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THE MEMPHIS DEPOT
TENNESSEE

ADMINISTRATIVE RECORD
COVER SHEET

AR File Number 569

File: 212.700.000.a
C.H. 569

569 1

BRAC Cleanup Team

Meeting Minutes

August 19, 1999

Attendees

Name	Organization	Phone
Stanley Tyler	RAB Member	(901) 942-0329
Shawn Phillips	Depot	(901) 544-0611
Jordan English	TDEC-DSF	(901) 368-7953
Turpin Ballard	EPA Region IV	(404) 562-8553
Brian Deeken	TDEC-DSF	(901) 368-7955
Jim Morrison	TDEC-DSF	(901) 368-7957
John DeBack	Depot	(901) 544-0622
Denise K. Cooper	Depot	(901) 544-0610
Jack Kallal	Depot	(901) 544-0614
Dorothy Richards	CEHNC	(256) 895-1463
Scott Bradley	CEHNC	(256) 895-1637
Chris King	CEHNC	(256) 895-1144
Kurt Braun	CESAM	(334) 690-3415
Neil Anderson	CESAM	(901) 686-6195
Earl Edris	Waterways Experiment Station	(601) 634-3378
Dave Richards	Waterways Experiment Station	(601) 634-2126
Dr. Dennis Focht	University of California, Riverside	(909) 787-3446
Greg Jenkins	Venture Capital	(256) 895-8580
David Ladd	USGS	(615) 837-4773
Greg Underberg	CH2M Hill	(423) 483-9032
Tom Beisel	CH2M Hill	(770) 604-9182
Jennifer Hall	Frontline	(888) 848-9898

Review of Previous Meeting Minutes

The BCT discussed, approved and signed the July meeting minutes.

Introduction of new TDEC Project Manager

Mr. Jordan English introduced Mr. Jim Morrison who will be TDEC's project manager for the Memphis Depot project. Mr. Brian Deeken will continue to be involved with initial document

reviews and fieldwork oversight. Mr. Morrison had worked on the Memphis Depot project in 1993, but has been working on the Naval Air Station Millington project since then. That project is winding down, so Mr. Morrison will rejoin the Memphis Depot project team.

Review of Project Status

Dunn Field Remedial Investigation

Mr. Tom Beisel reported that the analytical data had been received, validated and entered into the database. CH2M Hill was now writing the Dunn Field Remedial Investigation report. The Dunn Field risk assessment approach technical memorandum had been forwarded to TDEC and EPA for review and approval of the approach. Dr. Ted Simon of EPA had provided comments. Mr. Jordan English suggested CH2M Hill coordinate a conference call with Dr. Chen to discuss the approach as she had been out of town and had not provided him with comments to date. Mr. Greg Underberg will coordinate a conference call for August 26. Mr. Turpin Ballard and Mr. English will provide their written comments to CH2M Hill by August 25.

Dunn Field Chemical Warfare Materiel Removal Action

Ms. Dorothy Richards reported that the Site Safety Submission with all appropriate Depot, EPA and TDEC comments incorporated was scheduled to go up to the final reviewers on September 24. She indicated it usually took 8 to 12 weeks to move through the review process, but it could take longer. For community relations purposes, she anticipated the final approved document would be available for release to the public in late January 2000.

Mr. Shawn Phillips asked if evacuation procedures for the community had been incorporated into the Site Safety Submission. Ms. Richards was unsure, but Mr. Scott Bradley indicated community evacuation plans were not usually part of the Site Safety Submission. Mr. Bradley mentioned, and Mr. Ballard reiterated, that the worst case scenario developed for the submission indicated that the effects of a release would dissipate before reaching the Dunn Field fenceline. Mr. Phillips, Ms. Denise Cooper and Ms. Jennifer Hall interjected that even though the worst case scenario indicated a release would not reach the Dunn Field fenceline, the public would want and should be provided an evacuation plan as the community does not have a high level of trust in the government's scenarios. Ms. Cooper and Ms. Hall agreed to contact the Local Emergency Planning Agency by November 30 to request the agency's normal evacuation procedures and to determine appropriate information to provide the community on evacuation procedures during the CWM removal at Dunn Field.

Ms. Richards asked if the public comment period for the EE/CA was completed and if any comments had been received. Mr. Phillips responded that the comment period was over and that comments would be provided to the appropriate agencies for input. Ms. Cooper agreed to provide the comments via email to the appropriate agencies by August 27. Ms. Richards advised Mr. Phillips that Parsons had requested comments on the action memorandum, and Mr. Phillips agreed to provide comments by September 16.

