

**Massachusetts Military Reservation Cleanup Team**  
**322 East Inner Road**  
**Otis ANGB, MA**  
**May 11, 2011**  
**6:00 – 8:20 p.m.**

**Meeting Minutes**

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**Action Items:**

1. Mr. Godard requests that the agencies provide information on what is being considered as the Central Impact Area decision is being made.
2. Mr. Goddard requests the MMR Groundwater Findings map be available at MMRCT meetings, in both electronic and printed form.
3. Ms. Donovan requests that the MMRCT be informed of MMR Military-Civilian Community Council (MC<sup>3</sup>) membership and future meeting dates.

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**Handouts Distributed at Meeting:**

1. Response to Action Items from the March 16, 2011 MMRCT
2. Figures: Demolition Area 1 map and cross-section
3. Presentation handout: Central Impact Area Feasibility Study
4. Figures to accompany Central Impact Area Feasibility Study presentation
5. Presentation handout: Fuel Spill 1 Plume Update
6. Presentation handout: CS-20 Leading Edge Update
7. MMRCT Future Agenda Topics
8. MMR Cleanup Team Meeting Evaluation form

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**Agenda Item #1. Introductions, Agenda Review, Approval of March 16, 2011  
MMRCT Meeting Minutes**

Mr. Karson convened the meeting at 6:02 p.m., reviewed the agenda, and asked if there were any changes or additions to the March 16, 2011 Massachusetts Military Reservation Cleanup Team (MMRCT) meeting minutes. No changes were offered and the minutes were approved as written.

**Agenda Item #2. Demolition Area 1 Update**

Mr. Gregson spoke about the Demolition Area 1 (Demo 1) plume, which originated in an area in the middle of the base where munitions and other items containing explosives or perchlorate were brought for demolition. He showed a map of the Demo 1 groundwater plume, noted that the pink color represents perchlorate contamination, and pointed out the base boundary, McArthur Boulevard (also known as Route 28), the rotary at the base entrance, the Otis Fish & Game Club location, and the neighborhood in Bourne where investigation work is ongoing. He also noted that the plume has segmented, having been cut off effectively by the extraction well at Pew Road. He then pointed out a location at the base boundary where perchlorate was detected at about 12 parts per billion (ppb), and he mentioned that the Massachusetts maximum contaminant level (MMCL) for perchlorate is 2 ppb.

Mr. Gregson reported that, based on the 12 ppb detection, the U.S. Environmental Protection Agency (EPA) asked the Impact Area Groundwater Study Program (IAGWSP) to install a treatment system to cut off the plume. EPA also asked the IAGWSP to verify that all residences in the neighborhood were connected to town water, and to investigate the extent of contamination into the neighborhood. He noted that the IAGWSP began its off-base investigation at the corner of Williams Avenue and Route 28, at the Hamilton Tree & Landscaping property, where, in March 2011, perchlorate was detected at 7.5 ppb. Additional drilling showed detections of 9.8 ppb at two locations (locations 2W and 3W) and a detection of about 0.5 ppb toward Lily Pond (location 4W). Currently, another sampling location is being drilled on Windmill Road to help determine the width of the plume in that area. Mr. Gregson then showed a cross-section figure of the Demo 1 perchlorate plume and pointed out the base boundary, ground surface, Lily Pond (a relatively shallow pond), the groundwater table, and the layer of clean groundwater water over the plume, which is about 60 feet thick.

Mr. LoGiudice asked if the residents of the affected neighborhood are satisfied with the progress of the investigation. Mr. Gregson replied that the IAGWSP sent out neighborhood notices to invite the residents to this meeting and has been keeping them informed about the progress of the investigation. He also noted that although the large drills used to conduct the investigation are fairly intrusive, the IAGWSP is trying to accomplish the work with as little disruption as possible.

Mr. Dinardo asked if the plume is actually sinking. Mr. Gregson replied that the plume does appear to be getting deeper as it migrates. Mr. Dinardo then asked if the dates noted on the Demo 1 figures refer to the drilling date or the sampling date. Mr. Gregson clarified that they refer to the sampling date. Mr. Dinardo noted that the sampling conducted in the neighborhood was done rather recently, in 2011. Mr.

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Gregson confirmed that that's correct and noted again that drilling is currently being done on Windmill Road.

Ms. Rielinger asked if the data from locations 2W, 3W and 4W are screening data or data from well samples. Mr. Gregson replied that they are screening data, or profile data, which are collected at intervals as a location is being drilled. He added that profile data are used to install permanent wells at drilling locations. Ms. Rielinger asked if permanent wells have been installed at 2W, 3W, and 4W. Mr. Gregson replied that permanent wells have not been installed there yet; however, a permanent monitoring well was installed at the Hamilton property, but wells sampling results are not yet available.

Mr. Lim asked Mr. Gregson to update the group on the planned extraction well at the base boundary. Mr. Gregson displayed the plan view map and explained that the purpose of the new extraction well is to cut off the plume and prevent its further migration into the neighborhood. He pointed out the location of the new well and reported that the entire infrastructure for the treatment system is in place and ready to go. He said that the IAGWSP is just waiting for the electrical connection to the NStar line in order to start operating the system, which is expected to occur within the next week or two. He also noted that the extraction well will pump groundwater at 35 gallons per minute (gpm). Mr. Gregson further noted that the IAGWSP will continue to provide updates to the residents either through mail or email, and welcomes any questions or comments via the telephone number provided in the neighborhood notices.

At this time, Mr. Karson asked if there were any comments on the Responses to Action Items from the March 16, 2011 MMRCT meeting. No comments were offered.

### **Agenda Item #3. Central Impact Area Update**

Mr. Gregson stated that the Central Impact Area, the largest and most complicated IAGWSP site, has been undergoing investigation for more than ten years. He noted that two draft documents associated with the site are currently being reviewed by the regulatory agencies: the Central Impact Area Feasibility Study (FS) and the Central Impact Area Source Report, which provides more in-depth detail on the source of contamination.

Mr. Gregson showed a map of the Upper Cape and pointed out the base boundary, the Impact Area boundary, and the triangular-shaped outline of the Central Impact Area. He noted that the Impact Area is about 3,000 acres in size, while the Central Impact Area is about 330 acres. He also said that the Impact Area, which was the primary target location for artillery and firing around the base, is a restricted area with limited access.

