

APPENDIX C

Standard Operating Procedures for OE Support Services

Standard Operating Procedures for Ordnance Explosives (OE) Support Services at AFWTF, Vieques Island, Puerto Rico

Introduction

CH2M HILL is under contract to conduct RFI activities in Eastern Vieques Island, Puerto Rico to provide data needed in support of these environmental remediation activities.

The OE firm (hereinafter referred to as the "subcontractor" will support CH2M HILL's brush clearing and sampling efforts for this project by providing onsite OE support during all field activities, which will include brush clearing, electromagnetic surveys (EM), surface and subsurface soil sampling, subsurface drilling, surveying of the sampling points/ wells, and access to these areas. The OE team will not remove, handle, or destroy any OE/UXO that is encountered. The subcontractor will comply with the health and safety requirements specified by CH2M HILL's Health & Safety Plan, at a minimum, as well as any H&S Procedures that are specified to the subcontractor's specialized services; these will be included in the subcontractor's UXO work plan described below.

UXO Support Services Required

Subcontractor Tasks - Ordnance Explosives (OE) Avoidance

The subcontractor shall provide a two-person OE team to provide on-site OE avoidance support during all brush clearance, sampling activities, which include surface and subsurface soil sampling, surveying of sampling points and installation and sampling of monitoring wells. The subcontractor OE team will be comprised of a minimum of a UXO Technician III as Team Leader and a UXO Technician II as team member. The OE team will not remove, handle, or destroy any OE or unexploded ordnance (UXO) encountered. The OE team will report all OE/UXO to CH2M HILL, who in turn will request assistance from the Roosevelt Roads Navy EOD Team, Todd Enders point of contact, for proper removal and disposal.

The subcontractor OE Team will be comprised of a minimum of a UXO Technician III and a UXO Technician II. Resumes, medical surveillance, and OSHA 40-hour training certificates of the OE Team personnel must be provided to the CH2M HILL UXO Safety Officer prior to mobilization.

OE Team Composition and Qualifications

- *1.1X0 Team Leader.* This individual will be a UXO Technician III and will be the technical lead directly responsible for all OE avoidance activities at each project site. This person must have documented experience in supervising range clearance operations and supervising personnel. This individual must be a graduate of the U.S. Army Bomb

Disposal School, Aberdeen Proving Ground, Maryland or the Naval Explosive Ordnance School at Indian Head, Maryland and have at least 10 years of combined military active duty EOD and contractor UXO experience.

- *LIXO Team Member.* This individual must be a UXO Technician II and a graduate of the U.S. Army Bomb Disposal School, Aberdeen Proving Ground, Maryland U.S. Naval Explosive Ordnance School at Indian Head, Maryland. As an exception, a UXO Technician II may be an UXO Technician I that is a graduate of the EOD Assistants Course, Redstone Arsenal, Alabama, the EOD Assistants Course Eglin Air Force Base, Florida, or a DOD certified equivalent course with at least five years (combined) active-duty military EOD and contractor UXO experience.

Responsibilities and Authority. The OE team will provide the explosive ordnance recognition, location, and safety function for all contractor personnel onsite. The OE Team Leader has final authority for onsite personnel regarding all matters pertaining to OE/UXO.

Task 1- Work and Safety Plans. The OE team will follow their approved OE Safety and Health Plan which is appended as Appendix D in CH2M HILL's Work Plan for these 4 RI/FS activities. The UXO Team Leader will conduct safety briefings for all site personnel and visitors.

Task 2 - Mobilization/Demobilization.

Upon notice to proceed, provide all necessary personnel and equipment to accomplish the scope of work.

Task 3 - OE Avoidance

Clear Access Routes to Sampling Locations.

- a. Prior to brush clearing, the OE Team shall conduct a reconnaissance of the area to be cleared. Only after this area has been inspected and approved for further activities by the UXO Team Leader, shall movement into the area, drilling or sampling activities commence.
- b. Prior to sampling or well drilling crews going onsite, the OE Team shall conduct a reconnaissance of the sampling and drilling areas. The reconnaissance shall include locating a clear path for the sampling crews, vehicles and equipment to approach the site. The approach path, at a minimum will be twice the width of the widest vehicle. The contractor will clearly mark all boundaries of the cleared approach path to prevent personnel from straying into un-cleared areas. No personnel shall be allowed outside the cleared paths.
- c. If OE/UXO is encountered on the surface, divert the approach around the OE/UXO, clearly, mark the area and report the OE/UXO.
- d. A magnetometer shall be used to insure there is no subsurface UXO within the approach paths. If an magnetic anomaly is encountered, assume it to be a UXO and divert the path around the anomaly. Only UXO personnel shall identify UXO and operate the magnetometer.

Soil Sampling/Well Installation Sites.

- a. The OE team shall locate magnetic anomaly areas for soil samples and well drilling. If a pre-selected area indicates magnetic anomalies, a new sampling site will be chosen.
- b. The Contractor will clearly mark the boundaries of the cleared soil sampling. Personnel will not go outside the cleared area. As a minimum, the cleared area will be a square, with a side dimension equal to twice the length of the largest vehicle or piece of equipment to be bought onsite.
- c. Prior to drilling equipment being moved to the proposed well location, the OE Team shall locate a magnetic anomaly free site. This shall be accomplished using a magnetometer with down-hole monitoring capabilities. The OE Team will direct the beginning of the borehole, which will be started with a hand held or portable auger. At not more than a two foot depth, the auger will be withdrawn and the magnetometer will be lowered into the borehole. This procedure will be used to insure that smaller items of UXO, undetectable from the surface, can be detected. If no magnetic anomalies are found, the procedure will be repeated at two foot intervals to the maximum depth of the auger, but not less than 4 feet. If the proposed borehole site is free of magnetic anomalies, the drilling equipment may be bought onsite and utilized. Borehole monitoring with the magnetometer shall continue at two foot intervals, until the sampling is completed.

SAFETY and Quality Assurance

The subcontractor must provide the CH2M HILL UXO Safety Officer a current SAFETY EMR below industry averages to be eligible for this solicitation. The OA Health and Safety plan provided by the sub-contractor is appended as Appendix D.

The site is considered a hazardous waste site. Therefore, the subcontractor will comply with 29 CFR 1910.120; the OSHA regulations for the protection of hazardous waste workers. The subcontractor may refer to CH2M HILL's Health and Safety Plan for a description of site conditions at the project site, including safety of all personnel and property during performance of the work. Subcontractor personnel must be on a medical surveillance program and have current physicals.

Workmanship

The subcontractor will provide all necessary tools, support equipment, and ancillary materials needed to complete the work described herein. The subcontractor will perform all work necessary to move personnel and equipment in and out of the site, set up equipment, and restore the site to its original condition. To the extent possible, the site will be left in the condition in which it was found.

Task 4 - Report

The subcontractor shall prepare a final report that includes daily activities, UXO identified (complete description required: For example: 105mm HE Projectile with M51 Point Detonating Fuze, Fired and Fuze Armed), any problems, and lessons learned.

References

DOD 6055.9-STD	DOD Ammunition and Explosives Safety Standards
OPNAVINST 8020.14	Department of the Navy Explosives Safety Policy
NAVSEA OP 5 Vol 1	Ammunition and Explosives Ashore: Safety Regulations for Handling, Storing, Production, Renovation and Shipping
Interim Guidance Document 00-03	Basic Safety Concepts and Considerations for OE Operations, U.S. Army Corps of Engineers OE Center of Excellence