



January 25, 2008

Ms. Cynthia A. Ries
U.S. Army Corps of Engineers
Louisville District
Environmental Engineering Branch
600 Martin Luther King Pl.
P.O. Box 59
Louisville, KY 40201-0059

Re: Draft Letter Report Work Plan for Pre-Slab Removal Tasks
Contract No.: W912QR-04-D-0025
Delivery Order No.: 0006

Dear Ms. Ries:

URS Group, Inc. has been contracted by the United States Army Corps of Engineers (USACE) to sample soils below floor slabs at Load Lines 2, 3, and 4 and to excavate and transport contaminated soils to Load Line (LL) 4 (Buildings G-1, G-1A, and G-3) at the Ravenna Army Ammunition Plant (RVAAP) under our Multiple Award Remediation Contract (MARC), Delivery Order 0006.

As part of the Scope of Work (SOW) for Task Order 0006, a Work Plan to address pre-floor slab removal field screening testing is required (Task 2A Letter work plan to address the tasks sampling activities from Table 1 and the existing soil stockpiles at LL 4). Discussions with RVAAP stakeholders have indicated that a letter report Work Plan addressing Task 2C (completion of sampling associated with Table 1 at open slab areas in LL 2, 3, and 4), Task 2D (evaluation of the sampling associated with Table 1, Task 2C) and Task 2E (characterization of six piles currently staged at Load Line 4) is sufficient to commence the work to be done in advance of the slab removal.

A detailed Work Plan addressing all SOW tasks will be prepared during review and comment of this letter work plan for approval before slab removal is undertaken by others. This plan is a supplement to the Revised 2001 Facility-Wide Sampling and Analysis Plan (FWSAP) for the Ravenna Army Ammunition Plant (RVAAP), Ravenna, Ohio (SAIC, 2001a). The FWSAP provides the base documentation (i.e., technical and investigative protocols) for conducting a remedial investigation under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) at RVAAP.

The rationale for sample design is provided in Section 3.2.9 of the FWSAP. A more detailed description of the load line-specific sample design is included in the SOW issued for Delivery Order 0006 (USACE, 2007). The sample design provided in the SOW for each load line is based on historical information such as past usage and past investigations



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(especially at the Joliet Army Ammunition Plant). The purpose for collecting the soil samples is to provide sufficient data such that load line building earth fill removal actions can be efficiently planned and accomplished.

The remainder of this letter details the work and the methods for performing those SOW activities that can be accomplished prior to the slab removal at RVAAP.

INTRODUCTION:

RVAAP is located in northeastern Ohio within Portage and Trumbull Counties, approximately 1.6 km (1 mile) northwest of the city of Newton Falls and 4.8 km (3 miles) east-northeast of the city of Ravenna. The facility is a parcel of property approximately 17.7 kilometers (11 miles) long and 5.6 kilometers (3.5 miles) wide bounded by State Route 5, the Michael J. Kirwan Reservoir, and the CSX System Railroad on the south; Garret, McCormick, and Berry roads on the west; the Norfolk Southern Railroad on the north; and State Route 534 on the east. As of February 2006, a total of 20,403 acres of the former 21,683-acre RVAAP have been transferred to the United States Property and Fiscal Officer (USP&FO) for Ohio and subsequently licensed to the Ohio Army National Guard for use as a training site. Currently, RVAAP consists of 1,280 acres in several distinct parcels scattered throughout the confines of the Ravenna Training and Logistics Site (RTLS). RVAAP's remaining parcels of land are located completely within the RTLS. RTLS did not exist when RVAAP was operational, and the entire 21,683-acre parcel was a government-owned, contractor-operated industrial facility. The RVAAP IRP encompasses investigation and cleanup of past activities over the entire 21,683 acres of the former RVAAP and therefore references to the RVAAP in this document are considered to be inclusive of the historical extent of the RVAAP, which is inclusive of the combined acreages of the current RTLS and RVAAP, unless otherwise specifically stated.

