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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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SAN JUAN, PR 00907-4127

December 21, 2006

Mr. Christopher Penny, P.E.
Vieques Project Coordinator
Commander Atlantic Division
Naval Facilities Engineering Command
6506 Hampton Boulevard
Norfolk, VA 23508-1278

Re: Review of the Final ERA and Phase II SI Work Plan, Former Naval Training Range (VNTR), Vieques, Puerto Rico

Dear Mr. Penny:

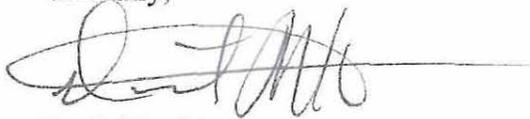
The U.S. Environmental Protection Agency (EPA) and the Puerto Rico Environmental Quality Board (EQB) have completed the review of the Final Expanded Range Assessment (ERA) and Phase II Site Inspection (SI) Work Plan, Former Naval Training Range (VNTR), Vieques, Puerto Rico, dated April 2006.

Our review indicates that the Final ERA and Phase II SI Work Plan does not address several Regulatory Agencies comment submitted by EPA on May 26, 2006. In addition, the final document does not include several modifications presented on the response to comments as presented in the Navy's response to comments posted on the project website on August 4, 2006. Therefore, the Final ERA and Phase II Work Plan cannot be approved. Enclosed you will find our comments.

The Navy should ensure that all comments submitted by the Regulatory Agencies are appropriately incorporated in the subsequent revision of the document. Changes to be made in the document should be implemented exactly as stated in the comment responses, unless this is not possible due to some overriding reason. Should a change to the proposed modification of the subject document be necessary after the responses to the Regulatory Agencies' comments have been formalized, the Regulatory Agencies should be advised of these changes and given an opportunity to review them and to comment on their sufficiency prior to the finalization of the succeeding revision of the document.

We remain available to meet with you to go over these outstanding matters. If you have any questions, please contact me at (787) 741-5201.

Cordially,

A handwritten signature in black ink, appearing to read 'Daniel Rodriguez', written over a horizontal line.

Daniel Rodriguez
Remedial Project Manager
Response and Remediation Branch

Enclosures (2)

cc: Yarissa Martinez, EQB, w/ encl.
Richard Henry, FWS, w/ encl.
John Tomik, CH2M Hill, w/ encl.
Doug Maddox, FFRRO, w/ encl.

**EPA review on the *Final Expanded Range Assessment and Phase II Site Inspection Work Plan, Former Vieques Naval Training Range (VNTR), Vieques, Puerto Rico*
November 2006**

Only those comments deemed deficient during the analysis and the necessary corrections are presented below.

EPA Specific Comments

- 1. Acronyms and Abbreviations, page ix:** The acronym "EOD" is defined here as "Explosive Ordnance Detachment." The definition of "EOD" provided in NAVSEA OP5 (U.S. Naval Sea Systems Command Ammunition and Explosives Safety Ashore, Regulations for Handling, Storing, Production, Renovation and Shipping) is "Explosive Ordnance Disposal." Please correct this definition.

Navy Response: The table of Acronyms and Abbreviations will be revised to include Explosive Ordnance Disposal.

Analysis Of Response Implementation: Instead of correcting the definition of the acronym "EOD" as stated in the response, the Navy removed it from the cited table. The Navy should either reinstate the acronym and its definition as stated in the response, or they should revise the response to reflect the actual action taken thereon.

- 6. Section 3.2, Investigation Procedure, page 3-5:** The third paragraph of this section reads, "Verification Level (VL) III will be the initial VL for all QC inspections of sites being evaluated at 100 percent: a lot will consist of 4 grids (80 total lanes), which total 1 acre and the failure to identify 5 UXO items greater than or equal to 20mm in size for any grid will result in grid failure and the grid will be re-investigated. Verification Level (VL) VII will be the initial VL for all QC inspections of sites being evaluated using a transect approach: 2,400 linear meters of transect will equate to a lot with each meter being a sample unit, the failure to identify 20 UXO items greater than 20mm in size for any lot will result in lot failure and the lot will be re-investigated."

It is unclear as to why the same basic quality criteria (5 UXO items greater than or equal to 20mm in size for any grid) is not being applied to the areas being evaluated using the transect approach. From a quality evaluation approach, 20 items in the equivalent area of four grids is not the same as 5 items in the equivalent area of one grid. For example, it would be possible to have 19 of the 20mm items found in a one grid equivalent and none in the remaining three, allowing all four grid equivalents to pass inspection because less than 20 items were found in the entire lot. Also, it is unclear why grids (areas being 100 percent inspected) are initially being quality inspected at a Verification Level of III, whereas the areas inspected by transects are being evaluated at Verification Level VII.

Please revise the quality process for the areas being evaluated by transects to bring it into line statistically with that used for the areas being inspected using a grid system. Also, please expand the cited section to explain the basis for the different Verification Levels for grids and transects.

Navy Response: The QC program will be implemented according to Table 9-1, which is

presented in the Draft Master MEC Work Plan, Revision 1 (CH2M HILL, September 2005). The applicable definable features of work presented in Table 9-1 will be evaluated during the appropriate phases (preparatory, initial, and follow-up), which are indicated in Table 9-1.

The third paragraph of Section ^{3.2.} ~~3.5~~, page 3-2 will be replaced with: "Quality control of all investigation activities will be conducted in accordance with Section 9 of the Draft Master MEC Work Plan, Revision 1 (CH2M HILL, September 2005). Specifically, the applicable definable features of work identified in Table 9-1 will be evaluated during the appropriate assessment phases (preparatory, initial, and follow-up), which are given in Table 9-1. Additionally, a minimum of 10% of the areas (either transect or grid, whichever is being used) will be re-evaluated to insure proper MEC location and identification is being accomplished."

