



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 1

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BOSTON, MASSACHUSETTS 02114-2023

July 23, 2007

OFFICE OF THE
REGIONAL ADMINISTRATOR

Shawn Cody, Director of Environmental Affairs
Massachusetts National Guard
Office of the Adjutant General
50 Maple Street
Milford, MA 01757

Re: In re Training Range and Impact Area, Massachusetts Military Reservation
EPA Docket No. SDWA I-97-1030
Limited Authorization for Lead Ammunition Training

Dear Mr. Cody:

On June 13, 2007, the Massachusetts National Guard ("MANG"), on behalf of itself and the National Guard Bureau ("NGB"), requested that the United States Environmental Protection Agency ("EPA") modify the Scope of Work ("SOW") to Administrative Order SDWA I-97-1030 ("AO2") issued pursuant to Section 1431(a) of the Safe Drinking Water Act with respect to the Massachusetts Military Reservation ("MMR"). Specifically, the MANG requested approval to resume firing with lead ammunition at T (Tango) Range, a small arms range on MMR, with an accompanying pollution prevention plan and proposed environmental monitoring program.

This letter and the attached Appendix B constitute EPA's response and limited authorization for a seventeen month (August 2007-December 2008) pilot project under which MANG personnel, and personnel from other military and law enforcement agencies under the MANG's supervision, will be permitted to conduct lead ammunition training at T Range under specified conditions. EPA remains committed to protecting the sole source aquifer underlying MMR, and intends to monitor the pilot project closely to ensure that the pollution prevention measures succeed and that groundwater is not contaminated as a result of this pilot project.

I. Background

In February 1997, EPA issued Administrative Order SDWA I-97-1019 ("AO1") after finding, inter alia, high lead levels in soil and groundwater in the Impact Area of Camp Edwards at MMR. In the Scope of Work to AO1, EPA ordered the NGB to submit, by March 1997, "information relating to the potential health or environmental effects of past and current activities in the Training Range and Impact Area, including . . . [s]mall arms firing" and a "[d]escription of pollution prevention measures to be undertaken . . . to mitigate the effects on public health and the environment from any future activities at the Training Range and Impact

assessment of the effectiveness of the pollution prevention measures.” AO1, Appendix A (Scope of Work), ¶¶ II.A.3.a, II.B.6.

In March 1997, the NGB and MANG submitted to EPA proposed pollution prevention measures for the Training Ranges and Impact Area. The proposed pollution prevention measures included the following:

- a. Suspension of firing at small arms ranges D, K, J, N O, P and U, and implementation of mitigation measures to remove lead from impact berms at these ranges;
- b. Suspension of all live mortar firing until the study required by AO1 was completed;
- c. Suspension of all live artillery firing and live firing at the small arms ranges until the study required by AO1 was completed;
- d. Covering berms at small arms ranges with a water impermeable material except when ranges are in use;
- e. Research and implementation of measures to remove lead in soils at small arms ranges;
- f. Research and implementation of use of non-toxic ammunition, and bullet traps or other capture devices.

See AO2, ¶ 44.

In May 1997, EPA issued AO2, which required implementation of the pollution prevention measures that the NGB and MANG had proposed, certain additional pollution prevention and control measures specified by EPA, and other specified work. See AO2, Appendix A. In particular, AO2 required the NGB to cease firing live ammunition at the small arms ranges:

A. Respondents shall implement the following pollution prevention measures at or near the Training Range and Impact Area:

1. During the performance of the study of the Training Range and Impact Area being performed by the National Guard Bureau pursuant to the February 27, 1997 Order, and following completion of such study until EPA approves in writing the resumption of activities, except as provided in Section XXXIV of the Order, Modification of the SOW, Respondents shall suspend the following activities:

- a. All firing of lead ammunition or other “live” ammunition at small arms ranges at or near the Training Range and Impact Area. . . . ;

AO2, Appendix A (Scope of Work), ¶ II.A.1.a.

II. June 2007 Petition

In March 2006, the MANG indicated a desire to resume training with lead ammunition at the small arms ranges. As a result of this meeting, an interagency Command Group and a Small Arms Range Working Group were formed to develop a plan for this project, including remediation before any training, and pollution prevention and environmental monitoring during training.