Mr. Gregson reported that the Central Impact Area was the base's main target area for artillery and mortar fire from the 1930s to 1997. High-explosive artillery rounds were fired there until 1988, and the use of Low-Intensity Training Rounds (LITR) – inert rounds with no explosive filler, but with a spotting charge that contained perchlorate – began in 1982. All live firing, including mortars, stopped in 1997. Mr. Gregson also mentioned the Central Impact Area's sub-areas: the Sub-Caliber Aircraft Rocket (SCAR) site, the Eastern test site, Tank Alley, and the Chemical Spill 19 (CS-19) site, which has been investigated by the Air Force Center for Engineering and the Environment (AFCEE) Installation Restoration Program (IRP). He then noted that in terms of the environmental setting, the vegetation at the site is pitch pine and scrub oak barrens located over the geologic area known as the Mashpee pitted plain. He also referred to the figure entitled "Water Table Elevations" and pointed out the direction of groundwater flow at the site (southeast to northwest).

Mr. Gregson stated that groundwater investigation at the Central Impact Area, which has been ongoing since 1997, has involved the installation of 138 well clusters and 332 individual wells. The effort led to the identification of an area of RDX contamination coming from a number of point sources, such that what appears in plan view to be an RDX plume is really a number of separate fingers of contamination.

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The maximum concentration of RDX ever detected in the plume was 44 ppb, in 2005. The current maximum concentration of RDX, which occurs in the same well, is 17 ppb. Mr. Gregson then mentioned that the IAGWSP uses the  $10^{-6}$  one-in-a-million cancer risk number, which is 0.6 ppb, as its RDX cleanup level. He also noted that less extensive and lower-concentration perchlorate contamination has been identified at the Central Impact Area. The current maximum perchlorate concentration was 10 ppb, in 2010, and the current maximum is 9.7 ppb. Over the years, other explosive compounds have been detected in groundwater (HMX, TNT, and TNT breakdown products 2A-DNT and 4A-DNT), but at low concentrations that exist within the RDX footprint.

Mr. Gregson displayed a map showing 2007 sampling results from wells that intersect the water table. He then explained that water table results are important because they are one of the main indicators of the current source at the Central Impact Area, as detections in the shallow water table likely come from the surface directly above them. Mr. Gregson also reported that recent plume trends are consistent with what was expected. Contaminants at the source areas are becoming lower in concentration, and the plume is migrating off to the north and west. The center of mass appears to be moving downgradient, water table concentrations in the source area are declining, and the trailing edge of the RDX plume has begun to detach.

Mr. Goddard inquired about the prediction for contamination migrating off base. Mr. Gregson replied that current modeling indicates that concentrations around 2 ppb would migrate off base. Mr. Goddard then asked about the action level, and Mr. Gregson reminded him that it is 0.6 ppb, and added that the 2 ppb would eventually discharge into the Cape Cod Canal. Mr. Goddard then asked how long that would take and Mr. Gregson said it's predicted to take about 30 years for 2 ppb concentrations to reach the base boundary.

Mr. Goddard also inquired about any plans for prescribed burns at the Central Impact Area. Mr. Gregson replied that there are plans to conduct prescribed burns to knock down some of the pine trees there, but he's unsure of the timeframe for that activity. Mr. Goddard asked if that has to do with unexploded ordnance (UXO) issues. Mr. Gregson replied that it has to do with getting permission to conduct a prescribed burn, as it must be done from an aerial platform because of the UXO issue. However, the effort to obtain permission is under way.

Ms. Sweeney, a resident from the Lily Pond area, asked if the RDX and perchlorate plumes are following the same path or going off in two different directions. Mr. Gregson replied that they are traveling in the same direction, but the perchlorate plume is so small it's unlikely to reach the base boundary before dissipating to below-detectable levels. Ms. Sweeney then asked if the two plumes are traveling together or just parallel to each other. Mr. Gregson said that the plumes are co-located, meaning that both RDX and perchlorate can be detected in the same well. Ms. Jennings added that the plume currently being discussed is a different plume than the Demo 1 plume, which is traveling in a different direction. She then asked if there is a map available that shows all the IAGWSP plumes. Ms. Boghdan confirmed that that map is available at tonight's meeting. Mr. Dinardo inquired about the predicted depth of the plume at the base boundary, 30 years from now. Mr. Gregson said that perhaps it would be about 100 feet below ground level.

Mr. Gregson then reviewed the first slide entitled "Source Characterization," which noted the following: 1997 to 1998 – site-wide 9-point composite sampling at 41 sampling grids; 2000 – a land feature investigation that involved extensive soil sampling in areas identified through aerial photos; 2000 – an airborne magnetometer (AirMag) survey that involved helicopter-mounted magnetometers over four large areas of MMR, including the Central Impact Area, where many Army tanks and general areas of high concentrations of metal debris were identified (particularly in the Tank Alley/Turpentine Road area); 2000 – a mortar target investigation that involved clearing munitions and conducting geophysical surveys; 2000 to 2001 – target investigations that involved UXO removal, soil sampling, and soil removal/treatment; 2000 to 2001 – the High-Use Target Area I (HUTA I) investigations,

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which involved investigating a four-acre area for UXO based on AirMag results, an EM-61 survey over six test plots, and soil excavation; 2001 to 2002 – the HUTA II investigations, which involved EM-61 surveys of five transects over suspected target areas; and 2002 – the SCAR site investigation, which involved surface clearance for UXO at a ten-acre site where inert 2.25” rockets were fired from airplanes at targets on the ground.

Mr. Gregson then reviewed the second slide entitled “Source Characterization,” which noted the following: 2002 – the Eastern test site (a three-acre area identified through historic aerial photos) investigation, which involved surface clearance for UXO and an EM-61 survey over four and a half acres; 1991 to 2003 – AFCEE’s remedial investigation at CS-19 (an ordnance disposal area, from which an RDX plume is emanating), which involved soil removal and treatment; 2004 to 2005 – focused investigation at Targets 23 and 42, which involved soil sampling around targets and response actions to define contamination; 2006 – multi-increment sampling, a comprehensive soil sampling technique, began; 2006 – nine test plots were investigated to characterize munitions density; 2009 to 2010 – AFCEE’s CS-19 Bunker Area Phase II Investigation, which involved a UXO investigation and soil removal action north of the CS-19 disposal area; and 2010 – additional investigation of the UXO test plot to evaluate newer geophysical tools.

Mr. Gregson reported that over the years about 3,800 soil samples were collected. The primary explosive detected was RDX, with lesser detections of HMX, TNT, 2A-DNT and 4A-DNT. Mr. Gregson noted that RDX was detected in about 5% of the samples, and perchlorate in about 19%, but at low concentrations. He also mentioned that a few higher explosives concentrations were detected in soil directly beneath rounds that were broken open. He further noted that the detections were scattered and very heterogeneous, with high detections often surrounded by nondetects. However, there do appear to be more explosives detections at the targets, along Tank Alley and Turpentine Road. Mr. Gregson also said that recent multi-point composite soil sampling showed a number of nondetects as well as an RDX detection at 120 ppb and two detections of TNT breakdown products.

