Impact Area Review Team
Massachusetts Military Reservation
Building 330
February 3, 2000
6:00 PM

Meeting Minutes

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Agenda Item #1. Welcome, Introductions, Review Action Items, and Approval of the December 15, 1999 Meeting Minutes.

Review of Action Items

1. **Mr. Zanis requested that Ogden include the .PDF map files with the electronic versions of the weekly and monthly reports.**

   Ms. Frawley reported that this had been done.

2. **Mr. Hugus requested that EPA and DEP take under advisement the need to install a monitoring well downgradient of the high hits of RDX and HMX at the KD and U Ranges.**

   That request has been taken under advisement.

3. **Mr. Taylor requested that EPA and DEP take under consideration the need to install a monitoring well on the south side of the "toe" area of the plume in Demo Area 1.**

   That has also been taken under advisement.

4. **Mr. Hugus requested that the Interim Results Report contain maps that depict all contamination detections (like the maps included in the monthly investigation update report).**

   That has also been taken under consideration.

5. **Mr. Prince requested that, in the future, Ogden's monthly IART maps be amended to show the JPO's proposed water supply wells.**

   That has been done.

6. **Mr. Prince requested that Ogden highlight the results of the MW-78 investigation, when they are received, in the weekly and monthly reports.**

   Ms. Frawley reported that has been done which, she believed, started in the January 1, 2000 report.

7. **Mr. Zanis requested that his photos of C-4, RDX, and/or other munitions remnants at Demo Area 1 and their relationship to sampling at that area be discussed at the weekly technical meeting.**

   Ms. Frawley reported that this was done on December 15, 1999 following the meeting and that the results of that discussion will be touched upon in tonight's update.

8. **The IART's discussion and comments on the JPO Upper Cape Water Supply program will be taken from the minutes and provided to the JPO and the IART citizen members' public comments on the project.**

   That has been done.

9. **There will be a technical presentation and discussion on soil contamination from propellants used with small arms, M-16s, mortar rounds, etc. at the next IART meeting. To help facilitate the discussion, NGB requested that the citizen members forward their questions or comments on this issue to Mr. Borci, EPA-NE, who will forward them to the military.**

   Ms. Frawley said that this had been scheduled, but was cancelled when the meeting in January was cancelled. LTC Knott reported he had talked to US EPA and had offered a safety plan to address the concerns.

10. **Mr. Hugus requested that Jacobs Engineering present and discuss the selection of well locations for the JPO's Upper Cape Water Supply program, including modeling efforts for Impact Area plumes, contaminants and ZOCs.**

Mr. Gonser reported that, due to contractual difficulties, Jacobs would not be available at this meeting but thought that Jacobs would be available to address the IART at the March meeting. Ms. Frawley suggested postponing this issue until the next meeting. Mr. Hugus agreed to postpone this discussion in light of the full agenda. He stated that he still thinks this issue is important because at the last IART meeting the team was informed for the first time and completely out of the blue (except for a presentation to the Senior Management Board (SMB) two days before) that the Joint Program Office (JPO) now has several long-range water supply sites. He said that now, when so much talk is going on about public involvement, this was an example of the public not being involved -- they had no idea about this -- the discovery of these wells and the research that went into it. Mr. Hugus requested that this be a key item on the agenda for the next meeting. He commented that he did not understand the problem with the Jacobs contract. He asked if Ms. Goodman had asked that this effort be made to find 1 to 3 million gallons per day (mgd) of water. Mr. Gonser said that was correct, Ms. Goodman made a commitment to find an additional 3 mgd of water on the Upper Cape. Mr. Hugus asked if the JPO had contracted with Jacobs to find the wells to develop those 3 mgd and if the money on the contract had run out. Mr. Gonser said that the JPO contracted with Jacobs through the Air Force Center for Environmental Excellence (AFCEE) because that was the quickest way to do so. He added that Jacobs was tasked under a firm fixed-price contract, which means you cannot modify the statement of work. He explained that Jacobs's job was to tell the JPO and United States Army Corp of Engineers (USACE) the best places to look. Mr. Gonser said that, normally, one would just start an exploration, but since this tool was already available, the JPO said go ahead and help us look in the best places. He stated that Jacobs had given the JPO a head start on what would be the best place to look to try and locate the water. Mr. Hugus asked if Jacobs would have been able to make a presentation tonight if there had not been problems with the contract. Mr. Gonser said that he did not see any problem with that if a mechanism can be developed to allow Jacobs the flexibility to make the presentation. He added that Jacobs would be putting out a report soon that will be distributed to everyone. Mr. Hugus asked if Jacobs could present next time. Mr. Gonser replied yes unless there is a problem with the contract. Mr. Hugus said again that he would like to stress the fact that the JPO has been one of the main agencies talking about a need for public involvement. He said that the JPO's development of these new wells to meet the 3 mgd predicted shortfall had gone on without much public process, which he had pointed out at the last IART meeting. He said he hopes that the contract would not be an impediment to the people on this team hearing more about such a vital issue. Ms. Frawley said that she would make sure it is on the agenda for March.

11. **Mr. Schlesinger requested that Mr. Borci provide OpTech with copies of the 1985 report (Propellant Combustion Product Analyses on M-16 Rifle and a 105mm Caliber Gun) and that the report be included as an attachment to the December 15, 1999 meeting minutes.**

Ms. Frawley reported that the attachment had been sent in the package.

Review of Agenda

Ms. Frawley noted that an additional item was brought to her attention, which can hopefully be added under "Other Issues." She briefly reviewed the proposed agenda and noted that Mr. Schlesinger requested an update on the web site. She asked if there were any other items to add to the agenda. Dr. Feigenbaum asked about an unexploded ordnance (UXO) update and if there were any National Guard Bureau (NGB) consultants present who are knowledgeable about UXO cleanup. LTC Knott asked if it was something that he could answer quickly. Dr. Feigenbaum asked if there is anybody here who understands a little bit about the detection of subsoil UXOs and noted that he has heard the name Tetra Tech. He asked LTC Knott if Tetra Tech worked for the NGB. LTC Knott replied that Tetra Tech is a subcontractor for the munitions survey part of the modified scope of work and said he could try to wing it and answer any questions Dr. Feigenbaum had. Dr. Feigenbaum replied that we would have to wing it as best we can. Mr. Hugus commented that he did not know if Dr. Feigenbaum had heard, but the Center for Health Promotion and Preventative Medicine (CHPPM) is not here tonight, they were supposed to be, but could not make it. LTC Knott replied that CHPPM had arrived at the Cape for the January meeting which was subsequently cancelled due to snow, and that CHPPM could not reschedule for a meeting two weeks later. LTC Knott said they went ahead and put a plan together because NGB has heard the citizen's request and could not wait anymore. He said the Impact Area Review Team (IART) could still talk about the report and try to answer Mr. Zanis' questions.

Mr. Schlesinger stated that he would like to take a few minutes to let people know the status of the Technical Outreach Services to the Communities (TOSC) activities. Ms. Frawley suggested adding that to Other Items. Mr. Schlesinger asked if the CHPPM people are going to come back. LTC Knott replied that, based on IART input and the presentations to be given tonight, if there are any more questions to be answered to address any other concerns, we will attempt to answer them later.

Approval of the Minutes

Ms. Frawley asked if there were any changes to be made to the December 15, 1999 Meeting Minutes. Mr. Pinaud referred to page 8, the second paragraph and the second to last sentence which reads, "Mr. Pinaud....and that the notice really does not have any action independent of the EPA's order." He said that he thinks the sentence should read "the notice is an action independent of the EPA's order." He then requested that the end of the last sentence where it says, "... first have to notify they are liable for activities" be changed to read. "...first have to notify they are liable for cleanup activities." Mr. Hugus referred to page 23, the third paragraph, second sentence, which read, "He said that we think the NGB itself is in sort of a philosophical bind because for whatever reason they will say that RDX is the result of routine firing" and requested it be corrected to "...they will *not* say that RDX is the result of routine firing." He then referred to page 28, the top paragraph which read, "Mr. Hugus commented that day meetings were a problem for that part of the public...doing the day" and requested the word "*doing" be* corrected to "*during*". Mr. Grant requested a global correction, starting on page 11. He requested that "di-nitrosodiphenylamine" be corrected to "N-nitrosodiphenylamine." Mr. Schlesinger referred to page 9, and requested a correction in the third paragraph, in the sentence that began "Mr. Schlesinger explained that the questions came up from Section A-129..." He requested that "A-129" be corrected to "81.29". Ms. Larkin referred to page 27, the fourth line up from the bottom, the sentence that reads "...the point of starting the public process and the

presentation was part of it." She requested that the line be modified to read "... the point of starting the public process for the NEPA study and the presentation was part of it." Mr. Zanis requested a correction to the sentence on page 14 which read "Mr. Zanis explained that the target was the kettle hole" and said it should read "Mr. Zanis explained that the target was *not* the kettle hole." Ms. Frawley made a motion to accept the minutes with the changes.

Dr. Feigenbaum asked if there could be a small exception to the agenda's order to allow Mr. Judge to briefly address the IART at this point. He explained that Mr. Dick Judge, a member of the SMB and his selectman, has a selectmen's meeting to attend. The team members agreed.

Mr. Judge introduced himself as a Sandwich selectman and a member of the Senior Management Board (SMB). He said he would like to set the record straight as to where he stands as a selectman and a member of the SMB. Mr. Judge commented that it is his understanding that this Environmental Protection Agency (EPA) order, with the inclusion of community activities and policies to include the community, would stand as whole. He said he appreciates LTC Knott's work on that, but that he keeps hearing disturbing things. Mr. Judge said that one of the things he heard was this weekend at a convention - a gentleman sat back and said "I know the Massachusetts Military Reservation (MMR) and I know plenty of deer have died out there because they love to eat that stuff - they think it's sugar and salt." Mr. Judge said he was astounded when he said "You have a heck of a job ahead of you, I hope you have the right people to do it." Mr. Judge said he stands here and tells you today that the EPA order should stand in its entirety. He stated that we have an opportunity here to pick up munitions off the ground and from underneath the ground and prevent them from contaminating any more. He went on to say that he does not want to see any more pictures on the front page or front cover of any more magazines or newspapers around here showing munitions spilling out on the ground and the caption saying "Well, we think it's scrap metal, we do not think this is having an effect on our groundwater." Mr. Judge said he was passionate about protecting the groundwater on the Cape and if the order is the way to get it done, then he is for it and thinks you will find that a lot of people on the Cape are for it. He stated that the EPA has gone to extraordinary lengths to include us at this point and to include a lot of things. He added that he appreciates the NGB and appreciates the fact that they are willing to work with the EPA but would like to see that come to a conclusion sooner than later. Mr. Judge said that this idea that this can go on and this is a debatable subject or process is hogwash; it is something that needs to be done now, today.

Agenda Item #2. EPA Cleanup Order
(See Attachment # 1)

Mr. Walsh-Rogalski said that he would like to explain the chronology leading up to the order, the basic structure of the order, what some of the issues are, and what EPA's position is. He stated that the chronology leading up to the order was that in February 1997 the EPA issued an order that required a study of the groundwater underneath Camp Edwards. He noted that there was some debate at that time whether there was any impact to the groundwater and EPA was concerned enough that the issue should be studied. He explained that the study began and proceeded over the course of time, and that an important event was that, in June 1999, the IART got together and developed a fact sheet which pulled together in a concise form some of the interim findings of the study. Mr. Walsh-Rogalski reported that the fact sheet identified that there are some clear areas where contamination had been identified, which led the EPA to think that it is time to start considering how to move forward within the EPA. He stated that the study is not complete yet, but we know enough about some areas to move forward. He commented

that one of the lessons EPA has learned over the years is that when you are trying to clean something up, the sooner you address it, the less complex and the less costly the cleanup is. He reported that EPA decided to move forward with remediation on those areas that we understood well enough to start that process, and that understanding became a little more focused when the Interim Results Report came out. He commented that there were then a series of discussions between the NGB and the EPA regarding what long-term actions were anticipated over the next few years. He noted that, as a result of funding problems under the Groundwater Study, EPA found that not all the work that we were hoping to get accomplished was getting accomplished. Mr. Walsh-Rogalski reported that in October 1999 Mr. DeVillars wrote a letter to General Davis of the NGB stating that the EPA intends to start the remediation process, which began a series of exchanges between the NGB, the Department of Defense (DoD), and the EPA about the order. He said that in December 1999 EPA issued a draft consent order to the NGB and that the draft consent order said EPA wanted this cleanup done under the Safe Drinking Water Act (SDWA). He added that NGB and EPA tried to reach agreement on that order but were not successful. He said that, consequently, on January 7, 2000, EPA issued a unilateral order with an effective date of January 14, 2000. He reported that there had been a conference with the DoD and NGB on January 12, 2000.

Mr. Walsh-Rogalski said the Administrative Order (AO #3) contains three basic components, the Administrative Order, Appendix A, and Appendix B. He explained the beginning of the order contains certain factual legal findings supporting the exercise of EPA jurisdiction under the SDWA. He explained that the SDWA says that if the agency has reason to believe that contaminants are likely to enter the ground and the supply of drinking water and may cause imminent substantial endangerment, the agency may take action as appropriate to protect the underground source of water. He said the first part of the order goes to factual findings that support that legal finding of the imminent substantial endangerment of an underground supply of drinking water as a result of contaminant. Mr. Walsh-Rogalski stated that the order goes on to create a framework of procedure for work to occur, and lays out things such as the contracting mechanisms, who the technical project managers are, how submissions are to be submitted, how they are approved or disapproved, and how disputes get resolved. He added that there is a section of the order which discusses the legal impacts of the order, penalties for non-compliance, and liabilities. Mr. Walsh-Rogalski stated that the order is a statement of EPA's jurisdiction.

