PARSONS ENGINEERING SCIENCE, INC.

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August 15, 1996

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Ms. Dorothy Richards
CEHND-PM-E
U.S. Army Corps of Engineers
Huntsville Division
2486 University Drive
Huntsville, AL 35805

SUBJECT: Work Task Proposal, Tasks 1 thru 16, for Delivery Order 003 of Contract DACA87-95-0031

Dear Ms. Richards:

Enclosed with this cover letter is the Work Task Proposal (WTP), for Delivery Order 003 (Annex B) of Contract DACA87-95-D0031. The Scope of Work (SOW) for Delivery Order 003 describes the activities associated with performance of a Remedial Investigation/Feasibility Study (RI/FS) at the two deactivation furnace sites, SEAD-16 and SEAD-17, located at the Seneca Army Depot Activity (SEAD) in Romulus, NY. Parsons Engineering Science (Parsons ES) proposes to group all of the authorized SOW tasks into four (4) discrete work tasks. These work tasks are:

Work Task 1 - All of the field tasks, SOW Tasks 1 thru 3),
Work Task 2 - All of the report tasks, SOW Tasks 9 thru 14,
Work Task 3 - The post FS task, SOW Task 15 and
Work Task 4 - All of the project management tasks, SOW Tasks 6, 7, 8 and 16.

The optional tasks, SOW Tasks 4 and 5, are not included in our order for supplies and services letter of June 25, 1996 and are therefore not included in this WTP.

Parsons ES will track the schedule and costs associated with labor, ODC's and subcontractors for each work task and will provide this information for your review in the monthly progress reports. Invoices will be submitted for each work task. Included is a proposed milestone schedule for these work tasks which is different than the schedule in the current SOW. The SOW schedule projected initiation of field work as August 8, 1996. Our proposed schedule has fieldwork begining on August 5, one month after notifying EPA and NYSDEC of our intent to begin fieldwork. This is a requirement of the Federal Facilities Agreement (FFA).

If you have any questions, please, do not hesitate to call me at 617-859-2492.

Sincerely,

PARSONS ENGINEERING SCIENCE, INC.

Michael Duchesneau, P.E.
Project Manager

cc: Mr. James Chaplick

PARSONS

CONTRACT DACA87-95-D-0031

DELIVERY ORDER 0003
REMEDIAL INVESTIGATION/FEASIBILITY STUDY (RI/FS)
AT SEAD-16 and SEAD-17
THE EXISTING AND ABANDONED DEACTIVATION FURNACES

WORK TASK PROPOSAL

WORK TASK 1: FIELDWORK

PREPARED BY:

Parsons ES Task Manager
Michael Duchesneau, PE

TECHNICAL APPROVAL

CEHNC Technical Manager
Kevin Healy

Date

APPROVED BY:

Parsons ES Project Manager
Michael Duchesneau, PE

PROJECT APPROVAL

CEHNC Project Manager
Dorothy Richards

Date

CONCURRENCE:

Parsons ES Engineering Manager
James Chaplick

CONTRACT APPROVAL

Mary M. Dowling
Contracting Officer

Date

WORK TASK PROPOSAL

CONTRACT DACA87-95-D-0031
DELIVERY ORDER 0003
REMEDIAL INVESTIGATION/FEASIBILITY STUDY (RI/FS)
AT SEAD-16 and SEAD-17
THE EXISTING AND ABANDONED DEACTIVATION FURNACES

WORK TASK 1: FIELDWORK

ES TASK MANAGER: Michael Duchesneau, P.E.

Task Duration: August 1996 to January 1997

1.0 PURPOSE

The purpose of this task to perform all field tasks, Tasks 1 thru 3, described in the CEHNC Scope of Work (SOW). The SOW is based upon the Parsons Engineering Science, Inc. (Parsons ES) workplan, also known as the Project Scoping Plan, for SEAD-16, The Abandoned Deactivation Furnace Site and SEAD-17, The Existing Deactivation Furnace Site. These documents have been reviewed by both EPA and NYSDEC and are near final approval.

2.0 TECHNICAL APPROACH

2.1 GENERAL

The fieldwork to be performed involves activities associated with determining the nature and extent of environmental impacts that have occurred as a result of the operation of the former deactivation and the existing deactivation furnace. Both furnaces were used to demilitarize military items including small arms ammunition and bulk propellant. There is little information regarding the history of the former deactivation furnace, which is the focus of SEAD-16, however, we believe that the unit was operated from the initial construction of the facility to approximately 1962. This unit operated without air pollution control devices (APCD) and particulate discharges from the furnace dispersed near the furnace stack. The presence of elevated levels of Polynuclear Aromatic Hydrocarbons (PAH)s, known to be products of incomplete combustion, and heavy metals suggests that releases from the operation of the furnace are likely to have occurred.

In 1962 the operation of the old deactivation furnace was discontinued and a new furnace, the existing deactivation furnace was built. The actual operational history of both units is largely unknown. It is unclear why the new deactivation furnace replaced the older unit but it is known that this occurred in 1962. However, for various reasons, including RCRA permitting difficulties and downtime due to Army upgrades to the equipment, the new deactivation furnace does not appear to have the history of operation that the old deactivation furnace had. Although the new deactivation furnace was initially constructed without APCD, the unit was upgraded over several years to eliminate the uncontrolled discharges resulting from the demilitarization operation.. These upgrades were also made to the existing deactivation furnace over the time to improve the safety operation of the unit.

The existing Ammunition Pecular Equipment (APE) 1236 Deactivation Furnace, used by the Seneca Army Depot Activity (SEDA) to demilitarize various small arms munitions, was installed in 1962. Throughout

the years, the Army upgraded the system with various pollution control equipment. The baghouse was added in 1972 and the cyclone was added in 1978. This furnace, like the former deactivation furnace, operates by heating munitions in an inclined steel rotary kiln. The temperature within the kiln is dependent upon the munition to be deactivated but generally operates between 350°F and 600°F. The process of heating causes the munitions to detonate within the steel walls of the kiln, rendering them harmless. The spent cartridge shells and other residual materials then pass, by gravity, to the lower end of the flighted kiln through the process of tumbling. The residual materials then pass out of the kiln onto an exit conveyor where the material is collected into steel 55 gallon drums. This material, which is rich in copper, is recycled as scrap metal.

The gases produced during the detonation in the kiln, which is under negative pressure, are swept from the kiln through a stainless steel exhaust duct into an afterburner. The afterburner is typically operated between 1200°F to 1800°F and provides destruction of any residual uncombusted organic gases produced during the deactivation process. The afterburner is a stainless steel refractory lined box with an oil fired burner that provides sufficient residence time to complete the combustion process. Gases that exit the afterburner are cooled to approximately 350°F by two (2) stainless steel crossflow air coolers. The first air cooler drops the gas temperature to approximately 750°F and the second cooler decreases the exhaust gases to 350°F. Non-contact cooling of the gas is accomplished by induction fans that allow ambient air to flow by several small stainless steel tubes. Heat is transferred via convection from the hot gas through the steel tubes to the cooler ambient air. Once cooled larger particulates are removed in the cyclone. Following the cyclone, smaller particulates are removed in the baghouse. The baghouse contains several Nomex bags that trap the particulates allowing only gas to exit. The particulates are removed from the bags through the action of a sonic horn that dislodges the adhered material. The particulates are collected from the bottom of the baghouse through an air lock. The cleaned gases are discharged through a 32 foot stack.

Both sites were identified as Solid Waste Management Units (SWMU)s during the initial Resource Conservation and Recovery Act (RCRA) permit application. Following the listing of the Seneca Army Depot Activity (SEDA) on the National Priority List (NPL), it was determined that all SWMUs, not considered No-Action SWMUs were to be investigated following the guidelines of the Comprehensive Environmental Responsibility Compensation and Liability Act (CERCLA) As a result, preliminary investigations called Expanded Site Investigations (ESI)s were completed at both sites to gather initial information regarding the environmental quality of the soil and groundwater. The ESI performed at SEAD-16, The Former Deactivation Furnace identified the elevated presence of metals in both groundwater and soils above background. Semi-volatile organics, including herbicides, pesticides/PCBs, niroaromatics and Polynuclear Aromatic Hydrocarbons (PAH)s were also detected in soils many above the NYSDEC Technical and Administrative Guidance Memorandum (TAGM) criteria for soils. At SEAD-17, The Existing Deactivation Furnace, the ESI identified the elevated presence of semi-volatile organic compounds including PAHs pesticides, PCBs and metals in soils. Metals were also detected in groundwater. Groundwater impacts from PAHs were minimal.

As a result of the information compiled from the ESIs, the Army, with concurrence from the regulatory agencies, have concluded that these two sites pose a potential threat to human health and/or the environment. Accordingly, the process established in the Federal Facilities Agreement (FFA) between the Army, the United States Environmental Protection Agency (USEPA) and the New York State Department of Environmental Conservation (NYSDEC) requires that a Remedial Investigation/Feasibility Study (RI/FS) be conducted with the intention of quantifying this threat through a quantitative human health and ecological risk assessment and eliminating this threat, if it is determined that one or both of these sites pose unacceptable level of risk. This delivery order establishes the scope and the requirements necessary for Parsons ES to implement the RI/FS process.

2.2 SCOPE

This work task includes the following scope of work activities:

SOW Activity	Description of Activity
1.	Site Visit and Records Review
2.	Field Investigations SEAD-16
3.	Field Investigations SEAD-17

A description of the items to be included in each of the activities listed above is provided in Section 2.4.

2.3 BACKGROUND

The primary mission of the Seneca Army Depot Activity (SEDA) is the management of military items. This mission involves the demilitarization of overstocked or off-specification munitions. The demilitarization mission is accomplished through several mechanisms, including the use of the APE 1236 Deactivation Furnace. The first deactivation furnace at SEDA, which is now abandoned and is a Solid Waste Management Unit (SWMU), was housed in Building S-311 and has been given the SWMU name, SEAD-16. This facility operated, without APCD, from 1945 until approximately the mid-1960's. The details of the process operations is not well known although it is likely that the process was similar to the operation of the current deactivation furnace. This involved heating of small arms ammunition and bulk propellant in a rotary steel retort until the items detonated, rendering the munitions harmless.

The existing APE 1236 Deactivation Furnace, used by the SEDA to demilitarize various small arms munitions, was installed in 1962. This facility is housed in Building 376 and has also been identified as a SWMU, i.e. SEAD-17. Throughout the years, the Army has upgraded the system with various pollution control equipment. A baghouse was added in 1972 and the cyclone was added in 1978. In 1988 the Army modified the system for safety reasons. The changes included the installation of a dual conveyor feed system and an emergency release system.

In response to the November 8, 1989 deadline for compliance with promulgated RCRA Subpart O hazardous waste incinerators requirements, the Army, in 1989, initiated a major improvement program that included the two (2) high and low temperature gas coolers, the Automatic Waste Feed Shut Off System (AWFSO), a new computer control system, a steel shroud over the retort, Continuous Emission Monitoring (CEM) equipment and elimination of the emergency release system. This effort involved movement of equipment, installation of new ductwork and expansion of the concrete foundation slab.

However, the furnace equipment upgrades for SEDA were not completed in time to meet the requirements of Subpart O by the deadline date of November 8, 1989. Consequently, the New York State Department of Environmental Conservation (NYSDEC) determine that, since the requirements of Subpart O were not met, the facility had to be closed and a new RCRA permit applied for. SEDA was able to convince the NYSDEC that full closure was not needed, since the Army intended to continue to operate the facility once the upgrades were complete. NYSDEC agreed to allow partial closure of the facility but would not allow the facility to operate until the requirements of Subpart O were met. This requires successful completion of an approved Trial Burn Plan (TBP). In 1988, as part of the Part B permit application, SEDA submitted a final closure plan and a partial closure plan for the deactivation furnace. The partial closure plan was

initially comprised 72 different sites within the boundaries of the depot, were identified by SEDA as a requirement of the RCRA, Part B, hazardous waste management permit. This count was recently updated to 75. These sites were compiled from an evaluation of historical information and previous management practices, as sites where some potential for a release could have occurred. With input from the regulatory agencies involved, a subset of 24 out of the 75 total SWMUs were deemed to pose no threat to human health and/or the environment and were further classified as "No Action" SWMUs. The remaining SWMUs were classified as Areas of Concern (AOC)s, requiring further evaluation.

The ESI is the first step in the evaluation process and the point at which site specific information, necessary to evaluate the threat, is collected. Typically, this evaluation involves the collection of soil, groundwater, surface water and sediment data. Upon completion of an ESI, if it is agreed among all parties, that an AOC does not pose a threat, then the Army is required to prepare a completion report, which is a summary of the ESI, and finalize the results into a Record of Decision (ROD). The ROD is an important document in the process as it is a contractual agreement between all parties involved documenting the conclusions that have been reached and the final disposition of the site. However, if the conclusion of the ESI is that a threat does exist, then additional follow-on environmental work is required to adequately address and remedy these threats. Alternatively, if the Army, EPA and NYSDEC agree that although a threat does exist, but the threat is limited then the Army may implement a removal action to eliminate the threat, thereby preventing the need to perform an RI/FS. Upon successful implementation of a removal action, whereby the threat is eliminated and no further action is required, a completion report is prepared followed by finalization as a ROD. At this point, the site is eliminated from further consideration. However, if the ESI indicates that the threat is significant and the conditions at the AOC cannot be controlled with the implementation of a removal action, an RI/FS may be appropriate. The two sites under consideration for this delivery order, SEAD-16 and SEAD-17, are both considered to be sites that will require RI/FSs.

The investigatory process proposed by the Army and verbally agreed to by the EPA and NYSDEC required the Army to prioritized the sites that were to be investigated first. This "worst first" process ensured that sufficient manpower and funds could be directed at those sites that appeared to have the greatest impact on human health and the environment. It also provided that the environmental program would be manageable, providing quality documents within a reasonable amount of time.

Recent occurrences have caused this approach to be changed. In October, 1995, the Army announced the closure of SEDA. As a result, those sites that can be released for reuse the quickest will be given priority for the investigation and clean-up. Clean-up of sites that are located within areas that have the greatest economic reuse potential will be given a higher priority than those site that are in an area of little to none economic value. This process known as the Base Realignment and Closure Process (BRAC) involves substantial input from the Local Redevelopment Authority (LRA). The LRA is a key group as this body determines the areas of the depot that are most likely to be of interest for reuse.

Both SEAD-16 and SEAD-17 were designated as high priority AOCs in the final SWMU Classification Report prepared by Parsons ES. As a result of this designation, ESI's were conducted at the two SWMU's during 1994. At SEAD-16, the ESI indicated soil impacts from semi-volatile organic compounds (specifically PAHs) and metals had occurred. Groundwater impacts due to metals was also present. Samples collected from the floor inside Building S-311, which is part of SEAD-16 detected the presence of PAHs and nitroaromatic compounds at levels above background and the TAGM criteria. Asbestos, including chrysotile and amosite, were also detected in samples collected within the building. At SEAD-17, the ESI identified the presence of semi-volatiles and metals, including antimony, arsenic, barium, cadmium, copper, lead and zinc, in the soils. Groundwater impacts were considered to be minimal. The presence of

these chemicals in soils surrounding both the deactivation furnaces is considered to be a direct result of the operation of these units and is the focus of the RI and FS processes.

The Draft RI/FS workplan for SEAD-16 and SEAD-17 was submitted to both EPA Region 2 and NYSDEC by Parsons ES on March 29, 1995. EPA comments on the Draft workplan was received on May 19, 1995. NYSDEC comments, dated June 9, 1995, on the Draft version of the workplan were received on June 15, 1995. These comments were incorporated into our draft workplan and the workplan was reissued as a Draft-final workplan on August 1, 1995. EPA comments were received on September 1, 1995. No additional NYSDEC comments were received. Parsons incorporated the additional EPA comments to the draft-final workplan and issued the workplan as final on October 19, 1995. An additional EPA comment was received on November 21, 1995. The minor page inserts required to respond to this comment was issued shortly thereafter. Although final, written, approval of this workplan has not been received from the regulators we believe that since the time required for receipt of any additional comments has passed the workplan is considered final. The scope of services described in this Work Task Proposal (WTP) is based upon the field program presented in this draft-final workplan.

2.4 SOW ACTIVITY DESCRIPTION

2.4.1 SOW Activity 1 - Site Visit and Records Review

Parsons ES will visit each site gaining familiarity with the physical characteristics of each site. In addition, historical records and the previous investigations will be reviewed in order to provide a framework for the upcoming field and report preparation tasks.

2.4.2 SOW Activity 2 - Field Investigations SEAD-16

The following subsections details the field investigation tasks that will be performed as part of the data collection effort. Each field task is described in the scoping plan that serves as the basis for the planned activities.

2.4.2.1 SOW Activity 2.1 - Surface Soil Sampling at SEAD-16

The intent of this sampling will be to provide quantitative soil data that will serve as the basis for the human health and the ecological risk assessment. Exposure to surficial soil has been identified as a likely exposure pathway for both human health and the environment. Parsons ES will collect approximately 22 shallow surface soil samples at and around the former deactivation furnace of SEAD-16. The intent of this effort will be to define the extent of semi-volatile organic compounds and metals that were dispersed to the atmosphere during the operation of the furnace. In addition to the 22 surface soil samples that will be collected around the former deactivation furnace, Parsons ES will also collect 10 downwind surface soil samples. These samples will be collected at 500, 1000, 2000, 3000 and 3500 feet along both two wind directions. Parsons ES will drive a hardened steel spilt spoon sampler approximately 0.5 feet into the unsaturated zone. The sampler will be extracted and opened allowing the surfical soil to be removed and placed into appropriate sample jars for submission to the laboratory.

2.4.2.2 SOW Activity 2.2 - Subsurface Soil Investigation at SEAD-16

Parsons ES will perform five (5) soil borings that will be used to define the extent of VOCs in and around SEAD-16. The intent of this drilling will be to provide quantitative soil data that will serve as the basis for soil contamination isocontour maps. The subsurface soil data will also serve as the database for the human

health and the ecological risk assessment. Exposure to subsurface soils due to excavation has been identified as a potential exposure pathway. Parsons ES will perform continuous split spoon sampling during the drilling and will continue drilling until auger refusal is encountered. At these 5 locations Parsons ES expects to collect one surface soil sample and two subsurface split spoon samples. At two soil boring locations Parsons ES will collect and additional sample for a total of three (3) subsurface samples, one from near the surface, one from above the water table and at an intermediate location. These three (3) samples collected at two (2) locations will be analyzed for grain size and TOC. The total number of soil samples expected to be collected for routine chemical analysis is 15, (10 from the subsurface and 5 from the surficial soil)

Of the split spoon samples collected at each soil boring location, two (2) subsurface soil samples will be submitted to the laboratory for chemical analysis. Each split spoon soil sample will be inspected by a Parsons ES field geologist and will be field classified according to the Burmiester Method of soil classification. Each sample will be screened for the presence of VOCs using a hand held volatile organic analyzer equipped with a photoionization detector (PID). The presence of oil or discoloration in the soil will be noted in addition to the presence of odors. Based upon this visual and instrumentation screen, the Parsons ES field geologist will select and submit soil samples to the laboratory.

At each location the surficial soil sample from the 0 to 2 inch depth will be submitted for chemical analysis. The soil sample representing the location just above the water table will also be submitted for chemical analysis. An additional sample will also be submitted for chemical analysis from some intermediate location, based upon the results of the inspection of each intermediate split spoon sample. The sample corresponding to the most significantly impacted location between the surficial sample and the water table sample will also be submitted for chemical analysis.

For quality control, 1 sample will be collected for matrix spikes, matrix spike duplicates and method sample blanks (MS\MSD\MSB). These samples will be submitted with each sample delivery group (SDG). An SDG is comprised of approximately 20 samples. The identified as the MS/MSD samples are spiked by the laboratory to ensure accuracy and precision via proper recovery of both surrogate and matrix spiked compounds. In addition, Parsons ES will submit one (1) blind duplicate samples, one for each SDG, as an additional check to ensure precision of field and laboratory activities. One (1) rinsate blanks will be collected, one for each SDG, in order to provide an indication of proper decontamination procedures and prevent cross-contamination. One (1) trip blanks will be collected, one for each SDG, in order to provide assurance that samples have not become contaminated during transport or from the use of contaminated decon water. Trip blanks will only be analyzed for VOCs. The total number of quality control samples is therefore approximately 5.

At the locations where duplicate samples are collected, split samples will be collected, and will be shipped overnight to the MRD laboratory in Kansas City, Missouri. All other samples will be shipped overnight to Inchcape Testing Services, formerly Aquatec Inc., for NYSDEC CLP Level 4 analysis. No rinsate samples will be sent to MRD since MRD does not require rinsate blanks for soils. This is probably due to the difficulty in validating data using rinsate blanks, which are an aqueous matrix, with soil samples.

2.4.2.3 SOW Activity 2.3 - Surface Water and Sediment Sampling at SEAD-16

Parsons ES will collect 10 surface water and 10 sediment samples from various drainage ditches at the former deactivation furnace site. Surface water samples will be collected following a precipitation event to ensure that water samples will be available for sampling. Two surface water and sediment samples will be collected from the upper reaches of Kendaia Creek, just south and west of SEAD-16. Samples will be

collected to determine the extent that any pollutant has migrated from the site due to overland flow or as a result of shallow groundwater flow discharging to the surface. Samples will be shipped overnight and analyzed for Level 4 constituents. No screening of the sediment will occur.

During the collection of the surface water samples Parsons ES has assumed that 1 location will be collected in duplicate and 1 sample will be submitted for MS, MSD and MSB. Thus the total number of spikes and duplicate QC samples will be 4, (1 MS/MSD/MSB & 1 Duplicate). In addition, rinsate blanks will be collected at frequency of one per day of sampling. Of these samples, 1 will be split and shipped to MRD. Trip blanks will be collected at a rate of one per day of sampling, of which 1 will be split and sent to MRD as a check on quality assurance.

During the collection of the sediment samples Parsons ES has assumed that 1 location will be collected in duplicate and 1 MS, MSD and MSB will be collected. Thus the total number of spikes and duplicate QC samples will be 4, (1 MS/MSD/MSBs & 1 Duplicate). In addition, rinsate blanks and trip blanks will be collected at frequency of one per day of sampling. Of these samples 1 will be split and shipped to MRD.

2.4.2.4 SOW Activity 2.4 - Groundwater Investigations at SEAD-16

Prior to the installation of any permanent groundwater monitoring well, Parsons ES will install three (3) shallow monitoring wells in the overburden to define the extent of the VOC plume. Each well will be installed to a maximum depth of approximately 20 feet. Overburden monitoring wells will be completed in accordance with the requirements of the SEDA Generic Workplan. Although continuous split spoon samples will be collected during the installation of the wells, no soil samples will be submitted for chemical analysis.

Once each well has been installed, Parsons ES will develop each well in accordance with the protocols described in the Generic Workplan. Development will ensure valid samples, reflecting the condition of the groundwater. Samples will be collected from developed and purged wells. Purging procedures will be in accordance with the protocol negotiated the EPA and NYSDEC. Filtering will not be performed on any sample. The goal of the sampling protocol is to collect groundwater that is less than 50 NTUs. All other samples will be shipped overnight to Inchcape Testing Services, formerly Aquatec Inc., for NYSDEC CLP Level 4 analysis. Parsons ES will perform an initial round of sampling from every monitoring well at the site. One groundwater sample from each of the existing wells and each of the new wells installed as part of this work will be collected. The number of groundwater samples to be collected has been estimated to be , (3 existing, and new overburden wells). During the collection of these samples Parsons ES has assumed that 1 sample will be collected in duplicate and 1 sample will be collected in triplicate, enough for an MS, an MSD and an MSB to be performed by the laboratory. Thus the total number of spikes and duplicate QC samples will be 4, (1 MS/MSD/MSB & 1 field duplicate). In addition, a rinsate blank will be collected at frequency of one per SDG and will be split and shipped to MRD. Trip blanks will be collected at a rate of one per day of sampling for a total of 1, of which 1 will be split and sent to MRD as a check on quality assurance.