Mr. Gregson stated that although not very much soil contamination is found, the IAGWSP does find UXO. He also noted that the type of ordnance used before World War II contained TNT, the type used after World War II contained RDX, and LITR rounds, which came into use in 1987, contained a perchlorate spotting charge. The most common rounds identified were 81mm mortar rounds (30%), 105mm artillery projectiles (20%), and 155mm artillery projectiles (18%). Of the 291 high-explosive items discovered in the Central Impact Area, 24 were cracked or breached, while the remaining rounds all exhibited some degree of rust or corrosion. Mr. Gregson also spoke about the depths where the rounds were found: 26% on the surface, 59% (cumulatively) at less than one foot, 76% at less than two feet, 90% at less than three feet, and 97% at less than four feet.

Mr. LoGiudice asked if anyone had checked inside the Army tanks for items that might contain explosives, and Mr. Gregson replied that the tanks had been checked. Mr. Dinardo inquired whether any depleted uranium shells had been found. Mr. Gregson replied that there are no records or evidence of depleted uranium at the Impact Area. He also mentioned that some testing was conducted at some of the Southeast Ranges, but no depleted uranium was found.

Mr. Gregson then spoke about UXO distribution, noting that most UXO items were clustered around targets, as expected. He showed a figure entitled “UXO Distribution Central Impact Area,” pointed out the test plots, and explained that plots labeled with an “L” were those anticipated to have low density of UXO, while those labeled with an “H” were those anticipated to have high density, and those labeled “M” medium density. He reported that the “M’s” and “H’s” had an average of about 35 UXO per acre, while the “L’s” had an average of about 12 items per acre, for an overall average of 27 items per acre. Multiplying 27 by 330 (the number of acres in the Central Impact Area) results in an estimated 9,000 UXO items at the site, although the IAGWSP puts the estimate at 6,000 to 9,000 items, as there are probably fewer items toward the edges of the area. Mr. Gregson also mentioned that an

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exercise conducted in 2008 to approximate the number of UXO came up with an estimate of 7,500 items.

Mr. Gregson then spoke about the source delineation efforts, noting that with regard to contaminant distribution in soil: RDX was detected most frequently near targets along Tank Alley and Turpentine Road; the horizontal distribution of explosives is highly heterogeneous; high concentrations are co-located with nondetects; and the usefulness of soils data to define source areas is limited. He also noted that the groundwater model was used to run reverse particle tracks from detections to determine the point of origin of contamination. While this was useful for identifying general areas, accuracy was limited due to distance and the inability to distinguish between depleted and active source areas.

Mr. Gregson then stated that with respect to source delineation, it was most helpful to look at the water table detections, as he'd mentioned earlier. He explained that the water table information was used to map areas of potential surface contamination, which are consistent with other indicators (targets, soil sample results, particle backtracks, and recent groundwater data). He also noted that based on the groundwater data, source depletion appears to be occurring. He further noted, however, that there is some uncertainty, considering the possible number of UXO items that may pose an undefined potential future source.

Mr. Gregson displayed a map based on the most recent water table data, entitled "Estimated RDX Source Areas." He pointed out what appears to be an ongoing source of contamination at the intersection of Tank Alley and Turpentine Road (where some response actions have occurred), and a couple of detections to the south. He noted that other groundwater contamination is deeper, indicating that the source areas are farther upgradient.

Mr. Gregson then discussed initial response actions taken at the Central Impact Area: in 2000, based on soil sampling results from the target investigation, about 400 tons of soil was removed from around Mortar Target 9 and Target 25 and transported off site for disposal; in 2004, about 2,000 tons of soil was removed from around Targets 23 and 42 and treated on site in the thermal desorption treatment unit that was on the base at that time; and, as part of its CS-19 work, AFCEE has removed more than 1,300 tons of soil from the CS-19 disposal area.

Mr. Gregson also spoke about the Air Force Research Laboratory (AFRL) 2008 robotics technology demonstration and source removal action, which included work at the Central Impact Area. He reminded the group that the advantage of robotics is that it prevents workers from being exposed to potentially unsafe conditions. He also noted that the purpose of the demonstration was to evaluate methods for clearing potential UXO using remotely-operated equipment. The AFRL used a remotely-operated brush cutter to clear vegetation (in order to see the ground surface) and then an electromagnetic attachment to pick up UXO. Ms. Gregson stated that this effort was marginally successful in that it was effective at removing metallic objects, including UXO, at or slightly below ground surface, but not items that were more than a few inches below the surface.

Ms. Rielinger noted that one of the figures shows two additional higher-concentration areas (one to the east, near the 2,000 meter berm, and the other on the west side of CS-19) that Mr. Gregson hadn't identified as potential RDX source areas. Mr. Gregson explained that the CS-19 area was taken care of by the AFCEE cleanup program and the other is at the J-1 Range where some soil removal has been conducted, although the small plume emanating from there is being addressed as part of the Central Impact Area FS.

Ms. Donovan said that the data referenced in Figure 4.1 is from March 2007, and she wonders if the FS will include more updated information. Mr. Gallagher noted that Figure 5.1 is based on 2010 data, which will be in the FS.

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Mr. Gregson then continued his presentation by noting that in 2010 robotics equipment was used to address two of the prime source areas, based on water table detections. This effort involved soil removal using remotely-operated bulldozers and front-end loaders. The soil was screened, munitions were removed, and the soil was stockpiled and is currently being tested in order to determine its ultimate distribution. Mr. Gregson stated that approximately 8,000 tons of soil was removed from a northern area and about 4,000 tons from a southern area.

Mr. Gregson then reported that over the years munitions removals were conducted at areas identified through the AirMag survey, at HUTA I and HUTA II, and at the SCAR site, the Eastern test site, and the test plots. Additional munitions removal work was done as support activity, such as clearing roads and drill pads for safe access. Munitions were also removed from CS-19 and the CS-19 Bunker Area. He then showed a figure entitled "Source Clearance and Excavation Areas" and explained that it's color-coded to indicate the percentage of munitions removal in specific areas. He noted that it's believed that nearly 100% of munitions were removed from HUTA I, HUTA II, the test plots, Targets 42 and 23, Mortar Target 9, and CS-19 (by AFCEE). He also mentioned that approximately 20,000 tons of soil was removed. About 75% of munitions were removed from the SCAR site, the Eastern test site, the area surrounding excavations at Turpentine Road and Tank Alley, and the CS-19 Bunker Area. About 85% of munitions were removed at the support areas – drills pads, roads, the CS-10 support area, and other support areas used during excavation work. Mr. Gregson also mentioned the 25% munitions removal where surface clearance operations were conducted.