Analysis Of Response Implementation: While the Navy response appears to be reasonable, they have stated that they will replace the third paragraph of Section 3.5 instead of the third paragraph of Section 3.2, as was cited in the EPA comment. In addition, a review of the audit trail for determining sample sizes and pass/fail criteria as provided in the revised verbiage results in a confusing series of questions as to where this information is actually found. Table 9-1 (page 9-1) of the Final MEC Master Work Plan (December 2006) requires that the work be verified by a process specified as, "Check a portion of each grid/lot to insure Acceptance Criteria are met as defined in the SSWP." However, the SSWP refers you to Table 9-1, which results in a continual back-and-forth referral with no end point. A check of Section 9.5.3 of the Final MEC Master Work Plan reveals a statement that reads, "QC Pass/Fail criteria will be specified in Contractor SOWs and incorporated into SSWPs." This incorporation into the SSWP is not the case with the Final ERA & Phase II SI Work Plan, as is presented above.

Please correct the listing of the section revised to read Section 3.2 instead of Section 3.5. Also, revise the response and the listed work plans as necessary to define where the pass/fail criteria for surface removals on the affected areas may be found, and to consistently present this information in each cited document.

All table 9-1
tasks as needed
to complete this
investigation will
have the appropriate
listed inspections
conducted.
In the case
of failure the
"Action of failure occurs"
will be taken

No surface removal is by conducted or part of this investigation

**EQB COMMENTS ON THE FINAL EXPANDED RANGE ASSESSMENT
AND PHASE II SITE INSPECTION WORK PLAN
FORMER VIEQUES NAVAL TRAINING RANGE (VNTR)
VIEQUES, PUERTO RICO
DECEMBER 2006**

**A. OUTSTANDING COMMENTS THAT HAVE NOT BEEN ADEQUATELY
ADDRESSED:**

1. EQB comment (from first set of comments to the April 2006 document):
 1. Pg 2-2, Sec 2.2, Lines 8-17, Pg 2-3, Sec 2.2, Lines 2-17, Pg. 3-1, Sec 3.1, Lines 4-9. Some of the descriptions of the various sites are getting confusing. There are many sites and they are called by various names. For example, on these lines we have Ranges 1 through 6, which are also referred to as other range numbers:
 - Range 3 “here forth identified as Range 4”
 - Range 4 “here forth identified as Range 4B”
 - Range 5 “here forth identified as Range 3”

Note that the bullet on line 37 at the bottom of page 2-2 contradicts the text on lines 8 through 17. The text says that here forth the ranges will be referred to as Range 1, 2, 3, 4, 4B, and 6. The bullet on Line 37 refers to Ranges 3, 4, 4A, 4B, and 5. There is no mention of Range 4A in the text on lines 8 – 17, so which range is actually Range 4A?

There is also the discrepancy between the references to Range 6 in the text and Range 5 in the bullet. It is not possible to understand which range is which EMA MRS by the description provided here. Add to that the fact that the Phase I ERA/SI Report refers to Ranges 3, 4, 4A, 4B, and 6. There is no mention of Range 4A in lines 8 – 17 and we still have the discrepancy between Ranges 5 and 6.

Also, Figure 2-4 shows nine ranges along the north road, not six.

By the time one gets to page 2-3 a score card is needed to attempt to understand the sites. This text discusses MRS numbers, Range numbers, PIs, PAOCs, and then AOIs are added to the mix in Chapter 3 (see Figure 3-1). Add this to the fact that the MRS numbers are duplicated between the EMA, SIA, LIA, and ECA and the result is an inability for the reader to understand which site is being discussed.

Then, there are two new AOIs listed as being subjects for this work. Since they are not designated, how are they going to be discussed? “AOI North” and “AOI South”? Please explain.

A final example of the confusing nature of the site designations used in this document is the text on page 3-1, lines 4 – 9 which reads: “Based on the results of

the ERA/Phase I SI the following MRSs will be investigated during the Phase II SI: the entire MRA-ECA; the MRA Beach Area within the EMA, SIA and LIA; a total of 9 MRSs, including one PI site, and one PAOC site in the MRA-SIA; and a total of 22 MRSs within the EMA, including five PI sites, and three PAOC sites. In addition to the MRSs to be investigated two areas of interest (AOIs) identified from the LiDAR survey and will be investigated during the ERA/Phase II SI. The AOIs are within the boundary of MRS 43.” It is very difficult to understand the meaning of these three sentences.

Some method is needed to allow the reader to understand which site is being discussed. A scorecard, such as is provided in Table 3-1 may be the answer. Modifying this table (note that it only refers to EMA Ranges 3, 4, 4A, 4B, and 5 and that there is no mention of Ranges 1, 2, and 6) and putting it in the front of the document may be the answer. This issue of numbering and designating sites may deserve a separate chapter because there is little hope of achieving group and public understanding of the project if we can’t efficiently refer to sites when they are being discussed.

The Navy response to this comment reads as follows:

Nomenclature: The site nomenclature is a combination of standard Department of Defense (DoD) and standard US Environmental Protection Agency site descriptors. DoD breaks the site down into five munitions response areas (MRAs) (see Figure 2-2), the Eastern Maneuver Area (EMA), the Surface Impact Area (SIA), the Live Impact Area (LIA), the Eastern Conservation Area (ECA), and the Beach MRA. These MRAs are in turn broken down into munition response sites (MRSs). It has, to date, not been necessary to subdivide the Beach MRA into MRSs. Note that the MRSs are numbered incrementally for each MRA, and that the MRS numbers do not signify priority. Because the MRS numbers are duplicated across MRAs, where MRS numbers are cited in the text, if there is any question as to in which MRA that particular MRS resides, the MRA should be cited as well.

Note that the EMA-MRS 43 includes all land area within the EMA which is covered by artillery safety fans, excluding areas designated as other MRSs (Figure 2-4 shows artillery safety fans). EMA-MRS 44 includes all land area within the EMA which is outside the area covered by artillery safety fans, excluding areas designated as other MRSs. SIA-MRS 7 includes all land area within the SIA which is covered by artillery safety fans, excluding areas designated as other MRSs. Figure 2-2 will be revised, replacing in the notes range fan(s) with artillery safety fan(s).