2.4.2.5 SOW Activity 2.5 - Building Investigations at SEAD-16

Two building exist at the site. One Building, S-311, housed the deactivation furnace, the other building, adjacent to Building S-311 was probably used as a support building. During the ESI performed at this site, samples of standing water and accumulated material in the building was collected and sampled. Elevated concentrations of heavy metals, asbestos and PAHs were detected. As a follow-up to this initial sampling, Parsons ES will collect 2 samples of building debris from Building, S-311, and 5 samples of building

debris from the adjacent building. Three (3) samples of propellant residue will also be collected from piping or other exposed equipment in the building adjacent to Building S-311. All samples will be analyzed for VOCs, Base/Neutral and Acid (B/NA) extractable semi-volatile organics, PCBs and pesticides, explosives, nitrates and metals. Two (2) samples of building material from Building S-311 and five (5) samples of building materials from the adjacent building will be collected and submitted to an appropriate laboratory for asbestos analysis. Additionally, two (2) samples of the ambient air will be collected for semi-volatile organic compound, metals, including cyanide, and asbestos . An additional sample of the ambient air, outside of the building will be collected as a control sample.

2.4.2.6 SOW Activity 2.6 - Ecological Investigation at SEAD-16

In accordance with the NYSDEC, Department of Fish and Wildlife, guidance for evaluation of inactive hazardous waste site, the ecological investigation will be conducted in two parts. The initial effort will involve an ecological site survey of the aquatic and terrestrial community at the site. The goal of this effort will be to identify the presence of sensitive habitats, ecological receptors and obvious areas of ecological impacts. Mapping of wetland areas, aquatic and terrestrial species identification, identification of vegetative types will be conducted during the first part of the ecological investigation. Following this field effort, Parsons biologists will evaluate the field ecological information with the goal of refining the ecological conceptual site model presented in the workplan. The ecological site model will identify the ecological receptors present at the site, including both terrestrial, aquatic and vegetative, and provide an understanding of the interdependence between these receptors and the site conditions. This information will be the basis for performing the ecological risk assessment.

2.4.2.7 SOW Activity 2.7 - Chemical Analysis

The subcontractor laboratory, Inchcape Testing Inc., formerly Aquatec Inc., will perform analyses on all soil, sediment, groundwater, surface water, blanks and duplicate samples submitted during this project. The analyses that will be performed will follow the protocols established by NYSDEC in the Analytical Services Protocols (ASP). These protocols are used by NYSDEC as part of the State of New York Superfund program. This program is equivalent to the EPA Contract Laboratory Program (CLP), used by EPA at federal Superfund sites. Due to the differences in analytical protocols, analytes are divided into two groups, organic compounds and inorganic compounds. The organic compounds are listed as the Target Compound List (TCL), which comprise approximately 250 different organic compounds. The TCL list of compounds includes: volatile organic compounds (VOC)s, acid base/neutral extractable semi-volatile organic compounds (B/NA)s, herbicides, pesticides and PCBs. The inorganic constituents are listed in the Target Analyte List (TAL) and includes approximately 35 metals and cyanide. The specific analytes and methods of analysis are those identified in the NYSDEC ASP Statement of Work. Additionally, Inchcape Testing Inc. will perform matrix spikes (MS), matrix spike duplicates (MSD) and method spike blanks (MSB) on samples submitted by Parsons ES from the site. The frequency of MS/MSD/MSB has been set at approximately 5%, or one for every Sample Delivery Group (SDG). An SDG is typically comprised of twenty or less samples. This information will be used to determine accuracy and precision and will assess the impact that the site matrix may have upon the analyses.

Galson Laboratory of East Syracuse, NY will perform analyses on all air samples and asbestos samples collected during the investigation of the building.

Upon receipt of the laboratory data, Parsons ES will perform data validation on each SDG. This validation will include a review of the case narrative, provided by the laboratory. The case narrative presents the results of the laboratory review of the data and identifies all sample data points that are considered out of

the acceptable control range. Each data point identified in the case narrative that is outside the acceptable range will be scrutinized by the Parsons ES validator for acceptability. The validation protocols that will be used to evaluate the data are the EPA Region II functional guidelines. Although the laboratory uses several different qualifiers, such as E for exceeding the linear range of the calibration curve, each datapoint will be qualified as either acceptable, no qualifier, a U qualifier, undetected at the concentration shown, estimated, a J qualifier, or rejected, an R qualifier. Upon completion of this task, final data tables will be prepared identifying the concentration of the analyte and the data validation qualifier.

2.4.2.8 SOW Activity 2.8 - Surveying at SEAD-16

Vertical control for each sampling point, including all new and existing monitoring wells, soil gas sampling locations, soil boring locations, surface water and sediment sampling locations will be provided by land surveyors, registered in the state of New York. Horizontal control, defined as the Mean Sea Level (MSL) elevation, for each monitoring well casing will be determined and used to construct groundwater elevation maps. The location of wetland areas, should any exist will also be surveyed. All information will then be added to the existing topographic maps prepared as part of the Expanded Site Investigation (ESI) for this site.

2.4.3 SOW Activity 3 - Field Investigations SEAD-17

The following subsections details the field investigation tasks that will be performed as part of the data collection effort. Each field task is described in the scoping plan that serves as the basis for the planned activities

2.4.3.1 SOW Activity 3.1 - Surface Soil Investigation

Due to the distribution of Polynuclear Aromatic Hydrocarbons (PAH)s detected in the surface soil following the ESI, Parsons ES will conduct a widespread surface soil sampling program. Parsons ES will establish a sampling grid and will sample the grid for surficial soil at eighteen (18) locations at the 0 to 2" depth will be sampled and submitted for chemical analysis.

Each surficial soil sample collected for chemical analyses will be analyzed for the TCL and the TAL lists of analytes. The analyses will be performed in accordance with the protocols of the NYSDEC ASP Statement of Work.

Additionally, two (2) soil samples, at two locations, will be submitted for Total Organic Carbon (TOC) analysis and grain size distribution.

For quality control, MS\MSD\MSB will be collected at 1 location, yielding a total of 3 samples. In addition, Parsons ES will collect 1 duplicate sample. The total number of quality control samples is therefore 4. Providing sufficient sample exists, at the location where the duplicate is collected, a split sample will be collected, and will be shipped overnight to the MRD laboratory in Kansas City, Missouri. All other samples will be shipped overnight to the subcontractor laboratory, Inchcape Testing Inc., formerly Aquatec Inc., for NYSDEC ASP Level 4 analysis. Parsons ES will collect trip blanks during soil sampling at a frequency of one per day of sampling. Parsons ES will perform 1 rinsate blank. No rinsate samples will be sent to MRD since MRD does not require rinsate blanks for soils.

2.4.3.2 SOW Activity 3.2 - Surface Water and Sediment Sampling

Parsons ES will collect 10 surface water and 10 sediment samples from various drainage ditch locations where surface water runoff have been observed. Samples will be collected to determine the extent that any pollutant has migrated from the fire training area due to overland flow. Samples will be shipped overnight and analyzed for Level 4 constituents. No screening of the sediment will occur.

During the collection of the surface water samples Parsons ES has assumed that 1 location will be collected in duplicate and 1 MS\MSD\MSB will be collected. Thus the total number of spikes and duplicate QC samples will be 2, (1 MS/MSD/MSBs & 1 field duplicate). In addition, rinsate blanks will be collected at frequency of one per SDG. This sample will be split and shipped to MRD. One (1) trip blank will be collected which 1 will be split and sent to MRD as a check on quality assurance.

During the collection of the sediment samples Parsons ES has assumed that 1 location will be collected in duplicate and 1 MS\MSD\MSB will be collected. The total number of spikes and duplicate QC samples will be 2, (1 MS/MSD/MSB & 1 field duplicate). In addition, rinsate blanks will be collected at frequency of one per SDG or 1 rinsate sample. This sample will be split and shipped to MRD. Trip blanks will not be collected.

2.4.3.3 SOW Activity 3.3 - Groundwater Investigations at SEAD-17

Four (4) monitoring wells, installed as part of the ESI, exist at this site. Parsons ES will install one (1) additional shallow monitoring well in the overburden. The well will be installed downgradient of the aboveground No. 2 fuel oil tank. The installation of a monitoring well will provide groundwater quality data regarding any possible releases that may have occurred during furnace operation. Additionally, this location will provide groundwater elevation data for that area of the site that now has no data.

Each well will be installed to the maximum depth, depending upon the presence of competent bedrock. Continuous split spoon samples will be collected during the installation of the wells, providing subsurface stratigraphic soil data and vertical pollutant penetration. Soil samples, collected as part of the soil boring program, will be submitted for chemical analysis during the installation of each monitoring well.

Parsons ES will collect two groundwater samples from each of the 4 existing wells and the new well installed as part of this work. Two rounds of groundwater samples will be collected bringing the total number of groundwater samples to be collected at 10, (4 existing, and 1 new overburden well). During the collection of these samples 2 locations will be collected in duplicate, 1 during each round and 2 MS\MSD\MSB will be collected, 1 during each round. Of these samples 1 will be split and shipped to MRD. The total number of spikes and duplicate QC samples will be 4, (2 MS/MSD/MSBs & 2 field duplicates). In addition, rinsate blanks will be collected at frequency of one per SDG, or 1 per round of sampling. Trip blanks will be collected at a rate of one per day of sampling for a total of 4, of which 2 will be split and sent to MRD as a check on quality assurance.

Once each well has been installed, Parsons ES will develop each well in accordance with the protocols described in the Generic Workplan. Development will ensure valid samples, reflecting the condition of the groundwater. Samples will be collected from developed and purged wells. Purging procedures will be in accordance with the protocol negotiated the EPA and NYSDEC. Filtering will not be performed on any sample. The goal of the sampling protocol is to collect groundwater that is less than 50 NTUs. All samples will be shipped overnight to Inchcape Testing Services, formerly Aquatec Inc., for NYSDEC CLP Level 4 analysis. Parsons ES will perform an initial round of sampling from every monitoring well at the site. Prior to sampling, a water level will be recorded for each well.

2.4.3.4 SOW Activity 3.4 - Ecological Investigation

In accordance with the NYSDEC, Department of Fish and Wildlife, guidance for evaluation of inactive hazardous waste site, the ecological investigation will be conducted in two parts. The initial effort will involve an ecological site survey of the aquatic and terrestrial community at the site. The goal of this effort will be to identify the presence of sensitive habitats, ecological receptors and obvious areas of ecological impacts. Mapping of wetland areas, aquatic and terrestrial species identification, identification of vegetative types will be conducted during the first part of the ecological investigation. Following this field effort, Parsons biologists will evaluate the field ecological information with the goal of refining the ecological conceptual site model presented in the workplan. The ecological site model will identify the ecological receptors present at the site, including both terrestrial, aquatic and vegetative, and provide an understanding of the interdependence between these receptors and the site conditions. This information will be the basis for performing the ecological risk assessment.

2.4.3.5 SOW Activity 3.5 - Chemical Analysis

The subcontractor laboratory, Inchcape Testing Inc., formerly Aquatec Inc., will perform analyses on all soil, sediment, groundwater, surface water, blanks and duplicate samples submitted during this project. The analyses that will be performed will follow the protocols established by NYSDEC in the Analytical Services Protocols (ASP). These protocols are used by NYSDEC as part of the State of New York Superfund program. This program is equivalent to the EPA Contract Laboratory Program (CLP), used by EPA at federal Superfund sites. Due to the differences in analytical protocols, analytes are divided into two groups, organic compounds and inorganic compounds. The organic compounds are listed as the Target Compound List (TCL), which comprise approximately 250 different organic compounds. The TCL list of compounds includes: volatile organic compounds (VOC)s, acid base/neutral extractable semi-volatile organic compounds (B/NA)s, herbicides, pesticides and PCBs. The inorganic constituents are listed in the Target Analyte List (TAL) and includes approximately 35 metals and cyanide. The specific analytes and methods of analysis are those identified in the NYSDEC ASP Statement of Work. Additionally, Inchcape Testing Inc. will perform matrix spikes (MS), matrix spike duplicates (MSD) and method spike blanks (MSB) on samples submitted by Parsons ES from the site. The frequency of MS/MSD/MSB has been set at approximately 5%, or one for every Sample Delivery Group (SDG). An SDG is typically comprised of twenty or less samples. This information will be used to determine accuracy and precision and will assess the impact that the site matrix may have upon the analyses.

Upon receipt of the laboratory data, Parsons ES will perform data validation on each SDG. This validation will include a review of the case narrative, provided by the laboratory. The case narrative presents the results of the laboratory review of the data and identifies all sample data points that are considered out of the acceptable control range. Each data point identified in the case narrative that is outside the acceptable range will be scrutinized by the Parsons ES validator for acceptability. The validation protocols that will be used to evaluate the data are the EPA Region II functional guidelines. Although the laboratory uses several different qualifiers, such as E for exceeding the linear range of the calibration curve, each datapoint will be qualified as either acceptable, no qualifier, a U qualifier, undetected at the concentration shown, estimated, a J qualifier, or rejected, an R qualifier. Upon completion of this task, final data tables will be prepared identifying the concentration of the analyte and the data validation qualifier.

2.4.3.6 SOW Activity 3.6 - Surveying

Vertical control for each sampling point, including all new and existing monitoring wells, soil gas sampling locations, soil boring locations, surface water and sediment sampling locations will be provided by land

surveyors, registered in the state of New York. Horizontal control, defined as the Mean Sea Level (MSL) elevation, for each monitoring well casing will be determined and used to construct groundwater elevation maps. The location of wetland areas, should any exist will also be surveyed. All information will then be added to the existing topographic maps prepared as part of the Expanded Site Investigation (ESI) for this site.

3.0 GUIDANCE DOCUMENTS

The following documents will be used as guidance for this task:

1. The "U.S. Army Corps of Engineers Safety and Health Requirements Manual," U.S. Army Engineering Manual No. EM-385-1-1, April 1981.

2. Interim Final, "Guidance for Conducting Remedial Investigations/Feasibility Studies Under CERCLA," USEPA, Office of Solid Waste and Emergency Response, October 1988.

3. "Chemical Data Quality Management for Hazardous Waste Remedial Activities," ER 1110-1-263, March 1990.

4. "Work Plan for Remedial Investigation/Feasibility Study (RI/FS) at SEAD-16 and SEAD-17, Seneca Army Depot Activity, Romulus, New York," Parsons Engineering Science Inc., 1995.

5. "Federal Facility Agreement under CERCLA Section 120 in the Matter of Seneca Army Depot, Romulus, New York," Docket No. II-CERCLA-FFA-00202, USEPA, U.S. Department of the Army, and the New York State Department of Environmental Conservation, November 1990.

6. Interim Final, "Risk Assessment Guidance for Superfund," OSWER Directive 9285.7-01a, September 1989.

7. "Superfund Exposure Assessment Manual," EPA/540/1-88/01, OSWER Directive 9285.5-1, April 1988.

8. "Chemical Data Quality Management: A Checklist for Chemistry Review," CEMRD-ED-GC, September 21, 1988.

9. "Expanded Site Inspection Report at SEAD-16 and SEAD-17," Parsons Engineering Science, Inc., 1995.

4.0 INTERFACES

This task will require interface with the CEHNC Huntsville Division technical and project task managers. In addition, this task will require interface with technical and management staff from the Seneca Army Depot Activity and the CEHNC from the Missouri River Division, the Baltimore District the New York District and the North Atlantic Division. Technical review will be performed by staff from USAEC, AMCEN, CENAD and CHPPM. The technical review comments will be coordinated through the CEHNC, Huntsville Division.

5.0 OTHER PERFORMERS AND SUBCONTRACTORS

All facets of this task, except that involving review by the CEHNC, EPA and NYSDEC, will be executed by Parsons ES personnel or Parsons ES subcontractors. Parsons ES subcontractors include:

1. Inchcape Testing Services, Inc. - This subcontractor will provide analytical services for soil and water samples. Inchcape Testing Services has been MRD approved for this project and is an NYSDEC CLP laboratory.

2. Galson Laboratory - This subcontractor will provide analytical services for all air and asbestos samples.

3. Modi, Inc. - This subcontractor, which is a Minority Business Enterprise (MBE), will provide surveying services.

4. American Auger and Ditching, Inc. - This subcontractor, which is a small business enterprise (SDE) and a Woman-Owned Business Enterprise (WBE) will provide drilling services.

5. EWR Inc. - This subcontractor will provide IDW disposal services.

6.0 DELIVERABLES AND SCHEDULE

A schedule of the deliverables for this task are attached.

7.0 PERFORMANCE REPORTS

Project performance is presented as follows:

1- A Cost Allocation/Manpower Loading Summary Chart
2- A Progress Performance Report
3- A Cost and Schedule Performance Report
4- An Earned Value Progress Curve
5- A Schedule of Deliverables

COST ALLOCATION/MANPOWER LOADING SUMMARY

ACA87-95-D-0031 DELIVERY ORDER 0003 D 16 AND 17						09-Aug-96	06-Sep-96	04-Oct-96	01-Nov-96	29-Nov-96	27-Dec-96	24-Jan-97	21-Feb-97	21-Mar-97	18-Ap
	Breakdown	Amount	Start	End	Periods	96-8	96-9	96-10	96-11	96-12	96-13	97-1	97-2	97-3	97-
ork Task 1 – Field Work															
OW Task 1	Hours	96.0	15-Jul-96	09-Aug-96	1.0	96.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
te Visit and Records	Burdened Labor	$6,432				$6,432	$0	$0	0.0	$0	$0	$0	$0	$0	
Review	Period % Complete	100.0%				100.0%	0.0%	0.0%	0.0	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 2.1	Hours	256.0	10-Aug-96	06-Sep-96	1.0	0.0	256.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
EAD-16	Burdened Labor	$13,693				$0	$13,693	$0	$0	$0	$0	$0	$0	$0	
urface Soil Sampling	Period % Complete	100.0%				0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 2.2	Hours	68.0	10-Aug-96	06-Sep-96	1.0	0.0	68.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
EAD-16	Burdened Labor	$3,789				$0	$3,789	$0	$0	$0	$0	$0	$0	$0	
ub-Surface Soil Sam	Period % Complete	100.0%				0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 2.3	Hours	68.0	10-Aug-96	06-Sep-96	1.0	0.0	68.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
EAD-16	Burdened Labor	$3,789				$0	$3,789	$0	$0	$0	$0	$0	$0	$0	
urface Water and	Period % Complete	100.0%				0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
ediment Sampling															
OW Task 2.4	Hours	408.0	10-Aug-96	29-Dec-96	5.0	0.0	204.0	102.0	0.0	0.0	102.0	0.0	0.0	0.0	
EAD-16	Burdened Labor	$22,737				$0	$11,369	$5,684	$0	$0	$5,684	$0	$0	$0	
roundwater Invest.	Period % Complete	100.0%				0.0%	50.0%	25.0%	0.0%	0.0%	25.0%	0.0%	0.0%	0.0%	
OW Task 2.5	Hours	136.0	13-Jul-96	09-Aug-96	1.0	136.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
EAD-16	Burdened Labor	$7,637				$7,637	$0	$0	$0	$0	$0	$0	$0	$0	
uilding Inspections	Period % Complete	100.0%				100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 2.6	Hours	188.0	10-Aug-96	04-Oct-96	2.0	0.0	94.0	94.0	0.0	0.0	0.0	0.0	0.0	0.0	
EAD-16	Burdened Labor	$12,014				$0	$6,007	$6,007	$0	$0	$0	$0	$0	$0	
cological Investigation	Period % Complete	100.0%				0.0%	50.0%	50.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 2.7	Hours	511.0	05-Oct-96	24-Jan-97	4.0	0.0	0.0	0.0	127.8	255.5	76.7	51.1	0.0	0.0	
EAD-16	Burdened Labor	$34,816				$0	$0	$0	$8,704	$17,408	$5,222	$3,482	$0	$0	
hemical Analysis	Period % Complete	100.0%				0.0%	0.0%	0.0%	25.0%	50.0%	15.0%	10.0%	0.0%	0.0%	
OW Task 2.8	Hours	28.0	07-Sep-96	04-Oct-96	1.0	0.0	0.0	28.0	0.0	0.0	0.0	0.0	0.0	0.0	
EAD-16	Burdened Labor	$2,298				$0	$0	$2,298	$0	$0	$0	$0	$0	$0	
urveying	Period % Complete	100.0%				0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 3.1	Hours	166.0	10-Aug-96	04-Oct-96	2.0	0.0	83.0	83.0	0.0	0.0	0.0	0.0	0.0	0.0	
EAD-17	Burdened Labor	$9,107				$0	$4,554	$4,554	$0	$0	$0	$0	$0	$0	
urface Soil Sampling	Period % Complete	100.0%				0.0%	50.0%	50.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 3.2	Hours	68.0	10-Aug-96	06-Sep-96	1.0	0.0	68.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
EAD-17	Burdened Labor	$3,789				$0	$3,789	$0	$0	$0	$0	$0	$0	$0	
urface Water and	Period % Complete	100.0%				0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
ediment Sampling															

COST ALLOCATION/MANPOWER LOADING SUMMARY

ACA87-95-D-0031 DELIVERY ORDER 0003															
D 16 AND 17															
						09-Aug-96	06-Sep-96	04-Oct-96	01-Nov-96	29-Nov-96	27-Dec-96	24-Jan-97	21-Feb-97	21-Mar-97	18-Ap
	Breakdown	Amount	Start	End	Periods	96-8	96-9	96-10	96-11	96-12	96-13	97-1	97-2	97-3	97
OW Task 3.3	Hours	196.0	10-Aug-96	29-Dec-96	5.0	0.0	98.0	49.0	0.0	0.0	49.0	0.0	0.0	0.0	
EAD-17	Burdened Labor	$10,636				$0	$5,318	$2,659	$0	$0	$2,659	$0	$0	$0	
roundwater Invest.	Period % Complete	100.0%				0.0%	50.0%	25.0%	0.0%	0.0%	25.0%	0.0%	0.0%	0.0%	
OW Task 3.4	Hours	188.0	10-Aug-96	04-Oct-96	2.0	0.0	94.0	94.0	0.0	0.0	0.0	0.0	0.0	0.0	
EAD-17	Burdened Labor	$12,014				$0	$6,007	$6,007	$0	$0	$0	$0	$0	$0	
cological Investigation	Period % Complete	100.0%				0.0%	50.0%	50.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 3.5	Hours	228.0	05-Oct-96	24-Jan-97	4.0	0.0	0.0	0.0	57.0	114.0	34.2	22.8	0.0	0.0	
EAD-17	Burdened Labor	$15,503				$0	$0	$0	$3,876	$7,752	$2,325	$1,550	$0	$0	
hemical Analysis	Period % Complete	100.0%				0.0%	0.0%	0.0%	25.0%	50.0%	15.0%	10.0%	0.0%	0.0%	
OW Task 3.6	Hours	20.0	07-Sep-96	04-Oct-96	1.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	
EAD-17	Burdened Labor	$1,672				$0	$0	$1,672	$0	$0	$0	$0	$0	$0	
urveying	Period % Complete	100.0%				0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
ork Task 1	Hours	2625.0	15-Jul-96	21-Mar-97	9.0	232.0	1033.0	470.0	184.8	369.5	261.9	73.9	0.0	0.0	
	Burdened Labor	$159,926				$14,069	$58,314	$28,881	$12,580	$25,160	$15,891	$5,032	$0	$0	
	ODC's	$80,845				$0	$8,085	$24,254	$8,085	$16,169	$16,169	$0	$0	$8,085	
	Subcontracts	$359,839				$0	$64,771	$61,173	$57,574	$118,747	$35,984	$0	$0	$21,590	
	Total	$600,610				$14,069	$131,170	$114,307	$78,238	$160,075	$68,044	$5,032	$0	$29,675	
	Period % Complete	100.0%				2.3%	21.8%	19.0%	13.0%	26.7%	11.3%	0.8%	0.0%	4.9%	
ork Task 1	Hours	2625.0	15-Jul-96	21-Mar-97	9.0	232.0	1265.0	1735.0	1919.8	2289.3	2551.1	2625.0	2625.0	2625.0	2
	Burdened Labor	$159,926				$14,069	$72,383	$101,264	$113,844	$139,003	$154,894	$159,926	$159,926	$159,926	$15
	ODC's	$80,845				$0	$8,085	$32,338	$40,423	$56,592	$72,761	$72,761	$72,761	$80,845	$8
	Subcontracts	$359,839				$0	$64,771	$125,944	$183,518	$302,265	$338,249	$338,249	$338,249	$359,839	$35
	Total	$600,610				$14,069	$145,239	$259,545	$337,784	$497,859	$565,903	$570,935	$570,935	$600,610	$60
	Cumulative % Complete	100.0%				2.3%	24.2%	43.2%	56.2%	82.9%	94.2%	95.1%	95.1%	100.0%	1
	BCWS					$14,069	$145,239	$259,545	$337,784	$497,859	$565,903	$570,935	$570,935	$600,610	$60
ork Task 1	Hours	2625.0	15-Jul-96	21-Mar-97	9.0	0.0									
	Burdened Labor	$159,926				$0									
	ODC's	$80,845				$0									
	Subcontracts	$359,839				$0									
	Total	$600,610				$0									
	Period % Complete	100.0%				0.0%									
ork Task 1	Hours	2625.0	15-Jul-96	21-Mar-97	9.0	0.0									
	Burdened Labor	$159,926				$0									
	ODC's	$80,845				$0									
	Subcontracts	$359,839				$0									
	Total ACWP	$600,610				$0									
	Cumulative % Complete	100.0%				0.0%									
	BCWP					$0									