Mr. Walsh-Rogalski explained that Appendix A deals with what in a Superfund program would be called the removal action, but was termed a rapid response action in EPA's order. He said that Appendix A is meant to address the areas where we know these soil contaminations, probably limited soil contaminations, can be addressed in a rapid timeframe without a lot of planning. He noted that it has been the agency's experience that where there is limited soil contamination, it can just be moved to keep it from infiltrating into the groundwater. He said Appendix A identifies six areas at which the rapid response action can occur: (1) the contaminated soils at the steel-lined pit in the J Range; (2) ethylene dibromide (EDB)-contaminated soils in study area 2 of the Impact Area; (3) the contaminated soils at the firing and target area in the KD Range; (4) contaminants in soils at the J-3 wetland; (5) contaminated soils at gun positions (GP) GP-7, GP-16, and GP-9; and (6) contaminated soils at the armored personnel carrier area. He stated that all of those findings with respect to contaminated soils were an accumulation of IART contributions. Mr. Walsh-Rogalski reported that Appendix A also sets a certain requirement for the respondent, NGB, to provide a work plan which then goes through a review and implementation process.

Mr. Walsh-Rogalski said that Appendix B is meant to address the more complex problems identified to date and listed those five areas as: (1) contaminated soil and groundwater at Demolition Area 1; (2) contaminated soil and groundwater in the southeast corner of the ranges; (3) contaminated groundwater in and emanating from the central Impact Area; (4) contaminated soil and groundwater at Chemical Spill (CS) 19; and (5) UXO. He said that Appendix B for the more complex areas does not require a work plan but does require a planning process to begin activities. He explained that the planning process will be very similar to what has been done in the feasibility study under the Superfund program as it requires the establishment of remedial objectives, it requires looking at technologies that may be available, and it requires developing from those potential technologies alternatives to address the problem. He added that the planning process generally requires alternatives that range from a "no action" alternative to a "clean it up" alternative and requires the analysis of the various alternatives within that range. Mr. Walsh-Rogalski said that after these alternatives are developed, a public review process is included, and EPA would then select a remedy which would get implemented under this order.

Mr. Walsh-Rogalski then addressed the issues of public concern that are receiving a lot of attention. He noted that the order requires the NGB to provide a public involvement plan which would lay out the process by which the public is brought up to speed on the various issues and the methods for providing input to those decisions. He said that the order is not very explicit on what that plan should contain, but does contain a set of minimum requirements. He reported that EPA has had some discussion with the NGB about what that means and how it might affect the schedules, as there was concern that the schedules did not allow for adequate public involvement. He said that issue is being addressed to make sure the schedules do include that. He added that the EPA is developing some ideas in that area and that the NGB is responsible for developing a public involvement plan during the next few weeks. He explained that the idea is to have a process that is similar to the process under the IRP program where there are fact sheets, public meetings, news releases, public comment periods on significant documents, and outreach to affected neighborhoods.

Mr. Walsh- Rogalski commented that the second major issue he would like to address is whether or not the actions are going to be science-based. He noted that there was some concern that EPA was writing an order requiring remedial action before all the data was collected. He stated that the order contemplates, and EPA has made this clear, that the science getting developed in the course of this study should feed into the feasibility study. He stated that this is particularly a concern with respect to UXO because there will be major survey work ongoing soon and the NGB is concerned that they would be forced to take some sort of action without that science impacting the decision. He said that it is the intent of the order, and EPA will try to clarify that as much as possible, that the information developed in the high-use target area study and the emissions survey feed into the feasibility study and inform the study. Mr. Walsh-Rogalski commented that the UXO feasibility study and remedy decision is expected to be very complex because there are a number of interests at stake such as habitat, cost, groundwater protection, short-term impact and worker safety. He said it would be a complex decision involving lots of people and EPA hopes that this order gets the planning process moving now, and that the data coming in December 2000 will be part of that process.

Mr. Walsh-Rogalski stated that the third issue he would like to address is strip mining. He said it was not the intent of the order to require strip mining, the intent of the order is to require an orderly, informed, planning process that involves science, involves the public, and develops a range of alternatives that includes a mix of values which then allow for an application of various

criteria to come up with the best balance for the final decision. He added that EPA does not want to destroy the habitat and thinks there are a lot of different factors at play here and, clearly, the new landlords of the reservation are going to be critical players. Mr. Walsh-Rogalski said that one of the reasons EPA wanted to get this moving sooner rather than later was to have that decision be as informed as possible. He said lastly, there were two respondents to the order, the NGB and the Massachusetts Army Reserve National Guard (MAARNG). He explained that MAARNG is required to do two things -- to help out on emergency situations that may arise and to help out on access issues. He noted that there are other procedural things, but those are the two major work elements.

LTC Knott thanked Mr. Walsh-Rogalski and said that he had explained EPA's intentions concisely. LTC Knott quickly recapped the chronological history of events that Mr. Walsh-Rogalski had given. LTC Knott said that when the Air Force, Army, MAARNG and NGB met with the EPA in Boston, they heard Mr. DeVillars and that the EPA wanted to create a unilateral order. He said the military agreed that the cleanup needs to be done, but that NGB had proposed a consent order for a couple or reasons. He explained that a consent order would allow the Army and Air Force to be significant players and that, right now, the unilateral order puts the onus for technical and logistical work on the MAARNG and the NGB, but mostly on NGB. He added that by getting the Army and Air Force to sign up for the cleanup, the order would also be emphasizing the commitment to resources, that is, where the money would come from. LTC Knott said that NGB agrees to everything in the order requiring cleanup of contamination, but disagrees with the process. He said NGB understands EPA's position that the SDWA gives the EPA more control over the project and that NGB's proposal was to issue a consent order under the SDWA and allow the cleanup process, whatever it may be, be done under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) process. LTC Knott stated that NGB thinks AFCEE is doing a good job, but if at any time the EPA became unhappy with the way things were proceeding, they could revert back to the SDWA as a unilateral order. LTC Knott reported that negotiations went back and forth between the NGB and EPA but that the parties could not come to agreement and EPA subsequently issued the unilateral order, effective as of January 14, 2000. He said that the NGB had to respond to the order by January 21, 2000. LTC Knott reported that General Davis' letter in response to the order said that yes, the NGB agrees the contamination needs to be cleaned up, no matter what the source, but that the issue NGB has is the process required by the AO #3. LTC Knott said that NGB believes the process should be science-based and have community involvement, but would like to see it addressed as a part of one single cleanup program under AFCEE. He said that AFCEE's job is to do cleanup and the NGB's job is to train soldiers.

LTC Knott said that NGB agrees that the contamination needs to be cleaned up. He reported that NGB had met with EPA the previous day to try and address these concerns and that he thinks a lot of progress was made. He said that Mr. Walsh-Rogalski was correct, and that the meeting yesterday made clear some of NGB's concerns with the "black and white" order. He said that the EPA had agreed to change things and that the order should then reflect exactly what Mr. Walsh-Rogalski had stated in regard to a CERCLA-like AFCEE process of community involvement, scoping meetings and the like.

LTC Knott said that he would start with NGB's concerns regarding the science-based program. He stated that Mr. Walsh-Rogalski had touched on the subject and that he thought good progress had been made at the meeting yesterday. He said that one of the key points Mr. Walsh-Rogalski had touched on was the archeological dig under **AO #1**, at the two high-use target areas. He

explained that the dig was being done to find out what the UXO is doing to the sole-source aquifer. LTC Knott commented that although there had been other UXO studies done in California and Canada, they were not relevant in this case. He stated that what matters is to find out what is happening on Cape Cod. He added that the archeological dig would categorize and quantify everything and would note the condition of the UXO, weigh the UXO, and perform groundwater and soil sampling. He said the dig would provide definitive information on what the UXO is doing to the groundwater, and if the results indicate that the UXO is contaminating groundwater, then that is what the results are. If that is what it shows, that is what it shows. He said he hoped to have the information by December 2000. He noted that NGB's main concern was to have the scientific data included in the process of the feasibility study. LTC Knott stated that his understanding now is that the EPA will allow that data to be included as part of the cleanup process. He commented that it has to come back in writing, but he feels confident that an agreement was reached that would allow the use of this data and that it would allow the effective use of experienced people like AFCEE.

LTC Knott commented that another key point was the community-based program and explained that all of NGB's concerns lead to the process that AFCEE employs on the base, and that the CERCLA-based Installation Restoration Program (IRP) program meets all of NGB's requirements. He said that NGB's concern was in the way the order had been written, as there was no ambiguity in AO #3, and it did not seem to allow a process for community involvement to take place. He noted that the IART was a public process, and that citizen members had full-time jobs but still took time to participate. He stated it was important to get their input and important to get other people's input. LTC Knott said that Mr. Walsh-Rogalski had spoken yesterday about the SMB giving input to this process along with neighborhood groups and the production of fact sheets, which were all part of the AFCEE process for community involvement. He said he feels very confident that EPA will amend the order to allow AFCEE-like community-based input into the process.

LTC Knott said the NGB proposed allowing AFCEE to do the cleanup. He commented that he thinks AFCEE would be the choice of a lot of people that are a lot better qualified to judge AFCEE's capabilities than himself. He stated that, as he mentioned earlier, EPA is not happy with that.

LTC Knott reported that the Groundwater Study would continue and that a key part of that would be the UXO survey. He said that the archeological dig in the Impact Area would start within the next 90 to 160 days and a report that EPA, the Massachusetts Department of Environmental Protection (MA DEP) and IART agreed upon would be issued by next Christmas. LTC Knott emphasized the critical need for the data that would be collected and quantified as a result of the archeological dig, and said that there would be many organizations, scientific and military, participating in the dig. He added that this is something that has never been done before and would be setting a national precedence. He stated that his goal was that, when it came time to prepare the report, all parties would agree on the report contents; he felt that the dig would provide the definitive answer and there should be no argument on how to proceed.

LTC Knott said NGB had a March 1, 2000 deadline to give the EPA their plan on the six sites noted in the Rapid Response section of AO #3. He stated that what NGB has asked for, and EPA agreed to, was that the draft plan be reviewed throughout the public process. He said a briefing on NGB's draft plan would be given to the IART, the SMB, and at another public meeting next month in order to get some public comment on it and move forward. He added that NGB has

already started working on the draft plan, and was using the Environmental Technology Center located on the Base to assist NGB in developing some innovative solutions to not only remove soil, but employ treatment technology such as "bioslurry" – using microbes to eat the contamination. LTC Knott stated that more time was needed to develop a public involvement plan. He said it was discussed at the meeting yesterday, and that Mr. Walsh-Rogalski has had some discussions with elected officials. He added that Mr. Walsh-Rogalski was going to get input from the official and provide some guidance to NGB in formulating the plan, which will be incorporated into the draft plan. In summary, LTC Knott said it was a very positive meeting yesterday, and that, although there were differences, NGB would continue to work with EPA and do everything required by them.

Mr. Pinaud commented that, as discussed at the last IART meeting in September 1999, the Impact Area investigation revealed five areas containing contamination. He said the findings triggered the need for remedial activity under the Massachusetts Contingency Plan (MCP) the state Superfund law. He noted that five of the six areas in the EPA's AO were the same sites identified under the MCP, and at that point, MA DEP put the NGB and Textron Corporation on notice that they were responsible parties for remediation activities. He added that currently there is dual regulatory authority at the site for remedial activities, MA DEP under MCP, and EPA under AO #3. He said that for a number of reasons MA DEP would like to see a single regulatory authority at the site, and is working with the EPA to see that the needs of the Commonwealth are met. Mr. Pinaud said MA DEP supports the cleanup of contamination at the Impact Area in an expedited manner including the efforts to clean up UXO. Mr. Pinaud stated that MA DEP and EPA have been discussing a number of issues, including public involvement activities scheduled for the cleanup and MA DEP involvement under AO #3. He stated that he thinks the bottom line is that MA DEP would like to be substantially and meaningfully involved in the initiation, development, and selection of response actions for the Impact Area, and that MA DEP thinks that can be accomplished and is currently working with EPA in a cooperative fashion to implement the cleanup.

