASSIUM			✔
SODIUM			✔
AMMONIA			✔
CYANIDE AMENABLE			✔
CYANIDE REACTIVE			✔
CYANIDE TOTAL			✔
SULFIDE REACTIVE			✔

HOCs

✔ NONE

< 1000 PPM

>= 1000 PPM

PCBs

✔ NONE

< 50 PPM

>=50 PPM

IF PCBS ARE PRESENT, IS THE WASTE REGULATED BY TSCA 40 CFR 761?

YES ✔ NO

ADDITIONAL HAZARDS

DOES THIS WASTE HAVE ANY UNDISCLOSED HAZARDS OR PRIOR INCIDENTS ASSOCIATED WITH IT, WHICH COULD AFFECT THE WAY IT SHOULD BE HANDLED?

YES ✔ NO (If yes, explain)

CHOOSE ALL THAT APPLY

DEA REGULATED SUBSTANCES	EXPLOSIVE	FUMING	✔ OSHA REGULATED CARCINOGENS
POLYMERIZABLE	RADIOACTIVE	REACTIVE MATERIAL	NONE OF THE ABOVE

J5-4

F. REGULATORY STATUS

✔ YES NO USEPA HAZARDOUS WASTE?

D018

YES ✔ NO DO ANY STATE WASTE CODES APPLY?

Texas Waste Code

YES ✔ NO DO ANY CANADIAN PROVINCIAL WASTE CODES APPLY?

✔ YES NO IS THIS WASTE PROHIBITED FROM LAND DISPOSAL WITHOUT FURTHER TREATMENT PER 40 CFR PART 268?

LDR CATEGORY: *This is subject to LDR.*
VARIANCE INFO:

YES ✔ NO IS THIS A UNIVERSAL WASTE?

YES NO IS THE GENERATOR OF THE WASTE CLASSIFIED AS VERY SMALL QUANTITY GENERATOR (VSQG) OR A STATE EQUIVALENT DESIGNATION?

YES NO IS THIS MATERIAL GOING TO BE MANAGED AS A RCRA EXEMPT COMMERCIAL PRODUCT, WHICH IS FUEL (40 CFR 261.2 (C)(2)(II))?

YES ✔ NO DOES TREATMENT OF THIS WASTE GENERATE A F006 OR F019 SLUDGE?

YES NO IS THIS WASTE STREAM SUBJECT TO THE INORGANIC METAL BEARING WASTE PROHIBITION FOUND AT 40 CFR 268.3(C)?

YES ✔ NO DOES THIS WASTE CONTAIN VOC'S IN CONCENTRATIONS >=500 PPM?

YES NO DOES THE WASTE CONTAIN GREATER THAN 20% OF ORGANIC CONSTITUENTS WITH A VAPOR PRESSURE >= .3KPA (.044 PSIA)?

YES ✔ NO DOES THIS WASTE CONTAIN AN ORGANIC CONSTITUENT WHICH IN ITS PURE FORM HAS A VAPOR PRESSURE > 77 KPA (11.2 PSIA)?

YES ✔ NO IS THIS CERCLA REGULATED (SUPERFUND) WASTE ?

YES ✔ NO IS THE WASTE SUBJECT TO ONE OF THE FOLLOWING NESHAP RULES?

Hazardous Organic NESHAP (HON) rule (subpart G) Pharmaceuticals production (subpart GGG)

✔ YES NO IF THIS IS A US EPA HAZARDOUS WASTE, DOES THIS WASTE STREAM CONTAIN BENZENE?

YES ✔ NO Does the waste stream come from a facility with one of the SIC codes listed under benzene NESHAP or is this waste regulated under the benzene NESHAP rules because the original source of the waste is from a chemical manufacturing, coke by-product recovery, or petroleum refinery process?

YES NO Is the generating source of this waste stream a facility with Total Annual Benzene (TAB) >10 Mg/year?

What is the TAB quantity for your facility? Megagram/year (1 Mg = 2,200 lbs)

The basis for this determination is: Knowledge of the Waste Or Test Data Knowledge Testing

Describe the knowledge :

G. DOT/TDG INFORMATION

DOT/TDG PROPER SHIPPING NAME:

NA3082, HAZARDOUS WASTE, LIQUID, N.O.S., (BENZENE), 9, PG III

H. TRANSPORTATION REQUIREMENTS

ESTIMATED SHIPMENT FREQUENCY ONE TIME WEEKLY MONTHLY QUARTERLY YEARLY ✔ OTHER ***As needed:***

CONTAINERIZED

0-0 CONTAINERS/SHIPMENT

STORAGE CAPACITY:
CONTAINER TYPE:

PORTABLE TOTE TANK BOX|CARTON|CASE

CUBIC YARD BOX DRUM

OTHER:

DRUM SIZE:

✔ **BULK LIQUID**

GALLONS/SHIPMENT: ***1500.00 Min -3500.00 Max*** GAL.

