

**Restoration Advisory Board (RAB) Meeting
Conference Center
U.S. Army Soldier Systems Center
April 1, 2004
Meeting Minutes**

I. Attendance

RAB Members Present

Joel McCassie, Co-Chair	Environmental, Safety, and Health Office (ESHO), U.S. Army Soldier Systems Center (SSC)
Robert Campbell	Massachusetts Department of Environmental Protection (MADEP)
Dr. Charles Czeisler	Community Member
James Fitzgerald	Community Member
Sidney Gantman	Community Member
Stephen Lubic	Representative Natick Board of Selectmen
John McHugh	Restoration Officer, U.S. Army SSC
Elizabeth McCoy	Employee Member, Natick Soldier Center
Kelly McQueeney	Community Member
A. Richard Miller	Community Member
Leo Pessin	Community Member
Dr. Harlee Strauss	Community Member
Dr. Kannan Vembu	Representative of Natick Board of Selectmen
Christine Williams	U.S. Environmental Protection Agency (EPA)

RAB Members Absent

Lisa M. Allen	Representative of Natick Board of Selectmen
Anthony Doheny	Community Member
Marco Kaltofen, Co-Chair	Community Member
Marilyn Lourandos	Community Member
James Straub	Department of Environmental Management (DEM), Lakes & Ponds

Others in Attendance

Michelle Bonanca	ESHO, SSC
James Connolly	ESHO, SSC
Anne Marie Desmarais	Environmental Insight
Stacey Greendlinger	US EPA
Nicholas Given	Recorder, Peg Peterson & Associates
Bryan McDonnell	Environmental Consultant, ICF Consulting
Dr. Willard Murray	Environmental Consultant, MACTEC
Kevin Palaia	Environmental Consultant, ICF Consulting
Jeff Pickett	Environmental Consultant, MACTEC
Harold Prebensen	ESHO, SSC
Stan Reed	Environmental Consultant, MACTEC
Rod Rustad	Environmental Consultant, MACTEC
Kathleen Thrun	Environmental Consultant, ICF Consulting

II. Handouts

1. Building 14 and Former Building 13 Site Investigation, April 1, 2004
2. Approach to Cleanup: Buildings 22 and 36 Feasibility Study - Soldier Systems Center, April 1, 2004
3. DRAFT Revised Proposed RAB Rule, January 2004.
4. Email response to DRAFT Revised RAB Rule, January 2004 from Lenny Siegel, Director for the Center for Public Environmental Oversight

III. Meeting Minutes

Mr. McCassie called the meeting to order at 7:17 pm. He then asked for a review of the minutes from the November 2003 meeting.

Mr. McCassie asked for changes to the minutes, and there were none.

The minutes were accepted without amendment.

General Comments

Mr. McCassie then asked for General Comments, and there were none.

Mr. McCassie introduced Kevin Palaia and Bryan McDonnell from ICF to present on the Building 14 and Former Building 13 Draft Site Investigation Report.

Building 14 and Former Building 13 Draft Site Investigation Report.

Mr. Palaia stated that they would review the history of each of the buildings and the results of the investigation and then introduced Mr. McDonnell as the Field Operations Leader during the field investigation.

Mr. McDonnell located Buildings 13 and 14 in the southwest corner of the T-25 area. He stated that Building 14 was built in 1954 and that it was used as a vehicle and equipment maintenance facility. He added that administrative, heavy equipment storage, vehicle refueling, insect/rodent control, metal parts and brush cleaning, silk screening, and rubber adhesives thinning were some of the other activities in and around the building.

Mr. McDonnell presented photographs of Building 14 looking north, showing administrative offices; a view of Building 14 looking west along the south side of the building showing the garage bays that are used for storage; and a view looking south towards Building 14 and indicated the storage space for equipment maintenance.

Mr. McDonnell then introduced Building 13, which is adjacent to Building 14. He stated that Building 13 was built in 1954 as an incinerator for classified paperwork documents and that the incinerator was closed in 1985. Records indicate the incinerator was in use once a week for four hours. The rest of the building was removed in 1990 leaving a concrete foundation behind. He added that other uses in the area included decontamination of pesticide mixing equipment and vehicle washing.

Dr. Vembu asked what kind of fuel was used.

Mr. McHugh stated it was natural gas.

Mr. McDonnell presented a photograph looking west at Building 14, with the former Building 13 foundation in front and a view of the former Building 13 incinerator stack. He added that the wooden stakes in the surrounding grounds indicated sampling location.

Mr. McDonnell showed an aerial map of the area. He located existing and former permanent monitoring wells, small-diameter wells, and soil borings near Buildings 13 and 14, which were installed as part of historical investigation activities.

Mr. Palaia added that some of these historical investigations went back to the late 1980s. He stated that a lot of work had been done in the area, but that no specific investigations had targeted these two buildings.