The RVAAP was constructed in 1940 and 1941 for depot storage and ammunition assembly and loading. In 1950 the facility was placed on standby status until production activities were resumed in 1954 to 1957 and again in 1968 to 1972. Demilitarization activities continued until 1992. The only activities currently being carried out at RVAAP are environmental restoration, ordnance clearance, and demolition of discovered ordnance during those activities, as well as building decontamination and demolition.

The areas of concern for this work are Load Lines 2, 3, and 4. Industrial operations at these locations consisted primarily of melting and loading trinitrotoluene (TNT) and Composition B (TNT and hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)) into large caliber shells. Removal of the majority of the buildings, down to floor slabs, has been completed at these areas. A Contract Line Item has been exercised to MKM Engineers, Inc. to remove floor slabs and associated foundation walls to grade.

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Although limited remedial investigation soil samples directly below the floor slabs did not detect significant explosive contamination, the extent of residual contamination in the earth fill below floor slabs is not known. The work to be covered by URS' Delivery Order 0006 is to evaluate potential contamination below these floor slabs and to excavate and transport any contaminated earth fill materials above the chemical-specific cleanup goals presented in Table 6 of the SOW. Once the evaluation has been completed, the earth fill materials exceeding the SOW chemical cleanup criteria will be transported to buildings G-1, G-1A, and G-3 at Load Line 4 for storage until final disposition decisions are made.

A soil cover system is currently being evaluated for application to the earth fill surfaces after building slab removal. The sealer would provide adequate time to allow for coordination of the BRAC demolition contractor and URS to be in full compliance with the current regulatory site guidance from the Ohio EPA for exposure of building sub slab earth fill materials. The system will require stakeholder and regulatory approval prior to application. Additionally the "spray on" soil sealing system will require budget approval from the Army Environmental Command. If approved, the system would allow the BRAC demolition contractor to perform the demolition process unimpeded. This would also allow for adherence to the ESS documents by maintaining the maximum safe distance (MSD) arcs of 1,250 feet for either contractor.

DESCRIPTION OF ACTIVITIES:

The activities that will be undertaken within this letter report Work Plan include:

- Mobilization for field effort,
- Field screening sampling at two areas within Load Lines 2 and 3,
- Multi-increment sampling at six piles at Load Line 4,
- Evaluation of the results of the field sampling, and
- Evaluation of the results of multi-increment sampling.

Mobilization: Prior to field work commencing, all installation security requirements will be addressed, including notification to MKM regarding all personnel who will be on site.

A site-specific health and safety plan (HASP), in accordance with the Facility-Wide HASP (SAIC, 2001b) will be prepared and reviewed with sampling personnel. A fixed laboratory to analyze the multi-increment samples will be subcontracted prior to the field effort. The laboratory analyses will be in accordance with the Facility-Wide Quality Assurance Project Plan (SAIC, 2001a).

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Arrangements will be made to utilize a portion of Building 1036 or 1038 for analyzing the field screening samples. The temporary field screening laboratory will be equipped with materials to conduct the field screening operations on an as needed basis to accommodate the sampling schedule. The work areas will be covered with plastic to avoid contamination of testing process surface areas. The acetone used for the soil test extraction will be stored in a storage cabinet (suitable for storing flammable materials) when not in use. The expended acetone/soil mix will be stored in approved 5-gallon containers with containment in the testing area. The extraction mix will be consolidated into an approved 55-gallon waste fluid drum on an as needed basis. The drum and all containers will be appropriately labeled and staged for disposal at the conclusion of the field screening task.

Decontamination: A temporary decontamination area will be constructed to facilitate decontamination of the push probes and other associated equipment and personnel. The location and layout of the field decontamination area will be determined by the Technical Project Manager and the Site Safety and Health Officer. An additional decontamination area will be located in Building 1036 and will be used to decontaminate soil sampling equipment.