COST ALLOCATION/MANPOWER LOADING SUMMARY

ACA87-95-D-0031 DELIVERY ORDER 0003															
D 16 AND 17			Period												
		13-Jun-97	11-Jul-97	08-Aug-97	05-Sep-97	03-Oct-97	31-Oct-97	28-Nov-97	26-Dec-97	23-Jan-98	20-Feb-98	20-Mar-98	17-Apr-98	15-May-98	12-J
	Breakdown	97-6	97-7	97-8	97-9	97-10	97-11	97-12	97-13	98-1	98-2	98-3	98-4	98-5	9
ork Task 1 -- Field Work															
OW Task 1	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
te Visit and Records	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Review	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 2.1	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
EAD-16	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
rface Soil Sampling	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 2.2	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
EAD-16	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
ub-Surface Soil Sam	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 2.3	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
EAD-16	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
rface Water and	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
ediment Sampling															
OW Task 2.4	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
EAD-16	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
roundwater Invest.	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 2.5	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
EAD-16	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
ilding Inspections	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 2.6	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
EAD-16	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
ological Investigation	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 2.7	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
EAD-16	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
emical Analysis	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 2.8	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
EAD-16	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
rveying	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 3.1	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
EAD-17	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
rface Soil Sampling	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 3.2	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
EAD-17	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
rface Water and	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
ediment Sampling															

COST ALLOCATION/MANPOWER LOADING SUMMARY

ACA87-95-D-0031 DELIVERY ORDER 0003															
D 16 AND 17			Period												
		13-Jun-97	11-Jul-97	08-Aug-97	05-Sep-97	03-Oct-97	31-Oct-97	28-Nov-97	26-Dec-97	23-Jan-98	20-Feb-98	20-Mar-98	17-Apr-98	15-May-98	12-J
	Breakdown	97-6	97-7	97-8	97-9	97-10	97-11	97-12	97-13	98-1	98-2	98-3	98-4	98-5	98
OW Task 3.3	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
EAD-17	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
oundwater Invest.	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 3.4	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
EAD-17	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
ological Investigation	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 3.5	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
EAD-17	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
emical Analysis	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 3.6	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
EAD-17	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
rveying	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
ork Task 1	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	ODC's	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Subcontracts	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Total	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
ork Task 1	Hours	2625.0	2625.0	2625.0	2625.0	2625.0	2625.0	2625.0	2625.0	2625.0	2625.0	2625.0	2625.0	2625.0	2
	Burdened Labor	$159,926	$159,926	$159,926	$159,926	$159,926	$159,926	$159,926	$159,926	$159,926	$159,926	$159,926	$159,926	$159,926	$15
	ODC's	$80,845	$80,845	$80,845	$80,845	$80,845	$80,845	$80,845	$80,845	$80,845	$80,845	$80,845	$80,845	$80,845	$8
	Subcontracts	$359,839	$359,839	$359,839	$359,839	$359,839	$359,839	$359,839	$359,839	$359,839	$359,839	$359,839	$359,839	$359,839	$35
	Total	$600,610	$600,610	$600,610	$600,610	$600,610	$600,610	$600,610	$600,610	$600,610	$600,610	$600,610	$600,610	$600,610	$60
	Cumulative % Complete	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	1
	BCWS	$600,610	$600,610	$600,610	$600,610	$600,610	$600,610	$600,610	$600,610	$600,610	$600,610	$600,610	$600,610	$600,610	$60
ork Task 1	Hours														
	Burdened Labor														
	ODC's														
	Subcontracts														
	Total														
	Period % Complete														
ork Task 1	Hours														
	Burdened Labor														
	ODC's														
	Subcontracts														
	Total ACWP														
	Cumulative % Complete														
	BCWP														

COST ALLOCATION/MANPOWER LOADING SUMMARY

ACA87-95-D-0031 DELIVERY ORDER 0003 D 16 AND 17															
		07-Aug-98	04-Sep-98	02-Oct-98	30-Oct-98	27-Nov-98	25-Dec-98	22-Jan-99	19-Feb-99	19-Mar-99	16-Apr-99	14-May-99	11-Jun-99	09-Jul-99	06-A
	Breakdown	98-8	98-9	98-10	98-11	98-12	98-13	99-1	99-2	99-3	99-4	99-5	99-6	99-7	99
ork Task 1 - Field Work															
OW Task 1	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
te Visit and Records	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
leview	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 2.1	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
EAD-16	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
rface Soil Sampling	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 2.2	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
EAD-16	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
ab-Surface Soil Sam	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 2.3	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
EAD-16	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
rface Water and	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
ediment Sampling															
OW Task 2.4	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
EAD-16	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
oundwater Invest.	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 2.5	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
EAD-16	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
ilding Inspections	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 2.6	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
EAD-16	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
cological Investigation	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 2.7	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
EAD-16	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
hemical Analysis	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 2.8	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
EAD-16	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
rveying	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 3.1	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
EAD-17	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
rface Soil Sampling	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 3.2	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
EAD-17	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
rface Water and	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
ediment Sampling															

COST ALLOCATION/MANPOWER LOADING SUMMARY

DACA87-95-D-0031 DELIVERY ORDER 0003															
AD 16 AND 17															
		07-Aug-98	04-Sep-98	02-Oct-98	30-Oct-98	27-Nov-98	25-Dec-98	22-Jan-99	19-Feb-99	19-Mar-99	16-Apr-99	14-May-99	11-Jun-99	09-Jul-99	06-A
	Breakdown	98-8	98-9	98-10	98-11	98-12	98-13	99-1	99-2	99-3	99-4	99-5	99-6	99-7	9
OW Task 3.3	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
EAD-17	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
roundwater Invest.	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 3.4	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
EAD-17	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
cological Investigation	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 3.5	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
EAD-17	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
hemical Analysis	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 3.6	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
EAD-17	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
urveying	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
ork Task 1	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	ODC's	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Subcontracts	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Total	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
ork Task 1	Hours	2625.0	2625.0	2625.0	2625.0	2625.0	2625.0	2625.0	2625.0	2625.0	2625.0	2625.0	2625.0	2625.0	
	Burdened Labor	$159,926	$159,926	$159,926	$159,926	$159,926	$159,926	$159,926	$159,926	$159,926	$159,926	$159,926	$159,926	$159,926	$1
	ODC's	$80,845	$80,845	$80,845	$80,845	$80,845	$80,845	$80,845	$80,845	$80,845	$80,845	$80,845	$80,845	$80,845	$
	Subcontracts	$359,839	$359,839	$359,839	$359,839	$359,839	$359,839	$359,839	$359,839	$359,839	$359,839	$359,839	$359,839	$359,839	$3
	Total	$600,610	$600,610	$600,610	$600,610	$600,610	$600,610	$600,610	$600,610	$600,610	$600,610	$600,610	$600,610	$600,610	$6
	Cumulative % Complete	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	
	BCWS	$600,610	$600,610	$600,610	$600,610	$600,610	$600,610	$600,610	$600,610	$600,610	$600,610	$600,610	$600,610	$600,610	$6
ork Task 1	Hours														
	Burdened Labor														
	ODC's														
	Subcontracts														
	Total														
	Period % Complete														
ork Task 1	Hours														
	Burdened Labor														
	ODC's														
	Subcontracts														
	Total ACWP														
	Cumulative % Complete														
	BCWP														

COST ALLOCATION/MANPOWER LOADING SUMMARY

ACA87-95-D-0031 DELIVERY ORDER 0003 D 16 AND 17						09-Aug-96	06-Sep-96	04-Oct-96	01-Nov-96	29-Nov-96	27-Dec-96	24-Jan-97	21-Feb-97	21-Mar-97	18-A
	Breakdown	Amount	Start	End	Periods	96-8	96-9	96-10	96-11	96-12	96-13	97-1	97-2	97-3	97
ork Task 2 – RI/FS Report															
OW Task 9	Hours	240.0	02-Nov-96	27-Dec-96	2.0	0.0	0.0	0.0	0.0	120.0	120.0	0.0	0.0	0.0	
ontaminant	Burdened Labor	$14,891				$0	$0	$0	$0	$7,446	$7,446	$0	$0	$0	
ate and Transport	Period % Complete	100.0%				0.0%	0.0%	0.0%	0.0%	50.0%	50.0%	0.0%	0.0%	0.0%	
OW Task 10	Hours	860.0	02-Nov-96	21-Mar-97	6.0	0.0	0.0	0.0	215.0	430.0	0.0	129.0	0.0	86.0	
aseline	Burdened Labor	$56,981				$0	$0	$0	$14,245	$28,491	$0	$8,547	$0	$5,698	
isk Assessment	Period % Complete	100.0%				0.0%	0.0%	0.0%	25.0%	50.0%	0.0%	15.0%	0.0%	10.0%	
OW Task 11	Hours	1000.0	07-Sep-96	21-Mar-97	7.0	0.0	0.0	250.0	250.0	250.0	0.0	150.0	0.0	100.0	
l Report	Burdened Labor	$59,697				$0	$0	$14,924	$14,924	$14,924	$0	$8,955	$0	$5,970	
	Period % Complete	100.0%				0.0%	0.0%	25.0%	25.0%	25.0%	0.0%	15.0%	0.0%	10.0%	
OW Task 12	Hours	180.0	25-Jan-97	21-Feb-97	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	180.0	0.0	
reatability Study	Burdened Labor	$13,076				$0	$0	$0	$0	$0	$0	$0	$13,076	$0	
equirements Assess.	Period % Complete	100.0%				0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	
OW Task 13	Hours	700.0	25-Jan-97	16-May-97	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	280.0	175.0	
easibility Study	Burdened Labor	$41,622				$0	$0	$0	$0	$0	$0	$0	$16,649	$10,406	$
	Period % Complete	100.0%				0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	40.0%	25.0%	
OW Task 14	Hours	500.0	25-Jan-97	03-Oct-97	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	150.0	
S Report	Burdened Labor	$28,760				$0	$0	$0	$0	$0	$0	$0	$5,752	$8,628	
	Period % Complete	100.0%				0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	20.0%	30.0%	
ork Task 2	Hours	3480.0	07-Sep-96	03-Oct-97	14.0	0.0	0.0	250.0	465.0	800.0	120.0	279.0	560.0	511.0	
	Burdened Labor	$215,027				$0	$0	$14,924	$29,170	$50,860	$7,446	$17,502	$35,477	$30,701	$
	ODC's	$58,396				$0	$0	$4,088	$14,599	$14,599	$584	$4,088	$9,343	$5,840	$
	Subcontracts	$0				$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Total	$273,423				$0	$0	$19,012	$43,769	$65,459	$8,029	$21,589	$44,820	$36,541	$1
	Period % Complete	100.0%				0.0%	0.0%	7.0%	16.0%	23.9%	2.9%	7.9%	16.4%	13.4%	
ork Task 2	Hours	3480.0	07-Sep-96	03-Oct-97	14.0	0.0	0.0	250.0	715.0	1515.0	1635.0	1914.0	2474.0	2985.0	3
	Burdened Labor	$215,027				$0	$0	$14,924	$44,094	$94,954	$102,400	$119,901	$155,378	$186,079	$19
	ODC's	$58,396				$0	$0	$4,088	$18,687	$33,286	$33,870	$37,957	$47,301	$53,140	$5
	Subcontracts	$0				$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Total	$273,423				$0	$0	$19,012	$62,780	$128,240	$136,269	$157,859	$202,679	$239,220	$24
	Cumulative % Complete	100.0%				0.0%	0.0%	7.0%	23.0%	46.9%	49.8%	57.7%	74.1%	87.5%	
	BCWS					$0	$0	$19,012	$62,780	$128,240	$136,269	$157,859	$202,679	$239,220	$24
ork Task 2	Hours	3480.0	07-Sep-96	03-Oct-97	14.0	0.0									
	Burdened Labor	$215,027				$0									
	ODC's	$58,396				$0									
	Subcontracts	$0				$0									
	Total	$273,423				$0									
	Period % Complete	100.0%				0.0%									
ork Task 2	Hours	3480.0	07-Sep-96	03-Oct-97	14.0	0.0									
	Burdened Labor	$215,027				$0									
	ODC's	$58,396				$0									
	Subcontracts	$0				$0									
	Total ACWP	$273,423				$0									
	Cumulative % Complete	100.0%				0.0%									
	BCWP	100.0%				$0									

INDIVIDUAL PERFORMANCE REPORT

Contract No.: DACA87-95-D-0031
Delivery Order No. 0003
SEAD 16 and 17 RI/FS

Report Month: 09-Aug-96

Work Task: 1 - Field Work

Parsons ES Job Nos: 729895-01001

DELIVERABLES AND PERCENT COMPLETE

Activity	% Complete This Month	% of Task	Total % Complete
SOW Task 1 - Site Visit and Records Review	0.0%	1.4%	0.0%
SOW Task 2 - SEAD-16 Field Investigations			
SOW Task 2.1 - Surface Soil Sampling	0.0%	11.5%	0.0%
SOW Task 2.2 - Subsurface Soil Sampling	0.0%	3.8%	0.0%
SOW Task 2.3 - Surface Water and Sediment Sampling	0.0%	1.3%	0.0%
SOW Task 2.4 - Groundwater Investigations	0.0%	11.1%	0.0%
SOW Task 2.5 - Building Investigations	0.0%	3.1%	0.0%
SOW Task 2.6 - Ecological Investigation	0.0%	3.1%	0.0%
SOW Task 2.7 - Chemical Analysis	0.0%	31.2%	0.0%
SOW Task 2.8 - Surveying	0.0%	1.8%	0.0%
SOW Task 3 - SEAD-17 Field Investigations			
SOW Task 3.1 - Surface Soil Sampling	0.0%	5.4%	0.0%
SOW Task 3.2 - Surface Water and Sediment Sampling	0.0%	1.3%	0.0%
SOW Task 3.3 - Groundwater Investigations	0.0%	4.4%	0.0%
SOW Task 3.5 - Ecological Investigation	0.0%	3.1%	0.0%
SOW Task 3.6 - Chemical Analysis	0.0%	15.8%	0.0%
SOW Task 3.7 - Surveying	0.0%	1.7%	0.0%
TOTALS		100.0%	0.0%

STATUS

INDIVIDUAL PERFORMANCE REPORT

Contract No.: DACA87-95-D-0031
Delivery Order No. 0003
SEAD 16 and 17 RI/FS

Report Month: 09-Aug-96

Work Task: 1 - Field Work

Parsons ES Job Nos: 729895-01001

COST AND SCHEDULE PERFORMANCE REPORT

	Progress	Cost Data for Period Ending:				% Actuals Used	
	BCWP Period	BAC Period	EAC Period	BCWS Period	ACWP Period	BAC Period	EAC Period
Work Hours				232.0	0.0		
Burdened Labor				$14,069	$0		
ODC's				$0	$0		
Subcontracts				$0	$0		
TOTALS	$0			$14,069	$0	0.0%	0.0%

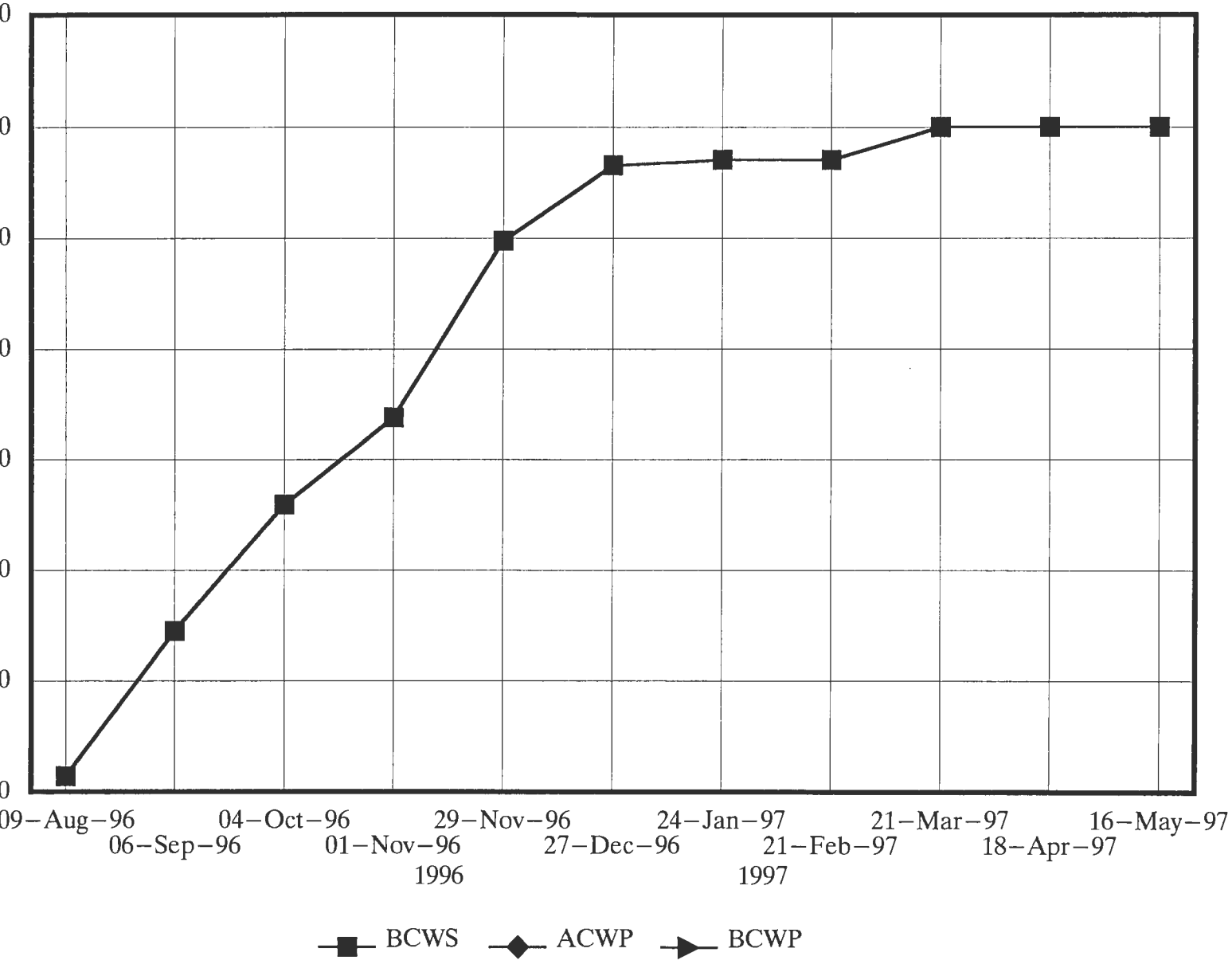
	Progress	Cost Data for Period Ending:				% Actuals Used	
	BCWP Cumulative	BAC Cumulative	EAC Cumulative	BCWS Cumulative	ACWP Cumulative	BAC Cumulative	EAC Cumulative
Work Hours		2625.0	4551.0	232.0	9.0		
Burdened Labor		$159,926	$250,349	$14,069	$0		
ODC's		$80,845	$124,998	$0	$0		
Subcontracts		$359,839	$391,294	$0	$0		
TOTALS	$0	$600,610	$766,641	$14,069	$0	0.0%	0.0%

COST SCHEDULE VARIANCE REROR T

SCHEDULE VARIANCE (BCWP-BCWS) = ($14,069)
COST VARIANCE (BCWP-ACWP) = $0

WORK TASK 1 – FIELD WORK

EARNED VALUE CURVE



CONTRACT DACA87-95-D-0031

DELIVERY ORDER 0003
REMEDIAL INVESTIGATION/FEASIBILITY STUDY (RI/FS)
AT SEAD-16 and SEAD-17
THE EXISTING AND ABANDONED DEACTIVATION FURNACES

WORK TASK PROPOSAL

WORK TASK 2: PREPARE AN RI/FS REPORT

PREPARED BY:

Parsons ES Task Manager
Michael Duchesneau, PE

TECHNICAL APPROVAL

CEHNC Technical Manager
Kevin Healy

Date

APPROVED BY:

Parsons ES Project Manager
Michael Duchesneau, PE

PROJECT APPROVAL

CEHNC Project Manager
Dorothy Richards

Date

CONCURRENCE:

Parsons ES Engineering Manager
James Chaplick

CONTRACT APPROVAL

Mary M. Dowling
Contracting Officer

Date

WORK TASK PROPOSAL

CONTRACT DACA87-95-D-0031
DELIVERY ORDER 0003
REMEDIAL INVESTIGATION/FEASIBILITY STUDY (RI/FS)
AT SEAD-16 and SEAD-17
THE FORMER AND EXISTING DEACTIVATION FURNACES

WORK TASK 2: PREPARE AN RI/FS REPORT

Parsons ES TASK MANAGER: Michael Duchesneau, P.E.

Task Duration: October 1996 to October 1997

1.0 PURPOSE

The purpose of this task is to prepare all RI/FS Reports, Tasks 9 through 14, described in the CEHNC Scope of Work (SOW). The SOW is based upon the Parsons ES workplans that are currently under review by both EPA and NYSDEC.

2.0 TECHNICAL APPROACH

2.1 GENERAL

The work to be performed involves preparation of a Remedial Investigation (RI) Report and a Feasibility Study (FS) Report. The RI Report will present all data collected during the field activities. The RI Report will determine the nature and extent of contamination as a result of activities associated with the operation of the deactivation furnaces. The RI Report will also assess the risk, both non-carcinogenic and carcinogenic, to human health and the environment that the conditions at the site may pose. This will require an evaluation of the fate and transport of the constituents found at the site.

The FS will utilize the data and conclusions of the RI in order to evaluate technologies which will be best for remediating the site. The initial process of this evaluation is to "screen" the breath of different technologies and focus upon those which meet the criteria for this evaluation. These criteria include technical feasibility, implementation feasibility, institutional acceptability and economic considerations. Following the initial screening of technologies, a more detailed evaluation of the "screened" technologies is performed. This is performed using the same criteria described earlier. It may be necessary, depending upon the complexity of the conditions at the site, to combine several different technologies into a remedial action. A final preferred remedial action is then selected from this feasibility evaluation.

2.2 SCOPE

This Work Task includes the following Scope of Work activities:

SOW Activity	Description of Activity
9.	Contaminant Fate and Transport
10.	Baseline Risk Assessment
11.	Remedial Investigation Report

12. Treatability Study Requirements Assessment
13. Feasibility Study
14. Feasibility Study Report

A description of the items to be included in each of the activities listed above is provided in Section 2.4.

