US Army Corps
of Engineers

Savannah District

FINAL

QUALITY CONTROL SUMMARY REPORT

PHASE I RCRA FACILITY INVESTIGATION
FORT STEWART, GEORGIA

Volume I of III

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Prepared for:

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1.0 Introduction

Fort Stewart is located approximately 30 miles southwest of Savannah, Georgia. The military installation, which was established in 1940, covers approximately 437 square miles of land. On August 14, 1987, Fort Stewart was issued a RCRA Part B permit for the storage and treatment of hazardous wastes. As a condition of this permit, a RCRA Facility Investigation (RFI) had to be conducted at all Solid Waste Management Units (SWMUs) listed in the permit. A corrected final RFI Workplan was completed by Geraghty & Miller, Inc., in April 1993 and was submitted to the Georgia Environmental Protection Division (GEPD) for approval. Field work for the investigation was executed by both Geraghty & Miller, Inc., and by Corps of Engineers (COE) personnel.

1.1 Project Description

Field work for this project involved sampling at SWMUs located throughout the installation. Several of the SWMUs are comprised of multiple sites. A list of the SWMUs sampled during the RFI is shown below.

FST-001 - South Central Landfill
FST-002 - Camp Oliver Landfill
FST-003 - Tac-X Landfill
FST-004A - Burn Pit
FST-004B - Burn Pit
FST-004C - Burn Pit
FST-004D - Burn Pit
FST-004E - Burn Pit
FST-004F - Burn Pit
FST-009 - EOD Area
FST-010 - EOD Area
FST-011 - EOD Area
FST-012 - Current EOD Area
FST-014 - Old Fire Training Pit
FST-017 - DRMO Hazardous Waste Storage Area
FST-018 - Industrial Waste-Water Treatment Plant
FST-024A - "New" Radiator Shop
FST-025 - 86 Waste Oil Tanks (14 tank sites sampled)
FST-026 - 724th Tanker Purging Station
FST-027 - Motor Pools (Wash, Grease, and Steam Racks)
FST-028 - 724th Battery Shop
FST-029 - Evans Army Heliport POL Storage Facility
FST-030 - Recirculating Wash Impoundment ("Bird Bath")
FST-031 - Three DEH Asphalt Tanks
FST-032 - Supply Diesel Tank
FST-033 - DEH Pesticide Warehouse
FST-034 - DEH Equipment Wash Rack

Geraghty & Miller, Inc., was tasked with the installation of 30 new ground-water monitoring wells at various units located throughout the installation. During well drilling, they collected soil samples as required by the RFI Workplan (Geraghty & Miller, Inc., 1993). The COE completed all other sampling for this project. A summary of the data collected by the COE may be found in Table 1. A more detailed breakdown of the analyses collected may be found in the RFI Report (RUST, Inc., 1994). Typical chemical testing of samples for this project included VOCs (EPA Method 8240), RCRA total metals, pesticides/PCBs (EPA Method 8080), TPH (EPA Method 8015), explosive residues (modified EPA Method 8330), and full TCLP.

TABLE 1
SWMU Sample Data

Number	Description	No. Samples	Matrix	No. QA 1/	No. QC 1/
FST-001	South Central Landfill	6	GW	3	3
FST-001	South Central Landfill	2	SW	3	3
FST-002	Camp Oliver Landfill	4	GW	3	3
FST-002	Camp Oliver Landfill	2	SW	3	3
FST-003	Tac-X Landfill	4	GW	3	3
FST-003	Tac-X Landfill	1	SS 3/	1	1
FST-004A	Burn Pits	4	GW	3	3
FST-004B	Burn Pits	4	GW	3	3
FST-004C	Burn Pits	4	GW	--	--
FST-004D	Burn Pits	4	GW	--	--
FST-004E	Burn Pits	4	GW	--	--
FST-004F	Burn Pits	4	GW	--	--
FST-009	EOD Area	6	SS	1	1
FST-010	EOD Area	6	SS	1	1
FST-011	EOD Area	6	SS	1	1
FST-012	Current EOD Area	10 2/	SS	1	1
FST-014	Old Fire Training Pit	4	GW	3	3
FST-017	DRMO Hazardous Waste Storage Area	4	SB	1	1
FST-018	Industrial Waste-Water Treatment Plant	1	SLD	1	1
FST-018	Industrial Waste-Water Treatment Plant	4	SB	1	1
FST-018	Industrial Waste-Water Treatment Plant	8	SED	1	1
FST-018	Industrial Waste-Water Treatment Plant	2	WW	3	3
FST-018	Industrial Waste-Water Treatment Plant	8 2/	SW	4 2/	3
FST-024A	"New" Radiator Shop	3	SB	1	1
FST-025	86 Waste Oil Tanks	16 2/	SB	1	1
FST-025	86 Waste Oil Tanks	16 2/	GW	3	3
FST-026	724th Tanker Purging Station	6 2/	SB	1	1
FST-026	724th Tanker Purging Station	2 2/	SS	--	--
FST-027	Motor Pools (Wash, Grease, & Steam Racks)	3	SB	1	1
FST-028	724th Battery Shop	4	SB	1	1
FST-029	Evans Army Heliport POL Storage Facility	8	SB	1	1
FST-030	Recirculation Wash Impoundment	2	SLD	1	1
FST-031	Three DEH Asphalt Tanks	6	SS	1	1
FST-032	Supply Diesel Tank	6	SS	1	1
FST-033	DEH Pesticide Warehouse	2	SS	1	1
FST-034	DEH Equipment Wash Rack	3	SS	1	1
	Totals	179		54	53

1/ This number includes Duplicates, Blanks, and Trip Blanks
2/ Extra sample taken over and above those specified in the Work Plan
3/ Substitute sample for unavailable leachate sample

MATRIX LEGEND:

GW	Ground Water	SS	Surface Soil	SLD	Sludge
SB	Soil Boring	SW	Surface Water		
SED	Sediment	WW	Waste Water		

1.2 Project Objectives

The objectives of the Phase I RFI was to determine if any contamination was present at any of the SWMU's. Unless additional reasons for further investigation were encountered during the investigation, sites where sampling revealed no contamination would be recommended for no further action (NFA). A Phase II investigation will be required to delineate and define any contamination found during Phase I. The data quality objective (DQO) for samples collected for this project was EPA Level III. The EPA data quality objective levels are defined herein on Table 2. All analyses were performed by off-site laboratories utilizing EPA testing methods, except aqueous pH and specific conductivity, which were field tested. All laboratories were also required to be certified by the COE Missouri River Division (MRD). EPA Level I data quality objective was used for screening soil samples in the field and for health and safety site monitoring (see Table 3).

1.3 Project Implementation

COE field work was initiated in July 1993 and was completed on November 23, 1993. A project specific Site Health and Safety Plan was compiled for the work to be completed by COE personnel. Mr. Judson Smith was designated as Sampling Team Leader for the project. He was responsible for the collection of samples in accordance with the RFI Workplan, completion of the Daily Quality Control Reports (DQCRs), coordination of site access, and shipment of samples to the laboratories. Quality Control Officer for the project was Dr. Franz Froelicher. He was responsible for data quality control for the COE sampling effort. This included, but was not limited to, validation of both field and laboratory data in accordance with the Quality Assurance Project Plan (QAPP) contained in the RFI Workplan (Geraghty & Miller, 1993), documentation and correction of problems as they occurred, maintaining the analytical files for the project, approval of payment requests from the laboratories, and completion of Monthly Progress Reports (MPRs).

Two analytical laboratories were utilized by the COE for testing samples collected by COE personnel. These were James H. Carr & Associates, Inc. (Carr Laboratory), Columbia, South Carolina, and International Technology Corporation Analytical Services (IT Laboratory), of Knoxville, Tennessee. Carr Laboratory executed all laboratory analyses for volatile, semi-volatile organics, pesticides, TCLP, and metals, while the IT Laboratory was contracted to perform all analyses for explosive constituents. Geraghty & Miller, Inc., used Savannah Laboratories for their analysis. The QA laboratory for the entire project was the COE South Atlantic Division (SAD) Laboratory in Marietta, Georgia.

1.4 Purpose of this Report

The purposes of this Quality Control Summary Report (QCSR) are as follows: (a) to describe Quality Control procedures followed to ensure that data generated by the Corps of Engineers during the Phase I RCRA Facility Investigation at Fort Stewart, Georgia would meet project requirements; (b) to describe problems encountered during the course of the study, and their solutions; and (c) to describe the quality of the data collected. This report does not cover data collected for this project by Geraghty and Miller, Inc. A separate QCSR has been prepared to address those data. Two QA reports will be completed by the SAD Laboratory, one covering data collected by the COE and one covering Geraghty and Miller's data.

2.0 QC Procedures

A Quality Assurance Project Plan (QAPP) was developed for this project and may be found in Volume II of the RFI Workplan (Geraghty & Miller, 1993). The purpose of this document was to not only enumerate the numbers and type of samples to be taken in characterizing the site, but also the number and type of Quality Assurance/Quality Control (QA/QC) samples to be used to evaluate the quality of the data obtained.

TABLE 2
Definition of EPA Levels of Data Quality
No longer applicable
Now use "Screening data and Definitive data"

- Level I — Field screening or analysis using portable instruments. Results are usually limited to volatile compounds, often not compound specific, and not quantitative, but can indicate presence or absence. Results available immediately
- Level II — Field screening or analysis using more sophisticated portable instruments. The quality of data generated is highly variable, depending on the use of suitable calibration standards, reference materials, sample preparation equipment, and the training of the operator. Results available almost immediately.
- Level III — All analyses performed in an off-site laboratory that may or may not follow Environmental Protection Agency (EPA) CLP procedures. Quality assurance/quality control (QA/QC) and documentation are less rigorous than CLP protocols. Results delayed.
- Level IV — CLP Routine Analytical Services. All analyses are performed in an off-site CLP laboratory following CLP procedures. QA/QC protocols and documentation are rigorous. Results delayed.
- Level V — Analysis by Non-Standard methods. All analyses are performed in an off-site CLP laboratory that may or may not be a CLP laboratory. CLP Special Analytical Services are Level V.

TABLE 3
EPA Data Quality Levels for Specific Project Objectives

Project Objectives	Objective Approach	Data Collection	Data Quality Level
Health and Safety	On-Site Monitoring	Organic Vapor Concentration (FID or PID)	I
Selection of Soil Samples for Lab Analysis	Screening of Soil Samples	Organic Vapor Concentration (Headspace) (FID or PID)	I
Nature and Extent of Contamination	Ground-water Sampling and Analysis	Chemical Composition	III
	Soil Sampling and Analysis	Chemical Composition	III

The procedures established in the QAPP required that for every 20 samples or less of each matrix and analyte group destined for chemical analysis, one sample would be collected in duplicate and analyzed by the contractor laboratory. In order to assess the degree of accidental contamination by volatile organic compounds (VOC) during the sample collection and shipment procedures, trip blanks accompanied each cooler containing samples for VOC analysis.

The QAPP also established requirements for laboratory QC samples. The various types of laboratory QC samples included: laboratory duplicates, laboratory blanks (i.e., reagent water spikes), known references (i.e., laboratory standards), surrogate spikes, and matrix spike/matrix spike duplicates. Details of the preparation of the various field and laboratory QC samples can be found in the QAPP. In accordance with the QAPP, QA samples were also sent to COE South Atlantic Division Laboratory in Marietta, Georgia.

The laboratory and field QC data provided information to evaluate the quality of the field sample data collected. The evaluation paid particular attention to exceptions to the planned QC activities, problems encountered, and the effectiveness of the methodologies used. Monthly progress was summarized by the QC Officer in Monthly Progress Reports (MPRs). These are included herein in Appendix A. A summary of all daily activities is presented in the Daily Quality Control Reports (DQCRs). The DQCRs are presented in Appendix B. These were completed in the field by the Sampling Team Leader.

Precision, accuracy, and completeness are defined in the QAPP in Sections 12.1, 12.2, and 12.3 (page AA-106 and AA-107). Precision is determined by the Relative Percent Differences (RPDs) for the field duplicates or the Matrix Spikes/Matrix Spike Duplicates (MS/MSDs). The method blank, MS/MSD, and surrogate recovery are used to determine the accuracy of the data. The data evaluator used professional judgment based upon established analytical chemistry principles and the guidelines presented in "Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses" (EPA, 1988) and in "National Functional Guidelines for Organic Data Review (EPA, 1991). All data were to be used, if possible. The completeness parameter was determined after the determination of the usability of the data.

2.1 Evaluation of Field Data Quality

To access the quality of the field activities, Quality Control (QC) and Quality Assurance (QA) samples were collected. These samples were required by the RFI Workplan. The nature of the QC and QA samples required is discussed below. Evaluation of field data quality consisted of investigations of completeness, trip blanks (if any), and field duplicate RPDs. Equipment rinsate samples were not required by the RFI Workplan.

QC samples were collected along with the field samples to assess the accuracy of sampling. For the samples collected for analysis by Carr Laboratory, the QC samples collected were field duplicates and trip blanks, as defined in the RFI Workplan. The QC samples were collected in the same sample containers and were treated in the same manner as the field samples. They were analyzed by Carr Laboratory concurrently with the field samples.

QA samples were collected along with the field samples to assess the accuracy of sampling and of Carr Laboratory's analyses. The QA samples collected were field duplicates and trip blanks, as defined in the RFI Workplan. When appropriate (i.e., for samples for analysis of volatile organic parameters), trip blanks were also sent to the QA laboratory. The QA samples were analyzed by the COE SAD Laboratory in Marietta, Georgia.

2.2 Monthly Progress Reports (MPRs)

An MPR was completed by the QC officer for every month from 15 July 1993 to 31 January 1994. The MPRs contain the following information: work completed, problems encountered, solutions, summary of findings, and upcoming work. They are contained in Appendix A.

2.3 Daily Quality Control Reports (DQCRs)

The Sampling Team Leader, Judson Smith, produced all Daily Quality Control Reports. These include information such as, but not limited to, sampling team members, type and number of samples taken, problems encountered, OVA readings, instrument calibrations, sample identification, sample location, sample container type, field sample preparation techniques, preservation methods, and other pertinent facts. The DQCRs are included in Appendix B.

2.4 SL Level II Laboratory Reporting

The QAPP for this project had very specific requirements for laboratory data reporting. The QAPP identified Savannah Laboratory (SL) as the lab for this project. The QAPP required that all laboratory reports be SL Level II. SL Level II reporting includes the following information:

a) sample results
b) laboratory blank results
c) laboratory control samples (% recovery)
d) precision (% RPD)
e) surrogate recoveries (organics only)
f) date extracted
g) date analyzed.

Due to contractual reasons, the COE utilized Carr Laboratory and IT Laboratory to complete the analytical testing for the samples collected by the COE. These laboratories were required to submit reports equivalent to SL Level II reporting. Therefore, all laboratory reports contained QC information equivalent to SL Level II, as required by the QAPP, except as described in Paragraph 3.3. Data results contained in these reports are defined below.

2.4.1 Laboratory Blanks

Laboratory blanks are deionized water samples that are pure and unadulterated. These are run to ascertain if the glassware are clean and that the laboratory procedures or environment have not contaminated the samples.

2.4.2 Laboratory Control Samples (% Recovery)

The laboratory spikes a pure water or soil sample with a known group of compounds. They are used to see if the methods and processing used produced uniform and reproducible results.

2.4.3 Precision (% RPD)

To evaluate laboratory precision, the values reported for a matrix spiked sample (MS) and its duplicate, the matrix spiked duplicate (MSD), or any other SL Level II duplicate parameter, were used to calculate a relative percent difference (RPD) utilizing the following equation:

$$RPD = \frac{[Vs - Vd]}{[Vs + Vd]/2} \times 100$$

Where Vs is the value reported for the matrix spiked sample (MS) and Vd is the value reported for its duplicate (MSD). RPD goals were set for soil samples, which tend to be relatively difficult to homogenize. An RPD of 45% or less is generally considered a reasonable goal for laboratory soil analyses. For water samples, RPDs of 20% or less are generally considered acceptable for laboratory analyses.

In addition to the matrix spike sample, field duplicates were collected to assess sampling precision. Duplicate samples were collected to meet the frequency guidance established by CEMRD (approximately 10%). Field and matrix spike duplicate RPDs were "graded" as follows:

TABLE 4
RPD Categories

Matrix	Good	Fair	Poor
Water	<25%	<50%	>50%
Soil	<40%	<80%	>80%

Field and matrix spike duplicate RPDs are calculated only for analytical values that are greater than or equal to the method quantitation limit. RPDs are considered "not calculable" for concentrations below the method quantitation limit because of analytical uncertainty, but EPA usage allows a zero RPD to be reported in cases of below-minimum quantitation limit results. This grading scheme is based on guidelines from the Contract Laboratory Program's Data Validation Program (EPA, 1988a and 1988b) and reflects the generally inhomogeneous nature of soil, which makes it difficult to obtain a reproducible sample in the laboratory and the field.

2.4.4 Surrogate Recoveries (organics only)

Surrogate recoveries are measures of accuracy. Accuracy measures the bias in a measurement system. The measurement of accuracy will be performed in accordance with the specifics provided in the analytical methods. For the Gas Chromatograph (GC) and the Mass Spectrometer (MS) for GC/MS analysis, accuracy will be determined by spiking certain samples with known concentrations of surrogate compounds and calculating percent recoveries (% R). Similarly, one field sample in an analytical batch was spiked with a known amount of analyses, and the percent recoveries were calculated. The general formula for the calculation of accuracy is the following:

$$\%\,R = \frac{\text{Concentration of spike found} \times 100}{\text{Concentration of spike added}}$$

2.4.5 Holding Times

Holding times are the maximum times that a method allows any given analyete to be stored before it is either extracted from the sample or analyzed. It is calculated from the time the sample is collected in the field until it is analyzed by the laboratory.

2.5 Data Validation

The objective when evaluating the quality of the chemical data is to determine its usability. The evaluation is based upon the interpretation of the laboratory QC data, the field QC data, and the project Data Quality Objectives (DQOs). The evaluation process is often termed "data validation".

The QAPP for this project contained Data Validation Checklists to facilitate data validation. These checklists were completed by the QC Officer for each SWMU data package. Each Data Validation Checklist contains one page pertaining to field data validation and five pages which were completed during laboratory data validation. Data validation checklists for each SWMU are included herein in Appendix C.

2.5.1 Field Data Validation

Daily Quality Control Reports were completed by the Sampling Team Leader, Mr. Judson Smith. The DQCRs and other field generated documents such as sampling logs, boring logs, and Project Chemical Exposure Data Reports were received by the QC Officer. A Field Data Package was produced for each SWMU. Section I of the Field Data Validation Checklist was completed by the reviewer. Section I categorized each field task as "Reported," "Performance Acceptable," or "Not Required."

2.5.2 Laboratory Data Validation

Sections II through V of the Data Validation Checklists were completed during laboratory data validation. Laboratory data were evaluated to assess completeness, adherence to holding times, method blank contamination (if any), surrogate recoveries (where applicable), and matrix spike/matrix spike duplicate (MS/MSD) relative percent differences (RPDs), and any other SL Level II reportables. These criteria (except completeness) were used to evaluate the bias and precision of the data generated by the laboratory. In order to perform this evaluation, the laboratory QC data were required to be submitted along with the field sample data. The bias of the laboratory data was assessed through consideration of the following:

- Adherence to the prescribed method;
- Recovery of spikes from field samples spiked with known amounts (the MS and MSD);
- Method blank contamination, if any;
- Adherence to preparation and analysis holding times;
- Recovery of surrogate spikes for analyses by gas chromatography/mass spectrometry.
- Field duplicate match

2.5.3 Definition of Data Qualifiers (Flags)

During the data validation process, all laboratory data had to be evaluated and assigned a data flag or code, as applicable. These flags are listed in Section V of the Data Validation Checklists. They are defined in the 1991 EPA document titled, "National Functional Guidelines for Organic Data Review." The guidance also describes procedures to be followed when coding data. The data flags are defined as follows:

When the material was analyzed for, but was not detected above the level of the associated value, a "U" was used to flag the compounds. A flag of "J" is usually used when the associated value is an estimated quantity. Data flagged with "R" are unusable. In some cases the flag "UJ" may be used to mean that the material was analyzed for, but was not detected, and the associated value is an estimate and may be inaccurate or imprecise. Data qualifier flags were not assigned to data that were totally in compliance with Quality Control requirements.

2.5.4 Flagged Samples

A few samples had to be flagged for certain specific parameters. Thus a sample might be flagged for pesticides, or some specific metal, or acid-base-neutrals (ABN) only, or for some other specific group because the QC recoveries or RPDs were too high, or the peaks were interfered with, or were masked in some way by unknown impurities. Samples where the QC samples showed a few high QC recoveries for a minority of compounds in the group were not flagged. The samples listed in Table 5 were flagged because of peak interference in the chromatogram that masked the true peaks and caused higher than acceptable recoveries.

TABLE 5
Flagged Data

Site	Flag	Comments
FST-025	R	Samples 4AA-L-11-93 & 4AA-S-11-93 for Pesticides & ABN only

(R = Unusable)

3.0 Problems Encountered and Corrective Actions Taken

The problems encountered during this investigation are described below. When problems were encountered they were corrected as soon as possible Sampling data that did not meet QC requirements were rejected, and the sites were resampled for the questionable parameters in all cases except for the samples listed in Table 5, above.

3.1 Holding Times

Holding times were exceeded with the samples taken on 15 - 19 July 1993 from Site FST-001 and were resampled and rerun on 5 October 1993.

3.2 Surrogate Recoveries

No discrepancies were found.

3.3 Precision (% RPD)

Occasionally an RPD of zero was assigned to compounds, even though a value below minimum detection limits was reported. Although dividing by zero is not possible mathematically, the EPA commonly allows this practice of calculating RPD.

The reason that detection limits are established is to establish a point at which the statistical certainty that a concentration exists in a sample is greater than 95%. A reported value of less than the detection limit is just as valid as a reported value above the detection limit, and a comparison between these data, the zero data, is also valid. This reasoning was agreed to and supported by Mr. Charlie Hooper at EPA Region IV (706-546-3286) as long as these methods are not used when trying to set up and calibrate a new instrument or performing some higher level of Quality Control.

3.4 Laboratory Blanks

Two laboratory blanks were found contaminated and were rejected, resampled, and rerun. See Paragraph 3.5, below.

3.5 Laboratory Contamination

Carr Laboratory inadvertently found that samples, duplicates, and blanks, including lab blanks, from FST-002 and FST-003, taken on 6 - 7 October 1993, were contaminated by the laboratory with Aldrin, a pesticide. The sites were resampled for the pesticide parameters on 16 - 17 November 1993.

3.6 Warm Shipping Coolers

During the heat of July and August, ice in the coolers from sites FST-001, FST-031, FST-032, and FST-033 was not sufficient to keep the coolers and their contents to a mandatory 4 degrees Centigrade during overnight shipping, and they arrived at the laboratory destinations, SAD Laboratory and Carr Laboratory, too warm. After the shipping procedure was changed to include a small cooler, iced down

inside a larger iced cooler for shipments to CESAD Laboratory, and sample pickup by personnel from Carr Laboratory, the sites were resampled on 5 October 1993.

3.7 Broken Bottles

The field blank from FST-014 was broken by the laboratory. A duplicate blank was available and was used.

3.8 Free Product

Heavy concentrations of odoriferous petroleum based compounds were found at SWMU FST-025 at waste oil tanks 4A, 64A, 70, 94C, and 100A. The occurrence was reported to the Installation.

3.9 Other Problems

Monitor well MW-1 at SWMU FST-002 and well MW-4 at FST-004F contained only approximately 1 foot of water when initially measured during sampling. During well purging, recoveries were very slow. Sampling these wells was very difficult. The low water levels in these wells and poor recoveries were most likely due to the drought conditions present during the summer months. Well boring logs indicate that the 10-foot well screens were installed approximately 7 feet into the water tables.

At SWMU FST-003, collection of the two required surface water samples was not possible (also due to drought). Several visits were made to the site in an attempt to locate surface water. The "pond" area was completely dry. No leachate was found at the site either. A soil sample was collected in the area immediately downslope of the trenches at the site (per telephone conversation with GEPD, June 1993).

At site FST-001, samples from monitor wells were found to contain radium (Ra 226/228). Radium 226, which occurs naturally in most soils and common rocks, decays to radon 222 and is the fifth decay product of uranium 238. The EPA-suggested limit is 4 pCi/L for radon, the daughter product of radium, while the National Council of Radiation Protection (NCRP) suggested limit is 8 pCi/L. Samples tested for radioactivity showed results of Ra 226/228 as follows:

Sample No.	Results
SCM1-7-93	3.8 pCi/L
SCM2-7-93	8.5 pCi/L
SCM3-7-93	3.2 pCi/L
SCM4-7-93	5.0 pCi/L
SCM5-7-93	2.8 pCi/L
SCM6-7-93	1.6 pCi/L

During sampling, Judson Smith, the Sampling Team Leader, was splashed with liquid from sample SCM2-7-93 and swallowed one half mouthful (approx. 50 cc) of the splashed liquid. A report regarding the splash and swallowing of the water was made to the Industrial Hygienist, Kathleen Miles by Judson Smith. Although the Site Safety and Health Plan (SSHP) specified that a face shield be worn, the equipment was not available. The field equipment was updated to include face shields, Silver Shield gloves, and Tyvek coveralls to help to insure that this incident would not be repeated. No revisions to Site Safety and Health Plan were required.

During the middle of July 93 (14 Jul 93 to 20 Jul 93) Carr Labratories changed some methods without notifying us. After the fact, the tests were judged equivalent enough by the District Chemist. The samples were not rerun. According to the SAD Division Laboratory Manager, these tests are equivalent and are accepted as such by the State of Georgia whom we queried.

4.0 Summary of Data Quality

Table 1 of this report portrays pertinent data regarding sampling results at the Fort Stewart SWMU's. The table gives the site number and description, the number of samples taken at each site, the sample matrix designation, and the number of QA and QC samples taken.

The results of the data quality evaluation indicate the overall quality of data is acceptable to confirm the presence or absence of contamination on the Ft. Stewart sites. Some problems were noted with the laboratory analyses, holding times, and sample shipment. All data from the COE sampling efforts are quantitative data and are not assigned any data qualifier flags, except the samples from FST-025 shown in Table 5 which were flagged "R." Quantitative data may be used for studies and designs.

In addition, SWMU FST-001 presented a myriad of problems, because of exceeded holding times, and because of exceeded sample temperature when these arrived at the Lab. Since this is a Phase I study used to determine if contamination is present, we decided that the discrepancies will not significantly effect the usefulness of this data for the purpose of this project.

5.0 Conclusions

All data samples were within usable QC limits even though some had to be resampled to be considered usable. All analyses were performed off-site using SW-846 methods (except for explosives analyses, which used Corps of Engineers modifications to EPA approved methods). Both laboratories were certified by CEMRD, and Carr Laboratory was also certified by the State of South Carolina. The EPA Level III data quality objective was met.

The data quality objective for the Fort Stewart RCRA Facility Investigation was that laboratory data completeness be 95 percent for ground-water samples and 90 percent or better for other matrix samples. The completeness measure for the Fort Stewart data for all media was above 95 percent. Therefore, this objective was met or exceeded. The quality requirements were met by resampling any samples that did not meet the quality objectives. The resampling of any questionable data was possible through the implementation of a strict, concurrent QC program executed during the COE sampling.

Thus, both data quality objectives and completeness criteria were met, and we conclude that the data for Fort Stewart site meet the project objectives.

The EPA Functional Guidelines for data validation were used as applicable where appropriate for this project and while keeping in mind the phase and level of data needed to be able make future judgments as to whether contamination is present or not. Of course, strict CLP protocol was not followed in the validation of this data.

6.0 References

Geraghty & Miller, Inc., 1993, Phase I RCRA Facility Investigation Workplan, Fort Stewart, Georgia

RUST Environmental & Infrastructure, Inc., 1994, Phase I RCRA Facility Investigation Report, Fort Stewart, Georgia

U. S. Environmental Protection Agency, 1991, National Functional Guidelines for Organic Data Review

U. S. Environmental Protection Agency, 1991, Environmental Services Division, Environmental Compliance Branch Standard Operating Procedures and Quality Assurance Manual

U. S. Environmental Protection Agency, 1988a, Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analysis [also called "Contract Laboratory Program's Data Validation Program (LDV, 1988)"]

U. S. Environmental Protection Agency, 1986, Office of Solid Waste and Emergency Response: Washington, DC, Test Methods for Evaluating Solid Waste, Third Edition with Revisions and Updates, SW-846

QUALITY CONTROL SUMMARY REPORT

PHASE I RCRA FACILITY INVESTIGATION

FORT STEWART, GEORGIA

APPENDIX A

MONTHLY PROGRESS REPORTS

SAVANNAH DISTRICT
U. S. ARMY CORPS OF ENGINEEERS

Monthly Progress Report
Ft. Stewart In-House RFI Sampling
July 15, through August 15, 1993

WORK COMPLETED

During the time from project beginning, approximately 15 July, and lasting until 15 August 93, the following activities were conducted:

Sites sampled during this time were: FST-001, FST-004C, FST-004D, FST-014, FST-017, FST-024, FST-031, FST-032, and FST-033.

Lab results and QC for FST-001, FST-004D, FST-014, FST-017, and FST-024 were received.