All sampling equipment will be decontaminated in accordance with the procedures outlined in Sections 4.4.2.8 and 4.3.8 of the FWSAP with the following exceptions:

- A 1% hydrochloric acid solution will be used rather than a 2% solution.
- Stainless steel sampling equipment will be dried immediately following decontamination using newly opened, un-dyed paper towels. Drying immediately after decontamination prevents corrosion of the equipment due to the acid.

Sampling Activities: Field screening sampling will be conducted at the following specific locations to evaluate the identified areas currently exposed due to partial slab removal:

- Load Line 2, Building DB-4, an area about 10 feet south and 15 feet west of the northeast corner of the building (area is about 10 feet in diameter).
- Load Line 3, Building EB-10, an area about 40 feet south of the north end, midway east and west (area is about 20 feet in diameter).

Sampling will be conducted in accordance with the Facility-Wide Sampling and Analysis Plan (SAIC, 2001a). Before any sampling is conducted, the areas will be observed and cleared by UXO personnel. No sampling will occur if any raw explosive, crystallized explosive, or obvious red colored soil is present. Two discrete surface samples at the top of the earth fill will be collected from the first area; three from the second. Similarly, five discrete samples at the same locations will be collected at a 1-foot depth. The field samples will be collected from the desired depth using a step probe. These samples will be placed in

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a new sealable plastic bag and transported to Building 1036 where EnSys soil test kits will be used to evaluate TNT and RDX concentrations. Analysis will be in strict accordance with the procedures provided by the manufacturer (EnSys) with the kits.

During the same field effort, the six piles located at Load Line 4 will be sampled. Sampling is being conducted for waste characterization purposes. If the analytical results are below clean-up goals then this material may be reused as fill at the load lines if approved. The locations of these piles are:

- At Building G-1, a pile at the northwest end of the building;
- At Building G-1A, a pile of soil and a pile of broken concrete at the northwest end of the building;
- At Building G-1A, two piles of soil at the southeast end of the building; and
- At Building G-3, one pile of soil at the east end of the building.

One, 30-increment, multi-increment sample will be collected at each of the six piles located at Buildings G-1, G-1A and G-3. Thirty random subsamples will be collected using a step probe. The subsamples will be placed in a plastic-lined bucket and combined to make a single sample. Every effort will be made to obtain the laboratory required volume for the sample preparation without excess. The entire single sample will be placed in a sealable plastic bag, secured, labeled, and delivered to the analytical laboratory. The analytical laboratory will dry, process, and analyze each sample for explosives, metals, semivolatile organics, polychlorinated biphenyls (PCBs), pesticides, and herbicides. A discrete sample will also be collected from each stockpile for volatile organic compound (VOC) analysis. The discrete location will be selected based upon field observations and any elevated readings noted with a photo ionization detector (PID) during a health and safety analysis of the breathing zone at each stockpile. Quality control samples will not be collected for this waste characterization. Analyses will be conducted in accordance with the Facility-Wide QAPP (SAIC, 2001a).

The field screening results will be transmitted to the USACE within 24 hours of the completion of the field effort. An internal Army draft report documenting the field screening effort will be submitted within 30 days of the completion of the field investigation. Draft and final reports will be submitted after USACE and stakeholder reviews.

The analytical results from the pile sampling will be received from the laboratory and reviewed for usability. Results will be compared to the chemical-specific cleanup goals provided in the SOW and to Region 9 Preliminary Remediation Goals (PRGs). The detected concentrations not on the chemical specific cleanup goals in the SOW will be compared to Region 9 PRGs assuming an industrial exposure scenario (USEPA, 2004). For PRGs based

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on a cancer endpoint, the PRG will be adjusted to reflect a 10^{-5} target risk level. Any exceedances of these goals will be immediately transmitted to the USACE. An internal Army draft report documenting the field effort and evaluation of the analytical data will be submitted within 30 days of the receipt of the analytical data from the fixed laboratory. Draft and final reports will be submitted after USACE and stakeholder reviews.

