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TECHNICAL MEMORANDUM REGARDING SUMMARY OF MUNITIONS RESPONSE  
INVESTIGATION NEW RIVER RUNWAY EXPANSION AREA SITE UNEXPLODED  
ORDNANCE 29 (UXO 29) MCB CAMP LEJEUNE NC  
06/19/2014  
CH2M HILL

# Summary of the Munitions Response Investigation at the Marine Corps Air Station New River Runway Expansion Area within and adjacent to Site UXO-29, Marine Corps Installations East - Marine Corps Base Camp Lejeune

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N62470-11-8012 Contract Task Order WE5A

This technical memorandum presents a summary of munitions response (MR) activities conducted in support of the Marine Corps Air Station (MCAS) New River - Runway Expansion Area military construction (MILCON) project within and adjacent to Military Munitions Response Program (MMRP) Site UXO-29, Marine Corps Installations East-Marine Corps Base Camp Lejeune (MCIEAST-MCB CAMLEJ), North Carolina.

The purpose of the MR activities was to reduce the potential for encountering munitions and explosives of concern (MEC) and material potentially presenting an explosive hazard (MPPEH) during future MILCON activities.

## Site Background and History

The munitions response area (MRA) boundary was established to coincide with the MILCON boundary, which encompasses approximately 10.4 acres south of MCAS New River. The MRA is located on the west bank of Morgan Bay, which is connected to the New River (**Figure 1**). Approximately 2 acres of the MRA lies within MMRP Site UXO-29. According to the *Final Range Identification and Preliminary Range Assessment* (USACE, 2001a) and the Archives Search Report (ASR) (USACE, 2001b), Site UXO-29 covers approximately 182 acres and is composed of the following historical terrestrial ranges:

- ASR #2.29, former Infantry Weapons Demonstration Course, B17<sup>1</sup>
- ASR #2.1, former Artillery Training Area (1941)
- ASR #2.167, former Hand Grenade Range (Practice) Demonstrator, M113

The MRA is divided into two munitions response sites (MRSs). MRS 1 (9.2 acres) contains an area of approximately 2,600 linear feet where a roadway, buried utilities, and fence line will be constructed. Approximately 75 cubic yards of stockpiled soil are present within MRS 1. MRS 2 (0.7 acre) contains approximately 125 cubic yards of stockpiled soil. The two MRSs are connected by 0.4 acres of land that did not receive a munitions response.

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<sup>1</sup> Although historical ranges ASR #2.1 and 2.167 are within MMRP Site UXO-29, only ASR #2.29 crosses the MRA.

The extents of Site UXO-29, the MRA, and the MRS boundaries are displayed on **Figure 1**. The soil stockpiled at MRSs 1 and 2 originated from initial MILCON earth-disturbing activities. Three 2.36-inch practice bazooka rounds were discovered during initial construction activities performed by MILCON contractors, halting construction on May 2, 2013. The incident report provided by MCIEAST-MCB CAMLEJ did not provide nomenclature, noting only that the Explosive Ordnance Disposal (EOD) unit classified the items as “No Hazard”. The EOD unit responded to each practice bazooka round discovery. It is assumed that the MEC and MPPEH found during the MILCON activities originated from the former Infantry Weapons Demonstration Course, B-17 (ASR #2.29).

## Investigation Activities and Results

The following field activities were conducted from October through November 2013:

- Site preparation
- 100% digital geophysical mapping (DGM) anomaly reacquisition over roadway, utility, and fence line scheduled to be constructed
- Intrusive investigation of geophysical anomalies representing potential subsurface MEC
- Manual processing of 200 cubic yards of stockpiled soil using analog geophysical surveys and anomaly investigation (mag-and-dig) methods
- Demolition and demilitarization of MEC and MPPEH and post-detonation soil sampling for munitions constituents (MC)

All field activities were conducted in accordance with the Work Plan (CH2M HILL, 2013a) and Explosives Safety Submission (ESS) (CH2M HILL, 2013b). The investigation activities and results are described in the following subsections.

### Site Preparation

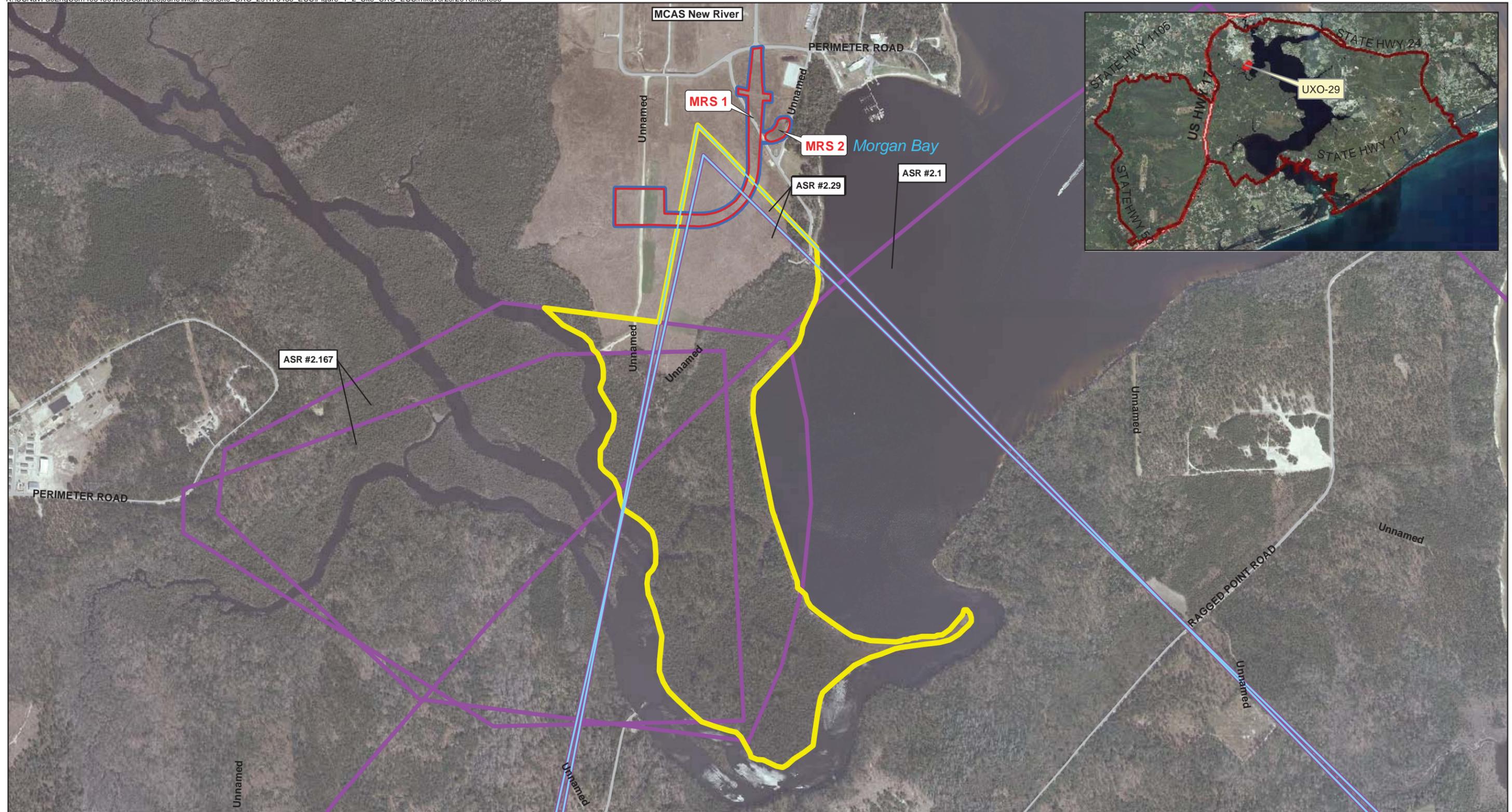
Site preparation activities were conducted under MEC and anomaly avoidance procedures performed by an unexploded ordnance (UXO) technician. Vegetation reduction was performed using mowers and string trimmers where necessary. A professional land surveyor installed temporary land survey control points, conducted a boundary survey, and set up a 50-meter by 50-meter grid network.

To identify buried utilities, a third-party utility locate was performed that included a records search and field marking of all observed buried utilities.

### Digital Geophysical Mapping Survey

DGM was conducted using a single coil Geonics EM61-MK2 in man-portable mode across 100 percent of the future roadway area, utility line, and fence line. The DGM survey resulted in the identification and selection of 1,536 subsurface anomalies as representing potential subsurface MEC. The DGM survey report is presented in **Attachment A**. A professional land surveyor reacquired all of the selected anomalies.

An EM61-MK2, which is capable of detecting shallow ferrous and non-ferrous objects, was used for all DGM surveys. The EM61-MK2 can reliably detect 60-millimeter (mm) cartridges or larger at depths of up to 2 feet below ground surface (USACE, 2003).



- Legend**
- ▭ MRS Boundary
  - ▭ MRA Boundary
  - ▭ ASR #2.29 B-17, Former Infantry Weapons Demonstration Course
  - ▭ Historic Ranges
  - ▭ Site UXO-29 Boundary - 182 acres

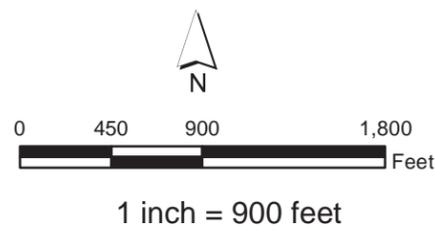


Figure 1  
 Site Map  
 MCAS New River - Runway Expansion Area  
 Technical Memorandum  
 MCIEAST-MCB CAMLEJ  
 North Carolina



## Intrusive Investigation

The intrusive investigation consisted of excavating 1,537 subsurface anomalies, processing 200 cubic yards of soil, and managing and disposing of recovered MEC and MPPEH. The intrusive investigation was performed by UXO technicians who manually investigated each DGM- or analog-detected anomaly.

UXO technicians used a mag-and-dig approach to process stockpiled soil. UXO technicians interrogated the slope of the stockpiled soil, manually investigated all detected anomalies. Once a slop has been investigated earth-moving heavy equipment was then used to pull off the top 2 feet layer of soil. The process was repeated in until stockpiled soil was processed.

Eight MEC items and 129 MPPEH items were identified during investigation of the DGM-identified anomalies and from the stockpiled soil:

- **MEC**
  - Rocket, 2.36-inch, high-explosive anti-tank (HEAT), M6 (5)
  - Projectile, 81-mm, white phosphorus (WP), M57 (3)
- **MPPEH** (all items were expended and later classified as material documented as safe [MDAS])
  - Grenade, Hand, WP, M34 (1)
  - Grenade, Rifle, Practice, M7 (2)
  - Projectile, 60-mm, M49 (2) and Projectile, 60-mm, Tail boom only, M49 (31)
  - Projectile, 60-mm, M83 (4) and Projectile, 60-mm, Tail boom, only, M83 (11)
  - Projectile, 81-mm, WP, M57 (3) and Projectile, 81-mm, Tail boom only, M57 (48)
  - Rocket, 2.36-inch, Practice, M7 (183) and Motors only from Rocket, 2.36-inch, Practice, M7 (35)
  - Rocket, 2.36-inch, HEAT, M6 (1)

The results of the intrusive investigation are summarized in Table 1 and the distribution of types of anomaly sources is illustrated in **Figure 2** and **Figure 3**.

TABLE 1  
**Summary of MEC Intrusive Investigation Results**

Item Classification <sup>a</sup>	Number of DGM Anomalies	Number of Anomalies within Stockpiled Soil	Total (%)
Facility resource <sup>b</sup>	27	0	1.6
MDAS	315	20	19.2
MEC	8	0	0.5
No contact	20	0	1.2
Non-Munitions Related Debris	1,087	84	71.4
Quality Control Seed	9	0	0.5
Shared Target <sup>c</sup>	91	0	5.5
<b>Total</b>	<b>1,537</b>	<b>104</b>	

<sup>a</sup> A detailed list of the results from intrusive investigation of the DGM selected anomalies is provided in in **Attachment B**.

<sup>b</sup> A facility resource is an anomaly caused by a man-made structure used by MCAS New River (for example, silt fence or underground utility)

<sup>c</sup> A shared target is documented when the results of a multiple singular DGM selected anomalies are associated with a single item.

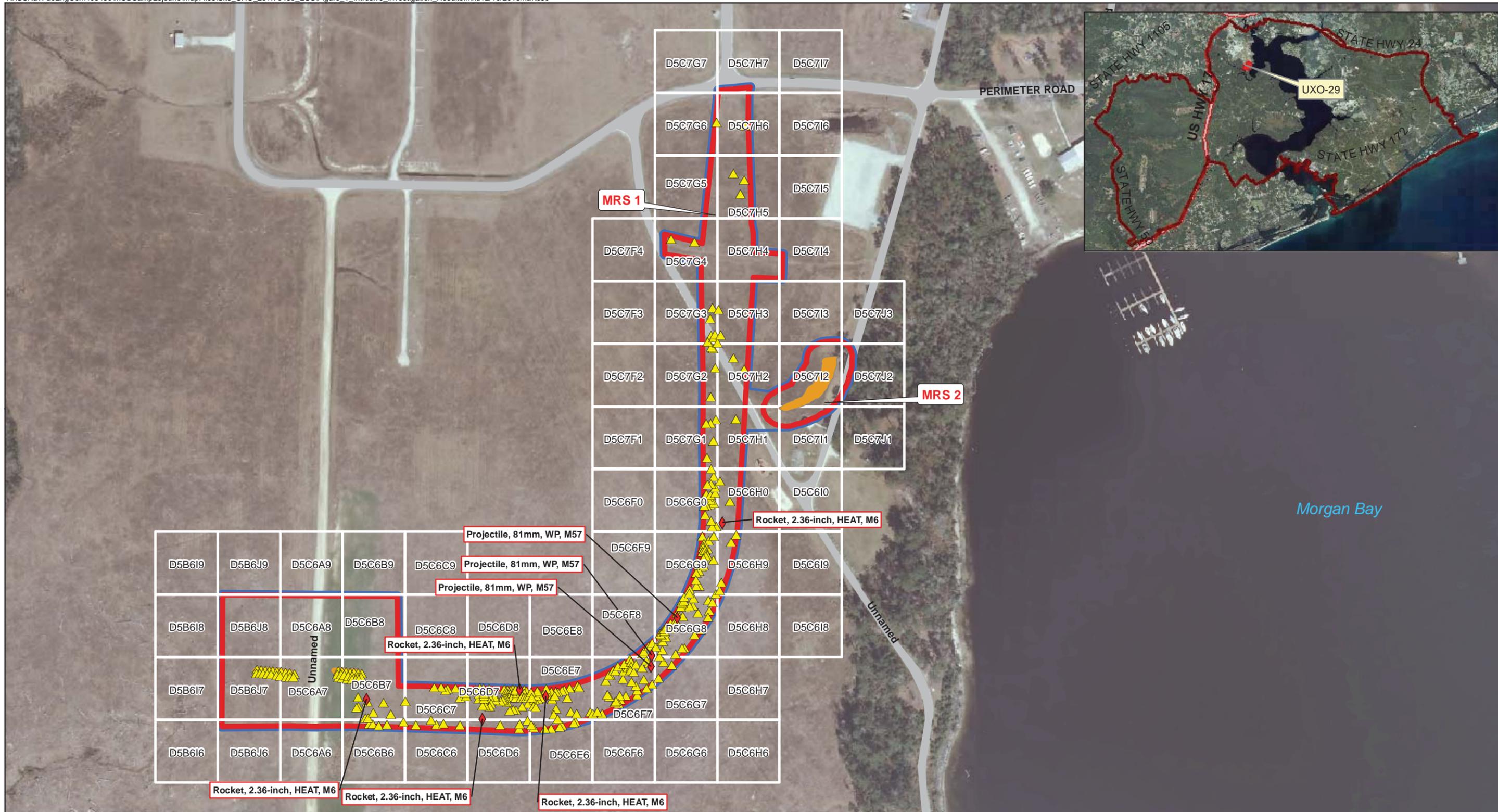
The recovered MEC items were demolished onsite using blow-in-place techniques with donor explosives in accordance with the ESS (CH2M HILL, 2013b).

MPPEH that could not be fully visually inspected to confirm all crevices were free of explosive hazards were vented onsite using donor explosives. Approximately 100 MPPEH items required explosive venting. MPPEH that could pass the 100 percent visual inspections were categorized as MDAS. A total of 548 pounds of MDAS was shipped to Bonetti Explosives in Columbus, Texas, for witnessed disposal by thermal treatment following intrusive investigation. **Attachment C** contains the chain of custody and MDAS documentation.

The non-munitions related debris consisted of metallic scrap metal, municipal waste, and construction debris and was disposed of at a local waste facility.

### **Quality Control Assessments**

Quality control (QC) consisted of observation inspections, post-intrusive investigation anomaly interrogation, equipment checks, and the placement of QC seed items for both DGM and intrusive activities. No QC failures were identified. QC inspection reports are presented in **Attachment D**.



- Legend**
- ◆ Munition and Explosives of Concern
  - ▲ Material Documented as Safe
  - 50 meter grid
  - ▭ MRS Boundary
  - ▭ MRA Boundary
  - Stockpiled Soil

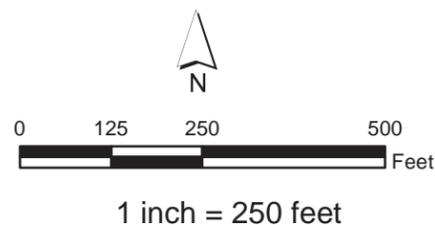
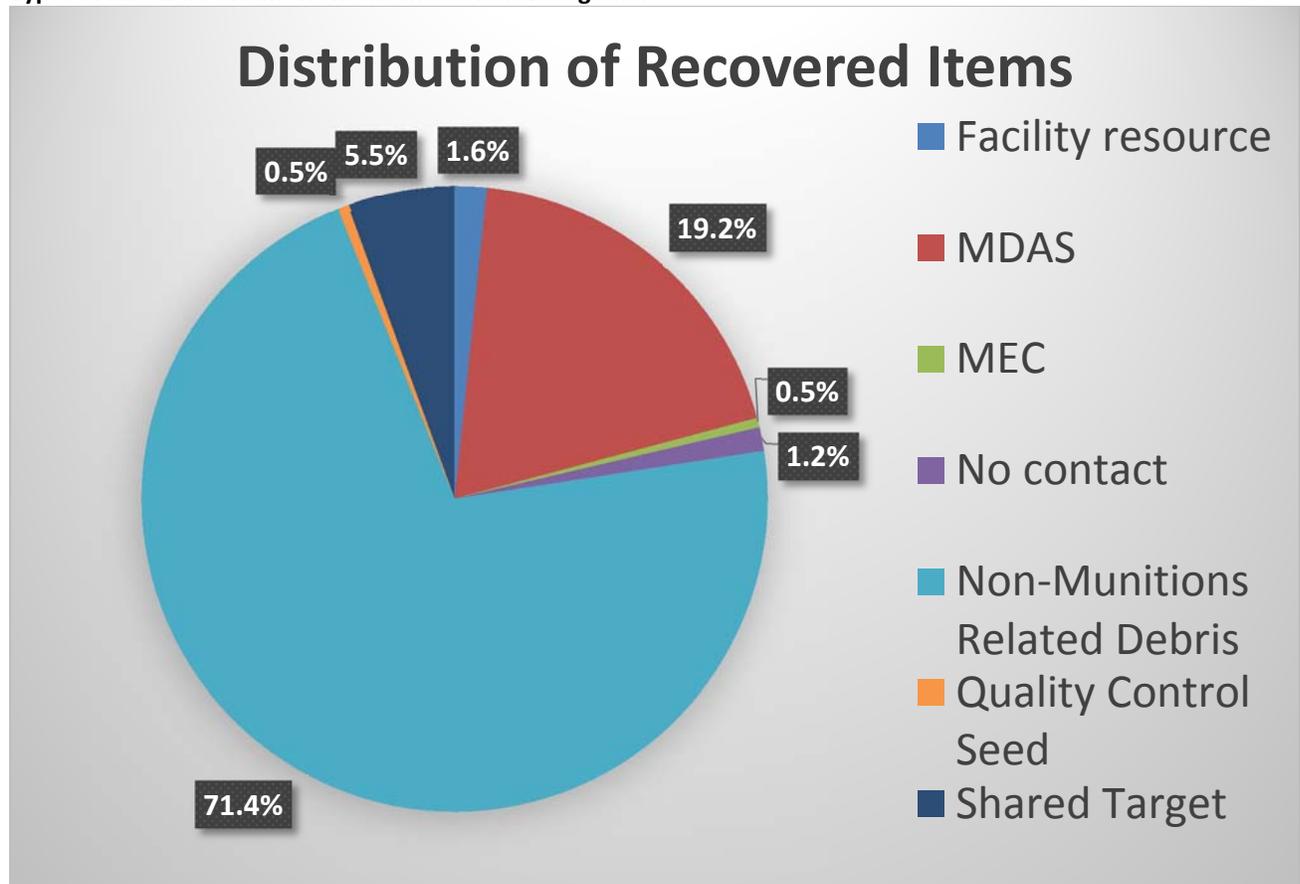


Figure 2  
 Intrusive Investigation Results  
 MCAS New River-Runway Expansion Area  
 Technical Memorandum  
 MCIEAST-MCB CAMLEJ  
 North Carolina



FIGURE 3

Types of Recovered Items from the Intrusive Investigation



MC Soil Sampling

Pre- and post-detonation soil samples were collected at locations where explosive detonations were conducted. Two post-detonation soil samples were collected at each detonation location: One sample from the crater created by the detonation (referred to as “inner” samples), and one sample from the area of ejected soil around the detonation crater (referred to as “outer” samples).

A total of 19 surface soil samples were collected, consisting of 1 pre-detonation sample, 9 post-detonation inner samples, and 9 post-detonation outer samples. Quality control samples included the collection of 3 duplicate samples.

The inner soil sample was collected using the TR-02-1 approach (Thiboutot et al., 2002). The decision unit for the outer sample was roughly circular and centered upon the crater, with a radius of up to 15 meters to encompass the visible soil ejecta.

Each soil sample was analyzed for MC using the following methods:

- SW846 8330B for explosives residues, including pentaerythritol tetranitrate (PETN) and nitroglycerin
- SW846 6850 for perchlorate
- SW846 Methods 6010C/6020A/7470A/7471 for metals
- SW846 7199 for hexavalent chromium

The analytical data are provided in **Attachment E**. Data were screened against the North Carolina Soil Screening Levels (NCSSLs) (North Carolina Department of Environment and Natural Resources [NCDENR], 2013), United States Environmental Protection Agency residential and industrial regional screening levels (RSLs) for soil that were adjusted for non-carcinogens to account for exposure to multiple constituents (2013), and the background threshold values for combined surface soil in developed areas (BTVs) (CH2M HILL, 2011). Based on the location of Site UXO-29 and planned MILCON, the BTVs for combined soil types in developed areas were used as the screening levels.

A summary of the results is provided below:

- Explosives
  - There were no detections of explosives residues, including PETN and nitroglycerin, or perchlorate.
- Metals
  - The maximum concentrations of chromium exceeded in all 22 soil samples for both NCSSLs and RSLs Residential Soil Adjusted but not the RSLs for Industrial Soil Adjusted or BTVs.
  - The maximum concentrations of chromium (hexavalent) exceeded both NCSSLs and RSLs for Residential Soil Adjusted in two samples, but not the RSLs for Industrial Soil Adjusted or BTVs. *Both samples were duplicates, but one sample was a pre-detonation and the other was a post-detonation.*
  - The maximum concentrations of iron exceeded NCSSLs in all 22 soil samples, but not the RSLs for Residential Soil Adjusted, RSLs for Industrial Soil Adjusted, or BTVs.

## Conclusions and Recommendations

Because DGM and intrusive investigation were conducted over 100% of the MRS and all identified anomalies were removed to the maximum depth of detection, the explosives safety quantity distance (ESQD) arcs were removed and MILCON proceeded within the MRA after workers received 3R (Recognize, Retreat, Report) training.

Following construction of the roadway, fence line, and utility line, an After Action Report will be prepared in accordance with Naval Ordnance Safety and Security Activity Instruction 8020.15C and submitted to Marine Corps Systems Command.

The discovery of MEC and MPPEH within the MRA and within the footprint of Site UXO-29 indicates that additional MEC and MPPEH may exist within Site UXO-29 and outside the boundary of the MRA. Additional investigations outside the MRA and within Site UXO-29 are recommended to delineate the nature and extent of MEC and MPPEH. Due to the former use of Site UXO-29 as a military range, site-wide environmental sampling for MC analysis is also recommended.

## References

CH2M HILL. 2011. Final Expanded Soil Background Study Report. Marine Corps Base Camp Lejeune. Jacksonville, North Carolina. August.

CH2M HILL. 2013a. Site-Specific Work Plan Addendum for Munitions Response Activities Marine Corps Air Station New River - Runway Expansion Area.

CH2M HILL. 2013b. Explosives Safety Submission Amendment No. 1 Munitions Response Activities Marine Corps Air Station New River – Runway Expansion Area (ESS-137).

United States Environmental Protection Agency. 2013. *Regional Screening Levels for Chemical Contaminants at Superfund Sites*.

North Carolina Department of Environment and Natural Resources. North Carolina Federal Remediation Branch Target Screening Guidelines Table (FRB Table), General Information on Using the Values in the FRB Table. July 22, 2013.

Thiboutot, Ampleman, and Hewitt. 2002. Technical Report ERDC/CRREL TR-02-1, Guide for Characterization of Sites Contaminated with Energetic Materials.

United States Army Corps of Engineers (USACE). 2001a. Final Range Identification and Preliminary Range Assessment, Marine Corps Base Camp Lejeune, Onslow, North Carolina. St. Louis District. December.

USACE. 2001b. Archives Search Report, Marine Corps Base Camp Lejeune, Onslow County, North Carolina. St. Louis District. December.

USACE. 2003. *Ordnance and Explosives Digital Geophysical Mapping Guidance - Operational Procedures and Quality Control Manual*.

Attachment A  
DGM Survey Report

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GPR  
MAGNETICS  
ELECTROMAGNETICS  
SEISMICS  
RESISTIVITY  
UTILITY LOCATION  
UXO DETECTION  
BOREHOLE CAMERA  
STAFF SUPPORT

## **GEOPHYSICAL INVESTIGATION REPORT**

### **Marine Corps Air Station New River Runway Expansion Area Munitions Response Site**

**Marine Corps Installation East – Marine Corps Base Camp Lejeune  
Camp Lejeune, North Carolina**

**Contract Task Order WE5A**

Dates of Investigation:  
October 10<sup>th</sup> – October 21<sup>st</sup>, 2013

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APPENDIX C: Initial IVS Maps

PLATE 1: EM61-MK2 Bottom Coil Channel 2 Site Mosaic

COMPACT DISC: Project Deliverables

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## COMPACT DISC CONTENTS

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- Raw Data (By Date)
  - Field notes files
  - Raw geophysical data files
  - Converted data XYZ files
- Preprocessed Data
  - Grid Blocks
    - Preprocessing reports in PDF format
    - Preprocessed XYZ files
  - QC Tests (By Date)
    - Preprocessed repeat XYZ, MAP, and PDF plots
    - Static, cable shake, and personnel test preprocessed XYZ, MAP, and PDF plots
- Final Processed Data
  - Grid Blocks
    - Final processing reports in PDF format
    - Final processed GRD and XYZ files
    - Grid color-contoured maps of geophysical data in PDF and MAP formats
    - Grid target lists in Microsoft Excel and XYZ formats
  - QC Tests (By Grid Block)
    - Static, cable shake, and personnel test final processed XYZ, MAP, and PDF plots
    - Final processed repeat XYZ, MAP, and PDF plots
- IVS Tests (By Date)
  - Processed XYZ and GRD files
  - Color-contoured maps of geophysical data in PDF and MAP formats
  - IVS target lists in Microsoft Excel and XYZ formats
- Mosaic
  - PDF format
- Report
  - Microsoft Word and PDF formats

## **ACRONYMS AND ABBREVIATIONS**

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AHA	Activity Hazard Analysis
ASCII	American Standard Code for Information Interchange
cm	Centimeter
CTO	Contract Task Order
DGM	Digital Geophysical Mapping
EM	Electromagnetic
EM61-MK2	Geonics, Limited EM61-MK2
ESTCP	Environmental Security Technology Certification Program
FTP	File Transfer Protocol
GPS	Global Positioning System
GSV	Geophysical System Verification
HAZWOPER	Hazardous Waste Operations and Emergency Response
in	Inch
ISO	Industry Standard Object
IVS	Instrument Verification Strip
m	Meter
MCAS	Marine Corps Air Station
MCBCAMLEJ	Marine Corps Base Camp Lejeune
MCIEAST	Marine Corps Installation East
MEC	Munitions and Explosives of Concern
MILCON	Military Construction
MPPEH	Materials Potentially Presenting Explosive Hazard
MQO	Measurement Quality Objective
MRS	Munitions Response Site
MRSIMS	Munitions Response Site Information Management System
mV	Millivolt
NAD83	North American Datum of 1983
NAEVA	NAEVA Geophysics, Inc.

NAOC	National Association of Ordnance and Explosive Waste Contractors
NMEA	National Marine Electronics Association
OSHA	Occupational Safety and Health Administration
QC	Quality Control
RTK	Real-Time Kinematic
SOP	Standard Operating Procedure
SOW	Scope of Work
SUXOS	Senior Unexploded Ordnance Supervisor
UTM	Universal Transverse Mercator
UXO	Unexploded Ordnance
UXOSO	Unexploded Ordnance Safety Officer

## **1.0 INTRODUCTION**

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### **1.1 BACKGROUND AND OBJECTIVES**

NAEVA Geophysics, Inc. (NAEVA) performed digital geophysical mapping (DGM) for CH2M HILL at Marine Corps Air Station (MCAS) New River – Runway Expansion Area Munitions Response Site (MRS) at Marine Corps Installation East – Marine Corps Base Camp Lejeune, Camp Lejeune, North Carolina (MCIEAST – MCBCAMLEJ) from October 10<sup>th</sup> to October 21<sup>st</sup>, 2013. During previous military construction (MILCON) activities related to runway expansion, munitions items were encountered in the subsurface, which prompted designation of the construction area as an MRS requiring investigation (CH2MHILL, 2013). NAEVA’s objective was to perform digital geophysical mapping (DGM) using the Geonics, Limited EM61-MK2 instrument to identify geophysical anomalies that may represent subsurface munitions and explosives of concern (MEC)/materials potentially presenting explosive hazards (MPPEH) at MCAS New River – Runway Expansion Area MRS in support of continuing MILCON activities. This report summarizes the equipment, methods, and results of the geophysical investigation.

### **1.2 SCOPE OF WORK**

The field personnel consisted of two NAEVA Field Geophysicists on site with support of the Project Geophysicist, Quality Control (QC) Geophysicist, and Geophysical Data Processors at the NAEVA Charlottesville, Virginia office. CH2M HILL Senior UXO Supervisor and Safety Officer (SUXOS/UXOSO) provided on-site logistics, anomaly avoidance, and Site Specific Health and Safety Plan administration. The CH2M HILL Project Geophysicist reviewed and approved submitted data. NAEVA’s tasks included the following:

- Preparation of a site specific Activity Hazard Analysis (AHA);
- Preparation of Standard Operating Procedures (SOPs);
- Mobilization of personnel and geophysical equipment;
- Instrument Verification Strip (IVS) surveying for system validation as part of the Geophysical System Verification (GSV) process;
- Quality control of geophysical and positioning data;
- DGM of approximately 3 hectares at a lane spacing of 0.75 meter (m);
- Data processing, target selection, and preparation of data deliverables;
- Database management and reporting.

### 1.3 SITE LOCATION AND DESCRIPTION

Runway Expansion Area MRS is located within MCAS New River, MCIEAST-MCBCAMLEJ. Vehicle access was possible via Demarco Street/Perimeter Road after entering base security on Curtis Road. The MRS lay south of the existing runways and west of Morgan Bay. Of the total 4-hectare MRS area, 3 hectares were designated for DGM. The survey area consisted of an approximately 30 m wide linear strip that followed a planned roadway with drainage ditches on either side.

The vegetation consisted of meadow grass up to one meter tall, which required cutting before starting of DGM survey. A metal silt fence bounded the survey area on the eastern and southern edge. A culvert within Grid D5C7H4 resulted in localized data gaps and interference in the data. Local geology, hydrogeology, and ambient geophysical noise did not appear to adversely impact data quality. The MRS is shown in Figure 1 below with the base-wide 50 m by 50 m grid overlay (Map source: CH2M HILL, 2013).

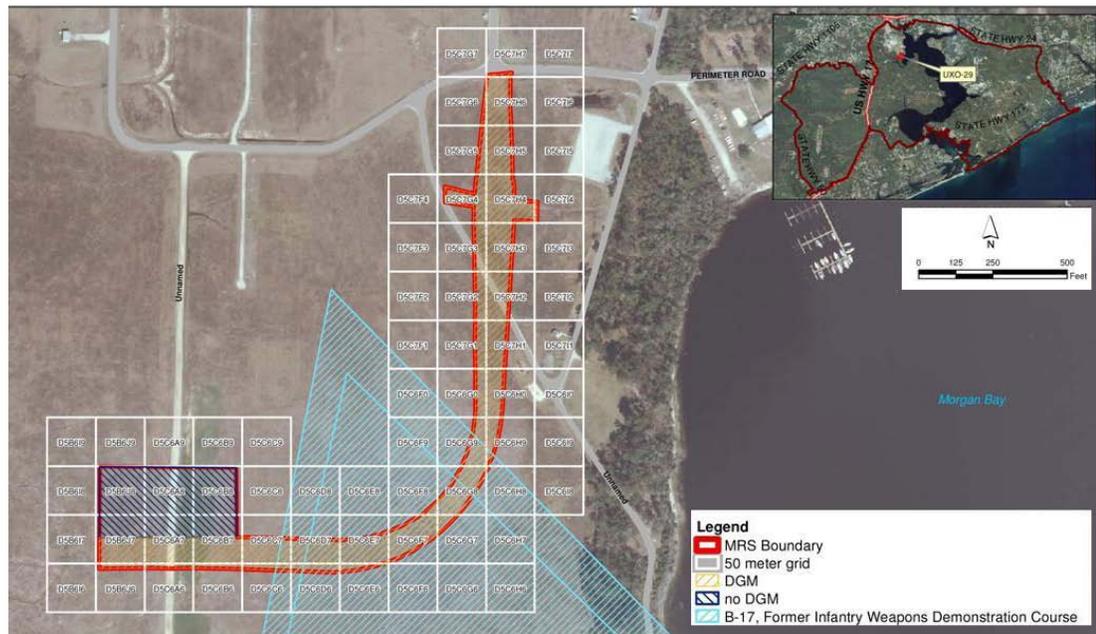


Figure 1. MRS with 50 m by 50 m grid overlay.

## 2.0 EQUIPMENT

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### 2.1 GEONICS, LIMITED EM61-MK2

The Geonics, Limited EM61-MK2 (EM61-MK2) is a high-resolution time-domain electromagnetic induction sensor capable of detecting, with high spatial resolution, shallow ferrous and non-ferrous metallic objects. The EM61-MK2 system consists of two 1.0 m x 0.5 m air-cored coils, an Allegro CX digital data logger, batteries, and processing electronics. The system transmitter generates a pulsed primary magnetic field, which then induces eddy currents in nearby metallic objects. The receiver, housed in the bottom coil along with the transmitter, measures the eddy currents at four distinct time gates. Earlier time gates provide enhanced detection of smaller metallic objects. Secondary voltages are measured in millivolts (mV). EM61MK2 software on the Allegro captures location and electromagnetic data onto a single raw data file.

For this investigation, the coils were mounted on manufacturer-supplied wheels with an instrument height of 40 centimeters (cm) from the ground surface to the bottom of the bottom coil. Figure 2 below shows the EM61-MK2 operated in person-towed mode with RTK GPS positioning. For more details on the EM61-MK2 refer to the instrument operator's manual (Geonics Limited, 2005).



Figure 2. EM61-MK2 with RTK GPS.

## 2.2 TRIMBLE RTK GPS

The geophysical data were positioned using a Trimble 5700 Global Positioning System (GPS) base station (Figure 3 below) and a Trimble R7 GPS rover receiver, operating in Real-Time Kinematic (RTK) mode. The R7 rover GPS antenna was positioned centrally on a tripod mounted on the EM61-MK2 top coil (Figure 2 above). The Trimble R7 rover receiver was set to output a GGA National Marine Electronics Association (NMEA) string at 1 hertz, which was captured and stored in the same file as geophysical data by NAV61MK2 software on the Allegro. Location data were recorded in geodetic coordinates and then converted to Universal Transverse Mercator (UTM) Zone 18 North coordinates in meters for map presentation and data deliverables.

The Trimble R7/5700 GPS is a 24-channel receiver tracking on L1 and L2 satellite frequencies. The base station, set statically on a known position, sends positional corrections at a rate of 1 hertz to the rover via radio link using a TDL 450H Ultra High Frequency radio modem (Figure 3 below). The accuracy of the GPS rover depends largely on the accuracy of the base station and the number of satellites visible. Under ideal conditions, centimeter-level horizontal accuracy can be expected when 5 or more satellites are visible.

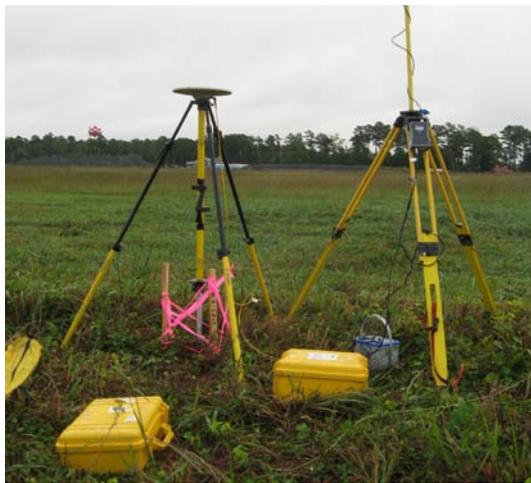


Figure 3. Trimble 5700 GPS base station.

## **3.0 METHODOLOGY**

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### **3.1 DGM SURVEY ACTIVITIES**

The EM61-MK2 bottom coil was hand-towed on manufacturer-supplied wheels and 4-channel data were recorded at a rate of 10 readings per second. The orientation of collection was such that the 1 m axis of the EM61-MK2 was perpendicular to the path of travel (Figure 2 above). Data were collected along parallel lines spaced 0.75 m apart. Guidance ropes with marks every 0.75 m were laid perpendicular to the path of travel at 10 m intervals to help the instrument operator maintain straight trajectories. Location of cultural obstructions and geophysical interference were recorded with RTK GPS and noted in the Munitions Response Site Information Management System (MRSIMS) database. Data were collected and submitted in units called grid blocks. Each grid block contained one or more contiguous grids and was identified by the southwest most stake label.

### **3.2 DATA PROCESSING AND INTERPRETATION**

#### **3.2.1 Raw Data Editing**

Digital geophysical and positional data were transferred from field data loggers to a field computer for initial data quality assessments and editing. Using TRACKMAKER61MK2 software, the EM61-MK2 data were positioned and exported to an ASCII file. The raw data were then transferred to the CH2M HILL File Transfer Protocol (FTP) site for processing, analysis, and QC using Geosoft *Oasis montaj* software and the UX-Detect module.

#### **3.2.2 Preprocessing**

Converted raw data files were imported into Geosoft *Oasis montaj* to perform the following:

- Review and finalize all QC tests (cable shake, personnel and static spike) prior to processing of the DGM data for that day;
- Conversion of geodetic coordinates to projected NAD83 UTM Zone 18 North coordinates;
- Evaluate data density;
- Apply auto leveling and instrument drift corrections;
- Apply default lag correction;
- Generate preliminary contour map(s) from gridded data;

- Generate preliminary original versus repeat profiles by grid block;
- Generate formatted ASCII files containing preprocessed data by grid block.

### **3.2.3 Final Processing**

After completion of preprocessing, the data were further evaluated and processed to generate final processed data files. Final processing steps included:

- Evaluation and refinement of auto leveling and instrument drift corrections in the channel selected for target analysis (Channel 2);
- Evaluation and refinement of lag correction in the channel selected for target analysis (Channel 2);
- Additional digital filtering and enhancement, as necessary, in the channel selected for target analysis (Channel 2);
- Selection of target anomalies, as described in Section 3.2.4;
- Generation of formatted ASCII files containing processed data by grid block;
- Generation of final maps for each transect showing contoured gridded data, target locations, and culture;
- Generation of final original versus repeat profiles by grid block.

### **3.2.4 Anomaly Selection**

Based on IVS data and static test results, an anomaly selection threshold of 3 mV on Channel 2 was selected. Production and daily static test data were monitored to ensure the threshold level was sufficiently above local background and noise levels. Targets were selected from geophysical data based on the anomaly selection threshold and selection procedures discussed below.

