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Amec Foster Wheeler Environment & Infrastructure, Inc.

David E. Smoak
Project Manager

Voluntary Remediation Program Status Report No. 1

Former Swift & Company Meat Processing Plant
Moultrie, Colquitt County, Georgia
HSI Site No. 10509

Submitted to:

Georgia Department of Natural Resources
Environmental Protection Division
Hazardous Sites Response and Remediation Program
Suite 1054, East Tower
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Atlanta, Georgia 30334

Prepared for:	ConAgra Foods, Inc. 1 ConAgra Drive, Omaha, Nebraska 68102
Date:	December 8, 2015
Prepared by:	Amec Foster Wheeler Environment & Infrastructure, Inc. 1075 Big Shanty Road NW, Suite 100, Kennesaw, Georgia 30144
Project No.:	6122140220

December 8, 2015

Mr. Allan Nix
Unit Coordinator
Georgia Department of Natural Resources
Response and Remediation Program
Suite 1054 East
2 Martin Luther King Jr. Drive SE
Atlanta, Georgia 30334

Subject: **Voluntary Remediation Program Status Report No. 1**
Former Swift & Company Meat Processing Plant
1189 North Main Street
Moultrie, Colquitt County, Georgia
HSI Site No. 10509

Dear Mr. Nix:

On behalf of ConAgra Foods, Inc. and Swift & Company, Inc., Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler) respectfully submits the attached Voluntary Remediation Program (VRP) Status Report No. 1 for the above-referenced site. ConAgra submitted a Voluntary Investigation and Remediation Plan (VIRP) to the Georgia Environmental Protection Division (EPD) on February 27, 2015. EPD accepted Swift & Company as a participant as defined in the Georgia Voluntary Remediation Program Act in its letter dated May 29, 2015. This VRP Status Report No. 1 is submitted as a semiannual progress report in accordance with the schedule contained in the May 29, 2015 letter.

Please contact us at 770-421-3400 with any questions you may have regarding this submittal. Thank you for your assistance with this project.

Sincerely,

Amec Foster Wheeler Environment & Infrastructure, Inc.

John Quinn, P.G.
Senior Geologist

David E. Smoak, P.G.
Associate Geologist/Project Manager

cc: Mr. Chris Aupperle, ConAgra Foods
Ella Fast, City of Moultrie
Mr. Billy Fallin

Attachments: VRP Status Report No. 1

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1.0 PG CERTIFICATION

"I certify under penalty of law that this report and all attachments were prepared by me or under my direct supervision in accordance with the Voluntary Remediation Program Act (O.C.G.A. Section 12-8-101, et seq.). I am a professional engineer/professional geologist who is registered with the Georgia State Board of Registration for Professional Engineers and Land Surveyors/Georgia State Board of Registration for Professional Geologists and I have the necessary experience and am in charge of the investigation and remediation of this release of regulated substances.

Furthermore, to document my direct oversight of the Voluntary Remediation Plan development, implementation of corrective action, and long term monitoring, I have attached a monthly summary of hours invoiced and description of services provided by me to the Voluntary Remediation Program participant since the previous submittal to the Georgia Environmental Protection Division.

The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

David E. Smoak / Georgia P.G. #1314 — 12/8/15

Printed Name and GA PE Number — Date

Signature and Stamp

2.0 INTRODUCTION AND BACKGROUND

This Voluntary Remediation Program Semi-Annual Status Report No. 1 (Status Report) was prepared in accordance with the Voluntary Remediation Program (VRP) for the former Swift & Company former meat processing facility site, Hazardous Site Inventory (HSI) No.10509. The Georgia Environmental Protection Division (EPD) letter, dated May 29, 2015, accepted the site into the VRP and requested submittal of semi-annual VRP status reports. As required by EPD's letter dated May 29, 2015, semiannual progress reports are to submitted November 29th and May 29th annually, beginning November 2015 and ending in 2020, unless a compliance status report (CSR) is submitted and approved prior to 2020. This first Status Report covers the activities conducted subsequent to EPD's May 29, 2015 VRP acceptance letter. The goals of this Status Report are to comply with the status report submittal schedule, update EPD on the progress of activities at the site, and respond to comments provided by EPD in a June 4, 2015 comment letter. This Status Report is submitted under a extension request communicated to EPD via telephone and electronic mail on November 17, 2015.

The site is comprised of three qualifying properties located at 1189 North Main Street (U.S. Highway 319 Business, Georgia Highway 33) the northern part of Moultrie, Georgia, in Colquitt County. A site location map is shown on Figure 1. The qualifying properties include:

- A 2.53 acre tract currently owned by the City of Moultrie (Tax ID Parcel M022A 005), which represents the southernmost portion of the former 14-acre Swift & Company meat processing facility property.
- A 2.52 acre parcel owned by the Rennie A. Tumlin Estate (Tax ID Parcel M022A 004).
- The easternmost portion of an adjoining 50.23 acre tract (Tax ID Parcel M022A 002) which formerly contained the Former Boiler and Engine House. This tract is owned by the Joint Development Authority (JDA) of Brooks, Colquitt, Grady, Mitchell, and Thomas Counties

A site map is provided in Figure 2. The western and southern boundaries of the site are bordered by an active railroad right of way owned by Georgia & Florida RailNet, Inc. North Main Street borders the subject properties on the east. The northern boundary of the subject properties are bounded by property that was part of the former Swift facility. Railroad tracks and retention ponds used by Farmland National Beef are located to the west.

While operational, the Swift & Company plant was a stockyard and meat-processing facility where hogs, cattle, and sheep were slaughtered, butchered, and packaged for the consumer market. The meat-processing plant was originally constructed in 1914, and operated until 1970. After 1970, Swift & Company constructed a new facility to the west now referred to as Farmland National Beef.

After meat processing operations ceased, the buildings remained on the property for about 30 years and were believed to have been used for storage by other property owners, among other things. The buildings on the 2.53-acre City of Moultrie tract were demolished in 2001, and the surface was subsequently graded and grassed. Information contained in a CSR prepared by Advanced Environmental Technologies, LLC (AET), and information provided by City of Moultrie representatives report the demolition debris was removed and properly disposed offsite. The

Former Boiler and Engine House were demolished in 2011. There are no activities currently conducted on the subject properties, and the subject properties are currently located on an open tract.

Previous investigations of the property detected volatile organic compounds (VOCs), and metals in groundwater. A few of the constituents exceeded the Hazardous Site Response Act (HSRA) notification concentrations. The environmental history of the site is summarized as follows:

- Assessments including soil and groundwater sampling were conducted in 1997.
- The site was listed on the Hazardous Site Inventory (HSI) on June 6, 1998 as Site No. 10509.
- A a HSRA Compliance Status Report (CSR) Assessment was conducted in 2001-2002 that included soil and groundwater sampling and submittal of a CSR. Buildings on the property were demolished in 2001 before the HSRA CSR investigations.
- Further CSR assessment was performed in 2003 (including submittal of a Revised CSR).
- Additional field investigation was conducted in 2004-2005.
- The available 2004-2005 data were included in the September 30, 2008, Revised CSR, which also included details for the 2007 and 2008 investigations conducted by MACTEC.
- The January 29, 2010 Revised CSR responded to the subsequent EPD comments on the September 30, 2008, Revised CSR, and included information from 2009 field investigations by MACTEC.
- A Corrective Action Plan (CAP) was submitted on May 13, 2011. The proposed remedy in the CAP for the former Swift site was monitored natural attenuation (MNA).
- EPD gave Conditional Approval of the CAP In a letter dated December 12, 2011.
- The First Semiannual Corrective Action Effectiveness Report (CAER) was submitted to EPD on June 12, 2012.
- The Second Semiannual CAER was submitted to EPD on December 11, 2012.
- The Third Semiannual CAER was submitted to EPD on May 24, 2013.
- The Fourth Semiannual CAER was submitted to EPD on December 11, 2013.
- The First Annual CAER (ACAER) was submitted to EPD on February 27, 2015 as Appendix B to the Voluntary Remediation Program Application and Plan. Based on the results of the monitoring and the updated SourceDK models presented in the ACAER, and after discussions with EPD, Swift had made the decision to proceed with entering the site into the VRP.
- The EPD letter dated May 29, 2015 accepted the site into the VRP and requested submittal of semi-annual VRP status reports.

  The EPD letter dated June 4, 2015 put forth comments to be addressed during implementation of the VRP. A response to the EPD Comments dated August 31, 2015 was submitted to EPD and is pending review.

3.0 WORK PERFORMED DURING REPORTING PERIOD

The activities currently identified to be conducted at the Swift site under the VRP are outlined in the VRP Application and Plan, dated February 27, 2015, and the EPD VRP approval and comment letters dated May 29 and June 4, 2015. The activities that have been conducted subsequent to EPD's acceptance of the site into the VRP include repair of monitoring wells MW-16, MW-18, MW-29 and MW-31, annual groundwater sampling and analysis, update of SourceDK modeling results, and updated fate and transport modeling. These activities are described in the following sections.

3.1 MONITORING WELL REPAIRS

As reported in the First ACAER, monitoring wells MW-A, MW-23, MW-24 and MW-25 could not be located for measurement of groundwater elevation in September 2014, due to grading which was found to have been performed at the northern portion of the site. MW-A and MW-23 were located in an area where fill had been deposited, and had apparently been covered with several feet of soil. MW-18 was also located in a "fill" area, but was found and measured as plastic buckets had been used to mark the well location. Wells MW-24 and MW-25 were located in an area where the ground surface had been lowered (or "cut"), and could not be found. Wells MW-16, MW-29 and MW-31 were also located in a "cut" area, but the wells were left in place and the ground surface was removed around these wells, leaving pinnacles of soil at the well locations.

On July 20-21, 2015, work was performed at the site in an attempt to locate and repair wells MW-A, MW-23, MW-24 and MW-25. The former locations of the wells were located and flagged by Amec Foster Wheeler personnel using the previous survey coordinates and a Trimble GeoXH 6000 series GNSS (Global Navigation Satellite System) unit, after which a utility locating subcontractor (One Vision Utility Services) utilized ground-penetrating radar (GPR) and a magnetometer to investigate the former well locations. The target locations identified by these methods were investigated by using a backhoe and manual tools to excavate to a depth of approximately four feet. MW-A, MW-23, MW-24 and MW-25 could not be located using these techniques, and must be presumed to have been destroyed during the grading activities.

Also on July 20-21, 2015, work was performed to repair wells MW-16, MW-29 and MW-31 (left as pinnacles of soil in a "cut" area), and well MW-18 (left several feet below grade in a "fill" area). Geo Lab Drilling (Geo Lab), a drilling subcontractor, performed the repair work to the wells under the observation of Amec Foster Wheeler personnel. Geo Lab removed the soil pinnacle, protective steel cover, damaged concrete pad, and grout collar from wells MW-16, MW-29, and MW-31, and the monitoring wells were then cut flush with the ground surface and completed with a new flush-mount steel protective cover and 2 foot (ft) by 2 ft by 4 inch (in) concrete pad. MW-18 was excavated by Geo Lab and the existing concrete pad and protective steel cover were removed. Additional PVC riser casing was added to MW-18 to bring the monitoring well up to ground surface, and the well was fitted with a new flush-mount steel cover and a 2 ft by 2 ft by 4-in concrete pad. Well development was determined to be unnecessary, as all existing well caps were found to be intact, and therefore no cave-in material is believed to have entered the monitoring wells during the site grading. After well repair was completed, the

top of casing and ground surface elevations of the wells were surveyed by a Georgia-registered land surveyor. These revised elevations are shown on Table 1.

3.2 ANNUAL GROUNDWATER SAMPLING AND ANALYSIS

The continued monitoring plan consists of annual groundwater sampling for up to five years of six site monitoring wells for site constituents of concern (COCs) arsenic, barium, cadmium, chromium, lead, nitrates and chlorides. These six wells include MW-6, MW-9, MW-13D, MW-15, MW-16, and MW-27DDDD, and are shown on Figure 2. In September 2015, eight additional wells (MW-1, MW-4, MW-7, MW-12, MW-18, MW-20, MW-29 and MW-31) were also sampled to address comments included in EPD's letter dated June 4, 2015. Additionally, the field pH of every groundwater sample is monitored during the sampling events. Water level measurements are collected in all site monitoring wells prior to sampling to evaluate groundwater flow direction. The metals sampling is conducted under low-flow methodologies to reduce potential turbidity in the samples. The procedures used to collect groundwater samples are wereconducted in general accordance with USEPA Region 4 SESD procedure SESDPROC-301-R3 (USEPA, 2013).

The scope of services performed during the September 2015 annual groundwater sampling and analysis event included the following:

- Determined the depth to groundwater in accessible site wells (September 21, 2015) and calculated groundwater elevations.
- Obtained groundwater samples on September 22 through 23, 2015 from 14 site monitoring wells (MW-1, MW-4, MW-6, MW-7, MW-9, MW-12, MW-13D, MW-15, MW-16, MW-18, MW-20, MW-27DDDD, MW-29 and MW-31). Sampling was attempted at MW-21, but no sample could be obtained due to lack of recharge.
- The samples were analyzed for the site COCs arsenic, barium, cadmium, chromium and lead. The COCs nitrates and chlorides were inadvertently omitted from the analyte list for this first annual VRP groundwater sampling event. These COCs will be analyzed during the subsequent sampling events. Additionally, the field pH of every groundwater sample was monitored during the sampling event.
- Prepared potentiometric surface maps using the September 21, 2015 groundwater elevation data showing groundwater flow directions in Shallow Zones A and B and determination of the groundwater flow rate.
- Preparation of an updated pH map based upon the September 22-23, 2015 pH values.
- Preparation of lead and barium isoconcentration maps based upon the September 22-23, 2015 concentrations.
- Updating of the SourceDK models submitted in the First ACAER with the data obtained in September 2015.
- Updating of the fate and transport modeling (BioScreen-AT) submitted in the VRP Application and Plan.
- Data evaluation and preparation of this summary of annual groundwater sampling and analysis.

The following sections describe the services listed above.

3.2.1 Groundwater Elevation and Flow Direction

Groundwater elevations were calculated from depth to groundwater measurements made in site monitoring wells on September 21, 2015 (Table 1). Table 1 also summarizes groundwater elevations measured at the site since 2001.

Potentiometric surface maps for the two shallow aquifers at the site, Shallow Zone A and Shallow Zone B, were developed from the groundwater elevation data obtained on September 21, 2015 and are presented as Figures 3 and 4, respectively. The Shallow Zone A potentiometric map appears similar to those presented in the second and third Semi-Annual CAERs, while the Shallow Zone B potentiometric map appears similar to the map presented in the first and second Semi-Annual CAERs, due to a component of northward flow at the northern end of the site, as described below. The direction of flow in Shallow Zone A (Figure 3) is to the north and northwest, while the flow direction in Shallow Zone B shows a northeastward component in the southern portion of the site, an eastward component in the central portion of the site, and a westerly and southerly component in the northern portion of the site, due to higher groundwater elevations in MW-1 and MW-29 as compared to MW-3 and MW-16 (Figure 4). Note that the interpretation of groundwater flow direction in Shallow Zone B for the September 2015 measurement event was made more difficult because of the inability to measure the groundwater elevations at MW-A, MW-23, MW-24 and MW-25, which are presumed to have been destroyed due to the grading which has been performed at the site, as mentioned above. Additional action/well replacement may be warrented to address this situation and will be addressed with EPD.

In addition, an evaluation of the vertical hydraulic gradient at the site was performed. Based on the groundwater elevation data obtained on September 21, 2015 from the cluster of wells that includes MW-8, MW-13D, MW-22DD and MW-26DDD, there was a downward vertical gradient of about 0.337 foot per foot at well pair MW-8 (screened in Shallow Zone A) and MW-26DDD, and of about 0.220 foot per foot at well pair MW-13D (screened in Shallow Zone B) and MW-26DDD. Additionally, a comparison of groundwater elevations at this well cluster to nearby deep well MW-27DDDD shows a downward vertical gradient from each well (MW-8, MW-13D, and MW-26DDDD) toward the interval screened by MW-27DDDD.

3.2.2 Groundwater Velocity

Based on the potentiometric surface maps, the horizontal gradient in the ground water in Shallow Zone A was about 0.0121 feet per foot across the site on September 21, 2015. The horizontal gradient in the ground water in Shallow Zone B ranged from 0.0040 to 0.0138 feet per foot on September 21, 2015. An effective porosity for the saturated soil was estimated to be 20 percent for a clayey sand/sandy clay (Driscoll, 1986). The horizontal ground-water flow velocity was calculated using the Darcy equation:

$$V = Ki/ne$$

Where: K = hydraulic conductivity (feet/day)
i = hydraulic gradient (feet/foot)
ne = effective porosity

The gradients given above, the geometric mean of the Shallow Zone A and B hydraulic conductivity testing results obtained in May 2012 (4.1544 ft./day and 2.8046 ft./day, respectively), and the estimated effective porosity of 0.2 were used to calculate a groundwater flow velocity of approximately 92 ft./year for Shallow Zone A, and a groundwater flow velocity of approximately 20 to 71 ft./year for Shallow Zone B. The Shallow Zone A velocity is within the range of the values reported in the previous CAERs, and slightly higher than the range of previous values reported in the Revised CSR, while the minimum Shallow Zone B velocity is within the range previously reported in the Revised CSR and the maximum Shallow Zone B velocity is within the range reported in the Revised CSR and the previous CAERs.

3.2.3 Groundwater Quality

For the groundwater quality sampling conducted on September 22 through 24, 2015 in 14 site monitoring wells, the wells sampled were as follows:

Upgradient wells:
- MW-12 Shallow Zone A

Interior wells:
- MW-6 Shallow Zone B
- MW-7 Shallow Zone B
- MW-13D Shallow Zone B
- MW-16 Shallow Zone B
- MW-18 Shallow Zone B

Perimeter wells:
- MW-4 Shallow Zone A
- MW-29 Shallow Zone B
- MW-31 Shallow Zone B

Downgradient wells:
- MW-1 Shallow Zone B
- MW-9 Shallow Zone B
- MW-15 Shallow Zone B
- MW-20 Shallow Zone B

Deep well:
- MW-27DDDD Deep well

The groundwater sampling procedure was conducted as follows. Before the purging and sampling of each well, the depth to water and total well depth were measured. Each well has been marked with a permanent reference survey point. The total depth of the well was measured from this survey point to the well bottom using a measuring tape. The depth to groundwater was measured from the reference survey point to the groundwater surface in the well using an electrical water-level indicator. The water level probe was lowered down the well until the meter's tone sounded, indicating the probe had encountered water. The measured depth to groundwater from the surveyed datum point on the well casing was recorded on the sampling form and in the field logbook to the nearest 0.01 foot. The depth to the groundwater was then subtracted from the surveyed elevation of the casing reference point to determine the groundwater elevation. Depth to groundwater data and groundwater elevations are shown on Table 1.

A low-flow method of purging and sampling was used. The wells were purged using a peristaltic pump for low-flow purging. At each well, new polyethylene tubing was inserted into the wells into the water column of the well. The wells were purged at a rate of 500 milliliters (mL) per minute or less until the pH, temperature, and specific conductance (SC) readings stabilized to within 10% of the previous reading, and a minimum of 3 well volumes were purged from each well, with the exception of deep well MW-27DDDD, in which 1 well volume was purged due to the large volume of water in the well.

The groundwater turbidity readings were measured with an electronic turbidity meter and documented before collecting samples in laboratory-provided preserved containers for analysis. At MW-1, MW-18, and MW-20, both total and dissolved metals samples were collected, as turbidity could not be reduced below 7,800 (was reduced to 390 NTU during purging, but went dry), 17.9, and 51.3 NTU, respectively.

The samples were delivered to Analytical Environmental Services, Inc. (AES) under chain-of-custody protocol for analysis by EPA Method 6020A for the site COCs arsenic, barium, cadmium, chromium and lead. As mentioned above, the COCs nitrates and chlorides were inadvertently omitted from the analyte list for this first annual VRP groundwater sampling event. These COCs will be analyzed during the subsequent sampling events.

The field pH measurements are reported in Table 2, along with a summary of the results of the analyses of the September 2015 samples. The laboratory analytical reports and field sampling reports for the September 2015 sampling event are provided in Appendix A.

A review of the results of the analyses of the September 2015 samples (Table 2) indicates that arsenic was detected in seven of the well samples (MW-1, MW-6, MW-7, MW-9, MW-13D, MW-15 and MW-18). Arsenic was not detected in September 2014 in any of the well samples collected. Additionally, the arsenic detection in MW-1 was in a total metals samples with elevated turbidity, and arsenic was not detected in the dissolved metals sample collected from MW-1. Arsenic had never before been reported in six of these wells (MW-1, MW-6, MW-7, MW-9, MW-15 and MW-18), and had only been reported once before at MW-13D. The arsenic concentrations in four of the wells (MW-6, MW-13D, MW-15 and MW-18) exceeded the Type 1 RRS of 0.01 mg/L. The only previous arsenic exceedances of the Type 1 RRS were isolated occurences; once at MW-12 (0.0126 mg/L in September 2013), and once at MW-28 (0.017 mg/L in November 2004). Also, while arsenic was reported at MW-9 during the September 2015 sampling event, arsenic was not detected in the duplicate sample (DUP-1) collected at MW-9. For the reasons given above (only two previous Type 1 RRS exceedances, reports of arsenic in multiple wells in which it had never before been reported, and an arsenic detection in a parent sample but not the associated duplicate sample), the arsenic detections are considered anomalous and may not reflect actual site conditions. The trend of arsenic detections will be assessed using the results of subsequent sampling events.

Cadmium was reported only in the samples from DUP-1 (0.00135 mg/L), MW-15 (0.00249 mg/L), MW-18 (total metals sample at 0.00742 mg/L and dissolved metals sample at 0.00507 mg/L) and MW-27DDDD (0.00228 mg/L), all below the Type 1 RRS of 0.005 mg/L except for MW-18 Cadmium was not reported in the parent sample (MW-9) of DUP-1. The cadmium

concentrations at MW-18 (total and dissolved samples) only slightly exceed the Type 1 RRS of 0.005 mg/L, and meet the Type 2 RRS of 0.0078 mg/L.

Chromium was detected only in the samples from MW-1 (0.0499 mg/L), DUP-1 (0.00135 mg/L) and MW-15 (0.00643 mg/L). The chromium detection in MW-1 was in a total metals sample with elevated turbidity Chromium was not detected in the dissolved metals sample collected from this well. Also, chromium was not reported in the parent sample (MW-9) of DUP-1. None of the chromium detections exceeded the Type 1 RRS of 0.1 mg/L

Barium was detected in the samples from 13 of the 14 of the monitoring wells, with concentrations ranging from 0.0159 mg/L (dissolved sample from MW-1) to 4.95 mg/L (MW-27DDDD). All of the concentrations were below the barium Type 1 RRS of 2 mg/L except for the MW-27DDDD value (4.95 mg/L). The MW-27DDDD concentration of 4.95 mg/L represents a noticeable decrease from the September 2014 barium value of 6.72 mg/L. The MW-6 concentration of 0.449 mg/L is a substantial decrease from the barium value of 10.3 mg/L reported in September 2014, which is now believed to have been anomalous.

Lead was reported in 11 of the 14 well samples in which it was analyzed (MW-1, MW-6, MW-7, MW-9, MW-13D, MW-15, MW-16, MW-18, MW-20, MW-29 and MW-31) at concentrations ranging from 0.00347 mg/L (MW-20) to 0.258 mg/L (MW-18). The lead detections in MW-1 and MW-20 were in total metals samples with elevated turbidity. Lead was not detected in the dissolved metals samples collected in these wells. The lead detections in six of the wells (MW-1, MW-6, MW-9, MW-13D, MW-15 and MW-18) exceeded the Type 1 RRS of 0.015 mg/L. Of these wells, as mentioned above, lead was not detected in the dissolved metals sample collected from MW-1.

3.2.4 Comparison to Prior Analytical Data

Updated SourceDK models have been prepared, following an additional year of monitoring. However, as part of preparation of this first Status Report, a comparison of the September 2015 data to the most recent comparable prior data was performed for the analyzed COCs. This comparison is described below.

The September 2015 arsenic results indicate that arsenic was detected in seven of the well samples (MW-1, MW-6, MW-7, MW-9, MW-13D, MW-15 and MW-18), whereas arsenic was not detected in any of the samples collected in September 2014. Arsenic had never before been reported in six of these wells (MW-1, MW-6, MW-7, MW-9, MW-15 and MW-18), and had only been reported once before at MW-13D. The arsenic detection in MW-1 was in a total metals samples with elevated turbidity, and arsenic was not detected in the dissolved metals sample collected from MW-1. Also, while arsenic was reported at MW-9, arsenic was not detected in the duplicate sample (DUP-1) collected at MW-9. The arsenic concentrations in four of the wells (MW-6, MW-13D, MW-15 and MW-18) exceeded the Type 1 RRS of 0.01 mg/L. The only previous arsenic exceedances of the Type 1 RRS were isolated occurences; once at MW-12 (0.0126 mg/L in September 2013), and once at MW-28 (0.017 mg/L in November 2004). As mentioned previously, for the reasons given above (only two previous Type 1 RRS exceedances, reports of arsenic in multiple wells in which it had never before been reported, and an arsenic detection in a parent sample but not the associated duplicate sample), the

arsenic detections are considered anomalous and may not reflect actual site conditions. The trend of arsenic detections will be assessed using the results of subsequent sampling events.

The only detections of cadmium in September 2015 were in wells where it had previously been reported in September 2014 (the duplicate sample [DUP-1) from MW-9, MW-18 and MW-27DDDD), with the exception of the detection at MW-15, which had never before had a detection of cadmium (although cadmium had only been analyzed at MW-15 once before, in September 2014. Cadmium was detected in DUP-1 at 0.00135 mg/L, above the September 2014 detection of 0.000898 mg/L at MW-9. This detection is below the Type 1 RRS of 0.005 mg/L. Cadmium at MW-15 increased from <0.0007 mg/L in September 2014 to 0.00249 mg/L, complying with the Type 1 RRS. Cadmium at MW-18 increased from 0.00175 mg/l in September 2014 to 0.00742 mg/L (total metals sample) and 0.00507 mg/L (dissolved metals sample). These MW-18 concentrations are slightly above the Type 1 RRS of 0.005 mg/L, but comply with the Type 2 RRS of 0.0078 mg/L. Cadmium at MW-27DDDD decreased slightly from 0.00246 mg/L in September 2014 to 0.00228 mg/L in September 2014. All of the September 2015 cadmium values were below the Type 1 RRS of 0.005 mg/L, except for the slight exceedances (total and dissolved sampes) at MW-18, which complied with the Type 2 RRS.

Chromium was detected at three wells (MW-1, DUP-1 [duplicate sample at MW-9] and MW-15). Chromium had never before been detected at MW-1, and the chromium detection in MW-1 was in a total metals sample with elevated turbidity; chromium was not detected in the dissolved metals sample. At MW-9, chromium was not detected in the parent sample (MW-9) of DUP-1, and there have been no previous detections of chromium at MW-9. The detection at MW-15 decreased from the detections in September 2014, with chromium at MW-15 decreasing from 0.0437 mg/L in September 2014 to 0.00643 mg/L in September 2015. All three of the September 2015 chromium values (MW-1 [0.0499 mg/L], DUP-1 [0.00135 mg/L] and MW-15 [0.00643 mg/L]) were below the Type 1 RRS of 0.1 mg/L.

For barium, there were four instances of an increase in concentration as compared to the previous data. In three of those wells where an increase was noted (MW-7, MW-9, and MW-16), the concentrations were both within the range of values obtained during 2012, 2013 and 2014 monitoring, and were well below values measured during previous historical site monitoring. At one of the wells (MW-1) where an increase was noted, the increase was in a total metals samples with elevated turbidity, as compared to the most recent barium result (0.042 mg/L in January 2003); the dissolved metals sample concentration was 0.0159 mg/L, a decrease from the January 2003 value. The MW-6 concentration of 0.449 mg/L is a substantial decrease from the barium value of 10.3 mg/L reported in September 2014, which is now believed to have been anomalous. The September 2015 value is similar to the barium value of 0.420 mg/L reported at MW-6 in September 2013, further confirming the September 2014 value of 10.3 mg/L as anomalous. The MW-27DDDD concentration of 4.95 mg/L represents a noticeable decrease from the September 2014 barium value of 6.72 mg/L, and is the lowest barium value observed at MW-27DDDD since May 2012. Only the MW-27DDDD value (4.95 mg/L) is above the barium Type 1 RRS of 2 mg/L. As mentioned in the First ACAER, the anomalously high barium values observed at MW-6 and MW-27DDDD in September 2014 may possibly have been due to the redevelopment performed in September 2014 the day prior to

both MW-6 and MW-27DDDD being sampled. For both MW-6 and MW-27DDDD, the September 2015 barium values represent a return to concentrations more representative of the previous years prior to September 2014. In the case of MW-27DDDD, the barium concentration is lower than any barium value reported since May 2012.

The barium detections were further evaluated using the updated SourceDK model, as described in Section 4.0. As noted above, none of the September 2015 barium concentrations exceeded the barium Type 1 RRS of 2 mg/L except for the MW-27DDDD value (4.95 mg/L). While the MW-27DDDD value exceeded the Type 1 RRS, it was well below the Type 4 RRS of 20 mg/L.

Assuming the concentrations of barium at MW-27DDDD have reached a plateau and are beginning to decrease (which may be the case based on the September 2015 results, and acknowledging the September 2014 result as anomalously high), it is reasonable to project that barium concentrations at this location may begin to show significant reductions in the next few years similar to what was observed in MW-13D.

For lead, of 14 wells analyzed, there were five instances of an increase in concentration as compared to the most recent data (at MW-1 [0.077 mg/l vs. <0.005 mg/L in January 2003], MW-7 [0.00995 mg/L vs. 0.00913 mg/L in September 2014], MW-9 [0.0898 mg/L vs. 0.0678 mg/L in September 2014], MW-18 [0.258 mg/L vs. 0.216 mg/L in September 2014], and MW-31 [0.00894 mg/L vs. 0.0055 mg/L in September 2012]). In three of those wells where an increase in lead concentration was noted (MW-7, MW-9 and MW-18), the concentrations were either within, or only slightly above, the range of values obtained during 2012 through 2014 monitoring, or were well below values measured during previous historical site monitoring. At one of the wells (MW-1), lead was reported for the first time, at a level (0.077 mg/L) exceeding the Type 1 RRS. As mentioned above, the lead detection in MW-1 was in a total metals sample with elevated turbidity, and lead was not detected in the dissolved metals samples collected in MW-1. At MW-31, while the September 2015 lead result was an increase above the previous (September 2012) result, this previous result was the only other time MW-31 has been sampled, and neither sample has exceeded the Type 1 RRS

The lead detections were further evaluated using the updated SourceDK model, as described in Section 4.0. As noted above, the lead detections in six of the wells (MW-1, MW-6, MW-9, MW-13D, MW-15 and MW-18) exceeded the Type 1 RRS of 0.015 mg/L. Of these wells, as also mentioned above, lead was not detected in the dissolved metals sample collected from MW-1.

The September 2015 measured field pH values were also compared to the September 2014 data. Of the 11 wells that had been sampled in both September 2014 and September 2015, 7 of the measured pH values decreased (becoming more acidic), and four of the wells exhibited an increase in pH (becoming more neutral). In general, the changes in pH were minor, with the maxiumum decrease of pH being 0.21 standard units at MW-29.

The September 2015 pH values were used to prepare an updated pH contour map. A comparison to the pH map presented in the First ACAER shows that the area of low pH appears to have become smaller, based on the September 2015 data.

3.3 UPDATED SOURCEDK MODELING RESULTS

As discussed in Section 3.0, the results of the September 2015 first annual sampling event were used to prepare updated SourceDK models. The results of the updated modeling are discussed below.

Monitored natural attenuation (MNA) was evaluated as a corrective action measure in the May 13, 2011 CAP to address groundwater impacts at the site. As described in the CAP, the U. S. Environmental Protection Agency's (USEPA) MNA Directive (USEPA, 1999) was used as guidance, in conjunction with the SourceDK computer spreadsheet. SourceDK is designed for use in evaluating the potential efficacy of MNA as a remedial alternative. This evaluation involves collection of site-specific data sufficient to estimate with an acceptable level of confidence both the rate of attenuation processes and the anticipated time required to achieve remediation objectives (AFCEE, 2004).

This evaluation requires statistical tools to assess the data collected in the site characterization and determine if natural attenuation (decreasing trends) is occurring. The SourceDK Microsoft Excel computer spreadsheet program is a planning-level screening model for estimating groundwater remediation timeframes and the uncertainties associated with the estimated timeframe. In this evaluation, "remediation timeframe" is the time required for the high-concentration source zones at a site to reach a certain target concentration (AFCEE, 2004).

3.3.1 Data Preparation

The updated dataset to be analyzed was generated from groundwater samples taken from August 2001 to September 2015, and included the following wells monitored semi-annually in 2012 and 2013, and annually in 2014 and 2015: Monitoring well MW-1 was included in the dataset for the SourceDK evaluation, as it was sampled in September 2015 for the first time since January 2003, and MW-31 was also included, as it was sampled for the first time since May 2012. Monitoring wells MW-2, MW-3, MW-19 and MW-23 were not sampled in September 2015, and were not included in the updated dataset.

Well ID	
MW-01	MW-16
MW-06	MW-18
MW-07	MW-20
MW-09	MW-27DDDD
MW-12	MW-29
MW-13D	MW-31
MW-15	

Since the methods used in the SourceDK package do not accommodate data below the reporting limit, all data reported as "below reporting limit" were converted to a detection at the reporting limit. Since these wells have had a record of at least one COC detection (barium, lead), this is considered to be a conservative substitution.

Only total metals results were used for the evaluation; dissolved metals results were not used. Both barium and lead were used for the evaluation; the final dataset is listed in Table 3.

3.3.2 Analyses

The SourceDK assessment is based on a slope determined from a regression model of existing groundwater data. As described in the SourceDK documentation, this model predicts remediation timeframe by determining the trend in measured concentration vs. time data from source-zone monitoring wells (or wells in other parts of the plume) and then extrapolating this trend to determine how long it will take to reach a cleanup objective entered by the user. The trend is based on an analysis of log-concentration vs. time data for any constituent in groundwater (AFCEE, 2004).

For each well of interest, a SourceDK spreadsheet model was constructed by adding site-specific sample dates, analytical concentrations, and the proposed regulatory limit (Type 1 RRS) into the spreadsheet. The model then takes the log of concentration and plots that against the sample date and calculates the slope of the resulting regression line. A negative slope (corresponding to a positive decay constant) suggests a downward trend in concentration and the likelihood of attenuation occurring. The model presents a graph of the resulting regression analysis along with a dotted line representing the regulatory limit, the regressions coefficient of determination (r2), a predicted year to attain cleanup (along with confidence limits on the estimate, if possible), and an estimated decay constant derived from the regression slope.

3.3.3 Results

A total of 24 different well/COC models were run. The results of each model run are included in Appendix B. A summary of the results is presented in the following tables. The majority of the updated models present decreasing trends in concentration (negative slopes and positive decay rates), with 84.6 percent of the barium trends and 63.6 percent of the lead trends decreasing. The direction of trend appears well defined in all cases with the exception of MW-13D (lead), MW-18 (barium), MW-20 (barium and lead) and MW-29 (lead) where the slope is essentially flat.

Summary of SourceDK Trend Results

	Barium	Lead
Decreases	11	7
Total	13	11
Percent	84.6%	63.6%

SourceDK Trend Results by COC

Well	Barium	Lead	Comments
MW-01	Increasing	Increasing	2015 barium concentration below Type 1 RRS; 2015 lead concentration (total metals) above Type 1 RRS; dissolved metals sample non-detect for lead; all previous lead analyses non-detect
MW-06	Decreasing	Decreasing	2015 barium concentration below Type 1 RRS; 2012, 2013, 2014 and 2015 lead concentrations both above and below Type 1 RRS
MW-07	Decreasing	Decreasing	Attained Type 1 RRS
MW-09	Decreasing	Decreasing	Barium Type 1 RRS attained; lead Type 1 RRS not yet attained
MW-12	Decreasing	NA	Attained Type 1 RRS
MW-13D	Decreasing	Decreasing	Barium Type 1 RRS attained; lead Type 1 RRS not yet attained
MW-15	Decreasing	Increasing	Barium Type 1 RRS attained; lead Type 1 RRS not yet attained. Only three data points (2003, 2014, 2015)
MW-16	Decreasing	Decreasing	Attained Type 1 RRS
MW-18	Decreasing	Decreasing	Barium Type 1 RRS attained; lead Type 1 RRS not yet attained
MW-20	Decreasing	Increasing	Barium and lead Type 1 RRS attained. Although total lead values show slight increasing trend, all 2012, 2013, 2014 and 2015 dissolved lead values were not detectable, and the lead concentration decreased from September 2014 to September 2015.
MW-27DDDD	Increasing	NA	Barium above Type 1 RRS, but below Type 4 RRS. 2015 concentration lowest value since September 2012.
MW-29	Decreasing	Decreasing	Attained Type 1 RRS
MW-31	Decreasing	Increasing	Attained Type 1 RRS; only 2 data points.

NA- not applicable; either all, or all except one, concentrations below detection limit

3.4 UPDATED FATE AND TRANSPORT MODELING

The contaminant fate and transport modeling completed using the Bioscreen-AT model, and included in the VRP Application and Plan, was updated with September 2015 data to assess theoretical downgradient migration of dissolved lead and determine if the distance would fall within acceptable point of compliance requirements under the VRP. In accordance with ConAgra's August 31, 2015 responses to EPD's comments dated June 4, 2015, the site point of exposure (POE) was designated as a location approximately 1051 feet east of the eastern property line of the site. The associated Point of Demonstration (POD) well was designated as MW-9, pursuant to any clarification resulting from additional potentiometric data that may be obtained in the future from across U.S Highway 319, as stated in the comment responses. Additionally, MW-13D, the "source area" monitoring well previously used, was replaced with MW-18 based on more current data. Also, a secondary source at MW-15 was incorporated into the Bioscreen model pursuant to EPD Comments of June 4, 2015.

BioScreen-AT is an enhanced version of BioScreen (Neewell et al, 1996) with an exact solution for the transport of a contaminant (Karanovic et al, 2007). The model uses the Domenico equation which describes one-dimensional transport of a solute (inorganic or organic, decaying or non-decaying). The model simulates advection, adsorption and three-dimensional dispersion of any dissolved constituent (inorganic or organic), and has the ability to simulate constant or decaying sources, and contaminant degradation using degradation constants. Features within the model designed to account for processes specific to natural attenuation of organic constituents were not applicable. The use of BioScreen-AT was limited for this site-specific application to model only advection, dispersion, and adsorption onto porous media since lead is not known to degrade at notable rates.

The results of the BioScreen-AT modeling were favorable, indicating that under a theoretical worst-case scenario lead would meet compliance standards within approximately 220 feet to 380 feet downgradient of the property boundary (425 feet to 590 feet from "source" monitoring well MW-18) based on 44 year and 100 year plume durations, respectively. For the MW-15 second source scenario, the lead concentration (for the modeled travel time of 100 additional years) would not exceed the GWPS of 0.015 mg/l between approximately 450 to 620 feet from MW-15, or approximately 270 to 320 feet beyond the eastern boundary along the prevalent groundwater flow direction. However, the actual downgradient extent of the dissolved lead plume would likely be much less since its mobility is diminished as pH level becomes more neutral. This decreased mobility with increased pH is not simulated by BioScreen-AT. Also, the BioScreen-AT model assumes a constant source, which does not apply to the Swift site as operations have ceased and there is no known source. The Georgia VRP permits a Point of Compliance up to 1,000 feet from a contaminant source provided there is no exposure risk. The full BioScreen-AT modeling discussion, site data, results and aerial depiction of the modeled potential offsite plume limit are provided in Appendix C.

4.0 CONCLUSIONS AND RECOMMENDATIONS

The number of monitoring well locations sampled that exceeded the lead Type 1 RRS in September 2015 is one more than exceeded at the start of the corrective action effectiveness monitoring, which commenced in March 2012. In March 2012, a total of five well locations (MW-7, MW-9, MW-13D, MW-16, and MW-18) exceeded the lead Type 1 RRS, while in September 2015, six well locations exceeded the lead Type 1 RRS (MW-1, MW-6, MW-9, MW-13D, MW-15 and MW-18). While the lead concentration in MW-1 in September 2015 exceeded the Type 1 RRS, this exceedance was in a total metals sample with elevated turbidity, and lead was not detected in the dissolved metals samples collected in MW-1.

The September 2015 arsenic results in four of the wells (MW-6, MW-13D, MW-15 and MW-18) exceeded the Type 1 RRS of 0.01 mg/L. The only previous arsenic exceedances of the Type 1 RRS were isolated occurences; once at MW-12 (0.0126 mg/L in September 2013), and once at MW-28 (0.017 mg/L in November 2004). Arsenic was detected in September 2015 in seven of the well samples (MW-1, MW-6, MW-7, MW-9, MW-13D, MW-15 and MW-18), whereas there were no arsenic detections in any of the samples collected in September 2014. Arsenic had never before been reported in six of these wells (MW-1, MW-6, MW-7, MW-9, MW-15 and MW-18), and had been reported only once before at MW-13D. The arsenic detection in MW-1 was in a total metals samples with elevated turbidity, and arsenic was not detected in the dissolved metals sample collected from MW-1. While arsenic was reported at MW-9, arsenic was not detected in the duplicate sample (DUP-1) collected at MW-9. As mentioned previously, for the reasons given above (only two previous arsenic Type 1 RRS exceedances, reports of arsenic in multiple wells in which it had never before been reported, and an arsenic detection in a parent sample but not the associated duplicate sample), the September 2015 arsenic detections are considered anomalous and may not reflect actual site conditions. The trend of arsenic detections will be assessed using the results of subsequent sampling events.

Barium meets the Type 4 RRS of 20 mg/L at all sampling locations, and also meets the Type 1 RRS of 2 mg/L at all locations except MW-27DDDD. The barium values reported at MW-6 and MW-27DDDD (which both exceeded Type 1 RRS in September 2014) have decreased to values more consistent with historical values. The barium value at MW-6 decreased from 10.3 mg/L in September 2014 to 0.449 mg/L in September 2015, and the barium value at MW-27DDDD decreased from 6.72 mg/L to 4.95 mg/L (the lowest value observed since September 2012). The increased barium values in MW-6 and MW-27DDDD in September 2014 are now believed to have been anomalous, possibly due to the redevelopment performed the day prior to both MW-6 and MW-27DDDD being sampled in September 2014, as discussed in the ACAER.

Annual groundwater sampling will continue (unless an alternative frequency is subsequently approved by EPD) until the data demonstrate that human health and the environment are adequately protected and EPD concurs. If the data demonstrates that a reduced frequency is warranted, modifications will be proposed in subsequent status reports.

5.0 NEXT SUBMITTAL

As required by EPD's letter dated May 29, 2015, semiannual progress reports are to submitted to EPD November 29th and May 29th annually, beginning November 2015 and ending in 2020, unless a CSR is submitted and approved prior to 2020. A report for the second semiannual period is planned to be submitted by May 29th, 2016, and is planned to include the following activities:

- Results from completed additional investigation activities, if any
- Activity, as required, related to EPD review and comments to the previous Responses to EPD comments submitted by Amec Foster Wheeler on behalf of ConAgra dated August 31, 2015.

