

**Restoration Advisory Board (RAB) Meeting
Recreation Center
Natick, Massachusetts
May 19, 2009
FINAL Meeting Minutes**

I. Attendance

RAB Members Present:

Robert Campbell	MADEP
Christine Williams	U.S. Environmental Protection Agency (EPA)
Steven Lubic	Board of Selectmen Representative
Marco Kaltofen	Co-Chair, Community Member
Dr. Kannan Vembu	Board of Selectmen Representative
Joel McCassie	Installation Co-Chair, U.S. Army Natick Soldier Systems Center (NSSC)
Elizabeth McCoy	Employee Member U.S. Army Natick Soldier Systems Center (NSSC)
John McHugh	Chief of Environmental & Health Office, U.S. Army Garrison Natick
A. Richard Miller	Community Member
James Connolly	Restoration Officer U.S. Army Garrison Natick

RAB Members Absent:

James Fitzgerald	Community Member
LTC(R) Sid Gantman	Community Member
Neil Osgood Jr.	Community Member
Jim Straub	Massachusetts Department of Conservation and Recreation
Dr. Harlee Strauss	Community Member
Dr. Charles Czeisler	Community Member, Lakewood Association

Others in Attendance:

Robert Tess	ECC
Kevin Palaia	ICF International
Carole Berkowitz	Chair Protect our Water Resources
Debi Heims	H&S Environmental
Stacey Lee	H&S Environmental
Amy Rosenstein	ICF International
Kyle McGovern	U.S. Army Garrison Natick
Stacy Greendlinger	U.S. EPA
Willard Murray	ECC
Debra MacDonald	ECC

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II. Handouts

1. Agenda
2. Final Meeting Minutes from April 17, 2008
3. Draft Meeting Minutes from June 24, 2008
4. Proposed Plan for Sediment at the US Army Natick Soldier Systems Center
5. Army Soldier System Center Natick Groundwater Remediation Update
6. Environmental Newsletter, Status of Sediment and Fish Studies at Natick Soldier Systems Center, May 2009

III. Meeting Minutes

Mr. Joel McCassie called the meeting to order at 7:10 pm asked if there were any comments, changes, or revisions to the June 24, 2008 Meeting Minutes.

Mr. Richard Miller questioned his statement in the April 17, 2008 Meeting Minutes. He said that it should say State Park Headquarters instead of State Clerk Headquarters and commented that statement may be out of context. He also added that both on page 7 and page 9, it should say Pegan, not Pagan Cove.

Mr. Marco Kaltofen asked to approve the minutes and it was accepted.

Mr. McCassie asked if there were general comments and there were no general comments.

IV. Proposed Plan for Sediment at the U.S. Army Natick Soldier System Center (SCC)

Mr. Kevin Palaia began discussion of the Proposed Plan for Sediment, which was intended to give an advanced viewing for the May 21, 2009 General Public Meeting. He stated that the purpose of the public hearing was to present the Proposed Plan for Sediment at the U.S. Natick Soldier System Center (NSSC) shoreline. The plan would communicate the Army's preferred alternative for cleanup of the contaminated sediment. It would summarize the site description, history, studies and potential risk as well as the remedial objectives, cleanup goals, and the rationale for the preferred alternatives. He added that the Proposed Plan will request the public's comments which would be considered during the decision making process. He added that the next step is the Record of Decision (ROD) which would present the final remedy selection with a Responsiveness Summary which is the written response to the public's comments.

Mr. Palaia reviewed the CERCLA/Superfund process which is the federal government's program to clean up the nation's hazardous waste sites. He discussed the major steps in the CERCLA process: Discovery, Site Investigation, Remedial Investigation/Feasibility Study, Proposed Plan, Record of Decision, Remedy Implementation, and Site Closeout. He continued stating that the U.S. Army Natick SSC is a superfund

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site which was listed on the National Priorities List in 1994. He presented a map of the Natick Lab and showed where the various media sampling locations have occurred over the years. He commented that the focus of this discussion was specifically for the sediment CERCLA Process and the Proposed Plan.

Mr. Palaia reviewed the site history of the property. He commented that prior to the 1950's the SSC property was owned by the Town of Natick. The property was used as a gravel pit filled with soil and construction debris. Since the 1950's to present, the U.S. Army has owned the property and used it for a number of research operations including outdoor storage of bulk waste and drums of petroleum, solvents, and pesticides. In 1989, the drum storage was moved indoors. He added that other uses of the property were warehouse operations, shipping and receiving, laboratory research, clothing and textile research, drop testing, waste incineration, and garage operations.

Mr. Palaia went on to discuss the shoreline sediment. He stated that the focus area is the South Pond of Lake Cochituate adjacent to Pegan Cove. He stated that the lake is managed by the Massachusetts Department of Conservation and Recreation (DCR). He added that Lake Cochituate is used for recreational boating, fishing and swimming; however, the shoreline at SSC is fenced off and access to the facility is restricted. He noted that storm water drains currently and historically drained into Lake Cochituate. He explained that in the 1990's, the storm water drains were outfitted with oil water separators. He added that in the mid-1980's there was a PCB transformer release which is what is believed to be the cause of the PCB sediment contamination in Lake Cochituate near the Main Stormwater Outfall. He continued that the release was cleaned up in the soils at the transformer location and there are currently no known SSC sources of PCBs to the lake.