BULK SOLID

SHIPMENT UOM: TON YARD

TONS/YARDS/SHIPMENT: ***0 Min - 0 Max***

I. SPECIAL REQUEST

COMMENTS OR REQUESTS:

CBPRS to DR (BULK)

GENERATOR'S CERTIFICATION

I certify that I am authorized to execute this document as an authorized agent. I hereby certify that all information submitted in this and attached documents is correct to the best of my knowledge.I also certify that any samples submitted are representative of the actual waste.If Clean Harbors discovers a discrepancy during the approval process, Generator grants Clean Harbors the authority to amend the profile, as Clean Harbors deems necessary, to reflect the discrepancy.

AUTHORIZED SIGNATURE	NAME (PRINT)	TITLE	DATE
Scott Clerk	Scott Clerk	Restoration Program Mgr	11-28-17

J5-5

Addendum

D. COMPOSITION

CHEMICAL	MIN	--	MAX	UOM
XYLENES	5.48000 00	--	5.4800 000	PPM

G. DOT/TDG INFORMATION

J5-6

liquid ENVIRONMENTAL SOLUTIONS *Clean. Reliable. Innovative.*

UNIFORM WASTE PROFILE

866-694-7327
www.liquidenviro.com

Internal Use Only:
Profile #:
Account #:
Approved ○ Non-Approved ○
Subcategory A ☐ B ☐ C ☐
Waste Code

PROFILE INFORMATION

US EPA ID#: State ID#: NAICS # TCEQ ID#(TX-Only): Analytical Attached MSDS Attached

GENERATOR INFORMATION

Name: Kirtland AFB
Address: 2050 Wyoming Blvd. SE, Bldg. 20685
City: Kirtland AFB State: NM Zip: 87117
Contact: Scott Clark Title: Acting Environmental Restoration Chief
Phone: 505-846-9017 Fax:
Email: scott.clark@us.af.mil

BILLING INFORMATION

Name: Clean Harbors Environmental Services, Inc.
Address: 2720 Girard NE
City: Albuquerque State: NM Zip: 87107
Contact: Brett Perry Title: Field Services Account Manager
Phone: 505-238-2523 Fax:
Email: perry.brett@cleanharbors.com

WASTE QUESTIONNAIRE (CHECK ALL THAT APPLY)

Non-hazardous Waste

Question	Yes	No	Unknown
1. Is this material a hazardous waste (F, K, U, or P listed) as defined by 40 CFR 261 Subpart D? If yes to the above, identify the listing.	○	◉	○
2. Has this material been mixed with a hazardous waste as defined by 40 CFR 261?	○	◉	○
3. Does this material exhibit any of the following hazardous waste characteristics? Ignitabilty? (40 CFR Part 261.21)	○	◉	○
Corrosivity? (40 CFR Part 261.21)	○	◉	○
Reactivity? (40 CFR Part 261.21)	○	◉	○
Toxicity? (40 CFR Part 261.21)	○	◉	○
4. Does this material contain? Herbicides, pesticides, insecticides?	○	◉	○
Dioxins?	○	◉	○
Radioactive substances?	○	◉	○
Domestic Wastes?	○	◉	○
Biohazardous materials?	○	◉	○
5 Is the waste derived from an underground storage tank (UST)?	○	◉	○
6. If waste is derived from fuel, is the fuel leaded?	○	◉	○

Used Oil (as defined by CFR 279.1)

Question	Yes	No	Unknown
1. Is this material Used Oil as defined by 40 CFR 279?	○	◉	○
2. Has this Used Oil been mixed with hazardous waste?	○	◉	○
3. Is the source of the waste a Conditionally Exempt Small Quantity Generator?	○	◉	○
4. Does this Used Oil contain chlorinated paraffins? If yes, attach MSDS	○	◉	○
5. Does this Used Oil contain TSCA (40 CFR 761) regulated levels of PCB? If yes, list PCB level:	○	◉	○
6. Does this Used Oil contain less (<) than or equal to 1,000 mg/L Total Organic Halogens (TOX)? * If no, rebuttal per 40 CFR 279.10(b)(1)(ii) must be included.	○	◉	○
7. Is this Used Oil soluble in water?	○	◉	○