Ranges: The discussion of range numbering will be clarified in the Expanded Range Assessment and Phase II Site Inspection Work Plan. In addition to the six EMA ranges mentioned in the draft document on page 2-2 lines 8-17, page 2-2 lines 18-22 discuss what were originally classified as nine ranges within the EMA. These ranges are ranges 1, 2, 3, 4, 5, 6, 7, 8, and 9. In historical

documents, ranges 4, 4A, and 4B were considered one range, currently they are considered separate ranges. Thus, there are actually 11 ranges in the EMA (Figure 2-3). The text on page 2-2, lines 18-22 will be changed to: "An aerial photograph analysis of the EMA and SIA (ERI, 2002) indicates that as many as 9 ranges (11 ranges now that range 4 has been subdivided into 3 discrete ranges, 4, 4A, and 4B) and up to 30 gun emplacements and positions may have existed historically at the EMA (Figure 2-5). These ranges are currently identified as ranges 1, 2, 3, 4, 4A, 4B, 5, 6, 7, 8, and 9. Additionally the aerial photograph analysis identified up to nine gun positions and eight observation posts within the SIA (identified on Figure 2-5 as GP for gun position, OP for observation post, or PI for photo-identified site, if the photo-identified site use could not be confirmed). These SIA sites may have been used for mortar or artillery gun training."

As discussed in the 6/1/06 CTC meeting Table 3-1, MRS 30 will be changed to include range 8. Also, items evaluated during the ERA Phase I SI will be removed from the table.

Page 3-1, lines 4-9 will be changed to:

"Based on the results of the ERA/Phase I SI, the following MRSs will be investigated during the Phase II SI:

- *MRA-ECA: The entire MRA-ECA.*
- *MRA Beach Area: The beaches in the EMA, SIA, LIA and ECA.*
- *MRA-SIA: A total of 7 MRSs, and one PI site, and one PAOC site.*
- *MRA-EMA: A total of 22 MRSs including five PI sites and three PAOC sites.*

EQB December 2006 follow-up comment: A check of the final document shows that the above text was not inserted as written into the final document. The last two bullets in the text of the final document say:

- **"MRA-SIA: A total of 7 MRSs, and two PI Sites, and one PAOC site.**
- **MRA-EMA: A total of 22 MRSs including eight PI sites and three PAOC sites."**

I am unsure of the reason for this change from the agreed upon text from one PI site to two PI sites in the SIA and from five PI sites to eight PI sites in the EMA. This should be explained.

In addition to the EMA-MRSs, PI sites, and PAOC sites noted above, two areas of interest (AOIs) identified during the LIDAR survey will be investigated during the ERA/Phase II SI. These AOIs are located within the boundaries of EMA-MRS 43 (Figure 3-1)."

Figure 3-1 will be revised to identify the northern AOI as AOI-1, and the

southern AOI as AOI-2. If munitions response actions are determined to be warranted, the AOIs will become new MRSs.

2. EQB comment (from response to comments sent on September 15, 2006):
EQB agrees that the changes to the document proposed by the Navy are appropriate and should help correct some of the confusion that was created by the original discussion of the various sites discussed in the document. However, it is recommended that the Navy and CH2M Hill examine the numbering system and evaluate whether or not it is likely to provide an efficient system for identifying the various sites. It should be remembered that the public and multiple agencies will be involved in discussing these sites in the future and many of these persons are not native English speakers. Developing a more simplified site naming system may simplify communication. For example:
 - it is not necessary to start the numbering of MRSs with the number 1 in each MRA. It may be advantageous to use a consecutive numbering system so that there is only one MRS 12.
 - The suggestion for a “scorecard” was a serious one. Producing a table that shows the MRS designation and linking this current designation to other previous or associated names for the site (for example, the previously used Range numbers) may be a very helpful reference for reviewers of the document.

Response:

As discussed in the MR Subcommittee meeting of September 19th, the site numbering system will be retained.

EQB comment: It doesn't appear to be possible for EQB to convince the Navy that the complexity designed into the current site numbering system should be corrected to make the site numbering system more user-friendly. However, EQB would like to make the following two points:

1. EQB doesn't agree with the Navy response above indicating that it was agreed and understood that the existing site numbering system will be retained. Our notes from the last MR Committee meeting (September 19, 2006) only reference discussion of comments 2, 3, 14, and 19. It is possible that this comment was discussed and not recorded by EQB during the meeting. This is another example of why it would be advisable to spend a short amount of time at the end of each MR Committee meeting to review agreements and action items and develop a consensus list of agreements, conclusions and action items.
2. Recent E-mails with USFWS indicate that they are having difficulty understanding which sites on VNTR are being discussed. In these informal discussions EPA has indicated similar concern. This is another indication that the current numbering system is creating confusion among members of the Vieques Project Team.

This problem is only going to worsen over time unless action is taken to simplify the site numbering system. EQB again recommends that the site numbering system be updated and simplified to allow efficient communication concerning specific project sites on the VNTR.

3. EQB comment (from first set of comments to the April 2006 document):
 2. Pg 2-2 to 2-3, Sec 2.2, Line 26 to 2. This section says that there are no impacts or potential environmental releases observed at PI 9. However, it is known that the shore area of PI 9 is heavily contaminated with MC and possibly MEC. It is recommended that this near-shore contamination be investigated and that PI 9 not be referred to as being documented to have no potential environmental releases. This same comment was made to the Phase I ERA/SI Report.

The Navy response to this comment reads as follows:

The section states that no impacts of any potential environmental releases were observed (at PI 9 and others). MRSs are defined as ending at the low tide line. Items below the low tide line, in the near shore zone, will be addressed as warranted following the investigation and remedial actions for inland areas. The types of items found at EMA MRS 12 consisted of small arms and expended items. A number of sub surface anomalies were identified in EMA MRS 12, and a subsurface evaluation was recommended. An investigation of environmental contamination from MC will be conducted, for this site as with all other munitions response sites, after the munitions response action(s) is/are completed.

EQB comment (from response to comments sent on September 15, 2006):

It is EQB's understanding that ordnance debris projects out of the water at PI 9/EMA MRS 12. This makes it at least debatable whether or not this contamination should be considered a subsurface anomaly. This site has not been visited by EQB in some time, and it is recommended that a visit to examine this contamination be performed in the near future.

But, the main point of the comment is to question the statement that there are no impacts of environmental releases at PI 9/EMA MRS 12. It is not know what level of effort was made to support this determination. A case could be made that MC projecting above the waterline (if this is the case) is evidence of an environmental release. It also hasn't been established that this pile of ordnance scrap consists of only MC since it hasn't been investigated yet.

