Impact Area Review Team
Bourne Best Western
January 23, 2007
6:00 – 9:00 p.m.

Meeting Minutes

Members:	**Organization:**
Hap Gonser	IAGWSP
Mike Minior	AFCEE/MMR
Lynne Jennings	US EPA
Bill Walsh-Rogalski	US EPA
Len Pinaud	MassDEP
Ellie Grillo	MassDEP
Richard Conron	IART/Bourne
Jim Pierce	IART/Sandwich
Facilitator:	**Organization:**
Jim Murphy	US EPA
Attendees:	**Organization:**
John McDonagh	IAGWSP
Lori Boghdan	IAGWSP
Pam Richardson	IAGWSP

Attendees (cont'd):	**Organization**:
Kris Curley	IAGWSP
Dave Hill	IAGWSP
Paul Nixon	IAGWSP
Bill Sullivan	E&RC
Doug Karson	AFCEE
Mark Panni	MassDEP
Jane Dolan	US EPA
Desiree Moyer	US EPA
Mark Begley	EMC
Kevin Hood	UCONN/TOSC
Lisa and Doug Cabral	Sandwich residents
David Dow	Sierra Club
Mike Goydas	ECC
Mark Hutson	Geo-Hydro, Inc.
Rick Carr	ATL
Jane Shea Moran	e^2M

Agenda Item #1. Welcome, Agenda Review, Approval of 12/5/06 IART Meeting Minutes

Mr. Murphy convened the meeting at 6:05 p.m. and the Impact Area Review Team (IART) members introduced themselves. Mr. Murphy read Ed Webb's letter of resignation from the IART, reviewed the agenda, and asked if there were any changes to the October 24, 2006 IART meeting minutes. No changes were offered and the minutes were approved as written.

Agenda Item #2. Late-Breaking News

Ms. Wadsworth, the community outreach manager for the Massachusetts Army National Guard's (the Guard's) Environmental & Readiness Center (E&RC) at the Massachusetts Military Reservation (MMR), provided a brief update on community involvement efforts pertaining to the initiative to improve training at the Small Arms Ranges (SARs) through the use of lead ammunition.

Ms. Wadsworth noted that the final Pollution Prevention Overview Plan, as well as other documents having to do with the Guard's phased approach to return to firing lead at the SARs, will be available at the E&RC's web site (www.EandRC.org) early next week. She also reported that in coordination with the Environmental Management Commission (EMC), the Massachusetts Department of Environmental Protection (MassDEP), the U.S. Environmental Protection Agency (EPA), and the Army Environmental Command (AEC), the E&RC recently produced a Small Arms Ranges brochure, which will be mailed to MMR stakeholders, distributed to the local libraries, posted on the web site, and made available to any other entities that might be recommended. Ms. Wadsworth expressed her appreciation for the agencies' help in developing the brochure, which required conveying very technical information at an understandable level. She also announced that the agencies and the E&RC are hosting a joint public meeting/open house about the lead initiative at the Falmouth Holiday Inn on February 28, 2007 from 4:00 to 8:00 p.m.

Mr. Dow inquired about the end date of the public comment period for the initiative. Ms. Wadsworth replied that the process involves a number of comment periods, with the next one being a 30-day public comment period scheduled to begin on or around February 7, 2007 and pertaining to a draft Environmental Assessment (EA) through the National Environmental Policy Act (NEPA). She also noted that other upcoming comment periods will be associated with an Environmental Performance Standard (EPS) and with EPA's Administrative Order #2 (AO#2), and that MMR stakeholders, including the advisory teams – the IART, the Plume Cleanup Team (PCT), and the Senior Management Board (SMB) – would be notified regarding availability of those documents for review and comment.

Mr. Dow asked when all of the comment periods would be completed. Ms. Wadsworth replied that the SAR Working Group, which is comprised of the environmental officer from the EMC and representatives from EPA, MassDEP, and AEC, has developed a schedule, which she believes is anticipated to result in a return to firing lead in the late spring/June timeframe. Ms. Jennings added that the schedule is quite complicated, involving multiple documents and comment periods. She also clarified that in fact the completion of all the processes isn't expected to occur until sometime in July. In addition she noted that E&RC's web site is a good resource for information about documents that are out for public comment, and that a detailed schedule would be provided at the February 28, 2007 public meeting. Ms. Wadsworth stated that the E&RC will also email MMR stakeholders, including Mr. Dow, to notify them of upcoming public comment periods.

