

## Scope of Work

### Site Inspections at the Former Laredo Air Force Base Shotgun Range (SGR) and the Industrial Waste Treatment Plant (IWTP)

Contract No. DACA56-97-D-0010

Task Order \_\_\_\_\_

**1.0 GENERAL.** The A-E shall furnish all services, permits, materials, supplies, plant, labor, equipment, disposal, studies, superintendence, travel, and any and all other services as required in connection with the site investigation as contained in this Scope of Work (SOW). The A-E, its subcontractor (s) and appropriate employee (s) of each, hereinafter collectively called the "A-E" or the "contractor", shall be responsible for obtaining and maintaining any registration or certification as required by the various Federal, State, and Local regulatory agencies, and any other registrations, certifications, licenses, permits, warrants, certificates, or other credentials or permissions required to perform these tasks. The contractor shall obey all laws and regulations of the United States, the State of Texas and the local governments having jurisdiction over the activities in this SOW. The contractor is responsible for determining which laws and regulations apply to a particular task although the Contracting Officer Representative (COR) may require additional legal/regulatory compliance as that person may determine is required.

**2.0 CONTRACT DURATION.** The duration of this contract is anticipated to be approximately 13 months.

### **3.0 BACKGROUND INFORMATION.**

**3.1 Project Location.** The Former Laredo Air Force Base (FLAFB) is located in Webb County, in the northeast area of the City of Laredo, Texas. There are two sites from this former base, the gunnery/shotgun range (SGR) and the industrial waste treatment plant (IWTP), are included in this SOW. These two sites are located near the existing Laredo International Airport (LIA). The location of the SGR and the IWTP are shown on Figure 1.

**3.2 Site History.** On 7 May 1942, the U.S. Government acquired 2,085.43 acres for the construction of Laredo Army Air Corps Base (now known as former Laredo Air Force Base). The Government constructed runways and numerous facilities from 1942 to 1974. The main mission of the base was gunnery and gunnery maintenance training. The Base was initially deactivated on 17 June 1947; however, it was reactivated during the Korean conflict (1952). The former Base was again deactivated on 29 March 1974. Approximately 309 acres were either deeded or sold to other federal, state and county agencies, or private firms. The remainder of the Base was deeded to the City of Laredo.

**3.2.1 SGR.** Historical aerial photographs and records of the former Laredo Air Force Base show that an area west-northwest of the existing LIA was used as a gunnery/shotgun training range. The gunnery range received varying levels of activity throughout the time of DOD control. Sometime in the late 1960s a small range developed north of the main SGR. (Note: This small range is included in the SGR SI). The SGR is presently located on residential and commercial property. This site is adjacent to the Sanitary Landfill that was investigated in 1997. The Sanitary Landfill final SI report is available upon request.

**3.2.2 IWTP.** The IWTP was installed 1969, and was used to treat various base industrial wastes until the base was closed in 1974. The IWTP is located on the City of Laredo property, and is adjacent to an existing fuel farm that has known contamination. Existing data concerning this site is available upon request.

**4.0 OBJECTIVE.** The primary objective of this SOW is to conduct a site inspection (SI) at the two sites, stated above, and to determine the presence or absence of contamination from the activities that occurred during the time the base was controlled by the Department of Defense (DOD). The A-E shall characterize the contamination, gather field data to evaluate the level of concentrations and their associated risks/threats, identify pathways of exposure if contamination exists, identify applicable or relevant and appropriate requirements (ARARS) for the sites, determine if additional work is required, identify the additional work requirements, identify cost associated with the additional work, and complete comprehensive SI reports discussing all aspects of this SOW.

**5.0 A-E SERVICES (Basic).** The scope of services has been divided into 5 main tasks as follows:

- a. A-E Services
- b. SI Work Plan Preparation
- c. SI Field Work
- d. SI Report
- e. Review Conferences

**6.0 REQUIRED A-E SERVICES.**

**6.1 General.** The contractor shall perform all services required by this SOW from the information provided in the following tasks.

**6.1.1 Regulations.** The A-E shall identify and follow all federal, state, local, and USACE regulation in order to accomplish the tasks listed in this SOW. Where there are conflicts with USACE guidance, the requirements of the regulatory agencies shall prevail.

**6.1.2 References.** The A-E shall follow the USACE regulations and manuals listed below to accomplish the tasks required by this SOW.

EM 200-1-2	Technical Project Planning Guidance for HTRW Data Quality Design
EM 200-1-3	Requirements for the Preparation of Sampling and Analysis Plan
EM 1110-1-4000	Monitoring Well Design, Installation, and Documentation at Hazardous and/or Toxic Waste Sites
ER 1110-1-263	Chemical Data Quality Management for HTRW Remedial Activities

**6.1.3 Permits.** The A-E shall identify, procure, and maintain all necessary permits, certifications, approvals, or other applicable requirements from federal, state, and local agencies necessary to accomplish the tasks listed in this SOW.