Mr. McDonnell stated that the investigation took place in March and April of 2003, during which they conducted background and historical research activities and a geophysical survey to identify underground utilities, clear locations for subsurface exploration, and identify other underground structures (e.g. sumps, dry wells, USTs). He stated that they installed 18 soil borings surrounding Buildings 13 and 14 and collected 30 subsurface soil samples and 16 ground water screening samples from the water table. He stated that they collected 18 surface soil samples in the area at 0 to 6 inches below ground surface, and 5 subsurface soil samples at 2 to 3.5 feet below ground surface. After the sampling, they conducted a location and elevation survey of all sampling locations.

Mr. McDonnell displayed an aerial map of the area and indicated the location of soil borings and surface soil samples. He noted that they primarily collected surface soil samples from the area around the incinerator, north around the existing gas pump, and along the west edge of the property to catch any possible runoff. The soil borings and subsurface soil samples were used to identify possible contaminant source areas. Borings were installed near the existing gas pump, to the southeast of Building 14 near the former UST, and at other points to investigate the down gradient area.

Mr. McDonnell stated that soil samples were submitted for a full-suite of analyses including VOCs, SVOCs, pesticides, PCBs, metals, VPH/EPH, TOC, and grain size. Ground water samples were collected for similar analyses, including VOCs, SVOCs, pesticides, PCBs, metals, and VPH/EPH.

Mr. McDonnell stated that the soil consisted of fine to medium sands overlying silty sands, and ground water depths were 15 to 30 feet bgs. He stated that shallow ground water flow direction is generally to the west towards Lake Cochituate.

Mr. Palaia then presented the analytical results of the SI, including the surface soil (0 to 6 inch bgs), shallow-subsurface soil (2 to 3.5 feet bgs), subsurface soil, and ground water samples.

Mr. Palaia stated that several PAHs were detected in the surface soils, and there were widespread exceedances of MCP S-1/GW-1 soil criteria. He stated that there were three pesticides detected above criteria: DDT, DDE, and dieldrin. He added that these exceedances were limited to only two samples. He stated that PCBs, VOCs, and metals were detected, but that they were below criteria.

Mr. Palaia presented a map indicating the locations of the 18 samples, and indicated locations

where exceedances occurred. He noted that all samples, with the exception of two, exceeded criteria. He added that Building 14 was used for vehicle maintenance and there were high levels of truck traffic going through this area. He mentioned that all surface soil samples were collected from unpaved surfaces, however some were collected near paved areas. He noted that they did not bore through asphalt in any of these instances.

Mr. Palaia stated that there were PAHs, pesticides, VOCs, metals, and VPH/EPHs detected at the shallow-subsurface soil (2 to 3.5 feet bgs) samples, but their concentrations were below criteria. He noted that PCBs were not detected in these samples. Mr. Palaia stated that there were slight MCP S-1/GW-1 criteria exceedances for beryllium at 2 locations.

Mr. Palaia stated that the elevated PAH concentrations detected in the surface soils did not appear in the deeper samples.

Mr. Miller asked if the presence of beryllium suggested any materials.

Mr. Palaia stated that beryllium was a metal that had historically been detected at the site and in background samples. He noted that it was naturally occurring to some degree. He did note that the levels were slightly above MADEP published background metal concentrations, which indicates that naturally occurring levels of beryllium were 0.4 parts per million.

Mr. Palaia stated that there were PAH and PCE exceedances of MCP S-1/GW-1 criteria at three soil borings to the southeast of Building 14. The depths of the samples with exceedances ranged from 4 to 12 feet bgs. Samples from beneath these depths did not have exceedances. Mr. Palaia noted that pesticides, PCBs, and metals were detected in the subsurface soil samples, but they were below criteria.

Dr. Strauss asked about the water table in regards to detections in the subsurface soil samples. She asked for clarification that there were no detections above or below the 4 to 12 foot range.

Mr. Palaia stated that they had generally taken two soil samples for each boring. The first sample was in the 4 to 8 foot range, and the second sample was in the 15 to 25 foot range. He noted that exceedances occurred more so in the shallower sample. He added that deeper samples generally did not have exceedances.

Dr. Strauss asked about the detections in the soil headspace readings.

Mr. McDonnell stated that there were no significant headspace hits except for at boring EB-190A.

Mr. Palaia identified the locations of the three borings with the PAH exceedances. He stated that initially, they intended to install EB-190A and EB-177A, but because of the headspace hit at EB-109A and visual and olfactory evidence of contamination at EB-190A, they installed additional borings at EB-191A and EB-192A to better delineate the contamination. He added that there is room for further delineation of the contamination and stated that this was one of their recommendations.