Mr. Pinaud announced that MassDEP is holding public hearings on proposed amendments to the Massachusetts Contingency Plan (MCP), which are intended to update numerical cleanup standards and strengthen and clarify performance standards and requirements for the assessment and cleanup of disposal sites. He noted that the first hearing will occur on February 27, 2007 at 3:00 p.m. at MassDEP's Lakeville office, that comments can be submitted up until Monday, April 16, 2007 at 5:00 p.m., that the amendments are available on MassDEP's web site or at the Hyannis office, and that they pertain in part to soil and groundwater cleanup standards for RDX and HMX.

Mr. Gonser announced that the U.S. Army Center for Health Promotion and Preventive Medicine (CHPPM) recently released results of its tungsten toxicity study, which involved feeding tungstate to rats. The study identified a no-observable-effects-level of 20 milligrams of sodium tungstate per kilogram of body weight (mg/kg) and a lowest-observable-effects-level of 200 mg/kg. The next step will be to conduct a 30-day trial that looks at various levels of tungstate between 20 and 200 mg in order to better understand what levels in groundwater would be of concern. Ms. Grillo noted that a copy of the study report was provided to MassDEP's Office of Research & Standards, which is currently reviewing the document.

Agenda Item #3. Remediation & Investigation Update

Mr. Goydas reminded the group that in September 2004 a Rapid Response Action (RRA) system was installed at the Demolition Area 1 (Demo 1) groundwater plume. In December 2006 a final Demo 1 plume cleanup decision was made, involving the installation of three new extraction wells (EW-501, EW-502, and EW-503), the construction of a new treatment plant, and the installation of an additional downgradient reinjection well. Mr. Goydas noted that the wells and pipeline have been installed and the treatment plant is currently being built. He then showed a series of photographs of construction activities.

Mr. Goydas then reported that as part of the J-1 Range investigation, RDX was detected at levels up to about 15 parts per billion (ppb) in profile boring J1P31, where a monitoring well was installed to help determine whether that area is a potential source and if there's a connection to

downgradient contamination related to the Central Impact Area plume. He also said that additional wells are planned to better understand the significance of that contamination.

Mr. Goydas then showed a figure depicting the J-1 Range area and pointed out J1P31, lines representing backward and forward particle tracks, and the 2000-meter berms. He also pointed out the proposed drilling locations related to the detection at J1P31, as well as another location to the east to help understand the general breadth of the contamination, and a proposed location pertaining to a potential data gap on the eastern side of the J-1 North plume.

Mr. Dow inquired about the dark pink area on the figure. Mr. Goydas replied that that's the interberm area, the home of a number of site activities believed to be the source of the J-1 North plume. Mr. Dow then asked if the purpose of the current work is to examine a potential new source area associated with the berm itself. Mr. Goydas replied that the intent of "these wells" is to obtain a better understanding of the potential source of contamination seen in J1P31. Mr. Dow asked if the suggestion is that there might be a plume heading off in a different direction from the main plume that's already been identified. Mr. Goydas replied yes, it seems that there might be a separate area of contamination, with a slightly more westerly trajectory.

Agenda Item #4. J-1 Range Southeast Groundwater Rapid Response Action

Mr. Goydas stated that the 14-day public comment period on the J-1 Range Southeast Groundwater RRA Plan begins tonight, and that copies of the executive summary are available at the meeting. He also noted that the plan will be available in the local libraries and that comments can be submitted on line, or by email or by phone to Pamela Richardson at the IAGWSP office.

Mr. Goydas showed a map of the J-1 Range Southeast plume, which he noted was identified through drive-point work along the base boundary and Greenway Road. He also pointed out DP384, where RDX was detected at a concentration of around 300 ppb, and later at 120 ppb in a fixed monitoring well. Mr. Goydas also pointed out the downgradient, off-site drilling locations that had tested nondetect, and noted that the IAGWSP has been working to gain access to an off-site area closer to the known plume in order to better understand the contamination. He then explained that the purpose of the current RRA is to take some action in the portion of the known plume that's on base in order to prevent further off-site migration.

Mr. Goydas then stated that the known plume, which is about 1,300 feet long, 650 feet wide, and up to 60 feet thick, is primarily RDX, with some very low levels of HMX. He showed a cross-section figure and said that it's believed that there's currently enough information about the upgradient portion of the plume to take rapid response action there. He also showed a modeling animation of how the plume is predicted to behave over time if no action is taken, pointed out the area in the center of the plume where contaminant concentrations exceed 200 ppb, and noted that the plume would continue to migrate through the Forestdale section of Sandwich and across Route 130. Mr. Goydas then stated that the goal of the RRA is to prevent the known mass on base from continuing to migrate off base, and accomplish that work on base without disruption to the community.

