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LETTER AND COMMENTS FROM RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL
MANAGEMENT REGARDING MUNITIONS RESPONSE PROGRAM DRAFT FINAL WORK
PLAN/SITE INSPECTION MCBC DAVISVILLE RI
12/07/2010
RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT



RHODE ISLAND

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

235 Promenade Street, Providence, RI 02908-5767

TDD 401-222-4462

7 December 2010

LTC Randall K. Church
Rhode Island Army National Guard
Camp Fogarty
2841 South County Trail
East Greenwich, RI 02818

RE: Military Munitions Response Program
Draft Final Work Plan/Site Inspection
National Guard response to RIDEM Comments
Submitted 2 December 2010, dated 1 December 2010

Dear LTC Church;

The Rhode Island Department of Environmental Management, Office of Waste Management (RIDEM) has reviewed the above referenced document and has the following comments to offer;

1. Page 2, Figure 1-1, SI Process – With respect to this flow chart it should be revised to reflect that the regulators and stakeholders should be involved in the TPP Process. For the Further Action Recommended diamond the yes portion should go to a NTCRA or a TCRA not the imminent Threat Present diamond. The Proceed to Removal Phase does not allow for in-situ or on site treatment. Please revise.

National Guard Response - Figure 1-1 has been revised (Attachment 1) as follows:

Regulators and stakeholder involvement has been added at several points in the diagram. . “Interim Action” was substituted for “Removal Phase” to indicate the potential for a removal or other remedial action. The Project Closeout was replaced with “Remedial Investigation”. The “Imminent Threat Present” diamond was retained since it is used to differentiate between immediate response actions versus moving to a different response action (i.e., remedial investigation). Revised Figure is attached Attachment 1.

RIDEM Comment – Response is acceptable.

2. Page 5, Section 1.7.1, Summary Report for Camp Fogarty Firing Range Site 10 (Halliburton NUS, 9/94) – This paragraph notes the MCL for lead in water at 5 mg/l. The correct MCL is 15 ug/l. Please revise.

National Guard Response – Section 1.7.1 has been corrected as requested.

RIDEM Comment – Response is acceptable.

3. Page 6, Section 1.7.3, Environmental Assessment (EA) (2009) – This paragraph states that an environmental assessment was conducted by RIARNG in May 2010 and the results of this study show no significant impact either environmentally or socio-economically as a result of this project. Please state what kind of studies were conducted and what criteria were used to draw this conclusion. RIDEM would be particularly interested in any sampling results that were obtained.

National Guard Response - The environmental assessment (EA) was prepared in accordance with the National Environmental Policy Act (NEPA), and its implementing regulations as published by the Council on Environmental Quality (40 Code of Federal Regulations [CFR] 1500–1508) and 32 CFR 651, Environmental Analysis of Army Actions; the Army National Guard Manual for Compliance with the National Environmental Policy Act of 1969 [NEPA Handbook 2006 edition] and Army National Guard Real Estate Manual for Federal Property). The potential environmental effects resulting from the implementation of the Proposed Action and the alternatives to the Proposed Action including the No Action Alternative were analyzed within this environmental assessment. The assessment was based principally on existing data available about the site. No independent sampling was conducted as part of the EA. This information has been added to Section 1.7.3.

RIDEM Comment – If no samples were obtained (surface/sub-surface soil, groundwater, sediment, etc.) it is not clear how a determination of no significant impact could be obtained unless the existing data were fairly complete. RIDEM would be interested in reviewing this data.

4. Page 6, Section 1.7.4, Geotechnical Engineering Report (Jacobs, 2009), Paragraph 2 - This paragraph indicates that there were 13 test borings of which three became monitoring wells (with construction details) and five test pit excavations. Further on in the paragraph there is discussion of piezometers Please state what analytical samples, if any, were obtained for the wells, test pits and piezometers.

National Guard Response - The objective of the geotechnical investigation was to conduct a geotechnical engineering analysis and develop an engineering report with specific earthwork, foundation design, and construction recommendations for the proposed building. The piezometers were installed to monitor water levels

as part of the geotechnical analysis; no analytical samples were collected from the piezometers or in conjunction with the other geotechnical tasks.

RIDEM Comment - The response addresses the piezometers, but does not address the monitoring wells or test pits.