On June 13, 2007, the MANG, on behalf of itself and the NGB, submitted to EPA a written petition for modification of the Scope of Work of AO2, pursuant to Paragraph 125 of AO2, which provides:

If a Respondent believes that a modification of the Work specified in the SOW or in work plans developed pursuant to the SOW is necessary and appropriate, Respondent may petition to EPA for an EPA determination on such potential modification, submitting appropriate documentation. Within a reasonable time after receipt of such petition, EPA will make a determination whether the SOW should be modified. Bases for such a petition may include, but not be limited to, the following: the upcoming Dugway Proving Ground "Bangbox Study" regarding the use of propellants and pyrotechnics; documentation demonstrating that the use of a propellant or pyrotechnic that is suspended pursuant to this Order does not present a threat of harm to the public or the environment that would warrant its continued suspension under this Order; or results from the study required by the February 27, 1997 Order to determine the effect of past, present and future activities on or near the Training Range and Impact Area.

In its petition, the MANG requested a limited modification of the Scope of Work to AO2. Specifically, the petition requests that Paragraph II.A.1.a, which prohibits firing of lead ammunition at small arms ranges, be modified to allow limited firing of lead ammunition at T Range. The MANG stated that "[i]n order to comply with new Department of Defense and Department of the Army guidance to the National Guard to reduce deployment time for the soldier from about 18 months down to approximately 12 months, each State must maximize the allotted training time it has prior to unit deployment," and that in order to achieve this, "the Camp Edwards small arms training ranges are a critical training component across New England" in order for soldiers to be certified before deployment.

In support of this request, the petition included the following documents:

- a. *Draft Final T Range Soil and Groundwater Investigation Report*, prepared by the U.S. Army Corps of Engineers for the Army Environmental Command's Impact Area Groundwater Study Program, dated June 4, 2007.
- b. *Project Note: T Range Site Preparation Plan*, prepared by URS Corporation for the MANG Environmental and Readiness Center, dated June 8, 2007.

- c. *Environmental Assessment of Lead at Camp Edwards, Massachusetts Small Arms Ranges*, prepared by the U.S. Army Cold Regions Research and Engineering Laboratory, U.S. Army Engineer Research and Development Center, for the MANG Environmental and Readiness Center, dated May 9, 2007.
- d. *T Range Best Management Practices: Operations, Maintenance, and Monitoring Plan*, prepared by URS Corporation for the MANG Environmental and Readiness Center, dated June 8, 2007.

The MANG also represented that it has requested sufficient funds in its annual operations and maintenance budget to sustain proper operation and maintenance of the STAPP Environmental Bullet Catcher system at T Range, as described in the *T Range Best Management Practices: Operations, Maintenance, and Monitoring Plan*. In a followup letter dated July 20, 2007, the MANG provided additional information supporting the need for other military and law enforcement agencies to resume small arms training with lead ammunition at T Range.

III. Public Participation

EPA offered an informal two week public comment period on the MANG's petition and supporting documents. The comment period commenced with a public meeting on June 20, 2007, and lasted until July 3, 2007. EPA offered to extend the public comment period at the request of any person.

Four persons submitted oral or written comments during the comment period. None requested an extension of the comment period. The following is a summary of comments received:

- a. Dick Conron, local citizen and member of the Impact Area Review Team: Mr. Conron submitted three main comments: 1) The MANG should not be allowed to self-monitor; rather, EPA should hire a contractor to conduct independent audits and sampling. 2) Any limited approval should extend for five years to ensure all aspects of the system, particularly the bullet trap system, can be fully evaluated. 3) The MANG should be required to conduct a public involvement program during the project.
- b. Allen Hemberger, local citizen: Mr. Hemberger supports the petition.
- c. David Heimann, Chair, Massachusetts Chapter, Sierra Club: Mr. Heimann submitted the following comments on behalf of the Sierra Club: 1) The informal two week public comment period was too brief. While Mr. Heimann did not request an extension, he did request that a more extensive public involvement process be conducted at the end of the pilot period. 2) The monitoring program should be conducted by an independent (non-military) entity. 3) The state Environmental Management Commission, not the MANG, should oversee the adaptive management program proposed for the pilot project. 4) The pilot project should not proceed before preparation of a state Environmental Impact Report (EIR) or federal Environmental Assessment (EA).
- d. Bill Martiros, local citizen: Mr. Martiros opposes the petition and stated that live ammunition training should not be conducted at MMR.

EPA carefully considered each of these comments in developing its findings and in specifying the conditions of the limited authorization for lead ammunition training.