Engineering Evaluation/Cost Analysis for the Old Paint Shop and Maintenance Area

Mr. Phillips reported that the public comment period began on May 17 and ended on July 16 after a 30-day extension. Twenty-nine comments were received from the public comment meeting and by mail. About 10 comments related directly to the EE/CA. The others were general in nature. EPA, TDEC and CH2M Hill provided responses to these public comments per Mr. Phillips' request. The final responsiveness summary will break the comments directly related to the EE/CA from the more general comments. Ms. Cooper and Mr. Phillips were working to complete the responsiveness summary and to provide it to EPA and TDEC by close of business August 23. Mr. Phillips wanted EPA and TDEC to approve the responses, so he can indicate in the responsiveness summary the organizations that provided input. Once EPA and TDEC concur with the responsiveness summary, Mr. Phillips will forward it up his command chain with the action memorandum for review and signature. The Commander of the Defense Distribution Depot Susquehanna Pennsylvania will sign the action memorandum. Mr. Phillips anticipated it would be signed by September 16.

Mr. Underberg indicated CH2M Hill was working some design issues in order to complete and submit the final EE/CA.

Dieldrin Bioremediation Pilot Study

Dr. Dennis Focht of the University of California, Riverside, and Mr. Greg Jenkins of Venture Capital provided an update of the dieldrin bioremediation pilot study. The purpose of the pilot study was to evaluate the effectiveness of several solutions designed to stimulate native bacteria to consume dieldrin. Two treatment solutions were found to work in the shake flask. When used on the plots of soil removed from the Golf Course, a dry application of the treatment watered in with distilled water worked best and was the least expensive method of application. Dieldrin concentrations in the Golf Course plots dropped 80 percent from the initial sample results.

According to Dr. Focht, the process of lowering dieldrin concentrations depended on the presence of living organisms in the soil and would take more than one growing season. The treatment process would not work during the winter months as the soil must be above a certain temperature for the bacteria to function properly. Mr. Jenkins indicated the treatment should be applied at the beginning of the growing season and then in the middle of the growing season. If applied more often, the treatment does not to work. Dr. Focht and Mr. Jenkins suggested the treatment be made part of the normal landscape management program. The cost to apply would not be prohibitive as the most successful treatment consisted of commercial fertilizer mixed with terpines (plant oil such as from pine trees).

Mr. Jenkins furthered explained that effluent gathered from the soil plots was sampled and indicated the dieldrin was not breaking down into other pesticides such as aldrin. Apparently, the dieldrin is breaking down into compounds normally found in humus or the atmosphere. Mr. Jenkins and Dr. Focht wanted to purchase dieldrin with radioactive isotope tracers to see where the dieldrin is going during the treatment process. This would be very expensive.

Mr. Ballard reiterated that the risk assessment indicated that there was no need to reduce levels on the Golf Course because it would be reused as a Golf Course, but that it may be a good idea to use the treatment to bring down overall risk levels. Mr. Phillips was glad to have bioremediation as a cleanup alternative as the Main Installation remedial investigation may show a need to reduce dieldrin levels at other areas of the Main Installation. Mr. Underberg was unsure how dieldrin affected the Main Installation risk assessment, but he did not recall it being a major influence on risk levels. Mr. Beisel indicated sample results from Dunn Field

showed dieldrin in the area near the former pistol range that has been proposed for recreational reuse as well as along the fenceline.

Mr. Tyler asked if the Golf Course and Main Installation recreational area was safe for children to play on. Mr. Ballard, Mr. Phillips and Mr. Underberg described the risk assessment process and the different risk scenarios put through the process to indicated the Golf Course and Main Installation recreational area was safe for children to play on.

Mr. Phillips asked Mr. Ballard about the requirement to do this. Mr. Ballard wants to ask headquarters if a feasibility study would be needed if institutional controls were included in an institutional control remediation proposal.

Additional Recovery/Monitoring Wells

Mr. Underberg provided an update on the monitoring well recently placed on Belz property to gather more data on the hydrogeological trough feature in the clay layer. The well hit a 70 foot thick clay layer then encountered silty sands, identified as the Cooke Mountain formation, before reaching cleaner sands identified as the Memphis Sands. Sampling of the groundwater was being performed. Mr. David Ladd of the U.S. Geologic Survey asked if the groundwater would be analyzed for tritium to determine the age of the water. Mr. Underberg indicated the groundwater would be analyzed for VOCs, tritium and cations. Mr. Phillips said that both Mr. Jack Carmichael and Mr. Ladd of USGS were present during the well installation and geological identification of formations encountered. Mr. English and Mr. Brian Deeken of TDEC were also present during the well installation.