Mr. Walsh-Rogalski asked if the reason concentrations in the animation seem to disappear after they migrate beyond the base boundary is because that's the end of the data, or because that's where they reach concentrations below detection levels. Mr. Goydas replied that what the animation shows is the anticipated attenuation and migration of the plume, based on the relatively low concentrations in the trailing edge wells. He also noted, however, that it's predicted to take 20 to 30 years for that attenuation to happen, and he acknowledged that it's currently unknown "exactly what is down here," where drilling is now being undertaken.

Ms. Dolan asked if Mr. Goydas has any projections that show what the front half of the plume might look like, and how far it might migrate into the future. Mr. Goydas replied that although he

doesn't have that kind of projection to show tonight, that has been examined in order to help identify well locations. He also noted that the current focus is on trying to prevent the known upgradient contamination from migrating off site, accelerate restoration, and limit construction activities in the community by placing a treatment system on base.

Mr. Goydas then stated that because of the compact nature of the plume, rather than evaluating a variety of alternatives, the approach that the IAGWSP is taking for this RRA is to install one extraction well at the base boundary pumping at a rate of 75 gallons per minute (gpm). He noted that although testing indicates that a rate of less than 50 gpm would capture the plume, the IAGWSP is recommending a higher flow rate, at least initially, to ensure capture of the flanking portion of the plume and prevention of off-base migration. He also noted that the system would include an on-base modular treatment unit and an infiltration trench to return the treated water to the aquifer. He then showed a photograph of modular treatment units, which he described as Conex boxes typically used for shipping cargo, currently located at the Demo 1 plume. He noted that the assumption is that one of the Demo 1 units will be utilized for the RRA system, and added that the unit would be able to handle flow up 100 gpm. Mr. Goydas said that the well would be installed in the zone of higher concentrations, the modular treatment unit would be located fairly close to the base boundary, and the infiltration trench would also be located fairly close, but not right on top of the plume.

Mr. Goydas then showed an animation with the system operational beginning October 2007, although it may start operating a little earlier or a little later than that. He pointed out that the plume begins to migrate and then starts to be addressed by the remedial system. He also showed a schematic drawing of the system and noted that the treatment train is granular activated carbon (GAC) vessels in series, including a primary vessel and then a polishing step to treat any contaminant that might break through.

Ms. Jennings asked if there are higher RDX concentrations elsewhere in the J Range plumes. Mr. Goydas mentioned concentrations of 900 ppb in the J-3 plume, but Mr. Hill noted that those are perchlorate concentrations, not RDX. Ms. Jennings than inquired as to whether any sensitivity analyses were conducted that involved loading the model with higher RDX concentrations (in the well currently being drilled, for example) than have been detected. Mr. Goydas replied that what was tested was the realm of possibilities based on the known contamination on base, while the type of analyses that Ms. Jennings mentioned would be more suited to the Remedial Investigation/Feasibility Study (RI/FS).

Ms. Jennings asked when data would be available from the monitoring wells that are currently being installed. Mr. Gonser replied that monitoring well data should be available sometime next month. Mr. Hill added that profile data should start to become available over the next few days. Ms. Jennings suggested that data from the new wells could be helpful in terms of refining the system design, particularly the location of the extraction well.

Mr. Gonser agreed and noted that this is why the IAGWSP worked so hard to obtain access to the monitoring well locations. He then mentioned that the base boundary is as far out as the extraction well location could be without disrupting the community. He further stated that it makes sense to capture the upgradient portion of the plume no matter what, although it may become necessary to site an extraction well in the Forestdale neighborhood later on. Mr. Gonser also said that even though not all of the information about the plume is available at this time, he considers it worthwhile to move forward with the RRA system, minimize impacts to the community, and capture as much of that contamination as possible before it migrates off base.

Mr. Gonser also made a point of noting that completion of the Demo 1 Decision Document and construction of that final remedy are particularly important because one of the modular treatment units that's currently in use as part of the temporary Demo 1 system is going to be moved and

used for the J-1 Range Southeast RRA. He also mentioned that the J-1 Range Southeast system will be over-designed in light of the assumption that another extraction well, perhaps in Forestdale, is likely to be required.