The UX-Detect module identifies peak amplitude responses associated with subsurface metallic objects. Single-source anomalies may generate multiple target designations depending on shape and orientation. Initial target selections were auto-selected using a peak-picking algorithm based on the Channel 2 profile data. Data profiles corresponding to the anomalies selected by Geosoft *Oasis montaj* were then analyzed by experienced geophysicists; with the targets evaluated as to their validity and position. Targets found to be invalid (duplicate targets, targets outside the grid, targets on gridding artifacts, etc) or incorrectly located were removed or adjusted. Additionally, anomalies that were not selected by the UX-Detect module, yet exhibited the characteristics of a subsurface metallic object, were manually selected. All targets were selected from final processed Channel 2 data of the EM61-MK2 bottom coil. Targets were given a unique identification number and the list exported to a Microsoft Excel file.

The criteria for selecting and locating anomalies for the target list included the following items:

- Maximum amplitude of the response with respect to local background conditions;
- Lateral extent (width) of the response;
- Three-dimensional shape of the response;
- Location of the response with respect to the edge of the survey area, inaccessible areas, land features, cultural features, or utilities within or adjacent to the survey area.

### **3.2.5 Data Deliverables**

Daily data deliverables were organized by grid block and submitted electronically to the CH2M HILL FTP site as completed. The hard copy of this report contains a compact disc with all project data deliverables.

Processed data deliverables included:

- ASCII format of processed data corrected for sensor offsets, lag corrections, drift/leveling corrections and instrument bias;
  - Data were geo-referenced using the UTM Coordinate System, Zone 18 North;

- ASCII format delimited fields as x, y, v1, v2, etc., (where x and y are project coordinates, and v1, v2, v3, etc., are the instrument readings; the last data field is a time stamp);
- PDF files documenting the processing performed by grid block;
- Grid maps in Geosoft *Oasis montaj* packed map and PDF formats of color-contoured geophysical results with anomaly selections shown and labeled at a readable scale;
- Final target lists containing grid, x, y and targeted response value;
- Composite mosaic in Geosoft *Oasis montaj* packed map and PDF formats.

### **3.2.6 Database Management**

MRSIMS was used to store field, processing, and QC documentation. Daily field documentation was entered into a mobile device then later synced with the main project database. The updated database was then uploaded to the CH2M HILL FTP site.

## **4.0 RESULTS**

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### **4.1 MOBILIZATION AND SITE SETUP**

Prior to mobilization, AHAs and SOPs were provided to CH2M HILL. The NAEVA field team had 40-hour Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response (HAZWOPER) training, with current annual 8-hour refresher training. The NAEVA field team mobilized on October 9, 2013 and demobilized on October 22, 2013 after the completion of data collection and review of the QC test data by NAEVA data processors.

In preparation for DGM survey, dense vegetation within the MRS was cut by CH2M HILL to allow passage of the field team and geophysical equipment. A licensed North Carolina professional land surveyor located and placed labeled wooden stakes at grid corners referenced to the base-wide 50 m grid system. The boundary of the MRS was also marked with wooden stakes. As part of the GSV, discussed below in Section 5.3, blind seeds were placed in advance of DGM by CH2M HILL. The locations were not known to NAEVA during data collection and processing.

### **4.2 SUMMARY OF WORK PERFORMED**

An IVS area adjacent to the MRS was established to provide initial validation of the EM61-MK2 and provide on-going QC throughout the production survey for ISO response repeatability and positioning. Due to concerns regarding potential interference from MCAS operations (e.g. radar, communications), sample 3-minute background EM61-MK2 static data were collected throughout the survey area to characterize ambient noise and identify areas with potentially localized variations noise or interference. Production DGM of grids began in the northern region and progressed south. The data were processed and QC checks were performed daily as they were received from the field.

The daily field schedule, based on a 10-hour workday, was as follows, unless otherwise noted in daily work logs:

- Morning safety brief and planning;
- Equipment setup;
- Instrument calibration and verification;
- DGM survey;

- End of day instrument verification;
- Equipment storage;
- Data download and review for completeness;
- Upload to the FTP site.

### **4.3 DGM SURVEY ACTIVITIES**

DGM survey coverage totaled approximately 3 hectares. DGM data met data density criteria of 0.213 m spacing as well as the 100 percent coverage criteria for the lane spacing to not exceed 1 m. Blind seeds were detected by the EM61-MK2 and selected as targets in DGM data. Repeat data for each grid block compared well with original data in anomaly amplitude and location. A sample repeat figure can be found in Appendix A. An example grid color-contoured map is included in Appendix B.

Data gaps caused by obstructions were documented in MRSIMS and recorded with RTK GPS for inclusion on the individual grid maps. Man-made features included the silt fence along the MRS boundary and the drainage culvert. The culvert centered in Grid D5C7H4, affected survey coverage due to its steep slopes.

### **4.4 DATA PROCESSING AND INTERPRETATION**

Data were processed as described in the Methodology section. Appropriate processing details and parameters were generated for each block of data. A total of 1,681 anomalies were selected for investigation based on the 3 mV Channel 2 threshold. The selected anomalies are classified into five types as follows. Type 1 anomalies are point source targets that may represent targets of interest. Type 2 anomalies are known cultural objects such as signs, pipes, fences, etc. Type 3 anomalies are suspected culture such as underground utilities. Type 4 anomalies are those below the established threshold but were selected based on their decay characteristics. Indicative decay characteristics when comparing profiles of all channels together, would typically have Channel 1 at the highest value followed by Channels 2, 3, and 4. Type 5 represents suspected data spikes resulting from terrain response or ambient electrical noise. Processed data can be found organized by grid block in the attached compact disc.

## 5.0 QUALITY CONTROL

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### 5.1 MEASUREMENT QUALITY OBJECTIVES AND PERFORMANCE CRITERIA

#### 5.1.1 DGM System Positioning

The MQO for system positioning accuracy was that positioning of DGM data and detected anomalies was accurate enough to allow for effective reacquisition of selected targets. The measurement performance criterion for system positioning was that results of daily reoccupation (Section 5.2.1) of a control point did not vary more than 10 cm. Table 1 below lists points used for position control.

Table 1. Control points in NAD83 UTM Zone 18N Meters.

Control Point ID	Easting (m)	Northing (m)
1	276986.2845	3842291.1280
2	277080.6025	3842028.9990
3	276746.8514	3841986.0560
4	276747.8190	3841981.5800

#### 5.1.2 Data Positioning

The MQO for data positions accuracy was that positioning of detected anomalies was accurate. The measurement performance criterion for data positioning was that all locations of anomalies representing QC seeds lie within a 1 m radius of a point on the ground surface directly above the seed item. Any anomaly that was selected outside of 1 m from a point directly above the seed item was not considered to be a detection of that item. This was evaluated in data by verifying that all anomalies selected were within this standard or could be otherwise explained.

#### 5.1.3 System Munitions Detection

The MQO for system munitions detection was that the system responded consistently from the beginning to the end of an operation within industry standard of detection for an industry standard object (ISO). The measurement performance criterion was that the response to an ISO did not vary more than  $\pm 20$  percent on Channel 2. Daily beginning and end of day static spike tests were evaluated to meet this criterion (Section 5.2.3).

#### **5.1.4 System Data Repeatability**

The MQO for DGM systems data repeatability is that the systems respond consistently from the beginning to the end of daily operation. The criterion for detection repeatability was that anomaly response amplitude of ISOs buried in the IVS was generally consistent from the start of day to the end of day. Detection repeatability were qualitatively evaluated twice daily with IVS survey data (Section 5.3.2).

Data repeatability was also evaluated per block of survey data collected. For each block of daily data, a minimum of 2 percent of the total survey area was re-collected at the end of each grid block. Evaluation of repeat data was conducted qualitatively against initial data profiles during data processing to document consistent data response amplitudes.

#### **5.1.5 Down-line Data Density**

The MQO for down-line data density was to have sufficient data collected along each transect to detect potential MEC/MPPEH items. The measurement performance criterion for this was that at least 98 percent of possible sensor readings were captured along each transect at a spacing of 0.213 m or less. In addition, any transect containing an unexplained data gap of 0.61 m or greater did not meet this MQO. This was evaluated by verifying that production data point separation met this standard.

#### **5.1.6 Survey Coverage (Lane Spacing)**

The MQO for lane spacing was to maintain appropriate transect spacing to provide 100 percent coverage of the accessible areas of the site. The measurement performance criterion for this is that the lane spacing varied no more than 1 m. This was evaluated production data by verifying that all of the data met this standard.

### **5.2 SYSTEM QUALITY CONTROL**

#### **5.2.1 Record Sensor Positions Test**

The Trimble GPS positioning equipment was checked for system positioning at the beginning of each workday. After starting the GPS base station, the GPS rover unit to be mounted on the EM61-MK2 was used to measure a position at a known control point (Table 1 above). Positions within 10 cm of the known point were acceptable.

### 5.2.2 Instrument Warm Up

At the beginning of each workday before operation and acquisition of data, the EM61-MK2 was assembled, powered on, and warmed up for a minimum of 15 minutes to minimize instrument drift and ensure proper function.

### 5.2.3 Background and Spike Test

Static background and static standard response spike tests were conducted at the beginning and end of each day as part of system QC, during which, readings were collected automatically for a minimum of one minute per test (3 minutes total) at a rate of 10 hertz. The background test data were monitored during collection for data spikes and noise level while the spike test data were monitored for consistent response of a small ISO, a 2.54 cm x 10.16 cm galvanized steel pipe nipple (McMaster-Carr Part Number 44615K466). The small ISO was oriented horizontally and mounted centrally at a distance of 42 cm from the top of the bottom coil to the ISO's center of mass (Figure 4 below). The background test required that the response varied no more than  $\pm 2$  mV from the mean response on Channel 2. Acceptable spike response values were to be within  $\pm 20$  percent of the value for Channel 2 after background corrections. The data from the static tests were evaluated for consistency with NRL ISO response curves and munitions detection repeatability throughout the duration of investigation.

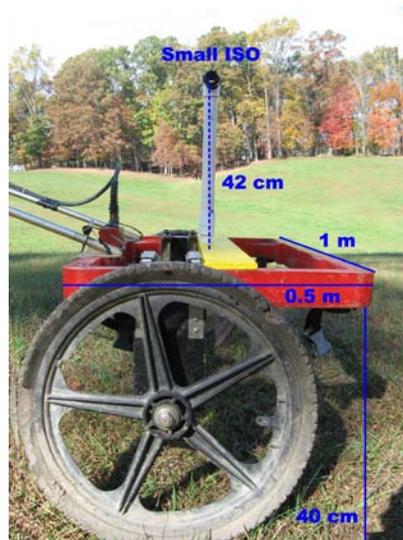


Figure 4. Static spike test item position (shown without GPS configuration).

#### **5.2.4 Cable Shake Test**

A 30-second cable shake test was performed each time the sensor was assembled, typically at the beginning of the day, and any time that a cable was replaced. For this test, all cables of the system were shaken to simulate vibrations associated with dynamic DGM survey while monitoring data for shake-induced spikes. This test functioned to detect problems associated with damaged or loose connectors, twisted cables, and other defects. After identification and replacement of the malfunctioning component, the geophysical system would again be verified at the IVS and allowed to resume geophysical operations after demonstrating resolution to the problem.

#### **5.2.5 Personnel Test**

At the beginning of each workday a 30-second personnel test was performed and monitored for response variations and interference associated with proximity of the instrument operator. Field personnel not actively operating the instrument did not come in close proximity to the EM61-MK2 sensor during production DGM.

#### **5.2.6 Repeat Data**

Daily AM and PM 2-line IVS data were collected to evaluate system positioning and detection repeatability. IVS seed positions within  $\pm 25$  cm of the recorded locations were acceptable. Response amplitudes were evaluated for general consistency. In addition, repeat data were collected for each block of data to total at minimum two percent of the block survey area for qualitative amplitude and positional comparison to the initial profiles.

### **5.3 GEOPHYSICAL SYSTEM VERIFICATION**

#### **5.3.1 Overview**

The GSV process is a physics-based validation protocol applicable only to the EM61, developed by the Environmental Security Technology Certification Program (ESTCP), in collaboration with the military services, State and Federal regulators, and the National Association of Ordnance and Explosive Waste Contractors (NAOC). The protocol is based on physics models of sensor response to an ISO, which act as an inexpensive and widely available surrogate to a range of munitions. The GSV is an economical means of confirming geophysical sensor capability and verifying daily sensor functions on Munitions Response Sites. An IVS and a production blind seeding component make up the GSV (Nelson, Kaye, & Andrews, 2009).

### 5.3.2 Instrument Verification Strip

Before seed burial, a background survey of the intended IVS location (north of Grid GD5C6B9) was conducted to evaluate overall suitability of the intended localized test area for anomaly, noise, and geophysical interference. Background data were submitted to CH2M HILL On-site Representative, Andrew Louder for review. With the exception of an anomaly in the southwest, the site was suitable for the IVS. The seeded strip was placed east of the noted anomaly to minimize signal masking and interference.

The installed IVS consisted of a 20 m linear path seeded with two small ISOs approximately 6 m apart. The ISOs were buried vertically at depths of 22.86 cm and 10.16 cm below ground surface (depths were measured from center of mass). IVS endpoints and seed locations were marked with labeled plastic flags and recorded with RTK GPS. Seed item information is summarized in Table 2 below.

**Table 2. IVS seed item position and depth.**

Item ID	Item Type	Easting (m)	Northing (m)	Depth (cm)	Orientation
ISO1	Small ISO	276755.345	3841958.776	22.86	Vertical
ISO2	Small ISO	276755.492	3841965.690	10.16	Vertical

An initial 5-line IVS survey was performed to demonstrate system detection and positioning capabilities. The 5-line survey consisted of a line of data at full spacing from the seeded line (0.75 m), a line centered over the seeds, a line at half spacing (0.375 m), another line at full spacing and finally a background line 3 m from the seeded line (Figure 5 and Figure 6 below). Daily AM and PM 2-line IVS tests consisted of a line over the seed items, and one over the background line. The IVS survey data demonstrated the EM61's ability to accurately detect the ISO at the given depths and site conditions. Daily IVS data were evaluated for MQO compliance (Section 5.1.4). Maps from the initial IVS background and 5-line survey can be found in Appendix C.



Figure 5. 5-line IVS as-built.

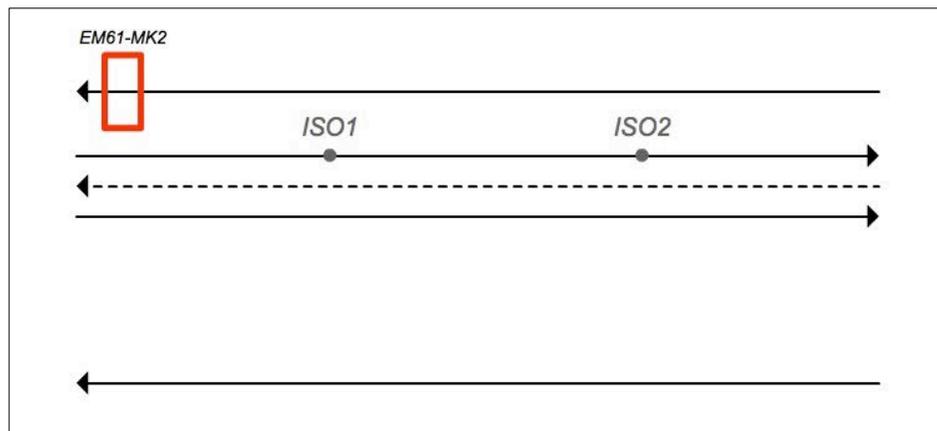


Figure 6. 5-line IVS layout diagram, not to scale.

### 5.3.3 Production Blind Seeding

As part of ongoing project QC and system validation, small ISOs were seeded in the production area blind to field DGM teams and data processing teams. Location, orientation and seed identification were recorded for comparison and verification with production data. The CH2M HILL Project Geophysicist evaluated detection of the blind seeds in submitted data and reported that all nine seeds were detected.

## 5.4 RESULTS

Record sensor positions test positions were within the 10 cm offset tolerance (Figure 7 below). Background static tests were within the acceptable range of  $\pm 2$  mV from mean value in Channel 2. Standard response data showed detection of the small industry standard object (ISO) was consistent and repeatable within  $\pm 20$  percent throughout the investigation (see Figure 8 below). The cable shake and personnel data exhibited no significant interference as a result of cable motion or proximity of personnel, respectively.

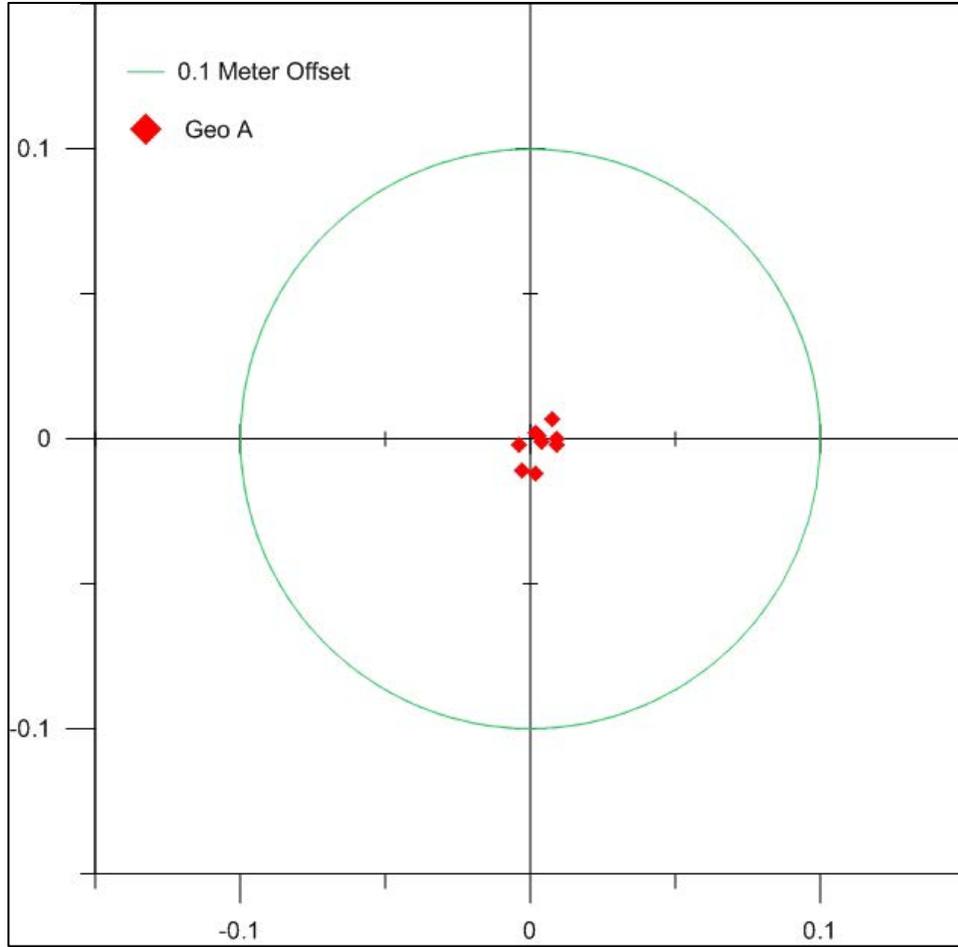


Figure 7. GPS QC test positions offset plot.

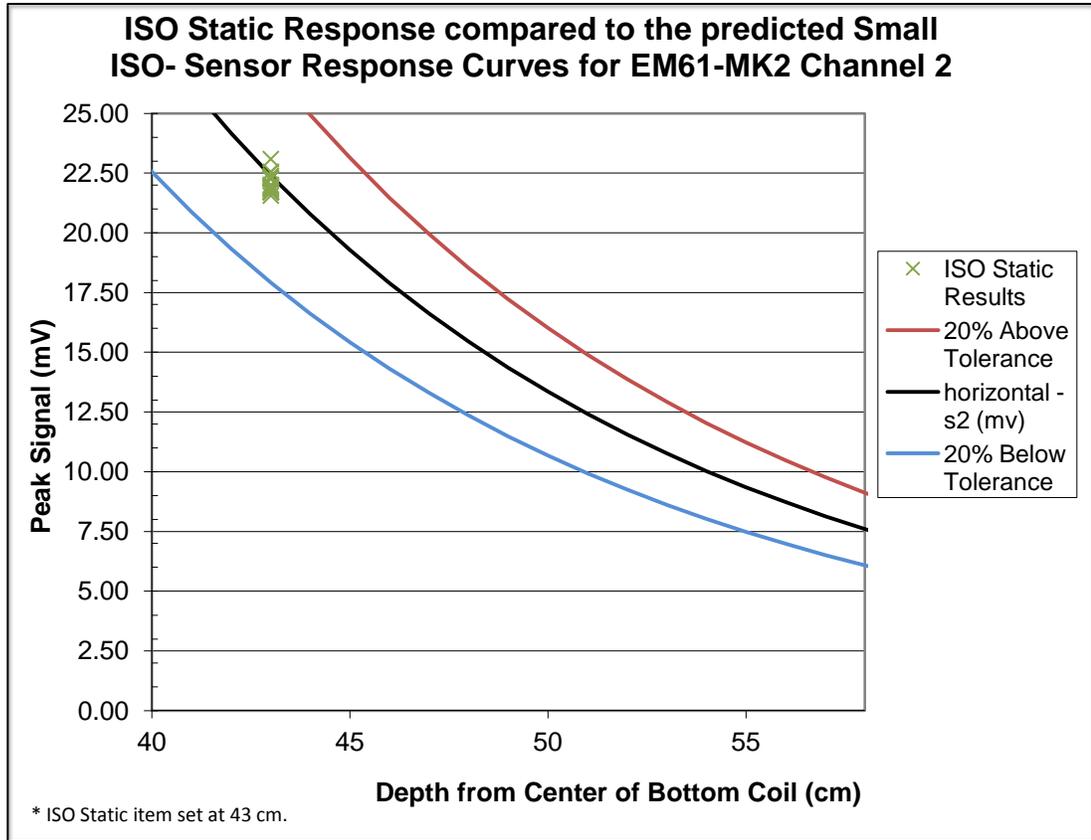


Figure 8. Static spike response test plot.

Analysis and contouring of IVS data demonstrated the suitability of the location for seeding and testing. The EM61-MK2 was able to detect the buried seeds items above background levels. Daily beginning and end of day IVS data compared well, with all ISO seed items being detected with consistent amplitude characteristics and locations to within 25 cm of the recorded location. This satisfied the detection and positioning repeatability criteria. Table 3 below summarizes the MQOs and results for the investigation. Sample static spike, cable shake, and personnel test figures can be found in Appendix A.

**Table 3. MQO descriptions and results.**

<b>MQO</b>	<b>Measurement Performance Criteria</b>	<b>Test Method</b>	<b>Results</b>
<b>DGM System Munitions Detection (EM61-MK2).</b> DGM system response is within industry standards for detection.	Response to ISO will consistently not vary more than $\pm 20\%$ from predicted response for specific distance from sensors in static test.	Results of Static Spike Test (Section 5.2.3 ) will be compared to predicted EM61-MK2 response curves for ISOs at different distances from the sensor and orientation.	All responses were within 20% (Figure 8).
<b>DGM System Positioning.</b> Coordinates obtained from DGM system are of sufficient accuracy for relocation of anomalies.	Measurements made as a daily QC check of positioning systems will not exceed 10 cm compared to known, surveyed location.	Results of Record Sensors Position Test (Section 5.2.1) will be quantitatively evaluated for compliance.	All positions were within 10 cm. Average position offset was 0.74 cm. (Figure 7)
<b>Repeatability.</b> Repeatable and accurate data are being obtained from DGM system.	IVS seed item positions will be consistently within $\pm 25$ cm of known, surveyed locations. Response amplitudes collected along the IVS seeded and background transects will be comparable from one day to the next.	IVS seeded and background transects will be collected at least 2x daily as described in Section 5.3.2. Positions of the IVS seed items will be quantitatively compared to the surveyed locations recorded during emplacement.	All ISO positions were within 25 cm. Average offset for ISO 1 was 11 cm and the average offset for ISO 2 was 5 cm.
	Approximately 2% of each survey unit (e.g. group of transects or grids) will be re-surveyed, where responses are comparable to original line data.	IVS response amplitudes and results of repeat line collection in Section 5.2 will be qualitatively compared to results of original survey data.	All IVS amplitudes and repeat data generally repeated.
<b>Data Density.</b> Down line data density is sufficient to detect MEC items.	Over 98% of possible sensor readings are captured along a survey transect with a spacing of no greater than 0.213 m between points. A data gap greater than 0.61 m will not meet the MQO, unless the gap is associated with an obstruction or hazard.	Results of DGM surveys will be quantitatively evaluated for compliance.	Average down line data density was 0.093 m across all of the datasets with only an average of 0.007% of the readings with a spacing greater than 0.213 m. No readings were greater than 0.61 m apart.
<b>DGM Survey Coverage (Lane Spacing).</b> Lane spacing intended to provide 100% coverage of accessible portions of the DGM investigation area.	Lane spacing is no greater than 1 m with an intended lane spacing of 0.75 m.	Footprint coverage of DGM surveys will be evaluated for missing or improperly positioned survey lines as well as data gaps that are not otherwise explained.	100% coverage with 1 m footprint.
<b>Data Positioning.</b> Positioning of detected anomalies is accurate.	Anomaly locations representing QC seeds occur within a 1 m radius of a point on the ground surface directly above the QC seed.	Anomalies selected will be compared with surveyed seed item locations for compliance.	All blind seeds were detected within 1 m radius.
<b>Data Handling.</b> Data must be delivered in a timely manner and in accordance with GIP requirements.	Data packages are completed and delivered within schedule (3 days pre-processed; 5 days processed).	Evaluated based on actual delivery of data.	All data were delivered within the required timeframe.

## 6.0 CONCLUSIONS

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NAEVA successfully performed DGM, data analysis, and anomaly selection at MCAS New River Runway Expansion Area MRS for CH2M HILL in accordance with the project Geophysical Investigation Plan. The EM61-MK2 system and geophysical methods were successfully validated through the IVS, daily QC tests, and production blind seeding. Project MQOs were met. The threshold of 3 mV on Channel 2 was adequate for detection of subsurface geophysical anomalies given noise level and site conditions. Table 4 below summarizes the number of anomalies selected by type.

**Table 4. Selected anomaly totals by type.**

<b>Type</b>	<b>Anomaly Description</b>	<b>Total</b>
Type 1	Point	1471
Type 2	Culture	144
Type 3	Suspected culture	18
Type 4	Target selected below established threshold	45
Type 5	Data Spike (Terrain Response or Ambient Noise)	3
	<b>Total</b>	<b>1681</b>

The enclosed compact disc contains all raw, preprocessed, and processed data, including processing reports, QC test results, color contour maps and target lists for each grid, and mosaic map for the site (Plate 1). A copy of this report may also be found in Adobe PDF and Microsoft Word formats.

## 7.0 REFERENCES

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CH2M HILL. (2013, July). *Geophysical Investigation Plan MILCON Support Activities for Runway Expansions Site UXO-29 Marine Corps Air Station New River Marine Corps Installation East - Marine Corps Base Camp Lejeune Jacksonville, North Carolina*. Prepared for Department of the Navy Naval Facilities Engineering Command Mid-Atlantic.

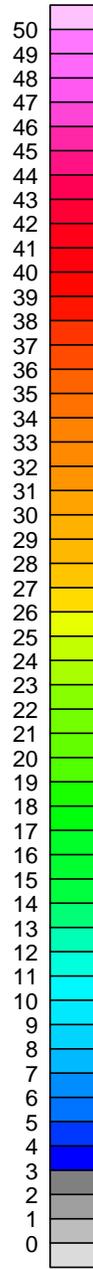
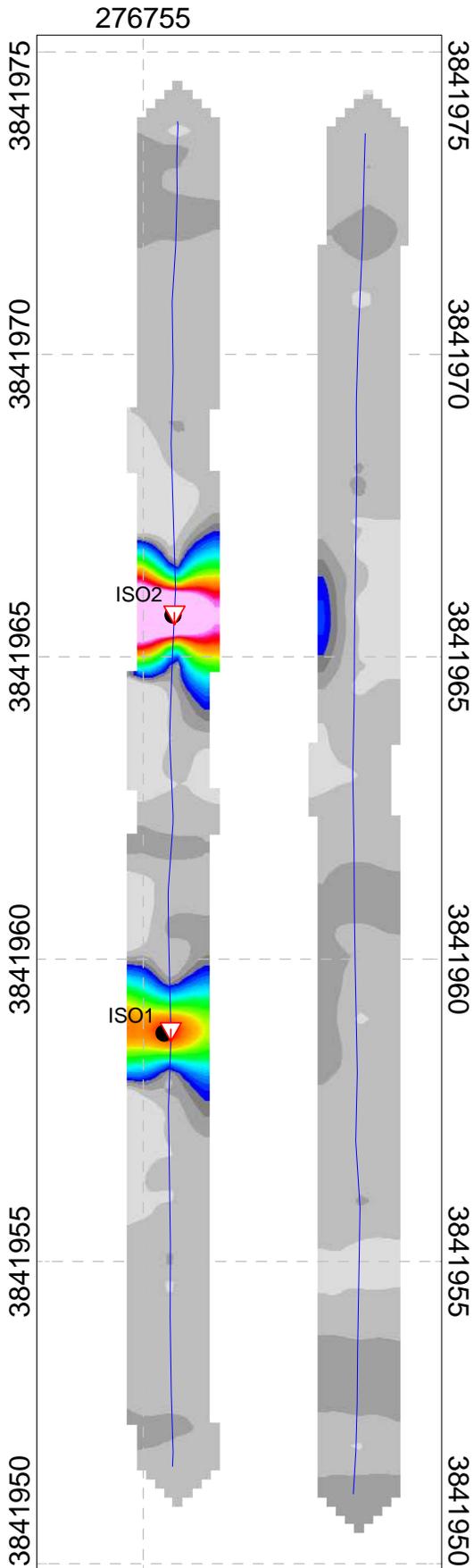
CH2M HILL. (2013, September). *Statement of Work/Technical Specifications Digital Geophysical Mapping Runway Expansion Area Marine Corps Air Station New River Runway Expansion Area Marine Corps Installation East – Marine Corps Base Camp Lejeune, Jacksonville, North Carolina*.

Geonics Limited (2005, July). EM61-MK2 and EM61-MK2HP 4 Channel High Sensitivity Metal Detectors Operating Manual.

Nelson, H., Kaye, K. & Andrew, A. (2009, July). *Final Report Geophysical System Verification (GSV): A Physics-Based Alternative to Geophysical Prove-Outs for Munitions Response*. SERDP/ESTCP.

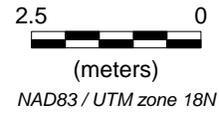
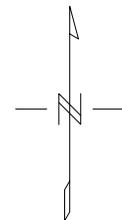
# **Appendix A**

**Sample IVS, Static Test, and Repeat Figures**



mV  
Channel 2

- ### Legend
-  Survey Point (if noted)
  -  Seed Location
  -  Selected Target  
(See Target Pick List For Response and Location)
  -  Line Path



ID	X_UTM	Y_UTM	COMMENTS
ISO1	276755.3	3841959	9in (22.86cm) Vert. bgs
ISO2	276755.5	3841966	4in (10.16cm) Vert. bgs

<b>Client: CH2M HILL</b> EM61 MK2 Bottom Coil 1010IVS1 (IVS Test - 2 Line ) Seeded Marine Corps Air Station New River MCIEast - MCB - Camp Lejeune, North Carolina
Date of Survey: 10/10/2013 Date of Map Creation: 10/11/2013
Map Approver: J. Guillard

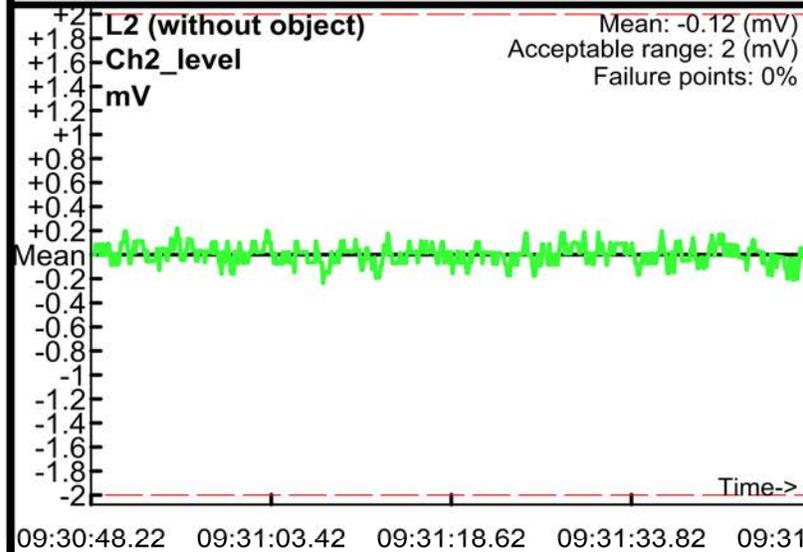
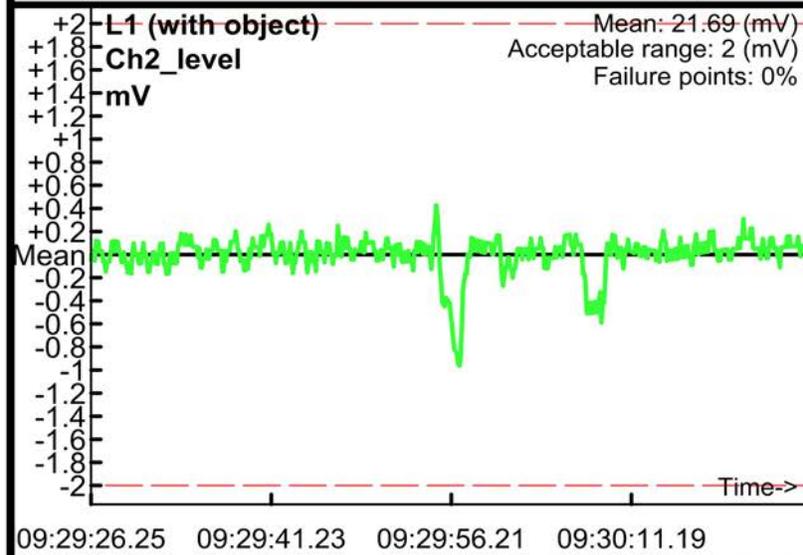
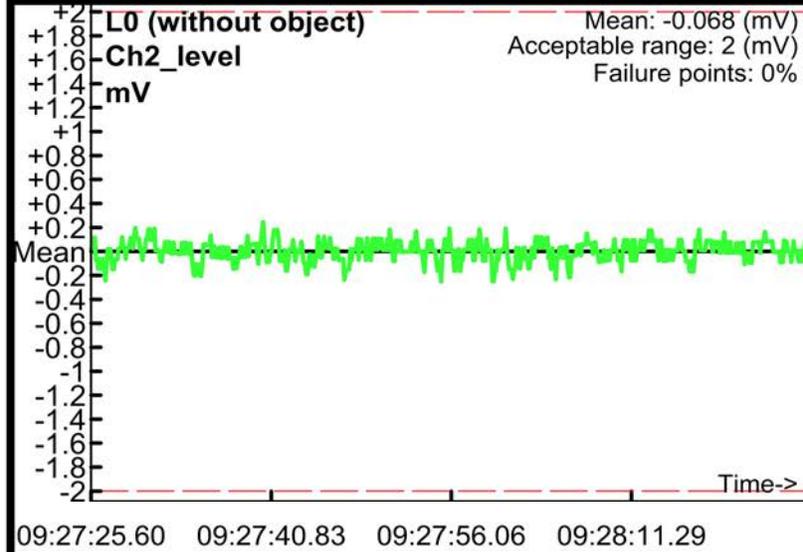
# Static Calibration Test

Mean Response Values  
Ch2\_level Without Object: -0.09  
Ch2\_level Signal Strength With Object: 21.79

Project: UXO-29  
Equipment: EM-61 Mark II  
Grid/Location: Localized QC Area

QC1 test  
Operator: GeoA  
Date: 10/14/2013

● Outside range  
— Acceptable limits

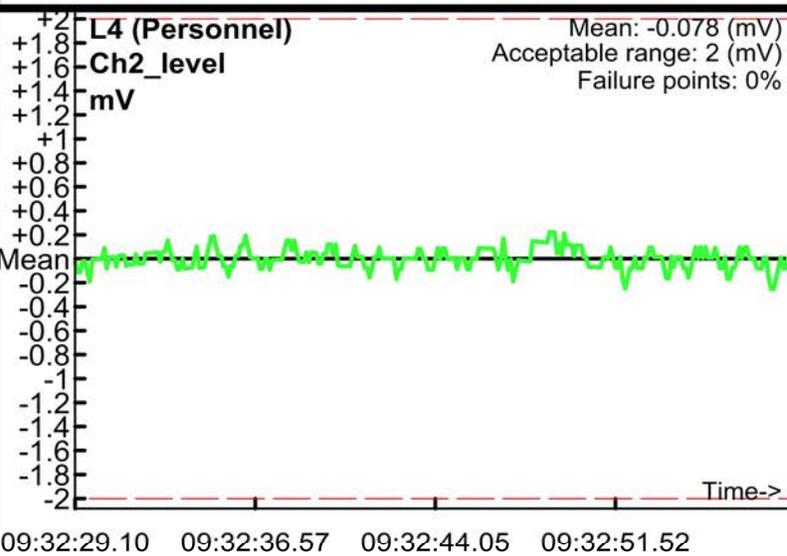
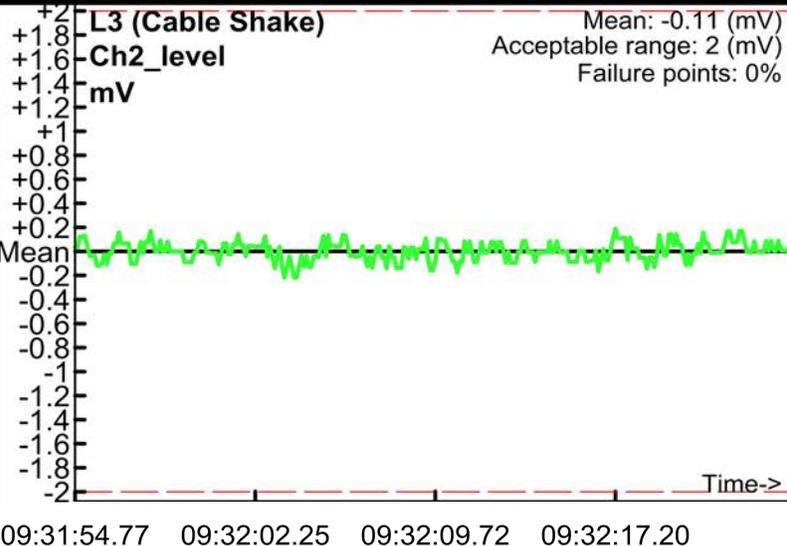