PROBLEMS ENCOUNTERED

Samples for sites FST-031, FST-032, FST-033 were received at SAD Lab and Carr Lab too warm. Iced coolers were mailed by an express company during the later part of July 1993 to the SAD laboratory in Atlanta and also to Carr Lab in Columbia, SC. When they arrived, it was found that the ice had melted and the contents of the coolers were hotter than room temperature. After researching the travel path of the coolers, it became clear that the express companies hold the packages (in this case the coolers) in transit warehouses without A/C where temperatures often reach 100 degrees F. or higher. The sites will be have to be resampled.

The site FST-001 monitor wells were found to contain six radium (Ra 226/228) containing samples. Radium 226, which occurs naturally in most soils and common rocks, decays to radon 222 and is the fifth decay product of uranium 238. The EPA suggested limit is 4 pCi/L for radon, the daughter product of radium, while the National Council of Radiation Protection (NCRP) suggested limit is 8 pCi/L. SCM1-7-93 shows a Ra 226/228 concentration of 3.8 pCi/L. Additional samples containing radium were:
SCM2-7-93, containing 8.5pCi/L Ra
SCM3-7-93, containing 3.2pCi/L Ra
SCM4-7-93, containing 5.0pCi/L Ra
SCM5-7-93, containing 2.8pCi/L Ra
SCM6-7-93, containing 1.6pCi/L Ra

During sampling, Judson Smith was splashed with liquid from sample SCM2-7-93 and swallowed one half mouthful (approx. 50 cc) of the splashed liquid.

SOLUTIONS

After various other modes of transport were checked, a "best way" was selected for sample shipment. The coolers going to the SAD laboratory in Atlanta will be shipped in a cooler which is itself placed in a cooler. Both containers were iced down and a trial run proved the efficacy of the method. Due to the number of samples being sent to Carr Lab, arrangements have been made to have Carr Lab personnel pick the samples up at the District offices once or twice a week depending on need.

A report regarding the swallowing of the splash of sample SCM2-7-93 was made to the Industrial Hygienist, Kathleen Miles by Judson Smith. Although the SSHP specifies that a face shield be worn, the equipment was not available. The field equipment has been updated to include face shields, Silver Shield gloves, and Tyvek coveralls to help to insure that this incident will not be repeated. In any case, no additional protective equipment will be called for by the SSHP plan.

SUMMARY OF FINDINGS

In addition to the radium find at site FST-001, low concentrations of metals, especially lead and arsenic, were found in some of the samples. Low levels of VOCs were detected in some samples. No "free-product" was found in any samples during this month.

UPCOMING WORK

After 15 Aug 93, FST-004A, 004B, 004E, and 004F will be sampled. The fifteen waste oil tank sites (SWMU FST-025) will also be sampled. At some sites, the water table is too deep to allow drilling by hand auger to reach ground water. These sites will be postponed and bored with the drilling rig. Sites 031, 032, and 033 will be resampled. If time allows, sampling at sites FST-001, 002, and 003 will be completed. Additional sampling of sites FST-018, 026, 028, and 034 are pending.

In addition, we will conduct the normal reporting and data gathering which include the following activities:

- Sample water and soils as planned
- acquire permits to enter and work at various sites (including EOD sites)
- prepare Daily Quality Control Reports
- prepare logs
- conduct data validation including Field Data Validation and Lab Data Validation
- prepare Quality Control Summary Report

Prepared by:

Dr. Franz Froelicher, Chemist
HTRW Section

Date prepared: September 14, 1993

Monthly Progress Report
Ft. Stewart In-House RFI Sampling
August 15 through September 15, 1993

WORK COMPLETED

During the time from August 15 and lasting until 15 September 1993 the following activities were conducted:

Sites sampled during this time were: FST-004A, FST-004B, FST- 004E, FST-004E, FST-004F, FST-025, and FST-028.

Lab results and QC for FST-004A, FST-004B, FST- 004E, FST-004E, and FST-004F were received.

PROBLEMS ENCOUNTERED

Some sampling sites (FST-004A, FST-004B, FST-004E, and FST-004F) were located near active weapon firing ranges and clearence to sample the sites had to be obtained. In one case, weapons activity on an adjacent firing range was heard and ground vibrations were felt by the samplers. The site had been cleared for site sampling where the team was working.

At monitor well FST-004F MW4, difficulty was experienced with water flow. The 19.35 foot well had only a foot of ground water and recovery flow rates were so poor that it was almost impossible to bail the well and still have enough ground water to sample. This was most likely the result of the current drought conbditions; however, poor well construction may also be the cause of the low water production of the well.

FST-025-70 and FST-025-94 were not completed as planned because the soil was too hard and the hand auger used could not penetrate the hardpan at level 14.5 feet and 15 feet below the surface. Augering adjacent locations showed that the hardpan was areally extensive. High PID readings were recorded by the sampling crew during the initiation of sampling at site FST-025-4A at the Tanker Purging Station. These readings occurred while nearby tanker purging operations were in progress.

The battery shop site (FST-028) presented a problem because the .9 ft. thick concrete slab which covered the area of the sampling sites, was harder than expected and drilling was more difficult and took longer.

SOLUTIONS

The burn pit areas access was obtained by checking with Range Control to see if the site was inactive and safe to sample.

Monitor well FST-004F MW4 was finally sampled after 45 bails produced one small sample.

FST-025-70 and FST-025-94 were not completed and will be saved until a later date when they will be bored using the drill rig. The crew did not enter site FST-025-4A until PID readings returned to normal.

SUMMARY OF FINDINGS

High concentrations of hydrocarbons or "free product" were found at FST-025-100A, FST-025-94C, FST-025-64A. Concentrations of metals, especially lead and arsenic, continue to be found in many samples.

UPCOMING WORK

After 15 Sep 93, FST-028, FST-018, and FST-029 will be sampled. The fifteen waste oil tank sites (SWMU FST-025) will continue to be sampled until complete. At some sites, the water table is too deep to reach by hand auger. These sites will be postponed and bored with the drilling rig. Sites 031, 032, and 033 will be resampled. If time allows, sampling at sites FST-001, 002, and 003 will be completed. Additional sampling of sites 026 and 034 are pending.

In addition, we will conduct the normal reporting and data gathering which include the following activities:

- Sample water and soils as planned
- Acquire permits to enter and work at various sites (including EOD sites)
- Prepare Daily Quality Control Reports
- Prepare logs
- Conduct data validation including Field Data Validation and Lab Data Validation
- Prepare Quality Control Summary Report

Prepared by:

Dr. Franz Froelicher, Chemist
HTRW Section

Date prepared: September 20, 1993

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Monthly Progress Report
Ft. Stewart In-House RFI Sampling
September 15 through October 15, 1993

WORK COMPLETED

During the time from September 15 and lasting until October 15, 1993 the following activities were conducted:

Sites sampled during this time were: FST-002, FST- 003, FST-018, FST-025, FST-026, FST-027, FST-029, FST-030, and FST-034. FST-032 was resampled. Lab results and QC for FST-018, FST-026 were received.

PROBLEMS ENCOUNTERED

At FST-002, Camp Oliver Landfill, the 23.32 foot monitor well already in place was found to be too shallow to be effective as there was only 1.5 ft of standing water and near zero flow. Recent drought conditions may also be a factor. At FST-003 surface water trenches and ponds were dried up making it impossible to obtain water samples. Leachate also could not be found at this site.

SOLUTIONS

To remedy the problem of no surface water or leachate at site FST-003, the sampling team followed the ditches to their intersection to the pond location. There the team took a surface soil sample covering the same parameters as for the proscribed but unavailable aqueous samples. For SWMU FST-027, samples were to be taken at Building 1060 at an adjacent ditch, but the building did not exist. The ditch actually occurs between Buildings 1070 and 1076 where samples were taken. This site was confirmed and approved by Thomas Houston on 9/16/93.

SUMMARY OF FINDINGS

Concentrations of metals, especially lead and arsenic, continue to be found in many samples. Free product was found at FST-026.

UPCOMING WORK

After 15 Oct 93, the remaineder of the sites will be sampled including the EOD sites. The sampling should be completed before 15 Nov 93 except for one site which must be sampled while the Hotel Range is closed. At site FST-026 additional samples will be taken in the ditch which appears contaminated. Sites FST-001, FST-004C, FST- 031, and FST-033 will be resampled due to prior sampling handling problems. Because of laboratory contamination, FST-002 and FST-003, pesticides only, will also have to be resampled.

In addition, we will conduct the normal reporting and data gathering which include the following activities:

- Sample water and soils as planned
- Acquire permits to enter and work at various sites (including EOD sites)
- Prepare Daily Quality Control Reports
- Prepare logs
- Conduct data validation including Field Data Validation and Lab Data Validation
- Prepare Quality Control Summary Report

Prepared by:

Dr. Franz Froelicher, Chemist
HTRW Section
Date prepared: November 12, 1993

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Monthly Progress Report
Ft. Stewart In-House RFI Sampling
October 15 through November15, 1993

WORK COMPLETED

During the time from October 15 and lasting until November 15, 1993 the following activities were conducted:

Sites sampled during this time were: FST-003, FST-004C, FST-010, FST-011, FST-012, FST-018, FST-025, FST-026, and FST-031.

PROBLEMS ENCOUNTERED

Carr Laboratory informed us that they had inadvertantly contaminated samples from SWMU FST-002 and FST-003 with the pesticide Aldrin. The site must be sampled again for pesticides.

SOLUTIONS

Samples will be retaken from SWMUs FST-002 and FST-003 for pesticide analysis only.

SUMMARY OF FINDINGS

Concentrations of metals, especially lead and arsenic, continue to be found in many sample. Free product was found at FST-025, Tank 70.

UPCOMING WORK

Samples must be retaken during this month from SWMUs FST-002 and FST-003 for pesticide analysis only. All the sampling should be completed before 15 Nov 93 except for one site which must be sampled while the Hotel Range is closed. This is EOD area SWMU FST-009.

In addition, we will conduct the normal reporting and data gathering which include the following activities:

- Sample water and soils as planned
- Acquire permits to enter and work at various sites (including EOD sites)
- Prepare Daily Quality Control Reports
- Prepare logs
- Conduct data validation including Field Data Validation and Lab Data Validation
- Prepare Quality Control Summary Report

Prepared by:

Dr. Franz Froelicher, Chemist
HTRW Section
Date prepared: November 30, 1993

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Monthly Progress Report
Ft. Stewart In-House RFI Sampling
November 15 through December 15, 1993

WORK COMPLETED

During the time from November 15 and lasting until December 15, 1993 the following activities were conducted:

The site sampled during this time was FST-009. An EOD Safety Specialist from the COE, Huntsville Division swept the areas prior to sampling by the team. FST-002 and FST-003 were resampled.

PROBLEMS ENCOUNTERED

The U.S. Army Corps of Engineers mailroom sent SAD's lab sample cooler to the IT Laboratory in Knoxville TN and the IT Lab sample cooler to SAD Marietta, GA.

All QC reports from Carr Laboratory had to be revised as the Relative Percent Difference were not calculated or included in the reports. Numerous other problems were encountered with the QC reporting. These included a lack of explanation of the way they handled the matrix spikes and matrix spike duplicates and their proper identification in the report, not including the matrix spikes and matrix spike duplicates in reports, numerous incorrect calculations, repetitions of same mistakes even after corrections, the listing of the samples numbers and their corresponding laboratory assigned sample numbers, and the general presentation of the data.

SOLUTIONS

The labs mailed each other the coolers and holding times were not exceeded. After some guidance, Carr Laboratory is resubmitting the QC in a modified presentation. Constant proof reading on our part is required to assure the quality of the QC data.

SUMMARY OF FINDINGS

No special finding are reported this month.

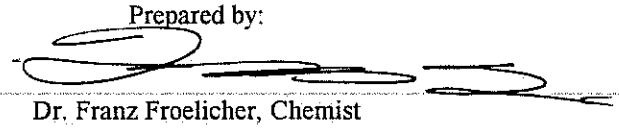
UPCOMING WORK

The project sampling is complete and no additional field work is planned at this time. The Quality Control Summary Report narrative is being prepared and remaining lab results should be received shortly.

Remaining work includes the following:

- Complete all data validation
- Complete Quality Control Summary Report
- Submit all data to the SAD Laboratory for their use during QA Report preparation.

Prepared by:



Dr. Franz Froelicher, Chemist
HTRW Section
Date prepared: December 21, 1993

Monthly Progress Report
Ft. Stewart In-House RFI Sampling
December 15 through January 31, 1994

WORK COMPLETED

During the time from December 15, 1993 and lasting until January 31, 1994 the Ft. Stewart RFI data validation was completed, and the Quality Control Summary Report was completed.

PROBLEMS ENCOUNTERED

A problem surfaced regarding the method Carr Laboratory used to calculate the relative percent difference (RPD). Occasionally an RPD of zero was assigned to QC compounds even though a value below minimum detection limits was reported and compared to another number below detection limits. The COE pointed out that dividing any number by zero is not a logical calculation. Other minor errors in the QC data were pointed out.

SOLUTIONS

Although dividing by zero is not possible mathematically, the EPA commonly allows this practice of calculating RPD. The reason that detection limits are established, is to establish a point at which the statistical certainty that a concentration exists in a sample is greater than 95%. A reported value of less than the detection limit is just as valid as a reported value above the detection limit, and a comparison between these data, the zero data, is also valid. This reasoning was agreed to and supported by Mr. Charlie Hooper at EPA Region IV (706-546-3286). Other errors were corrected.

SUMMARY OF FINDINGS

No special finding are reported this month.

UPCOMING WORK

This completes the sampling and laboratory data validation for the Ft. Stewart RFI.

Prepared by:

Dr. Franz Froelicher, Chemist
HTRW Section
Date prepared: Jaunary 31, 1994

QUALITY CONTROL SUMMARY REPORT

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PHASE I RCRA FACILITY INVESTIGATION

FORT STEWART, GEORGIA

APPENDIX B

DAILY QUALITY CONTROL REPORTS

SAVANNAH DISTRICT
U. S. ARMY CORPS OF ENGINEEERS

A-E DAILY QUALITY CONTROL REPORT

DATE 7/15/93

DAY	S	M	T	W	TH	F	S
						X	

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
			-		

TEMP	To 32	32-50	50-70	70-85	85 up
					X

WIND	Still	Moder	High	Recon No.
	X			

HUMIDITY	Dry	Moder	Humid	
			X	1

CCE PROJECT MANAGER Toni Nicholson

PROJECT FST-001, Fort Stewart South Central Landfill

JOB ~~NO.~~: Fort Stewart RFI

CONTRACT NO. None

SUB-CONTRACTORS ON SITE:

PERSONEL ON SITE: JUDSON SMITH, CHARLIE BELIN

EQUIPMENT ON SITE:

BAILERS (4), WELL SAMPLING EQUIPMENT, PID, CGI 271, pH METER, SPEC COND. METER, CALIBRATION SOLUTION, WATER LEVEL METER.

WORK PERFORMED (INCLUDING SAMPLING):

7/15/93 ARRIVED ON SITE. ~~STARTED~~ STARTED SITE WELL #SCM2 @ 09:20. TOOK WATER LEVEL MEASUREMENTS IMMEDIATELY. DECONED WATER LEVEL INSTROMENT. CALCULATED AMOUNT TO BE BAILED. ~ 31.5 GAL. WITH DECONED BAILERS, HAD C BELIN START BAILING WELL AFTER CHECKING BREATHING AIR WITH PID AND CGI. 3.2 UNITS & 20.1 O2 & 0.0 LEL. WATER EVATUATION WITH TEFLON BAILER. THE pH METER & SPC METER WERE CALIBRATED 09:32 pH READ 7.0 IN SAME SOLUTION. SPC COND METER CALIBRATED IN NACL SOLUTION. TOOK SAMPLES OF WELL WATER FOR pH, SPC @ 1 WELL VOLUME, 2 & 3. ~~FOR~~ C BELIN and J SMITH alternated BAILING IN 5 Gal INTERVALS. J SMITH MARKED BOTTLES DURING C BELIN'S BAILING. QA/QC SAMPLES ARE TO BE TAKEN AT THIS WELL. VOC IN 40 ml GLASS WITH HCl, RCRA METALS IN 500ml PLASTIC WITH HNO_3, RA 226/228 also 500 ml PLASTIC WITH HNO_3 and PEST/PCB 1000 ml Glass all also preserved with ICE. SAMPLE TIME 11:00, ended 11:30. STARTED FST-001 SCM3 @ 12:59 used same procedure as above except, only recalibrated pH meter @ 13:10 and no dup needed. PID readings 3.9 CGI O_2 20.3 and LEL 0.00. BAIL AMOUNT 54.4. Alternated bailing between C BELIN & J SMITH. ALL FIELD DATA WILL BE LOCATED IN SAMPLE LOG. DECON PROCEDURE: WASH WITH POTABLE WATER & LIQUINOX TOMPLETELY, RINSE COMPLETELY, WASH DI WATER, WASH ISOPROPYL ALCOHOL TWICE, WASH AN. FREE WATER, DRY, WRAP IN ALUMINUM FOIL FOR STORAGE

(Continuation Sheet)

PROJECT. EST-001 FT STEWART SOUTH CENTRAL LANDFILL REPORT NO. _____

JOB NO. _____ DATE 7/15/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

PID was pre calibrated 7/15/93 @ ENG DEPOT USING Isobutylene 250ppm reading 251 units. pH meter calibrated ONCE IN Eng DEPOT THEN 7/15/93 0932 & @ 310. SPC METER calibrated ONCE ENG DEPOT THEN 7/15/93 @ 9:32. ALL EQUIPMENT IS DECONED AS PER DER QA 001/92 PER USE. ALL COOLERS CONTAINING VOC SAMPLE CONTAINS TRIP BLANKS.

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

PID & CGI READINGS ARE TAKEN PER SITE. NEITHER EXCEEDED NOTED READINGS SO MOD LEVEL D REMIND IN EFFECT. Gloves (Latex) always used IN sampling and bailing activities.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN

THE HEAT CAUSED MANY PROBLEMS. FIRST BOTH C BELIN and J SMITH EXPERIENCE ADVERSE HEALTH EFFECTS LEADING POSSIBLY TOWARD HEAT STRESS OR STROKE SO WE ALTERNATED PHYSICAL ACTIVITIES. THE HEAT ALSO LOCKED THE BAILER VALVE ONTO THE BAILER, THIS HAS TO BE REMEDIED WITH COOL WATER.

SPECIAL NOTES THE AMOUNT OF WATER AND TIME PER WELL WAS NOT TAKEN CORRECTLY INTO CONSIDERATION, A MEETING MUST BE SET UP TO EXAMINE THIS CLOSER. ANY PERSON HELPING WITH THIS PROJECT MUST PHYSICALLY BE ABLE TO DO SO.

TOMORROWS EXPECTATIONS (MONDAY)

MEETING BETWEEN B. O'KELLEY, M FIFE, T. NICHOLSON and J SMITH. + TWO WELLS.

BY _____ TITLE _____

A-E DAILY QUALITY CONTROL REPORT

DATE 7/19/93

DAY	S	M	T	W	TH	F	S
		X					

WEATHER	Bright Sun	Clear	Overcast X	Rain	Snow
TEMP	To 32	32-50	50-70	70-85	85 up X
WIND	Still X	Moder	High	Recon No.	
HUMIDITY	Dry	Moder	Humid X	2	

COE PROJECT MANAGER _____

PROJECT FST-001 South Central Landfill

JOB NO. _____

CONTRACT NO. _____

SUB-CONTRACTORS ON SITE:

PERSONELL ON SITE: JUDSON SMITH, LARRY OLLIFF

EQUIPMENT ON SITE.

BAILERS (4), WELL SAMPLING EQUIPMENT, PID, CGI 271, pH METER, SPEC COND METER, CALIBRATION GASES, CALIBRATION SOLUTION, WATER LEVEL IND.

WORK PERFORMED (INCLUDING SAMPLING):

7/19/93 10⁰⁰ ARRIVED ON SITE. CALIBRATED ALL INSTRUMENTS PRIOR TO SAMPLING. TOOK PID and CGI BACKGROUND READINGS ON EACH WELL TO DETERMINE IF ANY PROBLEMS EXIST IN THE BREATHING ZONE. "ALL DATA IS LOCATED ON INDIVIDUAL DATA "SHEETS" THE WATER LEVEL READINGS WERE THEN TAKEN, AFTER WHICH THE METER WAS DECONED. THE NEEDED AMOUNT TO BE BAILED WAS THEN BAILED. AT INTERVALS OF FIRST BAILER, ½ AMOUNT BAILED AND CALCULATED AMOUNT, A WATER SAMPLE WAS TAKEN FOR pH, SPEC COND, and TEMP. IF THE PERIMETERS STABILIZED, THE SAMPLES WERE TAKEN. THEN THE EQUIPMENT "BAILERS, ETC" WERE DECONED. THIS WAS ACCOMPLISHED FOR FST-001-SCM4, and SCM1. ALSO A SURFACE WATER SAMPLE FST-001-SURS-1 WAS TAKEN. THIS WAS LOCATED NEXT TO FST-001-SCM1. FOR THAT SAMPLE, ONLY ONE pH, TEMP and SPEC COND WAS DONE.

SHEET ____ OF ____

(Continuation Sheet)

PROJECT: FST-001 South Central Landfill REPORT NO.

JOB NO. DATE 7/19/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

THE PID WAS CALIBRATED WITH ZERO AIR AND 25.0 ppm ISOBUTYLENE. THE ISOBUTYLENE CHECK OUT AS 253 UNITS ON THE PID. THE pH METER WAS CALIBRATED WITH STANDARD 7 AND 10. AND THE CONDUCTIVITY METER WITH N-Cl SOLUTION. ALL EQUIPMENT WAS DECONED ~~OUT~~ FROM ONE WELL TO ANOTHER USING DER-QA-001/92 PROCEDURES.

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

PROTECTION LEVEL WAS AT D MODIFIED.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

FINISH FST-001.

BY TITLE

A-E DAILY QUALITY CONTROL REPORT

DATE 7/20/93

DAY | S | M | T X | W | TH | F | S |

WEATHER	Bright Sun	Clear	Overcast X	Rain	Snow
TEMP	To 32	32-50	50-70	70-85	85 up X
WIND	Still X	Moder	High	Recon No.	3
HUMIDITY	Dry	Moder	Humid X		

COE PROJECT MANAGER _____

PROJECT FST-001 FT STEWART SOUTH CENTRAL LANDFILL

JOB NO. _____

CONTRACT NO _____

SUB-CONTRACTORS ON SITE:

PERSONNEL ON SITE: JUDSON SMITH, LARRY OLLIFF

EQUIPMENT ON SITE.

SAILERS (4), WELL SAMPLING EQUIPMENT, PID, CGI 271, pH METER, SPEC COND METER, CALIBRATION GAS AND SOLUTIONS, WATER LEVEL METER.

WORK PERFORMED (INCLUDING SAMPLING):

7/20/93 ARRIVED ON SITE 11:30. SAMPLED WELLS FST-001-SCM5 AND FST-001-SCM6 USING REGULAR WELL SAMPLING PROTOCAL & CALIBRATING INSTRUMENTS, CHECKING SITE, WATER LEVEL, DECON, BAIL, TAKE READINGS, SAMPLE & DECON. SCM6 WAS LOCATED IN A RESTRICTED AREA SO PERMISSION NEEDED TO BE OBTAINED TO ENTER. ALSO, THE AREA WAS COVERED IN POISON IVEY SO MOVEMENT WAS CAREFULLY PLANNED.

SHEET ____ OF ____

(Continuation Sheet)

PROJECT FST-001, FT STEWART SOUTH CENTRAL LF REPORT NO. _____

JOB NO. _____ DATE 7/20/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

THE PID WAS CALIBRATED WITH ZERO AIR AND 1% BUTYLENE (250 ppm). OH METER WAS CALIBRATED WITH 7 & 10 STANDARD AND CONDUCTIVITY METER WITH NaCl SOLUTION. ALL EQUIPMENT IS DECONED AS PER OFR-QA-001/92

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

LEVEL D MOD WAS USED. BUT CAUTION WAS ESPECIALLY TAKEN AT SCM6 AROUND THE POISON IVY.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

START AND TRY TO COMPLETE FST-017

BY _____ TITLE _____

61

A-E DAILY QUALITY CONTROL REPORT

DATE 7/22/93

DAY | S | M | T | W | TH X | F | S |

WEATHER	Bright Sun X	Clear	Overcast	Rain	Snow
TEMP	To 32	32-50	50-70	70-85	85 up X
WIND	Still X	Moder	High	Recon No.	4
HUMIDITY	Dry	Moder	Humid X		

COE PROJECT MANAGER _____

PROJECT FST-032 & FST-033

JOB NO. _____

CONTRACT NO. _____

SUB-CONTRACTORS ON SITE:

LARRY OLLIFF, WILSON SMITH

EQUIPMENT ON SITE:

HAND AUGER, PID, FID, THERMOMETER, CGI 271, SAMPLE BOTTLES, DECON EQUIPMENT, COOLERS

WORK PERFORMED (INCLUDING SAMPLING):

ARRIVED ON SITE AT 10:00. WALKED THE SITES WITH THE CGE TO DETERMINE IF ANY PROBLEMS EXISTED. THE BORINGS WERE MARKED IN ACCORDANCE TO PLAN THEN LATER MEASURE IN RELATION TO TANK. WHEN BORING LOCATION WAS DETERMINED, LARRY HAND AUGERED TO PERMEATER DEPTH WHILE WILSON MARKED THE SAMPLE BOTTLES. THE FOLLOWING TESTS ARE TO BE PERFORMED ON SAMPLES FROM FST-032: VOC 8240 (125 ml SEPTA TOP GLASS BOTTLE) & TPH 8015 MOD HEAVY (250 ml GLASS BOTTLE). AND ON FST-033: VOC 8240 (125 ml SEPTA TOP GLASS BOTTLE) AND PEST/PCB 8080 (250 ml GLASS BOTTLE). THE ONLY PERSERVATIVE WILL BE ICE. SAMPLES FOR LAB TESTING AND PID AND FID READINGS WERE TAKEN BETWEEN THE 15 AND 20 FOOT MARK. SOIL WAS CLASSIFIED AS TO TYPE. THIS WAS ACCOMPLISHED AT BOTH FST-032 AND FST-033. HAND AUGER WAS COMPLETELY DECONED BETWEEN HOLES. QA & QC WILL BE COLLECTED PER SITE. SITE MAP WILL COVER SAMPLE BORING LOCATIONS.

SHEET ____ OF ____

(Continuation Sheet)

PROJECT. FST-032 & FST-033 REPORT NO.

JOB NO. DATE 7/22/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

FID WAS CALIBRATED WITH ZERO AIR, METHANE 10 ppm AND 95 ppm. 10ppm registered as 10 & and 95ppm as 98ppm. PID WAS CALIBRATED WITH ZERO AIR AND 250ppm ISOBUTYLENE. (REGISTERED 257 UNITS).

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

LEVEL D MOD. USED.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

COULD NOT DO EST-017 ACCORDING TO PLAN, ASPHALT COVERED THE GROUND. FORGOT FID & PID SO HAD TO TAKE PID/FID SAMPLES BACK TO LABS.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

FST-031 TO BE COMPLETED

BY TITLE

A-E DAILY QUALITY CONTROL REPORT

DATE 7/23/93

DAY	S	M	T	W	TH	F	S
						X	

WEATHER	Bright Sun ✓	Clear	Overcast	Rain	Snow
TEMP	To 32	32-50	50-70	70-85	85 up X
WIND	Still X	Moder	High	Recon No.	
HUMIDITY	Dry	Moder	Humid X	5	

COE PROJECT MANAGER _____

PROJECT FST-031 DFH ASPHALT TANKS

JOB NO. _____

CONTRACT NO. _____

SUB-CONTRACTORS ON SITE:

JASON SMITH, LARRY OLLIFF

EQUIPMENT ON SITE:

HAND AUGER, PID, FID, THERMOMETER, CGI 271, SAMPLE BOTTLES, DECON EQUIPMENT, COOLER

WORK PERFORMED (INCLUDING SAMPLING):

ARRIVED ON SITE AT 11:30. WALKED THE SITE WITH THE CGI, AND PID TO DETERMINE IF ANY PROBLEMS EXIST. THE BORINGS WERE MARKED IN ACCORDANCE TO PLAN DRAWN OUT. WHEN BORINGS WERE MARKED LARRY HAND AUGERED TO A PREDETERMINED DEPTH 1.5 2.0 TO TAKE THE SAMPLES. THE FOLLOWING TESTS WILL BE DONE: pH 9045 (250ml GLASS), VOC 8240 (40ml SEPTA TOP GLASS BOTTLE) and TPH 8015 MOD HEAVY (250ml GLASS BOTTLE). THE ONLY PERSERVATIVE WILL BE ICE. SOIL TYPE WILL BE FIELD CLASSIFIED. QA and QC SAMPLES WILL BE COLLECTED. SITE MAP WILL COVER SAMPLE BORING LOCATIONS.

SHEET ____ OF ____

(Continuation Sheet)

PROJECT. FST-031 REPORT NO.

JOB NO. DATE 7/22/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

FID WAS CALIBRATED WITH ZERO AIR, METHANE 10 ppm and 95 ppm. 10 ppm read as 9.8 and 95 as 93 ppm. PID WAS CALIBRATED WITH ZERO AIR AND 250 ppm ISOBUTYLENE. 250 ppm read as 252 units.