5. Page 6, Section 1.7.5, Soil sampling (RIARNG, July 2009) - This paragraph notes that three lead samples were taken which ranged from 220 to 450 mg/kg and then cites the RIDOH lead regulations. Please be advised that unless someone lives at this site the RIDOH lead regulations do not apply. The proper regulations to cite are the RIDEM Remediation Regulations. The direct exposure criteria is 150 mg/kg for residential use and 500 mg/kg for commercial/industrial use. The military base would fall under commercial/industrial use and would require an environmental land use restriction (ELUR) to prevent residential use based on the results obtained.

National Guard Response – Table 1.7.5 has been revised as requested.

RIDEM Comment – Response is acceptable.

6. Page 15, Section 3.3, Digital Geophysical Mapping (DGM) and Intrusive Investigation, Paragraph 2 – It appears that any live munitions found during the investigation will be disposed of on site through detonation. Based on the information contained in Appendix M, the munition with the greatest fragment distance expected is the 81 mm mortar. In an uncontrolled situation the fragment can be propelled 1299' from the detonation site. In a controlled situation the fragments are expected to go no farther than 200'. Based on the Figure provided it would appear there is a possibility in the controlled detonation scenario that fragments could make its way to the clover-leaf associated with Route 4 and South County Trail. Please state if it is possible to move the controlled detonation location such that there is no possibility of fragments making there way off the Camp Fogarty property.

National Guard Response - This information is addressed in the Explosive Site Plan (ESP). Section 7(e), Page 2 of the ESP, Appendix M, states:

“Any occupied buildings or public roadways in the MSD areas during MEC operations will be evacuated and/or roadways blocked to prevent non-essential personnel from entering during the conduct of MEC operations. For roadways which cannot be blocked guards will be posted and work will halt when a vehicle enters the MSD.”

Section 8(b), Page 3, of the ESP states that if a MEC item is determined acceptable to move it may be moved to an area within the MRS to minimize evacuation of roadways or buildings.

This information will also be added to Section 3.3

RIDEM Comment – Response is acceptable.

7. Page 15, Section 3.4, Soil Sampling, First Sentence - The first sentence states that soil samples will be comprised of discrete, composite, or multi-incremental samples. Please be advised that RIDEM only accepts discrete soil samples. Soils that are to be disposed of at an approved facility can be composite. This comment also applies to sections 3.4.1 through 3.4.4.

Sections 3.4.1 through 3.4.3 indicate that the maximum depth of soil sample is 6". In Section 3.4.4 it is not clear how deep soil samples are to be taken. The concern is that many of the analytes being sampled for can perchlorate through the soil strata. RIDEM considers surface soil to be the top two feet and subsurface soil to be below that. Subsurface soils also need to be obtained.

National Guard Response - Multi-incremental and composite sampling are being conducted in accordance with the request from EPA and based on the recommended standard technical approach for munition response sites. For munitions constituents, both composite and multi-incremental sampling have been shown, in peer-reviewed studies, to generate representative site data because the contaminants are typically released through aerial dispersion. Discrete samples under these conditions will often yield non-detects. Multi-incremental sampling is actually considered to be the more conservative sampling method.

In terms of depth of soil sampling, both explosives and metals are contaminants which adhere to soil and vertical migration is likely to be minimal in this environmental setting. Because of the shallow groundwater, evidence of subsurface migration of contaminants, below 2 feet, should be evident in the shallow groundwater samples. If surface soil OR groundwater samples show concentrations of contaminants above action levels, delineation of the vertical extent of contaminants will be proposed as part of a time-critical removal action or other response action.

RIDEM Comment – RIDEM disagrees with the statement that multi-incremental sampling is conservative. In multi-incremental sampling a number of samples are taken over the site and composited which essentially provides an average concentration over the area investigated depending on sampling location. It does not identify hot-spot areas or areas of non-detect. Of particular concern is that *obvious hot spots are avoided in the sampling.* Based on discussions with staff many States do not accept this sampling approach even though USEPA may promote it. RIDEM does not accept it for the reasons noted below.

With respect to composite sampling, RIDEM will accept it provided the National Guard multiplies the result by the number of samples that went into the composite. For example, in the pinwheel approach RIDEM would expect the sampling result to be multiplied by 7 (one for each of the 6 pieces of pie

and the center sample). For the multi-incremental sampling approach this could involve potentially hundreds of samples depending upon the size of the site.

Please be advised that RIDEM has been involved in about a dozen MMRP sites from both the Army Corps of Engineers and the Navy (with USEPA involvement) and discreet sampling has been the norm.

