File: 541.460.000n
M.D.

THE MEMPHIS DEPOT
TENNESSEE

ADMINISTRATIVE RECORD
COVER SHEET

AR File Number 837

Final

Memphis Depot

BRAC Cleanup Team

Meeting Minutes

July 21, 2005

BRAC Cleanup Team	Organization	Phone/email
Michael Dobbs	Defense Logistics Agency (DLA)/Defense Distribution Center (DDC) DES DDC E	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**
Evan Spann	TDEC-DOR	901.368.7916
Roy Shrove	Air Force Center for Environmental Excellence	210.536.2409
Tom Holmes	MACTEC Engineering	770.421.3373
Denise Cooper	MACTEC Engineering	901.774.3681
Bruce Railey	Corps of Engineers – Huntsville	256.895.1463
David Nelson	CH2M Hill	770.604.9182 x645
John K. Miller	Mitretek Systems	703.610.2560

Previous Meeting Minute Approval

The BCT approved and signed the minutes from the June 15, 2005 meeting.

Disposal Sites Remedial Action

Mr. Holmes reported that remedial action at Disposal Sites 3 and 10 would resume upon receipt of notice to proceed (NTP) from AFCEE. Laguna Construction had submitted the change order to AFCEE in June and Mr. Holmes anticipated NTP by mid to late August. He indicated that field work could begin within two weeks upon receipt of NTP. He did not anticipate a lot of field time once field crews mobilized.

Early Implementation of Selected Remedy (EISR) Interim Remedial Action Completion Report (RACR)

Mr. Holmes distributed preliminary EISR sample results that included the May IRA O&M sample results from the EISR area. Mr. Holmes reviewed the results with the team and indicated that overall the contaminant levels had not decreased as much as anticipated. He reported that MACTEC's consultation with ARS regarding the results resulted in agreement that the spacing

between the injection points was probably too great and that a greater concentration of zero valent iron (ZVI) was necessary throughout the treatment area.

Mr. Ballard opined that CH2M Hill may need to reevaluate the placement of the permeable reactive barrier (PRB) to reduce the area down gradient that would receive ZVI. Mr. Holmes responded that the EISR provided some useful information to move forward with the Off Depot Remedial Design.

Mr. Ballard reported that there was a relatively new ZVI technology using micron size ZVI powder that moved with the groundwater. Recent field trials using the powder indicated that it would permeate the treatment area quickly reducing concentrations, but that the powder was quickly used up and should not be used if contamination continued to flow into the treatment area. He provided the information as some thing to think about if in a few years it became necessary to supplement regular ZVI to reduce concentrations.

Mr. Holmes reported that he had received EPA's comments on the EISR IRACR via email, and requested that Mr. Ballard provide a cover letter officially submitting the comments. Mr. Holmes indicated that the goal was to finalize the document before the end of the fiscal year (September 30). Mr. Ballard indicated that he required the document before September 30 in order to have it signed by his branch chief by September 30. Mr. Ballard requested receipt of the EISR IRACR by September 15 in order to obtain the appropriate signature by September 30.

Mr. Holmes indicated he had forwarded EPA's comments to the team. None of the comments presented a problem, so he was working to finalize the document. Mr. Ballard commented that the IRACR should contain the analysis ARS provided, but add the recent sampling data. Mr. Holmes indicated that he did not want to include data collected outside the EISR. Mr. Ballard agreed, but pointed out that the IRACR needed to address the fact that the ZVI injections did not work as anticipated and that additional action was part of final remedial action.

Mr. Spann anticipated providing comments on the EISR RACR the week of July 24.

AI: Mr. Ballard to provide EISR RACR comments cover letter.

Dunn Field Groundwater Interim Remedial Action (IRA)

Mr. Holmes reported that all the recovery well pumps were running. In response to the BCT's request to evaluate the cost effectiveness of turning off some of the wells, Mr. Holmes provided information regarding operations and maintenance (O&M) costs, repairs performed since 1998 when the system became operational and trends of volatile organic compounds (VOCs) removed per recovery well. Mr. Holmes reported that MACTEC had concerns about turning off a recovery well and its impact on the system given with the amount of time remaining for the system to operate, until construction of the Source Area Remedial Action. According to the information he provided, he identified three wells that were more critical to the system based upon the amount of VOCs being removed. He identified some wells that could be turned off based upon the amount of VOCs removed and the gallons per minute (gpm) pumped.