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

LEVEL D MOD USED.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES:

TOMORROWS EXPECTATIONS

FST-014 TO BE COMPLETED.

BY TITLE

A-E DAILY QUALITY CONTROL REPORT

DATE 7/28/93

DAY	S	M	T	W	TH	F	S
				X			

WEATHER	Bright Sun X	Clear	Overcast	Rain	Snow
TEMP	To 32	32-50	50-70	70-85	85 up X
WIND	Still X	Moder	High	Recon No.	
HUMIDITY	Dry	Moder	Humid X	6	

COE PROJECT MANAGER _____

PROJECT EST-014 OLD FIRE TRAINING PIT

JOB NO. _____

CONTRACT NO. _____

SUB-CONTRACTORS ON SITE:

Judson Smith, Jim Haley.

EQUIPMENT ON SITE.

Bailers (4), Well Sampling Equipment, PID, CGI 271, pH Meter, Spec Cond Meter, Calibration Gas & Solution, Water Level Meter

WORK PERFORMED (INCLUDING SAMPLING):

7/28/93 Arrived on site 1000. Calibrated all instruments prior to sampling. Took PID and CGI readings in breathing zone. Mod Level D determined to be used. Took water level readings to determine amount to be bailed then deconed. Took pH, temp and conductivity readings at the initial, fail full, the 1/2 mark and the calculated mark to determine stability point for sampling. On the initial opening of each well, a PID reading is taken. The perimeters being tested for are: 8240 voc (40ml septa top vial), RCRA total metals (500ml plastic), TPH light (40ml septa top vial) and TPH heavy (1000ml amber glass bottle).

The 8240 and TPH light were preserved with HCl and ice. The RCRA total metals are preserved with HNO3 and ice. The TPH heavy is preserved with ice. After all sampling all equipment is deconed as per DEH QA 001/92. Top of Casing Elevation is then recorded per hole. QA and QC samples will be taken at EST-014-MW10. Blanks will also be collected here.

SHEET ____ OF ____

(Continuation Sheet)

PROJECT. FST-014 OLD FIRE TRAINING PIT

REPORT NO.

JOB NO.

DATE 7/28/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

THE pH METER WAS CALIBRATED WITH 7 AND 10 STANDARD. THE CONDUCTIVITY METER WAS CALIBRATED WITH NaCl SOLUTION. THE PID WITH ZERO AND 250 ppm ISOBUTYLENE. ALL EQUIPMENT WAS DECONED AS PER DER QA 001/82.

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MODIFIED LEVEL D USED

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

FST-004C, COMPLETE SITE.

BY

TITLE

A-E DAILY QUALITY CONTROL REPORT

DATE 7/29/93

DAY	S	M	T	W	TH	F	S
					X		

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
			-	X	
TEMP	To 32	32-50	50-70	70-85	85 up
					X
WIND	Still	Moder	High	Report No.	
		X		8	
HUMIDITY	Dry	Moder	Humid		
			X		

COE PROJECT MANAGER

PROJECT FST-004C. Burn Pit

JOB NO.

CONTRACT NO.

SUB-CONTRACTORS ON SITE:

Judson Smith, Jim Haley

EQUIPMENT ON SITE.

- Bailers (4) Well Sampling Equipment, PID, CGI, pH Meter, Spec Cond Meter, Calibration Solution and Gases, Water Level Meter

WORK PERFORMED (INCLUDING SAMPLING):

7/29/93 Arrived on Site @ 13³⁰ Calibrated All Instruments Prior To Sampling Activities. Walked The Site With The PID and CGI To Determine If Any Change is Needed in Level of Protection, None Detected. When Each Well is open, A PID Reading is Taken To Check Existing Headspace Gases. The Water Level And Bottom of Well is Then Determine To Calculate Amount To Be Bailed. pH, Temp and Conductivity Readings Are Collected on The First Bailer, Half Mark And Calculated Amount While Bailing. At ~~S.A.B.~~ The Calculated Point unless Readings would have said otherwise, The Samples Are Taken. The Sampling Perimeters Are: 8240 VOC (40ml vial with HCl) and RCRA Total Metals (500ml Plastic Bottle with HNO₃). All Equipment is Then Decconed And The Top of Casing Elevation Taken.

SHEET ____ OF ____

(Continuation Sheet)

PROJECT: FST-004C - BURN PIT REPORT NO.:

JOB NO.: DATE: 7/29/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

THE PID WAS CALIBRATED WITH 250ppm ISOBUTYLENE GAS ZERO AIR + 250ppm READS AT 255 UNITS. PH METER WAS CALIBRATED WITH 7 AND 10 STANDARDS CONDUCTIVITY METER WITH NaCl.

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MED LEVEL D USED.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

ONLY PROBLEM ENCOUNTERED WAS A STRONG THUNDERSTORM. WE ACCOMPLISHED THE SITE WORK BEFORE IT HIT THOUGH. OTHERWISE NO DIFFICULTIES.

SPECIAL NOTES:

TOMORROWS EXPECTATIONS

FST-004D

BY: TITLE:

DATE 7/30/93

DAY

S	M	T	W	TH	F	S
					X	

A-E DAILY QUALITY CONTROL REPORT

WEATHER

Bright Sun	Clear	Overcast	Rain	Snow
	X			

TEMP

To 32	32-50	50-70	70-85	85 up
				X

WIND

Still	Moder	High	Report No.
X			8

HUMIDITY

Dry	Moder	Humid
		X

COE PROJECT MANAGER

PROJECT FST-004(4) Burn P.

JOB NO.

CONTRACT NO.

SUB-CONTRACTORS ON SITE:

Judson Smith, Jim Haley.

EQUIPMENT ON SITE:

BAILERS (4), WELL SAMPLING EQUIPMENT, PID, CGI, pH METER, SPEC COND METER, CALIBRATION SOLUTION, WATER LEVEL METER

WORK PERFORMED (INCLUDING SAMPLING):

7/30/93 ARRIVED ON SITE @ 12^50. BEFORE ANY SAMPLING ACTIVITIES I CALIBRATED ALL INSTRUMENTS WITH APPROPRIATE STANDARDS. USING THE PID AND CGI I WALKED THE SITE TO DETERMINE IF ANY CHANGE IN LEVEL OF PROTECTION IS NEEDED; NONE FOUND. ~~CHANE~~ EACH WELL HAD THE WATER LEVEL AND WELL DEPTH CHECKED TO DETERMINE TOTAL AMOUNT TO BE BAILED. WHEN THE WELL CAP IS FIRST REMOVED, A PID READING IS TAKEN AT THE TOP TO DETERMINE HEADSPACE GASES. A pH, TEMP AND CONDUCTIVITY READING IS THEN TAKEN AT THE FIRST BAIL FULL, THE HALF MARK AND THE CALCULATED FINAL MARK. UNLESS A FLUX OCCURS IN THE CONDUCTIVITY OR pH, THE SAMPLES ARE THEN TAKEN. THE SAMPLING PERIMETERS FOR THIS HOLE ARE: 8240 (VOCS) and RCRA TOTAL METALS. THE 8240 USES [illegible] Two 40 ml vials with HCl and the RCRA TOTAL METALS USES a 500 ml PLASTIC BOTTLE WITH HNO3. ALL EQUIPMENT IS THEN DECONED AND THE TOP OF CASING ELEVATION IS THEN TAKEN.

SHEET ____ OF ____

PROJECT. FST-0040 (Continuation Sheet)

REPORT NO.

JOB NO.

DATE 7/30/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

THE pH METER WAS CALIBRATED WITH 7 and 10 STANDARD. THE CONDUCTIVITY METER WAS CALIBRATED WITH NaCl STANDARD. AND THE PID WAS CALIBRATED WITH 95 ppm STANDARD. ALL EQUIPMENT WAS DECONED AS PER NER CA-001/92

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

LEVEL D USED

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROWS EXPECTATIONS

FST-004A

BY TITLE

A-E DAILY QUALITY CONTROL REPORT

DATE 8/9/93

DAY	S	M	T	W	TH	F	S
		X					

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
			\	X	

TEMP	To 32	32-50	50-70	70-85	85 up
				X	

WIND	Still	Moder	High	Recon No.
		X		

HUMIDITY	Dry	Moder	Humid
			X

COE PROJECT MANAGER _____

PROJECT _____

JOB NO. EST-017

CONTRACT NO. _____

SUB-CONTRACTORS ON SITE:

JUDSON SMITH, LARRY OLLIEF, HORACE FUTCHER, DOUGLAS LA-ROUCHE

EQUIPMENT ON SITE.

DRILL RIG, 4" AUGER, STEAM CLEANER, ALUM. FOIL, MASON JARS, SAMPLE JARS, CGI, PID, OVA, and VARIOUS DRILLING EQUIPMENT

WORK PERFORMED (INCLUDING SAMPLING):

THE PRIMARY RESPONSIBILITY TODAY IS A TRAVELING DAY DUE TO THE ON GOING HEAVY THUNDERSTORM ACTIVITY. ALL NECESSARY EQUIPMENT WAS LOADED UP AT THE YARD AND TAKEN TO THE SITE. AT THE SITE, I SPOKE TO VARIOUS PERSONEL WHO WORKED AT THAT LOCATION TO ASSURE THAT WE WOULD NOT HALT OPERATIONS. THEIR REPLY WAS POSITIVE AND ASK IF WE COULD START WITH SB1 FIRST. WE WILL OF COURSE COMPLY. I EXPLAINED THE OPERATION TO THE DRILL CREW AND LARRY OLLIEF.

SHEET ____ OF ____

PROJECT. FST-017 (Continuation Sheet)

REPORT NO.

JOB NO.

DATE 8/9/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

PID WAS CALIBRATED WITH 250 ppm STANDARD ISOBUTYLENE. READ 254 UNITS.
OVA WAS CALIBRATED WITH 10 ppm STANDARD METHANE. READ 9.7 ppm

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

LEVEL D MOD WILL BE MAINTAINED INCLUDING HARDHATS AND STEEL-TOED BOOTS.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

THUNDERSTORM DELAID STARTING

SPECIAL NOTES.

TOMORROWS EXPECTATIONS

SB1 - SB4 FOR COLLECTIONS OF PID/FID READINGS.

BY TITLE

A-E DAILY QUALITY CONTROL REPORT

DATE 8/10/93

DAY	S	M	T	W	TH	F	S
			X				

WEATHER	Bright Sun	Clear	Overcast	Rain X	Snow
TEMP	To 32	32-50	50-70	70-85 X	85 up
WIND	Still	Moder X	High	Recon No.	
HUMIDITY	Dry	Moder X	Humid		

COE PROJECT MANAGER _____

PROJECT _____

JOB NO. FST-017

CONTRACT NO. _____

SUB-CONTRACTORS ON SITE:

JUDSON SMITH, LARRY OLLIFF, HORACE FUTCHER, DOUGLAS LAROCHE

EQUIPMENT ON SITE:

DRILL RIG, 4" AUGER, STEAM CLEANER, ALUM. FOIL, MASON JARS, SAMPLE JARS, CGI, PID, OVA and VARIOUS DRILLING EQUIPMENT

WORK PERFORMED (INCLUDING SAMPLING):

WE BEGAN THIS MORNING WITH FST-017-SB1 AND THE EXERCISES WENT FASTER THAN PLANNED. H. FUTCHER and DOUGLAS WERE ON DRILL RIG, LARRY WAS STRICKLY RESPONSIBLE FOR THE BOTTLES (PID/FID) AND JUDSON WAS RECORDING THE BORINGS AND ANYTHING ELSE THAT HAPPENS. WE COMPLETED SB1 - SB4 (FID/PID) SAMPLES BEFORE LUNCH AND AS DESCRIBE IN METHOD, LET THEM SIT UP FOR AT LEAST AN HOUR WHILE WE ATE LUNCH. ONCE BACK JUDSON CALIBRATED THE FID/PID WITH CALIBRATE GAS. 10% FID/PID READINGS WERE TAKEN THEN AND AFTER WORDS THE DEPTHS OF THE ACTUAL SAMPLES WERE DETERMINED. WE WERE ABLE TO DO BOTH SB4 (FROM WHICH ~~WERE~~ WE TOOK QA & QC) and SB1. CGI & PID READINGS WERE TAKEN IN THE BREATHING ZONE PERIODICALLY FOR SAFETY

SHEET _____ OF _____

PROJECT. FST-017 (Continuation Sheet)

REPORT NO. _____

JOB NO. _____ DATE 8/10/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

PID WAS CALIBRATED WITH 250 ppm STANDARD ISOBUTYLENE. READ 252 UNITS.
OVA WAS CALIBRATED WITH 10ppm STAND ARD METHANE. READ 9.6 ppm

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

LEVEL D MOD WITH: HARDHATS & STEEL-TOED BOOTS

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROWS EXPECTATIONS

SB2 - SB3 AND START ON FST-024

BY _____ TITLE _____

A-E DAILY QUALITY CONTROL REPORT

DATE 8/11/93

DAY	S	M	T	W	TH	F	S
				X			

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
		X	-		

TEMP	To 32	32-50	50-70	70-85	85 up
				X	

WIND	Still	Moder	High	Record No.
	X			

HUMIDITY	Dry	Moder	Humid
		X	

COE PROJECT MANAGER _____

PROJECT _____

JOB NO. EST-017 / FST-024

CONTRACT NO _____

SUB-CONTRACTORS ON SITE:

JUDSON SMITH, LARRY OLLIFF, HORACE FUTCHER, DOUGLAS LaROUCHE

EQUIPMENT ON SITE.

DRILL RIG, 4" AUGER, STEAM CLEANER, ALUM. FOIL, MASON JAR, SAMPLE JARS, CGI, PID, OVA and VARIOUS DRILLING EQUIPMENT

WORK PERFORMED (INCLUDING SAMPLING):

~~THE WAS STARTED~~ THE HOSE ON THE STEAM CLEANER HAD A HOLE GET BLOWN IN IT THIS MORNING. I SENT HORACE TO GET A NEW ONE WHILE WE PROCEED TO DO EST-017-SB2 and EST-017-SB3. ~~WE HAD TO LEAVE THE AUGER RODS IN THE~~ WE FINISHED BEFORE HORACE GOT BACK SO I ASSIGNED THE SITE CLEANUP DUTIES TO COMMENSE. ALL HOLES WERE REFILLED AND ASHALT PATCH WAS USED TO SEAL THE HOLES. HORACE ARRIVED AS WE WERE FINISHING, AND THE LAST THING DONE PRIOR TO LEAVING WAS REMOVAL OF ALL EXCESS DIRT. AFTER LUNCH, WE STARTED ON FST-024. THE BORINGS THOUGH THE CONCRETE ARE TAKING LONGER THAN EXPECTED. ITS TAKING 40 MINUTES TO BORE THOUGH THE CONCRETE, ~~5 TO 5A~~. AND ONE TANK FULL OF WATER. SO, TO SAVE TIME, I ASSIGNED THE DRILL CREW THE TASK OF BORING THOUGH THE CONCRETE IN ALL SIX LOCATIONS BEFORE ANY SOIL BORINGS (SAVE THE TIME OF CHANGING RODS AND HOSES). WE ACCOMPLISHED THREE HOLES, CGI and PID READINGS TAKEN IN BREATHING ZONE.

SHEET ____ OF ____

PROJECT. FST-017 (Continuation Sheet)

REPORT NO.

JOB NO.

DATE 8/11/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

PID WAS CALIBRATED WITH 250 ppm STANDARD ISOBUTYLENE. READ 252 UNITS
OVA WAS CALIBRATED WITH 10 ppm STANDARD METHANE. READ 9.8 ppm

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

LEVEL D MOD WITH HARDHATS and STEEL-TOED BOOTS

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

I MET MOMENTALLY WITH M. DASHER AND SAID THAT I WOULD LEAVE WITH HIM PLANS FOR FST-025 and FST-028. HE SAID THAT WE WOULD GET TOGETHER Early NEXT WEEK

TOMORROWS EXPECTATIONS

BY TITLE

A-E DAILY QUALITY CONTROL REPORT

DATE 8/12/93

DAY | S | M | T | W | TH X | F | S |

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
TEMP	To 32	32-50	50-70	70-85	85 up
WIND	Still	Moder	High	Recon No.	
HUMIDITY	Dry	Moder	Humid		

COE PROJECT MANAGER _____

PROJECT _____

JOB NO. FST-024

CONTRACT NO _____

SUB-CONTRACTORS ON SITE:

Judson Smith, Larry Olliff, Horace Futcher, Douglas LaRouche

EQUIPMENT ON SITE.

Drill Rig, 4" Auger, Steame Cleaner, Alum. Foil, Mason Jar, Sample Jars, CGI, PID, OVA and Various Drilling Equipment

WORK PERFORMED (INCLUDING SAMPLING):

Started on borings 4-6 when first arrived. During the first part of this work, a backhoe was digging out rubble on the same building. The ditch created showed a layer of oil stained looking dirt that smelled of diesel and had a PID reading of 313 units right above its location. The CGI reading was only at 003 so I was not worried of explosive hazard and the breathing zone never went above 5 units. Work continued. But it does show contamination is at that location. We finished 4-6 a little after 10:00 and took all the PID/FID samples by 11:20. After lunch, Larry Olliff and I read the samples (after calibration) and all the readings pointed toward the lowest depth as where the contamination is, 7½-8. Once getting Larry Olliff and the drill crew started with the sampling, I went to take the sludge sample. No adequate material existed in the drain, it was all rocks, rusty pieces and like material therefore no sample taken. When sampling was complete, I filled out the chain of custodies and sent the samples with Larry Olliff so the samples can be in the office when Carr Labs arrives. All sample coolers have their ice replaced at least twice daily. The SAD lab coolers will be sent Monday morning so they will arrive

SHEET ____ OF ⟹

(Continuation Sheet)

PROJECT. FST-024 REPORT NO.

JOB NO. DATE 8/12/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

PID WAS CALIBRATED WITH 250 ppm STANDARD ISOBUTYLENE. READ 258 UNITS.
OVA WAS CALIBRATED WITH 10ppm STANDARD METHANE. READ 9.6ppm.

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

LEVEL D MOD WITH HARDHATS AND STEEL-TOED BOOTS.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES. CONT page 1. WHEN SOMEONE IS THERE TO TAKE THEM INSTEAD OF SITTING WHERE THEY MAY GET HOT.

TOMORROW'S EXPECTATIONS

GIVE THEY FORMS TO M. DASHER SO HE CAN SET UP A TIME NEXT WEEK THAT WE CAN WALK THOSE SITES. (FST-025 & FST-028)

BY TITLE

A-E DAILY QUALITY CONTROL REPORT

DATE 8/19/93

DAY	S	M	T	W	TH	F	S
					X		

WEATHER	Bright Sun	Clear	Overcast	Rain X	Snow
TEMP	To 32	32-50	50-70	70-85	85 & up X
WIND	Still	Moder X	High	Recon No.	
HUMIDITY	Dry	Moder	Humid X		

COE PROJECT MANAGER _____

PROJECT FST-004E

JOB NO. _____

CONTRACT NO _____

SUB-CONTRACTORS ON SITE:

JUDSEN SMITH, BILL TOWNSEND

EQUIPMENT ON SITE.

pH METER, CONDUCTIVITY METER, BAILERS (DISPOSABLE), WATER LEVEL METER, PID, CGI, DECON EQUIPMENT, SAMPLE BOTTLES & COOLERS

WORK PERFORMED (INCLUDING SAMPLING):

ARRIVED AT FT STEWART AROUND 10:30. CHECKED IN AT RANGE CONTROL, WHICH WE DECIDED WOULD BE PROPER TO DO WITH EVERY SITE OUTSIDE CANTONMENT AREA FOR SAFETY. APPROVED SITE FOR SAMPLING. THE pH METER, COND. & PID WERE PRECALIBRATED IN LAB BEFORE LEAVING. INITIAL TEST DONE BEFORE ANY WORK IS PID BREATHING ZONE READING. THEN THE WELL IS UNCAPPED AND A WELL READING ~~IS~~ USING PID IS TAKEN. WELL WATER LEVEL READINGS ALONG WITH TOP OF CASING ELEVATION TAKEN. ONCE AMOUNT OF WATER TO BE ~~EVAC.~~ REMOVED IS DETERMINE, WE BAILED THAT AMOUNT. pH & COND READINGS ARE TAKEN AT FIRST BAIL FULL, HALF POINT AND FINAL. ~~IF~~ ANY DRASTIC CHANGES ARE REASONS TO CONTINUE BAILING. WE SAMPLED FOR VOC 8240 and SRCRA METAL. PRESERVATIVES ARE HCl & ICE FOR 8240 & HNO_3 FOR METALS. SAMPLES ARE COOLED TO 4°C USING ICE

SHEET ____ OF ____

A-E DAILY QUALITY CONTROL REPORT

DATE 8/20/93

DAY	S	M	T	W	TH	F	S
						X	

WEATHER	Bright Sun	Clear X	Overcast	Rain	Snow
TEMP	To 32	32-50	50-70	70-85 X	85 up
WIND	Still X	Moder	High	Recon No.	
HUMIDITY	Dry	Moder	Humid X		

COE PROJECT MANAGER _____

PROJECT FST-004F

JOB NO. _____

CONTRACT NO. _____

SUB-CONTRACTORS ON SITE:

JUDSON SMITH, BILL TOWNSEND

EQUIPMENT ON SITE.

pH METER, COND. METER, BAILERS, WATER LEVEL METER, CGI PID, RECON EQUIPMENT, SAMPLE BOTTLES & COOLERS

WORK PERFORMED (INCLUDING SAMPLING):

ARRIVED AT STEWART BY 09:20. CHECKED IN WITH RANGE CONTROL. SITE APPROVED FOR ENTRANCE. TESTED BREATHING ZONE. UNLOCKED & UNCAPPED WELLS AND CHECKED PID READINGS. ONE WELL SHOWED VERY HIGH CONTAMINATION READINGS IN PID UNITS (FST-004F-MW4; 2544 unit), gave off a fuel sheen and odor and dissolve a cup. TOP of CASING MEASURED FOR EACH WELL. WATER LEVEL READINGS AND BOTTOM of WELL READINGS TAKEN FOR EACH WELL BEFORE BAILING. AMOUNT NEEDED TO BE BAICED IS "LEAST AMOUNT". OFTEN MORE IS BAILED, NEVER LESS. pH & COND. READINGS TAKEN AT FIRST BAIL, HALF POINT AND FINAL. DRASTIC CHANGES WILL LED TO MORE BAILING. WELL FST-004F-MW4 IS ALSO A SLOW FILLER. SITE HAS VARIOUS ITEMS TO CONSIDER FOR SAFETY WHEN NEXT ENTERED. SEVERAL TREES CONTAINS UNKNOWN (TO US) DEVICES WHICH HAVE BEEN IGNITED AND BURNT PART OF THE TREE IT IS CONNECTED TO AND SOME of THE GROUND WIRES LED TO SOME OF THESES DEVICES. UNEXPLODED DEVICES OF THIS KIND COULD BE A SAFETY HAZARD.

SHEET ____ OF ____

PROJECT. _____ (Continuation Sheet)

REPORT NO. _____

JOB NO. FST-004F

DATE 8/20/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

PID CALIBRATED WITH 250ppm ISOBUTYLENE. pH METER WITH 7/10 STANDARD & CONDUCTIVITY METER WITH 0.180 mohm NaCl STANDARD.

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Check WITH RANGE CONTROL TO SEE IF SITE WAS OKAY TO SAMPLE, NO ACTIVITIES. SITE APPROVED FOR ENTRANCE. USE MOD LEVEL D.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

DISCOVERED SITE FST-004E HAD ACTIVITY THE PREVIOUS DAY AND ~~SHOULD HAD~~ NOT BEEN ENTERED.

SPECIAL NOTES

TOMORROW'S EXPECTATIONS

FST-004A

BY _____ TITLE _____

A-E DAILY QUALITY CONTROL REPORT

DATE 8/21/93

DAY	S	M	T	W	TH	F	S
							X

WEATHER	Bright Sun X	Clear	Overcast	Rain	Snow
TEMP	To 32	32-50	50-70	70-85	85 & up X
WIND	Still X	Moder	High	Recon No.	
HUMIDITY	Dry	Moder	Humid X		

COE PROJECT MANAGER _____

PROJECT EST-004A & AB

JOB NO. _____

CONTRACT NO _____

SUB-CONTRACTORS ON SITE:

Judson Smith, Douglas La Rouche

EQUIPMENT ON SITE:

pH Meter, Cond. Meter, Bailers, Water Level Meter, CGI, PID, Decon Equipment, Sample Bottles & Coolers

WORK PERFORMED (INCLUDING SAMPLING):

Arrived At Stewart By 0840. Check in with Range Control. Approval Given For Site Entrance. PID meter shut off as we started. Had to use CGI exclusively for breathing zone measurements. Checked top of casing elevations and water levels for water level reading and bottom of the hole. Quality Control and Assurance will be taken At MW1. This will be one of two QA/QC samples taken for the whole of project 004. pH & Cond Samples will be taken At First, Hale and Final. No drastic changes occured in readings. Samples will be tested for 8240 (40ml vial, w/ HCl) and Metals (500ml Plastic Bottle w/ HNO_3). Samples are cooled to 4°C, using ice.

SHEET ____ OF ____

PROJECT _____ (Continuation Sheet)

REPORT NO. _____

JOB NO. FST-004A DATE 8/21/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

PID WAS DOWN. SHUT OFF A FIRST SITE. pH METER WITH 7/10 STANDARD & CONDUCTIVITY METER WITH 0.180 mohm NaCl STANDARD. QA & QC + BLANK SAMPLES TAKEN.

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Checked WITH RANGE CONTROL TO SEE IF SITE WAS OKAY TO SAMPLE, No ACTIVITIES. SITE Approved FOR ENTRANCE. USE MOD LEVEL D.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN

SPECIAL NOTES

TOMORROWS EXPECTATIONS

FST-0043

BY _____ TITLE _____

A-E DAILY QUALITY CONTROL REPORT

DATE 8/22/93

DAY	S	M	T	W	TH	F	S
	X						

WEATHER	Sunny/Sun X	Clear	Overcast	Rain	Snow
TEMP	To 32	32-50	50-70	70-85	85 up X
WIND	Still X	Moder	High	Recon No.	
HUMIDITY	Dry	Moder	Humid X		

COE PROJECT MANAGER _____

PROJECT FST-004B

JOB NO. _____

CONTRACT NO. _____

SUB-CONTRACTORS ON SITE:

JUDSON SMITH, DOUGLAS LAROUCHE

EQUIPMENT ON SITE:

pH METER, COND. METER, BAILERS, WATER LEVEL METER, CGI, PID, DECON EQUIPMENT, SAMPLE BOTTLES AND COOLERS

WORK PERFORMED (INCLUDING SAMPLING):

ARRIVED AT STEWART BY 0850. CHECKED IN WITH RANGE CONTROL. SITE APPROVED. PID METER UP AND WORKING. BREATHING ZONE CHECKED. MOD LEVEL D USED. CHECKED TOP OF CASING ELEVATION. PERFORMED PID READING ON WELL WHEN FIRST REMOVED CAP. QA, QC and BLANK SAMPLES TAKEN. THIS IS THE OTHER OF TWO TO BE TAKEN FOR THE WHOLE OF FST-004. WATER LEVEL READING TAKEN AND BOTTOM OF WELL. AMOUNT OF WATER TO BE REMOVED CALCULATED. pH & CONDUCTIVITY READINGS TAKEN AT FIRST, HALF AND FINAL. NO APASTE CHANGES IN READINGS OCCURED. ALL CHAINS OF CUSTODY FORMS FILLED OUT AND SAMPLE COOLERS ARE READIED FOR SHIPMENT. SAMPLES WILL BE TESTED FOR 8240 (40ml vials w/ HCl) and METALS (500ml PLASTIC BOTTLE w/ HNO_3). SAMPLES ARE COOLED TO 4°C, USING ICE.

SHEET ____ OF ____

PROJECT. _____ (Continuation Sheet)

JOB NO. FST-0043 REPORT NO. _____

DATE 8/22/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

PID WAS CALIBRATED WITH 258 ppm ISOBUTYLENE "NEW TANK" pH METER WAS CALIBRATED WITH 7/10 STANDARD & CONDUCTIVITY METER WITH 0.180 mohm STANDARD.

