



MARYLAND DEPARTMENT OF THE ENVIRONMENT

Oil Control Program, Suite 620, 1800 Washington Blvd., Baltimore MD 21230-1719

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Secretary

Anthony G. Brown
Lieutenant Governor

Robert M. Summers, Ph.D.
Deputy Secretary

November 18, 2010

Mr. Herbert M. Meade
Environmental, Health and Safety Director
Carroll Independent Fuel Company
2700 Loch Raven Boulevard
Baltimore MD 21208

Mr. Arshad M. Ranjha and
Mr. Saquib Iqbal Khan
Mr. Znafar
Saaba Corporation
2926 Summit Circle
Ellicott City MD 21207

Mr. Kiran M. Dewan, Resident Agent
1657 Whitehead Court
Baltimore MD 21207

Mr. Samir Andrawos and
Timbercrest LP
P.O. Box 369
Damascus MD 20872

Ms. Jennifer Andrawos, Resident Agent
25133 Silver Crest Drive
Gaithersburg MD 20882

RE: WORK PLAN APPROVAL
Case No. 2005-0834-FR
Notice of Violation NV-2007-069
Green Valley Citgo
11791 Fingerboard Road, Monrovia
Frederick County, Maryland
Facility I.D. No. 11836

Dear Messrs. Meade, Ranjha, Khan, Znafar, and Dewan, and Mr. and Ms Andrawos:

The Oil Control Program recently completed a review of the case file for the above-referenced property, including the *Groundwater Sampling Report - August 31, 2010* and the *In-Situ Chemical Oxidation Pilot Test Work Plan - September 9, 2010*. In June 2010, the Department required the submittal of a *Corrective Action Plan (CAP)* to address the elevated concentrations of methyl tertiary-butyl ether (MTBE) remaining in the on-site monitoring well network and several off-site private drinking water supply wells. In July 2010, groundwater sampling detected MTBE up to 12,800 parts per billion (ppb) in the vicinity of the active underground storage tank (UST) field. In addition, pre-filtration samples collected from the impacted off-site private drinking water wells detected MTBE up to 1,770 ppb.

In September 2010, the Department was notified by the Carroll Independent Fuel Company (CIFC) of their intent to evaluate in-situ chemical oxidation (ISCO) as a possible remedial technology. The *Chemical Oxidation Pilot Test Work Plan* proposes to inject hydrogen peroxide and ozone at three distinct subsurface intervals, in an area to the south of the active tank field, during a two-day pilot test. The proposed ISCO pilot test activities include the installation of three nested injection wells (IW-1, IW-2, IW-3), a nested observation well (MW-18N), and a vapor extraction well (VE-1). In addition, eleven existing on-site monitoring wells will be used to evaluate the aquifer for changes in groundwater chemistry and elevation. Prior to the start of pilot test activities, groundwater samples will be collected from the five identified monitoring wells (MW-7, MW-14D, MW-15D, MW-17, and MW-18N) in the vicinity of the study area. Post-injection samples will also be collected from the same five monitoring wells after one week and after four weeks following the oxidant injections. To minimize the potential for vapor migration, pilot test activities will include hourly vapor monitoring using the above five monitoring wells. Additionally, vapor monitoring will be conducted within the occupied areas of the Green Valley Plaza building.

The Department understands that should changing site conditions warrant, pilot testing activities will cease and the contingency plans, including groundwater extraction, vapor extraction, and increased vapor monitoring, will be enacted to further ensure that pilot testing activities do not pose a threat to human health or the environment.

In October 2010, the Department received the *Proposed Groundwater and Potable Well Sampling Program - October 13, 2010*. The *Sampling Program* proposes to use U.S. EPA approved low flow sampling procedures when collecting samples from the monitoring well network. In addition, the *Sampling Program* proposes to eliminate total petroleum hydrocarbons/diesel-range organics from the list of required analytes.

Based our review of the data submitted thus far, the Department hereby approves the *In-Situ Chemical Oxidation Pilot Test Work Plan - September 9, 2010* for immediate implementation, contingent upon the following modifications.