Ms. Jennings noted that EPA is still reviewing the RRA workplan, and while generally in favor of trying to do something sooner rather than later, the agency wants it to be clear that there's a possibility of suggesting an amendment to the RRA (rather than waiting for the RI/FS) once the contamination becomes better characterized. Mr. Gonser said that the pump-and-treat technology and use of the modular treatment units makes it possible to "just keep putting independent packages together and rolling them out" as more is learned.

Mr. Pinaud stated that MassDEP, which is reviewing the RRA workplan as well, is also in favor of treating the plume sooner rather than later, and is pleased with the monitoring wells being drilled at J1P38 and J1P37. He also asked Mr. Goydas to indicate on a plan view map how far out the leading edge of the plume is generally projected to be, which Mr. Goydas did. Mr. Pinaud then asked if the IAGWSP's access agreement with the town allows for more than just a couple of monitoring wells on the road, in the event that contamination is detected there.

Mr. Gonser replied that the IAGWSP does have the ability to locate additional wells along the road, if needed to bound the contamination. He then noted that the Town of Sandwich has been extremely cooperative in that it made an exception to a moratorium on taking over private roads in order to provide access for drilling. He also mentioned the concern of having to run a pipeline through someone's yard if it turns out that an extraction well is needed in that area.

Mr. Pinaud said that it would probably be possible to use the road. He also asked if there would be any merit to installing a second infiltration trench, to the north, as part of the RRA system. Mr. Goydas replied that consideration of injection/infiltration for the RRA system included looking at utilizing the existing Air Force Center for Environmental Excellence (AFCEE) Fuel Spill 12 (FS-12) reinjection arrangement, but it was determined not to be of benefit. However, additional reinjection can be helpful in terms of "squeezing" a plume, and that may become part of the final remedy. Mr. Goydas also explained that the infiltration trench for the RRA system is located to the south because the plume is not perfectly aligned at the center of mass, but is closer to the southern end of the plume. Mr. Gonser added that another reason why one infiltration trench is considered adequate is because the pumping rate of the system isn't very high.

Ms. Jennings asked for clarification as to whether the IAGWSP's access agreement with the Town of Sandwich allows for installation of an extraction well along the road, or only monitoring wells to bound the plume. Mr. Gonser replied that he's not certain, but he believes that the National Guard Bureau's (NGB's) real estate directive only allows the IAGWSP to ask for monitoring wells. He said that he thinks extra steps would be required internally, and externally with the town, which has been very cooperative. He also mentioned that installation of an extraction well in the area might also mean having to deal with private property owners. Mr. Hill added that the specific right-of-entry pertaining to the drilling on Windsong Road currently provides for two monitoring wells, but the program is actively pursuing an easement with the town that will allow for expansion of the investigation, which it's hoped will be in place by the time the second well is installed. He also said that given the already-established language and the spirit of cooperation with the town, problems are not anticipated.

Mr. Dow asked if there are any vernal pools downgradient of the infiltration trench. Mr. Goydas replied that there are not. He also noted that drawdown impacts to surface water bodies are considered during design, and none have been seen in terms of the RRA system or in terms of a combined flow rate that includes the FS-12 and J-3 Range plume systems.

Mr. Gonser noted that beyond the public comment period the IAGWSP is interested in hearing from Sandwich residents "in more detail," given that only they can measure the potential visual impact of the treatment plant and so might offer some insight as to its location. He encouraged residents to contact Ms. Richardson of the IAGWSP office so they might be called upon for their input.

Ms. Cabral, a resident of Windsong Road, asked how long the IAGWSP has known about the J-1 Range Southeast plume and why no cleanup has been done before now. Mr. Goydas replied that the drive-point work (that initially identified the plume) occurred about 12 to 18 months ago, and since that time the IAGWSP has been trying to gain access off site and has been designing the RRA system. He noted that a plume may exist for 20 to 40 years but remain unknown until drilling is done in the right spot, and this particular plume is a fairly new development in terms of new contamination.

Ms. Cabral inquired about the level of noise associated with drilling activities. Mr. Hill replied that the drilling is fairly loud, but won't occur beyond 4:30 in the afternoon. He also said that while it's an advantage that it's winter and windows are closed, the noise will be audible inside people's homes. Ms. Cabral asked if drilling would occur on weekends, and Mr. Hill assured her that it would not.