TABLES

Table 1: Summary of Groundwater Elevations

Well Number	Date Measured	Ground Suface Elevation (ft, NAVD)	Top of Casing Elevation (ft, NAVD)	Depth of Screened Interval (ft btoc)	Depth to Water (ft, btoc)	Groundwater Elevation (ft, NAVD)
MW-1	8/30/01	308.30	308.00	2.59-17.59	12.91	295.09
	12/18/01	308.30	308.00	2.59-17.59	13.82	294.18
	1/30/03	308.30	308.00	2.59-17.59	10.23	297.77
	2/14/03	308.30	308.00	2.59-17.59	11.58	296.42
	4/8/03	308.30	308.00	2.59-17.59	9.44	298.56
	6/9/04	308.30	308.00	2.59-17.59	10.55	297.45
	11/5/04	308.30	308.00	2.59-17.59	9.46	298.54
	1/25/2005[1]	306.91	306.50	1.09-16.09	6.88	299.62
	2/15/05	306.91	306.50	1.09-16.09	6.46	300.04
	5/15/2007[2]	306.47	306.06	0.65-15.66	10.35	295.71
	7/16/2008[2]	306.47	306.06	0.65-15.66	11.86	294.20
	10/19/09	306.47	306.06	0.65-15.66	10.47	295.59
	3/28/12	306.47	306.06	0.65-15.66	4.38	301.68
	9/26/12	306.47	306.06	0.65-15.66	3.37	302.69
	3/26/13	306.47	306.06	0.65-15.67	1.68	304.38
	9/9/13	306.47	306.06	0.65-15.67	2.98	303.08
	9/22/14	306.47	306.06	0.65-15.67	9.78	296.28
	9/21/15	306.47	306.06	0.65-15.68	10.50	295.56
MW-2	8/30/01	309.66	309.38	2.35-17.35	12.15	297.23
	12/18/01	309.66	309.38	2.35-17.35	15.16	294.22
	1/30/03	309.66	309.38	2.35-17.35	11.75	297.63
	2/14/03	309.66	309.38	2.35-17.35	11.60	297.78
	4/8/03	309.66	309.38	2.35-17.35	10.96	298.42
	6/9/04	309.66	309.38	2.35-17.35	12.77	296.61
	11/5/04	309.66	309.38	2.35-17.35	11.46	297.92
	1/25/2005[1]	308.25	307.96	0.93-15.93	8.90	299.06
	2/15/05	308.25	307.96	0.93-15.93	8.56	299.40
	5/16/2007[2]	307.77	307.48	0.45-15.45	Dry	Dry
	7/16/2008[2]	307.77	307.48	0.45-15.45	Dry	Dry
	10/19/09	307.77	307.48	0.45-15.45	0.21	307.27
	3/28/12	307.77	307.48	0.45-15.45	Dry	Dry
	9/26/12	307.77	307.48	0.45-15.45	4.86	302.62
	3/26/13	307.77	307.48	0.45-15.46	1.31	306.17
	9/9/13	307.77	307.48	0.45-15.46	3.12	304.36
	9/22/14	307.77	307.48	0.45-15.46	Dry	Dry
	9/21/15	307.77	307.48	0.45-15.47	Dry	Dry
MW-3	8/30/01	307.31	306.91	2.07-21.67	10.22	296.69
	12/18/01	307.31	306.91	2.07-21.67	13.02	293.89
	1/30/03	307.31	306.91	2.07-21.67	9.53	297.38
	2/14/03	307.31	306.91	2.07-21.67	9.35	297.56
	4/8/03	307.31	306.91	2.07-21.67	8.76	298.15
	6/9/04	307.31	306.91	2.07-21.67	10.49	296.42
	11/5/04	307.31	306.91	2.07-21.67	9.75	297.16
	1/25/2005[1]	307.10	306.79	1.95-21.55	8.92	297.87
	2/15/05	307.10	306.79	1.95-21.55	8.52	298.27
	5/15/2007[2]	306.63	306.32	1.48-21.08	11.85	294.47
	7/16/2008[2]	306.63	306.32	1.48-21.08	12.92	293.40
	10/19/09	306.63	306.32	1.48-21.08	NM	NM
	3/28/12	306.63	306.32	1.48-21.08	10.44	295.88
	9/26/12	306.63	306.32	1.48-21.08	9.89	296.43
	3/26/13	306.63	306.32	1.48-21.09	8.31	298.01
	9/9/13	306.63	306.32	1.48-21.09	8.41	297.91
	9/22/14	306.63	306.32	1.48-21.09	10.35	295.97
	9/21/15	306.63	306.32	1.48-21.10	13.32	293.00
MW-4	8/30/01	310.02	309.73	3.39-13.39	1.99	307.74
	12/18/01	310.02	309.73	3.39-13.39	4.28	305.45
	1/30/03	310.02	309.73	3.39-13.39	2.39	307.34
	2/14/03	310.02	309.73	3.39-13.39	1.45	308.28
	4/8/03	310.02	309.73	3.39-13.39	1.62	308.11
	6/9/04	310.02	309.73	3.39-13.39	3.07	306.66
	11/5/04	310.02	309.73	3.39-13.39	2.82	306.91
	1/25/05	310.02	309.73	3.39-13.39	1.45	308.28
	2/15/05	310.02	309.73	3.39-13.39	0.19	309.54
	5/15/2007[2]	309.68	309.39	3.05-13.05	NL	NL
	7/16/2008[2]	309.68	309.39	3.05-13.05	NL	NL
	10/19/09	309.68	309.39	3.05-13.05	1.16	308.23
	3/28/12	309.68	309.39	3.05-13.05	2.42	306.97
	9/26/12	309.68	309.39	3.05-13.05	1.35	308.04
	3/26/13	309.68	309.39	3.05-13.06	0.74	308.65
	9/9/13	309.68	309.39	3.05-13.06	1.34	308.05
	9/22/14	309.68	309.39	3.05-13.06	1.47	307.92
	9/21/15	309.68	309.39	3.05-13.07	4.01	305.38

Table 1: Summary of Groundwater Elevations

Well Number	Date Measured	Ground Suface Elevation (ft, NAVD)	Top of Casing Elevation (ft, NAVD)	Depth of Screened Interval (ft btoc)	Depth to Water (ft, btoc)	Groundwater Elevation (ft, NAVD)
MW-5	8/30/01	308.09	307.83	1.55-11.55	1.70	306.13
	12/18/01	308.09	307.83	1.55-11.55	6.45	301.38
	1/30/03	308.09	307.83	1.55-11.55	3.66	304.17
	2/14/03	308.09	307.83	1.55-11.55	3.23	304.60
	4/8/03	308.09	307.83	1.55-11.55	2.43	305.40
	6/9/04	308.09	307.83	1.55-11.55	2.96	304.87
	11/5/04	308.09	307.83	1.55-11.55	3.49	304.34
	1/25/05	308.09	307.83	1.55-11.55	2.82	305.01
	2/15/05	308.09	307.83	1.55-11.55	2.31	305.52
	5/15/07	308.09	307.83	1.55-11.55	NL	NL
	7/16/08	308.09	307.83	1.55-11.55	NL	NL
	10/19/09	308.09	307.83	1.55-11.55	NL	NL
	3/28/12	308.09	307.83	1.55-11.55	NL	NL
	9/26/12	308.09	307.83	1.55-11.55	NL	NL
	3/26/13	308.09	307.83	1.55-11.56	NL	NL
	9/9/13	308.09	307.83	1.55-11.56	NL	NL
	9/22/14	308.09	307.83	1.55-11.56	NL	NL
	9/21/15	308.09	307.83	1.55-11.57	NL	NL
MW-6	8/30/01	308.24	307.98	2.12-12.12	8.01	299.97
	12/18/01	308.24	307.98	2.12-12.12	8.69	299.29
	1/30/03	308.24	307.98	2.12-12.12	Covered with fill dirt	
	2/14/03	308.24	307.98	2.12-12.12	2.40	305.58
	4/8/03	308.24	307.98	2.12-12.12	2.24	305.74
	6/9/04	308.24	307.98	2.12-12.12	3.52	304.46
	11/5/04	308.24	307.98	2.12-12.12	3.66	304.32
	1/25/2005[1]	310.24	309.96	4.10-14.10	5.45	304.51
	2/15/05	310.24	309.96	4.10-14.10	5.76	304.20
	5/15/2007[2]	309.83	309.55	3.69-13.69	7.35	302.20
	7/16/2008[2]	309.83	309.55	3.69-13.69	27.95[(3)]	281.60
	10/19/09	309.83	309.55	3.69-13.69	3.75	305.80
	3/28/12	309.83	309.55	3.69-13.69	5.81	303.74
	9/26/12	309.83	309.55	3.69-13.69	6.06	303.49
	3/26/13	309.83	309.55	3.69-13.70	3.25	306.30
	9/9/13	309.83	309.55	3.69-13.70	3.28	306.27
	9/22/14	309.83	309.55	3.69-13.70	7.90	301.65
	9/21/15	309.83	309.55	3.69-13.71	7.85	301.70
MW-7	12/18/01	308.72	308.17	5.49-25.49	13.87	294.30
	1/30/03	308.72	308.17	5.49-25.49	Covered with fill dirt	
	2/14/03	308.72	308.17	5.49-25.49	9.99	298.18
	4/8/03	308.72	308.17	5.49-25.49	9.39	298.78
	6/9/04	308.72	308.17	5.49-25.49	11.01	297.16
	11/5/04	308.72	308.17	5.49-25.49	9.57	298.60
	1/25/2005[1]	309.99	309.63	6.95-26.95	11.22	298.41
	2/15/05	309.99	309.63	6.95-26.95	11.1	298.53
	5/16/2007[2]	309.57	309.21	6.53-26.53	14.32	294.89
	7/16/2008[2]	309.57	309.21	6.53-26.53	NM	NM
	10/19/09	309.57	309.21	6.53-26.53	14.81	294.40
	3/28/12	309.57	309.21	6.53-26.53	12.73	296.48
	9/26/12	309.57	309.21	6.53-26.53	11.98	297.23
	3/26/13	309.57	309.21	6.53-26.54	9.56	299.65
	9/9/13	309.57	309.21	6.53-26.54	10.68	298.53
	9/22/14	309.57	309.21	6.53-26.54	13.76	295.45
	9/21/15	309.57	309.21	6.53-26.55	15.85	293.36
MW-8	8/30/01	308.84	308.61	2.20-12.20	11.01	297.60
	12/18/01	308.84	308.61	2.20-12.20	11.10	297.51
	1/30/03	308.84	308.61	2.20-12.20	6.29	302.32
	2/14/03	308.84	308.61	2.20-12.20	4.66	303.95
	4/8/03	308.84	308.61	2.20-12.20	3.97	304.64
	6/9/04	308.84	308.61	2.20-12.20	6.67	301.94
	11/5/04	308.84	308.61	2.20-12.20	7.68	300.93
	1/25/2005[1]	308.73	308.43	2.02-12.02	3.72	304.71
	2/15/05	308.73	308.43	2.02-12.02	4.14	304.29
	5/15/2007[2]	308.33	308.03	1.62-11.62	6.56	301.47
	7/16/2008[2]	308.33	308.03	1.62-11.62	6.43	301.60
	10/19/09	308.33	308.03	1.62-11.62	1.41	306.62
	3/28/12	308.33	308.03	1.62-11.62	4.16	303.87
	9/26/12	308.33	308.03	1.62-11.62	2.44	305.59
	3/26/13	308.33	308.03	1.62-11.63	0.86	307.17
	9/9/13	308.33	308.03	1.62-11.63	2.41	305.62
	9/22/14	308.33	308.03	1.62-11.63	2.18	305.85
	9/21/15	308.33	308.03	1.62-11.64	7.01	301.02

Table 1: Summary of Groundwater Elevations

Well Number	Date Measured	Ground Suface Elevation (ft, NAVD)	Top of Casing Elevation (ft, NAVD)	Depth of Screened Interval (ft btoc)	Depth to Water (ft, btoc)	Groundwater Elevation (ft, NAVD)
MW-9	8/30/01	307.30	307.12	2.43-22.43	10.92	296.20
	12/18/01	307.30	307.12	2.43-22.43	13.62	293.50
	1/30/03	307.30	307.12	2.43-22.43	9.97	297.15
	2/14/03	307.30	307.12	2.43-22.43	9.80	297.32
	4/8/03	307.30	307.12	2.43-22.43	9.27	297.85
	6/9/04	307.30	307.12	2.43-22.43	Covered with fill dirt	
	11/5/04	307.30	307.12	2.43-22.43	10.31	296.81
	1/25/2005[1]	307.77	307.57	2.88-22.88	10.05	297.52
	2/15/05	307.77	307.57	2.88-22.88	9.92	297.65
	5/15/2007[2]	307.32	307.12	2.43-22.43	13.06	294.06
	7/16/2008[2]	307.32	307.12	2.43-22.43	14.15	292.97
	10/19/09	307.32	307.12	2.43-22.43	13.46	293.66
	3/28/12	307.32	307.12	2.43-22.43	11.65	295.47
	9/26/12	307.32	307.12	2.43-22.43	11.14	295.98
	3/26/13	307.32	307.12	2.43-22.44	9.49	297.63
	9/9/13	307.32	307.12	2.43-22.44	9.51	297.61
	9/22/14	307.32	307.12	2.43-22.44	12.51	294.61
	9/21/15	307.32	307.12	2.43-22.45	14.43	292.69
MW-10	8/30/01	308.41	308.20	1.65-11.65	3.25	304.95
	12/18/01	308.41	308.20	1.65-11.65	5.58	302.62
	1/30/03	308.41	308.20	1.65-11.65	Covered with fill dirt	
	2/14/03	308.41	308.20	1.65-11.65	2.50	305.70
	4/8/03	308.41	308.20	1.65-11.65	1.89	306.31
	6/9/04	308.41	308.20	1.65-11.65	2.87	305.33
	11/5/04	308.41	308.20	1.65-11.65	3.30	304.90
	1/25/2005[1]	309.51	309.29	2.74-12.74	3.90	305.39
	2/15/05	309.51	309.29	2.74-12.74	4.15	305.14
	5/15/2007[2]	309.16	308.94	2.39-12.39	5.82	303.12
	7/16/2008[2]	309.16	308.94	2.39-12.39	5.43	303.51
	10/19/09	309.16	308.94	2.39-12.39	3.74	305.20
	3/28/12	309.16	308.94	2.39-12.39	NL	NL
	9/26/12	309.16	308.94	2.39-12.39	NL	NL
	3/26/13	309.16	308.94	2.39-12.40	NL	NL
	9/9/13	309.16	308.94	2.39-12.40	NL	NL
	9/22/14	309.16	308.94	2.39-12.40	NL	NL
	9/21/15	309.16	308.94	2.39-12.41	NL	NL
MW-11	8/30/01	309.15	308.92	1.84-11.84	10.80	298.12
	12/18/01	309.15	308.92	1.84-11.84	5.73	303.19
	1/30/03	309.15	308.92	1.84-11.84	2.89	306.03
	2/14/03	309.15	308.92	1.84-11.84	2.78	306.14
	4/8/03	309.15	308.92	1.84-11.84	3.16	305.76
	6/9/04	309.15	308.92	1.84-11.84	5.56	303.36
	11/5/04	309.15	308.92	1.84-11.84	4.99	303.93
	1/25/05	309.15	308.92	1.84-11.84	4.15	304.77
	2/15/05	309.15	308.92	1.84-11.84	3.96	304.96
	5/15/2007[2]	308.7	308.47	1.39-11.39	6.17	302.30
	7/16/2008[2]	308.7	308.47	1.39-11.39	3.60	304.87
	10/19/09	308.7	308.47	1.39-11.39	2.05	306.42
	3/28/12	308.7	308.47	1.39-11.39	NL	NL
	9/26/12	308.7	308.47	1.39-11.39	NL	NL
	3/26/13	308.7	308.47	1.39-11.40	NL	NL
	9/9/13	308.7	308.47	1.39-11.40	NL	NL
	9/22/14	308.7	308.47	1.39-11.40	NL	NL
	9/21/15	308.7	308.47	1.39-11.41	NL	NL
MW-12	8/30/01	311.32	311.10	1.76-11.76	4.63	306.47
	12/18/01	311.32	311.10	1.76-11.76	5.73	305.37
	1/30/03	311.32	311.10	1.76-11.76	7.80	303.30
	2/14/03	311.32	311.10	1.76-11.76	4.63	306.47
	4/8/03	311.32	311.10	1.76-11.76	3.95	307.15
	6/9/04	311.32	311.10	1.76-11.76	6.12	304.98
	11/5/04	311.32	311.10	1.76-11.76	6.35	304.75
	1/25/05	311.32	311.10	1.76-11.76	4.35	306.75
	2/15/05	311.32	311.10	1.76-11.76	4.4	306.70
	5/15/2007[2]	310.99	310.77	1.43-11.43	6.60	304.17
	7/16/2008[2]	310.99	310.77	1.43-11.43	6.47	304.30
	10/19/09	310.99	310.77	1.43-11.43	3.55	307.22
	3/28/12	310.99	310.77	1.43-11.43	4.53	306.24
	9/26/12	310.99	310.77	1.43-11.43	3.48	307.29
	3/26/13	310.99	310.77	1.43-11.44	2.10	308.67
	9/9/13	310.99	310.77	1.43-11.44	2.82	307.95
	9/22/14	310.99	310.77	1.43-11.44	4.94	305.83
	9/21/15	310.99	310.77	1.43-11.45	6.38	304.39

Table 1: Summary of Groundwater Elevations

Well Number	Date Measured	Ground Suface Elevation (ft, NAVD)	Top of Casing Elevation (ft, NAVD)	Depth of Screened Interval (ft btoc)	Depth to Water (ft, btoc)	Groundwater Elevation (ft, NAVD)
MW-13D	8/30/01	309.03	308.78	19.58-24.58	12.35	296.43
	12/18/01	309.03	308.78	19.58-24.58	15.23	293.55
	1/30/03	309.03	308.78	19.58-24.58	11.50	297.28
	2/14/03	309.03	308.78	19.58-24.58	11.34	297.44
	4/8/03	309.03	308.78	19.58-24.58	11.80	296.98
	6/9/04	309.03	308.78	19.58-24.58	12.58	296.20
	11/5/04	309.09	308.78	19.58-24.58	11.81	296.97
	1/25/2005[1]	308.81	308.58	19.38-24.38	10.92	297.66
	2/15/05	308.81	308.58	19.38-24.38	10.85	297.73
	5/15/2007[2]	308.38	308.15	18.95-23.95	13.99	294.16
	7/16/2008[2]	308.38	308.15	18.95-23.95	15.16	292.99
	10/19/09	308.38	308.15	18.95-23.95	14.51	293.64
	3/28/12	308.38	308.15	18.95-23.95	12.67	295.48
	9/26/12	308.38	308.15	18.95-23.95	12.12	296.03
	3/26/13	308.38	308.15	18.95-23.96	10.46	297.69
	9/9/13	308.38	308.15	18.95-23.96	10.44	297.71
	9/22/14	308.38	308.15	18.95-23.96	13.52	294.63
	9/21/15	308.38	308.15	18.95-23.97	15.45	292.70
MW-14	8/30/01	307.26	306.92	1.19-6.19	DRY	DRY
	12/18/01	307.26	306.92	1.19-6.19	DRY	DRY
	1/30/03	307.26	306.92	1.19-6.19	2.98	303.94
	2/14/03	307.26	306.92	1.19-6.19	2.20	304.72
	4/8/03	307.26	306.92	1.19-6.19	2.67	304.25
	6/9/04	307.26	306.92	1.19-6.19	3.20	303.72
	11/5/04	307.26	306.92	1.19-6.19	3.24	303.68
	1/25/2005[1]	307.10	306.81	1.08-6.08	2.80	304.01
	2/15/05	307.10	306.81	1.08-6.08	2.31	304.50
	5/15/2007[2]	306.74	306.45	0.72-5.72	4.12	302.33
	7/16/2008[2]	306.74	306.45	0.72-5.72	3.65	302.80
	10/19/09	306.74	306.45	0.72-5.72	NM	NM
	3/28/12	306.74	306.45	0.72-5.72	2.86	303.59
	9/26/12	306.74	306.45	0.72-5.72	2.66	303.79
	3/26/13	306.74	306.45	0.72-5.73	1.93	304.52
	9/9/13	306.74	306.45	0.72-5.73	2.54	303.91
	9/22/14	306.74	306.45	0.72-5.73	2.39	304.06
	9/21/15	306.74	306.45	0.72-5.74	3.70	302.75
MW-15	1/30/03	306.11	305.82	5.18-15.18	14.94	290.88
	2/14/03	306.11	305.82	5.18-15.18	13.77	292.05
	4/8/03	306.11	305.82	5.18-15.18	9.53	296.29
	6/9/04	306.11	305.82	5.18-15.18	6.58	299.24
	11/5/04	306.11	305.82	5.18-15.18	5.75	300.07
	1/25/2005[1]	306.13	305.88	5.24-15.24	5.25	300.63
	2/15/05	306.13	305.88	5.24-15.24	4.79	301.09
	5/16/2007[2]	305.73	305.48	4.84-14.84	7.61	297.87
	7/16/2008[2]	305.73	305.48	4.84-14.84	8.02	297.46
	10/19/09	305.73	305.48	4.84-14.84	5.66	299.82
	3/28/12	305.73	305.48	4.84-14.84	4.92	300.56
	9/26/12	305.73	305.48	4.84-14.84	4.62	300.86
	3/26/13	305.73	305.48	4.84-14.85	4.02	301.46
	9/9/13	305.73	305.48	4.84-14.85	4.14	301.34
	9/22/14	305.73	305.48	4.84-14.85	4.97	300.51
	9/21/15	305.73	305.48	4.84-14.86	8.00	297.48
MW-16	1/30/03	310.39	309.95	5.40-20.40	NM	NM
	2/14/03	310.39	309.95	5.40-20.40	11.91	298.04
	4/8/03	310.39	309.95	5.40-20.40	11.31	298.64
	6/9/04	310.39	309.95	5.40-20.40	12.99	296.96
	11/5/04	310.39	309.95	5.40-20.40	12.19	297.76
	1/25/2005[1]	310.54	310.00	5.45-20.45	11.69	298.31
	2/15/05	310.54	310.00	5.45-20.45	11.53	298.47
	5/16/2007[2]	310.09	309.55	5.00-20.00	14.55	295.00
	7/16/2008[2]	310.09	309.55	5.00-20.00	15.67	293.88
	10/19/09	310.09	309.55	5.00-20.00	14.49	295.06
	3/28/12	310.09	309.55	5.00-20.00	12.98	296.57
	9/26/12	310.09	309.55	5.00-20.00	12.38	297.17
	3/26/13	310.09	309.55	5.00-20.01	10.78	298.77
	9/9/13	310.09	309.55	5.00-20.01	10.96	298.59
	9/22/14	310.09	309.55	5.00-20.01	14.17	295.38
	9/21/15	307.70	307.57	5.00-20.02	14.15	293.42
MW-17	1/30/03	308.04	307.53	4.90-14.90	2.70	304.83
	2/14/03	308.04	307.53	4.90-14.90	2.27	305.26
	4/8/03	308.04	307.53	4.90-14.90	2.42	305.11
	6/9/04	308.04	307.53	4.90-14.90	4.10	303.43
	11/5/04	308.04	307.53	4.90-14.90	3.82	303.71
	1/25/05	308.04	307.53	4.90-14.90	Covered with fill dirt	
	2/15/05	308.04	307.53	4.90-14.90	3.38	304.15
	5/16/07	308.04	307.53	4.90-14.90	NL	NL
	7/16/08	308.04	307.53	4.90-14.90	NL	NL
	10/19/09	308.04	307.53	4.90-14.90	Destroyed	Destroyed
	3/28/12	308.04	307.53	4.90-14.90	Destroyed	Destroyed
	9/26/12	308.04	307.53	4.90-14.90	Destroyed	Destroyed
	3/26/13	308.04	307.53	4.90-14.91	Destroyed	Destroyed

Table 1: Summary of Groundwater Elevations

Well Number	Date Measured	Ground Suface Elevation (ft, NAVD)	Top of Casing Elevation (ft, NAVD)	Depth of Screened Interval (ft btoc)	Depth to Water (ft, btoc)	Groundwater Elevation (ft, NAVD)
	9/9/13	308.04	307.53	4.90-14.91	Destroyed	Destroyed
	9/22/14	308.04	307.53	4.90-14.91	Destroyed	Destroyed
	9/21/15	308.04	307.53	4.90-14.92	Destroyed	Destroyed

Table 1: Summary of Groundwater Elevations

Well Number	Date Measured	Ground Suface Elevation (ft, NAVD)	Top of Casing Elevation (ft, NAVD)	Depth of Screened Interval (ft btoc)	Depth to Water (ft, btoc)	Groundwater Elevation (ft, NAVD)
MW-18	1/30/03	307.77	307.43	5.38-20.38	8.50	298.93
	2/14/03	307.77	307.43	5.38-20.38	9.23	298.2
	4/8/03	307.77	307.43	5.38-20.38	8.74	298.69
	6/9/04	307.77	307.43	5.38-20.38	10.13	297.3
	11/5/04	307.77	307.43	5.38-20.38	8.86	298.57
	1/25/2005[1]	308.57	308.12	6.07-21.07	9.13	298.99
	2/15/05	308.57	308.12	6.07-21.07	9.16	298.96
	5/15/2007[2]	308.14	307.69	5.64-20.64	13.09	294.6045
	7/16/2008[2]	308.14	307.69	5.64-20.64	14.46	293.23
	10/19/09	308.14	307.69	5.64-20.64	13.37	294.32
	3/28/12	308.14	307.69	5.64-20.64	11.11	296.58
	9/26/12	308.14	307.69	5.64-20.64	10.13	297.56
	3/26/13	308.14	307.69	5.64-20.65	6.12	301.57
	9/9/13	308.14	307.69	5.64-20.65	8.46	299.23
	9/22/14	308.14	307.69	5.64-20.65	12.41	295.28
	9/21/15	309.20	309.03	5.64-20.66	15.91	293.12
MW-19	1/30/03	305.30	308.66	5.42-15.42	5.10	303.56
	2/14/03	305.30	308.66	5.42-15.42	5.94	302.72
	4/8/03	305.30	308.66	5.42-15.42	6.08	302.58
	6/9/04	305.30	308.66	5.42-15.42	7.31	301.35
	11/5/04	305.30	308.66	5.42-15.42	6.67	301.99
	1/25/2005[1]	305.30	308.89	5.65-15.65	8.60	300.29
	2/15/05	305.30	308.89	5.65-15.65	5.43	303.46
	5/16/2007[2]	304.88	308.47	5.23-15.23	8.68	299.794
	7/16/2008[2]	304.88	308.47	5.23-15.23	9.78	298.69
	10/19/09	304.88	308.47	5.23-15.23	5.96	302.51
	3/28/12	304.88	308.47	5.23-15.23	6.50	301.97
	9/26/12	304.88	308.47	5.23-15.23	6.35	302.12
	3/26/13	304.88	308.47	5.23-15.24	4.83	303.64
	9/9/13	304.88	308.47	5.23-15.24	6.13	302.34
	9/22/14	304.88	308.47	5.23-15.24	10.71	297.76
	9/21/15	304.88	308.47	5.23-15.25	10.78	297.69
MW-20	1/30/03	305.86	305.63	5.21-15.21	8.20	297.43
	2/14/03	305.86	305.63	5.21-15.21	7.69	297.94
	4/8/03	305.86	305.63	5.21-15.21	6.98	298.65
	6/9/04	305.86	305.63	5.21-15.21	8.72	296.91
	11/5/04	305.86	305.63	5.21-15.21	8.09	297.54
	1/25/2005[1]	306.00	305.67	5.25-15.25	7.50	298.17
	2/15/05	306.00	305.67	5.25-15.25	7.46	298.21
	5/15/2007[2]	305.63	305.30	4.88-14.88	10.30	295.0002
	7/16/2008[2]	305.63	305.30	4.88-14.88	6.57	298.73
	10/19/09	305.63	305.30	4.88-14.88	2.57	302.73
	3/28/12	305.63	305.30	4.88-14.88	4.88	300.42
	9/26/12	305.63	305.30	4.88-14.88	2.68	302.62
	3/26/13	305.63	305.30	4.88-14.89	1.81	303.49
	9/9/13	305.63	305.30	4.88-14.89	3.91	301.39
	9/22/14	305.63	305.30	4.88-14.89	3.72	301.58
	9/21/15	305.63	305.30	4.88-14.90	8.99	296.31
MW-21	1/30/03	306.81	306.12	5.18-15.18	9.60	296.52
	2/14/03	306.81	306.12	5.18-15.18	6.90	299.22
	4/8/03	306.81	306.12	5.18-15.18	6.72	299.40
	6/9/04	306.81	306.12	5.18-15.18	7.91	298.21
	11/5/04	306.81	306.12	5.18-15.18	8.13	297.99
	1/25/2005[1]	306.77	306.16	5.22-15.22	7.66	298.50
	2/15/05	306.77	306.16	5.22-15.22	7.53	298.63
	5/15/2007[2]	306.43	305.82	4.88-14.88	9.08	296.74
	7/16/2008[2]	306.43	305.82	4.88-14.88	9.12	296.70
	10/19/09	306.43	305.82	4.88-14.88	1.75	304.07
	3/28/12	306.43	305.82	4.88-14.88	4.3	301.52
	9/26/12	306.43	305.82	4.88-14.88	2.85	302.97
	3/26/13	306.43	305.82	4.88-14.89	0.46	305.36
	9/9/13	306.43	305.82	4.88-14.89	1.39	304.43
	9/22/14	306.43	305.82	4.88-14.89	5.21	300.61
	9/21/15	306.43	305.82	4.88-14.90	5.98	299.84
MW-22DD	1/30/03	308.75	308.72	40.34-45.34	16.61	292.11
	2/14/03	308.75	308.72	40.34-45.34	16.51	292.21
	4/8/03	308.75	308.72	40.34-45.34	16.11	292.61
	6/9/04	308.75	308.72	40.34-45.34	17.90	290.82
	11/5/04	308.75	308.72	40.34-45.34	17.13	291.59
	1/25/2005[1]	308.79	308.55	40.17-45.17	16.11	292.44
	2/15/05	308.79	308.55	40.17-45.17	15.95	292.60
	5/15/2007[2]	308.3	308.06	39.68-44.68	18.85	289.2084
	7/16/2008[2]	308.3	308.06	39.68-44.68	19.57	288.49
	10/19/09	308.3	308.06	39.68-44.68	19.22	288.84
	3/28/12	308.3	308.06	39.68-44.68	17.76	290.30
	9/26/12	308.3	308.06	39.68-44.68	17.50	290.56
	3/26/13	308.3	308.06	39.68-44.69	15.86	292.20
	9/9/13	308.3	308.06	39.68-44.69	15.94	292.12
	9/22/14	308.3	308.06	39.68-44.69	18.46	289.60
	9/21/15	308.3	308.06	39.68-44.70	19.95	288.11

Table 1: Summary of Groundwater Elevations

Well Number	Date Measured	Ground Suface Elevation (ft, NAVD)	Top of Casing Elevation (ft, NAVD)	Depth of Screened Interval (ft btoc)	Depth to Water (ft, btoc)	Groundwater Elevation (ft, NAVD)
MW-23	4/8/03	307.09	306.78	5.41-20.41	7.75	299.03
	6/9/04	307.09	306.78	5.41-20.41	9.07	297.71
	11/5/04	307.09	306.78	5.41-20.41	8.23	298.55
	1/25/2005[1]	307.12	306.83	5.46-20.46	7.90	298.93
	2/15/05	307.12	306.83	5.46-20.46	8.04	298.79
	5/16/2007[2]	306.71	306.42	5.05-20.05	11.60	294.8207
	7/16/2008[2]	306.71	306.42	5.05-20.05	13.18	293.24
	10/19/09	306.71	306.42	5.05-20.05	12.55	293.87
	3/28/12	306.71	306.42	5.05-20.05	9.62	296.80
	9/26/12	306.71	306.42	5.05-20.05	9.00	297.42
	3/26/13	306.71	306.42	5.05-20.06	7.14	299.28
	9/9/13	306.71	306.42	5.05-20.06	7.51	298.91
	9/22/14	306.71	306.42	5.05-20.06	NL	NL
	9/21/15	306.71	306.42	5.05-20.07	NL	NL
MW-24	4/8/03	310.15	309.81	5.43-20.43	10.57	299.24
	6/9/04	310.15	309.81	5.43-20.43	12.31	297.5
	11/5/04	310.15	309.81	5.43-20.43	11.46	298.35
	1/25/2005[1]	310.18	309.85	5.47-20.47	11.10	298.75
	2/15/05	310.18	309.85	5.47-20.47	10.77	299.08
	5/16/2007[2]	309.75	309.42	5.04-20.04	13.95	295.4728
	7/16/2008[2]	309.75	309.42	5.04-20.04	15.19	294.23
	10/19/09	309.75	309.42	5.04-20.04	13.56	295.86
	3/28/12	309.75	309.42	5.04-20.04	12.15	297.27
	9/26/12	309.75	309.42	5.04-20.04	11.49	297.93
	3/26/13	309.75	309.42	5.04-20.05	9.22	300.20
	9/9/13	309.75	309.42	5.04-20.05	9.83	299.59
	9/22/14	309.75	309.42	5.04-20.05	NL	NL
	9/21/15	309.75	309.42	5.04-20.06	NL	NL
MW-25	4/8/03	311.50	311.02	5.30-20.30	11.83	299.19
	6/9/04	311.50	311.02	5.30-20.30	13.61	297.41
	11/5/04	311.50	311.02	5.30-20.30	12.78	298.24
	1/25/2005[2]	311.52	311.06	5.34-20.34	12.25	298.81
	1/25/2005[1]	311.52	311.06	5.34-20.34	12.05	299.01
	5/15/2007[2]	311.22	310.76	5.04-20.04	15.21	295.5463
	7/16/2008[2]	311.22	310.76	5.04-20.04	16.45	294.31
	10/19/09	311.22	310.76	5.04-20.04	14.95	295.81
	3/28/12	311.22	310.76	5.04-20.04	13.44	297.32
	9/26/12	311.22	310.76	5.04-20.04	12.82	297.94
	3/26/13	311.22	310.76	5.04-20.05	10.54	300.22
	9/10/13	311.22	310.76	5.04-20.05	11.28	299.48
	9/22/14	311.22	310.76	5.04-20.05	NL	NL
	9/21/15	311.22	310.76	5.04-20.06	NL	NL
MW-26DDD	4/8/03	308.75	308.35	55.43-60.43	19.99	288.36
	6/9/04	308.75	308.35	55.43-60.43	21.57	286.78
	11/5/04	308.75	308.35	55.43-60.43	20.87	287.48
	1/25/2005[1]	308.71	308.57	55.65-60.65	20.36	288.21
	2/15/05	308.71	308.57	55.65-60.65	20.15	288.42
	5/15/2007[2]	308.28	308.14	55.22-60.22	22.51	285.63
	7/16/2008[2]	308.28	308.14	55.22-60.22	23.57	284.57
	10/19/09	308.28	308.14	55.22-60.22	22.89	285.25
	3/28/12	308.28	308.14	55.22-60.22	21.87	286.27
	9/26/12	308.28	308.14	55.22-60.22	22.06	286.08
	3/26/13	308.28	308.14	55.22-60.23	20.65	287.49
	9/9/13	308.28	308.14	55.22-60.23	21.28	286.86
	9/22/14	308.28	308.14	55.22-60.23	22.93	285.21
	9/21/15	308.28	308.14	55.22-60.24	23.41	284.73
MW-27DDDD	11/5/04	308.64	308.35	71.23-91.19	24.47	283.88
	1/25/2005[1]	309.61	309.32	72.20-92.16	24.55	284.77
	2/15/05	309.61	309.32	72.20-92.16	24.48	284.84
	5/15/2007[2]	309.14	308.85	71.73-91.69	23.50	285.35
	7/16/2008[2]	309.14	308.85	71.73-91.69	18.71[(3)]	290.14
	10/19/09	309.14	308.85	71.73-91.69	27.89	280.96
	3/28/12	309.14	308.85	71.73-91.69	27.32	281.53
	9/26/12	309.14	308.85	71.73-91.69	25.72	283.13
	3/26/13	309.14	308.85	71.73-91.70	24.13	284.72
	9/11/13	309.14	308.85	71.73-91.70	24.06	284.79
	9/22/14	309.14	308.85	71.73-91.70	26.52	282.33
	9/21/15	309.14	308.85	71.73-91.71	27.69	281.16
MW-28	11/5/04	306.14	305.83	9.30-24.30	15.62	290.21
	1/25/05	306.14	305.83	9.30-24.30	14.75	291.08
	2/15/05	306.14	305.83	9.30-24.30	14.82	291.01
	5/15/07	306.14	305.83	9.30-24.30	17.45	288.38
	7/16/08	306.14	305.83	9.30-24.30	Damaged	Damaged
	10/19/09	306.14	305.83	9.30-24.30	Damaged	Damaged
	3/28/12	306.14	305.83	9.30-24.30	Damaged	Damaged
	9/26/12	306.14	305.83	9.30-24.30	Damaged	Damaged
	3/26/13	306.14	305.83	9.30-24.30	Damaged	Damaged
	9/9/13	306.137	305.83	9.30-24.30	Damaged	Damaged
	9/22/14	306.137	305.83	9.30-24.30	Damaged	Damaged
	9/21/15	306.137	305.83	9.30-24.30	Damaged	Damaged

Table 1: Summary of Groundwater Elevations

Well Number	Date Measured	Ground Suface Elevation (ft, NAVD)	Top of Casing Elevation (ft, NAVD)	Depth of Screened Interval (ft btoc)	Depth to Water (ft, btoc)	Groundwater Elevation (ft, NAVD)
MW-A	12/18/01	307.87	307.07	15.54-19.54	12.60	294.47
	4/8/03	307.87	307.07	15.54-19.54	7.61	299.46
	6/9/04	307.87	307.07	15.54-19.54	8.64	298.43
	11/5/04	307.87	307.07	15.54-19.54	7.79	299.28
	1/25/2005[1]	307.87	307.07	15.54-19.54	7.71	299.36
	2/15/05	307.87	307.07	15.54-19.54	7.81	299.26
	5/15/2007[2]	307.53	306.73	15.20-19.20	11.46	295.27
	7/16/2008[2]	307.53	306.73	15.20-19.20	NM	NM
	10/19/09	307.53	306.73	15.20-19.20	12.23	294.50
	3/28/12	307.53	306.73	15.20-19.20	9.4	297.33
	9/26/12	307.53	306.73	15.20-19.20	8.37	298.36
	3/26/13	307.53	306.73	15.20-19.20	6.53	300.20
	9/9/13	307.53	306.73	15.20-19.20	7.72	299.01
	9/22/14	307.53	306.73	15.20-19.20	NL	NL
	9/21/15	307.53	306.73	15.20-19.20	NL	NL
MW-29	7/17/08	NM	310.49	14.00-24.00	15.95	294.54
	10/19/09	NM	310.49	14.00-24.00	13.95	296.54
	3/28/12	NM	310.49	14.00-24.00	12.08	298.41
	9/26/12	NM	310.49	14.00-24.00	12.03	298.46
	3/26/13	NM	310.49	14.00-24.00	12.78	297.71
	9/9/13	NM	310.49	14.00-24.00	11.92	298.57
	9/22/14	NM	310.49	14.00-24.00	14.47	296.02
	9/21/15	307.00	306.85	14.00-24.00	12.59	294.26
MW-30	7/17/08	NM	305.51	10.00-20.00	10.84	294.67
	10/19/09	NM	305.51	10.00-20.00	9.41	296.10
	3/28/12	NM	305.51	10.00-20.00	NL	NL
	3/28/12	NM	305.51	10.00-20.00	NL	NL
	3/26/13	NM	305.51	10.00-20.00	NL	NL
	9/9/13	NM	305.51	10.00-20.00	NL	NL
	9/22/14	NM	305.51	10.00-20.00	NL	NL
	9/21/15	NM	305.51	10.00-20.00	NL	NL
MW-31	5/2/12	Not Surveyed	Not Surveyed	14.6-24.6[4]	13.69	N/A
	9/26/12	Not Surveyed	Not Surveyed	14.6-24.6[4]	11.43	N/A
	3/26/13	Not Surveyed	Not Surveyed	14.6-24.6[4]	9.59	N/A
	9/9/13	Not Surveyed	Not Surveyed	14.6-24.6[4]	9.96	N/A
	9/22/14	Not Surveyed	Not Surveyed	14.6-24.6[4]	13.44	N/A
	9/21/15	307.50	306.32	14.6-24.6[4]	12.23	294.09

Notes:

Prepared by/Date: JMQ 11/9/15
Checked by/Date: NM 12/2/15

NAVD = North American Vertical Datum
btoc = Below top of casing
N/A=Not Applicable
NL = Not Located
NM = Not Measured

[1] Indicates top of casing elevation was revised due to site grading.
[2] Indicates a revised top of casing elevation based on a site topographic survey.
[3] Possible measurement error.
[4] Below ground surface