Mr. Walsh-Rogalski said he wanted to make a few responses to LTC Knott's comments. He commented that, regarding AFCEE's involvement in the cleanup, during the negotiations that have gone on between the agencies, Mr. McCall, head of the Air Force program, stated there were no legal or policy impediments to AFCEE getting involved. Mr. Walsh-Rogalski said that what EPA is concerned about is public involvement, which is the one thing that EPA saw as a deterrent to keeping AFCEE. He said that EPA is hoping that now there is going to be a more clearly stated, broad public involvement process, and that AFCEE will come forward to do the work, as there is no reason why they cannot. Mr. Walsh-Rogalski said he would also like to address the point that LTC Knott had mentioned, that NGB had proposed starting the work under the Federal Facilities Act (FFA)/CERCLA and if EPA is not happy, then shift to SDWA. Mr. Walsh-Rogalski commented that there were a couple of reasons why EPA did not like that option. He explained that SDWA is different than the Superfund process, as it provides for cleanup of contamination in a preventative manner. He said that the Superfund process is meant to address contamination that has already occurred, takes a look at what the risks are, and permits the reduction of risks to "acceptable" levels. He noted it does not provide for the kind of preventative action the SDWA does. Mr. Walsh-Rogalski commented that EPA did not want to start down the FFA route, develop a CERCLA plan and get to a point where EPA was not happy with it and then be in a position to have to say "Let's start this other process under SDWA". He said it would be a waste of time -- why go down one road if you are going to end up in a different place. He added that another issue that is key to understanding why the SDWA is important is

the preventative approach, particularly with UXO. He reported that EPA has had several meetings with Mr. Taylor, general counsel to DoD, and it is Mr. Taylor's view that you do not need to clean up the UXO, it is not contaminating the groundwater, and that there is no reason to take action that is preventative. Mr. Walsh-Rogalski asked LTC Knott to correct him if he was not characterizing Mr. Taylor's comments correctly. LTC Knott said he had not been present, so could not comment. Mr. Walsh-Rogalski said his office had talked to other EPA regions around the country and asked what was going on with UXO. He said that it is EPA's understanding that at active ranges nothing is going on with UXO, it is not being cleaned up as a preventative measure. He stated that when sites get transferred into the public, domain, the UXO gets dealt with as a safety problem but not as an environmental problem. He explained that when UXO is dealt with as a safety problem, certain risk assumptions are made. He gave as an example a wildlife area and noted that people are not going to be in the area, so it does not have to be dealt with at all. He said that the final reason why the SDWA is important to EPA is because there is a distinction based on CERCLA in the Defense Environmental Restoration Account (DERA)-funded activities, between contamination that occurs as a result of disposal and contamination that results from ongoing training activities. He said EPA was not interested in getting involved in trying to sort out how the contamination occurred, but that there is a problem respective to the groundwater and it should be addressed and cleaned up. Mr. Walsh-Rogalski commented that, finally, he would like to say that he is heartened to hear LTC Knott state that if he was a regulator he would use the SDWA. He said he thinks that is about as strong an endorsement as you can get for this.

Dr. Feigenbaum commented that LTC Knott had said the issue was process, not substance. He said that he thinks everybody knows that it really is substance and that the real substance is making an aggressive effort to eliminate buried UXO. He stated that the process question is how we are going to determine if that is a threat or not. Dr. Feigenbaum said that also is a substantive question because the issue is whether it is a threat now or a potential future threat. He said if NGB wants to get out from under the responsibility and use AFCEE, and hand the Air Force the responsibility for cleaning up the mess the Army made, he does not understand why AFCEE cannot operate under the SDWA. He commented that when you are talking AFCEE, you really are not talking a lot of people -- what you are really saying is that you are turning the cleanup over to Jacobs Engineering. Dr. Feigenbaum said he thinks Jacobs Engineering would probably agree that they do not have any experience with UXO cleanup, and have very little experience with explosives, explosive-related compounds and propellants. He said he thinks Mr. Banks, the Project Engineer for Jacob's AFCEE operation is here, and asked Mr. Banks if he would comment on Jacobs' experience with UXO. Dr. Feigenbaum stated that he did not think it would be terrible to have two parallel remedial programs running concurrently, as there have been two investigatory processes going on at the same time. He said that there are members of the public on both teams. He commented that he did not think LTC Knott would say that the investigatory process that has been carried on under the SDWA has not been science-based. Dr. Feigenbaum reported that the IART has dealt with a lot of science here at this table which he did not see as a problem, and said he did not know why LTC Knott is raising it at this point. He said he had not come to bury AFCEE, but he thinks it is a charade to characterize them as the paradigm of community involvement. Dr. Feigenbaum stated that he has sat on AFCEE's Community Advisory Board for four years now and that, in the beginning, it worked very well, but it did not take long for AFCEE, at times, to sort of declare public relations war on the community. He reported that there had been major problems with findings for CS-10, as AFCEE put out a document that was mailed to the whole community on how they were going to remediate CS-10, but never brought that document before the Board. He said that the most recent case was just a

few months ago in regards to the cleanup of Fuel Spill (FS)-1. Dr. Feigenbaum stated that minutes from the last Joint Process Action Team (JPAT) meeting illustrated that the JPAT and the public were very upset on how AFCEE went about dealing with the community on FS-1. He commented that time after time we have seen that community involvement really just means public relations; public involvement sometimes means if you do not like the public that is involved, then go involve yourself with another segment of the public until you find somebody that agrees with you. Dr. Feigenbaum stated that, regarding policies on public involvement, Mr. McCall is a specialist in having closed meetings before important meetings and has a favorite technique of getting some of the most senior people together and hammering out any differences so there is actually no discussion in front of the public. He commented that that is not public involvement, that is nonsense. Dr. Feigenbaum stated that he thinks the science issue is a red herring and commented that he has never heard so much talk about public involvement in the last four years as he has heard in the last four weeks. He said that that tells him that somebody is talking about something other than public involvement.

Mr. Hugus said he also wanted to make some comments about public involvement. He commented that the fact is that the public is involved already in the Impact Area Study, and has been coming to the meetings for three years. Mr. Hugus said that he works as a carpenter, Dr. Feigenbaum is a teacher at the college, Mr. Kinney is a writer, Mr. Zanis is a mechanic, and Mr. Schlesinger is a scientist at Woods Hole, Mr. Prince attends -- we are all people from the community. He commented that they are involved, have been attending the meetings and doing a lot of work. Mr. Hugus reported that they get hundreds of pages of documents every week to review on their own time without reward, and have not in any way tried to exclude other people. He noted that Ms. Frawley invites the public to speak on any issue that comes up at all the meetings. Mr. Hugus stated that since the cancellation of the January IART meeting he has been frustrated because of the frequent comments he has read in the newspapers on how public involvement is not happening on the Impact Area which, he said, is simply not true. He said he has never heard any complaints from LTC Knott and that he feels shortchanged on that issue. Mr. Hugus stated that the NGB has said a number of things in the press, which he feels are irresponsible and misleading. He read a quote from the January 14, 2000 Enterprise in which the NGB said, "...if you follow this order, you will have what amounts to strip-mining of thousands and thousands of acres. Instead of a wildlife refuge you will have a desert. Believe me, this would have a major, major impact on the environment." Mr. Hugus commented that no one has ever talked about strip mining Camp Edwards and that, obviously, the IART did not want to strip mine Camp Edwards. He added that Mr. Walsh-Rogalski was right about that when he objected. Mr. Hugus then read another quote which said, "... serious questions about the wisdom of tearing up the northern base for the sake of unearthing some old metal that might last another 3,000 years before it corrodes enough for explosives to leak out for all we know..." Mr. Hugus noted that it has not taken 3,000 years, we have already found buried explosives and munitions casings that, when uncovered, were found to be severely corroded and leaking contaminants into the environment. Mr. Hugus stated that it is unfortunate that we have not been able to get together to prevent this sort of exaggeration from happening and that because it has gone down in the press this way, it has caused division among the team. Mr. Hugus said that this makes it difficult for us to work together unless we get some kind of rein on this sort of exaggeration. He said that, from his point of view, the statements are put out for no other reason than to oppose the order. Mr. Hugus commented that he feels it is not the local issue that matters, it is the national and international issue. He said that the DoD is worried that if a precedent is set here for the cleanup of UXO, millions of other acres of land that DoD has used for training and firing will also be subject to cleanup and they will be liable for that. He stated that would be a major

problem for the DoD, which is why we see this letter from Ms. Goodman to EPA written in such caustic terms. He stated that DoD is worried about its liability for this range and other ranges and does not want to clean up this UXO. He commented that he does not take it too personally, as he knows there is a national battle going on that involves the DoD's resistance to even making rules about munitions. Mr. Hugus added that the DoD does not want to say that when they fire a shell into an Impact Area, they are disposing of hazardous waste; to DoD that is just training. Mr. Hugus stated that, from his point of view, when you take a 100-lb. artillery shell and blast it into the earth here on Cape Cod you are just disposing of hazardous waste and that is the difference that is going on. Mr. Hugus said his final point was that LTC Knott's presentation repeatedly called this a unilateral decision, as if he wanted to underscore the fact that there was no agreement on it. Mr. Hugus said that the reason there was no agreement was because NGB could not come to a consensus and, furthermore, he and others on this team have supported this order as far back as October 1999. Mr. Hugus said he thinks that the cleanup should be done under the SDWA. He went on to say that he thinks that the CERCLA/AFCEE process being held up as the model is grossly overrated and noted that the CS-19 site is a good example. Mr. Hugus explained that CS-19 was reported by Mr. Zanis ten years ago, the site has been under AFCEE's jurisdiction since then, and there still has been no cleanup at that site. He reported that at the last JPAT meeting the plumes were discussed, and the JPAT team went through site after site that had not been addressed. Mr. Hugus said the reason was because there is so much room in the CERCLA process for AFCEE to drag its feet, which is what they have been doing. He commented that he was glad that we have an order, which will not waste the citizens' time anymore, and we will be able to get results. Mr. Hugus said that, finally, he was sorry that EPA has had to undergo the criticism that it has in the past few weeks over this order. He said that Mr. Walsh-Rogalski has been called "someone from outer space" by a selectman from Bourne, something some of the activists have been called. Mr. Hugus commented that this was a complete insult to Mr. Walsh-Rogalski, the EPA, and the work the citizens have been doing here.

Mr. Prince stated that he would like to add a couple of comments to what Dr. Feigenbaum and Mr. Hugus had said. He said he has been a member of the Long Range Water Supply Public Action Team (LRWS-PAT) since May 1993, and that he has had at least four years of being completely frustrated with trying to operate under CERCLA. He added that if it is possible to do what is warranted under CERCLA, fine, but he has reservations that roadblocks will be coming out, and we will hear "that is not allowed under CERCLA". Mr. Prince said it relates to the preventative versus cleanup issues under the order and that he was very concerned about that. Mr. Prince said he had another point regarding the completed study aspect of the order. He said he thinks that, if AFCEE had held up all their work until they had a completed study, nothing would be accomplished at this point. He explained that when the whole process started, nothing was known at FS-28, FS-29 or that whole area over to Route 151. He reported that when AFCEE finds something, they work on it, which is what he thinks we are being asked to do here. Mr. Prince commented that if we know there is a problem, let's start working on it, let's not just study -- you can study forever and never accomplish anything.

Mr. Kinney said he has been on the IART since the beginning but has not attended the meetings for the last few months. He said he came tonight because he thinks it is critical that this cleanup get underway at the Impact Area. He added that if the SDWA is the most effective, efficient and quickest way to get at this cleanup, he thinks that is the way to go. He stated that it is kind of an artificial distinction that we get into on this team as far as who is responsible for doing what, when. Mr. Kinney commented that the real question for the people who live on Cape Cod and are raising children here is whether the water is contaminated and whether or not there will be a

future water supply that is clean. He stated that jurisdictional issues aside, if everybody were really concerned about cleaning up in the most effective way, they would get on the stick right now. Mr. Kinney commented that we should learn from the history, which is a long, sordid affair consisting of mostly denial by the military, NGB and the Air Force, and a series of foot-dragging episodes that have been going on for years. He added that the CERCLA process is a dinosaur that can hardly get out of its own way which, he said, even MA DEP and EPA would agree to. He said he thought it was false to say that it is some kind of model of the best way to approach things and that there is something else going on. Mr. Kinney said that he finds NGB's sudden concerns about public participation in the process an insult and he thinks it is so disingenuous and dishonest that it borders on pathetic that this could be brought up as a genuine concern of the military. He went on to say that this is the military who has had secret meetings for years, who physically threw the citizenry out of meetings early on in this process, including people you are so concerned about and who are sitting at the IART table now. Mr. Kinney said he supposed the NGB could have had some sort of conversion experience, but that he doubted that. Mr. Kinney said he thinks the real problem is the UXO cleanup and that CERCLA was not the best way to get at this. He said as he understand it, the SDWA is the only way to get at this. Mr. Kinney said that studies show groundwater contamination and that there are 17 wells that have had detections of Royal Demolition Explosive (RDX), breakdown products and explosives. He added that it is known that there are rusting and corroding shells littered all over the Impact Area. He stated that he totally agreed with what Mr. Prince said, the cleanup process should go on concurrently with the study, and that we cannot afford to wait. Mr. Kinney said he supported the EPA's decision and he thinks that, if the NGB really wants to do something good for the community, they will get on board with this, come up with a public participation plan, and quickly start cleaning up as soon as possible so we will have a clean water supply under the Impact Area.

Mr. Schlesinger said he would like to echo Mr. Hugus' comments on public involvement. He explained that he joined the IART about two years ago and that he joined because he could not believe the stories he was hearing about what was going on out here and what was not being done about it. He said he was glad that he did, because it certainly turned him around. Mr. Schlesinger said he puts a lot of time into IART and that it is not just the people at this table but it is spouses taking care of children and friends who take time to attend the meetings, like Mr. Dow who is also a scientist at Woods Hole. Mr. Schlesinger stated that the IART has never turned anyone down at the microphone who has wanted to speak. He commented that it has been said in the press recently that the citizens on the team are "...comprised of a core group of militants, who are militant against the military..." which he objected to. He said that they are not, we are just citizens who are trying to do the best for our community.

Mr. Zanis said that the order was, to him, a dream come true, after all he has seen go on out there, with fuel bombs and all the so-called "training efforts" that were not training by any means and the disregard for the environment of Cape Cod. He commented that now that we have an order, we can get the job done. Mr. Zanis commented that he would say we stop the bickering and get to work cleaning up the environment for our children and our children's children.