EQB is concerned with the safety residents and visitors to Vieques. Having an ordnance scrap dump accessible to anyone with a boat is a concern because it is possible that this site, potentially containing hazardous ordnance or MC can be disturbed by trespassers at any time.

Because of this EQB recommends that the description of this site be modified to recognize these potential hazards.

Response:

As discussed during the MR Subcommittee meeting of September 19th 2006, EMA

MRS-46 has been expanded to include the area south of EMA MRS-12 including Puerto Ferro (see attached revised Figure 2-2). The locations where the items are visible at low tide will be evaluated to identify munitions related materials.

EQB Comment: Figure 2-2 was not attached to this document so it was not reviewed. In general, EQB agrees that the Navy response captures the discussion on this site during the last MR Committee meeting (expanding EMA MRS-12 and scheduling the MC that protrudes from the water at low tide for evaluation). However, one additional agreement was documented in EQB's meeting notes: "It was agreed that small piles of MEC discovered by Felix on land will be investigated during the Phase II ERA/SI." Including investigation of the MEC discovered by Felix in the Phase II ERA/SI would complete this response.

EQB December 2006 follow-up Comment: Figure 2-2 was checked upon receipt of the final document and EMA MRS-12 is not referenced on this figure.

Furthermore, the text on EMA MRS-12 states that this MRS was "investigated as part of the ERA/Phase I SI to assess the types, densities, and nature of the MEC items present at the sites" (page 2-2). This implies that this investigation was complete, however, as has been noted often in the past, objects resembling MEC protrude from the surface of the water at this site near to the shore and this portion of the MRS has never been investigated. Saying that this MRS has been investigated is misleading and this language should be corrected.

Additionally, the document states (page 2-3), "A number of subsurface anomalies were detected at EMA MRS 12 during the Phase I Site Inspection. It was verified that none of the items located at EMA MRSs 6 and 12 presented an explosive hazard; ...". Again, this statement is not correct because MEC visible above the waterline has not been inspected. This statement should be corrected.

Also, the agreement on this subject, discussed and resolved at the September 19, 2006 MR Subcommittee meeting, has not been incorporated into this document. The following is the section on this topic from my report of this meeting:

"Phase II ERA/SI Work Plan

#2 – This was the continued discussion of PI 9/MRS 12. I noted that the description of PI 9 doesn't include the MEC in the water that actually protrudes from the water. It is not accurate to call this an 'underwater site' and exclude it from investigation if the MEC protrudes from the water. The water portion of the site is also not included as part of the MRS. It was agreed that small piles of MEC discovered by Felix on land will be investigated during the Phase II ERA/SI. The MEC in the water and

protruding from the water will be identified and described in the Phase II ERA/SI work plan documenting that it is part of the MRS.”

Note that this text from my report documents that this topic was discussed at the MR Subcommittee meeting and that a specific agreement was made. This agreement has not been implemented and this error should be corrected in this document.

4. EQB comment (from first set of comments to the April 2006 document):
 3. Pg 2-3, Sec 2-2, Lines 18-29. These lines describe recommendations from the Phase I ERA/SI Report. It should be noted that EQB has comments on these recommendations as reflected in our comment numbers 27 through 30 in our comments to the Phase I ERA/SI Report. It is recommended that the comments on the recommendations contained in the Phase I ERA/SI Report be resolved first and then this section of the Phase II Work Plan can be revised accordingly.

The Navy response to this comment reads as follows:

As discussed in the responses to comments numbers 27 through 30 of the ERA and Phase I SI Report, the explosive hazard severity for EMA MRS 6 and EMA MRS 12 have been revised to follow the Site Prioritization Protocol's Table 1 classification within the EHE module munitions type. The explosive safety hazard screening category for EMA MRS 6 is moderate-high. The explosive safety hazard screening category for EMA MRS 12 is high. Because there is evidence that these sites have been impacted the recommendation is for further investigation; however, because all of the items found were expended, relative to some of the other sites they have a lower priority. The recommendations contained in the above mentioned section of the Phase II Work Plan are unchanged.

With respect to EMA MRS 12, MEC debris in near-shore water is outside the scope of this work, and not part of EMA MRS 12. Only MD was found in this MRS.

EQB comment (from response to comments sent on September 15, 2006):
This comment deals with the hazard assessment protocol used in this document.
The response describes revisions to the hazard assessments for these MRS that are contained in the Navy's responses to EQB's comments on the Phase I ERA SI Report. The Navy is correct that these changes were made in the Navy's responses to that report. However, the responses to EQB comments on the ERA SI Phase I Report are dated March 2006. Since that time, the Navy as agreed to revise the hazard assessment protocol at the last MR Committee meeting held in San Juan on May 31, 2006. As recorded in UXO Pro's report to EQB on that meeting:

- “The hazard assessment section of this document [note: “this document” is the Phase I ERA SI Report] was discussed at length. Jim Pastorick made the point that the current hazard assessment protocol is not useful to the project because it doesn't discriminate explosive hazards very well and it also doesn't

accurately represent the ranking procedure of the Site Prioritization Protocol on which it is based. It was decided that CH2M Hill would review the hazard ranking procedure and revise it within three weeks. Chris Penny said that the hazard assessment protocol should be a recurring topic of discussion for the MR Committee until it is resolved.”

To date no revisions to the hazard ranking protocol have been discussed with EQB or received by EQB. Therefore, EQB considers this comment to be still unresolved and open for discussion and future resolution.

EQB comment part 2(from response to comments sent on September 15, 2006): With respect to the second paragraph of the Navy response “With respect to EMA MRS 12, MEC debris in near-shore water is outside the scope of this work, and not part of EMA MRS 12. Only MD was found in this MRS”, please see the Additional EQB Comment #2 above.

Response to part 1:

The hazard assessment protocol was discussed in the September 19 2006 MR Subcommittee meeting. As discussed in the meeting, no changes will be made to this document on the hazard assessment protocol. However, the hazard assessment protocol will continue to be evaluated by the MR Subcommittee.