Table 2: Summary of Groundwater Analytical Results

Sample ID	Sample Date	Sampling Method	pH (pH units)	Turbidity (NTU)	Sample Type	Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Lead (mg/L)	Chloride (mg/L)	Nitrate (mg/L)
MW-1	8/30/2001	Bailer	5.32	70	Total	< 0.05	< 0.5	< 0.005	< 0.05	< 0.05	NA	NA
MW-1	9/6/2001	Bailer	NM	NM	Total	< 0.05	< 0.5	< 0.005	< 0.05	< 0.01	NA	NA
MW-1	9/18/2001	Bailer	5.47	NM	Total	NA	NA	NA	NA	NA	NA	< 0.01
MW-1	12/18/2001	Peristaltic Pump	5.35	1.99	Total	NA	**0.33**	NA	NA	< 0.005	NA	< 0.01
MW-1	10/4/2002	-	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA
MW-1	1/31/2003	Peristaltic Pump	5.17	10.3	Total	NA	**0.042**	NA	NA	< 0.005	NA	NA
MW-1	11/9/2004	-	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA
MW-1	9/23/2015	Peristaltic Pump	5.38	7800	Total	**0.00676**	**0.191**	< 0.0007	**0.0499**	**0.077**	NA	NA
MW-1	9/23/2015	Peristaltic Pump	NM	NM	Dissolved	<0.005	**0.0159**	<0.0007	<0.005	<0.001	NA	NA
MW-2	8/30/2001	Bailer	4.21	75	Total	< 0.05	**3.5**	< 0.005	< 0.05	**0.11**	NA	NA
MW-2	9/6/2001	Bailer	NM	NM	Dissolved	NA	**5**	NA	NA	**0.19**	NA	NA
MW-2	9/6/2001	Bailer	NM	NM	Total	< 0.05	**4.9**	< 0.005	< 0.05	**0.21**	NA	NA
MW-2	9/18/2001	Bailer	4.14	NM	Total	NA	NA	NA	NA	NA	NA	**2.16**
MW-2	12/18/2001	Peristaltic Pump	4.18	1.11	Total	NA	**12**	NA	NA	**0.55**	NA	**1.1**
MW-2 **	10/4/2002	-	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA
MW-2 **	9/28/2012	Peristaltic Pump	6.22	27.8	Total	NA	NA	NA	NA	NA	NA	NA
MW-2	3/28/2013	Peristaltic Pump	5.99	140.0	Total	< 0.005	**0.0409**	< 0.0007	< 0.005	**0.00236**	300	**0.66 J**
MW-2	3/28/2013	Peristaltic Pump	NM	NM	Dissolved	< 0.005	**0.0332**	<0.0007	<0.005	<0.001	NA	NA
MW-2	9/12/2013	Peristaltic Pump	6.04	39.8	Total	< 0.005	**0.0486**	<0.0007	<0.005	**0.00146**	**360**	<2.5
MW-2	9/12/2013	Peristaltic Pump	NM	NM	Dissolved	< 0.005	**0.0453**	<0.0007	<0.005	<0.001	NA	NA
MW-3	8/30/2001	Bailer	4.72	180000	Total	< 0.05	**3.4**	< 0.005	< 0.05	**0.12**	NA	NA
MW-3	9/6/2001	Bailer	NM	NM	Dissolved	< 0.05	**0.6**	< 0.005	< 0.05	**0.022**	NA	NA
MW-3	9/6/2001	Bailer	NM	NM	Total	< 0.05	**0.56**	< 0.005	< 0.05	**0.02**	NA	NA
MW-3	9/18/2001	Bailer	4.61	NM	Total	NA	NA	NA	NA	NA	NA	**12.7**
MW-3	12/18/2001	Peristaltic Pump	4.5	1.16	Total	NA	**0.89**	NA	NA	**0.044**	NA	**12**
MW-3	10/4/2002	-	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA
MW-3	11/10/2004	Peristaltic Pump	5.71	0.31	Total	NA	**2.3**	NA	NA	**0.019**	NA	NA
MW-3	2/15/2011	Peristaltic Pump	5.95	51.1	Total	<0.005	**0.0848**	< 0.0007	<0.005	**0.00347**	NA	NA
MW-3	2/15/2011	Peristaltic Pump	NM	0.24	Dissolved	<0.005	**0.0801**	< 0.0007	<0.005	<0.001	NA	NA
MW-3	3/29/2012	Peristaltic Pump	5.64	9.2	Total	<0.005	**0.179**	<0.0007	<0.005	**0.00123**	**140**	**0.63**
MW-3	9/27/2012	Peristaltic Pump	5.57	9.5	Total	< 0.005	**0.120**	< 0.0007	< 0.005	**0.00136**	**120**	<2.5
MW-3	3/26/2013	Peristaltic Pump	5.60	89.7	Total	< 0.005	**0.0275**	< 0.0007	< 0.005	**0.00501**	**5.4**	**0.16 J**
MW-3	3/26/2013	Peristaltic Pump	NM	NM	Dissolved	< 0.005	**0.0234**	< 0.0007	< 0.005	**0.00229**	NA	NA
MW-3	9/10/2013	Peristaltic Pump	5.75	9.96	Total	< 0.005	**0.127**	< 0.0007	< 0.005	**0.00108**	**130**	**0.75**
MW-3	9/23/2014	Peristaltic Pump	5.26	16.1	Total	< 0.005	**0.168**	< 0.0007	< 0.005	**0.00166**	**120**	**0.28**
MW-3	9/23/2014	Peristaltic Pump	NM	NM	Dissolved	< 0.005	**0.166**	< 0.0007	< 0.005	<0.001	NA	NA
MW-4	8/30/2001	Bailer	6.45	72	Total	< 0.05	< 0.5	< 0.005	< 0.05	< 0.05	NA	NA
MW-4	9/6/2001	Bailer	NM	NM	Total	< 0.05	< 0.5	< 0.005	< 0.05	< 0.01	NA	NA
MW-4	9/18/2001	Bailer	6.35	NM	Total	NA	NA	NA	NA	NA	NA	< 0.01
MW-4	12/18/2001	Peristaltic Pump	6.3	37.2	Total	NA	**0.081**	NA	NA	< 0.005	NA	< 0.01
MW-4	1/31/2003	Peristaltic Pump	5.75	2.86	Total	NA	NA	NA	NA	NA	NA	NA
MW-4	4/8/2003	Peristaltic Pump	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA
MW-4	10/20/2009	Peristaltic Pump	NM	NM	Dissolved	< 0.005	**0.106**	< 0.0007	< 0.025	< 0.001	NA	NA
MW-4	10/20/2009	Peristaltic Pump	6.55	0.47	Total	< 0.005	**0.107**	< 0.0007	< 0.005	< 0.001	**4.3**	**4**
MW-4	9/22/2015	Peristaltic Pump	6.19	0.37	Total	< 0.005	**0.0948**	< 0.0007	< 0.005	<0.001	NA	NA
MW-5	8/30/2001	Bailer	6.96	2900	Total	< 0.05	< 0.5	< 0.005	< 0.05	< 0.05	NA	NA
MW-5	9/6/2001	Bailer	NM	NM	Total	< 0.05	< 0.5	< 0.005	< 0.05	< 0.01	NA	NA
MW-5	9/18/2001	Bailer	6.55	NM	Total	NA	NA	NA	NA	NA	NA	**0.25**
MW-5	12/18/2001	Peristaltic Pump	6.76	0.67	Total	NA	**0.11**	NA	NA	< 0.005	NA	**0.12**
MW-6	8/30/2001	Bailer	4.09	75	Total	< 0.05	**2**	< 0.005	< 0.05	**0.19**	NA	NA
MW-6	9/6/2001	Bailer	NM	NM	Dissolved	NA	**2.2**	NA	NA	**0.26**	NA	NA
MW-6	9/6/2001	Bailer	NM	NM	Total	< 0.05	**2.1**	< 0.005	< 0.05	**0.27**	NA	NA
MW-6	9/18/2001	Bailer	4.21	NM	Total	NA	NA	NA	NA	NA	NA	**13.8**
MW-6	12/18/2001	Peristaltic Pump	4.12	1.58	Total	NA	**5.3**	NA	NA	**0.55**	NA	**16**
MW-6	5/16/2007	-	4.23	6.72	Total	NA	NA	NA	NA	NA	**2400**	**0.33**
MW-6	3/30/2012	Peristaltic Pump	6.05	9.17	Total	<0.005	**0.0746**	< 0.0007	<0.005	<0.001	**2000**	<2.5
MW-6	9/27/2012	Peristaltic Pump	6.34	8.7	Total	<0.025	**0.296**	< 0.0035	<0.025	**0.0322**	**1800**	<25
MW-6	3/27/2013	Peristaltic Pump	6.65	4.37	Total	< 0.005	**0.039**	**0.00082**	< 0.005	< 0.001	**210**	<2.7
MW-6	9/10/2013	Peristaltic Pump	5.57	69.1	Total	< 0.005	**0.420**	**0.000878**	**0.00547**	**0.0534**	**1400**	<2.5
MW-6	9/10/2013	Peristaltic Pump	NM	NM	Dissolved	< 0.005	**0.509**	< 0.0007	< 0.005	**0.0112**	NA	NA
MW-6	9/25/2014	Peristaltic Pump	4.10	21.4	Total	< 0.005	**10.3**	**0.00146**	**0.0106**	**1.16**	**6300**	<25
MW-6	9/25/2014	Peristaltic Pump	NM	NM	Dissolved	< 0.005	**9.29**	**0.00158**	< 0.005	**0.994**	NA	NA
MW-6	9/23/2015	Peristaltic Pump	4.55	1.88	Total	**0.0159**	**0.449**	<0.002	<0.005	**0.132**	NA	NA
MW-7	12/18/2001	Peristaltic Pump	4.31	1.66	Total	NA	**13**	NA	NA	**0.32**	NA	**4.2**
MW-7	5/16/2007	-	3.54	5.02	Total	NA	NA	NA	NA	NA	**3900**	**3.2**
DUP-03	5/16/2007	-	3.54	5.02	Total	NA	NA	NA	NA	NA	**4000**	**3.6**
MW-7	3/30/2012	Peristaltic Pump	5.14	1.41	Total	<0.005	**0.577**	< 0.0007	<0.005	**0.026**	**1500**	**3.4**
MW-7	9/28/2012	Peristaltic Pump	5.94	3.93	Total	<0.005	**0.384**	< 0.0007	<0.005	**0.00666**	**900**	<12 UJ
DUP-1	9/28/2012	Peristaltic Pump	NM	NM	Total	<0.005	**0.320**	< 0.0007	<0.005	**0.00483**	**890**	<12 UJ
MW-7	3/27/2013	Peristaltic Pump	6.34	2.00	Total	<0.005	**0.127**	<0.0007	<0.005	<0.001	**260**	**3.8 J**
MW-7	9/11/2013	Peristaltic Pump	5.91	3.71	Total	<0.005	**0.216**	<0.0007	<0.005	<0.001	**660**	<2.5
MW-7	9/23/2014	Peristaltic Pump	5.65	1.39	Total	<0.005	**0.315**	<0.0007	<0.005	**0.00913**	**1200**	**4.0**
MW-7	9/22/2015	Peristaltic Pump	5.57	1.47	Total	**0.00533**	**0.493**	<0.001	<0.005	**0.00995**	NA	NA
MW-8	8/30/2001	-	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA
MW-8	9/6/2001	Bailer	NM	NM	Total	< 0.05	< 0.5	< 0.005	< 0.05	< 0.01	NA	NA
MW-8	9/18/2001	Bailer	5.03	NM	Total	NA	NA	NA	NA	NA	NA	**33.3**
Applicable Standards: HSRA Type 1/3 Groundwater RRS or USEPA MCLs						**0.01**	**2**	**0.005**	**0.1**	**0.015**	**250***	**10**
Background						**<0.005**	**0.125**	**<0.0007**	**<0.005**	**<0.001**	**12**	**2.4**
Highest RRS						**0.01**	**20**	**0.051**	**0.1**	**0.015**	**--**	**--**
Corrective Action Goal						**0.01**	**20**	**0.051**	**0.1**	**0.015**	**--**	**--**

Table 2: Summary of Groundwater Analytical Results

Sample ID	Sample Date	Sampling Method	pH (pH units)	Turbidity (NTU)	Sample Type	Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Lead (mg/L)	Chloride (mg/L)	Nitrate (mg/L)
MW-9	8/30/2001	Bailer	4.43	550	Total	< 0.05	**1.6**	< 0.005	< 0.05	**0.08**	NA	NA
MW-9	9/6/2001	Bailer	NM	NM	Dissolved	NA	**4.7**	NA	NA	**0.17**	NA	NA
MW-9	9/6/2001	Bailer	NM	NM	Total	< 0.05	**2**	< 0.005	< 0.05	**0.077**	NA	NA
MW-9	9/18/2001	Bailer	4.33	NM	Total	NA	NA	NA	NA	NA	NA	**5.38**
MW-9	12/18/2001	Peristaltic Pump	4.3	4.74	Total	NA	**5.3**	NA	NA	**0.26**	NA	**5.8**
MW-9	10/21/2009	Peristaltic Pump	NM	NM	Dissolved	< 0.005	**1.1**	**0.00177**	< 0.005	**0.108**	NA	NA
MW-9	10/21/2009	Peristaltic Pump	4.2	2.38	Total	< 0.005	**1.22**	**0.00177**	< 0.005	**0.12**	**940**	**2.4 J**
MW-9	3/30/2012	Peristaltic Pump	4.13	3.35	Total	<0.005	**0.18**	< 0.0007	<0.005	**0.0437**	**490**	**2.6**
MW-9	9/28/2012	Peristaltic Pump	4.13	0.56	Total	<0.005	**0.118**	< 0.0007	<0.005	**0.0472**	**490**	<2.5 UJ
MW-9	3/27/2013	Peristaltic Pump	4.22	4.53	Total	<0.005	**0.232**	**0.000745**	<0.005	**0.0483**	**640**	**2.4 J**
MW-9	9/11/2013	Peristaltic Pump	4.48	0.81	Total	<0.005	**0.225**	**0.000881**	<0.005	**0.0613**	**760**	<2.5
MW-9	9/24/2014	Peristaltic Pump	4.51	0.49	Total	<0.005	**0.338**	**0.000898**	<0.005	**0.0678**	**860**	<25
DUP-1	9/24/2014	Peristaltic Pump	4.51	0.49	Total	<0.005	**0.333**	**0.000896**	<0.005	**0.0677**	**900**	<25
MW-9	9/22/2015	Peristaltic Pump	4.31	2.59	Total	**0.00509**	**0.375**	<0.00150	<0.005	**0.0898**	NA	NA
DUP-1	9/22/2015	Peristaltic Pump	4.31	2.59	Total	< 0.005	**0.374**	**0.00135**	**0.0441**	**0.0912**	NA	NA
MW-10	8/30/2001	Bailer	5.81	42	Total	< 0.05	< 0.5	< 0.005	< 0.05	< 0.05	NA	NA
MW-10	9/6/2001	Bailer	NM	NM	Total	< 0.05	< 0.5	< 0.005	< 0.05	< 0.01	NA	NA
MW-10	9/18/2001	Bailer	6.11	NM	Total	NA	NA	NA	NA	NA	NA	< 0.01
MW-10	12/18/2001	Peristaltic Pump	5.72	1.75	Total	NA	**0.39**	NA	NA	< 0.005	NA	< 0.01
MW-10	10/21/2009	Peristaltic Pump	NM	NM	Dissolved	< 0.005	**0.103**	< 0.0007	< 0.005	< 0.001	NA	NA
MW-10	10/21/2009	Peristaltic Pump	5.53	0	Total	< 0.005	**0.112**	< 0.0007	< 0.005	< 0.001	**23**	< 0.25
MW-11	8/30/2001	Bailer	6.11	110	Total	< 0.05	< 0.5	< 0.005	< 0.05	< 0.05	NA	NA
MW-11	9/6/2001	Bailer	NM	NM	Total	< 0.05	< 0.5	< 0.005	< 0.05	< 0.01	NA	NA
MW-11	9/18/2001	Bailer	5.89	NM	Total	NA	NA	NA	NA	NA	NA	**0.58**
MW-11	12/18/2001	Peristaltic Pump	5.62	0.59	Total	NA	**0.11**	NA	NA	< 0.005	NA	< 0.01
MW-11	10/21/2009	Peristaltic Pump	NM	NM	Dissolved	< 0.005	**0.0278**	< 0.0007	< 0.005	< 0.001	NA	NA
MW-11	10/21/2009	Peristaltic Pump	4.61	0.31	Total	< 0.005	**0.0323**	< 0.0007	< 0.005	< 0.001	**5.9**	< 0.25
MW-12	8/30/2001	Bailer	5.98	1800	Total	< 0.05	< 0.5	< 0.005	< 0.05	< 0.05	NA	NA
MW-12	9/6/2001	Bailer	NM	NM	Total	< 0.05	< 0.5	< 0.005	< 0.05	< 0.01	NA	NA
MW-12	9/18/2001	Bailer	5.85	NM	Total	NA	NA	NA	NA	NA	NA	< 0.01
MW-12	12/19/2001	Peristaltic Pump	5.72	4.26	Total	NA	**0.13**	NA	NA	< 0.005	NA	< 0.01
MW-12	10/20/2009	Peristaltic Pump	NM	NM	Dissolved	< 0.005	**0.123**	< 0.0007	< 0.025	< 0.001	NA	NA
MW-12	10/20/2009	Peristaltic Pump	5.71	0.57	Total	< 0.005	**0.12**	< 0.0007	< 0.005	< 0.001	**6.2**	**2.4**
MW-12	3/29/2012	Peristaltic Pump	6.01	4.04	Total	<0.005	**0.182**	< 0.0007	<0.005	<0.001	**3.1**	<0.25
MW-12	9/27/2012	Peristaltic Pump	6.31	3.72	Total	<0.005	**0.134**	**0.000843**	<0.005	<0.001	**2.9**	**5.4**
MW-12	3/26/2013	Peristaltic Pump	5.75	1.01	Total	<0.005	**0.102**	<0.0007	<0.005	<0.001	**2.1**	**4.8**
MW-12	9/10/2013	Peristaltic Pump	5.86	2.58	Total	**0.0126**	**0.124**	<0.0007	<0.005	<0.001	**2.1**	**0.25**
MW-12	9/23/2014	Peristaltic Pump	5.86	0.12	Total	<0.005	**0.154**	<0.0007	<0.005	<0.001	**2.7**	<0.25
MW-12	9/22/2015	Peristaltic Pump	5.85	0.85	Total	< 0.005	**0.130**	< 0.0007	< 0.005	<0.001	NA	NA
MW-13D	8/30/2001	Bailer	5	3.2	Total	< 0.05	**3.2**	< 0.005	< 0.05	**0.16**	NA	NA
MW-13D	9/6/2001	Bailer	NM	NM	Dissolved	NA	**2.7**	NA	NA	**0.14**	NA	NA
MW-13D	9/6/2001	Bailer	NM	NM	Total	< 0.05	**2.4**	< 0.005	< 0.05	**0.14**	NA	NA
MW-13D	9/18/2001	Bailer	4.22	NM	Total	NA	NA	NA	NA	NA	NA	**3.16**
MW-13D	12/18/2001	Peristaltic Pump	4.04	1.29	Total	NA	**1.7**	NA	NA	**0.19**	NA	**3.4**
MW-13D	11/10/2004	Peristaltic Pump	5.1	0.57	Total	NA	NA	NA	NA	NA	NA	NA
MW-13D	3/30/2012	Peristaltic Pump	3.72	2.62	Total	<0.005	**0.273**	**0.00333**	<0.005	**0.168**	**1600**	**5.5**
MW-13D	9/28/2012	Peristaltic Pump	3.98	1.30	Total	<0.005	**0.295**	**0.00132**	<0.005	**0.128**	**1400**	<12 UJ
MW-13D	3/28/2013	Peristaltic Pump	3.02	0.51	Total	<0.005	**0.383**	**0.00203**	<0.005	**0.143**	**1600**	**4.0 J**
DUP-1	3/28/2013	Peristaltic Pump	NM	NM	Total	<0.005	**0.386**	**0.00202**	<0.005	**0.143**	**1600**	**4.0 J**
MW-13D	9/12/2013	Peristaltic Pump	3.95	0.73	Total	**0.00699**	**0.338**	**0.0049**	<0.005	**0.139**	**1500**	**3.4**
MW-13D	9/25/2014	Peristaltic Pump	3.82	0.61	Total	<0.005	**0.254**	**0.00508**	<0.005	**0.176**	**1600**	<25
MW-13D	9/22/2015	Peristaltic Pump	3.83	2.41	Total	**0.0269**	**0.169**	<0.00450	<0.005	**0.129**	NA	NA
MW-15	4/8/2003	Peristaltic Pump	3.58	43.2	Total	NA	**0.412**	NA	NA	**0.124**	NA	NA
MW-15	9/25/2014	Peristaltic Pump	3.75	0.95	Total	<0.005	**0.0628**	<0.0007	**0.0437**	**0.311**	**1900**	<25
MW-15	9/23/2015	Peristaltic Pump	4.18	7.84	Total	**0.0264**	<0.075	**0.00249**	**0.00643**	**0.243**	NA	NA
MW-16	2/14/2003	Peristaltic Pump	3.98	0.6	Total	NA	**2.34**	NA	NA	**0.1**	NA	NA
MW-16	4/8/2003	Peristaltic Pump	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA
MW-16	3/29/2012	Peristaltic Pump	4.5	0.5	Total	<0.005	**0.542**	< 0.0007	<0.005	**0.0239**	**530**	**4**
MW-16	9/28/2012	Peristaltic Pump	4.60	1.25	Total	<0.005	**0.642**	< 0.0007	<0.005	**0.0220**	**490**	<12 UJ
MW-16	3/27/2013	Peristaltic Pump	5.44	3.06	Total	<0.005	**0.495**	<0.0007	<0.005	**0.00914**	**640**	**5.9 J**
MW-16	9/11/2013	Peristaltic Pump	5.02	0.0	Total	<0.005	**0.631**	<0.0007	<0.005	**0.01290**	**470**	**5.2**
MW-16	9/24/2014	Peristaltic Pump	4.36	4.86	Total	<0.005	<0.01	<0.0007	<0.005	**0.0244**	**570**	<25
MW-16	9/22/2015	Peristaltic Pump	4.20	8.22	Total	<0.005	**0.531**	<0.0007	<0.005	**0.0121**	NA	NA
MW-17	1/30/2003	Peristaltic Pump	5.42	0.79	Total	NA	**0.06**	NA	NA	< 0.005	NA	NA
MW-17	11/9/2004	Bailer	6.88	5.39	Total	NA	NA	NA	NA	NA	NA	NA
MW-18	1/30/2003	Peristaltic Pump	3.64	1.51	Total	NA	**0.285**	NA	NA	**0.382**	NA	NA
DUPLICATE	1/30/2003	Peristaltic Pump	3.64	1.51	Total	NA	**0.282**	NA	NA	**0.351**	NA	NA
MW-18	11/10/2004	Peristaltic Pump	6.07	1.17	Total	NA	NA	NA	NA	NA	NA	NA
MW-18	10/21/2009	Peristaltic Pump	NM	NM	Dissolved	< 0.005	**0.312**	**0.00881**	< 0.005	**0.287**	NA	NA
MW-18	10/21/2009	Peristaltic Pump	4.44	4	Total	< 0.005	**0.345**	**0.00849**	< 0.005	**0.318**	**3000**	**1.1 J**
MW-18	3/30/2012	Peristaltic Pump	5.49	5.06	Total	< 0.005	**0.148**	<0.0007	< 0.005	**0.0211**	**1200**	<2.5
DUP-1	3/30/2012	Peristaltic Pump	5.49	5.06	Total	<0.005	**0.148**	< 0.0007	<0.005	**0.022**	**1100**	<2.5
MW-18	9/28/2012	Peristaltic Pump	6.11	2.10	Total	<0.005	**0.0934**	< 0.0007	<0.005	**0.00288**	**800**	<12 UJ
MW-18	3/27/2013	Peristaltic Pump	6.91	35.4	Total	<0.005	**0.0531**	< 0.0007	<0.005	**0.00329**	**200**	<0.14
MW-18	3/27/2013	Peristaltic Pump	NM	NM	Dissolved	<0.005	**0.0529**	<0.0007	<0.005	<0.001	NA	NA
MW-18	9/10/2013	Peristaltic Pump	6.19	5.29	Total	<0.005	**0.124**	**0.00214**	<0.005	**0.00166**	**610**	<2.5
MW-18	9/24/2014	Peristaltic Pump	4.71	8.83	Total	<0.005	**0.254**	**0.00175**	<0.005	**0.216**	**260**	<50
MW-18	9/23/2015	Peristaltic Pump	4.51	17.9	Total	**0.0708**	**0.173**	**0.00742**	<0.005	**0.258**	NA	NA
MW-18	9/23/2015	Peristaltic Pump	NM	NM	Dissolved	**0.0747**	**0.0185**	**0.00507**	<0.005	**0.176**	NA	NA
Applicable Standards: HSRA Type 1/3 Groundwater RRS or USEPA MCLs						**0.01**	**2**	**0.005**	**0.1**	**0.015**	**250***	**10**
Background						**<0.005**	**0.125**	**<0.0007**	**<0.005**	**<0.001**	**12**	**2.4**
Highest RRS						**0.01**	**20**	**0.051**	**0.1**	**0.015**	**--**	**--**
Corrective Action Goal						**0.01**	**20**	**0.051**	**0.1**	**0.015**	**--**	**--**

Table 2: Summary of Groundwater Analytical Results

Sample ID	Sample Date	Sampling Method	pH (pH units)	Turbidity (NTU)	Sample Type	Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Lead (mg/L)	Chloride (mg/L)	Nitrate (mg/L)
MW-19	1/30/2003	Peristaltic Pump	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA
MW-19	10/23/2009	Peristaltic Pump	NM	NM	Dissolved	< 0.005	**0.12**	< 0.0007	< 0.025	< 0.001	NA	NA
MW-19	10/23/2009	Peristaltic Pump	6.3	0.19	Total	< 0.005	**0.125**	< 0.0007	< 0.005	< 0.001	**12**	< 0.25
MW-19	3/29/2012	Peristaltic Pump	5.78	7.1	Total	<0.005	**0.252**	< 0.0007	<0.005	<0.001	**11**	**0.58**
MW-19	9/28/2012	Peristaltic Pump	6.20	1.03	Total	<0.005	**0.231**	< 0.0007	<0.005	<0.001	**7.8**	<0.25 UJ
MW-19	3/26/2013	Peristaltic Pump	6.46	4.40	Total	<0.005	**0.143**	<0.0007	<0.005	<0.001	**3.6**	<0.25
MW-19	9/11/2013	Peristaltic Pump	5.95	4.39	Total	<0.005	**0.147**	<0.0007	<0.005	<0.001	**6.6**	<0.25
MW-19	9/23/2014	Peristaltic Pump	5.45	1.08	Total	<0.005	**0.131**	<0.0007	<0.005	**0.00287**	**5.5**	<0.25
MW-20	1/30/2003	Peristaltic Pump	5.44	3.03	Total	NA	**0.045**	NA	NA	< 0.005	NA	NA
DUP-2	1/30/2003	Peristaltic Pump	5.44	3.03	Total	NA	NA	NA	NA	NA	NA	NA
MW-20	10/22/2009	Peristaltic Pump	NM	NM	Dissolved	< 0.005	**0.0161**	< 0.0007	< 0.025	< 0.001	NA	NA
MW-20	10/22/2009	Peristaltic Pump	5.37	30.9	Total	< 0.005	**0.0224**	< 0.0007	< 0.005	**0.00344**	**11**	**0.81**
MW-20	3/30/2012	Peristaltic Pump	5.51	21.1	Total	< 0.005	**0.0447**	< 0.0007	< 0.005	**0.00549**	**9.6**	<0.25
MW-20	3/30/2012	Peristaltic Pump	NM	NM	Dissolved	<0.005	**0.0331**	< 0.0007	<0.005	<0.001	NA	NA
MW-20	9/27/2012	Peristaltic Pump	5.96	73.9	Total	<0.005	**0.0325**	< 0.0007	<0.005	**0.00490**	**9.3**	<0.25
MW-20	9/27/2012	Peristaltic Pump	NM	NM	Dissolved	<0.005	**0.0243**	< 0.0007	<0.005	<0.001	NA	NA
MW-20	3/27/2013	Peristaltic Pump	5.88	33.4	Total	<0.005	**0.0333**	< 0.0007	<0.005	**0.00689**	**12**	**0.24 J**
MW-20	3/27/2013	Peristaltic Pump	NM	NM	Dissolved	<0.005	**0.0209**	<0.0007	<0.005	<0.001	NA	NA
MW-20	9/10/2013	Peristaltic Pump	5.75	158	Total	<0.005	**0.0413**	<0.0007	**0.00808**	**0.0101**	**11**	<0.25
MW-20	9/10/2013	Peristaltic Pump	NM	NM	Dissolved	<0.005	**0.0146**	<0.0007	<0.005	<0.001	NA	NA
MW-20	9/24/2014	Peristaltic Pump	5.50	96.7	Total	<0.005	**0.0334**	<0.0007	**0.00822**	**0.0038**	**15**	<0.25
MW-20	9/24/2014	Peristaltic Pump	NM	NM	Dissolved	<0.005	**0.0188**	<0.0007	<0.005	<0.001	NA	NA
MW-20	9/22/2015	Peristaltic Pump	5.46	51.3	Total	<0.005	**0.0221**	<0.0007	<0.005	**0.00347**	NA	NA
MW-20	9/22/2015	Peristaltic Pump	NM	NM	Dissolved	<0.005	**0.0191**	<0.0007	<0.005	<0.001	NA	NA
MW-21	1/31/2003	Peristaltic Pump	4.96	9.7	Total	NA	**0.324**	NA	NA	< 0.005	NA	NA
MW-21	11/10/2004	-	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA
MW-21	10/21/2009	Peristaltic Pump	5.67	> 1000	Total	NA	NA	NA	NA	NA	NA	NA
MW-22DD	1/31/2003	Peristaltic Pump	4.37	3.36	Total	NA	**7.012**	NA	NA	< 0.005	NA	NA
MW-23	4/8/2003	Peristaltic Pump	5.63	44.8	Total	NA	**0.072**	NA	NA	< 0.005	NA	NA
MW-23	11/10/2004	Peristaltic Pump	7.24	9.95	Total	NA	NA	NA	NA	NA	NA	NA
MW-23	5/16/2007	-	NM	NM	Total	NA	NA	NA	NA	NA	**110**	< 0.05
MW-23	10/21/2009	Peristaltic Pump	NM	NM	Dissolved	< 0.005	**0.0479**	< 0.0007	< 0.025	< 0.001	NA	NA
MW-23	10/21/2009	Peristaltic Pump	5.82	0.78	Total	< 0.005	**0.0517**	< 0.0007	< 0.005	< 0.001	**110**	< 0.25
MW-23	3/29/2012	Peristaltic Pump	6.18	1.48	Total	<0.005	**0.064**	< 0.0007	<0.005	<0.001	**87**	<0.25
MW-23	9/27/2012	Peristaltic Pump	6.75	2.06	Total	<0.005	**0.0912**	< 0.0007	<0.005	<0.001	**62**	**2.8**
MW-23	3/26/2013	Peristaltic Pump	6.04	3.00	Total	<0.005	**0.0689**	<0.0007	<0.005	<0.001	**31**	**0.14 J**
MW-23	9/10/2013	Peristaltic Pump	6.17	1.91	Total	<0.005	**0.0679**	<0.0007	<0.005	<0.001	**37**	**0.98**
MW-24	4/8/2003	Peristaltic Pump	4.73	0.34	Total	NA	**0.051**	NA	NA	< 0.005	NA	NA
DUPLICATE	4/8/2003	Peristaltic Pump	4.73	0.34	Total	NA	NA	NA	NA	NA	NA	NA
MW-24	10/22/2009	Peristaltic Pump	NM	NM	Dissolved	< 0.005	**0.0416**	< 0.0007	< 0.025	< 0.001	NA	NA
MW-24	10/22/2009	Peristaltic Pump	5.7	0.14	Total	< 0.005	**0.0466**	< 0.0007	< 0.005	< 0.001	**130**	< 0.25
MW-25	4/8/2003	Peristaltic Pump	4.93	2.46	Total	NA	**2.8**	NA	NA	**0.008**	NA	NA
DUPLICATE	4/8/2003	Peristaltic Pump	4.93	2.46	Total	NA	**2.76**	NA	NA	**0.011**	NA	NA
MW-25	11/9/2004	Bailer	4.47	6.11	Total	NA	**3.2**	NA	NA	**0.031**	NA	NA
MW-25	10/22/2009	Peristaltic Pump	NM	NM	Dissolved	< 0.005	**0.365**	< 0.0007	< 0.005	**0.00508**	NA	NA
MW-25	10/22/2009	Peristaltic Pump	4.32	0.32	Total	< 0.005	**0.402**	< 0.0007	< 0.005	**0.00568**	**270**	**2.7**
MW-26DDD	4/8/2003	Peristaltic Pump	5.8	2	Total	NA	**4.78**	NA	NA	< 0.005	NA	NA
MW-26DDD	4/9/2004	Bladder Pump	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA
MW-26DDD	6/9/2004	Bladder Pump	NM	2.05	Total	NA	**16**	NA	NA	< 0.005	NA	NA
MW-27DDDD	11/10/2004	Bailer	6.6	7.66	Total	NA	< 0.5	NA	NA	NA	NA	NA
MW-27DDDD	2/15/2011	Peristaltic Pump	5.36	5.01	Total	<0.005	**4.34**	**0.00178**	<0.005	<0.001	NA	NA
MW-27DDDD	5/3/2012	Submersible Pump	5.07	2.02	Total	<0.005	**4.91**	**0.00187**	<0.005	<0.001	**490**	**2.5**
MW-27DDDD	9/27/2012	Submersible Pump	4.88	1.59	Total	<0.005	**5.15**	**0.00184**	<0.005	<0.001	**530**	**2.6**
MW-27DDDD	3/28/2013	Submersible Pump	4.93	5.78	Total	<0.005	**5.55**	**0.00216**	<0.005	<0.001	**530**	**3.7 J**
MW-27DDDD	9/12/2013	Peristaltic Pump	4.93	12.9	Total	<0.005	**5.11**	**0.00243**	<0.005	<0.001	**610**	<5.0
MW-27DDDD	9/12/2013	Peristaltic Pump	NM	NM	Dissolved	<0.005	**4.9**	**0.00235**	<0.005	<0.001	NA	NA
MW-27DDDD	9/25/2014	Peristaltic Pump	4.74	0.72	Total	<0.005	**6.72**	**0.00246**	<0.005	<0.001	**610**	<2.5
MW-27DDDD	9/23/2015	Peristaltic Pump	4.9	3.84	Total	< 0.005	**4.95**	**0.00228**	< 0.005	<0.001	NA	NA
MW-28	11/9/2004	Bailer	6.06	6.34	Total	**0.017**	**2.6**	< 0.01	< 0.01	< 0.005	NA	NA
MW-28	5/16/2007	Peristaltic Pump	5.25	1.16	Total	< 0.01	**0.16**	NA	NA	NA	NA	NA
MW-29	7/17/2008	Bailer	4.42	1.7	Total	NA	**1**	NA	NA	< 0.01	NA	NA
MW-29	10/22/2009	Peristaltic Pump	NM	NM	Dissolved	< 0.005	**0.965**	< 0.0007	< 0.005	**0.00886**	NA	NA
MW-29	10/22/2009	Peristaltic Pump	4.21	0	Total	< 0.005	**0.985**	< 0.0007	< 0.005	**0.00899**	**160**	**3.5**
MW-29	3/30/2012	Peristaltic Pump	4.08	0.32	Total	<0.005	**0.819**	< 0.0007	<0.005	**0.00733**	**140**	**1.4**
MW-29	9/27/2012	Peristaltic Pump	4.45	0.0	Total	<0.005	**0.765**	< 0.0007	<0.005	**0.00692**	**120**	<2.5
MW-29	3/28/2013	Peristaltic Pump	4.33	0.23	Total	< 0.005	**0.764**	< 0.0007	< 0.005	**0.00780**	**120**	**1.8**
MW-29	9/11/2013	Peristaltic Pump	4.30	0.0	Total	< 0.005	**0.712**	< 0.0007	< 0.005	**0.00721**	**120**	<2.5
DUP-1	9/11/2013	Peristaltic Pump	4.30	0.0	Total	< 0.005	**0.704**	< 0.0007	< 0.005	**0.00729**	**150**	<2.5
MW-29	9/24/2014	Peristaltic Pump	4.28	0.75	Total	< 0.005	**0.682**	< 0.0007	< 0.005	**0.00718**	**130**	<25
MW-29	9/23/2015	Peristaltic Pump	4.07	0.81	Total	< 0.005	**0.589**	< 0.0007	< 0.005	**0.00715**	NA	NA
MW-30	7/17/2008	Bailer	NM	NM	Total	NA	NA	NA	NA	NA	NA	NA
MW-30	10/23/2009	Peristaltic Pump	NM	NM	Dissolved	< 0.005	**0.0127**	< 0.0007	< 0.025	**0.0112**	NA	NA
MW-30	10/23/2009	Peristaltic Pump	4.21	0.06	Total	< 0.005	**0.0126**	< 0.0007	< 0.005	**0.0112**	**440**	**0.29**
MW-31	5/2/2012	Peristaltic Pump	4.92	1.52	Total	<0.005	**1.09**	<0.0007	<0.005	**0.0055**	**140**	**6.8**
MW-31	9/23/2015	Peristaltic Pump	4.19	0.66	Total	<0.005	**0.837**	<0.0007	<0.005	**0.00894**	NA	NA
Applicable Standards: HSRA Type 1/3 Groundwater RRS or USEPA MCLs						**0.01**	**2**	**0.005**	**0.1**	**0.015**	**250***	**10**
Background						**<0.005**	**0.125**	**<0.0007**	**<0.005**	**<0.001**	**12**	**2.4**
Highest RRS						**0.01**	**20**	**0.051**	**0.1**	**0.015**	**--**	**--**
Corrective Action Goal						**0.01**	**20**	**0.051**	**0.1**	**0.015**	**--**	**--**

Table 2: Summary of Groundwater Analytical Results

Sample ID	Sample Date	Sampling Method	pH (pH units)	Turbidity (NTU)	Sample Type	Arsenic (mg/L)	Barium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Lead (mg/L)	Chloride (mg/L)	Nitrate (mg/L)
MW-A	12/18/2001	Peristaltic Pump	6.75	1.41	Total	< 0.005	**0.036**	< 0.002	< 0.002	< 0.005	NA	**0.74**
MW-A	5/15/2007	Peristaltic Pump	6.77	2.36	Total	NA	NA	NA	NA	NA	NA	NA
MW-A	10/22/2009	Peristaltic Pump	NM	NM	Dissolved	< 0.005	**0.0775**	< 0.0007	< 0.025	< 0.001	NA	NA
MW-DUP01	10/22/2009	Peristaltic Pump	NM	NM	Dissolved	< 0.005	**0.0762**	< 0.0007	< 0.025	< 0.001	NA	NA
MW-A	10/22/2009	Peristaltic Pump	6.21	0	Total	< 0.005	**0.0886**	< 0.0007	< 0.005	< 0.001	**120**	< 0.25
MW-DUP01	10/22/2009	Peristaltic Pump	6.21	0	Total	< 0.005	**0.0839**	< 0.0007	< 0.005	< 0.001	**130**	< 0.25
TMW-1	7/14/1997	-	NM	NM	Total	< 0.005	**5.38**	**0.028**	**0.028**	**0.028**	NA	NA
Applicable Standards: HSRA Type 1/3 Groundwater RRS or USEPA MCLs						**0.01**	**2**	**0.005**	**0.1**	**0.015**	**250***	**10**
Background						**<0.005**	**0.125**	**<0.0007**	**<0.005**	**<0.001**	**12**	**2.4**
Highest RRS						**0.01**	**20**	**0.051**	**0.1**	**0.015**	**--**	**--**
Corrective Action Goal						**0.01**	**20**	**0.051**	**0.1**	**0.015**	**--**	**--**

Notes:

RRS = Risk Reduction Standard
Total Metals are field preserved, unfiltered
Dissolved Metals are not preserved, laboratory filtered
USEPA MCLs = United States Environmental Protection Agency Maximum Contaminant Levels
HSRA Type 1/3 GW RRS from Appendix III
* = USEPA Secondary Maximum Contaminant Levels are used for Chloride
** insufficient water column for sample collection
- = Data unavailable
-- = No Applicable Standard has been established for this constituent
Bolded result represents a positive value
Bolded/Shaded result exceeds the groundwater standard
Bolded/Shaded result exceeds the RRS

Prepared by: RMB 12/21/09
Checked by: JAH 12/21/09
Revised by: JMQ 10/21/14
Revised by: JAH 10/29/15
Checked by: NM 12/2/15

Data Qualifiers:

J = Estimated value based on QC data
NA = Not Analyzed
NM = Not Measured

Table 3: Summary of SourceDK Model Input

Well ID	Sample Date	Barium (mg/L)	Lead (mg/L)	Number Of Samples
MW-1	8/30/2001	<0.05	<0.05	1
	9/6/2001	<0.05	<0.01	1
	12/18/2001	0.33	<0.005	1
	1/31/2003	0.042	<0.005	1
	9/23/2015	0.191	0.077	1
MW-6	8/30/2001	2	0.19	1
	9/6/2001	2.1	0.27	1
	12/18/2001	5.3	0.55	1
	3/30/2012	0.0746	<0.001	1
	9/27/2012	0.296	0.0322	1
	3/27/2013	0.039	<0.001	1
	9/10/2013	0.42	0.0534	1
	9/25/2014	10.3	1.16	1
	9/23/2015	0.449	0.132	1
MW-7	12/18/2001	13	0.32	1
	3/30/2012	0.577	0.026	1
	9/28/2012	0.384	0.00666	1
	3/27/2013	0.127	<0.001	1
	9/11/2013	0.216	<0.001	1
	9/23/2014	0.315	0.00913	1
	9/22/2015	0.493	0.00995	1
MW-9	8/30/2001	1.6	0.08	1
	9/6/2001	2	0.077	1
	12/18/2001	5.3	0.26	1
	10/21/2009	1.22	0.12	1
	3/30/2012	0.18	0.0437	1
	9/28/2012	0.118	0.0472	1
	3/27/2013	0.232	0.0483	1
	9/11/2013	0.225	0.0613	1
	9/24/2014	0.338	0.0678	1
	9/22/2015	0.375	0.0898	1
MW-12	8/30/2001	0.5	--	1
	9/6/2001	0.5	--	1
	12/19/2001	0.13	--	1
	10/20/2009	0.12	--	1
	3/29/2012	0.182	<0.001	1
	9/27/2012	0.134	<0.001	1
	3/26/2013	0.102	<0.001	1
	9/10/2013	0.124	<0.001	1
	9/23/2014	0.154	<0.001	1
	9/22/2015	0.130	<0.001	1
MW-13D	8/30/2001	3.2	0.16	1
	9/6/2001	2.4	0.14	1
	12/18/2001	1.7	0.19	1
	3/30/2012	0.273	0.168	1
	9/28/2012	0.295	0.128	1
	3/28/2013	0.383	0.143	1
	9/12/2013	0.338	0.139	1
	9/25/2014	0.254	0.176	1
	9/22/2015	0.169	0.129	1

Table 3: Summary of SourceDK Model Input

Well ID	Sample Date	Barium (mg/L)	Lead (mg/L)	Number Of Samples
MW-15	4/8/2003	0.412	0.124	1
	9/25/2014	0.0628	0.311	1
	9/23/2015	<0.075	0.243	1
MW-16	2/14/2003	2.34	0.1	1
	3/29/2012	0.542	0.0239	1
	9/28/2012	0.642	0.022	1
	3/27/2013	0.495	0.00914	1
	9/11/2013	0.631	0.0129	1
	9/24/2014	<0.01	0.0244	1
	9/22/2015	0.531	0.0121	1
MW-18	1/30/2003	0.2835	0.3665	2
	10/21/2009	0.345	0.318	1
	3/30/2012	0.148	0.0211	1
	9/28/2012	0.093	0.00288	1
	3/27/2013	0.0531	0.00329	1
	9/10/2013	0.124	0.00166	1
	9/24/2014	0.254	0.216	1
	9/23/2015	0.173	0.258	1
MW-20	1/30/2003	0.045	0.005	1
	10/22/2009	0.0224	0.00344	1
	3/30/2012	0.0447	0.00549	1
	9/27/2012	0.0325	0.0049	1
	3/27/2013	0.0333	0.00689	1
	9/10/2013	0.0413	0.0101	1
	9/24/2014	0.0334	0.0038	1
	9/22/2015	0.0221	0.00347	1
MW-27DDDD	11/10/2004	<0.5	--	1
	2/15/2011	4.34	<0.001	1
	5/3/2012	4.91	<0.001	1
	9/27/2012	5.15	<0.001	1
	3/28/2013	5.55	<0.001	1
	9/12/2013	5.11	<0.001	1
	9/25/2014	6.72	<0.001	1
	9/23/2015	4.95	<0.001	1
MW-29	10/22/2009	0.985	0.00899	1
	3/30/2012	0.819	0.00733	1
	9/27/2012	0.765	0.00692	1
	3/28/2013	0.764	0.0078	1
	9/11/2013	0.7120	0.00721	1
	9/24/2014	0.682	0.00718	1
	9/23/2015	0.589	0.00715	1
MW-31	5/2/2012	1.09	0.0055	1
	9/23/2015	0.837	0.00894	1

Notes:

mg/L = milligrams per Liter

-- = not analyzed or not used as input

Prepared by/Date: JMQ 11/1/2013
Checked by/Date: JDD 11/5/2013
Revised by: JMQ 12/8/14
Revised by: JMQ 11/9/15
Checked by: NM 12/2/15

FIGURES

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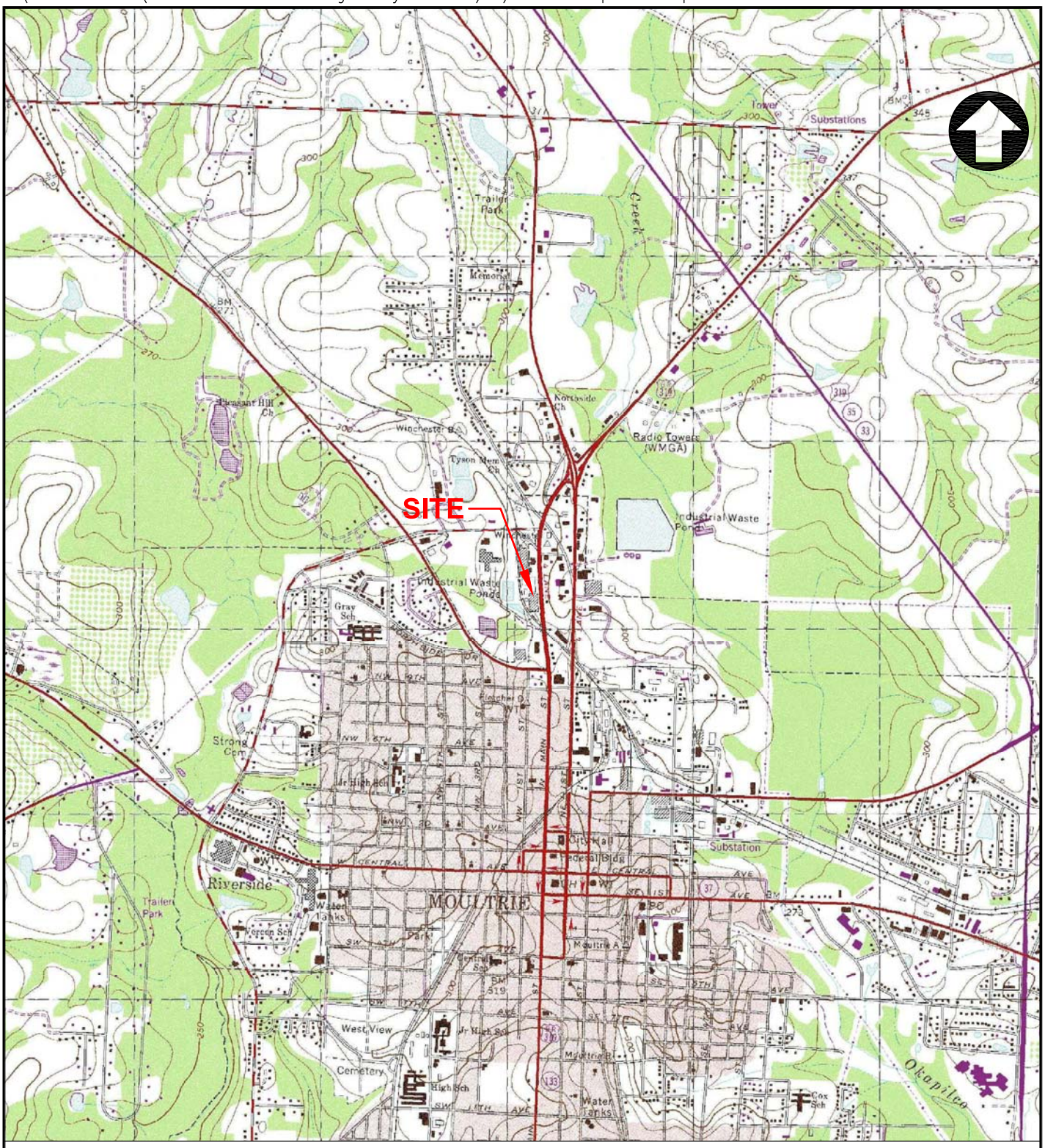


SCALE

0 1 2 MILE

CONTOUR INTERVAL 10 FEET

BASE MAP FROM MOUTRIE QUADRANGLE, 7.5 MINUTE SERIES (TOPOGRAPHIC), 1978, PHOTO REVISED 1988

GEORGIA
QUADRANGLE LOCATION

FORMER SWIFT & COMPANY–
MEAT PROCESSING PLANT
1189 NORTH MAIN STREET
MOULTRIE, GEORGIA COLQUITT
COUNTY

amec foster wheeler

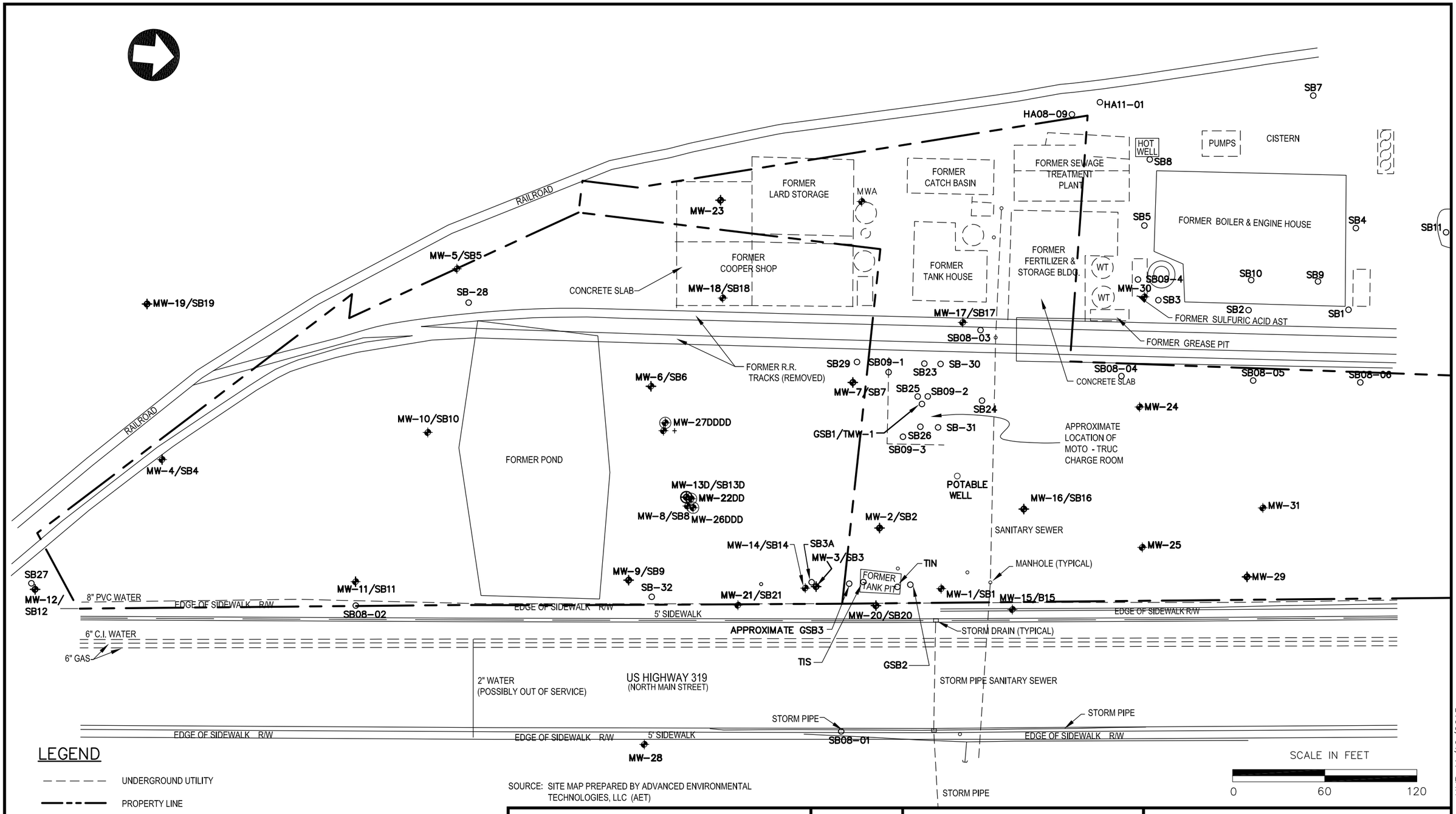
Environment & Infrastructure, Inc.
3200 TOWN POINT DRIVE, SUITE 100
KENNESAW, GEORGIA 30144 (770) 421-3400

SITE LOCATION MAP

JOB NO. 6122-14-0220 FIGURE 1

PREPARED BY/DATE TG 11/16/2015
CHECKED BY/DATE RNQ 11/16/2015

J:\FORMER SWIFT\SEP 2015\SITE MAP SAMP LOC.dwg – Layout1 12/01/2015 2:41pm huan.pham



LEGEND

- UNDERGROUND UTILITY
- PROPERTY LINE
- MONITORING WELL LOCATION
- + UNIDENTIFIED WELL
- DEEP MONITORING WELL LOCATION
- SOIL BORING LOCATION

SOURCE: SITE MAP PREPARED BY ADVANCED ENVIRONMENTAL TECHNOLOGIES, LLC (AET)

FORMER SWIFT & COMPANY
MEAT PROCESSING PLANT
MOULTRIE, GEORGIA COLQUITT COUNTY

Amec Foster Wheeler
Environment & Infrastructure, Inc.
1075 BIG SHANTY ROAD, NW, SUITE 100
KENNESAW, GEORGIA 30144 (770) 421-3400

SITE MAP

JOB NO. 6122-14-0220 FIGURE 2

PREPARED BY/DATE HVP 11/16/2015
CHECKED BY/DATE JMQ 11/16/2015

J:\FORMER SWIFT\SEP 2015\POTMAP SHALLOW A ZONE 3RD QUAR 2015 PH.dwg – Layout1 12/01/2015 4:48pm huan.pham

RAILROAD

MW–19/SB19

MW–5/SB5

MW–23

FORMER LARD STORAGE

MWA

FORMER COOPER SHOP

MW–18/SB18

CONCRETE SLAB

FORMER CATCH BASIN

FORMER TANK HOUSE

FORMER SEWAGE TREATMENT PLANT

HOT WELL

PUMPS

CISTERN

FORMER BOILER & ENGINE HOUSE

FORMER FERTILIZER & STORAGE BLDG.

