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NAS CECIL FIELD, FL
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LETTER REGARDING COMPLETION OF INITIAL MUNITIONS RESPONSE IN THE VICINITY OF HANGAR 860 AND ADDITIONAL WORK PLANNED FOR THREE ADJACENT AREAS WITH ATTACHMENTS NAS CECIL FIELD FL
1/31/2007
BASE REALIGNMENT AND CLOSURE PROGRAM MANAGEMENT OFFICE SOUTHEAST

DEPARTMENT OF THE NAVY
BASE REALIGNMENT AND CLOSURE
PROGRAM MANAGEMENT OFFICE SOUTHEAST
4130 FABER PLACE DRIVE
SUITE 202
NORTH CHARLESTON, SC 29405

11101
Ser BPMOSE med/0070
31 Jan 07

Mr. Rusty Chandler
Jacksonville Aviation Authority
13365 Aeronautical Circle
Jacksonville, FL 32221-8105

Subj: HANGAR 860 MUNITIONS RESPONSE WORK, FORMER NAVAL AIR STATION CECIL FIELD, JACKSONVILLE, FL

Encl: (1) CH2MHill Letter Report Dated December 29, 2006, Completion Report for Hangar 860 Munitions Response Site 1
Encl: (2) Figure 1-1 Vicinity Map, Area of Munitions Response Work for Hangar 860 Munitions Response Site 2

Dear Mr. Chandler:

As you know, the Navy has been conducting investigations and removal activities in the vicinity of Hangar 860 due to the discovery of discarded military munitions (DMM) by Florida Army Reserve National Guard (FLARNG). The intent of this letter is to notify you of the completion of this initial munitions response (MR), as well as to inform you of additional MR work planned for three adjacent areas.

The Navy has completed its MR investigation, removal and detonation activities at the initial MRS, a 20 acre parcel located west and southwest of Hangar 860 which the Navy refers to as H860-MRS-1. This work was completed during the fall of 2006. Enclosure 1, prepared at the request of FLARNG, identifies the boundaries of H860-MRS-1 and documents the MR work completed at this initial MRS. The Navy hereby releases this area back to JAA and its tenants. However, while the MR work performed was very thorough and successful, there always remains the potential for additional DMM to be encountered during future construction activities. Therefore, for future intrusive work in the 20 acre H860-MRS-1 area, the Navy recommends 3R (Recognize, Retreat, Report) training for site workers.

Due to the presence of DMM in cells located on the perimeter of H860-MRS-1 to the north, west and south, the Navy is planning to expand the MR investigation outward in three areas to ensure no additional DMM is present beyond the original site boundaries. These areas are referred to as H860-MRS-2 and are identified in Enclosure 2 as the green grid blocks. The H860-MRS-2 expansion will cover approximately 10 acres and is scheduled to commence in March 2007. Therefore, the Navy asks that JAA not perform any intrusive activities in H860-MRS-2 until the Navy completes this expanded MR work

The Navy appreciates JAA's patience as we continue the MR work to ensure the safety of the Aviation Authorities' employees, tenants and contractors. If you should have any questions, please feel free to contact Mark Davidson at (843) 743-2135 or by email at mark.e.davidson@navy.mil.

Sincerely,

JAMES R. FERRO, P.E.
Deputy Base Closure Manager
Navy BRAC PMO SE

Copy to via email:
EPA Region 4 (Doyle Brittain)
FDEP (David Grabka)
TTNUS (Mark Speranza, Rob Simcik, Mark Jonnet)
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FLARNG (Richard Nichols)
PMO SE (Mark Davidson)

CH2M HILL
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Tel 770.604.9095
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December 29, 2006

Mr. Mark Davidson
Base Realignment and Closure
Program Management Office Southeast
P.O. Box 190010
North Charleston, SC 29419-9010

Subject: Contract No. N62467-01-D-0331
Contract Task Order No. 0029
Former Naval Air Station Cecil Field - Jacksonville, Florida
Project Completion Letter Report
Munitions Response for Discarded Military Munitions at Munitions Response Site 1
Hangar 860 Munitions Response Area

Dear Mr. Davidson:

At the request of the Florida Army Reserve National Guard (FLARNG), CH2M HILL Constructors, Inc. (CH2M HILL) is providing this Project Completion Letter Report to document the completed munitions response (MR) to locate and remove munitions and explosives of concern (MEC) and material potentially presenting an explosive hazard (MPPEH) from the Hangar 860 Munitions Response Area (H860-MRA), Munitions Response Site 1 (H860-MRS-1), located at the former Naval Air Station (NAS) Cecil Field, Jacksonville, Florida. This letter report is being prepared under Contract Task Order No. 0029 for the Response Action Contract No. N62467-01-D-0331.

Executive Summary

During a visual site survey on Friday, February 4, 2005, for a future construction project design, members of the FLARNG, the tenant occupying Hangar 860, observed multiple possible MEC items in an open stormwater drainage ditch located to the southwest of Hangar 860 at the former NAS Cecil Field. These items were subsequently identified as JAU-22/B cartridge actuated initiators (CAI). The Hangar 860 area was then designated a MRS by the Naval Ordnance Safety and Security Activity after receipt of an MRS Identification and Notification Report submitted by Base Realignment and Closure, Program Management Office Southeast (BRAC PMO SE) on February 11, 2005.

The MPPEH discovery prompted the need for additional MEC support. The additional support was to provide a MR as a cautionary action to: 1) ensure that the presence of the discovered MPPEH was unique to the area where the items were found, 2) protect human health and safety for site personnel, and 3) allow the continued land use of the area.

MEC clearance and removal on the 20-acre H860-MRS-1 was completed from May 22, 2006 to June 22, 2006. This MR action was completed under the Comprehensive Environmental

Response, Compensation, and Liability Act (CERCLA) process, as a Time Critical Removal Action (TCRA), and included the detection and removal of MEC from the ground surface to an approximate depth of one-foot. Following is a list of MEC items recovered:

- (21) each miscellaneous impulse/signal cartridges (MK2, MK19, and AN M 31)
- (7) each 20-millimeter (mm) projectiles
- (451) each JAU-22/B CAIs
- (3) each MK 23 practice bombs

Based on the completed MR, the original Hangar 860 MRS has been re-designated as a Munitions Response Area (the H860-MRA) comprised of two MRS: 1) H860-MRS-1 which is the subject of this letter report, and 2) H860-MRS-2 where a continued MR is required, and will be completed by CH2M HILL to the north, west, and south of the 20-acre H860-MRS-1 because of MEC recovery in the boundary grids. Currently, work plans are being prepared to outline the continued MR with field work scheduled for March 2007. The 20-acre H860-MRS-1 has been cleared of MEC and is available for FLARNG to continue the land use of the area and proceed with the future construction project. No Further Department of Defense (DoD) Action is required on the 20-acre H860-MRS-1.

For future intrusive work within the boundaries of the 20-acre H860-MRS-1, CH2M HILL recommends 3R (Recognize, Retreat, Report) MEC training for site workers.

Site History

During a visual site survey on Friday, February 4, 2005, for a future construction project design, members of FLARNG, the tenant occupying Hangar 860, observed multiple possible MEC items in an open stormwater drainage ditch located to the southwest of Hangar 860 at the former NAS Cecil Field. The stormwater ditch had been cleared approximately one month earlier. A Florida Air National Guard (FANG) Explosive Ordnance Disposal (EOD) team responded on February 4, 2005, recovered one of the possible MEC items, and provided an e-mail summary of the FANG EOD response to FLARNG. FANG EOD identified the recovered item as a JAU-22/B CAI with a Net Explosive Weight of 0.0116 lb and rated as 1.4C class/division explosives. It was estimated that approximately one dozen of the CAIs remained in-place at the site following the FANG EOD response.

FLARNG notified the Jacksonville Airport Authority (JAA) of the discovery by e-mail on February 4, 2005; and on Tuesday, February 8, 2005, JAA notified BRAC PMO SE. Based on a request from BRAC PMO SE, CH2M HILL visited the site with JAA and FLARNG. Approximately 12 to 15 CAIs were observed during the site visit. One CAI was located along the slope of the ditch and the remainder of the CAIs were located in the bottom of the ditch, visible through standing water. EOD Mayport responded on Tuesday, February 22, 2005, at the request of BRAC PMO SE to remove the CAIs remaining onsite. EOD Mayport removed 22 CAIs and identified the CAIs as expended.