Response to part 2:

As discussed above in the most recent Navy response to EQB April 2006 comment 2. Pg 2-2 to 2-3, Sec 2.2, Line 26 to 2, the locations where the items are visible at low tide will be evaluated to identify munitions related materials.

EQB October 2006 Comment: EQB doesn’t agree that Part I was resolved at the September MR Committee meeting and that agreement was reached that no changes will be made to the hazard assessment protocol presented in the Phase II ERA/SI Work Plan. As noted in the previous comments issued by EQB on this subject, the Navy has previously committed to revising the hazard assessment protocol within three weeks of May 31, 2006 and the Navy also committed to discussing this subject within the MR Committee. Neither of these things has occurred. Also, EQB’s notes describing the discussion of this comment at the last MR Committee meeting says, “Discussion of this comment was not completed and was postponed until later”, indicating that continued discussion of this topic was, once again, scheduled but not implemented.

EQB’s position is, in summary, that there are two hazard analyses that need to be accomplished:

- 1. The Navy is required to develop the Site Prioritization Protocol (SPP) for all MRS on the VNTR. It is EQB’s understanding that this is an internal DoD requirement and that the Navy is required to implement the SPP exactly as published in the Federal Register to comply with this comment.**
- 2. Separate from the requirement described in #1 above, the Navy needs to perform an assessment of the hazard of MEC on the MRS in the VNTR for the purpose of determining a.) if a future response action is required**

(basically a preliminary screen with possible outcomes of “no further action”, “forward to RI/FS”, or “accelerated response”) and b.) if a response is required by the results of a.) what is the appropriate response action.

It is EQB’s understanding that the two hazard analyses listed above require three actual screening processes:

- 1. The SPP as published in the Federal Register.**
- 2. A preliminary screening protocol performed prior to the Remedial Investigation.**
- 3. A detailed hazard analysis protocol performed during the Feasibility Study.**

The SPP exists as published in the Federal Register (screen #1 above). The EPA is developing the MEC Hazard Analysis (MEC HA) which is designed to be used for the hazard analysis described in #3 above. We are currently dealing with the requirement for the preliminary screen described in #2 above and a successful screening protocol for this purpose has not yet been developed.

It is EQB’s understanding that the SPP is intended to prioritize sites for future attention on a nation-wide basis. It is EQB’s understanding that it is not designed to be used as a risk assessment tool for determining future remedial actions at specific MRS and this is where EQB disagrees with the Navy’s use of the SPP in this document.

EQB recommends that the previous agreement to discuss this issue in detail within the MR Committee be implemented. EQB stands ready to support this effort and further recommends that Doug Maddox, an original member of the MR Committee from EPA, be included in these discussions since he has intimate knowledge of the various MEC hazard analysis processes including the MEC HA.

EQB December 2006 follow-up comment: There has been no additional discussion of this issue and it remains unresolved.

- 5. EQB comment (from first set of comments to the April 2006 document):
14. Pg 5-1, Sec 5.2, Line 18-28. This section references the hazard evaluation and site prioritization performed as part of the Phase I ERA/SI. However, EQB had several comments (comment numbers 25 – 30) on the hazard evaluation and site prioritization in the Phase I ERA/SI which have not been resolved. It is recommended that EQB’s comments on the hazard evaluation and site prioritization in the Phase I ERA/SI be discussed and resolved before the results of that evaluation and screening process are implemented in this work plan.**

The Navy response to this comment reads as follows:

The explosive hazard categories have been revised to include the 11 categories given in the DoD Site Prioritization Protocol. The “Riot Control” category has been retained for consistency with the DoD protocol. See response to comments 25 through 30 of the ERA and Phase I SI Report.

The categories are:

Classification	Description	Score
Sensitive	<ul style="list-style-type: none"> All UXO that are considered likely to function upon any interaction with exposed persons (e.g., submunitions, 40mm high-explosive[HE] grenade projectiles, white phosphorus [WP] munitions, high-explosive antitank [HEAT] munitions, and practice munitions with sensitive fuzes, but excluding all other practice munitions). All hand grenades containing energetic filler Bulk primary explosives, or mixtures of these with environmental media, such that the mixture poses an explosive hazard. 	30
High explosive (used or damaged)	<ul style="list-style-type: none"> All UXO containing a high-explosive filler (e.g., RDX, Composition B), that are not considered “sensitive” All DMM containing a high-explosive filler that have: <ul style="list-style-type: none"> -Been damaged by burning or detonation -Deteriorated to the point of instability. 	25
Pyrotechnics (used or damaged)	<ul style="list-style-type: none"> All UXO containing pyrotechnic fillers other than white phosphorous (e.g., flares, signals, simulators, smoke grenades). All DMM containing pyrotechnic fillers other than white phosphorous (e.g., flares, signals, simulators, smoke grenades) that have: <ul style="list-style-type: none"> -Been damaged by burning or detonation -Deteriorated to the point of instability. 	20
High explosive (unused)	<ul style="list-style-type: none"> All DMM containing a high explosive filler that: <ul style="list-style-type: none"> -Have not been damaged by burning or detonation -Are not deteriorated to the point of instability. 	15
Propellant	<ul style="list-style-type: none"> All UXO containing mostly single-, double-, or triple-based propellant, or composite propellants(e.g., rocket motor). All DMM containing mostly single-, double-, or triple-based propellant, or composite propellants(e.g., rocket motor) that are: <ul style="list-style-type: none"> -Damaged by burning or detonation -Deteriorated to the point of instability. 	15
Bulk secondary high explosives, pyrotechnics, or propellant	<ul style="list-style-type: none"> All DMM containing mostly single-, double-, or triple-based propellant, or composite propellants(e.g., rocket motor), that are deteriorated Bulk secondary high explosives, pyrotechnic compositions, or propellant (not contained in a munition), or mixtures of these with environmental media such that the mixture poses an 	10

	explosive hazard.	
Pyrotechnic (not used or damaged)	<ul style="list-style-type: none"> All DMM containing pyrotechnic fillers (i.e., red phosphorous), other than white phosphorous filler that: <ul style="list-style-type: none"> -Have not been damaged by burning or detonation -Are not deteriorated to the point of instability. 	10
Practice	<ul style="list-style-type: none"> All UXO that are practice munitions that are not associated with a sensitive fuse. All DMM that are practice munitions that are not associated with a sensitive fuse and that have not: <ul style="list-style-type: none"> -Been damaged by burning or detonation -Deteriorated to the point of instability. 	5
Riot control	<ul style="list-style-type: none"> All UXO or DMM containing a riot control agent filler (e.g., tear gas). 	3
Small arms	<ul style="list-style-type: none"> All used munitions or DMM that are categorized as small arms ammunition. [Physical evidence or historical evidence that no other types of munitions (e.g., grenades, subcaliber training rockets, demolition charges) were used or are present on the MRS is required for selection of this category.] 	2
Evidence of no munitions	Following investigation of the MRS, there is physical evidence that there are no UXO or DMM present, or there is historical evidence indicating that no UXO or DMM are present.	0