Mr. Palaia displayed photographs of the area where the borings had the exceedances. He stated that this area, based on historical drawings, contained a fueling station with an underground storage tank. He added that it was, therefore, not surprising that they found exceedances.

Mr. Palaia presented results on the ground water samples. He stated that they had taken screening

samples from temporary wells installed at each of the borings. There were exceedances at one boring (EB-181A) for the lighter weight PAHs (including naphthalene and 2-methylnaphthalene) and VPH/EPH. Mr. Palaia stated that VOCs, pesticides, and metals were frequently detected in ground water samples, but below MCP GW-1 and EPA MCLs. He added that no PCBs were detected in ground water.

Mr. Palaia indicated the location of EB-181A, which had PAHs and VPH exceedances for the ground water sample. He added that the ground water flow was generally to the west towards Lake Cochituate. Given the location of the observed subsurface soil PAH contamination and the expected ground water flow direction, it was possible that the ground water contamination was related to the contaminated subsurface soil.

Dr. Strauss asked what was contained in the underground storage tank.

Mr. McDonnell indicated that it was probably gasoline, but was not completely sure.

Mr. Palaia then presented the recommendations of the SI, which included: 1) installing additional soil borings south of Building 14 to further delineate the extent of subsurface soil PAH contamination, 2) prepare an Interim Remedial Action (IRA) Plan for possible subsurface/surface soil remediation activities, 3) pending the feasibility of the IRA, conduct a human health risk assessment (HHRA), and 4) further evaluate the PAHs in the ground water by installing and sampling a permanent monitoring well near EB-181A.

Dr. Strauss asked about the levels of naphthalene in ground water.

Mr. Palaia stated that he was unsure of the levels, but that information was provided in the draft report that the RAB members would be receiving.

Dr. Strauss asked if naphthalene was the only PAH found in the ground water.

Mr. Palaia stated that 2-methylnaphthalene and VPH/EPH were also found in the ground water.

Dr. Vembu asked about the three pesticides in two surface soil locations, and what their levels were.

Mr. Palaia stated that the dieldrin was fairly low at approximately 54 ppm with an MCP S-1/GW-1 criterion of 30 ppm. He added that the DDE was detected at 2.2 ppm, with a criterion of 2 ppm; and DDT was detected at 6.4 ppm with a criterion of 2 ppm.

Dr. Czeisler asked if the PAHs in the subsurface soil were of the greatest concern.

Mr. Palaia stated that they were a concern, however, they were not a major concern as far as leaching potential to ground water. He added that the area that they had found those detections was paved, thereby limiting infiltration.

Dr. Czeisler asked about the possibility of conducting a HHRA.

Mr. Palaia mentioned the possible exposure scenarios for a HHRA would include construction worker exposure. He stated that there is no residential exposure to the subsurface soils. He added that the subsurface soil contamination did not appear to be widespread.

Dr. Czeisler asked by what value the subsurface soil contamination exceeded S-1 criteria.

Mr. Palaia stated that it was generally in the range of 1 to 5 times the criteria.

Dr. Czeisler asked where this material came from.

Mr. Palaia stated that the former gas pump and underground storage tank were likely sources.

Mr. Pessin asked about the value of a permanent monitoring well.

Mr. Palaia stated that the value would be to monitor the potential for leaching from the contaminated soils in the area. In addition, it would confirm the suspected low levels of contamination found in the screening sample.

Mr. Vembu asked if that was the case, whether or not it would be better to go ahead with the monitoring rather than an IRA plan.

Mr. Palaia stated that they were looking at different remedial management alternatives. He added that they had not yet confirmed the extent of the contamination.

Mr. McHugh added that the RAB would be receiving the actual report in a couple of weeks.

Mr. McCassie thanked ICF for their report and introduced the next presentation by MACTEC Engineering and Consulting on Buildings 22 and 36.

Approach to Clean up Buildings 22 and 36 Feasibility Study Soldier Systems Center.

Mr. Pickett introduced Stan Reed, an engineer out of their Portland, Maine office. He introduced Dr. Willard Murray, who would be assisting Mr. Reed with remedial options.

Mr. Rustad began by providing the board with a brief overview of the area. He stated that Building 22 and 36 are located in the southwestern portion of SSC adjacent to the Boiler Plant. He stated that there were a number of geologic and hydrogeologic factors that influenced the ground water contaminant migration site. A major factor is the silt layer which occurs 40 feet below ground surface. He presented an illustration to the board, which indicated the significant thickness of the silt layer.

Mr. Rustad indicated that there was a depression in the top of the silt layer. He stated that another hydrogeologic factor was the radial ground water flow in this area. Mr. Rustad showed the board the ground water contour lines. He noted that there was a divide in the ground water flow.

Dr. Czeisler asked about the ground water flow.