The Hangar 860 area was designated a MRS by the Naval Ordnance Safety and Security Activity after receipt of an MRS Identification and Notification Report submitted by BRAC PMO SE on February 11, 2005. The location and layout of H860-MRA, H860-MRS-1 is shown on the enclosed figures.

The MPPEH discovery prompted the need for additional MEC support. The additional support was to provide a MR as a cautionary action to: 1) ensure that the presence of the discovered MPPEH was unique to the area where the items were found, 2) protect human health and safety for site personnel, and 3) allow the continued land use of the area.

Munitions Response Activities

CH2M HILL, with USA Environmental, Inc. (USAE), completed MEC clearance and removal on the 20-acre H860-MRS-1 from May 22, 2006 to June 22, 2006. Photographs taken during MEC clearance and removal are attached to this letter report. This MR action was completed under CERCLA process, as a TCRA, and included the detection and removal of MEC from the ground surface to an approximate depth of one-foot. Following is a list of MEC items recovered:

- (21) each miscellaneous impulse/signal cartridges (MK2, MK19, and AN M 31)
- (7) each 20-mm projectiles
- (451) each JAU-22/B CAIs
- (3) each MK 23 practice bombs

Table 1 provides a summary of the recovered MEC with the Grid Identification Nos. and the MEC locations shown on the attached figure. Table 2 provides a summary of the recovered munitions debris and cultural debris. All recovered MEC were disposed of on June 28, 2006 by open detonation at the detonation site shown on the attached figure. An Emergency Permit for Detonation Order, dated June 27, 2006 was received from the Florida Department of Environmental Protection (FDEP) prior to MEC open detonation. Following MEC open detonation, CH2M HILL and USAE collected all sandbag fragments, large munition fragments, and other debris; and cleared the detonation site and soil for MEC. Soil visibly impacted by MEC open detonation was then excavated on June 29, 2006 by backhoe and placed in a lined 20 cubic yard (cy) roll-off container staged at the site. Approximately 8-10cy of soil was excavated and placed in the lined 20cy roll-off container and disposed of. Table 6 provides the soil disposal characterization analytical result summary for the excavated soil.

MEC Environmental Impact

To determine the potential environmental impact of MEC presence at the site and MEC open detonation, MEC impact to soil determination and pre- and post-MEC detonation site impact determination soil samples were collected on June 27 and 29, 2006. The potential constituents of concern that could potentially cause environmental impacts were determined to be the 8 Resource Conservation and Recovery Act (RCRA) metals and nitroaromatic explosives.

MEC Impact to Soil Determination

Soil samples were collected from three discrete locations where significant quantities of MEC were recovered to determine if MEC has caused an adverse impact to the surrounding soil. The three soil samples, labeled as MEC1 through MEC3, were collected from two locations where CAIs were recovered (one sediment sample from the open stormwater drainage ditch and one unsaturated soil sample) and one location where signal cartridges were recovered. 20-mm projectiles and cartridge actuated devices (CADs)/impulse cartridges were shown to not cause an adverse environmental impact based on analytical results from the Building 365 MRS, and therefore locations at the Hangar 860 site where these MEC types were recovered were not sampled and analyzed. Soil that would have been in contact with MEC at each location was

collected on June 27, 2006 and analyzed for the 8 RCRA metals by U.S. Environmental Protection Agency (EPA) SW-846 Method 6010B/7471A and nitroaromatic explosives by EPA SW-846 Method 8330. Table 3 provides a description of each sample location and a summary of the soil analytical results. Table 4 provides the analytical result summary table.

TABLE 3
MEC Impact to Soil Determination - Sample Description and Analytical Result Summary

Sample Location	MEC Item at Location	Analytical Result Summary
MEC1	JAU-22/B CAIs, unsaturated soil sample	No FDEP SCTLs exceeded
MEC2	AN M 31 signal cartridge	No FDEP SCTLs exceeded
MEC3	JAU-22/B CAIs, sediment sample	No FDEP SCTLs exceeded

SCTL – Soil Cleanup Target Level

Analytical results for the three soil samples (MEC1, MEC2, and MEC3) did not exceed FDEP Direct Exposure-Residential or Leachability Based on Groundwater Criteria Soil Cleanup Target Levels (SCTLs). Based on these analytical results, the presence of MEC has not caused an adverse impact to site soil.

Pre- and Post-MEC Detonation Site Impact Determination

Pre- and post-MEC detonation site impact determination included soil sampling and laboratory analyses from the detonation sites (before and after MEC detonations) to ensure soil impacted by MEC detonations had been sufficiently removed.

Pre-MEC detonation site impact determination included soil sampling and laboratory analyses from the planned five detonation sites. The five grab soil samples, labeled as PRD1 through PRD5, were collected on June 27, 2006 from the floor of each detonation site and analyzed for the 8 RCRA metals by EPA SW-846 Method 6010B/7471A and nitroaromatic explosives by EPA SW-846 Method 8330. Table 5 provides the analytical result summary table.

Analytical results for four of the soil samples (PRD1, PRD2, PRD3, and PRD4) did not exceed FDEP Direct Exposure-Residential or Leachability Based on Groundwater Criteria SCTLs. Analytical results for soil sample PRD5 (0.36 J mg/kg) exceeded the FDEP Leachability Based on Groundwater Criteria SCTL for RDX of 0.002 mg/kg.

Post-MEC detonation site impact determination included soil sampling and laboratory analyses from the four used detonation sites (Detonation Sites 1, 2, 3, and 5). The four grab soil samples, labeled as PST1 (Detonation Site 1 for JAU-22/B CAIs), PST2 (Detonation Site 2 for JAU-22/B CAIs and 20-mm projectiles), PST3 (Detonation Site 3 for CADs/impulse cartridges), and PST5 (Detonation Site 5 for signal cartridges) were collected on June 29, 2006 from the floor of each detonation site following visibly-impacted soil removal and analyzed for the 8 RCRA metals by EPA SW-846 Method 6010B/7471A and nitroaromatic explosives by EPA SW-846 Method 8330. Table 5 provides the analytical result summary table. Four grab samples from each type of detonation site and one composite sample from the five planned detonation sites were anticipated to be collected, however since only four detonation sites were utilized, the planned composite sample was not collected.

Analytical results for three of the soil samples (PST1, PST3, and PST5) did not exceed FDEP Direct Exposure-Residential or Leachability Based on Groundwater Criteria SCTLs. Analytical results for soil sample PST2 (3.6 mg/kg) exceeded the FDEP Leachability Based on Groundwater Criteria SCTL for RDX of 0.002 mg/kg.

Based on these analytical results, the soil impacted by MEC detonations was sufficiently removed at Detonation Sites 1, 3, and 5. Additional impacted soil was excavated on August 10, 2006 by backhoe from Detonation Site 2 due to the Leachability Based on Groundwater Criteria SCTL exceedance and placed in a lined 20cy roll-off container staged at the site. Approximately 10cy of soil was excavated and placed in the lined 20cy roll-off container and disposed of. A confirmatory sample (PST02AS) was subsequently collected from the floor of the detonation site following additional soil removal, and analyzed only for nitroaromatic explosives by EPA SW-846 Method 8330. Analytical results did not exceed FDEP Direct Exposure-Residential or Leachability Based on Groundwater Criteria SCTLs, therefore soil impacted by MEC detonations was sufficiently removed from Detonation Site 2. Table 5 provides the analytical result summary table.

Problems Encountered

Problems encountered during completion of Phase I MEC clearance and removal included:

- Asbestos-coated piping was recovered during MEC clearance and removal on the 20-acre H860-MRS-1 and accidentally containerized on-site with other recovered scrap metal in a 40cy closed top roll-off container. The asbestos-coated piping, asbestos-contaminated material, and recovered scrap metal were transferred on September 13, 2006 from the 40cy closed top roll-off container into a 20cy open top roll-off container for transportation and disposal. Public Works Center Jacksonville denied transportation of the material for disposal on September 27, 2006 because a section of lead pipe was observed in the roll-off container. Pending resolution of this issue, the 20cy roll-off container was relocated on October 24, 2006 to the secured North Fuel Farm site to allow FLARNG access and use of the site.
- Received notification from FLARNG on October 24, 2006 that during a site walk, FLARNG representatives observed three potential MEC items located on the taxiway southwest of Hangar 860. CH2M HILL with USAE responded on October 25, 2006 and identified the items as not MEC or hazardous in nature, and specifically as a bolt, a piece of anchor chain, and an empty cylinder that appeared to be part of an aircraft fire extinguisher. The items were recovered and placed with the other recovered scrap metal.