2.3 BACKGROUND

The primary mission of the Seneca Army Depot Activity (SEDA) is the management of military items. This mission involves the demilitarization of overstocked or off-specification munitions. The demilitarization mission is accomplished through several mechanisms, including the use of the APE 1236 Deactivation Furnace. The first deactivation furnace at SEDA, which is now abandoned and is a Solid Waste Management Unit (SWMU), was housed in Building S-311 and has been given the SWMU name, SEAD-16. This facility operated, without APCD, from 1945 until approximately the mid-1960's. The details of the process operations is not well known although it is likely that the process was similar to the operation of the current deactivation furnace. This involved heating of small arms ammunition and bulk propellant in a rotary steel retort until the items detonated, rendering the munitions harmless.

The existing APE 1236 Deactivation Furnace, used by the SEDA to demilitarize various small arms munitions, was installed in 1962. This facility is housed in Building 376 and has also been identified as a SWMU, i.e. SEAD-17. Throughout the years, the Army has upgraded the system with various pollution control equipment. A baghouse was added in 1972 and the cyclone was added in 1978. In 1988 the Army modified the system for safety reasons. The changes included the installation of a dual conveyor feed system and an emergency release system.

In response to the November 8, 1989 deadline for compliance with promulgated RCRA Subpart O hazardous waste incinerators requirements, the Army, in 1989, initiated a major improvement program that included the two (2) high and low temperature gas coolers, the Automatic Waste Feed Shut Off System (AWFSO), a new computer control system, a steel shroud over the retort, Continuous Emission Monitoring (CEM) equipment and elimination of the emergency release system. This effort involved movement of equipment, installation of new ductwork and expansion of the concrete foundation slab.

However, the furnace equipment upgrades for SEDA were not completed in time to meet the requirements of Subpart O by the deadline date of November 8, 1989. Consequently, the New York State Department of Environmental Conservation (NYSDEC) determine that, since the requirements of Subpart O were not met, the facility had to be closed and a new RCRA permit applied for. SEDA was able to convince the NYSDEC that full closure was not needed, since the Army intended to continue to operate the facility once the upgrades were complete. NYSDEC agreed to allow partial closure of the facility but would not allow the facility to operate until the requirements of Subpart O were met. This requires successful completion of an approved Trial Burn Plan (TBP). In 1988, as part of the Part B permit application, SEDA submitted a final closure plan and a partial closure plan for the deactivation furnace. The partial closure plan was implemented in 1989 and 1990. On November 1, 1989, surface soil sampling was performed at the incinerator and analyzed for Extraction Procedure for Toxicity (EP) Tox metals. Eighteen (18) of the twenty-nine (29) soil samples collected exceeded the allowable limit of 5 mg/L for lead. Additionally, on February 23, 1990, May 2 and June 20, 1990 wipe samples were collected from various locations at the facility including the ductwork. As a result of the soil sampling, soil that exceeded the EP Tox limits for lead was removed and disposed of off-site as a characteristic hazardous waste.

Following the removal of soil, the Army installed the new equipment and submitted a TBP as part of the Part B permit application in August 1990 to NYSDEC for approval. A revised permit including a revised TBP was submitted on or about October 16, 1990. A Notice of Incomplete Application (NIA) pertaining to the Part B TSD permit was provided to SEDA on March 29, 1991 by NYSDEC but did not include comments to the TBP. NYSDEC issued TBP comments on December 2, 1991 and indicated that the revised TBP must be provided by December 31, 1991 or NYSDEC will initiate enforcement action, permit denial or termination of interim status if a full and complete application is not received in a timely fashion. Parsons ES, as Chas. T. Main (MAIN), submitted the TBP to NYSDEC on December 31, 1991. Several deficiencies were noted by NYSDEC in the February 3, 1992 comment letter and the EPA, Region II, in their March 31, 1992 comment letter. Due to the nature of the comments and the level of effort required a new delivery order was issued. Following this, Parsons ES responded to the comments and resubmitted the TBP on or about April 5, 1993.

During the subsequent NYSDEC review, EPA issued the "New Draft Strategy for the Combustion of Hazardous Waste" on May 18, 1993 which placed additional requirements on the licensing of hazardous waste incinerators. With this, EPA determined that new hazardous waste incinerators must meet additional requirements for licensing including: a multi-media risk assessment, dioxin sampling, lower particulate emission concentrations and measurement of all Products of Incomplete Combustion (PIC). Since the April 5, 1993 TBP did not include provisions to comply with these new requirements, a new modified TBP will need to be written. EPA, Region II, issued formal comments indicating the need to comply with these new requirements on June 15, 1993. NYSDEC issued similar comments on August 9, 1993.

In August 1990, the Seneca Army Depot Activity (SEDA) was listed final on Group 14 of the federal section of the National Priority List (NPL). The listing of the facility on the NPL mandates that the requirements of CERCLA be met. In addition, since the depot is also operating under the interim status provisions of the RCRA, the requirements of RCRA, where applicable, must also be met.

Following the NPL listing, the Army recognized the need to consolidate the requirements of both CERCLA and RCRA at the facility. This effort was intended to provide a mechanism to resolve disputes and establish procedures and policies that will be used in addressing all future environmental issues that may exist at the SEDA. This culminated into a formalized, negotiated agreement, called the Federal Facilities Agreement (FFA), sometimes referred to as the Interagency Agreement (IAG), between the Army and the two regulating authorities, the USEPA and the NYSDEC. To assist the Army in implementing the activities of the FFA, SEDA requested assistance, both technical and administrative, from the, U. S. Army Engineering and Support Center, Huntsville, (CEHNC) formerly known as the Corps of Engineers Huntsville Division (CEHNC). Parsons ES, under the, SEDA specific, current indefinite delivery order, cost reimbursable contract with the U. S. Army, CEHNC, Huntsville, has been tasked to provide the environmental support services necessary to fulfill the requirements identified in the FFA.

In accordance with the procedures described in the FFA, Parsons ES has performed various Expanded Site Investigations (ESI)s and Remedial Investigations/Feasibility Studies (RI/FS)s at selected Solid Waste Management Units (SWMU)s that have been identified as Areas of Concern (AOC)s. All SWMUs, which initially comprised 72 different sites within the boundaries of the depot, were identified by SEDA as a requirement of the RCRA, Part B, hazardous waste management permit. This count was recently updated to 75. These sites were compiled from an evaluation of historical information and previous management practices, as sites where some potential for a release could have occurred. With input from the regulatory agencies involved, a subset of 24 out of the 75 total SWMUs were deemed to pose no threat to human health and/or the environment and were further classified as "No Action" SWMUs. The remaining SWMUs were classified as Areas of Concern (AOC)s, requiring further evaluation.

The ESI is the first step in the evaluation process and the point at which site specific information, necessary to evaluate the threat, is collected. Typically, this evaluation involves the collection of soil, groundwater, surface water and sediment data. Upon completion of an ESI, if it is agreed among all parties, that an AOC does not pose a threat, then the Army is required to prepare a completion report, which is a summary of the ESI, and finalize the results into a Record of Decision (ROD). The ROD is an important document in the process as it is a contractual agreement between all parties involved documenting the conclusions that have been reached and the final disposition of the site. However, if the conclusion of the ESI is that a threat does exist, then additional follow-on environmental work is required to adequately address and remedy these threats. Alternatively, if the Army, EPA and NYSDEC agree that although a threat does exist, but the threat is limited then the Army may implement a removal action to eliminate the threat, thereby preventing the need to perform an RI/FS. Upon successful implementation of a removal action, whereby the threat is eliminated and no further action is required, a completion report is prepared followed by finalization as a ROD. At this point, the site is eliminated from further consideration. However, if the ESI indicates that the threat is significant and the conditions at the AOC cannot be controlled with the implementation of a removal action, an RI/FS may be appropriate. The two sites under consideration for this delivery order, SEAD-16 and SEAD-17, are both considered to be sites that will require RI/FSs.

The investigatory process proposed by the Army and verbally agreed to by the EPA and NYSDEC required the Army to prioritized the sites that were to be investigated first. This "worst first" process ensured that sufficient manpower and funds could be directed at those sites that appeared to have the greatest impact on human health and the environment. It also provided that the environmental program would be manageable, providing quality documents within a reasonable amount of time.

Recent occurrences have caused this approach to be changed. In October, 1995, the Army announced the closure of SEDA. As a result, those sites that can be released for reuse the quickest will be given priority for the investigation and clean-up. Clean-up of sites that are located within areas that have the greatest economic reuse potential will be given a higher priority than those site that are in an area of little to none economic value. This process known as the Base Realignment and Closure Process (BRAC) involves substantial input from the Local Redevelopment Authority (LRA). The LRA is a key group as this body determines the areas of the depot that are most likely to be of interest for reuse.

Both SEAD-16 and SEAD-17 were designated as high priority AOCs in the final SWMU Classification Report prepared by Parsons ES. As a result of this designation, ESI's were conducted at the two SWMU's during 1994. At SEAD-16, the ESI indicated soil impacts from semi-volatile organic compounds (specifically PAHs) and metals had occurred. Groundwater impacts due to metals was also present. Samples collected from the floor inside Building S-311, which is part of SEAD-16 detected the presence of PAHs and nitroaromatic compounds at levels above background and the TAGM criteria. Asbestos, including chrysotile and amosite, were also detected in samples collected within the building. At SEAD-17, the ESI identified the presence of semi-volatiles and metals, including antimony, arsenic, barium, cadmium, copper, lead and zinc, in the soils. Groundwater impacts were considered to be minimal. The presence of these chemicals in soils surrounding both the deactivation furnaces is considered to be a direct result of the operation of these units and is the focus of the RI and FS processes.

The Draft RI/FS workplan for SEAD-16 and SEAD-17 was submitted to both EPA Region 2 and NYSDEC by Parsons ES on March 29, 1995. EPA comments on the Draft workplan was received on May 19, 1995. NYSDEC comments, dated June 9, 1995, on the Draft version of the workplan were received on June 15, 1995. These comments were incorporated into our draft workplan and the workplan was reissued as a Draft-final workplan on August 1, 1995. EPA comments were received on September 1, 1995. No

additional NYSDEC comments were received. Parsons incorporated the additional EPA comments to the draft-final workplan and issued the workplan as final on October 19, 1995. An additional EPA comment was received on November 21, 1995. The minor page inserts required to respond to this comment was issued shortly thereafter. Although final, written, approval of this workplan has not been received from the regulators we believe that since the time required for receipt of any additional comments has passed the workplan is considered final. The scope of services described in this Work Task Proposal (WTP) is based upon the draft-final workplan.

2.4 SOW ACTIVITY DESCRIPTION

2.4.1 SOW Activity 9 - Contaminant Fate and Transport

The potential routes of migration (i.e., air, groundwater, etc.) shall be determined for the site. Contaminant persistence shall be evaluated through a review of the physical, chemical, and/or biological factors of importance for the media of interest. A discussion of contaminant migration shall include factors affecting migration for the media of importance (e.g., sorption into soils, solubility in water, movement of groundwater, etc.).

2.4.2 SOW Activity 10 - Baseline Risk Assessment

The work required in this section shall be prepared in accordance with the EPA's RI/FS Guidance Manual. Using the information gathered from the record search, the field work and data analyses, Parsons ES will prepare and submit a quantitative Risk Assessment. The Risk Assessment shall provide an evaluation of the potential threat to human health, the environment, and ecology in the absence of any remedial action and provide the basis for determining whether or not remedial action is necessary. The Risk Assessment Report shall be prepared using the guidance presented in the EPA's Interim Final "Risk Assessment Guidance for Superfund" and "Superfund Exposure Assessment Manual" and shall be submitted with the Phase II - RI and FS Reports. Parsons ES will provide information including, but not necessarily limited to, the following:

2.4.2.1 Identification of Contaminants of Concern

Using the information gathered from field work, record searches, consultations with appropriate local, State and Federal Officials, and in accordance with the Scope of Work, Parsons ES will identify the contaminants which are of concern. Parsons ES will also provide a summary of each identified contaminant describing why it was selected, and the effects of its chronic and acute toxicity to humans and the environment.

2.4.2.2 Exposure Assessment

Parsons ES will identify actual or potential exposure paths and routes, characterize potentially exposed populations, and estimate expected exposure levels and chemical intakes in accordance with the Scope of Work. Water well surveys have already been performed.

2.4.2.3 Toxicity Assessment

Parsons ES will weigh available evidence regarding the potential for contaminants to cause adverse effects in exposed individuals and estimate the relationship between the extent of exposure and corresponding adverse effects. The relationship shall be determined from field data, ARAR's, toxicological data, and the

EPA Integrated Risk Information System (IRIS). Work shall conform to the Scope of Work. Parsons ES will also make a comparison of acceptable levels of contamination with actual levels identified during the exposure assessment. The comparison shall be based upon available ARAR's, TBCs and other toxicological data, where existing.

2.4.2.4 Risk Characterization

Parsons ES will, based upon other components of the Risk Assessment, characterize the risk associated with the site. Parsons ES will also consider the carcinogenic risk, noncarcinogenic risk and the environmental risk. The characterization shall include a summary of each projected exposure route for contaminants of concern and the distribution of risk across various sectors of the population. Such factors as weight-of evidence associated with toxicity information, the estimated uncertainty of the component parts, and the assumptions contained within the estimates shall be discussed. Work shall conform to applicable sections of the Scope of Work.

2.4.2.5 Applicable or Relevant and Appropriate Requirements (ARAR's) To Be Considered (TBC) Requirements

Parsons ES will develop and propose contaminant and location specific "Applicable or Relevant and Appropriate Requirements" (ARAR's) and To Be Considered (TBC) Requirements which, after review and possible modification as directed by the Contracting Officer, shall be utilized to evaluate subsequent proposed remedial actions. Location specific ARAR's (i.e., clean up levels) and activity-specific ARAR's shall be developed. ARAR's and TBC's shall be prepared using guidance presented in the RI/FS Guidance Manual.

2.4.3 SOW Activity 11 - Remedial Investigation Report

Following completion of the fieldwork, Parsons ES will prepare a Remedial Investigation (RI) report. This document will follow the general format, identified as Table 3-13, of the referenced EPA guidance document, "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA", October 1989.

As part of the RI Report, Parsons ES will conduct a statistical analysis of the soil metals data. Parsons ES will evaluate the data in two sets, with the first set including all surficial soil samples collected from a depth of from 0-2'. The second set shall include all the remaining subsurface data collected from a depth of 2' - refusal. The segregation of the data into two groups is based upon an understanding of the overburden geology of the site. During the Phase I investigation subsurface sampling indicated that the surficial soil layer did not exceed 18" in thickness. Thus the samples collected from the 0-2' depth shall be representative of the A soil horizon. Below a depth of approximately 2 feet the Phase I investigation identified glacially derived till as the only overburden geologic unit present. Thus, the grouping of samples from the 2' - refusal depth, where the refusal depth does not generally exceed 10 feet, is designed to represent the glacial till unit. In order to evaluate the chemical distribution of metals in soils, Parsons ES will statistically evaluate the chemical data based upon the two sample groups described above. Additional background samples shall be collected so as to increase the number of samples for both of the proposed population groups. The statistical program described in the following sections shall then be applied in order to evaluate the variability of TAL metals in site soils.

The distribution of metals within the soils at the fire training areas shall be fully evaluated using the statistical process described below. The process shall be applied to both the 0-2' and 2'-refusal sample groups. The first step of the statistical analysis shall be performed for each analyte to determine if the samples represent a normal or non-parametric distribution of the parent population. An appropriate statistical test method will be selected from the reference, (Gilbert, 1987). This reference lists several effective methods for testing whether a data set has been drawn from an underlying normal distribution. The determination of population distribution shall be made using data collected during both the Phase I and II investigations so as to provide the largest and most statistically reliable data set.

Upon evaluation of the distribution of the data, a statistical test for significance shall be made to determine if the sample data set is statistically different than the background data sets or if the difference is attributed to random error. For the normally distributed data, the Students T-test shall be performed. The Students T-test is designed for the statistical comparison of the means of sample populations. This method provides a statistical means by which to compare two populations of data in order to test for the of equivalency the two data sets. For the data that are not normally distributed, the Mann-Whitney test may be used as a substitute for the T-test to evaluate the means of two sample sets based upon a non-parametric distribution of the data.

Upon completion of the Students T-test or the Mann-Whitney test, the chemical database shall be evaluated for all the metals analyzed. Those metals that are not considered statistically different from the background shall be removed from further consideration. Those metals that are considered to be statistically above the background shall be incorporate into the risk assessment task of the project.

2.4.4 SOW Activity 12 - Treatability Study Requirements Assessment

The work required in this section shall be prepared in accordance with the EPA's RI/FS Guidance Manual. Parsons ES will assess existing data on technologies identified as Remedial Action Alternatives to determine data needs required to undertake treatability investigations following completion of alternatives development. Parsons ES will recommend if specific Treatability Studies are required or if the existing situation is well enough understood and described in scientific, engineering and other technical literature such that site specific treatability studies do not appear to be necessary. ES will develop a Conceptual Treatability Study Plan. Actual implementation of the Treatability Study Plan is not part of this SOW. The Treatability Study shall be submitted with the RI/FS Report.

2.4.5 SOW Activity 13 - Feasibility Study

The work required in this section shall be prepared in accordance with the EPA's RI/FS Guidance Manual. The primary objective of this phase of the FS is to develop an appropriate range of waste management options that protect human health and the environment.

2.4.5.1 Remedial Action Objectives

Parsons ES will develop remedial action objectives which protect human health and the environment and then describe general response action which shall satisfy the remedial action objectives.

2.4.5.2 Alternative Remedial Actions

Parsons ES will describe all available technologies that could be reasonably used as remedial actions at SEAD. Parsons ES will then screen the list to remove any potential Remedial Actions which are clearly

illogical, inadequate, unfeasible, or otherwise ill-suited to the site. Remedial actions presented past the initial screening shall consist of only those representing proven technologies adequate to address site conditions. A detailed evaluation including the strengths and weaknesses of each technology shall be performed. The initial screening shall be based upon effectiveness, implementability and cost. Where appropriate, Parsons ES may combine feasible remedial actions. The "no action" alternative shall be described in detail as part of this task. Additional data needed shall also be described.

2.4.6 SOW Activity 14 - Feasibility Study Report

The work required in this section shall be prepared in accordance with the EPA's RI/FS Guidance Manual. At the completion of the preceding tasks, Parsons ES will prepare the Remedial Investigation/Feasibility Study Report, fully documenting all Phase I work performed. The report shall be prepared according to the requirements of this SOW and the referenced guidance documents. The report shall also describe the recommended work to be performed during the Phase II RI/FS and make specific recommendations, and provide the justification, for sampling locations and analytes proposed for Phase II. As part of this report ES will evaluate the need for interim or expedited remedial actions at each of the sites. If Parsons ES recommends that either is appropriate, he shall so propose and justify. Parsons ES will also propose and justify additional investigations to be undertaken as part of the Phase II Remedial Investigations, if any, for the Contracting Officer's review and approval. The FS Report shall generally follow the referenced "Suggested FS Report Format."

3.0 GUIDANCE DOCUMENTS

The following documents will be used as guidance for this task:

1. The "U.S. Army Corps of Engineers Safety and Health Requirements Manual," U.S. Army Engineering Manual No. EM-385-1-1, April 1981.

2. Interim Final, "Guidance for Conducting Remedial Investigations/Feasibility Studies Under CERCLA," USEPA, Office of Solid Waste and Emergency Response, October 1988.

3. "Chemical Data Quality Management for Hazardous Waste Remedial Activities," ER 1110-1-263, March 1990.

4. "Work Plan for Remedial Investigation/Feasibility Study (RI/FS) at SEAD-16 and SEAD-17, Seneca Army Depot Activity, Romulus, New York," Parsons Engineering Science Inc., 1995.

5. "Federal Facility Agreement under CERCLA Section 120 in the Matter of Seneca Army Depot, Romulus, New York," Docket No. II-CERCLA-FFA-00202, USEPA, U.S. Department of the Army, and the New York State Department of Environmental Conservation, November 1990.

6. Interim Final, "Risk Assessment Guidance for Superfund," OSWER Directive 9285.7-01a, September 1989.

7. "Superfund Exposure Assessment Manual," EPA/540/1-88/01, OSWER Directive 9285.5-1, April 1988.

8. "Chemical Data Quality Management: A Checklist for Chemistry Review," CEMRD-ED-GC, September 21, 1988.

9. "Expanded Site Inspection Report at SEAD-16 and SEAD-17", Parsons Engineering Science, Inc., 1995.

4.0 INTERFACES

This task will require interface with the CEHNC technical and project task managers. In addition, this task will require interface with technical and management staff from the Seneca Army Depot Activity and the CEHNC from the Missouri River Division, the Baltimore District the New York District and the North Atlantic Division. Technical review will be performed by staff from USAEC, AMCEN, CENAD and CHPPM. The technical review comments will be coordinated through the CEHNC, Huntsville Division.

5.0 OTHER PERFORMERS AND SUBCONTRACTORS

All facets of this task, except that involving review by the CEHNC, EPA and NYSDEC, will be executed by Parsons ES personnel.

6.0 DELIVERABLES AND SCHEDULE

A schedule of the deliverables for this task are attached.

