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MCB CAMP LEJEUNE
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LETTER REGARDING THE TRANSMITTAL OF ACTION MEMORANDUM FOR NON TIME
CRITICAL REMOVAL ACTION FOR D-6 50 FOOT INDOOR RIFLE AND PISTOL RANGE
UNEXPLODED ORDNANCE 01 FORMER BUILDING 451 AND RESPONSE TO COMMENTS
MCB CAMP LEJEUNE NC
10/06/2011
TETRA TECH NUS



TETRA TECH

PITT-10-11-010

October 6, 2011

Project Number 112G01716

NAVFAC Mid-Atlantic
Marine Corps North Carolina IPT
6506 Hampton Boulevard
Norfolk, Virginia 23508-1278
Attention: Mr. Bryan K. Beck, P.E. (OPCEV)

Reference: CLEAN Contract No. N62472-03-D-0057
Contract Task Order No. 0163

Subject: Final Action Memorandum for the Non-time Critical Removal Action at the D-6,
50-Foot Indoor Rifle and Pistol Range – UXO-01 (Former Building 451)
Marine Corps Base Camp Lejeune, Jacksonville, North Carolina

Dear Mr. Beck:

Enclosed is the Final Action Memorandum for the Non-time Critical Removal Action for the subject former Small Arms Range at Camp Lejeune. The enclosed Final Action Memorandum has been updated to address technical review comments on the draft-final version provided by Gena Townsend and David Buxbaum, U.S. EPA Region IV. A Response to Comments matrix is also enclosed with this letter to describe how each comment was addressed in the attached Action Memorandum. Please find enclosed one (1) printed hardcopy of the subject document and (1) one compact disk (CD) with the electronic files used to prepare the printed document. The electronic files recorded on the CD are certified as "virus free" and the CD includes both native (updatable) format and Adobe Acrobat (.pdf) format files, as is required for task order electronic data deliverables for NAVFAC.

This submittal constitutes Tetra Tech's final project deliverable for the approved and amended scope of work for this Contract Task Order. Tetra Tech has worked to support NAVFAC and Camp Lejeune on this specific task order during the past three years beginning with the initial Preliminary Assessment and Site Inspection through the performance of the follow-on EE/CA, RAB and public meeting presentations, and the more recent Action Memorandum activities. Tetra Tech is prepared to provide NAVFAC and Camp Lejeune similar technical support for other activities at Camp Lejeune and welcomes future opportunities to continue this important work.

If you have any questions regarding this document or require additional copies, please contact Rick Barringer at 412-921-8524 or by e-mail: Rick.Barringer@tetrattech.com or Chuck Metz at 412-921-8214.

Sincerely,

Richard A. Barringer
Project Manager

RAB/mlg
Enclosures

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PITT-10-11-010
Mr. Bryan K. Beck, P.E.
NAVFAC Mid-Atlantic
October 6, 2011 - Page 2

cc Ms. Charity Rychak, MCBCL (letter and enclosures-one copy with CDs)
Ms. Marti Morgan, NCDENR (letter and enclosures with CDs)
Ms. Gena Townsend, USEPA-Region IV (letter and enclosures with CDs)
Mr. John Trepanowski, P.E., Tetra Tech, Inc. (letter with CDs)
Mr. Ralph Basinski, Tetra Tech, Inc. (letter only)
Mr. Garth Glenn, Tetra Tech, Inc. (letter only)
Mr. Glenn Wagner, Tetra Tech, Inc. (letter and enclosures-one copy with CDs)
Project File – CTO 0163 (letter and enclosures with CDs)

REVIEW COMMENTS		DOCUMENT: January 2011, Draft Action Memorandum for the NTCRA at the D-6 50-foot Indoor Rifle and Pistol Range – UXO-01 (Former Building 451)		
Date: 09/07/11 Primary Reviewer: David Buxbaum, Assistant Regional Counsel - USEPA, Reg. 4 Phone: (404) 562-9549 Submitted by: Ms. Gena Townsend, RPM - USEPA, Reg. 4 (404) 562-8538		Action on comments taken by: Charles Metz, TtNUS		
Item No.	Page, Section, Paragraph	Comments	Response	(A-agree) (D-disagree)
EPA -1	Section 1.0 Purpose, 1 st paragraph, Page 1	The wording in the first sentence should be revised to state that the Action Memo documents the basis for the removal and describes the non-time critical removal action (NTCRA).	The first sentence of paragraph 1 in Section 1.0 was revised to state: "This Action Memorandum documents the basis for a removal response, describes the proposed non-time-critical removal action (NTCRA), and commits Navy resources to the proposed NTCRA described herein for the D-6, 50-Foot Indoor Rifle and Pistol Range, former Building 451 (referred to as D-6, Small Arms Range), located within Marine Corps Base (MCB) Camp Lejeune, Onslow County, North Carolina."	Agree
EPA -2	Section 1.0, 2 nd paragraph, Page 1	The wording in the first sentence should be revised to state that the Action Memo was 'prepared' as opposed to 'completed' in accordance with the requirements of CERCLA and the NCP. Note that the most recent EPA Action Memo guidance was issued in 2009.	The word "prepared" was substituted and the EPA Action Memo guidance citation was updated to 2009.	Agree
EPA -3	Section 1.0, 3rd paragraph, Page 1	Revise first sentence to read: "The Navy has authority under Executive Order 12580 and CERCLA 104 to carry out.....".	Proposed sentence revision was made to Section 1.0, 3rd paragraph, Page 1.	Agree
EPA -4	Section 2.5 NPL Status, 1 st paragraph, Page 3	Revise the following sentences to read: "...entered into an FFA under CERCLA Section 120...". "The Installation Restoration (IR) Program is responsible for investigating environmental contamination and undertaking response actions, as appropriate, under CERCLA and the FFA. Such actions are expected to satisfy any RCRA corrective action requirements that otherwise might apply as well as meet any RCRA requirements for the management of hazardous waste that are identified as ARARs in accordance with the FFA, CERCLA and the NCP."	Proposed sentence revisions were made to Section 2.5, NPL Status, 1 st paragraph, Page 3.	Agree
EPA -5	Section 2.8 State and Local Authorities	Revise the last sentence as follows: "CERCLA Section 120 requires the Navy to enter into an interagency agreement with the State and EPA that outlines the requirements for	Proposed sentence revision was made to Section 2.8, State and Local Authorities Role, 1 st paragraph, Page 4.	Agree