Mr. Gregson then showed a slide entitled "Conceptual Site Model" and noted that artillery projectiles and mortars were fired into the Central Impact Area from 1940 to 1997, and most of the munitions contained RDX and/or TNT. After the munitions exploded (if they exploded as intended), smoke and other fine particles containing explosives built up on the ground, dissolved once coming into contact with precipitation, and leached toward the groundwater. Rounds that broke open or didn't explode completely left bigger chunks of explosives that didn't dissolve as readily; over time, however, they will be subject to precipitation and the explosives will reach groundwater. The UXO are not a current source to groundwater contamination. Mr. Gregson also noted that once in solution, TNT can adsorb to soil or degrade to 2A-DNT or 4A-DNT before reaching groundwater. RDX, however, does not degrade in surface soil, but instead leaches to groundwater and creates an RDX plume.

Mr. Gregson stated that the IAGWSP conducted a risk screening based on groundwater monitoring results from 140 monitoring wells. Detected in the well samples were explosives, perchlorate, metals and inorganics, pesticides, herbicides, semi-volatile organic compounds (SVOCs), and volatile organic compounds (VOCs). Only RDX and perchlorate were retained for further evaluation, as the other contaminants were detected infrequently and sporadically, were consistent with background levels, were common laboratory contaminants, or exhibited low mobility in the environment. Mr. Gregson also said that past and ongoing source removal actions will remove the known current source areas. He further noted, however, that some source that can't be fully characterized remains, which results in some uncertainty.

Mr. Gregson then discussed the FS development of alternatives, which, he noted, were based on plume extent and concentrations, and predictions of groundwater flow and contaminant fate and transport. The 2001 FS Screening Report evaluated a wide range of remedial technologies including ex-situ and in-situ technologies, and it was concluded that a pump-and-treat alternative would probably be the most effective, given the contaminants, the extent of contamination, and the relatively low concentrations seen over a wide area. The 2007 FS Screening Report looked at a wide range of hydraulic containment options that focused on extraction wells and ex-situ treatment. The 2011 FS focused on the use of treatment systems with ion exchange resin and/or granular activated carbon (GAC) vessels.

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Mr. Gregson reported that the remedial alternatives for the FS are: no further action; monitored natural attenuation (MNA) and Land Use Controls (LUCs) both on and off base to prevent exposure to the groundwater; four focused extraction/MNA/LUCs alternatives, each involving two to three extraction wells, in the vicinity of Burgoyne Road or Tree Swamp Road (in the heart of the plume, to capture the main area of contamination); and, as required by EPA's Administrative Order, an alternative that would clean up the plume in ten years.

Mr. Gregson concluded his presentation by reviewing a "Next Steps" slide: address regulator comments on the Source Area Report and the FS, this summer; issue the Remedy Selection Plan (RSP), this summer; hold a public comment period, this summer; hold a public meeting on the RSP, late June (possibly June 29); and respond to comments and issue a final Decision Document (DD) in the fall 2011.

Mr. Goddard asked if there's a plan to destroy any UXO in the contained detonation chamber (CDC). Mr. Gregson replied that some items are currently being stored in a secure bunker and once enough items have accumulated the CDC will be brought back on site, perhaps in a few weeks. Mr. Goddard then asked about the amount of soil that's currently stockpiled. Mr. Gallagher replied that about 1,200 tons of soil is stockpiled. Mr. Goddard asked if the stockpiles are covered and Mr. Gallagher confirmed that they are. Mr. Goddard also asked if all of the alternatives would allow some portion of the plume to migrate off base. Mr. Gregson clarified that the ten-year alternative would capture the entire plume, while the others would allow some portion of the plume downgradient of the extraction wells to migrate a small distance off base. Mr. Goddard then asked if that portion of the plume would contain only RDX, as perchlorate would be below cleanup level. Mr. Gregson replied that perchlorate is currently being detected in only three monitoring wells and is not expected to migrate very far.

Ms. Jennings referred to Mr. Goddard's question about the CDC and said that the IAGWSP has uncovered a number of munitions items in the course of its investigation. She also noted, however, that the robotics exercise itself actually caused many of the munitions items that were found to become fairly unstable, and therefore the IAWGSP has been performing consolidated blow-in-places (BIPs) for many of those items. Items found on a routine basis – while putting in well pads, for example – continue to be stored at the Ammunition Supply Point (ASP) until the CDC is brought back to the base. Ms. Jennings explained that the CDC hasn't been brought back more recently because the stockpile of munitions to be destroyed hasn't accumulated significantly enough, due to the numerous BIPs being done since the robotics work.

Ms. Jennings also spoke about the plan to hold a public meeting in late June to present specific information on the Central Impact Area groundwater and source alternatives, noting that a recap of the same information might also be presented at the July MMRCT meeting. She said that those presentations would include more details about each alternative, such as exact well configurations, predicted cleanup timeframes, and the portion of the plume that would be allowed to migrate off base.

Ms. Jennings then said that she thinks the project managers are close to issuing a Central Impact Area groundwater remedy, but the bigger question is what to do with the remaining source. She noted that although a lot of clearance has been done, there are still an estimated 5,500 to 9,000 UXO items remaining at the site, and she doesn't think anyone really knows what will happen with them over time. Ms. Jennings said that a long-term remedy for the source is probably the biggest decision that needs to be made and will probably be the most expensive remedy ever to be implemented at MMR. Therefore, feedback from the MMRCT and the public is going to be very important.

Mr. Goddard asked if, rather than digging up the whole Central Impact Area, restricting access to the area with LUCs and allowing anything that degrades to migrate into a remediation system is one possibility. Mr. Gregson agreed that that would be one alternative – monitoring for RDX contamination and having a downgradient treatment system in place to address it.

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Ms. Jennings stated that from EPA's perspective, a groundwater containment and collection system buys some time, but leaving the munitions items at the site until something else happens doesn't really make sense, considering the sole-source aquifer. She said that she thinks the source solution will be a long-term removal program, with the hope that over time technology will improve so that the process can be accomplished more efficiently and inexpensively. She added that she can't envision a decision that doesn't require further removal of UXO. Mr. Goddard said that this is why he inquired about prescribed burns. Ms. Jennings replied that it might be that additional clearance is tied with future prescribed burns.

Ms. Rielinger suggested that it's probably not known how long it takes for UXO to degrade. Ms. Jennings agreed. Mr. Gregson added that some corrosion studies have been done, and although the thickness of the casings varies for different types of items, degradation was estimated to take 100 to 200 years, but it's really a big unknown. Ms. Rielinger asked if it's possible to continue monitoring without decommissioning a treatment system completely and then reactivate the system if contamination is detected. Mr. Gregson said that this approach would be possible.