Is this a virgin or off-spec product? (If Yes, must include MSDS)	Yes	No	Unknown
1. Unused Product or Chemical	○	◉	○
2. Waste by-product from process	○	◉	○
3. Spill Clean Up	○	◉	○
4. Planned Site Remediation	○	◉	○
5. Representative Sample Provided.	○	◉	○
Petroleum Contact Water (PCW)/Leaking	○	◉	○
Underground Storage Tank (LUST) Water	○	◉	○
Is the generator a Conditionally Exempt Small Quantity Generator (CESQG)?	○	◉	○
Does this waste contain oils, lubricants, coolants or petroleum products	☐	☒	☐

WASTE STREAM COMPOSITION (TOTAL MUST EQUAL 100%)

MajorComponentsConcentrationRange (Water, Oil, Solid, etc.)	Average	Minumum	Maximum
Decontamination Water		100	100

WASTE DESCRIPTION

Common Name of Waste: Decontamination Water from Well Drilling

Detail Process Generating Waste: (Add additional sheet if necessary) Well drilling

Physical State
○ 100% Solid Without Free Liquid
◉ 100% Liquid With No Solids
○ Liquid/Solid Mixture
100 % Free Liquid
% Settled Solids
% Total Suspended Solids

Layers
◉ Single Phase
○ Bi-Layered
○ Multi Layered

ph
○ <2 ○ 8-12.5
○ 2-6 ○ >12.5
◉ 6-8 ○ N/A

Flash Point
○ <73 F ○ 141-200 F
○ 73-100 F ○ >200 F
○ 101-140 F ◉ N/A

Specific Gravity
Range: To:

Color
Describe Clear

Odor
◉ None ○ Mild ○ Strong
Describe:

Viscosity
◉ Low
○ High
○ Medium

TX-Only Classification
○ Class I
○ Class II
○ Other:

TX-ONLY: PLEASE INDICATE WHETHER ANY OF THE FOLLOWING ARE PRESENT:

○ TCLP Metals — Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium and Silver
○ TCLP Semivolitiles — (o-Cresol, m-Cresol, p-Cresol, Cresol (total) 2-4 Dinitrotoluene, Hexachlorobenzene, Hexacchlorobutadiene, Hexachlorethane, Nitrobenzene, Pentachchlorophenol, Pyridine, 2-4-5 Trichlorophenol, and 2-4-6 Trichlorophenol)
○ TCEQ Appendix 1 — (TAC 31, Section 335-Subchapter R) or Total Petroleum Table 1, Constituents Hydrocarbons)
○ TCLP Herbicides/ Pesticides — (Chlordane, 2-4 Endrin, Heptachlor, Heptachlor epoxide, Lindane, Methoxyclor, Toxaphene, and 2-4-5 TP/Silvex)
○ TCLP Volatiles — (Benzene, Carbon Tetrachloride, Chlorobenzene, Chloroform, Methyl Ethyl Ketone, 1-4 Dichlorobenzene, 1-2 Dichloroethane, 1-1 Dichloroethylene, Trichloroethylene, Tetrachloroethylene, and Vinyl Chloride)
○ RCI — (Reactive Cyanide, Reactive Sulfide, Corrosivity, Ignitability

TRANSPORTATION INFORMATION

Method of Shipment: ◉ Bulk Liquid ○ Bulk Sludge ○ Bulk Solid ○ Drum/Box ○ Other:
Shipment Frequency: ○ One Time ○ Weekly ○ Monthly ○ Quarterly ○ Annually ○ Other:
Anticipated Volume: 2000 - 10,000 gallons

GENERATOR CERTIFICATION AND GUARANTEE - PLEASE READ AND SIGN BELOW

As the generator of the material (waste) described above, I certify that I have provided all relevant information as required by this profile and that the information provided is, to the best of my knowledge and belief, true, accurate and complete. Generator agrees not to deliver or arrange for delivery of any material that does not conform to the waste characterization contained in this profile. I further certify that this material is not a RCRA hazardous waste pursuant to federal, state or local laws and has not been mixed with any chlorinated solvents or any other contaminants including, without limitation, PCBs, pesticides, or other hazardous wastes. If Liquid Environmental Solutions (LES) accepts the material for processing and the material is later determined by LES or any other person to be or contain hazardous waste within the meaning of any federal, state or local law, or contain PCBs in sufficient quantity to render it a TSCA-regulated material, the generator agrees to pay all costs incurred by LES to properly treat, store, dispose or otherwise handle the material and any fines and penalties resulting from LES's handling of generator's material. Generator agrees to promptly notify LES of any change in the composition of the material or process generating the material, and agrees to provide LES with a new Uniform Waste Profile prior to delivering any material to LES that does not conform to the waste characterization contained in this profile. The undersigned is an authorized representative of the generator.