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	Role, 1 st paragraph, Page 4	investigation and cleanup of environmental contamination at the installation as well as provides process for State and USEPA oversight role.”		
EPA -6	Section 2.8 State and Local Authorities Role, 2nd paragraph, Page 4	Revise the last sentence as follows: “Oversight of the NTCRA activities by the USEPA and NCDENR will occur through participation in meetings and correspondences as well as inspections in the field.”	Proposed sentence revision was made to Section 2.8, State and Local Authorities Role, 2nd paragraph, Page 4.	Agree
EPA -7	Section 4.0 Endangerment Determination, Page 5	Revise the sentence to read as follows: “...may present an imminent and substantial endangerment to public health, or welfare, or the environment.”	Proposed sentence revision was made to Section 4.0, Endangerment Determination, Page 5.	Agree
EPA -8	Section 5.1.1 Proposed Action Description, Page 5	Based upon the description and it is unclear whether the arsenic and/or lead contaminated soils that are to be removed will be RCRA characteristically hazardous waste due to toxicity. To determine whether a CERCLA remediation waste is a RCRA characteristic waste, the site managers may test the waste <u>or</u> use their knowledge of the properties of the waste. ¹ Elevated concentrations of arsenic and/or lead in soils could fail the Toxicity Characteristic Leaching Procedure (TCLP), the test which is required under the RCRA regulations. ² If the remediation wastes exhibit hazardous characteristics, RCRA requirements are applicable since the CERCLA response action will involve storage, treatment, or disposal	Soil testing will be conducted during the proposed excavation to determine whether the excavated wastes are hazardous. It has been assumed based upon similar projects that the bulk of the remediation waste will be nonhazardous. There is the potential that a small percentage of the waste will test hazardous and require on-site treatment (to make characteristically nonhazardous) prior to transportation. Treatment will then allow for the waste to be transported and disposed of as nonhazardous. Therefore, ARAR citations are included for the storage, treatment (stabilization), and disposal of hazardous wastes.	Agree

¹ See 53 Fed. Reg. 51394 at 51444 (December 21, 1988) Proposed Rule: NCP. “The lead agency must use best professional judgment to determine, on a site-specific basis, if testing for hazardous characteristics is necessary. Testing is required unless it can be determined by applying knowledge of the hazard characteristic in light of the materials or process used that the waste does not have hazardous characteristics.” See also 40 CFR 262.11(c).

² See 40 CFR 261.24 Toxicity characteristic.

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		<p>and these particular regulations would need to be identified as ARARs.³ Certain physical movement, alteration, or disturbance of RCRA hazardous waste associated with a response action may meet the definition of treatment, storage, or disposal. For instance, according to EPA, treatment has occurred when the CERCLA remedial action uses “any method, technique, or process, including neutralization, designed to change the physical, chemical, or biological character or composition of any hazardous waste so as to neutralize such waste, or so as to recover energy for material resources from the waste, or so as to render the such waste non-hazardous; or less hazardous; safer to transport, store, dispose of; or amenable for recovery, amenable for storage, or reduced in volume.”⁴</p> <p>The stabilization of soils for treatment of the arsenic or lead would be viewed as treatment and thus some of the RCRA requirements for a Miscellaneous Treatment Unit at 40 CFR 264.600 <i>et. seq.</i> may be relevant and appropriate and certain of the Land Disposal Restrictions (LDRs) requirements at 40 CFR 268 <i>et. seq.</i> will be applicable for any wastes managed outside the Area of Contamination (AOC)⁵ and disposed off-site at either RCRA Subtitle D or C landfill. An AOC is delineated by the areal extent (or boundary) of contiguous contamination. Such contamination must be continuous, but</p>		

³ 53 Fed. Reg. 51444.

⁴ *Id.*, See also 40 CFR 260.10 for definition of ‘Treatment’.

⁵ 55 Fed. Reg. at 8760. See also “Determining When LDRs are Applicable to CERCLA Response Actions”, U.S. EPA July 1989, (OSWER Directive 9347.3-05FS). The generation of media (soils, groundwater) contaminated with a RCRA hazardous waste and subsequent management outside the CERCLA “area of contamination” (or AOC) could constitute “placement” that would trigger RCRA LDRs. To assist in defining when placement does or does not occur, the EPA uses the concept of an AOC, which may be viewed as equivalent to a RCRA land-based unit, usually a landfill. Placement does not occur when RCRA wastes are: 1) treated in situ; 2) capped in place; 3) consolidated within the AOC; or 4) processed within the AOC (but not in a separate unit, such as tank) to improve its structural stability (e.g., for capping or to support heavy machinery).

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		may contain varying types and concentrations of hazardous substances. The D-6 Small Arms Range site boundary, and in particular the areas with soil contamination, would be considered an AOC for purposes of determining whether the remedial activities as part of the removal action is considered "placement".		
EPA -9	Section 5.1.1 Proposed Action Description, Page 5	Based upon the above information and requirements related to RCRA hazardous waste, the EPA suggests the following changes: Revise the first sentence to read: "The proposed removal action is the excavation of lead-, arsenic-, and antimony contaminated soil, possible treatment of such waste and then disposal off-site in an either a RCRA Subtitle C or Subtitle D landfill, depending on whether the concentrations of arsenic and/or lead in the soil render it characteristic hazardous waste."	Proposed sentence revision was made to Section 5.1.1, Proposed Action Description, Page 5.	Agree
EPA -10	Section 5.1.1 Proposed Action Description, Page 6	Based upon the above information and requirements related to RCRA hazardous waste, the EPA suggests the following changes: Revise the following bullet to read: "Sampling and characterization of the contaminated soil to determine whether the excavated soil is considered a RCRA hazardous waste due to high concentrations of arsenic and/or lead and requires treatment (e.g. stabilization) prior to off-site disposal. It is assumed that the soil will be considered non-hazardous waste and be managed as solid waste. Soil that is considered hazardous waste [D004 and/or D008] due to toxicity characteristic must meet the RCRA LDRs alternative treatment standards for soil and would require stabilization prior to land disposal in offsite landfill."	Proposed bullet revision was made to the fourth bullet in Section 5.1.1, Proposed Action Description, Page 6.	Agree