Ms. Cabral then asked if the treatment facility would be visible from Windsong Road and Grand Oak Drive, and whether it would be audible from there as well. Mr. Hill replied that the treatment system is very quiet. He also said that during the winter at least one of the homeowners would be able to see the treatment unit through the fence – but plantings could be installed to improve that situation. Mr. Gonser added that when the treatment facility was turned on during the dedication ceremony for the J-2 Range plume system, those in attendance had to be told that the system had been activated because it was so quiet.

Ms. Cabral also inquired about the existence of treatment systems in other local communities that the Sandwich residents could see. Mr. Minior recommended that Ms. Cabral contact Doug Karson, who could arrange for her to see AFCEE systems in Falmouth, Mashpee, or Bourne.

Ms. Jennings clarified for Ms. Cabral that the first animation Mr. Goydas ran didn't show known off-base contamination, but what was predicted to happen if no actions are taken. She also inquired about the monitoring frequency of the downgradient off-base wells that had tested nondetect. Mr. Hill replied that the most recent samples he could find in the database were from last summer, but he believes they should have been sampled again by now, perhaps as recently as last month. He also noted that the wells have continued to test nondetect; however, the expectation is that the plume will be found in the wells on Windsong Road. Ms. Jennings asked if there's an approved schedule for monitoring the downgradient wells in the interim monitoring plan. Mr. Hill replied that he doesn't know off hand but could check on that information.

Mr. Minior inquired about the groundwater flow velocity in the area. Mr. Goydas replied that it's a little less than one foot per day. Mr. Minior noted that the plume has traveled about 500 feet over the past year-and-a-half then. Mr. Goydas agreed.

Agenda Item #5. J-2 Range Groundwater Investigation/Feasibility Study

Mr. Goydas reviewed the J-2 Range feasibility study alternatives: Alternative 1 – no action; Alternative 2 – long-term monitoring at J-2 North and J-2 East; Alternative 3 – continue operating the existing J-2 North treatment system (3 wells, 375 gpm) and conduct long-term monitoring at J-2 East; Alternative 4 – continue operating the existing J-2 North treatment system and add J-2 East treatment (2 wells, 200 gpm); Alternative 5 – additional treatment at J-2 North (4 wells, 425 gpm) and additional downgradient extraction at J-2 East (3 wells, 250 gpm); and

Alternative 6 – increased pumping at J-2 North (4 wells, 460 gpm) and increased pumping at J-2 East (3 wells, 550 gpm).

Mr. Goydas showed a table that summarized the components of the alternatives: institutional controls and long-term monitoring – Alternatives 2 through 6; use of the current J-2 North system – Alternatives 3 through 6; additional downgradient extraction – Alternative 5; additional in-plume extraction – Alternative 6; and increased pumping that required additional treatment plant capacity and associated construction – Alternatives 4 through 6.

Mr. Goydas noted that the J-2 Range plumes are composed primarily of perchlorate and RDX. The J-2 North plume, which is more narrow and homogeneous than the J-2 East plume, has a straight north/northeast flow trajectory, and is about 7,500 feet long and up to about 100 feet thick. Mr. Goydas pointed out the various components of the existing J-2 North treatment system and noted that there's no system currently in place at J-2 East.

Mr. Goydas showed the animation for Alternatives 1 and 2 for perchlorate and pointed out that some low-conductivity silts tend to retard the migration of the J-2 North plume, while the J-2 East plume migrates a little more rapidly. He also showed the animation for Alternatives 1 and 2 for RDX and noted that even without treatment the plumes collapse in place as there's not enough mass to keep them migrating.

Mr. Goydas also showed the perchlorate and RDX animations for Alternative 3 and pointed out how the J-2 North plume collapses around the three existing extraction wells, while the J-2 East plume continues to migrate. Mr. Walsh-Rogalski observed that the animations show the contamination to concentrations of 2 ppb. Mr. Goydas confirmed that that is so, but also noted that in the FS perchlorate is shown to nondetect and RDX to 0.6 ppb.

Mr. Goydas then continued his presentation by showing the Alternative 4 animations. He pointed the layout of the J-2 East system and noted that that plume is restored more rapidly under this alternative. He also mentioned that in order to make accurate comparisons, all of the animations for the active scenarios that require additional construction include a three-year window between the current time (2006.75) and when the system becomes operational.

Mr. Walsh-Rogalski inquired about the possibility of using 10^{-6} (or 0.67 ppb) for RDX in the future, in order to better understand what the alternatives would do. Mr. Goydas replied that as a result of an earlier meeting with the regulators, the IAGWSP agreed to add that material into the FS, which has been done; however, it is not included in tonight's animations.

