LOCATION: U.S. EPA Region 4, Atlanta/Conference Call

## **ATTENDEES:**

USACE Tulsa: Tyler Jones

CALIBRE: BEC - Joan Hutton

TDEC Division of Remediation, DDMT Project Manager: Jamie Woods

U.S. Environmental Protection Agency, Region 4, DDMT Project Manager: Diedre Lloyd

HDR EOC: Tom Holmes

## INTRODUCTIONS

Ms. Hutton opened the meeting by stating that the main purpose was to discuss questions from Ms. Lloyd regarding the plans and schedule for activities at DDMT.

## GENERAL

## **Document Review**

Attendees discussed the review comment period outlined in Section XV of the Federal Facilities Agreement. Mr. Holmes noted that the provisions for schedule extensions in Section XXII applied only to Army. Attendees agreed that modification of the FFA was not practical and that its provisions would need to be followed.

Ms. Lloyd stated a preference for one round of comments/responses to finalize documents instead of multiple rounds and noted additional discussion may assist in resolving the comments.

Attendees agreed that more frequent conference calls would be held to discuss project activities, schedules and report comments. For the time being, calls will be held monthly on a Tuesday near mid-month at 10:30 am EDT; the next call will be on Tuesday, 14 April. An agenda will be sent out for comment approximately one week before to the call.

## Site Management Plan

Ms. Lloyd and Mr. Woods confirmed their agreement with Army's responses to their comments on the Site Management Plan (SMP), Revision 0. Ms. Lloyd noted that upon further review she agreed with the designation of primary and secondary documents as shown in the SMP. The SMP, Revision 1 was submitted 13 March.

Ms. Lloyd's request for a timeline of site activities was discussed, and the portion of the master schedule showing the SRI and dependent activities was reviewed. Ms. Lloyd agreed to review the schedule and provide additional information, if she felt a revised schedule was necessary.

## MAIN INSTALLATION

### **Remedial Action**

Ms. Lloyd asked about the status of enhanced bioremediation treatment activities. Mr. Holmes stated that the final planned EBT injections were completed August 2014 with performance monitoring completed November 2014. No further EBT is planned until the SRI/FFS are completed.

Mr. Holmes noted the project team had previously discussed that the current actions on the MI were not meeting the schedule for achieving RAOs. The concentration used to select areas for EBT (100 ppb of PCE/TCE) was not sufficient to meet RAOs. The SRI/FS is expected to recommend a lower concentration and EBT will be one of the remedial alternatives included in the FS.

#### Supplemental Remedial Investigation/Focused Feasibility Study

Ms. Lloyd provided comments on the SRI Phase 1 Work Plan and all attendees took part in the discussion.

Ms. Lloyd asked how the well borings would be advanced and Mr. Holmes replied that rotasonic drilling would be used based on past experience at DDMT. Its use is based on difficult drilling due to cemented layers and cobbles/gravel in the fluvial aquifer at 70+ feet and on reduced soil cuttings generated. Ms. Lloyd noted the increased cost for rotasonic drilling and Mr. Holmes replied that faster drilling and less waste material made up for the costs. Mr. Woods noted that rotasonic drilling is the standard method for well borings in the Memphis area.

Ms. Lloyd noted the well screens for the planned wells were planned to be 15 to 20 feet in length and that shorter (5 to 10-foot) screens were preferred by USEPA. The 20-foot screens are based on past practice at DDMT and the relatively homogeneous nature of the fluvial aquifer. Mr. Woods stated that 20-foot screens were relatively standard for the fluvial aquifer in Memphis and that the increased length was considered to increase the chance of detecting groundwater contamination ("more bang for the buck"). The temporal variation in water levels was briefly discussed; greater variation is observed in the intermediate aquifer (IAQ) and Memphis aquifer than the fluvial aquifer. The past use of multiple samples collected over depth in the longer screened interval was briefly discussed; results had demonstrated little stratification in contamination within wells.

The attendees discussed groundwater sampling using PDBs in the planned screened intervals. Ms. Hutton stated that if the scope allows, two PDBs each will be installed in two fluvial wells and one intermediate aquifer well for groundwater sampling. Wells selected for dual PDBs will have maximum contaminant concentrations. Ms. Lloyd was satisfied that this will address her concerns regarding vertical stratification of contaminants in aquifer.

Ms. Lloyd asked about the practice of drilling well borings to the clay at the base of the fluvial aquifer and how the wells were backfilled. Mr. Holmes stated that the borings are often drilled to 'tag' the top of clay and advanced 5-10 feet into the clay to confirm it was not a 'stringer'. The borings are then backfilled with bentonite or by natural collapse, depending on depth. Mr. Woods noted that confirming the depth to clay was also common for monitoring wells in Memphis. Ms. Lloyd stated a preference for using bentonite to back fill the borings and it was agreed that would be done.