WT

WT

MW–30

MW–17/SB17

FORMER SULFURIC ACID AST

FORMER GREASE PIT

CONCRETE SLAB

FORMER R.R. TRACKS (REMOVED)

MW–6/SB6
301.70

MW–7/SB7

MW–24

MW–10/SB10

MW–27DDDD

GSB1/TMW–1

APPROXIMATE LOCATION OF MOTO - TRUC CHARGE ROOM

RAILROAD

MW–4/SB4
305.38

305

304

303

302

FORMER POND

MW–13D/SB13D

MW–22DD

301.02

MW–8/SB8

MW–26DDD

POTABLE WELL

MW–16/SB16

MW–31

MW–2/SB2

SANITARY SEWER

MW–14/SB14
302.75

SB3A

MW–3/SB3

MW–25

MANHOLE (TYPICAL)

MW–9/SB9

FORMER TANK PIT

MW–29

MW–12/SB12
304.39

8" PVC WATER

MW–11/SB11

EDGE OF SIDEWALK R/W

EDGE OF SIDEWALK R/W

5' SIDEWALK

MW–21/SB21

MW–1/SB1

MW–15/B15

MW–20/SB20

EDGE OF SIDEWALK R/W

STORM DRAIN (TYPICAL)

6" C.I. WATER

6" GAS

2" WATER
(POSSIBLY OUT OF SERVICE)

US HIGHWAY 319
(NORTH MAIN STREET)

STORM PIPE SANITARY SEWER

STORM PIPE

STORM PIPE

EDGE OF SIDEWALK R/W

EDGE OF SIDEWALK R/W

5' SIDEWALK

MW–28

EDGE OF SIDEWALK R/W

STORM PIPE

LEGEND

- UNDERGROUND UTILITY
- PROPERTY LINE
- MONITORING WELL LOCATION
- UNIDENTIFIED WELL
- DEEP MONITORING WELL LOCATION
- SOIL BORING LOCATION
- 307 — POTENTIOMETRIC SURFACE CONTOUR
- 308.93 — POTENTIOMETRIC SURFACE ELEVATION (FEET, NAVD)
- DIRECTION OF GROUNDWATER FLOW
- -- NOT LOCATED

SOURCE: SITE MAP PREPARED BY ADVANCED ENVIRONMENTAL TECHNOLOGIES, LLC (AET)

SCALE IN FEET

0 60 120

FORMER SWIFT & COMPANY
MEAT PROCESSING PLANT
MOULTRIE, GEORGIA COLQUITT COUNTY

Amec Foster Wheeler
Environment & Infrastructure, Inc.
1075 BIG SHANTY ROAD, NW, SUITE 100
KENNESAW, GEORGIA 30144 (770) 421–3400

POTENTIOMETRIC SURFACE
SHALLOW ZONE A
SEPTEMBER 21, 2015

JOB NO. 6122–14–0220 FIGURE 3

PREPARED BY/DATE HVP 11/16/2015
CHECKED BY/DATE JMQ 11/16/2015

J:\FORMER SWIFT\SEP 2015\POTMAP SHALLOW B ZONE 3RD QUAR 2015 PH.dwg – Layout1 12/01/2015 5:17pm huan.pham

RAILROAD

MW-19/SB19
297.69

MW-5/SB5

MW-23

FORMER LARD STORAGE

MWA

FORMER COOPER SHOP

293.12
MW-18/SB18

CONCRETE SLAB

FORMER CATCH BASIN

FORMER TANK HOUSE

FORMER SEWAGE TREATMENT PLANT

HOT WELL

PUMPS

CISTERN

FORMER BOILER & ENGINE HOUSE

FORMER FERTILIZER & STORAGE BLDG.

WT

WT

MW-30

MW-17/SB17

FORMER SULFURIC ACID AST

FORMER GREASE PIT

CONCRETE SLAB

FORMER R.R. TRACKS (REMOVED)

MW-6/SB6

MW-7/SB7
293.36

MW-24

GSB1/TMW-1

APPROXIMATE LOCATION OF MOTO - TRUC CHARGE ROOM

296

295

294

293

MW-10/SB10

FORMER POND

MW-27DDDD

292.70
MW-13D/SB13D
MW-22DD
288.11*
MW-8/SB8
MW-26DDD

MW-4/SB4

POTABLE WELL

293.4
MW-16/SB16

MW-31
294.09

MW-2/SB2
Dry

SANITARY SEWER

MW-14/SB14

SB3A
MW-3/SB3
293.00

FORMER TANK PIT

MW-25

MANHOLE (TYPICAL)

MW-9/SB9
292.69

MW-11/SB11

299.84*
MW-21/SB21

296.31*
MW-20/SB20

295.56*
MW-1/SB1

297.48*
MW-15/B15

MW-29
294.26

MW-12/SB12

8" PVC WATER

EDGE OF SIDEWALK R/W

5' SIDEWALK

EDGE OF SIDEWALK R/W

STORM DRAIN (TYPICAL)

6" C.I. WATER

6" GAS

2" WATER
(POSSIBLY OUT OF SERVICE)

US HIGHWAY 319
(NORTH MAIN STREET)

STORM PIPE SANITARY SEWER

STORM PIPE

STORM PIPE

EDGE OF SIDEWALK R/W

EDGE OF SIDEWALK R/W

5' SIDEWALK

EDGE OF SIDEWALK R/W

MW-28

STORM PIPE

SCALE IN FEET

0 60 120

LEGEND

- 301 — POTENTIOMETRIC SURFACE CONTOUR
- 299 — EXTRAPOLATED CONTOUR
- 302.34 — POTENTIOMETRIC SURFACE ELEVATION (FEET, NAVD)
- 304.43* — ANOMALOUS VALUE. ELEVATION NOT USED IN CONTOURING.
- DIRECTION OF GROUNDWATER FLOW
- -- — NOT LOCATED
- UNDERGROUND UTILITY
- PROPERTY LINE
- MONITORING WELL LOCATION
- + UNIDENTIFIED WELL
- DEEP MONITORING WELL LOCATION
- SOIL BORING LOCATION

SOURCE: SITE MAP PREPARED BY ADVANCED ENVIRONMENTAL TECHNOLOGIES, LLC (AET)

FORMER SWIFT & COMPANY
MEAT PROCESSING PLANT
MOULTRIE, GEORGIA COLQUITT COUNTY

amec foster wheeler

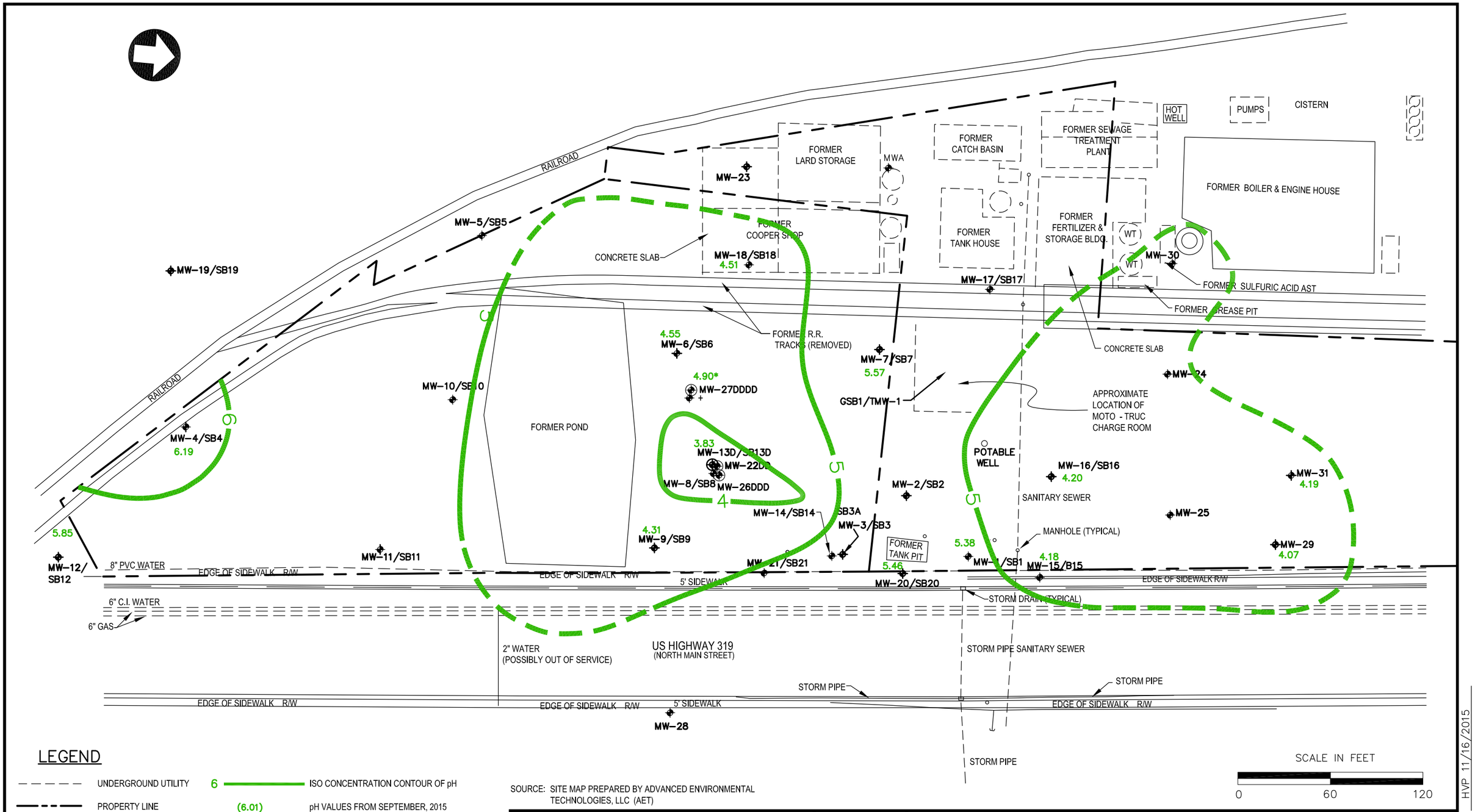
Amec Foster Wheeler
Environment & Infrastructure, Inc.
1075 BIG SHANTY ROAD, NW, SUITE 100
KENNESAW, GEORGIA 30144 (770) 421-3400

POTENTIOMETRIC SURFACE
SHALLOW ZONE B
SEPTEMBER 21, 2015

JOB NO. 6122-14-0220 FIGURE 4

PREPARED BY/DATE HVP 11/16/2015
CHECKED BY/DATE JMQ 11/16/2015

J:\FORMER SWIFT\SEP 2015\POTMAP 3RD QUAR 2015 PH.dwg – Layout1 12/01/2015 2:50pm huan.pham



LEGEND

- UNDERGROUND UTILITY
- PROPERTY LINE
- MONITORING WELL LOCATION
- + UNIDENTIFIED WELL
- DEEP MONITORING WELL LOCATION
- SOIL BORING LOCATION
- 6 ISO CONCENTRATION CONTOUR OF pH
- (6.01) pH VALUES FROM SEPTEMBER, 2015
- * pH CONCENTRATION NOT USED FOR CONTOURING

SOURCE: SITE MAP PREPARED BY ADVANCED ENVIRONMENTAL TECHNOLOGIES, LLC (AET)

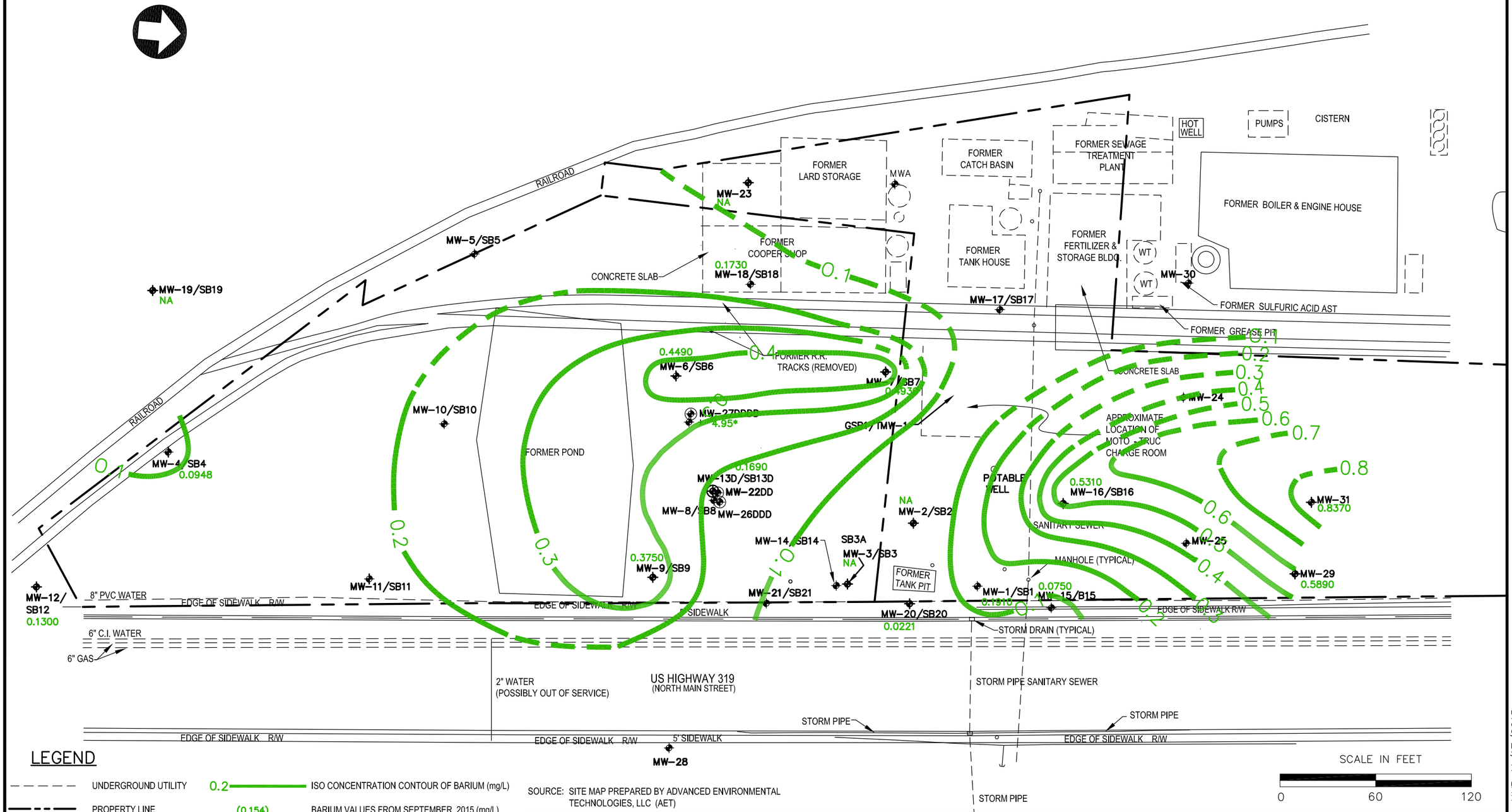
FORMER SWIFT & COMPANY
MEAT PROCESSING PLANT
MOULTRIE, GEORGIA COLQUITT COUNTY

Amec Foster Wheeler
Environment & Infrastructure, Inc.
1075 BIG SHANTY ROAD, NW, SUITE 100
KENNESAW, GEORGIA 30144 (770) 421-3400

GROUNDWATER QUALITY MAP–pH
SEPTEMBER, 2015

JOB NO. 6122-14-0220 FIGURE 5

PREPARED BY/DATE HVP 11/16/2015
CHECKED BY/DATE JMQ 11/16/2015



LEGEND

- UNDERGROUND UTILITY
- PROPERTY LINE
- MONITORING WELL LOCATION
- UNIDENTIFIED WELL
- DEEP MONITORING WELL LOCATION
- SOIL BORING LOCATION
- 0.2 — ISO CONCENTRATION CONTOUR OF BARIUM (mg/L)
- (0.154) — BARIUM VALUES FROM SEPTEMBER, 2015 (mg/L)
- * — BARIUM VALUES NOT USED IN CONTOURING

SOURCE: SITE MAP PREPARED BY ADVANCED ENVIRONMENTAL TECHNOLOGIES, LLC (AET)

FORMER SWIFT & COMPANY
MEAT PROCESSING PLANT
MOULTRIE, GEORGIA COLQUITT COUNTY

Amec Foster Wheeler
Environment & Infrastructure, Inc.
1075 BIG SHANTY ROAD, NW, SUITE 100
KENNESAW, GEORGIA 30144 (770) 421-3400

GROUNDWATER QUALITY MAP – BARIUM
SEPTEMBER, 2015

JOB NO. 6122-14-0220 FIGURE 6

PREPARED BY/DATE HVP 11/17/2015
CHECKED BY/DATE JMQ 11/17/2015

J:\FORMER SWIFT\SEP 2015\POTMAP 3RD QUAR 2015 LEAD.dwg – Layout1 12/01/2015 4:50pm huan.pham

RAILROAD
RAILROAD
MW-19/SB19
MW-5/SB5
MW-23
FORMER LARD STORAGE
MWA
FORMER COOPER SHOP
CONCRETE SLAB
MW-18/SB18
0.2580
FORMER CATCH BASIN
FORMER TANK HOUSE
FORMER SEWAGE TREATMENT PLANT
HOT WELL
PUMPS
CISTERN
FORMER BOILER & ENGINE HOUSE
FORMER FERTILIZER & STORAGE BLDG.
WT
WT
MW-30
FORMER SULFURIC ACID AST
FORMER GREASE PIT
MW-17/SB17
CONCRETE SLAB
MW-24
0.13200
MW-6/SB6
FORMER R.R. TRACKS (REMOVED)
MW-7/SB7
0.00995
MW-10/SB10
<0.001*
MW-27DDD
GSB1/TMW-1
APPROXIMATE LOCATION OF MOTO - TRUC CHARGE ROOM
FORMER POND
MW-4/SB4
<0.001
0.12900
MW-13D/SB13D
MW-2DD
MW-8/SB8
MW-26DDD
POTABLE WELL
MW-2/SB2
0.01210
MW-16/SB16
MW-31
0.00894
SANITARY SEWER
MW-4/SB14
SB3A
MW-3/SB3
MW-25
MANHOLE (TYPICAL)
0.008980
MW-9/SB9
FORMER TANK PAD
MW-29
0.00715
MW-11/SB11
MW-21/SB21
MW-1/SB1
0.00700
MW-15/B15
0.0430
MW-12/SB12
<0.001
8" PVC WATER
EDGE OF SIDEWALK R/W
EDGE OF SIDEWALK R/W
5' SIDEWALK
MW-20/SB20
0.00547
EDGE OF SIDEWALK R/W
6" C.I. WATER
6" GAS
STORM DRAIN (TYPICAL)
2" WATER
(POSSIBLY OUT OF SERVICE)
US HIGHWAY 319
(NORTH MAIN STREET)
STORM PIPE SANITARY SEWER
STORM PIPE
STORM PIPE
EDGE OF SIDEWALK R/W
EDGE OF SIDEWALK R/W
5' SIDEWALK
EDGE OF SIDEWALK R/W
MW-28
STORM PIPE
0.01
0.015
0.05
0.1
0.2
0.7
0.05
0.015
0.01
0.05
0.1
0.01
0.015
0.01

LEGEND

- UNDERGROUND UTILITY
- PROPERTY LINE
- MONITORING WELL LOCATION
- + UNIDENTIFIED WELL
- DEEP MONITORING WELL LOCATION
- SOIL BORING LOCATION
- 0.01 ISO CONCENTRATION CONTOUR OF LEAD (mg/L)
- (0.00913) LEAD VALUES FROM SEPTEMBER, 2015 (mg/L)
- * LEAD VALUES NOT USED IN CONTOURING

SOURCE: SITE MAP PREPARED BY ADVANCED ENVIRONMENTAL TECHNOLOGIES, LLC (AET)

SCALE IN FEET
0 60 120

FORMER SWIFT & COMPANY
MEAT PROCESSING PLANT
MOULTRIE, GEORGIA COLQUITT COUNTY

Amec Foster Wheeler
Environment & Infrastructure, Inc.
1075 BIG SHANTY ROAD, NW, SUITE 100
KENNESAW, GEORGIA 30144 (770) 421-3400

GROUNDWATER QUALITY MAP – LEAD
SEPTEMBER, 2015

JOB NO. 6122-14-0220 FIGURE 7

PREPARED BY/DATE HVP 11/16/2015
CHECKED BY/DATE JMQ 11/16/2015

APPENDIX A

September 2015 Laboratory Data Reports, Chain Of Custody, And Field Sampling Reports

Laboratory Reports for September 2015 Groundwater Sampling Event

AES

ANALYTICAL ENVIRONMENTAL SERVICES, INC.

November 17, 2015

David Smoak
AMEC E&I, Inc. -Kennesaw
1075 Big Shanty Rd NW
Kennesaw GA 30144

TEL:
FAX:

RE: Swift - Moultrie

Dear David Smoak: Order No: 1509L11

Analytical Environmental Services, Inc. received 16 samples on 9/24/2015 1:35:00 PM for the analyses presented in following report.

No problems were encountered during the analyses. Additionally, all results for the associated Quality Control samples were within EPA and/or AES established limits. Any discrepancies associated with the analyses contained herein will be noted and submitted in the form of a project Case Narrative.
AES' certifications are as follows:
-NELAC/Florida Certification number E87582 for analysis of Environmental Water, soil/hazardous waste, and Drinking Water Microbiology, effective 07/01/15-06/30/16.
-AIHA-LAP, LLC Laboratory ID: 100671 for Industrial Hygiene samples (Organics, Inorganics), Environmental Lead (Paint, Soil, Dust Wipes, Air), and Environmental Microbiology (Fungal) Direct Examination, effective until 09/01/17.

These results relate only to the items tested. This report may only be reproduced in full.

If you have any questions regarding these test results, please feel free to call.

Ioana Pacurar

Ioana Pacurar
Project Manager

Revision 11/17/2015

ANALYTICAL ENVIRONMENTAL SERVICES, INC

3080 Presidential Drive, Atlanta GA 30340-3704

AES TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY

Work Order: 1509L11

Date: 9/23/15 Page 1 of 2

COMPANY:	ADDRESS:
AMEC Foster Wheeler	1075 Big Shanty RD NW Suite 100 Kennesaw, GA 30144
PHONE: 770-421-3400	FAX:
SAMPLED BY: Ever G. & Mark A.	SIGNATURE:

#	SAMPLE ID	SAMPLED DATE	SAMPLED TIME	Grab	Composite	Matrix (See codes)	Lead (Total)	Barium (Total)	Dissolved Lead	No # of Containers
							PRESERVATION (See codes)			
1	MW-20	9/22/15	1143	✓		GW	X		X	2
2	MW-4	9/22/15	1328	✓		GW	X			1
3	MW-12	9/22/15	1505	✓		GW	X			1
4	MW-2 DUP	9/23/15	1045	✓		GW		X		1
5	MW-1	9/23/15	1250	✓		GW	X		X	2
6	MW-31	9/23/15	1515	✓		GW	X			1
7	MW-29	9/23/15	1635	✓		GW	X			1
8	MW-7	9/22/15	1120	✓		GW	X			1
9	MW-16	9/22/15	1230	✓		GW	X			1
10	MW-9	9/22/15	1445	✓		GW	X			1
11	MW-13D	9/22/15	1655	✓		GW	X			1
12	MW-18	9/23/15	1010	✓		GW	X		X	2
13	MW-15	9/23/15	1225	✓		GW	X			1
14	MW-6	9/23/15	1440	✓		GW	X	X		1

Visit our website www.aesatlanta.com to check on the status of your results, place bottle orders, etc.

REMARKS

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
1:	9-24-15 / 1335	1:	9/24/15 1335
2:		2:	
3:		3:	

PROJECT INFORMATION

PROJECT NAME: Swift Moultrie

PROJECT #: 612214022O

SITE ADDRESS: Moultrie, GA

SEND REPORT TO: David Smoak

INVOICE TO: (IF DIFFERENT FROM ABOVE)

QUOTE #: PO#:

RECEIPT

Total # of Containers: 17

Turnaround Time Request

- (●) Standard 5 Business Days
- ( ) 2 Business Day Rush
- ( ) Next Business Day Rush
- ( ) Same Day Rush **(auth req.)**
- ( ) Other

STATE PROGRAM (if any):

E-mail? Y / N; Fax? Y / N

DATA PACKAGE: I II III IV

SPECIAL INSTRUCTIONS/COMMENTS: Dissolved Samples were field filtered

SHIPMENT METHOD

OUT / / VIA:

IN / / VIA:

(CLIENT) FedEx UPS MAIL COURIER

GREYHOUND OTHER_____

SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TAT OF SAMPLES.
SAMPLES ARE DISPOSED 30 DAYS AFTER REPORT COMPLETION UNLESS OTHER ARRANGEMENTS ARE MADE.

MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify) WW = Waste Water

PRESERVATIVE CODES: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

White Copy - Original; Yellow Copy - Client

ANALYTICAL ENVIRONMENTAL SERVICES, INC

3080 Presidential Drive, Atlanta GA 30340-3704
TEL.: (770) 457-8177 / TOLL-FREE (800) 972-4889 / FAX: (770) 457-8188

CHAIN OF CUSTODY

Work Order: 1509L11

Date: 9/23/15 Page 2 of 2

COMPANY: AMEC Foster Wheeler	ADDRESS: 1075 Big Shanty RD NW Suite 100 Kennesaw, GA 30144
PHONE: 770-421-3400	FAX:
SAMPLED BY: Ever G. & Mark A.	SIGNATURE:

#	SAMPLE ID	SAMPLED DATE	SAMPLED TIME	Grab	Composite	Matrix (See codes)	Barium (Total)	Lead (Total)	PRESERVATION (See codes)	REMARKS	No # of Containers
1	MW-16 MS	9/22/15	1230	✓		GW		X			1
2	MW-16 MSD	9/22/15	1230	✓		GW		X			1
3	EB-1	9/23/15	0850	✓		W	X				1
4	DUP-1	9/22/15	1200	✓		GW		X			1
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											

ANALYSIS REQUESTED

Visit our website www.aesatlanta.com to check on the status of your results, place bottle orders, etc.

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
1:	9-24-15/1335	1:	9/24/15 1835
2:		2:	
3:		3:	

PROJECT INFORMATION

PROJECT NAME: Swift Moultrie
PROJECT #: 612214.0220
SITE ADDRESS: Moultrie, GA
SEND REPORT TO: David Smoak
INVOICE TO: (IF DIFFERENT FROM ABOVE)
QUOTE #: PO#:

RECEIPT

Total # of Containers: 4

Turnaround Time Request
- (●) Standard 5 Business Days
- ( ) 2 Business Day Rush
- ( ) Next Business Day Rush
- ( ) Same Day Rush **(auth req.)**
- ( ) Other

STATE PROGRAM (if any):
E-mail? Y / N; Fax? Y / N
DATA PACKAGE: I II III IV

SPECIAL INSTRUCTIONS/COMMENTS:

SHIPMENT METHOD
OUT / / VIA:
IN / / VIA:
(CLIENT) FedEx UPS MAIL COURIER
GREYHOUND OTHER

SAMPLES RECEIVED AFTER 3PM OR ON SATURDAY ARE CONSIDERED RECEIVED THE NEXT BUSINESS DAY. IF TURNAROUND TIME IS NOT INDICATED, AES WILL PROCEED WITH STANDARD TAT OF SAMPLES. SAMPLES ARE DISPOSED 30 DAYS AFTER REPORT COMPLETION UNLESS OTHER ARRANGEMENTS ARE MADE.

MATRIX CODES: A = Air GW = Groundwater SE = Sediment SO = Soil SW = Surface Water W = Water (Blanks) DW = Drinking Water (Blanks) O = Other (specify) WW = Waste Water

PRESERVATIVE CODES: H+I = Hydrochloric acid + ice I = Ice only N = Nitric acid S+I = Sulfuric acid + ice S/M+I = Sodium Bisulfate/Methanol + ice O = Other (specify) NA = None

White Copy - Original; Yellow Copy - Client

Client: AMEC E&I, Inc. -Kennesaw
Project: Swift - Moultrie
Lab ID: 1509L11

Case Narrative

Metals Analysis by Method 6020:

Due to sample matrix, samples 1509L11-008A, -010A, -011A, -013A, and -014A required dilution during analysis resulting in elevated reporting limits.

Percent recovery for the internal standard compound Terbium on sample 1509L11-012B was outside control limits biased high due to suspected matrix interference. Due to this, barium result was reported as estimated.

Percent recovery for the internal standard compound Terbium No Gas on sample 1509L11-005A was outside control limits biased high due to suspected matrix interference. Due to this, cadmium result was reported as estimated.

Sample 1509L11-005B barium result was reported as estimated due to suspected matrix interference with sample QC criteria below 10 µg/L. All associated batch QC were within limits.

Analytical Environmental Services, Inc **Date:** 17-Nov-15

Client:	AMEC E&I, Inc. -Kennesaw	**Client Sample ID:**	MW-20
Project Name:	Swift - Moultrie	**Collection Date:**	9/22/2015 11:43:00 AM
Lab ID:	1509L11-001	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Metals by ICP/MS SW6020A				**(SW3005A)**				
Arsenic	BRL	5.00		ug/L	213518	1	09/29/2015 21:21	JS
Barium	22.1	10.0		ug/L	213518	1	09/29/2015 21:21	JS
Cadmium	BRL	0.700		ug/L	213518	1	09/29/2015 21:21	JS
Chromium	BRL	5.00		ug/L	213518	1	09/29/2015 21:21	JS
Lead	3.47	1.00		ug/L	213518	1	09/29/2015 21:21	JS
Dissolved Metals by ICP/MS SW6020A				**(SW3005A)**				
Arsenic	BRL	5.00		ug/L	213601	1	09/30/2015 20:24	JS
Barium	19.1	10.0		ug/L	213601	1	09/30/2015 20:24	JS
Cadmium	BRL	0.700		ug/L	213601	1	09/30/2015 20:24	JS
Chromium	BRL	5.00		ug/L	213601	1	09/30/2015 20:24	JS
Lead	BRL	1.00		ug/L	213601	1	09/30/2015 20:24	JS

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 17-Nov-15

Client:	AMEC E&I, Inc. -Kennesaw	**Client Sample ID:**	MW-4
Project Name:	Swift - Moultrie	**Collection Date:**	9/22/2015 1:28:00 PM
Lab ID:	1509L11-002	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Metals by ICP/MS SW6020A				**(SW3005A)**				
Arsenic	BRL	5.00		ug/L	213518	1	09/29/2015 21:47	JS
Barium	94.8	10.0		ug/L	213518	1	09/29/2015 21:47	JS
Cadmium	BRL	0.700		ug/L	213518	1	09/29/2015 21:47	JS
Chromium	BRL	5.00		ug/L	213518	1	09/29/2015 21:47	JS
Lead	BRL	1.00		ug/L	213518	1	09/29/2015 21:47	JS

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 17-Nov-15

Client:	AMEC E&I, Inc. -Kennesaw	**Client Sample ID:**	MW-12
Project Name:	Swift - Moultrie	**Collection Date:**	9/22/2015 3:05:00 PM
Lab ID:	1509L11-003	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Metals by ICP/MS SW6020A				**(SW3005A)**				
Arsenic	BRL	5.00		ug/L	213518	1	09/29/2015 21:52	JS
Barium	130	10.0		ug/L	213518	1	09/29/2015 21:52	JS
Cadmium	BRL	0.700		ug/L	213518	1	09/29/2015 21:52	JS
Chromium	BRL	5.00		ug/L	213518	1	09/29/2015 21:52	JS
Lead	BRL	1.00		ug/L	213518	1	09/29/2015 21:52	JS

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 17-Nov-15

Client:	AMEC E&I, Inc. -Kennesaw	**Client Sample ID:**	MW-27DDDD
Project Name:	Swift - Moultrie	**Collection Date:**	9/23/2015 10:45:00 AM
Lab ID:	1509L11-004	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Metals by ICP/MS SW6020A				**(SW3005A)**				
Arsenic	BRL	5.00		ug/L	213518	1	09/29/2015 22:08	JS
Barium	4950	10.0		ug/L	213518	1	09/29/2015 22:08	JS
Cadmium	2.28	0.700		ug/L	213518	1	09/29/2015 22:08	JS
Chromium	BRL	5.00		ug/L	213518	1	09/29/2015 22:08	JS
Lead	BRL	1.00		ug/L	213518	1	09/29/2015 22:08	JS

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 17-Nov-15

Client:	AMEC E&I, Inc. -Kennesaw	**Client Sample ID:**	MW-1
Project Name:	Swift - Moultrie	**Collection Date:**	9/23/2015 12:50:00 PM
Lab ID:	1509L11-005	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Metals by ICP/MS SW6020A					**(SW3005A)**			
Arsenic	6.76	5.00		ug/L	213518	1	09/29/2015 22:13	JS
Barium	191	10.0		ug/L	213518	5	09/30/2015 18:10	JS
Cadmium	BRL	0.700	Narr	ug/L	213518	1	09/29/2015 22:13	JS
Chromium	49.9	5.00		ug/L	213518	1	09/29/2015 22:13	JS
Lead	77.0	2.00		ug/L	213518	5	09/30/2015 18:10	JS
Dissolved Metals by ICP/MS SW6020A					**(SW3005A)**			
Arsenic	BRL	5.00		ug/L	213601	1	09/30/2015 20:49	JS
Barium	15.9	10.0	Narr	ug/L	213601	1	09/30/2015 20:49	JS
Cadmium	BRL	0.700		ug/L	213601	1	09/30/2015 20:49	JS
Chromium	BRL	5.00		ug/L	213601	1	09/30/2015 20:49	JS
Lead	BRL	1.00		ug/L	213601	1	09/30/2015 20:49	JS

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 17-Nov-15

Client:	AMEC E&I, Inc. -Kennesaw	**Client Sample ID:**	MW-31
Project Name:	Swift - Moultrie	**Collection Date:**	9/23/2015 3:15:00 PM
Lab ID:	1509L11-006	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Metals by ICP/MS SW6020A				**(SW3005A)**				
Arsenic	BRL	5.00		ug/L	213518	1	09/29/2015 22:18	JS
Barium	837	10.0		ug/L	213518	1	09/30/2015 18:15	JS
Cadmium	BRL	0.700		ug/L	213518	1	09/29/2015 22:18	JS
Chromium	BRL	5.00		ug/L	213518	1	09/29/2015 22:18	JS
Lead	8.94	1.00		ug/L	213518	1	09/30/2015 18:15	JS

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 17-Nov-15

Client:	AMEC E&I, Inc. -Kennesaw	**Client Sample ID:**	MW-29
Project Name:	Swift - Moultrie	**Collection Date:**	9/23/2015 4:35:00 PM
Lab ID:	1509L11-007	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Metals by ICP/MS SW6020A				**(SW3005A)**				
Arsenic	BRL	5.00		ug/L	213518	1	09/29/2015 22:23	JS
Barium	589	10.0		ug/L	213518	1	09/29/2015 22:23	JS
Cadmium	BRL	0.700		ug/L	213518	1	09/29/2015 22:23	JS
Chromium	BRL	5.00		ug/L	213518	1	09/29/2015 22:23	JS
Lead	7.15	1.00		ug/L	213518	1	09/29/2015 22:23	JS

Qualifiers:

- * Value exceeds maximum contaminant level
- BRL Below reporting limit
- H Holding times for preparation or analysis exceeded
- N Analyte not NELAC certified
- B Analyte detected in the associated method blank
- > Greater than Result value
- E Estimated (value above quantitation range)
- S Spike Recovery outside limits due to matrix
- Narr See case narrative
- NC Not confirmed
- < Less than Result value
- J Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 17-Nov-15

Client:	AMEC E&I, Inc. -Kennesaw	**Client Sample ID:**	MW-7
Project Name:	Swift - Moultrie	**Collection Date:**	9/22/2015 11:20:00 AM
Lab ID:	1509L11-008	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Metals by ICP/MS SW6020A					**(SW3005A)**			
Arsenic	5.33	5.00		ug/L	213518	1	09/29/2015 22:28	JS
Barium	493	10.0		ug/L	213518	5	09/30/2015 18:20	JS
Cadmium	BRL	1.00		ug/L	213518	5	09/30/2015 18:20	JS
Chromium	BRL	5.00		ug/L	213518	1	09/29/2015 22:28	JS
Lead	9.95	2.00		ug/L	213518	5	09/30/2015 18:20	JS

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 17-Nov-15

Client:	AMEC E&I, Inc. -Kennesaw	**Client Sample ID:**	MW-16
Project Name:	Swift - Moultrie	**Collection Date:**	9/22/2015 12:30:00 PM
Lab ID:	1509L11-009	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Metals by ICP/MS SW6020A				**(SW3005A)**				
Arsenic	BRL	5.00		ug/L	213518	1	09/29/2015 22:34	JS
Barium	531	10.0		ug/L	213518	1	09/29/2015 22:34	JS
Cadmium	BRL	0.700		ug/L	213518	1	09/29/2015 22:34	JS
Chromium	BRL	5.00		ug/L	213518	1	09/29/2015 22:34	JS
Lead	12.1	1.00		ug/L	213518	1	09/29/2015 22:34	JS

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 17-Nov-15

Client:	AMEC E&I, Inc. -Kennesaw	**Client Sample ID:**	MW-9
Project Name:	Swift - Moultrie	**Collection Date:**	9/22/2015 2:45:00 PM
Lab ID:	1509L11-010	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Metals by ICP/MS SW6020A					**(SW3005A)**			
Arsenic	5.09	5.00		ug/L	213518	1	09/29/2015 22:39	JS
Barium	375	10.0		ug/L	213518	5	10/01/2015 16:36	JS
Cadmium	BRL	1.50		ug/L	213518	5	09/30/2015 18:35	JS
Chromium	BRL	5.00		ug/L	213518	1	09/29/2015 22:39	JS
Lead	89.8	2.00		ug/L	213518	5	10/01/2015 16:36	JS

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 17-Nov-15

Client:	AMEC E&I, Inc. -Kennesaw	**Client Sample ID:**	MW-13D
Project Name:	Swift - Moultrie	**Collection Date:**	9/22/2015 4:55:00 PM
Lab ID:	1509L11-011	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Metals by ICP/MS SW6020A					**(SW3005A)**			
Arsenic	26.9	5.00		ug/L	213518	1	09/29/2015 22:44	JS
Barium	169	10.0		ug/L	213518	10	09/30/2015 18:40	JS
Cadmium	BRL	4.50		ug/L	213518	10	09/30/2015 18:40	JS
Chromium	BRL	5.00		ug/L	213518	1	09/29/2015 22:44	JS
Lead	129	4.00		ug/L	213518	10	09/30/2015 18:40	JS

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 17-Nov-15

Client:	AMEC E&I, Inc. -Kennesaw	**Client Sample ID:**	MW-18
Project Name:	Swift - Moultrie	**Collection Date:**	9/23/2015 10:10:00 AM
Lab ID:	1509L11-012	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Metals by ICP/MS SW6020A					**(SW3005A)**			
Arsenic	70.8	5.00		ug/L	213518	1	09/29/2015 22:49	JS
Barium	173	10.0		ug/L	213518	50	09/30/2015 19:27	JS
Cadmium	7.42	7.00		ug/L	213518	50	09/30/2015 19:27	JS
Chromium	BRL	5.00		ug/L	213518	1	09/29/2015 22:49	JS
Lead	258	20.0		ug/L	213518	50	09/30/2015 19:27	JS
Dissolved Metals by ICP/MS SW6020A					**(SW3005A)**			
Arsenic	74.7	5.00		ug/L	213601	1	10/01/2015 16:52	JS
Barium	18.5	10.0	Narr	ug/L	213601	1	09/30/2015 20:54	JS
Cadmium	5.07	0.700		ug/L	213601	1	09/30/2015 20:54	JS
Chromium	BRL	5.00		ug/L	213601	1	09/30/2015 20:54	JS
Lead	176	1.00		ug/L	213601	1	10/01/2015 16:52	JS

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 17-Nov-15

Client:	AMEC E&I, Inc. -Kennesaw	**Client Sample ID:**	MW-15
Project Name:	Swift - Moultrie	**Collection Date:**	9/23/2015 12:25:00 PM
Lab ID:	1509L11-013	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Metals by ICP/MS SW6020A					**(SW3005A)**			
Arsenic	26.4	5.00		ug/L	213518	1	09/29/2015 22:55	JS
Barium	BRL	75.0		ug/L	213518	10	09/30/2015 19:37	JS
Cadmium	2.49	1.40		ug/L	213518	10	09/30/2015 19:37	JS
Chromium	6.43	5.00		ug/L	213518	1	09/29/2015 22:55	JS
Lead	243	4.00		ug/L	213518	10	10/01/2015 16:41	JS

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 17-Nov-15

Client:	AMEC E&I, Inc. -Kennesaw	**Client Sample ID:**	MW-6
Project Name:	Swift - Moultrie	**Collection Date:**	9/23/2015 2:40:00 PM
Lab ID:	1509L11-014	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Metals by ICP/MS SW6020A					**(SW3005A)**			
Arsenic	15.9	5.00		ug/L	213518	1	09/29/2015 23:10	JS
Barium	449	10.0		ug/L	213518	10	09/30/2015 19:47	JS
Cadmium	BRL	2.00		ug/L	213518	10	09/30/2015 19:47	JS
Chromium	BRL	5.00		ug/L	213518	1	09/29/2015 23:10	JS
Lead	132	4.00		ug/L	213518	10	09/30/2015 19:47	JS

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 17-Nov-15

Client:	AMEC E&I, Inc. -Kennesaw	**Client Sample ID:**	EB-1
Project Name:	Swift - Moultrie	**Collection Date:**	9/23/2015 8:50:00 AM
Lab ID:	1509L11-015	**Matrix:**	Aqueous

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Metals by ICP/MS SW6020A				**(SW3005A)**				
Arsenic	BRL	5.00		ug/L	213518	1	09/29/2015 23:15	JS
Barium	BRL	10.0		ug/L	213518	1	09/29/2015 23:15	JS
Cadmium	BRL	0.700		ug/L	213518	1	09/29/2015 23:15	JS
Chromium	BRL	5.00		ug/L	213518	1	09/29/2015 23:15	JS
Lead	BRL	1.00		ug/L	213518	1	09/29/2015 23:15	JS

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc **Date:** 17-Nov-15

Client:	AMEC E&I, Inc. -Kennesaw	**Client Sample ID:**	DUP-1
Project Name:	Swift - Moultrie	**Collection Date:**	9/22/2015 12:00:00 PM
Lab ID:	1509L11-016	**Matrix:**	Groundwater

Analyses	Result	Reporting Limit	Qual	Units	BatchID	Dilution Factor	Date Analyzed	Analyst
Total Metals by ICP/MS SW6020A				**(SW3005A)**				
Arsenic	BRL	5.00		ug/L	213518	10	09/30/2015 19:53	JS
Barium	374	10.0		ug/L	213518	10	09/30/2015 19:53	JS
Cadmium	1.35	1.30		ug/L	213518	10	09/30/2015 19:53	JS
Chromium	44.1	20.0		ug/L	213518	10	09/30/2015 19:53	JS
Lead	91.2	4.00		ug/L	213518	10	09/30/2015 19:53	JS

Qualifiers:

*	Value exceeds maximum contaminant level	E	Estimated (value above quantitation range)
BRL	Below reporting limit	S	Spike Recovery outside limits due to matrix
H	Holding times for preparation or analysis exceeded	Narr	See case narrative
N	Analyte not NELAC certified	NC	Not confirmed
B	Analyte detected in the associated method blank	<	Less than Result value
>	Greater than Result value	J	Estimated value detected below Reporting Limit

Analytical Environmental Services, Inc.