# Cable Shake & Personnel Test

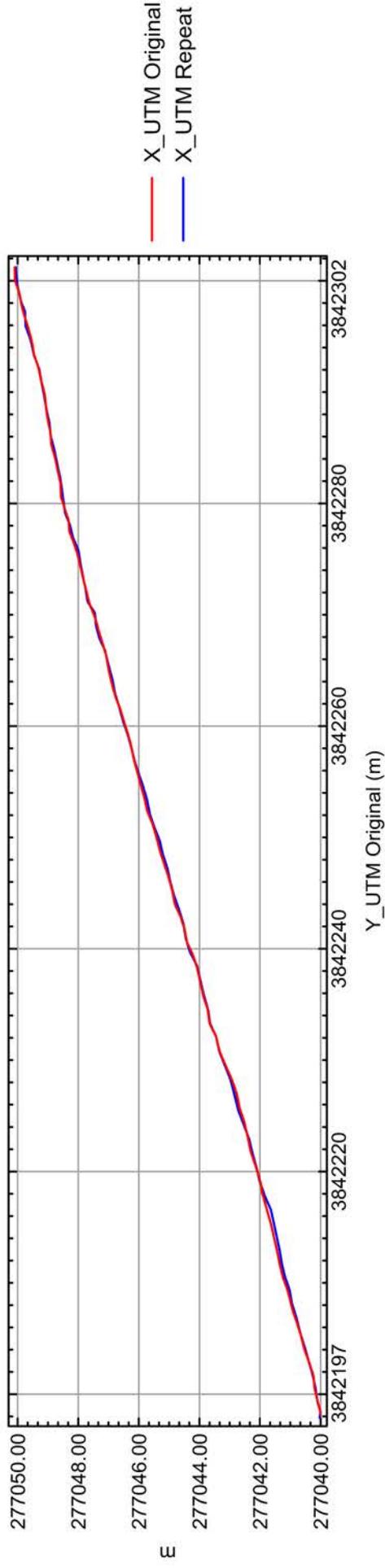
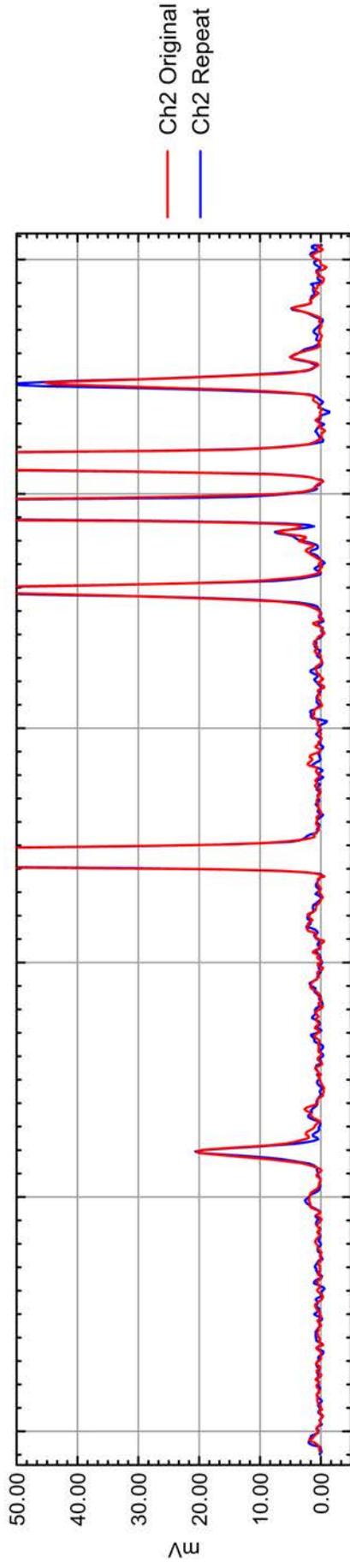
Project: UXO-29  
Equipment: EM-61 Mark II  
Grid/Location: Localized QC Area

QC1 test  
Operator: GeoA  
Date: 10/14/2013

● Outside range  
— Acceptable limits



# UXO-29, Camp Lejeune, North Carolina EM61MK2 - Block D5C7G5 - Repeat Line 0



# **Appendix B**

## **Sample Grid Color-contoured Map**

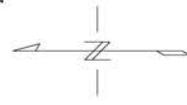


**Legend**

- Grid Boundary
- Area of Investigation
- Culture (if noted)
- Saturated Response Area (SRA)  
(If noted see individual ply files for all points)

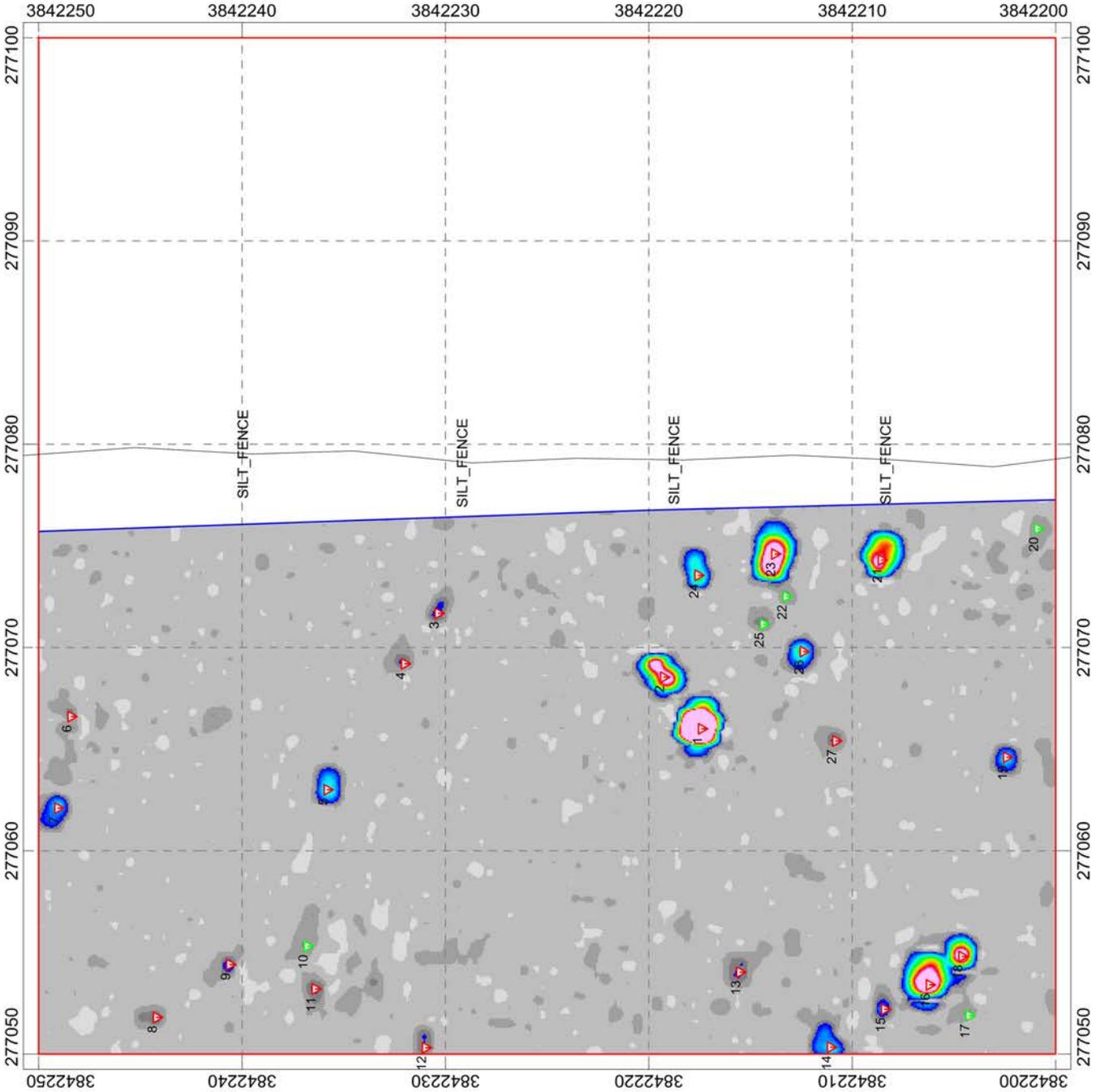
**Selected Targets**  
(See Target Pick List For Response and Location)

- 1 - Point
- 2 - Culture
- 3 - Suspected Culture
- 4 - Below Established Threshold
- 5 - Data Spike (Terrain Response or Ambient Noise)
- 6 - Saturated Response Area (SRA)
- 7 - Anomaly Selected within SRA



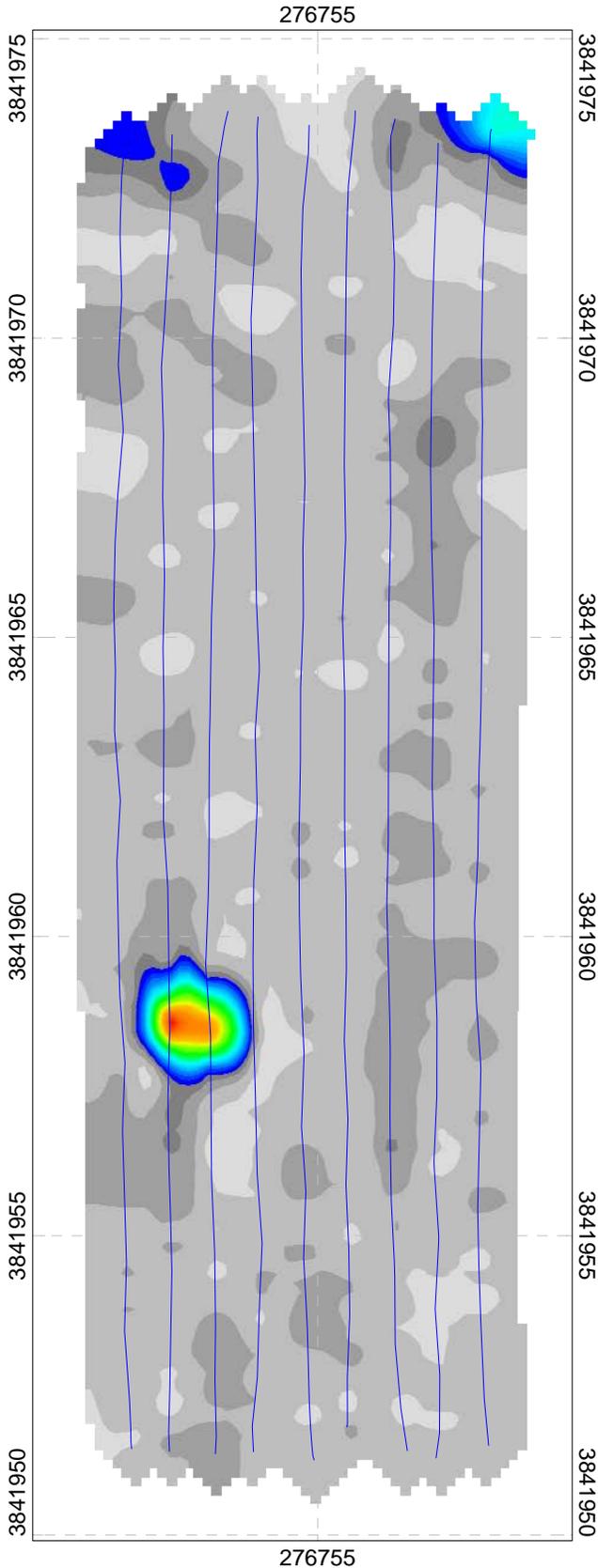
**Client: CH2M HILL**  
 EM61 MK2 Bottom Coil  
 Block D5C7G5 - Grid D5C7H5  
 UXO-29 - Runway Expansion Area  
 Marine Corps Air Station New River  
 MCIEast - MCB - Camp Lejeune, North Carolina

Date of Survey: 10/14/2013  
 Date of Map Creation: 10/15/2013  
 Map Approver: J. Guillard



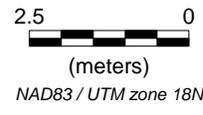
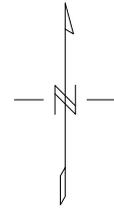
# **Appendix C**

## **Initial IVS Maps**

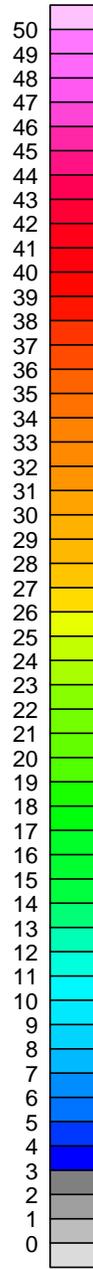
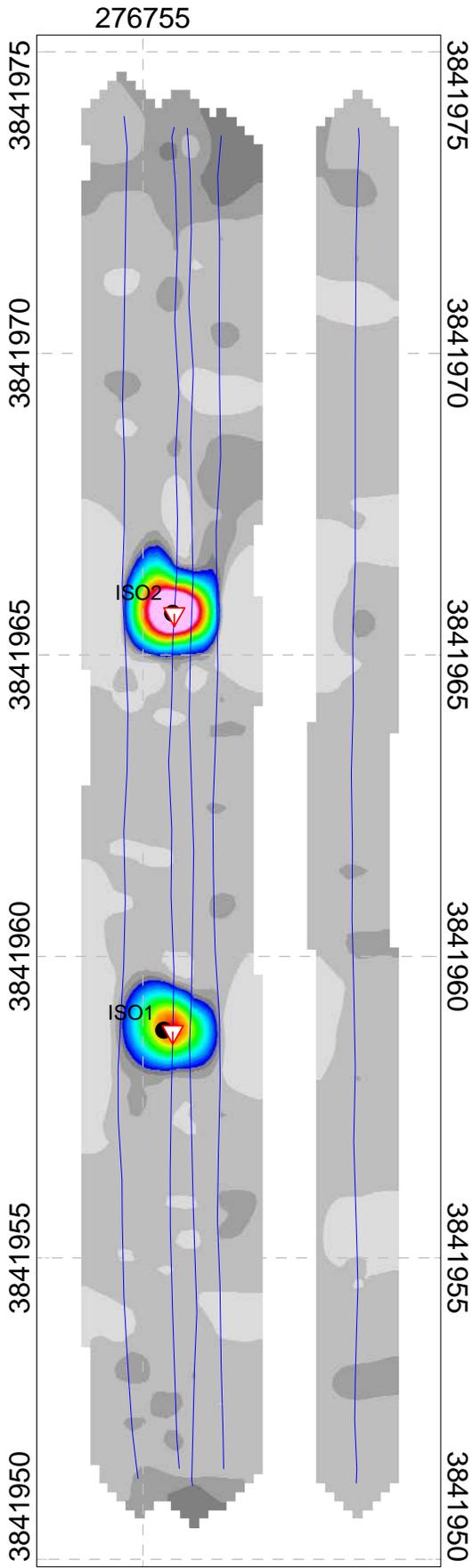


mV  
Channel 2

**Legend**  
 Line Path

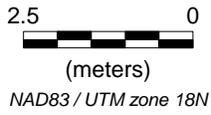
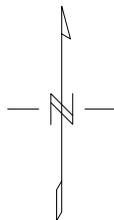


<b>Client: CH2M HILL</b>
EM61 MK2 Bottom Coil IVS01 (IVS Test) Background Marine Corps Air Station New River MCIEast - MCB - Camp Lejeune, North Carolina
Date of Survey: 10/10/2013 Date of Map Creation: 10/11/2013
Map Approver: J. Guillard



mV  
Channel 2

- ### Legend
-  Survey Point (if noted)
  -  Seed Location
  -  Selected Target  
(See Target Pick List For Response and Location)
  -  Line Path

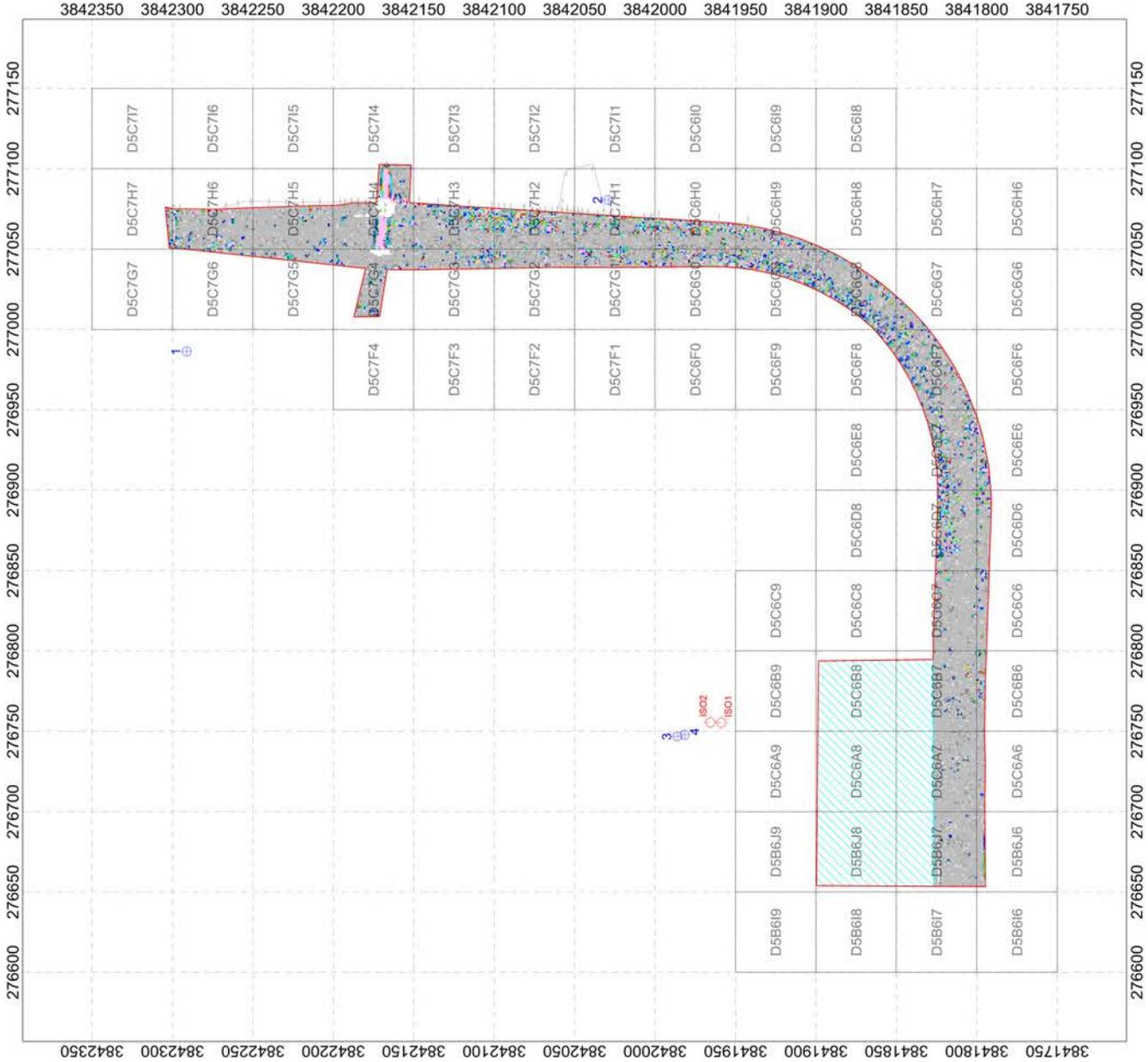
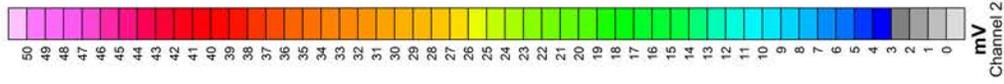


ID	X_UTM	Y_UTM	COMMENTS
ISO1	276755.3	3841959	9in (22.86cm) Vert. bgs
ISO2	276755.5	3841966	4in (10.16cm) Vert. bgs

<b>Client: CH2M HILL</b>
EM61 MK2 Bottom Coil IVS02 (IVS Test - 5 Line ) Seeded Marine Corps Air Station New River MCIEast - MCB - Camp Lejeune, North Carolina
Date of Survey: 10/10/2013 Date of Map Creation: 10/11/2013
Map Approver: J. Guillard

# **Plate 1**

**EM61-MK2 Bottom Coil Channel 2 Site Mosaic**



**Client: CH2M HILL**  
 EM61 MK2 Bottom Coil  
 Mosaic  
 UXO-29 - Runway Expansion Area  
 Marine Corps Air Station New River  
 MCIEast - MCB - Camp Lejeune, North Carolina  
 Date of Survey: 10/11/2013 - 10/21/2013  
 Date of Map Creation: 10/22/2013  
 Map Approver: J. Guillard

**Attachment B**  
**Intrusive Investigation Results**

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Appendix B  
MEC Intrusive Investigation Results  
Marine Corps Air Station New River - Runway Expansion Munition Response Area  
MCIEAST-MCB CAMLEJ  
North Carolina

Anomaly ID	DGM Survey Initial Reading	Easting (UTM meters)	Northing (UTM meters)	Group	Class	Category	Filler Type	Fuzed Descriptions	Quantity	Depth (inches)	Weight (pounds)	Post Excavation Reading (mV)	Action Taken	Final Disposition	Comment
D5C6B6-00006	15.4	276771.60	3841797.00	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	4	1	0	Consolidation Point	Demil	
D5C6B6-00007	155.8	276774.15	3841797.00	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	4	5	0	Consolidation Point	Demil	
D5C6B6-00008	304.2	276779.10	3841795.50	MDAS	Rocket	Rocket motor, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	2	0	Consolidation Point	Demil	
D5C6B6-00009	110.2	276785.81	3841796.43	MDAS	Rocket	Rocket motor, 2.36-inch, Practice, M7	Empty	Unfuzed	1	4	2	0	Consolidation Point	Demil	
D5C6B6-00011	76.2	276799.00	3841798.75	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	6	5	0	Consolidation Point	Demil	
D5C6B7-00002	107.3	276788.85	3841804.65	MDAS	Rocket	Warhead, Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	1	0	Consolidation Point	Demil	
D5C6B7-00003	6.4	276783.00	3841814.25	MDAS	Rocket	Rocket motor, 2.36-inch, Practice, M7	Empty	Unfuzed	1	8	1	0	Consolidation Point	Demil	
D5C6B7-00009	43.1	276762.45	3841818.60	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	4	1	0	Consolidation Point	Demil	
D5C6B7-00013	4.4	276769.95	3841814.55	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	16	1	0	Consolidation Point	Demil	
D5C6B7-00016	7.7	276762.75	3841810.95	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	4	1	0	Consolidation Point	Demil	
D5C6B7-00017	208.8	276761.02	3841810.14	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	4	5	0	Consolidation Point	Demil	
D5C6B7-00021	92.4	276768.45	3841801.65	MDAS	Rocket	Warhead, Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	1	0	Consolidation Point	Demil	
D5C6B7-00022	4.1	276770.40	3841801.65	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	2	0.5	0	Consolidation Point	Demil	
D5C6B7-00025	97.0	276774.90	3841806.15	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	3	5	0	Consolidation Point	Demil	
D5C6C6-00002	8.8	276844.06	3841795.89	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	0.5	1	Consolidation Point	Demil	
D5C6C6-00006	56.2	276808.80	3841796.25	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	1	1.5	0	Consolidation Point	Demil	
D5C6C6-00007	25.6	276825.45	3841796.40	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	6	1	0	Consolidation Point	Demil	
D5C6C6-00008	7.7	276831.00	3841797.45	MDAS	Projectile	Tail boom, Projectile, 60mm, M83	Empty	N/A	1	4	1	0	Consolidation Point	Demil	
D5C6C7-00001	365.7	276821.10	3841800.15	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	5	0	Consolidation Point	Demil	
D5C6C7-00007	37.4	276844.05	3841817.85	MDAS	Rocket	Warhead, Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	2	1	0	Consolidation Point	Demil	
D5C6C7-00008	36.0	276849.14	3841819.08	MDAS	Rocket	Warhead, Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	3	1	0	Consolidation Point	Demil	
D5C6C7-00009	16.7	276848.55	3841821.30	MDAS	Rocket	Rocket motor, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	0.5	0	Consolidation Point	Demil	
D5C6C7-00010	82.1	276848.15	3841824.10	MDAS	Rocket	Rocket motor, 2.36-inch, Practice, M7	Empty	Unfuzed	1	4	2	0	Consolidation Point	Demil	
D5C6C7-00011	139.9	276840.45	3841825.35	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	5	0	Consolidation Point	Demil	
D5C6C7-00013	155.2	276834.26	3841824.87	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	3	5	0	Consolidation Point	Demil	
D5C6C7-00014	227.9	276832.80	3841823.85	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	5	0	Consolidation Point	Demil	
D5C6C7-00016	149.7	276829.05	3841825.80	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	2	5	0	Consolidation Point	Demil	
D5C6C7-00017	155.7	276823.55	3841825.81	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	3	5	0	Consolidation Point	Demil	
D5C6C7-00020	166.3	276800.33	3841814.84	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	5	0	Consolidation Point	Demil	
D5C6D6-00001	197.1	276898.18	3841799.71	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	5	0	Consolidation Point	Demil	
D5C6D6-00007	75.9	276891.60	3841793.10	MDAS	Rocket	Rocket motor, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	1	0	Consolidation Point	Demil	
D5C6D6-00010	52.9	276876.45	3841796.10	MDAS	Rocket	Warhead, Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	1	2	Consolidation Point	Demil	
D5C6D6-00019	33.8	276891.75	3841796.55	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	4	0.5	0	Consolidation Point	Demil	
D5C6D7-00001	5915.7	276862.95	3841825.05	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	2	12	10	0	Consolidation Point	Demil	
D5C6D7-00002	128.9	276867.60	3841824.90	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	4	5	0	Consolidation Point	Demil	
D5C6D7-00003	538.0	276867.15	3841823.25	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	6	5	0	Consolidation Point	Demil	
D5C6D7-00004	3.5	276869.25	3841822.50	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	6	0.5	0	Consolidation Point	Demil	
D5C6D7-00007	21.4	276879.59	3841824.46	MDAS	Rocket	Rocket, 2.36-inch, HEAT, M6	Empty	Unfuzed	1	18	5	0	Consolidation Point	Demil	
D5C6D7-00008	144.6	276881.89	3841824.27	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	3	8	15	0	Consolidation Point	Demil	
D5C6D7-00009	32.6	276881.10	3841822.95	MDAS	Rocket	Rocket motor, 2.36-inch, Practice, M7	Empty	Unfuzed	1	4	1	0	Consolidation Point	Demil	
D5C6D7-00011	153.9	276881.70	3841821.30	MDAS	Rocket	Rocket motor, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	2	0	Consolidation Point	Demil	
D5C6D7-00013	72.0	276885.00	3841824.45	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	5	5	0	Consolidation Point	Demil	
D5C6D7-00014	103.4	276886.50	3841824.46	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	3	12	15	0	Consolidation Point	Demil	
D5C6D7-00015	128.5	276886.50	3841822.05	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	4	5	0	Consolidation Point	Demil	
D5C6D7-00016	188.3	276884.40	3841820.85	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	2	5	0	Consolidation Point	Demil	
D5C6D7-00017	16.4	276885.60	3841819.18	MDAS	Rocket	Rocket motor, 2.36-inch, Practice, M7	Empty	Unfuzed	1	4	1	0	Consolidation Point	Demil	
D5C6D7-00018	232.9	276883.80	3841817.85	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	6	5	0	Consolidation Point	Demil	
D5C6D7-00019	93.1	276885.75	3841818.00	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	6	5	0	Consolidation Point	Demil	
D5C6D7-00020	116.4	276886.37	3841818.59	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	3	5	0	Consolidation Point	Demil	
D5C6D7-00022	122.5	276888.88	3841817.95	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	4	5	0	Consolidation Point	Demil	
D5C6D7-00024	149.6	276890.06	3841821.17	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	3	5	0	Consolidation Point	Demil	
D5C6D7-00025	104.4	276890.10	3841823.10	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	6	5	0	Consolidation Point	Demil	
D5C6D7-00026	26.0	276888.89	3841824.40	MDAS	Rocket	Warhead, Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	4	1	0	Consolidation Point	Demil	
D5C6D7-00028	255.2	276893.36	3841822.50	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	2	5	1	Consolidation Point	Demil	
D5C6D7-00029	190.7	276895.64	3841824.29	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	5	1	Consolidation Point	Demil	
D5C6D7-00030	258.8	276897.45	3841823.10	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	5	0	Consolidation Point	Demil	
D5C6D7-00033	409.3	276895.62	3841821.25	MDAS	Rocket	Rocket motor, 2.36-inch, Practice, M7	Empty	Unfuzed	2	1	10	0	Consolidation Point	Demil	
D5C6D7-00034	177.6	276894.15	3841818.90	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	3	5	0	Consolidation Point	Demil	
D5C6D7-00035	56.9	276893.06	3841817.86	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	4	5	0	Consolidation Point	Demil	
D5C6D7-00036	120.9	276895.38	3841817.65	MDAS	Rocket	Rocket motor, 2.36-inch, Practice, M7	Empty	Unfuzed	1	6	1	0	Consolidation Point	Demil	

Appendix B  
MEC Intrusive Investigation Results  
Marine Corps Air Station New River - Runway Expansion Munition Response Area  
MCIEAST-MCB CAMLEJ  
North Carolina

Anomaly ID	DGM Survey Initial Reading	Easting (UTM meters)	Northing (UTM meters)	Group	Class	Category	Filler Type	Fuzed Descriptions	Quantity	Depth (inches)	Weight (pounds)	Post Excavation Reading (mV)	Action Taken	Final Disposition	Comment
D5C6D7-00037	191.2	276897.15	3841817.70	MDAS	Rocket	Rocket motor, 2.36-inch, Practice, M7	Empty	Unfuzed	1	3	1	0	Consolidation Point	Demil	
D5C6D7-00038	133.1	276899.41	3841818.93	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	4	5	0	Consolidation Point	Demil	
D5C6D7-00040	176.2	276898.80	3841813.20	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	3	5	0	Consolidation Point	Demil	
D5C6D7-00044	728.3	276893.85	3841810.80	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	4	0	Consolidation Point	Demil	
D5C6D7-00046	5.4	276889.05	3841807.95	MDAS	Projectile	Tail boom, Projectile, 60mm, M49	Empty	N/A	1	4	0.5	0	Consolidation Point	Demil	
D5C6D7-00047	27.7	276886.80	3841808.40	MDAS	Rocket	Warhead, Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	12	1	0	Consolidation Point	Demil	
D5C6D7-00048	253.1	276884.10	3841807.65	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	5	0	Consolidation Point	Demil	
D5C6D7-00052	70.5	276882.00	3841814.40	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	4	1	0	Consolidation Point	Demil	
D5C6D7-00053	57.5	276881.05	3841817.34	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	6	5	0	Consolidation Point	Demil	
D5C6D7-00054	160.4	276879.75	3841817.40	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	4	5	0	Consolidation Point	Demil	
D5C6D7-00055	32.9	276879.75	3841815.45	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	2	1	0	Consolidation Point	Demil	
D5C6D7-00056	274.6	276878.40	3841816.05	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	5	0	Consolidation Point	Demil	
D5C6D7-00057	100.0	276876.57	3841814.97	MDAS	Rocket	Warhead, Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	2	1	0	Consolidation Point	Demil	
D5C6D7-00061	28.4	276872.25	3841816.05	MDAS	Rocket	Warhead, Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	1	0	Consolidation Point	Demil	
D5C6D7-00062	75.6	276872.55	3841818.15	MDAS	Rocket	Warhead, Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	12	5	0	Consolidation Point	Demil	
D5C6D7-00063	43.7	276871.90	3841818.22	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	10	5	0	Consolidation Point	Demil	
D5C6D7-00065	33.3	276867.90	3841818.30	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	12	5	0	Consolidation Point	Demil	
D5C6D7-00066	172.3	276866.58	3841816.54	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	5	0	Consolidation Point	Demil	
D5C6D7-00067	108.0	276868.89	3841813.25	MDAS	Rocket	Rocket motor, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	1	0	Consolidation Point	Demil	
D5C6D7-00068	106.5	276868.05	3841810.95	MDAS	Rocket	Warhead, Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	4	0.5	0	Consolidation Point	Demil	
D5C6D7-00072	1152.4	276864.45	3841811.25	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	2	1	0	Consolidation Point	Demil	Along with 20 lbs of CD
D5C6D7-00073	1650.9	276862.05	3841811.25	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	5	0	Consolidation Point	Demil	
D5C6D7-00075	266.3	276859.19	3841816.91	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	3	5	0	Consolidation Point	Demil	
D5C6D7-00077	144.9	276856.05	3841822.80	MDAS	Rocket	Rocket motor, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	1	0	Consolidation Point	Demil	
D5C6D7-00078	271.8	276856.65	3841824.45	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	2	5	0	Consolidation Point	Demil	
D5C6D7-00080	43.6	276858.90	3841822.65	MDAS	Rocket	Rocket motor, 2.36-inch, Practice, M7	Empty	Unfuzed	1	6	1	0	Consolidation Point	Demil	
D5C6D7-00081	64.1	276859.35	3841820.55	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	8	5	0	Consolidation Point	Demil	
D5C6D7-00084	155.4	276863.55	3841817.25	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	3	5	0	Consolidation Point	Demil	
D5C6D7-00085	130.1	276863.40	3841819.50	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	6	5	0	Consolidation Point	Demil	
D5C6D7-00086	75.5	276863.40	3841821.00	MDAS	Rocket	Rocket motor, 2.36-inch, Practice, M7	Empty	Unfuzed	1	5	1	0	Consolidation Point	Demil	
D5C6D7-00087	261.2	276861.60	3841823.02	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	3	5	2	Consolidation Point	Demil	
D5C6D7-00088	32.4	276860.01	3841825.25	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	6	5	2	Consolidation Point	Demil	
D5C6E6-00006	263.4	276936.90	3841798.65	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	3	6	0	Consolidation Point	Demil	
D5C6E6-00011	271.7	276935.40	3841797.69	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	5	0	Consolidation Point	Demil	
D5C6E6-00012	444.1	276925.80	3841795.65	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	2	2	10	0	Consolidation Point	Demil	
D5C6E6-00013	41.1	276924.25	3841794.59	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	12	5	0	Consolidation Point	Demil	
D5C6E6-00015	28.6	276917.18	3841793.19	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	5	0	Consolidation Point	Demil	
D5C6E6-00019	396.6	276912.30	3841793.10	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	2	4	10	2	Consolidation Point	Demil	
D5C6E6-00021	86.5	276903.30	3841793.85	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	3	5	0	Consolidation Point	Demil	
D5C6E6-00022	40.1	276901.20	3841796.25	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	6	2	0	Consolidation Point	Demil	
D5C6E7-00011	51.4	276948.60	3841806.30	MDAS	Projectile	Tail boom, Projectile, 60mm, M49	Empty	N/A	1	6	3	1.9	Consolidation Point	Demil	
D5C6E7-00030	279.6	276938.40	3841827.15	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	3	2	1	Consolidation Point	Demil	
D5C6E7-00032	10.8	276939.75	3841825.95	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	6	1	1	Consolidation Point	Demil	
D5C6E7-00039	108.6	276930.15	3841817.85	MDAS	Rocket	Rocket motor, 2.36-inch, Practice, M7	Empty	Unfuzed	1	8	4	0	Consolidation Point	Demil	
D5C6E7-00043	159.9	276931.95	3841825.05	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	3	4	1	Consolidation Point	Demil	
D5C6E7-00045	24.2	276927.60	3841824.00	MDAS	Rocket	Rocket motor, 2.36-inch, Practice, M7	Empty	Unfuzed	1	5	2	1	Consolidation Point	Demil	
D5C6E7-00046	217.1	276925.95	3841823.55	MDAS	Rocket	Rocket motor, 2.36-inch, Practice, M7	Empty	Unfuzed	1	6	3	1	Consolidation Point	Demil	
D5C6E7-00049	258.4	276922.60	3841821.98	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	5	4	1	Consolidation Point	Demil	
D5C6E7-00050	127.9	276920.88	3841822.53	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	4	4	1	Consolidation Point	Demil	
D5C6E7-00051	133.2	276917.25	3841822.50	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	6	4	1	Consolidation Point	Demil	
D5C6E7-00055	48.8	276914.70	3841820.06	MDAS	Rocket	Warhead, Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	8	2	1	Consolidation Point	Demil	
D5C6E7-00058	91.1	276913.22	3841824.88	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	4	1	1	Consolidation Point	Demil	
D5C6E7-00059	124.8	276910.95	3841820.25	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	4	4	1	Consolidation Point	Demil	
D5C6E7-00063	122.9	276909.60	3841817.70	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	3	4	1	Consolidation Point	Demil	
D5C6E7-00064	11.2	276906.51	3841816.69	MDAS	Rocket	Warhead, Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	8	2	1	Consolidation Point	Demil	
D5C6E7-00065	183.8	276903.90	3841816.20	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	3	4	1	Consolidation Point	Demil	
D5C6E7-00067	63.4	276905.10	3841819.40	MDAS	Rocket	Warhead, Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	6	2	1	Consolidation Point	Demil	
D5C6E7-00069	153.8	276907.35	3841821.75	MDAS	Rocket	Warhead, Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	2	4	1	Consolidation Point	Demil	
D5C6E7-00071	166.5	276906.00	3841823.10	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	6	4	1	Consolidation Point	Demil	
D5C6E7-00073	904.3	276901.06	3841822.06	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	6	4	1	Consolidation Point	Demil	Along with 20 lbs of CD

Appendix B  
MEC Intrusive Investigation Results  
Marine Corps Air Station New River - Runway Expansion Munition Response Area  
MCIEAST-MCB CAMLEJ  
North Carolina

Anomaly ID	DGM Survey Initial Reading	Easting (UTM meters)	Northing (UTM meters)	Group	Class	Category	Filler Type	Fuzed Descriptions	Quantity	Depth (inches)	Weight (pounds)	Post Excavation Reading (mV)	Action Taken	Final Disposition	Comment
D5C6E7-00075	21.3	276901.65	3841817.85	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	4	2	1	Consolidation Point	Demil	
D5C6E7-00079	11.3	276903.15	3841810.80	MDAS	Rocket	Warhead, Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	12	2	1	Consolidation Point	Demil	
D5C6E7-00080	200.5	276904.80	3841810.05	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	2	1	1	Consolidation Point	Demil	
D5C6E7-00087	104.1	276918.15	3841816.50	MDAS	Rocket	Rocket motor, 2.36-inch, Practice, M7	Empty	Unfuzed	1	6	3	1	Consolidation Point	Demil	
D5C6E7-00089	42.0	276919.95	3841819.20	MDAS	Rocket	Rocket motor, 2.36-inch, Practice, M7	Empty	Unfuzed	1	8	2	1	Consolidation Point	Demil	
D5C6E7-00096	13.1	276921.15	3841809.15	MDAS	Grenade	Grenade, Hand, WP, M34	Empty	Unfuzed	1	2	2	1	Consolidation Point	Demil	
D5C6E7-00097	43.1	276919.20	3841804.20	MDAS	Rocket	Rocket motor, 2.36-inch, Practice, M7	Empty	Unfuzed	1	6	2	2	Consolidation Point	Demil	
D5C6E7-00100	193.2	276922.35	3841800.64	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	2	3	1	Consolidation Point	Demil	
D5C6E7-00108	73.3	276932.70	3841806.45	MDAS	Projectile	Tail boom, Projectile, 60mm, M49	Empty	N/A	1	1	2	1	Consolidation Point	Demil	
D5C6E7-00112	46.5	276937.50	3841804.95	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	4	2	1	Consolidation Point	Demil	
D5C6F7-00001	998.6	276995.60	3841845.20	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	1	5	0.4	Consolidation Point	Demil	
D5C6F7-00005	13.4	276991.35	3841832.31	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	5	1	1.8	Consolidation Point	Demil	
D5C6F7-00009	11.4	276997.98	3841828.51	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	4	1	1.9	Consolidation Point	Demil	
D5C6F7-00011	20.8	276993.49	3841825.03	MDAS	Projectile	Tail boom, Projectile, 60mm, M49	Empty	N/A	1	5	2	1.3	Consolidation Point	Demil	
D5C6F7-00016	3.3	276986.20	3841820.00	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	2	1	2.4	Consolidation Point	Demil	
D5C6F7-00017	184.9	276986.00	3841823.80	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	3	1.2	Consolidation Point	Demil	
D5C6F7-00018	206.2	276985.00	3841827.20	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	2	1	6	1.6	Consolidation Point	Demil	
D5C6F7-00019	13.9	276981.60	3841830.40	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	6	3	0.3	Consolidation Point	Demil	
D5C6F7-00021	18.4	276977.00	3841819.60	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	2	6	1.4	Consolidation Point	Demil	
D5C6F7-00026	3.0	276972.54	3841816.31	MDAS	Projectile	Tail boom, Projectile, 60mm, M83	Empty	N/A	1	6	1	1.7	Consolidation Point	Demil	
D5C6F7-00027	9.9	276972.20	3841819.20	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	3	1	1.3	Consolidation Point	Demil	
D5C6F7-00028	184.3	276971.20	3841813.20	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	4	2.2	Consolidation Point	Demil	
D5C6F7-00031	19.9	276968.20	3841814.20	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	3	2	1.4	Consolidation Point	Demil	
D5C6F7-00032	3.0	276969.20	3841815.20	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	6	1	2.5	Consolidation Point	Demil	
D5C6F7-00036	128.9	276963.82	3841818.86	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	2	4	2.5	Consolidation Point	Demil	
D5C6F7-00037	21.3	276962.20	3841820.00	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	4	1	2.3	Consolidation Point	Demil	
D5C6F7-00044	13.5	276958.00	3841805.00	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	1	0.9	Consolidation Point	Demil	
D5C6F7-00050	7.1	276950.60	3841805.00	MDAS	Projectile	Tail boom, Projectile, 60mm, M49	Empty	N/A	1	8	2	1.9	Consolidation Point	Demil	
D5C6F7-00051	67.3	276954.07	3841806.65	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	2	2	2.3	Consolidation Point	Demil	
D5C6F7-00069	17.8	276961.00	3841831.00	MDAS	Projectile	Tail boom, Projectile, 60mm, M83	Empty	N/A	1	6	2	2.1	Consolidation Point	Demil	
D5C6F7-00080	56.2	276964.43	3841835.25	MDAS	Projectile	Projectile, 60mm, M83	Empty	Unfuzed	1	1	2	1.6	Consolidation Point	Demil	
D5C6F7-00081	19.7	276963.20	3841835.40	MDAS	Projectile	Tail boom, Projectile, 60mm, M49	Empty	N/A	1	3	2	1.1	Consolidation Point	Demil	
D5C6F7-00083	7.4	276966.74	3841839.29	MDAS	Projectile	Tail boom, Projectile, 60mm, M49	Empty	N/A	1	6	2	1	Consolidation Point	Demil	
D5C6F7-00085	14.2	276968.63	3841838.74	MDAS	Projectile	Tail boom, Projectile, 60mm, M83	Empty	N/A	1	4	2	1	Consolidation Point	Demil	
D5C6F7-00092	15.6	276974.80	3841832.60	MDAS	Projectile	Projectile, 60mm, M83	Empty	Unfuzed	1	8	2	0.1	Consolidation Point	Demil	
D5C6F7-00094	433.7	276975.20	3841838.60	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	6	10	0.7	Consolidation Point	Demil	
D5C6F7-00095	11.8	276978.40	3841841.80	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	8	2	1.3	Consolidation Point	Demil	
D5C6F7-00099	12.1	276970.52	3841842.52	MDAS	Projectile	Tail boom, Projectile, 60mm, M49	Empty	N/A	1	4	2	0.4	Consolidation Point	Demil	
D5C6F7-00101	13.6	276975.60	3841844.60	MDAS	Projectile	Projectile, 60mm, M49	Empty	Unfuzed	1	6	2	0.8	Consolidation Point	Demil	
D5C6F7-00105	4.9	276980.21	3841848.36	MDAS	Projectile	Tail boom, Projectile, 60mm, M49	Empty	N/A	1	4	2	1.4	Consolidation Point	Demil	
D5C6F7-00107	16.3	276981.20	3841846.20	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	5	2	2.4	Consolidation Point	Demil	
D5C6F7-00110	13.9	276981.40	3841842.60	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	8	2	2	Consolidation Point	Demil	
D5C6F7-00112	8.5	276980.60	3841839.60	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	6	1	0.2	Consolidation Point	Demil	
D5C6F7-00113	69.7	276983.20	3841838.20	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	2	2	2.5	Consolidation Point	Demil	
D5C6F7-00118	7.9	276985.00	3841844.20	MDAS	Projectile	Tail boom, Projectile, 60mm, M83	Empty	N/A	1	8	2	0.3	Consolidation Point	Demil	
D5C6F7-00124	77.0	276990.00	3841841.60	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	2	2	0.4	Consolidation Point	Demil	
D5C6F7-00129	22.1	276993.49	3841847.48	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	1	1	0.8	Consolidation Point	Demil	
D5C6F8-00010	40.5	276990.40	3841853.00	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	8	1	1	Consolidation Point	Demil	
D5C6F8-00012	8.9	276991.40	3841854.40	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	6	1	2	Consolidation Point	Demil	
D5C6F8-00017	6.7	276995.20	3841858.60	MDAS	Grenade	Grenade, Rifle, Practice, M7	Empty	Unfuzed	1	2	1	1	Consolidation Point	Demil	
D5C6F8-00020	8.4	276998.05	3841861.22	MDAS	Projectile	Tail boom, Projectile, 60mm, M83	Empty	N/A	1	16	1	1	Consolidation Point	Demil	
D5C6G0-00005	408.1	277049.40	3841954.40	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	2	0	Consolidation Point	Demil	
D5C6G0-00006	146.4	277046.00	3841954.20	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	6	2	1	Consolidation Point	Demil	
D5C6G0-00008	17.7	277045.20	3841959.00	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	3	1	0	Consolidation Point	Demil	
D5C6G0-00013	59.6	277044.40	3841971.80	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	3	1.5	0	Consolidation Point	Demil	
D5C6G0-00018	148.3	277047.40	3841973.00	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	3	1.2	0	Consolidation Point	Demil	
D5C6G0-00019	36.5	277044.87	3841975.39	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	2	1	0	Consolidation Point	Demil	
D5C6G0-00020	196.0	277042.20	3841977.40	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	3	2	2	Consolidation Point	Demil	
D5C6G0-00021	135.1	277039.08	3841976.86	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	1.5	1	Consolidation Point	Demil	
D5C6G0-00022	225.5	277041.54	3841980.15	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	3	0	Consolidation Point	Demil	