Mr. Phillips informed the BCT that the access agreement for the additional monitoring wells west of Dunn Field had been signed by both parties. Mr. Phillips tasked Mr. Kurt Braun of the Corps of Engineers South Atlantic Division, Mobile, to proceed with installation of the additional monitoring wells and to coordinate with OHM Remediation Services and CH2M Hill. Mr. Braun indicated he had received the design from CH2M Hill for 4" wells to allow greater ease of bailing and insertion of transducers. Mr. Braun indicated OHM Remediation Services' subcontractor should install the offsite monitoring wells in approximately 2 to 3 weeks and that this would be OHM Remediation Services' last task order under their contract. The sampling requirements for these new monitoring wells will be the same as the "start up" sampling for the recovery wells. Mr. Braun will provide Mr. Phillips a schedule for installing these four off-site wells by August 27.

Mr. Braun indicated he had issued the task order to install the additional recovery wells slated for Dunn Field to OHM Remediation Services, but that he would issue the task order to install the discharge piping system and to perform operations and maintenance on all the wells to Sverdrup.

Mr. Dave Richards and Mr. Earl Edris of the Corps of Engineers Waterways Experiment Station presented an overview of the modeling effort to locate additional recovery wells for the Dunn Field Groundwater Interim Remedial Action south of the existing monitoring wells. The model boundary conditions were hard to define due to paleo features in the area, and the model used the most recently available data to plot groundwater flow. Groundwater tended to flow either northwest or southwest from a ridge feature perpendicular to Dunn Field. The model showed that the first seven wells were pulling in the hottest part of the plume.

The purpose of the current model was to determine the appropriate spacing and location for proposed recovery wells south of the existing wells by verifying CH2M Hill's analytical estimates of three wells spaced 160 feet apart. WES also modeled four wells 120 feet apart. The

model showed that three wells would allow the plume hot spot to move past the recovery wells, but that four wells worked very well to contain the plume hot spot.

The BCT concurred to install four additional recovery wells on Dunn Field south of the existing wells. The four additional wells will be spaced 120 feet apart and will be pumped at 5 gallons per minute. Mr. Braun will provide Mr. Phillips a schedule for installation of the additional recovery wells by September 16. Mr. Phillips will notify in writing the Memphis Public Works/Sanitary Sewer Division of the anticipated increase in flow due to the additional recovery wells.

Ms. Richards asked the BCT if they wanted WES to continue with modeling to determine if additional recovery wells may be required at northwestern end of Dunn Field to capture that portion of the plume. Ms. Richards will make the technical decision to have WES update the model day-to-day or to wait until data has been received from the additional monitoring and recovery wells.

Offsite Plume

Mr. Ballard voiced concerns that the current recovery well configuration on Dunn Field did not conform to the final Interim Remedial Action record of decision. He asked if the existing recovery wells with the additional four would capture what the IRA ROD intended. He continued that the IRA ROD indicated the recovery wells would be west of Dunn Field in order to capture contamination that had moved west of Dunn Field, but that the IRA ROD did indicate use of the observational approach to place the recovery wells. Since signing the IRA ROD, a decision was made to install the first seven wells, incorporate the data into the model and determine locations for the next phase of wells.

Mr. Ballard suggested that Mr. Phillips prepare a short Explanation of Significant Differences to document the modification to the recovery well design process. The ESD should document what the design process was when the ROD was signed, what caused the modification to the process and how the Depot intends to fulfill the intent of the IRA ROD. Mr. Phillips requested CH2M Hill assist him in preparing an ESD to the IRA ROD by September 30.

Mr. Tyler asked how far it was from the contamination plume to the drinking water. Mr. Underberg responded that there appeared to be about 70 feet of clay between the contamination and the drinking water. Mr. Ladd and Mr. English reminded Mr. Underberg that since there was no water on top of the clay as determined during installation of the Memphis Sands monitoring well, the water was going somewhere.

Mr. Underberg indicated he had recently worked with the University of Memphis Groundwater Institute on a model of the hydrogeological feature. Apparently, UoM had seen this type of feature before and determined it to be an erosional feature that could be an oxbow feature. UoM believed that there was a high point or weir funneling water to the southeast. Because of these erosional features, placing recovery wells offsite may be difficult.