Notes:

- Former* (as in “former military range”) means the MRS is a location that was (1) closed by a former decision made by the Component with administrative control over the location, or (2) put to a use incompatible with the presence of UXO, DMM, or MC.
- Historical evidence* means the investigation: (1) found written documents or records, (2) documented interviews of persons with a knowledge of site conditions, or (3) found and verified other forms of information.
- Physical Evidence* means: (1) recorded observations from on-site investigations, such as finding intact UXO or DMM, or munitions debris (e.g., fragments, penetrators, projectiles, shell casings, links, fins); (2) the results of field or laboratory sampling and analysis procedures; or (3) the results of geophysical investigations.
- Practice munitions* means munitions that contain an inert filler (e.g., wax, sand, concrete), a spotting charge (i.e., a small charge of red phosphorous, photoflash powder, or black powder used to indicate the point of impact), and a fuze.
- The term *small arms ammunition* means ammunition, without projectiles that contain explosives (other than tracers), that is .50 caliber or smaller, or for shotguns.

EQB comment (from response to comments sent on September 15, 2006):
Please see the Additional EQB Comment on #3 above. In addition, the Navy’s
response merely cuts and pastes Table 1 from the Site Prioritization Protocol.
There is no explanation for why this is an appropriate hazard ranking method for
the Vieques Phase II SI. As is documented in the Additional EQB Comment on

#3 above, “It was decided that CH2M Hill would review the hazard ranking procedure and revise it within three weeks. Chris Penny said that the hazard assessment protocol should be a recurring topic of discussion for the MR Committee until it is resolved.” However, it has not been resolved and, in fact, there have not been any additional meetings or discussion on this topic. EQB considers this comment to be not resolved and open for discussion.

Response:

The hazard assessment protocol was discussed in the September 19 2006 MR Subcommittee meeting. As discussed in the meeting, no changes will be made to this document on the hazard assessment protocol. However, the hazard assessment protocol will continue to be evaluated by the MR Subcommittee.

EQB October 2006 Comment: Please see EQB’s response to the previous comment #3 for a more detailed description of EQB’s understanding of the various hazard assessment requirements. Note that EQB disagrees that it was decided that no changes will be made to this document concerning the hazard assessment protocol at the last MR Committee meeting.

It is also noted that there is little purpose in continuing to evaluate this issue if there is no possibility that changes will be made to the hazard evaluation process in this document. Under those conditions it is likely that EQB will decline to participate in discussions since it has been predetermined that they will not result in any changes.

Please see comment #3 above for a thorough summary of EQB’s understanding of the hazard assessment requirements of this project and for EQB’s recommendation for a path forward.

EQB December 2006 follow-up comment: There has been no additional discussion of this issue and it remains unresolved.

6. EQB comment (from first set of comments to the April 2006 document):
19. App B Attachment and Table 1. Much of the Attachment to Appendix B (the GPO Plan) repeats the requirements of Appendix F to the Master Work Plan. Inclusion of this information only serves to cause confusion where the Appendix B Attachment doesn’t agree with Appendix F to the MWP.

For example, both documents contain an introductory section on “Purpose.” However, the attachment to Appendix B excludes two of the requirements contained in Appendix F to the MWP: “Document system reliability” and “Evaluate estimated field production rates and estimated false positive ratios, as related to project cost”. Is the deletion of these requirements a formal modification to the MWP which means that documentation of system reliability and field production rates is not part of the function of the GPO? If so, why? Why was it included as part of the purpose in the MWP and not in the Phase II ERA/SI? And why repeat all of the other requirements verbatim if they are

unchanged?

It is recommended that the attachment to Appendix B be scrubbed to eliminate all text that is duplicative to the existing requirements of the MWP because this duplication with only minor changes causes confusion.

Also, the section on DQOs is slightly different than that contained in the MWP. For example, the requirement for “Downline Data Density” is not in the MWP and the text for “Survey Coverage (Lane Spacing)” is different than that in the MWP. Are these formal changes which should be reflected in the next version of the MWP or are they errors in the attachment to Appendix B?

Also, Table 1 on “Project Data Quality Objectives” contains numerous conflicts with the text in the work plan and the MWP. Project DQOs are contained in several places in this document and the MWP so it is inevitable that there will be contradictions. For example, Table 1 says that the DQO for transect spacing is for no more than a 2-ft. gap. Is this the same as the MWP requirement for “Lane Spacing (Sensor Separation)” contained in the MWP? They appear to be different (the MWP contains a 2% requirement and a 1-ft. radius requirement). Another difference is the Table 1 requirement for “Search transect spacing to vary no more than + or – 20% of spacing specified in sampling design.” This appears to be different than the 98% coverage requirement in the MWP Appendix F.

Also, Table 1 doesn’t have any DQO for reacquisition accuracy as does the MWP Appendix F. Why is this DQO missing?

The Navy response to this comment reads as follows:

The Master Work Plan is intended to be a general overarching guidance document. Where site specific projects vary from the general guidance, site specific work plans are written to document the changes. This Draft Expanded Range Assessment Site Investigation Phase II Work Plan is such a document, providing modifications to the general guidance for this specific project. The geophysical investigation plan in this document is a later edition, and reflects updates that will be made to the Master Work Plan when it is next revised.