Appendix B  
MEC Intrusive Investigation Results  
Marine Corps Air Station New River - Runway Expansion Munition Response Area  
MCIEAST-MCB CAMLEJ  
North Carolina

Anomaly ID	DGM Survey Initial Reading	Easting (UTM meters)	Northing (UTM meters)	Group	Class	Category	Filler Type	Fuzed Descriptions	Quantity	Depth (inches)	Weight (pounds)	Post Excavation Reading (mV)	Action Taken	Final Disposition	Comment
D5C6G0-00023	393.6	277044.80	3841979.20	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	3	0	Consolidation Point	Demil	
D5C6G0-00025	141.0	277048.60	3841981.00	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	3	3	0	Consolidation Point	Demil	
D5C6G0-00028	18.3	277048.60	3841985.40	MDAS	Projectile	Tail boom, Projectile, 60mm, M49	Empty	N/A	1	1	1	0	Consolidation Point	Demil	
D5C6G0-00031	127.8	277047.40	3841994.00	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	5	1	Consolidation Point	Demil	
D5C6G0-00043	101.1	277045.40	3841988.20	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	5	0	Consolidation Point	Demil	
D5C6G0-00046	80.6	277042.20	3841987.80	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	3	1.5	0	Consolidation Point	Demil	
D5C6G0-00050	381.4	277041.40	3841970.80	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	3	0	Consolidation Point	Demil	
D5C6G0-00052	135.6	277039.80	3841970.60	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	2	0	Consolidation Point	Demil	
D5C6G0-00053	365.4	277040.40	3841963.40	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	2	0	Consolidation Point	Demil	
D5C6G7-00008	12.6	277003.20	3841833.20	MDAS	Projectile	Tail boom, Projectile, 60mm, M49	Empty	N/A	1	1	1	0.7	Consolidation Point	Demil	
D5C6G7-00010	31.2	277013.80	3841843.60	MDAS	Projectile	Tail boom, Projectile, 60mm, M49	Empty	N/A	1	4	2	0.5	Consolidation Point	Demil	
D5C6G7-00015	6.1	277007.20	3841846.20	MDAS	Projectile	Tail boom, Projectile, 60mm, M83	Empty	N/A	1	4	1	0.6	Consolidation Point	Demil	
D5C6G8-00004	15.2	277043.00	3841895.40	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	3	2	2	Consolidation Point	Demil	
D5C6G8-00007	36.9	277046.31	3841893.66	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	8	2	2	Consolidation Point	Demil	
D5C6G8-00011	35.8	277043.83	3841887.02	MDAS	Rocket	Warhead, Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	3	2	0	Consolidation Point	Demil	
D5C6G8-00012	3.7	277034.60	3841885.40	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	11	1	0	Consolidation Point	Demil	
D5C6G8-00014	205.2	277042.80	3841882.00	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	3	2	0	Consolidation Point	Demil	
D5C6G8-00019	216.9	277036.77	3841871.79	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	6	2	0	Consolidation Point	Demil	
D5C6G8-00020	13.4	277032.00	3841867.80	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	6	2	0	Consolidation Point	Demil	
D5C6G8-00026	126.7	277023.94	3841857.27	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	6	3	1	Consolidation Point	Demil	
D5C6G8-00027	151.1	277021.90	3841857.04	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	4	3	1	Consolidation Point	Demil	
D5C6G8-00033	142.0	277016.92	3841852.19	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	3	3	2	Consolidation Point	Demil	
D5C6G8-00037	16.6	277003.80	3841850.40	MDAS	Projectile	Tail boom, Projectile, 60mm, M49	Empty	N/A	1	3	2	1	Consolidation Point	Demil	
D5C6G8-00045	9.7	277006.24	3841855.47	MDAS	Projectile	Tail boom, Projectile, 60mm, M49	Empty	N/A	1	6	1	0	Consolidation Point	Demil	
D5C6G8-00051	6.6	277001.00	3841858.00	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	3	1	0	Consolidation Point	Demil	
D5C6G8-00055	39.0	277005.60	3841862.80	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	8	3	1	Consolidation Point	Demil	
D5C6G8-00056	39.9	277006.80	3841862.60	MDAS	Projectile	Tail boom, Projectile, 60mm, M49	Empty	N/A	1	8	1	1	Consolidation Point	Demil	
D5C6G8-00074	14.6	277014.40	3841872.60	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	5	2	1	Consolidation Point	Demil	
D5C6G8-00079	8.5	277009.04	3841865.95	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	2	2	1	Consolidation Point	Demil	
D5C6G8-00081	30.2	277005.40	3841867.60	MDAS	Projectile	Tail boom, Projectile, 60mm, M83	Empty	N/A	1	2	2	2	Consolidation Point	Demil	
D5C6G8-00082	16.2	277004.27	3841868.44	MDAS	Projectile	Tail boom, Projectile, 60mm, M49	Empty	N/A	1	1	2	2	Consolidation Point	Demil	
D5C6G8-00083	11.7	277005.80	3841869.80	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	8	2	2	Consolidation Point	Demil	
D5C6G8-00086	3.6	277008.20	3841869.80	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	6	2	0	Consolidation Point	Demil	
D5C6G8-00087	4.2	277007.90	3841871.08	MDAS	Projectile	Tail boom, Projectile, 60mm, M49	Empty	N/A	1	8	2	0	Consolidation Point	Demil	
D5C6G8-00088	9.5	277007.59	3841872.44	MDAS	Projectile	Tail boom, Projectile, 60mm, M49	Empty	N/A	1	3	2	2	Consolidation Point	Demil	
D5C6G8-00091	14.6	277009.40	3841874.00	MDAS	Projectile	Tail boom, Projectile, 60mm, M83	Empty	N/A	1	6	2	1	Consolidation Point	Demil	
D5C6G8-00093	9.0	277012.80	3841876.80	MDAS	Projectile	Tail boom, Projectile, 60mm, M49	Empty	N/A	1	6	2	1	Consolidation Point	Demil	
D5C6G8-00095	24.4	277016.64	3841878.60	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	1	2	1	Consolidation Point	Demil	
D5C6G8-00096	17.3	277017.65	3841877.67	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	3	2	2	Consolidation Point	Demil	
D5C6G8-00111	8.6	277018.00	3841885.00	MDAS	Projectile	Tail boom, Projectile, 60mm, M49	Empty	N/A	1	3	2	1	Consolidation Point	Demil	
D5C6G8-00115	7.9	277022.60	3841882.60	MDAS	Projectile	Tail boom, Projectile, 60mm, M49	Empty	N/A	1	6	2	1	Consolidation Point	Demil	
D5C6G8-00121	19.8	277025.24	3841889.75	MDAS	Projectile	Tail boom, Projectile, 60mm, M83	Empty	N/A	1	1	2	2	Consolidation Point	Demil	
D5C6G8-00125	16.4	277030.80	3841891.00	MDAS	Projectile	Projectile, 81mm, WP, M57	Empty	Unfuzed	1	4	2	2	Consolidation Point	Demil	
D5C6G8-00126	47.8	277028.00	3841890.60	MDAS	Projectile	Projectile, 81mm, WP, M57	Empty	Unfuzed	1	4	2	0	Consolidation Point	Demil	
D5C6G8-00131	12.2	277020.88	3841890.02	MDAS	Projectile	Tail boom, Projectile, 60mm, M49	Empty	N/A	1	4	2	0	Consolidation Point	Demil	
D5C6G8-00133	82.8	277022.28	3841892.77	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	8	2	0	Consolidation Point	Demil	
D5C6G8-00134	37.8	277021.61	3841893.88	MDAS	Projectile	Projectile, 81mm, WP, M57	Empty	Unfuzed	1	8	4	1	Consolidation Point	Demil	
D5C6G8-00135	5.7	277022.30	3841895.17	MDAS	Projectile	Tail boom, Projectile, 60mm, M49	Empty	N/A	1	12	2	2	Consolidation Point	Demil	
D5C6G8-00136	14.8	277023.40	3841894.60	MDAS	Projectile	Tail boom, Projectile, 60mm, M83	Empty	N/A	1	8	2	1	Consolidation Point	Demil	
D5C6G8-00138	44.7	277023.76	3841897.91	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	8	3	1	Consolidation Point	Demil	
D5C6G8-00148	308.8	277031.00	3841897.00	MDAS	Projectile	Tail boom, Projectile, 60mm, M49	Empty	N/A	1	2	2	1	Consolidation Point	Demil	
D5C6G9-00003	28.8	277047.00	3841927.40	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	4	1	2	Consolidation Point	Demil	
D5C6G9-00008	6.3	277042.40	3841936.60	MDAS	Projectile	Tail boom, Projectile, 60mm, M49	Empty	N/A	1	8	2	1	Consolidation Point	Demil	
D5C6G9-00017	50.8	277043.20	3841943.00	MDAS	Rocket	Warhead, Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	6	2	1	Consolidation Point	Demil	
D5C6G9-00022	186.0	277047.20	3841946.60	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	3	1	Consolidation Point	Demil	
D5C6G9-00028	9.1	277038.13	3841946.15	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	8	2	1	Consolidation Point	Demil	
D5C6G9-00031	273.2	277039.40	3841940.60	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	3	2	Consolidation Point	Demil	
D5C6G9-00032	119.4	277039.10	3841938.06	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	3	3	1	Consolidation Point	Demil	
D5C6G9-00033	352.8	277038.73	3841937.25	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	3	1	Consolidation Point	Demil	
D5C6G9-00034	35.7	277037.80	3841933.80	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	8	1	1	Consolidation Point	Demil	

Appendix B  
MEC Intrusive Investigation Results  
Marine Corps Air Station New River - Runway Expansion Munition Response Area  
MCIEAST-MCB CAMLEJ  
North Carolina

Anomaly ID	DGM Survey Initial Reading	Easting (UTM meters)	Northing (UTM meters)	Group	Class	Category	Filler Type	Fuzed Descriptions	Quantity	Depth (inches)	Weight (pounds)	Post Excavation Reading (mV)	Action Taken	Final Disposition	Comment
D5C6G9-00035	40.9	277038.54	3841934.18	MDAS	Rocket	Rocket motor, 2.36-inch, Practice, M7	Empty	Unfuzed	1	8	2	0	Consolidation Point	Demil	
D5C6G9-00036	3.3	277040.49	3841935.36	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	1	1	1	Consolidation Point	Demil	
D5C6G9-00038	7.6	277040.92	3841932.58	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	4	1	1	Consolidation Point	Demil	
D5C6G9-00039	39.3	277042.30	3841931.14	MDAS	Rocket	Rocket motor, 2.36-inch, Practice, M7	Empty	Unfuzed	1	6	2	1	Consolidation Point	Demil	
D5C6G9-00040	40.3	277040.98	3841930.56	MDAS	Rocket	Rocket motor, 2.36-inch, Practice, M7	Empty	Unfuzed	1	10	2	2	Consolidation Point	Demil	
D5C6G9-00043	27.8	277039.20	3841928.80	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	4	2	1	Consolidation Point	Demil	
D5C6G9-00050	5.1	277034.60	3841926.00	MDAS	Projectile	Tail boom, Projectile, 60mm, M49	Empty	N/A	1	8	1	2	Consolidation Point	Demil	
D5C6G9-00051	11.5	277035.40	3841923.60	MDAS	Projectile	Tail boom, Projectile, 60mm, M49	Empty	N/A	1	3	2	1	Consolidation Point	Demil	
D5C6G9-00052	12.8	277036.00	3841922.60	MDAS	Projectile	Tail boom, Projectile, 60mm, M49	Empty	N/A	1	6	2	1	Consolidation Point	Demil	
D5C6G9-00053	3.8	277037.42	3841922.06	MDAS	Projectile	Tail boom, Projectile, 60mm, M49	Empty	N/A	1	6	1	2	Consolidation Point	Demil	
D5C6G9-00055	23.6	277035.56	3841918.79	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	2	2	2	Consolidation Point	Demil	
D5C6G9-00056	97.8	277033.40	3841917.40	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	3	2	1	Consolidation Point	Demil	
D5C6G9-00064	19.1	277035.80	3841906.80	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	8	2	2	Consolidation Point	Demil	
D5C6G9-00065	12.2	277033.40	3841906.80	MDAS	Projectile	Tail boom, Projectile, 60mm, M49	Empty	N/A	1	6	0.5	1	Consolidation Point	Demil	
D5C6G9-00068	83.5	277033.20	3841911.60	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	4	2	1	Consolidation Point	Demil	
D5C6G9-00073	22.2	277028.00	3841904.20	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	6	1	0	Consolidation Point	Demil	
D5C6G9-00078	19.9	277027.80	3841900.80	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	8	2	0	Consolidation Point	Demil	
D5C6G9-00088	4.0	277049.09	3841900.48	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	2	1	0	Consolidation Point	Demil	
D5C6G9-00097	6.0	277039.52	3841922.85	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	1	1	2	Consolidation Point	Demil	
D5C6H0-00041	107.2	277060.20	3841974.40	MDAS	Rocket	Rocket motor, 2.36-inch, Practice, M7	Empty	Unfuzed	1	3	1.5	1	Consolidation Point	Demil	
D5C6H0-00068	275.7	277052.40	3841990.40	MDAS	Rocket	Rocket motor, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	3	1	Consolidation Point	Demil	
D5C6H9-00007	91.3	277052.10	3841903.14	MDAS	Rocket	Rocket motor, 2.36-inch, Practice, M7	Empty	Unfuzed	1	2	2	0.8	Consolidation Point	Demil	
D5C6H9-00009	18.5	277053.33	3841909.44	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	2	1	0.2	Consolidation Point	Demil	
D5C6H9-00028	150.5	277061.20	3841942.00	MDAS	Rocket	Rocket motor, 2.36-inch, Practice, M7	Empty	Unfuzed	1	2	3	1.9	Consolidation Point	Demil	
D5C6H9-00032	51.4	277065.40	3841947.88	MDAS	Rocket	Warhead, Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	6	2	2.2	Consolidation Point	Demil	
D5C7G1-00005	124.4	277047.00	3842022.40	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	8	2	0	Consolidation Point	Demil	
D5C7G1-00013	34.0	277049.00	3842039.40	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	1	2	0	Consolidation Point	Demil	
D5C7G1-00027	20.4	277044.80	3842036.40	MDAS	Rocket	Rocket motor, 2.36-inch, Practice, M7	Empty	Unfuzed	1	2	1	0	Consolidation Point	Demil	
D5C7G1-00029	396.7	277041.20	3842036.20	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	2	0	Consolidation Point	Demil	
D5C7G1-00046	187.5	277042.11	3842008.87	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	2	0	Consolidation Point	Demil	
D5C7G1-00053	26.2	277045.32	3842000.20	MDAS	Rocket	Warhead, Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	5	0.5	0	Consolidation Point	Demil	
D5C7G2-00005	141.2	277048.70	3842080.51	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	3	3	0	Consolidation Point	Demil	
D5C7G2-00012	49.8	277046.80	3842096.40	MDAS	Projectile	Projectile, 60mm, M49	Empty	Unfuzed	1	6	1	0	Consolidation Point	Demil	
D5C7G2-00013	462.2	277045.49	3842097.41	MDAS	Rocket	Rocket motor, 2.36-inch, Practice, M7	Empty	Unfuzed	1	24	2	0	Consolidation Point	Demil	Along with 50 lbs of steel
D5C7G2-00030	124.7	277045.07	3842057.53	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	12	3	0	Consolidation Point	Demil	
D5C7G3-00010	10.6	277045.40	3842106.40	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	6	2	0	Consolidation Point	Demil	
D5C7G3-00015	211.1	277042.40	3842101.40	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	3	3	0	Consolidation Point	Demil	
D5C7G3-00020	164.8	277047.20	3842104.80	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	3	3	0	Consolidation Point	Demil	
D5C7G3-00022	105.9	277048.40	3842107.40	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	3	3	0	Consolidation Point	Demil	
D5C7G3-00027	12.1	277044.60	3842120.00	MDAS	Projectile	Tail boom, Projectile, 81mm, M57	Empty	N/A	1	6	1	0	Consolidation Point	Demil	
D5C7G3-00030	96.5	277046.38	3842128.63	MDAS	Rocket	Warhead, Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	6	2	0	Consolidation Point	Demil	
D5C7G4-00018	63.3	277013.40	3842183.20	MDAS	Projectile	Projectile, 60mm, M83	Empty	Unfuzed	1	6	2	1	Consolidation Point	Demil	
D5C7G4-00022	12.2	277031.80	3842181.00	MDAS	Grenade	Grenade, Rifle, Practice, M7	Empty	Unfuzed	1	8	2	1	Consolidation Point	Demil	
D5C7G6-00012	15.0	277049.60	3842276.60	MDAS	Rocket	Warhead, Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	6	1	1.8	Consolidation Point	Demil	
D5C7H1-00010	5.6	277065.20	3842039.80	MDAS	Projectile	Tail boom, Projectile, 60mm, M49	Empty	N/A	1	6	0.5	0	Consolidation Point	Demil	
D5C7H1-00017	118.8	277065.80	3842024.80	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	3	3	0	Consolidation Point	Demil	
D5C7H2-00040	34.1	277071.74	3842079.71	MDAS	Rocket	Rocket motor, 2.36-inch, Practice, M7	Empty	Unfuzed	1	3	1	2	Consolidation Point	Demil	
D5C7H2-00092	302.0	277063.00	3842088.60	MDAS	Rocket	Rocket motor, 2.36-inch, Practice, M7	Empty	Unfuzed	1	3	3	1	Consolidation Point	Demil	
D5C7H3-00101	161.4	277050.40	3842100.60	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	6	3	0	Consolidation Point	Demil	
D5C7H3-00102	144.9	277052.80	3842106.80	MDAS	Rocket	Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	3	3	0	Consolidation Point	Demil	
D5C7H3-00107	143.2	277051.20	3842127.00	MDAS	Rocket	Warhead, Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	3	0.5	0	Consolidation Point	Demil	
D5C7H5-00002	64.3	277068.54	3842219.26	MDAS	Rocket	Rocket motor, 2.36-inch, Practice, M7	Empty	Unfuzed	1	2	3	0	Consolidation Point	Demil	
D5C7H5-00003	3.8	277071.68	3842230.35	MDAS	Rocket	Rocket motor, 2.36-inch, Practice, M7	Empty	Unfuzed	1	1	1	0	Consolidation Point	Demil	
D5C7H5-00005	12.0	277063.00	3842235.80	MDAS	Projectile	Projectile, 60mm, M83	Empty	Unfuzed	1	4	0.5	0	Consolidation Point	Demil	
D5C7H6-00007	67.1	277072.20	3842273.80	MDAS	Rocket	Warhead, Rocket, 2.36-inch, Practice, M7	Empty	Unfuzed	1	3	1	2.1	Consolidation Point	Demil	

Attachment C  
MDAS Chain of Custody Documents

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**Attachment D**  
**QC Inspection Reports**

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# FORM 8-1b

## Preparatory Inspection Checklist (Part I)

Contract No.: WE5A Air Station New River Runway Expansion Area

Date: 23 October 2013

TITLE AND NO. OF TECHNICAL SECTION: MRP-SOP-0001 anomaly avoidance

### **17.0 MEC AVOIDANCE SUPPORT LAND SURVEY, SEDIMENT SAMPLING, GROUNDWATER COLLECTION,**

**Section 15 DGM Instrumentation and positioning method**

A. Planned Attendees:

	Name	Position	<u>Company</u>
1)	Noah Weinberg	Project Manager	CH2M Hill
2)	Steve Brown	UXOQC SO	CH2M Hill
3)	Thomas Anderson	Surveyor	LDSI
4)	Jason Vandelinde	Surveyor	LDSI
5)			
6)			
7)			
8)			
9)			
10)			
11)			

B. Submittals required to begin work:

	Item	<u>Submittal No.</u>	Action Code
1)	SOW	WE5A_PLS_Land Survey	approved
2)	SOP	MRP -0001 anomaly avoidance	approved
3)	AHA	LDSI AHA	Approved
4)	8 hr HAZWOPER	J. Boyles/T. Anderson/T. Yandle	Approved
5)	Qualifications	J. Boyles/ T. Anderson/T. Yandle	Approved
6)	WP		Draft
7)			
8)			

I hereby certify, that to the best of my knowledge and belief, that the above required materials delivered to the job site are the same as those submitted and approved.

\_\_\_\_\_  
Contractor Quality Control Systems Manager

FORM 8-1b (Continued)

Preparatory Inspection Checklist  
(Part I)

Contract No.: WE5A Air Station New River Runway Expansion Area

Date: 23 October 2013

C. Equipment to be used in executing work:

- 1) Survey equipment ( GPS, RTK)
- 2) PPE
- 3) Magnetic locator
- 4) Pin flag
- 5) \_\_\_\_\_

D. Work areas examined to ascertain that all preliminary work has been completed:

Yes

\_\_\_\_\_

E. Methods and procedures for performing Quality Control, including specific testing requirements:

Observation and inspection

\_\_\_\_\_

The above methods and procedures have been identified from the project plans and will be performed as specified for the Definable Feature of Work.

\_\_\_\_\_  
Contractor Quality Control Systems Manager

FORM 8-1b (Continued)

Preparatory Inspection Checklist  
(Part II)

- A. Persons in attendance: See Meeting Attendance Sheet (attached)
  
- B. Because of mutual understanding developed during review of preparatory outline and Contract Requirements: (Contract items not specifically covered during the preparatory inspection conference are assumed to be in strict conformance with the contract requirements.)

Shall re-acquire individual locations that represent geophysical anomalies to be intrusively investigated by others.

Anomaly re-acquisition will be conducted only within the 9.2 acres

Prior to mobilization, the SUBCONTRACTOR shall review the anomaly list for completeness and address questions or seek clarification on the anomaly list with the CH2M HILL site or project manager.

The SUBCONTRACTOR shall place non-metallic flags at each anomaly location with an offset of 1 foot to the North added to the flag location

Pin flags can be any color but red.

Information on the flag shall include; the provided Anomaly Identification number, and the Millivolt value of the anomaly target.

The SUBCONTRACTOR shall provide "As-Staked" locations of all points set in ASCII or Excel format. The SUBCONTRACTOR should anticipate as many as 10% of anomaly locations set in the field will be checked verses calculated position to stake. The SUBCONTRACTOR shall also provide an as-staked site plan that compares the as-staked positions to the planned locations.

Quality Assurance/Control Survey data, including control points and anomaly locations shall be performed under the direction of a licensed PLS in good standing in the State of North Carolina

The professional land surveyor will use either Static GPS or real time kinematic (RTK) global positioning system (GPS), or conventional geodetic survey Total Station instruments to collect or emplace points within the accuracy requirements.

Upon completion of the field work, the easting's and northing's (x,y), and elevations (z) for the survey points will be presented in a certified letter and drawing (CAD and pdf), along with the corresponding electronic files.

The items noted above constitute a memorandum of mutual understanding and will be performed as planned and specified.

Steve Brown  
MEC QCS/SO



\_\_\_\_\_  
Technical Representative

# FORM 8-1b

## Preparatory Inspection Checklist (Part I)

Contract No.: WE5A Air Station New River Runway Expansion Area

Date: 10 October 2013

TITLE AND NO. OF TECHNICAL SECTION: MRP-SOP-0001 anomaly avoidance

### **17.0 MEC AVOIDANCE SUPPORT LAND SURVEY, SEDIMENT SAMPLING, GROUNDWATER COLLECTION, ENDANGERED SPECIES, SAMPLING/MONITORING**

A. Planned Attendees:

	Name	Position	Company
1)	Noah Weinberg	Project Manager	CH2M Hill
2)	Steve Brown	UXOQCSO	CH2M Hill
3)	Andrew Louder	Geophysicist	CH2M Hill
4)	Cesar Chirinos	GEO Tech	NAEVA
5)	Thanhan Nguyen	GEO Tech	NAEVA
6)			
7)			
8)			
9)			
10)			
11)			

B. Submittals required to begin work:

	Item	Submittal No.	Action Code
1)	SOW	WE5A_Digital Geophysical Mapping	approved
2)	SOP	MRP -001 anomaly avoidance	approved
3)	SOP	Geophysical Mapping	Approved
4)	AHA	NAEVA AHA	Approved
5)	8 hr HAZWOPER	NAEVA personnel	Approved
6)	Qualifications	NAEVA personnel	Approved
7)	Geophysical Investigation Plan		Draft
8)	Geophysical System Verification Plan		Draft

I hereby certify, that to the best of my knowledge and belief, that the above required materials delivered to the job site are the same as those submitted and approved.

\_\_\_\_\_  
Contractor Quality Control Systems Manager

FORM 8-1b (Continued)

Preparatory Inspection Checklist  
(Part I)

Contract No.: WE5A Air Station New River Runway Expansion Area

Date: 10 October 2013

C. Equipment to be used in executing work:

- 1) EM-61mk2
- 2) PPE
- 3) Magnetic locator
- 4) Ropes
- 5) Measuring tapes

D. Work areas examined to ascertain that all preliminary work has been completed:

Yes

E. Methods and procedures for performing Quality Control, including specific testing requirements:

Instrument Verification Strip, Observation and inspection, QC of data input

The above methods and procedures have been identified from the project plans and will be performed as specified for the Definable Feature of Work.

\_\_\_\_\_  
Contractor Quality Control Systems Manager

FORM 8-1b (Continued)

Preparatory Inspection Checklist  
(Part II)

- A. Persons in attendance: See Meeting Attendance Sheet (attached)
- B. Because of mutual understanding developed during review of preparatory outline and Contract Requirements: (Contract items not specifically covered during the preparatory inspection conference are assumed to be in strict conformance with the contract requirements.)

The objective of the DGM is to identify subsurface anomalies that may be indicative of Munitions and Explosives of Concern (MEC) and Material Potentially Presenting an Explosive Hazard (MPPEH).

DGM shall consist of surveying using the EM61-MK2. Data coverage includes 100% of the accessible portions of the site) using a lane spacing of 0.75 meters.

DGM shall be completed using its wheels or the two-person tandem mode operation.

A combination of the two is acceptable. It is assumed that location control can be maintained using real-time kinematic GPS (RTK GPS) capable of achieving survey-grade accuracy.

Installation of an Instrument Verification Strip (IVS). 5 meters (m) by 25 m and consist of 5 individual parallel transects. Data will be post-processed and provided to the CH2M HILL Project Geophysicist for evaluation

Raw data shall be posted on the day collected, pre-processed data packages within 3 work days of data collection, and final processed data packages within 5 working days.

Target IDs for each grid shall increment sequentially in a general pattern from the southwest corner of the grid.

Perform geophysical surveying and quality control (QC) per applicable QC tests outlined in in the GIP.

The EM61-MK2 field survey information and data processing progress will be logged using CH2M HILL's Munitions Response Site Information Management System (MRSIMS); field devices and database interface software will be provided.

NAEVA shall be required to post data and deliverables to a CH2M HILL provided ftp or Sharepoint site.

Within 20 days of the completion of survey activity, NAEVA shall provide CH2M HILL project manager all final geophysical maps, supporting geophysical interpretations, and description of the field activities that includes data collection methodology, processing, interpretation, and results.

The items noted above constitute a memorandum of mutual understanding and will be performed as planned and specified.

Steve Brown  
MEC QCS/SO



Technical Representative

# FORM 8-1b

## Preparatory Inspection Checklist (Part I)

Contract No.: WE5A Air Station New River Runway Expansion Area

Date: 07 October 2013

TITLE AND NO. OF TECHNICAL SECTION: MRP-SOP-0001 anomaly avoidance

### 17.0 MEC AVOIDANCE SUPPORT

### LAND SURVEY, SEDIMENT SAMPLING, GROUNDWATER COLLECTION, ENDANGERED SPECIES SAMPLING/MONITORING

#### A. Planned Attendees:

	<u>Name</u>	<u>Position</u>	<u>Company</u>
1)	Noah Weinberg	Project Manager	CH2M Hill
2)	Steve Brown	UXOQC SO	CH2M Hill
3)	Thomas Anderson	Surveyor	LDSI
4)	Jason Vandelinde	Surveyor	LDSI
5)			
6)			
7)			
8)			
9)			
10)			
11)			

#### B. Submittals required to begin work:

	<u>Item</u>	<u>Submittal No.</u>	<u>Action Code</u>
1)	SOW	PLS_ Land Survey	approved
2)	SOP	MRP -0001 anomaly avoidance	approved
3)	AHA	LDSI AHA	Approved
4)	8 hr HAZWOPER	J. Vandelinde /T. Anderson	Approved
5)	Qualifications	J. Vandelinde / T. Anderson	Approved
6)			
7)			
8)			

I hereby certify, that to the best of my knowledge and belief, that the above required materials delivered to the job site are the same as those submitted and approved.

\_\_\_\_\_  
Contractor Quality Control Systems Manager

FORM 8-1b (Continued)

Preparatory Inspection Checklist  
(Part I)

Contract No.: Air Station New River Runway Expansion Area

Date: 07 October 2013

C. Equipment to be used in executing work:

- 1) Survey equipment
- 2) PPE
- 3) Magnetic locator
- 4) \_\_\_\_\_
- 5) \_\_\_\_\_

D. Work areas examined to ascertain that all preliminary work has been completed:

Yes

\_\_\_\_\_

E. Methods and procedures for performing Quality Control, including specific testing requirements:

Observation and inspection

\_\_\_\_\_

The above methods and procedures have been identified from the project plans and will be performed as specified for the Definable Feature of Work.

\_\_\_\_\_  
Contractor Quality Control Systems Manager



# FORM 8-1b

## Preparatory Inspection Checklist (Part I)

Contract No.: WE5A Air Station New River Runway Expansion Area

Date: 23 October 2013

TITLE AND NO. OF TECHNICAL SECTION: MRP-SOP-0001 anomaly avoidance

### 17.0 MEC AVOIDANCE SUPPORT LAND SURVEY

A. Planned Attendees:

	Name	Position	<u>Company</u>
1)	Noah Weinberg	Project Manager	CH2M Hill
2)	Steve Brown	UXOQC SO	CH2M Hill
3)	Ben Sox	Technician	ECLS
4)	Michael Thompson	Technician	ECLS
5)			
6)			
7)			
8)			
9)			
10)			
11)			

B. Submittals required to begin work:

	Item	<u>Submittal No.</u>	Action Code
1)	SOW	Utility Locate_SOW_Oct7	approved
2)	SOP	MRP -0001 anomaly avoidance	approved
3)	AHA	ECLS AHA	Approved
4)	8 hr HAZWOPER	B. Sox /M. Thompson	Approved
5)	Qualifications	B. Sox /M. Thompson	Approved
6)			
7)			
8)			

I hereby certify, that to the best of my knowledge and belief, that the above required materials delivered to the job site are the same as those submitted and approved.

\_\_\_\_\_  
Contractor Quality Control Systems Manager

FORM 8-1b (Continued)

Preparatory Inspection Checklist  
(Part I)

Contract No.: Air Station New River Runway Expansion Area

Date: 23 October 2013

C. Equipment to be used in executing work:

- 1) Survey equipment
- 2) PPE
- 3) Marking material
- 4) Ground Penetrating Radar
- 5) \_\_\_\_\_

D. Work areas examined to ascertain that all preliminary work has been completed:

Yes

E. Methods and procedures for performing Quality Control, including specific testing requirements:

Observation and inspection

The above methods and procedures have been identified from the project plans and will be performed as specified for the Definable Feature of Work.

\_\_\_\_\_  
Contractor Quality Control Systems Manager

FORM 8-1b (Continued)

Preparatory Inspection Checklist  
(Part II)

- A. Persons in attendance: See Meeting Attendance Sheet (attached)
  
- B. Because of mutual understanding developed during review of preparatory outline and Contract Requirements: (Contract items not specifically covered during the preparatory inspection conference are assumed to be in strict conformance with the contract requirements.)

identifying and marking all subsurface utilities within the entire pre-established 9.2-acre remedial investigation area

Utilities will be identified using electronic devices or site maps and marked on the ground with survey marking paint, or any other means necessary to ensure the safety of earth disturbing activities and the protection of the Base infrastructure.

Utilities will be identified using all reasonably available as-built drawings , electronic locating devices, and any other means necessary.

The location of utilities identified from as-built drawings or other maps must be verified in the field prior to marking.

It is the responsibility of the Subcontractor to contact MCIEAST-MCB CAMLEJ and review the base utility drawings and referenced as part of the utility locating

Utility drawings shall not be considered definitive and must be field verified

Field verification will include detection using nonintrusive subsurface detection equipment capable of locating subsurface utilities, as well as opening manhole covers to verify pipe directions.

Utilities shall be marked using the appropriate industry standard paint and/or color coded pin flags to indicate electricity, gas, water, steam, telephone, TV cable, fiber optic, sewer, etc.

In addition, the Buried Utility Location Tracking Form will be completed by the Subcontractor for the site based upon the utilities identified in the field during utility locating.

The form will be submitted to CH2M HILL (field staff or project manager) within 24 hours of completing utility locating activities

The Subcontractor will complete the buried utility tracking form(s) and return it to CH2M HILL within one (1) business day of completing the field effort.

The items noted above constitute a memorandum of mutual understanding and will be performed as planned and specified.

Steve Brown   
MEC QCS/SO

\_\_\_\_\_  
Technical Representative

# FORM 8-1b

## Preparatory Inspection Checklist (Part I)

Contract No.: WE5A Air Station New River Runway Expansion Area

Date: 23 October 2013

TITLE AND NO. OF TECHNICAL SECTION: MRP-SOP-0001 anomaly avoidance

### **17.0 MEC AVOIDANCE SUPPORT LAND SURVEY, SEDIMENT SAMPLING, GROUNDWATER COLLECTION,**

**Section 15 DGM Instrumentation and positioning method**

A. Planned Attendees:

	Name	Position	Company
1)	Noah Weinberg	Project Manager	CH2M Hill
2)	Steve Brown	UXOQC SO	CH2M Hill
3)	Thomas Anderson	Surveyor	LDSI
4)	Jason Vandelinde	Surveyor	LDSI
5)			
6)			
7)			
8)			
9)			
10)			
11)			

B. Submittals required to begin work:

	Item	Submittal No.	Action Code
1)	SOW	WE5A_PLS_Land Survey	approved
2)	SOP	MRP -0001 anomaly avoidance	approved
3)	AHA	LDSI AHA	Approved
4)	8 hr HAZWOPER	J. Boyles/T. Anderson/T. Yandle	Approved
5)	Qualifications	J. Boyles/ T. Anderson/T. Yandle	Approved
6)	WP		Draft
7)			
8)			

I hereby certify, that to the best of my knowledge and belief, that the above required materials delivered to the job site are the same as those submitted and approved.

\_\_\_\_\_  
Contractor Quality Control Systems Manager

FORM 8-1b (Continued)

Preparatory Inspection Checklist  
(Part I)

Contract No.: WE5A Air Station New River Runway Expansion Area

Date: 23 October 2013

C. Equipment to be used in executing work:

- 1) Survey equipment ( GPS, RTK)
- 2) PPE
- 3) Magnetic locator
- 4) Pin flag
- 5) \_\_\_\_\_

D. Work areas examined to ascertain that all preliminary work has been completed:

Yes

\_\_\_\_\_

E. Methods and procedures for performing Quality Control, including specific testing requirements:

Observation and inspection

\_\_\_\_\_

The above methods and procedures have been identified from the project plans and will be performed as specified for the Definable Feature of Work.

\_\_\_\_\_  
Contractor Quality Control Systems Manager

FORM 8-1b (Continued)

Preparatory Inspection Checklist  
(Part II)

- A. Persons in attendance: See Meeting Attendance Sheet (attached)
  
- B. Because of mutual understanding developed during review of preparatory outline and Contract Requirements: (Contract items not specifically covered during the preparatory inspection conference are assumed to be in strict conformance with the contract requirements.)

Shall re-acquire individual locations that represent geophysical anomalies to be intrusively investigated by others.

Anomaly re-acquisition will be conducted only within the 9.2 acres

Prior to mobilization, the SUBCONTRACTOR shall review the anomaly list for completeness and address questions or seek clarification on the anomaly list with the CH2M HILL site or project manager.

The SUBCONTRACTOR shall place non-metallic flags at each anomaly location with an offset of 1 foot to the North added to the flag location

Pin flags can be any color but red.

Information on the flag shall include; the provided Anomaly Identification number, and the Millivolt value of the anomaly target.

The SUBCONTRACTOR shall provide "As-Staked" locations of all points set in ASCII or Excel format. The SUBCONTRACTOR should anticipate as many as 10% of anomaly locations set in the field will be checked verses calculated position to stake. The SUBCONTRACTOR shall also provide an as-staked site plan that compares the as-staked positions to the planned locations.

Quality Assurance/Control Survey data, including control points and anomaly locations shall be performed under the direction of a licensed PLS in good standing in the State of North Carolina

The professional land surveyor will use either Static GPS or real time kinematic (RTK) global positioning system (GPS), or conventional geodetic survey Total Station instruments to collect or emplace points within the accuracy requirements.