LTC Fitzpatrick stated that he has been a Mashpee resident for twelve years and has been on this project since April 1999. He said there has been a lot of talk on all sides on how this should be resolved, and that, as a taxpayer, he would like see his money spent wisely. LTC Fitzpatrick stated that his concern was that the money be spent correctly, and that there should not be duplication of effort, whether you think AFCEE or the NGB should do the work. He added that

it is not the Air Force cleaning up a potential Army problem that happened years ago, and that years ago, environmentally, none of us were smart; we did various things like changing oil, dumping it on the grass, and doing military training in an Impact Area above a sole-source aquifer. LTC Fitzpatrick commented that, in the last six months, everyone has accused everyone else. He said he has yet to see a collective effort where everyone sits at this table and discusses calmly what should be done. He said that he thought the way the AO #3 had come down was a political agenda, and not necessarily because something needed to be corrected. LTC Fitzpatrick added that if there is a problem in the Impact Area, yes, he would like to see it cleaned up, as he wanted to live here with his family and friends and have a safe and healthy future. LTC Fitzpatrick commented that if we all want to be honest, we should just bury the hatchet and get off our soap boxes. He said the IART should do the right thing, but not fight, which it has been doing since at least April 1999 and which has probably been going on since this started in 1997. He added that if all we are doing is bickering we are never going anywhere and that he would like to see it done the correct way.

Mr. Dow of the Sierra Club said he had one suggestion and one question. He stated he has attended many of the IART meetings and thinks there has been a lot of good discussion at the table, but that he would suggest it involve a wider community. He said the suggestions that occur here are way too detailed and involve too much past history for most citizens who are not as engaged as the team members. He commented that when the community involvement plan is developed, the IART needs to find a way to expand the community and involve regular citizens in some kind of public outreach, and that follow-up has got to express their concerns and have them addressed. Mr. Dow said he understands the SMB has plans to extend their purview to deal with these issues, so that is one form of public involvement beyond this team.

Mr. Dow said he had a question about the J-3 wetland soil cleanup. He asked how large the cleanup area is in relationship to the J-3 wetlands. Mr. Gregson replied that, based on the data currently available, it is a relatively small area, something on the order of 10 feet by 10 feet.

Mr. Gordy, chairman of the PACERS, commented that he was sorry he had not attended more IART meetings, but that there have been a lot of meetings to attend. He said that lately he has been going to the Standing Water Supply Group (SWSG) meetings. Mr. Gordy commented that the new order is similar to the 1997 order, except the word "study" has been crossed out and replaced by the word "cleanup". He added that Phase I had cost $12 million, Phase 2 had cost $10 million, and EPA kept ordering more and more phases; we keep having more and more of these phases, and all the phases have been ordered by the EPA. Mr. Gordy said that now the EPA is suddenly saying "OK, we know enough, we can draw our own conclusions, the rest of you people can go home, we are taking over, we are making an order." He commented that it surprises him how many people around the IART's table clap their hands about that -- saying now we have somebody who is going to get something done, when most of them have been holding things up themselves. He went on to say that the Groundwater Study has drilled something like 300 holes around here, trying to find things that you could hang the NGB on with reference to the groundwater. Mr. Gordy stated that only 4% of the 15,000 acres had been discovered to have a problem. He said that the problem existed because the Health Advisory (HA) was set so low, that he thinks you could drink that water all your life and it would not bother you a bit. Mr. Gordy noted that there are areas at the surface where you can point to contamination, but that when you move a short distance away from a point of contamination, there is no more contamination. He said there are natural processes taking place here. He explained that we live on a microbial planet, it is the dominant form of life here, and it is the

thing that protects us all and has always protected humanity from itself. He stated that if this was not so, everyone would have died already. Mr. Gordy said he thinks this natural process is being very much ignored. He commented that LTC Knott had mentioned it, and that he thinks studies should be conducted on it. Mr. Gordy said he had asked for advice from Mr. Gregson, who told him there is a lot we did not know, it would have to be studied, and perhaps that study would take a long time. He commented that Camp Edwards has been here for 89 years, and all of a sudden we are in a big hurry to get things done, but all the people who have been holding things up are sitting around this table. He said he is not blaming just the NGB, he is blaming everybody, especially the EPA. He stated that he thinks the EPA is acting very inconsistently and is not following due process when they order NGB to study things but does not wait for the conclusions. Mr. Gordy commented that it was a scientific process - you cannot interrupt it and if you do, what you are doing is just trying to make things come out the way you want them to.

Mr. Biber asked if the cost of the cleanup was $320 million. LTC Knott replied it was. Mr. Biber asked how much of an increase NGB would give to the Air Force for the cleanup, if the NGB were to go through the Air Force. LTC Knott replied that it did not matter who did the work, the minimum cost of the cleanup under AO #3 would be $320 million. Mr. Biber then asked if it would cost more money for NGB to do the cleanup rather than make use of the Superfund through the Air Force. LTC Knott said that was very easy to say yes to. Mr. Biber asked who was going to pay for this. LTC Knott replied that NGB would take the money from the funds used to train troops for war, and said that the same dollar that would pay to put someone in uniform and get training in a military specialty to protect the country would instead be spent on the Groundwater Study. He said that money spent through AFCEE is cleanup money, it does not take any money away from repairing helicopters or training people to defend the United States. Mr. Biber commented that he thinks if the money to be spent through the NGB were put with the Superfund, we are going to save some money. He suggested that the savings be used to help the towns of Wellfleet or Provincetown, who also need clean water. Mr. Biber suggested the monies be put toward desalinization projects to help these towns. He said that he has recently read about a project underway in Brockton and Taunton employing this technology which will produce 8 mgd. He added that the Patriot Ledger reported that the town of Weymouth has problems and was planning to spend $5 million on a desalinization plant that would produce 1 mgd. Mr. Biber stated that he had lived on desalinized water for five years. He asked if there were any naval veterans or anyone present who had been on a cruise ship, and reported that they had been drinking salt water on those ships. He said it was the best water you could find after it had been desalinized, as it was almost pure. Mr. Biber commented that the excess funds should be spent to help Provincetown and Wellfleet.

Mr. Goddard said he wanted to reiterate some comments he made to the JPO on this issue. He said he thinks the government has an opportunity to look at this in terms of a "half-full" glass of water. He asked the team to imagine they were the Air National Guard fifteen years ago, had all these systems and were in the position of acting before things migrated off the base. He said it would be avoiding a lot of heartache and disturbances in the neighborhoods. Mr. Goddard stated that he is on the Public Information Team (PIT) with AFCEE and a lot of what the team deals with is interaction with the neighborhoods. He said that he thinks that we have a potential opportunity to keep everything that is out there from migrating off the base, which would be a victory.

Mr. Goddard said he had two questions for the EPA. He asked what EPA was considering in their public information process and if they were doing anything to modify it, given what they

had heard at the SMB meeting. Mr. Walsh-Rogalski replied that the way the order is written, it requires a public involvement plan to be submitted by the NGB, and, since EPA's discussions with the NGB, we are trying to come up with something that looks like the AFCEE process. Mr. Walsh-Rogalski said that the order had not specified what the process for public comment was after the work plans and studies get developed, and the EPA has now defined in greater precision what that process for public comment is. He said he thinks the public involvement process will be as much as anyone wants. Mr. Goddard asked if the public involvement plan would be put out for public comment. Mr. Walsh-Rogalski said they had not made that decision but that he thought that made sense. Mr. Goddard said his second question was on the issue of funding. He said that, if he understood correctly, doing this cleanup under the SDWA meant that cleanup dollars from the DERA could not be used. Mr. Walsh-Rogalski said that was not his understanding, that based on conversations with the DoD's general counsel, DERA funds could be used. Mr. Goddard requested that at some point it be made crystal clear jointly from both sides on whether or not these funds could be used, so we know whether or not NGB troops are going to suffer because of funding issues. He stated that it would be terrible to have NGB not get training dollars because of the cleanup.

Mr. Crocker commented that it was obvious that around the IART table there were two sides, and that all the citizen members of the team seemed to be on one side and the military on another. He said he would like to see some involvement from people that have a broader spectrum on the problem, and not just "against this", "I don't like that", etc. Mr. Crocker stated that a broader representation from the community was needed.

Mr. Hugus said there were a couple things he wanted to respond to quickly. He stated that a comment was made that the NGB did not really know what they were doing out at Camp Edwards because everyone was ignorant about pollution and its effects. He said that our sole-source aquifer was designated at such in the mid-1980s and the firing did not stop until the cease-fire order in 1997. He said that there was ample time for the NGB to do the right thing, but it took an order from EPA in order to bring this about. He added that there were complaints about the order in 1997, people said it was outrageous, but it turns out that that order was correct and plenty of contamination due to explosives has been found in the Impact Area. Mr. Hugus commented that mention was made about the health advisories for chemicals like RDX. He said he thinks those health advisories are very conservative, as levels as high as 375 ppb have been found in groundwater. He stated that nobody should have to drink levels like that. Mr. Hugus said one thing that also needs to be mentioned is that the order asks the NGB to design a public involvement plan (it is on page 31). He commented that it is a little bit perverse for the NGB to be talking about the lack of public involvement when the EPA has handed the NGB responsibility for the public involvement program.

Mr. Zanis commented that the U.S. Army did a study on Camp Edwards that stated that Camp Edwards was on top of a sole-source aquifer in 1985. He said that anything that is disposed of on the ground will have an adverse effect on the protected water supply. Mr. Zanis showed a photograph and commented that the photograph illustrated what had happened after 1985. He said that the military knew about contamination starting in 1954, saying how poisonous the fumes are from certain explosives, how toxic it is, and that it was killing all the fish and the wildlife. Mr. Zanis reiterated that we knew about this years ago.

Dr. Feigenbaum said he wanted to again express his gratitude to the EPA and Mr. DeVillars and that he thinks everyone at the table wishes him well in his new career. He said he thinks we had

a real demonstration just in the last couple of days of what happens regarding the Impact Area if there is no EPA oversight. He reported that yesterday the Navy, speaking to President Clinton, said that if the Navy stops shelling the island of Viegues just off of Puerto Rico, the treatment that the Impact Area will receive is sweeping for surface ordnance and then fencing off the entire area in perpetuity. Dr. Feigenbaum said that this was an area of a couple of thousand acres of beautiful tropical sand dunes, a lovely place like the Cape – that is what we would be facing without this order.

LTC Fitzpatrick commented that we will never get the problem fixed, and never get anything solved here if we keep yelling at each other and throwing darts.

Mr. Kinney stated that LTC Fitzpatrick was right and that the NGB now has a good opportunity to do something that has never been done on this base, not on the Air Force side or the Army side, and that is to put the precautionary principle into play, and to prevent something from happening, before it becomes a serious problem. He stated that this is a great opportunity for the NGB not only to clean up the environment here, but to set a national precedent about how the new Army Guard or DoD is really truly concerned about the environment. He added that it is a chance to rebuild trust in the community that has been squandered over the years. Mr. Kinney said that instead of talking about it in a negative way, he thinks that, if the NGB looks at it in a positive way, EPA has handed them a method to get by some of the bureaucracy of the CERCLA process, to immediately get on the problem of UXO and to have a model cleanup right here on the Cape

Agenda Item #3. Controlled Burn at MMR
(See Attachment #2)

Mr. Guido introduced himself and asked that all questions be held until the end of his presentation. He stated that the NGB has been issued a permit to do a prescription burn. He said the main two benefits of the burn would be eliminating fuel for wildfires and maintaining the habitat of the scrub oak in the areas to be burned. He then referred the IART members to the handout, which listed the various participants who would be involved. Mr. Guido reported that Dr. Bill Patterson of the University of Massachusetts (UMASS) at Amherst would be the burn boss and would make the final decisions after looking at all the criteria on the day of the burn. He said that Dr. Patterson would make the decision on whether or not to do the burn that day. Mr. Guido commented that the prescription burn was being done for public safety purposes and described the burn as a very fast-moving, low-flame, low-heat fire, which will burn 3 to 6 feet high and will burn off the accumulated organic matter. Mr. Guido stated that he has talked to Chief Newman and met with the Barnstable and the Otis Fire Chiefs who are all involved in this process.

Mr. Guido explained that there are a number of species that are state-listed, and dependent in their life cycle on the burn for scrub oak. He stated that his understanding is that once this area is burned, it will flourish much faster and better than the areas that will not be burned in the Impact Area.

Mr. Guido reported that the permit was for January 15 to March 31, 2000. He stated that if all the criteria are suitable for the day chosen, the start time will be 10:00 AM and the fire will be extinguished by 4:00 PM. Mr. Guido reported that the permit allowed the burning of area #3 shown on the map in the handout. He noted that it was the one NGB wanted to burn as the

primary unit, but if the conditions are such that we cannot do #3, we will attempt to do #7. He said that if this year we do not get a chance to burn, then next year will be #3 and then #7, until we get these areas burned. Mr. Guido said the burn would take place as soon as NGB feels certain that UMASS has the public health criteria just the way they want it. He added that a lot of the concerns are associated with safety and reported that all the fire breaks have been cleared. He said there will be a helicopter for the burn boss, Dr. Patterson, and that if UMASS cannot be there, someone from the Nature Conservancy or Cape Cod National Seashore would be. He explained that they will have air-to-ground communication with the fire command control center which will be located near the fire. He reiterated that some of the fire departments which were not listed in the handout will be available, if needed, through the mutual-aid plan. Mr. Guido said that an initial media advisory has been sent out and that there will be a date for notification but, again, we cannot publish too far in advance as it is all dependent on the weather. He stated that when the criteria is right, notification will be sent out to all the media outlets, and that there would be another press release the day after the prescription burn.

