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Subject: FW: DEP Review- Koppers- April 20, 2015 Pre final Design for Former Process Area ISGS
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Importance: High

Scott-

DEP has reviewed the above referenced Design report. We understand that EPA has approved the Design. DEP's review of the revised report is focused on those issues or concerns identified in our April 6, 2015 review comments, including effectiveness of the ISGS application, UIC requirements and performance/compliance monitoring.

Previous comments have expressed concerns with the variability in reduction in DNAPL recovery rates in the pilot area in response to ISGS treatment, the consistency of ISGS reagent sweep and distribution, and the potential for fracturing and preferential flow at the higher injection pressures observed during the pilot test. We understand that if post injection performance monitoring does not confirm good sweep and reduction in DNAPL recovery rates as defined in Table 1 of the 2012 ISGS Work Plan and summarized in DEP's previous comments, the need for additional ISGS treatment will be evaluated and ISGS reapplication will be performed as necessary.

As outlined in the Section 3.4 of the 2012 Work Plan, performance monitoring will include sampling of ZOD wells for ISGS constituents as well as the standard suite of Site constituents (COCs) analyzed during the regular semi-annual groundwater monitoring events. Based on the 2012 Work Plan, the DEP approved March 17, 2014 UIC notification identifying monitoring requirements for the pilot study and the revised Design proposal to include HG6D as a point of compliance ZOD well in the monitoring program for the full scale ISGS implementation; DEP understands that *performance monitoring* will include pre-injection baseline and post injection monitoring for site COCs in down gradient monitoring wells including HG26S, HG33S, HG34S, HG6D, HG26D, M-25B and M-25A. Similarly to ISGS constituent monitoring, we anticipate that initial performance monitoring of COCs in down gradient wells will be quarterly. We also recommend that performance monitoring for COCs include the existing down gradient Floridan Aquifer well, FW 18B on a least a semi-annual basis. This monitoring program will allow evaluation of the effectiveness of ISGS treatment on DNAPL sources as well as any lateral or vertical displacement of the plume in response to injection pressures.

The revised Pre-final Design has proposed HG6D as the point of compliance ZOD well in response to DEP's request for a Lower Hawthorn UIC compliance well at the likely institutional control boundary. This well is acceptable.

Please update the March 2014 UIC Notification to reflect the addition of HG6D into the UIC compliance monitoring network and indicate that these monitoring requirements apply to the full

scale ISGS injection remedy in the former process area. Please sign and date the form prior to submittal. We respectfully request that quarterly post-injection compliance monitoring results during the 1st year be submitted on a quarterly basis to demonstrate timely compliance with UIC.

We look forward to successful implementation of the former process area source remedy.

Please let me know if you have any questions.

Kelsey

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