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

CHECKED WITH RANGE CONTROL TO SEE IF SITE WAS OKAY TO SAMPLE, NO ACTIVITIES. SITE APPROVED FOR ENTRANCE. USE MOD LEVEL D.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN

SPECIAL NOTES

TOMORROWS EXPECTATIONS

START FST-028

BY _____ TITLE _____

111

FST-028

A-E DAILY QUALITY CONTROL REPORT

DATE 8/24/93

DAY	S	M	T	W	TH	F	S
			X				

WEATHER	Bright Sun	Clear	Overcast X	Rain	Snow
TEMP	To 32	32-50	50-70	70-85	85 up X
WIND	Still	Moder X	High	Recon No.	
HUMIDITY	Dry	Moder X	Humid		

CCE PROJECT MANAGER _____

PROJECT FT STEWART BATTERY SHOP FST-028

JOB NO. _____

CONTRACT NO. _____

SUB-CONTRACTORS ON SITE:

JUDSON SMITH, DERRICK AMIDON, DOUGLAS LAROUCHE, HORACE FLETCHER

EQUIPMENT ON SITE:

DRILL RIG, DRILL EQUIPMENT, STEAM CLEANER, DECON EQUIPMENT, PID, OVA, CGI, MASON JARS, ALUMINUM FOIL, CALIBRANT GASES, SAMPLE BOTTLES

WORK PERFORMED (INCLUDING SAMPLING):

ARRIVED ON SITE AT 0700. NO ONE TO OPEN GATES UNTIL 0730. STARTED FST-028-SB1 THE CONCRETE BEING DRILLED INTO IS FULL OF GRANITE AND OTHER ASSORTED ROCKS IN A COMPACTED FORMATION. THIS HAS MADE THE CONCRETE SO HARD THAT IT HAS TAKEN MUCH LONGER THAN HOPED. TODAY HAS GONE AS FOLLOWED: 0730-0840: SET-UP DRILL RIG. HOOK UP WATER AND LOCATE A CONSTANT WATER SUPPLY. ~~0840-1115~~ THIS COULD NOT BE DONE (WATER SUPPLY) UNTIL 8:30. SHOP CLOSED. PERSONEL AT FORMATION. 0840 - 1115 SB1 PID/FID CONCRETE BORING. 1115 - 1200 LUNCH. 1200 - 1435 SB1, LAB SAMPLE CONCRETE. 1435 - 1710 SB2, PID/FID CONCRETE. DISCUSSED WITH DOUGLAS LAROUCHE ANY POSSIBILITY OF SPEEDING UP THE PROCESS. HE DOES NOT KNOW HOW. THE CONCRETE IS .95' THICK. TO SPEED UP THE PROCESS, ON WENSDAY, DERRICK AND MYSELF WILL HAND AUGER THE PID/FID SAMPLES, AND TAKE THE LAB SAMPLES, AS DOUGLAS AND HORACE DO THE CONCRETE BORINGS. TO BETTER USE THE DOWN TIME, I HAD DERRICK MARK ALL OF THE BOTTLES FOR PID/FID READINGS, MARK THE HAND AUGER AND HELP DOUGLAS. ALL PERSONEL AT THE BATTERY SHOP WERE NOTIFIED YESTERDAY. EXPLAINED ~~ANYTHING~~ EVERYTHING TO SGT SASTRO. I HAD DOUGLAS AND DERRICK FILL UP THE WATER TANK FOR TOMOIROW. WATER MAY NOT BE AVAILABLE TO 0900. THE HYDROLIC CLYINDER THAT PULLS THE TABLE IN AND OUT IS BROKE. I DISCUSSED WITH THE PERSONEL AT THE BATTERY SHOP AND LOCATED A PLACE TO FIX THE RIG. DEH ENGR DEPARTMENT HAS AN ARC WELDER. THEY OPEN AT 0800 TOMORROW SO WE WILL HAVE THE DRIL RIG THERE FIRST THING IN THE MORNING.

SHEET ____ OF ____

PROJECT. _____ (Continuation Sheet)

REPORT NO. _____

JOB NO. FST-028 -

DATE 8/24/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

PID CALIBRATED WITH 758 ppm ISOBUTYLENE.

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

ROPED OFF AREA TO SHOW EVERYONE WHERE THE HARD HAT AREA IS. MOD LEVEL D WITH STEEL-TOED BOOTS & HARD HATS

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SEE FRONT PAGE FINAL SENTENCES.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

FST-028 FIVE CORE BORINGS AND START PID/FID SAMPLING.

BY _____ TITLE _____

A-E DAILY QUALITY CONTROL REPORT

DATE 8/25/93

DAY	S	M	T	W	TH	F	S
				X			

WEATHER	Bright Sun	Clear X	Overcast	Rain	Snow
TEMP	To 32	32-50	50-70	70-85	85 up X
WIND	Still X	Moder	High	Record No.	
HUMIDITY	Dry	Moder	Humid X		

COE PROJECT MANAGER _____

PROJECT Ft Stewart (Battery Shop (FST-028)

JOB NO. _____

CONTRACT NO _____

SUB-CONTRACTORS ON SITE:

Judson Smith, Derrick Amidon, Douglas Larouche, Horace Futcher

EQUIPMENT ON SITE.

Drill Rig, Drill Equipment, Steam Cleaner, Decon Equipment, PID, OVA, CGI, Mason Jars, Aluminum Foil, Calibrant Gases, Sample Bottles

WORK PERFORMED (INCLUDING SAMPLING):

Located Personel To Arc Weld Piece "Bracket on Hydraulic Push" At DEH. Work Started 09:16 on Drill Rig, Finished Welding By 09:25. Drilling Started By 09:30. The Borings Went Much Faster Today Than Yesterday. SB4 Require Extra Effort Due To The Fact That It Is 1.15ft Thick. Able To Do All The PID/FID Samples Today Which Will Be Ran Tomite. The Total of All Concrete Borings Are Complete Along With All of The PID/FID Borings. For Cost-Effectiveness, I Will Send The Drill Crew To The Yard Tomorrow To Take Back The Rig. Around 15:00 The Rig Popped A Gear Requiring Additional Fixing. Final Core Boring Done 17:00. Hand-Augered Final PID/FID Sample. Finished By 18:00.

SHEET ____ OF ____

PROJECT. _____ (Continuation Sheet)

REPORT NO. _____

JOB NO. FST-0004E

DATE 8/19/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

PID CALIBRATED WITH 250 ppm ISOBUTYLENE.
pH METER WITH 7/10 STANDARD.
CONDUCTIVITY METER CALIBRATED WITH 0.180 mohm STANDARD.

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

CHECKED WITH RANGE CONTROL TO SEE IF SITE WAS OKAY TO SAMPLE, NO ACTIVITIES. SITE APPROVED FOR ENTRANCE. USE MOD LEVEL D.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN

SPECIAL NOTES

ARTILLARY FIRE SEEM EXTREMELY CLOSE, AFTER EVEN ~~CLEAN~~ AREA APPROVED FOR SAMPLING.

TOMORROWS EXPECTATIONS

FINISH FST-0004E

BY _____ TITLE _____

PROJECT. FT STEWART BATTERY SHOP FST-028 (Continuation Sheet)

REPORT NO. _____

JOB NO. _____

DATE 8/25/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

CALIBRATED THE PID USING 258 ISOBUTYLENE STANDARD. READ 256 UNITS. CALIBRATED THE FID USING 10 ppm and 990 ppm METHANE. READ 10 ppm and 93 ppm ~~respectively~~.

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

ROPED OFF AREA TO SHOW HARD HAT AREA. MOD-LEVEL D WITH STEEL TOED BOOTS AND HARD HATS.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SEE FRONT PAGE

SPECIAL NOTES.

TOMORROWS EXPECTATIONS

RETURN DRILL RIG and DO LAB SAMPLING.

BY _____ TITLE _____

FST-028

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A-E DAILY QUALITY CONTROL REPORT

DATE 8/26/93

DAY | S | M | T | W | TH | F | S | (TH checked)

WEATHER	Bright Sun	Clear	Overcast	Rain X	Snow
TEMP	To 32	32-50	50-70	70-85	85 & up X
WIND	Still	Moderate X	High	Recon No.	
HUMIDITY	Dry	Moderate	Humid X		

COE PROJECT MANAGER _____

PROJECT FT STEWART BATTERY SHOP FST-028

JOB NO. _____

CONTRACT NO _____

SUB-CONTRACTORS ON SITE:

JUDSON SMITH, DOUGLAS LAROUCHE, HORACE FUTCHER

EQUIPMENT ON SITE:

HAND-AUGERS, STEAM CLEANER, DECON EQUIPMENT, PID, OVA, CGI, MASON JARS, ALUMINUM FOIL, CALIBRANT GASES, SAMPLE BOTTLES

WORK PERFORMED (INCLUDING SAMPLING):

SENT DRILL CREW TO DELIVER RIG BACK TO DEPOT TO MINIMIZE COST. LABELED ALL BOTTLES. 11:10 TOOK FIRST SAMPLE WHICH IS TO BE THE QA & QC SAMPLE FST-028-SB2-8-93. AT 12:50, TOOK FST-028-SB1, 13:40 TOOK SB3 and 14:30 TOOK SB4. THE ANALYSIS TO BE RUN ARE pH 9045, FULL TCLP and TPH 8015 MOD HEAVY. pH uses a 250 ml G BOTTLE, TCLP uses 500 ml G and 125 ml amb G and TPH uses a 250 ml G BOTTLE. ALL SAMPLES WERE ICED TO 4°C. THE MAIN PROBLEM TODAY WERE THUNDERSTORMS WHICH CONTINUED THROUGH MOST OF THE DAY. ALL HOLES WERE SEALED WITH CONCRETE AND OPERATION ARE MOVED TO FST-025-100A.

SHEET ____ OF ____

PROJECT. FST-028 (Continuation Sheet)

REPORT NO.

JOB NO.

DATE 8/26/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

CALIBRATED THE PID WITH 258 ppm ISOBUTYLENE, READ 261 UNITS. CALIBRATED THE FID WITH 10 ppm & 100 ppm METHANE. READ 9.7 & 101. ~~Respectively~~

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MOD LEVEL D WITH HARD HAT AND STEEL-TOED BOOTS.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

THUNDERSTORMS, SAMPLED ONLY DURING THE LIGHTER RAINING PERIODS.

SPECIAL NOTES.

TOMORROWS EXPECTATIONS

START FST-025

BY TITLE

A-E DAILY QUALITY CONTROL REPORT

DATE 8/27/93

DAY	S	M	T	W	TH	F	S
						X	

WEATHER	Bright Sun	Clear	Overcast	Rain X	Snow
TEMP	To 32	32-50	50-70	70-85	85 up X
WIND	Still	Moder X	High	Recon No.	
HUMIDITY	Dry	Moder	Humid X		

COE PROJECT MANAGER _____

PROJECT Ft Stewart, 86 Waste Oil Tanks, FST-025

JOB NO. _____

CONTRACT NO. _____

SUB-CONTRACTORS ON SITE:

Judson Smith, Douglas Larouche, Horace Fulcher

EQUIPMENT ON SITE.

Hand-augers, well casing, well screen, lock & caps, steam cleaner, decon equipment, PID, OVA, CGI, pH meter, conductivity meter, mason jars, Al. foil, Calibrant gases + solutions, sample jars.

WORK PERFORMED (INCLUDING SAMPLING):

The method of doing FST-025 will occur as follows, first we do the soil borings collecting a PID/FID sample every half a foot. Once we reach water, we discontinue taking PID/FID samples and keep digging until the hole is about to cave-in. (Basically as far as possible. A temporary well made to have at least 1 foot of stick-up is then pushed into the hole (2" thick PVC). The well is then secured in place. Water level indicator is then used to assure well is below water table. After all soils are collected and wells installed, and at least one hour has passed, the PID/FID readind are then taken. ~~Today, we completed~~ Once all wells are installed and all readings taken, then the actual lab samples are taken. Today, we completed the installation and readings on FST-025-100A, FST-025-100B, FST-025-94C. Thunderstorms prevented further progress on site. All PID/FID readings are taken.

SHEET _____ OF _____

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PROJECT. Ft Stewart, 86 Waste Oil Tanks, FST-025 (Continuation Sheet)

REPORT NO. _____

JOB NO. _____

DATE 8/27/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

The PID was calibrated with 258 ppm Isobutylene, read 262 units. The FID was calibrated with 10 ppm & 90 ppm Methane, read 9.6 & 92 ppm.

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Mod Level D with Hard Hats, Steel-Toed Boots and Latex Gloves.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

Thunderstorms Stopped Work After 94C. Lightning & Heavy Rains Keep All Work From Continuing.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

Next Week, Continue FST-025.

BY _____ TITLE _____

A-E DAILY QUALITY CONTROL REPORT

DATE 8/31/93

DAY	S	M	T	W	TH	F	S
			X				

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
			X		

TEMP	To 32	32-50	50-70	70-85	85 & Up
					X

WIND	Slight	Moder	High	Record No.
	X			

HUMIDITY	Dry	Moder	Humid
			X

COE PROJECT MANAGER _____

PROJECT Ft Stewart, 86 Waste Oil Tanks, FST-025

JOB NO. _____

CONTRACT NO _____

SUB-CONTRACTORS ON SITE:

Judson Smith, Douglas Laroche, Horace Fulcher

EQUIPMENT ON SITE:

Hand-Augers, Well Casing, Well Screen, Locks & Caps, Steam Cleaner, Decon Eqp, PID, OVA, CGI, pH Meter, Conductivity Meter, Mason Jars, Al Foil, Cal. Eqp, Sample Jars

WORK PERFORMED (INCLUDING SAMPLING):

8/30/93, No Work Could Be Performed. Thunderstorms Were Active All Afternoon. Started With Hole FST-025-94B. As With Many Other Borings, Had To Redo Borings After 4.0 Ft And 9.0 Ft. Hit Impassable Zone With Hand Auger. As In Health And Safety Plan, Each Site Is Check With The PID And CGI Before Personnel Can Enter Site. Well Installation And PID/FID Readings Were Completed On Holes 94B, '64, G4A And 4A. Water Level Indicator Was Used To Assure Wells Were In Groundwater. All Equipment Deconed As Per Instructions.

SHEET ____ OF ____

PROJECT. FT STEWART, 86 WASTE OIL TANKS, FST-025 (Continuation Sheet)

JOB NO. _____ REPORT NO. _____

DATE 8/31/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

THE PID WAS CALIBRATED WITH 258ppm ISOBUTYLENE, READ 260 UNITS. THE FID WAS CALIBRATED WITH 10ppm & 90ppm METHANE. READ 9.7ppm & 89ppm.

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MOD LEVEL D WITH HARD HATS, STEEL-TOED BOOTS and LATEX GLOVES.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROWS EXPECTATIONS

CONTINUE FST-025.

BY _____ TITLE _____

A-E DAILY QUALITY CONTROL REPORT

DATE 9/1/93

DAY	S	M	T	W	TH	F	S
				X			

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
			X		

TEMP	To 32	32-50	50-70	70-85	85 up
					X

WIND	Still	Moder	High	Recon No.
	X			

HUMIDITY	Dry	Moder	Humid
			X

COE PROJECT MANAGER _____

PROJECT Ft Stewart, 86 Waste Oil Tanks, FST-025

JOB NO. _____

CONTRACT NO. _____

SUB-CONTRACTORS ON SITE:

Judson Smith, Douglas Larouche, Horace Fulcher

EQUIPMENT ON SITE.

Hand-Augers, well casing, well screen, lock & caps, steam cleaner, decon equipment, PID, OVA, CGI, pH meter, Conductivity meter, Mason Jars, Al. Foil, Calibrant Gases + Solutions, Sample Jars.

WORK PERFORMED (INCLUDING SAMPLING):

Had the field personel clean out the Mason Jars while Judson Smith talked to Mike Dasher about when he could examine sites FST-025-214, 215, 220 and 232. He informed Judson that he may be able to examine the sites during the week of 09/06/93 - 09/10/93. Completed the borings for FST-025-56 and FST-025-67 including getting the FID/PID readings. FST-025-70 and FST-025-94 were not completed because the soil where we were boring was so hard, the hand auger just scraped surface of the bottom of the hole which was 14.5 and 15.0 ft deep. Adjacent locations were tried and same thing occur at that depth. These locations will have to be saved until later when we can use the drill rig. No boring log recorded because hole will not be used and a boring log may cause confusion. All drilling equipment decon'd per hole.

SHEET ____ OF ____

PROJECT. Ft Stewart, 86 Waste Oil Tanks, FST-025 (Continuation Sheet)

JOB NO. _____ REPORT NO. _____

DATE 9/1/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

PID was calibrated using 258 ppm Isobutylene, Read 256 units. FID was calibrated using 10 ppm and 90 ppm Methane, Read 9.8 ppm and 91 ppm.

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Mod Level D with Hard Hats, Steel-Toed Boots and Latex Gloves.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

Incapable of Completing Two Soil Borings, and Installing Two Wells. Will wait for use of Drill Rig.

SPECIAL NOTES.

TOMORROWS EXPECTATIONS

Start Lab Sampling.

BY _____ TITLE _____

A-E DAILY QUALITY CONTROL REPORT

DATE 9/2/93

DAY	S	M	T	W	TH	F	S
					X		

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
		X	X		

TEMP	To 32	32-50	50-70	70-85	85 up
					X

WIND	Still	Moder	High	Recon No.
	X			

HUMIDITY	Dry	Moder	Humid
			X

COE PROJECT MANAGER _____

PROJECT Ft Stewart, 86 Waste Oil Tanks, FST-025

JOB NO. _____

CONTRACT NO. _____

SUB-CONTRACTORS ON SITE:

Judson Smith, Douglas Larouche, Horace Fulcher, Derrick Amidon

ECUIPMENT ON SITE.

Hand-Augers, well casing, well screen, lock & caps, steam cleaner, decon equipment, PID, OVA, CGI, pH meter, conductivity meter, mason jars, Al. Foil, Calibrant Gases + Solutions, Sample Jars.

WORK PERFORMED (INCLUDING SAMPLING):

Using data obtained from the PID/FID readings on the soil borings, the depths needed for taking lab samples is determined. For soil, aqueous samples will be taken using regular method including bailing, field pH and conductivity readings. All ambient readings are observed. The bailer being used is a 3.0 ft long, 1.5 inche diameter VOC approved disposable bailer. All equipment being use between holes (water level indicator, Hand-Augers, etc) will be deconed using approved method. The samples will be analyzed for VOC 8240, RCRA metals and TPH 8015 mod-heavy for aqueous, pH, Full TCLP, and TPH 8015 mod heavy for nonaqueous. We collected the ~~AQUEOUS~~ needed samples from sites 100A, 100B, 94C, 9413 and 64. All QA and QC were collected from site FST-025-64-9.93. Blanks will be collected tomorrow. Sites 100A and 94C has free product (looks to be waste oil). 100A has +4.0 ft and 94C has 2.54 ft. At neither site will aqueous sampling be taken, but wells will be left after we leave for further sampling.

SHEET ____ OF ____

PROJECT. Ft Stewart, 86 Waste Oil Tanks, FST-025 (Continuation Sheet)

REPORT NO. _____

JOB NO. _____

DATE 9/21/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

pH METER WAS CALIBRATED WITH 7 & 10 STANDARD.
CONDUCTIVITY METER WAS CALIBRATED WITH 0.180 mho NaCl STANDARD.
PID WAS CALIBRATED WITH 258 ppm Isobutylene.
FID WAS CALIBRATED WITH 10 ppm & 90 ppm METHANE.

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MOD LEVEL D WITH HARD HATS, STEEL-TOED BOOTS and LATEX GLOVES.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

No Problems

SPECIAL NOTES.

TOMORROWS EXPECTATIONS

FINISH COLLECTING INSTALLED TEMP WELL SAMPLES OF FST-025

BY _____ TITLE _____

141

A-E DAILY QUALITY CONTROL REPORT

DATE 9/3/93

DAY	S	M	T	W	TH	F	S
						X	

WEATHER	Bright Sun	Clear X	Overcast	Rain	Snow
TEMP	To 32	32-50	50-70	70-85	85 up X
WIND	Still X	Moder	High	Recon No.	
HUMIDITY	Dry	Moder	Humid X		

COE PROJECT MANAGER _____

PROJECT FT STEWART, 86 WASTE OIL TANKS, FST-025

JOB NO. _____

CONTRACT NO _____

SUB-CONTRACTORS ON SITE:

JUDSON SMITH, DOUGLAS LAROUCHE, HORACE FULCHER, DERRICK AMIDON

EQUIPMENT ON SITE.

HAND-AUGERS, WELL CASING, WELL SCREEN, LOCK & CAPS, STEAM CLEANER, DECON EQUIPMENT, PID, OVA, CGI, pH METER, CONDUCTIVITY METER, MASON JARS, AL. FOIL, CALIBRANT GASES + SOLUTIONS, SAMPLE JARS.

WORK PERFORMED (INCLUDING SAMPLING):

WHEN ARRIVED WE DISCOVERED THAT ALL OF THE GATES HAD BEEN LOCKED AND VISUALLY NO ONE SEEMED TO BE AROUND. AFTER WAITING SEVERAL MINUTES, I ~~GIS~~ DECIDED TO LOCATE SOMEONE SO WE COULD GAIN ACCESS TO OUR EQUIPMENT. ON EACH SITE, WE CHECKED TO MAKE SURE PARKING EQUIPMENT AT THAT SITE WAS ALRIGHT AND NO PROBLEMS IN RELATION TO THE TIME-FRAME. UNFORTUNATELY, WE WERE NOT INFORM OF THE BASE-HOLIDAY. I LOCATED SOMEONE TO OPEN THE FENCE AND WE WERE ABLE TO COLLECT SAMPLES FROM 64A AND 67. 64A IS THE LOCATION OF TAKING FST-025's BLANK SAMPLES (FST-025-BLK-9-93). 64A HAS "4.05+ of FREE PRODUCT WHICH LOOKS AND SMELLS OF WASTE OIL. DOUGLAS AND HORACE HAD TO LEAVE FIRST THING THIS MORNING TO GET TO ANOTHER SITE. ONLY DERRICK AND JUDSON WERE LEFT TO TAKE THE SAMPLES. OTHER LOCATIONS WERE NOT ACCESSIBLE DUE TO HOLIDAY.

SHEET ____ OF ____

PROJECT. Ft Stewart, 86 Waste Oil Tanks, FST-025 (Continuation Sheet)

JOB NO. _____ REPORT NO. _____

DATE 9/23/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

pH METER WAS CALIBRATED WITH 7 & 10 STANDARD.
CONDUCTIVITY METER WAS CALIBRATED WITH 0.180 mohm NaCl STANDARD.
PID WAS CALIBRATED WITH 258 ppm Isobutylene.
FID WAS CALIBRATED WITH 10 ppm & 90 ppm METHANE.

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MOD LEVEL D WITH HARD HATS, STEEL-TOED BOOTS and LATEX GLOVES.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

EQUIPMENT LOCKED UP, FOUND INDIVIDUAL TO UNLOCK GATE.

SPECIAL NOTES.

TOMORROWS EXPECTATIONS

RECIEVE PERMITS AND CONTINUE FST-025 (NEXT WEEK).

BY _____ TITLE _____

A-E DAILY QUALITY CONTROL REPORT

DATE 9/14/93

DAY	S	M	T	W	TH	F	S
			X				

WEATHER	Bright Sun	Clear	Overcast	Rain X	Snow
TEMP	To 32	32-50	50-70	70-85	85 X 90
WIND	Still	Moder X	High	Falcon No.	
HUMIDITY	Dry	Moder	Humid X		

COE PROJECT MANAGER _____

PROJECT FST-029: Evans Army Heliport Fol St. Fac

JOB NO. _____

CONTRACT NO _____

SUB-CONTRACTORS ON SITE:

Judson Smith, Douglas Larroche, Horace Fulcher

EQUIPMENT ON SITE.

Hand Auger, Steam Cleaner, Decon Eqp., PID, OVA, CGI, Mason JARS, Aluminum Foil, Calibrant Gases, Sample JARS.

WORK PERFORMED (INCLUDING SAMPLING):

Yesterday, 9/13/93, we Could Only Map The Locations Of Temp Wells At FST-025, No Daily Report Was Filed. Initially We Collected OVA/PID Samples From All Of The Holes At An Half Foot Intervals After Letting The Soil Sample Heat Up Thus Volatilizing All Gases, We Ran OVA/PID Readings On Each. With This Data, We Took Lab Samples. Facility Personnel Informed Us To Vacate Area By Four O'Clock. Two Noticable Problems Were Observed At This Site. First, By FST-029-SB4, A Valve Appears To Have Barly Leaked Onto The Ground. Characteristic Fuel Stain Appears On Dirt And Valve Is Very Rusty. Second, FST-029-SB3 Seems To Be Contaminated With Something Other Than Fuel. The Smell Is Quite Different.

SHEET ____ OF ____

PROJECT. FST-029 HELIPORT POL STORAGE FAC (Continuation Sheet)

REPORT NO. _____

JOB NO. _____ DATE 9/14/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

CALIBRATED PID & OVA
PID WAS CALIBRATED WITH 258 ppm ISOBUTYLENE.
READ 262 UNITS.
OVA WITH 10 ppm & 90 ppm METHANE
READ 9.7 & 92 ppm

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MOD LEVEL D WITH HARD HATS AND STEEL TOED-BOOTS

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN.

RAIN & LIGHTNING OCCURRED DURING WORK.
DISCONTINUED UNTIL PASSED.

SPECIAL NOTES.

TOMORROWS EXPECTATIONS

FINISH FST-026 & START FST-026

BY _____ TITLE _____

149

A-E DAILY QUALITY CONTROL REPORT

DATE 9/16/93

DAY	S	M	T	W	TH	F	S
					X		

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
			X		

TEMP	To 32	32-50	50-70	70-85	85 up
					X

WIND	Still	Moder	High	Recon No.
	X			

HUMIDITY	Dry	Moder	Humid	
		X		

COE PROJECT MANAGER _____

PROJECT FST-026 & FST-027

JOB NO. _____

CONTRACT NO _____

SUB-CONTRACTORS ON SITE:

JUDSON SMITH, DERRICK AMIDON, DOUGLAS LAROUCHE, HORACE FULCHER

EQUIPMENT ON SITE.

HAND-AUGER, STEAM CLEANER, DECON EQUIPMENT, PID, OVA, CGI, MASON JARS, ALUMINUM FOIL, CALIBRANT GASES SAMPLE JARS.

WORK PERFORMED (INCLUDING SAMPLING):

ARRIVE ON SITE FST-026 AT 07:00. SOMEONE LET US IN BY 07:45. COMPLETED FINAL BORING FOR FID/PID READINGS FST-026-SB4 9-93. DECONED HAND-AUGER. WHILE WAITING FOR FID/PID SAMPLES TO VOLATILIZE, WE TOOL THE LAB SAMPLES FROM FST-026-SB1 - FST-026-SB3. THE ANALYSIS TO BE PERFORMED ARE VOC8240, TCLP(FULL), TPH MOD HEAVY AND LIGHT AND pH. QC AND QA WILL BE PERFORM ON HOLE SB3. AFTER SB3, THE FID/PID SAMPLES WERE RAN AND THE LAB SAMPLES TAKEN. SITE FST 027 WAS NOT LOCATED AS INDICATED IN WORK PLAN. 1060(BID) DOES NOT EXIST. THE DITCH OCCURS BETWEEN BID 1070 AND BID ~~1080~~ 1076. THIS WAS VERIFIED BY THOMS HOUSTON ON 9/16/93 ~ 12:00 NOON. EACH BORING WITHIN THIS SITE WAS EQUAL OR LESS THAN TWO FEET TO TRUE GROUND WATER SO, EVEN WITH DECON, THESE BORINGS WERE FINISHED QUICK. ~~AFTE~~ THREE TOTAL BORINGS WERE PERFORMED AFTERWORDS, LAB SAMPLES WERE TAKEN ON EACH. ANALYSIS ~~E~~ TO BE DONE: VOC 8240, TPH MOD HEAVY, TCLP(FULL) AND pH. SITE FST-029 WAS EXAMINE TO SEE IF DRUM REMOVAL HAD OCCURRED. AS OF TODAY, IT HAD NOT.

SHEET ____ OF ____

(Continuation Sheet)

PROJECT. _____ REPORT NO. _____

JOB NO. _____ DATE 9/16/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

OVA CALIBRATED 0900 10ppm METHANE READ 9.7ppm, 9.8ppm READ 98ppm
1230 10ppm " " 9.6ppm, 9.5ppm " 97ppm

PID CALIBRATED 0730 25ppm ISOBUTYLENE READ 260 UNITS
0900 " " 258 UNITS
1230 " " 559 UNITS

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MOD LEVEL D WITH STEEL TOED BOOTS AND HARD HATS

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN

SPECIAL NOTES.

TOMORROWS EXPECTATIONS

FST-029 FINISH

BY _____ TITLE _____

153

A-E DAILY QUALITY CONTROL REPORT

DATE 9/17/93

DAY	S	M	T	W	TH	F	S
						X	

WEATHER	Bright Sun	Clear	Overcast X	Rain	Snow
TEMP	To 32	32-50	50-70	70-85	85 up X
WIND	Still X	Moder	High	Recon No.	
HUMIDITY	Dry	Moder	Humid X		

COE PROJECT MANAGER _____

PROJECT FST-029

JOB NO. _____

CONTRACT NO. _____

SUB-CONTRACTORS ON SITE:

JUDSON SMITH, DERRICK AMIDON, HORACE FULCHER

EQUIPMENT ON SITE.

HAND AUGER, STEAM CLEANER, DECON EQP, PID, OVA, CGI, MASON JARS, ALUMINUM FOIL, CALIBRANT GASES, SAMPLE JARS

WORK PERFORMED (INCLUDING SAMPLING):

HAD TO RETURN EARLY TO OFFICE TO SEND OUT COOLERS. COULD NOT SAMPLE TODAY.

SHEET ____ OF ____

PROJECT. _____ (Continuation Sheet)

REPORT NO. _____

JOB NO. _____ DATE 9/17/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

N/A NOT ON SITE

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MOD LEVEL D

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN.

—

SPECIAL NOTES.