IV. EPA Findings

EPA's present findings are based on the limited, preliminary information submitted by the MANG and on the public comments received. EPA's findings will be reviewed and updated as necessary based on further information.

The preliminary studies and data submitted by the MANG indicate that:

- a. Lead has not caused significant groundwater contamination at MMR. Although lead has been detected in one well downgradient of the small arms ranges, no large plumes have been identified.
 - b. The lack of significant groundwater contamination is attributable to two main reasons: (1) the geochemistry of the soil serves to retard the migration of lead, and (2) the depth to groundwater is deep, and substantial intervening soil acts as an absorbent.
 - c. The information does *not* support the conclusion that lead is immobile in soil. Rather, the data suggests that lead in soil will take a long time to significantly impact the groundwater. The models predict that it could take anywhere from several hundred to over a thousand years for groundwater to exceed drinking water standards.
 - d. Based on the above findings, a limited pilot project for resumption of training with lead ammunition is appropriate.
 - e. Nevertheless, there are always uncertainties associated with developing conceptual models. Moreover, the soils beneath the ranges have only a finite capacity to act as a lead migration buffer, and it is not acceptable to use the soils beneath the ranges as a "containment" system for lead.
 - f. Consequently, pollution prevention measures are necessary to ensure that the resumption of training with lead ammunition will not result in groundwater contamination.
2. The measures identified in the *T Range Best Management Practices: Operations, Maintenance, and Monitoring Plan*, if performed as described, would be likely to accomplish the following:
- a. The plan will minimize the amount of lead and other small arms-related contaminants that may migrate into the environment through the use of a STAPP Environmental Bullet Catcher which will capture the majority of bullets fired on the range. The system also includes a containment system to capture any rainwater runoff from the system, and to minimize infiltration into the environment.
 - b. The plan includes an environmental monitoring plan to confirm that the environment is protected from releases of hazardous materials. The monitoring plan includes soil sampling at the firing line and in front of the bullet capture system, pore water sampling from lysimeters installed at the firing line and the bullet capture system, and groundwater sampling downgradient of the range.

- c. The plan includes an operation and maintenance plan to ensure that the capture system is properly maintained and functioning as designed, and a supervision plan to assure the system is inspected and operated in accordance with all requirements.
3. Resumption of lead ammunition training at T Range is necessary for the MANG and the other agencies discussed in the MANG's July 20, 2007 letter to meet their small arms training requirements.

Based on the above findings, EPA has concluded that there are sufficient grounds under Paragraph 125 of AO2 to approve a limited pilot project for training with lead ammunition at the Tango Range, with specified conditions. EPA has concluded that a modification to authorize a limited pilot project under the conditions specified is both "necessary and appropriate" under AO2. The findings recited in this letter constitute all of EPA's findings, i.e., by authorizing this pilot project, EPA does not necessarily adopt every datum or conclusion contained in the petition or supporting documents.

EPA has decided to modify the MANG's proposal in several respects as a result of public comments. First, in response to Mr. Conron's and Mr. Heimann's comment that a non-military entity should audit the environmental results, the MANG's operations will be subject to periodic audits by EPA or its contractors throughout the pilot period. Second, in response to Mr. Conron's comment that the MANG should be required to conduct a public involvement program during the pilot project, EPA will require the MANG to conduct public informational meetings throughout the pilot period and consider public comments received at these meetings. Third, in response to Mr. Heimann's comment that a more extensive public involvement process should be conducted after the conclusion of the pilot period, EPA accepts the suggestion and intends to provide a more extensive public involvement process at that time. EPA also acknowledges Mr. Hemberger's comment in support of the petition. With respect to the remaining comments, EPA has not modified the MANG's proposal as suggested. First, in response to Mr. Conron's comment that the pilot period should last five years, EPA finds it more protective of the environment to first authorize a more limited pilot project. If the results from this initial pilot project are promising, the MANG may request a renewal for a longer period. Second, in response to Mr. Heimann's comment that the EMC should be more directly involved in the operations and management plan and that the MANG should be required to submit an EIR before starting this pilot project, those comments are more appropriately answered by the Commonwealth of Massachusetts. Third, in response to Mr. Heimann's comment that the MANG should be required to submit a federal EA before starting this pilot project, the MANG has done so. Fourth, in response to Mr. Martiros's comment opposing the petition, EPA acknowledges Mr. Martiros's opposition, but finds this limited pilot project to be necessary and appropriate for the reasons stated above.