Mr. Dinardo asked if it's correct that only about 5% of the source has been addressed. Ms. Jennings clarified that that number pertains specifically to UXO. She also noted that most of the UXO removal work was conducted around known target areas, but targets were moved around over the many years of training. She said that the project managers have tried to determine where the worst source areas are and address them – for example, by using the water table detections as a line of evidence. Ms. Jennings further noted, however, that remaining at the site are a large number of UXO that are corroded, cracked, or breached, but not leaking to the point where a shallow groundwater plume can be identified. Nevertheless, they are "certainly a potential source." She also said that EPA views the remaining UXO as no different than a PCB transformer or an underground storage tank, for example, in that the agency would not agree to just leaving them at a site until they cause a problem or begin to leak.

Mr. Dinardo asked if the BIPs wouldn't actually be introducing a source. Ms. Jennings replied that they are done in a fairly controlled manner, and afterward the soil can be removed. Mr. Dinardo then questioned if there is a way to secure five acres, for example, without digging everything up to a certain depth. Mr. LoGiudice suggested that perhaps the best approach is to dig everything up and then replant it. Mr. Gregson noted that the area in question is approximately 330 acres in size. Ms. Jennings added that that is just the Central Impact Area, and there's more beyond it. Mr. Gregson said that his point is that it would never be possible to remove all of the UXO items. Ms. Jennings replied that the question is whether to leave them behind and wait for problems 100 years from now or put a plan in place now that begins removing them. She added that, again, this is probably the most difficult and controversial decision to be made – because it's expensive.

Mr. Goddard said that he doesn't think an all-or-nothing decision can be made right now, and he doesn't anticipate even having a final answer this summer. He also suggested that this has "huge implications nationally for all the ranges." Ms. Jennings agreed. Mr. Goddard then asked if the Pentagon is weighing in on the decision. Ms. Jennings replied "not yet" because a decision hasn't yet been officially proposed. Mr. Gregson agreed that this is a huge issue with national implications. Mr. Goddard mentioned the Range Rule, and questioned whether it pertains to the situation at MMR. Ms. Jennings replied that the Range Rule pertains to munitions used for their intended purpose, in an environment situation, until the range is closed. However, EPA's authority under the Safe Drinking Water Act (SDWA) sort of circumvented the Range Rule at MMR because it's located over a sole-source aquifer. Ms. Jennings added that she doesn't know whether the "big Army" will object when the Central Impact Area decision is issued. She further stated that she thinks there are a lot of policy implications for both sides.

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Mr. Goddard requested that the MMRCT be kept informed of the comments of high-level management at EPA, the National Guard Bureau, and the Army as he thinks those opinions would factor into what he would recommend in terms of a decision. Ms. Donovan asked if Mr. Goddard wants these people to be invited to the public meeting. Mr. Goddard indicated that it would be good if they were willing to attend, but he would be satisfied to hear about their comments and what they believe the implications would be. Ms. Jennings stated that once the decision is rolled out, it will be elevated up the chain at EPA.

Mr. Pinaud stated that the Central Impact Area boundary line, which encompasses 330 acres of the roughly 3,300-acre Impact Area, was somewhat arbitrarily drawn many years ago by a group of project managers using their professional judgment. Therefore, he thinks that the comment that UXO may exist outside of the Central Impact area is well founded.

Mr. Pinaud then asked how the IAGWSP arrived at the numbers that denote the percent of UXO removed at specific locations within the Central Impact Area. Mr. Gregson replied that, again, a good deal of professional judgment was used, looking at the capability of the geophysical instruments that detect the items and what was seen in past investigations. Mr. Pinaud then asked if there's a plan to go back now and remove the other 25% in an area with 75% removal, for example, or is the IAGWSP saying in its FS that enough has been done already for the purpose of moving forward. Mr. Gregson replied that at this point in the FS it's thought that the IAGWSP is done with those areas. He noted, for example, that 100% removal was achieved at areas identified through water table detections as ongoing sources. He also mentioned that in areas outside of those, significant groundwater contamination is no longer being seen, so it was thought that a lesser level of removal was needed. Mr. Pinaud asked if it's correct that the focus was that the ordnance was a potential source to groundwater. Mr. Gregson agreed, but added "specifically the rounds that were broken open."

Mr. Pinaud then noted that although access to the Impact Area is restricted, everyone knows that trespassing at MMR is a big issue. He said that trespassing occurs every day, with some of the trespassers being kids, and other being adults driving ATVs. Even though the roads are gated, anyone could just walk right into the Impact Area, and the Massachusetts Department of Environmental Protection (DEP) is concerned about potential exposure to ordnance. He then said that he thinks MassDEP will be looking for LUCs that really work to restrict access and eliminate public safety issues, and possibly include yearly UXO sweeps tied to prescribed burns. Mr. Pinaud also noted that MassDEP will be talking to EPA and the Massachusetts National Guard to ensure that this idea is incorporated into whatever source remedy is selected. He further stated that there's a lease requirement to remove ordnance from the base, and that lease currently expires in 2051, although it could be extended.

Mr. Minior said that he assumes that based on signal strength, the IAGWSP only removes a certain amount of what registers on the magnetometer equipment, knowing that the rest is only little bits and pieces of metal debris. He then asked if that in any way enters into the removal percentages that were discussed and shown on the figure. Mr. Gregson replied that it does. Mr. Minior noted that the IAGWSP then made informed decisions as to what to remove and what not to remove, which is why there could be some variations.

#### **Agenda Item #4. FS-1 Update**

Mr. Hilyard stated that the Fuel Spill 1 (FS-1) plume is located on the southeast boundary of the base, in the town of Mashpee. The FS-1 source area, located on the base, was the result of a release of aviation gasoline (AvGas) to the ground surface. The contaminants of concern (COCs) in groundwater at the source area (lead, thallium, and toluene) are not migrating and therefore the remedy there is long-term monitoring. The off-base FS-1 area of concern is an ethylene dibromide (EDB) plume, which is completely detached from the source area and has followed natural gradients off the base toward the

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Quashnet River headwaters. Mr. Hilyard noted that the cleanup standard for EDB is the MMCL of 0.02 micrograms per liter ( $\mu\text{g/L}$ ). He also reported that the historical maximum EDB concentration was 44.5  $\mu\text{g/L}$  and the current maximum concentration in the monitoring network is 0.54  $\mu\text{g/L}$ .