## **6.2 A-E Services.**

**6.2.1** The A-E shall provide consultation services up to 160 hours (2 professionals at 10 days each) for anticipated, but unidentified tasks, including but not limited to: attendance of various meetings, record searches, preparation of presentations, development of additional work plans, obtaining permits, drilling soil borings and installing monitoring wells, collecting samples and conducting analysis, developing reports, regulatory analysis, and other various tasks associated with the hazardous, toxic waste sites at the former Laredo AFB. Hourly rates, overhead, and profit shall be in accordance with rates negotiated under the basic contract. Anticipated staff requirements include project manager, engineers, technicians, and administrative personnel.

**6.2.2.** To execute hours under this task, the COE shall notify the A-E of the task to be performed and will send all pertinent data (Attachment 1) to the A-E. The A-E shall provide the technical manager a proposal. The A-E and the COE shall negotiate the hours and travel involved for each particular task. Attachment 1 shall document the agreed upon hours and travel, and shall be signed by the A-E and the Technical Manager. The Technical Manager shall provide a notice to proceed after the document is signed by the COE. Attachment 2 is a tracking of expenditures form for each task under this section. All funds not expended for this task shall be deobligated from the deliver order.

## **6.3 SI Work Plan Preparation.**

**6.3.1** The A-E shall develop a SI Work Plan describing the methods and procedures to conduct the site inspections/investigations at both sites to accomplish the tasks listed in this SOW. Refer to EM 200-1-2 for more information on SI Work Plan Preparation. Separate draft, draft final, and final Work Plans shall be prepared for both sites. The work plans shall be prepared in accordance with EPA/TNRCC guidance for site inspections. The Work Plans shall include detailed individual site plan requirements, a Sampling and Analysis Plan (in accordance with ER 1110-1-263, Chemical Data Quality Management for HTRW Remedial Activities and EM 200-1-3, Requirements for the Preparation of Sampling and Analysis Plan), a Site and Safety Health Plan (SSHP), and a Waste Management Plan (WMP). The Work Plans shall be prepared and presented in a logical and easily defensible description of the method(s) used for each site characterization.

**6.3.2** The Work Plans shall include the following, but is not limited to: project/work schedules, applicable background information, project strategy, data quality objectives, drilling procedures and requirements, sample collection and analysis requirements, design and installation of monitoring wells, geologic logs, well schematics, reducing and analyzing data generated from investigations including chemical and physical data summaries, geological and hydrogeological investigations, safety issues, emergency situations, plan implementation requirements, organizational structure and responsibilities, initial evaluation of existing data, site visits, meetings and Government furnished information, preliminary assessment of public health and environmental impacts; a preliminary identification of general response actions and alternatives; and identification of applicable or relevant and appropriate requirements (ARARs) associated with site investigations, applicable Texas, and federal regulations.

**6.3.2.1 Chemical Data Acquisition Plan.** The A-E shall prepare a CDAP which contains a description of all requirements and procedures for field activities including sample locations, drilling, well installation and screening, and sampling and analysis of soil groundwater, and IDW. The CDAP shall include requirements for quality assurance (QA) and quality control (QC). The CDAP shall also include analytical methods, holding times, preparation and practical quantitation limits for each parameter to be analyzed for the project. It should be organized according to the following format:

- Introduction
- Project background
- Project organization. This section shall include a discussion of the contractor's personnel including managers, field personnel, QC/QA personnel, the contractor's organizational chart and proposed laboratory organization, validation and qualifications.
- Data Quality Objectives. The Data Quality Objectives will discuss data uses and data needs for all aspects of the project that includes, but are not limited to: evaluation of the nature of contamination. Numerical goals shall be established for precision, accuracy and representativeness. Objectives shall be established for comparability and completeness. Laboratory quantitation limits shall be provided for each analyte.
- Field operations. This section shall include field oversight, drilling techniques, well installation, location surveys, geophysical surveys, sampling, field screening, decontamination, field QA/QC, waste management/disposal of wastes and other investigative procedures proposed by the contractor.
- Sample handling and testing.
- Sample integrity, including custody and documentation.
- Data reduction, validation and reporting.
- Audits (QA procedures to insure adherence to the Work Plan and the performance of quality work).
- Corrective action.