Recommendations

Based on the completed MR, the original Hangar 860 MRS has been re-designated as a Munitions Response Area (the H860-MRA) comprised of two MRS: 1) H860-MRS-1 which is the subject of this letter report, and 2) H860-MRS-2 where a continued MR is required, and will be completed by CH2M HILL to the north, west, and south of the 20-acre H860-MRS-1 because of MEC recovery in the boundary grids. Currently, work plans are being prepared to outline the continued MR with field work scheduled for March 2007. The 20-acre H860-MRS-1 has been cleared of MEC and is available for FLARNG to continue the land use of the area and proceed with the future construction project. No Further DoD Action is required on the 20-acre H860-MRS-1.

For future intrusive work within the boundaries of the 20-acre H860-MRS-1, CH2M HILL recommends 3R (Recognize, Retreat, Report) MEC training for site workers.

The information provided in this letter report will also be included in the detailed project After Action Report that will be prepared and submitted by CH2M HILL following field work completion.

Please call me at (904) 777-4812 ext. 233 or e-mail me at michael.halil@ch2m.com if you have any questions or comments regarding this submittal.

Respectfully,

CH2M HILL CONSTRUCTORS, INC.

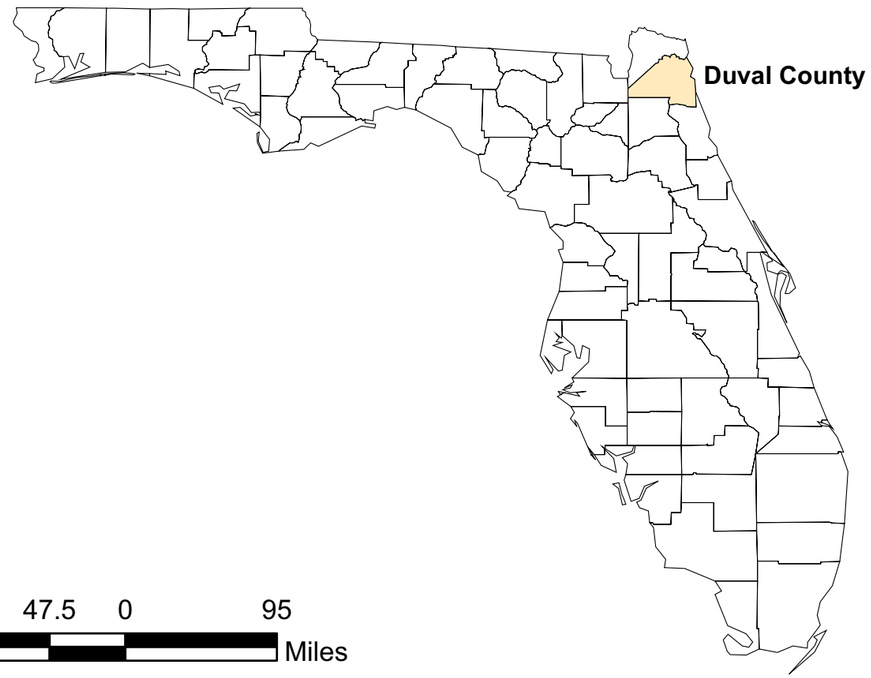
Michael D. Halil, P.E.
Project Manager

Enclosures

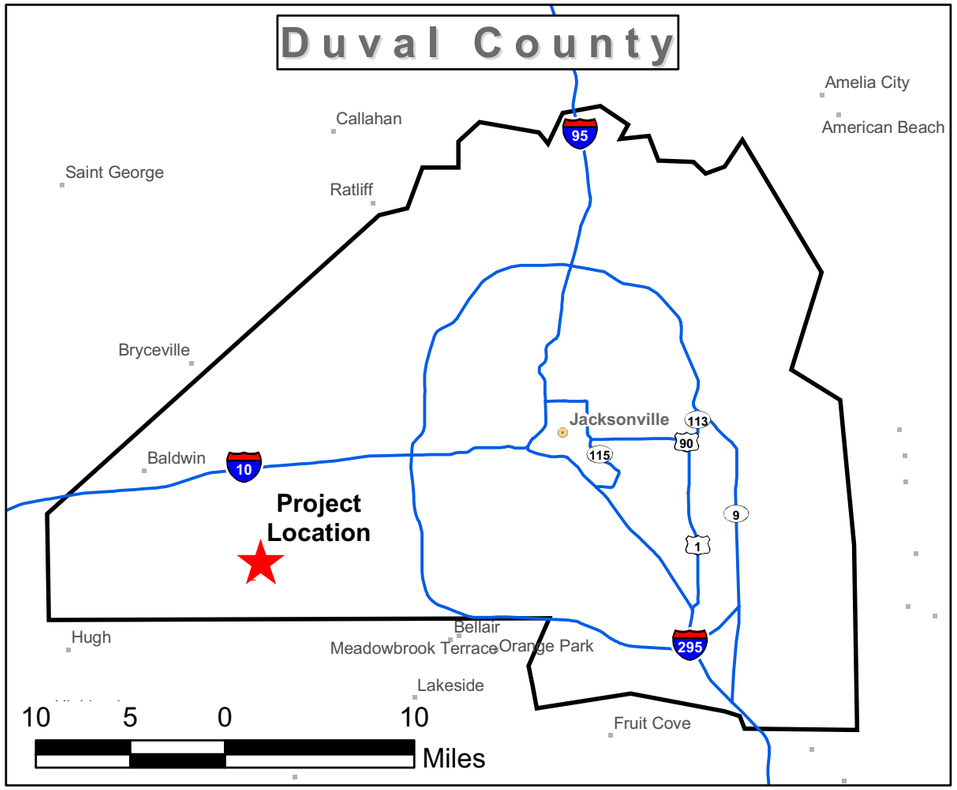
cc: Richard Nichols/FLARNG
David Grabka/FDEP
Doyle Brittain/EPA
Steve Ball/EPA
Mark Speranza/TtNUS
Project File No. 321878