Mr. Hilyard stated that active remediation of the FS-1 plume began in April 1999, with a total pumping rate of 720 gpm. The system went through various changes over the years and currently consists of three operating extraction wells: extraction well 1 (EW-1), the southernmost well, operating at a flow rate of 90 gpm; EW-5, the middle well, operating at a flow rate of 175 gpm; and EW-11, the northernmost well, operating at a flow rate of 250 gpm. Mr. Hilyard reported that EW-7 was turned off in 2007 as part of an optimization, and he pointed out on a figure the dots that represent the discharge points of the treated water via bubblers in the bog system. He also showed a photo of the FS-1 treatment facility and explained that contaminated water is pumped through a series of GAC vessels and the treated water is discharged through vertical risers, also known as bubblers.

Mr. Hilyard then showed a 1998 FS-1 plume depiction beside a 2010 depiction, noting that the plume used to be much longer. He also pointed out that the groundwater contamination that was underneath the bog has discharged into the surface water, and that the leading edge of the plume has retreated away from the bog system. Mr. Hilyard then reported that from startup in April 1999 through December 2010, the FS-1 system has treated about 3.5 billion gallons of water and removed 17.76 pounds of EDB (enough to put 161,000 Olympic-size pools at 0.02  $\mu\text{g/L}$ ). He also reported that from January to December 2010, the system treated 264 million gallons of groundwater and removed about 0.16 pounds of EDB (enough to put about 1,400 Olympic-size pools at 0.02  $\mu\text{g/L}$ ).

Mr. Hilyard stated that there is no current risk of exposure to FS-1 groundwater; there are no residences in the immediate vicinity of the plume nor are there any public municipal water supplies. In addition, AFCEE's Private Well Verification Program, which is an aspect of its LUCs program, is currently under way to verify that none of the parcels in the vicinity of the plume is using a private well. Mr. Hilyard also noted that there are no risks through surface water exposure. EDB levels in the surface water at the Quashnet River are intermittent and generally very low, usually less than the 0.02  $\mu\text{g/L}$  cleanup standard, while the screening-level human health risk benchmark that was established is 6.5  $\mu\text{g/L}$  and the screening-level ecological benchmark is 31  $\mu\text{g/L}$ . Mr. Hilyard also mentioned that the cranberry bogs in the area are not currently in production.

Mr. Hilyard referred to a figure depicting the FS-1 plume boundary and the LUC boundary that defines the area included in the Private Well Verification Program. He noted that the FS-1 plume is primarily overlain by parcels owned by the state or government, although there are some private parcels in the Saddleback Road. He noted that all of these parcels will undergo verification.

Mr. Hilyard reviewed costs associated with the FS-1 plume: for fiscal year 2010 – \$595,000; for 1997 to 2010 – \$22 million; and estimated for 2011 to 2038 – \$2.9 million.

Mr. Hilyard displayed a figure showing the FS-1 groundwater monitoring network and noted that biennial, annual, and semiannual sampling events were conducted in 2010. Surface water monitoring is also conducted at three locations in the bogs three times year, and at five additional locations annually. Mr. Hilyard also spoke about a data gap investigation in the vicinity of EW-1, which involved groundwater and lithological profiling at three locations, using direct-push and rotosonic technology. Some data gap work was also done just north of EW-5.

Mr. Hilyard then showed a graph entitled "FS-1 Extraction Well and Plant Influent Data (2003 – present)" and another graph entitled "FS-1 Extraction Well and Plant Influent Data – 3 Year Overview." He noted that EW-11, with the highest influent concentration, appears to be doing the most work, while concentrations at EW-5 are just slightly above the cleanup standard, and concentrations at

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EW-1 have been at or below the cleanup standard since December 2008, which indicates that the well is nearing the end of its life cycle and may be ripe for optimization.

Mr. Hilyard stated that the electrical consumption associated with operating the FS-1 treatment system was 253 megawatt hours (MWh) over the past year and 4,247 MWh since system startup. He also noted that in 2010 emissions generated from this electrical consumption were significantly less than what they would have been using the tradition New England power mix, because AFCEE is part of the Green Power Purchases program (50% of electricity from renewable sources) and because of its use of power generated by the onsite wind turbine.

Mr. Hilyard reported that the source area monitoring wells are sampled every two years, primarily for lead. He noted that total lead concentrations are stable or decreasing, but as of June 2009 one of the two monitoring wells was still showing lead at levels above the tap water action level of 15 µg/L. The wells will be sampled again next month. Also, it was noted on the slide that Mr. Hilyard displayed that thallium hasn't been detected at the source area since 1999 and that toluene concentrations have been below the MCL of 1,000 µg/L since 1999.

Mr. Hilyard then stated that in the EDB plume itself, concentrations throughout the plume continue to decrease, which is primarily due to operation of the treatment system and the natural attenuation processes that occur in the aquifer. Historically, the highest EDB concentrations were seen at monitoring well 36MW1041, just north of EW-11, the northernmost extraction well. Concentrations there have decreased, however – from 3 µg/L in 2007 to 0.857 µg/L in 2009 and then to 0.454 µg/L in June 2010. Mr. Hilyard noted that there's evidence that the plume is contracting in the aquifer toward the extraction wells, and he mentioned that there are no detections of EDB in monitoring wells south of Grafton Pocknet Road.

Mr. Hilyard stated that the monitoring data are consistent with the latest available model transport simulations from 2007. He also noted that there are some low concentrations in the plume north of EW-5, with the bulk of the plume remaining north of EW-11. He said that the plume is behaving as predicted. He then showed a figure entitled "EDB Concentration Trends in Groundwater and Surface Water" and noted that the black outline represents the plume boundary in early 2010 and the gray outline represents how the plume was redrawn based on sampling conducted in 2010.

Mr. Hilyard showed a north/south cross-section of the plume, pointed out the most recent plume boundary, and said that based on 2011 data it's no longer thought that the plume exists in the area between EW-11 and EW-1. He also point out the location of the current maximum EDB concentration (0.45 µg/L), upgradient of EW-11. He then showed a west/east cross-section of the leading edge of the plume and noted that concentrations there have decreased significantly, with influent concentrations at less than the cleanup standard since 2008. He further noted that the data gap investigation he mentioned shows that the plume in that area is quite narrow, and what remains of the plume is deep, with the bottom being controlled by a low-conductivity silt unit.

Mr. Hilyard then displayed a figure entitled "FS-1 Surface Water Results September 2010" and noted that there are eight surface water sampling locations throughout the bog system. Most of the locations test nondetect, but there are some intermittent low-level detections at two of the locations (36SW0019 and 36SW4200). This was expected, however, and that contamination probably represents an area that was downgradient of the capture zone for the extraction system when it was turned on. It's believed that that small area of EDB will slowly bleed out of the bogs (where there's a lot of peat) and into the river.

