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THE MEMPHIS DEPOT
TENNESSEE

ADMINISTRATIVE RECORD
COVER SHEET

AR File Number 866

Final

Memphis Depot

BRAC Cleanup Team

Teleconference Meeting Minutes

17 August 2006

BRAC Cleanup Team	Organization	Phone/email
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Evan Spann	Tennessee Department of Environment and Conservation, Division of Remediation (TDEC-DoR)	901.368.7916
Project Team	**Organization**	**Phone**
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Previous Meeting Minutes

The final 27 June 2006 BCT meeting minutes will be signed at the September meeting.

Dunn Field 60% Off-Depot Groundwater Remedial Design (RD)

Mr. Nelson reported that EPA provided comments on 4 August 2006 and that TDEC provided comments on 11 August 2006. CH2M Hill was preparing the responses to comments. He indicated that Mr. Ballard had also reviewed the internal team comments. Mr. Nelson then reviewed several of the more pertinent comments and indicated that he would discuss Long Term

Monitoring Plan comments regarding monitoring wells to keep or abandon with the individual commenter.

The team discussed existing and planned monitoring wells with regards to monitoring the preferential flow from the fluvial aquifer to the intermediate aquifer. Mr. Nelson indicated that the transitional area between the fluvial and intermediate aquifers contained several wells that would monitor preferential flow and that there was no clay layer differentiating the fluvial aquifer from the intermediate aquifer, based on the cross section figures contained in the document. The team also discussed the geohydrology of the area and the uncertainties regarding the clay layer.

The team discussed if the use of enhanced bioremediation down gradient of the Permeable Reactive Barrier (PRB) instead of injecting Zero-Valent Iron (ZVI) would require a ROD amendment or an Explanation of Significant Differences (ESD). Mr. Ballard indicated that the use of enhanced bioremediation instead of ZVI did not constitute a fundamental change to the ROD, so an ESD would be sufficient.

In response to a TDEC comment regarding of the need for a Memphis Sand aquifer monitoring well, the team discussed existing monitoring wells in the area. Mr. Nelson pointed out that MW186 was installed through the clay layer, was screened in the intermediate aquifer, and acted as a sentinel well for the Memphis Sand aquifer in that area. Mr. Ballard suggested that a monitoring well screened in the Memphis Sand aquifer in the same location was not necessary because of MW186. Mr. Spann did not disagree and pointed out that the approach assumed the clay formation in the area was tight and that there was no way for water to get through. Mr. Nelson reported that even though there were only a few monitoring wells screened in the intermediate aquifer at Dunn Field, sample results did not indicate contamination in the Memphis Sand aquifer down gradient of Dunn Field.

Mr. Nelson then addressed team comments regarding the sand/iron mixture used to create the PRB columns and the resulting hydraulic conductivity. Mr. Ballard commented that the RD was to establish the sand/iron mix specifications for the remedial action (RA) contractor. The design should indicate the range of hydraulic conductivity for the area and then provide the design specification. It would then be the responsibility of the RA contractor to indicate in the RA Work Plan how they would meet that specification. The team concluded that the conductivity and/or porosity of the ZVI PRB should be equal to or greater than the formation in which it was being installed. Mr. Holmes remarked that e2M would test the sand/iron mixture to make sure that it would meet the design specifications.

Discussion then moved to an EPA comment regarding the need for the RD to include treating the plume migrating onto Dunn Field at the northeast corner. Mr. Ballard interjected that as long as contamination was migrating onto the facility, EPA would be unable to provide an Operating Properly and Successful (OPS) determination. Mr. Dobbs indicated that the BCT would address the issue at the September BCT meeting and that the TDEC investigation of a potentially responsible party for the migrating plume was not yet complete and needed to be resolved.

Mr. Nelson reported that the schedule provided CH2M Hill 60 days to prepare and distribute the response to comments. He also noted that CH2M Hill would contact each commenter to discuss specific issues in order to produce the response to comments ahead of the schedule.

Dunn Field 60% Source Areas RD and Land Use Control Implementation Plan (LUCIP)

Mr. Perlmutter reported that the main issues regarding the 60% Source Areas RD were resolved during the 27 June 2006 on-board document review and via subsequent emails. CH2M Hill has incorporated the comments into the 90% Source Areas RD.

Mr. Perlmutter indicated that based upon Mr. Ballard's concern regarding the schedule for the fluvial Soil Vapor Extraction (SVE) system, CH2M Hill had reworked the RD to include an aboveground piping system for the fluvial SVE system using stainless steel pipes that would be installed during construction of loess SVE system reducing construction time by about one year.

Mr. Ballard asked what construction activity would now be completed last based upon the revised construction schedule. Mr. Perlmutter responded that construction of the loess and fluvial SVE systems would be followed, after a period of monitoring, with injection of ZVI. He continued that once the fluvial SVE system started to shrink the size of the source areas, then the team would have a better understanding of the size of the ZVI injection areas.