Sample Preparation and Shipping: Samples will be prepared, packaged, and shipped in accordance with Section 6.0 of the FWSAP. Exceptions to the FWSAP procedures include:

- No tape of any kind will be placed on the volatile sample containers; and
- All VOC sample containers will be placed in either foam bubble wrap or paper towels to reduce the potential for breakage during shipping.

Decontamination of equipment will be conducted in accordance with the procedure presented in Section 4.3.8 of the FWSAP.

Investigation Derived Waste (IDW): All IDW, including personal protective equipment, disposable sampling equipment, and decontamination fluids, will be segregated, handled, labeled, characterized, managed, and disposed in accordance with the federal, state, and local rules, regulations and laws and Section 7.0 of the FWSAP.

The IDW will be segregated by type of medium and will be containerized as follows:

- Personal protective equipment and disposable sampling equipment will be containerized in DOT-approved, 55-gallon steel drums and staged at the temporary waste accumulation area (Building 1036) pending sample analysis.
- Water used to decontaminate large and small equipment will be containerized in poly tank(s) or DOT-approved drums and staged at the temporary waste accumulation area pending sample and waste characterization analysis.

At the conclusion of all field activities for the load line sub slab characterization, the characterization results, classification, and disposition of the IDW will be documented. Characterization, transportation, and disposal of the IDW will comply with federal, state and local rules, laws and regulations, as well as the permit requirements for the receiving facility as applicable. In the event environmental sample data indicate that an IDW stream is potentially hazardous, a Toxicity Characteristic Leaching Procedure (TCLP) sample will be collected for additional characterization purposes. All shipments of IDW off site will be coordinated through the RVAAP Environmental Coordinator. Disposition will be based on the results of the laboratory analyses for the bulk quantity in accordance with all federal,

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state and local rules, laws and regulations. Labeling of all IDW containers will be in accordance with Section 7.2 of the FWSAP.

SPRAY-ON SOIL STABILIZATION TASK:

The spray-on soil stabilization task, if approved, will be conducted to stabilize the earth fill materials immediately below the building slabs after removal. Prior to application the spray materials will be analyzed as required to supplement the manufacturer data sheets. Additionally, the areas to be treated with the soil spray cover will be visually evaluated for areas of potential explosive impact prior to application. Identified areas will be handled as per the SOW (USACE, 2007). The visual inspection and documentation will include the following components:

- Visual inspection for potentially impacted (explosive compounds) earth fill materials. The inspection criteria will include both soil staining and explosive product. Any noted odors will also be noted in the inspection.
- Photo documentation of the area with particular emphasis on any areas with visual signs of potential explosive impact.
- Field demarcation of visually observed areas of potential impact with pin flags or grade stakes so that the area can be relocated after application of the spray cover.
- Field sketch of entire building footprint with potential impacted areas and photographic details.

REFERENCES

SAIC. 2001a. Facility-Wide Sampling and Analysis Plan for the Ravenna Army Ammunition Plant, Ravenna, OH. Prepared by SAIC for The US Army Corps of Engineers, Louisville District.

SAIC. 2001b. Facility-Wide Safety and Health Plan for the Ravenna Army Ammunition Plant, Ravenna, OH. Prepared by SAIC for The US Army Corps of Engineers, Louisville District. 2001.

USACE. 2007. US Army Corps of Engineers. Ravenna Army Ammunition Plant Scope of Work, Sampling of Soils Below Floor Slabs at LLs-2, 3, 4 and Excavation and Transportation of Contaminated Soils to Load Line 4, The US Army Corps of Engineers, Louisville District. 11 December 2007.

USEPA. 2004. Region 9 Preliminary Remediation Goals. October, 2004, with revisions 12/28/2004.



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Very truly yours,

URS Group, Inc.

A handwritten signature in cursive script that reads "Jo Ann Bartsch".

Jo Ann Bartsch
Project Manager

A handwritten signature in cursive script that reads "Stan Levenger".

Stan Levenger
Technical Project Manager

JAB/SL/mg

Enclosures

cc: file 13812319