



November 17, 2016

Ms. Susan Bull  
Maryland Department of the Environment  
Oil Control Program  
1800 Washington Boulevard  
Baltimore, Maryland 21230-1719

Re: **UST REMOVAL WORK PLAN ADDENDUM**  
Bel Air Xtra Fuels  
2476 Churchville Road, Bel Air MD  
MDE Case No. 2013-0007-HA and 2011-0112-HA

Dear Ms. Susan Bull:

Groundwater and Environmental Services, Inc. (GES), on behalf of Drake Petroleum Company, Inc. (Drake), is submitting the attached UST Removal Work Plan Addendum, as requested via email from the Maryland Department of the Environment (MDE) dated November 15, 2016 and a subsequent phone conversation. The purpose of the proposed work is to provide a baseline for naturally occurring heavy metal concentrations as found in soil and groundwater at 2476 Churchville Road, Bel Air, MD (Site) and potentially connected potable wells prior to treatment of the Site with an oxygen releasing compound (ORC) that will assist with the remediation of the Site. Upon approval, work will be completed immediately starting in November 2016.

#### **Potable Well Sampling**

As directed in email and phone correspondence from the MDE, GES on behalf of Drake will collect pre-remediation samples from the potable wells located at: 2303, 2317, 2319, 2401A and 2401C Churchville Road and 1 (influent), 3, 5, 7, 9 and 10 Meadow Spring Drive Bel Air, MD. Samples will be collected in laboratory supplied containers and immediately placed on ice to be couriered to Accutest of Dayton, New Jersey (Accutest) for laboratory analysis of total lead, dissolved lead, arsenic and total chromium via Environmental Protection Agency (EPA) Method 200.7/200.8 and hexavalent chromium via EPA Method 218.7. GES, on behalf of Drake, will coordinate and schedule the collection of these samples with the property owners at their convenience. As these wells are directed to be sampled quarterly, Drake requests that the quarterly sampling analysis also be conducted at this time instead of in December as a convenience for the home owners with subsequent quarterly sampling continuing in the second month of each quarter.

Please find a detailed description of potable well sampling procedures below with additional generalized procedures found in the attached *Residential Well Sampling SOP*:

- GES Personnel will introduce themselves to the resident (property owner) and explain why they are there. Homeowners (property owners) are familiar with the process.
- GES personnel will determine if the person answering the door is the owner, landlord, tenant, etc. to determine if they are authorized to grant GES permission to enter the home. An adult (18 years or older) must be present for GES to enter the home for any reason. A carpenter, mechanic, neighbor, etc. can't grant GES permission unless permission was previously granted by the owner/tenant listed. Call the office with name discrepancies from what is listed on the schedule sheet. GES may also access the outdoor spigot for sampling if permission is granted from the home owner and the home is inaccessible.
- The resident will be requested to purge the water for approximately 15 minutes prior to collecting the sample (prior to arrival) or GES will complete the purge if purge has not been completed.
- Samples will be collected from the potable well at the nearest point of entry into the house (usually the pressure tank in basement) unless access to the house is not available and an outdoor spigot may be used. Heavy metal samples collected from point of entry treatment (POET) system at 1 Meadow Spring Drive will be obtained from the influent port or the bladder tank directly.



- Properly labeled samples will be placed immediately on ice following collection.
- The area will be left as it was found, trash will not be left in the residences.
- GES personnel will complete a Sample Log Sheet, Sample Attempts Log Sheet and a lab supplied chain of custody each day of the sampling event.
- Nitrile gloves are to be worn while handling laboratory supplied containers and during sample collection to limit cross-contamination. Gloves should be changed and disposed of between sample locations.
- Laboratory supplied containers for analysis of total lead, dissolved lead, arsenic and total chromium via EPA Method 200.7/200.8 and hexavalent chromium via EPA Method 218.7 include: one (1) 1,000 milliliter (mL) non-preserved plastic container, one (1) 1,000 mL plastic container preserved with nitric acid and one (1) 250 mL plastic container preserved with ammonium sulfate.
- Quarterly samples will also be collected at this time in hydrochloric acid (HCL) preserved 40 mL VOAs for full-suite volatile organic carbons (VOCs), including fuel oxygenates and naphthalene using EPA method 524.2.
- All samples collected will be couriered in iced coolers to Accutest Laboratory NJ.
- Results letters will be mailed to the well owners within 30 days of sample collection with copies of the letters submitted to the MDE and Harford County Health Department.