RIDEM requires that all reasonable media be investigated. For this site that would include surface soil, sub-surface soil and groundwater. With respect to sub-surface soil it is clear that the top soil has been disturbed as evidenced by the construction of berms and subsequent destruction of some of the berms. Metals, as well as the tri-nitro-toluene products can migrate through the soil below a depth of 2' from the surface. Therefore, RIDEM re-iterates that sub-surface soil samples should also be collected as part of this study.

8. Appendix E (QAPP), Figure 10-2, Conceptual Site Model – Please define the acronym “MCOC”. In addition, the following are concerns with this Figure:
 - a) Under the Receptors section there are two divisions for human receptors. Please explain what each division is for as opposed to the one division for ecological receptors.
 - b) Under the Exposure Media, please explain why there is no direct link between surface/subsurface soil and incidental ingestion and dermal contact. If there is contamination this would seem to be a primary means of transporting contaminants from source to receiver.
 - c) Under Source Media please explain why there is no direct link between Surface Water and Sediment. It would seem that fauna living in the wetlands would be directly impacted by any contamination within the wetlands, thus providing a direct link.

National Guard Response - A “MCOC” is a munitions contaminant of concern. Definition of this acronym has been added.

8a) The second division was intended for residential (as opposed to industrial) human receptors. Because there are no residential receptors applicable to the MRS, this extra division will be deleted.

8b) A link will be added

8c) The wetlands and surface water are in an undisturbed area where there are no known activities that are suspected to have caused a release – in CERCLA vernacular, there is no contaminant SOURCE in the wetland area. However, a

link IS provided indicating that erosion from upland areas and groundwater discharges could impact sediment and surface water in that area under Exposure Media. So although there is no source in the wetland area, there is a route of migration to the wetland area that accounts for potential impacts.

RIDEM Comment – The responses for 8, 8a, 8b and 8c are acceptable though for 8a the residential section should be kept as a baseline condition and under 8c a sediment and surface water sample should be taken to insure that erosion and/or groundwater has not impacted the wetland.

9. Appendix E, Page 10-6, Human Receptors – The residential scenario should also be considered as a baseline condition.

National Guard Response - Consideration of residential receptors would be included in a risk assessment as a component of the potential future use scenario, if a Remedial Investigation is required. However, this is a Site Inspection, and residential receptors are not current receptors to be included in our Conceptual Site Model.

RIDEM Comment – As part of the MMRP the National Guard is to produce an MRSPP (Munitions Response Site Prioritization Protocol) which in a sense is a risk assessment. The residential scenario should be included as a baseline to determine if unacceptable risk exists.

10. Appendix E, Page 10-6, Ecological Receptors – This section states there are no threatened or endangered species implying that ecological receptors are not going to be considered. While there are no threatened or endangered species the ecological receptors that do exist on site still need to be considered.

National Guard Response - For munitions and explosives of concern (Explosive hazard) as a “contaminant”, only endangered and threatened species are considered as potential receptors, not all ecological receptors. This is because explosive risk is only a hazard to the individual, not an entire population. For receptors, only individuals that belong to threatened and endangered species are potentially significantly impacted (i.e., it is important if one Dodo bird is killed, but not if one Robin is killed), hence the need for the specification of threatened and endangered species. If munitions constituents were identified as contaminants released at the site, the risk to all species (not just threatened and endangered species) would be assessed at the Remedial Investigation phase relative to the specific compounds/analytes.

RIDEM Comment – Protection of ecological receptors is not limited to threatened and endangered species. It includes all ecological receptors. This aspect needs to be evaluated as part of the MMRP study.

11. Appendix E, Page 11-2, Soil Sampling – This section notes that composite samples will be taken at various locations (Berm Area, Range Floor Area both disturbed and

undisturbed area). Please see comment #7. RIDEM does not accept composite samples except for disposal purposes.

National Guard Response – Please see Response #7

RIDEM Comment – Please see RIDEM Comment #7.

12. Appendix E, Table 11-1-1, Sample Summary and Rationale Berm Area – Please be advised that RIDEM considers surface soil to be the first two feet of depth and subsurface soil to be greater than two feet below ground surface. As noted in comments 7 and 11 RIDEM does not accept composite samples. Please revise the Table accordingly.

National Guard Response – Please see Response #7.

RIDEM Comment – Please see RIDEM Comment #7.