Sediment Investigations:

Mr. Palaia stated that from 1998-2004, there were Remedial Investigations (RI) completed at numerous SSC outfalls and 11 non-SSC locations across Lake Cochituate (South, Middle, North and Fisk Ponds). He commented that these investigations involved collecting hundreds of sediment and surface water samples as well as fish tissue and fresh water muscle samples. He continued that from 2001-2004, there were human health and ecological risk assessments conducted. In 2005, there was an angler survey conducted across the entire Lake Cochituate system to estimate fish ingestion rates. In 2007, there was an additional sediment and fish sampling and a revised human health risk assessment to obtain a larger data set to support the risk assessment efforts targeted in the Pegan Cove area and stated that the prior human health risk assessment was revised. He said that these prior studies lead to the 2009 feasibility study which was completed to evaluate various sediment cleanup alternatives.

Mr. Palaia presented pictures of sediment sampling on the lake using a ponar dredge sampler. He stated that over the past ten years, more than 200 sediment samples and several hundred fish samples were collected from the lake and analyzed. He added that PCBs, pesticides, metals and petroleum compounds were found in both the sediment samples and fish samples from the lake. He added that PCBs were the contaminant that drove the human health risk assessment. It was noted that that there were other possible non-SSC contaminants sources to the lake.

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Dr. Vembu asked if Figure 4 of the Proposed Plan (the schematic of Ecological Food Chain at Lake Cochituate) could be added to this PowerPoint presentation.

Mr. Palaia agreed and continued to describe the concentration of PCBs at the lake. He stated that PCB concentration was up to about 8 to 9 parts per million (ppm) at one location. He commented that the average across the cove was above 1 ppm. He added that there were also elevated amounts of PCBs also detected at Fisk and Middle Ponds.

Mr. Palaia stated that the Army performed risk assessments following U.S. Environmental Protection Agency guidance. The results were stated for individuals swimming or wading in the lake near the SSC outfalls, there were no unacceptable health risks identified. These results were confirmed in an independent health assessment conducted by the US Agency of Toxic Substance and Disease Registry.

Mr. Palaia added that the Army also looked at individuals eating legal-sized (> 12 inches) native fish. The results demonstrated that the risks did exceed US EPA's acceptable range for eating native fish caught from the SSC shoreline within Pegan Cove. He noted that risks also exceeded US EPA's acceptable range for eating native fish at non-SSC locations on South Pond and Fisk Pond.

Mr. Palaia stated that in 1996 Massachusetts Department of Public Health posted a health advisory to restrict the consumption of fish from Lake Cochituate, due to the PCBs in the fish samples. This advisory specifically states that children under the age of twelve, pregnant women, women of childbearing age who may become pregnant, and nursing mothers should not eat any fish caught from Lake Cochituate. It also stated that the general public should not consume any American Eels from Lake Cochituate. He said that Ecological risk assessments were also performed to evaluate risks to sediment dwelling organisms, fish, birds, and mammals. He commented that surface water and sediment ecological risks were assessed by comparing detected concentrations of contaminants to ecological criteria. There were additional fish and sediment sampling, food chain modeling, and comparisons to risks at other locations in South Pond. These studies concluded there was a minimal potential for ecological risks associated with the sediments.

Mr. Miller commented that he was concerned because he believed that there was an obstruction to the environmental cleanup of the toxic sediment during critical years due to the milfoil issue and that the problems now because it was not attacked early on. He also commented that we should be addressing this issue rather than avoiding it.

Mr. Kaltofen questioned if the EPA had information on addressing this and if there exists some kind of a checklist for this process.

Mr. Williams commented that the sediments were evaluated under the EPA guidance and it was concluded that the sediments were non toxic to boating, swimming, wading or to environmental receptors.

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Mr. Miller commented that they were told that they should not do a removal because they wanted to avoid a disturbance in the area.

Ms. Williams commented that she was not involved in that decision.

Mr. Miller stated that he believed that everyone at this table had been in discussions about not putting a floating circulator near this area. He continued that it seems pretty clear that this was an obstruction to this particular cleanup which has turned out to be a very major cleanup.

Mr. Kaltofen commented that he hears what Mr. Miller is saying as well as Mr. Palaia and Ms. Williams. He added that the procedure followed EPA's guidance and that maybe this was not a priority or maybe it needs to be updated by the EPA, but there currently is no guidance on how to address the potential damage that mechanical root harvesting could cause.

Mr Miller commented that the damage was done because a window of opportunity was missed and that there is still is an obstruction to the cleanup because we cannot pull roots and disturb sediment.

Mr. Palaia commented that the original concern was physically pulling weeds from the contaminated areas could cause spreading of the contamination. They knew they had a problem but didn't want to make the problem worse by re-distributing the contamination.

Mr. Miller commented that because the milfoil wasn't addressed, it created an environmental damage of a different nature and that the fourteen acres of milfoil exists that was originally and primarily identified in Pegan Cove in 2002 and has now spread to the rest of the lake.