Mr. Schlesinger asked what the expected impact would be to the protected turtles in the area. Mr. Guido introduced Dr. Michael Ciaranca to answer the question. Dr. Ciaranca replied that the turtles are in a state of torpor at the moment, buried underground, and that the fire will burn right over them without harm. Mr. Schlesinger asked Mr. Grant if any groundwater study resources would be compromised by the burn. Mr. Grant responded that the primary burn area has one monitoring well located in it and that all the wells in the Impact Area were flush with the surface. He explained that this meant that there was a concrete apron around the steel box and said that the burn would have no impact on that construction. He went on to say that the secondary burn area also has one monitoring well located in it. Mr. Schlesinger then asked how the burn would affect UXO. Mr. Grant said Ogden had only surveyed for UXO in areas where they work in the Impact Area, so Ogden has not conducted any broad sweeps for UXO in the prescription burn areas. He said he was not sure if they were going to be part of the broader munitions survey, as he did not think they were high-target areas. Mr. Borci said there were no known high-use areas. Mr. Schlesinger asked if UXO had been found in the vicinity of the monitoring well location, and that presumably a sweep was done before putting that well in. Mr. Grant said there was, but he does not recall any UXO being found.

Mr. Zanis asked why the primary area was being burned. Mr. Guido replied that the area was the one up next in the cycle of burn. Mr. Zanis commented that the area had been burned pretty powerfully not too long ago, within 20 years, and asked what was going on over there. Mr. Ciaranca asked Mr. Zanis what exactly his question was. Mr. Zanis said his question is why are you burning it again. Dr. Ciaranca said that we maintain the whole Impact Area on a rotational cycle, this unit is due for a burn according to the prescribed burn plan, and it will maintain scrub oak barrens that flourish quite beautifully. Dr. Ciaranca offered to take Mr. Zanis on a tour of the area in the Spring. Mr. Zanis replied that he gets to walk where he wants. Mr. Zanis then showed the team a picture of the area after it burned, and commented that it did not look that great to him.

Mr. Dow said he understands that Dr. Patterson is still working on his report about the burn plan, and asked how NGB had decided to go forward with the plan if the report was not yet completed. Dr. Ciaranca replied that there are written prescriptions for each of these burn units, and a basic plan for the rotational cycle. Dr. Ciaranca said the reason Dr. Patterson's report was not available was that a comprehensive plan was being compiled that would be presented to the NGB and all the state agencies. He stated the plan is in place, but had not been published yet. He said

that the plan is due in the second week of February, and will be a complete bound report for anybody to review. He added that Mr. Dow is more than welcome to access that report.

Mr. Dow asked if NGB thinks it would be beneficial to have the plan reviewed by the appropriate experts. Dr. Ciaranca said that an Environmental Impact Report (EIR) had been done and accepted by all the state agencies, and that MA DEP and EPA support the burn. He said that the only reason for NGB to perform this burn is to benefit the environment, which seems to be the reason we are all here to begin with. Dr. Ciaranca said that the burn will benefit, at the very least, 15 state-listed species and will have an immediate impact this Spring on their overall well-being. He said he believes it is essential that NGB maintain this practice. He added that the Natural Heritage group would like to maintain about 2,100 acres of scrub oak barrens within Camp Edwards; 1,700 acres of those just happen to be in the Impact Area, the bulk of the rest is just north of Giggs road, and they would also like to see that area burned at their request. He noted that these are private interest groups, not a military entity.

Mr. Schlesinger asked what impact the burn would have on any UXO. Dr. Ciaranca said that the way he understood it was that the event will benefit the search and finding of surface UXO. He said he could not answer how it will affect the UXO itself. Mr. Schlesinger then asked if the burn would cause the UXO to explode or corrode faster. Mr. Jacobs, of the Camp Edwards Environmental Office, replied that the prescribed burns, which have been conducted here since 1988, have basically burned most of the Impact Area. He said they have never had a single round explode during a controlled burn.

Mr. Prince said he would like to go on record as being in favor of the burn as proposed.

Agenda Item #3. Detonation Chamber Update

Mr. Gonser reported that the last time the IART discussed this was September 1999. He said that at that point he talked about the efforts of the DoD to develop a new chamber, using several high-tech approaches and high-strength steel. He reported that the effort is continuing, but there was some concern about the speed of that process, so the Defense Department went out and looked for alternatives in order to move more quickly. Mr. Gonser said DoD identified a system that is available with E-Mil International, and let a contract with them to re-scope the stationary systems that they had available. He said that this project has moved along quite quickly and is pretty much accomplished now. Mr. Gonser stated that DoD then asked USACE to test and analyze the so-called "P-10 Chamber". He said USACE completed the analysis, submitted the safety requirements to the Army, and the Army approved it. Mr. Gonser reported that on January 11, 2000 the Defense Ammo Center came to Camp Edwards and presented the results. He said there had been a briefing on the Controlled Detonation Chamber (CDC) for the NGB and other interested parties on what would be required to get it in operation. He said that a number of selectmen, the press and various other folks were present. He added that there are some issues on transportation and operation that are being worked on right now, but that the CDC will be out here in the latter part of Spring 2000. Mr. Gonser said that the NGB has asked USACE to look into developing an operations plan, to identify what needs to be done, determine the location of the chamber and, most importantly, plan the operation and maintenance of the chamber. He said he hoped this will all be completed by Summer 2000. Mr. Gonser reported that the main plan is to have a chamber available that will be able to safely detonate up to 81mm-size mortar and contain any emissions. He added that USACE still has to identify all the pieces to be detonated,

and that a community involvement plan will be developed to make sure the community is involved and informed.

Mr. Hugus commented that Mr. Gonser stated there had been a briefing on the chamber in January. Mr. Gonser replied that it was not really a briefing, it was a working meeting, and that those folks who had expressed an interested were asked to come. Mr. Hugus said he did not hear about it until he read it in the paper and that, as a member of the IART, he thought he would have gotten an invitation. He commented that in the spirit of public involvement, which is so important to the JPO, he thought there would have been some kind of notice to the community. Mr. Gonser said that he did not know if there was any sort of widespread announcement, there was just an initial working agreement to make sure that everybody who was working on the project was aware of it. Mr. Hugus commented that certain people were invited, like Mr. Judge and the press. Mr. Gonser replied that Mr. Judge had attended the meetings in Washington, DC and had a very high interest and had asked about it. Mr. Hugus commented that he would have appreciated an invitation as a member of the IART and the public.

Mr. Hugus asked what were the largest size rounds the chamber would handle. Mr. Gonser answered 81mm. Mr. Hugus asked how that would help when we have 155mm and even 8-inch rounds out there to dispose of. Mr. Gonser said the chamber would certainly take care of a lot of the smaller rounds, but that Mr. Hugus was right, there are items that are bigger than that, and the Army is still moving forward with a solution on how to handle the larger rounds. He added that, beyond 155mm, he thinks they would have to use some kind of technology to reduce the size. Mr. Gonser said that the Army people are not optimistic about being able to build a moveable structure that will be able to take anything bigger than 155mm, but are looking at options. Mr. Hugus commented that he thought the only things bigger were the 8-inch rounds. Mr. Gonser said that he thought there was some larger Navy ordnance. LTC Fitzpatrick stated that the largest rounds were the 8-inch rounds.

Mr. Hugus said that originally when the IART asked for this chamber, it was talking about the Donovan chamber which was demonstrated as being able to handle 155mm rounds, and the team was given assurances that the Donovan chamber could be adapted for air emissions. He stated that he wanted to express his frustration that after two years of effort trying to get a detonation chamber here, we still do not have one coming that is adequate. He said he was glad that one was coming for the smaller rounds but that he did not think it would handle everything we will be running into on the UXO cleanup. Dr. Feigenbaum commented that if it takes care of the 155mm rounds it will have gotten most of the UXO, and noted that the 8-inch round was not much bigger than the 155mm round. Mr. Zanis asked if there is a safe way to move the rounds to the chamber. Mr. Gonser said right now the only method is human transportation, which is one aspect USACE is looking at. Mr. Gonser stated that he has talked to the research and development people who acknowledged that one of the things on their plates is the possibility of remote control devices, but that was down the road.

Mr. Schlesinger said he did not have a question on the detonation chamber, but about the letter that came to the IART several weeks ago from Mr. DeVillars addressed to the Army, regarding making arrangements to remove high explosives from the Ammo Supply Point. He asked if anything had been removed as a result of the letter that the IART was not aware of. LTC Fitzpatrick answered no, he had provided the IART with the inventory as requested and that the inventory listed the general bills of lading which identify when the items will be shipped. He added that Col. Jenner got involved to make sure that happened. He added that he was not

specifically tracking trucks coming in or out to do that, and that State Headquarters was working to move the ammo out. LTC Knott asked that the tracking be reported in the Weekly Update.

Ms. Frawley noted the time and asked if there was need to reschedule. The IART chose to continue.

Agenda Item #4. Soil Sample Results from the APC Area
(See Attachment #3)

Mr. Grant reported that this study was of the Armored Personnel Carriers (APCs) in the Impact Area and noted that there was some munitions debris located there which was removed. He reported that the first samples were collected in October 1999, and Ogden had a composite sample from the area between the first APC and Turpentine Road. Mr. Grant said that five separate sampling points were composited and that Ogden got explosives detections for the composite samples at several different depths. He noted that the concentrations appear to be decreasing from about 1,100 ppb to 400 ppb, over a thickness of about 12 inches. He said that RDX was the main compound of interest, and that the results caused Ogden to install additional sampling grids around the APC area. He said that Ogden also revisited the original five sampling points and collected discrete samples at those locations. He said that the results from the first three indicate that there are contaminants, RDX and TNT-related compounds, in the filter at one group, but that the northern group appears to be clean. He added that the discrete samples suggest that the highest concentrations are located in the area where he believes most of the debris was formerly located. He noted that an upgradient area has RDX concentrations that range as high as 4,300 ppb and that this area happens to be one of the areas identified in the EPA cleanup order, so it will be subject to additional action.

Mr. Zanis asked if Mr. Grant knew where the piles originated. Mr. Grant replied that he does not know if that was ever subject to investigation, but it was not part of Ogden's study. He said he knows that the UXO folks went through the pile and inventoried every single piece. He added that there may have been a discussion of where the ordnance came from in the USACE Archive Search Report. Mr. Grant said that all the sampling grids had three depth intervals, 0-3 inches, 3-6 inches and 6-12 inches.

Mr. Zanis asked if there would be problems with removing the soil and doing a cleanup quickly. Mr. Grant said that was the subject of the rapid response action under AO #3, which is part of the next work plan, and that Ogden will be specifying how to go about doing removal. Mr. Zanis asked if there would be a problem. Mr. Grant said there was not a problem, but it was hard to tell right now. He stated that he thinks the cleanup would be localized to 50 feet around the APCs.

Mr. Hugus asked which compound had a concentration of 4,300 ppb. Mr. Grant replied that it was RDX.

Mr. Schlesinger commented that sampling implies that work must be done on a larger area, and asked if that was the intent here. Mr. Grant said that generally what Ogden does is surround an area of known contamination with grids; if more contamination is found, then those grids are surrounded with more grids and discrete sampling conducted, as in the process followed at Demo Area 2. Mr. Schlesinger asked if that procedure would be followed here. Mr. Grant said that remains to be determined, but that is what Ogden is in the process of writing a plan for.

Agenda Item #5. Small Arms Propellant Sampling Plan
(See Attachments #4 and #5)

MAJ Ruscio introduced himself as the health advisor to the JPO and noted that he was asked to provide a quick overview of the Propellant Combustion Product Analysis on an M-16 Rifle and 105mm Caliber Gun. MAJ Ruscio said the first task was to define the nature and magnitude of the propellant combustion product with M-16 and 105mm weapons. He reported that the study was designed using an M-16 and 105mm weapon in an enclosed sampling tank and that results indicate that trace product elements were identified with toxicological properties. He noted that polynuclear aromatic hydrocarbons (PAHs) were identified and that this was the first time they had been identified from an M-16 firing weapon test. He added that respiratory levels of metals had also been identified, including lead, barium and antimony. He reported that the method used in the study was four regular bores and that the authors believe that the large fractions of the lead were from the bullets used, the slug part, not the combustion process. He stated that the authors did try to estimate the magnitude, the amount of products that were produced. He noted that the authors do identify that there was a large error in the standard errors compilation in the process. MAJ Ruscio stated that the conclusions were that there appears to be a potential for adverse health effects from extended exposure to, and inhalation of, propellant combustion products. MAJ Ruscio commented that the study was not designed to address, and does not address, public health risks, but does indicate a need for further investigation.

Mr. Kinney asked what an extended exposure would be. MAJ Ruscio replied that that was a good question and that there is no conclusion from the information presented in this study.

Mr. Schlesinger stated that it has come to his attention that a scientist at the Lawrence Livermore National Labs did some work on propellant combustion analysis and has published an article. He said he found the article interesting and contacted the scientist. He reported that the scientist and his colleagues found that there were nitro-aromatic amines in the chambers that were the most mutagenic he had ever seen. Mr. Schlesinger commented that it stands to reason that we really need to be looking at it very carefully locally. He noted that the scientist was a food biologist and senior researcher.