Sample/Cooler Receipt Checklist

Client AMEC/Kennesaw Work Order Number 1509L11

Checklist completed by [signature] 9/24/15
Signature Date

Carrier name: FedEx __ UPS __ Courier __ Client ✓ US Mail __ Other _____

Shipping container/cooler in good condition? Yes ✓ No __ Not Present __

Custody seals intact on shipping container/cooler? Yes __ No __ Not Present ✓

Custody seals intact on sample bottles? Yes __ No __ Not Present ✓

Container/Temp Blank temperature in compliance? (0°≤6°C)* Yes ✓ No __

Cooler #1 3.0 Cooler #2 _____ Cooler #3 _____ Cooler #4 _____ Cooler#5 _____ Cooler #6 _____

Chain of custody present? Yes ✓ No __

Chain of custody signed when relinquished and received? Yes ✓ No __

Chain of custody agrees with sample labels? Yes ✓ No __

Samples in proper container/bottle? Yes ✓ No __

Sample containers intact? Yes ✓ No __

Sufficient sample volume for indicated test? Yes ✓ No __

All samples received within holding time? Yes ✓ No __

Was TAT marked on the COC? Yes ✓ No __

Proceed with Standard TAT as per project history? Yes __ No __ Not Applicable ✓

Water - VOA vials have zero headspace? No VOA vials submitted ✓ Yes __ No __

Water - pH acceptable upon receipt? Yes ✓ No __ Not Applicable __

Adjusted? _____ Checked by AD

Sample Condition: Good ✓ Other(Explain) _____

(For diffusive samples or AIHA lead) Is a known blank included? Yes __ No ✓

See Case Narrative for resolution of the Non-Conformance.

* Samples do not have to comply with the given range for certain parameters.

\\Aes_server\\Sample Receipt\My Documents\COCs and pH Adjustment Sheet\Sample_Cooler_Recipt_Checklist_Rev1.rtf

Analytical Environmental Services, Inc

Date: 2-Oct-15

Client: AMEC E&I, Inc. -Kennesaw
Project Name: Swift - Moultrie
Lab Order: 1509L11

Dates Report

Lab Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
1509L11-001A	MW-20	9/22/2015 11:43:00AM	Groundwater	Total Metals by ICP/MS		9/28/2015 11:15:00AM	09/29/2015
1509L11-001B	MW-20	9/22/2015 11:43:00AM	Groundwater	Dissolved Metals by ICP/MS		9/30/2015 12:14:00PM	09/30/2015
1509L11-002A	MW-4	9/22/2015 1:28:00PM	Groundwater	Total Metals by ICP/MS		9/28/2015 11:15:00AM	09/29/2015
1509L11-003A	MW-12	9/22/2015 3:05:00PM	Groundwater	Total Metals by ICP/MS		9/28/2015 11:15:00AM	09/29/2015
1509L11-004A	MW-27DDDD	9/23/2015 10:45:00AM	Groundwater	Total Metals by ICP/MS		9/28/2015 11:15:00AM	09/29/2015
1509L11-005A	MW-1	9/23/2015 12:50:00PM	Groundwater	Total Metals by ICP/MS		9/28/2015 11:15:00AM	09/30/2015
1509L11-005B	MW-1	9/23/2015 12:50:00PM	Groundwater	Dissolved Metals by ICP/MS		9/30/2015 12:14:00PM	09/30/2015
1509L11-006A	MW-31	9/23/2015 3:15:00PM	Groundwater	Total Metals by ICP/MS		9/28/2015 11:15:00AM	09/30/2015
1509L11-007A	MW-29	9/23/2015 4:35:00PM	Groundwater	Total Metals by ICP/MS		9/28/2015 11:15:00AM	09/29/2015
1509L11-008A	MW-7	9/22/2015 11:20:00AM	Groundwater	Total Metals by ICP/MS		9/28/2015 11:15:00AM	09/30/2015
1509L11-009A	MW-16	9/22/2015 12:30:00PM	Groundwater	Total Metals by ICP/MS		9/28/2015 11:15:00AM	09/29/2015
1509L11-010A	MW-9	9/22/2015 2:45:00PM	Groundwater	Total Metals by ICP/MS		9/28/2015 11:15:00AM	10/01/2015
1509L11-011A	MW-13D	9/22/2015 4:55:00PM	Groundwater	Total Metals by ICP/MS		9/28/2015 11:15:00AM	09/30/2015
1509L11-012A	MW-18	9/23/2015 10:10:00AM	Groundwater	Total Metals by ICP/MS		9/28/2015 11:15:00AM	09/30/2015
1509L11-012B	MW-18	9/23/2015 10:10:00AM	Groundwater	Dissolved Metals by ICP/MS		9/30/2015 12:14:00PM	10/01/2015
1509L11-013A	MW-15	9/23/2015 12:25:00PM	Groundwater	Total Metals by ICP/MS		9/28/2015 11:15:00AM	10/01/2015
1509L11-014A	MW-6	9/23/2015 2:40:00PM	Groundwater	Total Metals by ICP/MS		9/28/2015 11:15:00AM	09/30/2015
1509L11-015A	EB-1	9/23/2015 8:50:00AM	Aqueous	Total Metals by ICP/MS		9/28/2015 11:15:00AM	09/29/2015
1509L11-016A	DUP-1	9/22/2015 12:00:00PM	Groundwater	Total Metals by ICP/MS		9/28/2015 11:15:00AM	09/30/2015

Client: AMEC E&I, Inc. -Kennesaw
Project Name: Swift - Moultrie
Workorder: 1509L11

ANALYTICAL QC SUMMARY REPORT

BatchID: 213518

Sample ID: **MB-213518**	Client ID:		Units: **ug/L**	Prep Date: **09/28/2015**	Run No: **300958**
SampleType: **MBLK**	TestCode: **Total Metals by ICP/MS SW6020A**		BatchID: **213518**	Analysis Date: **09/29/2015**	Seq No: **6433855**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Arsenic	BRL	5.00									
Barium	BRL	10.0									
Cadmium	BRL	0.700									
Chromium	BRL	5.00									
Lead	BRL	1.00									

Sample ID: **LCS-213518**	Client ID:		Units: **ug/L**	Prep Date: **09/28/2015**	Run No: **300958**
SampleType: **LCS**	TestCode: **Total Metals by ICP/MS SW6020A**		BatchID: **213518**	Analysis Date: **09/29/2015**	Seq No: **6433854**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Arsenic	101.1	5.00	100.0		101	80	120				
Barium	94.79	10.0	100.0		94.8	80	120				
Cadmium	107.7	0.700	100.0		108	80	120				
Chromium	104.4	5.00	100.0		104	80	120				
Lead	99.75	1.00	100.0		99.7	80	120				

Sample ID: **1509L11-001AMS**	Client ID: **MW-20**		Units: **ug/L**	Prep Date: **09/28/2015**	Run No: **300958**
SampleType: **MS**	TestCode: **Total Metals by ICP/MS SW6020A**		BatchID: **213518**	Analysis Date: **09/29/2015**	Seq No: **6433857**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Arsenic	94.59	5.00	100.0	0.8527	93.7	75	125				
Barium	108.5	10.0	100.0	22.10	86.4	75	125				
Cadmium	94.41	0.700	100.0	0.1648	94.2	75	125				
Chromium	99.28	5.00	100.0	3.551	95.7	75	125				
Lead	95.30	1.00	100.0	3.467	91.8	75	125				

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: AMEC E&I, Inc. -Kennesaw
Project Name: Swift - Moultrie
Workorder: 1509L11

ANALYTICAL QC SUMMARY REPORT

BatchID: 213518

Sample ID: **1509L11-009AMS** Client ID: **MW-16** Units: **ug/L** Prep Date: **09/28/2015** Run No: **300958**
SampleType: **MS** TestCode: **Total Metals by ICP/MS SW6020A** BatchID: **213518** Analysis Date: **10/02/2015** Seq No: **6444049**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Arsenic	79.66	5.00	100.0	1.687	78.0	75	125				
Barium	570.2	10.0	100.0	530.9	39.3	75	125				S
Cadmium	78.36	0.700	100.0	0.1903	78.2	75	125				
Chromium	111.6	5.00	100.0	3.882	108	75	125				
Lead	105.5	1.00	100.0	12.10	93.4	75	125				

Sample ID: **1509L11-001AMSD** Client ID: **MW-20** Units: **ug/L** Prep Date: **09/28/2015** Run No: **300958**
SampleType: **MSD** TestCode: **Total Metals by ICP/MS SW6020A** BatchID: **213518** Analysis Date: **09/29/2015** Seq No: **6433858**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Arsenic	101.6	5.00	100.0	0.8527	101	75	125	94.59	7.15	20	
Barium	115.8	10.0	100.0	22.10	93.7	75	125	108.5	6.51	20	
Cadmium	83.96	0.700	100.0	0.1648	83.8	75	125	94.41	11.7	20	
Chromium	106.6	5.00	100.0	3.551	103	75	125	99.28	7.10	20	
Lead	101.6	1.00	100.0	3.467	98.1	75	125	95.30	6.36	20	

Sample ID: **1509L11-009AMSD** Client ID: **MW-16** Units: **ug/L** Prep Date: **09/28/2015** Run No: **300958**
SampleType: **MSD** TestCode: **Total Metals by ICP/MS SW6020A** BatchID: **213518** Analysis Date: **10/02/2015** Seq No: **6444050**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Arsenic	80.81	5.00	100.0	1.687	79.1	75	125	79.66	1.43	20	
Barium	573.2	10.0	100.0	530.9	42.3	75	125	570.2	0.529	20	S
Cadmium	54.23	0.700	100.0	0.1903	54.0	75	125	78.36	36.4	20	SR
Chromium	111.4	5.00	100.0	3.882	108	75	125	111.6	0.124	20	
Lead	104.5	1.00	100.0	12.10	92.4	75	125	105.5	0.990	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: AMEC E&I, Inc. -Kennesaw
Project Name: Swift - Moultrie
Workorder: 1509L11

ANALYTICAL QC SUMMARY REPORT

BatchID: 213601

Sample ID: **MB-213601** Client ID: Units: **ug/L** Prep Date: **09/30/2015** Run No: **301111**
SampleType: **MBLK** TestCode: **Dissolved Metals by ICP/MS SW6020A** BatchID: **213601** Analysis Date: **09/30/2015** Seq No: **6436416**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Arsenic	BRL	5.00									
Barium	BRL	10.0									
Cadmium	BRL	0.700									
Chromium	BRL	5.00									
Lead	BRL	1.00									

Sample ID: **LCS-213601** Client ID: Units: **ug/L** Prep Date: **09/30/2015** Run No: **301111**
SampleType: **LCS** TestCode: **Dissolved Metals by ICP/MS SW6020A** BatchID: **213601** Analysis Date: **09/30/2015** Seq No: **6436415**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Arsenic	92.05	5.00	100.0		92.1	80	120				
Barium	90.54	10.0	100.0		90.5	80	120				
Cadmium	93.00	0.700	100.0		93.0	80	120				
Chromium	94.95	5.00	100.0		94.9	80	120				
Lead	98.87	1.00	100.0		98.9	80	120				

Sample ID: **1509L11-001BMS** Client ID: **MW-20** Units: **ug/L** Prep Date: **09/30/2015** Run No: **301111**
SampleType: **MS** TestCode: **Dissolved Metals by ICP/MS SW6020A** BatchID: **213601** Analysis Date: **09/30/2015** Seq No: **6436420**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Arsenic	94.66	5.00	100.0	0.4640	94.2	75	125				
Barium	108.8	10.0	100.0	19.10	89.7	75	125				
Cadmium	70.23	0.700	100.0	0.1479	70.1	75	125				S
Chromium	94.36	5.00	100.0	0.4021	94.0	75	125				
Lead	93.52	1.00	100.0	0.3808	93.1	75	125				

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Client: AMEC E&I, Inc. -Kennesaw
Project Name: Swift - Moultrie
Workorder: 1509L11

ANALYTICAL QC SUMMARY REPORT

BatchID: 213601

Sample ID: **1509L11-001BMSD** Client ID: **MW-20** Units: **ug/L** Prep Date: **09/30/2015** Run No: **301111**
SampleType: **MSD** TestCode: **Dissolved Metals by ICP/MS SW6020A** BatchID: **213601** Analysis Date: **09/30/2015** Seq No: **6436421**

Analyte	Result	RPT Limit	SPK value	SPK Ref Val	%REC	Low Limit	High Limit	RPD Ref Val	%RPD	RPD Limit	Qual
Arsenic	98.14	5.00	100.0	0.4640	97.7	75	125	94.66	3.61	20	
Barium	111.9	10.0	100.0	19.10	92.8	75	125	108.8	2.84	20	
Cadmium	72.53	0.700	100.0	0.1479	72.4	75	125	70.23	3.22	20	S
Chromium	100.9	5.00	100.0	0.4021	101	75	125	94.36	6.73	20	
Lead	97.83	1.00	100.0	0.3808	97.5	75	125	93.52	4.51	20	

Qualifiers:

>	Greater than Result value	<	Less than Result value	B	Analyte detected in the associated method blank
BRL	Below reporting limit	E	Estimated (value above quantitation range)	H	Holding times for preparation or analysis exceeded
J	Estimated value detected below Reporting Limit	N	Analyte not NELAC certified	R	RPD outside limits due to matrix
Rpt Lim	Reporting Limit	S	Spike Recovery outside limits due to matrix		

Field Sampling Reports for September 2015 Groundwater Sampling Event

PROJECT NAME:
Swift- Moultrie, GA

FIELD SAMPLING REPORT

Project Number: 6122140220

AMEC, E&I
1075 BIG SHANTY ROAD NW, SUITE 100 KENNESAW GA 30144
PHONE: (770) 421-3400 / FAX: (770) 421-3486

SAMPLING EVENT: __1ST QUARTER __2ND QUARTER __3RD QUARTER __4TH QUARTER
MONITORING WELL TYPE: __Standard __ Compliance __Background __Extraction
WELL ID: MW-1
WELL MATERIAL: PVC
SAMPLE METHOD: Peristaltic Pump

DUP./REP. OF:_____

Top of Screened interval (btoc):_____
Screen length:_____
Arrived at: 1111
Initial PID = _____
Bailing PID = _____

WELL DIAMETER: 2"
DEPTH TO WATER: 10.50 GRAB (x) COMPOSITE ( )
TOTAL DEPTH: 15.75
WATER COLUMN HEIGHT: 15.25 X .163 X 3 =
PURGE VOLUME: 2.57
[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]
[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]
[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [<10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial: 1126	—	NA	NA	5.68	0.20	28.1	~~7800~~	100 ( )	11.15
1138	.50			5.65	0.19	27.3	414	150	11.85
1150	1.00			5.46	0.19	27.4	380	150	12.00
1202	1.50			5.47	0.18	30.2	205	150	13.50
1214	2.00			5.38	0.19	30.2	305	150	14.74
~~1226~~	~~2.50~~								
1250	Sample time	MW-1					7800		15.00

NOTES: Tubing intake = 13.00'; 1150 lowered tubing intake = 14.00'; 1214 Lowered Tubing intake = 15.00', 1220 well purged dry water silty & muddy. Large mud clods came out of well. will let well recharge then sample

SAMPLE DATE: 4/23/15
SAMPLE TIME: 1250

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
				Lead Total
				Lead Dissolved

GENERAL INFORMATION			
WEATHER:			
SHIPPED VIA:	Delivered to AES laboratory		
SHIPPED TO:	AES Laboratories, 3785 Presidential Parkway, Atlanta, GA 30340		
SAMPLER: Mark A.		OBSERVER:	

PROJECT NAME:
Swift- Moultrie, GA

FIELD SAMPLING REPORT

Project Number: 6122140220

AMEC, E&I
1075 BIG SHANTY ROAD NW, SUITE 100 KENNESAW GA 30144
PHONE: (770) 421-3400 / FAX: (770) 421-3486

SAMPLING EVENT: __1ST QUARTER __2ND QUARTER __3RD QUARTER __4TH QUARTER
MONITORING WELL TYPE: __Standard __ Compliance __Background __Extraction
WELL ID: MW-4
WELL MATERIAL: PVC
SAMPLE METHOD: Peristaltic Pump

DUP./REP. OF:_____

Top of Screened interval (btoc):_____
Screen length:_____
Arrived at: 1216
Initial PID = _____
Bailing PID = _____

WELL DIAMETER: 2"
DEPTH TO WATER: 4.01 GRAB (x) COMPOSITE ( )
TOTAL DEPTH: 13.37
WATER COLUMN HEIGHT: 4.36 X 0.163X3
PURGE VOLUME: 4.57
[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]
[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]
[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [<10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial: 1226	—	NA	NA	6.15	0.45	26.5	12.7	300 ( )	4.35
1235	.75			6.17	0.45	26.4	8.61	300	4.35
1244	1.50			6.13	0.45	26.4	5.62	300	4.35
1253	2.25			6.17	0.45	26.6	1.55	300	4.35
1302	3.00			6.20	0.47	26.5	0.72	300	4.35
1311	3.75			6.21	0.47	26.5	0.68	300	4.35
1320	4.50			6.20	0.47	26.2	0.31	300	4.35
1326	5.00			6.19	0.47	26.3	0.37	300	4.35
1328	Sample time								

NOTES: Tubing intake = 5.00'

SAMPLE DATE: 4/22/15
SAMPLE TIME: 1328

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
1/250 Poly	1	HNO_3		Lead

GENERAL INFORMATION		
WEATHER:	Partly Cloudy Hot	
SHIPPED VIA:	Delivered to AES laboratory	
SHIPPED TO:	AES Laboratories, 3785 Presidential Parkway, Atlanta, GA 30340	
SAMPLER: Mark A.		OBSERVER:

PROJECT NAME:
Swift- Moultrie, GA

FIELD SAMPLING REPORT

Project Number: 6122140220

AMEC, E&I
1075 BIG SHANTY ROAD NW, SUITE 100 KENNESAW GA 30144
PHONE: (770) 421-3400 / FAX: (770) 421-3486

SAMPLING EVENT: __1ST QUARTER __2ND QUARTER __3RD QUARTER __4TH QUARTER
MONITORING WELL TYPE: __Standard __ Compliance __Background __Extraction
WELL ID: MW-6
WELL MATERIAL: PVC
SAMPLE METHOD: PERISTALTIC

DUP./REP. OF:
INTAKE @ 13.0
Top of Screened interval (btoc): 3.97
Screen length: 10.0'
Arrived at:
Initial PID =
Bailing PID =

WELL DIAMETER: 2"
DEPTH TO WATER: 7.93 GRAB (x) COMPOSITE ( )
TOTAL DEPTH: 13.80
WATER COLUMN HEIGHT: 5.87 X.17 = 0.99 X 3 = 2.97
PURGE VOLUME: 2.97
[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]
[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]
[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [<10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial: 1335	0.25	—	—	4.23	9.62	26.7	3.49	200 ( )	8.32
1340	0.5	—	—	4.95	6.56	26.7	5.26	200	8.83
1350	1.0	—	—	5.90	3.71	26.5	3.38	200	9.69
1400	1.5	—	—	5.82	3.72	26.6	7.98	200	10.59
1410	2.0	—	—	5.65	4.41	26.6	5.16	200	11.33
1420	2.5	—	—	5.31	5.46	26.5	3.12	200	12.01
1425	2.75	—	—	4.62	7.49	26.3	2.06	200	12.37
1430	3.0	—	—	4.60	7.69	26.4	1.98	200	12.73
1435	3.25	—	—	4.55	7.80	26.3	1.88	200	12.91
1440	Collect	Sample							

NOTES:

SAMPLE DATE: 9-23-15
SAMPLE TIME: 1440

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
250 ML PE	1	HNO_3		Pb - BARIUM

GENERAL INFORMATION		
WEATHER:	HOT - HUMID - CLOUDY	
SHIPPED VIA:	Delivered to AES laboratory	
SHIPPED TO:	AES Laboratories, 3785 Presidential Parkway, Atlanta, GA 30340	
SAMPLER: EVER GUILLEN		OBSERVER:

PROJECT NAME:
Swift- Moultrie, GA

FIELD SAMPLING REPORT

Project Number: 6122140220

AMEC, E&I
1075 BIG SHANTY ROAD NW, SUITE 100 KENNESAW GA 30144
PHONE: (770) 421-3400 / FAX: (770) 421-3486

SAMPLING EVENT: __1ST QUARTER __2ND QUARTER __3RD QUARTER __4TH QUARTER
MONITORING WELL TYPE: __Standard __ Compliance __Background __Extraction
WELL ID: MW-7
WELL MATERIAL: PVC
SAMPLE METHOD: PERISTACTIC

DUP./REP. OF:_____
Top of Screened interval (btoc): INTAKE set @ 21.0' ~~15.89~~ 6.89
Screen length: 20'
Arrived at:_____
Initial PID = _____
Bailing PID = _____

WELL DIAMETER: 2"
DEPTH TO WATER: 15.91 GRAB (x) COMPOSITE ( )
TOTAL DEPTH: 26.10
WATER COLUMN HEIGHT: 10.19 x 0.17 = 1.73 x 3 = 5.19
PURGE VOLUME: 5.19
[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]
[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]
[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [<10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial: 1005	0.25	—	—	5.43	3.95	25.5	85.8	200 ( )	16.15
1020	1.0	—	—	5.46	3.89	25.2	13.1	200	16.48
1040	2.0	—	—	5.54	3.81	24.5	11.4	200	16.86
1050	3.0	—	—	5.59	3.78	24.2	7.46	400	17.32
1100	4.0	—	—	5.58	3.79	24.0	2.27	400	17.93
1110	5.0	—	—	5.57	3.81	24.0	1.60	400	18.68
1115	5.5	—	—	5.57	3.79	24.1	1.47	400	18.91
1120	Collect	Sample							

NOTES:

SAMPLE DATE: 9-22-15
SAMPLE TIME: 1120

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
250 mL Poly	1	HNO^3		Pb

GENERAL INFORMATION		
WEATHER:	Hot - Humid - Some Clouds	
SHIPPED VIA:	Delivered to AES laboratory	
SHIPPED TO:	AES Laboratories, 3785 Presidential Parkway, Atlanta, GA 30340	
SAMPLER: Ever Guillen		OBSERVER:

PROJECT NAME:
Swift- Moultrie, GA

FIELD SAMPLING REPORT

Project Number: 6122140220

AMEC, E&I
1075 BIG SHANTY ROAD NW, SUITE 100 KENNESAW GA 30144
PHONE: (770) 421-3400 / FAX: (770) 421-3486

SAMPLING EVENT: __1ST QUARTER __2ND QUARTER __3RD QUARTER __4TH QUARTER
MONITORING WELL TYPE: __Standard __ Compliance __Background __Extraction
WELL ID: MW-9
WELL MATERIAL: PVC
SAMPLE METHOD: PERISTALTIC

DUP./REP. OF: DUP-1
INTAKE @ 18.0'
Top of Screened interval (btoc): 2.63
Screen length: 20.0
Arrived at:
Initial PID =
Bailing PID =

WELL DIAMETER: 2"
DEPTH TO WATER: 14.50 GRAB (x) COMPOSITE ( )
TOTAL DEPTH: 20.20
WATER COLUMN HEIGHT: 5.70 X .17 = 0.96 X 3 = 2.90
PURGE VOLUME: 2.90
[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]
[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]
[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [<10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial: 1335	0.25	—	—	3.87	4.54	26.8	124	200 ( )	14.63
1340	0.5	—	—	4.11	3.88	25.9	23.5	200	14.68
1345	0.75	—	—	4.32	2.71	25.3	8.16	200	14.73
1350	1.0	—	—	4.31	2.74	25.2	5.57	200	14.74
1355	1.25	—	—	4.32	2.74	25.2	5.24	200	14.76
1400	1.5	—	—	4.31	2.75	25.1	4.49	200	14.77
1405	1.75	—	—	4.31	2.74	25.1	4.68	200	14.77
1410	2.0	—	—	4.31	2.75	25.0	3.90	200	14.78
1415	2.25	—	—	4.31	2.75	25.0	3.48	200	14.78
1420	2.5	—	—	4.31	2.75	25.0	3.23	200	14.78
1425	2.75	—	—	4.31	2.75	25.1	2.88	200	14.78
1430	3.0			4.31	2.75	25.1	2.59	200	14.78
1445	Collect Sample								

NOTES:

SAMPLE DATE: 9-22-15
SAMPLE TIME: 1445

	CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
MW-9	250 ML PE	1	HNO_3		Pb
DUP-1	250 ML PE	1	HNO_3		Pb

GENERAL INFORMATION		
WEATHER:	HOT - HUMID - SOME CLOUDS	
SHIPPED VIA:	Delivered to AES laboratory	
SHIPPED TO:	AES Laboratories, 3785 Presidential Parkway, Atlanta, GA 30340	
SAMPLER:	EVER GUILLEN	OBSERVER:

PROJECT NAME:
Swift- Moultrie, GA

FIELD SAMPLING REPORT

Project Number: 6122140220

AMEC, E&I
1075 BIG SHANTY ROAD NW, SUITE 100 KENNESAW GA 30144
PHONE: (770) 421-3400 / FAX: (770) 421-3486

SAMPLING EVENT: __1ST QUARTER __2ND QUARTER __3RD QUARTER __4TH QUARTER
MONITORING WELL TYPE: __Standard __ Compliance __Background __Extraction
WELL ID: MW-12
WELL MATERIAL: PVC
SAMPLE METHOD: Peristaltic Pump

DUP./REP. OF:_____

Top of Screened interval (btoc):_____
Screen length:_____
Arrived at: 1337
Initial PID = _____
Bailing PID = _____

WELL DIAMETER: 2"
DEPTH TO WATER: 6.38 GRAB (x) COMPOSITE ( )
TOTAL DEPTH: 11.77
WATER COLUMN HEIGHT: 5.39 X .163X3
PURGE VOLUME: 2.64
[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]
[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]
[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [<10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial: 1407	—	NA	NA	6.00	0.35	30.2	6.69	200 ( )	6.50
1416	.50			5.88	0.36	29.0	2.02	200	7.50
1428	1.00			5.94	0.37	29.3	1.30	200	7.80
1438	1.50			5.87	0.36	29.1	0.39	200	7.80
1448	2.00			5.80	0.36	29.3	1.21	200	7.83
1458	2.50			5.85	0.36	29.7	0.75	200	7.83
1503	2.75			5.95	0.37	29.5	0.85	200	7.83
1505	Sample from MW-12								

NOTES: Tubing Intake = 9.00'

SAMPLE DATE: 9/22/15
SAMPLE TIME: 1505

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
250/Poly	1	HNO_3		Lead

GENERAL INFORMATION		
WEATHER:	Cloudy Hot	
SHIPPED VIA:	Delivered to AES laboratory	
SHIPPED TO:	AES Laboratories, 3785 Presidential Parkway, Atlanta, GA 30340	
SAMPLER: Mark A.		OBSERVER:

PROJECT NAME:
Swift- Moultrie, GA

FIELD SAMPLING REPORT

Project Number: 6122140220

AMEC, E&I
1075 BIG SHANTY ROAD NW, SUITE 100 KENNESAW GA 30144
PHONE: (770) 421-3400 / FAX: (770) 421-3486

SAMPLING EVENT: __1ST QUARTER __2ND QUARTER __3RD QUARTER __4TH QUARTER
MONITORING WELL TYPE: __Standard __ Compliance __Background __Extraction
WELL ID: MW-13D
WELL MATERIAL: PVC
SAMPLE METHOD: PERISTALTIC

DUP./REP. OF: _____
INTAKE @ 22.5'
Top of Screened interval (btoc): 19.18
Screen length: 5.0'
Arrived at: _____
Initial PID = _____
Bailing PID = _____

WELL DIAMETER: 2"
DEPTH TO WATER: 15.56 GRAB (x) COMPOSITE ( )
TOTAL DEPTH: 24.00
WATER COLUMN HEIGHT: 2.90 x.17 = 1.43 x 3 = 4.30
PURGE VOLUME: 4.30
[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]
[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]
[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [<10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial: 1530	0.25	—	—	3.81	5.69	26.4	26.0	200 ( )	15.72
1535	0.5	—	—	3.81	5.79	25.2	20.4	200	15.74
1540	0.75	—	—	3.81	5.81	24.6	12.3	200	15.73
1545	1.0	—	—	3.81	5.82	24.3	7.80	200	15.74
1550	1.25	—	—	3.82	5.82	24.1	6.36	200	15.75
1600	1.75	—	—	3.82	5.83	24.0	5.15	200	15.75
1615	2.5	—	—	3.80	5.83	23.8	3.80	200	15.75
1625	3.0	—	—	3.83	5.81	23.8	5.10	200	15.76
1635	3.5	—	—	3.82	5.78	23.9	2.38	200	15.76
1645	4.0	—	—	3.82	5.77	23.9	2.68	200	15.77
1650	4.25	—	—	3.83	5.76	24.0	2.41	200	15.77
1655	Collect	Sample							

NOTES:

SAMPLE DATE: 9-22-15
SAMPLE TIME: 1655

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
250 ML PE	1	HNO3		Pb

GENERAL INFORMATION		
WEATHER:	Hot - Humid - Some Clouds	
SHIPPED VIA:	Delivered to AES laboratory	
SHIPPED TO:	AES Laboratories, 3785 Presidential Parkway, Atlanta, GA 30340	
SAMPLER:	EVER GUILLEN	OBSERVER:

PROJECT NAME:
Swift- Moultrie, GA

FIELD SAMPLING REPORT

Project Number: 6122140220

AMEC, E&I
1075 BIG SHANTY ROAD NW, SUITE 100 KENNESAW GA 30144
PHONE: (770) 421-3400 / FAX: (770) 421-3486

SAMPLING EVENT: __1ST QUARTER __2ND QUARTER __3RD QUARTER __4TH QUARTER
MONITORING WELL TYPE: __Standard __ Compliance __Background __Extraction
WELL ID: MW-15
WELL MATERIAL: PVC
SAMPLE METHOD: PERISTALTIC

DUP./REP. OF:
INTAKE @ 14.0'
Top of Screened interval (btoc): 5.10
Screen length: 10'
Arrived at:
Initial PID =
Bailing PID =

WELL DIAMETER: 2"
DEPTH TO WATER: 8.05 GRAB (x) COMPOSITE ( )
TOTAL DEPTH: 15.05
WATER COLUMN HEIGHT: 7.0 x.17 = 1.19 x 3 = 3.57
PURGE VOLUME: 3.57
[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]
[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]
[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [<10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial: 1115	0.25	—	—	4.15	6.26	27.4	3.15	200 ( )	8.37
1120	0.5	—	—	4.40	5.48	27.8	3.13	200	9.01
1125	0.75	—	—	4.25	5.77	27.4	3.96	200	9.78
1130	1.0	—	—	4.15	6.11	27.0	3.77	200	10.13
1135	1.25	—	—	4.82	3.95	27.5	5.43	200	10.81
1140	1.5	—	—	4.77	4.06	27.4	6.45	200	11.19
1150	2.0	—	—	4.65	4.36	27.4	7.54	200	11.72
1200	2.5	—	—	4.57	4.63	27.4	8.30	200	12.18
1210	3.0	—	—	4.53	4.86	27.4	12.9	200	12.62
1220	3.5	—	—	4.18	5.73	27.4	7.84	200	12.97
1225	Collect Sample								

NOTES:

SAMPLE DATE: 9-23-15
SAMPLE TIME: 1225

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
250ML PE	1	HNO_3		Pb

GENERAL INFORMATION		
WEATHER:	HOT - HUMID - Some Clouds	
SHIPPED VIA:	Delivered to AES laboratory	
SHIPPED TO:	AES Laboratories, 3785 Presidential Parkway, Atlanta, GA 30340	
SAMPLER: EVER GUILLEN		OBSERVER:

PROJECT NAME:
Swift- Moultrie, GA

FIELD SAMPLING REPORT

Project Number: 6122140220

AMEC, E&I
1075 BIG SHANTY ROAD NW, SUITE 100 KENNESAW GA 30144
PHONE: (770) 421-3400 / FAX: (770) 421-3486

SAMPLING EVENT: __1ST QUARTER __2ND QUARTER __3RD QUARTER __4TH QUARTER
MONITORING WELL TYPE: __Standard __ Compliance __Background __Extraction
WELL ID: MW-16
WELL MATERIAL: PVC
SAMPLE METHOD: PERISTALTIC

DUP./REP. OF: MS/MSD
INTAKE @ 17.5'
Top of Screened interval (btoc): 3.56
Screen length: 15.0
Arrived at:
Initial PID =
Bailing PID =

WELL DIAMETER: 2"
DEPTH TO WATER: 14.26 GRAB (x) COMPOSITE ( )
TOTAL DEPTH: 18.25
WATER COLUMN HEIGHT: 3.99 x .17 = 0.67 x 3 = 2.03
PURGE VOLUME: 2.03
[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]
[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]
[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [<10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial: 1150	0.25	—	—	4.53	1.30	25.6	>1000	200 ( )	14.45
1155	0.5	—	—	4.31	0.99	26.9	286	200	14.39
1200	0.75	—	—	4.22	0.95	25.8	185	200	14.40
1205	1.0	—	—	4.22	0.95	25.5	88.3	200	14.39
1210	1.25	—	—	4.22	0.94	25.9	51.5	200	14.40
1215	1.50	—	—	4.21	0.95	25.6	30.0	200	14.40
1220	1.75	—	—	4.20	0.96	25.9	14.8	200	14.40
1225	2.0	—	—	4.20	0.96	25.6	8.22	200	14.41
1230	Collect	Sample							

NOTES: SILTY BOTTOM — Surged & Purged ± 0.5 Gallons after Collecting Sample.

Collected MW-16, MW-16 MS & MW-16 MSD

SAMPLE DATE: 9-22-15
SAMPLE TIME: 1230

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
250 ML PE	3	HNO_3		Pb

GENERAL INFORMATION		
WEATHER:	HOT - HUMID - SOME CLOUDS	
SHIPPED VIA:	Delivered to AES laboratory	
SHIPPED TO:	AES Laboratories, 3785 Presidential Parkway, Atlanta, GA 30340	
SAMPLER: EVER GUICCEN		OBSERVER:

PROJECT NAME:
Swift- Moultrie, GA

FIELD SAMPLING REPORT

Project Number: 6122140220

AMEC, E&I
1075 BIG SHANTY ROAD NW, SUITE 100 KENNESAW GA 30144
PHONE: (770) 421-3400 / FAX: (770) 421-3486

SAMPLING EVENT: __1ST QUARTER __2ND QUARTER __3RD QUARTER __4TH QUARTER
MONITORING WELL TYPE: __Standard __ Compliance __Background __Extraction
WELL ID: MW-18
WELL MATERIAL: PVC
SAMPLE METHOD: PERISTALTIC

DUP./REP. OF:
INTAKE @ 20.0'
Top of Screened interval (btoc): 7.43
Screen length: 15.0
Arrived at:
Initial PID =
Bailing PID =

WELL DIAMETER: 2"
DEPTH TO WATER: 16.04 GRAB (x) COMPOSITE ( )
TOTAL DEPTH: 22.20
WATER COLUMN HEIGHT: 6.16 X .17 = 1.04 X 3 = 3.14
PURGE VOLUME: 3.14
[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]
[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]
[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [<10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial: 850	0.25	—	—	4.58	7.58	23.6	81.2	200 ( )	16.51
855	0.5	—	—	4.59	7.60	23.7	57.2	200	16.69
905	1.0	—	—	4.60	7.59	23.7	26.7	200	16.91
915	1.5	—	—	4.59	7.64	23.8	11.9	200	17.19
925	2.0	—	—	4.53	7.82	24.0	16.7	200	17.42
935	2.5	—	—	4.51	7.85	24.1	12.8	200	17.83
945	3.0	—	—	4.50	7.86	24.1	21.3	200	18.12
950	3.25	—	—	4.51	7.87	24.6	17.2	200	18.38
955	3.5	—	—	4.51	7.86	24.1	15.0	200	18.72
1000	3.75	—	—	4.51	7.85	24.1	17.0	200	19.09
1005	4.0	—	—	4.51	7.85	24.1	17.9	200	19.31
1010	Collect	Sample							

NOTES: TURBIDITY WAS @ 11.9 THEN BEGAN TO RISE.
Collected FIELD FILTERED & REGULAR SAMPLE

SAMPLE DATE: 9-23-15
SAMPLE TIME: 1010

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
250 ML PE	1	HNO_3		Pb
250 ML PE	1	HNO_3		DISOLVED Pb (FIELD FILTERED

GENERAL INFORMATION		
WEATHER:	HOT - HUMID - CLOUDY	
SHIPPED VIA:	Delivered to AES laboratory	
SHIPPED TO:	AES Laboratories, 3785 Presidential Parkway, Atlanta, GA 30340	
SAMPLER: EVER GUILLEN		OBSERVER:

PROJECT NAME:
Swift- Moultrie, GA

FIELD SAMPLING REPORT

Project Number: 6122140220

AMEC, E&I
1075 BIG SHANTY ROAD NW, SUITE 100 KENNESAW GA 30144
PHONE: (770) 421-3400 / FAX: (770) 421-3486

SAMPLING EVENT: __1ST QUARTER __2ND QUARTER __3RD QUARTER __4TH QUARTER
MONITORING WELL TYPE: __Standard __ Compliance __Background __Extraction
WELL ID: MW-20
WELL MATERIAL: PVC
SAMPLE METHOD: Peristaltic pump

DUP./REP. OF: _____

Top of Screened interval (btoc): _____
Screen length: _____
Arrived at: 1000
Initial PID = _____
Bailing PID = _____

WELL DIAMETER: 2"
DEPTH TO WATER: 8.99 GRAB (x) COMPOSITE ( )
TOTAL DEPTH: 15.05
WATER COLUMN HEIGHT: 6.06 X 0.163 X 3 =
PURGE VOLUME: 2.96
[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]
[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]
[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [<10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial: 1000	-	NA	NA	5.54	0.23	28.2	78.5	200 (ml/min)	9.67
1030	.50	NA	NA	5.53	0.23	27.7	75.4	200	10.15
1040	1.00	NA	NA	5.49	0.23	28.1	77.5	150	10.85
1052	1.50	NA	NA	5.50	0.23	28.3	73.3	150	11.40
1104	2.00	NA	NA	5.46	0.22	28.2	63.7	150	11.65
1116	2.50	NA	NA	5.46	0.21	28.7	45.7	150	12.30
1128	3.00	NA	NA	5.45	0.21	28.6	46.4	150	12.70
1140	3.50	NA	NA	5.46	0.21	28.3	51.3	150	12.80
1143	Sample time MW-20								

NOTES: Tubing Intake = ~~10.00~~ N/A 13.00'

SAMPLE DATE: 7/22/15
SAMPLE TIME: 1143

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
250 ml/poly	1	HNO_3		Lead
250 ml/poly	1	HNO_3		Dissolved Lead

GENERAL INFORMATION		
WEATHER:	Partly Cloudy Hot	
SHIPPED VIA:	Delivered to AES laboratory	
SHIPPED TO:	AES Laboratories, 3785 Presidential Parkway, Atlanta, GA 30340	
SAMPLER: Mark A.		OBSERVER:

PROJECT NAME:
Swift- Moultrie, GA

FIELD SAMPLING REPORT

Project Number: 6122140220

AMEC, E&I
1075 BIG SHANTY ROAD NW, SUITE 100 KENNESAW GA 30144
PHONE: (770) 421-3400 / FAX: (770) 421-3486

SAMPLING EVENT: __1ST QUARTER __2ND QUARTER __3RD QUARTER __4TH QUARTER
MONITORING WELL TYPE: __Standard __ Compliance __Background __Extraction
WELL ID: MW-270000
WELL MATERIAL: PVC
SAMPLE METHOD: Monsoon Pump

DUP./REP. OF:_____

Top of Screened interval (btoc):_____
Screen length:_____
Arrived at: 0900
Initial PID = _____
Bailing PID = _____

WELL DIAMETER: 2"
DEPTH TO WATER: 27.67 GRAB (x) COMPOSITE ( )
TOTAL DEPTH: 91.40
WATER COLUMN HEIGHT: 63.73 x .163
PURGE VOLUME: 10.39 gal
[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]
[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]
[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [<10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial: 0920	-	NA	NA	5.26	1.57	22.4	245	600 ( )	34.00
0926	1.00			5.01	1.98	22.7	47.5	600	34.35
0934	2.00			4.90	2.22	23.08	15.5	500	34.50
0942	3.00			4.83	2.24	23.1	21.4	500	34.50
0950	4.00			4.84	2.24	23.2	5.64	500	34.48
0958	5.00			4.78	2.26	23.6	3.42	500	34.48
1006	6.00			4.83	2.24	23.8	9.12	500	34.44
1014	7.00			4.86	2.24	23.9	6.37	500	34.44
1022	8.00			4.92	2.22	24.0	9.21	500	34.48
1030	9.00			4.90	2.22	24.0	8.71	500	34.50
1038	10.00			4.90	2.23	24.0	5.56	500	34.50
1042	10.50			4.90	2.26	24.2	3.84	500	34.50
1045	Sample Time		MW-270000						

NOTES: Pump Intake = 71.00'

SAMPLE DATE: 9/23/15
SAMPLE TIME: 1045

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
				Barium

GENERAL INFORMATION			
WEATHER:			
SHIPPED VIA:	Delivered to AES laboratory		
SHIPPED TO:	AES Laboratories, 3785 Presidential Parkway, Atlanta, GA 30340		
SAMPLER:	Mark A	OBSERVER:	