Mr. Kaltofen commented that this brings up an interesting technical problem and that according to the Proposed Plan (he commented that he was jumping ahead) he knew that this would be addressed. He wondered if this situation was made more complex with the presence and the invasion of the milfoil. He asked if it was still there today.

Mr. Miller responded affirmatively.

Mr. Kaltofen asked if the double silt curtain would actually prevent the spreading of milfoil.

Mr. Palaia commented that he was planning to address this and added as dredging operations occur they probably would be dredging milfoil within the proposed dredging areas. He continued that part of the dewatering procedure would be the removal of debris or vegetation which is not conducive to the type of dewatering technology to be used.

Mr. Kaltofen asked if Mr. Miller was talking about areas outside of Pegan Cove.

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Mr. Miller said that at that time that they had the opportunity to do a clearing it was only in Pegan Cove and now other areas are infested including any part of South Pond, a large part of Middle Pond, and a smaller part of North Pond. He added that the cost of cleaning up or removing it now would be very expensive and that the window of opportunity was missed. He added that the reason this situation is upon us is that we couldn't get in there and pull that fourteen acres when we had the chance.

Mr. McHugh asked if it was a nine month period between when Mr. Miller first found the milfoil and the first action, when he stated this was an issue. He asked if he ever made a complaint.

Mr. Miller responded saying it was more like three months. He added that he took his first actions in mid-September the year when he discovered it and then we went through the summer season. He continued that the impact of leaving the toxic sediment has been a very big impact and the corrections for that are subject to a proper debate.

Mr. Kaltofen commented that future activities and the expertise of milfoil removal processes may or may not involve the Army but rather the EPA, who put together numbers on sediment suspension outside of Pegan Cove. He added that those people are the people we should be talking too.

Mr. Miller stated that there has been all kinds of talks and that even had some experiments, but the bottom line is that we are looking at a one to two million dollars of continuing damage that we are trying to get under some kind of control and it came from Pegan Cove with the sediment being the obstacle. It effects what we are talking about here and it effects the presentation.

Mr. McHugh said that Mr. Miller was incorrect by stating that by saying that the Army is the cause. He added that there are multiple causes, not just the Army.

Mr. Miller said that he agreed, but that there was damage including nutrient loading damage that the Army put there.

Mr. McHugh added that there were multiple causes and this is just your opinion.

Mr. Miller added that this was many people's opinion.

Mr. Palaia continued with the presentation discussing the sediment cleanup goals. He added that the Army, the U.S. EPA, and the Massachusetts DEP selected a sediment clean up goal of an average of 1 part per million (ppm) across Pegan Cove. He added that this clean up goal is protective of humans, it is similar to existing sediment PCB concentrations at the up gradient non-SSC impacted Fisk Pond location, and it is consistent with the goals selected at other PCB sites in New England.

Mr. Kaltofen asked for the calculation and references for the 1 ppm.

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Mr. Palaia commented that the information was in the Feasibility Study Report and that there were a couple of different approaches used to come up to with that calculation.

Dr. Vembu asked if there will be an explanation of what the average really means.

Mr. Palaia responded affirmatively.

Mr. Palaia continued that the next step of the process is the feasibility study. He explained that the feasibility study is where the Army screens, evaluates, and performs a detailed analysis of different alternatives for obtaining the cleanup goal and then he explained the nine cleanup alternatives:

Nine Cleanup Alternatives for the Proposed Plan for Sediment:

1. No Action –Required by CERCLA
2. Limited Action/Institutional Controls
3. Institutional Controls/Environmental Monitoring
4. Clay Capping/Monitoring/Institutional Controls
5. Composite Capping/Monitoring/Institutional Controls
6. Mechanical Dry Dredging/Sediment Stabilization/ Off-Site Disposal/Institutional Controls
7. Hydraulic Dredging/Geotextile Tube Dewatering/Off-Site Disposal/Institutional Controls
8. Hot Spot Hydraulic Dredging/Geotextile Tube Dewatering/Off-Site Disposal/Backfilling
9. Hydraulic Dredging/Mechanical Dewatering/Off-Site Disposal/Institutional Controls

Mr. Palaia said that these alternatives were all evaluated against 9 different CERCLA criteria:

1. Overall Protection of Human Health and the Environment
2. Compliance with ARARs
3. Long-Term Effectiveness and permanence
4. Reduction of Toxicity , Mobility or volume
5. Short term effectiveness
6. Implementability
7. Cost
8. State acceptance
9. Community acceptance

He continued that through that detailed analysis and evaluation, the Army with support from the EPA and Massachusetts DEP, proposed Alternative 8 – Hot Spot Dredging. He added that this would include a pre-cleanup survey (depth, shape, bottom, baseline samples of surface water and sediment) and site control measures including signage prohibiting boating/fishing from and near the SSC shoreline posted prior and during remedial action. Double silt curtains would be installed around each area to extend from the top of the water surface to the lake bottom to ensure contaminants will not be transported to other areas of the lake. Hot-spot hydraulic dredging would be conducted by a boat-mounted system. Mr. Palaia showed and described pictures of dredging and silt curtains. He explained that the depth of dredging would range from 6-12 inches. He added that once sediment was transported to the dewatering area it would be pre-screened

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for debris/rocks/vegetation; the sediment would then be pumped into geotextile tubes which the water would permeated through.