Ms. Lloyd asked about some of the well locations and the rationale was discussed. All agreed that the planned well locations were appropriate. Mr. Holmes noted that access agreements were being

sought by USACE-Mobile real estate personnel and that one of the off-site wells (MW-269) was being shifted due to overhead power lines and the small residential lots at the initial proposed location.

It was agreed that hydrogeological and analytical data from new IAQ well MW-262 would be used to select the location of the second IAQ well. Army will seek regulatory concurrence on the second well location before installation.

Ms. Lloyd asked if cross-sections would be prepared following well installation. Mr. Holmes stated that a new top of clay map and additional cross-sections were commonly prepared based on information from new wells. Current cross-sections are shown in the 2014 LTM report currently in review and the cross-section locations are shown on the top of clay map. (Note: Mr. Holmes mistakenly stated that the cross-sections were included in the Year Four EBT report submitted on 13 March.)

Ms. Lloyd noted that she plans to be in Memphis for only a portion of the Phase 1 field work and asked if updates regarding findings would be provided as drilling progressed. Mr. Holmes stated that preliminary findings of interest would be provided.

Ms. Lloyd asked about photo-ionization detector readings from soil cuttings, the criteria used to select samples for analysis and the type of analysis. Mr. Holmes noted rotasonic drilling generally increases temperature of the soil cutting and reduces the usefulness of VOC analyses. The samples are to be screened with one sample selected from each 10-foot length of soil core and placed in a 'baggy' for measurement; the sample would be selected based on field observations of potential contamination if any. A PID reading of 50 ppm would be used as a criterion for laboratory analysis. (Note: additional samples may be submitted based on field observations.) PID readings will be included on soil boring logs.

Ms. Lloyd stated that Ben Bentkowski at USEPA was reviewing the SRI Work Plan with comments due to her by March 22. Ms. Lloyd will provide comments to Army by March 26.

## Long Term Monitoring

Mr. Holmes noted that the next LTM event will begin April 6.

Ms. Lloyd asked about sample collection with bailers. Mr. Holmes noted that most LTM samples were collected using PDBs. If the saturated screened interval in a well was less than 5 feet, low flow sampling with bladder pumps was used. Bailers are used only if a bladder pump is not practical due to lack of recharge or due to casing diameter (e.g. PZ-03). Only a few wells are sampled with bailers and they are listed in the reports. Ms. Hutton cited information from the reports.

Ms. Lloyd stated that she would like to see some samples collected at the time of highest and lowest water levels. Mr. Woods noted that precipitation was highest in winter/early spring and lowest in late summer/fall and that the current scheduling of LTM sampling (April and October) met that goal.

## **DUNN FIELD**

### **Remedial Action**

The remedial activities at Dunn Field were briefly discussed. Fluvial SVE was shutdown in 2012 and rebound monitoring is conducted through LTM. Recent LTM results identified rebound, primarily chloroform, in the southern part of Dunn Field.

AS/SVE system repairs were completed and operations re-started 6 March 2015. The schedule for AS/SVE operation was discussed. Five years was the original estimate with operation through 2015; the system shutdown early in the 5<sup>th</sup> year and operations are now planned to extend through 2016. Additional operation may be required to meet the criteria for shutdown (individual CVOC concentrations above 50 ppb in upgradient wells) and to address rebound on Dunn Field.

### Long Term Monitoring

As noted above, the next LTM event will begin April 6 with sampling from all wells.

Mr. Holmes noted that comments on the 2014 LTM report are due 13 April 2015.

The off-site plume coming on to Dunn Field was briefly discussed. Mr. Woods noted that additional work including sampling existing wells and soil sampling was being reviewed. Ms. Lloyd stated that she would be meeting with John Nolan in the USEPA site evaluation group regarding that work. Ms. Hutton stated that Ms. Delight Balducci of the Army Environmental Legal Division had started reviewing information on the off-site plume in order to consider Army's position and that she would contact the USEPA attorney once the review was complete.

## **OTHER ISSUES**

There was a brief discussion on vapor intrusion (VI) monitoring at the MI. Mr. Woods stated that further discussion with TDEC personnel in Nashville was needed to develop their recommendations. Mr. Holmes asked whether the VI study performed in the Off Depot area would be applicable. Mr. Woods thought it would and noted the loess layer at the surface provided a good barrier for vapor migration from groundwater; the layer also held volatile contaminants for a long period and acted as a source area if a release occurred. Mr. Woods suggested that sampling a minimum of office spaces on the MI over the hottest parts of the groundwater plume was one approach to be considered.

In response to a question, Mr. Woods stated that TDEC VI guidance dated August 2014 was considered final. Ms. Lloyd was not sure when USEPA would be issuing new guidance.

The attendees agreed requirements for VI studies need to be determined prior to the next Five Year Review in 2017 and that there was sufficient time to address the issue.