PROJECT NAME:
Swift- Moultrie, GA

FIELD SAMPLING REPORT

Project Number: 6122140220

AMEC, E&I
1075 BIG SHANTY ROAD NW, SUITE 100 KENNESAW GA 30144
PHONE: (770) 421-3400 / FAX: (770) 421-3486

SAMPLING EVENT: __1ST QUARTER __2ND QUARTER __3RD QUARTER __4TH QUARTER
MONITORING WELL TYPE: __Standard __ Compliance __Background __Extraction
WELL ID: MW-29
WELL MATERIAL: PVC
SAMPLE METHOD: PERISTALTIC

DUP./REP. OF:
INTAKE @ 17.0'
Top of Screened interval (btoc): 10.36
Screen length: 10'
Arrived at:
Initial PID =
Bailing PID =

WELL DIAMETER: 2"
DEPTH TO WATER: 13.05 GRAB (x) COMPOSITE ( )
TOTAL DEPTH: 20.65
WATER COLUMN HEIGHT: 7.60 X.17 = 1.29 X 3 = 3.87
PURGE VOLUME: 3.87
[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]
[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]
[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [<10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial: 1515	0.25	—	—	4.26	0.42	25.6	5.69	( )	13.56
1520	0.5	—	—	4.16	0.40	25.7	6.63		13.74
1530	1.0	—	—	4.12	0.39	26.3	3.28		13.96
1540	1.5	—	—	4.09	0.39	26.3	1.44		14.18
1550	2.0	—	—	4.08	0.40	26.1	0.73		14.40
1600	2.5	—	—	4.07	0.40	26.0	0.81		14.64
1610	3.0	—	—	4.09	0.40	25.9	0.65		14.92
1620	3.5	—	—	4.08	0.40	25.9	0.94		15.19
1625	3.75	—	—	4.08	0.40	25.9	1.61	15.30	
1630	4.0	—	—	4.07	0.40	25.7	0.81		15.47
1635	Collect	Sample							

NOTES:

SAMPLE DATE: 9-23-15
SAMPLE TIME: 1635

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS
250 ML PE	1	HNO_3		Pb

GENERAL INFORMATION		
WEATHER:	HOT - HUMID - Cloudy	
SHIPPED VIA:	Delivered to AES laboratory	
SHIPPED TO:	AES Laboratories, 3785 Presidential Parkway, Atlanta, GA 30340	
SAMPLER: EVER GUILLEN		OBSERVER:

PROJECT NAME:
Swift- Moultrie, GA

FIELD SAMPLING REPORT

Project Number: 6122140220

AMEC, E&I
1075 BIG SHANTY ROAD NW, SUITE 100 KENNESAW GA 30144
PHONE: (770) 421-3400 / FAX: (770) 421-3486

SAMPLING EVENT: __1ST QUARTER __2ND QUARTER __3RD QUARTER __4TH QUARTER
MONITORING WELL TYPE: __Standard __ Compliance __Background __Extraction
WELL ID: MW-31
WELL MATERIAL: PVC
SAMPLE METHOD: peristaltic Pump

DUP./REP. OF:_____

Top of Screened interval (btoc):_____
Screen length:_____
Arrived at: 1324
Initial PID = _____
Bailing PID = _____

WELL DIAMETER: 2"
DEPTH TO WATER: 12.23 GRAB (x) COMPOSITE ( )
TOTAL DEPTH: 21.35
WATER COLUMN HEIGHT: 9.12 x .163 x 3
PURGE VOLUME: 4.46
[0.163 x water column height (ft) x 3 (well volumes) for 2" wells]
[0.653 x water column height (ft) x 3 (well volumes) for 4" wells]
[1.47 x water column height (ft) x 3 (well volumes) for 6" wells]

TIME	VOL. PURGED (gal)	Diss. Oxygen (+/- 10%)	ORP (+/- 10 mV)	pH (+/- 0.1 pH units)	SPEC. COND. (ms/cm) [+/- 3%]	TEMP (°C)	TURB. (NTU) [<10 NTU]	Pump Rate ml/min. (& pump setting)	New Water Level
Initial: 1343	—	NA	NA	4.43	0.65	29.9	4.03	200 ( )	12.65
1353	.50			4.27	0.64	26.6	2.46	200	12.80
1403	1.00			4.31	0.63	26.7	1.75	200	12.90
1413	1.50			4.24	0.61	27.1	1.60	200	12.90
1423	2.00			4.23	0.61	27.2	0.72	200	12.90
1433	2.50			4.19	0.61	27.2	0.71	200	12.90
1443	3.00			4.19	0.62	27.2	0.60	200	12.90
1453	3.50			4.18	0.62	27.1	0.54	200	12.90
1503	4.00			4.19	0.62	27.1	0.20	200	12.90
1513	4.50			4.19	0.62	27.1	0.66	200	12.90
1515	Sample Has MW-31								

NOTES:

SAMPLE DATE: 4/23/15
SAMPLE TIME: 1515

CONTAINER SIZE/TYPE	NO.	PRESERVATIVE	ANALYTICAL METHOD	ANALYSIS

GENERAL INFORMATION			
WEATHER:	Cloudy Hot		
SHIPPED VIA:	Delivered to AES laboratory		
SHIPPED TO:	AES Laboratories, 3785 Presidential Parkway, Atlanta, GA 30340		
SAMPLER:	Mark A.	OBSERVER:	

APPENDIX B
SourceDK Modeling Results

SourceDK

Remediation Timeframe Decision Support System

Air Force Center for Environmental Excellence — *Version 1.1*

TIER 1 Empirical Data

Data Input Instructions:

10.80 → *Enter value directly.*

10.80 → *Value calculated by model. (Don't enter any data).*

Site Location and I.D.:	Swift MW-1
Constituent of Interest:	Barium and Lead

1. ENTER CONSTITUENT NAME AND HISTORICAL DATA

Concentration mg/L

	Date (mm/dd/yy)	Constituent A	Constituent B	Constituent C	Constituent D
		Barium	***Lead***		
1	*8/30/2001*	*0.05*	*0.05*		
2	*9/6/2001*	*0.05*	*0.01*		
3	*12/18/2001*	*0.33*	*0.005*		
4	*1/31/2003*	*0.042*	*0.005*		
5	*9/23/2015*	*0.191*	*0.077*		
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

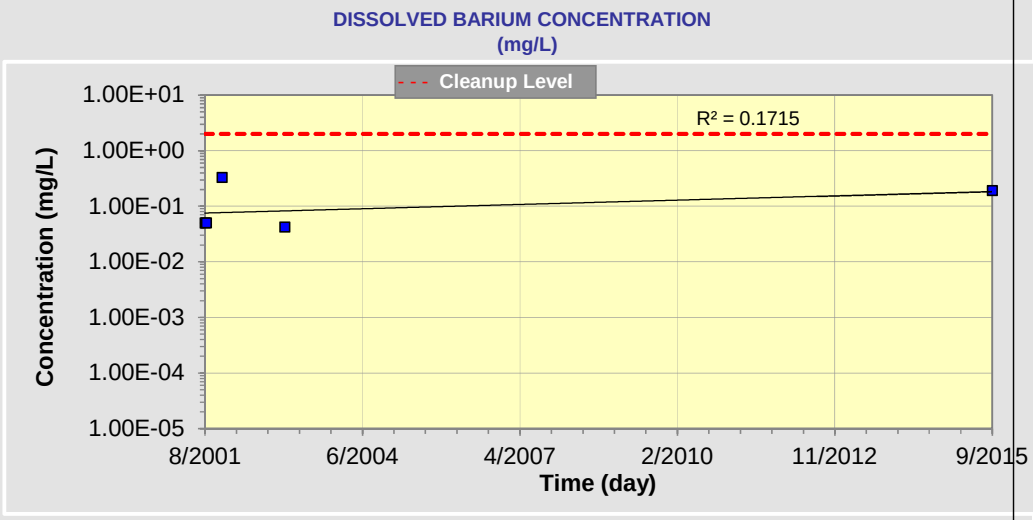
Print Historical Data

2. WHICH CONSTITUENT TO PLOT?

What is the cleanup level?

◉	**Barium**	2 (mg/L)
○	Lead	0.015 (mg/L)
○	Constituent C	(mg/L)
○	Constituent D	(mg/L)

3. OUTPUT GRAPH



Number of Years Over Which to Plot Graph (yr) — Update Graph

4. RESULTS

Predicted Date to Achieve Cleanup: **Can't Calc (+ve Trend)**

Confidence Interval on Predicted Cleanup Date:
(at least 3 data points needed to calculate confidence intervals)

◉ 90 % Confidence Interval
○ 95 % Confidence Interval

2001 (Lower Limit on Confidence Interval) to **Can't Calc (+ve Trend)** (Upper Limit on Confidence Interval)

Source Decay Rate Constant (1/year): **-6.35E-02**
(positive numbers represent shrinking plumes while negative numbers represent expanding plumes)

Return To Main Screen | *New Site/Clear Screen* | *Paste Example Data Set* | *HELP*

SourceDK

Remediation Timeframe Decision Support System

Air Force Center for Environmental Excellence — *Version 1.1*

TIER 1 Empirical Data

Data Input Instructions:

10.80 → *Enter value directly.*

10.80 → *Value calculated by model. (Don't enter any data).*

Site Location and I.D.:	Swift MW-1
Constituent of Interest:	Barium and Lead

1. ENTER CONSTITUENT NAME AND HISTORICAL DATA

Concentration mg/L

	Date (mm/dd/yy)	Constituent A	Constituent B	Constituent C	Constituent D
		Barium	***Lead***		
1	*8/30/2001*	*0.05*	*0.05*		
2	*9/6/2001*	*0.05*	*0.01*		
3	*12/18/2001*	*0.33*	*0.005*		
4	*1/31/2003*	*0.042*	*0.005*		
5	*9/23/2015*	*0.191*	*0.077*		
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

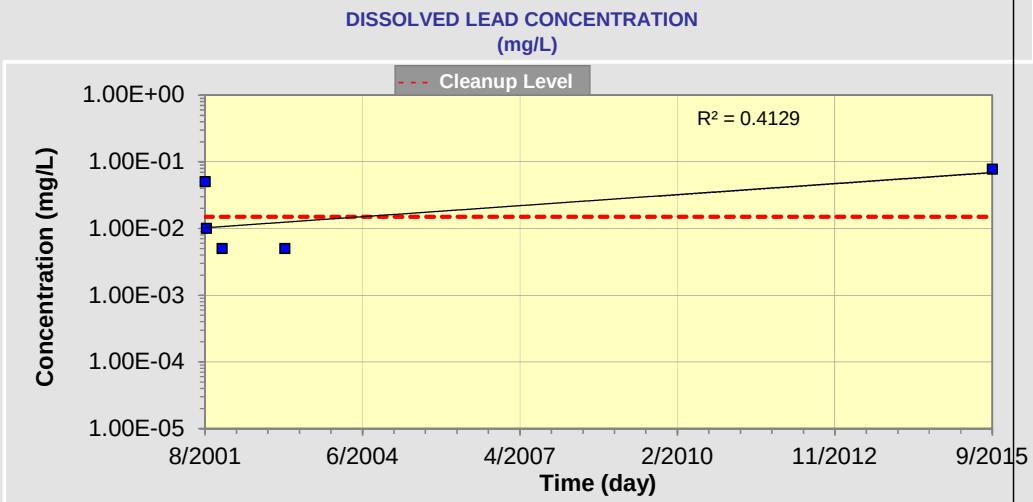
Print Historical Data

2. WHICH CONSTITUENT TO PLOT?

What is the cleanup level?

○	Barium	2 (mg/L)
◉	**Lead**	0.015 (mg/L)
○	Constituent C	(mg/L)
○	Constituent D	(mg/L)

3. OUTPUT GRAPH



Number of Years Over Which to Plot Graph (yr) Update Graph

4. RESULTS

Predicted Date to Achieve Cleanup: **Can't Calc (+ve Trend)**

Confidence Interval on Predicted Cleanup Date:
(at least 3 data points needed to calculate confidence intervals)

◉ 90 % Confidence Interval
○ 95 % Confidence Interval

2001 (Lower Limit on Confidence Interval) to **Can't Calc (+ve Trend)** (Upper Limit on Confidence Interval)

Source Decay Rate Constant (1/year): **-1.36E-01**
(positive numbers represent shrinking plumes while negative numbers represent expanding plumes)

Return To Main Screen | *New Site/Clear Screen* | *Paste Example Data Set* | *HELP*

SourceDK

Remediation Timeframe Decision Support System

Air Force Center for Environmental Excellence — *Version 1.1*

TIER 1 Empirical Data

Data Input Instructions:

10.80 → *Enter value directly.*

10.80 → *Value calculated by model. (Don't enter any data).*

Site Location and I.D.:	Swift MW-6
Constituent of Interest:	Barium and Lead

1. ENTER CONSTITUENT NAME AND HISTORICAL DATA

Concentration mg/L

	Date (mm/dd/yy)	Constituent A	Constituent B	Constituent C	Constituent D
		Barium	***Lead***		
1	*8/30/2001*	*2*	*0.19*		
2	*9/6/2001*	*2.1*	*0.27*		
3	*12/18/2001*	*5.3*	*0.55*		
4	*3/30/2012*	*0.0746*	*0.001*		
5	*9/27/2012*	*0.296*	*0.0322*		
6	*3/27/2013*	*0.039*	*0.001*		
7	*9/10/2013*	*0.42*	*0.0534*		
8	*9/25/2014*	*10.3*	*1.16*		
9	*9/23/2015*	*0.449*	*0.132*		
10					
11					
12					
13					
14					
15					

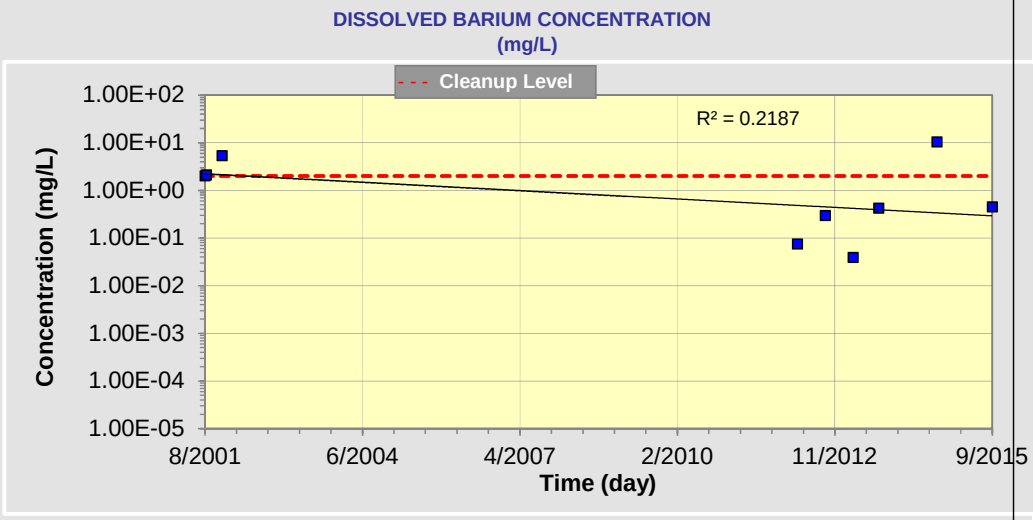
Print Historical Data

2. WHICH CONSTITUENT TO PLOT?

What is the cleanup level?

◉	**Barium**	2 (mg/L)
○	Lead	0.015 (mg/L)
○	Constituent C	(mg/L)
○	Constituent D	(mg/L)

3. OUTPUT GRAPH



Number of Years Over Which to Plot Graph ( ) *(yr)* — Update Graph

4. RESULTS

Predicted Date to Achieve Cleanup: **2002**

Confidence Interval on Predicted Cleanup Date:
(at least 3 data points needed to calculate confidence intervals)

◉ 90 % Confidence Interval
○ 95 % Confidence Interval

2001 (Lower Limit on Confidence Interval) to **Can't Calc (+ve Trend)** (Upper Limit on Confidence Interval)

Source Decay Rate Constant (1/year): **1.45E-01**
(positive numbers represent shrinking plumes while negative numbers represent expanding plumes)

Return To Main Screen | ***New Site/Clear Screen*** | ***Paste Example Data Set*** | ***HELP***

SourceDK

Remediation Timeframe Decision Support System

Air Force Center for Environmental Excellence — *Version 1.1*

TIER 1 Empirical Data

Site Location and I.D.:	Swift MW-6
Constituent of Interest:	Barium and Lead

Data Input Instructions:

10.80 → *Enter value directly.*

10.80 → *Value calculated by model. (Don't enter any data).*

1. ENTER CONSTITUENT NAME AND HISTORICAL DATA

Concentration mg/L

	Date (mm/dd/yy)	Constituent A: Barium	Constituent B: Lead	Constituent C	Constituent D
1	8/30/2001	2	0.19		
2	9/6/2001	2.1	0.27		
3	12/18/2001	5.3	0.55		
4	3/30/2012	0.0746	0.001		
5	9/27/2012	0.296	0.0322		
6	3/27/2013	0.039	0.001		
7	9/10/2013	0.42	0.0534		
8	9/25/2014	10.3	1.16		
9	9/23/2015	0.449	0.132		
10					
11					
12					
13					
14					
15					

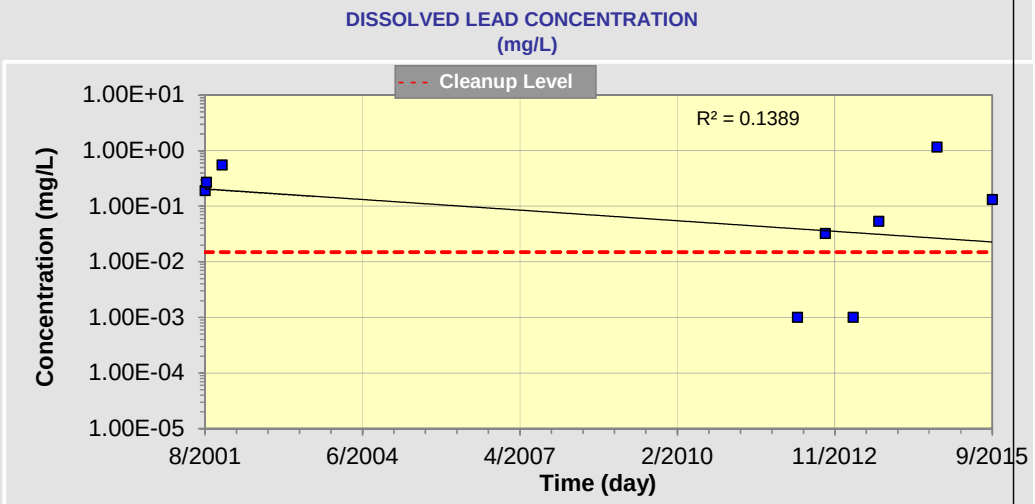
Print Historical Data

2. WHICH CONSTITUENT TO PLOT?

What is the cleanup level?

○	Barium	2 (mg/L)
◉	**Lead**	0.015 (mg/L)
○	Constituent C	(mg/L)
○	Constituent D	(mg/L)

3. OUTPUT GRAPH



Number of Years Over Which to Plot Graph (yr) — Update Graph

4. RESULTS

Predicted Date to Achieve Cleanup: **2018**

Confidence Interval on Predicted Cleanup Date:
(at least 3 data points needed to calculate confidence intervals)

◉ 90 % Confidence Interval
○ 95 % Confidence Interval

2001 (Lower Limit on Confidence Interval) to **Can't Calc (+ve Trend)** (Upper Limit on Confidence Interval)

Source Decay Rate Constant (1/year): **1.56E-01**
(positive numbers represent shrinking plumes while negative numbers represent expanding plumes)

Return To Main Screen | New Site/Clear Screen | Paste Example Data Set | HELP

SourceDK

Remediation Timeframe Decision Support System

Air Force Center for Environmental Excellence — *Version 1.1*

TIER 1 Empirical Data

Site Location and I.D.:	Swift MW-7
Constituent of Interest:	Barium and Lead

Data Input Instructions:

10.80 → *Enter value directly.*

10.80 → *Value calculated by model. (Don't enter any data).*

1. ENTER CONSTITUENT NAME AND HISTORICAL DATA

Concentration mg/L

	Date (mm/dd/yy)	Constituent A	Constituent B	Constituent C	Constituent D
		Barium	***Lead***		
1	*12/18/2001*	*13*	*0.32*		
2	*3/30/2012*	*0.577*	*0.026*		
3	*9/28/2012*	*0.384*	*0.00666*		
4	*3/27/2013*	*0.127*	*0.001*		
5	*9/11/2013*	*0.216*	*0.001*		
6	*9/23/2014*	*0.315*	*0.00913*		
7	*9/22/2015*	*0.493*	*0.00995*		
8					
9					
10					
11					
12					
13					
14					
15					

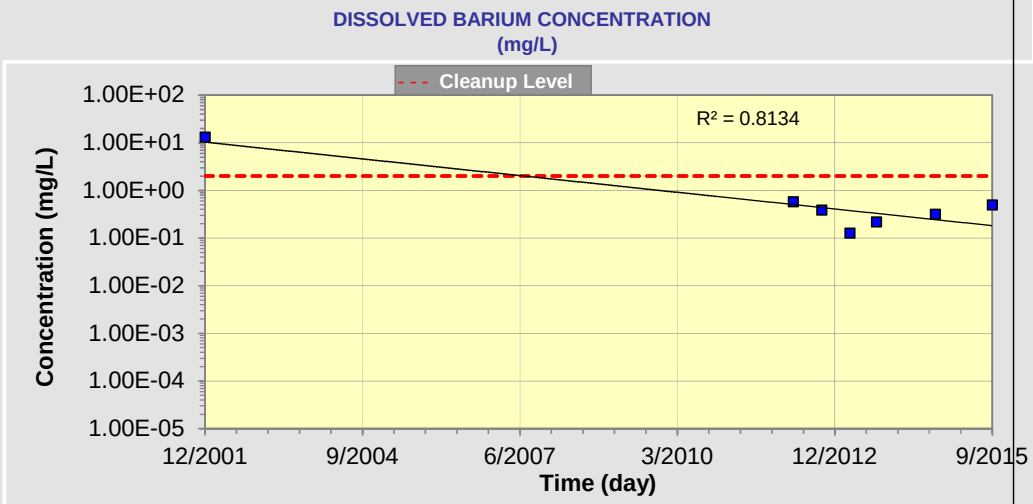
Print Historical Data

2. WHICH CONSTITUENT TO PLOT?

What is the cleanup level?

◉	**Barium**	2 (mg/L)
○	Lead	0.015 (mg/L)
○	Constituent C	(mg/L)
○	Constituent D	(mg/L)

3. OUTPUT GRAPH



Number of Years Over Which to Plot Graph (yr) — Update Graph

4. RESULTS

Predicted Date to Achieve Cleanup: **2007**

Confidence Interval on Predicted Cleanup Date:
(at least 3 data points needed to calculate confidence intervals)

◉ 90 % Confidence Interval
○ 95 % Confidence Interval

2002 (Lower Limit on Confidence Interval) to **2020** (Upper Limit on Confidence Interval)

Source Decay Rate Constant (1/year): **2.94E-01**
(positive numbers represent shrinking plumes while negative numbers represent expanding plumes)

Return To Main Screen | New Site/Clear Screen | Paste Example Data Set | HELP

SourceDK

Remediation Timeframe Decision Support System

Air Force Center for Environmental Excellence — *Version 1.1*

TIER 1 Empirical Data

Site Location and I.D.:	Swift MW-7
Constituent of Interest:	Barium and Lead

Data Input Instructions:

10.80 → *Enter value directly.*

10.80 → *Value calculated by model. (Don't enter any data).*

1. ENTER CONSTITUENT NAME AND HISTORICAL DATA

Concentration mg/L

	Date (mm/dd/yy)	Constituent A	Constituent B	Constituent C	Constituent D
		Barium	***Lead***		
1	*12/18/2001*	*13*	*0.32*		
2	*3/30/2012*	*0.577*	*0.026*		
3	*9/28/2012*	*0.384*	*0.00666*		
4	*3/27/2013*	*0.127*	*0.001*		
5	*9/11/2013*	*0.216*	*0.001*		
6	*9/23/2014*	*0.315*	*0.00913*		
7	*9/22/2015*		*0.00995*		
8					
9					
10					
11					
12					
13					
14					
15					

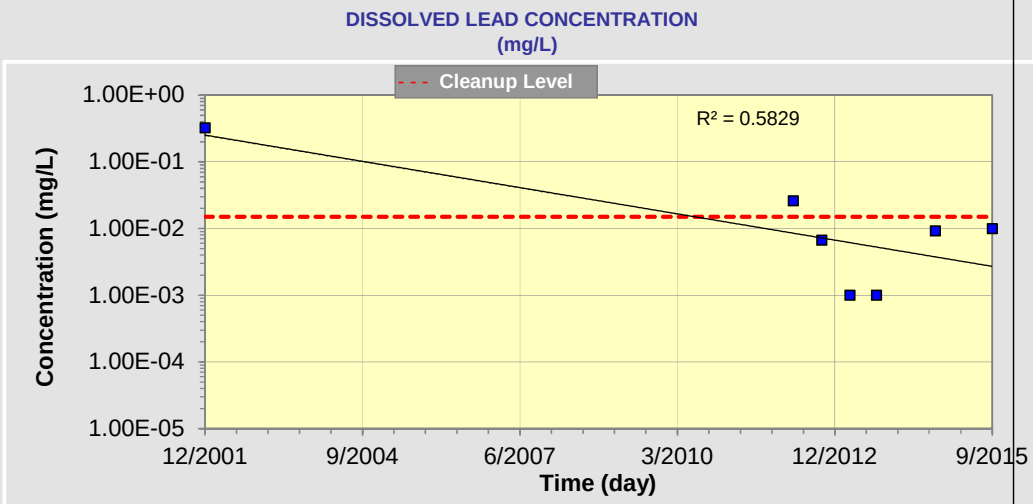
Print Historical Data

2. WHICH CONSTITUENT TO PLOT?

What is the cleanup level?

○	Barium	2 (mg/L)
◉	**Lead**	0.015 (mg/L)
○	Constituent C	(mg/L)
○	Constituent D	(mg/L)

3. OUTPUT GRAPH



Number of Years Over Which to Plot Graph (yr) Update Graph

4. RESULTS

Predicted Date to Achieve Cleanup: **2010**

Confidence Interval on Predicted Cleanup Date:
(at least 3 data points needed to calculate confidence intervals)

◉ 90 % Confidence Interval
○ 95 % Confidence Interval

2002 (Lower Limit on Confidence Interval) to **2073** (Upper Limit on Confidence Interval)

Source Decay Rate Constant (1/year): **3.29E-01**
(positive numbers represent shrinking plumes while negative numbers represent expanding plumes)

Return To Main Screen | *New Site/Clear Screen* | *Paste Example Data Set* | *HELP*

SourceDK

Remediation Timeframe Decision Support System

Air Force Center for Environmental Excellence — *Version 1.1*

TIER 1 Empirical Data

Data Input Instructions:

10.80 → *Enter value directly.*

10.80 → *Value calculated by model. (Don't enter any data).*

Site Location and I.D.:	Swift MW-9
Constituent of Interest:	Barium and Lead

1. ENTER CONSTITUENT NAME AND HISTORICAL DATA

Concentration mg/L

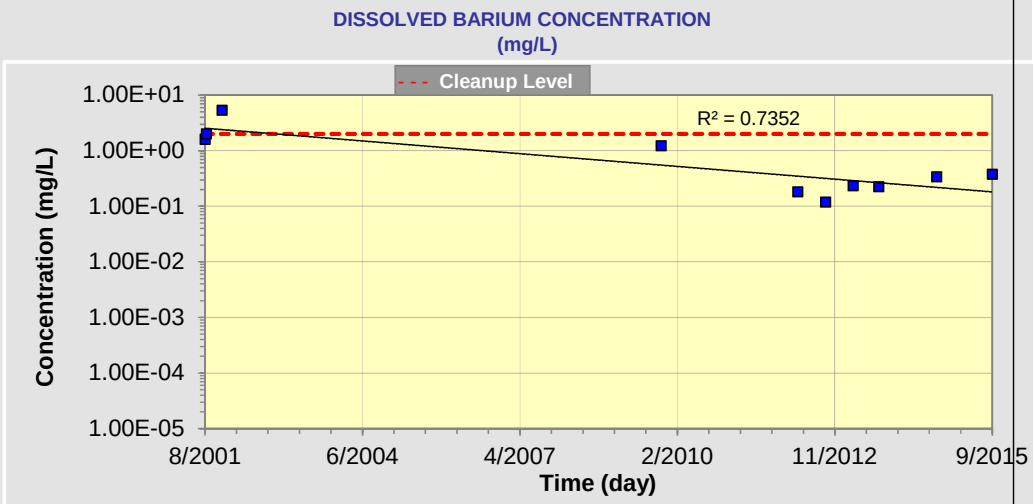
	Date (mm/dd/yy)	Constituent A	Constituent B	Constituent C	Constituent D
		Barium	***Lead***		
1	8/30/2001	1.6	0.08		
2	9/6/2001	2	0.077		
3	12/18/2001	5.3	0.26		
4	10/21/2009	1.22	0.12		
5	3/30/2012	0.18	0.0437		
6	9/28/2012	0.118	0.0472		
7	3/27/2013	0.232	0.0483		
8	9/11/2013	0.225	0.0613		
9	9/24/2014	0.338	0.0678		
10	9/22/2015	0.375	0.0898		
11					
12					
13					
14					
15					

Print Historical Data

2. WHICH CONSTITUENT TO PLOT?

		What is the cleanup level?	
◉	**Barium**	2	(mg/L)
○	Lead	0.015	(mg/L)
○	Constituent C	0.005	(mg/L)
○	Constituent D		(mg/L)

3. OUTPUT GRAPH



Number of Years Over Which to Plot Graph _____ *(yr)* Update Graph

4. RESULTS

Predicted Date to Achieve Cleanup: **2002**

Confidence Interval on Predicted Cleanup Date:
(at least 3 data points needed to calculate confidence intervals)

◉ 90 % Confidence Interval
○ 95 % Confidence Interval

2001 (Lower Limit on Confidence Interval) to **2010** (Upper Limit on Confidence Interval)

Source Decay Rate Constant (1/year): **1.88E-01**
(positive numbers represent shrinking plumes while negative numbers represent expanding plumes)

Return To Main Screen | New Site/Clear Screen | Paste Example Data Set | HELP

SourceDK

Remediation Timeframe Decision Support System

Air Force Center for Environmental Excellence — *Version 1.1*

TIER 1 Empirical Data

Data Input Instructions:

10.80 → *Enter value directly.*

10.80 → *Value calculated by model. (Don't enter any data).*

Site Location and I.D.:	Swift MW-9
Constituent of Interest:	Barium and Lead

1. ENTER CONSTITUENT NAME AND HISTORICAL DATA

Concentration mg/L

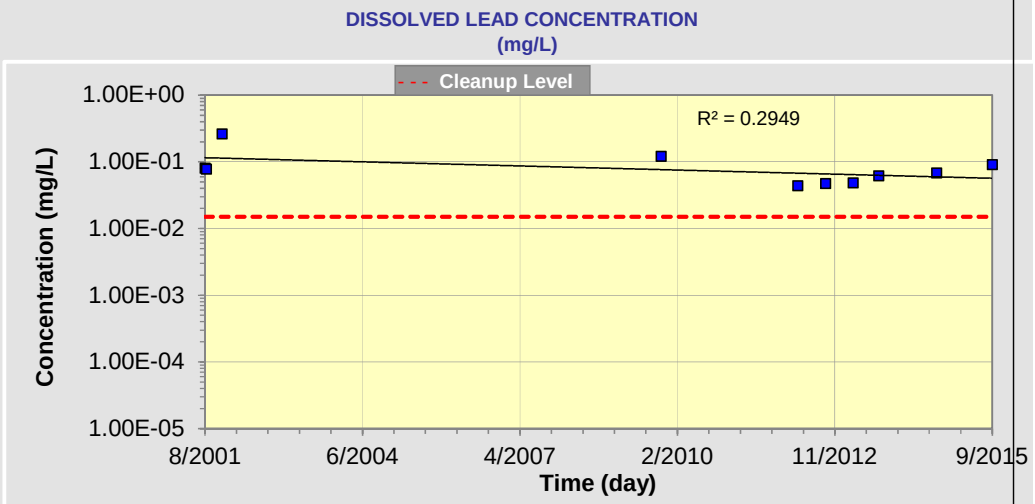
	Date (mm/dd/yy)	Constituent A	Constituent B	Constituent C	Constituent D
		Barium	***Lead***		
1	8/30/2001	1.6	0.08		
2	9/6/2001	2	0.077		
3	12/18/2001	5.3	0.26		
4	10/21/2009	1.22	0.12		
5	3/30/2012	0.18	0.0437		
6	9/28/2012	0.118	0.0472		
7	3/27/2013	0.232	0.0483		
8	9/11/2013	0.225	0.0613		
9	9/24/2014	0.338	0.0678		
10	9/22/2015	0.375	0.0898		
11					
12					
13					
14					
15					

Print Historical Data

2. WHICH CONSTITUENT TO PLOT?

		What is the cleanup level?	
○	Barium	2	(mg/L)
◉	**Lead**	0.015	(mg/L)
○	Constituent C	0.005	(mg/L)
○	Constituent D		(mg/L)

3. OUTPUT GRAPH



Number of Years Over Which to Plot Graph _____ *(yr)* Update Graph

4. RESULTS

Predicted Date to Achieve Cleanup: **2042**

Confidence Interval on Predicted Cleanup Date:
(at least 3 data points needed to calculate confidence intervals)

◉ 90 % Confidence Interval
○ 95 % Confidence Interval

2016 (Lower Limit on Confidence Interval) to **Can't Calc (+ve Trend)** (Upper Limit on Confidence Interval)

Source Decay Rate Constant (1/year): **5.05E-02**
(positive numbers represent shrinking plumes while negative numbers represent expanding plumes)

Return To Main Screen | *New Site/Clear Screen* | *Paste Example Data Set* | *HELP*

SourceDK

Remediation Timeframe Decision Support System

Air Force Center for Environmental Excellence — *Version 1.1*

TIER 1 Empirical Data

Data Input Instructions:

10.80 → *Enter value directly.*

10.80 → *Value calculated by model. (Don't enter any data).*

Site Location and I.D.:	Swift MW-12
Constituent of Interest:	Barium

1. ENTER CONSTITUENT NAME AND HISTORICAL DATA

Concentration mg/L

	Date (mm/dd/yy)	Constituent A	Constituent B	Constituent C	Constituent D
		Barium			
1	*8/30/2001*	*0.5*			
2	*9/6/2001*	*0.5*			
3	*12/19/2001*	*0.13*			
4	*10/20/2009*	*0.12*			
5	*3/29/2012*	*0.182*			
6	*9/27/2012*	*0.134*			
7	*3/26/2013*	*0.102*			
8	*9/10/2013*	*0.124*			
9	*9/23/2014*	*0.154*			
10	*9/22/2015*	*0.13*			
11					
12					
13					
14					
15					

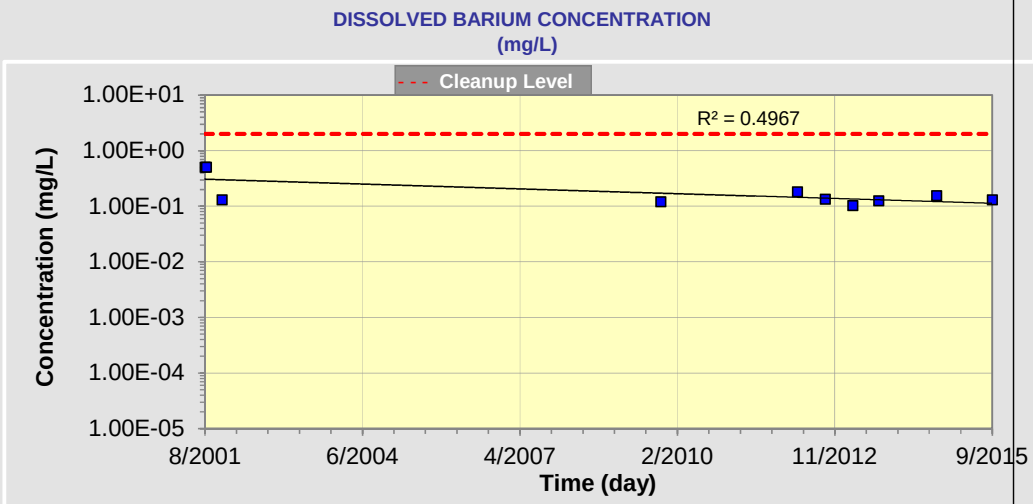
Print Historical Data

2. WHICH CONSTITUENT TO PLOT?

What is the cleanup level?

◉	**Barium**	2 (mg/L)
○	Constituent B	(mg/L)
○	Constituent C	(mg/L)
○	Constituent D	(mg/L)

3. OUTPUT GRAPH



Number of Years Over Which to Plot Graph _____ *(yr)* Update Graph

4. RESULTS

Predicted Date to Achieve Cleanup: **2001**

Confidence Interval on Predicted Cleanup Date:
(at least 3 data points needed to calculate confidence intervals)

◉ 90 % Confidence Interval
○ 95 % Confidence Interval

2001 (Lower Limit on Confidence Interval) to **2001** (Upper Limit on Confidence Interval)

Source Decay Rate Constant (1/year): **7.14E-02**
(positive numbers represent shrinking plumes while negative numbers represent expanding plumes)

Return To Main Screen | ***New Site/Clear Screen*** | ***Paste Example Data Set*** | ***HELP***

SourceDK

Remediation Timeframe Decision Support System

Air Force Center for Environmental Excellence — *Version 1.1*

TIER 1 Empirical Data

Site Location and I.D.:	Swift MW13D
Constituent of Interest:	Barium and Lead

Data Input Instructions:

10.80 → *Enter value directly.*

10.80 → *Value calculated by model. (Don't enter any data).*

1. ENTER CONSTITUENT NAME AND HISTORICAL DATA

Concentration mg/L

	Date (mm/dd/yy)	Constituent A — Barium	Constituent B — Lead	Constituent C	Constituent D
1	8/30/2001	3.2	0.16		
2	9/6/2001	2.4	0.14		
3	12/18/2001	1.7	0.19		
4	3/30/2012	0.273	0.168		
5	9/28/2012	0.295	0.128		
6	3/28/2013	0.383	0.143		
7	9/12/2013	0.338	0.139		
8	9/25/2014	0.254	0.176		
9	9/22/2015	0.169	0.129		
10					
11					
12					
13					
14					
15					

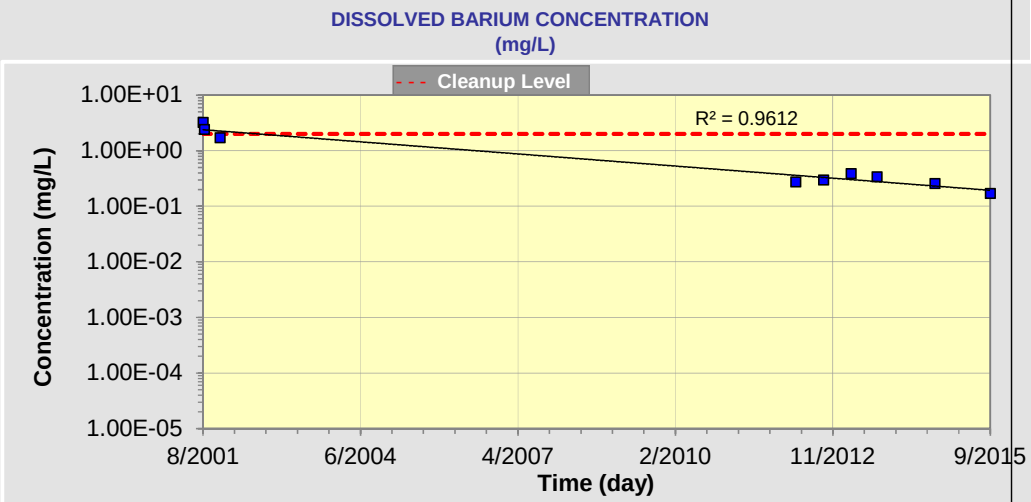
Print Historical Data

2. WHICH CONSTITUENT TO PLOT?

What is the cleanup level?

(●)	**Barium**	2 (mg/L)
( )	Lead	0.015 (mg/L)
( )	Constituent C	(mg/L)
( )	Constituent D	(mg/L)

3. OUTPUT GRAPH



Number of Years Over Which to Plot Graph _____ *(yr)* Update Graph

4. RESULTS

Predicted Date to Achieve Cleanup: **2002**

Confidence Interval on Predicted Cleanup Date:
(at least 3 data points needed to calculate confidence intervals)

(●) 90 % Confidence Interval
( ) 95 % Confidence Interval

2001 (Lower Limit on Confidence Interval) to **2004** (Upper Limit on Confidence Interval)

Source Decay Rate Constant (1/year): **1.79E-01**
(positive numbers represent shrinking plumes while negative numbers represent expanding plumes)

Return To Main Screen | ***New Site/Clear Screen*** | ***Paste Example Data Set*** | ***HELP***

SourceDK

Remediation Timeframe Decision Support System

Air Force Center for Environmental Excellence — *Version 1.1*

TIER 1 Empirical Data

Site Location and I.D.:	Swift MW13D
Constituent of Interest:	Barium and Lead

Data Input Instructions:

10.80 → *Enter value directly.*

10.80 → *Value calculated by model. (Don't enter any data).*

1. ENTER CONSTITUENT NAME AND HISTORICAL DATA

Concentration mg/L

	Date (mm/dd/yy)	Constituent A	Constituent B	Constituent C	Constituent D
		Barium	***Lead***		
1	*8/30/2001*	*3.2*	*0.16*		
2	*9/6/2001*	*2.4*	*0.14*		
3	*12/18/2001*	*1.7*	*0.19*		
4	*3/30/2012*	*0.273*	*0.168*		
5	*9/28/2012*	*0.295*	*0.128*		
6	*3/28/2013*	*0.383*	*0.143*		
7	*9/12/2013*	*0.338*	*0.139*		
8	*9/25/2014*	*0.254*	*0.176*		
9	*9/22/2015*		*0.129*		
10					
11					
12					
13					
14					
15					

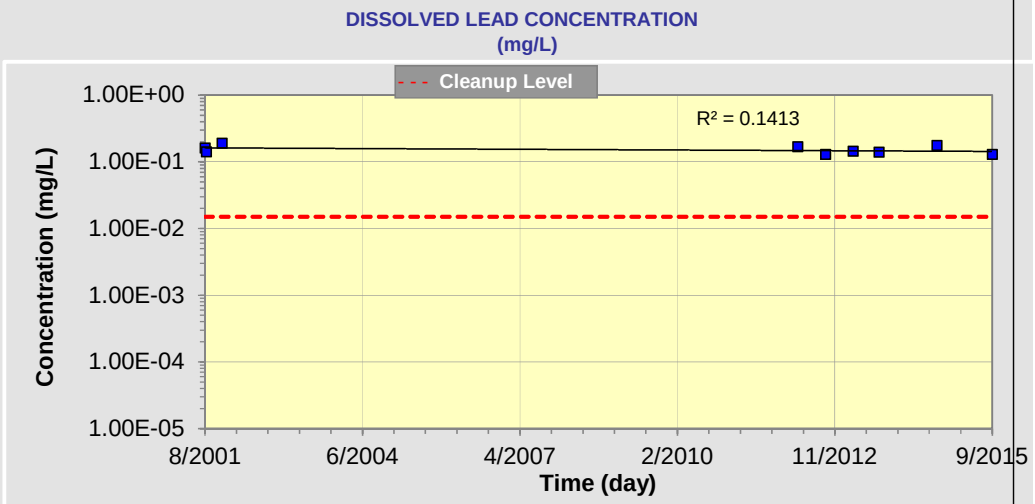
Print Historical Data

2. WHICH CONSTITUENT TO PLOT?

What is the cleanup level?