—

TOMORROW'S EXPECTATIONS

FST-018 & FST-029 FINISH

BY _____ TITLE _____

A-E DAILY QUALITY CONTROL REPORT

DATE 9/28/93

DAY	S	M	T	W	TH	F	S
			X				

WEATHER	Bright Sun	Clear	Overcast X	Rain	Snow
TEMP	To 32	32-50	50-70	70-85 X	85 up
WIND	Still	Moder	High	Recon No.	
HUMIDITY	Dry	Moder	Humid X		

COE PROJECT MANAGER _____

PROJECT IND. WASTEWATER TREATMENT PLANT FST-018

JOB NO. _____

CONTRACT NO. _____

SUB-CONTRACTORS ON SITE:

JUDSON SMITH, MIKE BAILY

EQUIPMENT ON SITE. HAND AUGER, DISPOSABLE TEFLON BAILERS, OVA, PID, CGI, pH METER, CONDUCTIVITY METER, CALIBRATION EQUIPMENT, DECON EQUIPMENT, SAMPLE COOLERS AND JARS.

WORK PERFORMED (INCLUDING SAMPLING):

OBTAINED PASSAGE THUR THE WEEK FROM RANDY PARKS OF THE CENTRAL ENERGY PLANT. STARTED THE SITE BY DOING THE SOIL BORINGS. INITIALLY TOOK THE OVA/PID SAMPLES TO DETERMINE WHERE SAMPLES ~~NEED~~ (LAB) NEED TO BE TAKEN. DECON PROCEDURES ARE USED ON ALL SAMPLE COLLECTION ACTIVITIES AS IS MONITORING OF GASES TO DETERMINE POSSIBLE NEED TO RAISE LEVEL OF PROTECTION. AFTER ACCOMPLISHING BORINGS, THE SLUDGE SAMPLE WAS COLLECTED. USING THE PID AND THE CGI, SAFETY WAS DETERMINED FOR THE AREA BEFORE ANY ENTRANCE. ~~HOWEVER~~ SAFETY DETERMINED POSITIVE AND SAMPLE COLLECTED. FIRST SEDIMENT SAMPLE COLLECTED AS LOCATED IN THE SAND FILTERS APPROXIATELY 10 FEET UNDER THE SURFACE. AS ABOVE, DECON PROCEDURES ARE FOLLOWED. DETERMINE THAT TEFLON BAILERS ARE BEST SERVED FOR THE SURFACE SAMPLE AND HAND AUGERS FOR LAKE SEDIMENT. EDGE OF POND IS VERY SLIPPERY AND FALLING IN IS A ~~DEFEAT~~ HEALTH HAZARD. FINISHED THREE OF THE SURFACE WATER SAMPLES.

SHEET ____ OF ____

(Continuation Sheet)

PROJECT. FST-018 REPORT NO. _____

JOB NO. _____ DATE 9/25/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

CALIBRATION OF OVA, PID, pH METER AND CONDUCTIVITY METER ~~PERFORMED~~ DONE IN FIELD.

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MOD LEVEL D.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN

SPECIAL NOTES.

TOMORROWS EXPECTATIONS

FST-029 FINISH, CONTINUE FST-018

BY _____ TITLE _____

A-E DAILY QUALITY CONTROL REPORT

DATE 9/29/93

DAY	S	M	T	W	TH	F	S
				X			

WEATHER	Bright Sun	Clear X	Overcast -	Rain	Snow
TEMP	To 32	32-50	50-70	70-85 X	85 up
WIND	Still X	Moder	High	Recon No.	
HUMIDITY	Dry	Moder	Humid X		

COE PROJECT MANAGER _____

PROJECT FST-029, FST-018

JOB NO. _____

CONTRACT NO. _____

SUB-CONTRACTORS ON SITE:

Judson Smith, Mike Baily

EQUIPMENT ON SITE: Hand Auger, Disposable Bailers (Teflon), OVA, PID, CGI/pH Meter, Conductivity Meter, Calibration Equipment, Recon Equipment, Sample Coolers.

WORK PERFORMED (INCLUDING SAMPLING):

Performed sampling (lab) activities on site FST-029 this morning. Using collected data to determine depths, we took all lab samples. QC and QA were performed on FST-029-SB3 located near Bld 19125. This is the site of the unusual odor and spill like markings on the ground coming from the stacks of 5 gal drums. Testing to be done on these samples is VOC 8240 using 125ml glass septum top sample jar, full TCLP using 500ml Amber glass sample jar and TPH mod-heavy using 250ml Glass Sample jar. Samples are iced immediately to 4°C. After FST-029 was finished samples ~~were~~ collection continued on FST-018. ~~Various samples collected~~ The anaysis for the various samples collected are recorded in both the individual sample logs and chains of custody. Field analysis on aqueous samples include temperature, pH and conductivity.

SHEET ____ OF ____

(Continuation Sheet)

PROJECT. FST-029, FST-018 REPORT NO.

JOB NO. DATE 9/29/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

FIELD CALIBRATIONS WERE PERFORMED ON PID, OVA, pH METER AND CONDUCTIVITY METER.

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MOD LEVEL D.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROWS EXPECTATIONS

FINISH FST-018

BY TITLE

165

A-E DAILY QUALITY CONTROL REPORT

DATE 9/30/93

DAY	S	M	T	W	TH	F	S
					X		

WEATHER	Bright Sun	Clear X	Overcast	Rain	Snow
TEMP	To 32	32-50	50-70	70-85 X	85 up
WIND	Still X	Moder	High	Recon No.	
HUMIDITY	Dry	Moder X	Humid		

COE PROJECT MANAGER _____

PROJECT INDUSTRIAL WASTEWATER TREATMENT PLANT FST-018

JOB NO. _____

CONTRACT NO. _____

SUB-CONTRACTORS ON SITE:

JASON SMITH, MIKE BAILEY

EQUIPMENT ON SITE: HAND AUGER, DISPOSABLE TEFLON BAILERS, OVA, PID, CGI, pH METER, CONDUCTIVITY METER, CALIBRATION EQUIPMENT, DECON EQUIPMENT, SAMPLE COOLERS AND BOTTLES

WORK PERFORMED (INCLUDING SAMPLING):

FINISHED TAKING ALL SAMPLES FOR FST-018. ALL SAMPLES WERE ICED IMMEDIATELY. DURING EARLY SAMPLING ACTIVITIES, VAN GOT STUCK IN THE MUD. TOOK OVER AN HOUR TO GET IT OUT. RETURNED KEY TO RANDY PARKS.

SHEET ____ OF ____

(Continuation Sheet)

PROJECT. Ino. Wastewater Treatment Plant, FST-018 REPORT NO. _____

JOB NO. _____ DATE 9/30/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

Field Calibrations were performed on PID, OVA, pH meter and conductivity meter.

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

Mod Level D

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN

Van got stuck in mud. Took about an hour to try to get it out, fail and get help.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

FST-032, FST-033, FST-034

BY _____ TITLE _____

169

A-E DAILY QUALITY CONTROL REPORT

DATE 10/1/93

DAY	S	M	T	W	TH	F	S
						X	

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
		X	-		

TEMP	To 32	32-50	50-70	70-85	85 up
			X		

WIND	Still	Moder	High	Recon No.

HUMIDITY	Dry	Moder	Humid	

COE PROJECT MANAGER _____

PROJECT FST-032, FST-033, FST-034

JOB NO. _____

CONTRACT NO _____

SUB-CONTRACTORS ON SITE:

IVOSON SMITH, MIKE BAILY

EQUIPMENT ON SITE. HAND AUGERS, DECON EQUIPMENT, OVA, PID, OGI, CALIBRATION EQUIPMENT, SAMPLE COOLERS AND BOTTLES

WORK PERFORMED (INCLUDING SAMPLING):

SAMPLES TO BE TAKEN AT SITES FST-032, 33 AND 34 ARE SURFACE SOILS TAKE APPROXIMATELY ONE FOOT ~~BEN~~ UNDERGROUND. THESE SITES ARE ALL WITHIN 100 METERS OF EACH OTHER ALLOWING FOR QUICK SAMPLING OF SITES WITHOUT DOWN TRAVEL TIME. FST-032 IS THE SUPPLY DIESEL TANK REQUIRING LAB ANALYSES FOR 8240 VOC AND TPH HEAVY. FST-033 IS THE PESTICIDE WAREHOUSE REQUIRING 8240 VOC AND PESTIPCB (8080). AND FST-034 IS THE DEH EQUIPMENT WASH RACK REQUIRING 8240 VOC AND TPH MOD HEAVY. DECON PROCEDURES ARE FOLLOWED PER HOLE.

SHEET ____ OF ____

(Continuation Sheet)

PROJECT. FST-032, FST-033, FST-034 REPORT NO. _____

JOB NO. _____ DATE 10/1/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

PID CALIBRATED ~~WELL~~ WITH 758 ppm ISOBUTYLENE, READ 257 UNITS.

OVA CALIBRATED WITH 10,190 ppm METHANE READ 9.8 ppm & 92 ppm.

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MOD LEVEL D

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

NEXT WEEK, FST-001, FST-002, FST-003

BY _____ TITLE _____

DATE 10/5/93

DAY | S | M | T X | W | TH | F | S |

A-E DAILY QUALITY CONTROL REPORT

WEATHER	Bright Sun	Clear X	Overcast	Rain	Snow
TEMP	To 32	32-50	50-70	70-85 X	85 up
WIND	Still X	Moder	High	Recon No.	
HUMIDITY	Dry	Moder X	Humid		

COE PROJECT MANAGER _____

PROJECT South Central Landfill, FST-001

JOB NO. _____

CONTRACT NO. _____

SUB-CONTRACTORS ON SITE:

Judson Smith, Mike Baily

EQUIPMENT ON SITE.

Pump, VOC Approved Tubing, Disposable Teflon Bailers, Decon Equipment, PID, pH Meter, Cond Meter, Calibration Equipment, Sample Coolers

WORK PERFORMED (INCLUDING SAMPLING):

I Used For The First Time On Site For Well Evacuation, The Peristaltic Pump. Regular Bailing Took Far To Long Initially So We Tried Using A Peristalic Pump. The Idea Behind This Type Pump Was That The Pump Itself Is Never Exposed To The Contaminates And The Tubing Is Disposable. Site FST-001 Had To Be Repeated For only The VOC 8240 Samples. Site Completed In One Day. Decontamination Procedures Still Completely Followed For All Equipment, Water Level Indicator And other Exposed Equipment. Generator was placed far enough and down wind so no stray VOC's may affect the results.

SHEET ____ OF ____

PROJECT. SOUTH CENTRAL LANDFILL (Continuation Sheet)

REPORT NO. _____

JOB NO. _____

DATE 10/5/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

pH METER CALIBRATED WITH 7 & 10 pH STANDARD 08:50

CONDUCTIVITY METER CALIBRATED WITH 0.1 N NACl STANDARD 08:50

PID CALIBRATED WITH 258 ppm ISOBUTYLENE (READ 256 UNITS) 08:55

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MOD LEVEL D

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

FST-002

BY _____ TITLE _____

A-E DAILY QUALITY CONTROL REPORT

DATE 10/6/93

DAY	S	M	T	W	TH	F	S
				X			

WEATHER	Bright Sun	Clear	Overcast	Rain X	Snow
TEMP	To 32	32-50	50-70	70-85 X	85 up
WIND	Still	Moder X	High	Recon No.	
HUMIDITY	Dry	Moder	Humid X		

COE PROJECT MANAGER _____

PROJECT CAMP OLIVER LANDFILL FST-002

JOB NO. _____

CONTRACT NO _____

SUB-CONTRACTORS ON SITE:

JUDSON SMITH, MIKE BAILY

EQUIPMENT ON SITE.

PUMP, VOC APPROVED TUBING, DISPOSABLE TEFLON BAILERS, DECON EQUIPMENT, PID, pH METER, COND. METER, CALIBRATION EQUIPMENT, SAMPLE COOLERS & BOTTLES

WORK PERFORMED (INCLUDING SAMPLING):

COULD NOT INITIALLY FIND THE SITE, WHEN WE FOUND THE ROAD LEADING TO FST-002, ONE OF THE VANS GOT STUCK ON THE WAY. COST OVER TWO HOURS. ONCE AT THE SITE WE STARTED SAMPLING ACTIVITIES THE FIRST WELL FST-002-MW1 PUT IN BY G. & MILLER WAS FAR TO SHALLOW TO BE AN EFFECTIVE WELL. THE WATER TABLE WAS 21.75 ft AND THE WELL WAS ONLY 23.32 FEET DEEP. THE BOTTOM DID NOT FEEL AS THOUGH SEDIMENT HAD FILLED IT UP, IT FELT SOLID, LIKE THE BOTTOM OF A PVC WELL TIP. ALSO, THE DRUMS HAD NOT YET BEEN REMOVED. FINISHED ALL SAMPLING ACTIVITIES ON TIME. SAMPLE ANALYSES ARE VOC 8240, RCRA TOTAL METALS AND PEST/PCB 8080. ONE MISTAKE MADE IN SAMPLE NUMBERING IS FST-002-SW1-10-93, THE FIRST SURFACE WATER SAMPLE IS ACTUALLY CO-S2 ON MAP FIGURE 4.8 IN WORKPLAN AND FST-002-SW2-10-93 IS CO-S1.

SHEET ____ OF ____

PROJECT: CAMP OLIVER LANDFILL FST-002 (Continuation Sheet)

JOB NO. _____ REPORT NO. _____

DATE 10/6/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

pH METER CALIBRATED WITH 7 & 10 pH STANDARD SOLUTION 11:45.

CONDUCTIVITY METER CALIBRATED WITH 0.180 mohm NaCl STANDARD SOLUTION 11:45.

PID CALIBRATED WITH 258 ppm ISOBUTYLENE @ 11:30.

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MOD LEVEL D

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

TRUCK STUCK IN MUD, HAD TRUCK TOWED.

SPECIAL NOTES:

TOMORROW'S EXPECTATIONS

FST-003

BY _____ TITLE _____

181

A-E DAILY QUALITY CONTROL REPORT

DATE 10/7/93

DAY: S | M | T | W | TH X | F | S

WEATHER	Bright Sun	Clear	Overcast -	Rain X	Snow
TEMP	To 32	32-50	50-70	70-85 X	85 up
WIND	Still	Moder X	High	Recon No.	
HUMIDITY	Dry	Moder	Humid X		

COE PROJECT MANAGER _____

PROJECT TAC-X LAND FILL FST-003

JOB NO. _____

CONTRACT NO _____

SUB-CONTRACTORS ON SITE:

JUDSON SMITH, MIKE BAILY.

EQUIPMENT ON SITE.

PUMP, VOC APPROVED TUBING, DISPOSABLE TEFLON BAILERS, DECON EQUIPMENT, PID, pH METER, CONDUCTIVITY METER, CALIBRATION EQUIPMENT, SAMPLE COOLERS

WORK PERFORMED (INCLUDING SAMPLING):

COULD NOT BEGAN SITE FST-003 UNTIL LATE BECAUSE SITE PERSONEL HAD TO BRING SAMPLE COOLER BACK TO OFFICE. WHEN ARRIVED ON SITE, SITE WAS NOT LAID OUT AS ON MAP. THE TRENCHES DID EXIST AND INTERSECT AS SHOWN, BUT NO LAKE OR POND EXISTED OR ANY LOCATION TO TAKE A LEACHATE SAMPLE. ALL WAS DRY. FURTHERMORE, NO WELLS HAD WELL NUMBERS SO WE HAD TO WALK THE SITE A FEW TIMES TO NUMBER WELLS CORRECTLY. ABLE TO SAMPLE FST-002-MW2-10-93. RAIN WAS A CONSTANT PROBLEM TODAY.

SHEET ____ OF ____

PROJECT. FST-003 TAC-X LAND FILL (Continuation Sheet)

REPORT NO.

JOB NO.

DATE 10/7/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

pH METER CALIBRATED WITH 7& 10 pH STANDARD. 14:12

CONDUCTIVITY METER CALIBRATED WITH 0.180 mohm NaCl STAN

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MOD LEVEL D

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN.

THUNDERSTORMS OCCUR MOST OF THE DAY, COULD NO WORK DURING PERIODS OF LIGHTNING.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

FINISH FST-003

BY TITLE

A-E DAILY QUALITY CONTROL REPORT

DATE 10/8/93

DAY | S | M | T | W | TH | F X | S |

WEATHER	Bright Sun	Clear	Overcast X	Rain	Snow
TEMP	To 32	32-50	50-70	70-85 X	85 up
WIND	Still	Moder X	High	Recon No.	
HUMIDITY	Dry	Moder	Humid X		

COE PROJECT MANAGER _____

PROJECT FST-003 TAC-X LANDFILL

JOB NO. _____

CONTRACT NO. _____

SUB-CONTRACTORS ON SITE:

JUDSON SMITH, MIKE BAILY

EQUIPMENT ON SITE.

PUMP, VOC APPROVED TUBING, DISPOSABLE TEFLON BAILERS, DECON EQUIPMENT, PID, pH METER, CONDUCTIVITY METER, CALIBRATION EQUIPMENT, SAMPLE COOLERS

WORK PERFORMED (INCLUDING SAMPLING):

COULD ONLY SAMPLE TWO OF THE THREE REMAINING WELLS. EACH REQUIRED 75 Gals TO BE REMOVED AND THE ONLY ~~TEFLON~~ TUBING WE HAD WAS VERY THIN DRAMATICALLY SLOWING US DOWN. ALL SAMPLES WERE ICED TO 4°C. SAMPLE ANALYSIS ARE VOCS 8240, RCRA TOTAL METALS AND PEST/PCB 5080. WILL DO THE FINAL WELL FST-003-MW3 WHEN RETURN NEXT WEEK. QA AND QC AND ALSO BLANKS WERE COLLECTED AT FST-003-MW1-10-93.

SHEET ____ OF ____

PROJECT. FST-003 TAC-X LANDFILL (Continuation Sheet)

JOB NO. _____ REPORT NO. _____

DATE 10/5/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

pH METER CALIBRATED WITH 7 & 10 STANDARD 0850
CONDUCTIVITY METER CALIBRATED WITH 0.180 mohm NaCl 0850
PID CALIBRATED WITH 258 ppm ISOBUTYLENE 0830.

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MOD LEVEL D

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

SPECIAL NOTES.

TOMORROWS EXPECTATIONS

NEXT WEEK, FST-030, FST-031, EST-025 (EXCEPT DRILL REQUIRED SAMPLING) FST-003-MW3.

BY _____ TITLE _____

189

A-E DAILY QUALITY CONTROL REPORT

DATE 10/12/93

DAY

S	M	T	W	TH	F	S
		X				

WEATHER	Bright Sun	Clear X	Overcast	Rain	Snow
TEMP	To 32	32-50	50-70	70-85 X	85 up
WIND	Still X	Moder	High	Recon No.	
HUMIDITY	Dry	Moder X	Humid		

COE PROJECT MANAGER _____

PROJECT FST-009 / FST-012

JOB NO. _____

CONTRACT NO _____

SUB-CONTRACTORS ON SITE:

JUDSON SMITH, TONI NICHOLSON, MIKE BAILY, KATHLEEN MILES

EQUIPMENT ON SITE.

WORK PERFORMED (INCLUDING SAMPLING):

EXAMINED EACH SITE FST-009 THUR FST-012 TO SHOW WHERE SAMPLING IS TO TAKE PLACE. SAMPLING WILL NOT COMMENSE UNTIL EACH SITE IS INSPECTED BY TRAINED EOD PERSONEL. MIKE BAILY AND JUDSON SMITH LOADED EQUIPMENT AND ~~PREPARE~~ PREPARED FOR THE WEEKS SAMPLING ACTIVITIES. SITES TO BE SAMPLED ARE, 025 (214, 215, 220, 232, 4A, 56) 30, 31, 03 ALONG WITH MAPPING AND OTHER DUTIES.

SHEET ____ OF ____

191

PROJECT. FST-009- FST-012 (Continuation Sheet)

JOB NO. REPORT NO.

DATE 10/12/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

FST-025 (228 - 232)

BY TITLE

193

A-E DAILY QUALITY CONTROL REPORT

DATE 10/13/93

DAY

S	M	T	W	TH	F	S
			X			

WEATHER	Bright Sun	Clear X	Overcast	Rain	Snow
TEMP	To 32	32-50	50-70	70-85 X	85 up
WIND	Still X	Moder	High	Recon No.	
HUMIDITY	Dry	Moder X	Humid		

COE PROJECT MANAGER _____

PROJECT FST-025 / 132 and 220

JOB NO. _____

CONTRACT NO. _____

SUB-CONTRACTORS ON SITE:

JUDSON SMITH, MIKE BAILEY

EQUIPMENT ON SITE.

HAND AUGER, WELL SCREEN AND CASING, LOCKS & CAPS, DECON EQUIPMENT, PID, OVA, CGI, pH METER, CONDUCTIVITY METER, MASON JARS, ALUM FOIL, CALIBRANT GASES & SOLUTIONS, SAMPLE JARS.

WORK PERFORMED (INCLUDING SAMPLING):

COMPLETED IN FULL INSTALLING THE TEMP. WELLS IN SITES FST-025-232 AND FST-025-220. STARTED WITH 232; HAND AUGER TO GROUNDWATER TAKING AN OVA/PID SAMPLE EVERY HALF FOOT. ONCE AT GROUNDWATER, WE AUGERED A FEW MORE FEET TO ASSURE A GOOD AQUEOUS SAMPLE. BEFORE ANY AUGERING STARTED, WE CALIBRATED THE PID WITH 258 ppm ISOBUTYLENE AND CHECKED THE BREATHING ZONE. ONCE OVA/PID SAMPLES WERE COLLECTED OUT OF EACH HOLE, AND AFTER LUNCH TO GIVE THEM TIME TO HEAT UP, ALL SAMPLES WERE RAN TO CHECK LAB SAMPLE DEPTH. SAMPLES ARE TO BE FIELD ANALYSED (AQUEOUS) FOR TEMPERATURE, pH AND CONDUCTIVITY. AQUEOUS SAMPLES ARE LAB ANALYSED FOR 8240 VOC, RCRA TOTAL METALS AND TPH MOD-HEAVY. NONAQUEOUS ARE ANALYSED FOR pH, FULL TCLP AND TPH MOD-HEAVY.

SHEET ____ OF ____

PROJECT. FST-025 (Continuation Sheet)

REPORT NO.

JOB NO.

DATE 10/13/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

pH METER CALIBRATED 14:00 WITH 7 AND 10 STANDARD

CONDUCTIVITY METER CALIBRATED 14:00 WITH 0.180 mmho NaCl

PID CALIBRATED 08:00 & 12:40 WITH 258 ppm ISOBUTYLENE

OVA CALIBRATED 12:40 WITH 10 ppm & 95 ppm METHANE

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MOD LEVEL D

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

N/A

SPECIAL NOTES.

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TOMORROW'S EXPECTATIONS

FST-025-214, 215, 44 AND 56.

BY TITLE

A-E DAILY QUALITY CONTROL REPORT

DATE 10/14/93

DAY	S	M	T	W	TH	F	S
					X		

WEATHER	Bright Sun	Clear	Overcast X	Rain	Snow
TEMP	To 32	32-50	50-70 X	70-85	85 up
WIND	Still X	Moder	High	Recon No.	
HUMIDITY	Dry	Moder X	Humid		

COE PROJECT MANAGER _____

PROJECT FST-030, FST-025

JOB NO. _____

CONTRACT NO. _____

SUB-CONTRACTORS ON SITE:

JUDSON SMITH, MIKE BAILEY

EQUIPMENT ON SITE:

HAND AUGER, WELL SCREEN AND CASING, LOCKS & CAPS, DECON EQUIPMENT, PID, OVA, CGI, pH METER, CONDUCTIVITY METER, MASON JARS, ALUM FOIL, CALIBRANT GASES & SOLUTIONS

WORK PERFORMED (INCLUDING SAMPLING):

STARTED TODAY ON FST-030 INSTEAD OF FST-025-214 BECAUSE FST-030 WOULD BE CLOSED ON THE WEEKEND AND NOT FST-025-214 & 215. WE COLLECTED SLUDGE SAMPLES OUT OF THE RECIRCULATING WASH IMPOUNDMENT USING THE HAND AUGER, ALLOWING ENOUGH SPACE TO EXIST TO ASSURE SAFETY. WE CHECK THE BREATHING ZONE BEFORE ENTERING. AFTER FST-030, WE SAMPLED FST-025-4A-10.93. THE WELL CONTAIN FREE PRODUCT, MOSTLY GAS AND DIESEL. TOOK THE SOIL SAMPLE. THEN SAMPLED FST-025-56-10-93. ONCE THESE LOCATIONS WERE SAMPLED, WE STARTED FST-025-214 AND 215. WAS ABLE TO PUT IN FIRST WELL AND TAKE OVA/PID READINGS.

SAMPLE JARS

SHEET ____ OF ____

199

PROJECT. FST-030, FST-025 (Continuation Sheet)

JOB NO. REPORT NO. 10

DATE 10/14/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

~~PH METER~~

PID CALIBRATED WITH 258 ppm ISOBUTYLENE.
OVA CALIBRATED WITH 10 ppm & 95 ppm METHANE
pH METER CALIBRATED WITH 7 and 10 pH STANDARD.
COND METER CALIBRATED WITH 0.180 mohm $NaCl$.

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MOD LEVEL D

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

N/A

SPECIAL NOTES.

TOMORROWS EXPECTATIONS

FINISH FST-025-214 AND 215

BY TITLE

201

DATE 10/15/93

DAY

S	M	T	W	TH	F	S
					X	

A-E DAILY QUALITY CONTROL REPORT

FST-025-215

COE PROJECT MANAGER _____

PROJECT FST-025 86 WASTE OIL TANKS

JOB NO. _____

CONTRACT NO. _____

WEATHER	Bright Sun	Clear	Overcast -	Rain X	Snow
TEMP	To 32	32-50	50-70	70-85 X	85 up
WIND	Still	Moder X	High	Recon No.	
HUMIDITY	Dry	Moder	Humid X		

SUB-CONTRACTORS ON SITE:

JUDSON SMITH, MIKE BAILEY

ECUIPMENT ON SITE.

HAND AUGER, WELL SCREEN AND CASING, LOCKS & CAPS, DECON EQUIPMENT, PID, OVA, CGI, pH METER, CONDUCTIVITY METER, MASON JARS, ALUM FOIL, CALIBRANT GASES & SOLUTIONS, SAMPLE JARS.

WORK PERFORMED (INCLUDING SAMPLING):

RETURNED ~~COOLE~~ SAMPLE COOLERS TO CORPS OFFICE SO THEY CAN BE SENT TO THE ~~ARRAS~~ LABS (CARR & SAD). THE TRIP TOOK OVER HALF THE DAY. THE ONLY SITE COMPLETED WAS THE INSTALLATION OF FST-025-215 TEMP WELL.

SHEET ____ OF ____

PROJECT. FST-025 SG WASTE OIL TANKS (Continuation Sheet)

JOB NO. _____ REPORT NO. _____

DATE 10/15/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

PID WAS CALIBRATED WITH 258 ppm ISOBUTYLENE.
OVA WAS CALIBRATED WITH 10 PPM AND 95 ppm METHANE.

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MOD LEVEL D

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

N/A

SPECIAL NOTES.

TOMORROWS EXPECTATIONS

FST-025-214, 215 AND FST-003

BY _____ TITLE _____

A-E DAILY QUALITY CONTROL REPORT

DATE 10/16/93

DAY	S	M	T	W	TH	F	S
							X

WEATHER	Bright Sun	Clear	Overcast	Rain X	Snow
TEMP	To 32	32-50	50-70 X	70-85	85 up
WIND	Still	Moder	High X	Record No.	
HUMIDITY	Dry	Moder	Humid X		

COE PROJECT MANAGER _____

PROJECT FST-003 TAC-X LANDFILL

JOB NO. _____

CONTRACT NO _____

SUB-CONTRACTORS ON SITE:

JUDSON SMITH, MIKE BAILEY

EQUIPMENT ON SITE.

HAND AUGER, PERISTALTIC PUMP, TUBING, LOCKS & CAPS, DECON EQUIPMENT, PID, OVA, CGI, pH METER, CONDUCTIVITY METER, SAMPLE BUTTLES AND COOLERS, CALIBRANT GASES AND SOLUTIONS, GENERATOR

WORK PERFORMED (INCLUDING SAMPLING):

ARRIVED ON SITE AROUND 08:00. HEAVY RAINS PREVENTED ANY OTHER SAMPLING BUT THIS SITE. BEFORE THE RAIN BECAME BAD, WE PUMPED 75 GALS OUT OF FST-003-MW3, AND, USING A TEFLON BISPOSABLE BAILER, TOOK REQUIRED SAMPLES. THE WATER WAS CHECK AT START, DURING AND RIGHT BEFORE COMPLETION FOR TEMP, pH AND CONDUCTIVITY. pH & CONDUCTIVITY METERS WERE CALIBRATED 08:40. ONCE WE LEFT SITE 003, DUE TO THE HEAVY RAINS PERVENT ANY FURTHER PROGRESS IN ANY OF THE OTHER SITE SAMPLING ACTIVITIES, WE WENT TO EACH OF THE SITES WHERE WELLS WERE INSTALLED BY GERAGHTY AND MILLER TO SEE IF THE DRUMS HAD BEEN REMOVED.