Generator Authorization Signature [signature] Date 5-17-17 Print Name and Title Scott Clark, Restoration Program Mgr.

LES Rev: 8-18-15

6133 Edith Blvd. NE
Albuquerque, NM 87107
Phone: (505) 349-5220
Fax: (505) 344-7986

GENERATOR WASTE PROFILE SHEET

A. GENERATOR INFORMATION

Profile Number: ACT76908
Generator US EPA ID: NM9570024423
Phone: 505 846 9017
Fax:
Email:

Generator Name: KIRTLAND AIR FORCE BASE
Mailing Address: 2050 WYOMING BLVD SE BLDG 20685, ENVIRONMENTAL RESTORATION
KIRTLAND AIR FORCE BASE, NM 87117
Site Pick-up Address: 5202 RANDOLPH AVE SE
ALBUQUERQUE , NM 87117
Technical Contact: SCOTT CLARK Title: MAIN CONTACT
Name of Waste WELL WATER CONTAMINATED WITH BENZENE
Process Generating HAZARDOUS WELL WATER FROM KAFB BFF

NAICS CODE: 928110 **Form Code:** W101 **Source Code:** G39

B. PHYSICAL CHARACTERISTICS OF WASTE AT 25C OF 77F

Physical State: LIQUID **Color:** CLEAR **Clarity:** CLEAR **Phase Separation Number of Layers:** SINGLE **Odor:** NONE

PH: 6 - 8 **Specific Gravity:** 1 - 1 SP.GR. **Flash Point (F):** > 200 F **BTU Value:** BTU/LB NA

C. Chemical Composition / UHC's

Range

BASED UPON: ANALYTICAL(INCLUDED) [X] **GENERATOR KNOWLEDGE** [ ]

1,1,2 Trichloroethane	0	-	.083	MG/L
1,2-dibromoethane (EDB)	0	-	.432	MG/L
2-butanone (MEK) [HZ]	0	-	.591	MG/L
4-methyl-2-pentanone	0	-	.665	MG/L
Acetone	0	-	2.81	MG/L
Acetophenone	0	-	8.24	MG/L
Benzene	0	-	9.8	MG/L
Ethylbenzene	0	-	2.04	MG/L
Naphthalene	0	-	.82	MG/L
Toluene	0	-	19.5	MG/L
Total Xylenes	0	-	6	MG/L
Trichloroethene	0	-	.28	MG/L
Water	98	-	100	%
methylene Chloride	0	-	.49	MG/L

D. METALS

Total (PPM) EP Toxicity (mg/l)

Arsenic:
Barium:
Cadmium:
Chromium:
Lead:
Mercury:
Chromium, Hexavalent
Selenium:

Silver:
Copper:
Nickel:
Zinc:
Thallium:

E. OTHER COMPONENTS

OXIDIZER:		REACTIVE SULFIDES PPM	N
EXPLOSIVE:	N	REACTIVE CYANIDES PPM	N
SHOCK SENSITIVE:	N	WATER/AIR REACTIVE	N
TIRES:	N	THERMALLY UNSTABLE	N
PYROPHORIC:	N	TSCA REG PCB WASTE:	N
RADIOACTIVE:	N	COMPRESSED GASSES:	N
EXEMPT RAD:	N	CERCLA/SUPERFUND:	N
ETHIOLOGICAL:	N	PESTICIDE MANUFACTURING WASTE:	N

HALOGENATED ORGANIC COMPOUNDS PER 40 CFR 268, APPENDIX III
DEBRIS N <500 PPM VOC as generated YES

Subject to NESHAP Regulations
US EPA Hazardous Waste Y

US EPA Hazardous Waste Codes: ; D018

F. Shipping Information:

DOT Hazardous Material YES Exempted NO

Proper Shipping Name: NA3082, Hazardous waste, liquid, n.o.s. (Benzene), 9 , PGIII

Hazard Class: 9
ID #: NA3082
PG: III

Anticipated Volume (Units): 12 DM

Per: QUARTER

G. Special Handling Instructions:

all VOC and SemiVOC listed no analytical on file ESTCP 10-17-17

H. GENERATOR'S CERTIFICATION:

I hereby certify that all information in this and all the attached documents is complete and accurate, and that all known or suspected hazards have been disclosed. I further certify that any samples submitted with this profile are representative of the waste to be shipped and are taken in accordance with SW 846 or other approved procedures. I agree to notify Advanced Chemical Treatment in writing when the process generating this waste stream changes or when I have reason to believe the data contained herein is not complete and accurate.