Mr. Ballard interjected that if there was no decrease in the size of the source areas, then that might indicate a source in the fluvial aquifer. And that was why during the on-board review he thought it would be better to inject the ZVI before starting the SVE system, but the team had disagreed because of the fear that the ZVI would begin to degrade before the SVE construction was completed. He opined that if the SVE system was constructed first, then it may delay the time to achieve the Remedial Action Completion milestone.

Mr. Holmes said that the ZVI injection must be accomplished with tight spacing between injection points, and that the team was optimistic that the SVE system would reduce the size of the ZVI injection areas. He continued that if there was a source in the fluvial aquifer, then the ZVI would treat it. And that due to cost considerations, the team wanted to minimize the amount of ZVI injected.

Mr. Holmes noted that saving construction time was the idea behind constructing the above ground fluvial SVE system prior to construction of the loess SVE system. And, he said that it would be difficult to install a lot of additional wells once the loess SVE system was constructed, so with the current construction sequence, the team would be able to see the effect of the loess SVE system followed in about 1½ years with ZVI injections. Mr. Holmes also indicated that if the PRB construction method did not work, the team would need to revaluate the issue. And that the PRB construction schedule was something that required some thought over the next two months before presenting the revised master schedule to the BCT in the next version of the BRAC Cleanup Plan.

Mr. Nelson reported that Mr. John De Back of the Department of Army (DA) BRAC Division had forwarded EPA and TDEC comments on the Land Use Control Implementation Plan (LUCIP) portion of the 60% Source Areas RD to the DA Environmental Law Division to coordinate responses to comments. Mr. Nelson indicated that he had received comments from the U.S. Army Southeast Region Environmental Office (SREO), but was still awaiting comments from the DA Environmental Law Division. Mr. Nelson said that the SREO comments raised issues that he was unable to address. Mr. Dobbs suggested that the comments should then be forwarded to and discussed with the DA. Mr. Ballard suggested that Mr. Dobbs also provide EPA with the SREO comments, especially if they indicated the need for major revisions to the document as he did not want the LUCIP to delay completion of the Source Areas RD. Mr.

Dobbs indicated the need to involve the SREO Council, so he needed to determine the best method for circulating information.

AI: CH2M Hill to distribute the LUCIP comments to the entire team. Mr. Dobbs will coordinate with SREO and DA to determine the best method of handling the LUCIP comments.

Dunn Field Permeable Reactive Barrier (PRB) Implementation Study

Mr. Railey indicated that CH2M Hill had distributed the results of the first confirmation sampling event. Mr. Nelson reported that CH2M Hill had received sample results from the baseline and confirmatory events 1 and 2, and that they were reviewing the data prior to distribution.

Mr. Nelson then reviewed the available data with the team. He reported that MW196 did not produce much water, so there was no data from that well. Dr. Ludwig asked if CH2M Hill knew why the well was not producing any water. Mr. Nelson responded that they had not yet determined why because two other wells within the wall at similar elevations contained water.

Mr. Nelson reported that CH2M Hill would install other confirmatory borings the week of 28 August 2006 with Hayward-Baker Inc. (HBI) on site. He indicated that CH2M Hill planned to complete a confirmatory boring near MW196 and may decide to install another monitoring well near that location.

He indicated that it was difficult to develop trend data at this point, but that oxidation reduction potential (ORP) and dissolved oxygen (DO) at MW195 appeared to be on target. He reported that contamination levels at MW194 trended downward, but that CH2M Hill was still monitoring it to see if there was further reaction as the ORP results fluctuated. He indicated that MW194 was installed between two PRB columns and was on the up gradient side of the PRB, so he assumed that was why there had been no significant decrease in contaminant levels.

Mr. Nelson continued his report saying that there was a mixture of results from the down gradient monitoring wells. Results indicated a decrease in contaminant levels within some monitoring wells, while no decrease in others. He indicated there were no wells down gradient of MW195, so CH2M Hill was not yet able to determine the down gradient impact of the PRB at this location.

Mr. Nelson indicated that CH2M Hill had not yet revised the top of clay contour map based on the monitoring well bore logs. He reported that there were not many changes in water levels within the monitoring wells, and that overall water level patterns were similar across the area. Mr. Nelson confirmed that CH2M Hill would monitor the wells on a monthly basis until December.

The team then discussed the upcoming confirmatory boring event. Mr. Perlmutter confirmed that if borings did not encounter iron at the anticipated locations, then CH2M Hill would advance the next boring closer to the center of the column. He indicated that having HBI in the field during the confirmatory boring event would provide CH2M Hill with greater ability to determine where the iron went as HBI was very familiar with the jetting process. He explained that if there were different levels of erosionable material, then the jetting process may produce variations in placement. And, he also mentioned the issue of geohydrological features collapsing during the injection process. He indicated that CH2M Hill did not have any conclusive information at this point, but that they were working to address these questions.