Figures

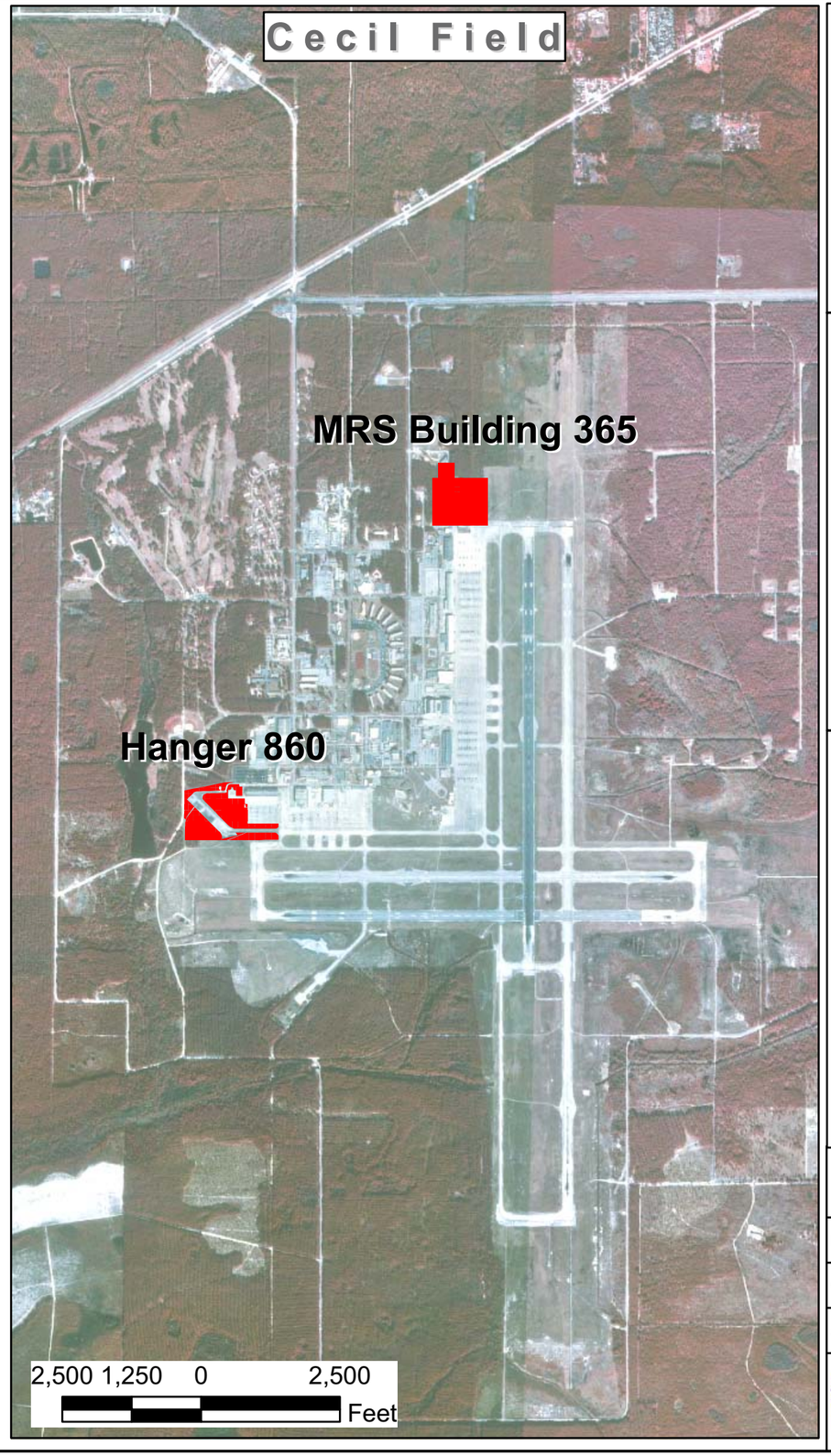
Florida



Duval County



Cecil Field



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Scale Varies

Data is projected to the State Plane Coordinate System: Florida East Zone, NAD83, Units in Feet.

CH2M Hill Constructors, Inc.
For
Former Naval Air Station
Cecil Field

Location Map

Contract No. N62467-01-D-0331
Task Order No. 0029

Jacksonville, FL

Legend

City Type

- National Capital
- State Capital; State Capital County Seat
- County Seat
- Other
- Interstate Highways
- Project Location
- County Boundary

USA Environmental, Inc.	CH2M Hill	
Drawn By: JAL	Scale: Varies	Rev:
Checked By:	Date Drawn: 4-08-2005	
Submitted By:	Revision Date: 7-17-2006	

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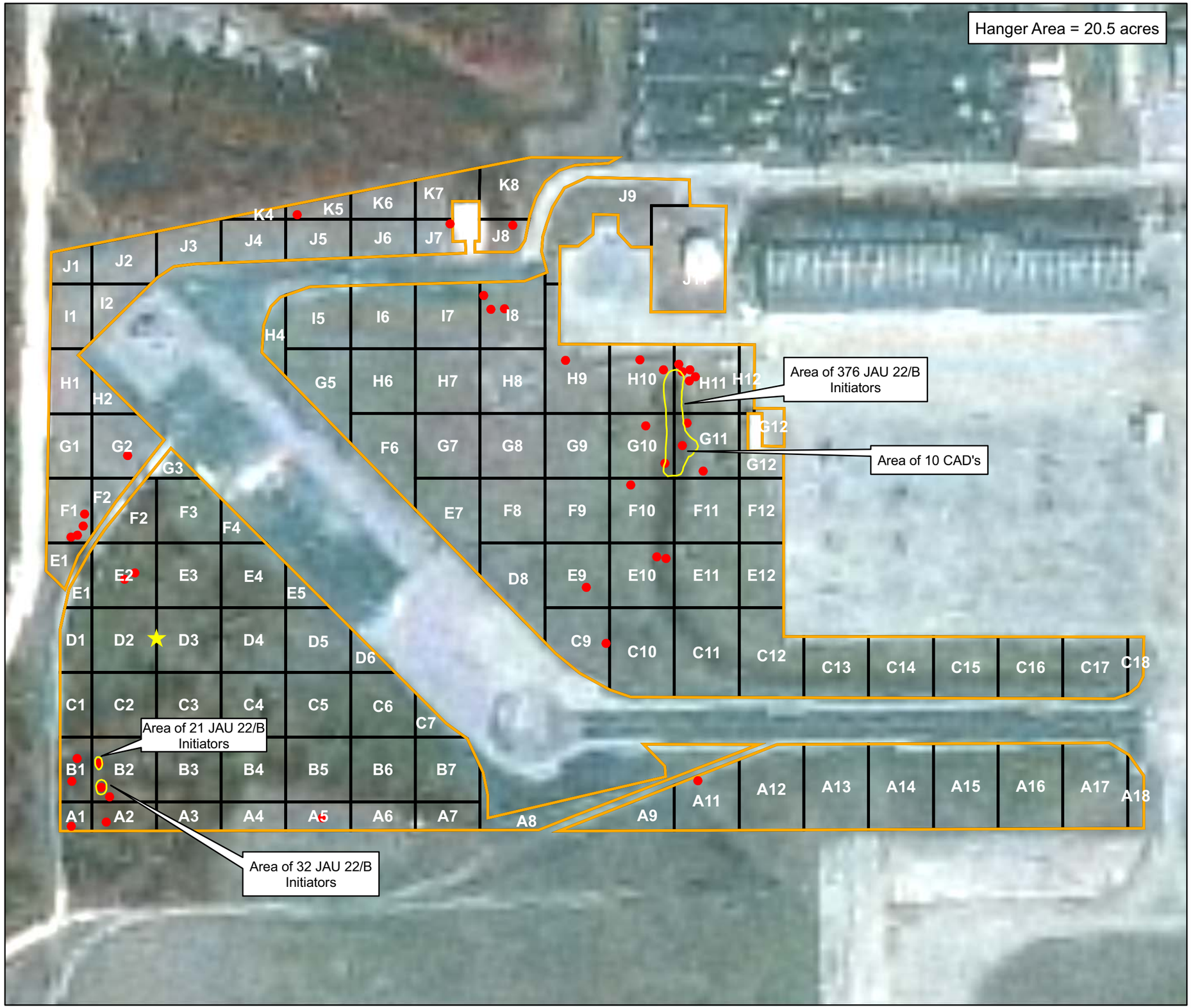

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150 75 0 150

Feet

Data is projected to the State Plane Coordinate System: Florida East Zone, NAD83, Units in Feet.

CH2M Hill Constructors, Inc.
For
Former Naval Air Station
Cecil Field

MRS Hanger 860 Intrusive Results

Contract No. N62467-01-D-0331
Task Order No. 0029

Jacksonville, FL

Legend

- MEC Locations
- Demo Holes/Trenches
- Area of Initiators
- Hanger Area Boundary
- Hanger Area Grids

USA Environmental, Inc.

CH2MHILL

Drawn By:	JAL	Scale: 1" = 150'	Rev:
Checked By:		Date Drawn: 07-17-2006	
Submitted By:	MS	Revision Date:	

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Hanger Area Intrusive Results.mxd

Tables

TABLE 1
Summary of Recovered MEC

Grid ID No.	MEC Type	Condition Found	No. of Anomalies	MEC Quantity	MEC Depth to Tip	Filler	Date Found	Date Disposed
A1	MK19 Impulse Cartridge	Unfired	47	6	< 12"	Low Explosive	6/14/06	6/28/06
A2	JAU-22/B CAI	Unfired	63	1	< 12"	NOSOL Propellant	6/14/06	6/28/06
A5	20-mm Projectile	Unfired	29	1	< 12"	High Explosive	6/15/06	6/28/06
A11	MK 23 Practice Bomb	Unfired	12	1	< 12"	Practice	6/21/06	6/28/06
B1	JAU-22/B CAI	Unfired	60	1	< 12"	NOSOL Propellant	6/14/06	6/28/06
	MK 2 Impulse Cartridge	Unfired		2	< 12"	Low Explosive	6/14/06	6/28/06
B2	JAU-22/B CAI	Unfired	40	54	< 12"	NOSOL Propellant	6/15/06	6/28/06
C9	AN M 31 Signal Cartridge	Unfired	128	1	< 12"	Low Explosive	6/19/06	6/28/06
E2	20-mm Projectile	Unfired	31	1	< 12"	High Explosive	6/14/06	6/28/06
	JAU-22/B CAI	Unfired		1	< 12"	NOSOL Propellant	6/14/06	6/28/06
E9	AN M 31 Signal Cartridge	Unfired	132	2	< 12"	Low Explosive	6/19/06	6/28/06
E10	JAU-22/B CAI	Unfired	25	2	< 12"	NOSOL Propellant	6/19/06	6/28/06
F1	JAU-22/B CAI	Unfired	93	2	< 12"	NOSOL Propellant	6/16/06	6/28/06
	MK 23 Practice Bomb	Unfired		2	< 12"	Practice	6/16/06	6/28/06
F10	JAU-22/B CAI	Unfired	53	1	< 12"	NOSOL Propellant	6/20/06	6/28/06
G2	20-mm Projectile	Unfired	11	1	< 12"	High Explosive	6/16/06	6/28/06
G10	JAU-22/B CAI	Unfired	189	70	12" - 36"	NOSOL Propellant	6/2/06	6/28/06
G11	JAU-22/B CAI	Unfired	280	147	12" - 36"	NOSOL Propellant	6/2/06	6/28/06
	MK2 Impulse Cartridge	Unfired		10	12" - 36"	Low Explosive	6/2/06	6/28/06
H9	20-mm Projectile	Unfired	40	1	< 12"	High Explosive	6/19/06	6/28/06
H10	JAU-22/B CAI	Unfired	172	89	12" - 36"	NOSOL Propellant	6/2/06	6/28/06
H11	JAU-22/B CAI	Unfired	142	80	12" - 36"	NOSOL Propellant	6/21/06	6/28/06
I8	20-mm Projectile	Unfired	198	2	< 12"	High Explosive	6/7/06	6/28/06
	JAU-22/B CAI	Unfired		1	< 12"	NOSOL Propellant	6/7/06	6/28/06