13. Appendix E, Table 11-3, Soil Analytical Methods, Reporting Limits, and Screening Levels – For screening levels RIDEM has a direct exposure criteria for beryllium of 0.4 mg/kg (residential) and 1.3 mg/kg (commercial/industrial). Selenium 390 mg/kg (residential) and 10,000 mg/kg (commercial/industrial) For chlorobenzene 210 mg/kg (residential) and 10,000 mg/kg (commercial/industrial). Please add these to this Table as no value is currently provided. There does not appear to be a similar Table for groundwater. Please note that RIDEM has classified the groundwater under this site as GAA.

National Guard Response - Table 11-3 will be revised as indicated. Table 11-4 lists the groundwater Analytical Methods, Reporting Limits, and Screening Levels.

RIDEM Comment – Response is acceptable.

14. Appendix E, Page 14-1, Digital Geophysical Mapping (DGM) and Intrusive Investigation – This section states that the area will be divided into 100' x 100' grids to facilitate data management. Page 15, Section 3.3 of the Work Plan states the area will be divided in 200' x 200' grids for the same purpose. Please clarify which section is correct.

National Guard Response - QAPP, Appendix E, Page 14-1, last paragraph, fourth sentence was revised to indicate 200 by 200 foot grids.

RIDEM Comment – Response is acceptable.

15. Appendix E, Page 15-17, Table 15-7 - Massachusetts has a standard for perchlorate of 1.0 ug/l, California of 6.0 ug/l and USEPA considering 6.0 ug/l? QL is 6.67 ug/l.

National Guard Response – Noted.

RIDEM Comment – **Response is acceptable.**

16. Appendix E, Page 16-1, QAPP Worksheet #16 – This Table notes that the Site Inspection report will be prepared in December 2010. Sampling will most likely occur sometime between November and December 2010. Please note that to get validated data takes approximately 6 months. Please confirm that the Site Inspection Report will be started in December, not completed at this time.

National Guard Response – Worksheet #16 has been revised as indicated.

RIDEM Comment – **Response is acceptable.**

17. Appendix E, Page 25-1, QAPP Worksheet #25, Analytical Instrument and Equipment Maintenance, testing, and Inspection Table – The frequency of maintenance, testing and inspection is listed as daily for all equipment. Where appropriate the calibration of equipment should be tested at the end of the day to insure there has been no “drift” in the measurements. This should be included in this worksheet.

National Guard Response - Equipment calibration is conducted in accordance with the EPA method protocol and laboratory SOP. “Daily” in the frequency column will be revised to indicate “Daily in accordance with the SOP”.

RIDEM Comment – **Response is acceptable.**

18. Appendix I – There is no Appendix I which should be Technical Project Planning (TPP) Worksheets.

National Guard Response - Appendix I with the TPP Worksheet will be included. The TPP Worksheet is attached (Attachment 2).

RIDEM Comment – **Response is acceptable.**

19. Appendix L, Guidance Document for “Use of Sandbags for Mitigation of Fragmentation and Blast Effects Due to Intentional detonation of Munitions” - This section ends after Page L-6, prior to providing any useful information. Please provide the rest of the document.

National Guard Response - Appendix L will be included in its entirety. A copy has been attached to these comment responses.

RIDEM Comment – **response is acceptable.**

20. Appendix O – Please provide this appendix which is supposed to be Standard Operating Procedures.

National Guard Response - Reference to Appendix 0 will be deleted. All SOPs are included in Attachment A of Appendix E QAPP.

RIDEM Comment – Response is acceptable.

21. Appendix P, Environmental Protection Plan , Section 4.1 Site-Specific Mitigation Procedures - This section notes that liquid wastes will be disposed of in accordance with Delaware Regulations. RIDEM would prefer that RIDEM Policy Memo 95-01 “Guidelines for the Management of Investigation Derived Wastes” be followed. In addition, please explain how the solid waste generated from the borings and wells will be disposed of.

National Guard Response - Section 4.1 of the Environmental Protection Plan has been revised to reference RIDEM Policy Memo 95-01 "Guidelines for the Management of Investigation Derived Wastes [IDW]". Liquid waste will be stored in drums and characterized. Solid IDW will be used as backfill for the wells, if possible. Excess solid IDW will be stored in drums and characterized.

RIDEM Comment - Response is acceptable.

22. Appendix P, Page P-4, Section 4.1.8, IDW & Page P-5, Section 4.2.4, Decontamination and Disposal of Equipment – This section notes that IDW will be stored as indicated in section 1.6.1. There is no Section 1.6.1 in this Appendix. Section 1.6 in the main Work Plan is entitled “Future Land Use”. IDW should be handled as noted in Comment 21, above.

