US Army
Engineering & Support Center
Huntsville, AL

FINAL

Removal Report
SEAD-59 and 71
Time Critical Removal Action
Seneca Army Depot Activity
Romulus, NY

Contract No. GS-10F-0115K
Delivery Order No. DACA87-02-F-0137

ENSR Corporation
January 2003
Document Number 09090-029-320

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1.0 PROJECT DESCRIPTION

The United States Army Engineering & Support Center located in Huntsville, Alabama (hereafter referred to as the USACE), issued Delivery Order No. DACA87-02-F-0137 (the award document) on 1 August 2002 to ENSR Corporation (ENSR) for the Time Critical Removal Actions at SEAD 59 and SEAD 71 of the Seneca Army Depot Activity (SEDA), Romulus, New York. As awarded, the project called for the preparation of a Work Plan and several supporting documents, the excavation and disposal of soil and debris from both SEADs, and development of a Final Removal Report. The areas to be excavated are identified in Figure 1 and the estimated quantities presented in the award document were as follows:

SEAD 59, estimated quantities:

- Soil Excavation - 23,100 CY
- Off-site Disposal of Non-Hazardous Soil - 7,600 CY
- Off-site Disposal of Hazardous Debris - 35 CY

SEAD 71, estimated quantities:

- Soil Excavation - 875 CY
- Off-site Disposal of Non-Hazardous Soil - 875 CY
- Off-site Disposal of Hazardous Debris - 35 CY

An existing conditions map is attached as Figure 5

SEAD 59 was a fill area located west of building 135 at the SEDA. This SEAD is located on both sides of a dirt access road that extends from Administration Avenue to Building 311. It was a known fill area used for the past disposal of concrete, asphalt, metal, wood, chain link fencing, 55 gallon drums, and paint cans. Areas of petroleum hydrocarbon staining had also been documented in SEAD 59.

SEAD 71 was an alleged paint disposal area located between the two railroad tracks servicing buildings 114 and 127, approximately 200 feet west of 4th Avenue. It is rumored that paints and/or solvents were disposed of in pits at this SEAD. Debris identified in test pits dug at this site included construction debris, chain link fencing, sheet metal, asphalt, stone slabs, bricks, piping, railroad ties and one crushed twenty gallon drum.

Mobilization for the field work portion of the project began on 6 September 2002, as required by the contract documents. Excavation of soil began on 16 September 2002, with the excavated material being moved immediately to prepared staging areas. The soil stockpiles were subdivided into approximately 150 CY lots and the lots were sampled for characterization. Once an area had been excavated to the predetermined (Figure 1), and/or other acceptable limits, confirmation samples were collected from the walls and floor of the excavation. The laboratory analysis of the characterization and confirmation samples was completed on expedited turn around times.

The characterization and confirmation sample results were to be compared to the TAGM-derived cleanup goals provided by the United States Army Corps of Engineers (USACE) in the Request for Quotation (RFQ) to determine the final disposition of the stockpiled soil, and whether or not the limits of any given excavation needed to be advanced further to completely remove the contaminate source material. Stockpiled soil was to either be characterized as requiring off-site disposal, or as being suitable for use at the site as backfill.

As the excavation progressed, the cleanup goal (as provided in the RFQ) became a part of the decision process, not the sole criteria. The USACE gave direction on a "pile by pile" basis as to whether to use the soil as backfill, to ship it off site for disposal or to leave it stockpiled. The final quantities of soil managed by the project are presented in detail in Section 4.0 of this report.

2.0 PROJECT MANAGEMENT STRUCTURE

The organization chart attached as Figure 2 presents the project organization. The chart graphically represents the lines of authority and communications that the project staff followed. The roles and responsibilities of each key ENSR position in the structure are explained further below.

Mr. Rick Brannon served as the Project Manager. He was responsible for the overall performance of the project including project schedule, cost control, quality and contract/work order management Mr. Brannon maintained a leadership role to provide direction/advice on technical issues as well as contract and quality issues. He supported the Construction Manager in obtaining and maintaining the appropriate resources for the project. Mr. Brannon maintained open lines of communication with the stakeholders and ensured that all deliverables, communications and presentations were in accordance with the project specifications, the stakeholders' expectations and sound project management practices. He prepare the monthly reports (Appendix A) which were submitted to the USACE with each monthly progress invoice.