7.0 PERFORMANCE REPORTS

Project performance is presented as follows:

1- A Cost Allocation/Manpower Loading Summary Chart
2- A Progress Performance Report
3- A Cost and Schedule Performance Report
4- An Earned Value Progress Curve
5- A Schedule of Deliverables

COST ALLOCATION/MANPOWER LOADING SUMMARY

ACA87-95-D-0031 DELIVERY ORDER 0003 D 16 AND 17															
		13-Jun-97	11-Jul-97	08-Aug-97	05-Sep-97	03-Oct-97	31-Oct-97	28-Nov-97	26-Dec-97	23-Jan-98	20-Feb-98	20-Mar-98	17-Apr-98	15-May-98	12-J
	Breakdown	97-6	97-7	97-8	97-9	97-10	97-11	97-12	97-13	98-1	98-2	98-3	98-4	98-5	9
ork Task 2 – RI/FS Report															
OW Task 9	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
ontaminant	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
ate and Transport	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 10	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
aseline	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
sk Assessment	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 11	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Report	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 12	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
eatability Study	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
equirements Assess.	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 13	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
easibility Study	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 14	Hours	50.0	0.0	75.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
S Report	Burdened Labor	$2,876	$0	$4,314	$0	$2,876	$0	$0	$0	$0	$0	$0	$0	$0	
	Period % Complete	10.0%	0.0%	15.0%	0.0%	10.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
ork Task 2	Hours	50.0	0.0	75.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Burdened Labor	$2,876	$0	$4,314	$0	$2,876	$0	$0	$0	$0	$0	$0	$0	$0	
	ODC's	$584	$0	$1,168	$0	$584	$0	$0	$0	$0	$0	$0	$0	$0	
	Subcontracts	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Total	$3,460	$0	$5,482	$0	$3,460	$0	$0	$0	$0	$0	$0	$0	$0	
	Period % Complete	1.3%	0.0%	2.0%	0.0%	1.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
ork Task 2	Hours	3355.0	3355.0	3430.0	3430.0	3480.0	3480.0	3480.0	3480.0	3480.0	3480.0	3480.0	3480.0	3480.0	
	Burdened Labor	$207,837	$207,837	$212,151	$212,151	$215,027	$215,027	$215,027	$215,027	$215,027	$215,027	$215,027	$215,027	$215,027	$2
	ODC's	$56,644	$56,644	$57,812	$57,812	$58,396	$58,396	$58,396	$58,396	$58,396	$58,396	$58,396	$58,396	$58,396	$5
	Subcontracts	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Total	$264,481	$264,481	$269,963	$269,963	$273,423	$273,423	$273,423	$273,423	$273,423	$273,423	$273,423	$273,423	$273,423	$2
	Cumulative % Complete	96.7%	96.7%	98.7%	98.7%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	1
	BCWS	$264,481	$264,481	$269,963	$269,963	$273,423	$273,423	$273,423	$273,423	$273,423	$273,423	$273,423	$273,423	$273,423	$2
ork Task 2	Hours														
	Burdened Labor														
	ODC's														
	Subcontracts														
	Total														
	Period % Complete														
ork Task 2	Hours														
	Burdened Labor														
	ODC's														
	Subcontracts														
	Total ACWP														
	Cumulative % Complete														
	BCWP														

COST ALLOCATION/MANPOWER LOADING SUMMARY

ACA87-95-D-0031 DELIVERY ORDER 0003															
D 16 AND 17															
		07-Aug-98	04-Sep-98	02-Oct-98	30-Oct-98	27-Nov-98	25-Dec-98	22-Jan-99	19-Feb-99	19-Mar-99	16-Apr-99	14-May-99	11-Jun-99	09-Jul-99	06-A
	Breakdown	98-8	98-9	98-10	98-11	98-12	98-13	99-1	99-2	99-3	99-4	99-5	99-6	99-7	99
ork Task 2 – RI/FS Report															
OW Task 9	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
ontaminant	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
te and Transport	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 10	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
aseline	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
sk Assessment	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 11	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Report	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 12	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
eatability Study	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
equirements Assess.	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 13	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
easibility Study	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 14	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
S Report	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
ork Task 2	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	ODC's	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Subcontracts	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Total	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
ork Task 2	Hours	3480.0	3480.0	3480.0	3480.0	3480.0	3480.0	3480.0	3480.0	3480.0	3480.0	3480.0	3480.0	3480.0	
	Burdened Labor	$215,027	$215,027	$215,027	$215,027	$215,027	$215,027	$215,027	$215,027	$215,027	$215,027	$215,027	$215,027	$215,027	$2
	ODC's	$58,396	$58,396	$58,396	$58,396	$58,396	$58,396	$58,396	$58,396	$58,396	$58,396	$58,396	$58,396	$58,396	$5
	Subcontracts	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Total	$273,423	$273,423	$273,423	$273,423	$273,423	$273,423	$273,423	$273,423	$273,423	$273,423	$273,423	$273,423	$273,423	$2
	Cumulative % Complete	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	1
	BCWS	$273,423	$273,423	$273,423	$273,423	$273,423	$273,423	$273,423	$273,423	$273,423	$273,423	$273,423	$273,423	$273,423	$2
ork Task 2	Hours														
	Burdened Labor														
	ODC's														
	Subcontracts														
	Total														
	Period % Complete														
ork Task 2	Hours														
	Burdened Labor														
	ODC's														
	Subcontracts														
	Total ACWP														
	Cumulative % Complete														
	BCWP														

INDIVIDUAL PERFORMANCE REPORT

Contract No.: DACA87-95-D-0031
Delivery Order No. 0003
SEAD 16 and 17 RI/FS

Report Month: 09-Aug-96

Work Task: 2 - Prepare RI/FS Report

Parsons ES Job Nos: 729895-01002

DELIVERABLES AND PERCENT COMPLETE

Activity	% Complete This Month	% of Task	Total % Complete
SOW Task 9 - Contaminant Fate and Transport	0.0%	5.5%	0.0%
SOW Task 10 - Baseline Risk Assessment	0.0%	21.2%	0.0%
SOW Task 11 - Prepare RI Report			0.0%
Pre-Draft	0.0%	15.7%	0.0%
Draft	0.0%	7.9%	0.0%
Final-Draft	0.0%	4.7%	0.0%
Final	0.0%	3.1%	0.0%
SOW Task 12 - Treatability Study Requirement Assessmen	0.0%	4.9%	0.0%
SOW Task 13 - Feasibility Study	0.0%	15.7%	0.0%
SOW Task 14 - Prepare FS Report			0.0%
Pre-Draft	0.0%	10.6%	0.0%
Draft	0.0%	5.3%	0.0%
Final-Draft	0.0%	3.2%	0.0%
Final	0.0%	2.1%	0.0%
TOTALS		100.0%	0.0%

STATUS

INDIVIDUAL PERFORMANCE REPORT

Contract No.: DACA87-95-D-0031
Delivery Order No. 0003
SEAD 16 and 17 RI/FS

Report Month: 09-Aug-96

Work Task: 2 - RI/FS Report

Parsons ES Job Nos: 729895-01002

COST AND SCHEDULE PERFORMANCE REPORT

	Progress	Cost Data for Period Ending:				% Actuals Used	
	BCWP Period	BAC Period	EAC Period	BCWS Period	ACWP Period	BAC Period	EAC Period
Work Hours				0.0	0.0		
Burdened Labor				$0	$0		
ODC's				$0	$0		
Subcontracts				$0	$0		
TOTALS	$0			$0	$0	0.0%	0.0%

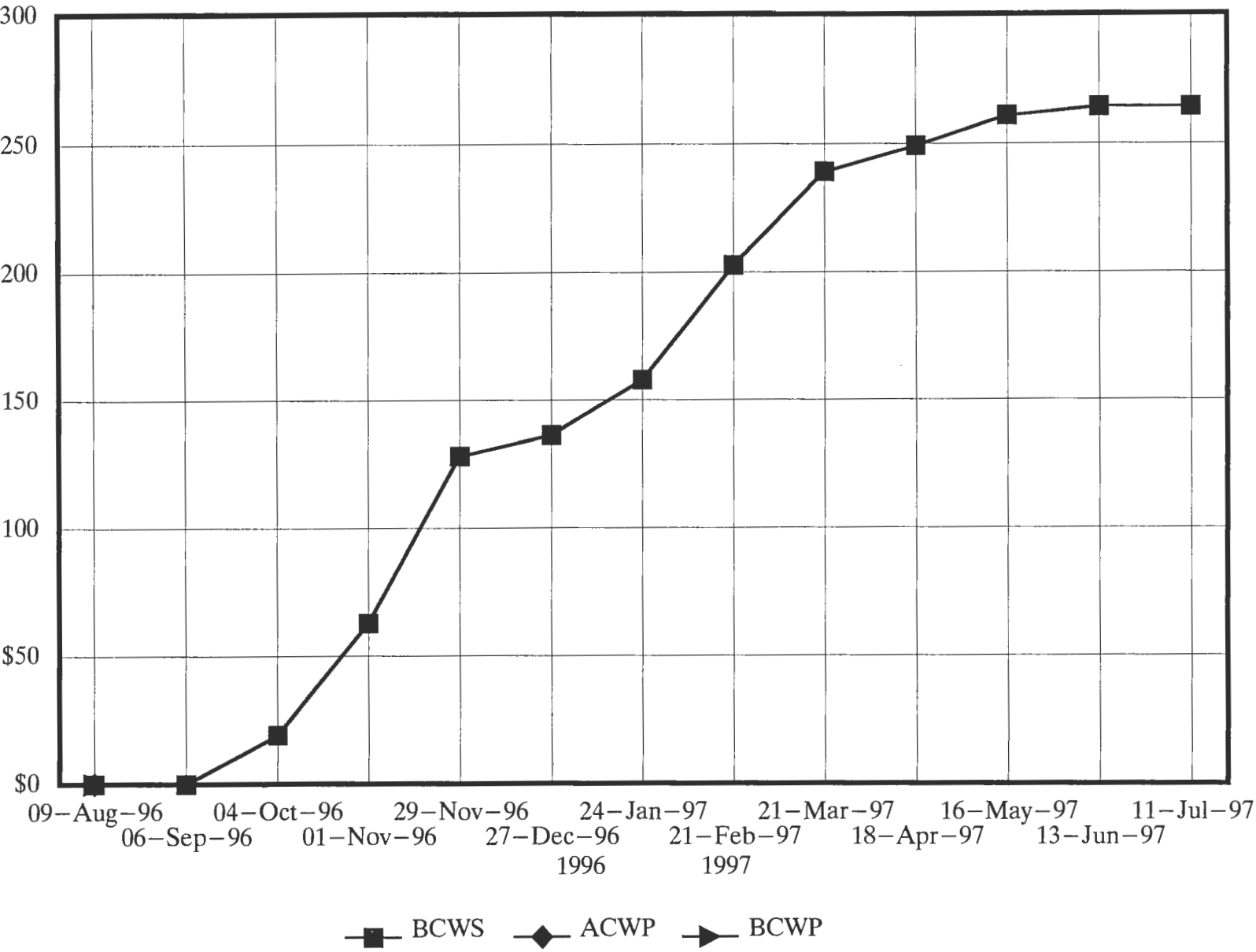
	Progress	Cost Data for Period Ending:				% Actuals Used	
	BCWP Cumulative	BAC Cumulative	EAC Cumulative	BCWS Cumulative	ACWP Cumulative	BAC Cumulative	EAC Cumulative
Work Hours		3480.0	3480.0	0.0	14.0		
Burdened Labor		$215,027	$215,027	$0	$0		
ODC's		$58,396	$58,396	$0	$0		
Subcontracts		$0	$0	$0	$0		
TOTALS	$0	$273,423	$273,423	$0	$0	0.0%	0.0%

COST SCHEDULE VARIANCE REROR T

SCHEDULE VARIANCE (BCWP-BCWS) = $0
COST VARIANCE (BCWP-ACWP) = $0

WORK TASK 2 – RI/FS REPORT

EARNED VALUE CURVE



CONTRACT DACA87-95-D-0031

DELIVERY ORDER 0003
REMEDIAL INVESTIGATION/FEASIBILITY STUDY (RI/FS)
AT SEAD-16 and SEAD-17
THE EXISTING AND ABANDONED DEACTIVATION FURNACES

WORK TASK PROPOSAL

WORK TASK 3: POST FS SUPPORT

PREPARED BY:

Parsons ES Task Manager
Michael Duchesneau, PE

TECHNICAL APPROVAL

CEHNC Technical Manager
Kevin Healy

Date

APPROVED BY:

Parsons ES Project Manager
Michael Duchesneau, PE

PROJECT APPROVAL

CEHNC Project Manager
Dorothy Richards

Date

CONCURRENCE:

Parsons ES Engineering Manager
James Chaplick

CONTRACT APPROVAL

Mary M. Dowling
Contracting Officer

Date

WORK TASK PROPOSAL

CONTRACT DACA87-95-D-0031
DELIVERY ORDER 0003
REMEDIAL INVESTIGATION/FEASIBILITY STUDY (RI/FS)
AT SEAD-16 and SEAD-17
THE FORMER AND EXISTING DEACTIVATION FURNACES

WORK TASK 3: POST FEASIBILITY STUDY SUPPORT REPORT

ES TASK MANAGER: Michael Duchesneau, P.E.

Task Duration: October 1997 to May 1998

1.0 PURPOSE

The purpose of this task is to provide support following approval of the RI and FS Reports. This will include preparation of the Proposed Remedial Action Plan (PRAP) and the Record of Decision (ROD). This is Task 15 which is described in the CEHNC Scope of Work (SOW). The SOW is based upon the Parsons ES workplans that are currently under review by both EPA and NYSDEC.

2.0 TECHNICAL APPROACH

2.1 GENERAL

The two documents required for this task are the Proposed Remedial Action Plan (PRAP) and the Record of Decision (ROD). The PRAP is the optimum remediation plan determined after the evaluation of the feasible alternatives determined in Work Task 2. It is based on the criteria also found in Work Task 2. The ROD is a legally binding document which will provide schedules for the remediation activities. Penalties, if scheduled deadlines are not met are also provided.

2.2 SCOPE

This Work Task includes the following Scope of Work activity:

SOW Activity	Description of Activity
15.	Post Feasibility Study Support

A description of the items to be included in this activity is provided in Section 2.4.

2.3 BACKGROUND

The primary mission of the Seneca Army Depot Activity (SEDA) is the management of military items. This mission involves the demilitarization of overstocked or off-specification munitions. The demilitarization mission is accomplished through several mechanisms, including the use of the APE 1236 Deactivation Furnace. The first deactivation furnace at SEDA, which is now abandoned and is a Solid Waste Management Unit (SWMU), was housed in Building S-311 and has been given the SWMU name, SEAD-16. This facility operated, without APCD, from 1945 until approximately the mid-1960's. The

details of the process operations is not well known although it is likely that the process was similar to the operation of the current deactivation furnace. This involved heating of small arms ammunition and bulk propellant in a rotary steel retort until the items detonated, rendering the munitions harmless.

The existing APE 1236 Deactivation Furnace, used by the SEDA to demilitarize various small arms munitions, was installed in 1962. This facility is housed in Building 376 and has also been identified as a SWMU, i.e. SEAD-17. Throughout the years, the Army has upgraded the system with various pollution control equipment. A baghouse was added in 1972 and the cyclone was added in 1978. In 1988 the Army modified the system for safety reasons. The changes included the installation of a dual conveyor feed system and an emergency release system.

In response to the November 8, 1989 deadline for compliance with promulgated RCRA Subpart O hazardous waste incinerators requirements, the Army, in 1989, initiated a major improvement program that included the two (2) high and low temperature gas coolers, the Automatic Waste Feed Shut Off System (AWFSO), a new computer control system, a steel shroud over the retort, Continuous Emission Monitoring (CEM) equipment and elimination of the emergency release system. This effort involved movement of equipment, installation of new ductwork and expansion of the concrete foundation slab.

However, the furnace equipment upgrades for SEDA were not completed in time to meet the requirements of Subpart O by the deadline date of November 8, 1989. Consequently, the New York State Department of Environmental Conservation (NYSDEC) determine that, since the requirements of Subpart O were not met, the facility had to be closed and a new RCRA permit applied for. SEDA was able to convince the NYSDEC that full closure was not needed, since the Army intended to continue to operate the facility once the upgrades were complete. NYSDEC agreed to allow partial closure of the facility but would not allow the facility to operate until the requirements of Subpart O were met. This requires successful completion of an approved Trial Burn Plan (TBP). In 1988, as part of the Part B permit application, SEDA submitted a final closure plan and a partial closure plan for the deactivation furnace. The partial closure plan was implemented in 1989 and 1990. On November 1, 1989, surface soil sampling was performed at the incinerator and analyzed for Extraction Procedure for Toxicity (EP) Tox metals. Eighteen (18) of the twenty-nine (29) soil samples collected exceeded the allowable limit of 5 mg/L for lead. Additionally, on February 23, 1990, May 2 and June 20, 1990 wipe samples were collected from various locations at the facility including the ductwork. As a result of the soil sampling, soil that exceeded the EP Tox limits for lead was removed and disposed of off-site as a characteristic hazardous waste.

Following the removal of soil, the Army installed the new equipment and submitted a TBP as part of the Part B permit application in August 1990 to NYSDEC for approval. A revised permit including a revised TBP was submitted on or about October 16, 1990. A Notice of Incomplete Application (NIA) pertaining to the Part B TSD permit was provided to SEDA on March 29, 1991 by NYSDEC but did not include comments to the TBP. NYSDEC issued TBP comments on December 2, 1991 and indicated that the revised TBP must be provided by December 31, 1991 or NYSDEC will initiate enforcement action, permit denial or termination of interim status if a full and complete application is not received in a timely fashion. Parsons ES, as Chas. T. Main (MAIN), submitted the TBP to NYSDEC on December 31, 1991. Several deficiencies were noted by NYSDEC in the February 3, 1992 comment letter and the EPA, Region II, in their March 31, 1992 comment letter. Due to the nature of the comments and the level of effort required a new delivery order was issued. Following this, Parsons ES responded to the comments and resubmitted the TBP on or about April 5, 1993.

During the subsequent NYSDEC review, EPA issued the "New Draft Strategy for the Combustion of Hazardous Waste" on May 18, 1993 which placed additional requirements on the licensing of hazardous

waste incinerators. With this, EPA determined that new hazardous waste incinerators must meet additional requirements for licensing including: a multi-media risk assessment, dioxin sampling, lower particulate emission concentrations and measurement of all Products of Incomplete Combustion (PIC). Since the April 5, 1993 TBP did not include provisions to comply with these new requirements, a new modified TBP will need to be written. EPA, Region II, issued formal comments indicating the need to comply with these new requirements on June 15, 1993. NYSDEC issued similar comments on August 9, 1993.

In August 1990, the Seneca Army Depot Activity (SEDA) was listed final on Group 14 of the federal section of the National Priority List (NPL). The listing of the facility on the NPL mandates that the requirements of CERCLA be met. In addition, since the depot is also operating under the interim status provisions of the RCRA, the requirements of RCRA, where applicable, must also be met.

Following the NPL listing, the Army recognized the need to consolidate the requirements of both CERCLA and RCRA at the facility. This effort was intended to provide a mechanism to resolve disputes and establish procedures and policies that will be used in addressing all future environmental issues that may exist at the SEDA. This culminated into a formalized, negotiated agreement, called the Federal Facilities Agreement (FFA), sometimes referred to as the Interagency Agreement (IAG), between the Army and the two regulating authorities, the USEPA and the NYSDEC. To assist the Army in implementing the activities of the FFA, SEDA requested assistance, both technical and administrative, from the, U. S. Army Engineering and Support Center, Huntsville, (CEHNC) formerly known as the Corps of Engineers Huntsville Division (CEHNC). Parsons ES, under the, SEDA specific, current indefinite delivery order, cost reimbursable contract with the U. S. Army, CEHNC, Huntsville, has been tasked to provide the environmental support services necessary to fulfill the requirements identified in the FFA.

In accordance with the procedures described in the FFA, Parsons ES has performed various Expanded Site Investigations (ESI)s and Remedial Investigations/Feasibility Studies (RI/FS)s at selected Solid Waste Management Units (SWMU)s that have been identified as Areas of Concern (AOC)s. All SWMUs, which initially comprised 72 different sites within the boundaries of the depot, were identified by SEDA as a requirement of the RCRA, Part B, hazardous waste management permit. This count was recently updated to 75. These sites were compiled from an evaluation of historical information and previous management practices, as sites where some potential for a release could have occurred. With input from the regulatory agencies involved, a subset of 24 out of the 75 total SWMUs were deemed to pose no threat to human health and/or the environment and were further classified as "No Action" SWMUs. The remaining SWMUs were classified as Areas of Concern (AOC)s, requiring further evaluation.

The ESI is the first step in the evaluation process and the point at which site specific information, necessary to evaluate the threat, is collected. Typically, this evaluation involves the collection of soil, groundwater, surface water and sediment data. Upon completion of an ESI, if it is agreed among all parties, that an AOC does not pose a threat, then the Army is required to prepare a completion report, which is a summary of the ESI, and finalize the results into a Record of Decision (ROD). The ROD is an important document in the process as it is a contractual agreement between all parties involved documenting the conclusions that have been reached and the final disposition of the site. However, if the conclusion of the ESI is that a threat does exist, then additional follow-on environmental work is required to adequately address and remedy these threats. Alternatively, if the Army, EPA and NYSDEC agree that although a threat does exist, but the threat is limited then the Army may implement a removal action to eliminate the threat, thereby preventing the need to perform an RI/FS. Upon successful implementation of a removal action, whereby the threat is eliminated and no further action is required, a completion report is prepared followed by finalization as a ROD. At this point, the site is eliminated from further consideration. However, if the ESI indicates that the threat is significant and the conditions at the AOC cannot be controlled with the

implementation of a removal action, an RI/FS may be appropriate. The two sites under consideration for this delivery order, SEAD-16 and SEAD-17, are both considered to be sites that will require RI/FSs.

The investigatory process proposed by the Army and verbally agreed to by the EPA and NYSDEC required the Army to prioritized the sites that were to be investigated first. This "worst first" process ensured that sufficient manpower and funds could be directed at those sites that appeared to have the greatest impact on human health and the environment. It also provided that the environmental program would be manageable, providing quality documents within a reasonable amount of time.

Recent occurrences have caused this approach to be changed. In October, 1995, the Army announced the closure of SEDA. As a result, those sites that can be released for reuse the quickest will be given priority for the investigation and clean-up. Clean-up of sites that are located within areas that have the greatest economic reuse potential will be given a higher priority than those site that are in an area of little to none economic value. This process known as the Base Realignment and Closure Process (BRAC) involves substantial input from the Local Redevelopment Authority (LRA). The LRA is a key group as this body determines the areas of the depot that are most likely to be of interest for reuse.

Both SEAD-16 and SEAD-17 were designated as high priority AOCs in the final SWMU Classification Report prepared by Parsons ES. As a result of this designation, ESI's were conducted at the two SWMU's during 1994. At SEAD-16, the ESI indicated soil impacts from semi-volatile organic compounds (specifically PAHs) and metals had occurred. Groundwater impacts due to metals was also present. Samples collected from the floor inside Building S-311, which is part of SEAD-16 detected the presence of PAHs and nitroaromatic compounds at levels above background and the TAGM criteria. Asbestos, including chrysotile and amosite, were also detected in samples collected within the building. At SEAD-17, the ESI identified the presence of semi-volatiles and metals, including antimony, arsenic, barium, cadmium, copper, lead and zinc, in the soils. Groundwater impacts were considered to be minimal. The presence of these chemicals in soils surrounding both the deactivation furnaces is considered to be a direct result of the operation of these units and is the focus of the RI and FS processes.

The Draft RI/FS workplan for SEAD-16 and SEAD-17 was submitted to both EPA Region 2 and NYSDEC by Parsons ES on March 29, 1995. EPA comments on the Draft workplan was received on May 19, 1995. NYSDEC comments, dated June 9, 1995, on the Draft version of the workplan were received on June 15, 1995. These comments were incorporated into our draft workplan and the workplan was reissued as a Draft-final workplan on August 1, 1995. EPA comments were received on September 1, 1995. No additional NYSDEC comments were received. Parsons incorporated the additional EPA comments to the draft-final workplan and issued the workplan as final on October 19, 1995. An additional EPA comment was received on November 21, 1995. The minor page inserts required to respond to this comment was issued shortly thereafter. Although final, written, approval of this workplan has not been received from the regulators we believe that since the time required for receipt of any additional comments has passed the workplan is considered final. The scope of services described in this Work Task Proposal (WTP) is based upon the draft-final workplan.

2.4 SOW ACTIVITY DESCRIPTION

2.4.1 SOW Activity 15 - Post Feasibility Study Support

Following approval of the RI and FS reports by the regulators, Parsons ES will be responsible for the preparation of the Proposed Remedial Action Plan (PRAP) and the Record of Decision (ROD). Both documents shall be prepared in accordance with the existing EPA guidance documents.

3.0 GUIDANCE DOCUMENTS

The following documents will be used as guidance for this task:

1. The "U.S. Army Corps of Engineers Safety and Health Requirements Manual," U.S. Army Engineering Manual No. EM-385-1-1, April 1981.

2. Interim Final, "Guidance for Conducting Remedial Investigations/Feasibility Studies Under CERCLA," USEPA, Office of Solid Waste and Emergency Response, October 1988.

3. "Chemical Data Quality Management for Hazardous Waste Remedial Activities," ER 1110-1-263, March 1990.

4. "Work Plan for Remedial Investigation/Feasibility Study (RI/FS) at SEAD-16 and SEAD-17, Seneca Army Depot Activity, Romulus, New York," Parsons Engineering Science Inc., 1995.

5. "Federal Facility Agreement under CERCLA Section 120 in the Matter of Seneca Army Depot, Romulus, New York," Docket No. II-CERCLA-FFA-00202, USEPA, U.S. Department of the Army, and the New York State Department of Environmental Conservation, November 1990.

6. Interim Final, "Risk Assessment Guidance for Superfund," OSWER Directive 9285.7-01a, September 1989.

7. "Superfund Exposure Assessment Manual," EPA/540/1-88/01, OSWER Directive 9285.5-1, April 1988.

8. "Chemical Data Quality Management: A Checklist for Chemistry Review," CEMRD-ED-GC, September 21, 1988.