Upon completion of the field work, the easting's and northing's (x,y), and elevations (z) for the survey points will be presented in a certified letter and drawing (CAD and pdf), along with the corresponding electronic files.

The items noted above constitute a memorandum of mutual understanding and will be performed as planned and specified.

Steve Brown  
MEC QCS/SO



\_\_\_\_\_  
Technical Representative

# FORM 8-1b

## Preparatory Inspection Checklist (Part I)

Contract No.: WE5A Air Station New River Runway Expansion Area

Date: 10 October 2013

TITLE AND NO. OF TECHNICAL SECTION: MRP-SOP-0001 anomaly avoidance

### **17.0 MEC AVOIDANCE SUPPORT LAND SURVEY, SEDIMENT SAMPLING, GROUNDWATER COLLECTION, ENDANGERED SPECIES, SAMPLING/MONITORING**

A. Planned Attendees:

	Name	Position	Company
1)	Noah Weinberg	Project Manager	CH2M Hill
2)	Steve Brown	UXOQCSO	CH2M Hill
3)	Andrew Louder	Geophysicist	CH2M Hill
4)	Cesar Chirinos	GEO Tech	NAEVA
5)	Thanhan Nguyen	GEO Tech	NAEVA
6)			
7)			
8)			
9)			
10)			
11)			

B. Submittals required to begin work:

	Item	Submittal No.	Action Code
1)	SOW	WE5A_Digital Geophysical Mapping	approved
2)	SOP	MRP -001 anomaly avoidance	approved
3)	SOP	Geophysical Mapping	Approved
4)	AHA	NAEVA AHA	Approved
5)	8 hr HAZWOPER	NAEVA personnel	Approved
6)	Qualifications	NAEVA personnel	Approved
7)	Geophysical Investigation Plan		Draft
8)	Geophysical System Verification Plan		Draft

I hereby certify, that to the best of my knowledge and belief, that the above required materials delivered to the job site are the same as those submitted and approved.

\_\_\_\_\_  
Contractor Quality Control Systems Manager

FORM 8-1b (Continued)

Preparatory Inspection Checklist  
(Part I)

Contract No.: WE5A Air Station New River Runway Expansion Area

Date: 10 October 2013

C. Equipment to be used in executing work:

- 1) EM-61mk2
- 2) PPE
- 3) Magnetic locator
- 4) Ropes
- 5) Measuring tapes

D. Work areas examined to ascertain that all preliminary work has been completed:

Yes

E. Methods and procedures for performing Quality Control, including specific testing requirements:

Instrument Verification Strip, Observation and inspection, QC of data input

The above methods and procedures have been identified from the project plans and will be performed as specified for the Definable Feature of Work.

\_\_\_\_\_  
Contractor Quality Control Systems Manager

FORM 8-1b (Continued)

Preparatory Inspection Checklist  
(Part II)

- A. Persons in attendance: See Meeting Attendance Sheet (attached)
- B. Because of mutual understanding developed during review of preparatory outline and Contract Requirements: (Contract items not specifically covered during the preparatory inspection conference are assumed to be in strict conformance with the contract requirements.)

The objective of the DGM is to identify subsurface anomalies that may be indicative of Munitions and Explosives of Concern (MEC) and Material Potentially Presenting an Explosive Hazard (MPPEH).

DGM shall consist of surveying using the EM61-MK2. Data coverage includes 100% of the accessible portions of the site) using a lane spacing of 0.75 meters.

DGM shall be completed using its wheels or the two-person tandem mode operation.

A combination of the two is acceptable. It is assumed that location control can be maintained using real-time kinematic GPS (RTK GPS) capable of achieving survey-grade accuracy.

Installation of an Instrument Verification Strip (IVS). 5 meters (m) by 25 m and consist of 5 individual parallel transects. Data will be post-processed and provided to the CH2M HILL Project Geophysicist for evaluation

Raw data shall be posted on the day collected, pre-processed data packages within 3 work days of data collection, and final processed data packages within 5 working days.

Target IDs for each grid shall increment sequentially in a general pattern from the southwest corner of the grid.

Perform geophysical surveying and quality control (QC) per applicable QC tests outlined in in the GIP.

The EM61-MK2 field survey information and data processing progress will be logged using CH2M HILL's Munitions Response Site Information Management System (MRSIMS); field devices and database interface software will be provided.

NAEVA shall be required to post data and deliverables to a CH2M HILL provided ftp or Sharepoint site.

Within 20 days of the completion of survey activity, NAEVA shall provide CH2M HILL project manager all final geophysical maps, supporting geophysical interpretations, and description of the field activities that includes data collection methodology, processing, interpretation, and results.

The items noted above constitute a memorandum of mutual understanding and will be performed as planned and specified.

Steve Brown   
MEC QCS/SO

\_\_\_\_\_  
Technical Representative

# FORM 8-1b

## Preparatory Inspection Checklist (Part I)

Contract No.: WE5A Air Station New River Runway Expansion Area

Date: 07 October 2013

TITLE AND NO. OF TECHNICAL SECTION: MRP-SOP-0001 anomaly avoidance

### 17.0 MEC AVOIDANCE SUPPORT

### LAND SURVEY, SEDIMENT SAMPLING, GROUNDWATER COLLECTION, ENDANGERED SPECIES SAMPLING/MONITORING

#### A. Planned Attendees:

	<u>Name</u>	<u>Position</u>	<u>Company</u>
1)	Noah Weinberg	Project Manager	CH2M Hill
2)	Steve Brown	UXOQC SO	CH2M Hill
3)	Thomas Anderson	Surveyor	LDSI
4)	Jason Vandelinde	Surveyor	LDSI
5)			
6)			
7)			
8)			
9)			
10)			
11)			

#### B. Submittals required to begin work:

	<u>Item</u>	<u>Submittal No.</u>	<u>Action Code</u>
1)	SOW	PLS_ Land Survey	approved
2)	SOP	MRP -0001 anomaly avoidance	approved
3)	AHA	LDSI AHA	Approved
4)	8 hr HAZWOPER	J. Vandelinde /T. Anderson	Approved
5)	Qualifications	J. Vandelinde / T. Anderson	Approved
6)			
7)			
8)			

I hereby certify, that to the best of my knowledge and belief, that the above required materials delivered to the job site are the same as those submitted and approved.

\_\_\_\_\_  
Contractor Quality Control Systems Manager

FORM 8-1b (Continued)

Preparatory Inspection Checklist  
(Part I)

Contract No.: Air Station New River Runway Expansion Area

Date: 07 October 2013

C. Equipment to be used in executing work:

- 1) Survey equipment
- 2) PPE
- 3) Magnetic locator
- 4) \_\_\_\_\_
- 5) \_\_\_\_\_

D. Work areas examined to ascertain that all preliminary work has been completed:

Yes

\_\_\_\_\_

E. Methods and procedures for performing Quality Control, including specific testing requirements:

Observation and inspection

\_\_\_\_\_

The above methods and procedures have been identified from the project plans and will be performed as specified for the Definable Feature of Work.

\_\_\_\_\_  
Contractor Quality Control Systems Manager



# FORM 8-1b

## Preparatory Inspection Checklist (Part I)

Contract No.: WE5A Air Station New River Runway Expansion Area

Date: 23 October 2013

TITLE AND NO. OF TECHNICAL SECTION: MRP-SOP-0001 anomaly avoidance

### 17.0 MEC AVOIDANCE SUPPORT LAND SURVEY

#### A. Planned Attendees:

	Name	Position	<u>Company</u>
1)	Noah Weinberg	Project Manager	CH2M Hill
2)	Steve Brown	UXOQC SO	CH2M Hill
3)	Ben Sox	Technician	ECLS
4)	Michael Thompson	Technician	ECLS
5)			
6)			
7)			
8)			
9)			
10)			
11)			

#### B. Submittals required to begin work:

	Item	<u>Submittal No.</u>	Action Code
1)	SOW	Utility Locate_SOW_Oct7	approved
2)	SOP	MRP -0001 anomaly avoidance	approved
3)	AHA	ECLS AHA	Approved
4)	8 hr HAZWOPER	B. Sox /M. Thompson	Approved
5)	Qualifications	B. Sox /M. Thompson	Approved
6)			
7)			
8)			

I hereby certify, that to the best of my knowledge and belief, that the above required materials delivered to the job site are the same as those submitted and approved.

\_\_\_\_\_  
Contractor Quality Control Systems Manager

FORM 8-1b (Continued)

Preparatory Inspection Checklist  
(Part I)

Contract No.: Air Station New River Runway Expansion Area

Date: 23 October 2013

C. Equipment to be used in executing work:

- 1) Survey equipment
- 2) PPE
- 3) Marking material
- 4) Ground Penetrating Radar
- 5) \_\_\_\_\_

D. Work areas examined to ascertain that all preliminary work has been completed:

Yes

E. Methods and procedures for performing Quality Control, including specific testing requirements:

Observation and inspection

The above methods and procedures have been identified from the project plans and will be performed as specified for the Definable Feature of Work.

\_\_\_\_\_  
Contractor Quality Control Systems Manager

FORM 8-1b (Continued)

Preparatory Inspection Checklist  
(Part II)

- A. Persons in attendance: See Meeting Attendance Sheet (attached)
  
- B. Because of mutual understanding developed during review of preparatory outline and Contract Requirements: (Contract items not specifically covered during the preparatory inspection conference are assumed to be in strict conformance with the contract requirements.)

identifying and marking all subsurface utilities within the entire pre-established 9.2-acre remedial investigation area

Utilities will be identified using electronic devices or site maps and marked on the ground with survey marking paint, or any other means necessary to ensure the safety of earth disturbing activities and the protection of the Base infrastructure.

Utilities will be identified using all reasonably available as-built drawings , electronic locating devices, and any other means necessary.

The location of utilities identified from as-built drawings or other maps must be verified in the field prior to marking.

It is the responsibility of the Subcontractor to contact MCIEAST-MCB CAMLEJ and review the base utility drawings and referenced as part of the utility locating

Utility drawings shall not be considered definitive and must be field verified

Field verification will include detection using nonintrusive subsurface detection equipment capable of locating subsurface utilities, as well as opening manhole covers to verify pipe directions.

Utilities shall be marked using the appropriate industry standard paint and/or color coded pin flags to indicate electricity, gas, water, steam, telephone, TV cable, fiber optic, sewer, etc.

In addition, the Buried Utility Location Tracking Form will be completed by the Subcontractor for the site based upon the utilities identified in the field during utility locating.

The form will be submitted to CH2M HILL (field staff or project manager) within 24 hours of completing utility locating activities

The Subcontractor will complete the buried utility tracking form(s) and return it to CH2M HILL within one (1) business day of completing the field effort.

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The items noted above constitute a memorandum of mutual understanding and will be performed as planned and specified.

Steve Brown   
MEC QCS/SO

\_\_\_\_\_  
Technical Representative

# FORM 8-2b

## Initial Phase Check List

Contract No.: WE5A New River Air Station

Date: 14 October 2013

Title and No. of Technical Section: Draft Geophysical Investigation Plan  
Section 15 DGM Instrumentation and positioning method

Description and Location of Work Inspected: Data Delivery from LDSI

A. Key Personnel Present:

Name	Position	Company
Noah Weinberg	Project Manager	CH2M Hill
Steve Brown	UXOQCSO	CH2M Hill
Matt Barner	Project Geophysicist	CH2M Hill
Seth Martin	Surveyor	LDSI
Doug Gaibler	Surveyor	CH2M HILL

B. Materials being used are in strict compliance with the contract plans and specifications: Yes  No

If not, explain: \_\_\_\_\_

C. Procedures and/or work methods witnessed are in strict compliance with the contract specifications: Yes  No

If not, explain: \_\_\_\_\_

D. Workmanship is acceptable:

Yes  No

State where improvement is needed: \_\_\_\_\_

E. Workmanship is free of safety violations:

Yes  No

If no, corrective action taken: \_\_\_\_\_

STEVE BROWN



MEC QCS/SO

## General Comments/Findings

Upon receipt of control point, LOD, grid corner, and QC seed locations from LDSI, the following tasks were completed:

1. M. Barner delegated review of control pt information to Doug Gaibler/WDC. Preliminary review of the control pts indicated compliance with surveyor SOW, although surveyor report would be needed for final confirmation. As of date of this report, LDSI has not delivered their surveyor report.
2. M. Barner performed overlay of LDSI pts with GIS files provided by Critigen. All appeared to overlay with no issue (e.g. offsets). Pt #1024 in LDSI data files was an offset point from the LOD in case the stake at Pt #1023 was damaged or removed (it was located on a gravel path). Purpose of offset stake at #1024 was to be able to reoccupy LOD angle point in case stake at #1023 was destroyed. This information was not communicated by LDSI – confirmation obtained after CH2M HILL inquiry.
3. M. Barner noticed that QC seeds #10-12 were placed within non-DGM footprint area. Informed N. Weinberg, who indicated they would be removed from the official QC record in order to avoid a QC failure. M. Barner indicated that 9 remaining QC seeds would be sufficient for DGM as this translates to ~1 seed/0.75 acres (GSV Plan requirement).

# FORM 8-2b

## Initial Phase Check List

Contract No.: Air Station New River Runway Expansion Area

Date: 23 October 2013

Title and No. of Technical Section: MRP-SOP-0001 anomaly avoidance

MEC AVOIDANCE SUPPORT LAND SURVEY

Utility Locate\_SOW\_Oct7

Description and Location of Work Inspected: Utility Locating Air Station New River Runway Expansion Area

A. Key Personnel Present:

<u>Name</u>	<u>Position</u>	<u>Company</u>
Noah Weinberg	Project Manager	CH2M Hill
Steve Brown	UXOQCSO	CH2M Hill
Ben Sox	Technician	ECLS
Michael Thompson	Technician	ECLS

B. Materials being used are in strict compliance with the contract plans and specifications: Yes  No

If not, explain: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

C. Procedures and/or work methods witnessed are in strict compliance with the contract specifications: Yes  No

If not, explain: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

D. Workmanship is acceptable: Yes  No

State where improvement is needed: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

E. Workmanship is free of safety violations: Yes  No

If no, corrective action taken: \_\_\_\_\_  
\_\_\_\_\_

STEVE BROWN



MEC QCS/SO

# FORM 8-2b

## Initial Phase Check List

Contract No.: WE5A Air Station New River Runway Expansion Area

Date 9 October 2013

Title and No. of Technical Section: \_\_\_\_\_

Work Plan

2.0 Site Preparation

Description and Location of Work Inspected: Site Preparation of site Air Station New River Runway Expansion Area

A. Key Personnel Present:

Name	Position	Company
Jake Crostic	Site Coordinator	CH2M Hill
Steve Brown	UXOQCSO	CH2M Hill
Dave McDonald	SUXOS	CH2M Hill
Jim Keesee	Field Team Leader	USAE
Pat Gildea	UXO III	USAE

B. Materials being used are in strict compliance with the contract plans and specifications: Yes  No \_\_\_\_\_

If not, explain: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

C. Procedures and/or work methods witnessed are in strict compliance with the contract specifications: Yes  No \_\_\_\_\_

If not, explain: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

D. Workmanship is acceptable: Yes  No \_\_\_\_\_

State where improvement is needed: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

E. Workmanship is free of safety violations: Yes  No \_\_\_\_\_

If no, corrective action taken: \_\_\_\_\_  
\_\_\_\_\_

STEVE BROWN



MEC QCS/SO

# FORM 8-2b

## Initial Phase Check List

Contract No.: WE5A Air Station New River Runway Expansion Area

Date 25 November 2013

Title and No. of Technical Section: SOP OPS-04, DGM Anomaly Investigations

### Work Plan

3.0 Intrusive investigations, 3.1 Detection and Removal Procedures, 3.1.3.1 Intrusive teams, 3.1.3.2 Manual Excavations, 3.1.3.3 Mechanical Handling Equipment, 3.2 Anomaly Excavation Reporting

Description and Location of Work Inspected: Soil processing and intrusive investigation of site Air Station New River Runway Expansion Area

#### A. Key Personnel Present:

Name	Position	Company
Jake Crostic	Site Coordinator	CH2M Hill
Steve Brown	UXOQCSO	CH2M Hill
Dave McDonald	SUXOS	CH2M Hill
Jim Keesee	Field Team Leader	USAE
Pat Gildea	UXO III	USAE

B. Materials being used are in strict compliance with the contract plans and specifications: Yes  No

If not, explain: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

C. Procedures and/or work methods witnessed are in strict compliance with the contract specifications: Yes  No

If not, explain: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

D. Workmanship is acceptable: Yes  No

State where improvement is needed: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

E. Workmanship is free of safety violations: Yes  No

If no, corrective action taken: \_\_\_\_\_  
\_\_\_\_\_

STEVE BROWN



MEC OCS/SO

# FORM 8-2b

## Initial Phase Check List

Contract No.: WE5A Air Station New River Runway Expansion Area

Date: 10 October 2013

Title and No. of Technical Section: Draft Geophysical Investigation Plan & Draft Geophysical System Verification Plan

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Description and Location of Work Inspected: Background (Pre-seeded) DGM survey and IVS 5-line survey results; MRSIMS entries

A. Key Personnel Present:

Name	Position	Company
Noah Weinberg	Project Manager	CH2M HILL
Steve Brown	UXOQC SO	CH2M HILL
Andrew Louder	Site Geophysicist	CH2M HILL
Cesar Chirinos	GEO Tech	NAEVA
Thanhan Nguyen	GEO Tech	NAEVA
Matthew Barner	Project Geophysicist	CH2M HILL

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B. Materials being used are in strict compliance with the contract plans and specifications: Yes  No

If not, explain: \_\_\_\_\_  
\_\_\_\_\_

C. Procedures and/or work methods witnessed are in strict compliance with the contract specifications: Yes  No

If not, explain: \_\_\_\_\_  
\_\_\_\_\_

D. Workmanship is acceptable: Yes  No

State where improvement is needed: \_\_\_\_\_  
\_\_\_\_\_

E. Workmanship is free of safety violations: Yes  No

If no, corrective action taken: \_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
PROJECT GEOPHYSICIST

## General Comments/Findings:

1. IVS background survey was completed in accordance with GSV Plan. A large anomaly was identified in the survey and avoided during placement of the ISO seeds.
2. IVS 5-line survey was completed after burial of the ISOs. ISOs were buried in accordance with GSV Plan.
3. NAEVA provided results of background and 5-line surveys within time frame specified in the GSV Plan and GIP.
4. MQOs were met for GPS QC, line spacing, data density, ISO static tests, and IVS seed positioning.
5. NAEVA performed additional static background testing at 6 locations throughout project area. Intent was to quantify potential noise sources associated with the site, in an attempt to determine whether EM61 would be an adequate method to use or if changing to the G858 was necessary. Results of this additional static background testing demonstrated EM61 noise levels of less than +/- 1 mV. Use of EM61 appears to be justified based on these (and the IVS) results.
6. MRSIMS was appropriately updated by NAEVA. QC performed by M. Barner.

# FORM 8-2b

## Initial Phase Check List

Contract No.: WE5A New River Air Station

Date: 23 October 2013

Title and No. of Technical Section: MRP-SOP-0001 anomaly avoidance

### **17.0 MEC AVOIDANCE SUPPORT**

### **LAND SURVEY, SEDIMENT SAMPLING, GROUNDWATER COLLECTION, ENDANGERED SPECIES SAMPLING/MONITORING**

### **Section 15 DGM Instrumentation and positioning method**

Description and Location of Work Inspected: Re-acquisition and marking of anomaly's in  
UXO -29 New River Air Station MCAS N.C.  
USA

A. Key Personnel Present:

<u>Name</u>	<u>Position</u>	<u>Company</u>
Noah Weinberg	Project Manager	CH2M Hill
Steve Brown	UXOQCSO	CH2M Hill
Jason Vandelinde	Surveyor	LDSI
Thomas Anderson	Surveyor	LDSI

B. Materials being used are in strict compliance with the contract plans and specifications: Yes  No

If not, explain: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

C. Procedures and/or work methods witnessed are in strict compliance with the contract specifications: Yes  No

If not, explain: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

D. Workmanship is acceptable: Yes  No

State where improvement is needed: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

E. Workmanship is free of safety violations: Yes  No

If no, corrective action taken: \_\_\_\_\_  
\_\_\_\_\_

STEVE BROWN



MEC QCS/SO

# FORM 8-2b

## Initial Phase Check List

Contract No.: WE5A Air Station New River Runway Expansion Area

Date 04 November 2013

Title and No. of Technical Section: SOP OPS-04, DGM Anomaly Investigations

3.0 Intrusive investigations, 3.1 Detection and Removal Procedures, 3.1.3.1 Intrusive teams

3.1.3.2 Manual Excavations, 3.1.3.3 Mechanical Handling Equipment, 3.2 Anomaly Excavation Reporting,

Description and Location of Work Inspected: Soil processing and intrusive investigation of site Air Station New River Runway Expansion Area

A. Key Personnel Present:

Name	Position	Company
Jake Crostic	Site Coordinator	CH2M Hill
Steve Brown	UXOQC SO	CH2M Hill
Dave McDonald	SUXOS	CH2M Hill
Jim Keesee	Field Team Leader	USAE
Pat Gildea	UXO III	USAE

B. Materials being used are in strict compliance with the contract plans and specifications: Yes  No

If not, explain: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

C. Procedures and/or work methods witnessed are in strict compliance with the contract specifications: Yes  No

If not, explain: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

D. Workmanship is acceptable: Yes  No

State where improvement is needed: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

E. Workmanship is free of safety violations: Yes  No

If no, corrective action taken: \_\_\_\_\_

\_\_\_\_\_

STEVE BROWN



MEC QCS/SO

# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 07 October 2013

Contractor: LDSI

Contract No: N26470-08-D-8012, WE5A, Air Station New River Runway Expansion Area

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Establish of bench marks, plotting out South west corner grid stakes and LOD, recording of QC seed locations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Establish grids and LOD utilizing wooden stakes with grid numbers and tape **underway**

No metal hubs or nails with the grid or boundary stakes

If SW corner of the grid is well beyond the LOD, that stake will be set, or, an offset stake with the offset distances (meters E and N of the SW corner) labeled on the stake itself

Any stake offsets from the provided coordinates must have the offset distances written in meters East and North of the SW corner on the stake

Coordinates of all QC seed items.

Coordinates of the seed items need to be transmitted in different file.

PERSONNEL PRESENT; Steve Brown, Jason Vandelinde, Thomas Anderson

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Confirmation of control points coordinates, 2 different samples collected, J. Vandelinde, T. Anderson

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 07 October 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 08 October 2013

Contractor: LDSI

Contract No: N26470-08-D-8012, WE5A, Air Station New River Runway Expansion Area

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Establish of bench marks, plotting out South west corner grid stakes and LOD, recording of QC seed locations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Establish grids and LOD utilizing wooden stakes with grid numbers and tape **underway**

No metal hubs or nails with the grid or boundary stakes

If SW corner of the grid is well beyond the LOD, that stake will be set, or, an offset stake with the offset distances (meters E and N of the SW corner) labeled on the stake itself

Any stake offsets from the provided coordinates must have the offset distances written in meters East and North of the SW corner on the stake

Coordinates of all QC seed items.

Coordinates of the seed items need to be transmitted in different file.

PERSONNEL PRESENT; Steve Brown, Jason Vandelinde, Thomas Anderson

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Confirmation of control points coordinates, 2 different samples collected, J. Vandelinde, T. Anderson

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 08 October 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 09 October 2013

Contractor: LDSI

Contract No: N26470-08-D-8012, WE5A, Air Station New River Runway Expansion Area

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Establish of bench marks, plotting out South west corner grid stakes and LOD, recording of QC seed locations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Establish grids and LOD utilizing wooden stakes with grid numbers and tape Completed

No metal hubs or nails with the grid or boundary stakes

If SW corner of the grid is well beyond the LOD, that stake will be set, or, an offset stake with the offset distances (meters E and N of the SW corner) labeled on the stake itself Completed

Any stake offsets from the provided coordinates must have the offset distances written in meters East and North of the SW corner on the stake Completed

Coordinates of all QC seed items. Completed

Coordinates of the seed items need to be transmitted in different file. Completed

PERSONNEL PRESENT; Steve Brown, Jason Vandelinde, Thomas Anderson

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Confirmation of control points coordinates, 2 different samples collected, J. Vandelinde, T. Anderson

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 09 October 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 10 October 2013

Contractor: NAEVA

Contract No: N26470-08-D-8012, WE5A, Air Station New River Runway Expansion Area

Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE	YES
WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE	Establish IVS,

### IDENTIFY DEFINABLE FEATURE OF WORK.

Identify subsurface anomalies that may be indicative of MEC or MPPEH.

Surveying using the EM61-MK2, coverage includes 100% of the site using a lane spacing of 0.75 meters.

Use of real-time kinematic GPS (RTK GPS) capable of achieving survey-grade accuracy

Data will be post-processed and provided to CH2M HILL Project Geophysicist for evaluation

PERSONNEL PRESENT; Steve Brown, Thanhhan Nguyen, Cesar Chirinos.

### TESTING PERFORMED

Daily instrument verification

Perform geophysical surveying and quality control (QC) per applicable QC tests outlined the GIP.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 10 October 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 11 October 2013

Contractor: NAEVA

Contract No: N26470-08-D-8012, WE5A, Air Station New River Runway Expansion Area

Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE	YES
WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE	Collect stationary measurements for noise,

### IDENTIFY DEFINABLE FEATURE OF WORK.

Identify subsurface anomalies that may be indicative of MEC or MPPEH.

Surveying using the EM61-MK2, coverage includes 100% of the site using a lane spacing of 0.75 meters.

Use of real-time kinematic GPS (RTK GPS) capable of achieving survey-grade accuracy

Data will be post-processed and provided to CH2M HILL Project Geophysicist for evaluation

PERSONNEL PRESENT; Steve Brown, Thanhhan Nguyen, Cesar Chirinos.

### TESTING PERFORMED

Daily instrument verification

Perform geophysical surveying and quality control (QC) per applicable QC tests outlined the GIP.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 11 October 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 14 October 2013

Contractor: NAEVA

Contract No: N26470-08-D-8012, WE5A, Air Station New River Runway Expansion Area

Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE	YES
WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE	Collect ion in grids D5C7G5, D5C7G6, D5C7H5, D5C7H6, D5C7H7

### IDENTIFY DEFINABLE FEATURE OF WORK.

Identify subsurface anomalies that may be indicative of MEC or MPPEH.

Surveying using the EM61-MK2, coverage includes 100% of the site  
using a lane spacing of 0.75 meters.

Use of real-time kinematic GPS (RTK GPS) capable of achieving survey-grade accuracy

Data will be post-processed and provided to CH2M HILL Project Geophysicist for evaluation

PERSONNEL PRESENT; Steve Brown, Thanhhan Nguyen, Cesar Chirinos.

### TESTING PERFORMED

Daily instrument verification

Perform geophysical surveying and quality control (QC) per applicable QC tests outlined  
the GIP.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 14 October 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 15 October 2013

Contractor: NAEVA

Contract No: N26470-08-D-8012, WE5A, Air Station New River Runway Expansion Area

Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE	YES
WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE	Collect ion in grids D5C7G4, D5C7G3, D5C7H4, D5C7H3, D5C7I4

### IDENTIFY DEFINABLE FEATURE OF WORK.

Identify subsurface anomalies that may be indicative of MEC or MPPEH.

Surveying using the EM61-MK2, coverage includes 100% of the site  
using a lane spacing of 0.75 meters.

Use of real-time kinematic GPS (RTK GPS) capable of achieving survey-grade accuracy

Data will be post-processed and provided to CH2M HILL Project Geophysicist for evaluation

PERSONNEL PRESENT; Steve Brown, Thanhhan Nguyen, Cesar Chirinos.

### TESTING PERFORMED

Daily instrument verification

Perform geophysical surveying and quality control (QC) per applicable QC tests outlined  
the GIP.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 15 October 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 16 October 2013

Contractor: NAEVA

Contract No: N26470-08-D-8012, WE5A, Air Station New River Runway Expansion Area

Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE	YES
WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE	Collect ion in grids D5C7G2, D5C7G1, D5C7H2, D5C7H1

### IDENTIFY DEFINABLE FEATURE OF WORK.

Identify subsurface anomalies that may be indicative of MEC or MPPEH.

Surveying using the EM61-MK2, coverage includes 100% of the site  
using a lane spacing of 0.75 meters.

Use of real-time kinematic GPS (RTK GPS) capable of achieving survey-grade accuracy

Data will be post-processed and provided to CH2M HILL Project Geophysicist for evaluation

PERSONNEL PRESENT; Steve Brown, Thanhhan Nguyen, Cesar Chirinos.

### TESTING PERFORMED

Daily instrument verification

Perform geophysical surveying and quality control (QC) per applicable QC tests outlined  
the GIP.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 16 October 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 17 October 2013

Contractor: NAEVA

Contract No: N26470-08-D-8012, WE5A, Air Station New River Runway Expansion Area

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	YES
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Collection in grids D5C6G0, D5C6G9, D5C6H0, D5C6H9

### IDENTIFY DEFINABLE FEATURE OF WORK.

Identify subsurface anomalies that may be indicative of MEC or MPPEH.

Surveying using the EM61-MK2, coverage includes 100% of the site using a lane spacing of 0.75 meters.

Use of real-time kinematic GPS (RTK GPS) capable of achieving survey-grade accuracy

Data will be post-processed and provided to CH2M HILL Project Geophysicist for evaluation

PERSONNEL PRESENT; Steve Brown, Thanh Nguyen, Cesar Chirinos.

### TESTING PERFORMED

Daily instrument verification

Perform geophysical surveying and quality control (QC) per applicable QC tests outlined in the GIP.

### DGM QUALITY CONTROL

Following data underwent QC by Project Geophysicist (Matthew Barner) on 10/17/13: DGM QC and 2x daily IVS data from 10/14/13, 10/15/13, 10/16/13; delivered processed data packages for blocks D5C7G5, D5C7G3, and D5C7G1.

No issues identified with QC or 2x daily IVS data from these dates. Data pass QC.

QC seeds #1 - #4 successfully detected in block data and selected as targets within positioning metric.

Block D5C7G1 has no QC issues to report.

Block D5C7G5 exhibited a small data gap in Grid D5C7H7 that exceeds line spacing MQO. Inquiry sent to NAEVA QC Geophysicist on 10/18/13 to confirm presence of an obstruction. If no obstruction is present, NAEVA instructed to perform gap fill in the area. Coordinate of approx. center of gap: 277071.4528, 3842302.591. No other QC issues to report with respect to this grid block.

Block D5C7G3 exhibited several data gaps between survey lanes that exceed lane spacing MQO. NAEVA instructed on 10/18/13 to have field team fill them.

Grid D5C7I4 appears to depict a shared target (ID#2) with ID#45 in neighboring grid D5C7H4. Inquiry sent to NAEVA to either confirm they are two separate targets as currently reported. If determined to be a shared target, one map and target list will be updated.

Grid D5C7I4 appears to depict response from culvert pipe. No annotation provided. Inquiry sent to NAEVA to confirm response is associated with cultural feature, and if so, provide appropriate annotation on the grid map.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO: Steve Brown Date 17 October 2013



Project Geophysicist: Matthew Barner Date 17 October 2013

# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 18 October 2013

Contractor: NAEVA

Contract No: N26470-08-D-8012, WE5A, Air Station New River Runway Expansion Area

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	YES
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Collection in grids D5C6F8, D5C6G8, D5C6H8, D5C6F7, D5C6G7

### IDENTIFY DEFINABLE FEATURE OF WORK.

Identify subsurface anomalies that may be indicative of MEC or MPPEH.

Surveying using the EM61-MK2, coverage includes 100% of the site using a lane spacing of 0.75 meters.

Use of real-time kinematic GPS (RTK GPS) capable of achieving survey-grade accuracy

Data will be post-processed and provided to CH2M HILL Project Geophysicist for evaluation

PERSONNEL PRESENT; Steve Brown, Thanh Nguyen, Cesar Chirinos.

### TESTING PERFORMED

Daily instrument verification

Perform geophysical surveying and quality control (QC) per applicable QC tests outlined in the GIP.

### DGM QUALITY CONTROL

Follow-up comments on QC issues identified in Blocks D5C7G5, D5C7G3 on 10/17/13 QC report.

Issues were resolved with NAEVA:

1. Data gap in Grid D5C7H7 was associated with metal pipe that was not annotated on the grid map. NAEVA has made the annotation and updated the map. Issue resolved.
2. Data gaps in Block D5C7G3 were due to display issue in Geosoft. Data gaps were initially identified and collected by NAEVA. No gaps were present. Issue resolved.
3. Target ID#2 in grid D5C7I4 was removed due to being shared target with #45 in Grid D5C7H4. High-amplitude response in D5C7I4 was associated with culvert. NAEVA updated target list and map (including culvert annotation) for D5C7I4.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO: Steve Brown Date 18 October 2013

A handwritten signature in blue ink that reads "Steve Brown". The signature is written in a cursive style with a large initial 'S'.

Project Geophysicist: Matthew Barner Date 18 October 2013

# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 20 October 2013

Contractor: NAEVA

Contract No: N26470-08-D-8012, WE5A, Air Station New River Runway Expansion Area

Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE	YES
WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE	Collect ion in grids D5C6B7, D5C6C7, D5C6D7, D5C6E7, D5C6C7, D5C6B6, D5C6C6, D5C6D6, D5C6E6

### IDENTIFY DEFINABLE FEATURE OF WORK.

Identify subsurface anomalies that may be indicative of MEC or MPPEH.

Surveying using the EM61-MK2, coverage includes 100% of the site  
using a lane spacing of 0.75 meters.

Use of real-time kinematic GPS (RTK GPS) capable of achieving survey-grade accuracy

Data will be post-processed and provided to CH2M HILL Project Geophysicist for evaluation

PERSONNEL PRESENT; Steve Brown, Thanhhan Nguyen, Cesar Chirinos.

### TESTING PERFORMED

Daily instrument verification

Perform geophysical surveying and quality control (QC) per applicable QC tests outlined  
the GIP.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 20 October 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 21 October 2013

Contractor: NAEVA

Contract No: N26470-08-D-8012, WE5A, Air Station New River Runway Expansion Area

Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE	YES
WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE	Collection in grids D5B6J7, D5B6J6, D5C6A7, D5C6A6

### IDENTIFY DEFINABLE FEATURE OF WORK.

Identify subsurface anomalies that may be indicative of MEC or MPPEH.

Surveying using the EM61-MK2, coverage includes 100% of the site using a lane spacing of 0.75 meters.

Use of real-time kinematic GPS (RTK GPS) capable of achieving survey-grade accuracy

Data will be post-processed and provided to CH2M HILL Project Geophysicist for evaluation

PERSONNEL PRESENT; Steve Brown, Thanh Nguyen, Cesar Chirinos.

### TESTING PERFORMED

Daily instrument verification

Perform geophysical surveying and quality control (QC) per applicable QC tests outlined the GIP.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 21 October 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 23 October 2013

Contractor: NAEVA

Contract No: N26470-08-D-8012, WE5A, Air Station New River Runway Expansion Area

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	YES
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	DGM QC QC and 2x IVS data from 10/17/13 through 10/21/13; Production data for Grid Blocks D5C6F7 and D5C6G9

### IDENTIFY DEFINABLE FEATURE OF WORK.

Download and review of data packages posted through 10/22/13 by NAEVA

Perform DGM QC

Evaluate whether DGM data meet project MQOs in GIP

PERSONNEL: Matthew Barner

### TESTING PERFORMED

DGM QC

### RESULTS

No deficiencies or QC issues identified in data sets listed above. Data meet MQOs.

Seeds QC-5 through QC-7 successfully identified and targeted in grid block data listed above.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

Project Geophysicist: Matthew Barner Date 23 October 2013

# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 25 October 2013

Contractor: NAEVA

Contract No: N26470-08-D-8012, WE5A, Air Station New River Runway Expansion Area

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	YES
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	DGM QC QC of production data for Grid Blocks D5B6J6, D5C6B6, D5C6D6

### IDENTIFY DEFINABLE FEATURE OF WORK.

Download and perform DGM QC of data packages posted through 10/24/13 by NAEVA

Evaluate whether DGM data meet project MQOs in GIP

PERSONNEL: Matthew Barner

### TESTING PERFORMED

DGM QC

### RESULTS

No deficiencies or QC issues identified in data sets listed above. Data meet MQOs.

Seeds QC-8 and QC-9 successfully identified and targeted in grid block data listed above. All seeds now accounted for.

Duplicate target identified in Grid D5C7H4 (Block D5C7G3) during final review of all maps.

Issue resolved by NAEVA on 10/25/13. Target count in Grid D5C7H4 reduced by one.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

Project Geophysicist: Matthew Barner Date 25 October 2013

# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 04 November 2013

Contractor: LDSI

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Place non-metallic flags at each anomaly location with an offset of 1 foot to the North. Provide Anomaly Identification number, and the Millivolt value of the anomaly target.

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Re-acquire individual locations that represent geophysical anomalies to be intrusively investigated

Anomaly re-acquisition will be conducted only within the 9.2-acre site

Review the anomaly list for completeness and address questions or seek clarification on the anomaly list

Place non-metallic flags at each anomaly location with an offset of 1 foot to the North added to the flag location.

Same colours can be used in alternating grids (NO RED)

Information on the flag shall include; the provided Anomaly Identification number, and the Millivolt value of the anomaly target.

~~Completed~~

PERSONNEL PRESENT; Steve Brown, Tom Anderson, Jason Vandelinde

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

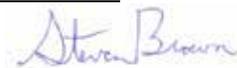
Confirmation of control points coordinates, Tom Anderson, Jason Vandelinde

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 04 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 04 November 2013

Contractor: USAE

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Soil processing with mechanical aid

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Processing of soil piles located at south west end of task site

~~Completed~~

PERSONNEL PRESENT; Steve Brown, Dave McDonald, Jake Crostic, Jim Keesee, Pat Gildea, Allen Cochran  
Matt Kuster, Robert Querry, James Ray, Mario Valez, Joe Wilder, Scott McKenzie  
Adam Miller, Charles Haggerty.

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Testing of EM-61, All metals detectors.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 04 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 04 November 2013

Contractor: ECLS

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE	Yes
WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE	Locate and mark underground utilities

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Identifying and marking all subsurface utilities within the entire pre-established 9.2-acre remedial investigation area.

Utilities will be identified using electronic devices or site maps and marked on the ground with survey marking paint, or any other means necessary to ensure the safety of earth disturbing activities and the protection of the Base infrastructure. Utilities will be identified using all reasonably available as-built drawings, electronic locating devices, and any other means necessary. The location of utilities identified from as-built drawings or other maps must be verified in the field prior to marking.

Utility drawings shall not be considered definitive and must be field verified. Field verification will include detection using nonintrusive subsurface detection equipment capable of locating subsurface utilities, as well as opening manhole covers to verify pipe directions.

Utilities shall be marked using the appropriate industry standard paint and/or color coded pin flags to indicate electricity, gas, water, steam, telephone, TV cable, fiber optic, sewer, etc.

In addition, the Buried Utility Location Tracking Form will be completed by the Subcontractor for the site based upon the utilities identified in the field during utility locating. The form will be submitted to CH2M HILL (field staff or project manager) within 24 hours of completing utility locating activities.

~~Completed~~

PERSONNEL PRESENT; Steve Brown, Todd Thompson, Ben Sox

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

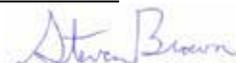
Verification of field instruments, Todd Thompson, Ben Sox

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 04 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 05 November 2013

Contractor: LDSI

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Place non-metallic flags at each anomaly location with an offset of 1 foot to the North. Provide Anomaly Identification number, and the Millivolt value of the anomaly target.

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Re-acquire individual locations that represent geophysical anomalies to be intrusively investigated

Anomaly re-acquisition will be conducted only within the 9.2-acre site

Review the anomaly list for completeness and address questions or seek clarification on the anomaly list

Place non-metallic flags at each anomaly location with an offset of 1 foot to the North added to the flag location.

Same colours can be used in alternating grids (NO RED)

Information on the flag shall include; the provided Anomaly Identification number, and the Millivolt value of the anomaly target.

~~Completed~~

PERSONNEL PRESENT; Steve Brown, Tom Anderson, Jason Vandelinde

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

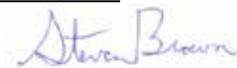
Confirmation of control points coordinates, Tom Anderson, Jason Vandelinde

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 05 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 05 November 2013

Contractor: USAE

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Soil processing with mechanical aid, intrusive investigation operations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Processing of soil piles located at south west end of task site.

Intrusive investigations started;

Grids D5C7G6 completed.

~~Completed~~  
PERSONNEL PRESENT; Steve Brown, Dave McDonald, Jake Crostic, Jim Keese, Pat Gildea, Allen Cochran

Matt Kuster, Robert Querry, James Ray, Mario Valez, Joe Wilder, Scott McKenzie

Adam Miller, Charles Haggerty.