MACTEC would further evaluate the information and would include a proposal of which wells could be turned off in the next Semi-Annual IRA report. Mr. Miller suggested that MACTEC keep in mind that even though a well may pump significant gpm it may not be of value if it was not removing VOCs. Mr. Dobbs reminded that team that the IRA system was designed to act as a hydraulic barrier, and MACTEC needed to ensure that it was maintained as such.

Mr. Morrison asked if recovery well samples were gathered in stream. Mr. Holmes responded that samples were collected from a sampling port in the discharge pipe from each well and also at the discharge point to the sanitary sewer.

Returning to the subject of wells to turn off, Mr. Holmes indicated that MACTEC would also have to evaluate VOCs removed by a well and the gpm of water pumped vs. the total discharge to ensure the discharged water continued to meet Memphis' water treatment plant requirements. Mr. Morrison asked Mr. Holmes to provide the data as VOC mass removed per gallon in order to indicate which wells were providing the best value. Mr. Holmes agreed to email the data to Mr. Morrison.

Mr. Spann asked when the system could be mothballed. Mr. Ballard responded the system could be mothballed once the soil vapor extraction (SVE) system was constructed and ZVI injections were completed.

Mr. Holmes reported that on June 24 he distributed the Rev. 1 Annual IRA Operations Report that addressed BCT comments, and that he was awaiting additional comments or approval of the response to comments.

AI: MACTEC to email to Mr. Morrison recovery well data for VOC mass removed per gallon.

AI: MACTEC to send CH2M Hill the June O&M sampling data.

AI: MACTEC to produce plume and groundwater contours map in next Semi-Annual IRA Report.

Off-Depot Remedial Design (RD)

Mr. Nelson reported that after last month's groundwater modeling discussion he discussed the issues presented with CH2M Hill's modelers. He emailed the modeling team with recommendations and the following questions: how long to meet maximum contaminant levels (mcls) and the location of the plume edge's point of compliance for monitoring purposes. He also discussed with the modelers other objectives including past release dates. The modelers indicated it would be time consuming and costly to try and match current plume configuration based on past release date assumptions. They suggested taking the four source areas and inputting the data into the RT3D to model future conditions. They would take the current plumes and source areas and then model where it would go from here.

The team discussed the need for the model to project the post-remedy plume configuration in 5, 10 and 15 year increments in order to provide the regulators something to compare to during the 5-year reviews as well as a projection of how long until the contamination levels reached mcls based on current assumptions. The RD should include models of the projected plume configuration so that when empirical data is collected in 5, 10 and 15 years, the data could be used to calibrate the model.

The team also discussed the need for the model to closely reflect current conditions, but not necessarily exactly, in order to provide confidence in models of future conditions. The regulators agreed that the RD for the groundwater remedy must contain a projection of how long it will take to meet the remedial action objectives (RAOs) stated in the ROD and that the projection would be reviewed for validity. Also in order to obtain regulatory approval that the groundwater

remedial action was operating properly and successfully (OPS), the OPS request must provide a projection of how long the remedial action would take to reach RAOs.

The regulators stressed the importance of capturing the uncertainties of the modeling effort so that the decision makers could better understand the uncertainties in order to determine whether they could accept the uncertainties or not.

Mr. Nelson will continue discussing the BCT's needs with the modelers with the idea to input assumptions based on known historical data and allow the model to run forward in hopes that the model projection basically reflects the current plume configuration. He provided the modelers with data the week of July 11 and hoped to have the next projections by the end of July. He agreed to email the projections to the team once CH2M Hill was confident in the results.

Permeable Reactive Barrier (PRB) Field Trial

Mr. Nelson reported that since the June meeting, CH2M Hill had spoken with several of the companies and distributed a summary of the proposed deep PRB installation methods. His discussion with the team included information about using a smaller zero valent iron (ZVI) grain size and its impact on the ZVI's long term effectiveness. He indicated the need to investigate the affect that the PRB will have on aquifer porosity if the ZVI has a smaller grain size than used within the PRB Bench-Scale study.

Mr. Nelson presented information about PRBs successfully constructed by the jetting companies, waste reduction techniques, and problems encountered at sites with different geological characteristics. Based on site characteristics at the Memphis Depot, CH2M Hill was confident that the jetting method proposed by Heyward Baker, Inc. should be successful. CH2M Hill was prepared to move forward with the jetting study.

If successful, then CH2M Hill could write a performance based specification in the remedial design that would increase competition by allowing several companies the opportunity to bid and reduce overall costs. Mr. Nelson confirmed that CH2M Hill would verify that the PRB constructed with the jetting technology met the specifications. He also confirmed that the field trial would affect the short term deliverable schedule, but not the long term.