○	Barium	2 (mg/L)
◉	**Lead**	0.015 (mg/L)
○	Constituent C	(mg/L)
○	Constituent D	(mg/L)

3. OUTPUT GRAPH



Number of Years Over Which to Plot Graph (yr) — Update Graph

4. RESULTS

Predicted Date to Achieve Cleanup: **2274**

Confidence Interval on Predicted Cleanup Date:
(at least 3 data points needed to calculate confidence intervals)

◉ 90 % Confidence Interval
○ 95 % Confidence Interval

2094 (Lower Limit on Confidence Interval) to **Can't Calc (+ve Trend)** (Upper Limit on Confidence Interval)

Source Decay Rate Constant (1/year): **8.72E-03**
(positive numbers represent shrinking plumes while negative numbers represent expanding plumes)

Return To Main Screen | *New Site/Clear Screen* | *Paste Example Data Set* | *HELP*

SourceDK

Remediation Timeframe Decision Support System

Air Force Center for Environmental Excellence — *Version 1.1*

TIER 1 Empirical Data

Site Location and I.D.:	Swift MW15
Constituent of Interest:	Barium and Lead

Data Input Instructions:

10.80 → *Enter value directly.*

10.80 → *Value calculated by model. (Don't enter any data).*

1. ENTER CONSTITUENT NAME AND HISTORICAL DATA

Concentration mg/L

	Date (mm/dd/yy)	Constituent A	Constituent B	Constituent C	Constituent D
		Barium	***Lead***		
1	*4/8/2003*	*0.412*	*0.124*		
2	*9/25/2014*	*0.0628*	*0.311*		
3	*9/23/2015*	*0.075*	*0.243*		
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

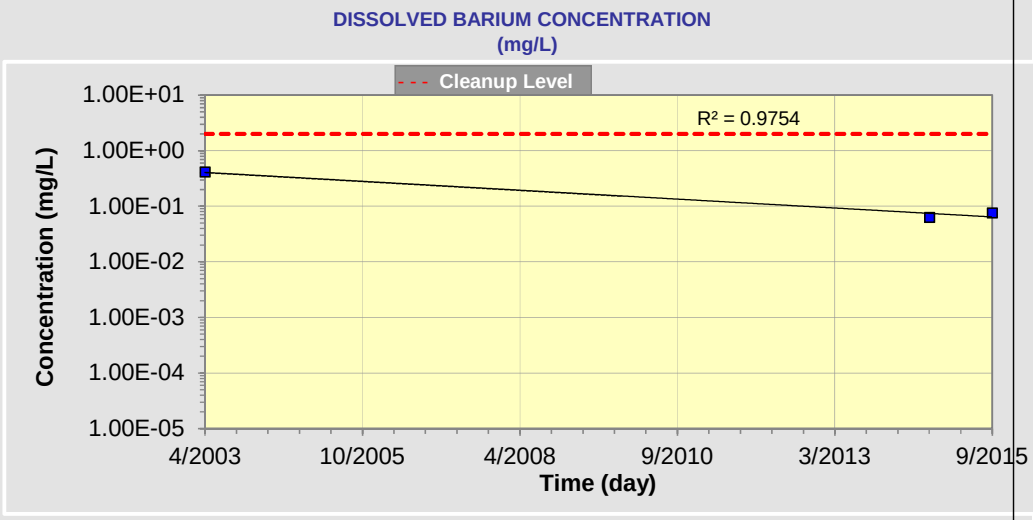
Print Historical Data

2. WHICH CONSTITUENT TO PLOT?

What is the cleanup level?

◉	**Barium**	2 (mg/L)
○	Lead	0.015 (mg/L)
○	Constituent C	(mg/L)
○	Constituent D	(mg/L)

3. OUTPUT GRAPH



Number of Years Over Which to Plot Graph (yr) — Update Graph

4. RESULTS

Predicted Date to Achieve Cleanup: **2003**

Confidence Interval on Predicted Cleanup Date:
(at least 3 data points needed to calculate confidence intervals)

◉ 90 % Confidence Interval
○ 95 % Confidence Interval

2003 (Lower Limit on Confidence Interval) to **Can't Calc (+ve Trend)** (Upper Limit on Confidence Interval)

Source Decay Rate Constant (1/year): **1.48E-01**
(positive numbers represent shrinking plumes while negative numbers represent expanding plumes)

Return To Main Screen | *New Site/Clear Screen* | *Paste Example Data Set* | *HELP*

SourceDK

Remediation Timeframe Decision Support System

Air Force Center for Environmental Excellence — *Version 1.1*

TIER 1 Empirical Data

Site Location and I.D.:	Swift MW15
Constituent of Interest:	Barium and Lead

Data Input Instructions:

10.80 → *Enter value directly.*

10.80 → *Value calculated by model. (Don't enter any data).*

1. ENTER CONSTITUENT NAME AND HISTORICAL DATA

Concentration mg/L

	Date (mm/dd/yy)	Constituent A	Constituent B	Constituent C	Constituent D
		Barium	***Lead***		
1	*4/8/2003*	*0.412*	*0.124*		
2	*9/25/2014*	*0.0628*	*0.311*		
3	*9/23/2015*		*0.243*		
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

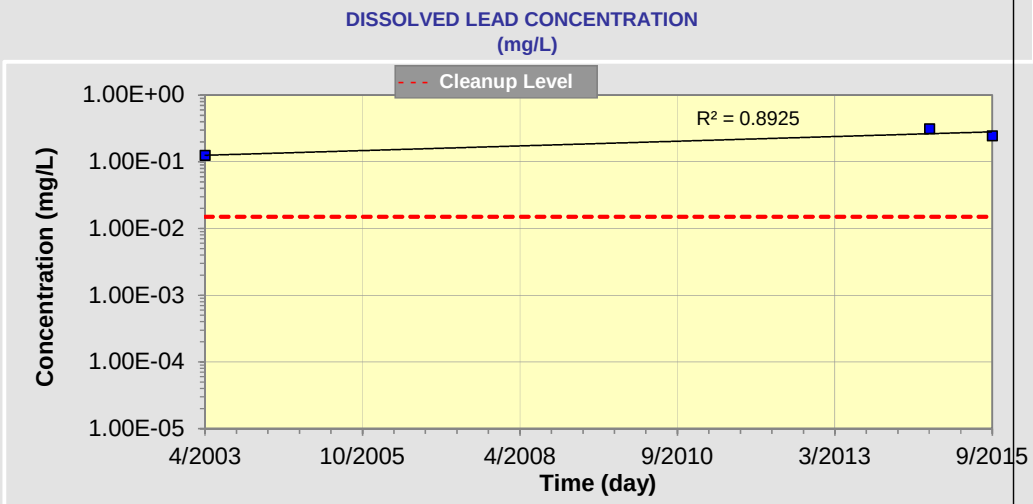
Print Historical Data

2. WHICH CONSTITUENT TO PLOT?

What is the cleanup level?

○	Barium	2 (mg/L)
◉	**Lead**	0.015 (mg/L)
○	Constituent C	(mg/L)
○	Constituent D	(mg/L)

3. OUTPUT GRAPH



Number of Years Over Which to Plot Graph (yr) — Update Graph

4. RESULTS

Predicted Date to Achieve Cleanup: **Can't Calc (+ve Trend)**

Confidence Interval on Predicted Cleanup Date:
(at least 3 data points needed to calculate confidence intervals)

◉ 90 % Confidence Interval
○ 95 % Confidence Interval

2012 (Lower Limit on Confidence Interval) to **Can't Calc (+ve Trend)** (Upper Limit on Confidence Interval)

Source Decay Rate Constant (1/year): **-6.49E-02**
(positive numbers represent shrinking plumes while negative numbers represent expanding plumes)

Return To Main Screen | *New Site/Clear Screen* | *Paste Example Data Set* | *HELP*

SourceDK

Remediation Timeframe Decision Support System

Air Force Center for Environmental Excellence — *Version 1.1*

TIER 1 Empirical Data

Data Input Instructions:

10.80 → *Enter value directly.*

10.80 → *Value calculated by model. (Don't enter any data).*

Site Location and I.D.:	Swift MW16
Constituent of Interest:	Barium and Lead

1. ENTER CONSTITUENT NAME AND HISTORICAL DATA

Concentration mg/L

	Date (mm/dd/yy)	Constituent A	Constituent B	Constituent C	Constituent D
		Barium	***Lead***		
1	*2/14/2003*	*2.34*	*0.1*		
2	*3/29/2012*	*0.542*	*0.0239*		
3	*9/28/2012*	*0.642*	*0.022*		
4	*3/27/2013*	*0.495*	*0.00914*		
5	*9/11/2013*	*0.631*	*0.0129*		
6	*9/24/2014*	*0.01*	*0.0244*		
7	*9/22/2015*	*0.531*	*0.0121*		
8					
9					
10					
11					
12					
13					
14					
15					

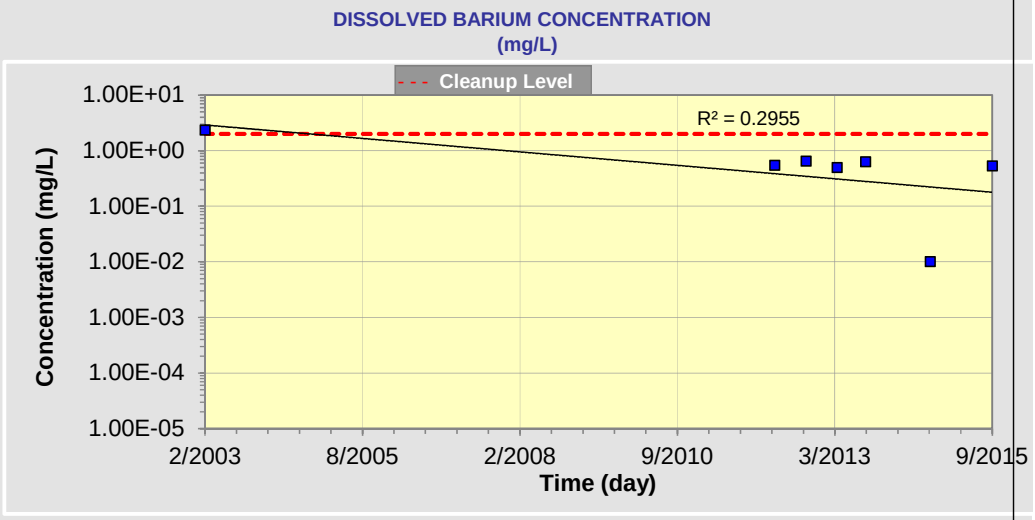
Print Historical Data

2. WHICH CONSTITUENT TO PLOT?

What is the cleanup level?

◉	**Barium**	2 (mg/L)
○	Lead	0.015 (mg/L)
○	Constituent C	(mg/L)
○	Constituent D	(mg/L)

3. OUTPUT GRAPH



Number of Years Over Which to Plot Graph (yr) Update Graph

4. RESULTS

Predicted Date to Achieve Cleanup: **2004**

Confidence Interval on Predicted Cleanup Date:
(at least 3 data points needed to calculate confidence intervals)

◉ 90 % Confidence Interval
○ 95 % Confidence Interval

2003 (Lower Limit on Confidence Interval) to **Can't Calc (+ve Trend)** (Upper Limit on Confidence Interval)

Source Decay Rate Constant (1/year): **2.21E-01**
(positive numbers represent shrinking plumes while negative numbers represent expanding plumes)

Return To Main Screen | *New Site/Clear Screen* | *Paste Example Data Set* | *HELP*

SourceDK

Remediation Timeframe Decision Support System

Air Force Center for Environmental Excellence — *Version 1.1*

TIER 1 Empirical Data

Data Input Instructions:

10.80 → *Enter value directly.*

10.80 → *Value calculated by model. (Don't enter any data).*

Site Location and I.D.:	Swift MW16
Constituent of Interest:	Barium and Lead

1. ENTER CONSTITUENT NAME AND HISTORICAL DATA

Concentration mg/L

	Date (mm/dd/yy)	Constituent A	Constituent B	Constituent C	Constituent D
		Barium	***Lead***		
1	*2/14/2003*	*2.34*	*0.1*		
2	*3/29/2012*	*0.542*	*0.0239*		
3	*9/28/2012*	*0.642*	*0.022*		
4	*3/27/2013*	*0.495*	*0.00914*		
5	*9/11/2013*	*0.631*	*0.0129*		
6	*9/24/2014*	*0.01*	*0.0244*		
7	*9/22/2015*		*0.0121*		
8					
9					
10					
11					
12					
13					
14					
15					

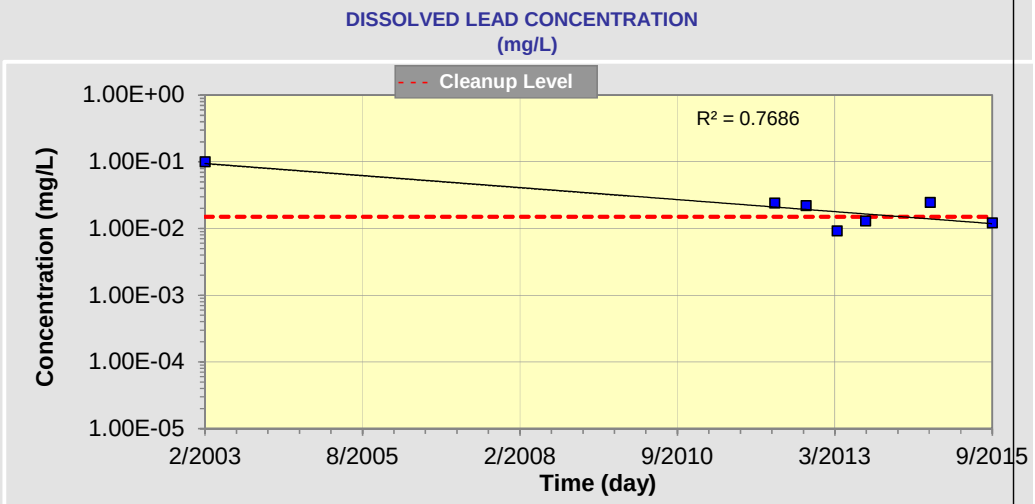
Print Historical Data

2. WHICH CONSTITUENT TO PLOT?

What is the cleanup level?

○	Barium	2 (mg/L)
◉	**Lead**	0.015 (mg/L)
○	Constituent C	(mg/L)
○	Constituent D	(mg/L)

3. OUTPUT GRAPH



Number of Years Over Which to Plot Graph (yr) Update Graph

4. RESULTS

Predicted Date to Achieve Cleanup: **2014**

Confidence Interval on Predicted Cleanup Date:
(at least 3 data points needed to calculate confidence intervals)

◉ 90 % Confidence Interval
○ 95 % Confidence Interval

2007 (Lower Limit on Confidence Interval) to **2034** (Upper Limit on Confidence Interval)

Source Decay Rate Constant (1/year): **1.65E-01**
(positive numbers represent shrinking plumes while negative numbers represent expanding plumes)

Return To Main Screen | New Site/Clear Screen | Paste Example Data Set | HELP

SourceDK

Remediation Timeframe Decision Support System

Air Force Center for Environmental Excellence — *Version 1.1*

TIER 1 Empirical Data

Site Location and I.D.:	Swift MW-18
Constituent of Interest:	Barium and Lead

Data Input Instructions:

10.80 → *Enter value directly.*

10.80 → *Value calculated by model. (Don't enter any data).*

1. ENTER CONSTITUENT NAME AND HISTORICAL DATA

Concentration mg/L

	Date (mm/dd/yy)	Constituent A	Constituent B	Constituent C	Constituent D
		Barium	***Lead***		
1	*1/30/2003*	*0.2835*	*0.3665*		
2	*10/21/2009*	*0.345*	*0.318*		
3	*3/30/2012*	*0.148*	*0.0211*		
4	*9/28/2012*	*0.093*	*0.00288*		
5	*3/27/2013*	*0.531*	*0.00329*		
6	*9/10/2013*	*0.124*	*0.00166*		
7	*9/24/2014*	*0.254*	*0.216*		
8	*9/23/2015*	*0.173*	*0.258*		
9					
10					
11					
12					
13					
14					
15					

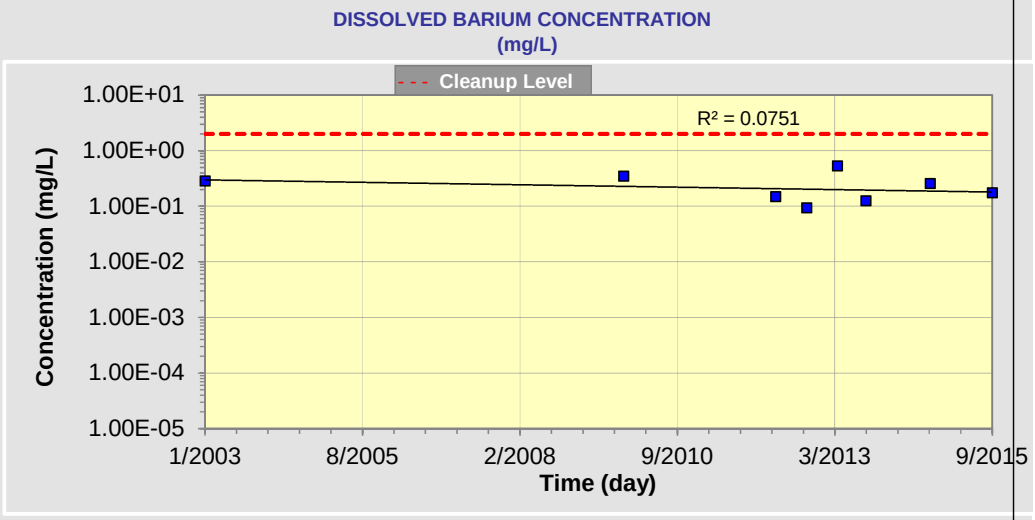
Print Historical Data

2. WHICH CONSTITUENT TO PLOT?

What is the cleanup level?

◉	**Barium**	2 (mg/L)
○	Lead	0.015 (mg/L)
○	Constituent C	(mg/L)
○	Constituent D	(mg/L)

3. OUTPUT GRAPH



Number of Years Over Which to Plot Graph (yr) — Update Graph

4. RESULTS

Predicted Date to Achieve Cleanup: **2003**

Confidence Interval on Predicted Cleanup Date:
(at least 3 data points needed to calculate confidence intervals)

◉ 90 % Confidence Interval
○ 95 % Confidence Interval

2003 (Lower Limit on Confidence Interval) to **Can't Calc (+ve Trend)** (Upper Limit on Confidence Interval)

Source Decay Rate Constant (1/year): **3.98E-02**
(positive numbers represent shrinking plumes while negative numbers represent expanding plumes)

Return To Main Screen | New Site/Clear Screen | Paste Example Data Set | HELP

SourceDK

Remediation Timeframe Decision Support System

Air Force Center for Environmental Excellence — *Version 1.1*

TIER 1 Empirical Data

Site Location and I.D.:	Swift MW-18
Constituent of Interest:	Barium and Lead

Data Input Instructions:

10.80 → *Enter value directly.*

10.80 → *Value calculated by model. (Don't enter any data).*

1. ENTER CONSTITUENT NAME AND HISTORICAL DATA

Concentration mg/L

	Date (mm/dd/yy)	Constituent A	Constituent B	Constituent C	Constituent D
		Barium	***Lead***		
1	*1/30/2003*	*0.2835*	*0.3665*		
2	*10/21/2009*	*0.345*	*0.318*		
3	*3/30/2012*	*0.148*	*0.0211*		
4	*9/28/2012*	*0.093*	*0.00288*		
5	*3/27/2013*	*0.531*	*0.00329*		
6	*9/10/2013*	*0.124*	*0.00166*		
7	*9/24/2014*	*0.254*	*0.216*		
8	*9/23/2015*		*0.258*		
9					
10					
11					
12					
13					
14					
15					

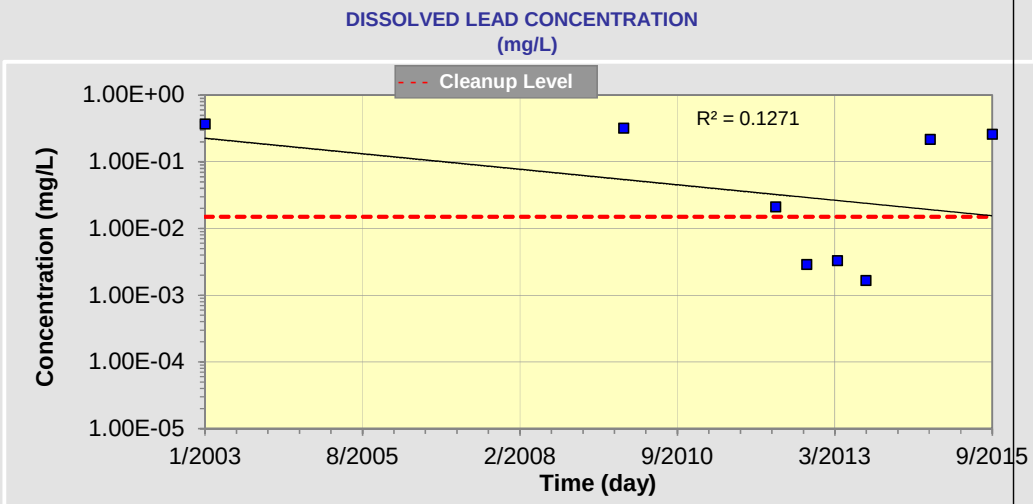
Print Historical Data

2. WHICH CONSTITUENT TO PLOT?

What is the cleanup level?

○	Barium	2 (mg/L)
◉	**Lead**	0.015 (mg/L)
○	Constituent C	(mg/L)
○	Constituent D	(mg/L)

3. OUTPUT GRAPH



Number of Years Over Which to Plot Graph (yr) — Update Graph

4. RESULTS

Predicted Date to Achieve Cleanup: **2015**

Confidence Interval on Predicted Cleanup Date:
(at least 3 data points needed to calculate confidence intervals)

◉ 90 % Confidence Interval
○ 95 % Confidence Interval

2003 (Lower Limit on Confidence Interval) to **Can't Calc (+ve Trend)** (Upper Limit on Confidence Interval)

Source Decay Rate Constant (1/year): **2.12E-01**
(positive numbers represent shrinking plumes while negative numbers represent expanding plumes)

Return To Main Screen | New Site/Clear Screen | Paste Example Data Set | HELP

SourceDK

Remediation Timeframe Decision Support System

Air Force Center for Environmental Excellence — *Version 1.1*

TIER 1 Empirical Data

Site Location and I.D.:	Swift MW-20
Constituent of Interest:	Barium and Lead

Data Input Instructions:

10.80 → *Enter value directly.*

10.80 → *Value calculated by model. (Don't enter any data).*

1. ENTER CONSTITUENT NAME AND HISTORICAL DATA

Concentration mg/L

	Date (mm/dd/yy)	Constituent A	Constituent B	Constituent C	Constituent D
		Barium	***Lead***		
1	*1/30/2003*	*0.045*	*0.005*		
2	*10/22/2009*	*0.0224*	*0.00344*		
3	*3/30/2012*	*0.0447*	*0.00549*		
4	*9/27/2012*	*0.0325*	*0.0049*		
5	*3/27/2013*	*0.0333*	*0.00689*		
6	*9/10/2013*	*0.0413*	*0.0101*		
7	*9/24/2014*	*0.0334*	*0.0038*		
8	*9/22/2015*	*0.0221*	*0.00347*		
9					
10					
11					
12					
13					
14					
15					

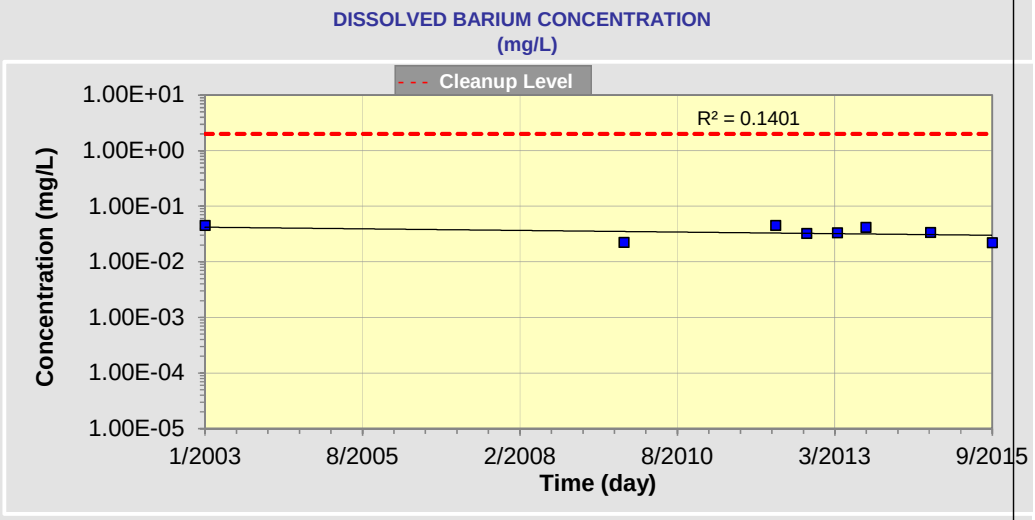
Print Historical Data

2. WHICH CONSTITUENT TO PLOT?

What is the cleanup level?

◉	**Barium**	2 (mg/L)
○	Lead	0.015 (mg/L)
○	Constituent C	(mg/L)
○	Constituent D	(mg/L)

3. OUTPUT GRAPH



Number of Years Over Which to Plot Graph (yr) — Update Graph

4. RESULTS

Predicted Date to Achieve Cleanup: **2003**

Confidence Interval on Predicted Cleanup Date:
(at least 3 data points needed to calculate confidence intervals)

◉ 90 % Confidence Interval
○ 95 % Confidence Interval

2003 (Lower Limit on Confidence Interval) to **Can't Calc (+ve Trend)** (Upper Limit on Confidence Interval)

Source Decay Rate Constant (1/year): **2.64E-02**
(positive numbers represent shrinking plumes while negative numbers represent expanding plumes)

Return To Main Screen | New Site/Clear Screen | Paste Example Data Set | HELP

SourceDK

Remediation Timeframe Decision Support System

Air Force Center for Environmental Excellence — *Version 1.1*

TIER 1 Empirical Data

Site Location and I.D.:	Swift MW-20
Constituent of Interest:	Barium and Lead

Data Input Instructions:

10.80 → *Enter value directly.*

10.80 → *Value calculated by model. (Don't enter any data).*

1. ENTER CONSTITUENT NAME AND HISTORICAL DATA

Concentration mg/L

	Date (mm/dd/yy)	Constituent A	Constituent B	Constituent C	Constituent D
		Barium	***Lead***		
1	*1/30/2003*	*0.045*	*0.005*		
2	*10/22/2009*	*0.0224*	*0.00344*		
3	*3/30/2012*	*0.0447*	*0.00549*		
4	*9/27/2012*	*0.0325*	*0.0049*		
5	*3/27/2013*	*0.0333*	*0.00689*		
6	*9/10/2013*	*0.0413*	*0.0101*		
7	*9/24/2014*	*0.0334*	*0.0038*		
8	*9/22/2015*		*0.00347*		
9					
10					
11					
12					
13					
14					
15					

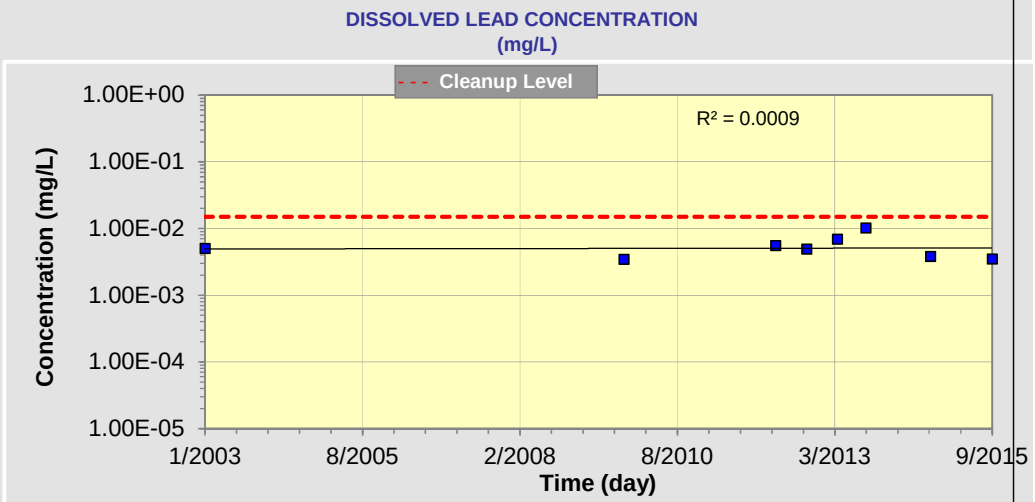
Print Historical Data

2. WHICH CONSTITUENT TO PLOT?

What is the cleanup level?

○	Barium	2 (mg/L)
◉	**Lead**	0.015 (mg/L)
○	Constituent C	(mg/L)
○	Constituent D	(mg/L)

3. OUTPUT GRAPH



Number of Years Over Which to Plot Graph ( ) *(yr)* Update Graph

4. RESULTS

Predicted Date to Achieve Cleanup: **Can't Calc (+ve Trend)**

Confidence Interval on Predicted Cleanup Date:
(at least 3 data points needed to calculate confidence intervals)

◉ 90 % Confidence Interval
○ 95 % Confidence Interval

2003 (Lower Limit on Confidence Interval) to **Can't Calc (+ve Trend)** (Upper Limit on Confidence Interval)

Source Decay Rate Constant (1/year): **-2.82E-03**
(positive numbers represent shrinking plumes while negative numbers represent expanding plumes)

Return To Main Screen | *New Site/Clear Screen* | *Paste Example Data Set* | *HELP*

SourceDK

Remediation Timeframe Decision Support System

Air Force Center for Environmental Excellence — *Version 1.1*

TIER 1 Empirical Data

Data Input Instructions:

10.80 → *Enter value directly.*

10.80 → *Value calculated by model. (Don't enter any data).*

Site Location and I.D.:	Swift MW-27DDDD
Constituent of Interest:	Barium

1. ENTER CONSTITUENT NAME AND HISTORICAL DATA

Concentration mg/L

	Date (mm/dd/yy)	Constituent A	Constituent B	Constituent C	Constituent D
		Barium			
1	*11/10/2004*	*0.5*			
2	*2/15/2011*	*4.34*			
3	*5/3/2012*	*4.91*			
4	*9/27/2012*	*5.15*			
5	*3/28/2013*	*5.55*			
6	*9/12/2013*	*5.11*			
7	*9/25/2014*	*6.72*			
8	*9/23/2015*	*4.95*			
9					
10					
11					
12					
13					
14					
15					

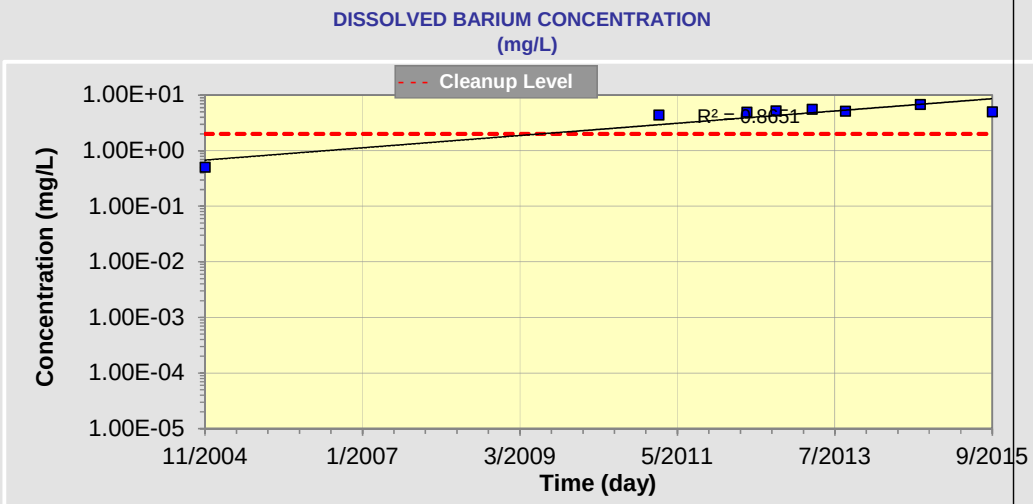
Print Historical Data

2. WHICH CONSTITUENT TO PLOT?

What is the cleanup level?

◉	**Barium**	2 (mg/L)
○	Constituent B	(mg/L)
○	Constituent C	(mg/L)
○	Constituent D	(mg/L)

3. OUTPUT GRAPH



Number of Years Over Which to Plot Graph (yr) — Update Graph

4. RESULTS

Predicted Date to Achieve Cleanup: **Can't Calc (+ve Trend)**

Confidence Interval on Predicted Cleanup Date:
(at least 3 data points needed to calculate confidence intervals)

◉ 90 % Confidence Interval
○ 95 % Confidence Interval

Can't Calc (+ve Trend) (Lower Limit on Confidence Interval) to **Can't Calc (+ve Trend)** (Upper Limit on Confidence Interval)

Source Decay Rate Constant (1/year): **-2.34E-01**
(positive numbers represent shrinking plumes while negative numbers represent expanding plumes)

Return To Main Screen | New Site/Clear Screen | Paste Example Data Set | HELP

SourceDK

Remediation Timeframe Decision Support System

Air Force Center for Environmental Excellence — *Version 1.1*

TIER 1 Empirical Data

Site Location and I.D.:	Swift MW-29
Constituent of Interest:	Barium and Lead

Data Input Instructions:

10.80 → *Enter value directly.*

10.80 → *Value calculated by model. (Don't enter any data).*

1. ENTER CONSTITUENT NAME AND HISTORICAL DATA

Concentration mg/L

	Date (mm/dd/yy)	Constituent A	Constituent B	Constituent C	Constituent D
		Barium	***Lead***		
1	*10/22/2009*	*0.985*	*0.00899*		
2	*3/30/2012*	*0.819*	*0.00733*		
3	*9/27/2012*	*0.765*	*0.00692*		
4	*3/28/2013*	*0.764*	*0.0078*		
5	*9/11/2013*	*0.712*	*0.00721*		
6	*9/24/2014*	*0.682*	*0.00718*		
7	*9/23/2015*	*0.589*	*0.00715*		
8					
9					
10					
11					
12					
13					
14					
15					

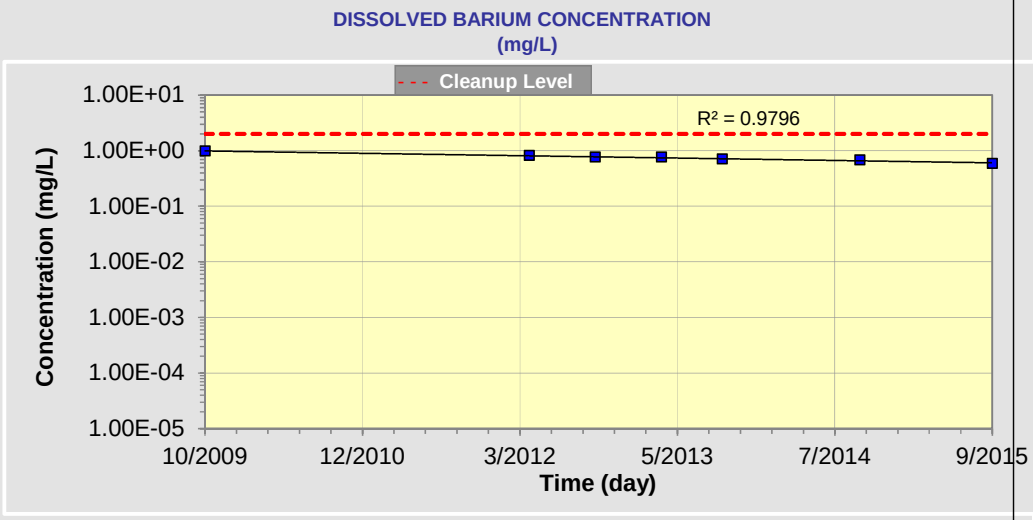
Print Historical Data

2. WHICH CONSTITUENT TO PLOT?

What is the cleanup level?

◉	**Barium**	2 (mg/L)
○	Lead	0.015 (mg/L)
○	Constituent C	(mg/L)
○	Constituent D	(mg/L)

3. OUTPUT GRAPH



Number of Years Over Which to Plot Graph (yr) — Update Graph

4. RESULTS

Predicted Date to Achieve Cleanup: **2009**

Confidence Interval on Predicted Cleanup Date:
(at least 3 data points needed to calculate confidence intervals)

◉ 90 % Confidence Interval
○ 95 % Confidence Interval

2009 (Lower Limit on Confidence Interval) to **2009** (Upper Limit on Confidence Interval)

Source Decay Rate Constant (1/year): **8.33E-02**
(positive numbers represent shrinking plumes while negative numbers represent expanding plumes)

Return To Main Screen | New Site/Clear Screen | Paste Example Data Set | HELP

SourceDK

Remediation Timeframe Decision Support System

Air Force Center for Environmental Excellence — *Version 1.1*

TIER 1 Empirical Data

Site Location and I.D.:	Swift MW-29
Constituent of Interest:	Barium and Lead

Data Input Instructions:

10.80 → *Enter value directly.*

10.80 → *Value calculated by model. (Don't enter any data).*

1. ENTER CONSTITUENT NAME AND HISTORICAL DATA

Concentration mg/L

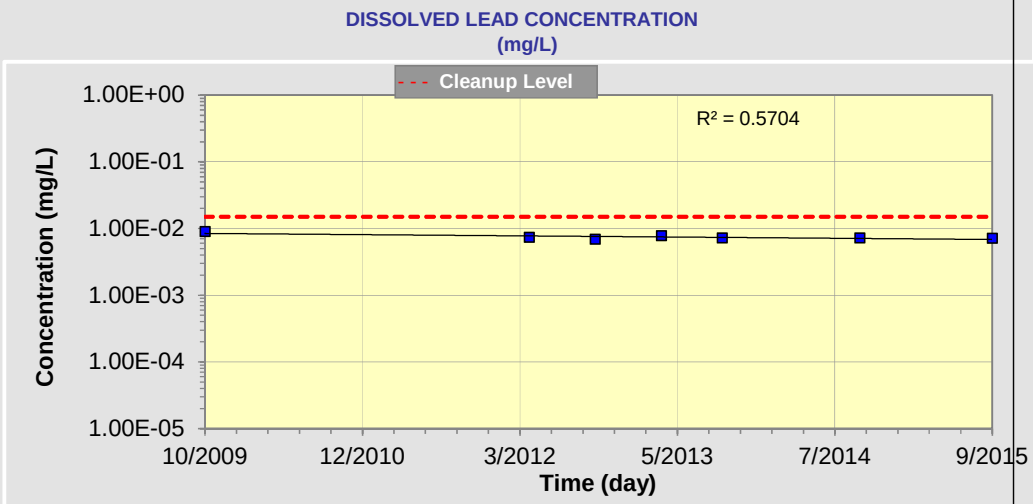
	Date (mm/dd/yy)	Constituent A	Constituent B	Constituent C	Constituent D
		Barium	***Lead***		
1	*10/22/2009*	*0.985*	*0.00899*		
2	*3/30/2012*	*0.819*	*0.00733*		
3	*9/27/2012*	*0.765*	*0.00692*		
4	*3/28/2013*	*0.764*	*0.0078*		
5	*9/11/2013*	*0.712*	*0.00721*		
6	*9/24/2014*	*0.682*	*0.00718*		
7	*9/23/2015*		*0.00715*		
8					
9					
10					
11					
12					
13					
14					
15					

Print Historical Data

2. WHICH CONSTITUENT TO PLOT?

		What is the cleanup level?	
○	Barium	2	(mg/L)
◉	**Lead**	0.015	(mg/L)
○	Constituent C		(mg/L)
○	Constituent D		(mg/L)

3. OUTPUT GRAPH



Number of Years Over Which to Plot Graph _____ *(yr)* Update Graph

4. RESULTS

Predicted Date to Achieve Cleanup: **2009**

Confidence Interval on Predicted Cleanup Date:
(at least 3 data points needed to calculate confidence intervals)

◉ 90 % Confidence Interval
○ 95 % Confidence Interval

2009 (Lower Limit on Confidence Interval) to **2009** (Upper Limit on Confidence Interval)

Source Decay Rate Constant (1/year): **3.53E-02**
(positive numbers represent shrinking plumes while negative numbers represent expanding plumes)

Return To Main Screen | ***New Site/Clear Screen*** | ***Paste Example Data Set*** | ***HELP***

SourceDK

Remediation Timeframe Decision Support System

Air Force Center for Environmental Excellence — *Version 1.1*

TIER 1 Empirical Data

Site Location and I.D.:	Swift MW-31
Constituent of Interest:	Barium and Lead

Data Input Instructions:

10.80 → *Enter value directly.*

10.80 → *Value calculated by model. (Don't enter any data).*

1. ENTER CONSTITUENT NAME AND HISTORICAL DATA

Concentration mg/L

	Date (mm/dd/yy)	Constituent A	Constituent B	Constituent C	Constituent D
		Barium	***Lead***		
1	*5/2/2012*	*1.09*	*0.0055*		
2	*9/23/2015*	*0.837*	*0.00894*		
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

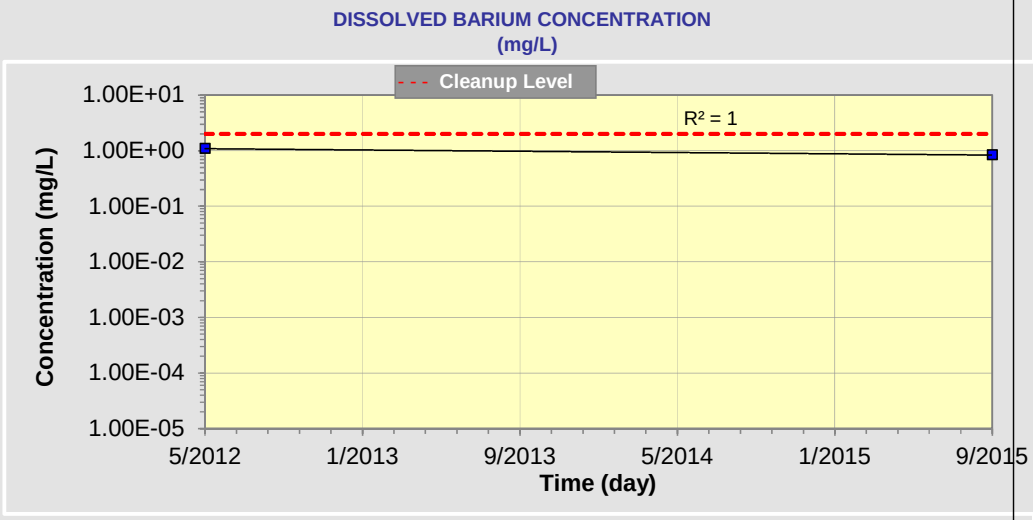
Print Historical Data

2. WHICH CONSTITUENT TO PLOT?

What is the cleanup level?

◉	**Barium**	2 (mg/L)
○	Lead	0.015 (mg/L)
○	Constituent C	(mg/L)
○	Constituent D	(mg/L)

3. OUTPUT GRAPH



Number of Years Over Which to Plot Graph (yr) — Update Graph

4. RESULTS

Predicted Date to Achieve Cleanup: **2012**

Confidence Interval on Predicted Cleanup Date:
(at least 3 data points needed to calculate confidence intervals)

◉ 90 % Confidence Interval
○ 95 % Confidence Interval

#N/A (Lower Limit on Confidence Interval) to **#N/A** (Upper Limit on Confidence Interval)

Source Decay Rate Constant (1/year): **7.79E-02**
(positive numbers represent shrinking plumes while negative numbers represent expanding plumes)

Return To Main Screen | New Site/Clear Screen | Paste Example Data Set | HELP

SourceDK

Remediation Timeframe Decision Support System

Air Force Center for Environmental Excellence — *Version 1.1*

TIER 1 Empirical Data

Data Input Instructions:

10.80 → *Enter value directly.*

10.80 → *Value calculated by model. (Don't enter any data).*

Site Location and I.D.:	Swift MW-31
Constituent of Interest:	Barium and Lead

1. ENTER CONSTITUENT NAME AND HISTORICAL DATA

Concentration mg/L

	Date (mm/dd/yy)	Constituent A	Constituent B	Constituent C	Constituent D
		Barium	***Lead***		
1	*5/2/2012*	*1.09*	*0.0055*		
2	*9/23/2015*	*0.837*	*0.00894*		
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					

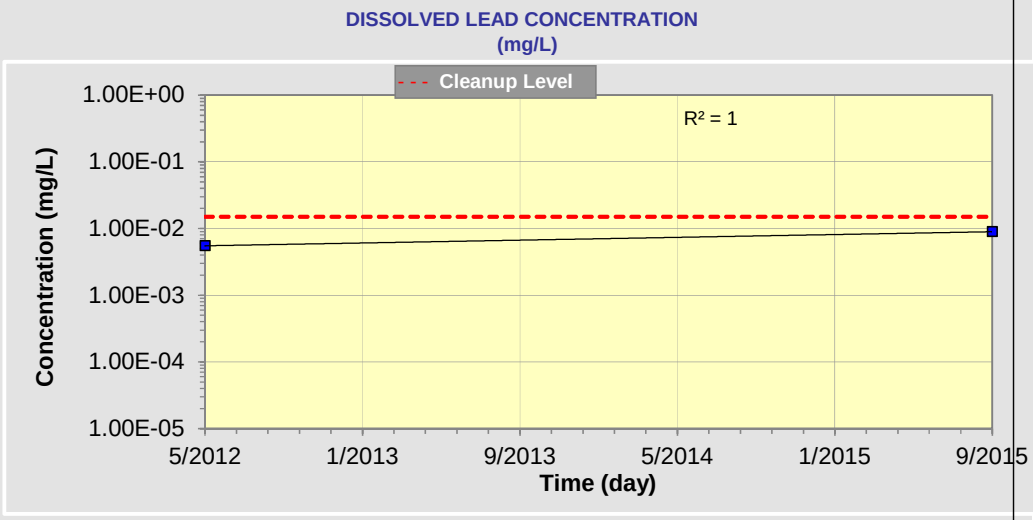
Print Historical Data

2. WHICH CONSTITUENT TO PLOT?

What is the cleanup level?