EQB comment (from response to comments sent on September 15, 2006):
Based on the Navy’s response these changes represent significant changes to the MWP. However, by merely including these changes in the site-specific work plan without discussion the Navy puts EQB in the position of having to spend a significant amount of time comparing the two documents, looking for variations, and evaluating those variations.

For example, since the response says that the text in the site-specific work plan takes precedent, EQB assumes that there is not DWP for reacquisition accuracy (since it is not referenced in the site-specific work plan). Or, does the original reacquisition accuracy DQO from the MWP still apply?

Figuring this out which changes apply to the MWP and which portions of the MWP are still valid is nearly impossible under these circumstances. It is highly recommended that the Navy list these important changes to the GPO plan contained in the MWP, that has already been agreed upon, so these changes can be recognized and understood by all agencies and reviewers involved. Submitting a change notice to the MWP would be an appropriate format for implementing these changes.

Response:

To clarify the original comment: The Master Work Plan is the general overarching guidance document. Where site specific work plans specifically call out changes, those changes apply for the specific project only. If the site specific work plan does not contain a requirement in the Master Work Plan, that requirement is still valid for the site specific project. The geophysical investigation plan in this document is a later edition, and reflects updates that will be made to the Master Work Plan when it is next revised. Specifically:

- *The requirements to “Document system reliability” and “Evaluate estimated field production rates and estimated false positive ratios, as related to project cost” will be added to the purpose section of the Geophysical Prove-Out Work Plan in the Expanded Range Assessment and Phase II Site Inspection Work Plan*
- *The requirements for “Downline Data Density” and the revised text for “Survey Coverage (Lane Spacing)” will be added to the Master Work Plan when it is next revised.*
- *In response to the original April comment that states “Table 1 says that the DQO for transect spacing is for no more than a 2-ft. gap. Is this the same as the MWP requirement for Lane Spacing (Sensor Separation) contained in the MWP?” The DQO quoted is for downline data density (data density along the line of travel in the geophysical survey), which is different than lane spacing (the distance between individual geophysical survey lines). The requirements are correct as written in the documents.*
- *The requirement in the site specific Geophysical Prove-Out Work Plan for “Search transect spacing to vary no more than + or – 20% of spacing specified in sampling design” is an update to standard requirements and will be revised in the Master Work Plan Appendix F.*
- *The site specific work plan does not contain the DQO for reacquisition accuracy provided in the Master Work Plan. The DQO for reacquisition accuracy was written for the case where an anomaly is identified and flagged, and another geophysical team/technique is used to try to more accurately identify the location. This type of work is not planned in the Expanded Range Assessment and Phase II Site Inspection, only geophysical mapping will be conducted. Reacquisition and anomaly investigation will be carried out as part of future removal action.*

With respect to the most recent August 2006 comment: If there is no changed requirement established in the site specific work plan, then the requirements of

the Master Work Plan stand. The original DQO for reacquisition in the MWP still applies, though reacquisition is not planned for this phase of work. The Master Work Plan will be modified to reflect the changes stated in the responses to comments.

EQB October 2006 Comment: EQB's notes from the last MR Committee meeting on this comment say, "It was agreed that the Navy will update the Master Work Plan often to keep up with field changes that are implemented. This will keep the MWP from quickly becoming obsolete." Issuing a revised MWP and updating it frequently through formal Field Changes will help to eliminate contradictions between the MWP and site-specific work plans.

It is also recommended that if a topic is covered in the MWP that the site-specific work plan only contain information that modifies the information in the MWP. For example, if the description of a GPO is complete in the MWP, the site-specific work plan only needs to show the location of the specific GPO and list the type, number, and depth of MEC that will serve as targets. Listing information that is largely redundant with that in the MWP requires that reviewers compare the two plans almost word by word to spot the differences between the two. This is difficult and time consuming and it would be appreciated if the Navy and their contractors could minimize this effort by crafting the site-specific plan to only include technical items that are changes from the MWP. If this is not possible it would be equally helpful to highlight in some way items in the site-specific plan that represent changes from the MWP. Anything that can help lessen the word-by-word comparison of two complex documents will increase the efficiency of the document review and also help the field personnel charged with implementing these multiple plans to more easily understand the guidance being given to them.

EQB December 2006 follow-up comment: Very few changes have been made to the GPO plan in response to this comment. It is still wordy and difficult to compare to the requirements of the Master Work Plan (the point of the original EQB comment). It is recommended that, since the Navy prefers to use a system of work plan documents including a Master Work Plan and numerous site-specific work plans, that the Navy institute a policy of not repeating text in site-specific work plans that is adequately covered and not changed from the MWP. Repeating text, either verbatim or nearly verbatim, requires the reviewer to go through the time consuming process of comparing the two documents side by side in an attempt to find small but significant changes in the text of the site-specific plan. The recommended policy is, "If the MWP is correct and applies to the site-specific plan then reference it in the MWP and don't repeat it".

As an example, both the Phase II ERA/SI Work Plan have eight QC tests specified in the GPO plan section. However, the Phase II ERA/SI Work Plan has a "Repeat Data" test as test #8 (see Table 3 on page C-13) while the new

MWP (December 2006) has an “Octant Test” as test #8. The reviewer is left wondering why this specific change was made to the site specific work plan without explanation. Instead of repeating the first seven tests it would be more valuable to state that the first seven tests from the MWP will be implemented but the eighth test was changed from the “Octant Test” to the “Repeat Data Test” for the following reasons. The reason for this change could then briefly be documented which should answer all of the reviewers questions concerning this technical change.

This is only one example of this issue, which has been systemic throughout the project. Many more examples could be cited. The volume of repeated text in site-specific plans places a significant burden on reviewers and makes it difficult to find the important technical changes from the MWP. This also lessens the importance of the MWP since it is unlikely that field personnel are going to carefully scrub multiple documents for minute technical changes. They are most likely to simply use the text from the site-specific work plan and ignore the MWP. In this case, why bother with an MWP at all.

B. THE NAVY FAILED TO COMPLY WITH THE AGREED-UPON RESOLUTION AND HAS NOT MADE THE REQUIRED CHANGES TO THE DOCUMENT FOR THE FOLLOWING COMMENTS:

1. EQB comment #20 (from first set of comments to the April 2006 document):
This comment requested that the work plan include information in the size and burial depth of GPO targets. The Navy’s response said that this information will not be added to the work plan in order to maintain the confidentiality of this information (an appropriate measure) but that this information will be provided to stakeholders prior to construction of the GPO.