Mr. Rustad stated that the depression was far below the water table. He stated that the height of the water table would affect the ground water flow. He explained that there were a number of fluctuations.

Dr. Czeisler asked how it was possible to have this shape in the water flow if it's sand in between the depression.

Mr. Rustad stated that the variability in recharge all ground water has a gradient to hit.

Mr. Reed noted that the water would run downhill.

Mr. Rustad stated that the radial flow would head in the direction of the pond.

Mr. Rustad presented a depiction of PCE concentrations in the ground water small diameter well sampling program performed during the remedial investigation. He noted the southeast direction of contaminant flow. He stated that beneath the central portion of Building 36, the contamination was located at depth. He stated that there was 25 to 30 feet of clean ground water before detecting contaminants. He stated that the southeast and northwest had higher degrees of contamination, which would then discharge into the lake.

Mr. Pessin asked about contamination levels in the southeast corner.

Mr. Rustad stated that the levels of contamination would rise as one approaches the southeastern corner. He noted the vapor diffusion sample results, which helped to locate the contamination direction.

Mr. Pessin asked about the level of contamination.

Mr. Rustad stated that a maximum of 400 to 500 parts per billion were found. He stated that the lower ends of contamination were at 5 parts per billion.

Mr. Pessin asked how far below the ground the contamination was found at Building 36.

Mr. Rustad stated that the distance underground was approximately 55 to 60 ft.

Mr. Rustad then introduced Mr. Reed.

Mr. Reed explained that the feasibility study would be the second step in a four-step process. He stated that the first step was the Remedial Investigation, which assesses the extent of the contamination. During the investigation, a risk assessment for exposure risks is performed. The second step is the Feasibility Study in which alternatives for cleaning up and controlling risk. The third step is the Proposed Plan, where the Army sets forth its plans publicly. After this comes the Record of Decision.

Mr. Reed began by summarizing the RI and the risk assessment. He stated from there, they move to a process in which various technologies are screened to identify which processes do and don't work. After this point, several steps are taken to identify regulations that may or may not apply. These are formed all into a statement identifying objectives.

Mr. Reed presented on the Detailed Analysis Criteria. These included: Overall Protection of Human Health and the Environment; Compliance with ARARs; Long-term Effectiveness; Reduction of Toxicity, Mobility, and Volume Through Treatment; Short-term Effectiveness; Implementability; Cost; State Acceptance (in Proposed Plan and ROD); and Community Acceptance (in Proposed Plan and ROD).

He added that the last two criteria were part of the formal process of the Proposed Plan. However, they receive comments and have discussions throughout the entire process.

Mr. Reed presented the Site Background. He stated that Buildings 22 and 36 are located in the

southwestern portion of SSC adjacent to the Boiler Plant. He stated that Building 22 was a former hazardous materials storage building. Building 36 was a Food Science Laboratory and administrative office space. There is no current or planned use of the site ground water. He stated that Springvale wells are approximately 3,400 feet to the northwest of SSC.

Mr. Reed showed a photo of Building 22. It is a small concrete building built in the 50's. Through 1988 it was used to store chemicals for oil plants and chemicals from other buildings.

Mr. Reed showed a photo of Building 36. He stated that the building was used as a Food Research Lab and for office space.

Mr. Reed then presented the Nature & Distribution of Contaminants. He stated that the primary contaminant is tetrachloroethene (PCE) in the ground water. He added that the water had low levels of metals and that surface water had a low concentration of volatiles. He stated that the sediment had a low level of volatiles and PAHs. He stated that the soil had some VOCs. He added that all contaminants were evaluated during the risk assessment.

He stated that a possible source was under the center of Building 36 and presented a display of PCE distribution in ground water. Mr. Rustad added that the source designation was based on their assumptions, which were made based on the weight of evidence.

Mr. Reed stated that the contamination spread to the northwest towards Lake Cochituate and then to the southeast to the cove near Building 22. He stated that the plume depiction is based on the small diameter well screening from the RI. .

Mr. Reed directed the board's attention to the two cross section lines A-A' and B-B'. These section lines show a sideways view of the subsurface, and helped to display the thickness of the plume, which was approximately 20 to 25 feet.

Mr. Reed presented another display of the PCE distribution and added that the depiction of contamination is discontinuous because there is a lack of data obtained from beneath the buildings.

Mr. Reed stated that cross section B-B' illustrated the general shape of the plume in that section.

Mr. Reed stated that in the RI, they observed extensive soil and vapor migration. He noted that contamination levels were within or below human health risk management guidelines. He stated that one scenario that posed risk was using ground water as potable drinking water. He stated that there was no risk to terrestrial or aquatic life.

Dr. Czeisler asked if there was a risk of migration.

Mr. Reed stated that this would be considered in the assessment of the risks. He stated that as a numerical exercise there was likely a potential risk. He stated that the ground water discharged directly into the lake.