Mr. Holmes asked about the accuracy for measuring the amount of guar gum material injected and the amount removed from the boring during the sand/iron material injection. Mr. Nelson indicated the measurements were very accurate. Mr. Perlmutter said that CH2M Hill knew that all the sand/iron material was in the ground.

Mr. Perlmutter continued that CH2M Hill generally knew where the cutting elevations were, but that CH2M Hill was evaluating the issue of controlling the column location. He indicated that there were still some issues to resolve such as if flowing sands moved into the geometry, if the geometry collapsed, and if they should cut into the clay allowing some formation collapse or use a more viscous guar to alleviate the formation collapse issue. Mr. Perlmutter was optimistic that the jetting process worked, but acknowledged that there were still issues to resolve.

Mr. Perlmutter reported that CH2M Hill and HBI were also evaluating the area for a preferential flow path caused by the top of clay elevation. They planned to conduct some more confirmation sampling near the center of the columns to confirm the amount of iron at those points. He indicated CH2M Hill had discussed with HBI the sampling results seen to date, and that HBI had provided some interesting information regarding the field effort.

Since HBI was not available at the first confirmation sampling event to look at boring cores, they will be on site during the next event and will look at the cores saved and stored in the warehouse. Mr. Nelson indicated that since ProSonic was on site for the MI RA, he scheduled them to drill bore holes at the PRB. He also reported that based on an issue raised by an email received from Mr. Dobbs regarding GeoSierra, CH2M Hill was looking at the applicability and availability of other vendors and methods for installing a deep PRB.

Dunn Field Off-Depot Property Access Agreements

Mr. Nelson reported that CH2M Hill would review the current agreements and RD maps, to include the PRB contingency area, to determine if any existing agreements should be updated or if additional agreements would be necessary. Mr. Dobbs confirmed that as in the past the Corps of Engineers, Mobile District would obtain the access agreements. Mr. Price indicated that the master schedule date for agreements to be in place was 26 October 2006, so CH2M Hill should move forward on their review and provide the necessary information to e2M as soon as possible.

Main Installation Remedial Action (RA)

Mr. Holmes reported that e2M had completed installation of all injection and monitoring wells. He indicated that the injection wells in Target Treatment Area (TTA) 1 had accepted the injection with no problems identified. He reported that construction of the portable injection trailers and renovation of Building 265 was completed, and that e2M Memphis was fully staffed with local technicians to implement the RA. E2M was currently testing the injection trailers and would conduct baseline sampling over next couple of weeks. Mr. Holmes anticipated that e2M would begin RA injections the first part of September.

Mr. Holmes indicated that there was not a whole lot of water in TTA 2, so e2M was expecting problems during the injection tests in that area. He reported that e2M had started installing the monitoring wells identified in the Long Term Monitoring (LTM) Report. He said that e2M encountered the clay at about the elevations they had anticipated. He continued that after installing the monitoring wells, e2M would then abandon all the monitoring wells identified in LTM report. He said he had forwarded the abandonment information to EPA and TDEC. Mr. Ballard and Mr. Spann provided their concurrence that there were no changes to the list of wells. He reported that sample results from the first baseline sampling event were not yet available.

Dunn Field Groundwater Interim Remedial Action (IRA)

Mr. Price reported that the system was currently running properly. During July, MACTEC performed routine maintenance with no impact on system performance. During July the system removed 2.63 lbs of Trichloroethene (TCE) and 6.42 lbs of total Volatile Organic Compounds (VOCs), which equaled 304.80 lbs of TCE and 767.80 lbs of total VOCs removed with the groundwater since system start-up. Mr. Price indicated that MACTEC was currently working the Semi-Annual Groundwater IRA Report and that it was on schedule for internal review on 15 September 2006.

Dunn Field Property Sale

Mr. Price reported that the Corps of Engineers had erected "For Sale" signs at Dunn Field and that additional advertisements would run in the Memphis Commercial Appeal newspaper between 18 and 21 August 2006. According to his conversations with Mr. Harold Duck, the advertisements that ran from 28 through 30 July 2006 had not garnered any expressions of interest. Mr. Price also reported that the Depot Redevelopment Corporation had informed Barnhart Crane of the sale, and that they may submit an expression of interest.

Next Meeting

The BCT tentatively scheduled the next meeting for the week of 25 September 2006, to be conducted in Memphis, TN. Mr. Price will query the team via email to confirm the exact date.

MICHAEL DOBBS — DATE
Defense Distribution Center
BRAC Environmental Coordinator
BRAC Cleanup Team Member

TURPIN BALLARD — DATE
Environmental Protection Agency
Federal Facilities Branch
Remedial Project Manager
BRAC Cleanup Team Member

09/28/06
EVAN SPANN — DATE
Tennessee Department of Environment and Conservation
Memphis Field Office
Division of Remediation
BRAC Cleanup Team Member

FINAL PAGE

ADMINISTRATIVE RECORD

FINAL PAGE