Mr. James Sprague served as the Project Engineer and Quality Control Systems Manager. Mr. Sprague attended the USACE's Construction Quality Management for Contractors course during the fieldwork portion of the project. He focused on providing engineering support to the project team with special attention to the construction team during fieldwork. He maintained a regular presence at the site, but was not at the site full time. During those times that Mr. Sprague was not at the project site the Site Superintendent had full Quality Control authority. Mr. Sprague was on site for all preparatory phase and initial phase quality inspections. Mr. Sprague was directly responsible for development of the project plans and reports, regulatory conformance and contract conformance as outlined in the Project Quality Control Plan. He delegated appropriate specific Quality Control responsibilities to project team task leaders. Mr. Sprague was responsible for preparing all Preparatory and Initial Phase Quality Inspection Reports. Copies of these reports are attached as Appendix B, and Appendix C, respectively.

Mr. Steve Kostage served as the Construction Manager and was responsible for the planning and execution of the fieldwork for this project. He maintained a regular presence at the site but in general was assigned to the project part-time. Mr. Kostage was the point of contact for all ENSR subcontractors and directly responsible for their quality of work. He directly supported the Site Safety Officer in the implementation and maintenance of the Site Health and Safety Plan. He attended the project meetings and presentations and supported the Project Manager in meeting the stakeholders' communication expectations. Mr. Kostage supported the Construction Superintendent with identifying, requesting and securing project resources.

Mr. Guy Simpson was ENSR's full-time representative at the project site as the Construction Superintendent. He was directly responsible for the day-to-day management and supervision of the project resources and subcontractors. Mr. Simpson was responsible for assisting the Construction Manager in planning the project work with a specific focus on short-term issues. He was the daily point of contact for the USACE's on-site representative. Mr. Simpson was also responsible for quality control issues as delegated by the Quality Control System Manager in the Project Quality Control Plan. Mr. Simpson prepared and distributed the required Daily Reports and Weekly Reports. Copies of these reports are attached as Appendix D, and Appendix E, respectively.

Ms. Terri Willfong coordinated the implementation and maintenance of the Health and Safety Plan. She interacted daily with all site personnel to oversee and communicate health and safety issues. Ms. Willfong conducted daily health and safety meetings with the site personnel and worked with the project team to maintain a safe work environment. She was also responsible for quality issues relating to site safety as outlined and delegated by the Quality Control Systems Manager in the Project Quality Control Plan.

Mr. Craig Stiles served as the Field Sampling Task Leader. He was responsible for coordinating the collection, documentation and shipment of all analytical samples collected. Mr. Stiles was delegated Quality Control responsibilities for these activities. These samples included waste characterization samples collected from the soil stockpiles, confirmation samples collected from the excavations, and wastewater samples collected from the wastewater storage drums. He coordinated the activities of the other sampling technicians assigned to the project and served as the sampling point of contact to the Stockpile Coordinator and the Construction Superintendent.

Mr. Rick Wellman served as the Data Quality Manager and was delegated Quality Control responsibility for this task. Mr. Wellman was responsible for the review of all analytical data received to ensure it was in compliance with the Quality Assurance Project Plan. He provided input to the Field Sampling Task Leader and the Stockpile Coordinator to assist them in accomplishing their specific task. Mr. Wellman also interacted directly with the subcontracted analytical laboratory in a proactive manner to prevent data quality deficiencies to the extent possible.

Mr. Tony Kwiec served as the Stockpile Coordinator. He was responsible for tracking the piles of excavated materials while they were in storage at the project site as well as through their disposition. Mr. Kwiec coordinated the placement, sampling, backfilling and off-site disposition of each pile. He was delegated Quality Control responsibility for these activities.