Mr. Rustad stated that they had collected surface water samples that did discharge west of Building 36. He stated that those PCE levels and PCE-related breakdown products were very low and well below criteria.

Dr. Czeisler asked if it was possible for contaminants to migrate below the surface.

Mr. Rustad stated that they had not seen any contamination at the lake at depth or in the vicinity of the water table. He stated that at the cove, contaminants were detected 10 to 15 feet below the water table. He stated that it was discharging near the shore.

Mr. McHugh stated that they were monitoring the ground water on land north of this project near the warehouse.

Mr. Miller cited an instance, just north of Route 9 from here, where a drinking well was contaminated with PCE as a result of underground channeling, which allowed less resistance and contributed to contaminants traveling in a non-obvious direction. Mr. Miller asked if there was any certainty that such an occurrence was not happening with this plume.

Mr. Rustad stated that based on his evidence, he could speak with relative confidence that such a flow was not occurring here. He noted that the available data showed limitations both vertically and to the north. He stated that he did not believe such a flow was occurring.

Mr. Miller asked if there was a quantitative way to know.

Mr. Rustad stated that there were too many variables to say for sure.

Mr. Miller stated that he was concerned that the similarities in the areas might allow for some of this unexpected flow of contaminants.

Mr. Campbell stated that he was familiar with the site referenced by Mr. Miller, and that he was the Project Manager for that site. He stated that below that site was a glacial streambed. He added that it was a unique depositional environment with a different kind of sedimentation that was more permeable for migration. He stated that such a deposition was not occurring in this area.

Mr. Miller asked if this was measured adequately.

Mr. Rustad stated that the only similar unit was a layer of silt under Building 22. He stated that this layer was approximately 40 feet thick.

Mr. Pickett stated that he would double-check this in the report. He added that there was a well MW-93B located north of Buildings 36 and 16 that had no detects of PCE. He added that this well lies between Building 36 site and the Springvale Wells to the north.

Mr. Rustad stated that they had sampled into that silt layer with no detects turning up. He added that there was no evidence that would suggest that there was a preferential flow path beneath that layer.

Mr. Miller asked if there was enough evidence to suggest that such a flow was unlikely.

Mr. Rustad stated yes.

Mr. McHugh stated that the depictions showed wells in the silt layer that did not have detections.

Dr. Strauss asked about the depiction of the silt layer in Mr. Rustad's presentation.

Mr. Rustad indicated the top of silt layer.

Dr. Strauss asked about the location of the 25-foot thick layer of PCE and its proximity to the lake.

Mr. Reed stated that the plume starts under the middle of the building and that based on their sampling, the contamination is about 5 feet below the water table near the shoreline.

Dr. Strauss asked if the contaminants were falling underneath the lake.

Mr. Rustad stated that this was not occurring based on their observations. He stated that they had found clean ground water located beneath the contaminated ground water near the shoreline.

Dr. Strauss asked if the contaminants were coming up through the middle of the lake.

Mr. McHugh stated that it pinches up toward the surface of the lake at the shoreline.

Dr. Strauss asked if the thickness of the contaminated layer decreases.

Mr. Reed stated that the thickness stays the same, but it approaches the water level.

Dr. Strauss asked where the 20 feet of contaminated water was coming from.

Mr. Rustad stated that contaminated ground water was occurring at the water table and at some distance at approximately 20 feet of thickness discharging in the north shore area.

Dr. Strauss asked how deep the lake was in this area.

Mr. Rustad stated that the depth was approximately 8 feet.

Dr. Strauss stated that therefore some of the contaminated water is going into the lake.

Mr. Rustad stated that it was all going into the lake. He stated that according to the USGS, contaminated ground water discharge can be expected at a lateral distance from the shoreline equal to the depth below the top of the water table. He stated that in this case, one wouldn't expect discharge into the lake further than 15 or 20 feet out.

Dr. Czeisler asked if they were detecting the contaminants coming up into the lake.

Mr. Rustad stated yes.

Mr. Rustad stated that vapor diffusion is a means of measuring the amount of volatile contaminants that occur in the pore-space of the sediment. He stated that it was a good qualitative tool to show the extent of the contamination. He added that everything discharges in the near shore area.

Dr. Czeisler asked what happens when it enters the lake.

Mr. Rustad stated that it dissolves and dilutes into the lake water.

Mr. Reed stated that the contaminants become extremely diluted to a near non-detectable concentration. He added that degradation and volatilization would occur.

Mr. Fitzgerald asked if they could detect PCE in this method.

Mr. Rustad stated yes.

Dr. Czeisler asked if they could only detect it in the sediments, as opposed to the water.