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Testing of EM-61, schonstedt and all metals detectors.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO: Steve Brown Date 05 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 06 November 2013

Contractor: LDSI

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Place non-metallic flags at each anomaly location with an offset of 1 foot to the North. Provide Anomaly Identification number, and the Millivolt value of the anomaly target.

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Re-acquire individual locations that represent geophysical anomalies to be intrusively investigated  
Anomaly re-acquisition will be conducted only within the 9.2-acre site  
Review the anomaly list for completeness and address questions or seek clarification on the anomaly list  
Place non-metallic flags at each anomaly location with an offset of 1 foot to the North added to the flag location.  
Same colours can be used in alternating grids (NO RED)  
Information on the flag shall include; the provided Anomaly Identification number, and the Millivolt value of the anomaly target.

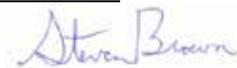
~~Completed~~  
PERSONNEL PRESENT; Steve Brown, Tom Anderson, Jason Vandelinde

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Confirmation of control points coordinates, Tom Anderson, Jason Vandelinde

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO: Steve Brown Date 06 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 06 November 2013

Contractor: USAE

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Intrusive investigation operations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Intrusive operations in grid D5C7H3, D5C7H6, D5C7H7, D5C7G3, D5C7G5, D5C7H5, and D5C7H2..

~~Completed~~  
PERSONNEL PRESENT; Steve Brown, Dave McDonald, Jake Crostic, Jim Keese, Pat Gildea, Allen Cochran

Matt Kuster, Robert Querry, James Ray, Mario Valez, Joe Wilder, Scott McKenzie

Adam Miller, Charles Haggerty.

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Testing of EM-61, schonstedt and all metals detectors.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 06 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 07 November 2013

Contractor: LDSI

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Place non-metallic flags at each anomaly location with an offset of 1 foot to the North. Provide Anomaly Identification number, and the Millivolt value of the anomaly target.

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Re-acquire individual locations that represent geophysical anomalies to be intrusively investigated

Anomaly re-acquisition will be conducted only within the 9.2-acre site

Review the anomaly list for completeness and address questions or seek clarification on the anomaly list

Place non-metallic flags at each anomaly location with an offset of 1 foot to the North added to the flag location.

Same colours can be used in alternating grids (NO RED)

Information on the flag shall include; the provided Anomaly Identification number, and the Millivolt value of the anomaly target.

~~Completed~~

PERSONNEL PRESENT; Steve Brown, Tom Anderson, Jason Vandelinde

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Confirmation of control points coordinates, Tom Anderson, Jason Vandelinde

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 07 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 07 November 2013

Contractor: USAE

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Intrusive investigation operations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Intrusive operations in grid D5C7H4, D5C7H1, D5C7I4, D5C7G4, D5C7G2.

~~Completed~~  
PERSONNEL PRESENT; Steve Brown, Dave McDonald, Jake Crostic, Jim Keese, Pat Gildea, Allen Cochran  
Matt Kuster, Robert Querry, James Ray, Mario Valez, Joe Wilder, Scott McKenzie  
Adam Miller, Charles Haggerty.

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Testing of EM-61, schonstedt and all metals detectors.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO: Steve Brown Date 07 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 08 November 2013

Contractor: LDSI

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Place non-metallic flags at each anomaly location with an offset of 1 foot to the North. Provide Anomaly Identification number, and the Millivolt value of the anomaly target.

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Re-acquire individual locations that represent geophysical anomalies to be intrusively investigated  
Anomaly re-acquisition will be conducted only within the 9.2-acre site  
Review the anomaly list for completeness and address questions or seek clarification on the anomaly list  
Place non-metallic flags at each anomaly location with an offset of 1 foot to the North added to the flag location.  
Same colours can be used in alternating grids (NO RED)  
Information on the flag shall include; the provided Anomaly Identification number, and the Millivolt value of the anomaly target.

Work completed

~~Completed~~  
PERSONNEL PRESENT; Steve Brown, Tom Anderson, Jason Vandelinde

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Confirmation of control points coordinates, Tom Anderson, Jason Vandelinde

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 08 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 12 November 2013

Contractor: USAE

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Intrusive investigation operations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Intrusive operations in grid D5C6H9, D5C6G0, and D5C6G9. .

~~Completed~~  
PERSONNEL PRESENT; Steve Brown, Dave McDonald, Jake Crostic, Jim Keese, Allen Cochran

Matt Kuster, Robert Querry, James Ray, Mario Valez, Joe Wilder, Scott McKenzie

Adam Miller, Charles Haggerty.

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Testing of EM-61, schonstedt and all metals detectors.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 12 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 13 November 2013

Contractor: USAE

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Intrusive investigation operations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Intrusive operations in grid D5C7G1

~~Completed~~

PERSONNEL PRESENT; Steve Brown, Dave McDonald, Jake Crostic, Jim Keese, Allen Cochran

Matt Kuster, Robert Querry, James Ray, Mario Valez, Joe Wilder, Scott McKenzie

Adam Miller, Charles Haggerty.

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Testing of EM-61, schonstedt and all metals detectors.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 13 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 14 November 2013

Contractor: USAE

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Intrusive investigation operations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Intrusive operations in grid D5C6G8, D5C6D6, D5C6H0

~~Completed~~  
PERSONNEL PRESENT; Steve Brown, Dave McDonald, Jake Crostic, Jim Keese, Alan Turpin, Allen Cochran  
Matt Kuster, Robert Querry, James Ray, Mario Valez, Joe Wilder, Scott McKenzie  
Adam Miller, Charles Haggerty.

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Testing of EM-61, schonstedt and all metals detectors.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 14 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 15 November 2013

Contractor: USAE

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Demolition operations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Demolition operations.

~~Completed~~

PERSONNEL PRESENT; Steve Brown, Dave McDonald, Jake Crostic, Jim Keese, Alan Turpin, Allen Cochran

Matt Kuster, Robert Querry, James Ray, Mario Valez, Joe Wilder, Scott McKenzie

Adam Miller, Charles Haggerty.

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Testing of EM-61, schonstedt and all metals detectors.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 15 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 18 November 2013

Contractor: USAE

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Intrusive Operations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Intrusive operations in grids D5C6C7, D5C6C6, D5C6B6

~~Completed~~

PERSONNEL PRESENT; Steve Brown, Dave McDonald, Jake Crostic, Jim Keese, Alan Turpin, Allen Cochran

Matt Kuster, Robert Querry, James Ray, Mario Valez, Joe Wilder, Scott McKenzie

Adam Miller, Charles Haggerty.

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Testing of EM-61, schonstedt and all metals detectors.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO: Steve Brown Date 18 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 19 November 2013

Contractor: USAE

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Intrusive Operations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Intrusive operations in grids D5C6F7, D5C6G7, D5C6E6, D5C6B7, D5C6A7, D5C6A6, D5C6J7, D5C6J6, D5C6F8, and D5C6E7

~~Completed~~  
PERSONNEL PRESENT; Steve Brown, Dave McDonald, Jake Crostic, Jim Keesee, Alan Turpin, Allen Cochran  
Matt Kuster, Robert Querry, James Ray, Mario Valez, Joe Wilder, Scott McKenzie  
Adam Miller, Charles Haggerty.

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Testing of EM-61, schonstedt and all metals detectors.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO: Steve Brown Date 19 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 20 November 2013

Contractor: USAE

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Demolition Operations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Demolition operations of 2 X 81mm mortars and 4 x 2.36 inch rockets

~~Completed~~

PERSONNEL PRESENT; Steve Brown, Dave McDonald, Jake Crostic, Jim Keese, Alan Turpin, Allen Cochran

Matt Kuster, Robert Querry, James Ray, Mario Valez, Joe Wilder, Scott McKenzie

Adam Miller, Charles Haggerty.

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Testing of EM-61, schonstedt and all metals detectors.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 20 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 21 November 2013

Contractor: USAE

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Demolition Operations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Demil operations of 160 x expended 2.36 inch rocket motors

~~Completed~~

PERSONNEL PRESENT; Steve Brown, Dave McDonald, Jake Crostic, Jim Keese, Alan Turpin, Allen Cochran

Matt Kuster, Robert Querry, James Ray, Mario Valez, Joe Wilder, Scott McKenzie

Adam Miller, Charles Haggerty.

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Testing of EM-61, schonstedt and all metals detectors.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 21 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 25 November 2013

Contractor: USAE

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Soil Processing Operations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Processing of soil pile

~~Completed~~

PERSONNEL PRESENT; Steve Brown, Jake Crostic, Jim Keese, Allen Cochran

Matt Kuster, Robert Querry, James Ray, Joe Wilder, Charles Haggerty.

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Testing of EM-61, schonstedt and all metals detectors.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 25 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 26 November 2013

Contractor: USAE

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Soil Processing Operations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Processing of soil pile

Completed

PERSONNEL PRESENT; Steve Brown, Jake Crostic, Jim Keese, Allen Cochran

Matt Kuster, Robert Querry, James Ray, Joe Wilder, Charles Haggerty.

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Testing of schonstedt and all metals detectors.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 26 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 27 November 2013

Contractor: USAE

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Soil Processing Operations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Processing of soil pile

Completed

PERSONNEL PRESENT; Steve Brown, Jake Crostic, Jim Keese, Allen Cochran

Matt Kuster, Robert Querry, James Ray, Joe Wilder, Charles Haggerty.

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Testing of schonstedt and all metals detectors.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 27 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 29 November 2013

Contractor: USAE

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Soil Processing Operations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Processing of soil pile completed.

~~Completed~~  
PERSONNEL PRESENT; Steve Brown, Jake Crostic, Jim Keese, Allen Cochran  
Matt Kuster, Robert Querry, James Ray, Joe Wilder, Charles Haggerty.

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Testing of schonstedt and all metals detectors.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 29 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 09 October 2013

Contractor: LDSI

Contract No: N26470-08-D-8012, WE5A, Air Station New River Runway Expansion Area

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Establish of bench marks, plotting out South west corner grid stakes and LOD, recording of QC seed locations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Establish grids and LOD utilizing wooden stakes with grid numbers and tape Completed

No metal hubs or nails with the grid or boundary stakes

If SW corner of the grid is well beyond the LOD, that stake will be set, or, an offset stake with the offset distances (meters E and N of the SW corner) labeled on the stake itself completed.

Any stake offsets from the provided coordinates must have the offset distances written in meters East and North of the SW corner on the stake Completed

Coordinates of all QC seed items. Completed

Coordinates of the seed items need to be transmitted in different file. Completed

PERSONNEL PRESENT; Steve Brown, Jason Vandelinde, Thomas Anderson

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Confirmation of control points coordinates, 2 different samples collected, J. Vandelinde, T. Anderson

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 09 October 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 25 November 2013

Contractor: USAE

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Soil Processing Operations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Processing of soil pile

PERSONNEL PRESENT; Steve Brown, Jake Crostic, Jim Keese, Allen Cochran  
Matt Kuster, Robert Querry, James Ray, Joe Wilder, Charles Haggerty.

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

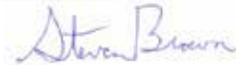
Testing of EM-61, schonstedt and all metals detectors.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 25 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 26 November 2013

Contractor: USAE

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Soil Processing Operations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Processing of soil pile

Completed

PERSONNEL PRESENT; Steve Brown, Jake Crostic, Jim Keese, Allen Cochran

Matt Kuster, Robert Querry, James Ray, Joe Wilder, Charles Haggerty.

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Testing of schonstedt and all metals detectors.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 26 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 27 November 2013

Contractor: USAE

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Soil Processing Operations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Processing of soil pile

Completed

PERSONNEL PRESENT; Steve Brown, Jake Crostic, Jim Keese, Allen Cochran

Matt Kuster, Robert Querry, James Ray, Joe Wilder, Charles Haggerty.

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Testing of schonstedt and all metals detectors.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 27 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 29 November 2013

Contractor: USAE

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Soil Processing Operations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Processing of soil pile completed.

~~Completed~~  
PERSONNEL PRESENT; Steve Brown, Jake Crostic, Jim Keese, Allen Cochran  
Matt Kuster, Robert Querry, James Ray, Joe Wilder, Charles Haggerty.

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Testing of schonstedt and all metals detectors.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 29 November 2013



# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 07 October 2013      **Task Order No.:** WE5A      **Report No.:** 20131007

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Avoidance escort to LDSI Surveyors.

**Weather:** cloudy

**Temperature:** 80 °F

**1. Work performed today:** Pre task brief, review of HASP, AHA, Avoidance SOP, escort survey team in locating and staking 31 LOD & 6 grid corner stakes, scanning of ground for 3 bench marks.

---

**2. Work performed today by CH2MHILL subcontractor(s):** Review of HASP, AHA, Avoidance SOP, locate and stake 31 LOD & 6 grid corner stakes, establish 3 bench marks

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** Yes, Thomas Anderson, Jason Vandelinde, Site map, AHA, SOP

---

**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** Yes, Thomas Anderson, Jason Vandelinde, Site map, AHA, SOP

---

**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):** Locate and stake LOD and grid corners, establish bench marks

---

**6. List tests performed, samples collected, and results received:** Magnetic locator test, reacquiring of bench marks with GPS.

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

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**8. Non-conformances/deficiencies reported:** None

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**9. Site safety monitoring activities performed today:** PTSP

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**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that*

*noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

Date: 07 October 2013

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 08 October 2013      **Task Order No.:** WE5A      **Report No.:** 20131008

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Avoidance escort to LDSI Surveyors.

**Weather:** cloudy, rain

**Temperature:** 64 °F

**1. Work performed today:** Pre task brief, escort survey team in locating and staking 41 LOD, 2 grid corner stakes and 5 QC seeds.

---

**2. Work performed today by CH2MHILL subcontractor(s):** Locate and stake 41 LOD & 2 grid corner stakes, record 5 QC seeds.

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

---

**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

---

**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):** Locate and stake LOD and grid corners, plant 5 QC seeds

---

**6. List tests performed, samples collected, and results received:** Magnetic locator test, reacquiring of bench marks with GPS.

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

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**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP

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**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

Date: 08 October 2013

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 09 October 2013      **Task Order No.:** WE5A      **Report No.:** 20131009

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Avoidance escort to LDSI Surveyors.

**Weather:** cloudy, rain

**Temperature:** 63 °F

**1. Work performed today:** Pre task brief, escort survey team in locating and staking 46 LOD and grid offsets, 13 grid corner stakes and 7 QC seeds. Task Completed!

---

**2. Work performed today by CH2MHILL subcontractor(s):** Locate and stake 46 LOD and grid offsets & 13 grid corner stakes, record 7 QC seeds.

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

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**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

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**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):** Locate and stake LOD, grid offsets and grid corners, plant 7 QC seeds

---

**6. List tests performed, samples collected, and results received:** Magnetic locator test, reacquiring of bench marks with GPS and RTS.

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

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**8. Non-conformances/deficiencies reported:** None

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**9. Site safety monitoring activities performed today:** PTSP

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**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

Date: 09 October 2013

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 10 October 2013      **Task Order No.:** WE5A      **Report No.:** 20131010

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Avoidance escort to NAVEA DGM techs.

**Weather:** cloudy, rain

**Temperature:** 61 °F

**1. Work performed today:** Pre task brief, review of HASP, AHA, and Avoidance SOP, cut 1,800 sqm of vegetation

---

**2. Work performed today by CH2MHILL subcontractor(s):** Review of HASP, AHA, Avoidance SOP, get cables, establish and mark IVS

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**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** Yes, Thanhan Nguyen, Cesar Chirinos Site map, AHA, SOP

---

**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** Yes, Thanhan Nguyen, Cesar Chirinos Site map, AHA, SOP

---

**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):** Locate and stake IVS,

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**6. List tests performed, samples collected, and results received:** Magnetic locator test, \_\_\_\_\_

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**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

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**8. Non-conformances/deficiencies reported:** None

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**9. Site safety monitoring activities performed today:** PTSP

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**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

Date: 10 October 2013

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 11 October 2013      **Task Order No.:** WE5A      **Report No.:** 20131011

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Avoidance escort to NAVEA DGM techs.

**Weather:** cloudy, light rain

**Temperature:** 63 °F

**1. Work performed today:** Pre task brief, review of HASP, AHA, and Avoidance SOP for Cliff Walden, cut 1,900 sqm of vegetation

---

**2. Work performed today by CH2MHILL subcontractor(s):** partial collection in grids B6J7, C6A7, C6B7, Collected stationary measurements for noise EM61, and G858

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**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

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**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

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**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):** Stationary noise testing

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**6. List tests performed, samples collected, and results received:** Magnetic locator test, IVS

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**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

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**8. Non-conformances/deficiencies reported:** None

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**9. Site safety monitoring activities performed today:** PTSP, SBO

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**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

Date: 11 October 2013

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 12 October 2013      **Task Order No.:** WE5A      **Report No.:** 20131012

**Location of work:** Air Station New River Runway Expansion Area

**Description:** vegetation cutting.

**Weather:** cloudy

**Temperature:** 63 °F

**1. Work performed today:** cut 1,700 sqm of vegetation

---

**2. Work performed today by CH2MHILL subcontractor(s):** None

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**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

---

**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

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**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):** None

---

**6. List tests performed, samples collected, and results received:** None

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**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

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**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP,

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**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

Date: 12 October 2013

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 14 October 2013      **Task Order No.:** WE5A      **Report No.:** 20131014

**Location of work:** Air Station New River Runway Expansion Area

**Description:** vegetation cutting, DGM collection.

**Weather:** cloudy, some rain

**Temperature:** 66 °F

**1. Work performed today:** cut vegetation approximately 85% completed

---

**2. Work performed today by CH2MHILL subcontractor(s):** collection in grids D5C7G5, D5C7G6, D5C7H5, D5C7H6, D5C7H7.

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

---

**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

---

**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):** Collection in grids D5C7G5, D5C7G6, D5C7H5, D5C7H6, and D5C7H7.

---

**6. List tests performed, samples collected, and results received:** EM61 thru IVS

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**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

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**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP,

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**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

Date: 14 October 2013

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 15 October 2013      **Task Order No.:** WE5A      **Report No.:** 20131015

**Location of work:** Air Station New River Runway Expansion Area

**Description:** vegetation cutting, DGM collection.

**Weather:** cloudy, some rain

**Temperature:** 66 °F

**1. Work performed today:** cut vegetation approximately 97% completed. Returned Brush cutters, U-Haul van. Should complete brush cutting 16 Oct 13 with weed whacker.

---

**2. Work performed today by CH2MHILL subcontractor(s):** collection in grids D5C7G4, D5C7G3, D5C7H4, D5C7H3, D5C7I4.

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

---

**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

---

**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):** Collection in grids D5C7G4, D5C7G3, D5C7H4, D5C7H3, and D5C7I4.

---

**6. List tests performed, samples collected, and results received:** EM61 thru IVS

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

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**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP,

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**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

Date: 15 October 2013

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 16 October 2013      **Task Order No.:** WE5A      **Report No.:** 20131016

**Location of work:** Air Station New River Runway Expansion Area

**Description:** vegetation cutting, DGM collection.

**Weather:** cloudy,

**Temperature:** 69 °F

**1. Work performed today:** vegetation cutting 100%. Taking photographs of DGM, grid coordinates of possible third spoil pile.

---

**2. Work performed today by CH2MHILL subcontractor(s):** collection in grids D5C7G2, D5C7G1, D5C7H2, D5C7H1. IVS

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

---

**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

---

**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):** Collection in grids D5C7G2, D5C7G1, D5C7H2, D5C7H1

---

**6. List tests performed, samples collected, and results received:** EM61 thru IVS

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

---

**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP,

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**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

Date: 16 October 2013

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 17 October 2013      **Task Order No.:** WE5A      **Report No.:** 20131017

**Location of work:** Air Station New River Runway Expansion Area

**Description:** DGM collection.

**Weather:** sunny with cloudy periods later in the day,

**Temperature:** 76 °F

**1. Work performed today:** Avoidance for DGM.

---

**2. Work performed today by CH2MHILL subcontractor(s):** collection in grids D5C6G0, D5C6G9, D5C6H0, D5C6H9. IVS

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

---

**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

---

**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):** Collection in grids D5C6G0, D5C6G9, D5C6H0, and D5C6H9

---

**6. List tests performed, samples collected, and results received:** EM61 thru IVS

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

---

**8. Non-conformances/deficiencies reported:** The tripod with the Trimble Satellite Antenna fell over at some and went unnoticed until the end of the day. End of day IVS was completed twice once before the tripod failure was noticed and repeated after the tripod was reestablished. Thanhan Nguyen said he would see if he can calculate the offset between the two IVS data readings to correct the data.

---

**9. Site safety monitoring activities performed today:** PTSP,

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**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*



# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 18 October 2013      **Task Order No.:** WE5A      **Report No.:** 20131018

**Location of work:** Air Station New River Runway Expansion Area

**Description:** DGM collection.

**Weather:** cloudy

**Temperature:** 71 °F

**1. Work performed today:** Avoidance for DGM.

---

**2. Work performed today by CH2MHILL subcontractor(s):** collection in grids D5C6F8, D5C6G8, D5C6H8, D5C6F7, D5C6G7. IVS

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

---

**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

---

**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):** Collection in grids D5C6F8, D5C6G8, D5C6H8, D5C6F7, and D5C6G7.

---

**6. List tests performed, samples collected, and results received:** EM61 thru IVS

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

---

**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP,

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**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

Date: 18 October 2013

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 20 October 2013      **Task Order No.:** WE5A      **Report No.:** 20131020

**Location of work:** Air Station New River Runway Expansion Area

**Description:** DGM collection.

**Weather:** cloudy

**Temperature:** 71 °F

**1. Work performed today:** Avoidance for DGM.

---

**2. Work performed today by CH2MHILL subcontractor(s):** collection in grids D5C6B7, D5C6C7, D5C6D7, D5C6E7, D5C6C7, D5C6B6, D5C6C6, D5C6D6, D5C6E6. IVS

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

---

**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

---

**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):** Collection in grids D5C6B7, D5C6C7, D5C6D7, D5C6E7, D5C6C7, D5C6B6, D5C6C6, D5C6D6, D5C6E6.

---

**6. List tests performed, samples collected, and results received:** EM61 thru IVS

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

---

**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP,

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**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Cliff Walden

Date: 20 October 2013

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 21 October 2013      **Task Order No.:** WE5A      **Report No.:** 20131021

**Location of work:** Air Station New River Runway Expansion Area

**Description:** DGM collection.

**Weather:** partly sunny in the am, cloudy

**Temperature:** 61 °F

**1. Work performed today:** Avoidance for DGM.

---

**2. Work performed today by CH2MHILL subcontractor(s):** collection in grids D5B6J7, D5B6J6, D5C6A7, D5C6A6. IVS Data collection complete.

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

---

**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

---

**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):** Collection in grids D5B6J7, D5B6J6, D5C6A7, D5C6A6.

---

**6. List tests performed, samples collected, and results received:** EM61 thru IVS

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

---

**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP,

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**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Cliff Walden

Date: 21 October 2013

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 04 November 2013      **Task Order No.:** WE5A      **Report No.:** 20131104

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Anomaly Reacquisition, Utility Locating, Soil processing.

**Weather:** sunny, cool, windy

**Temperature:** 53 °F

**1. Work performed today:** Pre task brief, review of HASP, AHA with USAE, ECLS and LDSI. Inspected MDAS with USAE Team Leader.

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**2. Work performed today by CH2MHILL subcontractor(s):** LDSI reacquired 291 anomalies, ECLS located and marked utilities at North end of task site, USAE processed approximately 50% of both soil piles located at South West end of task site. 24 pounds of MDAS was located.

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**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** LDSI with Thomas Anderson, Jason Vandelinde Dave McDonald, Jake Crostic SOW, and AHA.

ECLS with Ben Sox Todd Thompson, Dave McDonald, Jake Crostic SOW, and AHA.  
USAE with Dave McDonald, Jake Crostic, Jim Keese, Pat Gildea, Allen Cochran  
Matt Kuster, Robert Querry, James Ray, Mario Valez, Joe Wilder, Scott McKenzie  
Adam Miller, Charles Haggerty

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**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** LDSI with Thomas Anderson, Jason Vandelinde Dave McDonald, Jake Crostic SOW, and AHA.

ECLS with Ben Sox Todd Thompson, Dave McDonald, Jake Crostic SOW, and AHA.  
USAE with Dave McDonald, Jake Crostic, Jim Keese, Pat Gildea, Allen Cochran  
Matt Kuster, Robert Querry, James Ray, Mario Valez, Joe Wilder, Scott McKenzie  
Adam Miller, Charles Haggerty

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**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):** LDSI reacquired 291 anomalies, ECLS located and marked utilities at North end of task site, USAE processed approximately 50% of both soil piles located at South West end of task site.

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**6. List tests performed, samples collected, and results received:** EM61 and whites locators thru IVS

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**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

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**8. Non-conformances/deficiencies reported:** None

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**9. Site safety monitoring activities performed today:** PTSP, oversight

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**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

Date: 04 November 2013

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 05 November 2013      **Task Order No.:** WE5A      **Report No.:** 20131105

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Anomaly Reacquisition, Soil Processing, Intrusive Investigation.

**Weather:** partly sunny, cool, windy

**Temperature:** 69 °F

**1. Work performed today:** Pre task brief. Inspected MDAS with USAE Team Leader. Escorted electrician from CRM Electric to site, met with New River Explosive Safety Officers (MCI East) Mr. Ralph Harris and CWO2 Davis Jensen, New River Environmental Safety Officer, Mr. Kevin McGowan, and Mr. Randy McElveen North Carolina DENR who all visited the site for approximately 30 minutes. Oversight of operation, QC of 12 anomalies.

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**2. Work performed today by CH2MHILL subcontractor(s):**

LDSI reacquired 426 anomalies.

USAE completed processing of both soil piles located at South West end of task site.

Intrusive investigations started;

Grid D5C7G6 completed.

Grids D5C7H3 and D5C7H6 started, 118 digs completed awaiting QC.

21 pounds of MDAS was located.

185 pounds of CD

QC seed 003 was located.

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

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**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

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**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):**

LDSI reacquired 426 anomalies.

USAE completed processing both soil piles located at South West end of task site.

Intrusive investigations started;

Grids D5C7G6 completed.

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**6. List tests performed, samples collected, and results received:** EM61, schonstedt and whites locators thru IVS

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**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

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**8. Non-conformances/deficiencies reported:** None

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**9. Site safety monitoring activities performed today:** PTSP, oversight of processing operations and Intrusive operations.

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**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

Date: 05 November 2013

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 06 November 2013      **Task Order No.:** WE5A      **Report No.:** 20131106

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Anomaly Reacquisition, Soil Processing, Intrusive Investigation.

**Weather:** cloudy, cool, windy, rain

**Temperature:** 53-71 °F

**1. Work performed today:** Pre task brief. Inspected MDAS with USAE Team Leader. QC of 203 anomalies.

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**2. Work performed today by CH2MHILL subcontractor(s):**

LDSI reacquired 417 anomalies. (403 remaining)

USAE completed grids D5C7H3, D5C7H6, D5C7H7, D5C7G3, D5C7G5, D5C7H5, and D5C7H2.

203 digs completed.

37 pounds of MDAS was located.

450 pounds of CD recovered.

QC seeds 002 and 004 were located.

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**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

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**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

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**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):**

LDSI reacquired 417 anomalies.

USAE completed grids D5C7H3, D5C7H6, D5C7H7, D5C7G3, D5C7G5, D5C7H5, and D5C7H2.

---

**6. List tests performed, samples collected, and results received:** EM61, schonstedt and whites locators thru IVS

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**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

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**8. Non-conformances/deficiencies reported:** None

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**9. Site safety monitoring activities performed today:** PTSP, oversight of processing operations and Intrusive operations.

---

**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

Date: 06 November 2013

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 07 November 2013      **Task Order No.:** WE5A      **Report No.:** 20131107

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Anomaly Reacquisition, Intrusive Investigation.

**Weather:** cloudy, cool, windy, rain

**Temperature:** 63-71 °F

**1. Work performed today:** Pre task brief. Inspected MDAS with USAE Team Leader. QC of 171 anomalies.

---

**2. Work performed today by CH2MHILL subcontractor(s):**

LDSI reacquired 315 anomalies. (88 remaining)

USAE completed grids D5C7H4, D5C7H1, D5C7I4, D5C7G4, and D5C7G2.

171 digs completed.

19 pounds of MDAS was located.

425 pounds of CD recovered.

QC seed 001 was located.

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**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

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**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

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**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):**

LDSI reacquired 315 anomalies.

USAE completed grids D5C7H4, D5C7H1, D5C7I4, D5C7G4, D5C7G2.

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**6. List tests performed, samples collected, and results received:** EM61, schonstedt and whites locators thru IVS

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**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

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**8. Non-conformances/deficiencies reported:** None

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**9. Site safety monitoring activities performed today:** PTSP, oversight of Intrusive operations.

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**10. Remarks:** None

**CERTIFICATION:** *I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 08 November 2013      **Task Order No.:** WE5A      **Report No.:** 20131108

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Anomaly Reacquisition.

**Weather:** sunny, cool, windy

**Temperature:** 43-51 °F

**1. Work performed today:** Pre task brief. Avoidance Anomaly Reacquisition.

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**2. Work performed today by CH2MHILL subcontractor(s):**

LDSI reacquired 88 anomalies, QC seeds 10, 11, 12, and LOD around 3<sup>rd</sup> spoil pile (with modifications). Reacquisition complete.

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**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

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**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

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**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):**

LDSI reacquired 88 anomalies QC seeds 10, 11, 12, and LOD around 3<sup>rd</sup> spoil pile.

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**6. List tests performed, samples collected, and results received:** schonstedt locator thru IVS

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**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

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**8. Non-conformances/deficiencies reported:** None

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**9. Site safety monitoring activities performed today:** PTSP.

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**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 12 November 2013      **Task Order No.:** WE5A      **Report No.:** 20131112

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Intrusive Investigation.

**Weather:** cloudy, cool, windy

**Temperature:** 36-64 °F

**1. Work performed today:** Pre task brief. Inspected MDAS with USAE Team Leader. QC of 198 anomalies. Review of AHA , SPO and HASP with USAE employee Mike Rago. Mr. Randy McElveen North Carolina DENR visited the site for approximately 30 minutes.

---

**2. Work performed today by CH2MHILL subcontractor(s):**

USAE completed grids D5C6H9, D5C6G0, and D5C6G9.

198 digs completed.

125 pounds of MDAS was located.

210 pounds of CD recovered.

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**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

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**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

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**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):**

USAE completed grids D5C6H9, D5C6G0, and D5C6G9.

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**6. List tests performed, samples collected, and results received:** EM61, schonstedt and whites locators thru IVS

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**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

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**8. Non-conformances/deficiencies reported:** None

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**9. Site safety monitoring activities performed today:** PTSP, oversight of Intrusive operations.

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**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 13 November 2013      **Task Order No.:** WE5A      **Report No.:** 20131113

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Intrusive Investigation.

**Weather:** cloudy, cold, windy

**Temperature:** 22-41 °F

**1. Work performed today:** Pre task brief. Inspected MDAS with USAE Team Leader. QC of 60 anomalies. Review of AHA , SPO and HASP with USAE employee Joshua Barry. Coordinated with Range control, Military Police and Fire Department for the planned demolition for 14 November 2013.

---

**2. Work performed today by CH2MHILL subcontractor(s):**

USAE completed grids D5C7G1.

60 digs completed.

68 pounds of MDAS was located.

245 pounds of CD recovered.

1 x 81 mm mortar (WP) and 1 x 2.36 inch rocket (HE) were located.

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**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

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**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

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**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):**

USAE completed grids D5C7G1.

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**6. List tests performed, samples collected, and results received:** EM61, schonstedt and whites locators thru IVS

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

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**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP, oversight of Intrusive operations.

---

**10. Remarks:** None

**CERTIFICATION:** *I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 14 November 2013      **Task Order No.:** WE5A      **Report No.:** 20131114

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Intrusive Investigation.

**Weather:** cloudy, cold,

**Temperature:** 29-57 °F

---

**1. Work performed today:** Pre task brief. Inspected MDAS with USAE Team Leader. QC of 251 anomalies. Review of AHA, SPO and HASP with USAE employee Alan Turpin. Coordinated with Air Operations and Military Police for the planned demolition for 15 November 2013.

---

**2. Work performed today by CH2MHILL subcontractor(s):**

USAE completed grids D5C6G8, D5C6D6, D5C6H0.

251 digs completed.

50 pounds of MDAS was located.

40 pounds of CD recovered.

QC Seed 005 and 006 were located.

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**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

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**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

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**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):**

USAE completed grids D5C6G8, D5C6D6, D5C6H0.

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**6. List tests performed, samples collected, and results received:** EM61, schonstedt and whites locators thru IVS

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**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

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**8. Non-conformances/deficiencies reported:** None

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**9. Site safety monitoring activities performed today:** PTSP, oversight of Intrusive operations.

---

**10. Remarks:** None

**CERTIFICATION:** *I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 15 November 2013      **Task Order No.:** WE5A      **Report No.:** 20131115

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Intrusive Investigation.

**Weather:** partly cloudy, cold,

**Temperature:** 29-57 °F

**1. Work performed today:** Pre task brief. Coordinated with air operations and Military Police for the demolition. Oversight of demolition operations. Telephone conference in reference to injured USAE UXO tech. Met with Air operations officer reference future demolition operations.

---

**2. Work performed today by CH2MHILL subcontractor(s):**

USAE completed demolition operations and clean-up of holes.

All CD was collected and removed to scrap dealers.

151 pounds of MDAS was located.

40 pounds of CD recovered.

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**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

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**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

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**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):**

USAE completed demolitions operations an site clean up.

---

**6. List tests performed, samples collected, and results received:** EM61, schonstedt and whites locators thru IVS

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

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**8. Non-conformances/deficiencies reported:** None

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**9. Site safety monitoring activities performed today:** PTSP, oversight of Intrusive operations.

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**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 18 November 2013      **Task Order No.:** WE5A      **Report No.:** 20131118

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Intrusive Investigation.

**Weather:** partly cloudy, warm,

**Temperature:** 45-82 °F

**1. Work performed today:** Pre task brief. QC of 133 digs.

---

**2. Work performed today by CH2MHILL subcontractor(s):**

USAE completed grids D5C6C7, D5C6C6, D5C6B6.

In grid D5C6F7, target 002 was an 81mm mortar, WP.

In grid D5C6D7 2 x 2.36 inch rockets targets 027 and 070 were located these grids have not been completed pending the final QC of the aforementioned target numbers.

75 pounds of MDAS was located.

130 pounds of CD recovered.

QC seed 007 was located.

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

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**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

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**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):**

USAE completed grids D5C6C7, D5C6C6, D5C6B6.

---

**6. List tests performed, samples collected, and results received:** EM61, schonstedt and whites locators thru IVS

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

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**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP, oversight of Intrusive operations.

---

**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 19 November 2013      **Task Order No.:** WE5A      **Report No.:** 20131119

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Intrusive Investigation.

**Weather:** partly cloudy, cold, windy

**Temperature:** 35-52 °F

**1. Work performed today:** Pre task brief. QC of 392 digs, recording of UXO. Inspection of 160 rocket motors requiring demil.

---

**2. Work performed today by CH2MHILL subcontractor(s):**

USAE completed grids D5C6F7, D5C6G7, D5C6E6, D5C6B7, D5C6A7, D5C6A6, D5C6J7, D5C6J6, D5C6F8, and D5C6E7.

1 X 81mm mortar was located D5C6F8, target 026.

2 x 2.36 inch rockets were located in grid D5C6B7 target 012 and D5C6E7 target 061.

150 pounds of MDAS was located.

265 pounds of CD recovered.

QC seed 009 was located.

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

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**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

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**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):**

USAE completed grids D5C6F7, D5C6G7, D5C6E6, D5C6B7, D5C6A7, D5C6A6, D5C6J7, D5C6J6, D5C6F8, and D5C6E7.

---

**6. List tests performed, samples collected, and results received:** EM61, schonstedt and whites locators thru IVS

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**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

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**8. Non-conformances/deficiencies reported:** None

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**9. Site safety monitoring activities performed today:** PTSP, oversight of Intrusive operations.

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**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 20 November 2013      **Task Order No.:** WE5A      **Report No.:** 20131120

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Demolitions Operations.

**Weather:** partly cloudy, cold, windy

**Temperature:** 45 °F

**1. Work performed today:** Pre task brief. Oversight of demolition operations. Coordination with base operations, military police, and fire department.

---

**2. Work performed today by CH2MHILL subcontractor(s):**

USAE completed demolitions of 2 X 81mm mortars and 4 x 2.36 inch rockets

Clearance of MDAS from blast holes. Preparation of demo site for planned demolition operations 21 Nov 13.

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

---

**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

---

**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):**

USAE completed demolitions of 2 X 81mm mortars and 4 x 2.36 inch rockets.

---

**6. List tests performed, samples collected, and results received:** EM61, schonstedt and whites locators thru IVS

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

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**8. Non-conformances/deficiencies reported:** None

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**9. Site safety monitoring activities performed today:** PTSP, oversight of Demolition operations.

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**10. Remarks:** None

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*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL*

*and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 21 November 2013      **Task Order No.:** WE5A      **Report No.:** 20131121

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Demolitions Operations.

**Weather:** partly cloudy, cool,

**Temperature:** 46 °F

**1. Work performed today:** Pre task brief. Oversight of demolition operations. Coordination with base operations, military police, and fire department.

---

**2. Work performed today by CH2MHILL subcontractor(s):**

USAE completed demilitarization of 160 x 2.36 inch expended rocket motors

Clearance of MDAS from blast holes.

Scanning of third spoil pile in preparation for raking ops.

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

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**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

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**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):**

USAE completed demil of 160 x 2.36 inch rocket motors.

---

**6. List tests performed, samples collected, and results received:** EM61, schonstedt and whites locators thru IVS

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

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**8. Non-conformances/deficiencies reported:** None

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**9. Site safety monitoring activities performed today:** PTSP, oversight of Demolition operations.

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**10. Remarks:** None

---

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL*

*and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 25 November 2013      **Task Order No.:** WE5A      **Report No.:** 20131125

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Soil processing Operations.

**Weather:** partly cloudy, cool,

**Temperature:** 39 °F

**1. Work performed today:** Pre task brief. Oversight of soil processing operations.

---

**2. Work performed today by CH2MHILL subcontractor(s):**

USAE completed 45% of spoil pile, recovered 150lbs of scrap.

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

---

**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

---

**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):**

USAE completed 45% of spoil pile.

---

**6. List tests performed, samples collected, and results received:** schonstedt and whites locators thru IVS

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

---

**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP, oversight of soil processing operations.

---

**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 26 November 2013      **Task Order No.:** WE5A      **Report No.:** 20131126

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Soil processing operations.

**Weather:** cloudy, cold, heavy rain most of the day

**Temperature:** 42 °F

**1. Work performed today:** Pre task brief. Oversight of soil processing operations.

---

**2. Work performed today by CH2MHILL subcontractor(s):**

USAE completed 70% of spoil pile to date (overestimated yesterday), recovered 85lbs of scrap, No MDAS.

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

---

**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

---

**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):**

USAE completed 70% of spoil pile.

---

**6. List tests performed, samples collected, and results received:** schonstedt and whites locators thru IVS

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

---

**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP, oversight of soil processing operations.

---

**10. Remarks:** None

---

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 27 November 2013      **Task Order No.:** WE5A      **Report No.:** 20131127

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Soil processing operations.

**Weather:** cloudy, cold, heavy rain

**Temperature:** 63 - 52 °F

**1. Work performed today:** Pre task brief. Oversight of soil processing operations.

---

**2. Work performed today by CH2MHILL subcontractor(s):**

USAE completed 78% of spoil pile to date, recovered 25lbs of scrap, No MDAS.

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

---

**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

---

**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):**

USAE completed 78% of spoil pile.

---

**6. List tests performed, samples collected, and results received:** schonstedt and whites locators thru IVS

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

---

**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP, oversight of soil processing operations.

---

**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 29 November 2013      **Task Order No.:** WE5A      **Report No.:** 20131129

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Soil processing operations.

**Weather:** sunny, cold,

**Temperature:** 25 - 42 °F

**1. Work performed today:** Pre task brief. Oversight of soil processing operations. Lifted IVS.

---

**2. Work performed today by CH2MHILL subcontractor(s):**

USAE completed spoil pile. Removed CD, No MDAS. Demobilized team.

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

---

**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

---

**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):**

USAE completed spoil pile.

---

**6. List tests performed, samples collected, and results received:** schonstedt and whites locators thru IVS

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

---

**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP, oversight of soil processing operations.

---

**10. Remarks:** None

---

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 25 November 2013      **Task Order No.:** WE5A      **Report No.:** 20131125

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Soil processing Operations.

**Weather:** partly cloudy, cool,

**Temperature:** 39 °F

**1. Work performed today:** Pre task brief. Oversight of soil processing operations.

---

**2. Work performed today by CH2MHILL subcontractor(s):**

USAE completed 45% of spoil pile, recovered 150lbs of scrap.