TABLE 1
Summary of Recovered MEC

Grid ID No.	MEC Type	Condition Found	No. of Anomalies	MEC Quantity	MEC Depth to Tip	Filler	Date Found	Date Disposed
J7	JAU-22/B CAI	Unfired	32	1	< 12"	NOSOL Propellant	6/21/06	6/28/06
J8	JAU-22/B CAI	Unfired	35	1	< 12"	NOSOL Propellant	6/21/06	6/28/06
K5	20-mm Projectile	Unfired	21	1	< 12"	High Explosive	6/19/06	6/28/06
Total Anomalies Investigated:				**1,833**				
Total MEC Found:				**482**				

TABLE 2
Summary of Recovered Munitions Debris and Cultural Debris

Grid ID No.	Debris Type	No. of Anomalies	Munitions Debris (lbs)	Scrap (lbs)	Date Found
A3	Misc. Metallic Scrap	32	0	52	6/14/06
A4	Misc. Metallic Scrap	27	0	6	6/15/06
A6	MK 23 Practice Bomb (Expended)	48	3	5	6/15/06
A7	Misc. Metallic Scrap	21	0	4	6/15/06
A8	Misc. Metallic Scrap	69	0	18	6/21/06
A9	Misc. Metallic Scrap	58	0	15	6/21/06
A12	Misc. Metallic Scrap	15	0	10	6/21/06
A13	Misc. Metallic Scrap	15	0	30	6/21/06
A14	Misc. Metallic Scrap	20	0	10	6/21/06
A15	Misc. Metallic Scrap	20	0	20	6/21/06
A16	Misc. Metallic Scrap	15	0	10	6/21/06
A17	Misc. Metallic Scrap	10	0	10	6/21/06
	Misc. Metallic Scrap	7	0	3	6/21/06
B3	Misc. Metallic Scrap	40	0	30	6/16/06
B4	Misc. Metallic Scrap	18	0	5	6/16/06
B5	Misc. Metallic Scrap	15	0	5	6/16/06
B6	Misc. Metallic Scrap	21	0	5	6/16/06
B7	Misc. Metallic Scrap	61	0	20	6/15/06
C1	Misc. Metallic Scrap	25	0	2	6/14/06
C2	Misc. Metallic Scrap	37	0	15	6/14/06
C3	Misc. Metallic Scrap	21	0	1	6/14/06
C4	Misc. Metallic Scrap	23	0	31	6/15/06
C5	Misc. Metallic Scrap	25	0	21	6/15/06
C6	Misc. Metallic Scrap	30	0	310	6/15/06
C7	Misc. Metallic Scrap	90	0	116	6/15/06
C10	Misc. Metallic Scrap	28	1	10	6/20/06
C11	Misc. Metallic Scrap	18	0	5	6/20/06
C12	Misc. Metallic Scrap	15	0	5	6/20/06
C13	Misc. Metallic Scrap	16	0	5	6/20/06
C14	Misc. Metallic Scrap	12	1	2	6/20/06
C15	Misc. Metallic Scrap	36	1	25	6/20/06
C16	Misc. Metallic Scrap	90	0	20	6/21/06

TABLE 2
Summary of Recovered Munitions Debris and Cultural Debris

Grid ID No.	Debris Type	No. of Anomalies	Munitions Debris (lbs)	Scrap (lbs)	Date Found
C17	Misc. Metallic Scrap	85	0	5	6/21/06
C18	Misc. Metallic Scrap	30	0	5	6/21/06
D1	Misc. Metallic Scrap	10	0	150	6/21/06
D2	Misc. Metallic Scrap	17	0	15	6/14/06
D3	Misc. Metallic Scrap	21	0	5	6/14/06
D4	Misc. Metallic Scrap	43	0	20	6/15/06
D5	Misc. Metallic Scrap	48	0	60	6/16/06
D6	Misc. Metallic Scrap	97	0	20	6/16/06
D9	Misc. Metallic Scrap	83	1	70	6/8/06
E1	Misc. Metallic Scrap	13	0	21	6/15/06
E3	Misc. Metallic Scrap	19	0	25	6/16/06
E4	Misc. Metallic Scrap	43	0	35	6/15/06
E5	Misc. Metallic Scrap	22	0	8	6/16/06
E7	Misc. Metallic Scrap	153	1	30	6/8/06
E11	Misc. Metallic Scrap	48	0	20	6/20/06
E12	Misc. Metallic Scrap	47	0	10	6/20/06
F2	Misc. Metallic Scrap	9	0	15	6/16/06
F3	Misc. Metallic Scrap	71	0	20	6/15/06
F4	Misc. Metallic Scrap	52	0	48	6/15/06
F6	Misc. Metallic Scrap	131	0	20	6/14/06
F8	Misc. Metallic Scrap	140	11	35	6/8/06
F9	Misc. Metallic Scrap	68	0	35	6/19/06
F11	Misc. Metallic Scrap	17	0	175	6/21/06
F12	Misc. Metallic Scrap	62	0	20	6/21/06
G1	Misc. Metallic Scrap	87	0	100	6/16/06
G3	Misc. Metallic Scrap	18	0	20	6/15/06
G5	Misc. Metallic Scrap	53	0	5	6/14/06
G7	Misc. Metallic Scrap	53	1	35	6/12/06
G8	Misc. Metallic Scrap	183	21	90	6/7/06
G9	Misc. Metallic Scrap	37	0	25	6/19/06
G12	Misc. Metallic Scrap	73	0	50	6/20/06
H1	Misc. Metallic Scrap	23	0	5	6/16/06

TABLE 2
Summary of Recovered Munitions Debris and Cultural Debris

Grid ID No.	Debris Type	No. of Anomalies	Munitions Debris (lbs)	Scrap (lbs)	Date Found
H2	Misc. Metallic Scrap	5	0	5	6/16/06
H4	Misc. Metallic Scrap	6	0	2	6/12/06
H6	Misc. Metallic Scrap	38	0	300	6/12/06
H7	Misc. Metallic Scrap	93	1	700	6/12/06
H8	Misc. Metallic Scrap	177	1	50	6/6/06
H12	Misc. Metallic Scrap	25	0	5	6/21/06
I1	Misc. Metallic Scrap	36	0	10	6/16/06
I2	Misc. Metallic Scrap	20	0	5	6/16/06
I5	Misc. Metallic Scrap	67	3	25	6/12/06
I6	Misc. Metallic Scrap	123	0	1500	6/14/06
I7	Misc. Metallic Scrap	106	2	45	6/12/06
J1	Misc. Metallic Scrap	48	0	5	6/16/06
J2	Misc. Metallic Scrap	109	0	35	6/16/06
J3	Misc. Metallic Scrap	42	0	300	6/19/06
J4	Misc. Metallic Scrap	38	0	15	6/19/06
J5	Misc. Metallic Scrap	43	0	3	6/19/06
J6	Misc. Metallic Scrap	23	0	15	6/20/06
J9	Misc. Metallic Scrap	108	1	10	6/6/06
J11	Misc. Metallic Scrap	71	1	25	6/7/06
K4	Misc. Metallic Scrap	46	1	15	6/19/06
K6	Misc. Metallic Scrap	40	0	10	6/20/06
K7	Misc. Metallic Scrap	52	0	5	6/21/06
K8	Misc. Metallic Scrap	30	0	5	6/21/06
Total:		**4,180**	**51 lbs**	**5,113 lbs**	