Mr. Rustad stated that it was easier to detect in the sediment than the water because dilution is less of an issue with the sediments. He added that the measurement of the vapor diffusion was a qualitative measure and it was difficult to put an exact number on a vapor concentration.

Dr. Czeisler asked if they thought that the concentration was high enough in the water to affect the Springvale Wells.

Mr. Rustad stated that contamination would not occur in that location at any detectable concentration.

Mr. McHugh added that they had been conducting lake water samples through the duration of the CERCLA program, and the samples had returned no significant contamination.

Dr. Czeisler asked if they had been sampling the sediments.

Mr. Palaia stated that they had conducted these tests on the sediments.

Mr. Reed stated that some finds had occurred within 10 to 20 feet from the shore.

Dr. Czeisler asked how high the ground water concentrations were for the T-25 Area.

Mr. Rustad stated that the Building 22 and 36 ground water concentrations are lower, and the plume was smaller.

Mr. Miller asked how much smaller.

Mr. Rustad was not sure, but he said that it was approximately half the size.

Mr. Palaia agreed.

Dr. Strauss if he had an estimate of the mass.

Mr. Reed stated that his preliminary estimate was 30 or 40 gallons. He added that his estimate did not take into account those contaminants that had not already discharged into the lake.

Mr. Fitzgerald asked if bounding had taken place in the western shore.

Mr. Rustad stated that they had used the vapor diffusion to bound it. He stated that as part of the FS, they would be getting a better idea of the contaminant distribution.

Mr. Miller expressed concern over the amount of contaminants that had already leached into the lake. He expressed further concern as to the destination of contaminants, whether they dissipate or remain embedded in the sediment. He mentioned the milfoil problem in the pond and the possibility of lowering the water to address the problem. He stated that he was concerned about

the plume, which had already gotten into the sediment.

Mr. Rustad stated that the data from the RI was the one area where they investigated significant breakdown products. He stated that the ground water would encounter conditions, which were conducive to breakdown such as high organic contents. He stated that they did find breakdown products in the sediment.

Mr. Miller stated that it was his hope that these values would be quantified at a later date. He stated for now, they would suspect that breakdown products are minimized at the drinking water levels.

Dr. Strauss asked about exposure risks in this discharge area.

Mr. Miller stated that people used the area for water skiing and risk ingesting the water.

Mr. Fitzgerald indicated a location where people could swim.

Mr. Reed presented on the Remedial Action Objectives, based on risk assessments. The first objective is to prevent the ingestion of ground water containing PCE at concentrations exceeding 5 parts per billion. The second is to prevent, to the extent practicable, the off-site migration of ground water with PCE at concentrations exceeding 5 parts per billion. The third objective is to restore ground water quality such that PCE concentrations do not exceed 5 parts per billion.

Dr. Vembu referenced Mr. Reed's earlier estimation of 30 to 40 gallons and his suspicion of that value being halved. He asked about the time frame.

Mr. Reed stated that he did not know.

Mr. Rustad stated that the building was constructed in the 60's, but that the contamination could have predated the construction.

Mr. Reed stated that the concentrations now are the most important.

Mr. Miller asked if there was enough data to speak to plume movement.

Mr. Rustad stated that it was possible, but that there was no definitive data as of yet.

Mr. Reed presented on the Preliminary Identification of Approaches. He presented a number of options including No Action; Monitored Natural Action Attenuation, which consisted of continued monitoring of the area to evaluate risk; Ground water Extraction, which was a pump and treat system; and Containment. He added that the ground water extraction option would not reduce the contaminant levels for a very long time.

Dr. Czeisler stated that the pump and treat method took a very short time to reduce concentrations dramatically within the T-25 Area.

Mr. Reed stated that it did take a long time for all the PCE to dissolve in the soil at Building 22/36.

Dr. Czeisler stated that the pump and treat system at the T-25 Area has reduced contamination significantly since it began. He asked how long this took.

Mr. McHugh stated that it took approximately 5 years. He added that the soil was different in the T-25 Area, and that in the Building 22/36 area there was more silt, which would prevent contaminants from dispersing as quickly.

Mr. Campbell stated that it would take a short time to get a reduction in concentration, but to reduce the levels of contaminants to the preferred level would take a significant amount of time.

Mr. Reed stated that the next alternatives were the Enhanced In-situ Biodegradation, in which control over ground water conditions allows for greater biodegradation; a Permeable Reactive Barrier, which involves injecting iron particles into the sand to form a barrier that water could float through. He added that iron could help to de-chlorinate PCE. The final alternative is Ground water Extraction plus Source Area Mass Removal. He stated that this would involve combining the degradation and speed up the process. He added that all these alternatives would be detailed at a later date.

Mr. Fitzgerald asked if the selected alternative was the Monitored Natural Attenuation.

Mr. McHugh explained that they had just completed the RI, which is a conceptual presentation. He added that the data would need to be analyzed to determine the next step.