SITES	DRUMS REMOVED
FST-002	NO
FST-004A	YES
FST-004B	UNABLE TO ACCESS DUE TO ROAD (MUD)
FST-004C	NO
FST-004D	NO
FST-004E	FIRING RANGE ACTIVE
FST-004F	YES
FST-004	NO

SHEET ____ OF ____

(Continuation Sheet)

PROJECT FST-003 TAC-X LANDFILL REPORT NO. _____

JOB NO. _____ DATE 10/16/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

pH METER CALIBRATED 10/16/93 08:40

CONDUCTIVITY METER CALIBRATED " "

PID CALIBRATED WITH 258 ISOBUTYLENE 08:30

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MOD LEVEL D

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN

HEAVY RAINS AND LIGHTNING. DISCONTINUED FIELD EXERCISES DURING LIGHTNING

SPECIAL NOTES.

TOMORROWS EXPECTATIONS

FST-031, FST-025-214 & 215

BY _____ TITLE _____

A-E DAILY QUALITY CONTROL REPORT

DATE 10/17/93

DAY	S	M	T	W	TH	F	S
	X						

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
			X		

TEMP	To 32	32-50	50-70	70-85	85 up

WIND	Still	Moder	High	Record No.

HUMIDITY	Dry	Moder	Humid	

COE PROJECT MANAGER _____

PROJECT FST-031 ASPHALT TANK RESAMPLE, FST-025

JOB NO. _____

CONTRACT NO _____

SUB-CONTRACTORS ON SITE:

JUDSON SMITH, MIKE BAILEY

EQUIPMENT ON SITE.

HAND-AUGER, PERISTALTIC PUMP, TUBING, LOCK & CAPS, BAILERS, DECON EQUIPMENT, PID, OVA, CGI, pH METER, CONDUCTIVITY METER, SAMPLE BOTTLES AND COOLERS, CALIBRANT GASES AND SOLUTIONS, GENERATOR

WORK PERFORMED (INCLUDING SAMPLING):

ARRIVED ON SITE @ 0730. CALIBRATED PID TO DETERMINE BREATHING ZONE READINGS. ALL SAMPLES COLLECTED ARE BETWEEN THE DEPTHS OF ONE TO ONE AND ONE HALF FEET DEEP. PID/FID SAMPLES WERE TAKEN BUT FID PROVED TO BE NOT FUNCTIONING. SO ONLY PID READINGS RECORDED. ONCE SAMPLES COLLECTED, WE SAMPLED SITES FST-025-214 AND FST-025-215 FOR BOTH AQUEOUS AND NONAQUEOUS SAMPLES. BREATHING ZONE READINGS TAKEN BEFORE SAMPLING ACTIVITIES.

SHEET ____ OF ____

PROJECT. ~~FST-071~~ ASPHALT TANKS, FST-025 (214, 215) (Continuation Sheet)

REPORT NO. _____

JOB NO. _____ DATE 10/17/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

PID CALIBRATED 07:40 w/ ISO BUTYLENE (258 ppm)
READ 256 UNITS.
pH METER CALIBRATED 11:15 WITH 7 & 10 STANDARD
COND " " " " 0.180 mohm STANDARD.

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MOD LEVEL D

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN.

LIGHT RAIN. FID NOT FUNCTIONING PROPERLY.
USED ONLY PID.

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

RETURN OFFICE

BY _____ TITLE _____

A-E DAILY QUALITY CONTROL REPORT

DATE 10/21/93

DAY	S	M	T	W	TH	F	S
					X		

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
			X		

TEMP	To 32	32-50	50-70	70-85	85 up
				X	

WIND	Still	Moder	High	Recon No.
		X		

HUMIDITY	Dry	Moder	Humid
			X

COE PROJECT MANAGER _____

PROJECT FST-025 #6 WASTE O,L TANKS

JOB NO. _____

CONTRACT NO _____

SUB-CONTRACTORS ON SITE:

JUDSON SMITH, MIKE BAILEY

EQUIPMENT ON SITE.

BAILERS, DECON EQUIPMENT, SAMPLE COOLERS & BOTTLES, PID

WORK PERFORMED (INCLUDING SAMPLING):

RETURNED TO EACH OF THE TEMP WELLS AT SITE FST-025 WHICH CONTAINED FREE PRODUCT. SAMPLED THE FREE PRODUCT FROM FST-025-(94C, 4A, 100A & 64A). 94C SHOW 2.8 ft OF FREE PRODUCT. 4A SHOWED HIGHER THAN EARLIER, SHOWED 2.5 ft. BOTH 100A AND 64A WERE OVER 3.0 ft. 4A SEEMS TO BE A MIXTURE OF FUELS (GAS, DEISEL, JP 4, etc) WHEREAS 100A, 64A AND 94C SEEMS TO BE OILS. FST-018-SW7 WAS RESAMPLED FOR METALS TO ~~VARA~~ CHECK EARLIER RESULTS. DRILL CREW INCAPABLE OF ARRIVING AND STARTING FST-025-94 AND -70 WHICH ARE THE ONLY REMAINING HOLES REQUIRING THE DRILL CREW.

SHEET ____ OF ____

PROJECT. FST-025 86 WASTE OIL TANKS (Continuation Sheet)

REPORT NO. _____

JOB NO. _____ DATE 10/21/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

PID CALIBRATED WITH 256 ppm ISOBUTYLENE READ 254 UNITS @ 08:00 10/21/93

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MOD LEVEL D WITH DOUBLE GLOVES

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN.

SPECIAL NOTES.

MARKED SAMPLE BOTTLES FREE PRODUCT TO WARM TECHNICIANS AT LAB

TOMORROW'S EXPECTATIONS

FST-025-94 & 70

BY _____ TITLE _____

A-E DAILY QUALITY CONTROL REPORT

DATE 10/22/93

DAY	S	M	T	W	TH	F	S
						X	

WEATHER	Bright Sun	Clear	Overcast X	Rain	Snow
TEMP	To 32	32-50	50-70	70-85 X	85 up
WIND	Still X	Moder	High	Recon No.	
HUMIDITY	Dry	Moder	Humid X		

COE PROJECT MANAGER _____

PROJECT FST-025 86 WASTE OIL TANKS

JOB NO. _____

CONTRACT NO _____

SUB-CONTRACTORS ON SITE:

JUDSON SMITH, MIKE BAILEY, HORACE FULCHER, DOUGLAS LAROUCHE

EQUIPMENT ON SITE.

DRILL RIG, DECON EQUIPMENT, STEAM CLEANER, HAND AUGER, WELL POINTS, WELL CASING, WELL SCREEN, SAMPLE BOTTLES, SAMPLE COOLERS, PID, OVA, CGI, CAL. GASES

WORK PERFORMED (INCLUDING SAMPLING):

CHECKED BREATHING ZONE AFTER CALIBRATION WITH PID TO DETERMINE SAFETY LEVEL. THEN STARTED FST-025-94. DRILL TO GROUND WATER FST-025-94 AND FST-025-70. TOOK OVA/PID SAMPLES EVERY HALF FOOT. FST-025-70 ~~WAS~~ LOOKED TO BE ~~A PARA~~ BADLY CONTAMINATED. STARTING AROUND 9.0ft, THE SOIL SMELLED STRONG OF VARIOUS VOC's. THE COLOR AND TEXTURE OF THE SOIL INDICATED HEAVY CONTAMINATION OF AN OILY RESIDUE. THE FID/PID SHOWED THAT THE CONTAMINATE IS HIGHLY VOLATILE. TEMPORARY WELLS WERE PLACED AT EACH LOCATIONS. 3 SOIL SAMPLES WERE COLLECTED BUT AQUEOUS SAMPLING WAS LEFT TO LATER WHEN A GOOD SAMPLE COULD BE TAKEN.

SHEET ____ OF ____

PROJECT. FST-025 86 WASTE OIL TANKS (Continuation Sheet)

REPORT NO. _____

JOB NO. _____ DATE 10/22/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

PID CALIBRATED WITH 256 ppm ISO BUTYLENE

OVA " " 10 & 95 ppm METHANE

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MOD LEVEL D

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN

NONE

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

FST-025-94, 70 AQUEOUS

BY _____ TITLE _____

A-E DAILY QUALITY CONTROL REPORT

DATE 10/25/93

DAY	S	M	T	W	TH	F	S
		X					

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
			-	X	

TEMP	To 32	32-50	50-70	70-85	85 up
				X	

WIND	Still	Moder	High	Report No.
		X		

HUMIDITY	Dry	Moder	Humid
			X

COE PROJECT MANAGER _____

PROJECT FST-025 86 WASTE OIL TANK

JOB NO. _____

CONTRACT NO. _____

SUB-CONTRACTORS ON SITE:

JUDSON SMITH

EQUIPMENT ON SITE.

TEFLON BAILERS, DECON EQUIPMENT, SAMPLE COOLERS & BOTTLES, pH METER, CONDUCTIVITY METER, CALIBRATION STANDARDS

WORK PERFORMED (INCLUDING SAMPLING):

RETURNED TO SITES FST-025-94 & FST-025-70 FOR A HALF DAY OF AQUEOUS SAMPLING. 70 HAD ONLY 0.1 FEET FREE PRODUCT, THE LEVEL OF CONTAMINATION IN THE SOIL APPEARED TO BE MORE. FST-025-94 WAS WITHIN A LOCKED MOTOR POOL AND IT TOOK AN HOUR TO LOCATE THE NECESSARY PERSONNEL TO OPEN IT.

SHEET ____ OF ____

PROJECT. FST-025 (Continuation Sheet)

JOB NO. REPORT NO.

DATE 10/25/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

PH METER CALIBRATED WITH 7 & 10 STANDARD
CONDUCTIVITY METER CALIBRATED WITH 0-180 mohm NaCl SOLUTION

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MOD LEVEL D

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

HEAVY RAIN. ONLY OCCURRED IN SPOTS, ABLE TO SAMPLE.

SPECIAL NOTES.

TOMORROWS EXPECTATIONS

EOD SITES.

BY TITLE

A-E DAILY QUALITY CONTROL REPORT

DATE 10/28/93

DAY	S	M	T	W	TH	F	S
					X		

WEATHER	Bright Sun	Clear X	Overcast	Rain	Snow
TEMP	To 32	32-50	50-70	70-85 X	85 up
WIND	Still X	Moder	High	Recon No.	
HUMIDITY	Dry	Moder X	Humid		

COE PROJECT MANAGER _____

PROJECT FST-003 TAC-X LAND FILL

JOB NO. _____

CONTRACT NO. _____

SUB-CONTRACTORS ON SITE:

JUDSON SMITH, TONI NICHOLSON, BILL TOWNSEND

EQUIPMENT ON SITE.

HAND AUGER, DECON EQUIPMENT, SAMPLE COOLERS AND BOTTLES

WORK PERFORMED (INCLUDING SAMPLING):

TODAY, WE EXAMINED PRIMARILY FST-025-56 AND FST-025-4A (WITH FST-026) TO DETERMINE WHAT FURTHER WORK NEEDS TO BE DONE AT THOSE LOCATIONS. FST-025-56 IS LOCATED UNDER CONCRETE, THEREFORE DOES NOT NEED TO BE SAMPLED. FST-025-4A NEEDS TO BE MOVED TO WITHIN ~~4.0ft~~ OR CLOSER TO THE TANK. THE SAMPLES FROM THIS BORING WILL BE SO MARKED FST-025-4AA. FST-026 NEEDS 2 MORE BORINGS WITHIN THE DITCH AROUND THE STAINED LOCATIONS. ONE SURFACE SAMPLE EACH AND ONE SOIL BORING EACH FOR A TOTAL OF 4 TOTAL SAMPLES. FST-003 WAS SAMPLED FOR ONE SURFACE SOIL INSTEAD OF THE SURFACE WATER AND LEACHATE WHICH WAS NOT PRESENT, ALL DRIED UP.

SHEET ____ OF ____

PROJECT. FST-003 (Continuation Sheet)

JOB NO. REPORT NO.

DATE 10/28/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

N/A

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MOD LEVEL D

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN

NONE

SPECIAL NOTES.

—

TOMORROW'S EXPECTATIONS

EOD SITES

BY TITLE

A-E DAILY QUALITY CONTROL REPORT

DATE 11/1/93

DAY	S	M	T	W	TH	F	S
		X					

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
		X	-		

TEMP	To 32	32-50	50-70	70-85	85 up
			X		

WIND	Still	Moder	High	Recon No.
	X			

HUMIDITY	Dry	Moder	Humid
		X	

COE PROJECT MANAGER _____

PROJECT FST-011 EOD SITE

JOB NO. _____

CONTRACT NO. _____

SUB-CONTRACTORS ON SITE:

JUDSON SMITH, MIKE STEVENS, RANDY HARRIS

EQUIPMENT ON SITE.

HAND-AUGER, DECON EQUIPMENT, SAMPLE COOLERS & JARS, PID, CGI, CALIBRATION GASES

WORK PERFORMED (INCLUDING SAMPLING):

AT ALL EOD SITES, THE SAMPLES WILL BE SENT TO THE FOLLOWING LABS BROKEN DOWN BY ANALYSIS; CARR LABS WILL RECIEVE pH/SPC, VOC 8240 AND RCRA METAL SAMPLES; IT LABS WILL RECIEVE EXPLOSIVE RESIDUE SAMPLES AND SAD WILL RECIEVE SAMPLES OF ALL PERIMETER EXCEPT pH/SPC

MET Sgt IRWIN AND RANDY HARRIS AT THOMAS HOUSTON'S OFFICE @ 12:00. WE WENT TO EOD SITE FST-011 TO SAMPLE FIRST. AT EACH PIT, TO DETERMINE SAFETY LEVELS, WE USED THE PID IN CONJUNCTION WITH THE METAL DETECTOR. ~~TO BE~~ ONCE THE PIT WAS SHOWN TO BE SAFE, WE USED A HAND-AUGER TO SAMPLE. SAMPLES WERE TAKEN BETWEEN 1-1½ FT BELOW SURFACE, BUT CONSIDER SURFACE SAMPLES. WE COMPLETE THREE TODAY.

SHEET ____ OF ____

PROJECT. FST-091 (Continuation Sheet)

JOB NO. _____ REPORT NO. _____

DATE 11/1/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

CALIBRATED PID WITH 256 ppm ISOBUTYLENE.

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MOD LEVEL D. USE PID WITH METAL DETECTOR TO DETERMINE SAFETY LEVEL. RANDY HARRIS, A TRAINED EOD SPECIALIST ~~[illegible]~~ DETERMINED IF ANY EXPLOSIVE HAZARDS EXISTED.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN.

SPECIAL NOTES.

TOMORROWS EXPECTATIONS

FST-011 FINISH, FST-012

BY _____ TITLE _____

A-E DAILY QUALITY CONTROL REPORT

DATE 11/2/93

DAY	S	M	T	W	TH	F	S
			X				

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
		X	-		
TEMP	To 32	32-50	50-70 X	70-85	85 up
WIND	Still X	Moder	High	Recon No.	
HUMIDITY	Dry	Moder X	Humid		

COE PROJECT MANAGER _____

PROJECT FST 011 EOD SITE

JOB NO. _____

CONTRACT NO. _____

SUB-CONTRACTORS ON SITE:

JUDSON SMITH, MIKE STEVENS, RANDY HARRIS

EQUIPMENT ON SITE:

HAND AUGER, DECON EQUIPMENT, SAMPLE COOLERS AND JARS, PID, CGI, CALIBRATE GASES

WORK PERFORMED (INCLUDING SAMPLING):

THE DIRT ROAD TO NUMBER FST-011 HAS THREE LARGE MUD HOLES BEFORE GETTING TO THE SITE. UNFORTUNETLY, THIS MORNING I TOOK A WRONG TURN WHILE ON THE DIRT ROADS. A SIMILAR PUDDLE ON THE ROAD I WAS ON PROVED TO BE SOMEWHAT DEEPER. THE VAN SUNK UP TO THE BUMPER IN WATER AND MUD. WE COULD NOT FIND HELP TILL AFTER 12:00 TO COME PULL OUT THE VAN. AFTER RUNNING IT FOR AN HALF HOUR, IT SEEMED TO WORK ALRIGHT. WE WERE ABLE TO COMPLETE FST-011. ~~AS YESTERDAY~~, EACH HOLE WAS ENTERED WITH THE PID IN CONJUNCTION WITH THE METAL DETECTOR TO DETERMINE SAFETY LEVELS.

PROJECT. FST-011 EOD SITE (Continuation Sheet)

JOB NO. REPORT NO.

DATE 11/2/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

CALIBRATED PID WITH 256ppm ISOBUTYLENE

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MOD LEVEL D

RANDY HARRIS, AN EOD SPECIALIST CHECKED THE AREA FOR EXPLOSIVE HAZARDS BEFORE ENTERING. ALSO USE PID TO DETERMINE SAFETY LEVEL.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

VAN STUCK. LOCATED HELP AT DEH.

SPECIAL NOTES

TOMORROWS EXPECTATIONS

FST-012

BY TITLE

A-E DAILY QUALITY CONTROL REPORT

DATE 11/3/93

DAY | S | M | T | W X | TH | F | S |

WEATHER	Bright Sun	Clear X	Overcast	Rain	Snow
TEMP	To 32	32-50	50-70	70-85 X	85 up
WIND	Soft X	Moder	High	Recon No.	
HUMIDITY	Dry	Moder X	Humid		

COE PROJECT MANAGER _____

PROJECT FST-012 ACTIVE EOD SITE

JOB NO. _____

CONTRACT NO. _____

SUB-CONTRACTORS ON SITE:

JUDSON SMITH, MIKE STEVENS, RANDY HARRIS, SGT IRWIN

EQUIPMENT ON SITE:

HAND AUGER, DECON EQUIPMENT, SAMPLE COOLERS & JARS, PID, CGI, CALIBRATION GAS

WORK PERFORMED (INCLUDING SAMPLING):

ARRIVED ON SITE AROUND 0830 HR. SGT IRWIN FT STEWART EOD SPECIALIST STAYED FOR A LITTLE WHILE, THEN LEFT AROUND 0915. RANDY HARRIS CHECKED ALL LOCATIONS. BEFORE DIGGING WITH AUGER TOOK PLACE. ALL HOLES WERE CHECKED AS CONFINED SPACES. BACKGROUND SAMPLE WAS TAKEN BEHIND BUNKER FOR BEST RESULTS. FST-012-(552-555), WHICH WERE THE SAMPLES DETERMINE AFTER THE WORKPLAN AS NEEDING TO BE TAKEN, HAD THE ADDITIONAL TESTING OF TPH MOD HEAVY AND LIGHT. THE AREA IS COVERED IN BULLET CASINGS AND OTHER VARIOUS METALS. A HIGH METALS RESULT FROM TESTING THE PCRA METALS IS FIGURABLE. MANY BULLETS APPEAR ALIVE AND ~~NOT~~ COMPLETE. THE BLAST PITS PREDETERMINED AT THE EARLIER MEETING WERE SAMPLED. AS EQUIPMENT WAS DECONED WITH DETERGENT WATER, TAP WATER, ~~A~~ ISO PROPANOL AND DI WATER.

SHEET _____ OF _____

PROJECT. FST-012 ACTIVE EOD SITE (Continuation Sheet)

REPORT NO. _____

JOB NO. _____ DATE 11/3/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

08:10 PID WAS CALIBRATED WITH 256ppm ISOBUTYLENE READ 254 UNITS

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MOD LEVEL D. AS EARLIER EOD.

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN.

SPECIAL NOTES.

TOMORROWS EXPECTATIONS

FST-010

BY _____ TITLE _____

241

A-E DAILY QUALITY CONTROL REPORT

DATE 11/4/93

DAY	S	M	T	W	TH	F	S
					X		

WEATHER	Bright Sun	Clear X	Overcast	Rain	Snow
TEMP	To 32	32-50	50-70	70-85 X	85 up
WIND	Still X	Moder	High	Recon No.	
HUMIDITY	Dry	Moder X	Humid		

COE PROJECT MANAGER _____

PROJECT FST-010, INACTIVE EOD SITE

JOB NO. _____

CONTRACT NO. _____

SUB-CONTRACTORS ON SITE:

JUDSON SMITH, MIKE STEVENS, RANDY HARRIS

EQUIPMENT ON SITE.

HAND-AUGER, RECON EQUIPMENT, SAMPLE COOLERS & JARS, PID, CGI, CALIBRATION GASES

WORK PERFORMED (INCLUDING SAMPLING):

ARRIVE ON SITE BY 08:00 AM. THE FIRST PIT WE DROVE TO, NOT PART OF THE ACTUAL SITE FST-010, LOOK TO RANDY HARRIS TO HAVE BEEN AN UNAUTHORIZED DUMP FOR VARIOUS SCRAPS. RANDY HARRIS AND JUDSON SMITH CHECKED THE SITE FOR SAFETY LEVEL AND EXPLOSIVE HAZARDS. ONCE DETERMINED SAFE, WE SAMPLED THE SITE FOR PH, SPC, VOC 8240, RCRA METALS AND EXPLOSIVE RESIDUE. THE BACKGROUND WAS TAKEN AT THE OTHER SIDE OF THE DIRT ROAD APPROPRIATELY 15 ft. ALL SAMPLES ARE SURFACE SOILS TAKEN BETWEEN 1 - 1.5 Ft. RETURNED TO OFFICE.

SHEET ____ OF ____

PROJECT. FST-040 INACTIVE EOD SITE (Continuation Sheet)

REPORT NO.

JOB NO.

DATE

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

CALIBRATED PID WITH 256ppm ISOBUTYLENE, READ 259 UNITS.

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MON LEVEL D

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

NEXT WEEK FST-025-4A(A), FST-026 (5A-6B) AND FST-004C.

BY TITLE

A-E DAILY QUALITY CONTROL REPORT

DATE 11/8/93

DAY	S	M	T	W	TH	F	S
		X					

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
			-	X	

TEMP	To 32	32-50	50-70	70-85	85 up
			X		

WIND	Still	Moder	High	Recon No.
		X		

HUMIDITY	Dry	Moder	Humid
			X

COE PROJECT MANAGER _____

PROJECT FST-025, FST-026

JOB NO. _____

CONTRACT NO _____

SUB-CONTRACTORS ON SITE:

Judson Smith, Jim Biddle

EQUIPMENT ON SITE.

Hand-Auger, Decon. Equipment, Well Screen, Well Casing, Locks & Caps, PID, OVA, CGI, pH, SPC Meter, Calibration Gases and Solutions, Bailers, Bailer Line Sample Coolers and Jars

WORK PERFORMED (INCLUDING SAMPLING):

At FST-025-4A site, we installed one more well about 3.0ft from the ~~Fuel~~ Tank. The rain slowed progress, it rained considerably hard. During the slow periods and befor work commensed, we used the instrumentation to determine level of safety. As with other soil borings, we collected PID/FID samples every half foot. Judson Smith ~~hand~~ augered while Jim Biddle determined soil type as we went down. Soil appeared highly contaminated. FST-026 needed two more borings to be taken within the ditch. As discussion with Toni Nicholson, we put the first in the middle of the ditch approximately 4 ft in front of the outlet pipe and 10 ft to the left facing the woods. The second boring was place at the edge of the ditch ~~instead of the~~ on the tank (not forest) side instead of the middle; it was full of water. Was appropriately 2 ft in front of the outlet pipe and 25 ft to the left. OVA/PID readings taken.

SHEET ____ OF ____

(Continuation Sheet)

PROJECT. FST-025 / FST-026 REPORT NO.

JOB NO. DATE 11/8/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

PID CALIBRATION 13:00 USING 256 ppm ISOBUTYLENE
READ 260 UNITS.
OVA CALIBRATION 13:10 USING 10-95 ppm METHANE

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MOD LEVEL D

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN

HEAVY RAINS

SPECIAL NOTES.

TOMORROWS EXPECTATIONS

FINISH FST-025 / FST-026

BY TITLE

A-E DAILY QUALITY CONTROL REPORT

DATE 11/9/93

DAY	S	M	T	W	TH	F	S
			X				

WEATHER	Bright Sun	Clear	Overcast	Rain X	Snow
TEMP	To 32	32-50	50/70 X	70-85	85 up
WIND	Still	Moder X	High	Recon No.	
HUMIDITY	Dry	Moder	Humid X		

COE PROJECT MANAGER _____

PROJECT FST-025, FST-026, FST-004C

JOB NO. _____

CONTRACT NO _____

SUB-CONTRACTORS ON SITE:

JUDSON SMITH, JIM BIDDLE

EQUIPMENT ON SITE:

HAND-AUGER, DECON-EQUIPMENT, WELL SCREEN, WELL CASING, LOCKS & CAPS, PID, OVA, CGI, pH, SPC METER, CALIBRATION GASES AND SOLUTIONS, BAILERS, BAILER LINE, SAMPLE COOLERS AND JARS

WORK PERFORMED (INCLUDING SAMPLING):

TOOK SEVERAL HOURS TO GET ICEYS FOR THE SITE. ONCE IN, DETERMINED SAFETY LEVEL. HEAVY RAINS HAVE BEEN POURING FOR SEVERAL DAYS, THE DITCH WAS FULL OF AN OILY SHEEN. THE AREA ALSO LIGHT SMELLED OF FUEL OIL. THE BREATHING ZONE READING ~~FOR THE AREA WAS~~ INDICATED THOUGH THAT IT WAS SAFE. FIRST WE SAMPLED FST-025-44(A)" SECOND WELL AT SITE FST-025-44" AND THERE WAS 1.83 FEET OF FREE PRODUCT. SAMPLED ANYWAY THOUGH AND MARKED THE WARNINGS ON THE CHAIN OF CUSTODY. TOOK THE SOIL SAMPLE FROM FST-025-44(A) AT THE DETERMINED DEPTH, 9.0ft. THE SAMPLES AT FST-025-26 ARE NUMBERED 5A, 5B, 6A AND 6B FOR THE FOLLOWING REASONS. FIRST 5, AND 6 MAKE UP TWO MORE BORINGS FOR SITE FST-026. SECOND, AS PER DISCUSSION WITH TONI NICHOLSON, SHE WANTED ONE SURFACE SAMPLE (A) AND ONE SOIL BORING (B) PER HOLE; THUS 5A, 5B AND 6A, 6B. FINALLY WE WERE ABLE TO SAMPLE TWO OF THE MW AT FST-004C.

SHEET ____ OF ____

(Continuation Sheet)

PROJECT. FST-025, FST-026, FST-004C REPORT NO. _____

JOB NO. _____ DATE 11/9/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

PID CALIBRATED 256 ppm ISOBUTYLENE @ 09:35
pH METER " 7, 10 STANDARD @ 14:05
COND " " 0.180 m.hm " @ 14:07

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MOD LEVEL D

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN.

HEAVY RAIN

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

FST-004C FINISH

BY _____ TITLE _____

A-E DAILY QUALITY CONTROL REPORT

DATE 11/10/93

DAY	S	M	T	W	TH	F	S
				X			

WEATHER	Bright Sun	Clear	Overcast	Rain X	Snow
TEMP	To 32	33-50 X	50-70	70-85	85 up
WIND	Still	Moder X	High	Recon No.	
HUMIDITY	Dry	Moder	Humid X		

COE PROJECT MANAGER _____

PROJECT FST-004C, BURN PITS

JOB NO. _____

CONTRACT NO. _____

SUB-CONTRACTORS ON SITE:

JUDSON SMITH, JIM BIDDLE

EQUIPMENT ON SITE:

BAILER, BAILER LINE, DECON EQUIPMENT, WATER LEVEL INDICATOR, PID, CGI, pH METER, SPC METER, CALIBRATION GASES AND SOLUTIONS

WORK PERFORMED (INCLUDING SAMPLING):

ARRIVED ON SITE AT 08^00. RAIN FLUXED BETWEEN MEDIUM AND HEAVY. COULD NOT DRIVE TO MONITORING WELLS, HAD TO WALK THE EQUIPMENT. TOOK PID READINGS (COVERED PID SO WOULD NOT GET WET) TO DETERMINE SAFETY LEVELS. DURING THE SLOWER RAIN PERIODS, AS TO KEEP FROM DILUTING THE SAMPLE, WE SAMPLED MW3 & MW4. pH, SPC AND TEMPERATURE WERE FIELD SAMPLED FOR ALL WELLS. ~~DECONING~~ DECONED ALL EQUIPMENT AS PER QA 001/92 (ADOPTED CORP PROCEDURE) WHICH GOES AS FOLLOWS CLEAN WITH DETERGENT (LIQUI-NOX) AND WATER; TAP WATER RINSE, DI RINSE, TECH GRADE ISOPROPANOL RINSE TWICE AND ~~FINAL~~ DI WATER FINAL RINSE. WAS INFORM CARR LABORATORIES CONTAMINATED TWO SITES ~~FOR~~. OF SAMPLES FST-002 & FST-003 WITH PESTICIDE. MUST BE RESAMPLED.

SHEET ____ OF ____

(Continuation Sheet)

PROJECT. FST-004C, BURN PITS REPORT NO.

JOB NO. DATE 11/10/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

CALIBRATED pH METER w/ 7,10 STANDARD 0815
" CONDUCTIVITY " " 0.180 m.hm " 0815
" PID w/ 256 ppm ISOBUTYLENE 08 "

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MOD LEVEL D

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN:

HEAVY RAIN

SPECIAL NOTES.

TOMORROW'S EXPECTATIONS

BY TITLE

A-E DAILY QUALITY CONTROL REPORT

DATE 11/16/93

DAY	S	M	T	W	TH	F	S
			X				

WEATHER	Bright Sun	Clear	Overcast X	Rain	Snow
TEMP	To 32	32-50	50-70	70-85 X	85 up
WIND	Still X	Moder	High	Recon No.	
HUMIDITY	Dry	Moder X	Humid		

COE PROJECT MANAGER _____

PROJECT FST-002 CAMP OLIVIER LANDFILL

JOB NO. _____

CONTRACT NO. _____

SUB-CONTRACTORS ON SITE:

JUDSON SMITH, JIM BRIDGE.

