SECTION 4

Descriptions of ESI Sites

The following sections discuss the site history, summary of previous investigations, and future activities of the 3 MMRP sites which are in the ESI phase of the CERCLA process.

4.1 MMRP ESI Sites

4.1.1 UXO-14—Indoor Pistol Range (ASR #2.199) and Gas Chamber (ASR #2.200)

Site UXO-14, the Indoor Pistol Range and Gas Chamber, encompasses less than 1 acre within the Rifle Range area of the Base (**Figure 4-1**). The Indoor Pistol Range (Building RR-53) was reportedly in use from 1950 to 1996. During operation of the range, small arms were used to fire at a fixed target. The Gas Chamber (Building RR-63) was reportedly in use from 1950 through 1954, and is thought to have primarily used tear gas.

FIGURE 4-1
MMRP Site UXO-14, ASR #2.199 and ASR #2.200

Previous investigations are listed in **Table 4-1.**

TABLE 4-1
Previous Investigations Summary, MMRP Site UXO-14, ASR #2.199 and #2.200

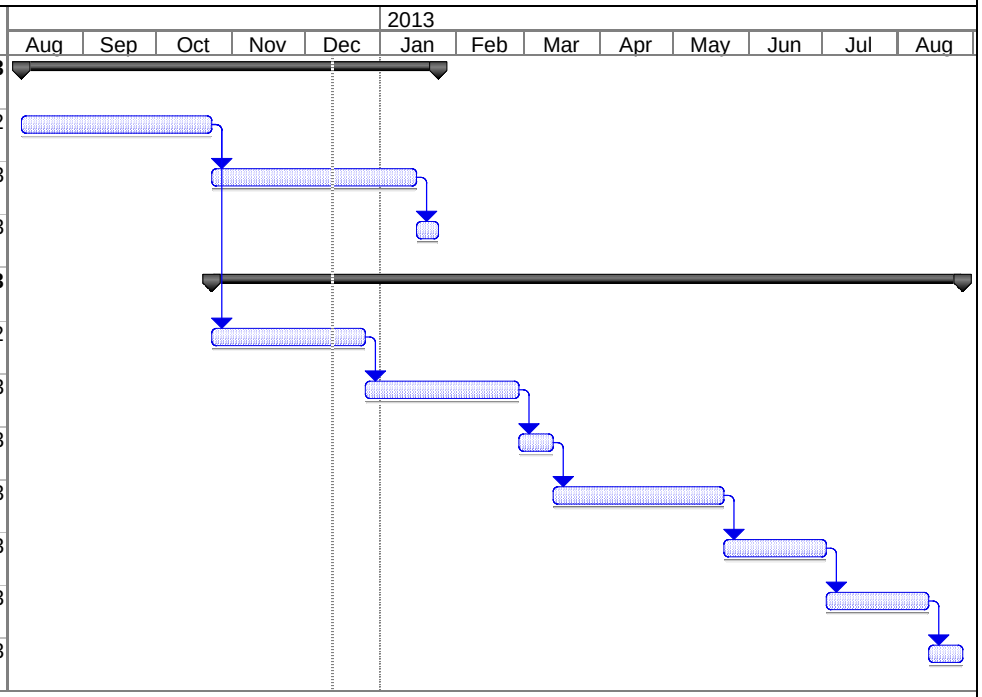
Previous Investigation/Action	Date	Activities
PA/SI (CH2M HILL, 2011)	2009 - 2011	A field investigation was conducted to identify the presence and nature of MC contamination and evaluate the number and density of anomalies that represent potential subsurface MEC. Field activities included soil and groundwater sampling and 10 percent DGM. Samples were analyzed for metals and SVOCs. Potentially unacceptable human health risks were identified due to exposure to antimony, mercury, and lead in soil. No unacceptable ecological risks were identified. 17 geophysical anomalies were present at the site, and an intrusive investigation was recommended.
ESI (CH2M HILL, 2012)	2011 - 2012	An ESI was conducted to evaluate potentially unacceptable human health risks previously identified in soil at the former Indoor Pistol range and assess the nature of geophysical anomalies in the former Gas Chamber area. Field activities included an intrusive investigation and surface and subsurface soil sampling for antimony, lead, and mercury. Potentially unacceptable human health and ecological risks were confirmed due to exposure to lead and antimony in soil at the Indoor Pistol Range. No MEC was identified during the intrusive investigation at the former Gas Chamber. No further investigation of the Gas Chamber and an interim action and/or a RI/FS to address antimony and lead in soil at the Indoor Pistol Range was recommended.
EE/CA (CH2M HILL, 2012)	2012	The EE/CA evaluated alternatives for a NTCRA to address potential unacceptable risks from antimony and lead in soil. The alternatives were no action, excavation and offsite disposal, and *in situ* soil stabilization with excavation and offsite disposal.