Ms. Williams asked when they would move to the next proposed plan stage.

Mr. McHugh stated that it would probably be in the next calendar year.

Dr. Czeisler asked if there would be an engineering difficulty in regards to the location, given the location of the existing treatment system.

Mr. McHugh stated that they could run the pumps down to the other facility. He added that the only restriction would be the underlying silty material. He stated that he would prefer to use the existing facility.

Dr. Vembu asked about the time frame to meet the remedial action objectives.

Mr. Reed stated that the least expensive way is to do this would be as quickly as possible. He stated that the cost of monitored natural attenuation is significant, when taking sampling into account. He noted that sometimes a more aggressive approach is more cost effective than a passive one.

Dr. Vembu asked if they intended to set forth goals to help decide up on a remedial approach.

Mr. Reed stated that they were still in the process of establishing these goals.

Mr. Rustad stated that this presentation was a conceptual idea of what they were going to be looking at.

Dr. Strauss asked if the bio degradation was aerobic or anaerobic.

Mr. Rustad stated that it was anaerobic.

Dr. Strauss asked if they had seen vinyl chloride.

Mr. Rustad stated that they had not seen any.

Mr. Reed stated that they had assumed a portion of the aquifer was generally aerobic. He stated that there was not much degradation going on.

Mr. McHugh stated that an organic source would help with the bio degradation.

Mr. Miller asked if MACTEC's presentation included the three-pond chain of lakes.

Mr. Rustad stated that it did not.

Mr. Fitzgerald thanked MACTEC for their presentation and introduced Mr. McHugh to present on the Department of Defense's notice to RAB members.

Draft Revised Proposed RAB Rule

Mr. McHugh stated that the Department of Defense, at secretary level, had issued a rule detailing the operation of RABs. He directed the board's attention to the bottom of the cover. He noted that the DOD was soliciting comments electronically to Patricia Ferree. He added that it had not yet been put into federal register for comment. Mr. McHugh stated that they were proposing operational requirements.

Mr. McHugh directed the board's attention to pages 13, 14, and 15, which discussed RAB operating requirements.

He noted on page 14, co-chair length of service as an example of regulations put into the proposed rule.

Mr. McHugh noted page 15, which discussed the adjournment of RABs. He explained that he wanted to present this to the board for discussion.

Ms. Williams stated that she was attending another RAB meeting for the Watertown Arsenal. She had photocopied an email from Mr. Lenny Siegel, which contained 11 comments to the DOD. Ms. Williams distributed copies to the board. The Watertown RAB had voted to forward and endorse Mr. Siegel's comments. She stated that his comments seemed reasonable.

Mr. Miller stated that he believed that the DOD's Rule had fallen short. Mr. Miller stated that, at several national RAB meetings he has attended across the country, a major concern of the RABs was assuring that they continue to function after restoration has taken place by transformation into Community Advisory Boards (CABs) to oversee facilities and new operations that are going on. He suggested that the 60-day grace period to submit comments would expire if the board were only going to meet every 90 days. He suggested that they meet to discuss comments before the next RAB meeting in June.

Mr. McHugh stated that the next meeting was scheduled for the 3rd of June.

Mr. Miller asked if this would give them the 60 days.

Mr. McHugh stated that members should go ahead and submit individual comments.

Mr. Miller stated that he would like the opportunity to think and act together as a board.

Mr. Czeisler asked if there was a meeting on May 6th.

Mr. McHugh stated that he would not call a meeting unless there was material to review.

Mr. Miller stated that he would prefer to have a meeting in May if that is required to leave room for group action.

Dr. Czeisler suggested that Mr. Siegel's email was reasonable and moved to vote to endorse those comments.

Dr. Strauss seconded that motion.

Mr. Fitzgerald asked if Watertown had endorsed the Mr. Siegel's comments.

Ms. Williams stated that they had endorsed those comments.

Mr. Miller stated that he would like to vote to endorse the comments.

Mr. McHugh stated that he would send the letter to Mr. Kaltofen.

Mr. Campbell stated that this was designed to encourage citizen comment.

Mr. Fitzgerald asked if they would vote. He stated that he preferred sending in their own individual comments, then submitting their own group comments, instead of endorsing and sending in comments that had already been sent in by the Watertown RAB.

Dr. Vembu stated that he did not believe that endorsing Mr. Siegel's comments would preclude them from submitting their own comments.

Mr. Miller stated that Mr. Siegel has been an excellent representative for all RABs. He stated that he would be comfortable adopting Mr. Siegel's comments now, in addition to generating further comments from the board.

Mr. Fitzgerald asked who would submit the comments.

Mr. McHugh stated that he would send the letter to Mr. Kaltofen, because the comments should come from him.

Dr. Czeisler called for a vote.