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EPA -11	Section 5.1.1 Proposed Action Description, RAOs, Page 6	The RAOs should be revised to reflect two distinct purposes of the removal: 1) mitigate human health and environmental risk through removal of arsenic-, lead-, and antimony-contaminated soil above levels suitable for unrestricted use and unlimited exposure; and 2) mitigate potential leaching of contaminants (i.e., lead) in soil to groundwater through removal of contaminated soil. The existing second bullet should be deleted as a bulleted RAO and instead is simply text explaining implementation issues.	<p>The first bullet was revised according to the comment and now states: "Mitigate human health and environmental risk through removal of arsenic-, lead-, and antimony- contaminated soil above levels suitable for unrestricted use and unlimited exposure."</p> <p>The original second bullet was removed from RAOs and moved as text in Section 5.1.3 (Description of Alternative Technologies). The second bullet of the RAOs now reads: "Mitigate potential leaching of contaminants (i.e., lead) in soil to groundwater through removal of contaminated soil".</p>	Agree				
EPA -12	Section 5.1.1 Proposed Action Description, Page 6	<p>Based upon the above information and requirements related to RCRA hazardous waste, the EPA suggests the following changes:</p> <p>Revise the following bullet to read: "...Excavated soil will be stockpiled in a container(s) and/or in a staging pile, or directly loaded for off-site disposal depending on whether it is considered RCRA hazardous waste that requires treatment or is considered solid waste."</p>	Proposed bullet revision was made to the fifth bullet in Section 5.1.1, Proposed Action Description, Page 6.	Agree				
EPA -13	Section 5.1.1 Proposed Action Description, Page 6	<p>Revise the following bullet to read: "Following excavation, verification samples will be collected to confirm removal of all soil exceeding the cleanup levels for lead, arsenic, and antimony."</p> <p>Add a small table that lists the COCs and their respective cleanup levels. See example below. Consider adding footnote to indicate the basis for the risk-based cleanup levels or EPA guidance that provides basis for the concentration such as for the lead.</p> <table border="1" data-bbox="415 1425 1087 1474"> <thead> <tr> <th>Contaminant of Concern</th> <th>Soil Cleanup Level</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> </tbody> </table>	Contaminant of Concern	Soil Cleanup Level			<p>Proposed bullet revision was made to the fourth bullet in Section 5.1.1, Proposed Action Description, Page 6. It now states: "Following excavation, verification samples will be collected to confirm removal of all soil exceeding the cleanup levels for lead, arsenic, and antimony."</p> <p>The example table was added to the fourth bullet in Section 5.1.1, Proposed Action Description, Page 6 (table is actually on Page 7). A footnote was added to the table to define the soil cleanup level is equal to the EPA RSL.</p>	Agree
Contaminant of Concern	Soil Cleanup Level							

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Item No.	Page, Section, Paragraph	Comments		Response	(A-agree) (D-disagree)						
		<table border="1"> <tr> <td>Arsenic</td> <td>4.4 mg/kg</td> </tr> <tr> <td>Antimony</td> <td>6.3 mg/kg</td> </tr> <tr> <td>Lead</td> <td>400 mg/kg</td> </tr> </table> <p>Based upon the above information and requirements related to RCRA hazardous waste, the EPA suggests the following changes:</p> <p>Revise the following bullet to read: "Following characterization of the excavated soil, and treatment if necessary, contaminated soils will be transported offsite for disposal in a RCRA Subtitle C or D landfill depending on whether it is considered solid or hazardous waste."</p>	Arsenic	4.4 mg/kg	Antimony	6.3 mg/kg	Lead	400 mg/kg		Proposed bullet revision was made to the fifth bullet in Section 5.1.1, Proposed Action Description, Page 7. It now states: "Following characterization of the excavated soil, and treatment if necessary, contaminated soils will be transported offsite for disposal in a RCRA Subtitle C or D landfill depending on whether it is considered solid or hazardous waste."	
Arsenic	4.4 mg/kg										
Antimony	6.3 mg/kg										
Lead	400 mg/kg										
EPA -14	Section 5.1.1 Proposed Action Description, Page 7	<p>The purposes of the removal action is to remove contaminated soil that presents unacceptable risk due to direct exposure and that is a potential source to groundwater contamination. [See Comment above on RAOs] The NCDENR groundwater standards are not PRGs or cleanup levels since the scope of the removal action is limited to monitoring groundwater, not restoration of groundwater. Accordingly, revise the second bullet to read as follows: "Shallow monitoring wells will be installed at up to five locations to verify that concentrations of lead do not exceed the NCDENR 2L standard of 15 ug/L and that the potential source removal was effective."</p> <p>Also, revise the following sentence as follows: "Post-excavation groundwater monitoring will be conducted quarterly for one year unless determined otherwise by the FFA parties."</p>		<p>The first sentence of the last bullet in Section 5.1.1 (formerly second bullet on Page 7) was revised as recommended and proposed sentence revision in the same bullet was also made. The bullet now reads as follows: "Shallow monitoring wells will be installed at up to five locations to verify that concentrations of lead do not exceed the NCDENR 2L standard of 15 ug/L and that the potential source removal was effective. The wells will likely be installed using direct-push technology and pre-packed screens. Post-excavation groundwater monitoring will be conducted quarterly for one year unless determined otherwise by the FFA parties. If lead concentrations do not exceed the NCDENR 2L standard in an individual well for four consecutive quarters, that well will be removed from the monitoring program. Wells removed from the monitoring program will not be abandoned until a No Further Action is granted for</p>	Agree						