4.1.1.1 Future Activities

An AM will be finalized in FY 2013 followed by a NTCRA (**Schedule 4-1**).

Schedule 4-1
MMRP Site UXO-14 ASR# 2.199
FY 2013 Site Management Plan
MCIEAST-MCB CAMLEJ

ID	Task Name	Duration	Start	Finish
1	**Action Memorandum**	**123 days**	**Tue 8/7/12**	**Thu 1/24/13**
2	Draft AM	56 days	Tue 8/7/12	Tue 10/23/12
3	Review Period	60 days	Wed 10/24/12	Tue 1/15/13
4	Final AM	7 days	Wed 1/16/13	Thu 1/24/13
5	**NTCRA**	**220 days**	**Wed 10/24/12**	**Tue 8/27/13**
6	Draft Work Plan	45 days	Wed 10/24/12	Tue 12/25/12
7	Review Period	45 days	Wed 12/26/12	Tue 2/26/13
8	Final Work Plan	10 days	Wed 2/27/13	Tue 3/12/13
9	NTCRA	50 days	Wed 3/13/13	Tue 5/21/13
10	Draft Report	30 days	Wed 5/22/13	Tue 7/2/13
11	Review Period	30 days	Wed 7/3/13	Tue 8/13/13
12	Final Report	10 days	Wed 8/14/13	Tue 8/27/13