### **Groundwater Sampling**

Additionally, pre-remediation groundwater samples will be collected from monitoring wells MW-8, MW-9, MW-14, MW-15S, MW-15D, MW-16S, MW-16I/D, MW-17S, MW-17I/D, RW-18 and RW-19, immediately placed on ice and couriered to Accutest for laboratory analysis of total lead, dissolved lead, arsenic and total chromium via EPA Method 200.7/200.8 and hexavalent chromium via EPA Method 218.7. Groundwater samples will be collected from the monitoring well following the purging of three volumes. Samples will be collected directly from the monitoring well using a disposable polyvinyl chloride (PVC) bailer. All purge water produced during monitoring well sampling activities will be run through activated carbon and onto a permeable surface. Please find a detailed description of monitoring well sampling procedures below:

- GES personnel will access monitoring wells and document condition well was found in on well inspection form.
- Monitoring wells will be gauged with a decontaminated electronic interface probe (EIP).
- GES personnel will document depth to water and depth to bottom of monitoring wells on liquid level gauging form.
- Gauging and sampling equipment will be decontaminated between each monitoring well to avoid cross contamination using Liquinox® followed by a water rinse.
- Monitoring wells will be purged using a poly-vinyl chloride (PVC) bailer of three (3) well volumes.
- All purge water produced during monitoring well sampling activities will be run through activated carbon buckets and onto a permeable surface.
- Allow monitoring well to recharge before collecting sample in laboratory supplied containers and packed immediately in coolers on ice and properly labeled.
- Monitoring well samples will be collected using a disposable PVC bailer and disposable string to lower the bailer.
- Laboratory supplied containers include: one (1) 500 mL plastic non-preserved container, one (1) 500 mL plastic container preserved with nitric acid and one (1) 250 mL plastic container preserved with ammonium sulfate.
- Collect samples in supplied containers with labels and place on ice within supplied cooler.
- A chain of custody will be completed by the sampler and a laboratory courier will be scheduled to pick up the samples.



### Soil Sampling

During the collection of waste classification samples for waste disposal purposes from a test pit, five (5) soil samples will also be submitted for laboratory analysis of total lead, arsenic and total chromium via EPA Method 200.7/200.8 and hexavalent chromium via EPA Method SW846 3060A to determine naturally occurring background concentrations of these metals in the soil. Soil samples will be collected from areas which are representative of the natural lithology and not backfill and immediately placed into laboratory supplied containers, properly labeled and placed on ice within a cooler. The cooler will be couriered to Accutest for analysis. Please find a detailed description of soil sampling procedures below:

- A total of five (5) soil samples will be collected from a test pit from depths and locations which are representative of the surrounding lithology.
- The test pits will be created using an excavator to obtain representative soil samples.
- Soil samples will be screened using a calibrated photoionization detector (PID) and then placed into laboratory supplied containers placed on ice within a cooler.
- The laboratory supplied container for soil sampling includes one (1) 8 ounce wide mouth glass jar which is non-preserved.
- A chain of custody will be completed and laboratory courier will be scheduled to pick up the samples.

### Post ORC Placement Sampling

Following the addition of the ORC within the backfill for the underground storage tank (UST) excavation a second round of samples will be collected from the potable wells located at 2303, 2317, 2319, 2401A and 2401C Churchville Road and 1 (influent), 3, 5, 7, 9 and 10 Meadow Spring Drive in the first quarter of 2017 for analysis of total lead, dissolved lead, arsenic and total chromium via EPA Method 200.7/200.8 and hexavalent chromium via EPA Method 218.7. Groundwater samples will also be collected from monitoring wells MW-8, MW-9, MW-14, MW-15S, MW-15D, MW-16S, MW-16I/D, MW-17S, MW-17I/D, RW-18 and RW-19 for analysis of total lead, dissolved lead, arsenic and total chromium via Environmental Protection Agency (EPA) Method 200.7/200.8 and hexavalent chromium via EPA Method 218.7. After receiving the data from the second round of sampling, the results will be compared to the baseline data to determine differences in concentrations of heavy metals in groundwater data based on the addition of the ORC to the UST excavation. GES on behalf of Drake will also conduct the quarterly potable well and quarterly groundwater sampling as detailed in the UST Removal Work Plan submitted to MDE on November 8, 2016. GES on behalf of Drake will submit the results of the heavy metal analysis within the quarterly reports and it will be determined at that time by the MDE if heavy metals analysis is to continue based on comparison to the baseline data.