Mr. Goydas then showed animations for Alternative 5 and noted that the extraction wells for both J-2 North and J-2 East are positioned farther downgradient, and there's an additional well for J-2 East. Mr. Dow asked Mr. Goydas to point out the J-2 East infiltration fence relative to the additional extraction well, which he did. Mr. Goydas also spoke about a J-2 East well as being fairly ineffective at capturing RDX as it was more intended to address perchlorate. He noted that the fact that the contaminants aren't at the exact same location in the aquifer has to be balanced.

Mr. Goydas also showed the Alternative 6 animations. He pointed out the additional J-2 North well that's intended to address a small zone of deep contamination that was evaluated as part of the RRA a year and a half ago. He also noted that the more aggressive pumping shaves several years off the cleanup timeframe.

Mr. Goydas then referred to a table that showed J-2 North estimated system shutoff dates for each alternative (2022 for Alternatives 3 through 5 and 2020 for Alternative 6) and J-2 East estimated system shutoff dates for each alternative (2022 for Alternative 4, 2024 for Alternative 5, and 2017 for Alternative 6). The table also included columns pertaining to J-2 North perchlorate mass removed in kilograms (Alternatives 1 & 2 – 5.7 kg; Alternative 3 – 26.5 kg; Alternative 4 – 26.6

kg; Alternative 5 – 26.9 kg, and Alternative 6 – 26.8 kg); J-2 North RDX mass removed (Alternatives 1 & 2 – 0.055 kg; Alternative 3 – 0.66 kg; Alternative 4 – 0.67 kg; Alternative 5 – 0.66 kg; and Alternative 6 – 0.68 kg); J-2 East perchlorate mass removed (Alternative 4 – 5.7 kg; Alternative 5 – 6.5 kg; and Alternative 6 – 6.8 kg); and J-2 East RDX mass removed (Alternative 4 – 2.8 kg; Alternative 5 – 3.2 kg; and Alternative 6 – 3.4 kg).

Mr. Goydas also showed line graphs entitled "J-2 North Perchlorate Volume Reduction by Alternative" and "J-2 North Perchlorate Mass Capture by Alternative" and noted that the active alternatives are almost identical in terms of volume reduction and mass removal. He then showed a line graph entitled "J-2 East Perchlorate Volume Reduction by Alternative" and noted that, as indicated by the Alternative 3 line, the pumping at J-2 North has a subtle effect on the J-2 East plume and actually tends to slow its development. He also showed a line graph entitled "J-2 East Perchlorate Mass Capture by Alternative" and noted that just over 6 kg of perchlorate is captured with Alternative 4 and just over 8 kg is captured with Alternative 6.

Mr. Goydas then displayed a table that showed when the J-2 North plume would be remediated to below the 2 ppb threshold for perchlorate (Alternatives 1 & 2 – 2091; Alternative 3 – 2027; Alternative 4 – 2029; Alternative 5 – 2028; and Alternative 6 – 2022) and below the 2 ppb threshold for RDX (2011, 2011, 2012, 2011, and 2011 respectively), and showed when the J-2 East plume would be remediated to below the 2 ppb threshold for perchlorate (2062, 2064, 2028, 2026, and 2023 respectively) and below the 2 ppb threshold for RDX (2034, 2035, 2029, 2027, and 2022 respectively).

Finally, Mr. Goydas showed a table entitled "J-2 Range Groundwater Alternatives Summary" which included columns headed "Short-Term Effectiveness," "Implementability," and "Cost" (per square foot and total). He noted that the cost figures do not include the construction costs associated with the existing RRA system.

Mr. Walsh-Rogalski asked if the cubic-foot costs are per year or per the length of the project. Mr. Goydas replied that they are for the length of the job; they pertain to the cost to remediate that cubic area of aquifer. Mr. Walsh-Rogalski suggested that it's a cost-effectiveness comparison and Mr. Goydas agreed. Mr. Walsh-Rogalski said that he thinks that the per-cubic-foot costs would lead people to draw certain conclusions about the remedy that "aren't necessarily consistent with the decision process and the order," which, although too complicated to understand now, might be worth discussing at a later time.