Mr. English suggested that as installation proceeds on the additional monitoring and recovery wells that the focus for these erosional features will be located. He indicated that if the focus was discovered a monitoring well may be needed downgradient from the focus in the Memphis Sands. He also indicated that if an interconnect between the aquifers was located that monitoring of the Memphis Sands will probably show that contamination levels are diluted so as not to be a problem.

Mr. Phillips reminded the BCT that the recovery well system was only a stopgap measure. The sources of contamination buried at Dunn Field must be removed in order to stop the release of contaminants into the upper aquifer. Mr. Phillips asked Mr. Ballard if natural attenuation was selected as a remedy, would that constitute a fundamental change to the IRA ROD or would it be part of the final ROD. Mr. Ballard indicated it would be appropriate for the final ROD.

Mr. Ballard did not feel that the existing monitoring wells west of Dunn Field provided enough information to define the leading edge of the plume boundary. That information would be necessary in order to determine if natural attenuation was a viable alternative for the final ROD. Mr. Underberg explained where the monitoring wells were located that provided information on the plume boundaries. After Mr. Underberg's explanation, Mr. Ballard said that he felt we had a handle on the plume boundary.

BRAC Cleanup Plan

Ms. Cooper discussed the update of the BRAC Cleanup Plan and the need to update Chapter 6, Unresolved Technical Issues. Ms. Cooper requested Mr. Ballard, Mr. English and Mr. Phillips their input on Chapter 6 by August 30. Their input should include what technical issues they felt were unresolved and why they were unresolved

Ms. Cooper also requested concurrence from the BCT on the areas at Dunn Field proposed for early removal under the CWM Removal EE/CA. The BCT concurred that Parcels 36.16 and 36.29 change from an environmental condition of property Category 7 to a Category 6 as they were proposed for early removal.

Ms. Cooper informed the BCT that the 1997 Final BRAC Cleanup Plan had designated Parcels 36.17, 36.18 and 36.19 at Dunn Field as Chemical Warfare Management Sites, but that they were not included in the CWM removal EE/CA. The BCT concurred that the Chemical Warfare Management Plan notation for Parcels 36.18 and 36.19 be deleted from BRAC Cleanup Plan as Mr. Wilson Walters of the Corps of Engineers, Huntsville, had verified with the Corps of Engineers, St. Louis, that the report of chemical agent identification sets being buried with food supplies was unsubstantiated. The Corps St. Louis had prepared the Chemical Warfare Materiel Archives Search Report and had conducted the interviews where this information was obtained. The BCT requested Ms. Cooper and Mr. Steve Dunn, Corps of Engineers, Huntsville, determine why Parcel 36.17 was not included in the EE/CA.

Dunn Field Functional Units

Ms. Cooper and Mr. Underberg asked the BCT if Dunn Field should be divided into functional units similar to the Main Installation for risk assessment purposes. The BCT agreed that Dunn Field should not be divided into functional units on the map or in the verbiage, but that the risk assessment approach would identify exposure based on proposed reuse. The groundwater under Dunn Field would not become another functional unit either, but would be included in the discussion as a footprint of each different proposed reuse exposure scenario.

September 16, 1999

SHAWN PHILLIPS DATE
Memphis Depot Caretaker
BRAC Environmental Coordinator

9/16/99

TURPIN BALLARD DATE
Environmental Protection Agency
Federal Facilities Branch
Remedial Project Manager

9/16/99

JORDAN ENGLISH DATE
Tennessee Department of Environment and Conservation
Division of Superfund
BRAC Cleanup Team member