9. "Expanded Site Inspection Report at SEAD-16 and SEAD-16," Parsons Engineering Science, Inc., 1995. The following documents will be used as guidance for this task:

4.0 INTERFACES

This task will require interface with the CEHNC technical and project task managers. In addition, this task will require interface with technical and management staff from the Seneca Army Depot Activity and the CEHNC from the Missouri River Division, the Baltimore District the New York District and the North Atlantic Division. Technical review will be performed by staff from USAEC, AMCEN, CENAD and CHPPM. The technical review comments will be coordinated through the CEHNC, Huntsville Division.

5.0 OTHER PERFORMERS AND SUBCONTRACTORS

All facets of this task, except that involving review by the CEHNC, EPA and NYSDEC, will be executed by Parsons ES personnel.

6.0 DELIVERABLES AND SCHEDULE

A schedule of the deliverables for this task are attached.

7.0 PERFORMANCE REPORTS

Project performance is presented as follows:

1- A Cost Allocation/Manpower Loading Summary Chart
2- A Progress Performance Report
3- A Cost and Schedule Performance Report
4- An Earned Value Progress Curve
5- A Schedule of Deliverables

COST ALLOCATION/MANPOWER LOADING SUMMARY

ACA87-95-D-0031 DELIVERY ORDER 0003 D 16 AND 17						09-Aug-96	06-Sep-96	04-Oct-96	01-Nov-96	29-Nov-96	27-Dec-96	24-Jan-97	21-Feb-97	21-Mar-97	18-Ap
	Breakdown	Amount	Start	End	Periods	96-8	96-9	96-10	96-11	96-12	96-13	97-1	97-2	97-3	97-
ork Task 3 – Post FS Support															
OW Task 15	Hours	720.0	04-Oct-97	15-May-98	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
epare PRAP & ROD	Burdened Labor	$51,508				$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Period % Complete	100.0%				0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
ork Task 3	Hours	720.0	04-Oct-97	15-May-98	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Burdened Labor	$51,508				$0	$0	$0	$0	$0	$0	$0	$0	$0	
	ODC's	$12,826				$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Subcontracts	$0				$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Total	$64,334				$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Period % Complete	100.0%				0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
ork Task 3	Hours	720.0	04-Oct-97	15-May-98	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Burdened Labor	$51,508				$0	$0	$0	$0	$0	$0	$0	$0	$0	
	ODC's	$12,826				$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Subcontracts	$0				$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Total	$64,334				$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Cumulative % Complete	100.0%				0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
	BCWS					$0	$0	$0	$0	$0	$0	$0	$0	$0	
ork Task 3	Hours	720.0	04-Oct-97	15-May-98	9.0	0.0									
	Burdened Labor	$51,508				$0									
	ODC's	$12,826				$0									
	Subcontracts	$0				$0									
	Total	$64,334				$0									
	Period % Complete	100.0%				0.0%									
ork Task 3	Hours	720.0	04-Oct-97	15-May-98	9.0	0.0									
	Burdened Labor	$51,508				$0									
	ODC's	$12,826				$0									
	Subcontracts	$0				$0									
	Total ACWP	$64,334				$0									
	Cumulative % Complete	100.0%				0.0%									
	BCWP					$0									

COST ALLOCATION/MANPOWER LOADING SUMMARY

ACA87-95-D-0031 DELIVERY ORDER 0003 D 16 AND 17															
		13-Jun-97	11-Jul-97	08-Aug-97	05-Sep-97	03-Oct-97	31-Oct-97	28-Nov-97	26-Dec-97	23-Jan-98	20-Feb-98	20-Mar-98	17-Apr-98	15-May-98	12-J
	Breakdown	97-6	97-7	97-8	97-9	97-10	97-11	97-12	97-13	98-1	98-2	98-3	98-4	98-5	98
ork Task 3 – Post FS Support															
OW Task 15	Hours	0.0	0.0	0.0	0.0	0.0	90.0	144.0	0.0	90.0	90.0	180.0	90.0	36.0	
epare PRAP & ROD	Burdened Labor	$0	$0	$0	$0	$0	$6,439	$10,302	$0	$6,439	$6,439	$12,877	$6,439	$2,575	
	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	12.5%	20.0%	0.0%	12.5%	12.5%	25.0%	12.5%	5.0%	
ork Task 3	Hours	0.0	0.0	0.0	0.0	0.0	90.0	144.0	0.0	90.0	90.0	180.0	90.0	36.0	
	Burdened Labor	$0	$0	$0	$0	$0	$6,439	$10,302	$0	$6,439	$6,439	$12,877	$6,439	$2,575	
	ODC's	$0	$0	$0	$0	$0	$1,603	$2,565	$0	$1,603	$1,603	$3,207	$1,603	$641	
	Subcontracts	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Total	$0	$0	$0	$0	$0	$8,042	$12,867	$0	$8,042	$8,042	$16,084	$8,042	$3,217	
	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	12.5%	20.0%	0.0%	12.5%	12.5%	25.0%	12.5%	5.0%	
ork Task 3	Hours	0.0	0.0	0.0	0.0	0.0	90.0	234.0	234.0	324.0	414.0	594.0	684.0	720.0	
	Burdened Labor	$0	$0	$0	$0	$0	$6,439	$16,740	$16,740	$23,179	$29,617	$42,494	$48,933	$51,508	$5
	ODC's	$0	$0	$0	$0	$0	$1,603	$4,168	$4,168	$5,772	$7,375	$10,581	$12,185	$12,826	$1
	Subcontracts	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Total	$0	$0	$0	$0	$0	$8,042	$20,909	$20,909	$28,950	$36,992	$53,076	$61,117	$64,334	$6
	Cumulative % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	12.5%	32.5%	32.5%	45.0%	57.5%	82.5%	95.0%	100.0%	1
	BCWS	$0	$0	$0	$0	$0	$8,042	$20,909	$20,909	$28,950	$36,992	$53,076	$61,117	$64,334	$6
ork Task 3	Hours														
	Burdened Labor														
	ODC's														
	Subcontracts														
	Total														
	Period % Complete														
ork Task 3	Hours														
	Burdened Labor														
	ODC's														
	Subcontracts														
	Total ACWP														
	Cumulative % Complete														
	BCWP														

COST ALLOCATION/MANPOWER LOADING SUMMARY

ACA87-95-D-0031 DELIVERY ORDER 0003															
D 16 AND 17															
		07-Aug-98	04-Sep-98	02-Oct-98	30-Oct-98	27-Nov-98	25-Dec-98	22-Jan-99	19-Feb-99	19-Mar-99	16-Apr-99	14-May-99	11-Jun-99	09-Jul-99	06-Au
	Breakdown	98-8	98-9	98-10	98-11	98-12	98-13	99-1	99-2	99-3	99-4	99-5	99-6	99-7	99
ork Task 3 – Post FS Support															
OW Task 15	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
epare PRAP & ROD	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
ork Task 3	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	ODC's	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Subcontracts	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Total	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
ork Task 3	Hours	720.0	720.0	720.0	720.0	720.0	720.0	720.0	720.0	720.0	720.0	720.0	720.0	720.0	
	Burdened Labor	$51,508	$51,508	$51,508	$51,508	$51,508	$51,508	$51,508	$51,508	$51,508	$51,508	$51,508	$51,508	$51,508	$5
	ODC's	$12,826	$12,826	$12,826	$12,826	$12,826	$12,826	$12,826	$12,826	$12,826	$12,826	$12,826	$12,826	$12,826	$1
	Subcontracts	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Total	$64,334	$64,334	$64,334	$64,334	$64,334	$64,334	$64,334	$64,334	$64,334	$64,334	$64,334	$64,334	$64,334	$6
	Cumulative % Complete	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	1
	BCWS	$64,334	$64,334	$64,334	$64,334	$64,334	$64,334	$64,334	$64,334	$64,334	$64,334	$64,334	$64,334	$64,334	$6
ork Task 3	Hours														
	Burdened Labor														
	ODC's														
	Subcontracts														
	Total														
	Period % Complete														
ork Task 3	Hours														
	Burdened Labor														
	ODC's														
	Subcontracts														
	Total ACWP														
	Cumulative % Complete														
	BCWP														

INDIVIDUAL PERFORMANCE REPORT

Contract No.: DACA87-95-D-0031
Delivery Order No. 0003
SEAD 16 and 17 RI/FS

Report Month: 09-Aug-96

Work Task: 3 – Post FS Support

Parsons ES Job Nos: 729895-01003

DELIVERABLES AND PERCENT COMPLETE

Activity	% Complete This Month	% of Task	Total % Complete
SOW Task 13 – Post FS Support			
Prepare PRAP			
Pre-Draft	0.0%	12.5%	0.0%
Draft	0.0%	20.0%	0.0%
Final-Draft	0.0%	12.5%	0.0%
Final	0.0%	5.0%	0.0%
Prepare ROD			
Pre-Draft	0.0%	12.5%	0.0%
Draft	0.0%	20.0%	0.0%
Final-Draft	0.0%	12.5%	0.0%
Final	0.0%	5.0%	0.0%
TOTALS		100.0%	0.0%

STATUS

INDIVIDUAL PERFORMANCE REPORT

Contract No.: DACA87-95-D-0031
Delivery Order No. 0003
SEAD 16 and 17 RI/FS

Report Month: 09-Aug-96

Work Task: 3 - Post FS Support

Parsons ES Job Nos: 729895-01003

COST AND SCHEDULE PERFORMANCE REPORT

	Progress	Cost Data for Period Ending:				% Actuals Used	
	BCWP Period	BAC Period	EAC Period	BCWS Period	ACWP Period	BAC Period	EAC Period
Work Hours				0.0	0.0		
Burdened Labor				$0	$0		
ODC's				$0	$0		
Subcontracts				$0	$0		
TOTALS	$0			$0	$0	0.0%	0.0%

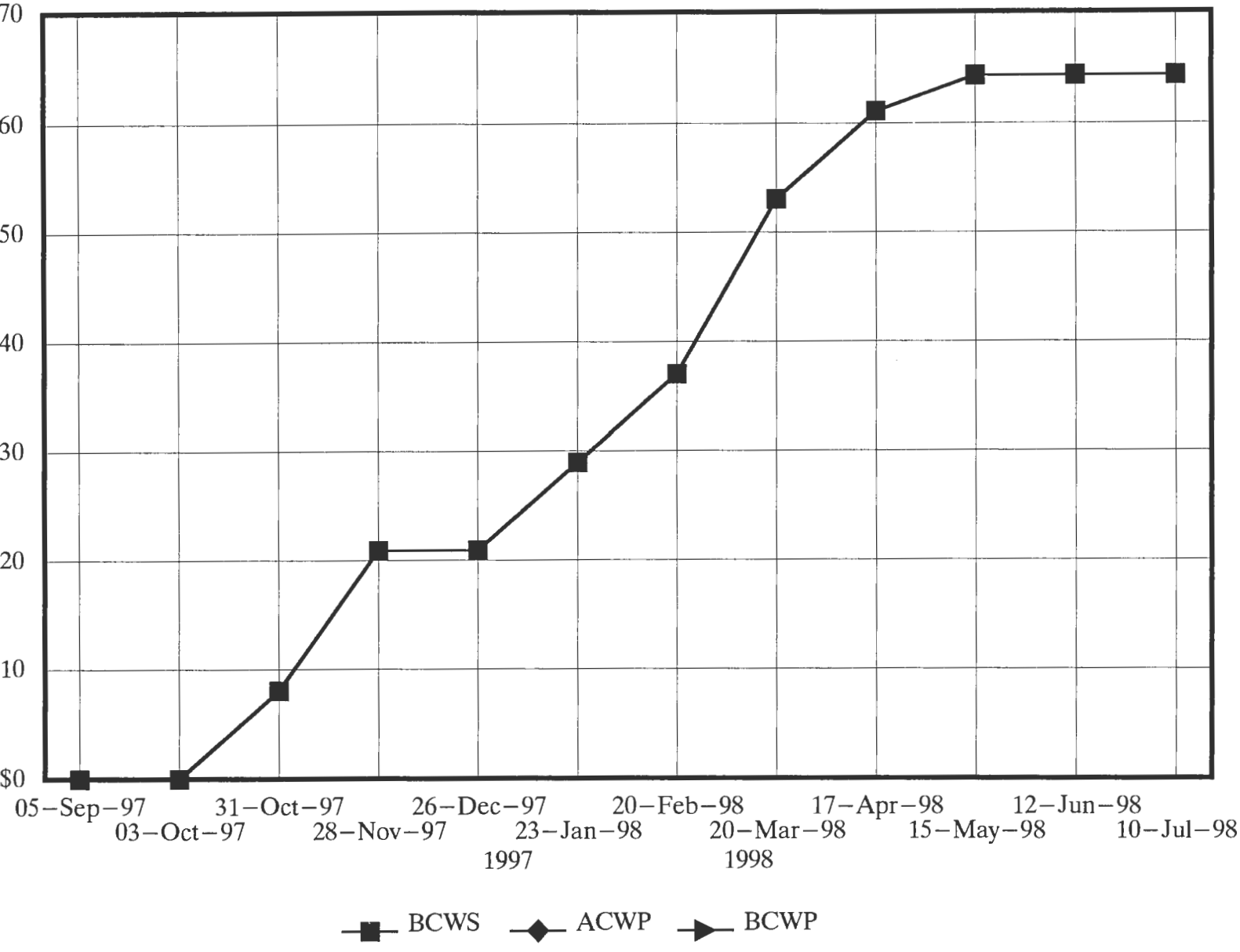
	Progress	Cost Data for Period Ending:				% Actuals Used	
	BCWP Cumulative	BAC Cumulative	EAC Cumulative	BCWS Cumulative	ACWP Cumulative	BAC Cumulative	EAC Cumulative
Work Hours		720.0	720.0	0.0	9.0		
Burdened Labor		$51,508	$51,508	$0	$0		
ODC's		$12,826	$12,826	$0	$0		
Subcontracts		$0	$0	$0	$0		
TOTALS	$0	$64,334	$64,334	$0	$0	0.0%	0.0%

COST SCHEDULE VARIANCE REROPT

SCHEDULE VARIANCE (BCWP-BCWS) = $0
COST VARIANCE (BCWP-ACWP) = $0

WORK TASK 3 – POST FS SUPPORT

CASH FLOW CURVE



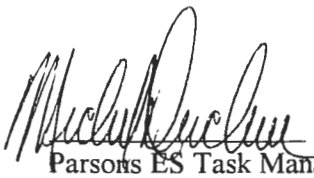
CONTRACT DACA87-95-D-0031

DELIVERY ORDER 0003
REMEDIAL INVESTIGATION/FEASIBILITY STUDY (RI/FS)
AT SEAD-16 and SEAD-17
THE FORMER AND EXISTING DEACTIVATION FURNACES

WORK TASK PROPOSAL

WORK TASK 4: PROJECT MANAGEMENT

PREPARED BY:



Parsons ES Task Manager
Michael Duchesneau, PE

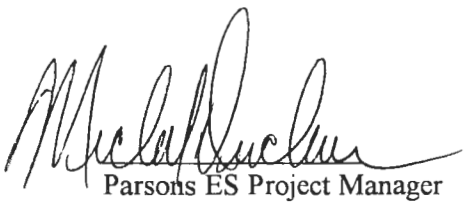
TECHNICAL APPROVAL

_____ _____

CEHNC Technical Manager
Kevin Healy

Date

APPROVED BY:



Parsons ES Project Manager
Michael Duchesneau, PE

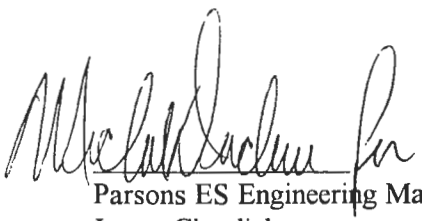
PROJECT APPROVAL

_____ _____

CEHNC Project Manager
Dorothy Richards

Date

CONCURRENCE:



Parsons ES Engineering Manager
James Chaplick

CONTRACT APPROVAL

_____ _____

Mary Dowling
Contracting Officer

Date

WORK TASK PROPOSAL

CONTRACT DACA 87-95-D-0031
DELIVERY ORDER 0003
REMEDIAL INVESTIGATION/FEASIBILITY STUDY (RI/FS)
AT SEAD-16 and SEAD-17
THE FORMER AND EXISTING DEACTIVATION FURNACES

WORK TASK 4: PROJECT MANAGEMENT

PARSONS ES TASK MANAGER: Michael Duchesneau, P.E.

Task Duration: August 1996 to July 1998

1.0 PURPOSE

The purpose of this work task is to describe activities that are required to update the Army as to the status and progress of the work and to track the budget while the preparation of the work plan is on-going.

2.0 TECHNICAL APPROACH

2.1 GENERAL

All management tasks associated with reporting of progress and the tracking of schedules and costs for this delivery order, identified as SOW Tasks 6, 7, 8 and 16 will be included as part of this work task. These tasks include: preparation of the Monthly Field Activity Reports, preparation of the Quarterly Reports, preparation of the Field Sampling Letter Reports, preparation of the Monthly Progress Reports, preparation of the Work Task Proposal, project update at the quarterly project manager's meeting, day to day scheduling of work and routine interfacing with the CEHNC and SEDA.

2.2 SCOPE

This work task includes the following Scope of Work activities:

SOW Activity	Description of Activity
6.	Monthly Field Activity Reports
7.	Quarterly Reports
8.	Field Sampling Letter Reports
16.	Project Management

A description of the items to be included in this activity is provided in Section 2.4.

2.3 BACKGROUND

The primary mission of the Seneca Army Depot Activity (SEDA) is the management of military items. This mission involves the demilitarization of overstocked or off-specification munitions. The demilitarization mission is accomplished through several mechanisms, including the use of the APE 1236 Deactivation Furnace. The first deactivation furnace at SEDA, which is now abandoned and is a Solid Waste Management Unit (SWMU), was housed in Building S-311 and has been given the SWMU name, SEAD-16. This facility operated, without APCD, from 1945 until approximately the mid-1960's. The details of the process operations is not well known although it is likely that the process was similar to the

operation of the current deactivation furnace. This involved heating of small arms ammunition and bulk propellant in a rotary steel retort until the items detonated, rendering the munitions harmless.

The existing APE 1236 Deactivation Furnace, used by the SEDA to demilitarize various small arms munitions, was installed in 1962. This facility is housed in Building 376 and has also been identified as a SWMU, i.e. SEAD-17. Throughout the years, the Army has upgraded the system with various pollution control equipment. A baghouse was added in 1972 and the cyclone was added in 1978. In 1988 the Army modified the system for safety reasons. The changes included the installation of a dual conveyor feed system and an emergency release system.

In response to the November 8, 1989 deadline for compliance with promulgated RCRA Subpart O hazardous waste incinerators requirements, the Army, in 1989, initiated a major improvement program that included the two (2) high and low temperature gas coolers, the Automatic Waste Feed Shut Off System (AWFSO), a new computer control system, a steel shroud over the retort, Continuous Emission Monitoring (CEM) equipment and elimination of the emergency release system. This effort involved movement of equipment, installation of new ductwork and expansion of the concrete foundation slab.

However, the furnace equipment upgrades for SEDA were not completed in time to meet the requirements of Subpart O by the deadline date of November 8, 1989. Consequently, the New York State Department of Environmental Conservation (NYSDEC) determine that, since the requirements of Subpart O were not met, the facility had to be closed and a new RCRA permit applied for. SEDA was able to convince the NYSDEC that full closure was not needed, since the Army intended to continue to operate the facility once the upgrades were complete. NYSDEC agreed to allow partial closure of the facility but would not allow the facility to operate until the requirements of Subpart O were met. This requires successful completion of an approved Trial Burn Plan (TBP). In 1988, as part of the Part B permit application, SEDA submitted a final closure plan and a partial closure plan for the deactivation furnace. The partial closure plan was implemented in 1989 and 1990. On November 1, 1989, surface soil sampling was performed at the incinerator and analyzed for Extraction Procedure for Toxicity (EP) Tox metals. Eighteen (18) of the twenty-nine (29) soil samples collected exceeded the allowable limit of 5 mg/L for lead. Additionally, on February 23, 1990, May 2 and June 20, 1990 wipe samples were collected from various locations at the facility including the ductwork. As a result of the soil sampling, soil that exceeded the EP Tox limits for lead was removed and disposed of off-site as a characteristic hazardous waste.

Following the removal of soil, the Army installed the new equipment and submitted a TBP as part of the Part B permit application in August 1990 to NYSDEC for approval. A revised permit including a revised TBP was submitted on or about October 16, 1990. A Notice of Incomplete Application (NIA) pertaining to the Part B TSD permit was provided to SEDA on March 29, 1991 by NYSDEC but did not include comments to the TBP. NYSDEC issued TBP comments on December 2, 1991 and indicated that the revised TBP must be provided by December 31, 1991 or NYSDEC will initiate enforcement action, permit denial or termination of interim status if a full and complete application is not received in a timely fashion. Parsons ES, as Chas. T. Main (MAIN), submitted the TBP to NYSDEC on December 31, 1991. Several deficiencies were noted by NYSDEC in the February 3, 1992 comment letter and the EPA, Region II, in their March 31, 1992 comment letter. Due to the nature of the comments and the level of effort required a new delivery order was issued. Following this, Parsons ES responded to the comments and resubmitted the TBP on or about April 5, 1993.

During the subsequent NYSDEC review, EPA issued the "New Draft Strategy for the Combustion of Hazardous Waste" on May 18, 1993 which placed additional requirements on the licensing of hazardous waste incinerators. With this, EPA determined that new hazardous waste incinerators must meet additional requirements for licensing including: a multi-media risk assessment, dioxin sampling, lower particulate emission concentrations and measurement of all Products of Incomplete Combustion (PIC). Since the April 5, 1993 TBP did not include provisions to comply with these new requirements, a new modified TBP will

need to be written. EPA, Region II, issued formal comments indicating the need to comply with these new requirements on June 15, 1993. NYSDEC issued similar comments on August 9, 1993.

In August 1990, the Seneca Army Depot Activity (SEDA) was listed final on Group 14 of the federal section of the National Priority List (NPL). The listing of the facility on the NPL mandates that the requirements of CERCLA be met. In addition, since the depot is also operating under the interim status provisions of the RCRA, the requirements of RCRA, where applicable, must also be met.

Following the NPL listing, the Army recognized the need to consolidate the requirements of both CERCLA and RCRA at the facility. This effort was intended to provide a mechanism to resolve disputes and establish procedures and policies that will be used in addressing all future environmental issues that may exist at the SEDA. This culminated into a formalized, negotiated agreement, called the Federal Facilities Agreement (FFA), sometimes referred to as the Interagency Agreement (IAG), between the Army and the two regulating authorities, the USEPA and the NYSDEC. To assist the Army in implementing the activities of the FFA, SEDA requested assistance, both technical and administrative, from the, U. S. Army Engineering and Support Center, Huntsville, (CEHNC) formerly known as the Corps of Engineers Huntsville Division (CEHNC). Parsons ES, under the, SEDA specific, current indefinite delivery order, cost reimbursable contract with the U. S. Army, CEHNC, Huntsville, has been tasked to provide the environmental support services necessary to fulfill the requirements identified in the FFA.

In accordance with the procedures described in the FFA, Parsons ES has performed various Expanded Site Investigations (ESI)s and Remedial Investigations/Feasibility Studies (RI/FS)s at selected Solid Waste Management Units (SWMU)s that have been identified as Areas of Concern (AOC)s. All SWMUs, which initially comprised 72 different sites within the boundaries of the depot, were identified by SEDA as a requirement of the RCRA, Part B, hazardous waste management permit. This count was recently updated to 75. These sites were compiled from an evaluation of historical information and previous management practices, as sites where some potential for a release could have occurred. With input from the regulatory agencies involved, a subset of 24 out of the 75 total SWMUs were deemed to pose no threat to human health and/or the environment and were further classified as "No Action" SWMUs. The remaining SWMUs were classified as Areas of Concern (AOC)s, requiring further evaluation.

