

October 11, 2010

Project 00596000060

Mr. Timothy King
Union Carbide Corporation
A Subsidiary of The Dow Chemical Company
Post Office Box 8361
South Charleston, West Virginia 25303

Subject: Groundwater Investigation Work Plan
Former DowBrands Site, Fresno, California

Dear Mr. King:

AMEC Geomatrix, Inc. has prepared this work plan for The Dow Chemical Company's (TDCC) submittal to the California Regional Water Quality Control Board – Central Valley Region (RWQCB) for the off-site groundwater investigation at the former DowBrands facility in Fresno, California (the site) (Figure 1).

In an August 16, 2010, letter to TDCC, the RWQCB requested a work plan from TDCC for the investigation of the extent of volatile organic chemicals (VOCs) in groundwater northwest of Jensen Avenue. The VOCs in groundwater in this area are primarily from the Champion/Autoline site at 2696 South Maple Avenue, located downgradient from the former DowBrands site. The toe of the VOC plume from the former DowBrands site appears to extend into this area and mix with the VOCs in groundwater from the Champion/Autoline site.

GROUNDWATER INVESTIGATION WORK PLAN

A groundwater investigation will be conducted to complete the characterization of the VOCs in groundwater from the two sites northwest of Jensen Avenue (Figure 1). The investigation will consist of collecting discrete-depth groundwater samples from multiple depths at three locations. Groundwater monitoring wells will be installed based on the sample results.

The discrete-depth groundwater sampling, groundwater monitoring well installation, groundwater monitoring, and reporting are described in this section and are based on the current understanding of the extent of VOCs in groundwater described in the following paragraph.

Current Understanding of the Extent of VOCs in Groundwater

VOCs in groundwater from the former DowBrands site are estimated to extend laterally along the predominant groundwater flow direction from the site (northwest) to a point between Jensen Avenue Bypass and location GW14 (Figure 1). The VOCs in groundwater from the site beyond well cluster W-4 become mixed with VOCs in groundwater from the Champion/Autoline site, with most of the VOCs in groundwater at well cluster W-5 attributed to the Champion/Autoline site. The VOC concentrations from the former DowBrands site decrease northwest of well cluster W-4 to a zero point somewhere between Jensen Avenue and location GW14.

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The maximum vertical extent of VOCs in groundwater from the former DowBrands site is estimated to be about 250 feet below ground surface (bgs), based on the discrete-depth data from locations GW10 and GW11. There was no PCE in the two deepest samples collected at location GW14 (267 and 295.5 feet bgs), supporting the estimate that the maximum vertical extent of VOCs in groundwater from the former DowBrands site is less than about 250 feet bgs.

VOCs in groundwater from the Champion/Autoline site extend laterally along the predominant groundwater flow direction (northwest) to at least location GW14 (Figure 1). Discrete-depth sampling locations GW8 and GW14 and off-site monitoring well cluster W-5 approximately define the longitudinal axis of the VOC plume from this site (Figure 1). The vertical extent of VOCs in groundwater from the Champion/Autoline site appears to be at least 295 feet bgs.

Discrete-Depth Groundwater Sampling

Drilling and encroachment permits will be obtained from Fresno County and the City of Fresno, as necessary, and Underground Service Alert will be notified for utility clearance. Soil cuttings, well development water, well purge water, and equipment decontamination water generated from the field investigation activities will be temporarily stored onsite for subsequent disposal by TDCC.

Discrete-depth groundwater samples will be collected from off-site locations to evaluate the vertical and lateral extent of VOCs in groundwater downgradient of former sampling location GW14 (Figure 1). At each location, an exploration boring first will be drilled to evaluate lithologies at this location. The boring will be drilled using the mud-rotary method to a depth of approximately 400 feet bgs. Soil samples will be collected from the drill cuttings for lithologic logging. The soil samples will be logged for lithology using the Unified Soil Classification System described in ASTM International Method D 2488. After reaching total depth, the boring will be geophysically logged using point resistivity, spontaneous potential, 6-foot lateral, and natural gamma ray logs. After logging, the exploration boring will be grouted with a bentonite/cement slurry from the bottom to the surface via a tremie pipe.

A second boring will be advanced adjacent to (within 20 feet of) the exploration boring for the collection of discrete-depth groundwater samples from apparent water-bearing intervals identified in the exploration boring. The boring will be advanced using the mud-rotary method to the target intervals. A HydroPunch™ or equivalent sampler will then be advanced into the undisturbed water-bearing zone and opened for collection of groundwater samples. The groundwater samples will be submitted to a laboratory for the analysis of VOCs. After sampling, the borings will be filled with a bentonite/cement grout from the bottom to the surface via a tremie pipe.

Groundwater Monitoring Wells Installation

Groundwater monitoring wells will be installed to monitor the VOCs in groundwater. The locations of these wells will depend on the discrete-depth sample results and accessibility.

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The wells will be installed using the mud-rotary drilling method. Well construction will depend on the sampling results and lithologies encountered in the exploration borings. The wells will be constructed of 4-inch diameter polyvinyl chloride casing and screen. After a minimum of 24 hours after completion, the wells will be developed by bailing and surging. After completion, the locations and elevations of the new wells will be surveyed by a California licensed land surveyor.

Groundwater Monitoring

Groundwater monitoring will be conducted using the new off-site wells on a semiannual basis. The monitoring will be conducted coincident with the ongoing monitoring of the existing on-site and off-site wells. Monitoring will consist of measuring the water levels in the wells and collecting groundwater samples from the wells for the analysis of VOCs.

Reporting

Results of the off-site groundwater investigation will be described in a report submitted to the RWQCB. The report will include a description of the field and analytical methods, and a summary of the field observations and laboratory data. The results of groundwater monitoring completed at the time the report is prepared also will be included in the report.

The results of the semiannual groundwater monitoring will be presented in reports submitted to the RWQCB following each monitoring event.

Please call if you have any questions.

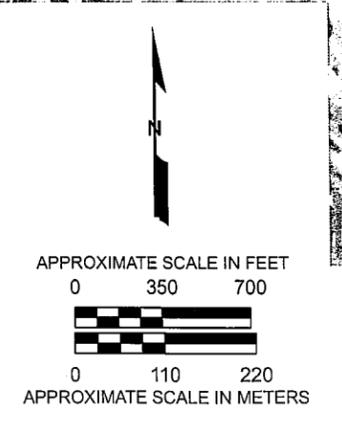
Sincerely yours,
AMEC Geomatrix, Inc.



William V. Pipes, PG
Principal Geologist

Attachment: Figure 1 – Site Plan

- Explanation**
- ⊙ On-site groundwater monitoring well
 - ⊗ Destroyed on-site groundwater monitoring well
 - ⊕ Off-site groundwater monitoring well or well cluster
 - Previous discrete-depth groundwater sample location
 - Proposed new discrete-depth sample location
 - ⊞ City of Fresno well
 - ⊗ Destroyed City of Fresno well
 - ⊞ Inactive City of Fresno well



SITE PLAN
Former Dow Brands Facility
Fresno, California

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| By: KLU | Date: 09/20/2010 | Project No. 5960.006 |
| AMEC Geomatrix | | Figure 1 |

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Basemap modified from Environmental Systems Research Institute (ESRI) I3_Imagery_Prime_World_2D (aerial photograph mosaic dataset), 2008 distribution.