Mr. Hugus said that maybe we do not need to drive this point home any further, as it sounds like the NGB is going to agree to do the soil sampling. He said he just wanted to comment that air sampling is a real concern too, and that one of the seventy compounds the study picked out was benzo(a)pyrene, a chief bad ingredient in cigarette smoke. He noted that the 1990 and 1995 Cancer Registry Data indicate that female lung cancer on the Cape has an elevation some 35% above state average and that people live really close to the small arms ranges in Forestdale. He said he just wanted to underscore the importance of (1) the chemicals that have been found, and (2) the existing health problems on the Upper Cape which brought about our concern.

MAJ Ruscio noted that the other part of the study is that PAHs were not identified in all samples, but were identified.

Mr. Schlesinger commented that the Report was a poor fax copy and he could not read the compounds on it. He asked that someone order a clean copy of the report for use. Mr. Borci said he would do that.

Dr. Feigenbaum stated that we have been talking about this particular study for a year now, and although it is gratifying to finally come to official notice, he did not think it should have taken so long. He said that as there is much discussion on the importance, or lack thereof, of citizen involvement, he wants to say that the only reason we have this study at all is because there is a citizens' network that has been in existence for about ten years that is concerned with military tactics. Dr. Feigenbaum noted that the Report was originally mailed to Mr. Zanis from Laura Olaf who works at the Badger munitions plant in Wisconsin. He said he just wants to let those people who are worried about lack of citizen involvement know that there are a lot of concerned citizens around the country.

Mr. Crocker asked if the testing had been conducted under a realistic situation where the powders were contained or had it just been burned powder. MAJ Ruscio replied that it had not been his test, but had occurred in a laboratory setting, and was not a field experiment. Mr. Crocker noted that obviously there was incomplete combustion in the test. MAJ Ruscio stated that there were some concerns with the report. Mr. Crocker stated that there is a big difference between burning a powder bag and actual firing.

Mr. Dow asked if the report had specified what percentage of PAHs were carcinogenic. MAJ Ruscio replied that the report did not. Mr. Dow asked if, over the period that they identified them, were the PAHs more than likely to adsorb to small particulates and get lodged in the lungs. MAJ Ruscio replied that if he remembered right, there were eleven identified with the M-16, and that he would have to go back and look at those eleven to answer the question. Mr. Zanis said that the authors obtained better readings out of the M-16 than they did from the 105mm tank gun. He stated that he thinks the tank gun used double-base powder, while the M-16 uses single-base powder. He added that he would think these glorified tank guns would be dirtier, but the study could not capture the gases as well, as there is so much power there.

Mr. Dow asked if the study gave any results on fine particulate adsorption. Mr. Zanis replied that the report did say they were in the breathable range.

Mr. Gordy commented that that the study should have included the green rounds that are supposed to be used, rather than something that was used in the past. He stated that this was like looking for something that happened in the past and trying to assign blame. He noted that the symptoms of elevated female lung cancer, as well as low birth rates, are symptomatic of smoking. He added that he has been told that the incidence of radon in the homes on Cape Cod has certain correlation with the types of cancers that have been found. Mr. Gordy said that the few things he has been able to read stated that the metal that would be used in the green rounds would be tin, which is supposed to be non-toxic. He added that NGB is supposed to be looking for non-toxic primers to use with these rounds, but have not been able to find a non-toxic parameter that functions at low temperatures. Mr. Gordy said he did not understand what the need for this Report is if it does not affect the reality of the future situation. MAJ Ruscio said he agreed and explained that the study was published in 1985, and was probably accomplished in the 1983-1984 timeframe and used lead bullets. He said he agrees that the issue of cancer on the Cape is very complicated. Mr. Zanis commented that the propellants are the same, from the green munitions to this, and that the propellant number is DWA33. He noted that, as the tank guns are triple-base and they shell tank guns an awful lot right behind the Forestdale neighborhood, it would be nice to know the past in order to protect ourselves in the future.

Mr. Borci said he would recommend moving on to what is going to be done, and that we all recognize this is an old study. Dr. Feigenbaum said he agrees it is important to get on, but we do not want to leave some misinformation hanging out there. He said this study deals not with the contamination caused by the projectile, but with the contamination caused by the propellant and the so-called "green" munitions that have been used and will continue to be used here on the Base, which use the same propellant as the M-16 in 1985; there has not been any change. He added that nobody has yet developed an alternative, and that they probably will not. Dr. Feigenbaum said that, right now, every time MAARNG goes out there shooting, they are putting into the environment contaminants that have been listed in this study. It is germane and important and, until there is a demonstrable alternative that is proven safe, this study is cause for great concern. He added that, regarding Mr. Gordy's comments that smoking is connected with lung cancer, everybody knows that, the question is that nobody has demonstrated that women on the Upper Cape, particularly women in Bourne and Falmouth, are smoking 30-50% more than women in other parts of the state.

Mr. Grant stated he would do a short presentation for the Proposal for Small Arms Ranges (SAR) Study. He stated that the proposal has been developed as a "worst case" attempt to characterize what emissions may have gathered in the soils and ponds. He explained that the proposal includes selecting small arms ranges for testing and that the criteria for testing are listed in the handout. He reported that Ogden is trying to find which facilities have been used for the longest period of time, have been used most intensively, have been used very recently so would not have been inactive for a long period of time, and have both the largest number of rounds fired and large-caliber rounds fired which would involve more propellant use. Mr. Grant stated that, based on these selection criteria used in the USACE Archive Search Report, Ogden has proposed three locations for testing. He said these three locations include the Alpha Range, which is up off of Wood Road, the Gulf Range, and the India Range. He added that those ranges appeared to have been used for long periods of time -- 30-35 years each -- and were used up until very recently, and he thinks there is a fairly high likelihood that these would be the ranges where contamination would be located. He said that the ranges are also suitable for study in that they have fairly well-defined firing points, so Ogden expected to be able to locate fairly well where the arms were fired.

Dr. Feigenbaum asked when the next firing that is going to be used would be. LTC Fitzpatrick said that he would have to look at the Range Control Usage Report but that he imagines it would be when the weather warms up, in the March-April timeframe.

Mr. Grant added that the proposal for sampling is a simple one, and that Ogden is proposing full sampling grids at each of the three ranges, positioned along the firing lines at each location, normally at the center locations and two at the firing lines. He said the grids will be a standard 22 feet by 22 feet, probably centered on the firing lines, which will cover about 10 feet right in front of the firing line and 10 feet right in back of the firing line. He reported that, in addition to the full sampling at these three ranges, Ogden proposes air sampling at any particular range; it does not matter if it is one of these three. He said that Ogden is trying to "test-drive" air emissions at a range during M-16 firing, and that there would be both upwind and downwind air sampling at that range. He said that the samples from both soil and air will be analyzed for pyrotechnic explosives and propellant (PEP) compounds, and also for metals, and the methods used would include the 8310 SVOC analysis and a complete metals analysis. He said that the proposal had been discussed with the agencies a couple of technical meetings ago.

Mr. Hugus asked if circles could be used for the soil sampling, as he thought the best way to sample would be to draw a circle around where a gun is fired, perhaps favoring in front of the gun a bit more than behind. Mr. Grant replied that the geometry does not matter so much, and that Ogden has used circles at the mortar targets where there is a high likelihood of artillery impact.

Mr. Hugus asked what Mr. Grant's rationale was for testing behind guns. Mr. Grant replied that it is not testing behind the guns per se, but testing within a certain radius of where the gun is fired. Mr. Hugus commented that is if it is assumed that the report comes out of the barrel. Mr. Grant asked if he meant downrange. Mr. Hugus concurred. Mr. Grant said it probably is, but that he thinks the heavier particles would probably fall closer to the gun.

Mr. Hugus stated that one of the areas the IART is concerned about is off Greenway Road, where there is an M-16 firing range. He asked if that range could be included. Mr. Grant replied that we could certainly consider it, and that the three that were proposed were based on what was thought would be the worst-case scenario. Mr. Hugus replied that if the M-16 range off of Greenway Road, which is so close to the community, were a high-use range, he would definitely recommend that it be tested. Mr. Grant said OK.

Mr. Zanis asked if the soil was removed and replaced at the chosen ranges. Mr. Grant replied that, as these are bermed ranges, the soil and the ground would probably have been treated in a berm maintenance program, but that he doubts that the soil in the firing range would have been affected. Mr. Zanis commented that when range maintenance is performed they sometimes rebuild the ranges. He asked if Ogden would sample that range that had been eroded last Spring. Mr. Grant said he was not sure which one that is. Mr. Zanis replied that it is like a golf course, they had been in there with bulldozers, and that it has been there for a long time. Mr. Grant commented that it did not look disturbed, and Mr. Zanis agreed. Mr. Grant said that the range could be looked at if it has an equivalent history of use. Mr. Zanis said he questioned if those ranges had been rebuilt over the years or had soil removed. Mr. Grant said Ogden could check with range patrol on what types of maintenance and how much grading was done.

Dr. Feigenbaum asked what was known about the fate and transport of these materials. He questioned that, if the range has not been used for a couple of years, how do we know it has not washed out of there. Mr. Borci replied that we are expecting to see metals and propellants. He commented that metals usually stay right at the surface and, as has been seen from sampling, propellants can travel a bit. He said he believes that the proposed grids are the same as used at the gun and mortar firing points. He said the results from the gun and mortar positions were currently coming in and could be used as a comparison.

Dr. Feigenbaum commented that firing was planned for the Spring and asked if there were any plans to look at soils approximate to the firing incident. Mr. Gregson replied that they will consider this part of the study the initial step and, based on this information, if it looks like there is reason to take a look after firing is done, they will. Dr. Feigenbaum said it seems to him that that is the only thing that makes sense. He stated that Ogden says you are looking at a worst-case situation, but really you are not because you have not presented any data on the last uses of these ranges you are proposing to test. He stated that very little was known about the fate and transport and these kinds of things should be known. Mr. Gregson said that one of the criteria used to select the locations was to try to pick ranges which had been used frequently in order to avoid the concern Dr. Feigenbaum raised. Dr. Feigenbaum asked if that could be documented.

Mr. Gregson said that he could provide details on the range selection and details on the last usage. Dr. Feigenbaum said that he would propose looking at the range immediately after the firing event, since the plan is to use the ranges during the period of study. He asked if there were any reason not to employ this practice and if this would happen. LTC Knott said the issue would be discussed at the next technical meeting and he would report back to the team.

Mr. Hugus said he just wanted to weigh in that he was in agreement with that. He added that one of the problems with some of the new ranges is that they have been through plenty of traffic and earth-moving due to the lead berm cleanup. He stated that sampling a brand new firing event seemed like a good idea. Mr. Grant said they could take a look to see if the cleanup office has documented anything on the traffic patterns for the lead berm project and see if there are areas that have been more widely affected.

Mr. Zanis asked Mr. Grant about air emissions, and asked how they would capture the smoke from the detonations and from an M-16. Mr. Grant replied that Ogden can get a lot closer to an M-16 than we can when we were going into the Impact Area. He said he was not sure yet how close they should be to the M-16 according to the agencies. He added that he thinks they could probably be immediately downwind of the firing line but that he was not sure it really helps to be right at an M-16 position when there are a multitude of positions firing at the same time. Mr. Zanis asked if NGB would voluntarily close those M-16 ranges near Forestdale until it is determined if they are dangerous or not. LTC Knott replied that MAARNG, not NGB, was in charge of those ranges. Mr. Zanis added that people were concerned over there and asked if the troops could be moved to the inside of the range. LTC Knott said that if Mr. Zanis put it in writing, he would be glad to take it to MAARNG.

Mr. Schlesinger said he did not catch what was being tested for, and asked Mr. Grant if he had a clean copy of the study. He asked if all of the compounds in this study that are mutagenic and carcinogenic were going to be in the PEP Ogden would use. Mr. Grant said that he thinks the only compounds in the study that they would not be testing for were volatile organic compounds (VOCs) and some gases. Mr. Grant said that Ogden would be looking for compounds that would be likely to have groundwater impact, which the gases probably would not, even though they could certainly have health effects someplace else.

Agenda Item #6. Investigations Update/UXO Update
(See Attachment #6)

- **Investigations Update**

Mr. Grant reported that the monitoring wells in the Demo Area 1 had been completed. He said that the last two wells completed since the last IART meeting were MW-78 and MW-74. He reported that all five wells had been installed in the area and that an upgradient well had also been installed. He added that profile results, but no monitoring well results, were available for these wells and that nothing from the profile would make Ogden change the shape of the plume that was drawn for the last meeting. He stated that in terms of profiling, MW-78 and MW-74 were clean for RDX, but that the southernmost well, MW-78, had detections for TNT compounds that do not appear to be related to the RDX released from Demo Area 1.

Mr. Hugus asked if Mr. Grant was saying that MW-78 had TNT, which was not related to the Demo Area 1 plume because it did not have RDX. Mr. Grant said that was his understanding

because of the depth of the detection, which is at the water table, and the RDX moving from Demo Area 1 is 40 to 50 feet below the water table. Mr. Hugus asked if the new detection was shallower or deeper. Mr. Grant replied that the MW-78 detection was shallow, which means it is from a closer source than Demo Area 1. Mr. Hugus asked if a whole new problem had been uncovered. Mr. Grant replied quite possibly, but that the monitoring well results from MW-78 would tell much more and that Ogden expected to see the same kinds of compounds in the monitoring wells. He added that the magnitude of the problem would be much less than Demo Area 1, as the detections have been at relatively low levels. Mr. Hugus commented that could mean that the source had much higher levels, and that he would like to recommend that a small search for the sources at MW-78 be conducted since it has been ruled out as part of the Demo Area 1 plume. Mr. Grant said to keep in mind that the ultimate goal is to design a cleanup for this area, and it will probably address MW-78 as well as other concerns. He added that in order to design that, you would have to know what the extent was from MW-78 as well as other wells in this area. Mr. Hugus said that is what he means, and suggested looking farther south to make sure we catch the whole plume. Dr. Feigenbaum stated that he would also like to see the search extended upgradient in order to see what the concentration is in the depths, as then you will know if the MW-78 detection is lower than upgradient. Mr. Grant stated that, as it had been a water table detection, you would not expect to find it too far upgradient.