Mr. Campbell asked what the mesh size of the geotextile tube would be and Mr. Palaia commented that it is undetermined at this time. He added that this would require a treatability or pilot study to determine the best mesh size to allow for adequate filtering.

Mr. Miller asked to confirm if it would be a mechanical separation of particles from water. Mr. Palaia responded affirmatively. Mr. Miller asked what percentage of the toxics could pass through. Mr. Palaia commented that contaminants are adsorbed to the particulates, so that the contaminants should be contained in the geotextile tube. Any of the water and materials that do pass through the fabrics would be collected, tested, and treated (for example with a bag filter and/or with activated carbon filtration) before the water would be tested to ensure it meets discharge criteria and discharged back to the lake.

Mr. Miller commented that this was important to explain and that this method might not catch all the contaminants.

Mr. Palaia continued that once the sediment is de-watered, the sediment is removed from the bag filters then it is loaded on to trucks and transported to a licensed disposal or treatment facility. Any disposal and treatment will be handled in accordance with all Federal and State regulations including Toxic Substance Control Act (TSCA) which handles the transportation, storage, and disposal of PCB contaminated materials.

Mr. Palaia continued that the depths of dredging would vary depending on location in the lake leaving a small void which would be backfilled with clean fill. He added that this was an extra step that the Army felt necessary to ensure if there were any residual PCBs left in the area that it would be isolated.

Mr. Kaltofen asked what type of backfill would be used and Mr. Palaia responded that it will be silt/sand similar to what is currently there now. He added that it won't have clay or organic materials in it.

Mr. Kaltofen asked if it would compress the current sediment and Mr. Palaia commented that they haven't done that test yet but would be looking at it. He continued that the current thickness of the sediment in the Pegan Cover area is about one to two feet and then under the sediment is a layer of dense peat.

Mr. Kaltofen asked what the estimated disposal backfill volume might be and Mr. Palaia commented that he did not have that information handy but it was addressed in the feasibility study under Alternative 8.

Mr. Palaia continued that the next step would be site restoration which includes removal of the silt curtains, breaking down of the dewatering area and provide any bank stabilization or restoration that might be needed. He added that there would also be cleanup monitoring in which water would be tested

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continuously to ensure it met appropriate criteria before being discharged back into the lake. In addition, monitoring of the lake water outside the hot spot area would occur to ensure that none of the sediments from within the hot spot area migrated outside the silt curtain.

Mr. McHugh commented they have used this double silt curtain in the past which has worked, thus one of the reasons for choosing it again.

Mr. Palaia added that they plan to monitor air for dust but they don't expect a problem due to the nature of the sediment materials. He added that they will also be monitoring for odors during the dredging and if it becomes an issue it would be dealt with at the appropriate time.

Mr. Kaltofen asked if they would be monitoring for sulfites and mecaptans.

Mr. Miller asked how it could be controlled.

Mr. Palaia responded that if the sediment is kept in the tube then odor should not be an issue because of minimized exposure of sediment to air.

Mr. Kaltofen suggested that you may want to cover the frac tank.

Mr. Palaia said that any tank that dealt with water would be covered.

Mr. Miller stated that if the mesh of a cloth passes water through it, it would also pass the gasses. He asked what sort of full enclosure could control the odors. He asked if others had experience with this.

Mr. Kaltofen said there should be no problem with odor as long as water continues to move and is not allowed to sit too long. He added that it is mostly lake water with oxygen in it so it needs to keep moving.

Mr. Miller asked if this process should take place in a building.

Mr. Kaltofen responded by saying that he rather have them spend the money on getting the sediment out and just not let the water sit too long.

Dr. Vembu asked what the residence time would be in the tube.

Mr. Palaia responded that this is a function of the mesh size; he added that the sediment is pretty gooey stuff. He continued that you don't want a mesh size that is too big to allow sediment to get through and said that there will be some testing up front.

Mr. Kaltofen added that temperature would be an issue too.

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Mr. Palaia presented a map showing the sediment areas proposed for hot spot dredging. He added that the dark green points on the map indicated excavation down to a foot, and that those areas had the highest contamination of PCBs of approximately 8 to 9 ppm. He continued that other dredging areas would be to a depth of approximately 6 inches. He added that the goal is to have an average PCB concentration of 1 ppm across the cove. He showed a variety of sampling points and demonstrated that currently the average across the cove is approximately 1.7 ppm. He stated that actively removing contamination is cost effective, easily implemented, it complies with the laws and regulations and it is protective of health and the environment.

Mr. Kaltofen questioned how the points were chosen and why there were no data points in between the two most southern lobes on the map. He added that there is no information to demonstrate that the concentration of contamination would be any different between the two lobes. He asked if it was based upon achieving an average or an assumption that it is cleaner between those two lobes.