3.0 SCHEDULE ACHIEVED

The proposed schedule called for the field activities to take place between 6 September and 8 November 2002. The "tracking" Gantt chart included as Figure 3 represents both the proposed (baseline) and the actual schedule completed. The actual fieldwork took place between 6 September and 19 November 2002. Some highlights of the schedule are:

- Mobilization/Initiation of fieldwork began on 6 September 2002.
- Excavation started 16 September and finished 31 October 2002.
- Backfill operations began on 11 October and finished 8 November 2002.
- Off site shipment of soil started 9 October and was completed 19 November 2002.
- Three monitoring wells were installed between 4 and 5 November 2002.
- Restoration and demobilization activities were completed 19 November 2002.

4.0 SOIL VOLUMES MANAGED

The total, in-place, volume of soil excavated from the areas identified in Figure 1 is estimated at 14,767.29. 14,104.5 cubic yards were excavated from SEAD-59 and 662.79 cubic yards were excavated from SEAD-71. Figure 6 shows specifics quantities removed from the various areas within the SEADs.

161 150-excavated cubic yard piles were created. A summary of the piles is attached in Table 1. This summary provides the following information:

- Pile/Sample Number
- Date Sampled
- Area Removed From
- Analysis Performed
- Excedences of cleanup goals
- Final Disposition

The following are the highlights of the management of the excavated soils:

- 7,360 estimated in-place cubic yards were backfilled.
- 3,805.44 tons were shipped off site for disposal. Copies of the manifests are attached in Appendix F.
- 479.27 tons were stabilized with trisodium phosphate (TSP) at a ratio of 97% soil and 3% TSP. This stabilized soil was shipped off site for disposal and is included in the total above.
- 46.73 tons of debris were shipped off site for disposal.
- 5,428 estimated in-place cubic yards were left stockpile at SEDA. A figure showing the locations of these stockpiled soils is attached as Figure 4.

5.0 DEBRIS FOUND

During the excavation phase various types of debris was located. The most commonly found items were construction and demolition debris consisting of bricks, concrete, asphalt, and scrap metal, pipe, lumber and wood. All large pieces of concrete that were discovered, and were clean, were used as backfill in SEAD 59, Area1. The remaining construction and demolition debris was shipped off-site for disposal. Some wood debris, consisting of logs and tree stumps was left at the site.

There were two areas were drums and pails were found. In SEAD 59, Area 3, dried and crushed paint pails from one quart to five gallons in size were discovered. These items were staged and handled separately from the other excavated material. In SEAD 59, Area 1, 55 gallon drums, and pieces of drums and pails were discovered. Most of these were empty and had been previously crushed. Approximately nine drums had substantial amounts of material in them, all of which was in a solid state. These drums were staged separately from the other debris and then sampled and analyzed for waste categorization. Based on this analysis all of these materials were able to be shipped for disposal as non-hazardous debris.

The April 2002 Action Memorandum outlined the objective of the remedial action to eliminate or significantly reduce potential risks to human health, the environment and groundwater quality by focusing on the removal of drums, paint cans and other containers as well as addressing the surrounding soils and groundwater. Based on the actual debris and containers found, the analysis of their contents, and the analysis of the surrounding soils that were removed and left in place, this objective has been met. Refer to:

- Appendix G, Analytical Results
- Appendix K, Confirmation Soil Sampling Logs
- Table 1, Pile Summary

6.0 LABORATORY ANALYSIS EFFORT

161 excavated cubic yard piles were sampled and analyzed in accordance with the Field Sampling Plan (FSP), and the Quality Assurance Project Plan (QAPP). Table 1 identifies what analysis was done on each pile sample and the excedences based on the cleanup goals. Below is a summary of the analysis performed as applicable for pile characterization and confirmation sampling.