National Guard Response – The referenced section has been changed from 1.6.1 to 4.1.

RIDEM Comment – Response is acceptable.

23. Appendix Q, Page Q-4, Figure 1-1, Project Quality Control Organizational Chart – This Figure does not allow for Stakeholder and Regulatory input. Please revise to allow for this input.

National Guard Response - Appendix Q Project Quality Control Organizational Chart was amended to provide for Stakeholder and Regulatory input. See (Attachment 3)

RIDEM Comment – Response is acceptable.

24. Appendix Q, page Q-10, Section 1.7.1 General Equipment Calibration/Maintenance Requirements – Where appropriate, equipment calibration should be checked at the

end of the day to ensure the readings are still accurate. It is not clear if Section 1.7.1.6 (Post-Operational Checks) addresses this concern.

National Guard Response - Section 1.7.1.1 was revised to indicate that analog geophysical instruments would be checked twice daily and 1.7.1.6 was revised to indicate that analog geophysical instruments will be field checked at the end of the day to ensure they are functioning properly and instrument sensitivity is adequate to detect MEC items of interest. The Digital Geophysical Investigation Plan, Appendix N, Section 8 addresses pre- and post- daily instrument testing of digital geophysical instruments.

RIDEM Comment – Response is acceptable.

25. General Comment – It is understood the Rhode Island Army National Guard is conducting an MMRP study of this site. This site is part of the NCBC National Priorities Listed Site. Due to the active nature of Camp Fogarty the Navy was only able to investigate a small disposal area in the northern portion of the property. A Record of Decision for the disposal area was processed on 30 June 1998 recommending no further action for both soils and groundwater. The MMRP study site is about 1500 feet away from this former disposal area.

The current MMRP study is unusual in the sense that it is being conducted so that the construction of an office building and parking area can take place in the very near future. It is strongly recommended that a mini site inspection also be conducted to insure that a safe working environment is being provided for the people that will be working at this location. This would include surface, sub-surface and groundwater samples. Metals, VOCs, SVOCs, pesticides and PCBs should be sampled for.

National Guard Response - Camp Fogarty is a part of the Davisville NCBC NPL Site. The available records do not indicate that there was any suspicion of contamination in the areas that include the project site at the time that the ROD for Site 10, located on Camp Fogarty, was signed. The current SI will evaluate all of the known or suspected potential hazards on the project site related to range use, and, as such, is focused on munitions and munitions constituents (including explosives, propellants and metals in surface soil and groundwater) and the potential that these contaminants were released to the septic system. In order for the Army National Guard to conduct other characterization of the site, there must be some known or suspect release per CERCLA, in order to obligate funds. Other than the range activities and potential for disposal in the old range building septic system, there are no known activities that would suggest a release of hazardous substances occurred. There must be a regulatory requirement for any additional study to be conducted beyond the CERCLA requirement. Without an additional regulatory driver for sampling, the scope of the project is limited by fiscal law to the address the range contaminants and contaminants in the septic system, if any.

RIDEM Comment – There have been more than 10 MMRP sites in Rhode Island that have been evaluated by both the Army Corps of Engineers and the Navy. In each case the current land use is also the anticipated future land use i.e., no construction activities are planned. The MMRP study for Camp Fogarty is being undertaken specifically to allow for the construction of an office building and parking lot where presumably there will be workers for 8 hours a day.

Due to limited access because of the active nature of the base the Navy was only able to evaluate some berms in the northwest quadrant of the site some 1800 feet away from Training Area 3-D. The Record of Decision (ROD) that was produced in June 1998 only dealt with the area investigated and was not intended to cover the remainder of the base.

Of concern to RIDEM, beyond the potential of munitions debris, munitions constituents, and munitions and explosives of concern is that there were debris piles on site (non- munitions), septic systems associated with buildings on site, and potential for PCB contamination from transformers located on electric poles on the site. RIDEM is in the process of locating plans of the area to determine what areas should be evaluated. RIDEM believes that some form of investigation should be undertaken to address these issues prior to the construction of the office building and parking lot.

RIDEM looks forward to working with the Rhode Island Army National Guard on this site. If you have any questions or require additional information please call me at (401) 222-2797 ext. 7138 or e-mail me at richard.gottlieb@dem.ri.gov.

Sincerely,



Richard Gottlieb, P.E.
Principal Sanitary Engineer

Cc: M. DeStefano, DEM OWM
C. Williams, USEPA
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