Mr. Conron asked if it's correct that the next step after the feasibility study is the remedy selection process. Mr. Goydas confirmed that it is. Mr. Gonser added that the IAGWSP has already gone through this process for the Demo 1 plume. He also noted that the remedy selection plan will go out for public comment. Mr. Conron asked who participates in the selection process. Mr. Gonser again mentioned the formal public comment period on the remedy selection plan, as well as review and comment by the regulatory agencies. He also said that the remedy selection plan eventually will become a decision document that includes a response-to-comments section that addresses everyone's comments.

Mr. Conron noted that the decision is not then solely the IAGWSP's. Mr. Gonser clarified that it's actually EPA's decision under the Safe Drinking Water Act (SDWA) AOs. Mr. Conron asked if the selection process criteria are weighted. Mr. Gonser replied that they aren't, but noted that the alternatives are compared against the nine Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) criteria, which are broken down into three categories. Mr. Conron asked if it's correct then that cost does not have a heavier weight than time, and Mr. Gonser confirmed that it does not.

Ms. Grillo said that she thinks it would be helpful to end presentations such as this with a "next steps" slide, as has been done in the past. Mr. Gonser noted that the remedy selection plan is scheduled to be out fairly soon, and added that funding to launch the project is available in this fiscal year, which ends September 30, 2007.

Mr. Dow referred to the J-2 East plume and asked if there's a tradeoff between the infiltration trench locations and the kind of pumping rates used within the plume. Mr. Goydas replied that there is a tradeoff between pumping rate and distance and "where reinjection locations are relative to up- and downgradient of an extraction well." Mr. Dow said that it seems to him that moving the infiltration trenches for the J-2 East plume in closer would eliminate the need for a third extraction well to deal with the perchlorate component. Mr. Goydas noted that Alternatives 4 and 6 don't include active pumping to the east, yet are nearly as effective at remediating the eastern side. He also mentioned that concentrations are highest in the center zone of the plume and that the eastern well is "extremely ineffective" and would operate for a relatively short period of time.

Agenda Item #6. Program Activities and Budget Review

Mr. Gonser stated that the IAGWSP anticipates receiving about $28 million in funding this year. He also reported that one-third to one-half of the IAGWSP's money will go to the Southeast Ranges, while expenses associated with Demo 1 have diminished significantly, as construction there is finishing up this year. Mr. Gonser further noted that the focus at the Central Impact Area has shifted from investigation to the feasibility study stage.

Mr. Gonser then stated that while last year a great deal of funding was spent on investigations and studies, many have been completed and this year the IAGWSP will be spending a majority of its funding on remediation. He mentioned the Demo 1 system, and the J-2 and J-3 Range systems, and the forthcoming J-1 RRA system as examples. He also noted that a bigger portion of the budget will be going toward Operations & Management (O&M) over the next few years.

Mr. Walsh-Rogalski asked if the IAGWSP first identifies work to be done and then requests money or if it's allotted a certain amount of money and then plans its work. Mr. Gonser explained that the budget process operates on a three-year cycle, and therefore the money that the IAGWSP spends this year is money that was programmed three or four years ago. He also noted, however, that he has the flexibility to move around funding to the extent that he's able to reprogram it toward activities that need to be accomplished this year. Mr. Walsh-Rogalski asked if it's possible for the IAGWSP to reach a point where it's out of money. Mr. Gonser replied that the funding is limited to what was programmed three years ago.

Mr. Walsh-Rogalski questioned whether it's true that there's no "absolute amount" against which the IAGWSP is working. Mr. Gonser explained that it's possible to update budgets that were programmed years ago by getting perhaps 10% more, but the reality is that big jumps can't be made. He also said that to date the IAGWSP hadn't had any problem with funding, but the real issue is "spending the funding we have wisely and successfully."

Ms. Grillo asked how the IAGWSP obtains funding to address new finds. Mr. Gonser replied that funding would be programmed in November for three years out. He also noted, however, that the IAGWSP has been able to find efficiencies/cost savings in its ongoing work such that its been possible to free up enough money to address finds that were unknown within the existing budget.

Mr. Dow asked if the money being spent by the E&RC to monitor for tungsten and to return to the use of lead ammunition is separate from the IAGWSP budget. Mr. Gonser replied that it is. Mr. Dow inquired about future budgeting for public outreach, including IART activities. Mr. Gonser replied that such items have been budgeted out through fiscal year 2013, by which time all decisions should have been made.

Agenda Item #7. Open Discussion

Fact Sheet Comments

Ms. Curley said that she'd received comments on the draft Plume Booklet and draft Overview & Update from EPA, MassDEP, Mark Begley of the EMC, and Mr. Conron. She also noted that she would be meeting with Mr. Murphy and Ms. Grillo later in the week to discuss/incorporate the comments that were received. Ms. Curley also noted that figures, maps, and diagrams will soon be added to the draft documents, which will be sent our again for review and comment.