GES and Drake look forward to your written response to this work plan. Please contact the undersigned at (800)220-3606 extension 3703, if you have any questions or require additional information.

Sincerely,  
**Groundwater & Environmental Services, Inc.**

A handwritten signature in blue ink, appearing to read 'Andrea Taylorson-Collins', is written over a light blue horizontal line.

Andrea Taylorson-Collins  
Environmental Scientist/ Sr. Project Manager

#### Attachments

cc: Eric Harvey, Global Partners  
File, GES – MD, psid# 617188

# STANDARD OPERATING PROCEDURES



Section: FM-8.12  
Revision #: 001  
Date: June 2008

## 1.0 TITLE: RESIDENTIAL WELL SAMPLING

## 2.0 PURPOSE / SCOPE

GES personnel who must sample residential wells shall comply with this procedure. This procedure does not govern the sampling of monitoring wells or any other sampling.

*Note: The importance of proper and consistent field methods, as well as proper documentation, **CANNOT BE OVER-EMPHASIZED.***

This SOP shall be used in conjunction with an approved Health and Safety Plan (HASP). Also, consult the HASP for information on the selection and use of PPE.

## 3.0 REFERENCE

ASTM D5903: Guide for Planning and Preparing for a Groundwater Sampling Event

ASTM D4448: Standard Guide for Sampling Groundwater Wells

EPA, *Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures*, (ORD/ OSWER, Washington D.C., 1996) (EPA-540/S-95/504).

EPA Region III, *Recommended Procedure For Low-Flow Purging and Sampling of Groundwater Monitoring Wells*. (Waste and Chemicals Management Division, 1997.)

## 4.0 RESPONSIBILITIES

### 4.1 Project Manager

The project manager's (PM) responsibility is to ensure that all activities performed by GES personnel are performed safely, comply with all pertinent

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regulations and procedures, and have the necessary equipment and resources to accomplish the tasks describe in this procedure.

## 4.2 Sampling Technician

The sampling technician must understand the operating parameters, limitations, and safety concerns of the supplies and equipment he/she intends to use before attempting to use in the field. The sampling technician is solely responsible for the proper calibration, operation, and care of any equipment used.

## 4.3 Local Health and Safety Officer (LHSO)

The Local Health and Safety Officer (LHSO), in consultation with the Corporate HSO and client, will designate the appropriate level of personnel protective equipment (PPE) for field personnel to safely accomplish their work.

## 5.0 EQUIPMENT / MATERIALS

A basic checklist of suggested equipment and supplies needed to implement this SOP include, but is not limited to:

- Personnel protective equipment as outlined in the site-specific HASP
- Electronic, audible (or visual identification) water level meter (0.01 feet accuracy), or interface probe if needed
- Flow measurement supplies (graduated cylinder and stop watch).
- Groundwater meter capable of measuring pH, specific conductance, and temperature
- Decontamination supplies
- Distilled water
- Polyethylene sheeting/cloth/paper towels/garbage bags
- Photoionization detector (PID)
- Field book

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## 6.0

### PREPARATION

#### 6.1 Planning and Preparation

*Note: When sampling potable water supply wells ensure that the samples collected are representative of the aquifer being sampled. Poor sampling techniques may result in incorrect results (either not detecting a compound that is present or by contaminating the sample and falsely indicating a compound that is not present). If incorrect results are disclosed to the public, it may be impossible to change public opinion when correct results are reported.*

Prior to residential well sampling, the sampler shall check with the project manager that the respective home owners have been notified and authorize the planned sampling event. Contact the home owner to arrange for a site visit. This may be arranged by the Client or other party.