EQUIPMENT ON SITE:

SAMPLE PUMP W/TUBING, GENERATOR, BAILER, BAILER LINE, DECON EQUIPMENT, PID, CGI, pH METER, CONDUCTIVITY METER, CALIBRATION GASES, SAMPLE COOLERS

WORK PERFORMED (INCLUDING SAMPLING):

HAD TO RESAMPLE FST-002 DUE TO CARR LAB'S MISTAKE. ARRIVED AROUND 10:00, COULD NOT FIND THE TURN-OFF SO HAD TO GO ANOTHER WAY. FIRST WELL, FST-002-MW1 STILL ONLY WITH 1.88 feet of WATER. BOTTOM FEELS LIKE THE BOTTOM OF A WELL AND NOT CLOGGED WITH MATERIAL. AFTER FIRST USE OF PERISTALTIC PUMP, TUBING COLLAPSED SO COULD NOT USE IT FOR OTHER MONITORING WELL. TOOK SURFACE WATER SAMPLES WHILE JIM BAILED LAST WELL AGAIN FST-002-SW1 AND SW2 APPEAR OPPOSITE FROM WORKPLAN.

SHEET ____ OF ____

(Continuation Sheet)

PROJECT. FST-002, CAMP OLIVIER REPORT NO. _____

JOB NO. _____ DATE 11/16/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

CALIBRATED PID WITH 25ppm ISOBUTYLENE 10:00

CALIBRATED pH METER WITH 7,10 STANDARD 10:15

" CONDUCTIVITY METER WITH 0.180 NACL STANDARD 10:15

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MOD LEVEL D

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN

SPECIAL NOTES.

TOMORROWS EXPECTATIONS

FST-003

BY _____ TITLE _____

A-E DAILY QUALITY CONTROL REPORT

DATE 11/22/93

DAY	S	M	T	W	TH	F	S
		X					

WEATHER	Bright Sun	Clear	Overcast	Rain	Snow
		X	-		

TEMP	To 32	32-50	50-70	70-85	85 up
				X	

WIND	Still	Moder	High	Record No.
	X			

HUMIDITY	Dry	Moder	Humid
		X	

COE PROJECT MANAGER _____

PROJECT FST-009, EOD AREA

JOB NO. _____

CONTRACT NO. _____

SUB-CONTRACTORS ON SITE:

JUDSON SMITH, DEREK AMIDON, JIM BIDDLE, RANDY HARRIS (COE Huntsville)

EQUIPMENT ON SITE:

HAND AUGER, DECON EQUIPMENT, SAMPLE JARS AND COOLERS, PID, CGI, CALIBRATION GASES (RANDY HARRIS METAL DETECTOR), CAMERA

WORK PERFORMED (INCLUDING SAMPLING):

CHECKED IN FIRST WITH RANGE CONTROL, SAID THAT THEY DID NOT KNOW OF OUR ARRIVAL. FINALLY APPROVED OUR SITE VISIT. PICKED UP RANDY HARRIS, EOD SAFETY SPECIALIST, SGT IRWIN, ET STEWART EOD SPECIALIST AND WENT OUT TO FST-009 WHICH IS LOCATED BEHIND RED CLOUD HOTEL. RANDY MARKED THE SOIL SAMPLE LOCATIONS BY DETERMINING IF METAL IS PRESENT UNDER THE SURFACE. WHILE HE WAS CHECKING SUCH, DEREK WAS BEHIND HIM & CHECKING THE BACKGROUND READINGS TO DETERMINE IF VOC'S ARE PRESENT IN QUANTITIES ENOUGH TO ALTER LEVEL OF SAFETY. LEVEL REMAINED MOD LEVEL D. EXTREME AMOUNT OF FRAGMENTED METAL PRESENT. TOOK REQUIRED SAMPLES AND ICED THEM DOWN. LEFT SITE. REMOVE ALL TEMP MONITORING WELLS EXCEPT FST-025 -94B & 94C. COULD NOT GAIN ACCESS TO AREA. FILLED IN HOLES.

SHEET ____ OF ____

PROJECT. FST-0004, EOD AREA (Continuation Sheet)

REPORT NO.

JOB NO.

DATE 11/22/93

QUALITY CONTROL ACTIVITIES (INCLUDING FIELD CALIBRATIONS)

CALIBRATED PID WITH 256 ppm ISOBUTYLENE

HEALTH AND SAFETY LEVELS AND ACTIVITIES.

MOD LEVEL D. RANDY HARRIS DETERMINE IF EXPLOSIVE HAZARD EXISTED (NONE FOUND)

PROBLEMS ENCOUNTERED/CORRECTION ACTION TAKEN.

NONE

SPECIAL NOTES.

LAST FIELD SAMPLING EVENT!

TOMORROW'S EXPECTATIONS.

FINISH PAPER WORK

BY _____ TITLE _____

QUALITY CONTROL SUMMARY REPORT

PHASE I RCRA FACILITY INVESTIGATION

FORT STEWART, GEORGIA

APPENDIX C

DATA VALIDATION CHECKLISTS

SAVANNAH DISTRICT
U. S. ARMY CORPS OF ENGINEEERS

Fort Stewart RFI

DATA VALIDATION CHECKLIST
SECTION ONE

PROJECT NAME: Ft. Stewart South Central Landfill
PROJECT NUMBER: FST-001
SAMPLING DATE: 15/19 July 93 resampled 5 Oct 93
VALIDATION DATE: 7 Nov 93
SAMPLE IDENTIFICATION: FST-001 | 5 Oct 93 | SEM 1-10-93, SEM BLK-10-93, SEM Trip BLK-10-93, SW1-10-93, SW BLK-10-93, SW trip Blank-10-93
SAMPLING TEAM: T. Smith, C. Belen, T. Oliff / T. Smith, Mike Daily
ANALYZING LABORATORY: Carr Laboratory
ANALYSES PERFORMED: 8240 5 Oct 93 // 608/8080, 624/8240, 8 RCRA metals 903.1 on 25 Aug 93
SAMPLE MATRIX: Aqueous
QA REPORTING LEVEL: II

FIELD DATA PACKAGE DOCUMENTATION

FIELD SAMPLING LOGS: 1/	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLING DATES NOTED	—	✓	—	✓	—
2. SAMPLING TEAM INDICATED	—	✓	—	✓	—
3. SAMPLE IDENTIFICATION TRACEABLE TO LOCATION COLLECTED	—	✓	—	✓	—
4. SAMPLE LOCATION	—	✓	—	✓	—
5. SAMPLE DEPTH FOR SOILS	—	✓	—	✓	—
6. COLLECTION TECHNIQUE (BAILER, PUMP ETC	—	✓	—	✓	—
7. FIELD SAMPLE PREPARATION TECHNIQUES	—	✓	—	✓	—
8. SAMPLE TYPE (GRAB, COMPOSITE)	—	✓	—	✓	—
9. SAMPLE CONTAINER TYPE	—	✓	—	✓	—
10. PRESERVATION METHODS	—	✓	—	✓	—
11. CHAIN OF CUSTODY FORM COMPLETED	—	✓	—	✓	—
12. REQUIRED ANALYTICAL METHODS REQUESTED	—	✓	—	✓	—
13. FIELD (WATER AND SOIL) SAMPLE LOGS COMPLETED PROPERLY AND SIGNED	—	✓	—	✓	—
14. NUMBER AND TYPE OF FIELD QC SAMPLES COLLECTED (BLANKS, REPLICATES, SPLITS, ETC.)	—	✓	—	✓	—
15. FIELD EQUIPMENT CALIBRATION	—	✓	—	✓	—
16. FIELD EQUIPMENT DECONTAMINATION	—	✓	—	✓	—
17. SAMPLE SHIPPING	—	✓	—	✓	—
18. LABORATORY TASK ORDER	—	✓	—	✓	—

1/ FIELD SAMPLING LOGS = WATER AND/OR SOIL/SEDIMENT SAMPLING LOGS

COMMENTS: First sampling run was arrived at lab too hot to get a correct reading on VOCs. Reran on 5 Oct 93

T. Smith swallowed by accident, 1/2 mouthfull of liquid splash from FST-001 SEM 2-7-93 on 5 Oct 93, Low level of toxicity

DATA VALIDATION CHECKLIST
SECTION ONE CONTINUED

ANALYTICAL DATA PACKAGE DOCUMENTATION
GENERAL INFORMATION

ALL QA REPORTING LEVELS	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLE RESULTS		✓		✓	
2. PARAMETERS ANALYZED		✓		✓	
3. METHOD OF ANALYSIS		✓		✓	
4. DETECTION LIMITS OF ANALYSIS		✓		✓	
5. MASTER TRACKING LIST		✓		✓	
6. SAMPLE COLLECTION DATE		✓		✓	
7. LAB SAMPLE RECEIVED DATE		✓		✓	
8. SAMPLE PREPARATION/EXTRACTION DATE		✓		✓	
9. SAMPLE ANALYSIS DATE		✓		✓	
10. COPY OF CHAIN-OF-CUSTODY FORM SIGNED BY THE LAB SAMPLE CUSTODIAN		✓		✓	
11. A NARRATIVE SUMMARY OF QA OR SAMPLE PROBLEMS IS PROVIDED.		✓		✓	

COMMENTS: _____

AFTER COMPLETING SECTION ONE PROCEED TO THE APPROPRIATE QA REPORTING LEVEL OF SECTION TWO (INORGANIC ANALYSES) AND/OR SECTION THREE (ORGANIC ANALYSES). FOLLOWING COMPLETION OF THESE SECTIONS PROCEED TO SECTION FOUR (DATA EVALUATION SUMMARY).

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES
METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: I

REQUIREMENTS (BATCH SPECIFIC QA)[1]	REPORTED NO	REPORTED YES	IN LIMITS NO	IN LIMITS YES	NOT REQUIRED
1. METHOD BLANKS					
2. MS[2] OR RWS[3] % RECOVERY (%R)					
3. MSD[4] OR RWSD[5] OR LD[6] %R					
4. RPD[7]					

COMMENTS: _____

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH REGARDLESS OF THE SOURCE.
2/ MS = MATRIX SPIKE;
3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.;
5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE;
7/ RPD = RELATIVE PERCENT DIFFERENCE

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES
METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: II
REQUIREMENTS (BATCH SPECIFIC QA)[1/]

	REPORTED NO	REPORTED YES	IN LIMITS NO	IN LIMITS YES	NOT REQUIRED
1. METHOD BLANKS		✓		✓	
2. MS % RECOVERY (%R)		✓		✓	
3. MSD OR LAB DUPLICATE % R		✓		✓	
4. RWS % R		✓		✓	
5. RWSD % R		✓		✓	
6. RPDs FOR MS/MSD, SAMPLE/LD, RWS/RWSD		✓		✓	
7. LCS[8/] %R					
8. ICVS [9/] %R					✓
					✓
					✓

COMMENTS: _____

QA REPORTING LEVEL: III
REQUIREMENTS (SAMPLE SPECIFIC QA)[10/]

1. CALIBRATION CURVE STANDARDS					
2. ICVS %R					
3. CCVS[11/] %R					
4. LCS %R					
5. METHOD BLANKS					
6. ICS[12/] %R (ICP ONLY)					
7. DCS[13/] %R (ICP ONLY)					
8. MS %R					
9. LD OR MSD %R AND RPD					
10. POST DIGESTION ANALYTICAL SPIKE[14/]					

COMMENTS: _____

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH.
2/ MS = MATRIX SPIKE; 3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.; 5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE; 7/ RPD = RELATIVE PERCENT DIFFERENCE
8/ LCS = LABORATORY CONTROL SAMPLE;
9/ ICVS = INITIAL CALIBRATION VERIFICATION STANDARD;
10/ SAMPLE SPECIFIC QA: APPLIES TO PROJECT SPECIFIC SAMPLES..
11/ CCVS = CONTINUING CALIBRATION VERIFICATION STANDARD;
12/ ICS = INTERFERENCE CHECK SAMPLE; 13/ DCS = DILUTION CHECK SAMPLE;
14/ POST DIGESTION ANALYTICAL SPIKE APPLIES TO FURNACE AA ONLY;

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION THREE

ORGANIC ANALYSES

QA REPORTING LEVEL: I
REQUIREMENTS

	Reported		In Limits		Not
	No	Yes	No	Yes	Required
1. WATER BLANKS					
2. EXTRACTION BLANKS					
3. RWS[1/]					
4. RWSD[2/]					
5. RPD[3/]					

COMMENTS:

QA REPORTING LEVEL: II
REQUIREMENTS

A. GAS CHROMATOGRAPHY (NO MASS SPEC) OR WET CHEMISTRY PROCEDURE

1. WATER BLANKS		✓		✓	
2. EXTRACTION BLANKS		✓		✓	
3. MS[4/] (BATCH SPECIFIC)		✓		✓	
4. MSD[5/] (BATCH SPECIFIC)		✓		✓	
5. LD[6/] (OPTIONAL)					✓
6. MS/MSD RPD OR SAMPLE/LD RPD					✓
7. RWS		✓		✓	
8. RWSD		✓		✓	
9. RWS RPD		✓		✓	
10. SURROGATE SPIKES		✓		✓	

B. GAS CHROMATOGRAPH/MASS SPECTROMETER

1. WATER BLANKS		✓		✓	
2. EXTRACTION BLANKS		✓		✓	
3. MS (BATCH SPECIFIC)		✓		✓	
4. MSD (BATCH SPECIFIC)		✓		✓	
5. LD (OPTIONAL)					✓
6. MS/MSD RPD OR SAMPLE/LD RPD					✓
7. RWS		✓		✓	
8. RWSD		✓		✓	
9. RWS RPD		✓		✓	
10. SURROGATE SPIKES		✓		✓	

COMMENTS:

1/ RWS = REAGENT WATER SPIKE; 2/ RWSD = REAGENT WATER SPIKE DUPLICATE;
3/ RPD = RELATIVE PERCENT DIFFERENCE; 4/ MS = MATRIX SPIKE;
5/ MSD = MATRIX SPIKE DUPLICATE; 6/ LD = LAB DUP

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FOUR

Fort Stewart RFI

DATA EVALUATION SUMMARY

PROJECT NAME: S. Central Sanitary Landfill PROJECT NUMBER: FST-001
QA REPORTING LEVEL: II VALIDATION DATE: 16 Nov 93

ALL QA REPORTING LEVELS (I, II, III)

SUMMARY OF CHECKLIST FINDINGS	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. FIELD MEASUREMENTS OF PH AND SPECIFIC CONDUCTANCE ARE CONSISTENT WITH HISTORICAL DATA				✓	
2. FIELD RECORDS		✓		✓	
3. METHODS (GEN. INFO. SECTION ONE)				✓	
4. HOLDING TIMES (MASTER SAMPLE LIST)		✓		✓	
A. EXTRACTION HOLDING TIMES		✓		✓	
B. ANALYSIS HOLDING TIMES		✓		✓	
5. DETECTION LIMITS (SECTION ONE)		✓		✓	
6. BLANKS (SECTIONS TWO OR THREE)		✓		✓	
A. EQUIPMENT RINSATE BLANKS					✓
B. FIELD BLANKS					✓
C. TRIP BLANKS		✓		✓	✓
D. LABORATORY BLANKS		✓		✓	
7. FIELD REPLICATES		✓		✓	
8. FIELD SPLITS		✓		✓	
9. GEOPHYSICAL COMPARISONS					✓
A. CATION VS ANION					✓
B. TDS VS SPEC. CONDUCTANCE					✓
C. PH VS ALK/ACIDITY					✓
D. OTHER					✓
10. METALS QA DATA (SECTION TWO)		✓		✓	
11. INORGANIC WET CHEMISTRY (SEC. TWO)		✓		✓	
12. ORGANIC QA DATA-GC (SECTION THREE-A)		✓		✓	
13. ORGANIC WET CHEMISTRY (SEC. THREE-A)		✓		✓	
14. ORGANIC QA DATA-GC/MS (SEC. THREE-B)		✓		✓	

AFTER COMPLETING THIS SECTION GO TO SECTION FIVE.
COMMENTS:

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ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FIVE

Ft. Stewart RFI

DATA VALIDATION CODING

PROJECT NAME: S. Central Landfill PROJECT NUMBER: FST-001
QA REPORTING LEVEL: II VALIDATION DATE: 16 Nov 93

1. QUALIFIER CODES ASSIGNED TO DATA: R, U, J, U/J, B, NO FLAG

2. IDENTIFICATION OF SAMPLES AND PARAMETERS WITH CODES:

	SAMPLE ID	PARAMETERS
R CODE		
B CODE		
U CODE		
J CODE		
U/J CODE		

EXPLANATION: all acceptable

VALIDATION PERFORMED BY: FRANZ FROELICHER

SIGNED: [signature]

DATE: 16 Nov 93

Ft. Stewart RFI

DATA VALIDATION CHECKLIST
SECTION ONE

PROJECT NAME: Camp Oliver Landfill
PROJECT NUMBER: 7ST-002
SAMPLING DATE: 6 Sept 93 / 16 Nov 93 VALIDATION DATE: 21 Dec 93
SAMPLE IDENTIFICATION: MW1-10-93, MW3, MW3, MW3 Dup, MW Blank, MW4, SW1, SW1 Dup, SW Blank, SW2, Trip Blanks, MW1-11-93, MW2, MW3, MW4, SW1
SAMPLING TEAM: T. Smith, M. Bailey
ANALYZING LABORATORY: Clayton Laboratory
ANALYSES PERFORMED: 8240, RCRA metals, Pest./PCB 8080
SAMPLE MATRIX: Aqueous + Non Aqueous
QA REPORTING LEVEL: II

FIELD DATA PACKAGE DOCUMENTATION

FIELD SAMPLING LOGS: 1/	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLING DATES NOTED		✓		✓	
2. SAMPLING TEAM INDICATED		✓		✓	
3. SAMPLE IDENTIFICATION TRACEABLE TO LOCATION COLLECTED		✓		✓	
4. SAMPLE LOCATION		✓		✓	
5. SAMPLE DEPTH FOR SOILS		✓		✓	
6. COLLECTION TECHNIQUE (BAILER, PUMP ETC		✓		✓	
7. FIELD SAMPLE PREPARATION TECHNIQUES		✓		✓	
8. SAMPLE TYPE (GRAB, COMPOSITE)		✓		✓	
9. SAMPLE CONTAINER TYPE		✓		✓	
10. PRESERVATION METHODS		✓		✓	
11. CHAIN OF CUSTODY FORM COMPLETED		✓		✓	
12. REQUIRED ANALYTICAL METHODS REQUESTED		✓		✓	
13. FIELD (WATER AND SOIL) SAMPLE LOGS COMPLETED PROPERLY AND SIGNED		✓		✓	
14. NUMBER AND TYPE OF FIELD QC SAMPLES COLLECTED (BLANKS, REPLICATES, SPLITS, ETC.)		✓		✓	
15. FIELD EQUIPMENT CALIBRATION		✓		✓	
16. FIELD EQUIPMENT DECONTAMINATION		✓		✓	
17. SAMPLE SHIPPING		✓		✓	
18. LABORATORY TASK ORDER		✓		✓	

1/ FIELD SAMPLING LOGS = WATER AND/OR SOIL/SEDIMENT SAMPLING LOGS

COMMENTS:

DATA VALIDATION CHECKLIST
SECTION ONE CONTINUED

ANALYTICAL DATA PACKAGE DOCUMENTATION
GENERAL INFORMATION

ALL QA REPORTING LEVELS	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLE RESULTS		✓		✓	
2. PARAMETERS ANALYZED		✓		✓	
3. METHOD OF ANALYSIS		✓		✓	
4. DETECTION LIMITS OF ANALYSIS		✓		✓	
5. MASTER TRACKING LIST		✓		✓	
6. SAMPLE COLLECTION DATE		✓		✓	
7. LAB SAMPLE RECEIVED DATE		✓		✓	
8. SAMPLE PREPARATION/EXTRACTION DATE		✓		✓	
9. SAMPLE ANALYSIS DATE		✓		✓	
10. COPY OF CHAIN-OF-CUSTODY FORM SIGNED BY THE LAB SAMPLE CUSTODIAN		✓		✓	
11. A NARRATIVE SUMMARY OF QA OR SAMPLE PROBLEMS IS PROVIDED.		✓		✓	

COMMENTS: _____

AFTER COMPLETING SECTION ONE PROCEED TO THE APPROPRIATE QA REPORTING LEVEL OF SECTION TWO (INORGANIC ANALYSES) AND/OR SECTION THREE (ORGANIC ANALYSES). FOLLOWING COMPLETION OF THESE SECTIONS PROCEED TO SECTION FOUR (DATA EVALUATION SUMMARY).

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES
METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: I

REQUIREMENTS (BATCH SPECIFIC QA)[1]	REPORTED NO	REPORTED YES	IN LIMITS NO	IN LIMITS YES	NOT REQUIRED
1. METHOD BLANKS					
2. MS[2] OR RWS[3] % RECOVERY (%R)					
3. MSD[4] OR RWSD[5] OR LD[6] %R					
4. RPD[7]					

COMMENTS: _____

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH REGARDLESS OF THE SOURCE.
2/ MS = MATRIX SPIKE;
3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.;
5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE;
7/ RPD = RELATIVE PERCENT DIFFERENCE

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES
METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: II
REQUIREMENTS (BATCH SPECIFIC QA)[1/]

	REPORTED NO	REPORTED YES	IN LIMITS NO	IN LIMITS YES	NOT REQUIRED
1. METHOD BLANKS		✓		✓	
2. MS % RECOVERY (%R)		✓		✓	
3. MSD OR ~~LAB DUPLICATE~~ % R		✓		✓	
4. RWS % R		✓		✓	
5. RWSD % R		✓		✓	
6. RPDs FOR MS/MSD, ~~SAMPLE/LD~~, RWS/RWSD		✓		✓	
7. LCS[8/] %R		✓		✓	
8. ICVS [9/] %R					✓
					✓

COMMENTS: _____

QA REPORTING LEVEL: III
REQUIREMENTS (SAMPLE SPECIFIC QA)[10/]

1. CALIBRATION CURVE STANDARDS					
2. ICVS %R					
3. CCVS[11/] %R					
4. LCS %R					
5. METHOD BLANKS					
6. ICS[12/] %R (ICP ONLY)					
7. DCS[13/] %R (ICP ONLY)					
8. MS %R					
9. LD OR MSD %R AND RPD					
10. POST DIGESTION ANALYTICAL SPIKE[14/]					

COMMENTS: _____

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH.
2/ MS = MATRIX SPIKE; 3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.; 5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE; 7/ RPD = RELATIVE PERCENT DIFFERENCE
8/ LCS = LABORATORY CONTROL SAMPLE;
9/ ICVS = INITIAL CALIBRATION VERIFICATION STANDARD;
10/ SAMPLE SPECIFIC QA: APPLIES TO PROJECT SPECIFIC SAMPLES.
11/ CCVS = CONTINUING CALIBRATION VERIFICATION STANDARD;
12/ ICS = INTERFERENCE CHECK SAMPLE; 13/ DCS = DILUTION CHECK SAMPLE;
14/ POST DIGESTION ANALYTICAL SPIKE APPLIES TO FURNACE AA ONLY;

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION THREE

ORGANIC ANALYSES

QA REPORTING LEVEL: I
REQUIREMENTS

	Reported No	Reported Yes	In Limits No	In Limits Yes	Not Required
1. WATER BLANKS					
2. EXTRACTION BLANKS					
3. RWS[1/]					
4. RWSD[2/]					
5. RPD[3/]					

COMMENTS:

QA REPORTING LEVEL: II
REQUIREMENTS

A. GAS CHROMATOGRAPHY (NO MASS SPEC) OR WET CHEMISTRY PROCEDURE

	Reported No	Reported Yes	In Limits No	In Limits Yes	Not Required
1. WATER BLANKS		✓		✓	
2. EXTRACTION BLANKS					✓
3. MS[4/] (BATCH SPECIFIC)		✓		✓	
4. MSD[5/] (BATCH SPECIFIC)		✓		✓	
5. LD[6/] (OPTIONAL)					✓
6. MS/MSD RPD ~~OR SAMPLE/LD~~ RPD		✓		✓	
7. RWS		✓		✓	
8. RWSD		✓		✓	
9. RWS RPD		✓		✓	
10. SURROGATE SPIKES		✓		✓	

B. GAS CHROMATOGRAPH/MASS SPECTROMETER

	Reported No	Reported Yes	In Limits No	In Limits Yes	Not Required
1. WATER BLANKS					✓
2. EXTRACTION BLANKS					✓
3. MS (BATCH SPECIFIC)		✓		✓	
4. MSD (BATCH SPECIFIC)		✓		✓	
5. LD (OPTIONAL)					✓
6. MS/MSD RPD ~~OR SAMPLE/LD~~ RPD		✓		✓	
7. RWS		✓		✓	
8. RWSD		✓		✓	
9. RWS RPD		✓		✓	
10. SURROGATE SPIKES		✓		✓	

COMMENTS:

1/ RWS = REAGENT WATER SPIKE; 2/ RWSD = REAGENT WATER SPIKE DUPLICATE;
3/ RPD = RELATIVE PERCENT DIFFERENCE; 4/ MS = MATRIX SPIKE;
5/ MSD = MATRIX SPIKE DUPLICATE; 6/ LD = LAB DUP

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FOUR

DATA EVALUATION SUMMARY Ft Stewart RFI

PROJECT NAME: Camp Gilmer Landfill PROJECT NUMBER: FST-002
QA REPORTING LEVEL: II VALIDATION DATE: 21 Dec 93

ALL QA REPORTING LEVELS (I,II,III)

SUMMARY OF CHECKLIST FINDINGS	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. FIELD MEASUREMENTS OF PH AND SPECIFIC CONDUCTANCE ARE CONSISTENT WITH HISTORICAL DATA					
2. FIELD RECORDS		✓		✓	
3. METHODS (GEN.INFO. SECTION ONE)		✓		✓	
4. HOLDING TIMES (MASTER SAMPLE LIST)		✓		✓	
A. EXTRACTION HOLDING TIMES					
B. ANALYSIS HOLDING TIMES		✓		✓	
5. DETECTION LIMITS (SECTION ONE)		✓		✓	
6. BLANKS (SECTIONS TWO OR THREE)		✓		✓	
A. EQUIPMENT RINSATE BLANKS					
B. FIELD BLANKS					✓
C. TRIP BLANKS		✓		✓	
D. LABORATORY BLANKS		✓		✓	
7. FIELD REPLICATES		✓		✓	
8. FIELD SPLITS		✓		✓	
9. GEOPHYSICAL COMPARISONS					✓
A. CATION VS ANION					
B. TDS VS SPEC. CONDUCTANCE					✓
C. PH VS ALK/ACIDITY					✓
D. OTHER					✓
10. METALS QA DATA (SECTION TWO)					✓
11. INORGANIC WET CHEMISTRY (SEC. TWO)		✓		✓	✓
12. ORGANIC QA DATA-GC (SECTION THREE-A)		✓		✓	
13. ORGANIC WET CHEMISTRY (SEC. THREE-A)		✓		✓	
14. ORGANIC QA DATA-GC/MS (SEC. THREE-B)		✓		✓	

AFTER COMPLETING THIS SECTION GO TO SECTION FIVE.
COMMENTS:

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FIVE

DATA VALIDATION CODING Ft Stewart RFI

PROJECT NAME: Camp Oliver Landfill PROJECT NUMBER: FST-002
QA REPORTING LEVEL: II VALIDATION DATE: 21 Dec 93

1. QUALIFIER CODES ASSIGNED TO DATA: R, U, J, U/J, B, NO FLAG

2. IDENTIFICATION OF SAMPLES AND PARAMETERS WITH CODES:

	SAMPLE ID	PARAMETERS
R CODE		
B CODE		
U CODE		
J CODE		
U/J CODE		

EXPLANATION: all Acceptable

VALIDATION PERFORMED BY: Frank Froelicher

SIGNED:

DATE: 21 Dec 93

Ft Stewart RFI

DATA VALIDATION CHECKLIST
SECTION ONE

PROJECT NAME: Tac x Landfill
PROJECT NUMBER: FST-003
SAMPLING DATE: 16 Sep 93 + VALIDATION DATE: 21 Dec 93
SAMPLE IDENTIFICATION: MW-1-10-93 MW, Dup, MW2 MW4 MW Blank MW3 11-93 FST-003-SS-10-93 FST-003-SS Dup-10-93, MW3, 1, 4, Trip Blank
SAMPLING TEAM: J. Smith, M. Bailey
ANALYZING LABORATORY: Carr, Tobyhanna
ANALYSES PERFORMED: TH, SPC, 8240, RCRA 20 Tab, Post PCB
SAMPLE MATRIX: Soil + Water
QA REPORTING LEVEL: II

FIELD DATA PACKAGE DOCUMENTATION

FIELD SAMPLING LOGS: 1/	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLING DATES NOTED	—	✓	—	✓	—
2. SAMPLING TEAM INDICATED	—	✓	—	✓	—
3. SAMPLE IDENTIFICATION TRACEABLE TO LOCATION COLLECTED	—	✓	—	✓	—
4. SAMPLE LOCATION	—	✓	—	✓	—
5. SAMPLE DEPTH FOR SOILS	—	✓	—	✓	—
6. COLLECTION TECHNIQUE (BAILER, PUMP ETC	—	✓	—	✓	—
7. FIELD SAMPLE PREPARATION TECHNIQUES	—	✓	—	✓	—
8. SAMPLE TYPE (GRAB, COMPOSITE)	—	✓	—	✓	—
9. SAMPLE CONTAINER TYPE	—	✓	—	✓	—
10. PRESERVATION METHODS	—	✓	—	✓	—
11. CHAIN OF CUSTODY FORM COMPLETED	—	✓	—	✓	—
12. REQUIRED ANALYTICAL METHODS REQUESTED	—	✓	—	✓	—
13. FIELD (WATER AND SOIL) SAMPLE LOGS COMPLETED PROPERLY AND SIGNED	—	✓	—	✓	—
14. NUMBER AND TYPE OF FIELD QC SAMPLES COLLECTED (BLANKS, REPLICATES, SPLITS, ETC.)	—	✓	—	✓	—
15. FIELD EQUIPMENT CALIBRATION	—	✓	—	✓	—
16. FIELD EQUIPMENT DECONTAMINATION	—	✓	—	✓	—
17. SAMPLE SHIPPING	—	✓	—	✓	—
18. LABORATORY TASK ORDER	—	✓	—	✓	—

1/ FIELD SAMPLING LOGS = WATER AND/OR SOIL/SEDIMENT SAMPLING LOGS

COMMENTS:

DATA VALIDATION CHECKLIST
SECTION ONE CONTINUED

ANALYTICAL DATA PACKAGE DOCUMENTATION
GENERAL INFORMATION

ALL QA REPORTING LEVELS	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLE RESULTS		✓		✓	
2. PARAMETERS ANALYZED		✓		✓	
3. METHOD OF ANALYSIS		✓		✓	
4. DETECTION LIMITS OF ANALYSIS		✓		✓	
5. MASTER TRACKING LIST		✓		✓	
6. SAMPLE COLLECTION DATE		✓		✓	
7. LAB SAMPLE RECEIVED DATE		✓		✓	
8. SAMPLE PREPARATION/EXTRACTION DATE		✓		✓	
9. SAMPLE ANALYSIS DATE		✓		✓	
10. COPY OF CHAIN-OF-CUSTODY FORM SIGNED BY THE LAB SAMPLE CUSTODIAN		✓		✓	
11. A NARRATIVE SUMMARY OF QA OR SAMPLE PROBLEMS IS PROVIDED.		✓		✓	

COMMENTS: _____

AFTER COMPLETING SECTION ONE PROCEED TO THE APPROPRIATE QA REPORTING LEVEL OF SECTION TWO (INORGANIC ANALYSES) AND/OR SECTION THREE (ORGANIC ANALYSES). FOLLOWING COMPLETION OF THESE SECTIONS PROCEED TO SECTION FOUR (DATA EVALUATION SUMMARY).