**6.3.2.2 Waste Management Plan.** The A-E shall develop Waste Management Plans in accordance with State of Texas and federal regulatory requirements for soil, water and PPE waste streams. The A-E is responsible for waste management from the point of generation to final disposal. The A-E shall list control measures to comply with the regulations such as segregation, containment, packaging, transportation and storage of waste. This includes, but is not limited to labelling, logging, permitting, and record keeping. The A-E shall provide all containers/drums, handle all waste, place waste in containers/drums, store the containers/drums temporarily on site, test all waste, and is responsible for disposal of all waste. The A-E shall provide an inventory of drums used to the COE detailing the number of the drum, when filled, and contents (i.e. soil, water, used PPE, etc.). All waste will be assumed to be hazardous while handling and storing, until analytical results of the waste are received and evaluated. For bid purposes, the A-E shall assume that soil and liquid IDW shall be classified as non-hazardous.

**6.3.2.3 Site Safety and Health Plan** The A-E shall develop Site Safety and Health Plans addressing the measures to be taken to ensure that all field activities shall be conducted in an environmentally safe manner for the workers, surrounding community, and environment from chemical, physical, and or biological hazards at each site in accordance with the Occupational safety and Health Administration (OSHA) 29 CFR, USACE Safety and Health Requirements Manual, EM385-1-1 (latest version), and USACE ER 385-1-92 (latest version), and any other applicable state and federal safety and health requirements.

**6.4 SI Field Work.** The A-E shall execute the field work as specified below and in the approved Final Work Plans for both sites.

**6.4.1 SGR & the IWTP Site.**

**6.4.1.1 Utility Clearances and Permits.** The A-E shall be responsible for obtaining drilling permits from the appropriate state and local agencies and shall be responsible for coordinating all utility clearances. If required to move a boring in order to avoid utilities, the A-E shall be responsible for proposing the relocation of the boring to a suitable location which accomplishes the intent of the original location. The proposed location shall be as close as possible to the original location. The A-E shall take all reasonable precautions to protect persons and property near the drill site, and shall restore the site to its original state when the field investigations are complete.

**6.4.1.2 Right-of-Entry (ROE).** The COE real estate division has obtained a number of signed ROE contracts from as many landowners as possible. A copy of all signed ROEs will be provided to the A-E which will be used to gain entry to the properties for the purpose of locating, collecting samples, and surveying. If a soil sample location is required to be moved for a specific reason, the contractor shall ensure the new location is on land where the ROE has been obtained. The contractor shall obtain approval from the COE prior to moving the sample location.

**6.4.1.3 Ordnance and Explosive Waste (OEW).** If explosives, chemical surety and warfare material (CSM/CWM), or unexploded ordnance (UXO) are discovered at any time during operations, the Contractor shall mark the location, immediately stop operations in the affected area, notify all on-site personnel of the OEW hazard and area restrictions, and notify the CO. The Government will make appropriate arrangements for evaluation and proper disposal of the device(s). Contractor personnel shall not be handle or participate in ordnance evaluation. The Work Plan shall specifically address procedures to be followed should known or potential explosives, CSM/CWM, UXO, or other such items be encountered during any phase of field work at the SGR. OEW is not expected at the IWTP area.

**6.4.1.4 Drilling Methods.** All borings shall be drilled by a method of the A-E's choosing, except no drilling fluids or water will be allowed. The method(s) shall be proposed by the A-E and submitted in the work plan and approved prior to use. The driller shall be licensed in accordance with the State of Texas regulations.

**6.4.1.5 Mobilization Notice.** The A-E shall provide a 14 day notice to the USACE personnel prior to mobilization to the field for each site inspection.

**6.4.1.6 Chemical Analytical/Laboratory Requirements.**

**6.4.1.6.1** Prior to the submittal of the draft work plans, the contractor shall identify and obtain approval from the assigned Tulsa District the selection of a laboratory to analyze soil and water samples. The quality assurance (QA) sampling effort shall be coordinated with the Tulsa District early in the project. The COE shall provide the A-E where to send all QA samples.

**6.4.1.6.2** The A-E shall provide all equipment (jars, bottles, VOA vials, coolers, and any other applicable items) to conduct the soil and groundwater sampling. The A-E shall follow the CDAP and ensure the required analytical methods and procedures are followed to ensure the quality of the analytical results.

**6.4.1.6.3** The Contractor shall organize and submit 2 hard copies of all laboratory analysis/reports to the COE (within 14 days of receipt from the lab) in order to evaluate the comparability of all data. The data shall be comb bound and shall have a heavy red card stock front and back cover. The original shall contain the original copy of all information required to be submitted and shall be marked at the original. All copies shall be clearly marked as "copy made from original source" or words to that effect. All laboratory data shall have dates, reference numbers, contract numbers, project numbers, project name, and other pertinent information on it. The COE shall provide a comparability letter to the A-E. The A-E shall insert the comparability information into the A-E Validation Report (as part of the appendices of the SI report). A copy of all analytical data shall be included in the appendices of the SI reports.

