COMMONWEALTH of VIRGINIA

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February 12, 2020

Mr. Jim McKenna
Radford Army Ammunition Plant
Route 114, P.O. Box 1
Radford, Virginia 24143-0100

VIA ELECTRONIC MAIL

Re: Draft Final Quality Assurance Project Plan
Former Gun and Trench Mortar Range Munitions Response Site (RFAAP-002-R-01)
Radford Army Ammunitions Plant
Route 114, Radford, Virginia 24141
EPA ID#: VA1210020730

Dear Mr. McKenna:

This letter acknowledges the receipt and review of the Draft Final Quality Assurance Project Plan, Former Gun and Trench Mortar Range Munitions Response Site (RFAAP-002-R-01) RCRA Facility Investigation dated October 2019 by Weston Solutions, Inc. submitted to the Virginia Department of Environmental Quality, Office of Remediation Programs (Department) by BAE Systems on behalf of the United States Army Corps of Engineers, Baltimore District and Radford Army Ammunitions Plant (RFAAP).

The Department has the following comments on the above-referenced document. They are:

1. Worksheet 11, "Identify the Goals of the Study:" The goals listed here include decision points, which are covered in a separate section. I recommend making the goals more general. For example, the first bullet should be "determine the presence or location of any burial pits/trenches." The second bullet should be "achieve 95% confidence in determining…" etc.
2. Worksheet 11, Page 35, first bullet: Lead has already been determined to be present above screening and background concentrations. The purpose of the proposed sampling is to evaluate the nature and extent of that contamination, whether it is related to range activities, and whether it drives actionable risk.
3. Worksheet 11, Section 4: VSP inputs should be removed from defining the boundaries of the study. VSP carries many assumptions, and is primarily a tool for identifying impact areas and burial pits. Additional data may be required to identify the nature and extent of low use or buffer areas depending on the results of the investigation. The actual boundaries of the study are covered in the

first 3 bullets of this section. Care should be taken to acknowledge that the nature and extent of MEC and MC have yet to be defined and the study boundaries should be flexible enough to accomplish that goal.

4. Worksheet 11, Section 6: Performance criteria should be limited to whether the project goals were met and if data quality objectives were achieved that could support a decision. There should be firm statements about what threshold of MPC etc. are required to actually make a decision.
5. Worksheet 15, Table 15.1: It is unclear what the facility wide background values of 2543 mg/kg selenium and 108 for vanadium are based on. Are these maximum values or the UTL from the background study?
6. Worksheet 17: Note that as currently proposed, the EM31 data will only be relevant to identify burial pits and very high density areas of debris. No inferences about the nature of identified anomalies or potential MEC densities (particularly for low use areas) can be made with any confidence using this approach. The potential exists for sporadic MEC to be located through the study area, and other data will be required to characterize their nature and extent.
7. Worksheet 22, Table 22-6, page 105, Coverage, detection, and recovery: "Based on root cause analysis and corrective action" seems to imply limited resurveying might be acceptable in the event a seed is missed. If a seed is missed, the entire area covered during that day's work should be resurveyed.
8. Appendix Q, Page 3, last bullet: Please cite EPA CERCLA guidance regarding background and not the VDEQ VRP guidance. Also please provide more information regarding the statistical approach by which site data will be compared to background.
9. Appendix Q, Section 1.4, page 8: Please note that many exposure defaults have been updated by EPA in a 2014 memo. Where applicable these values should be used over those in the Exposure Factors Handbook.
10. Appendix Q, Section 1.5.1: Incidental soil inhalation is also a relevant pathway to receptors other than construction workers and fugitive dust from construction. This pathway includes entrained dust and other indoor exposures and should be included in the risk assessment.
11. Appendix Q, Section 1.5.1, page 10: If the sediment pathway is open, then surface water ingestion could be as well.
12. Appendix Q, Section 2.1.1: Carnivorous mammals and birds have been identified at RFAAP and should be included in the SLERA.
13. Appendix Q, Section 2.2.1: According to the EPA Wildlife Exposure Handbook, short-tailed shrews are insectivorous and are therefore not representative of omnivorous mammals. Raccoons may be more representative of this guild.

If you have any additional technical questions, you may contact me at 703-583-3825 or by email at Kurt.Kochan@deq.virginia.gov.

Sincerely,

Kurt W. Kochan
Office of Remediation Programs

cc: RFAAP Correspondence File
Tara Mason, Kyle Newman, VDEQ-CO
Mindy Lemoine, EPA-Region 3