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			the site.'	
EPA -15	Section 5.1.2 Contribution to Remedial Performance, Page 7	Revise the text as follows: "Excavation and off-site disposal of the contaminated soil is expected to achieve the RAOs and meet the cleanup levels that will allow for unrestricted use and unlimited exposure. The NTCRA for the D-6 Small Arms Range is expected to the final response action for the contaminated soils; however a separate groundwater response action may be required depending on the concentrations of lead."	Proposed sentence revision was made to Section 5.1.2 Contribution to Remedial Performance, Page 7.	Agree
EPA -16	Section 5.1.5 Compliance with ARARs 1 st paragraph, Page 8	Please delete the existing paragraphs and replace with the following: "In accordance with 40 <i>Code of Federal Regulations</i> (C.F.R.) § 300.415(j) of the National Oil and Hazardous Substances Pollution Contingency Plan on-site removal actions conducted under CERCLA of 1980, as amended, are required to attain 'applicable' or 'relevant and appropriate' requirements (ARARs) to the extent practicable considering the exigencies of the situation. In determining whether compliance with ARARs is practicable, the lead agency may consider appropriate factors, including: 1) the urgency of the situation; and 2) the scope of the removal action. ARARs include only federal and state environmental or facility siting laws/regulations; they do not include occupational safety or worker protection requirements. Compliance with OSHA standards is required by 40 C.F.R. § 300.150. Additionally, per 40 C.F.R. § 300.405(g)(3), other advisories, criteria, or guidance may be considered in determining remedies [to-be-considered (TBC) category]."	The two paragraphs in Section 5.1.5 (page 8) were deleted and replaced with the provided paragraphs.	Agree

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		<p>For purposes of ease of identification, the EPA has created three categories of ARARs: Chemical-, Location- and Action-Specific. Chemical-Specific ARARs are usually health or risk based numerical values limiting the amount or concentration of a chemical that may be found in, or discharged to, the environment. There are no Chemical-specific ARARs/TBC guidance for this NTCRA. Location-Specific requirements establish restrictions on permissible concentrations of hazardous substances or establish requirements for how activities will be conducted because they are in special locations. (e.g., wetlands, floodplains, critical habitats, streams). There are no Location-Specific ARARs/TBC guidance for this NTCRA. Action-Specific requirements often include performance, design and controls, or restrictions on particular kinds of activities related to management of hazardous substances. Action-specific ARARs are triggered by the types of remedial activities and types of wastes that are generated, stored, treated, disposed, emitted, discharged, or otherwise managed. The primary Action-specific ARARs for this removal action include EPA and NCDENR requirements related to characterization, temporary storage, treatment, disposal, and preparation for transportation of waste (i.e., excavated contaminated soil). In addition, NCDENR regulations related to control of stormwater and fugitive dust emissions, as well as installation and abandonment of groundwater monitoring wells are ARARs for this NTCRA.</p> <p>The Navy has determined that ARARs compliance is practicable and it will comply with ARARs and TBC guidance as set forth in the Table 1 of the Action Memorandum when conducting this NTCRA.”</p>		

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EPA -17	Table 1 ARARs	<p>There are numerous entries on the table that probably should not be included considering the scope of the removal action and how it will likely be conducted on-site. For example, given the revised RAOs in the Action Memo to reduce potential contaminant source not restore groundwater, the listing of federal and NCDENR MCLs as Chemical-specific ARARs is not appropriate. Also, the NCDENR regulation related to establishing maximum soil contaminant concentrations does not appear to provide actual concentrations for an individual contaminant but instead references the use of EPA guidance to derive the soil levels. Consequently, EPA would not consider this regulation to be a Chemical-specific ARAR, although it could be referenced in the Action Memo if parties followed those regulations in derivation of the soil cleanup levels. At federal NPL sites, the lead agency is expected to follow pertinent EPA guidance including RAGs that could be used to derive appropriated cleanup levels.</p> <p>Additionally, based upon discussions with the RPM and a review of the site description, the D-6 Small Arms Range is not located in special location or is the removal expected to impact any threatened or endangered species. Consequently, these entries are unnecessary on Table 1. The entry for the NC Recordation of Inactive Substances or Waste Disposal Sites is not necessary since the removal action is expected to cleanup site to levels suitable for UU/UE.</p> <p>As mentioned in the above Comment, the question of whether RCRA characteristic hazardous wastes is present at this site should be known prior to the identification of the Action-specific ARARs. The extent to which the RCRA regulations should be cited as ARARs is entirely dependent on the types</p>	It is agreed that there are no applicable Chemical- or Location-specific ARARs for this NTCRA. The EPA provided Action-specific table (Table 1) will be used, as provided, as a replacement for the Action-specific ARAR table provided in the draft Action Memorandum.	Agree

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		<p>of waste, whether the remediation waste or secondary wastes from the treatment process are going to be “generated” and taken outside the AOC for subsequent management. For example, if the soils are determined to be considered RCRA characteristically hazardous waste, then staging such soils may need to certain waste pile or storage unit requirements. Also, the treatment may need to meet certain subpart X requirements for a Miscellaneous Treatment Unit at 40 CFR 264.600 <i>et. seq.</i> The EPA recommended table includes several specific RCRA ARARs that may be triggered depending on whether the excavated soil is indeed considered RCRA hazardous waste.</p> <p>Another problem with the ARARs Table is that some of the regulations are often cited as an entire Section or Chapter is which is overly broad. For example, 15A NCAC 13A or 40 CFR 264 (Subpart S) includes lots of requirements for managing RCRA wastes that don't apply considering the limited scope of the removal. Accordingly, see the revised Table 1 provided along with the Comments that includes specific RCRA requirements for the characterization, storage, treatment, and disposal of hazardous waste. The EPA attorney is willing to discuss the revised ARARs with the NCDENR, the Navy (and its contractors) to ensure that the proper requirements are listed on the ARARs Table.</p>	