Mr. Dobbs asked if the area for the test had been identified and if there were any anticipated property access issues to overcome. Mr. Holmes indicated that the test area would be the area south of the railroad tracks within the open area west of Rozelle Street between MW144 and MW161. The area provides easy access - easy to obtain access and easy for the equipment to access the area. Mr. Nelson reported that CH2M Hill had completed the preliminary contracting actions with Heyward Baker – CH2M Hill had submitted the scope of work and had received the cost estimates. Mr. Spann asked about the sampling period for the field trial. Mr. Nelson referred to the scope of work and indicated CH2M Hill would return 30 days after construction to perform coring and would then collect groundwater samples 30 and 60 days post construction.

AI: MACTEC to factor PRB field trial into appropriate schedules upon receipt of necessary info.

Source Area Remedial Design Investigation Work Plan

Mr. Nelson reported that CH2M Hill submitted the Work Plan to the internal team and had received comments from Mitretek and MACTEC. He anticipated distributing the Work Plan to the BCT on July 26. Mr. Nelson presented an overview of the Work Plan and noted aspects of it

that would change based on Mitretek's comments. Mr. Nelson indicated that CH2M Hill planned to conduct the SVE Extended Treatability Study during this field effort and that the Work Plan for that effort would be coming soon.

The team discussed several aspects of the Work Plan including concerns that the 1,1,2,2-Tetrachloroethane boiling point was above the maximum membrane temperature and that membrane probe may not heat up enough to volatize that contaminant. CH2M Hill planned to collect soil samples that would be analyzed for 1,1,2,2-Tetrachloroethane.

The team reviewed the proposed locations for additional monitoring wells on Dunn Field and west of Dunn Field and the proposed locations for soil borings in area of the proposed PRB location that would help to strengthen the Off Depot Groundwater RD and help to better define the PRB wall specifications, i.e. height and thickness.

The team discussed the remedial action confirmation sampling noting that it must step out from the SVE zone to confirm that contaminant concentrations in the soils were below the remedial goals. The team also discussed membrane interface probe (MIP) limitations and the need to collect soil samples to confirm contaminant levels in soils once MIP indicates non-detect. Mr. Nelson confirmed that the Source Areas Soils Investigation objective was to identify the area that exceeded the remedial goals, which in turn would become the treatment area. And he confirmed that soil samples as opposed to MIP results would be the criteria to determine that contaminant concentrations in soils were below remedial goals..

Offsite Plume – Northeast of Dunn Field (Wabash Avenue Investigation)

Mr. Holmes indicated that it was acceptable for EPA's contractor, Weston, to access the Dunn Field monitoring wells, except for wells in which permeable diffusion bags (PDBs) have been hung as they will not be pulled until September. Mr. Spann reported that EPA, in partnership with TDEC, would perform a focused site investigation to follow the plume back to the suspected source northeast of Dunn Field. Weston had received approval to install five (5) monitoring wells. Four locations had been selected and the fifth would be selected while in the field. Mr. Spann anticipated being in field the first part of August to install the monitoring wells. He reported that there were two machine works companies in the area that were being investigation as the presumed source.

Mr. Spann requested and received from Mr. Dobbs permission to store investigation derived waste on the storage pad located at Dunn Field.

Finding of Suitability To Transfer (FOST) 3

Mr. Holmes reported that the Corps of Engineers was preparing two (2) deeds for the FOST 3 area – one to the Department of Interior for the golf course and one to the Depot Redevelopment Corporation (DRC). Once the DRC and the Corps finalized the deed document it would be distributed to EPA. He reported that there was still discussion as to whether the Department of Army or the Defense Logistics Agency would provide the deed to EPA. The Land Use Control Implementation Plan indicated the Army was the responsible party.

Dunn Field Disposal Sites Area Transfer

Mr. Nelson reported that he distributed the risk assessment information letter and received comments from MACTEC. CH2M Hill was revising the document, but would not distribute it

until several questions had been resolved regarding the data of concern and its correlation to the Dunn Field Disposal Sites Remedial Action (RA).

The team discussed several issues regarding the data collected in 1998 vs. the need to collect additional data. Mr. Nelson reported that CH2M Hill was contemplating collecting additional samples during the Source Areas Soil Investigation that would duplicate the remedial investigation (RI) sampling. Mr. Ballard suggested establishing grid areas in the proposed recreation area and collecting several composite samples from each grid area in order to provide a better representation of the conditions within the proposed recreation area.