Mr. Schlesinger asked if a reverse particle track had been done. Mr. Grant said not yet and explained that sometimes Ogden waits to get the monitoring well results before they do that.

Mr. Prince said he votes for going south. He stated he thinks by going south we will be getting into the zone of contribution (ZOC) for the new Area 4 water supply wells. Mr. Grant said the thing Ogden found quite satisfying in this exercise is that the RDX plume is fairly narrow and seems to be fairly well defined, and that bodes well for remediation.

Mr. Schlesinger asked who makes the decision on the location of the well installations. Mr. Grant said it was discussed at the technical meetings with the agencies, and that sometimes Ogden will do additional work like particle tracks to try to decide where to locate wells. He said that he thinks that when a new detection area like this comes up, the first thing to do is go back to Ogden's Phase 2B-like document, which has cumulative information about all the ranges in that area, and try to see if it could be related to one of those – you look around the area and try to decide where the source could be.

Dr. Feigenbaum requested that MW-78 be addressed as an action item for the next meeting, and that there be a report on follow-up.

Mr. Grant went on to say that Ogden has just started working on the RDX response wells in the Impact Area and noted their location on the map. He stated that Ogden is working at two training sites along Turpentine Road in the front of the Impact Area and will also be working along Spruce Swamp Road on the western perimeter. He explained that Ogden was attempting to determine the width of the contamination from what they believe are particle tracks extending from one level to another. He stated that the initial set of wells installed in the Impact Area found some RDX detections and that those detections seem to relate from one well inside the Impact Area to another well outside the Impact Area. He noted that Ogden has been delayed in the program by the weather as the cleanup is very difficult when the soil is frozen, which had put them back about two weeks, but that they are back on schedule.

Mr. Grant said the groundwater sampling continues in a confusing array of rounds and types of wells. He explained there are a number of different programs of well installations and gave as examples the Group 1 far field wells and the Group 2 far field wells. He stated that each time Ogden completes a set of those wells, they are put into a sampling program, each set is sampled three times and the three sampling events are at least three months apart. Mr. Grant reported that the new Group 2 far field wells consist of the last Bourne well, the two wells that Ogden last put into the Long Range 3 ZOC, the J-well ZOC, and the Sandwich far field well. He stated that the five wells had been sampled and the results were back, and he believes everything is non-detect for explosives. Mr. Grant said Ogden is in the process of sampling the Demo Area 1 wells in the training site and the one upgradient well and has currently sampled 12 of those wells and another six, which is Round 1 for those wells. He added that the last six wells installed upgradient still needed to be sampled. He stated that the Group 2 far field wells, which are MW-63 in the ZOC of Long Range 12 and the Bourne far field well, were recently sampled for the second time. He noted that Ogden is sampling a third round at the supplemental IRP wells, which is a group of 48 wells installed by the IRP that IART is monitoring for explosives.

Mr. Kinney asked if CS-19 was downgradient of those wells. Mr. Grant replied that CS-19 was covered well in the original study and that these wells are mostly at FS-12, CS-10 and LF-1. He added that the wells Ogden has are located by the Coast Guard CS-1, FS-12 and the CS-10 areas. He noted the well locations on the map and explained that the wells would all be downgradient of parts of the training ranges.

Mr. Grant stated that the samples have gone to the laboratory, and he reviewed the validation results. He noted that it did not look like a big improvement from last month's slide and the reason for that is that these statistics are current as of January 3, 2000, which is the date Ogden closed in order to get ready for the January IART meeting. He said that a lot more had been validated in the month of January, and the IART would see that in the Monthly Report which is coming out next week.

Mr. Grant moved on to explosives detections in groundwater and noted a new detection since last time was a RDX detection at MW-58, which was installed along Tank Alley outside of the Impact Area. He reported that the detection had been at a steel-lined pit, formerly an ordnance disposal pit containing munitions debris. He said Ogden sampled the soil and discovered the soil contained RDX, Her Majesty's Explosive (HMX) and TNT breakdown products. Mr. Grant said that the steel-lined pit is subject to the Rapid Response Action under AO #3, and Ogden felt it warranted a monitoring well alongside the steel-lined pit. He stated that RDX was detected at a level of 3.7 ppb at the water table right next to the steel-lined pit. Mr. Grant commented that it looks like there is an impact there, and that the RDX is probably coming from the munitions debris in the pit, although Ogden has collected other soil samples in that area that come up non-detect.

Mr. Zanis commented that the steel-lined pit seemed to be centered on top of a bubble and asked if it could have shifted. Mr. Grant agreed and noted that it is possible that the top of the mound is shifting. He added that Ogden thinks the top of the mound is a bit closer to MW-58, and for that reason Ogden located the water table well on the west side of the pit. Mr. Zanis asked what the Rapid Response would be. Mr. Grant replied that Ogden has not come up with a response plan yet, and that it might be possible that it would be part of a larger program of investigation for the J Ranges, as the steel-lined pit is considered part of the J-1 range. The steel-lined pit had apparently been an ordnance disposal pit as it is located next to a 100-meter range. Mr. Grant

commented that this does not mean Ogden won't do a separate response for it, but that it might be part of a larger investigation of the entire J Ranges.

Mr. Grant reported that the other new explosives detections since last month was trinitrotoluene (TNT) and dinitrotoluene (DNT) detections at MW-78. Mr. Zanis asked if the DNT could be from a propellant. Mr. Grant said that he was not sure whether it was a 2,4 DNT compound which would be from a propellant or the amino TNT which would be a breakdown product. Mr. Grant explained that if the detection has amino in it, it is called a breakdown product, and that TNT is usually found in an explosive compound rather than a propellant compound. He added that DNT, 2,4 DNT, and 2,6 DNT are propellant-related compounds. He noted that one other thing that was confounding Ogden is that 2,4 DNT and 2,6 DNT were detected in a profile sample but are not detected in the well placed where the profile sample was collected. He said that Ogden is making their best efforts and using photo diode array (PDA) to verify the tests.

Mr. Grant reported that RDX had been detected in Demo Area 2 in a post-excavation sample. He added that there have been two excavation rounds at Demo Area 2, and there was the original examination from the artillery simulator update. He reported that this last RDX detection was a low-level detection compared to previous levels as it was just above detectable levels for RDX.

Mr. Zanis asked if Demo Area 2 should be studied more closely. Mr. Grant said that was the original thought when Ogden first had the detonation results. He said that Ogden thought that perhaps the whole area would be contaminated but, as they went through the step-wise removal of soil from the cratered area, the contamination seemed to dissipate and go away the farther you went. Mr. Grant stated that Ogden now thinks the contamination was related to detonation. Mr. Zanis stated that a closer look at Demo Area 2 is needed.

Mr. Grant reported that RDX and TNT were found around the APC area, the third of the potential source areas looked at. Mr. Schlesinger asked if the detection was before or after recent demolition. Mr. Grant replied that it would depend on which area you are talking about. Mr. Schlesinger asked if it were older than the January simulator disposition. Mr. Grant replied that the Demo Area 2 sample taken immediately after detonation showed high levels of RDX. He said that Ogden did removal, found lower levels of RDX, did another removal and found one last level. He noted that the detection had been one sample out of three, and that the other samples were non-detect. He added that the detection was at a low enough level that it could be background for Demo Area 2, but further investigation was needed. Mr. Schlesinger asked if Ogden would go deeper. Mr. Gregson said yes.

Mr. Zanis asked how much soil was removed when a removal was done. Mr. Grant said it depends on how big the crater is and explained that if sample results from several discrete samples were all contaminated that is a good indicator that you have to go further. He said he thinks in these cases a couple of inches of surface soils were removed. Mr. Gregson reported that in the first sampling event 1 to 2 inches were removed, and in the second removal action 5 to 6 inches were removed. Mr. Borci commented that EPA's comments on the Phase 2B Work Plan had requested additional work.

Mr. Zanis asked what is involved in the area and if it could impact on the far field wells. Mr. Grant replied that it would depend on where the problem was, and he thought there could be a ZOC for a Long Range well in the area. He added that it would also depend on the pumping rate.

Mr. Walsh-Rogalski commented that soil contamination was being seen in areas not seen in Phase 1. He asked why that was. Mr. Grant said he thinks the reason is that Ogden is sampling in specific areas rather than using a broad-brush approach to the Impact Area. He noted that in Phase 1 there were a number of tank targets located along Tank Alley and a couple extending up Turpentine Road. He said that in Phase 1 we took the approach of putting sampling grids in the area, but not necessarily around the targets, thinking there was going to be some low-level contamination that could be measured in the area, but nothing was found. He went on to say that in Phase 2 sampling grids surround the targets, getting a lot closer to them, and Ogden is starting to find low-level detections.

Mr. Grant said that as he had mentioned previously, RDX and TNT were found in two sampling grids which are ring grids around a tank target. He added that doing the two ring grids allowed for discrete samples and that Ogden found RDX levels at that location up to about 380 ppb, about three times the reporting level. He noted that a TNT breakdown product had also been found there. He reported that explosives contamination had been found in one sampling grid to the west of the tank target. Mr. Grant explained that the reason Ogden is sampling there is to try to find the source of contamination for MW-1, and that the back track for MW-1 comes into this area. He commented that Ogden is looking at the soil to see if there are RDX levels that would correlate with what is being seen at that well.

Mr. Zanis commented that the military explosives manual tells you that fine residues from RDX clings to things like wood. Mr. Grant said that he thinks in the high-use target area the investigation will be much more thorough, looking into UXO present in the area, and what could be causing the contamination.

Mr. Grant explained that the fourth bullet on his slide pertained to some contaminants detected in the groundwater when Ogden was looking along Greenway Road, downgradient of the L Range. He reported water table contamination at 90WT0013 and said that Ogden is installing some sampling grids along Greenway Road and closer to the well. He said that the contaminants look like propellant-related compounds like nitroglycerin and DNT. Mr. Zanis noted that the contaminants could be from tank gun testing that uses triple-base powder. Mr. Grant said that it is not clear what is happening because there are some propellant-related compounds in the soil, but a 1.0 ppb RDX detection at the water table. He added that subsequently the RDX detection disappeared and the well has had a couple of clean sampling events. Mr. Zanis asked if the DNT was a propellant. Mr. Grant said yes.

Mr. Grant reported that he did not have specific levels on the propellant compounds at GP-8, GP-10, GP-11, and GP-14. He said that this was the last one of the RDX potential source areas in the Phase 2A work plan. He stated that there had been a RDX detection at the water table in MW-25S. He said that, in this case, Ogden put ring grids around the tank in the vicinity of MW-25S, but there were no detections in the soil samples. He noted that this was a little bit different from some of the other ring grids where we did get detections in the soil. Mr. Grant stated that as part of Phase 2A Ogden would go to every gun and mortar position, a few of which were sampled in Phase 1, and would be sampling the soil for propellants in the cleared areas where Ogden thinks contamination may have occurred. He reported that Ogden was starting to get the first results back for the gun positions, and that GP-8, GP-10, GP-11, and GP-14 are the second through fifth highest priorities that the EPA has suggested for sampling. He reported that so far propellant detections seen were at similar or higher levels to what was seen in Phase I at the other gun positions. Mr. Hugus asked Mr. Grant to point out the locations on the map and give

the detection levels. Mr. Grant indicated the locations on the map. Mr. Borci reported that he thinks the 2,4 DNT detection was the highest at 5.2 ppm.

Mr. Walsh- Rogalski commented that Mr. Grant had presented a lot of data and that its significance to him was that a lot of the findings of the Phase 1 Completion of Work Report might be readjusted. He added that we do see soil contamination from training-related activities at target points and at firing points. Mr. Grant said that in terms of firing positions, this is very similar to what was seen in Phase 1. He stated that propellant-related compounds were seen at GP-16, the highest gun position, and Ogden thinks these other detections are at the highest gun positions, too. He added that detections at the target areas were a bit different and he thinks that the levels are, for the most part, low, unless there is an apparent disposal activity like at the APC area, where levels get up to 1,000 ppb. Mr. Grant commented that the tank targets had detections of 100 ppb or so, which was not a lot different from the results in Phase 1. He said that the reporting limit is 130 ppb. He stated that what is being seen now is the detections are just above reportable levels, but that Mr. Walsh-Rogalski was correct in that these detections may change some of the conclusions about what sources may be in the groundwater. He added that it is one thing if you have no detections but another when you have low-level detections. Mr. Borci said that the samples taken at the APC area in Tank Alley, which had detections of 2,4 DNT breakdown products, were the highest levels yet seen.

Mr. Schlesinger noted that Mr. Grant had said a site was not available and asked what he meant. Mr. Grant explained that the highest priority gun position for sampling was the area at Camp Good News. He said Ogden had some logistical problems in that the sampling points for that area are based wholly on historic aerial photographs. He added that Ogden had to quantify the photograph, which means put it into the current Geographical Information System (GIS) frame of reference, which took them some time to do.