TABLE 4

MEC Impact to Soil Determination Analytical Result Summary Table

Parameter and Analysis	Location		MEC1	MEC2	MEC3
	Sample ID		29MEC1S060627	29MEC2S060627	29MEC3S060627
	Sample Date		6/27/2006	6/27/2006	6/27/2006
	Units in mg/kg				
	SCTL[1RES]	LGW			
EPA SW-846 Method 6010B					
Arsenic	2.1	29	1.55 U	0.288 J	0.302 U
Barium	120**	1600	2.85	5.84	1.59
Cadmium	82	7.5	0.697	2.53	0.38
Chromium, total	210	38	1.62	8.58	1.23
Lead	400	***	7.76	13.7	1.36
Selenium	440	5.2	1.3	0.277 J	0.52
Silver	410	17	0.31 U	0.194 B	0.302 U
EPA SW-846 Method 7471A					
Mercury	3	2.1	0.0125 J	0.0312	0.00229 J
EPA SW-846 Method 8330					
1,3,5-trinitrobenzene	2000	1	1.3 U	1.8 U	1.3 U
1,3-dinitrobenzene	5.8	0.004	1.3 U	1.8 U	1.3 U
2,4,6-trinitrotoluene	28	0.007	1.3 U	1.8 U	1.3 U
2,4-dinitrotoluene	1.2	0.0004	**1.3 U**	**1.8 U**	**1.3 U**
2,6-dinitrotoluene	1.2	0.0004	**1.3 U**	**1.8 U**	**1.3 U**
2-amino-4,6-dinitrotoluene	NA	NA	1.3 U	1.8 U	1.3 U
2-nitrotoluene	400	1	1.3 U	1.8 U	1.3 U
3-nitrotoluene	640	1.5	1.3 U	1.8 U	1.3 U
4-amino-2,6-dinitrotoluene	NA	NA	1.3 U	1.8 U	1.3 U
4-nitrotoluene	750	1	1.3 U	1.8 U	1.3 U
hexahydro-1,3,5-trinitro-1,3,5,7-tetrazocine (RDX)	7.7	0.002	1.3 U	1.8 U	1.3 U
nitrobenzene	18	0.03	1.3 U	1.8 U	1.3 U
octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	NA	NA	1.3 U	1.8 U	1.3 U
tetryl	790	1.5	0.27 U	0.36 U	0.27 U

Notes:

All concentrations reported in milligrams per kilogram (mg/kg).

SCTL[1RES] - Direct Exposure-Residential Soil Cleanup Target Level (SCTL)

LGW - Leachability based on Groundwater Criteria SCTL

*** Leachability values may be derived using the SPLP Test to calculate site-specific SCTLs or may be determined using TCLP in the event oily wastes are present.

U - The analyte was analyzed for, but not detected

J - Result is estimated

Values bolded are parameters not detected but reporting limits are above the SCTL

Values shaded are concentrations that exceed LGW SCTL

TABLE 5
Pre- and Post-MEC Detonation Site Impact Determination
Analytical Result Summary Table

Parameter and Analysis			Location	PRD1	PRD2	PRD3	PRD4	PRD5	PST1	PST2	PST02AS	PST3	PST5
			Sample ID	29PRD1S060627	29PRD2S060627	29PRD3S060627	29PRD4S060627	29PRD5S060627	29PST01S060629	29PST02S060629	29PST02AS060810	29PST03S060629	29PST05S060629
			Sample Date	6/27/2006	6/27/2006	6/27/2006	6/27/2006	6/27/2006	6/29/2006	6/29/2006	8/10/2006	6/29/2006	6/29/2006
			Units in mg/kg										
	SCTL[1RES]	LGW											
EPA SW-846 Method 6010B													
Arsenic	2.1	29	0.344 U	0.147 J	0.197 J	0.35 U	0.301 U	0.378	0.44 U	NA	0.236 J	0.227 J	
Barium	120**	1600	1.72	6.66	1.25	1.43	1.06	4.88	2.04	NA	2.27	2.81	
Cadmium	82	7.5	0.344 U	0.31 U	0.292 U	0.35 U	0.301 U	0.296 U	0.268 J	NA	0.399 U	0.314 U	
Chromium, total	210	38	1.18	3.88	0.914	0.88	0.873	3.23	1.97	NA	1.24	1.41	
Lead	400	***	0.62	2.34	0.72	0.892	0.574	2.19	0.826	NA	3.49	1.78	
Selenium	440	5.2	0.344 U	0.31 U	0.292 U	0.35 U	0.23 J	0.296 U	0.44 U	NA	0.399 U	0.314 U	
Silver	410	17	0.344 U	0.31 U	0.292 U	0.35 U	0.301 U	0.296 U	0.44 U	NA	0.399 U	0.314 U	
EPA SW-846 Method 7471A													
Mercury	3	2.1	0.00436 J	0.00866 J	0.00505 J	0.0036 J	0.00479 J	0.00806 J	0.00843 J	NA	0.00887 J	0.0321	
EPA SW-846 Method 8330													
1,3,5-trinitrobenzene	2000	1	1.3 U	1.4 U	1.3 U	1.7 U	1.3 U	1.4 U	1.6 U	1.5 U	1.5 U	1.3 U	
1,3-dinitrobenzene	5.8	0.004	1.3 U	1.4 U	1.3 U	1.7 U	1.3 U	1.4 U	1.6 U	1.5 U	1.5 U	1.3 U	
2,4,6-trinitrotoluene	28	0.007	1.3 U	1.4 U	1.3 U	1.7 U	1.3 U	1.4 U	1.6 U	1.5 U	1.5 U	1.3 U	
2,4-dinitrotoluene	1.2	0.0004	**1.3 U**	**1.4 U**	**1.3 U**	**1.7 U**	**1.3 U**	**1.4 U**	**1.6 U**	**1.5 U**	**1.5 U**	**1.3 U**	
2,6-dinitrotoluene	1.2	0.0004	**1.3 U**	**1.4 U**	**1.3 U**	**1.7 U**	**1.3 U**	**1.4 U**	**1.6 U**	**1.5 U**	**1.5 U**	**1.3 U**	
2-amino-4,6-dinitrotoluene	NA	NA	1.3 U	1.4 U	1.3 U	1.7 U	1.3 U	1.4 U	1.6 U	1.5 U	1.5 U	1.3 U	
2-nitrotoluene	400	1	1.3 U	1.4 U	1.3 U	1.7 U	1.3 U	1.4 U	1.6 U	1.5 U	1.5 U	1.3 U	
3-nitrotoluene	640	1.5	1.3 U	1.4 U	1.3 U	1.7 U	1.3 U	1.4 U	1.6 U	1.5 U	1.5 U	1.3 U	
4-amino-2,6-dinitrotoluene	NA	NA	1.3 U	1.4 U	1.3 U	1.7 U	1.3 U	1.4 U	1.6 U	1.5 U	1.5 U	1.3 U	
4-nitrotoluene	750	1	1.3 U	1.4 U	1.3 U	1.7 U	1.3 U	1.4 U	1.6 U	1.5 U	1.5 U	1.3 U	
hexahydro-1,3,5-trinitro-1,3,5,7-tetrazocine (RDX)	7.7	0.002	1.3 U	1.4 U	1.3 U	1.7 U	0.36 J	1.4 U	3.6	1.5 U	1.5 U	1.3 U	
nitrobenzene	18	0.03	1.3 U	1.4 U	1.3 U	1.7 U	1.3 U	1.4 U	1.6 U	1.5 U	1.5 U	1.3 U	
octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	NA	NA	1.3 U	1.4 U	1.3 U	1.7 U	1.3 U	1.4 U	1.6 U	1.5 U	1.5 U	1.3 U	
tetryl	790	1.5	0.27 U	0.28 U	0.26 U	0.33 U	0.26 U	0.28 U	0.31 U	0.3 U	0.3 U	0.26 U	