The ESI is the first step in the evaluation process and the point at which site specific information, necessary to evaluate the threat, is collected. Typically, this evaluation involves the collection of soil, groundwater, surface water and sediment data. Upon completion of an ESI, if it is agreed among all parties, that an AOC does not pose a threat, then the Army is required to prepare a completion report, which is a summary of the ESI, and finalize the results into a Record of Decision (ROD). The ROD is an important document in the process as it is a contractual agreement between all parties involved documenting the conclusions that have been reached and the final disposition of the site. However, if the conclusion of the ESI is that a threat does exist, then additional follow-on environmental work is required to adequately address and remedy these threats. Alternatively, if the Army, EPA and NYSDEC agree that although a threat does exist, but the threat is limited then the Army may implement a removal action to eliminate the threat, thereby preventing the need to perform an RI/FS. Upon successful implementation of a removal action, whereby the threat is eliminated and no further action is required, a completion report is prepared followed by finalization as a ROD. At this point, the site is eliminated from further consideration. However, if the ESI indicates that the threat is significant and the conditions at the AOC cannot be controlled with the implementation of a removal action, an RI/FS may be appropriate. The two sites under consideration for this delivery order, SEAD-16 and SEAD-17, are both considered to be sites that will require RI/FSs.

The investigatory process proposed by the Army and verbally agreed to by the EPA and NYSDEC required the Army to prioritized the sites that were to be investigated first. This "worst first" process ensured that sufficient manpower and funds could be directed at those sites that appeared to have the greatest impact on human health and the environment. It also provided that the environmental program would be manageable, providing quality documents within a reasonable amount of time.

Recent occurrences have caused this approach to be changed. In October, 1995, the Army announced the closure of SEDA. As a result, those sites that can be released for reuse the quickest will be given priority for the investigation and clean-up. Clean-up of sites that are located within areas that have the greatest economic reuse potential will be given a higher priority than those site that are in an area of little to none economic value. This process known as the Base Realignment and Closure Process (BRAC) involves substantial input from the Local Redevelopment Authority (LRA). The LRA is a key group as this body determines the areas of the depot that are most likely to be of interest for reuse.

Both SEAD-16 and SEAD-17 were designated as high priority AOCs in the final SWMU Classification Report prepared by Parsons ES. As a result of this designation, ESI's were conducted at the two SWMU's during 1994. At SEAD-16, the ESI indicated soil impacts from semi-volatile organic compounds (specifically PAHs) and metals had occurred. Groundwater impacts due to metals was also present. Samples collected from the floor inside Building S-311, which is part of SEAD-16 detected the presence of PAHs and nitroaromatic compounds at levels above background and the TAGM criteria. Asbestos, including chrysotile and amosite, were also detected in samples collected within the building. At SEAD-17, the ESI identified the presence of semi-volatiles and metals, including antimony, arsenic, barium, cadmium, copper, lead and zinc, in the soils. Groundwater impacts were considered to be minimal. The presence of these chemicals in soils surrounding both the deactivation furnaces is considered to be a direct result of the operation of these units and is the focus of the RI and FS processes.

The Draft RI/FS workplan for SEAD-16 and SEAD-17 was submitted to both EPA Region 2 and NYSDEC by Parsons ES on March 29, 1995. EPA comments on the Draft workplan was received on May 19, 1995. NYSDEC comments, dated June 9, 1995, on the Draft version of the workplan were received on June 15, 1995. These comments were incorporated into our draft workplan and the workplan was reissued as a Draft-final workplan on August 1, 1995. EPA comments were received on September 1, 1995. No additional NYSDEC comments were received. Parsons incorporated the additional EPA comments to the draft-final workplan and issued the workplan as final on October 19, 1995. An additional EPA comment was received on November 21, 1995. The minor page inserts required to respond to this comment was issued shortly thereafter. Although final, written, approval of this workplan has not been received from the regulators we believe that since the time required for receipt of any additional comments has passed the workplan is considered final. The scope of services described in this Work Task Proposal (WTP) is based upon the draft-final workplan.

2.4 SOW ACTIVITY DESCRIPTION

2.4.1 SOW Activity 6 - Monthly Field Activity Reports

This task is a reflection of the management style of the CEHNC and Parsons ES that is based upon maintaining direct and efficient lines of communication and a proactive philosophy in identifying and eliminating potential problems as early as possible. Due to the potential difficulties associated with implementing and managing a large field program, involving coordination of several subcontractors, Parsons ES has been tasked with providing the CEHNC monthly reports while field tasks are being performed. The monthly reports will describe the field activities that have been performed and those that have been planned. The monthly field reports will include identification of any delays and anticipated problems associated with performance of the field tasks. These reports are intended to provide the CEHNC an understanding of the progress of the field tasks and alert the CEHNC to any and all impending potential difficulties associated with completing the assigned tasks on schedule and budget. Additionally, any dramatic detection of the concentration of pollutants as a result of the field efforts will be reported to the CEHNC immediately and will be described in the field report. If the presence of these pollutants constitutes a threat to human health or the environment, then the CEHNC may initiate an immediate removal action. Identification of any potential difficulty associated with successful completion of the field tasks will allow the CEHNC to implement any necessary corrective actions as soon as possible.

2.4.2 SOW Activity 7 - Quarterly Reports

On a quarterly basis, Parsons ES will submit reports to the CEHNC describing the status of the delivery order. Included in this report will be a description of the accomplishments, anticipated problems and proposed solutions to any anticipated problem. Financial information associated with the delivery order will not be included as part of this report as this report will be provided to the regulatory agencies. This report will be used by SEDA as part of the reporting requirements identified in the FFA. The report will be provided to the CEHNC within two weeks of the end of the calendar quarter.

2.4.3 SOW Activity 8 - Field Sampling Letter Report

Following completion of the field tasks and the receipt and validation of all of the laboratory data, Parsons ES will submit to the CEHNC a letter report describing the status of the delivery order. The letter report will identify the concentrations of all pollutants detected during the sampling effort in summary tables and will present a brief description of the results and the effects that this data will likely have on the outcome of the RI. Since the risk assessment will not have been completed, the analysis of the data will be qualitative. However, elevated concentrations of pollutants above background will be described. The presence of data gaps will be described in this report. This information may be used as the basis of additional field tasks, should the need be sufficient. This report will be provided to the CEHNC for review prior to submittal to the regulators.

2.4.4 SOW Activity 16 - Project Management

During the life of this delivery order (DO), Parsons ES will manage the DO in accordance with Appendix A of the basic contract SOW. Parsons ES will perform all project management tasks associated with this DO including, but not limited to, a cost and manpower plan and project management reports. The project management reports are due two weeks after each 4-week billing period. These reports will describe each work task and will contain information on the progress, individual performance, and cost/schedule variances in accordance with Appendix A of the basic contract SOW. These reports will be prepared in an earned value format, allowing a quantitative evaluation of schedule and budget for each work task. This delivery order has been divided into four work tasks. On a quarterly basis, a maximum of two Parsons ES personnel will also attend one meeting regarding this DO at the Seneca Army Depot Activity. Parsons ES will be prepared to present to a public and Army forum a description of the activities that have occurred during the previous quarter.

3.0 GUIDANCE DOCUMENTS

The following documents will be used as guidance for this task:

1. The "U.S. Army Corps of Engineers Safety and Health Requirements Manual," U.S. Army Engineering Manual No. EM-385-1-1, April 1981.

2. Interim Final, "Guidance for Conducting Remedial Investigations/Feasibility Studies Under CERCLA," USEPA, Office of Solid Waste and Emergency Response, October 1988.

3. "Chemical Data Quality Management for Hazardous Waste Remedial Activities," ER 1110-1-263, March 1990.

4. "Work Plan for Remedial Investigation/Feasibility Study (RI/FS) at SEAD-16 and SEAD-17, Seneca Army Depot Activity, Romulus, New York," Parsons Engineering Science Inc., 1995.

5. "Federal Facility Agreement under CERCLA Section 120 in the Matter of Seneca Army Depot, Romulus, New York," Docket No. II-CERCLA-FFA-00202, USEPA, U.S. Department of the Army, and the New York State Department of Environmental Conservation, November 1990.

6. Interim Final, "Risk Assessment Guidance for Superfund," OSWER Directive 9285.7-01a, September 1989.

7. "Superfund Exposure Assessment Manual," EPA/540/1-88/01, OSWER Directive 9285.5-1, April 1988.

8. "Chemical Data Quality Management: A Checklist for Chemistry Review," CEMRD-ED-GC, September 21, 1988.

9. "Expanded Site Inspection Report at SEAD-16 and SEAD-17," Parsons Engineering Science, Inc., 1995. The following documents will be used as guidance for this task:

4.0 INTERFACES

This task will require interface with the CEHNC technical and project task managers. In addition, this task will require interface with technical and management staff from the Seneca Army Depot Activity and the CEHNC from the Missouri River Division, the Baltimore District the New York District and the North Atlantic Division. Technical review will be performed by staff from USAEC, AMCEN, CENAD and CHPPM. The technical review comments will be coordinated through the CEHNC, Huntsville Division.

5.0 OTHER PERFORMERS AND SUBCONTRACTORS

All facets of this task, except that involving review by the CEHNC, EPA and NYSDEC, will be executed by Parsons ES personnel.

6.0 DELIVERABLES AND SCHEDULE

A schedule of the deliverables for this task are attached.

7.0 PERFORMANCE REPORTS

Project performance is presented as follows:

1- A Cost Allocation/Manpower Loading Summary Chart
2- A Progress Performance Report
3- A Cost and Schedule Performance Report
4- An Earned Value Progress Curve
5- A Schedule of Deliverables

COST ALLOCATION/MANPOWER LOADING SUMMARY

ACA87-95-D-0031 DELIVERY ORDER 0003 D 16 AND 17						09-Aug-96	06-Sep-96	04-Oct-96	01-Nov-96	29-Nov-96	27-Dec-96	24-Jan-97	21-Feb-97	21-Mar-97	18-Ap
	Breakdown	Amount	Start	End	Periods	96-8	96-9	96-10	96-11	96-12	96-13	97-1	97-2	97-3	97-
ork Task 4 – Program/Project Management															
OW Task 6	Hours	100.0	10-Aug-96	01-Nov-96	4.0	0.0	25.0	25.0	25.0	25.0	0.0	0.0	0.0	0.0	
onthly Field	Burdened Labor	$7,915				$0	$1,979	$1,979	$1,979	$1,979	$0	$0	$0	$0	
tivity Reports	Period % Complete	100.0%				0.0%	25.0%	25.0%	25.0%	25.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 7	Hours	200.0	13-Jul-96	10-Jul-98	26.0	0.0	0.0	25.0	0.0	0.0	0.0	25.0	0.0	0.0	
arterly Reports	Burdened Labor	$15,830				$0	$0	$1,979	$0	$0	$0	$1,979	$0	$0	$1
	Period % Complete	100.0%				0.0%	0.0%	12.5%	0.0%	0.0%	0.0%	12.5%	0.0%	0.0%	1
OW Task 8	Hours	152.0	30-Nov-96	24-Jan-97	2.0	0.0	0.0	0.0	0.0	0.0	76.0	76.0	0.0	0.0	
eld Sampling	Burdened Labor	$9,651				$0	$0	$0	$0	$0	$4,826	$4,826	$0	$0	
tter Reports	Period % Complete	100.0%				0.0%	0.0%	0.0%	0.0%	0.0%	50.0%	50.0%	0.0%	0.0%	
OW Task 16	Hours	580.0	13-Jul-96	10-Jul-98	26.0	23.2	23.2	23.2	23.2	23.2	23.2	23.2	23.2	23.2	
oject Management	Burdened Labor	$56,858				$2,274	$2,274	$2,274	$2,274	$2,274	$2,274	$2,274	$2,274	$2,274	$2
	Period % Complete	100.0%				4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	
ork Task 4	Hours	1032.0	13-Jul-96	10-Jul-98	26.0	23.2	48.2	73.2	48.2	48.2	99.2	124.2	23.2	23.2	
	Burdened Labor	$90,254				$2,274	$4,253	$6,232	$4,253	$4,253	$7,100	$9,079	$2,274	$2,274	$4
	ODC's	$8,146				$183	$380	$578	$380	$380	$783	$980	$183	$183	
	Subcontracts	$0				$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Total	$98,400				$2,457	$4,634	$6,810	$4,634	$4,634	$7,883	$10,059	$2,457	$2,457	$4
	Period % Complete	100.0%				2.5%	4.7%	6.9%	4.7%	4.7%	8.0%	10.2%	2.5%	2.5%	
ork Task 4	Hours	1032.0	13-Jul-96	10-Jul-98	26.0	23.2	71.4	144.6	192.8	241.0	340.2	464.4	487.6	510.8	5
	Burdened Labor	$90,254				$2,274	$6,527	$12,759	$17,012	$21,265	$28,365	$37,444	$39,718	$41,992	$46
	ODC's	$8,146				$183	$564	$1,141	$1,522	$1,902	$2,685	$3,666	$3,849	$4,032	$4
	Subcontracts	$0				$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Total	$98,400				$2,457	$7,091	$13,901	$18,534	$23,168	$31,051	$41,109	$43,567	$46,024	$50
	Cumulative % Complete	100.0%				2.5%	7.2%	14.1%	18.8%	23.5%	31.6%	41.8%	44.3%	46.8%	5
	BCWS					$2,457	$7,091	$13,901	$18,534	$23,168	$31,051	$41,109	$43,567	$46,024	$50
ork Task 4	Hours	1032.0	13-Jul-96	10-Jul-98	26.0	0.0									
	Burdened Labor	$90,254				$0									
	ODC's	$8,146				$0									
	Subcontracts	$0				$0									
	Total	$98,400				$0									
	Period % Complete	100.0%				0.0%									
ork Task 4	Hours	1032.0	13-Jul-96	10-Jul-98	26.0	26.0									
	Burdened Labor	$90,254				$0									
	ODC's	$8,146				$0									
	Subcontracts	$0				$0									
	Total ACWP	$98,400				$0									
	Cumulative % Complete	100.0%				0.0%									
	BCWP					$0									

COST ALLOCATION/MANPOWER LOADING SUMMARY

ACA87-95-D-0031 DELIVERY ORDER 0003															
D 16 AND 17															
		13-Jun-97	11-Jul-97	08-Aug-97	05-Sep-97	03-Oct-97	31-Oct-97	28-Nov-97	26-Dec-97	23-Jan-98	20-Feb-98	20-Mar-98	17-Apr-98	15-May-98	12-Ju
	Breakdown	97-6	97-7	97-8	97-9	97-10	97-11	97-12	97-13	98-1	98-2	98-3	98-4	98-5	98
ork Task 4 – Program/Project Management															
OW Task 6	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
onthly Field	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
tivity Reports	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 7	Hours	0.0	25.0	0.0	0.0	25.0	0.0	0.0	25.0	0.0	0.0	0.0	25.0	0.0	
arterly Reports	Burdened Labor	$0	$1,979	$0	$0	$1,979	$0	$0	$1,979	$0	$0	$0	$1,979	$0	
	Period % Complete	0.0%	12.5%	0.0%	0.0%	12.5%	0.0%	0.0%	12.5%	0.0%	0.0%	0.0%	12.5%	0.0%	
OW Task 8	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
eld Sampling	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
tter Reports	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 16	Hours	23.2	23.2	23.2	23.2	23.2	23.2	23.2	23.2	23.2	23.2	23.2	23.2	23.2	
oject Management	Burdened Labor	$2,274	$2,274	$2,274	$2,274	$2,274	$2,274	$2,274	$2,274	$2,274	$2,274	$2,274	$2,274	$2,274	$
	Period % Complete	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	
ork Task 4	Hours	23.2	48.2	23.2	23.2	48.2	23.2	23.2	48.2	23.2	23.2	23.2	48.2	23.2	
	Burdened Labor	$2,274	$4,253	$2,274	$2,274	$4,253	$2,274	$2,274	$4,253	$2,274	$2,274	$2,274	$4,253	$2,274	$
	ODC's	$183	$380	$183	$183	$380	$183	$183	$380	$183	$183	$183	$380	$183	
	Subcontracts	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Total	$2,457	$4,634	$2,457	$2,457	$4,634	$2,457	$2,457	$4,634	$2,457	$2,457	$2,457	$4,634	$2,457	$
	Period % Complete	2.5%	4.7%	2.5%	2.5%	4.7%	2.5%	2.5%	4.7%	2.5%	2.5%	2.5%	4.7%	2.5%	
ork Task 4	Hours	605.4	653.6	676.8	700.0	748.2	771.4	794.6	842.8	866.0	889.2	912.4	960.6	983.8	1
	Burdened Labor	$50,794	$55,047	$57,321	$59,596	$63,849	$66,123	$68,398	$72,651	$74,925	$77,199	$79,474	$83,727	$86,001	$8
	ODC's	$4,779	$5,159	$5,342	$5,525	$5,906	$6,089	$6,272	$6,653	$6,836	$7,019	$7,202	$7,582	$7,766	$
	Subcontracts	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Total	$55,573	$60,206	$62,664	$65,121	$69,755	$72,212	$74,670	$79,303	$81,761	$84,218	$86,675	$91,309	$93,766	$9
	Cumulative % Complete	56.5%	61.2%	63.7%	66.2%	70.9%	73.4%	75.9%	80.6%	83.1%	85.6%	88.1%	92.8%	95.3%	
	BCWS	$55,573	$60,206	$62,664	$65,121	$69,755	$72,212	$74,670	$79,303	$81,761	$84,218	$86,675	$91,309	$93,766	$9
ork Task 4	Hours														
	Burdened Labor														
	ODC's														
	Subcontracts														
	Total														
	Period % Complete														
ork Task 4	Hours														
	Burdened Labor														
	ODC's														
	Subcontracts														
	Total ACWP														
	Cumulative % Complete														
	BCWP														

COST ALLOCATION/MANPOWER LOADING SUMMARY

ACA87-95-D-0031 DELIVERY ORDER 0003															
D 16 AND 17															
		07-Aug-98	04-Sep-98	02-Oct-98	30-Oct-98	27-Nov-98	25-Dec-98	22-Jan-99	19-Feb-99	19-Mar-99	16-Apr-99	14-May-99	11-Jun-99	09-Jul-99	06-A
	Breakdown	98-8	98-9	98-10	98-11	98-12	98-13	99-1	99-2	99-3	99-4	99-5	99-6	99-7	99
ork Task 4 – Program/Project Management															
OW Task 6	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
onthly Field	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
tivity Reports	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 7	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
uarterly Reports	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 8	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
eld Sampling	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
tter Reports	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
OW Task 16	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
oject Management	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
ork Task 4	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	ODC's	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Subcontracts	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Total	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
ork Task 4	Hours	1032.0	1032.0	1032.0	1032.0	1032.0	1032.0	1032.0	1032.0	1032.0	1032.0	1032.0	1032.0	1032.0	
	Burdened Labor	$90,254	$90,254	$90,254	$90,254	$90,254	$90,254	$90,254	$90,254	$90,254	$90,254	$90,254	$90,254	$90,254	$9
	ODC's	$8,146	$8,146	$8,146	$8,146	$8,146	$8,146	$8,146	$8,146	$8,146	$8,146	$8,146	$8,146	$8,146	
	Subcontracts	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Total	$98,400	$98,400	$98,400	$98,400	$98,400	$98,400	$98,400	$98,400	$98,400	$98,400	$98,400	$98,400	$98,400	$9
	Cumulative % Complete	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	1
	BCWS	$98,400	$98,400	$98,400	$98,400	$98,400	$98,400	$98,400	$98,400	$98,400	$98,400	$98,400	$98,400	$98,400	$9
ork Task 4	Hours														
	Burdened Labor														
	ODC's														
	Subcontracts														
	Total														
	Period % Complete														
ork Task 4	Hours														
	Burdened Labor														
	ODC's														
	Subcontracts														
	Total ACWP														
	Cumulative % Complete														
	BCWP														

COST ALLOCATION/MANPOWER LOADING SUMMARY

ACA87-95-D-0031 DELIVERY ORDER 0003 D 16 AND 17															
						09-Aug-96	06-Sep-96	04-Oct-96	01-Nov-96	29-Nov-96	27-Dec-96	24-Jan-97	21-Feb-97	21-Mar-97	18-Ap
	Breakdown	Amount	Start	End	Periods	95-8	95-9	95-10	95-11	95-12	95-13	96-1	96-2	96-3	96-
ork Tasks 1 thru 4 – Summary															
ork Task 1 thru 4	Hours	7857.0	15-Jul-96	10-Jul-98	26.0	255.2	1081.2	793.2	698.0	1217.7	481.1	477.1	583.2	534.2	
	Burdened Labor	$516,715				$16,343	$62,567	$50,037	$46,002	$80,273	$30,436	$31,612	$37,751	$32,976	$1
	ODC's	$160,213				$183	$8,465	$28,919	$23,064	$31,148	$17,536	$5,068	$9,526	$14,107	$2
	Subcontracts	$359,839				$0	$64,771	$61,173	$57,574	$118,747	$35,984	$0	$0	$21,590	
	Total	$1,036,767				$16,526	$135,803	$140,128	$126,641	$230,168	$83,956	$36,680	$47,278	$68,673	$1
	Period % Complete	100.0%				1.6%	13.1%	13.5%	12.2%	22.2%	8.1%	3.5%	4.6%	6.6%	
ork Task 1 thru 4	Hours	7857.0	15-Jul-96	10-Jul-98	26.0	255.2	1336.4	2129.6	2827.6	4045.3	4526.3	5003.4	5586.6	6120.8	6
	Burdened Labor	$516,715				$16,343	$78,910	$128,947	$174,950	$255,222	$285,659	$317,271	$355,022	$387,998	$40
	ODC's	$160,213				$183	$8,648	$37,567	$60,631	$91,780	$109,316	$114,384	$123,910	$138,017	$14
	Subcontracts	$359,839				$0	$64,771	$125,944	$183,518	$302,265	$338,249	$338,249	$338,249	$359,839	$35
	Total	$1,036,767				$16,526	$152,329	$292,458	$419,098	$649,267	$733,223	$769,903	$817,181	$885,854	$90
	Cumulative % Complete	100.0%				1.6%	14.7%	28.2%	40.4%	62.6%	70.7%	74.3%	78.8%	85.4%	8
	BCWS					$16,526	$152,329	$292,458	$419,098	$649,267	$733,223	$769,903	$817,181	$885,854	$90
ork Task 1 thru 4	Hours	7857.0	15-Jul-96	10-Jul-98	26.0	0.0									
	Burdened Labor	$516,715				$0									
	ODC's	$160,213				$0									
	Subcontracts	$359,839				$0									
	Total	$1,036,767				$0									
	Period % Complete	100.0%				0.0%									
ork Task 1 thru 4	Hours	7857.0	15-Jul-96	10-Jul-98	26.0	26.0									
	Burdened Labor	$516,715				$0									
	ODC's	$160,213				$0									
	Subcontracts	$359,839				$0									
	Total ACWP	$1,036,767				$0									
	Cumulative % Complete	100.0%				0.0%									
	BCWP					$0									