TABLE 1

ACTION-SPECIFIC ARARS FOR D-6, SMALL ARMS RANGE
 MCB CAMP LEJEUNE, NORTH CAROLINA
 PAGE 1 OF 15

Action	Requirements	Prerequisite	Citation
General Construction Standards – All Land-disturbing Activities (i.e., excavation, clearing, grading, etc.)			
Managing storm water runoff from land-disturbing activities	Shall install erosion and sedimentation control devices and practices sufficient to retain the sediment generated by the land-disturbing activity within the boundaries of the tract during construction.	Land-disturbing activity (as defined in N.C.G.S. Ch. 113A-53) of more than 1 acre of land – applicable	N.C.G.S. Ch.113A-157(3)
	Shall plant or otherwise provide permanent ground cover sufficient to restrain erosion after completion of construction.		N.C.G.S. Ch.113A-157(3)
	Shall take all reasonable measures to protect all public and private property from damage caused by such activities.	Land-disturbing activity (as defined in N.C.G.S. Ch. 113A-52) of more than 1 acre of land – applicable	15A NCAC 4B.0105
	Erosion and sedimentation control plan must address the following basic control objectives: (1) Identify areas subject to severe erosion, and off-site areas especially vulnerable to damage from erosion and sedimentation. (2) Limit the size of the area exposed at any one time. (3) Limit exposure to the shortest feasible time. (4) Control surface water run-off originating upgrate of exposed areas. (5) Plan and conduct land-disturbing activity so as to prevent off-site sedimentation damage. (6) Include measures to control velocity of storm water runoff to the point of discharge.		15A NCAC 4B.0106

TABLE 1

ACTION-SPECIFIC ARARS FOR D-6, SMALL ARMS RANGE
 MCB CAMP LEJEUNE, NORTH CAROLINA
 PAGE 2 OF 15

Action	Requirements	Prerequisite	Citation
	Erosion and sedimentation control measures, structures, and devices shall be planned, designed, and constructed to provide protection from the run-off of 10 year storm.	Land-disturbing activity (as defined in N.C.G.S. Ch. 113A-52) of more than 1 acre of land – applicable	15A NCAC 4B.0108
	Shall conduct activity so that the post-construction velocity of the ten year storm run-off in the receiving watercourse to the discharge point does not exceed the parameters provided in this Rule.		15A NCAC 4B.0109
Managing fugitive dust emissions	Shall not cause or allow fugitive dust emissions to cause or contribute to substantive complaints, or visible emissions in excess of that allowed under paragraph (e) of this Rule.	Activities within facility boundary that will generate fugitive dust emissions – relevant and appropriate	15A NCAC 02D .0540(c)
	Implement methods (e.g. wetting dry soils) to control dust emissions that could travel beyond the facility boundary.		15A NCAC 02D .0540(g)
Waste Characterization and Storage – Primary Wastes (i.e., excavated contaminated soils)			
Characterization of solid waste	Must determine if solid waste is hazardous waste or if waste is excluded under 40 CFR 261.4(b); and	Generation of solid waste as defined in 40 CFR 261.2 – applicable	40 CFR 262.11(a) 15A NCAC 13A .0107
	Must determine if waste is listed under 40 CFR Part 261; or	Generation of solid waste which is not excluded under 40 CFR 261.4(a) – applicable	40 CFR 262.11(b) 15A NCAC 13A .0107

TABLE 1

**ACTION-SPECIFIC ARARS FOR D-6, SMALL ARMS RANGE
MCB CAMP LEJEUNE, NORTH CAROLINA
PAGE 3 OF 15**

Action	Requirements	Prerequisite	Citation
	<p>Must determine whether the waste is (characteristic waste) identified in subpart C of 40 CFR part 261 by either:</p> <p>(1) Testing the waste according to the methods set forth in subpart C of 40 CFR part 261, or according to an equivalent method approved by the Administrator under 40 CFR 260.21; or</p> <p>(2) Applying knowledge of the hazard characteristic of the waste in light of the materials or the processes used.</p>	<p>Generation of solid waste which is not excluded under 40 CFR 261.4(a) – applicable</p>	<p>40 CFR 262.11(c) 15A NCAC 13A .0107</p>
	<p>Must refer to Parts 261, 262, 264, 265, 266, 268, and 273 of Chapter 40 for possible exclusions or restrictions pertaining to management of the specific waste.</p>	<p>Generation of solid waste which is determined to be hazardous – applicable</p>	<p>40 CFR 262.11(d) 15A NCAC 13A .0107</p>
<p>Characterization of hazardous waste</p>	<p>Must obtain a detailed chemical and physical analysis on a representative sample of the waste(s), which at a minimum contains all the information that must be known to treat, store, or dispose of the waste in accordance with pertinent sections of 40 CFR 264 and 268.</p>	<p>Generation of RCRA-hazardous waste for storage, treatment or disposal – applicable</p>	<p>40 CFR 264.13(a)(1) 15A NCAC 13A .0109</p>
<p>Determinations for management of hazardous waste</p>	<p>Must determine each EPA Hazardous Waste Number (waste code) applicable to the waste in order to determine the applicable treatment standards under 40 CFR 268 <i>et seq.</i></p> <p><i>Note:</i> This determination may be made concurrently with the hazardous waste determination required in Sec. 262.11 of this chapter.</p>	<p>Generation of hazardous waste for storage, treatment or disposal – applicable</p>	<p>40 CFR 268.9(a) 15A NCAC 13A .0112</p>

TABLE 1

ACTION-SPECIFIC ARARS FOR D-6, SMALL ARMS RANGE
 MCB CAMP LEJEUNE, NORTH CAROLINA
 PAGE 4 OF 15

Action	Requirements	Prerequisite	Citation
	Must determine the underlying hazardous constituents [as defined in 40 CFR 268.2(i)] in the characteristic waste.	Generation of RCRA characteristic hazardous waste (and is not D001 non-wastewaters treated by CMBST, RORGS, or POLYM of Section 268.42 Table 1) for storage, treatment or disposal – applicable	40 CFR 268.9(a) 15A NCAC 13A .0112
Storage of solid waste	All solid waste shall be stored in such a manner as to prevent the creation of a nuisance, insanitary conditions, or a potential public health hazard.	Generation of solid waste which is determined not to be hazardous – relevant and appropriate	15A NCAC 13B .0104(f)
	Containers for the storage of solid waste shall be maintained in such a manner as to prevent the creation of a nuisance or insanitary conditions. Containers that are broken or that otherwise fail to meet this Rule shall be replaced with acceptable containers.	Generation of solid waste which is determined not to be hazardous – relevant and appropriate	15A NCAC 13B .0104(e)
Temporary storage of hazardous waste in containers	A generator may accumulate hazardous waste at the facility provided that: <ul style="list-style-type: none"> waste is placed in containers that comply with 40 CFR 265.171-173; and 	Accumulation of RCRA hazardous waste on site as defined in 40 CFR 260.10 – applicable	40 CFR 262.34(a) 40 CFR 262.34(a)(1)(i) 15A NCAC 13A .0107
	<ul style="list-style-type: none"> the date upon which accumulation begins is clearly marked and visible for inspection on each container 		40 CFR 262.34(a)(2) 15A NCAC 13A .0107