Mr. Palaia commented that the points were chosen using a combination of actual sediment data and software generated contour maps. He agreed that there was no data points between those two areas but added that there exists 75 data points within the cove. He added that there will be a pre-cleanup survey which will allow for additional surface water samples and sediment samples to refine the areas.

Mr. Kaltofen said that it may be more effective to merge the two lobes into one lobe instead of a start and stop process since there is no scientific reason for skipping that area. He commented that he realized there may be added costs and estimated that this would add approximately ten percent of material to the process.

Mr. Palaia added that additional dredging would also add more time, materials, dredging, and disposal costs.

Mr. Kaltofen asked if they planned to survey that spot.

Mr. Palaia responded that the remedial design had not been written yet and that it would be addressed for further refinement or investigation of the areas to be dredged.

Mr. Kaltofen requested for sample points to be taken in between the two hot spots and if the material concentration was not significantly different from the other four existing data points then it should be included in the dredging area. He stated that it should be included because the dredge operator will probably include it anyway.

Dr. Vembu asked if there were any extra precautions that should be taken in areas where the concentration levels are closer to 8 ppm.

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Mr. Palaia responded that there is not a significant difference in this area. He added that if you look at other sites around Massachusetts such as the Housatonic River or New Bedford Harbor that the clean up goals are 10 ppm to 50 ppm.

Ms. Williams asked if Massachusetts requires the concentration of PCBs to be below 2 ppm to landfill it.

Mr. Palaia responded affirmatively adding that they plan to look at different disposal alternatives and landfill requirements as part of the remedial design.

Mr. Palaia continued with the presentation stating that the preferred alternative for the remaining sediment on the shoreline areas outside of Pegan Cove is Alternative 1, which is No Action.

Lastly, he added that the reason that they are all here tonight and at the public hearing on May 21st is to get feedback from the community. He added that there are a number of ways to provide comments and suggestions back to the Army. One way is to comment after the public hearing on Thursday, May 21, 2009. Also one can submit a comment letter via mail, fax, or email to Mr. James Connolly.

Mr. James Connolly
Environmental and Health Office
U.S. Army Garrison Natick
Kansas Street
Natick, MA 01760
James.b.connolly@us.army.mil
(508) 233-5393 fax

He added that there is a 30-day public comment period from May 18, 2009 to June 16, 2009. He stated that there will be a compilation of comments and a preparation of Responsiveness Summary. There will be a preparation of the Record of Decision (ROD) and a signature of ROD by U.S. Army and U.S. EPA with concurrence of Massachusetts Department of Environmental Protection.

Mr. Kaltofen thanked Mr. Palaia asked if there were questions.

Mr. Miller again commented and corrected the pronunciation of Pegan Cove. He addressed his concern of the lake being used as a waste receptacle. He continued that the toxic sediment is an obstruction and understands it is expensive to clean up. He added that you could argue what percentage of the damage was caused by that and other items. He added that contamination that would be left behind as a result of this cleanup and restoration project should be questioned. He brought up another cleanup site, Nyanza Superfund Site, in Ashland, Massachusetts and said that it only drains into the Sudbury River and said that not many people are swimming or fishing in it unlike Lake Cochituate. According to Mr. Miller, Nyanza Superfund Site had a cleanup level of 1 ppm for PCBs and added that it has no effect on the public unlike here being right next to a major recreational lake. He questioned how we got to the 1 ppm

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level cleanup. He commented that he wants us to worry about the operations, mitigation, the correction of the corollary damage, collateral damage and the milfoil could have been controlled but instead was allowed to spread. He stated that the presentation ignored these issues which he thought was unfair and wrong. He added that we need to address the other half of the issue which is the restoration. He stated that other cleanups do exactly that and said he was involved with the Nyanza cleanup adding that there was four million dollars set aside for the restoration piece of the project to compensate for the damage that was done. He wanted to know if there was anybody else speaking tonight on behalf of Cochituate State Park. He added that he was on the advisory committee of the state park. He suggested that they should explore what fair means and compensation means and stated that he believed that there are mechanisms for the restoration program through The Department of the Interior.

Mr. Miller said that his second point was that the hearing was only in two nights from tonight. He also stated that the RAB had done a decent job with public involvement in the past but it is failing now and called it a total disaster. He said that first discussing the materials that will be presented in the public meeting two days before the meeting is not acceptable. He brought up that tonight's meeting is in conflict with Natick Town Meetings as well as the Thursday Town Meetings. He added that Thursdays are also the Natick Conservation Meetings, which many people who attend the conservation meeting would have been in attendance at the public comment session. He stated that a night was chosen in which concerned people could not attend. He asked why the RAB was not consulted in advance. Mr. Miller commented that we do not want to meet with these groups individually but questioned the best way to include them all. He stated that he will be attending Thursday's Natick Conservation Meeting which he had tried to move but they would not because they had properly announced their meeting.

Ms. Williams thanked Mr. Miller for trying to move the meeting.

Mr. McHugh suggested that they could have a second hearing within the appropriate time period. He also stated that the scheduling of the Natick Conservation Meeting for Thursday was due to a cancelled conservation meeting that was rescheduled.

