



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

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217/524-3300

April 18, 2008

Certified Mail  
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Shell Oil Products US  
Kevin Dyer  
Staff Project Manager  
Shell Oil Products US  
17 Junction Drive  
PMB #399  
Glen Carbon, Illinois 62034

WRB Refining LLC Wood River Refinery  
David Dunn  
900 South Central Avenue  
PO Box 76  
Roxana, Illinois 62084

Re: 1191150002 -- Madison County  
Equilon Enterprises LLC  
ILD2018000002  
Log No. B-43-CA-6  
Received: October 1, 2007  
Permit CA  
RCRA Permit

1190905013 - Madison County  
ConocoPhillips Co WWR  
RCRA Permit

Dear Mr. Dyer:

This is in response to a review completed on the groundwater portions of a document entitled, "West Fenceline P-93 Dissolved Phase Benzene Investigation," prepared and submitted on behalf of Shell Oil Products US (SOPUS), in cooperation with ConocoPhillips Company (COP), submitted on your behalf by URS, regarding a groundwater corrective action investigation associated with benzene contamination observed at well P-93. Three additional submittals dated: (1) November 16, 2007; (2) December 20, 2007; and (3) February 15, 2008, were reviewed as additional information to the subject document. The purpose of the subject document is to report the results of a benzene investigation conducted at and outside of the WRB Refining LLC Wood River Refinery (WWR) in Roxana, Illinois. The additional information presents future activities planned as a result of the groundwater investigation results.

The subject document was not submitted for Illinois EPA review and approval; however, the following conditions and modifications apply to the results obtained from the groundwater investigations being conducted by SOPUS:

1. A report documenting the results of the groundwater investigation must be submitted for Illinois EPA review and approval within ninety (90) days of the date investigation is initiated. The report documenting the results of investigations associated with groundwater must include, at a minimum:

- a. Specific information gathered and evaluated by SOPUS regarding:
  - 1) The petrography of all significant formations/strata including a qualitative assessment of the porosity, texture, uniformity and lithology for each unit;
  - 2) Significant structural features;
  - 3) Stratigraphic contacts between significant formations/strata;
  - 4) Zones of high permeability, fracture, or significant channeling in the unconsolidated and consolidated deposits;
  - 5) Perched aquifers;
  - 6) The location of each borehole and depth of termination;
  - 7) Depth to the zone of saturation and the thickness of the unit;
  - 8) An interpretation of hydraulic interconnections between saturated zones; and
  - 9) Depiction of the known extent of contamination.
  
- b. The above information may be obtained from boring log information associated with installation of piezometers/monitoring wells required for groundwater monitoring and appropriate existing boring information which is site-specific. However, depending upon the complexity of the geology beneath the facility, additional borings may be necessary to adequately characterize the geology in the vicinity of the unit. Laboratory or field testing may be necessary to obtain the above information. A boring log form and well completion form can be found at: [www.epa.state.il.us/land/forms/#groundwater-permits](http://www.epa.state.il.us/land/forms/#groundwater-permits).
  
- c. The report documenting the results of the groundwater investigation carried out to obtain the information described above must contain the following:
  - 1) Written description of the information required above, including all methods used to determine hydraulic properties;
  - 2) All data gathered during the investigation;
  - 3) Two scaled geologic cross-sections normal to each other which contain the unit to be closed and the information required above. In addition, the interval over which wells are screened should be identified;
  - 4) Scaled map which shows the location of borings, subject unit, and location of wells or borings used to identify the properties of the uppermost aquifer;

- 5) Logs of the borings used during the investigation and for those borings used for characterization of the geology; and
  - 6) If analytical results obtained during the groundwater investigation indicate further delineation of BETX contamination is necessary, a proposed course of action based on the investigation findings must be included for Illinois EPA review and approval.
2. A Water Well Survey (WWS) must be completed in accordance with 35 Ill. Adm. Code, Part 1600 regulations, and the guidance document entitled, "Well Survey Procedures at RCRA Facilities" (see Attachment 1), in order to fully evaluate groundwater at the facility in regards to the requirements found in 35 Ill. Adm. Code, Part 1600. An evaluation must be submitted for Illinois EPA review and approval within sixty (60) days of the date of this letter addressing the potable water well surveys and community relation activities required by 35 Ill. Adm. Code, Part 1600 regulations.