COST ALLOCATION/MANPOWER LOADING SUMMARY

ACA87-95-D-0031 DELIVERY ORDER 0003 D 16 AND 17															
		13-Jun-97	11-Jul-97	08-Aug-97	05-Sep-97	03-Oct-97	31-Oct-97	28-Nov-97	26-Dec-97	23-Jan-98	20-Feb-98	20-Mar-98	17-Apr-98	15-May-98	12-J
	Breakdown	96-6	96-7	96-8	96-9	96-10	96-11	96-12	96-13	97-1	97-2	97-3	97-4	97-5	97
ork Tasks 1 thru 4 – Summary															
ork Task 1 thru 4	Hours	73.2	48.2	98.2	23.2	98.2	113.2	167.2	48.2	113.2	113.2	203.2	138.2	59.2	
	Burdened Labor	$5,150	$4,253	$6,588	$2,274	$7,129	$8,713	$12,576	$4,253	$8,713	$8,713	$15,151	$10,692	$4,850	$
	ODC's	$767	$380	$1,351	$183	$964	$1,786	$2,748	$380	$1,786	$1,786	$3,390	$1,984	$824	
	Subcontracts	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Total	$5,917	$4,634	$7,939	$2,457	$8,093	$10,499	$15,324	$4,634	$10,499	$10,499	$18,541	$12,675	$5,674	$
	Period % Complete	0.6%	0.4%	0.8%	0.2%	0.8%	1.0%	1.5%	0.4%	1.0%	1.0%	1.8%	1.2%	0.5%	
ork Task 1 thru 4	Hours	6585.4	6633.6	6731.8	6755.0	6853.2	6966.4	7133.6	7181.8	7295.0	7408.2	7611.4	7749.6	7808.8	
	Burdened Labor	$418,557	$422,810	$429,398	$431,673	$438,802	$447,515	$460,091	$464,344	$473,056	$481,769	$496,921	$507,612	$512,462	$5
	ODC's	$142,268	$142,648	$143,999	$144,182	$145,147	$146,933	$149,682	$150,062	$151,848	$153,635	$157,024	$159,008	$159,833	$1
	Subcontracts	$359,839	$359,839	$359,839	$359,839	$359,839	$359,839	$359,839	$359,839	$359,839	$359,839	$359,839	$359,839	$359,839	$3
	Total	$920,664	$925,297	$933,237	$935,694	$943,788	$954,287	$969,611	$974,245	$984,744	$995,243	$1,013,784	$1,026,459	$1,032,133	$1,0
	Cumulative % Complete	88.8%	89.2%	90.0%	90.3%	91.0%	92.0%	93.5%	94.0%	95.0%	96.0%	97.8%	99.0%	99.6%	
	BCWS	$920,664	$925,297	$933,237	$935,694	$943,788	$954,287	$969,611	$974,245	$984,744	$995,243	$1,013,784	$1,026,459	$1,032,133	$1,0
ork Task 1 thru 4	Hours														
	Burdened Labor														
	ODC's														
	Subcontracts														
	Total														
	Period % Complete														
ork Task 1 thru 4	Hours														
	Burdened Labor														
	ODC's														
	Subcontracts														
	Total ACWP														
	Cumulative % Complete														
	BCWP														

COST ALLOCATION/MANPOWER LOADING SUMMARY

ACA87-95-D-0031 DELIVERY ORDER 0003 D 16 AND 17															
		07-Aug-98	04-Sep-98	02-Oct-98	30-Oct-98	27-Nov-98	25-Dec-98	22-Jan-99	19-Feb-99	19-Mar-99	16-Apr-99	14-May-99	11-Jun-99	09-Jul-99	06-A
	Breakdown	97-8	97-9	97-10	97-11	97-12	97-13	98-1	98-2	98-3	98-4	98-5	98-6	98-7	9
ork Tasks 1 thru 4 -- Summary															
ork Task 1 thru 4	Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Burdened Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	ODC's	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Subcontracts	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Total	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
	Period % Complete	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
ork Task 1 thru 4	Hours	7857.0	7857.0	7857.0	7857.0	7857.0	7857.0	7857.0	7857.0	7857.0	7857.0	7857.0	7857.0	7857.0	
	Burdened Labor	$516,715	$516,715	$516,715	$516,715	$516,715	$516,715	$516,715	$516,715	$516,715	$516,715	$516,715	$516,715	$516,715	$5
	ODC's	$160,213	$160,213	$160,213	$160,213	$160,213	$160,213	$160,213	$160,213	$160,213	$160,213	$160,213	$160,213	$160,213	$1
	Subcontracts	$359,839	$359,839	$359,839	$359,839	$359,839	$359,839	$359,839	$359,839	$359,839	$359,839	$359,839	$359,839	$359,839	$3
	Total	$1,036,767	$1,036,767	$1,036,767	$1,036,767	$1,036,767	$1,036,767	$1,036,767	$1,036,767	$1,036,767	$1,036,767	$1,036,767	$1,036,767	$1,036,767	$1,0
	Cumulative % Complete	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	1
	BCWS	$1,036,767	$1,036,767	$1,036,767	$1,036,767	$1,036,767	$1,036,767	$1,036,767	$1,036,767	$1,036,767	$1,036,767	$1,036,767	$1,036,767	$1,036,767	$1,0
ork Task 1 thru 4	Hours														
	Burdened Labor														
	ODC's														
	Subcontracts														
	Total														
	Period % Complete														
ork Task 1 thru 4	Hours														
	Burdened Labor														
	ODC's														
	Subcontracts														
	Total ACWP														
	Cumulative % Complete														
	BCWP														

INDIVIDUAL PERFORMANCE REPORT

Contract No.: DACA87-95-D-0031
Delivery Order No. 0003
SEAD 16 and 17 RI/FS

Report Month: 09-Aug-96

Work Task: 4 - Program/Project Management

Parsons ES Job Nos: 729895-01004

DELIVERABLES AND PERCENT COMPLETE

Activity	% Complete This Month	% of Task	Total % Complete
SOW Task 6 - Monthly Field Activity Reports			
Monthly Report #1	0.0%	2.2%	0.0%
Monthly Report #2	0.0%	2.2%	0.0%
Monthly Report #3	0.0%	2.2%	0.0%
Monthly Report #4	0.0%	2.2%	0.0%
SOW Task 7 - Quarterly Reports			
Quarterly Report #1	0.0%	2.1%	0.0%
Quarterly Report #2	0.0%	2.1%	0.0%
Quarterly Report #3	0.0%	2.1%	0.0%
Quarterly Report #4	0.0%	2.1%	0.0%
Quarterly Report #5	0.0%	2.1%	0.0%
Quarterly Report #6	0.0%	2.1%	0.0%
Quarterly Report #7	0.0%	2.1%	0.0%
Quarterly Report #8	0.0%	2.1%	0.0%
SOW Task 8 - Field Sampling Letter Reports			
SEAD-16 Report	0.0%	5.6%	0.0%
SEAD-17 Report	0.0%	5.6%	0.0%
SOW Task 16 - Project Management			
Work Task Proposals (1 Proposal)	0.0%	2.5%	0.0%
o Cost & Manpower Plan			
o Master Network Schedule			
Monthly Report (24 Reports)	0.0%	60.5%	0.0%
o Technical Progress Report			
o Monthly Individual Performance Rpt.			
o Cost/Schedule Variance Report			
TOTALS		100.0%	0.0%

STATUS

INDIVIDUAL PERFORMANCE REPORT

Contract No.: DACA87-95-D-0031
Delivery Order No. 0003
SEAD 16 and 17 RI/FS

Report Month: 09-Aug-96

Work Task: 4 – Program/Project Management

Parsons ES Job Nos: 729895-01004

COST AND SCHEDULE PERFORMANCE REPORT

	Progress	Cost Data for Period Ending:				% Actuals Used	
	BCWP Period	BAC Period	EAC Period	BCWS Period	ACWP Period	BAC Period	EAC Period
Work Hours				48.2	0.0		
Burdened Labor				$4,253	$0		
ODC's				$380	$0		
Subcontracts				$0	$0		
TOTALS	$0			$4,634	$0	0.0%	0.0%

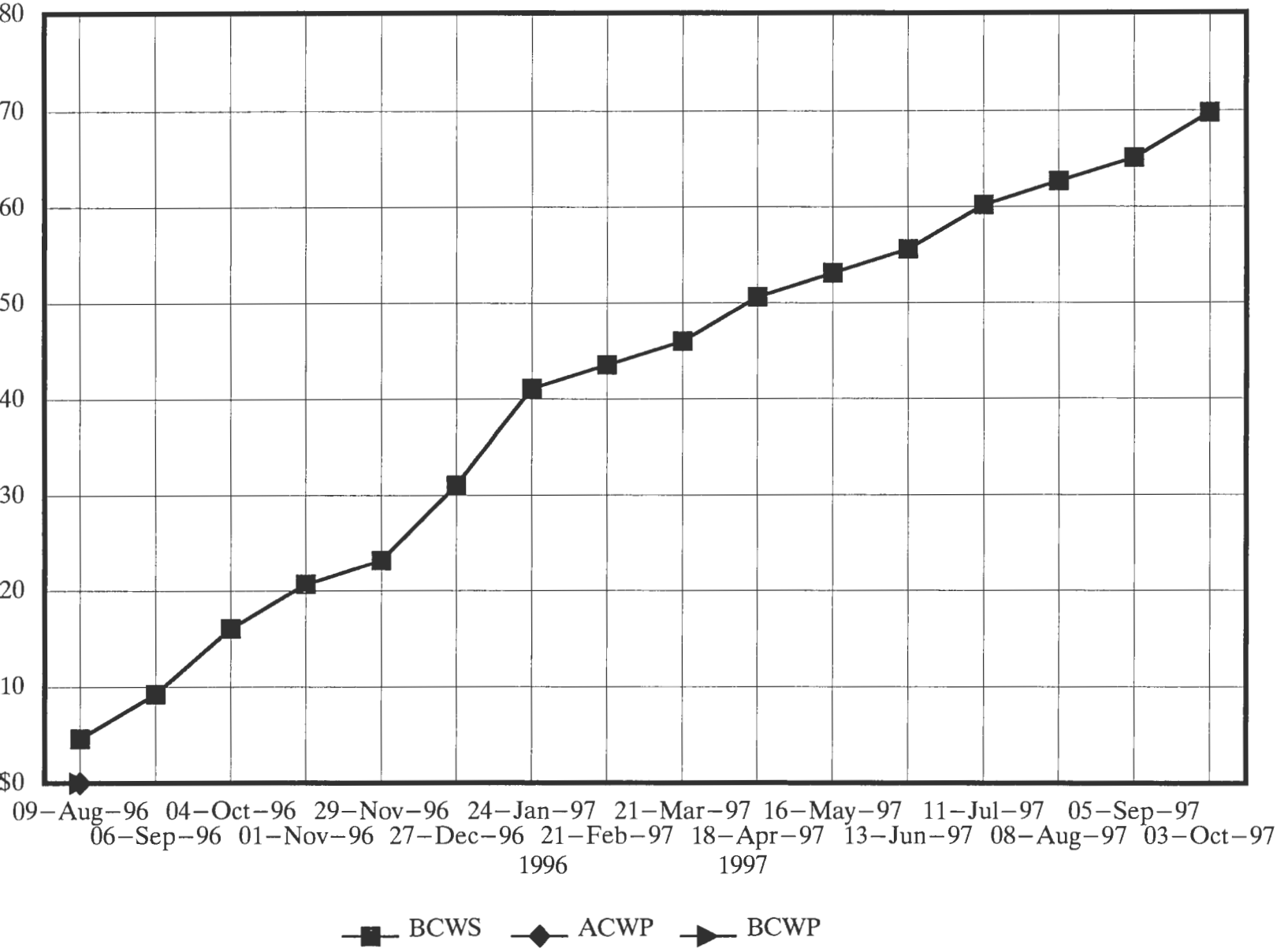
	Progress	Cost Data for Period Ending:				% Actuals Used	
	BCWP Cumulative	BAC Cumulative	EAC Cumulative	BCWS Cumulative	ACWP Cumulative	BAC Cumulative	EAC Cumulative
Work Hours		1032.0	1032.0	48.2	26.0		
Burdened Labor		$90,254	$90,254	$4,253	$0		
ODC's		$8,146	$8,146	$380	$0		
Subcontracts		$0	$0	$0	$0		
TOTALS	$0	$98,400	$98,400	$4,634	$0	0.0%	0.0%

COST SCHEDULE VARIANCE REROR T

SCHEDULE VARIANCE (BCWP-BCWS) = ($4,634)
COST VARIANCE (BCWP-ACWP) = $0

WORK TASK 4 – MANAGEMENT

EARNED VALUE CURVE



TECHNICAL PROJECT REPORT

Contract No.: DACA87-95-D-0031
Delivery Order No. 0003
SEAD 16 and 17 RI/FS

Report Month: 09-Aug-96

Work Task: 1 thru 4

Parsons ES Job Nos:729895- 01001 thru 01004

ACCOMPLISHMENTS

Work Accomplished During Reporting Period:

Planned Accomplishments for Next Period:

PROBLEM AREAS AND RECOMMENDED SOLUTIONS

INDIVIDUAL PERFORMANCE REPORT

Contract No.: DACA87-95-D-0031
Delivery Order No. 0003
SEAD 16 and 17 RI/FS

Report Month: 09-Aug-96

Work Task: Summary Tasks 1 thru 4

Parsons ES Job Nos:729895- 01001 thru 01004

COST AND SCHEDULE PERFORMANCE REPORT

	Progress	Cost Data for Period Ending:				% Actuals Used	
	BCWP Period	BAC Period	EAC Period	BCWS Period	ACWP Period	BAC Period	EAC Period
Work Task 1	$0			$14,069	$0	0.0%	0.0%
Work Task 2	$0			$0	$0	0.0%	0.0%
Work Task 3	$0			$0	$0	0.0%	0.0%
Work Task 4	$0			$4,634	$0	0.0%	0.0%
TOTALS	$0			$18,703	$0	0.0%	0.0%

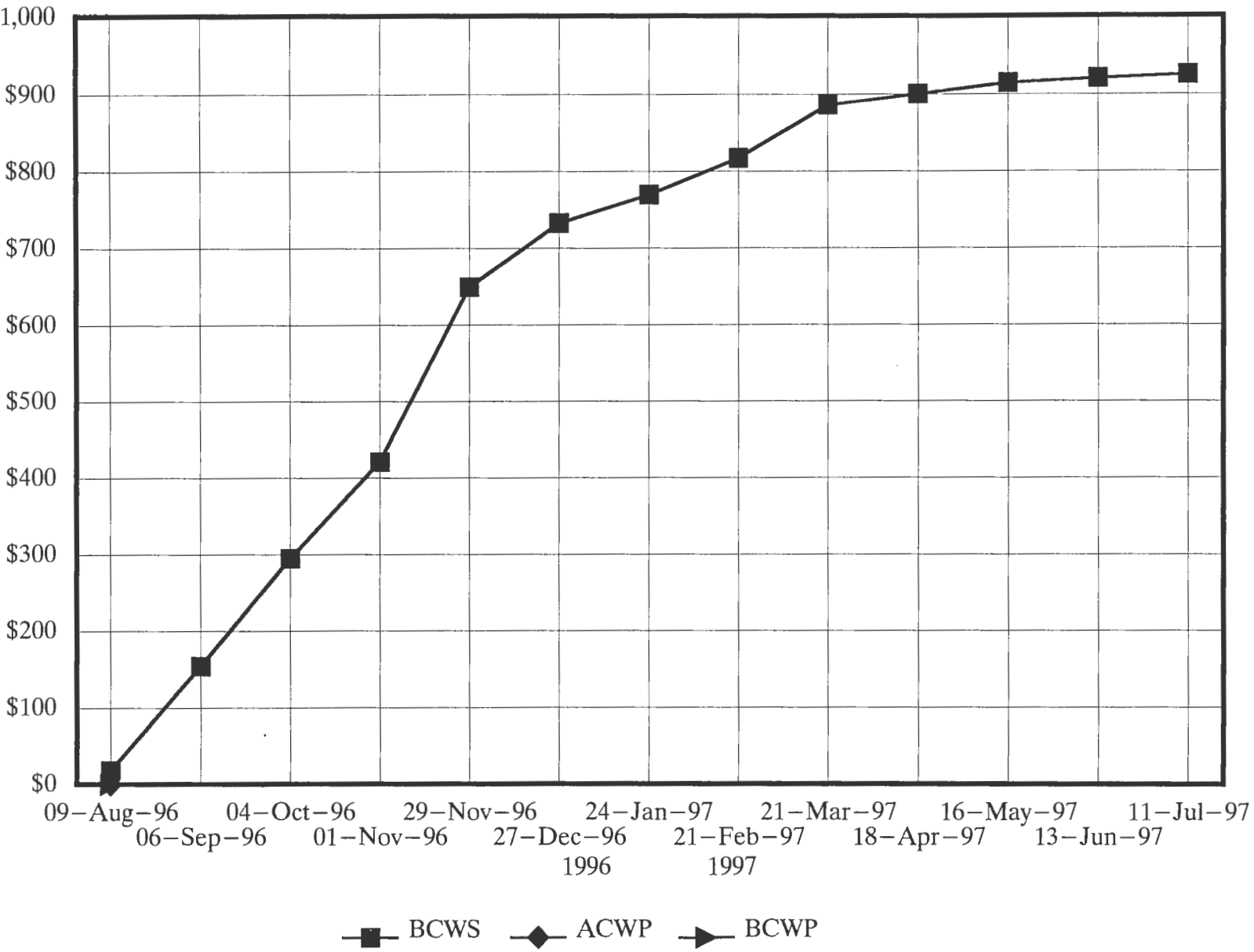
	Progress	Cost Data for Period Ending:				% Actuals Used	
	BCWP Cumulative	BAC Cumulative	EAC Cumulative	BCWS Cumulative	ACWP Cumulative	BAC Cumulative	EAC Cumulative
Work Task 1	$0	$600,610	$766,641	$14,069	$0	0.0%	0.0%
Work Task 2	$0	$273,423	$273,423	$0	$0	0.0%	0.0%
Work Task 3	$0	$64,334	$64,334	$0	$0	0.0%	0.0%
Work Task 4	$0	$98,400	$98,400	$4,634	$0	0.0%	0.0%
TOTALS	$0	$1,036,767	$1,202,798	$18,703	$0	0.0%	0.0%

COST SCHEDULE VARIANCE REROPT

SCHEDULE VARIANCE (BCWP-BCWS) = ($18,703)
COST VARIANCE (BCWP-ACWP) = $0

WORK TASK 1 THRU 4 – SUMMARY

EARNED VALUE CURVE



PAYMENT ESTIMATE–CONTRACT PERFORMANCE

For use of this form, see ER 37–2–10 and ER 37–345–10

1. DATE: 08/23/96

SHEET

RACTOR AND ADDRESS
s Engineering Science, Inc. File 91849 Los Angeles, CA 90074–1849

3. CONTRACT NO.: DACA87–95–D–0031

4. DISTRICT: Huntsville

RIPTION OF WORK
t SEAD 16 and 17

6. APPROPRIATION AND PROJECT

7. REQUIRED COMP

ION
Army Depot Activity

9. PERIOD COVERED BY THIS ESTIMATE
FROM 07/15/96 THRU 08/09/96

10. JOB ORDER NO.: Del. Order0003

11. EST
0000

DESCRIPTION b	CONTRACT QUANTITY AND UNIT c	CONTRACT UNIT PRICE d	CONTRACT AMOUNT e	TOTAL TO DATE QUANTITY AND UNIT f	TOTAL TO DATE A
Fee for Work Task 1 – Field Work	FIXED FEE	$14,446.00	$14,446.00	0.0%	
Fee for Work Task 2 – Reports	FIXED FEE	$16,406.00	$16,406.00	0.0%	
Fee for Work Task 3 – Post FS Support	FIXED FEE	$3,860.00	$3,860.00	0.0%	
Fee for Work Task 4 – Project Management	FIXED FEE	$5,905.00	$5,905.00	0.0%	
ES MODIFICATION THRU:	TOTAL CONTRACT ---->		$40,617.00	TOTAL EARNINGS TO DATE ----->	

12. PRESENTED FOR PAYMENT

ering–Science, Inc.

PER: Michael Duchesneau

TITLE: Project Manager

08/23/96

13. APPROVED FOR PAYMENT

that I have checked the quantities covered by this bill or estimate; that the actually performed; that the quantities are correct and consistent with all pre– itations as actually checked; that the quantities and amounts are wholly with the requirements of the contract or other instrument involved.

URE	TITLE	DATE

ACTING OFFICER APPROVAL(Signature) DATE

14.

A. PREVIOUS DEDUCTIONS OTHER THAN RETAINED PERCENTAGE**	$0.00
B. PREVIOUS RETAINED PERCENTAGE	$0.00
C. PREVIOUS PAYMENTS	$0.00
D. PREVIOUS EARNINGS (A+B+C)	
E. EARNINGS THIS PERIOD (TOTAL EARNINGS TO DATE MINUS D)	
F. LESS RETAINED PERCENTAGE	$0.00
G. LESS DEDUCTION OTHER THAN RETAINED PERCENTAGE FOR	$0.00
H. TOTAL DEDUCTIONS THIS PERIOD (F+G)	
I. RETAINAGE REFUNDED	$0.00
J. OTHER REFUNDS	$0.00
K. TOTAL REFUNDS THIS PERIOD	
L. AMOUNT DUE CONTRACTOR (E–H+K)	

15. RECAPITULATION

TOTAL RETAINED PCTG (B+F–I) $0.00 TOTAL PAID (C+L)

ORM 93
R 78

PREVIOUS EDITION OF THIS FORM OBSOLETE

** (USE REVERSE SIDE FOR DETAILED EXPLAINATION AND OR R

Standard Form 1034
Revised October 1987
Department of the Treasury
TFM 4–2000
1034–122

PUBLIC VOUCHER FOR PURCHASES AND SERVICES OTHER THAN PERSONAL

VOUCHER NO. 0000

U.S. DEPARTMENT, BUREAU, OR ESTABLISHMENT AND LOCATION

U.S Army Engineer Division, Huntsville
P.O. Box 1600
Huntsville, AL. 35807–4301

DATE VOUCHER PREPARED 08/23/96

CONTRACT NUMBER AND DATE 07/07/95
DACA87–95–D–0031,Del.Ord.3,Wk.Tsk 1,2,3,4

REQUISITION NUMBER AND DATE

SCHEDULE NO.

PAID BY

PAYEE'S NAME AND ADDRESS

Parsons Engineering Science, Inc.
File 91849
Los Angeles, CA 90074–1849

DATE INVOICE RECEIVED

DISCOUNT TERMS

PAYEE'S ACCOUNT NUMBER

SHIPPED FROM | TO | WEIGHT | GOVERNMENT B/L NUMBER

NUMBER AND DATE OF ORDER	DATE OF DELIVERY OR SERVICE	ARTICLES OR SERVICES (Enter description, item number of contract of Federal supply schedule, and other information deemed necessary)	QUANTITY	UNIT PRICE COST	UNIT PRICE PER	AMOUNT
	07/15/96 to 08/09/96	Labor				$0.00
		Overhead/G&A (137.78 %)				$0.00
		Other Direct Costs				$0.00
		Subcontracts (For detail, see attached invoice)				$0.00
		COST REIMBURSABLE–PROVISIONAL PAYMENT				
(Use continuation sheet(s) if necessary)		**(Payee must NOT use the space below)**			TOTAL	$0.00

PAYMENT:
PROVISIONAL
COMPLETE
PARTIAL
FINAL
PROGRESS
ADVANCE

APPROVED FOR Provisional Payment
Subject to later audit. =$

EXCHANGE RATE =$1.00

BY

TITLE
Auditor, Defense Contract Audit Agency

DIFFERENCES

Amount verified correct for

(Signature or initials)

Pursuant to authority vested in me, I certify that this voucher is correct and prpoer for payment.

(Date) *(Authorized Certifying Officer)* *(Title)*

ACCOUNTING CLASSIFICATION

PAID BY

CHECK NUMBER | ON ACCOUNT OF U.S. TREASURY | CHECK NUMBER | ON *(Name of bank)*

CASH $ | DATE | PAYEE

1. When stated in foreign currency, insert name of currency.
2. If the ability to certify and authority to approve are combined in one person, one signature only is necessary; otherwise the approving officer will sign in the space provided over his official title.
3. When a voucher is receipted in the name of a company or corporation, the name of the person writing the company or corporate name, as well as the capacity in which he signs, must appear. For example: "John Doe Company, per John Smith, Secretary", or "Treasurer" as the case may be.

PER

TITLE

Previous edition usable

NSN 7540–OC–634–4206

PRIVACY ACT STATEMENT

The information requested on this form is required under the provisions of 31 U.S.C. 82b and 82c, for the purpose of disbursing Federal money. The information requested is to identify the particular creditor and the amounts to be paid. Failure to furnish this information will hinder discharge of the payment obligation.

U.S. Government Printing Office 1980–201.769/00014