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From: Director, BRAC Program Management Office, West
To: Commanding Officer, Naval Ordnance Safety and Security Activity (Code N53)

Subj: EXPLOSIVES SAFETY SUBMISSION (ESS) MUNITIONS RESPONSE ACTION, WESTERN MAGAZINE AREA AT MARE ISLAND NAVAL SHIPYARD, VALLEJO, CA – CORRECTION 1 – JANUARY 2010

Ref: (a) NAVSEA OP5 Revision 7
(b) DOD Instruction 6055.09-STD
(c) NOSSA Letter Ser N54-TD/7025 of 27 November 2006

Encl: (1) Correction 1 to the Explosives Safety Submission for the Munitions Response Action at the Western Magazine Area at Mare Island Naval Shipyard, Vallejo, CA

1. The Explosives Safety Submission (ESS) Correction 1 found in enclosure (1) was prepared using the guidelines provided in references (a) and (b). The correction is necessary to support the completion of the munitions response action at the Western Magazine Area at former Mare Island Naval Shipyard, Vallejo, California. The existing ESS was approved by reference (c) in November 2006. The investigation of anomalies along the perimeter of wetland areas at the Western Magazine is required to demonstrate that all MEC and radiological items have been removed from the site.

2 The work is being performed by Weston Solutions, Inc., directed by BRAC PMO. The findings of the Removal Action will be incorporated into an After Action Report.

3. The investigation of wetland area anomalies is scheduled to commence as soon as approval is received to support project completion.

4. The point of contact is Ms. Brooks Pauly who may be reached at (619) 532-0789.

MICHAEL S. BLOOM
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By direction of the Director

Explosives Safety Submission

Munitions Response Action

Western Magazine Area

Former Mare Island Naval Shipyard Vallejo, California

Correction 1 to Amendment 1 (dated July 2006)

January 2010

Prepared for:
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and

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Prepared under:
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TABLE OF CONTENTS

NOTE

Correction 1 to the ESS incorporates the changes required to evaluate previously unsurveyed wetland areas within the original Western Magazine Area munitions response site boundary for additional munitions and explosives of concern (MEC) and low-level radiological (RAD) items.

The identification of MEC and RAD items located near the perimeter of the Wetland Area (Munitions Response Site 5) not included in the original digital geophysical mapping (DGM) surveys. Although there is no evidence to indicate that MEC or RAD exists in the wetland areas, regulatory agency concern has resulted in the need to perform additional investigations within wetland area located within the original Western Magazine Area site boundary. No provision was made in the original ESS submission for DGM surveys of the Wetland Area. This ESS Correction incorporates the provision to perform additional anomaly location and investigation within the Wetland Area utilizing a "mag and flag" approach similar to that recently utilized at adjacent Installation Restoration Site 05 on Mare Island. The mag and flag anomaly investigation will be completed within the Western Magazine Area boundary and therefore will not require an expansion of the currently approved exclusion zone described in the existing ESS.

Vegetation in the wetland areas is dominated by pickleweed, which is the preferred habitat for the endangered salt marsh harvest mouse. Therefore, man-portable survey instruments and hand tools are the preferred choice for identifying and investigating anomalies in order to minimize disturbance to the habitat.

The following is a summary of ESS changes:

1. *Section 6.1 – Added the provision to perform additional anomaly location and removal utilizing a "mag and flag" approach in the Wetland Area (MRS 5) of the Western Magazine Area.*

The pages affected by Correction 1 are: the cover and pages i, ii (new), 6-3 and 6-5.

implemented as a QC tool to verify that detected anomalies have been completely removed.

The proposed survey instruments were evaluated by the Naval Surface Warfare Center at Dahlgren Virginia (NOSSA, 2005) with regard to Hazards of Electromagnetic Radiation to Ordnance (HERO). The G858, and the GeoVizor system utilizing an G858 sensor/electronics unit, will not produce measurable electromagnetic radiation during normal operation and therefore poses no HERO concerns. The EM-61 system operating at an average power level will necessitate a safe separation distance of 1 foot (0.3 meters) be maintained between the coils and the soil surface. HERO warning labels will be affixed to the EM-61 indicating the required standoff distance.

Although the Wetland Area (MRS 5 in Figure 2-3) is not believed to represent a munitions concern for the following reasons (SSPORTS, 1997a), a "mag and flag" investigation of wetland perimeter area anomalies will be completed as described in Section 6.1 to address regulatory agency concerns regarding the potential presence of MEC within the wetland areas:

- There is no historical evidence of munitions being discarded there.
- No munitions had ever been encountered in the wetland areas.
- Due to its present and future classification as endangered species habitat.

Search instruments were selected to represent the best available technology to locate the expected anomalies at depths characteristic for each of the areas. Capabilities of the EM-61 and G-858 systems will be verified at a nearby 100 x 100 foot open area GPO test area established in representative soil conditions (Figure 2-4). A second GPO test area will be established under one of the WMA magazines to verify capabilities of the GeoVizor system to locate anomalies in a building footprint environment (Figure 2-5). Blind seeding of test plot targets representing the range of potential MEC items will be utilized to verify the combined capabilities of the system and operator. The proposed seed items are listed in Tables 6-1 and 6-2.

The GPO test areas will be developed to duplicate, as closely as possible, the conditions under which the geophysical surveys will be conducted. Representative inert ordnance will be used as

coordinates for each data point in the final version of geophysical data. Many factors affect DGPS accuracies, including PDOP, SNRs, base-station geodetic coordinate accuracies, carrier-phase ambiguity resolution, etc.

6.1 INVESTIGATION OF WETLAND AREA (MRS 5) ANOMALIES

A "mag and flag" investigation of selected anomalies in a 25-foot wide band around the perimeter of wetland areas within MRS 5 will be completed as an investigation action to determine whether the potential presence of MEC or RAD within the wetland areas is a realistic concern. Anomalies will be located using handheld geophysical survey instruments (AN-19/2 metal detector or Schonstedt magnetometer, dependent on whether items already identified in a particular area were predominantly ferrous or non-ferrous). All anomalies located within 100 feet of a previously identified MEC item will be investigated; a minimum 20% of all remaining wetland area anomalies will be selected for investigation. Should MEC be identified, all remaining anomalies within 25-feet and/or the nearest adjacent anomalies will be investigated. This investigation criteria is considered appropriate in consideration of the previous removal actions already completed adjacent to the wetland areas, and the extensive review of historical data that indicated no evidence of human intrusion into the wetland areas.

Selected anomalies will be exposed using hand tools under the oversight of a biological monitor. Surrounding soil may be removed using an excavator or backhoe to provide access to an anomaly only when necessary, and only after any mitigation measures required by the biological monitor have been taken to minimize environmental impact. Anomalies will be investigated to a minimum radius of 2 feet and to a maximum depth of 4 feet. Encountered MEC will be removed regardless of depth. Metallic debris may be left in place only if it cannot feasibly be removed and only after a determination that it does not represent potential MEC. The location of anomalies identified using the "mag and flag" approach will be documented using a handheld Trimble GeoXH GPS receiver that provides sub-meter accuracy.

Satisfactory operation of the AN-19/2 and Schonstedt handheld instruments will be verified daily at an established onsite test area. Any inability of an instrument to locate a test item will be corrected before the instrument is used.