**6.4.1.7 Site Restoration.** The A-E shall be responsible for restoring soil borings and monitoring well sites to pre-contract conditions upon completion of work and prior to departing the site.

**6.4.1.8 Investigative Derived Waste (IDW).** The contractor is responsible for the management and disposal of all wastes from the point of generation to final disposal. All solid and liquid waste generated from field investigations shall be containerized and managed as hazardous waste until determined nonhazardous through appropriate analysis. All waste shall be appropriately containerized, and stored on site (in a secure location) to await proper disposal. Containers should be permanently marked with information on contents, boring or well number from which soil was taken and depths from where soil was taken. IDW shall be characterized and disposed in accordance with the State of Texas and federal regulations.

**6.4.1.9 Sample Location Surveys and Mapping.**

**6.4.1.9.1** The A-E shall survey all soil boring locations where sediment and soil samples are collected and monitoring well locations. A registered land surveyor shall perform the survey. All locations shall be located both horizontally and vertically. Horizontal locations shall have a relative accuracy of  $\pm 0.1$  foot (3 cms). Top casing elevations shall be shot to the nearest 0.01 foot (3 millimeters), and ground surface elevations shall be shot to the nearest 0.1 foot (3 cms). All locations shall be surveyed to third order, Class I standards, with relative accuracy of 1 in 10,000. The COE shall furnish the A-E survey maps of each site in Integraph Microstation (\*.DGN) CADD format. All new locations shall be identified on these maps and included in the SI report. All new location survey data shall be provided to the COE in the same format.

**6.4.1.9.2** Each monitoring well, in addition to having an elevation established at natural ground surface, shall have an elevation established on top of the well casing with the well cap removed. The contractor shall delineate the point with a chiseled mark, punch hole, or other clearly distinguishable mark as required to provide a suitable reference point for groundwater measurements.

**6.4.1.10 Backfilling Procedures.** All soil borings and monitoring wells shall be backfilled in accordance with all applicable State of Texas and federal regulations.

#### 6.4.2 SGR Site

**6.4.2.1 Sample Location, Collection, and Analysis.** For bid purposes, the A-E shall assume: two discrete samples shall be collected from 15 locations across the site at a depth not to exceed 4 feet below ground surface (bgs). (Note: The A-E shall supply a unit price for drilling, sampling, and analysis for each location for the purpose of deobligating funds if all locations are not drilled, sampled, and analyzed). The A-E shall choose the appropriate depths to collect samples. Approximate sample depths are anticipated to be 5 inches and 2 feet bgs. Composite samples shall not be collected. Locations shall be dispersed throughout the area, and are dependent on the availability of ROEs. The soil volume recovered shall be adequate for all analytical requirements. If sample volumes are not adequate, the A-E shall collect another sample at the same depth adjacent to the previous sample location at no additional cost. The Contractor shall test each soil sample for the following parameters by methods listed in Table 1.

**Analytical Methods for the SGR - Table 1**

Analyte	EPA Method	Soil Only	PQL (mg/kg)	Qty.	Total Number of Samples
lead	6010 (low level ICP)	x	5	30	30
pH	9045	x	na	6	6
% moisture	ASTM 2216	x	na	6	6
QC		x	as above	1/10 for all	3

				samples	
QA		x	as above	1/10 for all samples	3
EB		x	as above	1/20 for all samples	2

All chemical methods are from SW-846.

PQL = practical quantitation limit

**6.4.2.2 Soil Description.** The A-E shall provide a log describing the soils encountered, sample identification number, sample collection depths, dates and times, total depth of each soil boring, and any other applicable information. Soil samples shall be described according to the Unified Soil Classification System. All logs shall be included in the SI report. All log entries shall be printed. Photo reproductions shall be clear and legible. The log description shall be in accordance with EM 1110-1-4000, Monitoring Well Design, Installation, and Documentation at Hazardous and/or Toxic Waste Sites.

#### 6.4.3 IWTP.

**6.4.3.1 Sample Location, Collection, and Analysis.** For bid purposes, the A-E shall assume the following: drill 4 soil borings, collect and analyze three discrete (no composite samples) soils samples per each boring. Install 3 permanent monitoring wells, develop, collect, and analyze 1 water sample from each well. During the installation of the monitoring wells, collect 3 soil samples per each boring. The groundwater at this site is at a depth of approximately 9 feet bgs. The depth of each boring shall be approximately 20 feet bgs; deep enough to set 10 ft. screens (PVC), and obtain ample water volumes for groundwater samples from each

location. The soil volume recovered shall be adequate for all analytical requirements. If sample volumes are not adequate, another sample shall be collected immediately below the previous sample within the same

boring. The A-E shall supply a unit price for drilling, installing, sampling, and analysis for each boring and monitoring well for the purpose of deobligating funds if all monitoring wells (along with soil sample collection and analysis - 3 per monitoring well) are not installed or if all soil borings are not drilled, sampled, and analyzed. The Contractor shall test each soil and water sample for the following parameters by methods listed in Table 2.