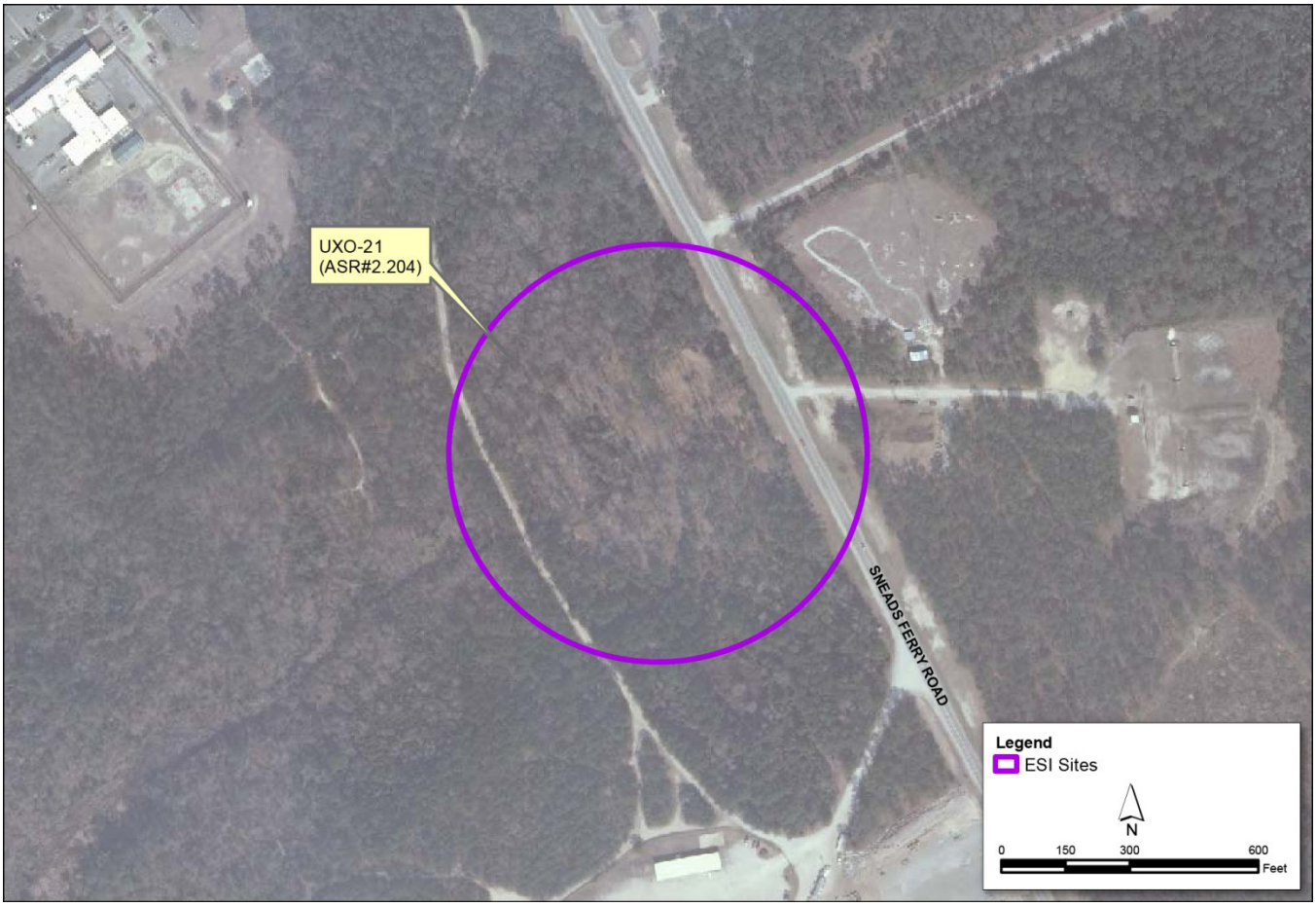


Task		Milestone		External Tasks	
Split		Summary		External Milestone	
Progress		Project Summary		Deadline	

4.1.2 UXO-21—Gas Chamber (2D MAR DIV) (ASR #2.204)

The Former Tear Gas Chamber, 2nd Marine Division site encompasses 17 acres and was used as a gas chamber in the 1970s (**Figure 4-2**). Based on the operational history of the site, chemical warfare training agents (tear gas) would have been used. Other chemical training items, including war gas identification sets and riot control hand grenades, may have been used in the area surrounding the gas chamber. Adjacent and overlapping ranges that may have impacted Site UXO-21 include the Combat Area/Impact Area located east of Sneads Ferry Road, the F-6 Live Grenade Range (ASR #2.55), the F-13 Flame Thrower Range (ASR #2.139), the F-7 Flame Thrower Range (ASR #2.128), and the F-13 Field Firing Range (ASR #2.54).

FIGURE 4-2
MMRP Site UXO-21, ASR #2.204



Previous investigations are listed in **Table 4-2**.

TABLE 4-2
Previous Investigations Summary, MMRP Site UXO-21, ASR #2.204

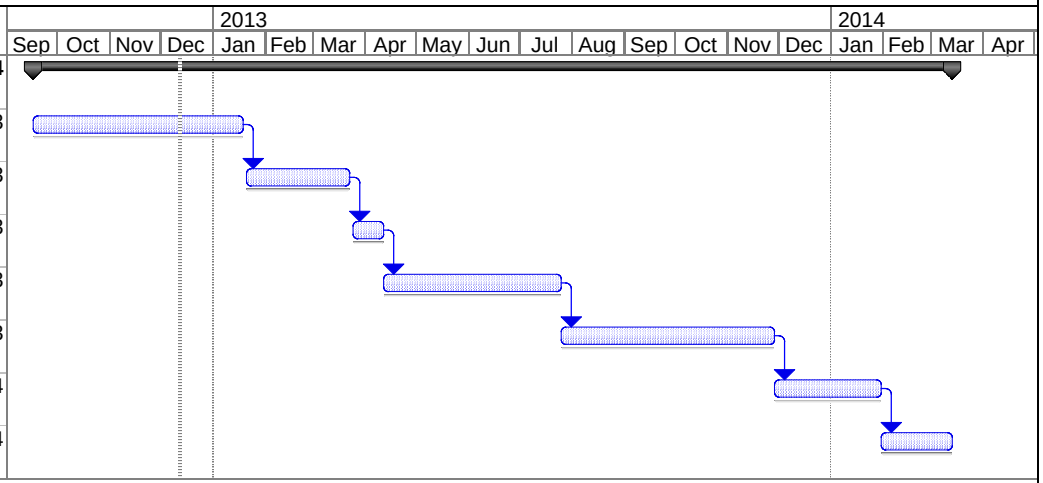
Previous Investigation/Action	Date	Activities
PA / SI (CH2M HILL, 2011)	2007 - 2011	In support of MILCON activities a PA/SI was conducted in a phased approach. In the interior 5-acre area of the site, soil and groundwater sampling and DGM were conducted as part of Phase I field activities. Samples were analyzed for VOCs, SVOCs, tear gas constituents, and metals. 569 geophysical anomalies representing potential subsurface MEC were identified during Phase I DGM. An intrusive investigation was conducted and approximately 6 percent of the anomalies were determined to be MPPEH. MPPEH was inspected, identified as MDAS, and removed for offsite disposal. Phase II field activities included 10 percent DGM of the surrounding 9.5 acres and soil, groundwater, surface water, and sediment sampling for VOCs, SVOCs, explosives, perchlorate, and metals. 738 geophysical anomalies that represented potential subsurface MEC were identified during Phase I DGM. No unacceptable human health or ecological risks were identified from exposure to environmental media; however, further investigation of the geophysical anomalies identified during Phase II DGM was recommended.
ESI (CH2M HILL, 2012)	2011 - 2012	An ESI was conducted to further assess the nature and extent geophysical anomalies identified during Phase II of the PA/SI. Field activities included an intrusive investigation of the 1,307 geophysical anomalies identified during the PA/SI. One MEC item was discovered and destroyed through a controlled detonation and more than 60 MPPEH items were identified. Additional DGM and an intrusive investigation were recommended to define the extent of MEC/MPPEH beyond the boundaries of Site UXO-21.