- 1) The Department requires the addition of monitoring wells MW-8, MW-10, MW-13, MW-14S, and MW-16 to the list of monitoring wells (MW-7, MW-14D, MW-15D, MW-17, and MW-18N) at which samples will be collected as part of the baseline and post-pilot test groundwater sampling plans. The Department reserves the right to require additional groundwater sampling and vapor monitoring as deemed necessary.
- 2) All wastewater generated as a result of pilot test activities will be containerized for off-site disposal at an approved facility.
- 3) The Department anticipates receiving a complete report evaluating the results of approved pilot test activities and submission of the *Corrective Action Plan* no later than January 31, 2011.
- 4) The Department approves the collection of samples from the monitoring well network in accordance with U.S. EPA approved low flow sampling techniques and as proposed in the *Sampling Program - October 13, 2010*.

- 5) Continue **quarterly (every three months)** sampling of the monitoring well network, including the newly constructed monitoring well MW-18N. All samples collected must be analyzed for full-suite volatile organic compounds (VOCs), including fuel oxygenates, using EPA Method 8260 and for total petroleum hydrocarbons/diesel and gasoline-range organics (TPH/DRO and TPH/GRO) using EPA Method 8015B. The Department will review the request to eliminate TPH/DRO from the list of required analyses pending an evaluation of the low flow sampling data and pilot testing activities.
- 6) Continue sampling of the granular activated carbon (GAC) filtration system installed on the transient non-community supply wells serving the Green Valley Plaza, as directed in the Department's correspondence dated June 17, 2010. Additionally, continue sampling supply wells FR-88-1366, FR-88-1394, and FR-81-5955 on an annual basis. All samples collected from the transient non-community supply wells must be analyzed for full-suite VOCs, including fuel oxygenates, using EPA Method 524.2. The Department does not require analyses for TPH/DRO and TPH/GRO for samples collected from the transient non-community supply wells.
- 7) Continue sampling the three transient non-community supply wells serving the Green Valley Shopping Center on a **quarterly (every three months)** basis. All samples collected from the transient non-community supply wells must be analyzed for full-suite VOCs, including fuel oxygenates, using EPA Method 524.2. The Department does not require analyses for TPH/DRO and TPH/GRO for samples collected from the transient non-community supply wells.
- 8) Continue **quarterly (every three months)** sampling of the private drinking water supply wells where point-of-entry treatment systems have been installed:
 - 3990, 3992, 3994, 3996, and 3997 Farm Lane; and
 - 3923 Rosewood Road.
- 8) Continue **quarterly (every three months)** sampling of the private drinking water supply wells at:
 - 3985, 3987, 3989, 3991, 3993, 3995, and 3998 Farm Lane;
 - 3829, 3833, 3835, and 3837 Green Ridge Drive; and
 - 3737, 3739, and 3740 Blueberry Court.
- 9) Continue **semi-annual (every six months)** sampling of the private drinking water supply wells at:
 - 3979, 3981, 3983, and 3984 Farm Lane; and
 - 3992, 3994, 3996, and 3998 Rye Lane.
- 10) All samples collected from the above off-site private drinking water supply wells must be analyzed for full-suite VOCs, including fuel oxygenates, using EPA Method 524.2. Provide a copy of the sampling results to the property owner, the Frederick County Health Department (Attn: George Keller), and the MDE-Oil Control Program (Attn: Jim Richmond).

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Notify the Oil Control Program at least five (5) working days prior to starting pilot test activities so we can be on-site to observe field activities. When submitting documentation to the Oil Control Program, provide two hard copies and a digital copy on a labeled compact disc (CD) for updating the Oil Control Program's *Remediation Sites* list on the MDE website. If you have any questions, please contact the case manager, Mr. Jim Richmond, at 410-537 3337 (email: jrichmond@mde.state.md.us) or me at 410-537-3499 (email: sbull@mde.state.md.us).

Sincerely,

A handwritten signature in black ink, appearing to read "S. Bull", with the word "FOR" written in smaller letters to the right of the signature.

Susan R. Bull, Western Region Section Head
Remediation and State-Lead Division
Oil Control Program

JWR/nln

cc: Mr. Steven M. Slatnick (Groundwater and Environmental Services, Inc.)
Mr. Norman B. Handler (Resident Agent)
Robert S. Bassman, Esquire (Bassman, Mitchell & Alfano)
Dwight W. Stone, Esquire (Whiteford, Taylor, Preston)
Mr. Christopher J. Miceli (VERTEX)
Mr. George Keller (Frederick County Health Dept.)
Mr. John Grace (MDE-Water Supply Program)
Ms. Priscilla Carroll, Esquire
Mr. Christopher H. Ralston
Mr. Thomas L. Walter
Mr. Horacio Tablada