*Signature*____________________ *Title: Restoration Program Mgr*________ *Date*____ *23 July 2020*_

Print Name: *Scott Clark*

6133 Edith Blvd. NE
Albuquerque, NM 87107
Phone: (505) 349-5220
Fax: (505) 344-7986

GENERATOR WASTE PROFILE SHEET

A. GENERATOR INFORMATION

Profile Number: ACT121443
Generator US EPA ID: NM9570024423
Phone: 505 846 9017
Fax:
Email:

Generator Name: KIRTLAND AIR FORCE BASE
Mailing Address: 2050 WYOMING BLVD SE BLDG 20685, ENVIRONMENTAL RESTORATION
KIRTLAND AIR FORCE BASE, NM 87117
Site Pick-up Address: 5202 RANDOLPH AVE SE
ALBUQUERQUE , NM 87117
Technical Contact: SCOTT CLARK Title: MAIN CONTACT
Name of Waste GROUND WATER MIXED WITH LNAPL
Process Generating HAZARDOUS WELL WATER FROM KAFB BFF

NAICS CODE: 928110 **Form Code:** W101 **Source Code:** G39

B. PHYSICAL CHARACTERISTICS OF WASTE AT 25C OF 77F

Physical State: LIQUID **Color:** CLEAR **Clarity:** CLEAR **Phase Separation Number of Layers:** SINGLE **Odor:** SOLVENT

PH: 6 - 8 **Specific Gravity:** 1 - 1 SP.GR. **Flash Point (F):** < 140 F **BTU Value:** **2000-5000** BTU/LB

C. Chemical Composition / UHC's Range

BASED UPON: ANALYTICAL(INCLUDED) X **GENERATOR KNOWLEDGE** ☐

BENZENE		=	750	MG/KG
ETHYLBENZENE		-	5400	MG/KG
TOLUENE		-	11000	MG/KG
WATER	80	-	90%	
NAPHTHALENE		-	770	MG/KG
XYLENES		-	20000	MG/KG

D. METALS

Total (PPM) EP Toxicity (mg/l)

Arsenic:
Barium:
Cadmium:
Chromium:
Lead:
Mercury:
Chromium, Hexavalent
Selenium:

Silver:
Copper:
Nickel:
Zinc:
Thallium:

E. OTHER COMPONENTS

OXIDIZER:		REACTIVE SULFIDES PPM	N
EXPLOSIVE:	N	REACTIVE CYANIDES PPM	N
SHOCK SENSITIVE:	N	WATER/AIR REACTIVE	N
TIRES:	N	THERMALLY UNSTABLE	N
PYROPHORIC:	N	TSCA REG PCB WASTE:	N
RADIOACTIVE:	N	COMPRESSED GASSES:	N
EXEMPT RAD:	N	CERCLA/SUPERFUND:	N
ETHIOLOGICAL:	N	PESTICIDE MANUFACTURING WASTE:	N

HALOGENATED ORGANIC COMPOUNDS PER 40 CFR 268, APPENDIX III
DEBRIS N <500 PPM VOC as generated NO

Subject to NESHAP Regulations
US EPA Hazardous Waste Y

US EPA Hazardous Waste Codes: ; D001,D018

F. Shipping Information:

DOT Hazardous Material YES Exempted NO

Proper Shipping Name: UN1993, Waste Flammable liquids, n.o.s. , 3 , PGII (Toluene, Benzene)

Hazard Class: 3
ID #: UN1993
PG: II

Anticipated Volume (Units): 12 DM

Per: QUARTER

G. Special Handling Instructions:

H. GENERATOR'S CERTIFICATION:

I hereby certify that all information in this and all the attached documents is complete and accurate, and that all known or suspected hazards have been disclosed. I further certify that any samples submitted with this profile are representative of the waste to be shipped and are taken in accordance with SW 846 or other approved procedures. I agree to notify Advanced Chemical Treatment in writing when the process generating this waste stream changes or when I have reason to believe the data contained herein is not complete and accurate.