August Action Items	Responsibility	Start - Suspense Date	Completed Date
Notify Depot if able to move Memphis' CWM removal action ahead of Ogden. Response: Unable to change schedule.	Dorothy Richards/Steve Dunn	8/19/99 - 8/30/99	9/16/99
Provide letter from Steve Dunn with PMNSP's responses to TDEC questions.	Shawn Phillips	8/19/99 - 8/23/99	8/23/99
Coordinate phone conference with Dr. Chen re: Dunn Field risk assessment approach tech memo.	Greg Underberg	8/19/99 - 8/26/99	8/30/99
Provide written comments to CH2M Hill on Dunn Field risk assessment approach tech memo.	Turpin Ballard/Jordan English	8/19/99 - 8/25/99	8/30/99
Request LEMA provide existing evacuation plan that may be used at Depot.	Denise Cooper/Alma Moore	8/19/99 - 11/30/99	
Provide CWM Removal EE/CA public comments to appropriate players for assistance w/responses.	Denise Cooper	8/19/99 - 8/27/99	8/27/99
Provide Parsons with comments on CWM Removal Action Memorandum.	Shawn Phillips/Denise Cooper	8/19/99 - 9/16/99	
Provide EPA/TDEC final Parcel 35/28 EE/CA Responsiveness Summary for review.	Shawn Phillips/Denise Cooper	8/19/99 - 8/23/99	8/23/99
Provide DDSP/DDC/DLA Parcel 35/28 Responsiveness Summary for review. Request approval of Responsiveness Summary so Action Memo can be signed by 9/16/99	Shawn Phillips/Denise Cooper	8/19/99 - Pending	Anticipate signature by 9/17/88
Request clarification from Headquarters if a feasibility study would be needed if institutional controls are included in an IC remediation proposal.	Turpin Ballard	8/19/99 - 9/16/99	9/9/99

Response: A feasibility study will need to be developed in order to compare the costs of clean-up alternatives that allow unrestricted use, allowing the public something to review by way of comparisons. This will hold for any IC-only remedy.			
Send letter to Memphis Sanitary Sewer division regarding the anticipted additional flow from the additional monitoring wells.	Shawn Phillips	8/19/99 - Pending	
Prepare and provide to BCTan Explanation of Significant Difference for the Groundwater IRA ROD.	Shawn Phillips/Dorothy Richards/Greg Underberg	8/19/99 - 9/30/99	
Provide Depot installation schedule for four additional monitoring wells.	Kurt Braun	8/19/99 - Pending	
Provide Depot installation schedule for four additional recovery wells.	Kurt Braun	8/19/99 - Pending	
Provide Denise Cooper input for BCP Chapter 6 - Unresolved Technical Issues.	Shawn Phillips, Turpin Ballard, Jordan English	8/19/99 - 8/30/99	8/30/99
Confirm resolution of Dr. Byl's comments on Main Installation RI.	Dan Marion	8/19/99 - Pending	
Resolve transducer issue.	Kurt Braun/Turpin Ballard/David Ladd	8/19/99 - 9/1/99	9/1/99
Provide CH2M Hill David Ladd's address and request they send his copy of the draft final Main Installation RI directly to him.	Denise Cooper/Shawn Phillips	8/19/99 - 9/1/99	9/16/99
Coordinate with Steve Dunn to determine why Parcel 36.17 not included in CWM removal action.	Denise Cooper	8/19/99 - 8/30/99	8/24/99

Existing/Open Action Items	Responsibility	Start - Suspense Date	Completed Date
Prepare and submit to the BCT a QAPP addendum regarding the HTRW confirmatory sampling at the CWM/OE excavation.	Greg Underberg	7/17/99 - 11/99	
Prepare and submit to EPA and TDEC a letter creating a new parcel at Dunn Field for the City's Hayes Road expansion project.	Shawn Phillips	7/15/99 - 8/19/99	8/26/99
Reformat draft Basis for No Further Action document as a technical memo and provide to BCT.	Greg Underberg	7/15/99 - 9/16/99	9/16/99
Prepare and submit to EPA and TDEC a letter requesting concurrence on the No Further Action sites.	Shawn Phillips	7/15/99 - 9/22/99	
Finalize community relations survey/focus group report and provide to the Depot.	Terry Flynn	7/15/99 - 8/30/99	9/16/99
Provide cover letter to CH2M Hill submitting the draft final Main Installation RI to EPA and TDEC.	Shawn Phillips/Denise Cooper	7/15/99 - 9/13/99	9/16/99
Submit draft final Main Installation RI directly to BCT for 60-day review.	Greg Underberg	7/15/99 - 9/23/99	
Produce and submit revised IRP schedule to the BCT.	Shawn Phillips	7/15/99 - 8/19/99	8/27/99
Coordinate meeting with National Congress of Black Churches.	Alma Moore	7/15/99 - Pending	

In October 1999, have USGS prepare an information package.	Turpin Ballard	6/17/99 - 10/15/99	
Prepare Action Memorandum and "bridging" document for removal action at Family Housing.	Depot	3/18/99 - Pending	
Modify "comfort letter" regarding status of proposed no further action sites and provide to DRC.	Depot	When needed	9/15/99
Provide comments on draft EE/CA Removal of Hot Spot Areas, Main Installation.	Depot, EPA, TDEC	On hold pending RI	

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