- Volatile organic compounds (VOCs) by USEPA Method 8260B (totals and TCLP);
- Semi-volatile organic compounds (SVOCs) by USEPA Method 8270C (totals and TCLP);
- TAL Metals by USEPA Method 6010B (totals and TCLP);
- Mercury by USEPA Method 7471A (total and TCLP);
- Cyanide by USEPA Method 9012A;
- Pesticides by USEPA Method 80801A (totals and TCLP);
- Polychlorinated Biphenyls (PCBs) by USEPA Method 8082 (totals);
- pH by USEPA Method 150.1;
- Total Dissolved Solids (TDS) by USEPA Method 160.1;
- Total Suspended Solids (TSS) by USEPA Method 160.2;
- Biologic Oxygen Demand (BOD-5) by USEPA Method 405.1;
- Ammonia as nitrogen by USEPA Method 350.1/350.2;
- Ignitability by ASTM Method E-502-84 (SW846 1010);
- Reactivity by USEPA Methods 9012 and 9030A (SW846 Chapter 7.4); and
- Corrosivity by USEPA Method 9045.

Analytical results for all samples are attached in electronic format (CD) as Appendix G.

Copies of the chain of custodies are attached as Appendix H. The following laboratories were utilized:

- Columbia Analytical, One Mustard St., Suite 250, Rochester, NY
- Mitkem, 175 Metro Center Blvd., Warwick, RI

7.0 SAFETY PROCEDURES AND PERFORMANCE

The fieldwork was conducted in accordance with the Health and Safety Plan. The project recorded 47 days and 4,329 man-hours without a lost workday. There were no OSHA recordable incidents or first aid cases. There was one safety warning issued that is attached as part of the 18 September 2002 Daily Report in Appendix D. Safety and health monitoring during field activities identified no events.

Perimeter air monitoring was conducted in accordance with the Community Air Monitoring Program (CAMP). There were no notable events during the field activities. Copies of the weekly reports are attached in Appendix E.

8.0 QUALITY PROCEDURES AND PERFORMANCE

The objective of the Project Quality Control Plan was to support the TCRA in accordance with Section 3.3.1 of the Project Description and Specifications and produce an end product, which complies with the contract requirements. This Plan utilized the USACE three-phase quality control process, which is described in greater detail later in this section. The three-phase quality control process calls for the identification of "definable features of work" included in a project. Listed below are the definable features of the work for the Time Critical Removal Action for SEAD-59 and 71.

- Mobilization and demobilization as described in Sections 4.2 and 4.8 of the Work Plan.
- Civil work as described in Sections 4.2, 4.3, 4.4, and 4.8 of the Work Plan.
- Off site disposition as described in Sections 4.5 and 4.6 of the Work Plan.
- Sampling and analysis as described in the Quality Assurance Project Plan and the Field Sampling Plan.
- Reporting as described in Section 7.0 of the Work Plan.

8.1 PROJECT QUALITY CONTROL ORGANIZATION

The Project Quality Systems Manager (Manager) was assisted by a staff of qualified personnel that focused on specific, definable features of the work. The Manager was tasked and authorized as represented in Section 3.3 of the Project Quality Control Plan and delegated authority and responsibility to those identified in Section 3.2 of the Project Quality Control Plan. The Manager had complete authority to take actions necessary to ensure the work was executed in compliance with the contract. This authority was delegated to the staff controlling specific features of the work as represented in Section 3.3 of the Project Quality Control Plan. The Manager was not on site at all times, but his delegates were while activities were being conducted under the specific feature of the work they had been delegated to control.

8.2 QUALITY CONTROL STAFF

The information below summarizes the Project Quality Control staff and responsibilities:

- James Sprague – Quality Control Systems Manager
- Guy Simpson – Quality Control Systems Manager Delegate
- Terri Willfong – Health and Safety Delegate
- Craig Stiles – Field Sampling Delegate
- Rick Wellman – Laboratory Data Quality Delegate
- Tony Kwiec – Pile Management Delegate

8.3 LETTERS OF DELEGATION AND AUTHORITY

Letters outlining the specific delegated responsibilities and authority from the appropriate authorized officials and staff relating to the quality control and contract compliance with the TCRA for SEAD 59 and SEAD 71 at the Seneca Army Depot Activity, Romulus, NY, were issued. These letters were attached to the Project Quality Control Plan as Attachment A.

8.4 SUBMITTAL MANAGEMENT

Quality Control Staff were responsible for ensuring that all submittals were in compliance with the contract requirements and were submitted in accordance with the schedule requirements. The submittal registry was maintained by the Quality Control Systems Manager, a copy of this registry is included in Appendix I.