**Analytical Methods for the IWTP - Table 2**

Analyte	WATER		SOIL		Total Number of Samples
	EPA Method & Quantity Collected		EPA Method & Quantity Collected		
	Method	Qty	Method	Qty	
VOCs	8260	3	8260	21	24
SVOCs	8270	3	8270	21	24
Pesticides	8081	3	8081	21	24



PCBs	8082	3	8082	21	24
herbicides	8151	3	8151	21	24
RCRA 8 metals					
arsenic	7060	3	7060	21	24
barium	6010 (low level ICP)	3	6010 (low level ICP)	21	24
cadmium	6010 (low level ICP)	3	6010 (low level ICP)	21	24
chromium	6010 (low level ICP)	3	6010 (low level ICP)	21	24
lead	7421	3	7421	21	24
mercury	7471	3	7470	21	24
selenium	7740	3	7740	21	24
silver	6010 (low level ICP)	3	6010 (low level ICP)	21	24
TPH (GRO & DRO data)	8015 M	3	8015 M	21	24
TPH	1005	3	1005	21	24
pH	9040	3	na	3	6
TDS	160.1	2	na	na	2
conductivity	9050	2	na	na	2
% moisture	na	na	ASTM 2216	3	3
<b>Total</b>		<b>37</b>		<b>216</b>	<b>253</b>
QC				1/10 samples	1 water, 2 soil
QA				1/10 samples	1 water, 2 soil
Equipment Blanks (EB)				1/20 samples	1 water, 1 soil
Trip Blanks (TB)				1/VOC cooler	1/VOC cooler

All chemical methods are from SW-846.

#### 6.4.3.2 Monitoring Wells.

**6.4.3.2.1 Design/Installation/Development.** It is the responsibility of the A-E to properly plan, install, develop and test monitoring wells so they are suitable to produce representative groundwater samples in sufficient quantity and quality for analytical testing. The monitoring well installation shall be in accordance with EM 1110-1-4000, Monitoring Well Design, Installation, and Documentation at Hazardous and/or Toxic Waste Sites.

**6.4.3.2.2 Groundwater Elevations.** The A-E shall collect data to obtain the potentiometric elevations, and develop groundwater elevation maps for the SI reports.

**6.4.3.2.3 Depth.** The screen length shall be of sufficient length in all wells as to allow for seasonal fluctuations of the water table and to insure the well does not go dry during periods of extensive drought.

**6.4.3.2.4** All risers shall be set round, plumb and true to line.

**6.4.3.3 Geological Logs & Well Construction Diagrams.**

**6.4.3.3.1** The A-E shall prepare a geologic log for each soil and monitoring well boring. The geologic log shall contain descriptions of soils, the sample identification number, sample collection depths, field screening results, dates and times, and total depth of the boring. All borings shall be continuously logged and soil samples will be described according to the Unified Soil Classification System (USCS). The geologic logs and well construction shall be in accordance with EM 1110-1-4000, Monitoring Well Design, Installation, and Documentation at Hazardous and/or Toxic Waste Sites.

**6.4.3.3.2** A monitoring well construction diagram shall also be prepared for each completed well, and shall provide detailed information on the construction. Each diagram shall be signed by the preparer. Information provided in all logs shall include, but not be limited to, the following:

- Total depth of completed well.
- Depth of any grouting or sealing, and the amount of cement and/or bentonite used.
- Static water level upon completion of the well and after well development.
- Installation date or dates, and name of the driller and the geologist installing the well.
- All pertinent construction details of monitoring wells, such as depth to and description of all backfill materials installed (such as gravel pack, bentonite, and grout); gradation of gravel pack; length, location, diameter, slot size, material (PVC, etc.) and manufacturer of well screen(s); and location of any blank pipe installed in the well.
- A brief log of the formations encountered in the well installation.
- Description of surface completion, including protective steel casing, protective pipes and concrete surface seal.
- A description of any difficulties encountered during well construction and OVA or PID readings.

- Survey coordinates and elevation of top of ground and top of well casing.
- A photograph of the completed well.

**6.4.3.3.3** All logs and diagrams shall be included in the SI report. All log entries shall be printed. Photo reproductions shall be clear and legible. Illegible or incomplete logs will not be accepted. Borehole depth information shall be from direct measurements accurate to 0.1 foot in boreholes that are continuously cored. If surveyed horizontal control is not available at the time of drilling, location sketches referenced by measured distances or prominent surface features shall be shown on, or attached to the log. The Contractor may choose an appropriate log scale for the monitoring wells and soil borings.