Mr. Hilyard reviewed the "Conclusions" slide: System Performance and Ecological Impact Monitoring (SPEIM) data are consistent with the conceptual side model for the plume, indicate that the remedial goals for the extraction/treatment/discharge (ETD) system are being met, confirm that the remediation is progressing as expected, and indicate that EDB near EW-1 is very limited in extent and so that well

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is in the process of being optimized; model predictions indicate that the FS-1 ETD system will operate until approximately 2020, with a small area of low-concentration EDB predicted to remain in a low-conductivity silt unit at the top of bedrock (although this hasn't yet been observed); and additional data are being collected to identify the optimal pumping configuration for EW-1.

Mr. Hilyard then stated that the next step is to install packers at EW-1 so that the well pumps from the bottom 15 feet of the screen and it will be possible to get a better idea of EDB concentrations there and determine if influent concentrations increase as a result. These data will be shared at Technical Update meetings and at a future MMRCT meeting. Then, the SPEIM monitoring network will be optimized, dependent on the final outcome of the EW-1 optimization.

Mr. Taylor noted that Mashpee used to lease the 25 acres of cranberry bogs in order to make money. He then asked if there's been any discussion about what it would cost to bring the bogs back into production, to make up for the 15 years that they haven't been used. Mr. Minior replied that a couple of years ago the Town of Mashpee looked into the possibility of resuming cranberry production and found that there was no interest to do so. Mr. Taylor stated that that was because the bogs hadn't been used for 15 years and therefore weren't healthy. He then clarified that his question is whether it's been discussed how much it would cost to restore the bogs. Mr. Minior said that the Conservation Commission decided it no longer wants to cultivate the area, but instead wants to restore it to a natural habitat environment. Mr. Hurley confirmed that the plan is to restore it to a brook trout habitat and wetland habitat. Mr. Minior added that that plan is in the process of being implemented.

Mr. Taylor also reminded the group of the statement that the small amount of EDB that was removed from the plume was enough to bring 161,000 Olympic-size pools to the cleanup standard, and he would bet that there are probably somewhat fewer than that many Olympic pools in the United States.

#### **Agenda Item #5. CS-20 Leading Edge Update**

Mr. Dalrymple stated that the CS-20 plume, a PCE plume located in the southwest portion of MMR, has an operating treatment system consisting of two extraction wells. Although the original treatment system design called for full containment of the plume, due to access issues AFCEE was unable to install a third extraction well at the plume's leading edge, and the regulators agreed that the downgradient portion of the plume would be allowed to naturally attenuate with monitoring.

Mr. Dalrymple reminded the team of the CS-20 Leading Edge update given at the October 2010 MMRCT meeting when it was reported that the March 2010 sampling results showed PCE trends increasing at three downgradient monitoring wells (81MW0013A, 81MW0018B, and 81MW0019C). Consequently, the sampling frequency at those wells was increased from annual to semiannual. It was reported during the CS-10 Leading Edge Update in December 2010, however, that the September 2010 sampling results showed that PCE concentrations at each of those wells had decreased.

Mr. Dalrymple then stated that results from the March 2011 sampling event showed an increase in PCE concentrations at 81MW0013B, from 8.5 µg/L to 24 µg/L. Consequently the sampling frequency at this well and at the downgradient 81MW0019A will be increased from annual to semiannual. Additional results from the March 2011 sampling events showed consistent or declining trends at the other leading edge wells. Mr. Dalrymple also showed a cross-section figure and pointed out Deep Pond, the direction of groundwater flow, and the monitoring wells at the leading edge where PCE was detected, and those where it was not.

Mr. Dalrymple also noted the following: at 81MW0015A&B, which is adjacent to EW-2, concentrations have been nondetect ever since the extraction well began operating, as expected; upgradient monitoring and the modeling indicate that the plume is being captured at Boxberry Hill Road; in the shallow well screen at 81MW0018, concentrations were nondetect through 2007, increased to nearly 30 µg/L in 2010, and fell below 10 µg/L in the last two sampling events; and in the

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deeper screen at 81MW0018, the concentration was 3.3 µg/L in the last sampling event, with concentrations generally ranging from 2 µg/L to 4 µg/L.

Mr. Dalrymple informed the group that the MCL for PCE is 5 µg/L and then noted: concentrations at 81MW0013A were below MCL up until 2009, then increased to 20 µg/L and have since dropped back down to about 17 µg/L; concentrations at 81MW0013B were below MCL until about 2006, then increased to about 15 µg/L, dropped to about 5 µg/L, and increased again to about 24 µg/L; the four monitoring wells near Deep Pond have had only one MCL exceedance (9 µg/L) – a one-time occurrence in a shallow screen that now tests nondetect, while the other screens at that well have always tested nondetect; and 69MW1507, which had an historical high of about 2 µg/L, now tests nondetect.

Mr. Dalrymple then reminded the group of the increased sampling frequencies at particular monitoring wells and noted that results will be presented as they become available. He also said that AFCEE is developing a plan to collect data to optimize the extraction wells and will be updating the plume shell as part of that process. The updated plume shell will include the most recent detections and some transport simulations will be run to see the fate of those detections. Although there's no concrete schedule at this time, these activities are expected to occur this summer or fall.

Mr. Lim asked Mr. Dalrymple to point out the location of the planned extraction well that was never installed due to access issues. Mr. Dalrymple referred to a figure and noted that it was planned for where 81MW0013 is now located, on Raspberry Path. Ms. Jennings asked if that had been the leading edge of the plume at that time. Mr. Dalrymple replied that at that time there were no MCL exceedances in that area, so the installation of that extraction well was to have been preventative. He also said that there were no monitoring wells there at that time, only some direct-push drilling along Boxberry Hill Road.

Ms. Jennings said that part of the reason EPA agreed to not installing a downgradient extraction well was because the levels weren't that high and access couldn't be obtained. Now that contamination levels are much higher and have reached beyond the original area, she wonders if there is another option for a downgradient extraction well. Mr. Minior replied that this is part of the ongoing discussion and evaluation. The increased concentrations have been observed, AFCEE is looking at what that means, and the model is going to be updated for a better prediction of what will happen in the future. And, as noted in the Record of Decision (ROD), AFCEE, in consultation with the regulators, will look at what might need to be done in the leading edge area. He stated that nothing is off the table at this time, but whether or not access could be obtained is unknown because an exact location hasn't been determined. He said that this is all part of the ongoing process.

Mr. Dalrymple added that the animations from 2006 showed 15 µg/L and 20 µg/L in that area, predicted to be degraded by the time they're near Deep Pond – so the model did show concentrations approaching those that have been observed, but they “just went on this side a little bit more.” Also, in response to an inquiry from Mr. Minior, Mr. Dalrymple confirmed that that modeling was based on the direct-push data from Boxberry Hill Road.