8.5 THREE PHASE CONTROL TRACKING

The USACE quality control system utilizes a three-phase control process to ensure that work is executed in compliance with the contract and deficiencies are identified and corrected. The three phases are:

- ✓ Preparatory – This phase is conducted prior to work beginning on a definable feature of work.
- ✓ Initial – This phase is conducted at the beginning of a definable feature of work when a representative sample of the work has been completed.

✓ Follow-up – This phase is conducted daily during the execution of the definable feature of work.

The phases were documented utilizing inspection tracking forms and the Daily Project Quality Control Report. The Preparatory Phase Quality Inspection checklists are presented in Appendix B. The Initial Phase Quality Inspection checklists are presented in Appendix C. These forms were completed for each definable feature of work. The Daily Project Quality Control Report was compiled by the Project Superintendent and included in his Daily progress reports. It was the responsibility of each Assistant Project Quality Systems Manager to report to the Project Superintendent the status of all issues pertaining to quality control that they had been given responsibility for so that the Daily Project Quality Control Report can be kept current. The Daily Reports are attached as Appendix D.

8.6 DEFICIENCY MANAGEMENT

Under the USACE's three-phase quality control system deficiencies are identified during each phase of control, and near the end of work during the Punch-Out Inspection. The three phase control system calls for deficiencies to be noted and tracked on a Master List of Deficiencies, as well as in the specific inspection tracking form or the Daily Project Quality Control Report. Given the nature and design of this project, the opportunities for deficiencies to occur were limited. Therefore, deficiency tracking and correction were not on on-going issue during this project. The project was completed without a deficiency being noted on the Master List of Deficiencies.

8.7 REPORTING PROCEDURES

The Project Quality Control activities were documented to provide a record and factual evidence that the required activities were preformed. This documentation, consisting of the inspection reports, the Daily Project Report, Punch-Out Inspection, and other project documentation/reports will be maintained as a part of this completion report.

8.8 PLAN RELATIONSHIP TO PROJECT SAFETY

The Project Quality Control Plan supported the Health and Safety Plan by specifically delegating the responsibility of the quality control issues relating to safety to the Site Safety Officer. This responsibility goes beyond the implementation and maintenance of the HASP as outlined in Section 1.2.4 of the HASP and delegates the quality control issues relating to safety for the project. These responsibilities are outlined in the delegation of authority letter provided to the Site Safety Officer.

8.9 TRAINING OF QUALITY CONTROL STAFF

The quality control staff were briefed on their responsibilities and the requirements of this plan, and trained on how to comply with the inspection and reporting requirements. The Quality Control System

Manager attended the USACE course entitled "Construction Quality Management for Contractors", his certificate of completion is presented in Appendix J.

9.0 SITE DESCRIPTION AT PROJECT COMPLETION

Following completion of the excavation work, and receipt and approval of all confirmatory sampling analytical results, the excavated areas were restored. For all excavated areas except SEAD 59, Area 1, this restoration consisted of backfilling the area so as to return it to its pre-excavation grading. There was no compaction requirement applicable to the placement of this backfill. All areas disturbed by the excavation process were then fine graded, seeded, and mulched.

SEAD 59, Area 1, was originally a small hill that raised above the surrounding area. This area was restored by backfilling it sufficiently so it could be graded to form a smooth transition to the undisturbed surrounding area. The small hill that existed prior to the excavation work was not recreated. As noted in Section 5.0, the clean concrete debris discovered during this project was used as backfill in SEAD 59, Area 1, along with excavated soil approved for use as backfill.

Figure 7 represent an as-built topographic map of the site after the completion of the work.

At the completion of the project the soil staging areas constructed for the project remained at the site with soil staged on them. There was also soil staged inside the Quonset building. These remaining soil piles were left at the site at the direction of the project owner, the SEDA. These remaining soil piles were left exposed to the weather; and ENSR was not requested to make any arrangements to manage the storm water that will accumulate in the soil staging areas in the future.