## **6.5 Site Investigation Report.**

**6.5.1** The SI report shall contain an executive summary, introduction, body of the report, conclusion, and appendices. The report shall discuss in detail pertinent existing information, field investigations including the methods and locations of the sampling conducted, the results of the data collected and the analysis and interpretation of the data provided in tables, maps, or graphs with accompanying explanations, the nature of the contamination, groundwater elevation maps, any conclusion on extent of contamination, and pathways of possible contaminant migration at each site, identify and discuss Federal/State specific Applicable or Relevant and Appropriate Requirements (ARARs), recommended remedial action(s) or additional work with explanations for the need along with associated costs. If the SI report indicates that the contamination is within acceptable limits, as defined by the Environmental Protection Agency (EPA) and the TNRCC regulations, or there are no human health populations subject to the contaminants, the SI report shall so indicate and recommend that no further studies be conducted for the remedial investigation at this site. The appendices shall include, but is not limited to, data validation report and analytical results, permits, field notes, well logs, survey data, completion and plugging reports for borings, disposal manifests, and other pertinent information.

**6.5.2 Data Validation Reports.** The A-E shall include a data validation report in the appendices. The report shall encompass the data contained in the laboratory Report pertaining to each analytical parameter. The contractor shall discuss the following:

- **General** – Test methods, method numbers, holding times, and a list of sampling, analysis and extraction dates.
- **Accuracy** – Matrix spike recoveries, surrogate recoveries, acceptable recovery ranges.
- **Precision** – Matrix spike duplicate recoveries, relative percent differences, laboratory quality control duplicates, acceptable recovery ranges and differences, and a comparison of the filed samples with their associated quality control duplicate samples.
- **Representativeness** – Laboratory blanks, field blanks, instrument blanks, chain of custody forms and cooler receipts, along with a brief discussion on sample condition upon arriving at the laboratory.
- **Completeness** – Analytical completeness shall be assessed by comparing the number of samples collected to the number of samples necessary to adequately characterize the site. Refer to EM 200-1-

3, Requirements for the Preparation of Sampling and Analysis Plan for more information.

- **Comparability** – The QA sample shall be analyzed by the Tulsa District and compared to its field replicates. The Tulsa District shall provide a letter of comparability to the A-E to be included in the Data Validation Report.
- **Sensitivity** – Adequacy of the detection limits for the intended purpose. The A-E shall discuss what their detection limit actually represents i.e. method detection limit or practical quantitation limit.
- Discussion of actual analytical method used, matrix interferences, dilution factors, and effects of any variance from the method as described in the CDAP, and whether or not holding times were met.
- The report shall maximize the use of tables to present all analytical data i.e. date samples collected, extraction dates, analysis dates, holding times, field identification numbers, laboratory identification numbers, TB, EB, QC, QA, soil samples, water samples, analytical parameters, laboratory report number reporting units, and quality control data (MS, MSD, LCS, surrogates, etc).
- The report shall discuss problems, and whether or not the data is suitable for its intended purpose and meets the data quality objectives as specified in the CDAP.

**6.6 Review Conferences.** A technical review meeting shall be held at the COE, Tulsa District office after the draft work plans have been reviewed by the COE, but prior to the final work plans. Another meeting shall be scheduled at the A-E's office after the COE has reviewed the draft SI reports, but prior to the final SI reports. The A-E shall assume a ½-1 days for each meeting to discuss various issues.

**6.7 Project Delivery Schedule.** The schedule for delivery of work items to the CO is in calendar days. The deliverables described below include the SGR and the IWTP.

Work Item	Work Description	Completion Schedule	Approximate Schedule (+/-)	Number of Copies
1	Draft Work Plans (SGR & IWTP)	75 days after notice to proceed	15 Sept 98	5
2	Review Conference	After the COE has reviewed draft work plan	15 Oct 98	Conference at the Tulsa District Office
3	Draft Final Work Plans	14 days after resolution of comments	30 Oct 98	5
4	Final Work Plans	14 days after resolution of comments	30 Nov 98	10, 1 disk copy in MS Word format
5	Begin Field Work	45 days after final work plan approval	15 Jan 99	na
6	Field Work Ends	45 days after start	1 Mar 99	na
7	Analytical Results (SGR & IWTP)	Assuming 30 day turnaround time for analysis, 14 days	15 April 99	2

		after contractor receipt		
8	Draft SI Report (SGR & IWTP)	75 days after completion of the field work	15 May 99	5
9	Review Conference	After the COE has reviewed draft SI Report	15 Jun 99	Conference at A-E's Office
10	Draft Final SI Report	14 days after resolution of comments	30 Jun 99	5
11	Final SI Report	14 days after resolution of comments	30 July 99	10, 1 disk copy in MS Word format

na = not applicable

**6.8 Distribution of Submittals.** All submittals shall be provided to the COE Technical Manager, and distribution of all submittals shall be made by the COE. All copies of submittals, including detailed progress reports, analytical data, confirmation notices, and Draft, Draft Final and Final Reports shall be mailed to:

Tulsa District, Corps of Engineers  
ATTN: CESWT-EC-EF (Angela Burckhalter)  
1645 South 101<sup>st</sup> East Avenue  
Tulsa, OK 74128-4629

## 7.0 Special Conditions.

**7.1 Performance of Work.** The contractor in performance of the work shall adhere to the following guidelines.

**7.1.1** The A-E shall furnish sufficient technical, supervisory and administrative personnel at all times to ensure the work is performed in accordance with the delivery schedule. Professional level skills and management practices are required in the performance of this contract. Accordingly, the A-E shall establish an effective quality control program to assure that the end product meets professional standards and complies with the contract requirements.

**7.1.2** Meetings/conference calls shall be held whenever requested by the CO or the A-E for discussion of questions and problems relating to the work required under the contract.

**7.1.3** The A-E, its subsidiaries, affiliates or associates shall not release any information regarding the project to technical societies, news media or the general public without obtaining permission from the Contracting Officer.

**7.1.4** An A-E performance evaluation shall be completed after the completion of this Task Order or in the interim if the A-E's work is found to be unsatisfactory.

## **7.2 Project Management.**

**7.2.1 A-E Project Coordinator or Manager.** The A-E shall appoint a project coordinator or manager to serve as a single point of contact and liaison between the A-E and the CO and/or his representative(s) for all work required under the contract. Upon award of the contract, the A-E shall immediately furnish the name of the designated individual to the CO, in writing. The project coordinator or manager will be responsible for the complete coordination of all work developed under the contract. All work will be accomplished with adequate internal controls and review procedures which will eliminate conflicts, errors and omissions and ensure technical accuracy.

**7.2.2 Government Managers.** The Government Technical Manager for this project is Angela Burckhalter, Formerly Used Defense Site Section, HTRW Design Center, Tulsa District (918-669-4957, FAX-7508). Any questions regarding the work under this contract should be directed to Ms. Burckhalter. Any questions about contract procedures should be directed to Mr. Bernd Koerber, A-E Contracts Section, Design Branch, Tulsa District (918-669-7025). The Government Project Manager for this project is Ms. Lisa Lawson, Project and Program Management Division, Tulsa District (918-669-7551).

## **7.3 Documents.**

**7.3.1** The deliverable documents described in this SOW shall be considered "Draft" and "Draft Final" only in the sense that they have not been reviewed and/or approved by the Contracting Officer (CO) or other members of a technical review team which, as determined by the CO, may include reviewers from the US Army Corps of Engineers (USACE), and local, state and federal regulatory agencies. Each draft and draft final reports shall be reviewed and approved prior to proceeding with the draft final and the final reports. In all respects, "Draft", "Draft Final", and "Final" work plans/reports shall be complete, in proper format, one-sided typed, double-spaced, and be free of grammatical and typographical errors. All documents shall maximize the use of tables and charts, and minimize the data in the appendices. All documents shall bound in a good quality three ring binder, and shall have the project title, site name, site location, type of investigation, state of the report (draft, draft final, or final), contract number, date, and prepared for the Tulsa District on the cover and the binder. All survey maps and associated survey data shall be provided to the Corps of Engineers, Tulsa District (COE) in an Integraph Microstation CADD (\*.DGN) format. All final reports shall also be provided to the CO in MS DOS readable disks in MS Word for Windows.

**7.3.2 Review.** The A-E shall comply with the review process as outlined in this paragraph. The CO will furnish the A-E review comments on the data and reports submitted at the various investigation milestones. The A-E shall comply with the review comments in the development of data and reports for the next milestone. If any review comment requires clarification and/or amplification to assure compliance, the A-E shall verbally notify the Technical Manager.

**7.3.2.1** The A-E shall submit, in writing, within seventy-two (72) hours of verbal notification, a record of the conversation to the USACE Technical Manager.

**7.3.2.2** Changes in any work as a result of review comments will not be considered a change in the contract unless a significant change in scope is involved.

**7.3.2.3** After each review, the A-E will be furnished one set of comments to be annotated and returned to the Government. Comments shall be annotated with a C - Concur, D - Do not concur, E - Exception, or X - Delete. Comments annotated with a D, E or X shall be explained to justify the non-compliance with the comment. The A-E shall furnish these annotated comments to the Government no later than 14 calendar days after receiving the comments.

**7.3.2.4** To assist reviewers, a copy of all annotated comments shall be included in each subsequent submittals. These annotations shall, in addition to explanations previously required, include a brief notation for all comments concurred with as to what action was taken and where.