Mr. Fitzgerald asked for a show of hands, RAB members who would like to endorse Mr. Siegel's comments.

The vote was carried 5 to 2.

The Natick RAB voted to endorse Mr. Siegel's comments to the DOD regarding the RAB rule.

Mr. Fitzgerald then asked for general comments.

Public Comment Period

Mr. McHugh stated that the Final Tier III ERA Report for the sediments at the outfalls was completed and copies were available. He stated that the Final Letter Report of the new monitoring wells drilled off the facility was also available.

Mr. Fitzgerald asked for comments from the public.

Mr. Miller wanted to update the board on other actions in South Pond regarding the Eurasian Water Milfoil and other invasive weeds that had been spreading rapidly. He stated that he and Dr. Czeisler had attended meetings regarding this.

Mr. Miller stated that 2 years ago, in May or June 2002, Mass. DEM discovered an extensive new growth of Eurasian Water Milfoil in Pegan Cove. He stated that the first planned action was to quickly install a net across the shallow mouth of Pegan Cove (south from the point of SSC) to quarantine this invasive aquatic plant, to keep it from spreading. However, he stated that that net never happened, and a waterski slalom course remained in Pegan Cove for the entire summer. After much more of the South Pond and some of the Middle Pond became infested through the summer, the first nets were installed on September 16th of that year - between South and Middle Ponds, and between Middle and North Ponds.

Mr. Miller stated that a study was to be expedited to recommend a management plan, but the consultant (Aquatic Control Technology) was not hired until late spring 2003. By then, the consultant company proposed administering an early chemical treatment itself, while developing a more complete plan. He stated that there was a concern regarding the nearby drinking wells. He stated that Mass. DEM (now DCR) and ACT had met with the Natick Conservation Commission and the Natick Board of Health, resulting in a compromise including initial chemical treatment in some areas, hand pulling, and benthic matting. He noted that a series of appeals had prevented the chemical treatment from taking place and the milfoil continued to spread.

Mr. Miller stated that this opens up a possible opportunity for this RAB to discuss alternate long-term plans for treatment, including a major drawdown of South Pond. He stated that the attractive aspect of the drawdown is that if it is conducted for a 2-week period in freezing temperatures, it may eradicate the infestation. Other techniques manage but do not eliminate milfoil, so must be long-term and less effective.

Mr. Miller said that the consultant conducting this treatment stated that the drawdown would be too expensive (as well as raising other significant questions). He noted that the consultant had been ordered to re-evaluate the costs and other aspects over the long term, rather than only comparing drawdown to one or two rounds of chemical treatment.

Mr. Miller stated that if a drawdown was conducted, the contaminated lake-bottom sediments from the facility could not be ignored. Mr. Miller stated that he felt now was the time to discuss these issues, which might offer benefits as well as concerns.

Mr. Miller proposed that this is becoming a very important issue for the RAB to consider soon. He stated that the rate at which the State is moving, they would have continuing and conflicting theories.

Dr. Vembu believed that Wayland had done some chemical work similar to this effort.

Mr. Miller stated that Wayland Town Beach operates on a permit from the state park. He stated that it had independently done chemical treatment. He noted that this was downstream from South Pond. He stated that the Wayland Town Beach was a different issue because the water was used primarily for recreational use, and therefore it was not hindered by the possibility of contaminating drinking water.

Mr. Miller asked the board if there were any questions.

Mr. McHugh asked what kind of drawdown might be conducted.

Mr. Miller stated that they would draw down the approximately 8-10 feet of water depth to which milfoil can establish in Lake Cochituate. Its growth is limited by light penetration.

Dr. Czeisler stated that the milfoil grows between 8 and 15 feet depths.

(In fact it can grow over 25 feet, but in very clear lakes.)

Mr. Miller stated that natural barriers exist between the lakes that are less than 10 feet deep.

Mr. McHugh asked how far down the recent repairs at Cochituate Dam dropped the water level.

Mr. Miller stated that that was significant, but that it was not as deep as 10 feet. He stated that even during summer droughts, powerboats have a difficult time navigating through Middle Pond to the connector pond. He stated that a significant drawdown would require siphons. He stated that this was not cheap, although it would be cheaper than doing chemical treatment over 50 years.

Mr. Miller stated that another question would be how the drawdown would affect the Natick Labs study.

Dr. Czeisler asked whether the Labs would allow that to happen. He stated that the question would be whether or not that would pose a problem.

Dr. Strauss stated that this would be a huge opportunity to address the sediment.

Mr. Miller stated that this could be a desirable alternative that normally would be prohibitive.

Mr. Fitzgerald asked for other questions or comments.

Mr. McHugh mentioned that the next RAB meeting would be on June 3rd.

The meeting was adjourned at 9:22 pm.

Action Items

None.