○	Barium	2 (mg/L)
◉	**Lead**	0.015 (mg/L)
○	Constituent C	(mg/L)
○	Constituent D	(mg/L)

3. OUTPUT GRAPH



Number of Years Over Which to Plot Graph (yr) Update Graph

4. RESULTS

Predicted Date to Achieve Cleanup: **Can't Calc (+ve Trend)**

Confidence Interval on Predicted Cleanup Date:
(at least 3 data points needed to calculate confidence intervals)

◉ 90 % Confidence Interval
○ 95 % Confidence Interval

#N/A (Lower Limit on Confidence Interval) to **#N/A** (Upper Limit on Confidence Interval)

Source Decay Rate Constant (1/year): **-1.43E-01**
(positive numbers represent shrinking plumes while negative numbers represent expanding plumes)

Return To Main Screen | *New Site/Clear Screen* | *Paste Example Data Set* | *HELP*

APPENDIX C
Updated Fate And Transport Modeling Results

BIOSCREEN-AT Model Results
Former Swift Site, Moultrie, Georgia
Fate and Transport of Lead

This section presents the modeled fate and transport for lead at the former Swift site, which was found above the screening level for groundwater in one or more wells. The screening level is based on the Groundwater Protection Standard (GWPS) of 0.015 mg/L. This section will focus on lead concentrations in groundwater since this form is subject to migration. The purpose of the following assessment is to evaluate the potential for lead detected above the screening levels to migrate beyond the current monitoring well network.

The maximum lead concentration detected in groundwater samples taken in September 2015 was at MW-18 (0.258 mg/L). Additonally, the lead concentration at MW-15 (0.243 mg/L), located on the eastern perimeter of the site, was also modeled using BIOSCREEN-AT.

Lead Transport

The potential for lead in groundwater to migrate from current locations to beyond the current monitoring well network was evaluated using the one-dimensional fate and transport model BIOSCREEN-AT. BIOSCREEN-AT is an enhanced version of BIOSCREEN (Newell et al., 1996) with an exact analytical solution for the transport of a contaminant (Karanovic et al., 2007). This model is based on Microsoft Excel software that solves the widely-used analytical Domenico equation (Karanovic et al, 2007). This equation describes transport of solute in groundwater (inorganic or organic, decaying or non-decaying). Features within the model designed to account for processes specific to natural attenuation of organic constituents were not used. The model simulates advection, adsorption and three dimensional dispersion of any dissolved constituent (inorganic or organic), and has the ability to simulate constant or decaying sources, and contaminant degradation using degradation constants. The use of BIOSCREEN AT was limited for this site-specific application to model only advection, dispersion, and adsorption onto porous media since lead is an elemental contaminant that does not naturally degrade. Processes such as degradation or other chemical/biological processes were not included in this model. The use of this model as described above is consistent with USEPA guidance (Ford et al, 2007), where the USEPA's Center for Subsurface Modeling Support states that the Domenico-basedmodels (such as BIOCHLOR, BIOSCREEN, FOOTPRINT, and REMChlor) in their current forms are reasonable for screening level tools.

Lead is modeled as being transported from the source area with the following assumptions.

- The modeled flow path is depicted from MW-18 through MW-09 and beyond.
- The highest detected lead concentration in MW-18 is representative of lead concentrations in the source area and is constant in concentration.
- An alternate scenario using MW-15 as a source area is also modeled.

The parameters selected for use in the model are presented in the following subsections.

Source Zone Width

The source zone is defined as the two-dimensional cross sectional area that is perpendicular to the direction of groundwater flow and of known constituent concentration. Downgradient of this

zone, the groundwater concentration is calculated by the model based on the dispersion, decay, adsorption, etc. that would occur in the flow field based on the value of the parameters used in the model. The modeled source is MW-18, with MW-15 also modeled as an alternate scenario. The planar two-dimensional source is represented by the highest detected lead concentration (MW-18 or MW-15). The cross section of the source is assumed to be approximately 100 feet wide around MW-18, or MW-15 in the alternate scenario.

Source Zone Thickness

The source zone thickness was assumed to be 50 feet based on the boring log and potentiometric surface measurements of MW-26DDD (near the central portion of the site).

Seepage velocity

There are two ways to input seepage velocity in this model – either as a final seepage velocity or as hydraulic conductivity, groundwater gradient, and effective porosity. The final seepage velocity method was used in this model exercise.

There are two water-bearing zones in the area of this model (Zone A and B). For this model, they are considered as one unit. The seepage velocity in Zone A has been calculated to be 65 ft/yr based on a horizontal gradient of 0.0086 ft/ft. Seepage velocities in Zone B have been calculated to be 32 – 91 ft/yr; based on a horizontal gradient of 0.0063 – 0.0178 ft/ft. Since the model requires a single seepage velocity, 65 ft/y was used. This value is consistent with reported values for both zones.

Dispersivity

The dispersivities were calculated by the model based on an estimated plume length of 280 feet. The resulting values are longitudinal dispersivity (13.3 feet), the transverse dispersivity (1.3 feet), and vertical dispersivity of 0.13 feet. The model estimates these based on published guidelines for dispersivity (Newell et al., 1996).

Partitioning Coefficient

BIOSCREEN is designed to use an organic Kd partitioning coefficient. This value is dependent on the fraction of organic carbon (foc) in the aquifer matrix, which is used to multiply the entered organic carbon partitioning coefficient (Koc) to get the organic Kd. It can also be used to model an inorganic metal constituent by entering a foc = 1.0 and an actual Kd for the Koc. With this adjustment, the appropriate actual metal Kd value is used in the adsorption formula. The Kd value for lead is dependent on pH. Both H+ (which determines pH) and Pb2+ are cations so there can be competition between them for adsorption sites on grain surfaces. This means the effective Kd depends on actual groundwater pH. Literature values report a range of Kd values from 5 L/kg to 100,000 L/kg (USEPA, 1996). Because the groundwater pH is below neutral, the median of literature values (15,849L/kg) was used as an initial input value and adjusted to calibrate the model to historic plume length and actual groundwater concentrations. Final Kd was dependent on length of time assumed since initial release.

Source Concentration and Strength

For the initial calibration, the lead concentration used in the MW-18 area was 0.258 mg/L, based on the September 2015 total metals sampling result at MW-18. At MW-18, both total and dissolved metals samples were collected, as turbidity could not be reduced below 17.9 NTU. The dissolved metals result at MW-18 was 0.176 mg/L. The source was assumed to be constant over time. The lead concentration in the MW-15 area is 0.243 mg/L based on the September 2015 sampling result.

Degradation and Chemical Transformations

No degradation of lead or chemical reactions was assumed in the model.

Simulation Time

For calibration, the estimated earliest and latest possible times of release (based on the years of operation of the former Swift facility) were modeled. The actual first release date is unknown but should lie somewhere between these endpoints. The estimated earliest possible release date gives the plume 100 years to develop and results in a slower moving plume with a higher retardation factor for the aquifer. Use of these parameters would lead to predictions of slower future growth and more limited extent. The estimated latest possible release date gives the plume 44 years to develop and results in a faster moving plume with a lower retardation factor for the aquifer. Use of these parameters would lead to predictions of faster future growth and more extensive plume development. Since neither of these scenarios takes into account source area attenuation (both use a continuing source), both will generate very conservative (higher concentrations and greater extent) estimates of future plume development.

Calibration Values

The following September 2015 concentrations were used to calibrate the Kd values for the 100 and 44 year historic plume development:

Well	Distance (Feet from Source Area)	September 2015 Lead Concentration (mg/L)
MW-18	0	0.258 (total)
MW-18	0	0.176 (dissolved)
MW-6	74	0.132
MW-13D	132	0.129
MW-9	194	0.0898
MW-20	224	0.00347

Screen captures of final input and output values for the 44 and 100 year historic plumes are attached.

The calibration using the MW-18 total metals value of 0.258 mg/L yielded unsatisfactory predicted values as compared to existing site values. Therefore, the calibration was performed again using the MW-18 dissolved metals value of 0.176 mg/L, which yielded a more satisfactory calibration when compared to site values. As mentioned above, the BIOSCREEN input pages for both the MW-18 total and dissolved metals values, and associated model output pages showing predicted values, are attached.

For the MW-15 scenario, the source used was the MW-15 September 2015 lead concentration of 0.243 mg/L. Modeled travel times of 50 and 100 years were used for this scenario. The set-up for the MW-18 scenario was otherwise used, as there are no downgradient wells from MW-15 to use for calibration of the Kd values.

CONCLUSIONS

Lead Model Results

The results of this model of lead fate and transport from MW-18 toward MW-9 show that (for the modeled travel time of 100 additional years) the lead concentration would not exceed the GWPS of 0.015 mg/l between approximately 425 to 590 feet from MW-18 (44 year historic plume or 100 year historic plume, respectively). This distance would extend beyond the eastern property boundary approximately 220 to 380 feet for the two time periods. For the MW-15 source scenario, the lead concentration (for the modeled travel time of 100 additional years) would not exceed the GWPS of 0.015 mg/l between approximately 450 to 620 feet from MW-15, or approximately 270 to 320 feet beyond the eastern boundary along the prevalent groundwater flow direction.

The models represent a very conservative estimate and actual conditions will be lower, as the highest detected groundwater concentration was maintained as a constant source over the entire model timeframe, and because the Kd values used are very low when compared to guidance document values. Most importantly, as pH becomes more neutral over time and distance from the source, the mobility of lead will be diminished and corresponding Kd values would increase. Screen captures of model inputs and results are attached.

Initial Set-up and Calibration Using MW-18 Total Metals Value

BIOSCREEN Natural Attenuation Decision Support System

Air Force Center for Environmental Excellence — *Version 1.4*

Swift- Lead - total Pb / *Moultrie, GA* — *Run Name*

Data Input Instructions:

115 → 1. Enter value directly....or
or
0.02 → 2. Calculate by filling in grey cells below. (To restore formulas, hit button below).

Variable* → Data used directly in model.
20 → Value calculated by model. (Don't enter any data).

1. HYDROGEOLOGY

Seepage Velocity*	*Vs*	65.0	*(ft/yr)*
or		*or*	
Hydraulic Conductivity	*K*	1.1E-02	*(cm/sec)*
Hydraulic Gradient	*i*	0.003	*(ft/ft)*
Porosity	*n*	0.3	*(-)*

2. DISPERSION

Longitudinal Dispersivity*	*alpha x*	13.3	*(ft)*
Transverse Dispersivity*	*alpha y*	1.3	*(ft)*
Vertical Dispersivity*	*alpha z*	0.1	*(ft)*
or		*or*	
Estimated Plume Length	*Lp*	280	*(ft)*

3. ADSORPTION

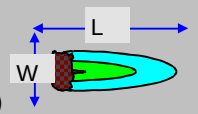
Retardation Factor*	*R*	20.9	*(-)*
or		*or*	
Soil Bulk Density	*rho*	1.5	*(kg/l)*
Partition Coefficient	*Koc*	3.98	*(L/kg)*
FractionOrganicCarbon	*foc*	1.0E+0	*(-)*

4. BIODEGRADATION

1st Order Decay Coeff*	*lambda*	0.0E+0	*(per yr)*
or		*or*	
Solute Half-Life	*t-half*	0.15	*(year)*
or Instantaneous Reaction Model			
Delta Oxygen*	*DO*	1.65	*(mg/L)*
Delta Nitrate*	*NO3*	0.7	*(mg/L)*
Observed Ferrous Iron*	*Fe2+*	16.6	*(mg/L)*
Delta Sulfate*	*SO4*	22.4	*(mg/L)*
Observed Methane*	*CH4*	6.6	*(mg/L)*

5. GENERAL

Modeled Area Length*	250	*(ft)*
Modeled Area Width*	200	*(ft)*
Simulation Time*	44	*(yr)*



6. SOURCE DATA

Source Thickness in Sat.Zone* 50 *(ft)*

Source Zones:

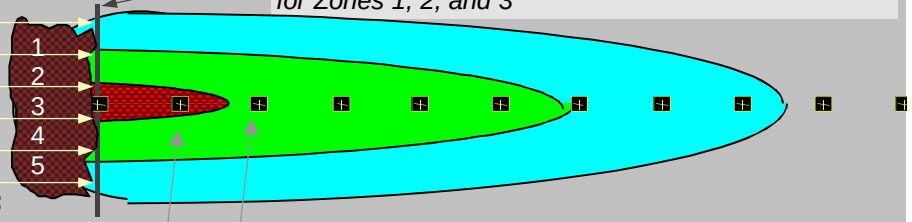
Width* (ft)	Conc. (mg/L)*	
10	0	1
20	0	2
100	0.258	3
20	0	4
10	0	5

Source Halflife (see Help):

20	>1000	*(yr)*
Inst. React.	1st Order	
Soluble Mass	2000	*(Kg)*

In Source NAPL, Soil

Vertical Plane Source: Look at Plume Cross-Section and Input Concentrations & Widths for Zones 1, 2, and 3



View of Plume Looking Down

Observed Centerline Concentrations at Monitoring Wells
If No Data Leave Blank or Enter "0"

7. FIELD DATA FOR COMPARISON

Concentration (mg/L)	.258			.132		.129			.09	.003	
Dist. from Source (ft)	0	25	50	75	100	125	150	175	200	225	250

8. CHOOSE TYPE OF OUTPUT TO SEE:

RUN CENTERLINE — **View Output**

RUN ARRAY — **View Output**

Help | Recalculate This

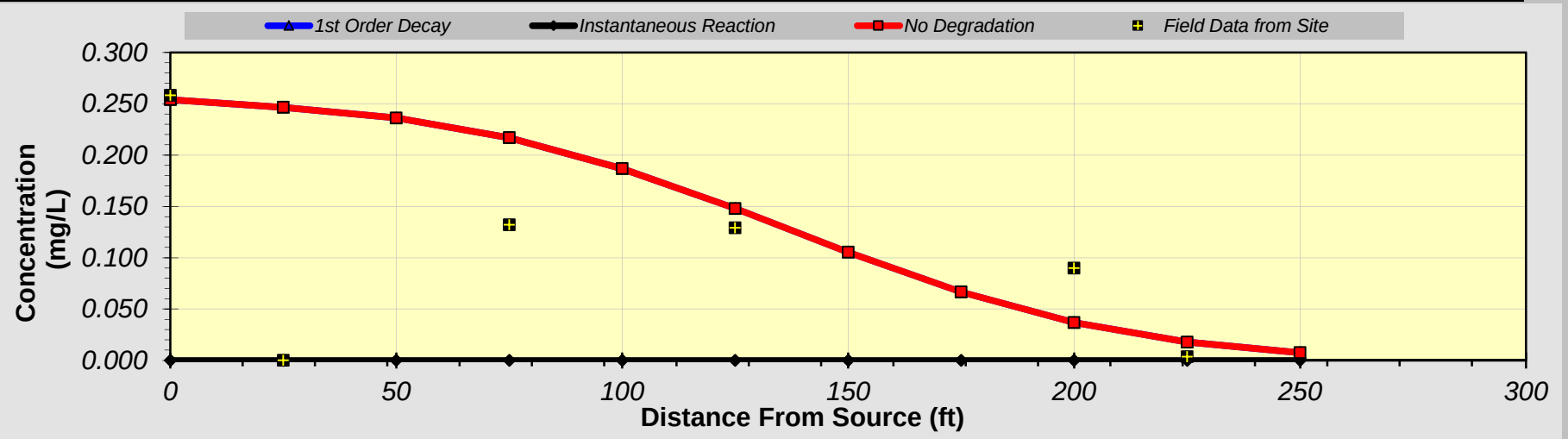
Paste Example Dataset

Restore Formulas for Vs,

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

Distance from Source (ft)

TYPE OF MODEL	0	25	50	75	100	125	150	175	200	225	250
No Degradation	0.254	0.247	0.236	0.217	0.187	0.148	0.105	0.067	0.037	0.018	0.007
1st Order Decay	0.254	0.247	0.236	0.217	0.187	0.148	0.105	0.067	0.037	0.018	0.007
Inst. Reaction	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Field Data from Site	0.258			0.132		0.129			0.090	0.003	



Calculate Animation

Time: 44 Years

Return to

Recalculate This

Final Set-up, Calibration and Predicted Values Using MW-18 Dissolved Metals Value

BIOSCREEN Natural Attenuation Decision Support System

Air Force Center for Environmental Excellence — *Version 1.4*

Swift- Lead
Moultrie, GA
Run Name

Data Input Instructions:

115 → *1. Enter value directly....or*
↑ or
0.02 → *2. Calculate by filling in grey cells below. (To restore formulas, hit button below).*

Variable* → *Data used directly in model.*
20 → *Value calculated by model. (Don't enter any data).*

1. HYDROGEOLOGY

Seepage Velocity*	*Vs*	65.0	*(ft/yr)*
or		↑ or	
Hydraulic Conductivity	*K*	1.1E-02	*(cm/sec)*
Hydraulic Gradient	*i*	0.003	*(ft/ft)*
Porosity	*n*	0.3	*(-)*

2. DISPERSION

Longitudinal Dispersivity*	*alpha x*	13.3	*(ft)*
Transverse Dispersivity*	*alpha y*	1.3	*(ft)*
Vertical Dispersivity*	*alpha z*	0.1	*(ft)*
or		↑ or	
Estimated Plume Length	*Lp*	280	*(ft)*

3. ADSORPTION

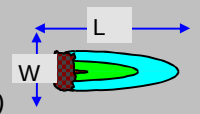
Retardation Factor*	*R*	20.9	*(-)*
or		↑ or	
Soil Bulk Density	*rho*	1.5	*(kg/l)*
Partition Coefficient	*Koc*	3.98	*(L/kg)*
FractionOrganicCarbon	*foc*	1.0E+0	*(-)*

4. BIODEGRADATION

1st Order Decay Coeff*	*lambda*	0.0E+0	*(per yr)*
or		↑ or	
Solute Half-Life	*t-half*	0.15	*(year)*
or Instantaneous Reaction Model			
Delta Oxygen*	*DO*	1.65	*(mg/L)*
Delta Nitrate*	*NO3*	0.7	*(mg/L)*
Observed Ferrous Iron*	*Fe2+*	16.6	*(mg/L)*
Delta Sulfate*	*SO4*	22.4	*(mg/L)*
Observed Methane*	*CH4*	6.6	*(mg/L)*

5. GENERAL

Modeled Area Length*	250	*(ft)*
Modeled Area Width*	200	*(ft)*
Simulation Time*	44	*(yr)*



6. SOURCE DATA

Source Thickness in Sat.Zone* 50 *(ft)*

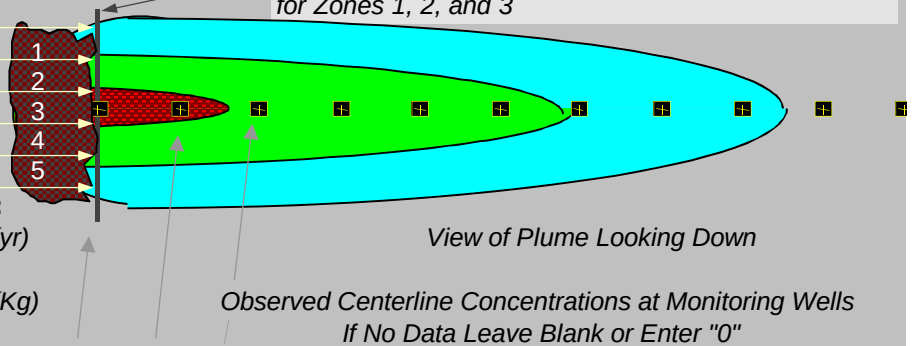
Source Zones:

Width* (ft)	Conc. (mg/L)*	
10	0	1
20	0	2
100	0.176	3
20	0	4
10	0	5

Source Halflife (see Help):

20	>1000	*(yr)*
Inst. React. ↑	↑ 1st Order	
Soluble Mass	2000	*(Kg)*
In Source NAPL, Soil		

Vertical Plane Source: Look at Plume Cross-Section and Input Concentrations & Widths for Zones 1, 2, and 3



View of Plume Looking Down

Observed Centerline Concentrations at Monitoring Wells
If No Data Leave Blank or Enter "0"

7. FIELD DATA FOR COMPARISON

Dist. from Source (ft)	0	25	50	75	100	125	150	175	200	225	250
Concentration (mg/L)	.258			.132		.129			.09	.003	

8. CHOOSE TYPE OF OUTPUT TO SEE:

RUN CENTERLINE — **View Output**

RUN ARRAY — **View Output**

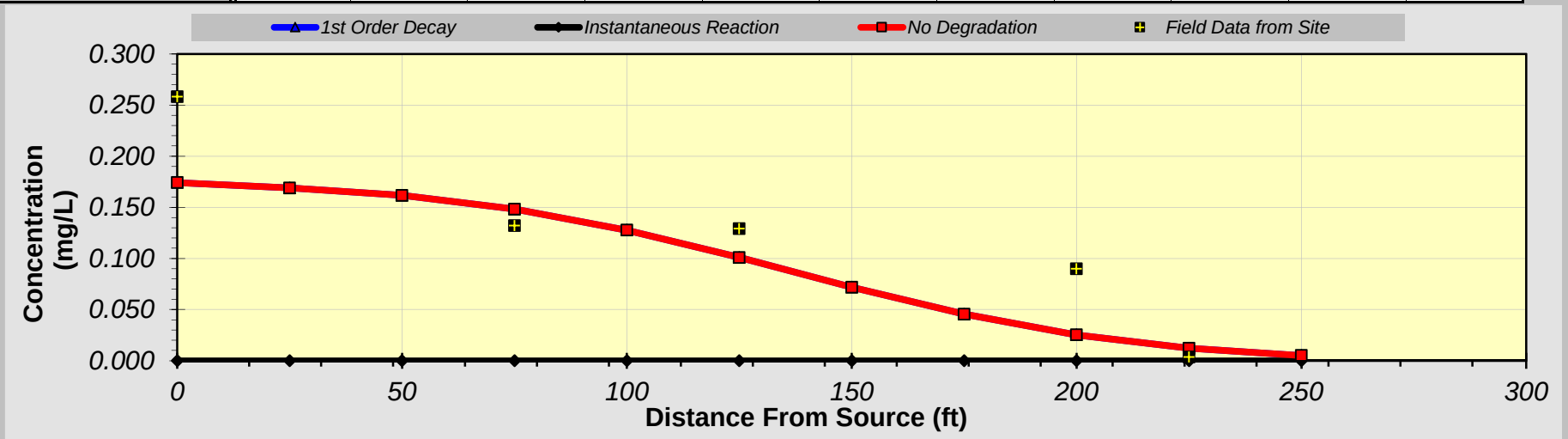
Help — Recalculate This

Paste Example Dataset

Restore Formulas for Vs,

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

	Distance from Source (ft)										
TYPE OF MODEL	0	25	50	75	100	125	150	175	200	225	250
No Degradation	0.174	0.169	0.162	0.148	0.128	0.101	0.072	0.045	0.025	0.012	0.005
1st Order Decay	0.174	0.169	0.162	0.148	0.128	0.101	0.072	0.045	0.025	0.012	0.005
Inst. Reaction	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Field Data from Site	0.258			0.132		0.129			0.090	0.003	



Calculate Animation

Time: 44 Years

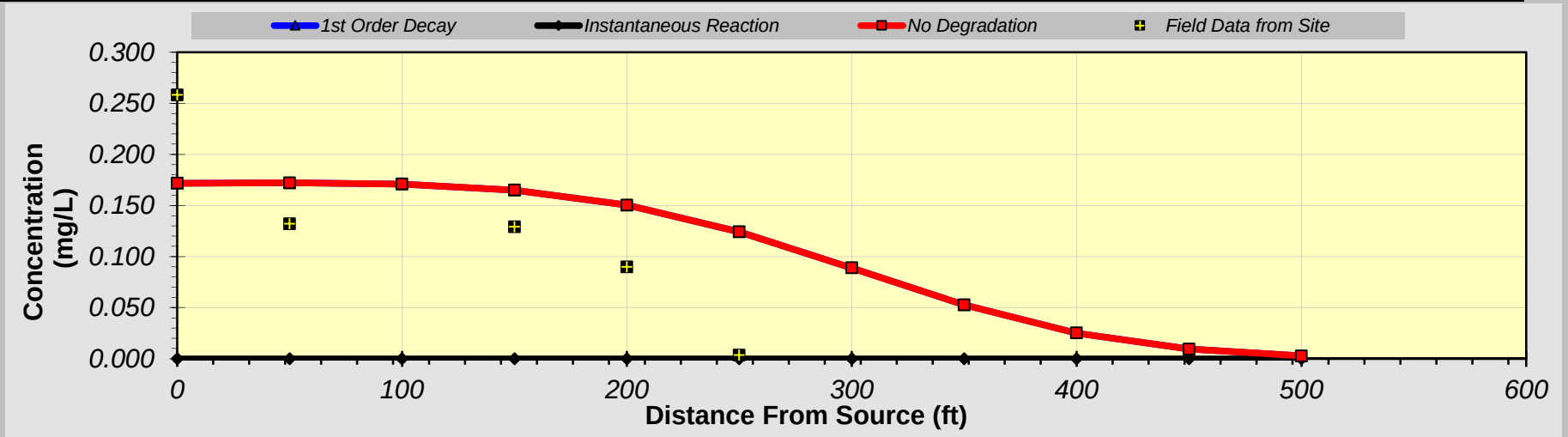
Return to

Recalculate This

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

Distance from Source (ft)

TYPE OF MODEL	0	50	100	150	200	250	300	350	400	450	500
No Degradation	0.172	0.172	0.171	0.165	0.150	0.124	0.089	0.053	0.025	0.009	0.003
1st Order Decay	0.172	0.172	0.171	0.165	0.150	0.124	0.089	0.053	0.025	0.009	0.003
Inst. Reaction	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Field Data from Site	0.258	0.132		0.129	0.090	0.003					



Calculate Animation

Time: 100 Years

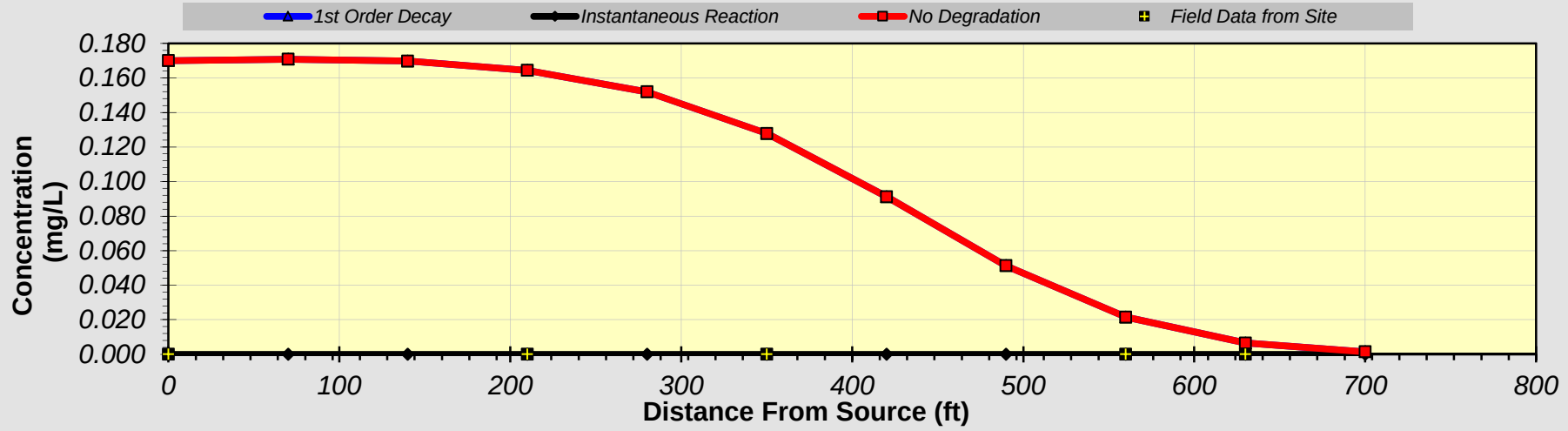
Return to

Recalculate This

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

Distance from Source (ft)

TYPE OF MODEL	0	70	140	210	280	350	420	490	560	630	700
No Degradation	0.170	0.171	0.170	0.164	0.152	0.128	0.091	0.051	0.022	0.007	0.001
1st Order Decay	0.170	0.171	0.170	0.164	0.152	0.128	0.091	0.051	0.022	0.007	0.001
Inst. Reaction	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Field Data from Site											



Calculate Animation

Time: 144 Years

Return to

Recalculate This

Set-up and Predicted Values of MW-15 Scenario

BIOSCREEN Natural Attenuation Decision Support System

Air Force Center for Environmental Excellence — *Version 1.4*

Swift- Lead MW-15
Moultrie, GA
Run Name

Data Input Instructions:

115 → 1. Enter value directly....or
or
0.02 → 2. Calculate by filling in grey cells below. (To restore formulas, hit button below).

Variable* → *Data used directly in model.*
20 → *Value calculated by model. (Don't enter any data).*

1. HYDROGEOLOGY

Seepage Velocity*	*Vs*	65.0	*(ft/yr)*
or		*or*	
Hydraulic Conductivity	*K*	1.1E-02	*(cm/sec)*
Hydraulic Gradient	*i*	0.003	*(ft/ft)*
Porosity	*n*	0.3	*(-)*

2. DISPERSION

Longitudinal Dispersivity*	*alpha x*	13.3	*(ft)*
Transverse Dispersivity*	*alpha y*	1.3	*(ft)*
Vertical Dispersivity*	*alpha z*	0.1	*(ft)*
or		*or*	
Estimated Plume Length	*Lp*	280	*(ft)*

3. ADSORPTION

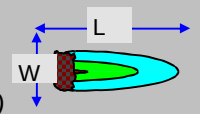
Retardation Factor*	*R*	20.9	*(-)*
or		*or*	
Soil Bulk Density	*rho*	1.5	*(kg/l)*
Partition Coefficient	*Koc*	3.98	*(L/kg)*
FractionOrganicCarbon	*foc*	1.0E+0	*(-)*

4. BIODEGRADATION

1st Order Decay Coeff*	*lambda*	0.0E+0	*(per yr)*
or		*or*	
Solute Half-Life	*t-half*	0.15	*(year)*
or Instantaneous Reaction Model			
Delta Oxygen*	*DO*	1.65	*(mg/L)*
Delta Nitrate*	*NO3*	0.7	*(mg/L)*
Observed Ferrous Iron*	*Fe2+*	16.6	*(mg/L)*
Delta Sulfate*	*SO4*	22.4	*(mg/L)*
Observed Methane*	*CH4*	6.6	*(mg/L)*

5. GENERAL

Modeled Area Length*	500	*(ft)*
Modeled Area Width*	200	*(ft)*
Simulation Time*	100	*(yr)*



6. SOURCE DATA

Source Thickness in Sat.Zone* 50 *(ft)*

Source Zones:

Width* (ft)	Conc. (mg/L)*	
10	0	1
20	0	2
100	0.243	3
20	0	4
10	0	5

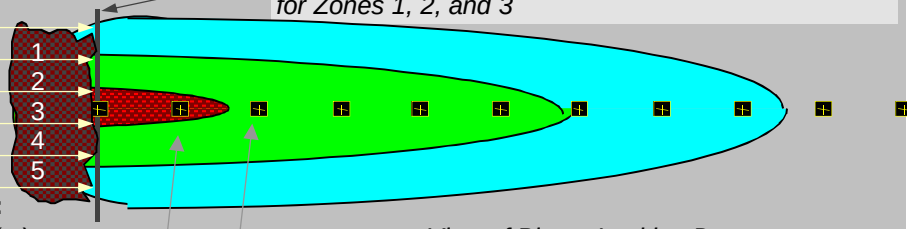
Source Halflife (see Help):

20 | >1000 *(yr)*

Inst. React. ↑ ↑ 1st Order

Soluble Mass 2000 *(Kg)*
In Source NAPL, Soil

Vertical Plane Source: Look at Plume Cross-Section and Input Concentrations & Widths for Zones 1, 2, and 3



View of Plume Looking Down

Observed Centerline Concentrations at Monitoring Wells
If No Data Leave Blank or Enter "0"

7. FIELD DATA FOR COMPARISON

Concentration (mg/L)	.243										
Dist. from Source (ft)	0	50	100	150	200	250	300	350	400	450	500

8. CHOOSE TYPE OF OUTPUT TO SEE:

RUN CENTERLINE — **View Output**

RUN ARRAY — **View Output**

Help | Recalculate This

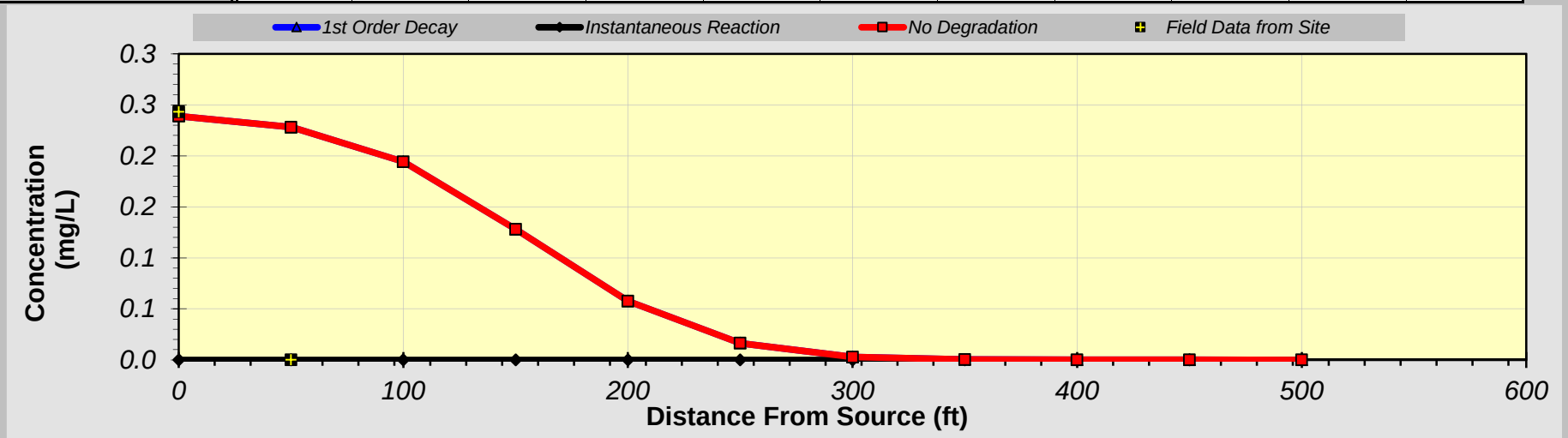
Paste Example Dataset

Restore Formulas for Vs,

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

Distance from Source (ft)

TYPE OF MODEL	0	50	100	150	200	250	300	350	400	450	500
No Degradation	0.239	0.228	0.194	0.128	0.058	0.016	0.003	0.000	0.000	0.000	0.000
1st Order Decay	0.239	0.228	0.194	0.128	0.058	0.016	0.003	0.000	0.000	0.000	0.000
Inst. Reaction	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Field Data from Site	0.243										



Replay Animation

Next Timestep

Prev Timestep

Time: 50 Years

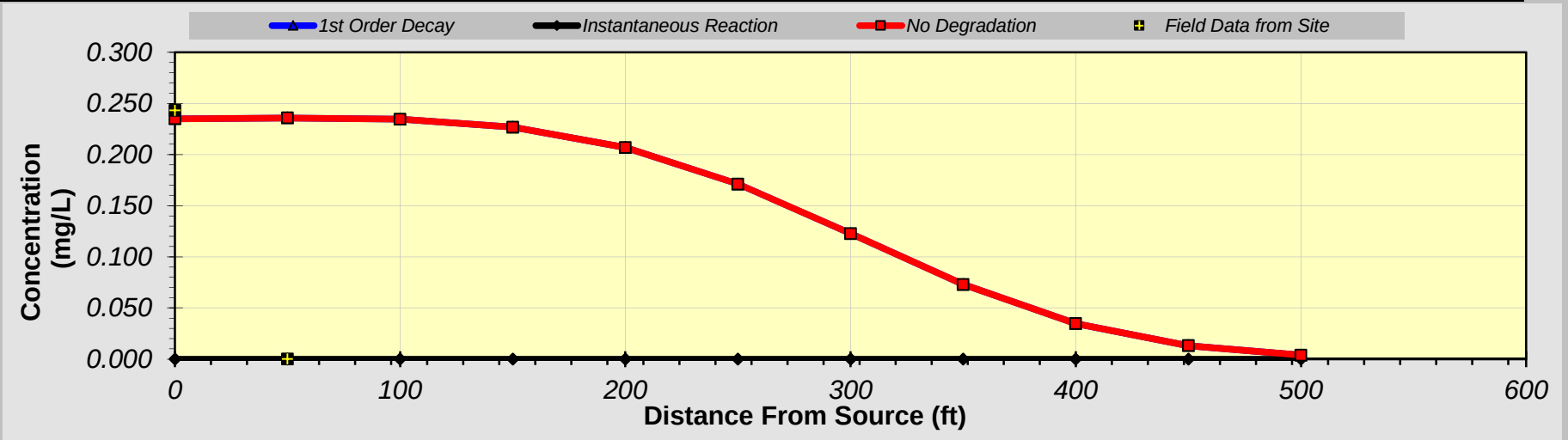
Return to

Recalculate This

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

Distance from Source (ft)

TYPE OF MODEL	0	50	100	150	200	250	300	350	400	450	500
No Degradation	0.235	0.236	0.235	0.227	0.207	0.171	0.123	0.073	0.035	0.013	0.004
1st Order Decay	0.235	0.236	0.235	0.227	0.207	0.171	0.123	0.073	0.035	0.013	0.004
Inst. Reaction	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Field Data from Site	0.243										



Replay Animation

Next Timestep

Prev Timestep

Time:

100 Years

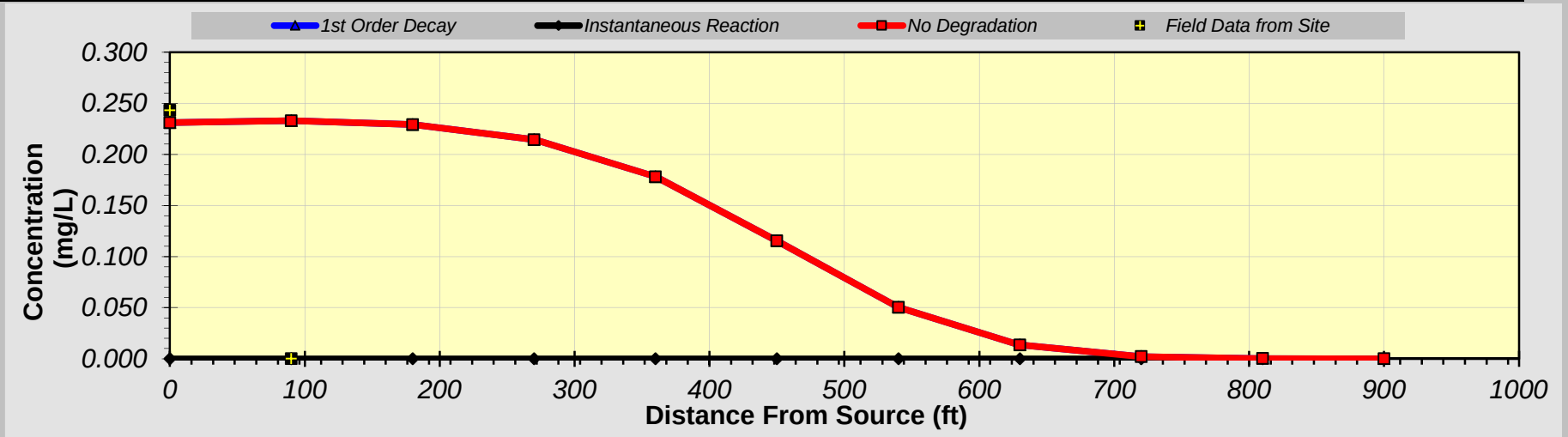
Return to

Recalculate This

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

Distance from Source (ft)

TYPE OF MODEL	0	90	180	270	360	450	540	630	720	810	900
No Degradation	0.231	0.233	0.229	0.214	0.178	0.115	0.050	0.013	0.002	0.000	0.000
1st Order Decay	0.231	0.233	0.229	0.214	0.178	0.115	0.050	0.013	0.002	0.000	0.000
Inst. Reaction	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Field Data from Site	0.243										

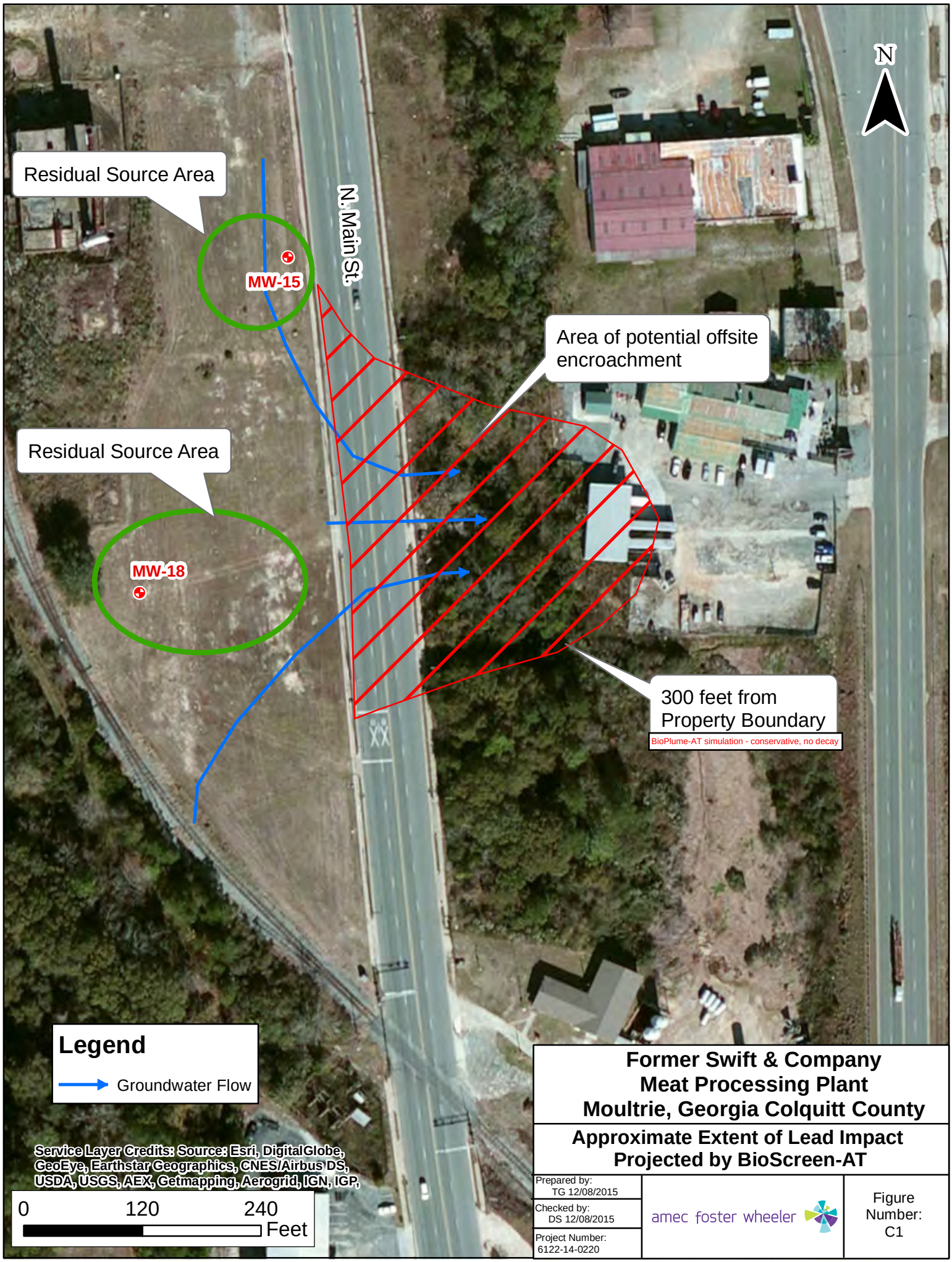


Calculate Animation

Time: 150 Years

Return to

Recalculate This



Former Swift & Company
Meat Processing Plant
Moultrie, Georgia Colquitt County

Approximate Extent of Lead Impact Projected by BioScreen-AT

Prepared by: TG 12/08/2015	amec foster wheeler	Figure Number: C1
Checked by: DS 12/08/2015		
Project Number: 6122-14-0220		

Document Path: G:\Former Swift Moultrie\mxd\Site Map-r1.mxd

APPENDIX D
REGISTERED PROFESSIONAL SUPPORTING DOCUMENTATION

Summary of Hours and Services
Former SWIFT & Company Meat Processing Plant
HSI Site No. 10509
Amec Project No. 6122-14-0220

Submittal to EPD date December 8, 2015

David E. Smoak, P.G.
Preparation of submittal and review
17 hours charged through December 4, 2015

John Quinn, P.G
Preparation of submittal documentation
68 hours charged through December 4, 2015