Review the work program project documents and health and safety requirements with the case manager. The project manager or designee is to arrange:

- laboratory;
- glassware;
- preservatives;
- filtration information;
- coolers;
- shipping details;
- starting date; and
- expected duration

## 7.0

### PROCEDURE

Even though the same care and techniques used in groundwater sampling (including documentation of location, date, time, etc.) are used in potable water supply sampling, there are certain additional procedures that shall be used. When water samples are collected from wells, either by mechanical or hand pumping, the wells must be purged before the sample is collected. Purging ensures that water is collected that represents the formation, not the standing water in the well

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casing, pipes, or holding tanks. At least one volume of water in the well casing and storage tank shall be purged (a 15-minute period is usually sufficient for residential wells). After purging, measure the pH, conductivity, and temperature until constant values are obtained.

Sampling residential wells can be performed using either the existing pumping system or GES pumping equipment. Use of the existing system is preferred as this is more representative of the water quality being provided to the residence and there is less chance of damage to the well and existing pumping system.

***Note:** In addition to the special technical procedures noted, GES personnel must be cognizant of the unique situation of conducting work in private residences. Special care must be taken to be polite and courteous, offer information only as necessary, maintain a clean work area, and return the work area to the condition it was found. Personnel should have proper identification available, if asked, and remain only in areas required for the work.*

Taps selected for sample collection should be located as close to the well as possible and upstream of any treatment system or storage/pressure tank. Note all water treatment devices in use at the residence (e.g., water softener, filtration unit). Leaking taps that allow water to flow out from around the stem of the valve handle and down the outside of the lip are to be avoided as sampling locations. Aerator, strainer, and hose attachments on the tap must be removed before sampling. Whenever a steady flow of water cannot be obtained, do not collect samples because the temporary fluctuation in line pressure may cause sheets of microbial growth lodged in some pipe sections or faucet connections to break loose. Open the cold water tap for 10 to 15 minutes to permit cleaning the service line. Obtain a smooth-flaring water stream at moderate pressure without splashing. Then, without changing the water flow—which could dislodge some particles in the faucet—collect the samples.

Regardless of the type of sample bottle used, never place the bottle cap on the ground or in a pocket. Instead, hold the bottle in one hand and the cap in the other, exercising care not to touch the inside of the cap. Disposable gloves shall be worn and changed between sample locations. Avoid contaminating the sample bottle with fingers or permitting the faucet to touch the inside of the bottle. When sampling for bacteria, the bottle shall not be rinsed before use. Flame sterilization of the tap outlet maybe a requirement of some Work Plans.

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## 8.0 DISPOSAL OF CONTAMINATED MATERIALS

All materials and equipment used for decontamination must be disposed of properly as outlined in the Sampling and Analysis Plan (SAP). Clothing (PPE), tools, buckets, brushes, and all other equipment that cannot be reused will be disposed of as discussed in the SAP.

## 9.0 RECORDS

### 9.1 Field Notes

Record field notes in a standard bound survey-type field book issued for general note taking/field records and available from all GES equipment administrators. Make all field book entries using black ink and make any changes/corrections with a single strikethrough line. Initial and date to indicate who made the change/correction and when it was made.

Fully document the well configuration (depth, casings, construction date), pumping system, piping system (e.g., copper pipe, lead-joint construction), and treatment devices.

Always obtain the name(s) of the residents or water supply owners, as well as the resident's exact mailing address and home and work telephone numbers. This information is required to inform the resident or water supply owner(s) of the results of the sampling program.

Documentation will typically follow the format requirements outlined SOP FM-1.4. Note that additional notes for documentation of well details, treatment devices, piping systems, and special circumstances are required in the field book.

## 10.0 FOLLOW-UP ACTIVITIES

### 10.1 Purging/Sampling Equipment

The following shall be performed once the field activities are complete:



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- Double check Work Plan to ensure all samples have been collected and confirm this with the project manager.
- Clean equipment and return to the equipment administrator; date and sign the appropriate.
- Notify the contract laboratory as to when to expect the samples. Enclose the chain of custody and cover letter, indicating the parameters and number of samples, in the sample cooler.
- Submit a memo to the file indicating sampling procedures and observations (such as treatment process) along with any field notes.
- Complete purge water and cleaning fluid disposal requirements per the Work Plan.
- Return site/well keys.

## ATTACHMENTS

None