



THE MEMPHIS DEPOT TENNESSEE

ADMINISTRATIVE RECORD COVER SHEET

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Final

**Memphis Depot
BRAC Cleanup Team
Meeting Minutes**

August 25-26, 2004

BRAC Cleanup Team	Organization	Phone/email
Michael Dobbs	Defense Logistics Agency (DLA)/Defense Distribution Center (DDC) J-3/J-4E	717.770.6950
Turpin Ballard	Environmental Protection Agency, Region IV (EPA)	404.562.8553
James Morrison	Tennessee Department of Environment and Conservation, Division of Superfund (TDEC)	615.532.0910
Project Team	Organization	Phone
Lt. Col. Craig Dezell, USAF	DLA Environmental and Safety Office	703.767.6255
David Buxbaum	U.S. Army SREO	404.524.5061 x.287
Angela McMath	MACTEC Engineering	770.590.4601
Tom Holmes	MACTEC Engineering	770.421.3373
Denise Cooper	MACTEC Engineering	901.767.1249
Bruce Railey	Corps of Engineers – Huntsville	256.895.1463
Steve Offner	CH2M Hill	770.604.9182 x302
David Nelson	CH2M Hill	770.604.9182 x645
Kinzie Gordon	Mitretek Systems	303.779.2664
John K. Miller	Mitretek Systems	703.610.2560

Previous Meeting Minute Approval

The BCT approved and signed the minutes from the July 20, 2004 meeting.

Findings from Recent Field Activities

Dunn Field

Mr. Offner presented groundwater analytical data, cross sections, potentiometric surface maps, and graphical representations of the contamination plume west and northwest of Dunn Field. The presentation was based on the preliminary results of groundwater samples from wells west of Dunn Field, including the seven wells installed since the July meeting, MW151 – MW157.

MACTEC collected the data. The team discussed the information relative to the necessity for implementing an early action to reduce VOC levels down gradient from Dunn Field.

Mr. Offner indicated the wells provided very good data. The saturated thickness at MW144 was less than 3 feet providing a good location to inject ZVI. MW154 sample results indicated VOC levels were less than 1 ug/l at that location, adjacent to MW67. MW157 provided a good southern boundary to the plume. He also indicated that flow velocity dropped an order of magnitude west of MW150 and was greatest between MW77 and MW144.

Mr. Holmes noted that there was no indication of contaminant stratification based on a comparison of results for wells MW144 to MW150 from the latest samples and those collected in June 2004. Mr. Offner reported that the potentiometric surface data indicated the water flow was bifurcating east of MW151 and MW152. Mr. Morrison suggested collecting a sample at the top portion of the screened interval at MW152 and MW155 to confirm the lack of stratification.

Mr. Offner presented the early implementation alternatives developed by the project team:

- Alternative 1: Continue to follow the selected remedial actions in the Dunn Field ROD with additional monitoring for plume stability, additional monitoring wells and additional modeling.
- Alternative 2: Alternative 1 plus ZVI near MW155 to reduce concentrations down gradient of the PRB to 500 ug/l in order for natural attenuation (NA) to take place.
- Alternative 3: Supplement Alternative 1 with ZVI up and down gradient in plume core.
- Alternative 4: Alternative 1 with early implementation of source area treatment (ZVI injection on and off Dunn Field).

The team discussed the alternatives. Mr. Ballard indicated that the ZVI design could be very simple, but raised the concern that as ZVI reduced levels then the influx of contaminated groundwater would raise levels again. Mr. Offner interjected that the PRB would capture and treat the contamination influx and that based on current flow velocities the plume west of MW155 could move 50 feet in the 1 ½ years necessary to complete the PRB and ZVI designs and remedial action work plans and to mobilize contractors following the standard CERCLA process.

Mr. Ballard said the plume area that had already passed the PRB location and was slated for monitored natural attenuation (MNA) now had levels higher than the team was comfortable leaving for MNA. Mr. Morrison asked when the team had determined to leave 500 ug/l for MNA. Mr. Ballard indicated the team agreed on the level during Dunn Field groundwater treatment area discussions as well as Main Installation enhanced bioremediation injection area discussions resulting in 500 ug/l total VOCs remaining for MNA to reduce to Safe Drinking Water Act maximum contaminant limits (MCLs). The issue was tabled for further discussion.

The team then discussed cost issues. Mr. Buxbaum indicated that since the Dunn Field ROD included costs for ZVI in two locations, the costs should not significantly exceed the ROD estimates as one area of ZVI can be moved. Mr. Holmes indicated the alternatives indicated adding a ZVI area, not just moving one. He also asked for the BCT to clearly define the goal for the early implemented action – to reduce the leading edge or to reduce the plume core.

Mr. Ballard, Mr. Morrison, Mr. Dobbs and Lt. Col. Dezell discussed the goal and the alternatives. Mr. Dobbs responded that with the ZVI vendors coming on board in early October, the BCT wanted to start with Alternative 2 and treat the area within the leading edge of the distal source plume (500 ug/l area around MW150), to treat across the plume near MW144, and then to have the project team accelerate design actions to treat the remaining plume west of the Dunn Field boundary.