*Signature*________ *Title* Restoration Program Mgr *Date* 17 Sept 2020

Print Name: Scott Clark

6133 Edith Blvd. NE
Albuquerque, NM 87107
Phone: (505) 349-5220
Fax: (505) 344-7986

GENERATOR WASTE PROFILE SHEET

A. GENERATOR INFORMATION

Profile Number: ACT128687
Generator US EPA ID: NM9570024423
Phone: 505 385-3679
Fax:
Email:

Generator Name: KIRTLAND AIR FORCE BASE
Mailing Address: 2050 WYOMING BLVD SE BLDG 20685, ENVIRONMENTAL RESTORATION
KIRTLAND AIR FORCE BASE, NM 87117
Site Pick-up Address: 5202 RANDOLPH AVE SE
ALBUQUERQUE , NM 87117
Technical Contact: SCOTT CLARK Title: MAIN CONTACT
Name of Waste ABSORBENT SOCKS CONTAMINATED WITH LNAPL
Process Generating REMOVAL OF LNAPL FROM WELLS AT KAFB BFF

NAICS CODE: 928110 **Form Code:**W310 **Source Code:** G39

B. PHYSICAL CHARACTERISTICS OF WASTE AT 25C OF 77F

Physical State: SOLID/LIQU **Color:** VARIES **Clarity:** CLOUDY **Phase Separation Number of Layers:** 2 **Odor:** MILD

PH: = 7 **Specific Gravity:** > 1.2 SP.GR. **Flash Point (F):** 101 - 140 F **BTU Value:** < 2000 BTU/LB

C. Chemical Composition / UHC's

Range

BASED UPON: ANALYTICAL(INCLUDED) [ ] **GENERATOR KNOWLEDGE** [X]

ABSORBENT SOCKS / PPE / SAMPLING TOOLS	90	-	95	%
BENZENE		=	750	MG/KG
ETHYLBENZENE		=	5400	MG/KG
LNAPL (JET FUEL)	10	-	5	%
TOLUENE		=	11000	MG/KG
XYLENES		=	20000	MG/KG

D. METALS

Total (PPM)

< 5	MG/L	Arsenic:
< 100	MG/L	Barium:
< 1	MG/L	Cadmium:
< 5	MG/L	Chromium:
< 5	MG/L	Lead:
< .2	MG/L	Mercury:
<	MG/L	Chromium, Hexavalent
< 1	MG/L	Selenium:

EP Toxicity (mg/l)

< 5	MG/L	Silver:
<	MG/L	Copper:
<	MG/L	Nickel:
<	MG/L	Zinc:
<	MG/L	Thallium:

E. OTHER COMPONENTS

OXIDIZER:	N	REACTIVE SULFIDES PPM	N
EXPLOSIVE:	N	REACTIVE CYANIDES PPM	N
SHOCK SENSITIVE:	N	WATER/AIR REACTIVE	N
TIRES:	N	THERMALLY UNSTABLE	N
PYROPHORIC:	N	TSCA REG PCB WASTE:	N
RADIOACTIVE:	N	COMPRESSED GASSES:	N
EXEMPT RAD:	N	CERCLA/SUPERFUND:	N
ETHIOLOGICAL:	N	PESTICIDE MANUFACTURING WASTE:	N

HALOGENATED ORGANIC COMPOUNDS PER 40 CFR 268, APPENDIX III
DEBRIS YES <500 PPM VOC as generated NO

Subject to NESHAP Regulations
US EPA Hazardous Waste Y

US EPA Hazardous Waste Codes: ; D001,D018

F. Shipping Information:

DOT Hazardous Material YES Exempted NO

Proper Shipping Name: UN1993, Waste Flammable liquids, n.o.s. (Toluene, Benzene), 3 , PGII

Hazard Class: 3
ID #: UN1993
PG: II

Anticipated Volume (Units): 1 DM

Per: QUARTER

G. Special Handling Instructions:

H. GENERATOR'S CERTIFICATION:

I hereby certify that all information in this and all the attached documents is complete and accurate, and that all known or suspected hazards have been disclosed. I further certify that any samples submitted with this profile are representative of the waste to be shipped and are taken in accordance with SW 846 or other approved procedures. I agree to notify Advanced Chemical Treatment in writing when the process generating this waste stream changes or when I have reason to believe the data contained herein is not complete and accurate.

*Signature*__________ *Title* Restoration Program Mgt *Date* 11-19-20

Print Name: Scott Clark

J5-10