TABLE 1

ACTION-SPECIFIC ARARS FOR D-6, SMALL ARMS RANGE
 MCB CAMP LEJEUNE, NORTH CAROLINA
 PAGE 5 OF 15

Action	Requirements	Prerequisite	Citation
	<ul style="list-style-type: none"> container is marked with the words "hazardous waste"; or 		40 CFR 262.34(a)(3) 15A NCAC 13A .0107
	<ul style="list-style-type: none"> container may be marked with other words that identify the contents. 	Accumulation of 55 gal. or less of RCRA hazardous waste at or near any point of generation – applicable	40 CFR 262.34(c)(1) 15A NCAC 13A .0107
Storage of hazardous waste in container area	Area must have a containment system designed and operated in accordance with 40 CFR 264.175(b)	Storage of RCRA hazardous waste in containers with free liquids – applicable	40 CFR 264.175(a) 15A NCAC 13A .0109
	<p>Area must be sloped or otherwise designed and operated to drain liquid resulting from precipitation, or</p> <p>Containers must be elevated or otherwise protected from contact with accumulated liquid.</p>	Storage of RCRA-hazardous waste in containers that <i>do not contain free liquids</i> (other than F020, F021, F022, F023, F026 and F027) – applicable	40 CFR 264.175(c)(1) and (2) 15A NCAC 13A .0109

TABLE 1

**ACTION-SPECIFIC ARARS FOR D-6, SMALL ARMS RANGE
MCB CAMP LEJEUNE, NORTH CAROLINA
PAGE 6 OF 15**

Action	Requirements	Prerequisite	Citation
Closure of RCRA container storage unit	<p>At closure, all hazardous waste and hazardous waste residues must be removed from the containment system. Remaining containers, liners, bases, and soils containing or contaminated with hazardous waste and hazardous waste residues must be decontaminated or removed.</p> <p>[Comment: At closure, as throughout the operating period, unless the owner or operator can demonstrate in accordance with 40 CFR 261.3(d) of this chapter that the solid waste removed from the containment system is not a hazardous waste, the owner or operator becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements of parts 262 through 266 of this chapter].</p>	Storage of RCRA hazardous waste in containers in a unit with a containment system – applicable	40 CFR 264.178 15A NCAC 13A .0109
Temporary on-site storage of remediation waste in staging pile (e.g., excavated soils)	Must be located within the contiguous property under the control of the owner/operator where the wastes are to be managed in the staging pile originated. For purposes of this section, storage includes mixing, sizing, blending or other similar physical operations so long as intended to prepare the wastes for subsequent management or treatment.	Accumulation of <i>solid non-flowing hazardous remediation waste</i> (or remediation waste otherwise subject to land disposal restrictions) as defined in 40 CFR 260.10 – applicable	40 CFR 264.554(a)(1) 15A NCAC 13A .0109

TABLE 1

**ACTION-SPECIFIC ARARS FOR D-6, SMALL ARMS RANGE
MCB CAMP LEJEUNE, NORTH CAROLINA
PAGE 7 OF 15.**

Action	Requirements	Prerequisite	Citation
Performance criteria for staging pile	Staging pile must: <ul style="list-style-type: none"> • facilitate a reliable, effective and protective remedy; • must be designed to prevent or minimize releases of hazardous wastes and constituents into the environment, and minimize or adequately control cross-media transfer as necessary to protect human health and the environment (e.g. use of liners, covers, run-off/run-on controls); 	Storage of remediation waste in a staging pile– applicable	40 CFR 264.554(d)(1)(i) and (ii) 15A NCAC 13A .0109
Operation of a staging pile	Must not operate for more than 2 years, except when an operating term extension under 40 CFR 264.554(i) is granted. <i>Note:</i> Must measure the 2-year limit (or other operating term specified) from first time remediation waste placed in staging pile	Storage of remediation waste in a staging pile– applicable	40 CFR 264.554(d)(1)(iii) 15A NCAC 13A .0109
	Must not use staging pile longer than the length of time designated by EPA in appropriate decision document.		40 CFR 264.554(h) 15A NCAC 13A .0109

TABLE 1

**ACTION-SPECIFIC ARARS FOR D-6, SMALL ARMS RANGE
MCB CAMP LEJEUNE, NORTH CAROLINA
PAGE 8 OF 15**

Action	Requirements	Prerequisite	Citation
Design criteria for staging pile	<p>In setting standards and design criteria must consider the following factors:</p> <ul style="list-style-type: none"> • Length of time pile will be in operation; • Volumes of waste you intend to store in the pile; • Physical and chemical characteristics of the wastes to be stored in the unit; • Potential for releases from the unit; • Hydrogeological and other relevant environmental conditions at the facility that may influence the migration of any potential releases; and • Potential for human and environmental exposure to potential releases from the unit. 	Storage of remediation waste in a staging pile – applicable	40 CFR 264.554(d)(2)(i) –(vi) 15A NCAC 13A .0109
Closure of staging pile of remediation waste	Must be closed within 180 days after the operating term by removing or decontaminating all remediation waste, contaminated containment system components, and structures and equipment contaminated with waste and leachate.	Storage of remediation waste in staging pile in previously contaminated area – applicable	40 CFR 264.554(j)(1) 15A NCAC 13A .0109
	Must decontaminate contaminated sub-soils in a manner that EPA determines will protect human and the environment.		40 CFR 264.554(j)(2) 15A NCAC 13A .0109
Waste Treatment and Disposal – Primary Wastes (i.e., excavated contaminated soils)			
Disposal of solid waste	Shall ensure that waste is disposed of at a site or facility which is permitted to receive the waste.	Generation of solid waste intended for off-site disposal – relevant and appropriate	15A NCAC 13B .0106(b)