When asked about access to MLGW property, Mr. Holmes responded that access inside the perimeter fence would have to be discussed with MLGW, but that they had been cooperative to this point. Mr. Nelson stated that past discussions had indicated where access was not allowed and that these areas could be portrayed on the site map.

Mr. Morrison opined the need for better definition of the plume and the potential for stratification due to the increasing saturated thickness west of MW155. He suggested installing a well cluster between MW155 and MW152 screening the entire saturated thickness and suitable for diffusion bag sampling (screen no longer than 15 feet). The potential for vertical flow should be considered and if present screens should be no longer than 10 feet and samples collected by bladder pump. Mr. Ballard indicated that the order of priority was to install the treatment and then install monitoring wells to meet the other DQOs.

The team then discussed documents necessary to move forward with the early implementation actions. Lt. Col. Dezell indicated the need for three groundwater remedial designs – one for the off-site source (ZVI for the center and toe of the plume), one for the on-site source (ZVI and SVE) and one for the PRB. Mr. Offner reported completion of the Disposal Site RD.

Mr. Buxbaum indicated that the first document to complete was a memorandum for file with a cover letter from the DDC requesting BCT concurrence with the decision to implement actions early. He said the memorandum for file would be a justification document for the administrative record. Mr. Holmes indicated public notification would occur via a fact sheet mailing and RAB meeting presentation.

Early Implementation Technical Memorandum (TM)

The team discussed Mitretek comments received by CH2M Hill on the draft Early Implementation TM as well as incorporated information from the previous early implementation conversation. The team agreed the purpose of the TM was to document why it was necessary to implement the selected remedial action for groundwater down gradient from Dunn Field earlier than scheduled.

The team selected figures and tables for use in the TM during a meeting break.

The team agreed it was a good idea to meet with the Health Department groundwater section and brief them on the ZVI injection action. Mr. Buxbaum reminded the team that they were not required to obtain a permit to inject and would not start that process as it may delay the action. Mr. Morrison requested that the team send information through him to the State groundwater department.

Mr. Buxbaum clarified why the team would not obtain an injection permit as the team has obtained permits for the monitoring wells installed off the property. The team obtained well permits because the team wanted the County to be aware of the wells, which will remain in place for many years, and to have them registered with the County in order to for the County to

provide oversight. Injection wells would not remain in place and would not require County oversight. The County has been notified of injections planned for areas off the property.

AI: MACTEC will draft a TM cover letter that Mr. Buxbaum will review for Mr. Dobbs' signature requesting EPA and TDEC concurrence at the September BCT. Mr. Ballard requested receipt of the TM at least one week prior to the September BCT.

The team conducted a walk-through of the MLGW substation area and identified locations for ZVI injections as well as additional monitoring wells. Mr. Holmes will coordinate with MLGW regarding access to their equipment lay-down area inside the fence.

Groundwater IRA

Mr. Holmes reported all the recovery wells were pumping properly. Pump calibration was completed. MACTEC will make recommendations to the BCT for IRA repairs.

Phase II SVE and Fracturing Pilot Study

Mr. Nelson presented an overview of the Phase II test. The team mobilized on August 2, 2004. They conducted the SVE test beginning August 4 and the fracturing of loess deposits beginning August 6. CH2M Hill covered the test area with plastic to determine if it increased vacuum efficiency. Without the ground cover, the area of vacuum influence was about 10 feet. With the ground cover, the area of influence increased to 54 feet. He continued that barometric pressure affected the fluvial aquifer conditions as evidenced by monitoring points outside the ground cover, so he was looking at the impact of barometric pressure in the RD. Proppant (ceramic beads used to hold the fracture open) was inserted into VW-4P.

Mr. Nelson reported that the fracturing and slurry/water injections did allow the loess to release VOCs, and that the fractures were extending to the monitoring points. CH2M Hill conducted vacuum tests at several of the monitoring points that indicated the fractures closed without the proppant. Even in the well where the proppant was injected, the vacuum test indicated the fractures near the well closed. This indicated that the injection contractor must be careful during equipment flushing to avoid pushing the proppant away from the well. Fractures without proppant were not as successful as fractures with proppant injected so the proppant remains near the injection point. Lt. Col. Dezell suggested using different sized proppant with smaller out front and larger near the borehole.

Mr. Ballard asked what other enhancements could occur at the loess to make SVE even more successful. Mr. Nelson reported that the loess was very difficult to work with, as it was a clay-rich environment with perched groundwater. Mr. Morrison asked about pushing air through the formation instead of pulling air through it causing a vacuum. Mr. Offner said they could cycle the pushed air and use a smaller pull pump. Mr. Nelson interjected that they could push rather than pull, but that energy costs would increase. Mr. Ballard responded that energy costs may increase, but if it decreased the time to cleanup then the greater upfront costs may be outweighed by the shorter duration.