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

---

**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

---

**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):**

USAE completed 45% of spoil pile.

---

**6. List tests performed, samples collected, and results received:** schonstedt and whites locators thru IVS

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

---

**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP, oversight of soil processing operations.

---

**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 26 November 2013      **Task Order No.:** WE5A      **Report No.:** 20131126

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Soil processing operations.

**Weather:** cloudy, cold, heavy rain most of the day

**Temperature:** 42 °F

**1. Work performed today:** Pre task brief. Oversight of soil processing operations.

---

**2. Work performed today by CH2MHILL subcontractor(s):**

USAE completed 70% of spoil pile to date (overestimated yesterday), recovered 85lbs of scrap, No MDAS.

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

---

**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

---

**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):**

USAE completed 70% of spoil pile.

---

**6. List tests performed, samples collected, and results received:** schonstedt and whites locators thru IVS

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

---

**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP, oversight of soil processing operations.

---

**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 27 November 2013      **Task Order No.:** WE5A      **Report No.:** 20131127

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Soil processing operations.

**Weather:** cloudy, cold, heavy rain

**Temperature:** 63 - 52 °F

**1. Work performed today:** Pre task brief. Oversight of soil processing operations.

---

**2. Work performed today by CH2MHILL subcontractor(s):**

USAE completed 78% of spoil pile to date, recovered 25lbs of scrap, No MDAS.

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

---

**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

---

**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):**

USAE completed 78% of spoil pile.

---

**6. List tests performed, samples collected, and results received:** schonstedt and whites locators thru IVS

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

---

**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP, oversight of soil processing operations.

---

**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 29 November 2013      **Task Order No.:** WE5A      **Report No.:** 20131129

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Soil processing operations.

**Weather:** sunny, cold,

**Temperature:** 25 - 42 °F

**1. Work performed today:** Pre task brief. Oversight of soil processing operations. Lifted IVS.

---

**2. Work performed today by CH2MHILL subcontractor(s):**

USAE completed spoil pile. Removed CD, No MDAS. Demobilized team.

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

---

**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

---

**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):**

USAE completed spoil pile.

---

**6. List tests performed, samples collected, and results received:** schonstedt and whites locators thru IVS

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

---

**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP, oversight of soil processing operations.

---

**10. Remarks:** None

---

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

# FORM 8-2b

## Initial Phase Check List

Contract No.: WE5A New River Air Station

Date: 14 October 2013

Title and No. of Technical Section: Draft Geophysical Investigation Plan  
Section 15 DGM Instrumentation and positioning method

Description and Location of Work Inspected: Data Delivery from LDSI

A. Key Personnel Present:

Name	Position	Company
Noah Weinberg	Project Manager	CH2M Hill
Steve Brown	UXOQCSO	CH2M Hill
Matt Barner	Project Geophysicist	CH2M Hill
Seth Martin	Surveyor	LDSI
Doug Gaibler	Surveyor	CH2M HILL

B. Materials being used are in strict compliance with the contract plans and specifications: Yes  No

If not, explain: \_\_\_\_\_

C. Procedures and/or work methods witnessed are in strict compliance with the contract specifications: Yes  No

If not, explain: \_\_\_\_\_

D. Workmanship is acceptable:

Yes  No

State where improvement is needed: \_\_\_\_\_

E. Workmanship is free of safety violations:

Yes  No

If no, corrective action taken: \_\_\_\_\_

STEVE BROWN



MEC QCS/SO

## General Comments/Findings

Upon receipt of control point, LOD, grid corner, and QC seed locations from LDSI, the following tasks were completed:

1. M. Barner delegated review of control pt information to Doug Gaibler/WDC. Preliminary review of the control pts indicated compliance with surveyor SOW, although surveyor report would be needed for final confirmation. As of date of this report, LDSI has not delivered their surveyor report.
2. M. Barner performed overlay of LDSI pts with GIS files provided by Critigen. All appeared to overlay with no issue (e.g. offsets). Pt #1024 in LDSI data files was an offset point from the LOD in case the stake at Pt #1023 was damaged or removed (it was located on a gravel path). Purpose of offset stake at #1024 was to be able to reoccupy LOD angle point in case stake at #1023 was destroyed. This information was not communicated by LDSI – confirmation obtained after CH2M HILL inquiry.
3. M. Barner noticed that QC seeds #10-12 were placed within non-DGM footprint area. Informed N. Weinberg, who indicated they would be removed from the official QC record in order to avoid a QC failure. M. Barner indicated that 9 remaining QC seeds would be sufficient for DGM as this translates to ~1 seed/0.75 acres (GSV Plan requirement).

# FORM 8-2b

## Initial Phase Check List

Contract No.: Air Station New River Runway Expansion Area

Date: 23 October 2013

Title and No. of Technical Section: MRP-SOP-0001 anomaly avoidance

MEC AVOIDANCE SUPPORT LAND SURVEY

Utility Locate\_SOW\_Oct7

Description and Location of Work Inspected: Utility Locating Air Station New River Runway Expansion Area

A. Key Personnel Present:

<u>Name</u>	<u>Position</u>	<u>Company</u>
Noah Weinberg	Project Manager	CH2M Hill
Steve Brown	UXOQCSO	CH2M Hill
Ben Sox	Technician	ECLS
Michael Thompson	Technician	ECLS

B. Materials being used are in strict compliance with the contract plans and specifications: Yes  No

If not, explain: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

C. Procedures and/or work methods witnessed are in strict compliance with the contract specifications: Yes  No

If not, explain: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

D. Workmanship is acceptable: Yes  No

State where improvement is needed: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

E. Workmanship is free of safety violations: Yes  No

If no, corrective action taken: \_\_\_\_\_  
\_\_\_\_\_

STEVE BROWN



MEC QCS/SO

# FORM 8-2b

## Initial Phase Check List

Contract No.: WE5A Air Station New River Runway Expansion Area

Date: 10 October 2013

Title and No. of Technical Section: Draft Geophysical Investigation Plan & Draft Geophysical System Verification Plan

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Description and Location of Work Inspected: Background (Pre-seeded) DGM survey and IVS 5-line survey results; MRSIMS entries

A. Key Personnel Present:

Name	Position	Company
Noah Weinberg	Project Manager	CH2M HILL
Steve Brown	UXOQC SO	CH2M HILL
Andrew Louder	Site Geophysicist	CH2M HILL
Cesar Chirinos	GEO Tech	NAEVA
Thanhan Nguyen	GEO Tech	NAEVA
Matthew Barner	Project Geophysicist	CH2M HILL

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B. Materials being used are in strict compliance with the contract plans and specifications: Yes  No

If not, explain: \_\_\_\_\_  
\_\_\_\_\_

C. Procedures and/or work methods witnessed are in strict compliance with the contract specifications: Yes  No

If not, explain: \_\_\_\_\_  
\_\_\_\_\_

D. Workmanship is acceptable: Yes  No

State where improvement is needed: \_\_\_\_\_  
\_\_\_\_\_

E. Workmanship is free of safety violations: Yes  No

If no, corrective action taken: \_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
PROJECT GEOPHYSICIST

## General Comments/Findings:

1. IVS background survey was completed in accordance with GSV Plan. A large anomaly was identified in the survey and avoided during placement of the ISO seeds.
2. IVS 5-line survey was completed after burial of the ISOs. ISOs were buried in accordance with GSV Plan.
3. NAEVA provided results of background and 5-line surveys within time frame specified in the GSV Plan and GIP.
4. MQOs were met for GPS QC, line spacing, data density, ISO static tests, and IVS seed positioning.
5. NAEVA performed additional static background testing at 6 locations throughout project area. Intent was to quantify potential noise sources associated with the site, in an attempt to determine whether EM61 would be an adequate method to use or if changing to the G858 was necessary. Results of this additional static background testing demonstrated EM61 noise levels of less than +/- 1 mV. Use of EM61 appears to be justified based on these (and the IVS) results.
6. MRSIMS was appropriately updated by NAEVA. QC performed by M. Barner.

# FORM 8-2b

## Initial Phase Check List

Contract No.: WE5A New River Air Station

Date: 23 October 2013

Title and No. of Technical Section: MRP-SOP-0001 anomaly avoidance

### **17.0 MEC AVOIDANCE SUPPORT**

### **LAND SURVEY, SEDIMENT SAMPLING, GROUNDWATER COLLECTION, ENDANGERED SPECIES SAMPLING/MONITORING**

### **Section 15 DGM Instrumentation and positioning method**

Description and Location of Work Inspected: Re-acquisition and marking of anomaly's in  
UXO -29 New River Air Station MCAS N.C.  
USA

A. Key Personnel Present:

<u>Name</u>	<u>Position</u>	<u>Company</u>
Noah Weinberg	Project Manager	CH2M Hill
Steve Brown	UXOQCSO	CH2M Hill
Jason Vandelinde	Surveyor	LDSI
Thomas Anderson	Surveyor	LDSI

B. Materials being used are in strict compliance with the contract plans and specifications: Yes  No

If not, explain: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

C. Procedures and/or work methods witnessed are in strict compliance with the contract specifications: Yes  No

If not, explain: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

D. Workmanship is acceptable: Yes  No

State where improvement is needed: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

E. Workmanship is free of safety violations: Yes  No

If no, corrective action taken: \_\_\_\_\_  
\_\_\_\_\_

STEVE BROWN



MEC QCS/SO

# FORM 8-2b

## Initial Phase Check List

Contract No.: WE5A Air Station New River Runway Expansion Area

Date 04 November 2013

Title and No. of Technical Section: SOP OPS-04, DGM Anomaly Investigations

3.0 Intrusive investigations, 3.1 Detection and Removal Procedures, 3.1.3.1 Intrusive teams

3.1.3.2 Manual Excavations, 3.1.3.3 Mechanical Handling Equipment, 3.2 Anomaly Excavation Reporting,

Description and Location of Work Inspected: Soil processing and intrusive investigation of site Air Station New River Runway Expansion Area

A. Key Personnel Present:

Name	Position	Company
Jake Crostic	Site Coordinator	CH2M Hill
Steve Brown	UXOQC SO	CH2M Hill
Dave McDonald	SUXOS	CH2M Hill
Jim Keesee	Field Team Leader	USAE
Pat Gildea	UXO III	USAE

B. Materials being used are in strict compliance with the contract plans and specifications: Yes  No

If not, explain: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

C. Procedures and/or work methods witnessed are in strict compliance with the contract specifications: Yes  No

If not, explain: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

D. Workmanship is acceptable: Yes  No

State where improvement is needed: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

E. Workmanship is free of safety violations: Yes  No

If no, corrective action taken: \_\_\_\_\_  
\_\_\_\_\_

STEVE BROWN



MEC QCS/SO

# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 07 October 2013

Contractor: LDSI

Contract No: N26470-08-D-8012, WE5A, Air Station New River Runway Expansion Area

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Establish of bench marks, plotting out South west corner grid stakes and LOD, recording of QC seed locations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Establish grids and LOD utilizing wooden stakes with grid numbers and tape **underway**

No metal hubs or nails with the grid or boundary stakes

If SW corner of the grid is well beyond the LOD, that stake will be set, or, an offset stake with the offset distances (meters E and N of the SW corner) labeled on the stake itself

Any stake offsets from the provided coordinates must have the offset distances written in meters East and North of the SW corner on the stake

Coordinates of all QC seed items.

Coordinates of the seed items need to be transmitted in different file.

PERSONNEL PRESENT; Steve Brown, Jason Vandelinde, Thomas Anderson

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Confirmation of control points coordinates, 2 different samples collected, J. Vandelinde, T. Anderson

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 07 October 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 08 October 2013

Contractor: LDSI

Contract No: N26470-08-D-8012, WE5A, Air Station New River Runway Expansion Area

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Establish of bench marks, plotting out South west corner grid stakes and LOD, recording of QC seed locations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Establish grids and LOD utilizing wooden stakes with grid numbers and tape **underway**

No metal hubs or nails with the grid or boundary stakes

If SW corner of the grid is well beyond the LOD, that stake will be set, or, an offset stake with the offset distances (meters E and N of the SW corner) labeled on the stake itself

Any stake offsets from the provided coordinates must have the offset distances written in meters East and North of the SW corner on the stake

Coordinates of all QC seed items.

Coordinates of the seed items need to be transmitted in different file.

PERSONNEL PRESENT; Steve Brown, Jason Vandelinde, Thomas Anderson

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Confirmation of control points coordinates, 2 different samples collected, J. Vandelinde, T. Anderson

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 08 October 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 09 October 2013

Contractor: LDSI

Contract No: N26470-08-D-8012, WE5A, Air Station New River Runway Expansion Area

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Establish of bench marks, plotting out South west corner grid stakes and LOD, recording of QC seed locations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Establish grids and LOD utilizing wooden stakes with grid numbers and tape Completed

No metal hubs or nails with the grid or boundary stakes

If SW corner of the grid is well beyond the LOD, that stake will be set, or, an offset stake with the offset distances (meters E and N of the SW corner) labeled on the stake itself Completed

Any stake offsets from the provided coordinates must have the offset distances written in meters East and North of the SW corner on the stake Completed

Coordinates of all QC seed items. Completed

Coordinates of the seed items need to be transmitted in different file. Completed

PERSONNEL PRESENT; Steve Brown, Jason Vandelinde, Thomas Anderson

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Confirmation of control points coordinates, 2 different samples collected, J. Vandelinde, T. Anderson

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 09 October 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 10 October 2013

Contractor: NAEVA

Contract No: N26470-08-D-8012, WE5A, Air Station New River Runway Expansion Area

Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE	YES
WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE	Establish IVS,

### IDENTIFY DEFINABLE FEATURE OF WORK.

Identify subsurface anomalies that may be indicative of MEC or MPPEH.

Surveying using the EM61-MK2, coverage includes 100% of the site using a lane spacing of 0.75 meters.

Use of real-time kinematic GPS (RTK GPS) capable of achieving survey-grade accuracy

Data will be post-processed and provided to CH2M HILL Project Geophysicist for evaluation

PERSONNEL PRESENT; Steve Brown, Thanhhan Nguyen, Cesar Chirinos.

### TESTING PERFORMED

Daily instrument verification

Perform geophysical surveying and quality control (QC) per applicable QC tests outlined the GIP.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 10 October 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 11 October 2013

Contractor: NAEVA

Contract No: N26470-08-D-8012, WE5A, Air Station New River Runway Expansion Area

Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE	YES
WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE	Collect stationary measurements for noise,

### IDENTIFY DEFINABLE FEATURE OF WORK.

Identify subsurface anomalies that may be indicative of MEC or MPPEH.

Surveying using the EM61-MK2, coverage includes 100% of the site using a lane spacing of 0.75 meters.

Use of real-time kinematic GPS (RTK GPS) capable of achieving survey-grade accuracy

Data will be post-processed and provided to CH2M HILL Project Geophysicist for evaluation

PERSONNEL PRESENT; Steve Brown, Thanhhan Nguyen, Cesar Chirinos.

### TESTING PERFORMED

Daily instrument verification

Perform geophysical surveying and quality control (QC) per applicable QC tests outlined the GIP.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown



Date 11 October 2013

# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 14 October 2013

Contractor: NAEVA

Contract No: N26470-08-D-8012, WE5A, Air Station New River Runway Expansion Area

Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE	YES
WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE	Collect ion in grids D5C7G5, D5C7G6, D5C7H5, D5C7H6, D5C7H7

### IDENTIFY DEFINABLE FEATURE OF WORK.

Identify subsurface anomalies that may be indicative of MEC or MPPEH.

Surveying using the EM61-MK2, coverage includes 100% of the site  
using a lane spacing of 0.75 meters.

Use of real-time kinematic GPS (RTK GPS) capable of achieving survey-grade accuracy

Data will be post-processed and provided to CH2M HILL Project Geophysicist for evaluation

PERSONNEL PRESENT; Steve Brown, Thanhan Nguyen, Cesar Chirinos.

### TESTING PERFORMED

Daily instrument verification

Perform geophysical surveying and quality control (QC) per applicable QC tests outlined  
the GIP.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 14 October 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 15 October 2013

Contractor: NAEVA

Contract No: N26470-08-D-8012, WE5A, Air Station New River Runway Expansion Area

Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE	YES
WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE	Collect ion in grids D5C7G4, D5C7G3, D5C7H4, D5C7H3, D5C7I4

### IDENTIFY DEFINABLE FEATURE OF WORK.

Identify subsurface anomalies that may be indicative of MEC or MPPEH.

Surveying using the EM61-MK2, coverage includes 100% of the site  
using a lane spacing of 0.75 meters.

Use of real-time kinematic GPS (RTK GPS) capable of achieving survey-grade accuracy

Data will be post-processed and provided to CH2M HILL Project Geophysicist for evaluation

PERSONNEL PRESENT; Steve Brown, Thanhhan Nguyen, Cesar Chirinos.

### TESTING PERFORMED

Daily instrument verification

Perform geophysical surveying and quality control (QC) per applicable QC tests outlined  
the GIP.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 15 October 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 16 October 2013

Contractor: NAEVA

Contract No: N26470-08-D-8012, WE5A, Air Station New River Runway Expansion Area

Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE	YES
WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE	Collect ion in grids D5C7G2, D5C7G1, D5C7H2, D5C7H1

### IDENTIFY DEFINABLE FEATURE OF WORK.

Identify subsurface anomalies that may be indicative of MEC or MPPEH.

Surveying using the EM61-MK2, coverage includes 100% of the site  
using a lane spacing of 0.75 meters.

Use of real-time kinematic GPS (RTK GPS) capable of achieving survey-grade accuracy

Data will be post-processed and provided to CH2M HILL Project Geophysicist for evaluation

PERSONNEL PRESENT; Steve Brown, Thanhhan Nguyen, Cesar Chirinos.

### TESTING PERFORMED

Daily instrument verification

Perform geophysical surveying and quality control (QC) per applicable QC tests outlined  
the GIP.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 16 October 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 17 October 2013

Contractor: NAEVA

Contract No: N26470-08-D-8012, WE5A, Air Station New River Runway Expansion Area

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	YES
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Collection in grids D5C6G0, D5C6G9, D5C6H0, D5C6H9

### IDENTIFY DEFINABLE FEATURE OF WORK.

Identify subsurface anomalies that may be indicative of MEC or MPPEH.

Surveying using the EM61-MK2, coverage includes 100% of the site using a lane spacing of 0.75 meters.

Use of real-time kinematic GPS (RTK GPS) capable of achieving survey-grade accuracy

Data will be post-processed and provided to CH2M HILL Project Geophysicist for evaluation

PERSONNEL PRESENT; Steve Brown, Thanh Nguyen, Cesar Chirinos.

### TESTING PERFORMED

Daily instrument verification

Perform geophysical surveying and quality control (QC) per applicable QC tests outlined in the GIP.

### DGM QUALITY CONTROL

Following data underwent QC by Project Geophysicist (Matthew Barner) on 10/17/13: DGM QC and 2x daily IVS data from 10/14/13, 10/15/13, 10/16/13; delivered processed data packages for blocks D5C7G5, D5C7G3, and D5C7G1.

No issues identified with QC or 2x daily IVS data from these dates. Data pass QC.

QC seeds #1 - #4 successfully detected in block data and selected as targets within positioning metric.

Block D5C7G1 has no QC issues to report.

Block D5C7G5 exhibited a small data gap in Grid D5C7H7 that exceeds line spacing MQO. Inquiry sent to NAEVA QC Geophysicist on 10/18/13 to confirm presence of an obstruction. If no obstruction is present, NAEVA instructed to perform gap fill in the area. Coordinate of approx. center of gap: 277071.4528, 3842302.591. No other QC issues to report with respect to this grid block.

Block D5C7G3 exhibited several data gaps between survey lanes that exceed lane spacing MQO. NAEVA instructed on 10/18/13 to have field team fill them.

Grid D5C7I4 appears to depict a shared target (ID#2) with ID#45 in neighboring grid D5C7H4. Inquiry sent to NAEVA to either confirm they are two separate targets as currently reported. If determined to be a shared target, one map and target list will be updated.

Grid D5C7I4 appears to depict response from culvert pipe. No annotation provided. Inquiry sent to NAEVA to confirm response is associated with cultural feature, and if so, provide appropriate annotation on the grid map.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO: Steve Brown Date 17 October 2013



Project Geophysicist: Matthew Barner Date 17 October 2013

# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 18 October 2013

Contractor: NAEVA

Contract No: N26470-08-D-8012, WE5A, Air Station New River Runway Expansion Area

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	YES
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Collection in grids D5C6F8, D5C6G8, D5C6H8, D5C6F7, D5C6G7

### IDENTIFY DEFINABLE FEATURE OF WORK.

Identify subsurface anomalies that may be indicative of MEC or MPPEH.

Surveying using the EM61-MK2, coverage includes 100% of the site using a lane spacing of 0.75 meters.

Use of real-time kinematic GPS (RTK GPS) capable of achieving survey-grade accuracy

Data will be post-processed and provided to CH2M HILL Project Geophysicist for evaluation

PERSONNEL PRESENT; Steve Brown, Thanh Nguyen, Cesar Chirinos.

### TESTING PERFORMED

Daily instrument verification

Perform geophysical surveying and quality control (QC) per applicable QC tests outlined in the GIP.

### DGM QUALITY CONTROL

Follow-up comments on QC issues identified in Blocks D5C7G5, D5C7G3 on 10/17/13 QC report.

Issues were resolved with NAEVA:

1. Data gap in Grid D5C7H7 was associated with metal pipe that was not annotated on the grid map. NAEVA has made the annotation and updated the map. Issue resolved.
2. Data gaps in Block D5C7G3 were due to display issue in Geosoft. Data gaps were initially identified and collected by NAEVA. No gaps were present. Issue resolved.
3. Target ID#2 in grid D5C7I4 was removed due to being shared target with #45 in Grid D5C7H4. High-amplitude response in D5C7I4 was associated with culvert. NAEVA updated target list and map (including culvert annotation) for D5C7I4.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO: Steve Brown Date 18 October 2013

A handwritten signature in blue ink that reads "Steve Brown". The signature is written in a cursive style with a large initial 'S'.

Project Geophysicist: Matthew Barner Date 18 October 2013

# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 20 October 2013

Contractor: NAEVA

Contract No: N26470-08-D-8012, WE5A, Air Station New River Runway Expansion Area

Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE	YES
WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE	Collect ion in grids D5C6B7, D5C6C7, D5C6D7, D5C6E7, D5C6C7, D5C6B6, D5C6C6, D5C6D6, D5C6E6

### IDENTIFY DEFINABLE FEATURE OF WORK.

Identify subsurface anomalies that may be indicative of MEC or MPPEH.

Surveying using the EM61-MK2, coverage includes 100% of the site  
using a lane spacing of 0.75 meters.

Use of real-time kinematic GPS (RTK GPS) capable of achieving survey-grade accuracy

Data will be post-processed and provided to CH2M HILL Project Geophysicist for evaluation

PERSONNEL PRESENT; Steve Brown, Thanhhan Nguyen, Cesar Chirinos.

### TESTING PERFORMED

Daily instrument verification

Perform geophysical surveying and quality control (QC) per applicable QC tests outlined  
the GIP.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 20 October 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 21 October 2013

Contractor: NAEVA

Contract No: N26470-08-D-8012, WE5A, Air Station New River Runway Expansion Area

Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE	YES
WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE	Collection in grids D5B6J7, D5B6J6, D5C6A7, D5C6A6

### IDENTIFY DEFINABLE FEATURE OF WORK.

Identify subsurface anomalies that may be indicative of MEC or MPPEH.

Surveying using the EM61-MK2, coverage includes 100% of the site using a lane spacing of 0.75 meters.

Use of real-time kinematic GPS (RTK GPS) capable of achieving survey-grade accuracy

Data will be post-processed and provided to CH2M HILL Project Geophysicist for evaluation

PERSONNEL PRESENT; Steve Brown, Thanh Nguyen, Cesar Chirinos.

### TESTING PERFORMED

Daily instrument verification

Perform geophysical surveying and quality control (QC) per applicable QC tests outlined in the GIP.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown



Date 21 October 2013

# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 23 October 2013

Contractor: NAEVA

Contract No: N26470-08-D-8012, WE5A, Air Station New River Runway Expansion Area

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	YES
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	DGM QC QC and 2x IVS data from 10/17/13 through 10/21/13; Production data for Grid Blocks D5C6F7 and D5C6G9

### IDENTIFY DEFINABLE FEATURE OF WORK.

Download and review of data packages posted through 10/22/13 by NAEVA

Perform DGM QC

Evaluate whether DGM data meet project MQOs in GIP

PERSONNEL: Matthew Barner

### TESTING PERFORMED

DGM QC

### RESULTS

No deficiencies or QC issues identified in data sets listed above. Data meet MQOs.

Seeds QC-5 through QC-7 successfully identified and targeted in grid block data listed above.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

Project Geophysicist: Matthew Barner Date 23 October 2013

# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 25 October 2013

Contractor: NAEVA

Contract No: N26470-08-D-8012, WE5A, Air Station New River Runway Expansion Area

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	YES
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	DGM QC QC of production data for Grid Blocks D5B6J6, D5C6B6, D5C6D6

### IDENTIFY DEFINABLE FEATURE OF WORK.

Download and perform DGM QC of data packages posted through 10/24/13 by NAEVA

Evaluate whether DGM data meet project MQOs in GIP

PERSONNEL: Matthew Barner

### TESTING PERFORMED

DGM QC

### RESULTS

No deficiencies or QC issues identified in data sets listed above. Data meet MQOs.

Seeds QC-8 and QC-9 successfully identified and targeted in grid block data listed above. All seeds now accounted for.

Duplicate target identified in Grid D5C7H4 (Block D5C7G3) during final review of all maps.

Issue resolved by NAEVA on 10/25/13. Target count in Grid D5C7H4 reduced by one.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

Project Geophysicist: Matthew Barner Date 25 October 2013

# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 04 November 2013

Contractor: LDSI

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Place non-metallic flags at each anomaly location with an offset of 1 foot to the North. Provide Anomaly Identification number, and the Millivolt value of the anomaly target.

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Re-acquire individual locations that represent geophysical anomalies to be intrusively investigated  
Anomaly re-acquisition will be conducted only within the 9.2-acre site  
Review the anomaly list for completeness and address questions or seek clarification on the anomaly list  
Place non-metallic flags at each anomaly location with an offset of 1 foot to the North added to the flag location.  
Same colours can be used in alternating grids (NO RED)  
Information on the flag shall include; the provided Anomaly Identification number, and the Millivolt value of the anomaly target.

~~Completed~~  
PERSONNEL PRESENT; Steve Brown, Tom Anderson, Jason Vandelinde

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Confirmation of control points coordinates, Tom Anderson, Jason Vandelinde

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO: Steve Brown Date 04 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 04 November 2013

Contractor: USAE

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Soil processing with mechanical aid

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Processing of soil piles located at south west end of task site

~~Completed~~

PERSONNEL PRESENT; Steve Brown, Dave McDonald, Jake Crostic, Jim Keesee, Pat Gildea, Allen Cochran  
Matt Kuster, Robert Querry, James Ray, Mario Valez, Joe Wilder, Scott McKenzie  
Adam Miller, Charles Haggerty.

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Testing of EM-61, All metals detectors.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 04 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 04 November 2013

Contractor: ECLS

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE	Yes
WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE	Locate and mark underground utilities

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Identifying and marking all subsurface utilities within the entire pre-established 9.2-acre remedial investigation area.

Utilities will be identified using electronic devices or site maps and marked on the ground with survey marking paint, or any other means necessary to ensure the safety of earth disturbing activities and the protection of the Base infrastructure. Utilities will be identified using all reasonably available as-built drawings, electronic locating devices, and any other means necessary. The location of utilities identified from as-built drawings or other maps must be verified in the field prior to marking.

Utility drawings shall not be considered definitive and must be field verified. Field verification will include detection using nonintrusive subsurface detection equipment capable of locating subsurface utilities, as well as opening manhole covers to verify pipe directions.

Utilities shall be marked using the appropriate industry standard paint and/or color coded pin flags to indicate electricity, gas, water, steam, telephone, TV cable, fiber optic, sewer, etc.

In addition, the Buried Utility Location Tracking Form will be completed by the Subcontractor for the site based upon the utilities identified in the field during utility locating. The form will be submitted to CH2M HILL (field staff or project manager) within 24 hours of completing utility locating activities.

~~Completed~~

PERSONNEL PRESENT; Steve Brown, Todd Thompson, Ben Sox

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Verification of field instruments, Todd Thompson, Ben Sox

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 04 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 05 November 2013

Contractor: LDSI

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Place non-metallic flags at each anomaly location with an offset of 1 foot to the North. Provide Anomaly Identification number, and the Millivolt value of the anomaly target.

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Re-acquire individual locations that represent geophysical anomalies to be intrusively investigated

Anomaly re-acquisition will be conducted only within the 9.2-acre site

Review the anomaly list for completeness and address questions or seek clarification on the anomaly list

Place non-metallic flags at each anomaly location with an offset of 1 foot to the North added to the flag location.

Same colours can be used in alternating grids (NO RED)

Information on the flag shall include; the provided Anomaly Identification number, and the Millivolt value of the anomaly target.

~~Completed~~

PERSONNEL PRESENT; Steve Brown, Tom Anderson, Jason Vandelinde

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Confirmation of control points coordinates, Tom Anderson, Jason Vandelinde

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 05 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 05 November 2013

Contractor: USAE

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Soil processing with mechanical aid, intrusive investigation operations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Processing of soil piles located at south west end of task site.

Intrusive investigations started;

Grids D5C7G6 completed.

~~Completed~~  
PERSONNEL PRESENT; Steve Brown, Dave McDonald, Jake Crostic, Jim Keese, Pat Gildea, Allen Cochran

Matt Kuster, Robert Querry, James Ray, Mario Valez, Joe Wilder, Scott McKenzie

Adam Miller, Charles Haggerty.

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Testing of EM-61, schonstedt and all metals detectors.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO: Steve Brown Date 05 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 06 November 2013

Contractor: LDSI

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Place non-metallic flags at each anomaly location with an offset of 1 foot to the North. Provide Anomaly Identification number, and the Millivolt value of the anomaly target.

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Re-acquire individual locations that represent geophysical anomalies to be intrusively investigated  
Anomaly re-acquisition will be conducted only within the 9.2-acre site  
Review the anomaly list for completeness and address questions or seek clarification on the anomaly list  
Place non-metallic flags at each anomaly location with an offset of 1 foot to the North added to the flag location.  
Same colours can be used in alternating grids (NO RED)  
Information on the flag shall include; the provided Anomaly Identification number, and the Millivolt value of the anomaly target.

~~Completed~~  
PERSONNEL PRESENT; Steve Brown, Tom Anderson, Jason Vandelinde

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Confirmation of control points coordinates, Tom Anderson, Jason Vandelinde

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO: Steve Brown Date 06 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 06 November 2013

Contractor: USAE

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Intrusive investigation operations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Intrusive operations in grid D5C7H3, D5C7H6, D5C7H7, D5C7G3, D5C7G5, D5C7H5, and D5C7H2..

~~Completed~~

PERSONNEL PRESENT; Steve Brown, Dave McDonald, Jake Crostic, Jim Keese, Pat Gildea, Allen Cochran

Matt Kuster, Robert Querry, James Ray, Mario Valez, Joe Wilder, Scott McKenzie

Adam Miller, Charles Haggerty.

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Testing of EM-61, schonstedt and all metals detectors.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 06 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 07 November 2013

Contractor: LDSI

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Place non-metallic flags at each anomaly location with an offset of 1 foot to the North. Provide Anomaly Identification number, and the Millivolt value of the anomaly target.

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Re-acquire individual locations that represent geophysical anomalies to be intrusively investigated

Anomaly re-acquisition will be conducted only within the 9.2-acre site

Review the anomaly list for completeness and address questions or seek clarification on the anomaly list

Place non-metallic flags at each anomaly location with an offset of 1 foot to the North added to the flag location.

Same colours can be used in alternating grids (NO RED)

Information on the flag shall include; the provided Anomaly Identification number, and the Millivolt value of the anomaly target.

~~Completed~~

PERSONNEL PRESENT; Steve Brown, Tom Anderson, Jason Vandelinde

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Confirmation of control points coordinates, Tom Anderson, Jason Vandelinde

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 07 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 07 November 2013

Contractor: USAE

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Intrusive investigation operations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Intrusive operations in grid D5C7H4, D5C7H1, D5C7I4, D5C7G4, D5C7G2.

~~Completed~~  
PERSONNEL PRESENT; Steve Brown, Dave McDonald, Jake Crostic, Jim Keese, Pat Gildea, Allen Cochran  
Matt Kuster, Robert Querry, James Ray, Mario Valez, Joe Wilder, Scott McKenzie  
Adam Miller, Charles Haggerty.

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Testing of EM-61, schonstedt and all metals detectors.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown



Date 07 November 2013

# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 08 November 2013

Contractor: LDSI

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Place non-metallic flags at each anomaly location with an offset of 1 foot to the North. Provide Anomaly Identification number, and the Millivolt value of the anomaly target.

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Re-acquire individual locations that represent geophysical anomalies to be intrusively investigated  
Anomaly re-acquisition will be conducted only within the 9.2-acre site  
Review the anomaly list for completeness and address questions or seek clarification on the anomaly list  
Place non-metallic flags at each anomaly location with an offset of 1 foot to the North added to the flag location.  
Same colours can be used in alternating grids (NO RED)  
Information on the flag shall include; the provided Anomaly Identification number, and the Millivolt value of the anomaly target.

Work completed

~~Completed~~  
PERSONNEL PRESENT; Steve Brown, Tom Anderson, Jason Vandelinde

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Confirmation of control points coordinates, Tom Anderson, Jason Vandelinde

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 08 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 12 November 2013

Contractor: USAE

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Intrusive investigation operations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Intrusive operations in grid D5C6H9, D5C6G0, and D5C6G9. .

~~Completed~~  
PERSONNEL PRESENT; Steve Brown, Dave McDonald, Jake Crostic, Jim Keese, Allen Cochran

Matt Kuster, Robert Querry, James Ray, Mario Valez, Joe Wilder, Scott McKenzie

Adam Miller, Charles Haggerty.

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Testing of EM-61, schonstedt and all metals detectors.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 12 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 13 November 2013

Contractor: USAE

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Intrusive investigation operations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Intrusive operations in grid D5C7G1

~~Completed~~

PERSONNEL PRESENT; Steve Brown, Dave McDonald, Jake Crostic, Jim Keese, Allen Cochran

Matt Kuster, Robert Querry, James Ray, Mario Valez, Joe Wilder, Scott McKenzie

Adam Miller, Charles Haggerty.

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Testing of EM-61, schonstedt and all metals detectors.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 13 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 14 November 2013

Contractor: USAE

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Intrusive investigation operations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Intrusive operations in grid D5C6G8, D5C6D6, D5C6H0

~~Completed~~  
PERSONNEL PRESENT; Steve Brown, Dave McDonald, Jake Crostic, Jim Keese, Alan Turpin, Allen Cochran  
Matt Kuster, Robert Querry, James Ray, Mario Valez, Joe Wilder, Scott McKenzie  
Adam Miller, Charles Haggerty.

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Testing of EM-61, schonstedt and all metals detectors.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 14 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 15 November 2013

Contractor: USAE

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Demolition operations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Demolition operations.

~~Completed~~  
PERSONNEL PRESENT; Steve Brown, Dave McDonald, Jake Crostic, Jim Keese, Alan Turpin, Allen Cochran  
Matt Kuster, Robert Querry, James Ray, Mario Valez, Joe Wilder, Scott McKenzie  
Adam Miller, Charles Haggerty.

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Testing of EM-61, schonstedt and all metals detectors.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO: Steve Brown Date 15 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 18 November 2013

Contractor: USAE

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Intrusive Operations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Intrusive operations in grids D5C6C7, D5C6C6, D5C6B6

~~Completed~~

PERSONNEL PRESENT; Steve Brown, Dave McDonald, Jake Crostic, Jim Keese, Alan Turpin, Allen Cochran

Matt Kuster, Robert Querry, James Ray, Mario Valez, Joe Wilder, Scott McKenzie

Adam Miller, Charles Haggerty.

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Testing of EM-61, schonstedt and all metals detectors.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO: Steve Brown Date 18 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 19 November 2013

Contractor: USAE

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Intrusive Operations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Intrusive operations in grids D5C6F7, D5C6G7, D5C6E6, D5C6B7, D5C6A7, D5C6A6, D5C6J7, D5C6J6, D5C6F8, and D5C6E7

~~Completed~~  
PERSONNEL PRESENT; Steve Brown, Dave McDonald, Jake Crostic, Jim Keesee, Alan Turpin, Allen Cochran  
Matt Kuster, Robert Querry, James Ray, Mario Valez, Joe Wilder, Scott McKenzie  
Adam Miller, Charles Haggerty.

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Testing of EM-61, schonstedt and all metals detectors.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO: Steve Brown Date 19 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 20 November 2013

Contractor: USAE

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Demolition Operations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Demolition operations of 2 X 81mm mortars and 4 x 2.36 inch rockets

~~Completed~~

PERSONNEL PRESENT; Steve Brown, Dave McDonald, Jake Crostic, Jim Keesee, Alan Turpin, Allen Cochran

Matt Kuster, Robert Querry, James Ray, Mario Valez, Joe Wilder, Scott McKenzie

Adam Miller, Charles Haggerty.

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Testing of EM-61, schonstedt and all metals detectors.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO: Steve Brown Date 20 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 21 November 2013

Contractor: USAE

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Demolition Operations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Demil operations of 160 x expended 2.36 inch rocket motors

~~Completed~~

PERSONNEL PRESENT; Steve Brown, Dave McDonald, Jake Crostic, Jim Keese, Alan Turpin, Allen Cochran

Matt Kuster, Robert Querry, James Ray, Mario Valez, Joe Wilder, Scott McKenzie

Adam Miller, Charles Haggerty.

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Testing of EM-61, schonstedt and all metals detectors.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO: Steve Brown Date 21 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 25 November 2013

Contractor: USAE

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Soil Processing Operations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Processing of soil pile

Completed

PERSONNEL PRESENT; Steve Brown, Jake Crostic, Jim Keese, Allen Cochran

Matt Kuster, Robert Querry, James Ray, Joe Wilder, Charles Haggerty.

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Testing of EM-61, schonstedt and all metals detectors.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 25 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 26 November 2013

Contractor: USAE

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Soil Processing Operations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Processing of soil pile

Completed

PERSONNEL PRESENT; Steve Brown, Jake Crostic, Jim Keese, Allen Cochran

Matt Kuster, Robert Querry, James Ray, Joe Wilder, Charles Haggerty.

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Testing of schonstedt and all metals detectors.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 26 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 27 November 2013

Contractor: USAE

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Soil Processing Operations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Processing of soil pile

Completed

PERSONNEL PRESENT; Steve Brown, Jake Crostic, Jim Keese, Allen Cochran

Matt Kuster, Robert Querry, James Ray, Joe Wilder, Charles Haggerty.

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Testing of schonstedt and all metals detectors.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 27 November 2013



# FORM 8-3b

## FOLLOW-UP CHECKLIST

Date: 29 November 2013

Contractor: USAE

Contract No: N26470-08-D-8012, WE5A, Runway Expansion New River Air Station

<b>Y=YES; N=NO; SEE REMARKS BLANK=NOT APPLICABLE</b>	Yes
<b>WORK COMPLIES WITH CONTRACT AS APPROVED IN INITIAL PHASE</b>	Soil Processing Operations

### IDENTIFY DEFINABLE FEATURE OF WORK, LOCATION, AND LIST PERSONNEL PRESENT

Processing of soil pile completed.

~~Completed~~  
PERSONNEL PRESENT; Steve Brown, Jake Crostic, Jim Keese, Allen Cochran  
Matt Kuster, Robert Querry, James Ray, Joe Wilder, Charles Haggerty.

### TESTING PERFORMED & WHO PERFORMED TEST (Include number of samples and/or tests taken)

Testing of schonstedt and all metals detectors.

QA Representative \_\_\_\_\_ Date \_\_\_\_\_

MEC QCS/SO:

Steve Brown

Date 29 November 2013



# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 07 October 2013      **Task Order No.:** WE5A      **Report No.:** 20131007

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Avoidance escort to LDSI Surveyors.

**Weather:** cloudy

**Temperature:** 80 °F

**1. Work performed today:** Pre task brief, review of HASP, AHA, Avoidance SOP, escort survey team in locating and staking 31 LOD & 6 grid corner stakes, scanning of ground for 3 bench marks.

---

**2. Work performed today by CH2MHILL subcontractor(s):** Review of HASP, AHA, Avoidance SOP, locate and stake 31 LOD & 6 grid corner stakes, establish 3 bench marks

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** Yes, Thomas Anderson, Jason Vandelinde, Site map, AHA, SOP

---

**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** Yes, Thomas Anderson, Jason Vandelinde, Site map, AHA, SOP

---

**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):** Locate and stake LOD and grid corners, establish bench marks

---

**6. List tests performed, samples collected, and results received:** Magnetic locator test, reacquiring of bench marks with GPS.