**7.4 Government-Furnished Materials (GFE).** Upon delivery of any government furnished information, the A-E shall inspect and notify (within 3 days) the Technical Manager acknowledging the receipt of the information. If the A-E identifies any conflicts with the GFE in comparison to pre-negotiation minutes, this SOW, or other communications concerning this project, the A-E shall notify the CO in writing, within 5 days of the discovery of the conflict. Any Government-furnished aerial photographs, topographic mapping, reproducible drawings, other various reports shall be returned to the Technical Manager prior to the completion of the Task Order.

**7.5 Confirmation Notices.** The A-E shall provide a record of all conferences, meetings, discussions, verbal directions, telephone conversations, etc., participated in by the A-E and/or his representative(s) on matters relative to the contract and the work. The records, entitled "CONFIRMATION NOTICES"(CNs), shall be numbered sequentially and shall fully identify participants, subject discussed and any conclusions reached. The A-E shall forward to the CO and the Technical Manager, within 72 hours, a reproducible copy of each confirmation notices. The A-E, upon COE request, shall perform any additional distribution of CNs as necessary.

**7.6 Subcontractors.** The A-E shall insert appropriate provisions in all subcontracts relating to this SOW to ensure fulfillment of all contractual provisions by the subcontractors. If for sufficient reason, at any time during the process of this contract, the CO determines that any subcontractor is unsatisfactory or is not performing in accordance with the contract, the A-E shall be informed in writing accordingly, and immediate steps shall be taken by the A-E to obtain acceptable performance or for cancellation of such subcontract. Subletting by subcontractors shall be subject to the same requirements. Nothing contained in this contract shall be construed to create any contractual relations between any subcontractor and the Government.

**7.7 Meetings and Conferences.**

**7.7.1 Meetings.** Meetings shall be held whenever requested by the CO or the A-E for discussion of questions and problems relating to the work required under the contract.

**7.7.2 Conferences.** The A-E shall be required to attend and participate in all conferences pertinent to the services and work required under the contract as directed by the CO.

**7.7.3 Site Visits.** The A-E or his representatives, including consultants, shall visit and inspect the project site as necessary and required during the preparation and accomplishment of the work described in this SOW. All travel, costs, and expenses incurred by the A-E or his representatives, including consultants, for such site visits shall be included in the lump sum price of the delivery order.

## **8.0 General Conditions.**

**8.1 Initiation of Work.** The Contractor shall not mobilize or initiate any work item of this Task Order prior to receipt of approval by the CO to initiate the respective work item or receipt of a contract modification initiating additional contract work. Any work done without being directed to do so by the CO shall be at the Contractor's expense.

**8.2 Monthly Progress Reports and Payment Requests.** The contractor shall prepare monthly progress reports that summarize the project activities which have occurred during that month, highlight any problems or potential problems which have become apparent regarding technical data adequacy, manpower, schedules, etc. and provide an estimated project completion status (%). The percent claimed shall coincide with the progress report. The report shall be delivered no later than the 5<sup>th</sup> day of the following month for the previous month's activities.

**The payment request with progress reports shall be mailed to:**

Tulsa District, Corps of Engineers  
ATTN: A-E Contracts and Documents Section (CESWT-EC-DA)  
1645 South 101<sup>st</sup> East Avenue  
Tulsa, OK 74128-4629

**The progress reports shall be faxed to:**

Tulsa District, Corps of Engineers  
CESWT-EC-EF (Angela Burckhalter)  
1645 South 101<sup>st</sup> East Avenue  
Tulsa, OK 74128-4629

**8.3 Completion of the Work.** Work under this task order shall not be considered complete until the Final SI report has been submitted and approved by the CO. If the delivery order is modified, the CO will consider completion of the modified delivery schedule to constitute completed work. A retainage of up to 10 percent of the total fee will be withheld until the CO determines the contract complete.



ATTACHMENT 1

Contract No. DA CA56-97-D-0010, Task \_\_\_\_, Task Order \_\_\_\_

Project Title:

Site:

Additional Work Confirmation Notice (C.N.) No. \_\_\_\_

Description of Work:

Deliverable Schedule:

Negotiated Schedule:

Items of Work	Cost
Total	

\_\_\_\_\_  
A-E Project Manager

\_\_\_\_\_  
Date Approved

\_\_\_\_\_  
COE Technical Manager

\_\_\_\_\_  
Date Approved

ATTACHMENT 2

Contract No. DACA56-97-D-0010, Task \_\_\_\_, Task Order \_\_\_\_

Additional Work Expenditures by Confirmation Notice (C.N.) #\_\_\_\_

Initial Total Negotiated Amount \$\_\_\_\_\_

C.N. No.	Date	Site	Negotiated Amount	Remaining Funds Total