Mr. Holmes asked if CH2M Hill looked at the distance the proppant extended from the borehole. Mr. Nelson said they intended to, but a problem arose as the proppant was the same color as the loess and was not much larger than the loess. He indicated CH2M Hill was contemplating a sieve test to identify the proppant.

Mr. Nelson then talked about the success of SVE at two other Memphis sites – Carrier and Ensaf. The Carrier project did not use fracturing or proppant and had been running the SVE system for about 10 years, a much longer time than planned for Dunn Field and with significant costs. Ensaf used the fracturing and proppant process and had removed a large volume of VOCs in a much shorter timeframe.

Mr. Offner thought there might be a short-term push/pull technique combined with a small thermal element to the pushed air to help the loess release the VOCs. Ms. Gordon and Mr. Miller offered to assist CH2M Hill to determine how long it would take to dry out the loess, which would allow natural vertical fracturing and increase SVE system effectiveness. Mr. Nelson said he would look at some inexpensive enhancements and include them in the RD.

Main Installation Land Use Control Implementation Plan (LUCIP)/Notice of Land Use Controls

During Mr. Morrison's review of the Notice of Land Use Controls, he noticed that the LUCIP did not include a "no dig" restriction for the PCP Dip Vat area. Mr. Buxbaum indicated that the MI Master Lease deed restrictions included a general "do not dig without approval" clause, but that the land use controls specified in the MI ROD did not include no digging at the PCP Dip Vat area. Mr. Buxbaum said that the Notice would include a clause to protect worker health if digging 10 feet below the Dip Vat area. Since the LUCIP had received approval and had been incorporated into the final MI RD, Mr. Buxbaum preferred not to revise the LUCIP and to capture the "no dig" restriction in the Notice, as future transferees would see the Notice, and not the LUCIP. Mr. Ballard agreed that the LUCIP did not need to be revised as the LUCIP directed transferees to the Notice, and the transferee must abide by the Notice.

Mr. Buxbaum and Mr. Morrison discussed the issue, and Mr. Morrison agreed that the Notice would contain a "no dig" restriction to 10 feet as well as a requirement to notify the BRAC contact if the concrete pad was to be removed or disturbed. He also agreed not to revise the LUCIP at this time. However, if the LUCIP is revised this restriction will be included to ensure consistency with the Notice. Any future transfer documents must also contain the restrictions.

AI: Mr. Buxbaum to verify the current "no dig" requirements under the Master Lease. Completed. The Master Lease Section 23(K) restricts excavation, digging or drilling.

Findings of Suitability to Transfer (FOST) 4

Mr. Holmes reported that MACTEC was awaiting comments from Mr. Buxbaum, who provided them to Mr. Holmes following the meeting. MACTEC will prepare and distribute response to comments, incorporate the comments and distribute Rev. 0 to the BCT.

Master Schedule

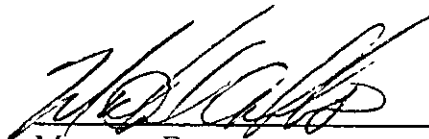
Mr. Dobbs stated that the expedited actions to investigate the plume west of Dunn Field and to plan for the early action had delayed planning for other remedial activities at the Depot. Mr. Holmes noted that the Main Installation RAWP would be delayed. Mr. Ballard stated that the FFA provided for delays with proper justification and that the BCT should be notified as required by the FFA. The team also discussed the need to consider results from the early implementation of ZVI at Dunn Field in the design of the PRB; that will require delay in the PRB RD. Mr. Holmes stated that the schedule would be revised in the scheduled revision to the BRAC Cleanup Plan.

RAB Agenda

Mr. Holmes requested input on the RAB agenda. Mr. Dobbs responded that he would present the latest accomplishments – the signed ROD, the two final remedial designs (Disposal Sites and MI) and the signed FOST. Mr. Holmes and Mr. Offner are to coordinate and develop a presentation about the off-site plume and future planned actions. CH2M Hill should present the SVE pilot test results. Mr. Ballard and Mr. Holmes are to determine any final remedial design public involvement requirements in the NCP and to provide Mr. Dobbs with recommendations. Mr. Dobbs to coordinate responsibility for producing the October 21 RAB meeting presentation with MACTEC and CH2M Hill.

Next Meeting

The BCT scheduled the next meeting for the afternoon of September 20 and continuing through September 21 to coincide with the RCRA permit renewal public comment meeting the evening of September 21 in Memphis, TN. The BCT also scheduled a meeting in Memphis, TN, for October 20, beginning in the afternoon, and continuing through October 21 to coincide with the RAB meeting scheduled for the evening of October 21.



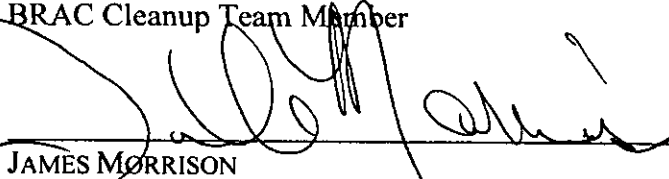
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