Mr. Goddard asked if it's correct that there are no downgradient receptors to the leading edge contamination, and Mr. Dalrymple confirmed that that's correct. Mr. Goddard then asked if it would be possible to identify a location where access could be obtained in order to intercept the contamination, and also questioned whether it would even be worthwhile to do so. Mr. Dalrymple replied that, as he'd mentioned, the transport simulations from 2006 suggest that the contamination would attenuate by the time it reached “about here.” He also said that the new transport simulations will provide a better idea of what might actually happen. And he mentioned that the Crooked Pond public water supply already has wellhead treatment on it, courtesy of AFCEE. Mr. Goddard asked when the MMRCT will hear another CS-20 Leading Edge update. Mr. Dalrymple replied that the next sampling event will take

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place in September so the team would be updated on sampling results at the October meeting – and on modeling results, once those are available.

Mr. Karson reminded Mr. Goddard that Deep Pond is part of AFCEE's pond sampling program, and results from the April sampling event are expected at the end of this month. He also mentioned the Private Well Verification Program LUC and said that 79 private wells have been identified in the CS-20 area, but only two of them are functional and are used only for outdoor watering. He further noted, however, that 19 parcel owners have not responded to AFCEE's outreach efforts so far, and therefore the status of those parcels is yet to be resolved.

Mr. Taylor recommended against taking comfort in the thought that there are no production wells for the Town of Falmouth downgradient of the plume, given that the Town is looking at adding more wells in order to reduce the use of water from Long Pond. He said, "Where the production wells are now isn't where the production wells will be in 25 years."

Mr. Pinaud referred to the cross-section figure and asked if there are any existing downgradient well screens to try to detect where the 30 µg/L concentration that passed through 81MW0018B is going. Mr. Dalrymple pointed out the wells screens where it was thought that contamination might be detected again in the future. Mr. Pinaud suggested that it's possible that something will be seen in those well screens fairly soon, and Mr. Dalrymple said that perhaps that would happen sometime in 2012 or 2013.

#### **Agenda Item #6. MMRCT Check-in**

Mr. Karson asked if MMRCT members would like to continue to have presentations that include detailed historical information, like those given tonight, or if they would prefer more streamlined presentations.

Mr. Dinardo said that he finds the historical data to be extremely valuable when reviewing trends or changes. He also said that a review of site history is very beneficial for some of the newer team members or the public, although having the information available in the handouts without going over every detail during a presentation could also be valuable. In terms of trends on testing and screening, however, he thinks it's necessary to provide details.

Mr. LoGiudice said that he thinks it's helpful to get the historical perspective of "where we've been and where we're going and how far we've come," although it doesn't have to be a lengthy presentation.

Mr. Goddard said that he thinks it might be a little cumbersome to review all the details of the decision process associated with a particular site, but reorienting the team on where a plume is located on the base, for example, is very helpful, as well as providing any relevant data when discussing trends. He also said that presenters could mention sources for historical details, such as the annual Plume Booklet.

Ms. Rielinger noted that she finds it helpful in terms of putting things in context when a presenter reviews what the contamination is, when it occurred, and if a treatment system is already in place. Mr. Goddard agreed and said that it isn't necessary to go through the whole decision process, such as when RODs were issued and so forth.

Ms. Donovan asked if anyone had a comment on the number of agenda items covered at tonight's meeting. Mr. Goddard indicated that he thought tonight's agenda was fine.

Mr. Dinardo said that he thinks that a map that shows both of the cleanup programs' plumes should always be available at MMRCT meetings. Mr. Karson said that he will make a note to see that that happens.

Mr. Karson then asked, since the IRP has activities in all four towns that surround MMR, whether the team would be interested in having meetings that focus on a specific town, while fitting that in with the

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IAGWSP's agenda requirements. Mr. Goddard asked if the meetings would be held in the town that's being discussed, but Mr. Karson replied that the updates would just be part of the regular MMRCT meeting. Ms. Jennings said that it's important to keep in mind that the MMRCT is only meeting about six times per year, not every month, which would make it difficult for the IAGWSP. Mr. Karson agreed that the IAGWSP is on deadlines and trying to meeting requirements. Ms. Jennings said that she thinks it would make more sense to consider a town-focused approach to the meetings in a couple of years, once the IAGWSP has reached a point in its cleanup program that's more similar to AFCEE's.

Mr. Karson then asked if tonight's meeting room (the IRP conference room) was satisfactory, should it be needed again in the future. Ms. Donovan indicated that the space could be somewhat limited if a lot of community members were to attend.

Mr. Karson reviewed the draft agenda for the next MMRCT meeting.

Ms. Jennings said that some of the residents who attended tonight's meeting for the Demo 1 update said they "didn't know about this" until drilling began in their neighborhood. Ms. Boghdan confirmed that a mailing was sent out to residents in the neighborhood. Ms. Jennings noted that the individuals at this meeting indicated that they hadn't received any mailings at all. Ms. Boghdan said that an extensive mailing was sent out, and Mr. Gregson said that the IAGWSP would cross-check tonight's sign-in sheet with the mailing list to ensure that notices were mailed. Mr. Dinardo remarked that sometimes people will receive information and notifications but not pay any attention until a drill rig shows up at the end of their driveway.

Mr. Dinardo also said that while he likes the intimacy of tonight's meeting room, he thinks members of the public would tend to be less comfortable participating in a meeting here than they would at the team's regular meeting facility. Ms. Jennings added that the lighting in this meeting room isn't great.

Mr. Goddard then asked if the Central Impact Area would be discussed at the August MMRCT meeting. Ms. Boghdan clarified that it would be included on July's agenda

Mr. Goddard then informed the group that he recently read in an email from the Environmental Business Council of New England that Rose Forbes of AFCEE was recently awarded the Paul G. Keough Environmental-Energy Award for Government Service for her work at MMR.

Ms. Donovan said that she noticed that the Environmental & Readiness Center (E&RC) hosted an MMR Military Civilian Community Council (MC<sup>3</sup>) this evening. She then said that she thinks that issues pertaining to the IRP or the IAGWSP may come up at MC<sup>3</sup> meetings, and she asked the E&RC to provide a list of committee members and a meeting agenda, although she didn't receive the agenda. Ms. Donovan said that she believes that the MC<sup>3</sup> membership includes about six or seven community members. She also said that she thinks it would be beneficial for the MMRCT to be kept informed about this forum, whose meetings might include issues being addressed by the MMRCT.

#### **Agenda Item #7. Next Meeting Schedule and Adjourn**

The MMRCT will meet next on Wednesday, July 13, 2011. Mr. Karson adjourned the meeting at 8:35 p.m.