During the most recent CTC meeting it was discovered that the GPO was under construction at the time of the meeting. No additional information on the GPO has been provided. EQB request that the Navy follow through on their commitment to provide this information to stakeholders as documented in the original comment and response copied below:

“20. Pg 3, Sec 2.2.1, Line Attachment to App B. This says the GPO seed items will be “a representative sample of MEC sizes ... buried at various depths and orientations”. It is recommended that the plan be more specific and indicate how many of what size MEC will be used and to what depths they will be buried in order to meet the requirement for representativeness.

Response: This table of sizes of GPO seed items and the depths, locations and orientations at which they will be buried, will be provided to stakeholders as per discussion and agreement in a timely manner prior to construction of the GPO. The information will not be included in this plan to ensure blind GPO

testing of subcontractors' processes and equipment.

Additional EQB Comment: The explanation provided resolves this comment.”

2. EQB comment #21 (from first set of comments to the April 2006 document):
This comment notes that the MWP contains a requirement for the False Alarm Rate (FAR) to be no more than 15%, however the Phase II ERA/SI Work Plan doesn't contain this requirement and offers some mushy language about how the difficulty in determining an acceptable maximum FAR. The comment questions whether or not the MWP requirement is appropriate and, if it is appropriate, why is it not being implemented in the Phase II Work Plan?

The Navy's response says that they have decided that the 15% FAR requirement isn't appropriate and that it will be removed from the MWP. However, a check of the revised MWP shows that this requirement is still there (page F-2). Also, a field change has not been issued modifying this requirement. The result of this is that this aspect of the Phase II Work Plan is not in accordance with the requirement of the MWP. I recommend that EQB bring this to the attention of the Navy and request that they modify one of the documents via a field change request to enable compliance on this important technical issue. The original comment and Navy response are copied below for reference:

“21. Pg 4, Sec 2.2.1, Line Attachment to App B. The discussion of FAR is confusing. If there is “... no absolute rule to determine an acceptable FAR”, then how will an acceptable FAR be determined? Can any criteria be established? The MWP Appendix F says the criteria is for FAR to be no greater than 15%. Is this requirement no longer valid?”

Response: The requirement for less than 15 percent FAR will be removed from the next version of the MWP. No absolute FAR will be determined. It is of more value to look at FAR as the project progresses, and evaluate the FAR against the anomaly selection criteria and other metrics, than to set a fixed limit for FAR.

Additional EQB Comment: The explanation provided resolves this comment. However, it is recommended that this change to the MWP be documented in a Document Change Notice.”

3. EQB comment #22 (from first set of comments to the April 2006 document):
The issue with comment 22 is similar to comment 21 above. In the response to this comment the Navy agreed to add the requirements for “Downline Data Density” and “Survey Coverage” to the MWP because they are included in the Phase II Work Plan but not the MWP. However, a back check of the MWP shows that these two requirements have not been added. It is recommended that EQB request that the Navy issue a Field Change Request to the MWP to comply with

this agreement. The original comment 22 and the Navy's response is reproduced below for reference:

"22. Pg 4, Sec 2.2.2 and 2.2.3, Line Attachment to Appendix B. The requirements here for "Downline Data Density" and "Survey Coverage" are not contained in the MWP. Should they be added to the MWP or are these criteria only valid to this one project?"

Response. Downline Data Density and Survey Coverage will be added as potential DQOs in the MWP. The requirements of site-specific geophysical work plans differ, depending on scope. These two requirements are applicable to this plan and potentially future ones.

Additional EQB Comment: The explanation provided resolves this comment."

4. EQB comment #24 (from first set of comments to the April 2006 document): This comment is similar to 20 above. It discusses selection of the GPO site and asks why the site isn't being selected now and included in the Phase II Work Plan. The Navy's response says that this information will be provided to the regulators in an "interim deliverable" which will include information on the location of the GPO and the type and depth of burial for the targets. It is recommended that EQB contact the Navy and request that they follow through on their commitment to provide this information in an "interim deliverable" as documented in the original comment and response copied below:

"24. Pg 7, Sec 4.0, Line Attachment to Appendix B, Comment 24, Pg 10, Sec 5.1, Line Attachment to Appendix B. This section says the GPO area will be selected in the future. It is recommended that it be selected and identified during the planning stage of the project and included in this GPO plan. Selecting the GPO area now would be consistent with guidance documents on the subject including the EPA UXO Handbook and the ITRC "GPOs for MR Projects".

Response: Appropriate project personnel will pre-scout potential locations. The project geophysicist will screen sites when he arrives to set up the GPO site. As discussed, an interim deliverable will be issued with the location of the GPO and specifications of seed items size, number, orientation and depth.

This section also says that the number, type, and depth of burial of seed items will be determined later. The same comment as above applies to this. It is recommended that the GPO be planned and that the plan be included in this planning document to comply with best practices as described in the referenced documents.

Additional EQB Comment: The explanation provided and the

recommended text change resolves this comment.

5. EQB comment #25 (from first set of comments to the April 2006 document):
This comment discusses an error in Table 3 of the GPO plan. This table said that the lane spacing for the GPO will be .75-ft. The response said that the table should say .75-meters and that the table would be corrected. However, the table has been deleted in the final work plan along with some important guidance information. The final work plan doesn't contain any specification for lane spacing, height of the sensor above the ground, data collection rate and survey speed. It is recommended that EQB inform the Navy that their action of deleting the table does not comply with their agreement to correct the table. The original comment and response are copied below for reference:

“25. Pg 9, Table 3, Attachment to Appendix B. Table 3 shows that the GPO will be performed on a lane width of 0.75-ft. (8-in.). This is an extremely narrow lane width. It is only appropriate to perform the GPO at this lane width if the production field work is also going to be performed at this narrow lane width. Please confirm that the production lane width will also be 8-in.

Response: The lane width is actually in meters, the table will be revised.

Additional EQB Comment: The explanation provided and the recommended text change resolves this comment.”