TABLE 1

**ACTION-SPECIFIC ARARS FOR D-6, SMALL ARMS RANGE
MCB CAMP LEJEUNE, NORTH CAROLINA
PAGE 9 OF 15**

Action	Requirements	Prerequisite	Citation
Disposal of RCRA hazardous waste in a land-based unit	May be land disposed if it meets the requirements in the table "Treatment Standards for Hazardous Waste" at 40 CFR 268.40 before land disposal.	Land disposal, as defined in 40 CFR 268.2, of restricted RCRA waste – applicable	40 CFR 268.40(a) 15A NCAC 13A .0112
	All underlying hazardous constituents [as defined in 40 CFR 268.2(i)] must meet the Universal Treatment Standards, found in 40 CFR 268.48 Table UTS prior to land disposal	Land disposal of restricted RCRA characteristic wastes (D001-D043) that are not managed in a wastewater treatment system that is regulated under the CWA, that is CWA equivalent, or that is injected into a Class I nonhazardous injection well – applicable	40 CFR 268.40(e) 15A NCAC 13A .0112
	<p>To determine whether a hazardous waste identified in this section exceeds the applicable treatment standards of 40 CFR 268.40, the initial generator must test a sample of the waste extract or the entire waste, depending on whether the treatment standards are expressed as concentration in the waste extract or waste, or the generator may use knowledge of the waste.</p> <p>If the waste contains constituents (including UHCs in the characteristic wastes) in excess of the applicable UTS levels in 40 CFR 268.48, the waste is prohibited from land disposal, and all requirements of part 268 are applicable, except as otherwise specified.</p>	Land disposal of RCRA toxicity characteristic wastes (D004-D011) that are newly identified (i.e., wastes, soil, or debris identified by the TCLP but not the Extraction Procedure) – applicable	40 CFR 268.34(f) 15A NCAC 13A .0112

TABLE 1

ACTION-SPECIFIC ARARS FOR D-6, SMALL ARMS RANGE
 MCB CAMP LEJEUNE, NORTH CAROLINA
 PAGE 10 OF 15

Action	Requirements	Prerequisite	Citation
Disposal of RCRA-hazardous waste in a land-based unit	Must be treated according to the alternative treatment standards of 40 CFR 268.49(c) <u>or</u> according to the UTSs specified in 40 CFR 268.48 applicable to the listed and/or characteristic waste contaminating the soil prior to land disposal	Land disposal, as defined in 40 CFR 268.2, of restricted hazardous soils – applicable	40 CFR 268.49(b) 15A NCAC 13A .0112
Treatment of RCRA hazardous waste soil on-site	Prior to land disposal, all "constituents subject to treatment" as defined in 40 CFR 268.49(d) must be treated as follows:	Treatment of restricted hazardous waste soils – applicable	40 CFR 268.49(c)(1) 15A NCAC 13A .0112
	For non-metals (except carbon disulfide, cyclohexanone, and methanol), treatment must achieve a 90 percent reduction in total constituent concentrations, except as provided in 40 CFR 268.49(c)(1)(C).		40 CFR 268.49(c)(1)(A) 15A NCAC 13A .0112
	For metals and carbon disulfide, cyclohexanone, and methanol, treatment must achieve a 90 percent reduction in total constituent concentrations as measured in leachate from the treated media (tested according to TCLP) <u>or</u> 90 percent reduction in total constituent concentrations (when a metal removal technology is used), except as provided in 40 CFR 268.49(c)(1)(C).		40 CFR 268.49(c)(1)(B) 15A NCAC 13A .0112

TABLE 1

ACTION-SPECIFIC ARARS FOR D-6, SMALL ARMS RANGE
 MCB CAMP LEJEUNE, NORTH CAROLINA
 PAGE 11 OF 15

Action	Requirements	Prerequisite	Citation
	When treatment of any constituent subject to treatment to a 90 percent reduction standard would result in a concentration less than 10 times the Universal Treatment Standard for that constituent, treatment to achieve constituent concentrations less than 10 times the universal treatment standard is not required. [Universal Treatment Standards are identified in 40 CFR 268.48 Table UTS].	Treatment of restricted hazardous waste soils – applicable	40 CFR 268.49(c)(1)(C) 15A NCAC 13A .0112
	In addition to the treatment requirement required by paragraph (c)(1) of this section, soils must be treated to eliminate these characteristics.	Soils that exhibit the characteristic of ignitability, corrosivity or reactivity intended for land disposal – applicable	40 CFR 268.49(c)(2) 15A NCAC 13A .0112
	Provides methods on how to demonstrate compliance with the alternative treatment standards for contaminated soils that will be land disposed.	On-site treatment of restricted hazardous waste soils following alternative soil treatment of 40 CFR 268.49(c) – To Be Considered	<i>Guidance on Demonstrating Compliance with the LDR Alternative Soil Treatment Standards</i> [EPA 530-R-02-003, July 2002]
Treatment of hazardous waste (soils considered D004 and D008) in Misc. Treatment Unit	Unit must be located, designed, constructed, operated and maintained, and closed in a manner that will ensure protection of human health and the environment.	Treatment of RCRA hazardous waste in miscellaneous units, except as provided in 40 CFR 264.1– relevant and appropriate	40 CFR 264.601 15A NCAC 13A .0109