Mr. Conron thanked Ms. Curley for her good work on the documents. He also noted that while attending social events over the holiday season he was asked the following questions, which he was unable to answer: What is the status of the aquifer today? What was its status when EPA put an end to the firing at the base in 1997? What does *restore the aquifer* mean? To what state will the aquifer be restored when the cleanup project is completed? Where are we in the lifecycle of the restoration process (percentage of investigation, remediation, monitoring, etc. completed)?

Ms. Grillo noted that the "Where are we?" question is problematic because the general public views the base as a whole and doesn't understand that there are different MMR cleanup programs at different stages, and she thinks that this should be communicated to the public as often as possible.

Ms. Jennings said that she thinks it would be fairly easy to include the answers to Mr. Conron's questions in the Plume Booklet and Overview & Update documents, and to email him the answers directly as well. Mr. Conron asked that the information just be included in the documents. Mr. Gonser noted that it would not be difficult to lay out general timeframes when decision documents are anticipated over the next three years.

PCT Update

Mr. Karson reminded the group of the discussions that occurred about a year ago regarding the potential merger of the PCT and IART, at which time it was decided that such a merger would not be appropriate. He also noted that this idea was discussed again as part of a team check-in meeting on January 10, 2007, which was attended by many of the PCT citizen members and by Mr. Dow.

Mr. Karson said that at the November PCT meeting it was noted that while there are important decisions to be made in 2007 regarding several of the groundwater plumes, there needed to be discussion about the PCT's role beyond completion of those decisions, which is what occurred at the January meeting. He noted that the PCT members talked about having six meetings in 2007. They also agreed that merging with the IART at this time still would be inappropriate due to the amount of material each team has to cover, but the concept should be visited again down the road. Also discussed was the idea of a team summit involving the IART, the PCT, and the SMB, when an effort could be made to flush out some ideas about how each of the teams should function in the future – whether individually, collectively, and in what capacity. Mr. Karson noted that some PCT members expressed an interest in joining the IART later on, after the remaining decisions have been made. He also mentioned that PCT members hesitated to disband entirely or meet too infrequently because they thought it would be difficult to reenergize the team and bring citizen volunteers back to the table, if needed. Finally, Mr. Karson noted that he would also be providing a brief PCT Update at next week's SMB meeting.

Mr. Conron asked who would take care of the monitoring when the Air Force leaves the base. Mr. Minior clarified that Base Realignment and Closure (BRAC) action that pertains to the F-15s

leaving MMR is entirely unrelated to AFCEE's cleanup program, which will continue for the duration.

Mr. Minior also recommended that IART member Tom Cambareri, who was not in attendance at the meeting, make a presentation to the group about the Hyannis fire-fighter training area perchlorate plume cleanup, which the Cape Cod Times quoted Mr. Cambareri as saying is being conducted at less cost than military cleanups of perchlorate plumes.

Agenda Item #7. Adjourn

Mr. Murphy stated that the IART would meet next on Tuesday, March 27, 2007 at the Bourne Best Western. He then adjourned the meeting at 8:37 p.m.

Action Item:

1. Mr. Minior recommended that Tom Cambareri make a presentation to the group about the Hyannis fire-fighter training area perchlorate plume cleanup, which he reportedly said is being conducted at less cost than military cleanups of perchlorate plumes.

Future Agenda Topics*:*

March 27, 2007 – Bourne Best Western:

- Remediation & Investigation Update
- Gun and Mortar Positions Investigation Workplan
- Massachusetts Army National Guard Small Arms Range Update

Handouts Distributed at the Meeting:

1. E&RC fact sheet: Camp Edwards: The Process to Reinstate Small Arms Training with Lead Ammunition
2. USACHPPM paper: Oral Subchronic Toxicity Study of Sodium Tungstate in Rats
3. Presentation handout: Remediation & Investigation Update
4. Presentation handout: J-1 Range Southeast Groundwater Rapid Response Action Plan
5. Presentation handout: J-2 Range Groundwater Feasibility Study Results
6. UXO Discoveries/Dispositions Since Last IART (Ending 1/19/07) All Awaiting CDC
7. News Releases, Neighborhood Notices, and Media Coverage 12/2/06 – 1/19/07
8. Map Legends