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

---

**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP

---

**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that*

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 08 October 2013      **Task Order No.:** WE5A      **Report No.:** 20131008

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Avoidance escort to LDSI Surveyors.

**Weather:** cloudy, rain

**Temperature:** 64 °F

**1. Work performed today:** Pre task brief, escort survey team in locating and staking 41 LOD, 2 grid corner stakes and 5 QC seeds.

---

**2. Work performed today by CH2MHILL subcontractor(s):** Locate and stake 41 LOD & 2 grid corner stakes, record 5 QC seeds.

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

---

**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

---

**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):** Locate and stake LOD and grid corners, plant 5 QC seeds

---

**6. List tests performed, samples collected, and results received:** Magnetic locator test, reacquiring of bench marks with GPS.

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

---

**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP

---

**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

Date: 08 October 2013

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 09 October 2013      **Task Order No.:** WE5A      **Report No.:** 20131009

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Avoidance escort to LDSI Surveyors.

**Weather:** cloudy, rain

**Temperature:** 63 °F

**1. Work performed today:** Pre task brief, escort survey team in locating and staking 46 LOD and grid offsets, 13 grid corner stakes and 7 QC seeds. Task Completed!

---

**2. Work performed today by CH2MHILL subcontractor(s):** Locate and stake 46 LOD and grid offsets & 13 grid corner stakes, record 7 QC seeds.

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

---

**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

---

**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):** Locate and stake LOD, grid offsets and grid corners, plant 7 QC seeds

---

**6. List tests performed, samples collected, and results received:** Magnetic locator test, reacquiring of bench marks with GPS and RTS.

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

---

**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP

---

**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

Date: 09 October 2013

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 10 October 2013      **Task Order No.:** WE5A      **Report No.:** 20131010

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Avoidance escort to NAVEA DGM techs.

**Weather:** cloudy, rain

**Temperature:** 61 °F

**1. Work performed today:** Pre task brief, review of HASP, AHA, and Avoidance SOP, cut 1,800 sqm of vegetation

---

**2. Work performed today by CH2MHILL subcontractor(s):** Review of HASP, AHA, Avoidance SOP, get cables, establish and mark IVS

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** Yes, Thanhan Nguyen, Cesar Chirinos Site map, AHA, SOP

---

**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** Yes, Thanhan Nguyen, Cesar Chirinos Site map, AHA, SOP

---

**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):** Locate and stake IVS,

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**6. List tests performed, samples collected, and results received:** Magnetic locator test, \_\_\_\_\_

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**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

---

**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP

---

**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

Date: 10 October 2013

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 11 October 2013      **Task Order No.:** WE5A      **Report No.:** 20131011

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Avoidance escort to NAVEA DGM techs.

**Weather:** cloudy, light rain

**Temperature:** 63 °F

**1. Work performed today:** Pre task brief, review of HASP, AHA, and Avoidance SOP for Cliff Walden, cut 1,900 sqm of vegetation

---

**2. Work performed today by CH2MHILL subcontractor(s):** partial collection in grids B6J7, C6A7, C6B7, Collected stationary measurements for noise EM61, and G858

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

---

**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

---

**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):** Stationary noise testing

---

**6. List tests performed, samples collected, and results received:** Magnetic locator test, IVS

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

---

**8. Non-conformances/deficiencies reported:** None

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**9. Site safety monitoring activities performed today:** PTSP, SBO

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**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

Date: 11 October 2013

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 12 October 2013      **Task Order No.:** WE5A      **Report No.:** 20131012

**Location of work:** Air Station New River Runway Expansion Area

**Description:** vegetation cutting.

**Weather:** cloudy

**Temperature:** 63 °F

**1. Work performed today:** cut 1,700 sqm of vegetation

---

**2. Work performed today by CH2MHILL subcontractor(s):** None

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

---

**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

---

**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):** None

---

**6. List tests performed, samples collected, and results received:** None

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

---

**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP,

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**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

Date: 12 October 2013

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 14 October 2013      **Task Order No.:** WE5A      **Report No.:** 20131014

**Location of work:** Air Station New River Runway Expansion Area

**Description:** vegetation cutting, DGM collection.

**Weather:** cloudy, some rain

**Temperature:** 66 °F

**1. Work performed today:** cut vegetation approximately 85% completed

---

**2. Work performed today by CH2MHILL subcontractor(s):** collection in grids D5C7G5, D5C7G6, D5C7H5, D5C7H6, D5C7H7.

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

---

**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

---

**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):** Collection in grids D5C7G5, D5C7G6, D5C7H5, D5C7H6, and D5C7H7.

---

**6. List tests performed, samples collected, and results received:** EM61 thru IVS

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**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

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**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP,

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**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

Date: 14 October 2013

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 15 October 2013      **Task Order No.:** WE5A      **Report No.:** 20131015

**Location of work:** Air Station New River Runway Expansion Area

**Description:** vegetation cutting, DGM collection.

**Weather:** cloudy, some rain

**Temperature:** 66 °F

**1. Work performed today:** cut vegetation approximately 97% completed. Returned Brush cutters, U-Haul van. Should complete brush cutting 16 Oct 13 with weed whacker.

---

**2. Work performed today by CH2MHILL subcontractor(s):** collection in grids D5C7G4, D5C7G3, D5C7H4, D5C7H3, D5C7I4.

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

---

**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

---

**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):** Collection in grids D5C7G4, D5C7G3, D5C7H4, D5C7H3, and D5C7I4.

---

**6. List tests performed, samples collected, and results received:** EM61 thru IVS

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

---

**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP,

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**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

Date: 15 October 2013

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 16 October 2013      **Task Order No.:** WE5A      **Report No.:** 20131016

**Location of work:** Air Station New River Runway Expansion Area

**Description:** vegetation cutting, DGM collection.

**Weather:** cloudy,

**Temperature:** 69 °F

**1. Work performed today:** vegetation cutting 100%. Taking photographs of DGM, grid coordinates of possible third spoil pile.

---

**2. Work performed today by CH2MHILL subcontractor(s):** collection in grids D5C7G2, D5C7G1, D5C7H2, D5C7H1. IVS

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**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

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**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

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**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):** Collection in grids D5C7G2, D5C7G1, D5C7H2, D5C7H1

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**6. List tests performed, samples collected, and results received:** EM61 thru IVS

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**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

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**8. Non-conformances/deficiencies reported:** None

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**9. Site safety monitoring activities performed today:** PTSP,

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**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

Date: 16 October 2013

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 17 October 2013      **Task Order No.:** WE5A      **Report No.:** 20131017

**Location of work:** Air Station New River Runway Expansion Area

**Description:** DGM collection.

**Weather:** sunny with cloudy periods later in the day,

**Temperature:** 76 °F

**1. Work performed today:** Avoidance for DGM.

---

**2. Work performed today by CH2MHILL subcontractor(s):** collection in grids D5C6G0, D5C6G9, D5C6H0, D5C6H9. IVS

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

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**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

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**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):** Collection in grids D5C6G0, D5C6G9, D5C6H0, and D5C6H9

---

**6. List tests performed, samples collected, and results received:** EM61 thru IVS

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**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

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**8. Non-conformances/deficiencies reported:** The tripod with the Trimble Satellite Antenna fell over at some and went unnoticed until the end of the day. End of day IVS was completed twice once before the tripod failure was noticed and repeated after the tripod was reestablished. Thanhan Nguyen said he would see if he can calculate the offset between the two IVS data readings to correct the data.

---

**9. Site safety monitoring activities performed today:** PTSP,

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**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 18 October 2013      **Task Order No.:** WE5A      **Report No.:** 20131018

**Location of work:** Air Station New River Runway Expansion Area

**Description:** DGM collection.

**Weather:** cloudy

**Temperature:** 71 °F

**1. Work performed today:** Avoidance for DGM.

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**2. Work performed today by CH2MHILL subcontractor(s):** collection in grids D5C6F8, D5C6G8, D5C6H8, D5C6F7, D5C6G7. IVS

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**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

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**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

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**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):** Collection in grids D5C6F8, D5C6G8, D5C6H8, D5C6F7, and D5C6G7.

---

**6. List tests performed, samples collected, and results received:** EM61 thru IVS

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**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

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**8. Non-conformances/deficiencies reported:** None

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**9. Site safety monitoring activities performed today:** PTSP,

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**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

Date: 18 October 2013

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 20 October 2013      **Task Order No.:** WE5A      **Report No.:** 20131020

**Location of work:** Air Station New River Runway Expansion Area

**Description:** DGM collection.

**Weather:** cloudy

**Temperature:** 71 °F

**1. Work performed today:** Avoidance for DGM.

---

**2. Work performed today by CH2MHILL subcontractor(s):** collection in grids D5C6B7, D5C6C7, D5C6D7, D5C6E7, D5C6C7, D5C6B6, D5C6C6, D5C6D6, D5C6E6. IVS

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**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

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**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

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**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):** Collection in grids D5C6B7, D5C6C7, D5C6D7, D5C6E7, D5C6C7, D5C6B6, D5C6C6, D5C6D6, D5C6E6.

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**6. List tests performed, samples collected, and results received:** EM61 thru IVS

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**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

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**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP,

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**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Cliff Walden

Date: 20 October 2013

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 21 October 2013      **Task Order No.:** WE5A      **Report No.:** 20131021

**Location of work:** Air Station New River Runway Expansion Area

**Description:** DGM collection.

**Weather:** partly sunny in the am, cloudy

**Temperature:** 61 °F

**1. Work performed today:** Avoidance for DGM.

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**2. Work performed today by CH2MHILL subcontractor(s):** collection in grids D5B6J7, D5B6J6, D5C6A7, D5C6A6. IVS Data collection complete.

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**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

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**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

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**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):** Collection in grids D5B6J7, D5B6J6, D5C6A7, D5C6A6.

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**6. List tests performed, samples collected, and results received:** EM61 thru IVS

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**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

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**8. Non-conformances/deficiencies reported:** None

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**9. Site safety monitoring activities performed today:** PTSP,

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**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Cliff Walden

Date: 21 October 2013

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 04 November 2013      **Task Order No.:** WE5A      **Report No.:** 20131104

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Anomaly Reacquisition, Utility Locating, Soil processing.

**Weather:** sunny, cool, windy

**Temperature:** 53 °F

**1. Work performed today:** Pre task brief, review of HASP, AHA with USAE, ECLS and LDSI. Inspected MDAS with USAE Team Leader.

---

**2. Work performed today by CH2MHILL subcontractor(s):** LDSI reacquired 291 anomalies, ECLS located and marked utilities at North end of task site, USAE processed approximately 50% of both soil piles located at South West end of task site. 24 pounds of MDAS was located.

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** LDSI with Thomas Anderson, Jason Vandelinde Dave McDonald, Jake Crostic SOW, and AHA.

ECLS with Ben Sox Todd Thompson, Dave McDonald, Jake Crostic SOW, and AHA.  
USAЕ with Dave McDonald, Jake Crostic, Jim Keesee, Pat Gildea, Allen Cochran  
Matt Kuster, Robert Querry, James Ray, Mario Valez, Joe Wilder, Scott McKenzie  
Adam Miller, Charles Haggerty

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**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** LDSI with Thomas Anderson, Jason Vandelinde Dave McDonald, Jake Crostic SOW, and AHA.

ECLS with Ben Sox Todd Thompson, Dave McDonald, Jake Crostic SOW, and AHA.  
USAЕ with Dave McDonald, Jake Crostic, Jim Keesee, Pat Gildea, Allen Cochran  
Matt Kuster, Robert Querry, James Ray, Mario Valez, Joe Wilder, Scott McKenzie  
Adam Miller, Charles Haggerty

---

**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):** LDSI reacquired 291 anomalies, ECLS located and marked utilities at North end of task site, USAE processed approximately 50% of both soil piles located at South West end of task site.

---

**6. List tests performed, samples collected, and results received:** EM61 and whites locators thru IVS

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

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**8. Non-conformances/deficiencies reported:** None

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**9. Site safety monitoring activities performed today:** PTSP, oversight

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**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

Date: 04 November 2013

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 05 November 2013      **Task Order No.:** WE5A      **Report No.:** 20131105

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Anomaly Reacquisition, Soil Processing, Intrusive Investigation.

**Weather:** partly sunny, cool, windy

**Temperature:** 69 °F

**1. Work performed today:** Pre task brief. Inspected MDAS with USAE Team Leader. Escorted electrician from CRM Electric to site, met with New River Explosive Safety Officers (MCI East) Mr. Ralph Harris and CWO2 Davis Jensen, New River Environmental Safety Officer, Mr. Kevin McGowan, and Mr. Randy McElveen North Carolina DENR who all visited the site for approximately 30 minutes. Oversight of operation, QC of 12 anomalies.

---

**2. Work performed today by CH2MHILL subcontractor(s):**

LDSI reacquired 426 anomalies.

USAE completed processing of both soil piles located at South West end of task site.

Intrusive investigations started;

Grid D5C7G6 completed.

Grids D5C7H3 and D5C7H6 started, 118 digs completed awaiting QC.

21 pounds of MDAS was located.

185 pounds of CD

QC seed 003 was located.

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

---

**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

---

**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):**

LDSI reacquired 426 anomalies.

USAE completed processing both soil piles located at South West end of task site.

Intrusive investigations started;

Grids D5C7G6 completed.

---

**6. List tests performed, samples collected, and results received:** EM61, schonstedt and whites locators thru IVS

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

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**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP, oversight of processing operations and Intrusive operations.

---

**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

Date: 05 November 2013

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 06 November 2013      **Task Order No.:** WE5A      **Report No.:** 20131106

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Anomaly Reacquisition, Soil Processing, Intrusive Investigation.

**Weather:** cloudy, cool, windy, rain

**Temperature:** 53-71 °F

**1. Work performed today:** Pre task brief. Inspected MDAS with USAE Team Leader. QC of 203 anomalies.

---

**2. Work performed today by CH2MHILL subcontractor(s):**

LDSI reacquired 417 anomalies. (403 remaining)

USAE completed grids D5C7H3, D5C7H6, D5C7H7, D5C7G3, D5C7G5, D5C7H5, and D5C7H2.

203 digs completed.

37 pounds of MDAS was located.

450 pounds of CD recovered.

QC seeds 002 and 004 were located.

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

---

**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

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**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):**

LDSI reacquired 417 anomalies.

USAE completed grids D5C7H3, D5C7H6, D5C7H7, D5C7G3, D5C7G5, D5C7H5, and D5C7H2.

---

**6. List tests performed, samples collected, and results received:** EM61, schonstedt and whites locators thru IVS

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

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**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP, oversight of processing operations and Intrusive operations.

---

**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

Date: 06 November 2013

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 07 November 2013      **Task Order No.:** WE5A      **Report No.:** 20131107

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Anomaly Reacquisition, Intrusive Investigation.

**Weather:** cloudy, cool, windy, rain

**Temperature:** 63-71 °F

**1. Work performed today:** Pre task brief. Inspected MDAS with USAE Team Leader. QC of 171 anomalies.

---

**2. Work performed today by CH2MHILL subcontractor(s):**

LDSI reacquired 315 anomalies. (88 remaining)

USAE completed grids D5C7H4, D5C7H1, D5C7I4, D5C7G4, and D5C7G2.

171 digs completed.

19 pounds of MDAS was located.

425 pounds of CD recovered.

QC seed 001 was located.

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

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**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

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**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):**

LDSI reacquired 315 anomalies.

USAE completed grids D5C7H4, D5C7H1, D5C7I4, D5C7G4, D5C7G2.

---

**6. List tests performed, samples collected, and results received:** EM61, schonstedt and whites locators thru IVS

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

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**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP, oversight of Intrusive operations.

---

**10. Remarks:** None

**CERTIFICATION:** *I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 08 November 2013      **Task Order No.:** WE5A      **Report No.:** 20131108

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Anomaly Reacquisition.

**Weather:** sunny, cool, windy

**Temperature:** 43-51 °F

**1. Work performed today:** Pre task brief. Avoidance Anomaly Reacquisition.

---

**2. Work performed today by CH2MHILL subcontractor(s):**

LDSI reacquired 88 anomalies, QC seeds 10, 11, 12, and LOD around 3<sup>rd</sup> spoil pile (with modifications). Reacquisition complete.

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

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**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

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**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):**

LDSI reacquired 88 anomalies QC seeds 10, 11, 12, and LOD around 3<sup>rd</sup> spoil pile.

---

**6. List tests performed, samples collected, and results received:** schonstedt locator thru IVS

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

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**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP.

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**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 12 November 2013      **Task Order No.:** WE5A      **Report No.:** 20131112

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Intrusive Investigation.

**Weather:** cloudy, cool, windy

**Temperature:** 36-64 °F

**1. Work performed today:** Pre task brief. Inspected MDAS with USAE Team Leader. QC of 198 anomalies. Review of AHA , SPO and HASP with USAE employee Mike Rago. Mr. Randy McElveen North Carolina DENR visited the site for approximately 30 minutes.

---

**2. Work performed today by CH2MHILL subcontractor(s):**

USAE completed grids D5C6H9, D5C6G0, and D5C6G9.

198 digs completed.

125 pounds of MDAS was located.

210 pounds of CD recovered.

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

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**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

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**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):**

USAE completed grids D5C6H9, D5C6G0, and D5C6G9.

---

**6. List tests performed, samples collected, and results received:** EM61, schonstedt and whites locators thru IVS

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

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**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP, oversight of Intrusive operations.

---

**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 13 November 2013      **Task Order No.:** WE5A      **Report No.:** 20131113

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Intrusive Investigation.

**Weather:** cloudy, cold, windy

**Temperature:** 22-41 °F

**1. Work performed today:** Pre task brief. Inspected MDAS with USAE Team Leader. QC of 60 anomalies. Review of AHA , SPO and HASP with USAE employee Joshua Barry. Coordinated with Range control, Military Police and Fire Department for the planned demolition for 14 November 2013.

---

**2. Work performed today by CH2MHILL subcontractor(s):**

USAE completed grids D5C7G1.

60 digs completed.

68 pounds of MDAS was located.

245 pounds of CD recovered.

1 x 81 mm mortar (WP) and 1 x 2.36 inch rocket (HE) were located.

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

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**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

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**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):**

USAE completed grids D5C7G1.

---

**6. List tests performed, samples collected, and results received:** EM61, schonstedt and whites locators thru IVS

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

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**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP, oversight of Intrusive operations.

---

**10. Remarks:** None

**CERTIFICATION:** *I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 14 November 2013      **Task Order No.:** WE5A      **Report No.:** 20131114

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Intrusive Investigation.

**Weather:** cloudy, cold,

**Temperature:** 29-57 °F

---

**1. Work performed today:** Pre task brief. Inspected MDAS with USAE Team Leader. QC of 251 anomalies. Review of AHA, SPO and HASP with USAE employee Alan Turpin. Coordinated with Air Operations and Military Police for the planned demolition for 15 November 2013.

---

**2. Work performed today by CH2MHILL subcontractor(s):**

USAE completed grids D5C6G8, D5C6D6, D5C6H0.

251 digs completed.

50 pounds of MDAS was located.

40 pounds of CD recovered.

QC Seed 005 and 006 were located.

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

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**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

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**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):**

USAE completed grids D5C6G8, D5C6D6, D5C6H0.

---

**6. List tests performed, samples collected, and results received:** EM61, schonstedt and whites locators thru IVS

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

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**8. Non-conformances/deficiencies reported:** None

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**9. Site safety monitoring activities performed today:** PTSP, oversight of Intrusive operations.

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**10. Remarks:** None

**CERTIFICATION:** *I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 15 November 2013      **Task Order No.:** WE5A      **Report No.:** 20131115

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Intrusive Investigation.

**Weather:** partly cloudy, cold,

**Temperature:** 29-57 °F

**1. Work performed today:** Pre task brief. Coordinated with air operations and Military Police for the demolition. Oversight of demolition operations. Telephone conference in reference to injured USAE UXO tech. Met with Air operations officer reference future demolition operations.

---

**2. Work performed today by CH2MHILL subcontractor(s):**

USAE completed demolition operations and clean-up of holes.

All CD was collected and removed to scrap dealers.

151 pounds of MDAS was located.

40 pounds of CD recovered.

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

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**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

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**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):**

USAE completed demolitions operations an site clean up.

---

**6. List tests performed, samples collected, and results received:** EM61, schonstedt and whites locators thru IVS

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

---

**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP, oversight of Intrusive operations.

---

**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 18 November 2013      **Task Order No.:** WE5A      **Report No.:** 20131118

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Intrusive Investigation.

**Weather:** partly cloudy, warm,

**Temperature:** 45-82 °F

**1. Work performed today:** Pre task brief. QC of 133 digs.

---

**2. Work performed today by CH2MHILL subcontractor(s):**

USAE completed grids D5C6C7, D5C6C6, D5C6B6.

In grid D5C6F7, target 002 was an 81mm mortar, WP.

In grid D5C6D7 2 x 2.36 inch rockets targets 027 and 070 were located these grids have not been completed pending the final QC of the aforementioned target numbers.

75 pounds of MDAS was located.

130 pounds of CD recovered.

QC seed 007 was located.

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

---

**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

---

**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):**

USAE completed grids D5C6C7, D5C6C6, D5C6B6.

---

**6. List tests performed, samples collected, and results received:** EM61, schonstedt and whites locators thru IVS

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

---

**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP, oversight of Intrusive operations.

---

**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 19 November 2013      **Task Order No.:** WE5A      **Report No.:** 20131119

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Intrusive Investigation.

**Weather:** partly cloudy, cold, windy

**Temperature:** 35-52 °F

**1. Work performed today:** Pre task brief. QC of 392 digs, recording of UXO. Inspection of 160 rocket motors requiring demil.

---

**2. Work performed today by CH2MHILL subcontractor(s):**

USAE completed grids D5C6F7, D5C6G7, D5C6E6, D5C6B7, D5C6A7, D5C6A6, D5C6J7, D5C6J6, D5C6F8, and D5C6E7.

1 X 81mm mortar was located D5C6F8, target 026.

2 x 2.36 inch rockets were located in grid D5C6B7 target 012 and D5C6E7 target 061.

150 pounds of MDAS was located.

265 pounds of CD recovered.

QC seed 009 was located.

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

---

**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

---

**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):**

USAE completed grids D5C6F7, D5C6G7, D5C6E6, D5C6B7, D5C6A7, D5C6A6, D5C6J7, D5C6J6, D5C6F8, and D5C6E7.

---

**6. List tests performed, samples collected, and results received:** EM61, schonstedt and whites locators thru IVS

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

---

**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP, oversight of Intrusive operations.

---

**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 20 November 2013      **Task Order No.:** WE5A      **Report No.:** 20131120

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Demolitions Operations.

**Weather:** partly cloudy, cold, windy

**Temperature:** 45 °F

**1. Work performed today:** Pre task brief. Oversight of demolition operations. Coordination with base operations, military police, and fire department.

---

**2. Work performed today by CH2MHILL subcontractor(s):**

USAE completed demolitions of 2 X 81mm mortars and 4 x 2.36 inch rockets

Clearance of MDAS from blast holes. Preparation of demo site for planned demolition operations 21 Nov 13.

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

---

**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

---

**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):**

USAE completed demolitions of 2 X 81mm mortars and 4 x 2.36 inch rockets.

---

**6. List tests performed, samples collected, and results received:** EM61, schonstedt and whites locators thru IVS

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

---

**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP, oversight of Demolition operations.

---

**10. Remarks:** None

---

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL*

*and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 21 November 2013      **Task Order No.:** WE5A      **Report No.:** 20131121

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Demolitions Operations.

**Weather:** partly cloudy, cool,

**Temperature:** 46 °F

**1. Work performed today:** Pre task brief. Oversight of demolition operations. Coordination with base operations, military police, and fire department.

---

**2. Work performed today by CH2MHILL subcontractor(s):**

USAE completed demilitarization of 160 x 2.36 inch expended rocket motors

Clearance of MDAS from blast holes.

Scanning of third spoil pile in preparation for raking ops.

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

---

**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

---

**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):**

USAE completed demil of 160 x 2.36 inch rocket motors.

---

**6. List tests performed, samples collected, and results received:** EM61, schonstedt and whites locators thru IVS

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

---

**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP, oversight of Demolition operations.

---

**10. Remarks:** None

---

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL*

*and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 25 November 2013      **Task Order No.:** WE5A      **Report No.:** 20131125

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Soil processing Operations.

**Weather:** partly cloudy, cool,

**Temperature:** 39 °F

**1. Work performed today:** Pre task brief. Oversight of soil processing operations.

---

**2. Work performed today by CH2MHILL subcontractor(s):**

USAE completed 45% of spoil pile, recovered 150lbs of scrap.

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

---

**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

---

**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):**

USAE completed 45% of spoil pile.

---

**6. List tests performed, samples collected, and results received:** schonstedt and whites locators thru IVS

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

---

**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP, oversight of soil processing operations.

---

**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 26 November 2013      **Task Order No.:** WE5A      **Report No.:** 20131126

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Soil processing operations.

**Weather:** cloudy, cold, heavy rain most of the day

**Temperature:** 42 °F

**1. Work performed today:** Pre task brief. Oversight of soil processing operations.

---

**2. Work performed today by CH2MHILL subcontractor(s):**

USAE completed 70% of spoil pile to date (overestimated yesterday), recovered 85lbs of scrap, No MDAS.

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

---

**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

---

**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):**

USAE completed 70% of spoil pile.

---

**6. List tests performed, samples collected, and results received:** schonstedt and whites locators thru IVS

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

---

**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP, oversight of soil processing operations.

---

**10. Remarks:** None

---

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 27 November 2013      **Task Order No.:** WE5A      **Report No.:** 20131127

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Soil processing operations.

**Weather:** cloudy, cold, heavy rain

**Temperature:** 63 - 52 °F

**1. Work performed today:** Pre task brief. Oversight of soil processing operations.

---

**2. Work performed today by CH2MHILL subcontractor(s):**

USAE completed 78% of spoil pile to date, recovered 25lbs of scrap, No MDAS.

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

---

**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

---

**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):**

USAE completed 78% of spoil pile.

---

**6. List tests performed, samples collected, and results received:** schonstedt and whites locators thru IVS

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

---

**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP, oversight of soil processing operations.

---

**10. Remarks:** None

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

# FORM 8-8b

## DAILY QUALITY CONTROL REPORT

**Contract No:** N26470-11-D-8012

**Date:** 29 November 2013      **Task Order No.:** WE5A      **Report No.:** 20131129

**Location of work:** Air Station New River Runway Expansion Area

**Description:** Soil processing operations.

**Weather:** sunny, cold,

**Temperature:** 25 - 42 °F

**1. Work performed today:** Pre task brief. Oversight of soil processing operations. Lifted IVS.

---

**2. Work performed today by CH2MHILL subcontractor(s):**

USAE completed spoil pile. Removed CD, No MDAS. Demobilized team.

---

**3. Preparatory Phase Inspections performed today (include personnel present, specification section, drawings, plans, and submittals required for definable feature of work):** None

---

**4. Initial phase Inspections performed today (include personnel present, workmanship standard established, material certifications/test is completed, plans and drawings are reviewed):** None

---

**5. Follow-up Phase Inspections performed today (include locations, feature of work and level of compliance with plans and procedures):**

USAE completed spoil pile.

---

**6. List tests performed, samples collected, and results received:** schonstedt and whites locators thru IVS

---

**7. Verbal instructions received (instructions given by Government representative and actions taken):** None

---

**8. Non-conformances/deficiencies reported:** None

---

**9. Site safety monitoring activities performed today:** PTSP, oversight of soil processing operations.

---

**10. Remarks:** None

---

*CERTIFICATION: I certify that the above report is complete and correct and that I, or my representative, have inspected all work identified on this report performed by CH2M HILL and our subcontractor(s) and have determined to the best of my knowledge and belief that noted work activities are in compliance with the plans and specifications, except as may be noted above.*

UXOQCS/SO: Steve Brown

**Attachment E**  
**MC Analytical Data**

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MCIEAST-MCB CAMLEJ  
MCAS New River - Runway Expansion Area  
Validated MC Sampling Exceedences and Results

Sample ID	CLEAN MCB CamLej Background Developed SS Combined Soil (BTVs) (August 2011)	NCSLs (July 2013)	RSLs Industrial Soil Adjusted (November 2013)	RSLs Residential Soil Adjusted (November 2013)	MR29-SS01D-OC-13D	MR29-SS01-IC-13D	MR29-SS01-OC-13D	MR29-SS02-IC-13D	MR29-SS02-OC-13D	MR29-SS03-IC-13D	MR29-SS03-OC-13D	MR29-SS04D-IC-13D	MR29-SS04-IC-13D
Sample Date					11/15/13	11/15/13	11/15/13	11/15/13	11/15/13	11/26/13	11/26/13	11/26/13	11/26/13
Sample Description					Duplicate sample	Inner crater for sample D5C6G8-107	Outer crater for sample D5C6G8-107	Inner crater for sample D5C6H0-061	Outer crater for sample D5C6H0-061	Inner crater for sample D5C6B7-012	Outer crater for sample D5C6B7-012	Duplicate Sample	Inner crater for sample D5C6D7-027
Sample Easting (UTM meters)					277018.00	277018.00	277018.00	277054.20	277054.20	276769.20	276769.20	276891.85	276891.85
Sample Northing (UTM meters)					3841881.40	3841881.40	3841881.40	3841957.40	3841957.40	3841816.80	3841816.80	3841824.34	3841824.34
Explosives (UG/KG)													
No Detections													
Total Metals (MG/KG)													
Aluminum	25000	--	99000	7700	2,060	2,320	1,940	1,990	2,150	2,320	2,570	2,620 J	4,100 J
Arsenic	2.42	5.8	2.4	0.61	1.45 U	1.31 U	1.49 U	1.34 U	1.44 U	1.46 U	0.359 J	1.28 U	1.34 U
Barium	33.8	580	19000	1500	2.8 J	2.06	1.87 J	1.9	1.96	2.64	2.86	2.89 J	5.79 J
Beryllium	--	63	200	16	0.0188 J	0.0192 J	0.0147 J	0.0159 J	0.0184 J	0.0199 J	0.0217 J	0.0207 J	0.0274 J
Calcium	3790	--	--	--	73	49.9	56.4	76.3	118	231	132	96.5	92.3
Chromium	23.1	3.8	5.6	0.29	<u>1.74</u>	<u>1.97</u>	<u>1.67</u>	<u>1.68</u>	<u>1.81</u>	<u>1.96</u>	<u>2.22</u>	<u>2.27 J</u>	<u>3.63 J</u>
Chromium (hexavalent)	3.91	3.8	5.6	0.29	0.21 J	0.28 J	0.23 J	0.19 J	0.65	0.23 J	0.25 J	0.19 J	0.17 J
Cobalt	--	0.9	30	2.3	0.111 J	0.12 J	0.0903 J	0.0892 J	0.0917 J	0.127 J	0.134 J	0.156 J	0.239 J
Copper	2.5	700	4100	310	0.422 J	0.443 J	0.394 J	0.391 J	0.439 J	0.52 J	0.564 J	0.56 J	0.99
Iron	11100	150	72000	5500	724 J	779 J	694 J	700 J	756 J	817	804	841	948
Lead	20.2	270	800	400	2.88 J	2.24 J	2.02 J	1.95 J	2.16 J	2.39 J	2.67	2.57	3.3
Magnesium	--	--	--	--	33.5 J	38.2	32.6 J	36.5	39.5	44.3	51.4	58.7 J	114 J
Manganese	18.3	65	2300	180	1.23 J	1.21 J	1.29 J	1.27 J	1.87	2.32	2.34	1.93	2.67
Mercury	0.121	1	31	2.3	0.0109 U	0.0106 U	0.0124 U	0.0123 U	0.0123 U	0.00414 J	0.00387 J	0.0112 U	0.0125 U
Nickel	2.73	130	2000	150	0.525 J	0.672	0.494 J	0.497 J	0.539 J	0.619 J	0.653	0.707 J	1.03 J
Potassium	--	--	--	--	42.8 J	49.9 J	40.2 J	47.1 J	45.9 J	48.7 J	53.3 J	57.1 J	96
Sodium	79.7	--	--	--	18.1 U	6.05 J	18.7 U	16.8 U	17.9 U	5.43 J	6.49 J	3.84 J	7.54 J
Vanadium	34.1	6	510	39	2.26	2.45	2.21	2.16	2.33	2.48	2.59	2.82	3.85
Zinc	16.2	1200	31000	2300	0.768 J	1.06 J	0.877 J	0.762 J	0.787 J	1.02 J	1.09 J	0.986 J	1.53

.. 01/00/1900

**Notes:**  
Shading indicates exceedance of Camp Lejeune background values as applicable to developed combined surface soil samples

**Bold box indicates exceedance of NCSLs**

**Bold text indicates exceedance of Adjusted Industrial Soil RSLs**

Underline indicates exceedance of Adjusted Residential Soil RSLs

J - Analyte present. Value may or may not be accurate or precise

MG/KG - Milligrams per kilogram

U - The material was analyzed for, but not detected

UG/KG - Micrograms per kilogram

MCIEAST-MCB CAMLEJ  
MCAS New River - Runway Expansion Area  
Validated MC Sampling Exceedences and Results

Sample ID	CLEAN MCB CamLej Background Developed SS Combined Soil (BTVs) (August 2011)	NCSs (July 2013)	RSLs Industrial Soil Adjusted (November 2013)	RSLs Residential Soil Adjusted (November 2013)	MR29-SS04-OC-13D	MR29-SS05-IC-13D	MR29-SS05-OC-13D	MR29-SS06-IC-13D	MR29-SS06-OC-13D	MR29-SS07-IC-13D	MR29-SS07-OC-13D	MR29-SS08D-OC-13D	MR29-SS08-IC-13D
Sample Date					11/26/13	11/26/13	11/26/13	11/26/13	11/26/13	11/26/13	11/26/13	11/26/13	11/26/13
Sample Description					Outer crater for sample D5C6D7-027	Inner crater for sample D5C6D7-070	Outer crater for sample D5C6D7-070	Inner crater for sample D5C6E7-061	Outer crater for sample D5C6E7-061	Inner crater for sample D5C6F7-002	Outer crater for sample D5C6F7-002	Duplicate Sample	Inner crater for sample D5C6F8-026
Sample Easting (UTM meters)					276891.85	276861.95	276861.95	276912.60	276912.60	276997.00	276997.00	276997.61	276997.61
Sample Northing (UTM meters)					3841824.34	3841800.74	3841800.74	3841819.05	3841819.05	3841842.60	3841842.60	3841851.51	3841851.51
Explosives (UG/KG)													
No Detections													
Total Metals (MG/KG)													
Aluminum	25000	--	99000	7700	2,770	2,500	2,840	3,940	2,600	2,830	3,830	2,330	2,500
Arsenic	2.42	5.8	2.4	0.61	1.39 U	1.45 U	1.05 U	0.397 J	1.52 U	0.382 J	1.04 U	1.47 U	1.05 U
Barium	33.8	580	19000	1500	2.85	2.61	3.6	5.95	3.12	3.24	5.6	2.45	2.66
Beryllium	--	63	200	16	0.0191 J	0.0179 J	0.0214 J	0.0254 J	0.0203 J	0.0222 J	0.0257 J	0.0179 J	0.0179 J
Calcium	3790	--	--	--	81.9	106	90.1	167	78.8	114	69.3	70.1	71
Chromium	23.1	3.8	5.6	0.29	<u>2.38</u>	<u>2.09</u>	<u>2.52</u>	<u>3.46</u>	<u>2.26</u>	<u>2.48</u>	<u>3.48</u>	<u>1.97</u>	<u>2.12</u>
Chromium (hexavalent)	3.91	3.8	5.6	0.29	<u>0.87</u>	<u>0.37</u> J	0.19 J	0.17 J	0.18 J	0.21 J	0.18 J	0.19 J	0.17 J
Cobalt	--	0.9	30	2.3	0.17 J	0.146 J	0.192 J	0.245 J	0.157 J	0.165 J	0.242 J	0.13 J	0.146 J
Copper	2.5	700	4100	310	0.565 J	0.573 J	0.608	0.995	0.545 J	0.643	1.12	0.51 J	0.532
Iron	11100	150	72000	5500	881	777	834	1,020	823	857	853	782	781
Lead	20.2	270	800	400	2.53 J	2.41 J	2.43	3.5	3.4	2.67	2.89	2.49 J	2.18
Magnesium	--	--	--	--	58.6	51.8	71.4	113	54	64	121	43.2	51.8
Manganese	18.3	65	2300	180	1.87	1.84	2.45	2.46	1.88	1.96	2.52	1.63	1.61
Mercury	0.121	1	31	2.3	0.00407 J	0.0131 U	0.0123 U	0.0122 U	0.00412 J	0.00491 J	0.00506 J	0.0043 J	0.0046 J
Nickel	2.73	130	2000	150	0.745	0.732	0.823	0.999	0.712 J	0.777	1.06	0.649 J	0.687
Potassium	--	--	--	--	58.6 J	55.1 J	60.3	94.3	52.9 J	60.9 J	85.4	43.9 J	48.8 J
Sodium	79.7	--	--	--	6.8 J	8.22 J	7.78 J	6.46 J	19 U	4.5 J	5.69 J	5.56 J	13.1 U
Vanadium	34.1	6	510	39	2.99	2.57	3.06	3.85	2.73	2.94	3.81	2.52	2.6
Zinc	16.2	1200	31000	2300	1.17 J	1.16 J	1.19	1.45	0.827 J	0.986 J	1.45	1.47	0.795 J

.. 01/00/1900

**Notes:**  
Shading indicates exceedance of Camp Lejeune background values as applicable to developed combined surface soil samples

**Bold box indicates exceedance of NCSs**

**Bold text indicates exceedance of Adjusted Industrial Soil RSLs**

Underline indicates exceedance of Adjusted Residential Soil RSLs

J - Analyte present. Value may or may not be accurate or precise

MG/KG - Milligrams per kilogram

U - The material was analyzed for, but not detected

UG/KG - Micrograms per kilogram

MCIEAST-MCB CAMLEJ  
MCAS New River - Runway Expansion Area  
Validated MC Sampling Exceedences and Results

Sample ID	CLEAN MCB CamLej Background Developed SS Combined Soil (BTVs) (August 2011)	NCSSLS (July 2013)	RSLs Industrial Soil Adjusted (November 2013)	RSLs Residential Soil Adjusted (November 2013)	MR29-SS08-OC-13D	MR29-SS09-IC-13D	MR29-SS09-OC-13D	MR29-SS10-IC-13D
Sample Date					11/26/13	11/26/13	11/26/13	11/26/13
Sample Description					Outer crater for sample D5C6F8-026	Inner crater for MPPEH demilitarization	Inner crater for MPPEH demilitarization	Pre-Detonation Sample for site
Sample Easting (UTM meters)					276997.61	276736.99	276736.99	277027.11
Sample Northing (UTM meters)					3841851.51	3841830.00	3841830.00	3841871.92
Explosives (UG/KG)								
No Detections								
Total Metals (MG/KG)								
Aluminum	25000	--	99000	7700	2,450	2,840	3,990	2,470
Arsenic	2.42	5.8	2.4	0.61	1.25 U	1.04 U	1.22 U	1.45 U
Barium	33.8	580	19000	1500	2.24	2.83	5.57	2.85
Beryllium	--	63	200	16	0.0181 J	0.0189 J	0.0222 J	0.0208 J
Calcium	3790	--	--	--	62.1	75.5	66.8	77.8
Chromium	23.1	3.8	5.6	0.29	<u>2.13</u>	<u>2.43</u>	<u>3.55</u>	<u>2.09</u>
Chromium (hexavalent)	3.91	3.8	5.6	0.29	0.26 J	<u>0.65</u>	0.21 J	<u>0.34</u> J
Cobalt	--	0.9	30	2.3	0.125 J	0.169 J	0.235 J	0.149 J
Copper	2.5	700	4100	310	0.577 J	0.525	1.03	0.485 J
Iron	11100	150	72000	5500	835	918	904	823
Lead	20.2	270	800	400	2.46 J	2.48	3.32	2.51 J
Magnesium	--	--	--	--	43.8	56.9	106	48.6
Manganese	18.3	65	2300	180	1.59	1.62	2.18	1.65
Mercury	0.121	1	31	2.3	0.0105 U	0.0122 U	0.0122 U	0.00428 J
Nickel	2.73	130	2000	150	0.724	0.729	0.991	0.689 J
Potassium	--	--	--	--	43.5 J	57.2	89.5	47.2 J
Sodium	79.7	--	--	--	15.6 U	4.72 J	5.72 J	18.2 U
Vanadium	34.1	6	510	39	2.65	3	3.73	2.67
Zinc	16.2	1200	31000	2300	0.766 J	1.01 J	1.53	1.15 J

.. 01/00/1900

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