TABLE 1

**ACTION-SPECIFIC ARARS FOR D-6, SMALL ARMS RANGE
MCB CAMP LEJEUNE, NORTH CAROLINA
PAGE 12 OF 15**

Action	Requirements	Prerequisite	Citation
	Protection of human health and the environment includes, but is not limited to: prevention of any release that may have adverse effects on human health or the environment due to migration of waste constituents in the surface water, or wetlands or soil surface considering the factors listed in 40 CFR 264.601(b)(1) thru (11).		40 CFR 264.601(b) 15A NCAC 13A .0109
Monitoring Well Installation, Operation, and Abandonment			
Construction of groundwater monitoring well(s)	No well shall be located, constructed, operated, or repaired in any manner that may adversely impact the quality of groundwater.	Installation of wells (including temporary) other than for water supply – applicable	15A NCAC 02C .0108(a)
	Shall be located, designed, constructed, operated and abandoned with materials and by methods which are compatible with the chemical and physical properties of the contaminants involved, specific site conditions, and specific subsurface conditions.		15A NCAC 02C .0108(c)
	Must comply with general requirements for construction of a well as provided in 15A NCAC 02C .0108(c)(1) through (12)		15A NCAC 02C .0108(c)
	Shall be constructed in such a manner as to preclude the vertical migration of contaminants with and along borehole channel.		15A NCAC 02C .0108(f)

TABLE 1

ACTION-SPECIFIC ARARS FOR D-6, SMALL ARMS RANGE
 MCB CAMP LEJEUNE, NORTH CAROLINA
 PAGE 13 OF 15

Action	Requirements	Prerequisite	Citation
Implementation of groundwater monitoring system	Shall be constructed in a manner that will not result in contamination of adjacent groundwaters of a higher quality.	Installation of monitoring system to evaluate effects of any actions taken to restore groundwater quality, as well as the efficacy of treatment – applicable	15A NCAC 02L .0110 (b)
Maintenance of groundwater monitoring well(s)	Every well shall be maintained by the owner in a condition whereby it will conserve and protect groundwater resources, and whereby it will not be a source or channel of contamination or pollution to the water supply or any aquifer.	Installation of wells (including temporary wells) other than for water supply – applicable	15A NCAC 02C .0112(a)
	Broken, punctured, or otherwise defective or unserviceable casing, screens, fixtures, seals, or any part of the well head shall be repaired or replaced, or the well shall be abandoned pursuant to 15A NCAC 02C .0113		15A NCAC 02C .0112(c)
	All materials used in the maintenance, replacement, or repair of any well shall meet the requirements for new installation.		15A NCAC 02C .0112(b)
Abandonment of groundwater monitoring well(s)	Shall be abandoned in accordance with the requirements of 15A NCAC 02C .0113(b)(1) and (2)	Permanent abandonment of wells (including temporary wells) other than for water supply – applicable	15A NCAC 02C .0113(b)
Transportation of Wastes			
Transportation of hazardous materials	Shall be subject to and must comply with all applicable provisions of the HMTA and DOT HMR at 49 CFR 171-180.	Any person who, under contract with a department or agency of the federal government, transports "in commerce," or causes to be transported or shipped, a hazardous material – applicable	49 CFR 171.1(c)

TABLE 1

**ACTION-SPECIFIC ARARS FOR D-6, SMALL ARMS RANGE
MCB CAMP LEJEUNE, NORTH CAROLINA
PAGE 14 OF 15**

Action	Requirements	Prerequisite	Citation
Transportation of hazardous waste <i>off-site</i>	Must comply with the generator requirements of 40 CFR 262.20–23 for manifesting, Sect. 262.30 for packaging, Sect. 262.31 for labeling, Sect. 262.32 for marking, Sect. 262.33 for placarding, Sect. 262.40, 262.41(a) for record-keeping requirements, and Sect. 262.12 to obtain EPA ID number.	Preparation and initiation of shipment of RCRA-hazardous waste off-site – applicable	40 CFR 262.10(h); 15A NCAC 13A .0107
Transportation of hazardous waste <i>on-site</i>	The generator manifesting requirements of 40 CFR 262.20–262.32(b) do not apply. Generator or transporter must comply with the requirements set forth in 40 CFR 263.30 and 263.31 in the event of a discharge of hazardous waste on a private or public right-of-way.	Transportation of hazardous wastes on a public or private right-of-way within or along the border of contiguous property under the control of the same person, even if such contiguous property is divided by a public or private right-of-way – applicable	40 CFR 262.20(f) 15A NCAC 13A .0107
Transportation of samples (i.e. contaminated soils)	Are not subject to any requirements of 40 CFR Parts 261 through 268 or 270 when: <ul style="list-style-type: none"> • the sample is being transported to a laboratory for the purpose of testing; or • the sample is being transported back to the sample collector after testing. • the sample is being stored by sample collector before transport to a lab for testing 	Samples of solid waste <u>or</u> a sample of water, soil for purpose of conducting testing to determine its characteristics or composition – applicable	40 CFR 261.4(d)(1)(i)-(iii) 15A NCAC 13A .0106

TABLE 1

ACTION-SPECIFIC ARARS FOR D-6, SMALL ARMS RANGE
 MCB CAMP LEJEUNE, NORTH CAROLINA
 PAGE 15 OF 15

Action	Requirements	Prerequisite	Citation
	<p>In order to qualify for the exemption in paragraphs (d)(1)(i) and (ii), a sample collector shipping samples to a laboratory must:</p> <ul style="list-style-type: none"> • Comply with U.S. DOT, U.S. Postal Service, or any other applicable shipping requirements • Assure that the information provided in (1) thru (5) of this section accompanies the sample. • Package the sample so that it does not leak, spill, or vaporize from its packaging. 		<p>40 CFR 261.4(d)(2)(i)(A) and (B) 15A NCAC 13A .0106</p>

- ARAR = applicable or relevant and appropriate requirement
- CFR = Code of Federal Regulations
- DEACT = deactivation
- DOT = U.S. Department of Transportation
- EPA = U.S. Environmental Protection Agency
- HMR = Hazardous Materials Regulations
- HMTA = Hazardous Materials Transportation Act
- LDR = Land Disposal Restrictions
- NCAC = North Carolina Administrative Code
- N.C.G.S. = North Carolina General Statutes
- RCRA = Resource Conservation and Recovery Act of 1976
- TBC = to be considered
- TCLP = Toxicity Characteristic Leaching Procedure
- UTS = Universal Treatment Standard