As a result of its own review and of public comments received, EPA has decided to approve the petition, subject to the following modifications:

1. Lead ammunition training may be conducted at the T Range as a pilot project for one training season from August 1, 2007 to December 31, 2008 (the pilot period).
2. By August 1, 2007, the NGB and MANG must submit to EPA a final *T Range Soil and Groundwater Investigation Report* in accordance with the Memorandum of Resolution dated July 17, 2007.

3. By August 1, 2007, the NGB and MANG must submit a final *T Range Site Preparation Plan* responsive to EPA's comments dated June 7, 2007 and must fully perform the activities described in the plan and submit to EPA a final report containing all sampling results.
4. The *T Range Best Management Practices: Operations, Maintenance, and Monitoring Plan* shall be modified to require re-sampling and validation of results if the pore water and/or groundwater analysis meets or exceeds one third of the Level 2 concentrations listed in tables 6-2 and 6-3. Re-sampling and validation for lead in soil shall occur at one half of the levels listed in Table 6-1.
5. This approval is subject to periodic audits, including split samples of environmental monitoring, to be conducted by EPA or its contractors throughout the pilot period. The NGB and MANG may be required by EPA to modify the operation, maintenance and monitoring activities as a result of these audits.
6. The NGB and MANG shall continue to conduct public informational meetings throughout the pilot period and consider public comments received at these meetings. The NGB and MANG may be required by EPA to modify the operation, maintenance and monitoring activities as a result of comments received during the pilot period.
7. The NGB and MANG shall provide copies to EPA of all documents or reports required by the Environmental Management Commission for consideration during the pilot period.
8. At the end of the pilot period, the NGB and MANG shall provide EPA with a final report on the results of the pilot project. The report shall describe the use history for the range including the number of bullets fired on the range and the number of bullets contained in the bullet capture system. The report shall summarize any operational issues encountered and how they were resolved and include all monitoring data collected for the pilot period. The report shall include a section with recommendations on any necessary changes to the system or its operation, monitoring and maintenance plans.

V. Modification of Scope of Work

For the reasons stated above, EPA hereby modifies AO2, Appendix A (Scope of Work), ¶ II.A.1.a, as follows:

- a. All firing of lead ammunition or other "live" ammunition at small arms ranges at or near the Training Range and Impact Area except as provided in Appendix B;

Appendix B, a copy of which is attached to this letter, is hereby appended to, and incorporated into, the Statement of Work to AO2. The provisions of Appendix B, including documents incorporated by reference, are fully enforceable requirements of AO2 and violations may be subject to penalties under Paragraph 110 of AO2.

This action does not modify any other provision of the Statement of Work or the main body of AO2. This modification may itself be modified or withdrawn by EPA at any time on twenty-four hours' written notice. This modification is effective immediately; however, the

NGB and MANG may not undertake the activities authorized in Appendix B before the dates stated in Appendix B.

After the conclusion of the pilot project (December 2008), EPA expects that the relevant stakeholders will reconvene to analyze and discuss the data generated during the pilot project. If the MANG wishes to request to renew this limited authorization, EPA expects to conduct a rigorous scientific analysis of the data from the pilot project and to invite substantial public involvement in determining whether a renewal would be "necessary and appropriate" under AO2. EPA also understands that the MANG may be interested in requesting similar pilot projects for other small arms ranges, such as the J (Juliet) and/or K (Kilo) Ranges, at some point in the future. Naturally, EPA will review any such requests when received, but EPA would expect the MANG to demonstrate that such requested modifications would be "necessary and appropriate" in light of the field results from the T Range pilot project.

If you have any questions about the terms of this modification, please contact Lynne Jennings at (617) 918-1210 or jennings.lynne@epa.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert W. Varney", with a large, stylized flourish extending to the right.