Mr. Miller agreed with the idea of a second hearing.

Mr. Kaltofen inquired if the two meetings could be combined and Mr. Miller responded that it is not a good idea and asked if the group be emailed in advance to determine if there are conflicts with other town meetings. There was an affirmative response.

Mr. Kaltofen noticed and mentioned that the email of the proposed plan went to a larger group than usual.

Mr. McHugh stated that it went to the Board of Health and all town bodies.

Mr. Kaltofen asked if the monitoring program included fish and sediment testing after completion of the remedial piece.

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Mr. Palaia said that it didn't.

Mr. Kaltofen added if the next scheduled fish sampling would be at the five year review.

Ms. Williams commented not necessarily.

Mr. Kaltofen questioned if there might not be any additional fish testing.

Mr. Kaltofen said that somebody asked him if the Library Repository was up to date. He asked if all the materials were still in the library such as the 2005 Angler Study and the 2007 Additional Sediment and Fish Testing Report. He asked if this could be checked because at least one person could not find the copy of the angler study but he believed that it was put there. Mr. Connolly said that they would check.

Mr. Kaltofen wanted to review remedy selection and the cost breakdown of remedy nine between the mechanical dewatering and institutional controls, he asked if there was some additional costs for institutional controls and wanted to know if that was the reason for not looking at it.

Mr. Palaia responded that there was signage development in Alternative 8 under the site control measures. He added if one looks under capital costs for Alternative 8 you will see a cost item that is equivalent to institutional control costs. Mr. Palaia added that the signs that are placed during the action would remain in place.

Mr. Kaltofen asked if fishing is barred from the lake.

Ms. Williams stated that signs are not necessary for the remedy only for the Army security.

Mr. Kaltofen asked if it's ok to eat native fish after the remedy and do fishing signs need to be more permanent.

Mr. Campbell commented that he does not believe that the MA DPH fish advisory will be lifted.

Mr. McHugh stated there are no plans to remove the signs.

Dr. Vembu asked if there was any money in Alternative 8 for ongoing monitoring. He asked if one looks at the evaluation criteria and any of the other methods 6, 7, 9, they all had a significant amount of line item costs for institutional controls except Alternative 8.

Mr. Palaia stated that Alternative 8 includes monitoring only during the remedy. He added that costs were also part of the rational but that cost is only one of the criteria.

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Mr. Campbell clarified that Dr. Vembu is trying to find the rational for this choice and why is there no O&M there but there is in the other alternatives.

Mr. Palaia commented that it was the decision of the Army to actively remove the contaminants. He added that this remedy would be protective of human health and meet cleanup goals as well as taking cost into consideration.

Mr. Campbell wondered if Alternative 9 does the same thing.

Dr. Vembu stated that Alternatives 6, 7, 9 are all the same but 8 didn't have the O&M piece.

Mr. Connolly stated that during extensive back and forth discussions with the EPA and MA DEP they found that Alternative 8 would not require operations and maintenance with a cleanup level of one ppm. O&M was left for the other alternatives, in the interest of saving time and money on revising non-preferred alternatives in the revision that created the final Feasibility Study document. It was realized that it presented some difficulty with directly comparing the costs of the otherwise similar alternatives, but that they could still be compared, as Dr. Vembu did, by subtracting the O&M costs from the other alternatives.

Mr. Miller commented that he was pulling for Alternative 9.

Mr. Kaltofen said that Mr. Miller would have to put it in writing before June 18th.

Mr. Miller commented that other than the shortfalls that he has already discussed, he liked the Proposed Plan and added that he thought it was a good presentation. He also commented that he put it on his website. He asked if there was a better place to put it other than his website.

Ms. Williams commented that she will be putting the link up on the EPA Natick Lab site.

Mr. Kaltofen commented that in the 1997 ATSDR study, there was concern with Dr. Czeisler's daughter and private property being so close to outfall, and asked if they are planning to put a no fishing sign on the T25 outfall?

Mr. McHugh commented that signs would only be placed at Pegan Cove.

Mr. Kaltofen asked if there are other questions or comments. He stated that this has been a long process and he was pleased and that this is a good step. He wanted to thank the Army and the regulators for their efforts. He added that he looks forward to the day where no children will be eating PCB contaminated fish.

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V. Presentation by Robert Tess, ECC Project Manager **Amy Soldier System Center Natick Groundwater Remediation Update**

Mr. Tess began the current status update stating that there has been reasonable capture of the plumes located at Building 23/36 Area for PCE and TCE at building 63/2/45 Area. He displayed a concentration contour map pointing out lower portion of the map where there were localized hits of 1,4-Dioxane from monitoring well 124B in buildings 63, 2, & 45 Area. He added that the contaminant has been present and is above the discharge criteria for groundwater since 2005. He stated that an ex-situ wellhead treatment unit was installed and turned on in August 2008. He added that it was installed near extraction well EW-4. He added that it currently treats combined flow from extraction well 2, 3, and 4 and that the combined flow is approximately 6 gpm. They decided to go with an ex-situ system which consists of Fenton's Reagent Advanced Oxidation Process. Mr. Tess showed a picture of the treatment system. He commented that the unit consists of two tanks. They add acid and peroxide to the process and then pump the water back into the main header and the water flows back to the T25 treatment plant where it runs through that entire process.