This letter shall constitute Illinois EPA's final decision on the subject submittal. Within 35 days of the date of mailing of the Illinois EPA's final decision, the applicant may petition for a hearing before the Illinois Pollution Control Board to contest the decision of the Illinois EPA, however, the 35-day period for petitioning for a hearing may be extended for a period of time not to exceed ninety days by written notice provided to the Board from the applicant and the Illinois EPA within the 35-day initial appeal period.

Work required by this letter, your submittal or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. This letter does not relieve anyone from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Should you have any questions concerning groundwater-related aspects of this letter, please contact Amy Boley at 217/558-4716.

Sincerely,

*Stephen F. Nightingale* by *CJL*

Stephen F. Nightingale, P.E.  
Manager, Permit Section  
Bureau of Land

SFN:AMB/mls/082642s.doc

cc: <sup>AMB</sup> ConocoPhillips - Mr. Eric Peterson  
URS - Mr. Bob Billman

## Well Survey Procedures at RCRA Facilities

All RCRA facilities pursuing risk-based closure pursuant to 35 Ill. Adm. Code Part 742 (TACO) must identify potable water supply wells and regulated recharge areas to ensure the protection of potable water supplies. This includes situations where the facility has determined that contamination has migrated beyond a property boundary or is predicted to migrate beyond a property boundary.

In order to meet these requirements, the facility in question must submit maps with the locations of all on-site and off-site injection wells, as well as withdrawal wells and recharge areas within at least 2,500 feet of the most downgradient point of contamination (map scale must be no less than one inch equals 200 feet). The facility must submit a certification form that states that all of the above source have been contacted. This information shall be obtained by the facility, by contacting all of the following sources:

Illinois State Geological Survey;  
Illinois State Water Survey;  
Illinois EPA Division of Public Water Supply;  
Illinois Department of Public Health;  
County and Municipal Health Departments; and  
Local water supply entity (i.e., public water districts, public water supply companies).

If it is determined that groundwater contamination has or is modeled to migrate off-site exceeding the Tier 1 remediation objectives of 35 Ill. Adm. Code 742, the area of the survey of water supply wells is extended based on the actual and modeled groundwater plume.

Documentation of the results of the survey of water supply wells must include the following information:

- Map(s) to appropriate scale showing the location of community water supply wells and other potable water supply wells including the setback zones of the wells identified in the survey (within applicable distances as defined by the appropriate program regulations, including all potable wells on the site). The location of the measured and modeled contamination plume, as appropriate based on the phase of remediation being conducted, shall also be shown on the map(s) if the measured or modeled plume extends off-site. In addition, the location of any regulated recharge areas, well head protection areas and delineated recharge areas of any community water supply well or other potable water supply well identified that are available from the Illinois EPA, Division of Public Water Supplies (<http://il.water.usgs.gov/factsheets/>);
- Table(s) indicating the setback zone for each community water supply well and potable water supply well identified;

- Narrative to supplement the map(s) and table(s) identified above. This includes the person(s) contacted as part of the survey, that person's title, sources of information used, field observations, etc.; and
- Certification by a Licensed Professional Engineer that the entities listed above have been contacted as part of the well survey and the information obtained is included in the map(s), table(s) and narrative.

Illinois EPA may require additional investigation of potable water supply well locations on a case-by-case basis if site-specific conditions warrant. These conditions include, but would not be limited to:

- The local water supply entity does not bill a residence/business located within the search area, and the other record searches do not show a potable well on the property; or
- The well survey identifies a few private or semi-private potable wells near the site. Because this does not account for all the residences or businesses in the same area near the site, questions should be raised as to where the other homes/businesses obtain their potable water.

Additional investigation may include a physical well survey (e.g. face-to-face interviews with property owners, a windshield survey looking for wellheads, distribution of door hangers requesting information about the existence of potable wells on the property, etc.) when data sources identified above do not appear to have adequately identified the location of potable wells (i.e. the two examples immediately above). This physical survey will include, at a minimum, the placement of written information at properties within the measured or modeled distance of the groundwater plume.

NOTE: If contamination at a remediation site cannot be modeled due to geology constraints (i.e. bedrock), the information requested above shall be collected at a distance to be determined by the Illinois EPA on a site-by-site basis.