Notes:
All concentrations reported in milligrams per kilogram (mg/kg).
SCTL[1RES] - Direct Exposure-Residential Soil Cleanup Target Level (SCTL)
LGW - Leachability based on Groundwater Criteria SCTL
*** Leachability values may be derived using the SPLP Test to calculate site-specific SCTLs or may be determined using TCLP in the event oily wastes are present.
NA - Parameter Not Analyzed
U - The analyte was analyzed for, but not detected
J - Result is estimated
Values bolded are parameters not detected but reporting limits are above the SCTL
Values shaded are concentrations that exceed LGW SCTL

TABLE 6
MEC Detonation-impacted Soil Disposal Characterization
Analytical Result Summary Table

Parameter and Analysis	Location	29WC2S0
	SampleID	29WC2S060629
	Sample Date	6/29/2006
	Units	
EPA SW-846 Method 1010		
Flash Point	^{O}F	**160**
EPA SW-846 Method 9045		
pH	pH	**5.98**
EPA SW-846 Method 1311/6010B (TCLP)		
Arsenic	MG/L	0.05 U
Barium	MG/L	**0.0657 J**
Cadmium	MG/L	**0.115**
Chromium, total	MG/L	0.5 U
Lead	MG/L	0.5 U
Selenium	MG/L	0.1 U
Silver	MG/L	0.2 U
EPA SW-846 Method 1311/7470A (TCLP)		
Mercury	MG/L	0.002 U
EPA SW-846 Method 1311/8081 (TCLP)		
Chlordane	UG/L	1.1 U
Endrin	UG/L	0.11 U
Gamma BHC (Lindane)	UG/L	0.11 U
Heptachlor	UG/L	0.11 U
Heptachlor epoxide	UG/L	0.11 U
Methoxychlor	UG/L	0.11 U
Toxaphene	UG/L	1.1 U
EPA SW-846 Method 8082		
Aroclor-1016	UG/KG	36 U
Aroclor-1221	UG/KG	18 U
Aroclor-1232	UG/KG	36 U
Aroclor-1242	UG/KG	18 U
Aroclor-1248	UG/KG	36 U
Aroclor-1254	UG/KG	36 U
Aroclor-1260	UG/KG	36 U
EPA SW-846 Method 1311/8151 (TCLP)		
2,4-D (Dichlorophenoxyacetic Acid)	UG/L	0.1 U
Silvex (2,4,5-TP)	UG/L	0.1 U
EPA SW-846 Method 1311/8260B (TCLP)		
1,1-Dichloroethene	UG/L	10 U
1,2-Dichloroethane	UG/L	10 U
Benzene	UG/L	10 U
Carbon tetrachloride	UG/L	10 U
Chlorobenzene	UG/L	10 U
Chloroform	UG/L	10 U
Methyl ethyl ketone (2-butanone)	UG/L	**199 B**
Tetrachloroethene (PCE)	UG/L	10 U
Trichloroethene (TCE)	UG/L	10 U
Vinyl chloride	UG/L	10 U
EPA SW-846 Method 1311/8270C (TCLP)		
1,4-Dichlorobenzene	UG/L	8.7 U
2,4,5-Trichlorophenol	UG/L	8.7 U
2,4,6-Trichlorophenol	UG/L	8.7 U
2,4-Dinitrotoluene	UG/L	8.7 U
2-Methylphenol (o-Cresol)	UG/L	8.7 U
4-Methylphenol (p-Cresol)	UG/L	21.7 U
Hexachlorobenzene	UG/L	8.7 U
Hexachlorobutadiene	UG/L	8.7 U
Hexachloroethane	UG/L	8.7 U
Nitrobenzene	UG/L	8.7 U
Pentachlorophenol	UG/L	43.5 UJ

TABLE 6
MEC Detonation-impacted Soil Disposal Characterization
Analytical Result Summary Table

Parameter and Analysis	Location	29WC2S0
	SampleID	29WC2S060629
	Sample Date	6/29/2006
	Units	
Pyridine	UG/L	8.7 U
EPA SW-846 Method 8330		
1,3,5-trinitrobenzene	MG/KG	1.5 U
1,3-dinitrobenzene	MG/KG	1.5 U
2,4,6-trinitrotoluene	MG/KG	1.5 U
2,4-dinitrotoluene	MG/KG	1.5 U
2,6-dinitrotoluene	MG/KG	1.5 U
2-amino-4,6-dinitrotoluene	MG/KG	1.5 U
2-nitrotoluene	MG/KG	1.5 U
3-nitrotoluene	MG/KG	1.5 U
4-amino-2,6-dinitrotoluene	MG/KG	1.5 U
4-nitrotoluene	MG/KG	1.5 U
hexahydro-1,3,5-trinitro-1,3,5,7-tetrazocine (RDX)	MG/KG	1.5 U
nitrobenzene	MG/KG	1.5 U
octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	MG/KG	1.5 U
tetryl	MG/KG	0.3 U
EPA SW-846 Method 6010B[1]		
Arsenic	MG/KG	**0.285 J**
Barium	MG/KG	**2.08**
Cadmium	MG/KG	**2.92**
Chromium, total	MG/KG	**7.11**
Lead	MG/KG	**1.68**
Selenium	MG/KG	0.34 U
Silver	MG/KG	0.34 U
EPA SW-846 Method 7471A[1]		
Mercury	MG/KG	**0.00964 J**

Notes:
Values bold and shaded are detections
U - The analyte was analyzed for, but not detected.
J - estimated value
B - The analyte was detected in the associated method and/or calibration blank.
UJ - Value non-detected estimated.
[1] Analytical results are preliminary.

Photos

B.1. SITE PHOTOGRAPHS OF THE MRS HANGER 860

B.1.1.1. 20 mm Projectile

Note: A total of 7 found and disposed of by detonation

B.1.1.2. MK 23 Practice Bomb

Note: A total of 3 found and disposed of by detonation

B.1.1.3. JAU-22/B Cartridge Actuated Initiator

Note: 451 found (majority in the Drainage Ditch) and disposed of by detonation using Flex Linear Shape Charge.

B.1.1.4. MK 2 Impulse Cartridge

B.1.1.5. MK 19 Mod 0 Impulse Cartridge

B.1.1.6. AN M31 Signal Cartridge

B.1.1.7. Dirt Mound Areas

Note: One of the Dirt Mounds left overgrown with native vegetation. Dirt Mounds were moved and cleared of any MEC/MPPEH.

B.1.1.8. Drainage Ditch Area - North

Note: Drainage Ditch looking north - Vegetation cleared and standing water removed. Majority of the JAU-22/Bs were found here.

B.1.1.9. Drainage Ditch Area – South

Note: Drainage Ditch looking south. Condition restored after MEC Clearance. Small sandbag dam installed.

B.1.1.10. Drainage Ditch Area – Culvert

Note: Standing Water Area after MEC Clearance. Small sandbag dam installed to help collect any items from inside the culvert.

B.1.1.11. Open Detonation (Demo) Area

Note: Demolition Area located between Grids D2 and D3, South-West of the MRS Hanger 860

B.1.1.12. Demolition of JAU-22/B CAI – Photo No. 1

Note: JAU-22/B CAIs were placed side-by-side on a plywood board inside a trench with sand bag on each for support.