4.1.2.1 Future Activities

A Phase 2 Expanded ESI is planned in FY 2013 to address the recommendations from the Expanded SI (**Schedule 4-2**). DGM and intrusive investigation activities in support of MILCON for Sneads Ferry Road and utility improvements and a tank trail are also being conducted and the results will be incorporated in the Phase 2 Expanded ESI.

Schedule 4-2
MMRP Site UXO-21 ASR# 2.204
FY 2012 Site Management Plan
MCIEAST-MCB CAMLEJ

ID	Task Name	Duration	Start	Finish
1	**Phase 2 Expanded SI**	**389 days**	**Mon 9/17/12**	**Thu 3/13/14**
2	Draft UFP-SAP	90 days	Mon 9/17/12	Fri 1/18/13
3	Review Period	45 days	Mon 1/21/13	Fri 3/22/13
4	Final UFP-SAP	14 days	Mon 3/25/13	Thu 4/11/13
5	Field Investigation	75 days	Fri 4/12/13	Thu 7/25/13
6	Draft Report	90 days	Fri 7/26/13	Thu 11/28/13
7	Review Period	45 days	Fri 11/29/13	Thu 1/30/14
8	Final Report	30 days	Fri 1/31/14	Thu 3/13/14

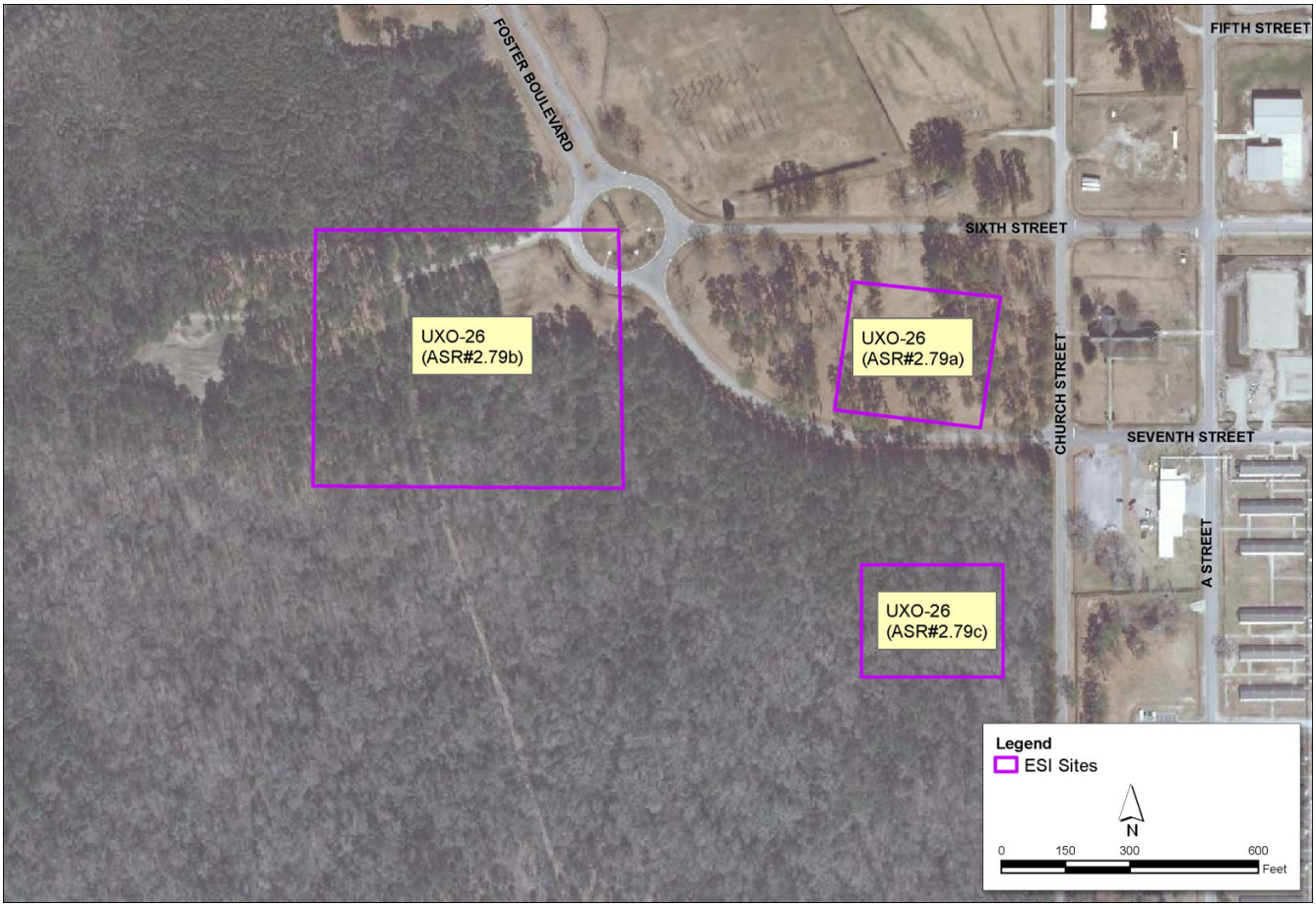


Task		Milestone		External Tasks	
Split		Summary		External Milestone	
Progress		Project Summary		Deadline	

4.1.3 UXO-26—B-3 Gas Chamber (ASR #2.79a, #2.79b, and #2.79c)

Site UXO-26, the Former B-3 Gas Chamber, was formerly part of Site UXO-01. The B-3 Gas Chamber is located at the main entrance of the New River Air Station. The site encompasses approximately 14 acres (**Figure 4-3**). The B-3 Gas Chamber facility was used between 1953 and 1958. As part of operational training activities chemical agents (CAs), war gas identification sets, and riot control hand grenades may have been used.

FIGURE 4-3
MMRP Site UXO-26, ASR #2.79a, #2.79b, and #2.79c



Previous investigations are listed in **Table 4-3**.

TABLE 4-3
Previous Investigations Summary, MMRP Site UXO-26, ASR #2.79a, #2.79b, and #2.79c

Previous Investigation/Action	Date	Activities
PA/SI (CH2M HILL, 2009)	2008 - 2009	A field investigation was conducted to identify the presence and nature of MC contamination and evaluate the number and density of anomalies that represent potential subsurface MEC. Field activities included soil, groundwater, surface water, and sediment sampling and 10 percent DGM. Samples were analyzed for SVOCs, including tear gas constituents, explosives, metals, and perchlorate. No unacceptable human health or ecological risks were identified in site media. 353 geophysical anomalies were present at the site, and an intrusive investigation was recommended.
Expanded SI (CH2M HILL, 2012)	2011-2012	The ESI field investigation was completed to assess, through intrusive investigation, the nature of the 353 geophysical anomalies identified during the PA/SI. No MPPEH

		was found during the intrusive investigation of areas ASR #2.79a or ASR #2.79c. In the ASR #2.79b area, M6A3 2.36-inch rockets, rocket motors, and pieces of rockets were found indicating a potential target area. However, Base Range Control identified the area encompassing ASR #2.79b to be re-opened. If the area is re-opened, it will fall under the responsibility and management of Range Control and MEC clearance activities were recommended to minimize explosive risks. If the area is not re-opened, an RI is recommended under the MMRP for ASR #2.79b. Additionally, it was recommended to maintain the existing warning signs and conduct a surface sweep for MEC/MPPEH to minimize explosive risks.

4.1.3.1 Future Activities

Base Range Control identified the area encompassing ASR #2.79b to be re-opened and future activities are pending approval.