Ms. Williams asked if there is a port for pre- and post-testing.

Mr. Tess responded affirmatively and referred back to the chart on the previous page. He pointed out that the data on the chart reflected influent and effluent data. He added that the Massachusetts advisory level is 3 ppb for 1,4-Dioxane and that the effluent results were below the 3 ppb.

Ms. Williams asked if they plan to continue to treat this plume.

Mr. Tess commented that the water will continue to be treated as long as 1,4-Dioxane is detected in the groundwater above regulatory limits.

Dieldrin at MW-40B

Mr. Tess continued stating that in September 1994, MW 40-B was installed which is located near the boiler plant at SSC. He added that there has been a historic detection of Dieldrin (pesticide) at MW-40B with the concentration fluctuating from non-detect to 0.262ug/L. He stated that the Army and EPA decided they would try to extract that groundwater to keep it contained he added that the Massachusetts Contingency Plan (MCP) GW1 standard is 0.1 ug/L. He continued stating that in February 2009, the existing MW-40B was over drilled to create a six inch extraction well MW-40BR and that they installed a new monitoring well MW-168B approximately fifteen feet west of MW-40BR. He added that in March

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2009, they sampled and the results for dieldrin were below the MCP levels in both wells. He added that there will be another sampling round in June 2009.

Dr. Vembu asked what the pH was leaving the system.

Mr. Tess commented that they don't monitor the pH leaving the system but they monitor pH leaving the overall treatment plant. He referred back to a previous slide discussing the construction of the treatment system piping. He continued that it runs the perimeter as one big header and each time it passes a well, it picks up the flow from extraction wells as it heads back to the T-25 treatment plant. He added that by the time it comes back it has been combined with other extraction wells and there have been no pH issues to date. He commented that the iron problems at the plant that could have been eliminated if the pH was reduced.

Ms. Williams asked if there will be a technical report of the monitoring wells.

Mr. Tess replied yes stating that it is being prepared.

T-25 Treatment Plant Update: MW 95B

Mr. Tess continued saying that in February 2009, broken piping to extraction well MW-95B was discovered commenting that the operator saw some water at the inlet to the plant where it comes up from the floor. He added that the quickest solution was to switch MW-95B over to monitoring MW-15B and the groundwater would be extracted from MW-15B until repairs could be made. The plume had shrunk a bit and thus it gave MW-15B a better opportunity to capture more contaminant concentration. He added that it was running at the same flow rate of 25gpm. He showed a table for TCE and PCE comparing the two wells and demonstrating that there was a higher concentration within plume area of MW-15B.

T-25 Treatment Plant Update- Liquid Granular Activated Carbon (LGAC) Vessels

Mr. Tess continued with the slides discussing that contamination at the T-25 Treatment plant is removed by the treatment system air stripper and that the LGAC vessels act as a backup for treatment only. He added that two new Liquid Granular Activated Carbon (LGAC) adsorber vessels were installed in February 2008. He continued that March 2009, one of the LGAC vessels began leaking. Permission was sought and obtained from EPA to deactivate the one leaking vessel and run the system off the working vessel. The Army also proposed increasing sample collection frequency of the discharge to every two weeks as an added measure. Mr. Tess showed a table demonstrating the sample collection and results for March and April of 2009. The results showed non-detect results for TCE in discharged groundwater. He added that on a couple of occasions since 1997 there had been hits of TCE, but it hadn't been above the discharge limits. Mr. Tess continued that they purchased a new LGAC and upon installation it was discovered that both LGAC units were almost empty of carbon and the effluent pipes for both tanks were broken commenting that the problem was identical on both vessels. Their conclusion was that they had bought bad vessels.

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Mr. Campbell asked to describe the nature of the break and wondered if the specifications/dimensions were the same as the original vessel. He also added if it was the same manufacturer.

Mr. Tess replied that the specs were the same but it was not the same manufacturer. Mr. Tess added that he had used this vendor before with success.

Dr. Vembu asked if Mr. Tess could demonstrate where the break occurred.

Mr. Tess showed a slide of the new granular activated carbon vessel commenting that he did not have a picture of the old vessel but tried to demonstrate from the existing picture that bottom of vessel became slightly bowed and that the piping is relatively flat.

Mr. Connolly added that the bottom of vessel is concave. The vessel has a steel sleeve with internal threads welded near the bottom. He stated that the exit screen is 4 inch slotted PVC pipe. The exit screen is glued to a threaded bushing. In both vessels the exit screen was sheared off at the threaded portion where the threads engaged the steel vessel. He added that one was completely sheared off and the other was cracked.

Mr. Miller wanted to know why it sheared and if it occurred during installation or did a pipe bend and there was no adequate stress relief.

Mr. Connolly replied that they are still trying to determine that.