Robert W. Varney
Regional Administrator

cc: Brigadier General Oliver Mason, MANG
Colonel William Fitzpatrick, MANG
Arleen O'Donnell, MassDEP
Mark Begley, EMC
Kent Gonser, IAGWSP
IART Members

SCOPE OF WORK
MASSACHUSETTS MILITARY RESERVATION
TRAINING RANGE AND IMPACT AREA

Appendix B to
EPA Region I Administrative Order
SDWA I-97-1030

I. INTRODUCTION AND PURPOSE

This Limited Authorization for Lead Ammunition Training (LALAT) authorizes Respondents to conduct lead ammunition training under specified conditions for a limited pilot project on T (Tango) Range at Massachusetts Military Reservation (MMR) on Cape Cod, Massachusetts. The LALAT is appended to the Scope of Work of the Administrative Order, Docket Number SDWA I-97-1030 (the "Order"), issued by the United States Environmental Protection Agency (EPA) regarding the Training Range and Impact Area at MMR, and specifies the conditions under which Respondents may conduct such training and the Work that Respondents must perform associated with such training.

II. LIMITED AUTHORIZATION

- A. This LALAT is effective from August 1, 2007 to December 31, 2008 (the "pilot period").
- B. By August 1, 2007, Respondents must perform each of the following:
1. Submit to EPA a final T Range Soil and Groundwater Investigation Report in accordance with the Memorandum of Resolution dated July 17, 2007.
 2. Submit to EPA a final T Range Site Preparation Plan responsive to EPA's comments dated June 7, 2007.
 3. Fully perform the activities described in the T Range Site Preparation Plan, which is hereby incorporated by reference except as modified by EPA's comments dated June 7, 2007.

4. Submit to EPA a final report containing all sampling results generated as part of the final T Range Site Preparation Plan.

Until Respondents fully perform each of the activities in paragraphs 1-4 above, Respondents may not fire any lead ammunition at T Range.

- C. After Respondents have fully performed the obligations of the T Range Site Preparation Plan as modified above, during the pilot period, Respondents and persons operating under their supervision may fire lead ammunition at T Range, subject to the following conditions:

1. Respondents must fully perform the activities described in the T Range Best Management Practices: Operations, Maintenance, and Monitoring Plan, which is hereby incorporated by reference except as stated below:
 - a. Respondents shall re-sample and validate results if pore water and/or groundwater samples meet or exceed 33% of the Level 2 concentrations listed in tables 6-2 and 6-3.
 - b. Respondents shall re-sample and validate results if pore water and/or groundwater samples meet or exceed 50% of the levels listed in Table 6-1.
2. Respondents shall continue to conduct public informational meetings throughout the pilot period and consider public comments received at these meetings. Respondents may be required by EPA to modify the operation, maintenance, and/or monitoring activities as a result of comments

received during the pilot period.

3. Respondents shall provide EPA with copies of all documents or reports required by the Environmental Management Commission for consideration during the pilot period.
 4. This approval is subject to periodic audits, including split samples of environmental monitoring, to be conducted by EPA or its contractors throughout the pilot period. Respondents may be required by EPA to modify operation, maintenance, and/or monitoring activities as a result of these audits.
 5. After the end of the pilot period, Respondents shall submit to EPA a final report on the results of the pilot project. The report shall describe the use history for the range, including the number of bullets fired on the range and the number of bullets contained in the bullet capture system. The report shall summarize any operational issues encountered and how they were resolved, and shall include all monitoring data collected for the pilot period. The report shall include a section with recommendations on any necessary changes to the system or its operation, monitoring, and/or maintenance plans. Respondents must submit this report to EPA no later than March 2, 2009 unless the TPC grants an extension in writing.
- D. The conditions of Paragraph II.C are fully enforceable requirements of the Order and violations of any of the above conditions may be subject to penalties under the Order.
- E. After the conclusion of the pilot period, Respondents may not fire lead ammunition at any

small arms ranges, including T Range, at or near the Training Range and Impact Area.

- F. Respondents are responsible for supervising their own personnel, personnel from other agencies that fire lead ammunition at T Range, and any contractors or consultants (including other government agencies) that Respondents engage or authorize to conduct any activities at T Range. Respondents shall ensure that all persons conducting activities at T Range comply with the requirements of this LALAT, the Order, other administrative orders issued by EPA with respect to MMR, and all applicable law. Respondents may be liable and subject to penalties for any violations of this LALAT, the Order, other administrative orders issued by EPA with respect to MMR, or other applicable law, caused by any persons conducting activities at T Range.
- G. Except as specifically stated in this LALAT, Respondents remain obligated to comply with all the terms and conditions of the Order, including Appendix A (Scope of Work).
- H. The TPC or the Regional Administrator may modify or withdraw this LALAT at any time upon twenty-four hours' written notice.