Mr. Miller suggested the need to duplicate the RI sampling in order to validate the historic samples. Mr. Ballard did not see need to validate the historical samples because the issue to overcome was the current risk at the proposed recreation area. He indicated that the technical memorandum being prepared by CH2M Hill should document why the team was doing something more – because of a change in the future reuse – then describe the uncertainty driving the sampling and document that the new sample data supersedes historical data. Mr. Holmes interjected that since DLA wanted to work with the National Park Service to transfer this area for a park, the best approach would be to grid out the area and collect sample from various points within the grid in the event that sample results indicated the need for additional remedial action to make it the area available for recreation reuse.

Mr. Spann agreed that since the future land use had changed there was no need to validate the historical data and that the additional samples would provide better data with which to conduct a risk assessment.

Mr. Nelson agreed to include the collection of additional samples from the proposed recreation area in the Source Areas Soils Investigation Work Plan – grid the area and collect composite samples using atomic absorption method looking for antimony and iron. Upon receipt of data and risk assessment, the team agreed to then develop the approach for going forward with the transfer to the Department of Interior and would work with Mr. David Buxbaum on how best to present the information to the City of Memphis.

AI: MACTEC to obtain information on City of Memphis entities charged with decision making regarding parks and recreational areas.

Main Installation Remedial Action Work Plan (RAWP)

Mr. Holmes reported that MACTEC had incorporated regulatory comments and planned to distribute the next revision on July 25. He identified one change in RAWP from the RD – using rotosonic to install injection wells instead of using mud rotary.

Mr. Holmes reported that he had discussed proposed changes to the long term monitoring (LTM) sampling plan in the past with the team and agreed with EPA's comment not to include the LTM sampling plan changes in the RAWP as it was ready to go final. He indicated MACTEC would include the proposed LTM sampling changes in annual O&M report.

Community Involvement

Mr. Holmes reported that as part of the Memphis Depot website update and based upon Mr. Ballard's request for visual aids, MACTEC and Frontline generated a condensed list of Frequently Asked Questions (FAQs) from the various existing website FAQs. He received and addressed comments on the condensed list of FAQs from EPA and Mitretek and distributed the

revised document. Then he received and must address comments from TDEC. Once TDEC's comments have been addressed, he will distribute the final FAQs to DDC for placement on the website.

Mr. Ballard reported that he had received the National Environmental Justice Action Committee report from the Federal Facilities Work Group and that the EPA Administrator was preparing a response. Mr. Ballard has been tasked to provide the Administrator with input regarding the report's site specific recommendations such as making things clearer for the community during presentations. He thought of the questions the team received at Restoration Advisory Board and public meetings that the team answered again and again and thought that perhaps the FAQs could help determine what visual aids might be helpful.

The BCT suggested creating a 3-D block diagram showing the geology/hydrogeology of the area in very basic terms. Mr. Morrison also suggested creating a block diagram with risk assessment and remedial goal information, and he volunteered to provide visual aids that he had seen at other sites.

Mr. Holmes reported that Mr. Terry Flynn of Frontline Corporate Communications would conduct risk communications refresher training on September 14, in Kennesaw, GA.

AI: CH2M Hill will update the conceptual site model and produce it in 3-D.

AI: MACTEC will work with TDEC to identify other visual aids used at other sites.

AI: Mitretek to provide MACTEC with copies of visual aids used at other sites.

AI: MACTEC to continue developing FAQs for placement on website.

Schedule Review

Mr. Holmes distributed the deliverables schedule updated with information from yesterday's project team meeting.

Mr. Ballard indicated that document on-board reviews needed to be a full day review not just a BCT agenda item. He also suggested that, upon receipt of funding, MACTEC move forward with the Disposal Sites RACR so that all that remained was inputting information from Sites 3 and 10.

Mr. Ballard commented that the BRAC Cleanup Plan Version 9 must provide good cause (as defined by the FFA) for changing the master schedule RA start and completion dates for FY06.

Next Meeting

The BCT confirmed the next meeting will be on September 14 – 15, 2005, at MACTEC's office in Kennesaw, GA. The project team meeting will begin the afternoon of September 13.

9/15/05

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

9/15/05

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

9-15-05

JAMES MORRISON — DATE
Tennessee Department of Environment and Conservation
Memphis Field Office
Division of Superfund
BRAC Cleanup Team Member

FINAL PAGE

ADMINISTRATIVE RECORD

FINAL PAGE