Mr. Tess continued stating that the discharge goes to a non-potable water tank and partly to the lake through an oil water separator. He added there was some carbon remaining in the vessel and that they inspected the non-potable water tank and found the bulk of carbon. He continued stating that they still plan to do an inspection of the oil water separator between the system and the outfall. He stated that they have not made an inspection at the outfall but they couldn't observe any carbon in the shoreline.

Mr. Campbell asked how much carbon mass is unaccounted for.

Mr. Tess replied up to about five hundred pounds.

Mr. Campbell asked how long the carbon had been in use.

Mr. Tess responded that they are not sure when the vessel broke. He added that the indicators allow the majority of the group to believe that it broke recently. He added that the carbon had been in use for about one year.

Mr. Campbell added that he was trying to figure out how this material could so easily escape.

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Mr. McHugh commented that there were some gaps in the piping and with the pressure of the discharge pumps, the carbon slurry could have flowed into the piping.

Mr. Tess commented that the oil water separator should catch anything that came through. He continued that they plotted all their pressure drop data and there was no indicator that there was a problem.

Mr. Tess stated that they have ordered a new vessel to replace the second broken one and it should be in at the end of May or the first week of June. He added that they fabricated on order thus the three to four week lead time. Mr. Tess said that the operator has added a requirement to “pop the hatch” and inspections for carbon to the normal operation of the treatment plant pressure indicator was not previously observed to be a reliable indication for this particular problem.

Mr. Kaltofen asked if there was a measurable head loss.

Mr. Tess responded that there was measureable head loss but it was consistent with the day that they installed the vessels. Mr. Tess added that the reason that they believe this was a recent problem was because of the system. He added when the differential pressure increases, the operator backwashes the filter, then the pressure drops and noted that this was a repeating process every three months or so. He added that it is mostly because of the iron that precipitates out and clogs up the carbon. He repeated that this has been consistent with the backwashing all year stating that it is the nature of the vessels.

Plume Capture – Future Improvements

Mr. Tess continued that in order to accelerate contaminant mass removal north of the T-25 area, the existing 4 inch well MW-211B-4 will be converted to an extraction well and will pump at about 10 gallons per minute for added benefit to capture the plume in this area. He added that a pipeline will be installed to connect the converted MW-211B4 to the T-25 treatment plant. Mr. Tess showed a slide of the plume capture for Event 44 (March 2006) comparing it to Event 55 (December 2008).

Mr. Kaltofen questioned the drawing of zones in the two side by side pictures questioning that it appeared that the size of the contamination zone appeared larger in 2008 than 2006 on the upper portion of the map. He asked if that was based on different data or different methods of drawing the contours. He also asked about the coloring and what it was based on. He added that it appeared that the maps are now drawn as two isolated zones and the areas above the MCL are separated by an area below the MCL between them. He asked if the levels had changed.

Mr. Murray commented that there are two contaminants of concern on the same diagram. He added that the area in question was not above the MCL and was highlighted by a green icon. It was added that they should change the icon color.

Mr. Miller asked the same question regarding the lower green colored plume and asked if this was what Mr. Tess expected.

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Mr. Tess responded that they installed an extraction well last year and this is what they did expect that would occur.

Mr. Kaltofen added that in the northern case, they are chasing the plume while in the southern case it is being drawn in towards the extraction well.

Mr. Tess added that he did not have the data for 2006 handy but he believed that the plume had been connected and over time sometimes plumes separate out.

Mr. Kaltofen added that he knows that they have always been chasing that plume from the north and the southern one has the opposite problem.

Mr. Connolly said that this goes back about two to three years to the Steve Young time-lapse presentation of the groundwater simulation model. Dr. Young had the system in the T-25 area pumping showing the reduction of the contaminated area on Fisher Street going down and down until stalling; thus the north is last area to be done. The suggestion to add an off-post extraction well originated in the result of this simulation.

Mr. Tess commented that evidence suggested that interpreted plumes were largely captured at first year average pumping rates and that the additional extraction wells that were installed in the various plume areas are positioned well and optimize plume capture. He also said the concentrations of VOCs in general are declining. He added that it is difficult to take a "snapshot" because there is a lot of fluctuation in between but if you put together trend grafts for all the monitoring wells and contaminants that there is a definitive decrease of contamination for all of the locations. He added as a final note that they do an annual treatment plant report to calculate how much material is removed from the ground and in 2008 the treatment system itself removed 2.76 pounds of TCE and PCE. He added that they are at 86 pounds removed from the aquifer cumulatively.

Mr. Kaltofen thanked Mr. Tess and asked if there are any other questions.

Mr. Miller asked about the tank failure and the perceived risk in another failure. He asked if there is a 1-2 month replacement should we have a spare on hand.

Mr. Murray commented that there is no additional risk because the current air stripper was extremely effective and that it removed the contaminants of concern. He added that there was additional monitoring of the water at the influent as well as effluent of the liquid-phase carbon vessel. The results demonstrated that there wasn't a problem as the water was below the discharge level at the influent of the liquid-phase carbon. He added that the air stripper is extremely efficient at removing the volatiles from the water, more than he would have suspected and the GAC unit is redundant and is really just an extra safety measure.

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Mr. Kaltfen asked if there were any other questions.

The meeting adjourned 9:45 pm.