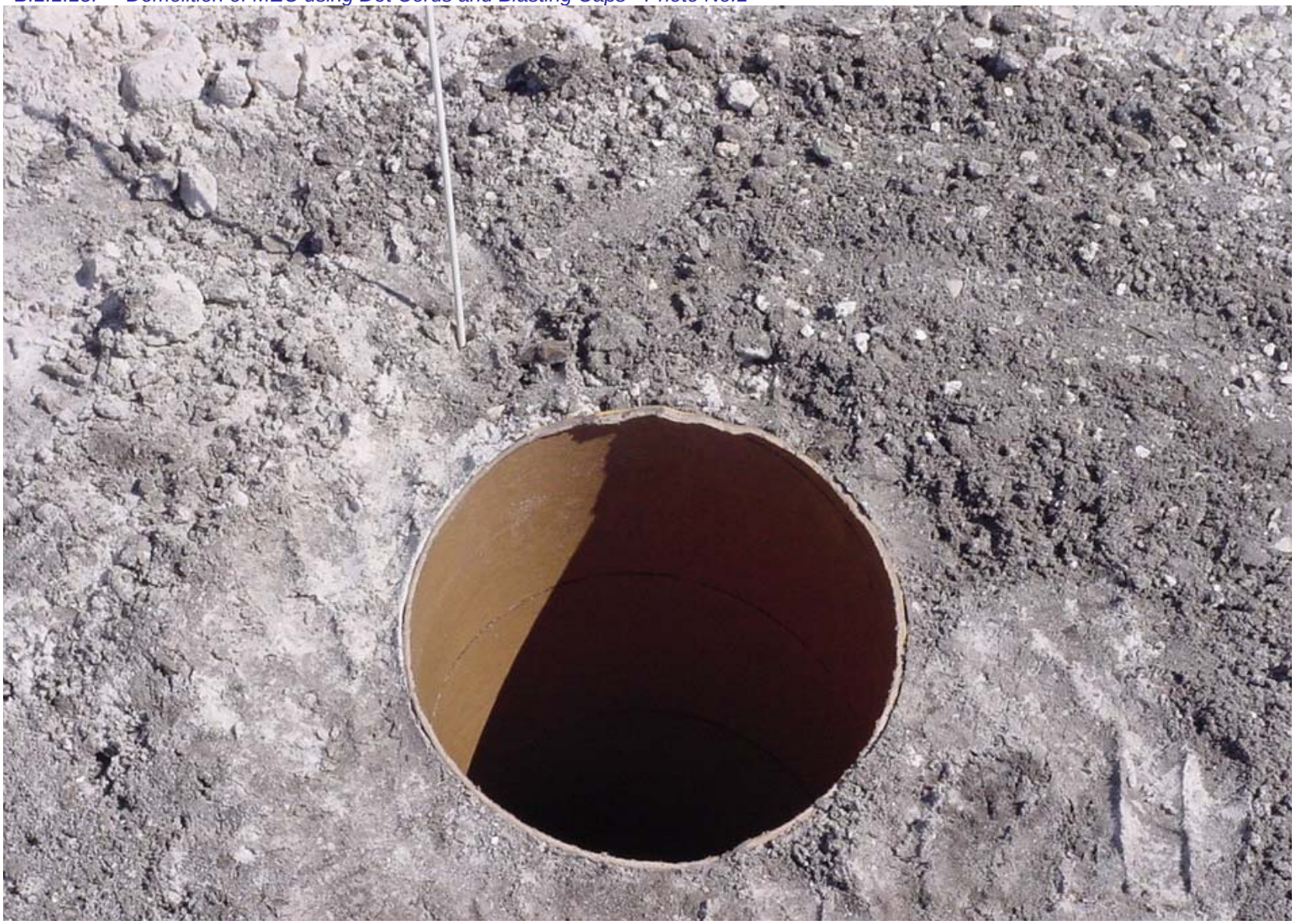
B.1.1.13. Demolition of JAU-22/B CAI – Photo No.2

Note: Flex Linear Shape Charge piece were connected and placed on the JAU-22/B CAIs over the Cap/Ignition Assembly.

B.1.1.14. Demolition of JAU-22/B CAI – Photo No.3

Note: Sand bags were placed on top for support to keep the Flex Shape Charge in position during detonation.

B.1.1.15. Demolition of MEC using Det Cords and Blasting Caps - Photo No.1



Note: Concrete form tube was used for MEC demolition shot placement.

B.1.1.16. Demolition of MEC using Det Cords and Blasting Caps - Photo No.2

Note: Sand bags were stacked over the MEC and donor explosives for protective measures during detonation.

B.1.1.17. Earth Covered Magazine at MRS Building 365

Note: All certified munitions debris for the NAS Cecil Field projects are locked inside this earth covered magazine.

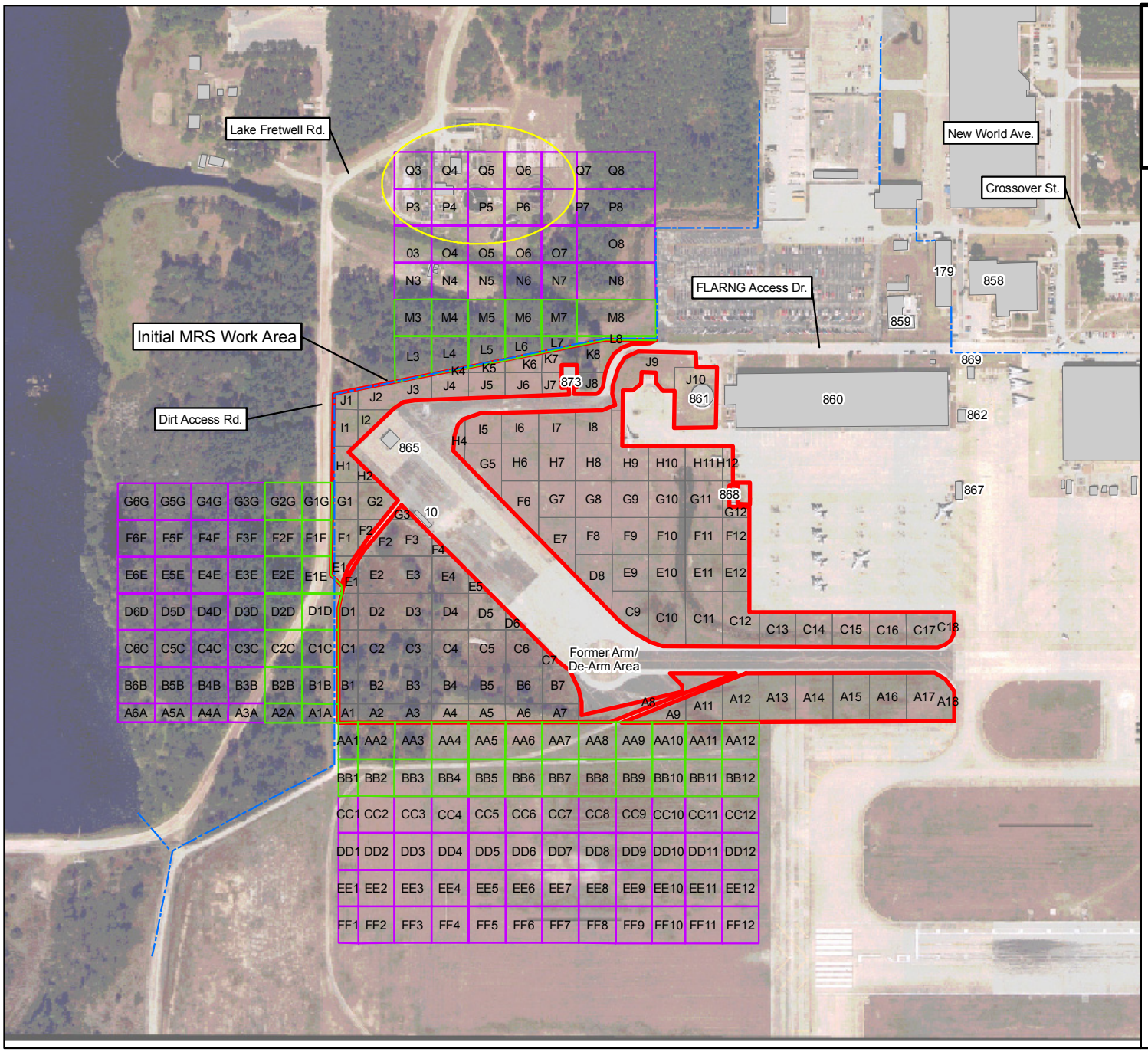


FIGURE 1-1
VICINITY MAP

Legend

- Initial MRS Work Area

Structures

- DEMOLITION
- PERMANENT
- Potential Expansion Area
- Hanger_Area_Grids
- JAA and FLARNG Fence Line
- Expansion No. 01
- Former Water Treatment Plant: Uninhabited; Closed and Secured by the Jacksonville Electric Authority

Building Information:

10: Removed

860: Inhabited FLARNG aircraft maintenance hanger. West end has masonry block and brick wall with a flat built-up roof system and has no openings in the direction (west) of the MRS. Openings to the south (hanger/personnel access doors) and north (personnel access) can be restricted to prevent personnel from entering the EZ.

861: Uninhabited; Concrete Fire Protection Water Reservoir for Hanger 860

865: Uninhabited; Cinderblock Magazine utilized by USCG and FLARNG for storage of small arms, pyrotechnics, flammable/nonflammable gases, oxygen, and miscellaneous nonhazardous materials.

867: Removed

868: Removed

873: Uninhabited; Used by FLARNG for storage of nonhazardous aircraft parts.

N
W E
S

0 100 200 400
Feet

\\volunteer\public\cecil_field\mxd\Initial MRS Work Area\Fig1-1_Vicinity_Map.mxd