Mr. Grant reported that the last bullet on soil detections on his slide was in reference to results for the most recent detonation which occurred on January 18, 2000 at a number of locations. He noted that two of the locations are on the side of Turpentine Road, and that those two locations had RDX and TNT compounds detected in the samples from the crater. He added that there were some other detonations done on the same day that did not have the explosives detections that these do.

Mr. Zanis asked when Ogden did the sampling. Mr. Grant replied that it was done a couple of days after the event, and that Ogden is working to get closer to the event date. He explained that this particular event had been a problem because Ogden had been working pretty hard that day to get air monitoring equipment moved around to the proper locations, and did not have a separate sampling crew coming in afterwards to collect soil samples. He explained that, by the time the crew had moved the other equipment around and was ready to sample, it was too late in the day to do so. He added that subsequently the soil had frozen and was not available for sampling, because Ogden is trying to carefully sample just surface soil. Mr. Grant said sampling took place 6 to 7 days after detonation, and that Ogden's agreement with EPA is that sampling occur within 3 days after detonation and/or before precipitation.

Mr. Zanis said he thinks Ogden would want to get out there while the crater is still smoking. Mr. Grant said that was what had been agreed to with the agencies, and that Ogden has assigned additional crews so they can come right in after the detonations. Mr. Hugus asked what had been detonated. Mr. Grant replied that 81mm mortars had been detonated. Mr. Hugus asked if they

were UXO. Mr. Grant said yes. Dr. Feigenbaum asked why the mortars were detonated. LTC Fitzpatrick stated that the mortars had been identified as unsafe to move. Dr. Feigenbaum asked if NGB had checked with EPA on each one of these events. LTC Fitzpatrick replied that EPA had been notified, everything was correct, and the information was given to them in the report format they wanted. Mr. Grant said he had a little more information about those detonations further on in his presentation, if there were questions.

Mr. Grant said he wanted to give a brief recap of the work at Demo Area 1 because that was the subject of discussion at the last IART meeting. He reported that the situation at Demo Area 1 is that some samples were recently collected, including some that were in the July 1999 Response Plan and additionally, some that were identified based on a site walk conducted on January 22, 2000 subsequent to looking at Mr. Zanis' photographs. He said the results for these samples were expected shortly. He stated that the sampling locations consist of a number of grids put in compass directions heading out from the center of Demo Area 1, and that Ogden had previously sampled extensively in this area, with both surface soil grids and deep soil borings. He explained that Ogden was sampling surface soils farther away from that central 1-acre depression on all four sides in an attempt to characterize whether the explosives seen in surface soils here also extended to further locations in this 5-acre area. He added that detections may be seen beyond the central depression area. He noted that the three grab sample locations, shown as yellow triangles on the map, were identified back in June or July 1999 based on a site walk with Mr. Zanis where we found some residual materials, and the decision was made to sample those locations. He reported that the additional soil samples were at three general locations, one in the vicinity of the smoke grenades, one of which was identified back in June or July 1999, and there were some other samples taken there. He added that another general location was up on a hill near the entrance where Mr. Zanis' photographs showed some C-4 residual material, and the third location was on the hill where some pyrotechnic material was seen that does not appear to be C-4, but possibly smoke compounds. Mr. Grant said that during the January site walk a few additional C-4 residual locations were found that Mr. Zanis had not photographed.

Mr. Hugus commented that Mr. Grant was saying that Ogden has gone back and tested in the areas that Mr. Zanis pointed out in his photographs. He asked Mr. Grant why those places were not sampled originally. Mr. Grant said there are actually two answers. He said one answer is that the locations known of, before Mr. Zanis brought the photographs, appeared to be smoke or pyrotechnic objects and not C-4. He said that Ogden's discussions with the agencies were, in part, focused on determining the sources of RDX in groundwater and therefore Ogden was only testing locations where C-4 residuals were located. Mr. Grant said that the second part of the answer is that Ogden did not know about the C-4 locations that Mr. Zanis had photographed nor about the other ones we found in January, but had a process in place to identify all of those which had not yet been executed. He added that Ogden was in the process of conducting the UXO and munitions survey of the entire 5-acre area and then doing a visual inspection to look for those kinds of objects.

Mr. Hugus said that his understanding was that all this was not based on Mr. Zanis' photographs, but was based on the original site walk that Mr. Zanis went on with you pointing out these places. He asked why the places Mr. Zanis pointed out were avoided. Mr. Grant replied that they were not avoided, and that no sampling had occurred between the time Mr. Zanis pointed out these locations and the time Mr. Zanis took the photographs. Mr. Grant said that Ogden was in the process of waiting for some other activities to occur, mainly UXO clearance, a munitions survey, and waiting for the vegetation to die down, so they could see what they were doing out

there. Mr. Grant said that when Mr. Zanis talks about avoidance, he thinks Mr. Zanis is talking about grid locations that were sampled in Phase 1, 1-1/2 years ago, when random sampling was being done across the entire hole. He added that Ogden had not been looking for munitions of that type at that time, but that subsequently it was decided that it was very important to find things like C-4 residuals and sample those locations as well.

Mr. Zanis said he just wanted to comment to the NGB that this was public participation. He reported that he had to go out there and show the NGB the steel-lined pit, he had to show the NGB the J-3 wetlands and had to show them the personnel carrier, which is contaminated. Mr. Zanis noted that the public is participating in this process.

Mr. Grant said the last thing being done at Demo Area 1, which he hopes will occur sometime in the next couple of months, is that Ogden has done a proposal for the installation of additional deep cell borings on the eastern side of the Demo Area 1 topographic depression. He said Ogden had put in nine borings, four of which went to the water table, and did not find what they had expected -- a "smoking gun" that would be high RDX levels extending to the water table. He said that Ogden felt it was important to check for RDX in the other part of the topographic depression before resigning themselves to these results for that area. He added that, based on the initial set of deep cell borings, RDX levels do not appear to be that high in the unsaturated zone. Mr. Grant noted that MW-19 had some high levels of contamination at the water table so the eastern side of the topographic depression could be a source for MW-19.

UXO Survey

Mr. Grant said that the last part of his presentation would cover December 1999 and January 2000 UXO findings. He reported that the December detonation event included four general locations: CS-19, where three objects were detonated and four objects placed in storage for the CDC; MW-25, which is close to CS-19, where 37mm grenades were detonated; the APC that Ogden has been sampling around for residuals, where two 6-inch training rounds were detonated; and Demo Area 1 where C-4 residual materials were placed in storage for the CDC. He reported that there were five separate detonation events in December, and that the soil and air results for these were non-detect with one exception. Mr. Grant stated that there had been a TNT soil detection in the range of 300 to 800 ppb at CS-19. He said that the detonation events for January occurred on January 18, 2000. He noted the locations as Turpentine Road, where the 31mm mortars with elevated RDX were detonated; Mortar Target 9, where a 4.2-inch mortar round had been detonated; Demo Area 1, where a 3.5-inch rocket was detonated and a 3.5-inch rocket held for the CDC; and southerly on Turpentine Road, where a 4.2-inch mortar was detonated.

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LTC Fitzpatrick explained how notification for detonation events took place. He said the regulatory agencies were notified 72 hours ahead of an event, that the public is notified 48 hours ahead of the event via media, and that the teams are notified by telephone.

Mr. Zanis asked why there were detections in some craters but not in others. Mr. Grant said that after all the results were in for each detonation event, Ogden would prepare a letter report to the agencies that tells what was detonated and why. He commented that although this was speculative, he thinks that at this latest event, where fairly high levels of RDX were seen in two 81mm mortar craters, the shape charges used for the detonation did not function properly on original detonation. He added that when the charges were found to have functioned improperly, they used a booster to make sure they worked the second time. Mr. Grant said that it could be a situation where the shape charge used created the contamination, but at this point it was hard to tell. He noted that in most cases the detonators work properly, so it is difficult to say why we get these sporadic detections of RDX.

Agenda Item #7. Other Issues/Open Discussion

Mr. Schlesinger reported that TOSC could not make the previous meeting that was called because of snow and could not make this meeting because of the short notice. Mr. Schlesinger asked if it were possible to identify a snow date in advance for wintertime meetings.

Mr. Schlesinger said that Mr. Jim Stahl has been identified as the individual who may be able to take on the military compound knowledge base position. Mr. Schlesinger said Mr. Stahl is a gentleman who has worked on TNT breakdown and as a consultant for the Cape Cod Commission. He reported that a meeting would be held with TOSC in Boston sometime next week at the Massachusetts Institute of Technology (MIT) and invited anyone who wished to attend. He noted that the community members of the IART were not expected to attend. Mr. Schlesinger said Ms. Frawley could give anyone who was interested the information on the event.

Mr. Schlesinger commented that he had an issue with the web page. He explained that when getting ready for the previously scheduled meeting, and having just met with Ms. Culligan and Mr. Hardy from MIT, he went to the web page to look for information they could use and found that it was not up to date; the latest meeting minutes were quite old. He requested that the web page stay up to date, as it was part of the public involvement process, to make sure the site is kept up-to-date and useful to the IART. Mr. Consolmagno replied that he had read Mr. Schlesinger's e-mailed memo, and stated that the web site was up to date. He stated that there had been no attempt to provide misinformation and that he was surprised and shocked that Mr. Schlesinger would make that charge. Mr. Consolmagno reported that the computer had been down for the better part of a month. Mr. Consolmagno reported that the October 28, 1999 meeting minutes were the latest minutes, as there had been no meeting in November and the January meeting had been cancelled. He added that the December minutes had just been finalized this evening. Mr. Consolmagno said the web site was up to date with the exception of some maps he wants to put on that he has talked to Mr. Grant about. He reported that in 2-1/2 years the system has only been down once and that it is updated every week.

Mr. Schlesinger asked if, in the interests of making the site more palatable to broader members of the community, the web site could be expanded so that it is more accessible to an audience with less of a technical background. Mr. Consolmagno replied that the web site was not just for the IART, but for the general public. He said that the documents the team members get in the weekly and monthly mailings were put on the site because they are the heart and soul of what goes on. Mr. Consolmagno said that if Mr. Schlesinger had some suggestions as to what he thinks should be put on the site, he would be most interested in hearing them.

Mr. Schlesinger said his last issue was a literature search, and asked what kind of literature search was being done by anyone involved with the study. He explained that he is very interested in the issue of propellant-compound analysis, and started searching the internet. Mr. Schlesinger reported that he found there were a lot of articles out there, particularly in military databases. He said he had expected the NGB and/or agencies to come up with a bibliography of what has been done. Mr. Grant said that could be done. Mr. Borci added that the Completion of Work Report contained the most comprehensive list of literature that has been researched. He stated that since that was done, there have been numerous articles, of which almost half that he has seen would not be useful for what the IART is doing. Mr. Borci said he can work with Mr. Grant to compile an updated list.

Mr. Consolmagno asked that team members inform him if they know of sites that could be linked to the web site. Mr. Schlesinger said he will provide Mr. Consolmagno with a listing of URLs.

Mr. Goddard asked if there were a map showing the overall Impact Area Study and where the hits are in relation to the drinking water well sources proposed by the JPO. He said the reason he was asking was because the IART spoke of a plume shape and he never heard that before. He said he wanted to start seeing that on the IRP side, the plumes outlined, and he wanted to see how that relates to not only the new 3-mgd well sites but also the four Bourne drinking water well sites. Mr. Grant said that the team members had copies of the plume map, which showed the proposed JPO sites but did not show the ZOCs and that he does not know what the JPO has developed. He said the JPO's input could be added to the IART maps.

Agenda Item #8. Wrap Up, Schedule Next Meeting, Review Action Items

Wrap Up, Schedule Next Meeting

Ms. Frawley stated the next meeting date would be March 9, 2000 and reviewed the action items.

Action Items:

1. The JPO will request that Jacobs Engineering present and discuss, at the March IART meeting, the selection of well locations for the JPO's Upper Cape Water Supply Program, including modeling efforts for Impact Area plumes, contaminants and ZOCs.

2. OpTech will send Mr. Richard Judge, Sandwich Selectman, a copy of the February 3, 2000 meeting minutes.

3. Mr. P. Goddard, citizen, requested that EPA take under advisement that the Public Involvement Plan being developed under AO #3 be put out for public comment.

4. MA ARNG agreed to provide a written update on the status of the October 8, 1999 Ammo Supply Point Inventory, including what is currently held on-site and what has been shipped off-site, and to distribute the update to the IART in the next Weekly Report.

5. Mr. Schlesinger requested that a legible copy of the 1985 report (Propellant Combustion Product Analysis on a M-16 Rifle and a 105mm Caliber Gun) be obtained and distributed to the IART.

6. Mr. Hugus requested that it be taken under consideration that the M-16 Range, located off Greenway Road, be included in the Small Arms Sampling Plan.

7. Mr. Zanis requested that the schedule and extent of range maintenance be investigated and reported for consideration when reviewing the small gun ranges sampling plan.

8. It was agreed to discuss, at the next technical meeting, Dr. Feigenbaum's request to include live-fire soil sampling in the small gun ranges sampling plan.

9. Dr. Feigenbaum, Mr. Hugus, and Mr. Taylor requested that options to expand the small source search in the area of MW-78, including installation of wells both upgradient and south of MW-78, be discussed at a technical meeting and the results of that discussion, including next steps, be reported at the next IART meeting.

10. It was requested that for IART meetings scheduled during the winter months, both a meeting date and a snow date be set at the end of the IART meeting.

Adjourn:

Ms. Frawley adjourned the meeting at 10:00 PM.