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES
METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: I REQUIREMENTS (BATCH SPECIFIC QA)[1]	REPORTED NO	REPORTED YES	IN LIMITS NO	IN LIMITS YES	NOT REQUIRED
1. METHOD BLANKS					
2. MS[2] OR RWS[3] % RECOVERY (%R)					
3. MSD[4] OR RWSD[5] OR LD[6] %R					
4. RPD[7]					

COMMENTS: _____

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH REGARDLESS OF THE SOURCE.
2/ MS = MATRIX SPIKE;
3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.;
5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE;
7/ RPD = RELATIVE PERCENT DIFFERENCE

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES
METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: II
REQUIREMENTS (BATCH SPECIFIC QA)1/

	REPORTED NO	REPORTED YES	IN LIMITS NO	IN LIMITS YES	NOT REQUIRED
1. METHOD BLANKS		✓		✓	
2. MS % RECOVERY (%R)		✓		✓	
3. MSD OR ~~LAB DUPLICATE~~ % R		✓		✓	
4. RWS % R					✓
5. RWSD % R					✓
6. RPDs FOR MS/MSD, ~~SAMPLE/LD, RWS/RWSD~~		✓		✓	
7. LCS8/ %R					
8. ICVS 9/ %R					✓

COMMENTS:

QA REPORTING LEVEL: III
REQUIREMENTS (SAMPLE SPECIFIC QA)10/

1. CALIBRATION CURVE STANDARDS					
2. ICVS %R					
3. CCVS11/ %R					
4. LCS %R					
5. METHOD BLANKS					
6. ICS12/ %R (ICP ONLY)					
7. DCS13/ %R (ICP ONLY)					
8. MS %R					
9. LD OR MSD %R AND RPD					
10. POST DIGESTION ANALYTICAL SPIKE14/					

COMMENTS:

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH.
2/ MS = MATRIX SPIKE; 3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.; 5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE; 7/ RPD = RELATIVE PERCENT DIFFERENCE
8/ LCS = LABORATORY CONTROL SAMPLE;
9/ ICVS = INITIAL CALIBRATION VERIFICATION STANDARD;
10/ SAMPLE SPECIFIC QA: APPLIES TO PROJECT SPECIFIC SAMPLES.
11/ CCVS = CONTINUING CALIBRATION VERIFICATION STANDARD;
12/ ICS = INTERFERENCE CHECK SAMPLE; 13/ DCS = DILUTION CHECK SAMPLE;
14/ POST DIGESTION ANALYTICAL SPIKE APPLIES TO FURNACE AA ONLY;

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION THREE

ORGANIC ANALYSES

QA REPORTING LEVEL: I_
REQUIREMENTS_____

	Reported No	Reported Yes	In Limits No	In Limits Yes	Not Required
1. Water Blanks					
2. Extraction Blanks					
3. RWS[1/]					
4. RWSD[2/]					
5. RPD[3/]					

Comments: _____

QA REPORTING LEVEL: II
REQUIREMENTS
A. GAS CHROMATOGRAPHY (NO MASS SPEC) OR WET CHEMISTRY PROCEDURE

1. Water Blanks		✓		✓	
2. Extraction Blanks		✓		✓	
3. MS[4/] (Batch Specific)		✓		✓	
4. MSD[5/] (Batch Specific)		✓		✓	
5. LD[6/] (Optional)					✓
6. MS/MSD RPD ~~OR SAMPLE/LD~~ RPD		✓		✓	
7. RWS					✓
8. RWSD					✓
9. RWS RPD					✓
10. Surrogate Spikes		✓		✓	

B. GAS CHROMATOGRAPH/MASS SPECTROMETER

1. Water Blanks		✓		✓	
2. Extraction Blanks					✓
3. MS (Batch Specific)		✓		✓	
4. MSD (Batch Specific)		✓		✓	
5. LD (Optional)					✓
6. MS/MSD RPD ~~OR SAMPLE/LD~~ RPD		✓		✓	
7. RWS		✓		✓	
8. RWSD		✓		✓	
9. RWS RPD		✓		✓	
10. Surrogate Spikes		✓		✓	

COMMENTS: _____

1/ RWS = REAGENT WATER SPIKE; 2/ RWSD = REAGENT WATER SPIKE DUPLICATE;
3/ RPD = RELATIVE PERCENT DIFFERENCE; 4/ MS = MATRIX SPIKE;
5/ MSD = MATRIX SPIKE DUPLICATE; 6/ LD = LAB DUP

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FOUR

DATA EVALUATION SUMMARY Ft. Stewart RFI

PROJECT NAME: Tac X Landfill PROJECT NUMBER: FST-003
QA REPORTING LEVEL: II VALIDATION DATE: 21 Dec 93

ALL QA REPORTING LEVELS (I, II, III)

SUMMARY OF CHECKLIST FINDINGS	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. FIELD MEASUREMENTS OF PH AND SPECIFIC CONDUCTANCE ARE CONSISTENT WITH HISTORICAL DATA					
2. FIELD RECORDS		✓		✓	
3. METHODS (GEN. INFO. SECTION ONE)		✓		✓	
4. HOLDING TIMES (MASTER SAMPLE LIST)		✓		✓	
A. EXTRACTION HOLDING TIMES		✓		✓	
B. ANALYSIS HOLDING TIMES		✓		✓	
5. DETECTION LIMITS (SECTION ONE)		✓		✓	
6. BLANKS (SECTIONS TWO OR THREE)		✓		✓	
A. EQUIPMENT RINSATE BLANKS					✓
B. FIELD BLANKS		✓		✓	
C. TRIP BLANKS		✓		✓	
D. LABORATORY BLANKS		✓		✓	
7. FIELD REPLICATES		✓		✓	
8. FIELD SPLITS					✓
9. GEOPHYSICAL COMPARISONS					✓
A. CATION VS ANION					✓
B. TDS VS SPEC. CONDUCTANCE					✓
C. PH VS ALK/ACIDITY					✓
D. OTHER					✓
10. METALS QA DATA (SECTION TWO)		✓		✓	
11. INORGANIC WET CHEMISTRY (SEC. TWO)		✓		✓	
12. ORGANIC QA DATA-GC (SECTION THREE-A)		✓		✓	
13. ORGANIC WET CHEMISTRY (SEC. THREE-A)		✓		✓	
14. ORGANIC QA DATA-GC/MS (SEC. THREE-B)		✓		✓	

AFTER COMPLETING THIS SECTION GO TO SECTION FIVE.

COMMENTS:

Spike QC Sample #10193

alpha-BHC	230% R
gamma-BHC	205% R
Heptachlor	194% R
aldrin	190% R

all are anomonously high due to interference peaks sample itself is acceptable.

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FIVE

DATA VALIDATION CODING Ft. Stewart RFI

PROJECT NAME: Tac X Landfill PROJECT NUMBER: FST-003
QA REPORTING LEVEL: II VALIDATION DATE: 9 Dec 93

1. QUALIFIER CODES ASSIGNED TO DATA: R, U, J, U/J, B, NO FLAG

2. IDENTIFICATION OF SAMPLES AND PARAMETERS WITH CODES:

	SAMPLE ID	PARAMETERS
R CODE		
B CODE		
U CODE		
J CODE		
U/J CODE		

EXPLANATION: see section 4
all acceptable

VALIDATION PERFORMED BY: FRANZ FROELICHER

SIGNED:

DATE: 9 Dec 93

Ft. Stewart RFI

DATA VALIDATION CHECKLIST
SECTION ONE

PROJECT NAME: Ft. Stewart Burn Pits
PROJECT NUMBER: FST-004A
SAMPLING DATE: 21 aug 93 VALIDATION DATE: 28 Sept 93
SAMPLE IDENTIFICATION: FST 004A MW3-8-93, MW4-8-93, MW2, MW1, + Dup

SAMPLING TEAM: T. Smith, Douglas LaBoeuf
ANALYZING LABORATORY: Carr Laboratory
ANALYSES PERFORMED: 10 Sept 93 624/8240 Drinking Water + 8 PPM Metals

SAMPLE MATRIX: aqueous
QA REPORTING LEVEL: II

FIELD DATA PACKAGE DOCUMENTATION

FIELD SAMPLING LOGS: 1/	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLING DATES NOTED	—	✓	—	✓	—
2. SAMPLING TEAM INDICATED	—	✓	—	✓	—
3. SAMPLE IDENTIFICATION TRACEABLE TO LOCATION COLLECTED	—	✓	—	✓	—
4. SAMPLE LOCATION	—	✓	—	✓	—
5. SAMPLE DEPTH FOR SOILS	—	✓	—	✓	—
6. COLLECTION TECHNIQUE (BAILER, PUMP ETC	—	✓	—	✓	—
7. FIELD SAMPLE PREPARATION TECHNIQUES	—	✓	—	✓	—
8. SAMPLE TYPE (GRAB, COMPOSITE)	—	✓	—	✓	—
9. SAMPLE CONTAINER TYPE	—	✓	—	✓	—
10. PRESERVATION METHODS	—	✓	—	✓	—
11. CHAIN OF CUSTODY FORM COMPLETED	—	✓	—	✓	—
12. REQUIRED ANALYTICAL METHODS REQUESTED	—	✓	—	✓	—
13. FIELD (WATER AND SOIL) SAMPLE LOGS COMPLETED PROPERLY AND SIGNED	—	✓	—	✓	—
14. NUMBER AND TYPE OF FIELD QC SAMPLES COLLECTED (BLANKS, REPLICATES, SPLITS, ETC.)	—	✓	—	✓	—
15. FIELD EQUIPMENT CALIBRATION	—	✓	—	✓	—
16. FIELD EQUIPMENT DECONTAMINATION	—	✓	—	✓	—
17. SAMPLE SHIPPING	—	✓	—	✓	—
18. LABORATORY TASK ORDER	—	✓	—	✓	—

1/ FIELD SAMPLING LOGS = WATER AND/OR SOIL/SEDIMENT SAMPLING LOGS

COMMENTS:

DATA VALIDATION CHECKLIST
SECTION ONE CONTINUED

ANALYTICAL DATA PACKAGE DOCUMENTATION
GENERAL INFORMATION

ALL QA REPORTING LEVELS	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLE RESULTS		✓		✓	
2. PARAMETERS ANALYZED		✓		✓	
3. METHOD OF ANALYSIS		✓		✓	
4. DETECTION LIMITS OF ANALYSIS		✓		✓	
5. MASTER TRACKING LIST		✓		✓	
6. SAMPLE COLLECTION DATE		✓		✓	
7. LAB SAMPLE RECEIVED DATE		✓		✓	
8. SAMPLE PREPARATION/EXTRACTION DATE		✓		✓	
9. SAMPLE ANALYSIS DATE		✓		✓	
10. COPY OF CHAIN-OF-CUSTODY FORM SIGNED BY THE LAB SAMPLE CUSTODIAN		✓		✓	
11. A NARRATIVE SUMMARY OF QA OR SAMPLE PROBLEMS IS PROVIDED.		✓		✓	

COMMENTS: _____

AFTER COMPLETING SECTION ONE PROCEED TO THE APPROPRIATE QA REPORTING LEVEL OF SECTION TWO (INORGANIC ANALYSES) AND/OR SECTION THREE (ORGANIC ANALYSES). FOLLOWING COMPLETION OF THESE SECTIONS PROCEED TO SECTION FOUR (DATA EVALUATION SUMMARY).

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES
METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: I REQUIREMENTS (BATCH SPECIFIC QA)[1]	REPORTED NO	REPORTED YES	IN LIMITS NO	IN LIMITS YES	NOT REQUIRED
1. METHOD BLANKS					
2. MS[2] OR RWS[3] % RECOVERY (%R)					
3. MSD[4] OR RWSD[5] OR LD[6] %R					
4. RPD[7]					

COMMENTS: _____

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH REGARDLESS OF THE SOURCE.
2/ MS = MATRIX SPIKE;
3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.;
5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE;
7/ RPD = RELATIVE PERCENT DIFFERENCE

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES
METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: II
REQUIREMENTS (BATCH SPECIFIC QA)1/

	REPORTED NO	REPORTED YES	IN LIMITS NO	IN LIMITS YES	NOT REQUIRED
1. METHOD BLANKS		✓		✓	
2. MS % RECOVERY (%R)		✓		✓	
3. MSD OR LAB DUPLICATE % R		✓		✓	
4. RWS % R		✓		✓	
5. RWSD % R		✓		✓	
6. RPDs FOR MS/MSD, ~~SAMPLE/LD, RWS/RWSD~~		✓		✓	
7. LCS8/ %R		✓		✓	
8. ICVS 9/ %R		-		-	✓
					✓

COMMENTS: _____

QA REPORTING LEVEL: III
REQUIREMENTS (SAMPLE SPECIFIC QA)10/

1. CALIBRATION CURVE STANDARDS					
2. ICVS %R					
3. CCVS11/ %R					
4. LCS %R					
5. METHOD BLANKS					
6. ICS12/ %R (ICP ONLY)					
7. DCS13/ %R (ICP ONLY)					
8. MS %R					
9. LD OR MSD %R AND RPD					
10. POST DIGESTION ANALYTICAL SPIKE14/					

COMMENTS: _____

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH.
2/ MS = MATRIX SPIKE; 3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.; 5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE; 7/ RPD = RELATIVE PERCENT DIFFERENCE
8/ LCS = LABORATORY CONTROL SAMPLE;
9/ ICVS = INITIAL CALIBRATION VERIFICATION STANDARD;
10/ SAMPLE SPECIFIC QA: APPLIES TO PROJECT SPECIFIC SAMPLES..
11/ CCVS = CONTINUING CALIBRATION VERIFICATION STANDARD;
12/ ICS = INTERFERENCE CHECK SAMPLE; 13/ DCS = DILUTION CHECK SAMPLE;
14/ POST DIGESTION ANALYTICAL SPIKE APPLIES TO FURNACE AA ONLY;

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION THREE

ORGANIC ANALYSES

QA REPORTING LEVEL: I
REQUIREMENTS

	Reported No	Reported Yes	In Limits No	In Limits Yes	Not Required
1. Water Blanks					
2. Extraction Blanks					
3. RWS[1/]					
4. RWSD[2/]					
5. RPD[3/]					

Comments:

QA REPORTING LEVEL: II
REQUIREMENTS

A. GAS CHROMATOGRAPHY (NO MASS SPEC) OR WET CHEMISTRY PROCEDURE

1. Water Blanks		✓		✓	
2. Extraction Blanks					✓
3. MS[4/] (Batch Specific)		✓		✓	
4. MSD[5/] (Batch Specific)		✓		✓	
5. LD[6/] (Optional)					✓
6. MS/MSD RPD or Sample/LD RPD		✓		✓	
7. RWS		✓		✓	
8. RWSD		✓		✓	
9. RWS RPD		✓		✓	
10. Surrogate Spikes		✓		✓	

B. GAS CHROMATOGRAPH/MASS SPECTROMETER

1. Water Blanks		✓		✓	
2. Extraction Blanks					✓
3. MS (Batch Specific)		✓		✓	
4. MSD (Batch Specific)		✓		✓	
5. LD (Optional)					✓
6. MS/MSD RPD or ~~Sample/LD RPD~~		✓		✓	
7. RWS		✓		✓	
8. RWSD		✓		✓	
9. RWS RPD		✓		✓	
10. ~~Surrogate Spikes~~		✓		✓	

COMMENTS: Trip Blanks for Metals not run by request.

1/ RWS = REAGENT WATER SPIKE; 2/ RWSD = REAGENT WATER SPIKE DUPLICATE;
3/ RPD = RELATIVE PERCENT DIFFERENCE; 4/ MS = MATRIX SPIKE;
5/ MSD = MATRIX SPIKE DUPLICATE; 6/ LD = LAB DUP

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FOUR

DATA EVALUATION SUMMARY Ft. Stewart RFI

PROJECT NAME: Ft Stewart Burn Pits PROJECT NUMBER: FST-0044
QA REPORTING LEVEL: II VALIDATION DATE: 28 Sept 93

ALL QA REPORTING LEVELS (I, II, III)

SUMMARY OF CHECKLIST FINDINGS	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. FIELD MEASUREMENTS OF PH AND SPECIFIC CONDUCTANCE ARE CONSISTENT WITH HISTORICAL DATA		✓		✓	
2. FIELD RECORDS		✓		✓	
3. METHODS (GEN. INFO. SECTION ONE)		✓		✓	
4. HOLDING TIMES (MASTER SAMPLE LIST)		✓		✓	
A. EXTRACTION HOLDING TIMES		✓			
B. ANALYSIS HOLDING TIMES		✓			
5. DETECTION LIMITS (SECTION ONE)		✓		✓	
6. BLANKS (SECTIONS TWO OR THREE)		✓		✓	
A. EQUIPMENT RINSATE BLANKS					✓
B. FIELD BLANKS					✓
C. TRIP BLANKS					✓
D. LABORATORY BLANKS		✓		✓	
7. FIELD REPLICATES		✓		✓	
8. FIELD SPLITS		✓		✓	
9. GEOPHYSICAL COMPARISONS					✓
A. CATION VS ANION					✓
B. TDS VS SPEC. CONDUCTANCE					✓
C. PH VS ALK/ACIDITY					✓
D. OTHER					✓
10. METALS QA DATA (SECTION TWO)		✓		✓	
11. INORGANIC WET CHEMISTRY (SEC. TWO)		✓		✓	
12. ORGANIC QA DATA-GC (SECTION THREE-A)		✓		✓	
13. ORGANIC WET CHEMISTRY (SEC. THREE-A)		✓		✓	
14. ORGANIC QA DATA-GC/MS (SEC. THREE-B)		✓		✓	

AFTER COMPLETING THIS SECTION GO TO SECTION FIVE.
COMMENTS:

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FIVE

DATA VALIDATION CODING Ft. Stewart RFI

PROJECT NAME: Ft Stewart Burn Pits PROJECT NUMBER: FS7-0004A
QA REPORTING LEVEL: II VALIDATION DATE: 28 Sept 93

1. QUALIFIER CODES ASSIGNED TO DATA: R, U, J, U/J, B, NO FLAG

2. IDENTIFICATION OF SAMPLES AND PARAMETERS WITH CODES:

	SAMPLE ID	PARAMETERS
R CODE		
B CODE		
U CODE		
J CODE		
U/J CODE		

EXPLANATION: all acceptable

VALIDATION PERFORMED BY: FRANZ FROELICHER

SIGNED: [signature]

DATE: 28 Sept 93

Ft Stewart RFI

DATA VALIDATION CHECKLIST
SECTION ONE

PROJECT NAME: Ft. Stewart Burn Pit
PROJECT NUMBER: FST-004B
SAMPLING DATE: 12 aug 93 VALIDATION DATE: 25 Sept 93
SAMPLE IDENTIFICATION: MW1, MW3, MW2 Dup, MW3, MW4, BLK-8-93 (are samples coded 8-93 to end of #) + Trip Blank
SAMPLING TEAM: I. Smith, Douglas La Rouche
ANALYZING LABORATORY: Cajar Laboratory
ANALYSES PERFORMED: 624/8240 & DP metals
SAMPLE MATRIX: aqueous
QA REPORTING LEVEL: II

FIELD DATA PACKAGE DOCUMENTATION

FIELD SAMPLING LOGS: 1/	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLING DATES NOTED		✓		✓	
2. SAMPLING TEAM INDICATED		✓		✓	
3. SAMPLE IDENTIFICATION TRACEABLE TO LOCATION COLLECTED		✓		✓	
4. SAMPLE LOCATION		✓		✓	
5. SAMPLE DEPTH FOR SOILS		✓		✓	
6. COLLECTION TECHNIQUE (BAILER, PUMP ETC		✓		✓	
7. FIELD SAMPLE PREPARATION TECHNIQUES		✓		✓	
8. SAMPLE TYPE (GRAB, COMPOSITE)		✓		✓	
9. SAMPLE CONTAINER TYPE		✓		✓	
10. PRESERVATION METHODS		✓		✓	
11. CHAIN OF CUSTODY FORM COMPLETED		✓		✓	
12. REQUIRED ANALYTICAL METHODS REQUESTED		✓		✓	
13. FIELD (WATER AND SOIL) SAMPLE LOGS COMPLETED PROPERLY AND SIGNED		✓		✓	
14. NUMBER AND TYPE OF FIELD QC SAMPLES COLLECTED (BLANKS, REPLICATES, SPLITS, ETC.)		✓		✓	
15. FIELD EQUIPMENT CALIBRATION		✓		✓	
16. FIELD EQUIPMENT DECONTAMINATION		✓		✓	
17. SAMPLE SHIPPING		✓		✓	
18. LABORATORY TASK ORDER		✓		✓	

1/ FIELD SAMPLING LOGS = WATER AND/OR SOIL/SEDIMENT SAMPLING LOGS

COMMENTS:

DATA VALIDATION CHECKLIST
SECTION ONE CONTINUED

ANALYTICAL DATA PACKAGE DOCUMENTATION

GENERAL INFORMATION

ALL QA REPORTING LEVELS	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLE RESULTS		✓		✓	
2. PARAMETERS ANALYZED		✓		✓	
3. METHOD OF ANALYSIS		✓		✓	
4. DETECTION LIMITS OF ANALYSIS		✓		✓	
5. MASTER TRACKING LIST		✓		✓	
6. SAMPLE COLLECTION DATE		✓		✓	
7. LAB SAMPLE RECEIVED DATE		✓		✓	
8. SAMPLE PREPARATION/EXTRACTION DATE		✓		✓	
9. SAMPLE ANALYSIS DATE		✓		✓	
10. COPY OF CHAIN-OF-CUSTODY FORM SIGNED BY THE LAB SAMPLE CUSTODIAN		✓		✓	
11. A NARRATIVE SUMMARY OF QA OR SAMPLE PROBLEMS IS PROVIDED.		✓		✓	

COMMENTS: _____

AFTER COMPLETING SECTION ONE PROCEED TO THE APPROPRIATE QA REPORTING LEVEL OF SECTION TWO (INORGANIC ANALYSES) AND/OR SECTION THREE (ORGANIC ANALYSES). FOLLOWING COMPLETION OF THESE SECTIONS PROCEED TO SECTION FOUR (DATA EVALUATION SUMMARY).

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES

METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: I REQUIREMENTS (BATCH SPECIFIC QA)[1]	REPORTED NO	REPORTED YES	IN LIMITS NO	IN LIMITS YES	NOT REQUIRED
1. METHOD BLANKS					
2. MS[2] OR RWS[3] % RECOVERY (%R)					
3. MSD[4] OR RWSD[5] OR LD[6] %R					
4. RPD[7]					

COMMENTS: _____

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH REGARDLESS OF THE SOURCE.
2/ MS = MATRIX SPIKE;
3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.;
5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE;
7/ RPD = RELATIVE PERCENT DIFFERENCE

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION THREE

ORGANIC ANALYSES

QA REPORTING LEVEL: I
REQUIREMENTS

	Reported		In Limits		Not
	No	Yes	No	Yes	Required
1. WATER BLANKS					
2. EXTRACTION BLANKS					
3. RWS[1/]					
4. RWSD[2/]					
5. RPD[3/]					

COMMENTS:

QA REPORTING LEVEL: II
REQUIREMENTS

A. GAS CHROMATOGRAPHY (NO MASS SPEC) OR WET CHEMISTRY PROCEDURE

1. WATER BLANKS		✓		✓	
2. EXTRACTION BLANKS					✓
3. MS[4/] (BATCH SPECIFIC)		✓		✓	
4. MSD[5/] (BATCH SPECIFIC)		✓		✓	
5. LD[6/] (OPTIONAL)		✓		✓	
6. MS/MSD RPD OR ~~SAMPLE/LD RPD~~		✓		✓	
7. RWS		✓		✓	
8. RWSD		✓		✓	
9. RWS RPD		✓		✓	
10. SURROGATE SPIKES		✓		✓	

B. GAS CHROMATOGRAPH/MASS SPECTROMETER

1. WATER BLANKS		✓		✓	
2. EXTRACTION BLANKS					✓
3. MS (BATCH SPECIFIC)		✓		✓	
4. MSD (BATCH SPECIFIC)		✓		✓	
5. LD (OPTIONAL)					✓
6. MS/MSD RPD OR SAMPLE/LD RPD		✓		✓	
7. RWS		✓		✓	
8. RWSD		✓		✓	
9. RWS RPD		✓		✓	
10. SURROGATE SPIKES		✓		✓	

COMMENTS:

1/ RWS = REAGENT WATER SPIKE; 2/ RWSD = REAGENT WATER SPIKE DUPLICATE;
3/ RPD = RELATIVE PERCENT DIFFERENCE; 4/ MS = MATRIX SPIKE;
5/ MSD = MATRIX SPIKE DUPLICATE; 6/ LD = LAB DUP

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES
METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: II
REQUIREMENTS (BATCH SPECIFIC QA)1/

	REPORTED NO	REPORTED YES	IN LIMITS NO	IN LIMITS YES	NOT REQUIRED
1. METHOD BLANKS		✓		✓	
2. MS % RECOVERY (%R)		✓		✓	
3. MSD OR ~~LAB DUPLICATE % R~~		✓		✓	
4. RWS % R		✓		✓	
5. RWSD % R		✓		✓	
6. RPDs FOR MS/MSD, SAMPLE/LD, RWS/RWSD		✓		✓	
7. LCS8/ %R		✓		✓	
8. ICVS 9/ %R		✓		✓	
		- -			✓

COMMENTS:

QA REPORTING LEVEL: III
REQUIREMENTS (SAMPLE SPECIFIC QA)10/

1. CALIBRATION CURVE STANDARDS					
2. ICVS %R					
3. CCVS11/ %R					
4. LCS %R					
5. METHOD BLANKS					
6. ICS12/ %R (ICP ONLY)					
7. DCS13/ %R (ICP ONLY)					
8. MS %R					
9. LD OR MSD %R AND RPD					
10. POST DIGESTION ANALYTICAL SPIKE14/					

COMMENTS:

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH.
2/ MS = MATRIX SPIKE; 3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.; 5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE; 7/ RPD = RELATIVE PERCENT DIFFERENCE
8/ LCS = LABORATORY CONTROL SAMPLE;
9/ ICVS = INITIAL CALIBRATION VERIFICATION STANDARD;
10/ SAMPLE SPECIFIC QA: APPLIES TO PROJECT SPECIFIC SAMPLES..
11/ CCVS = CONTINUING CALIBRATION VERIFICATION STANDARD;
12/ ICS = INTERFERENCE CHECK SAMPLE; 13/ DCS = DILUTION CHECK SAMPLE;
14/ POST DIGESTION ANALYTICAL SPIKE APPLIES TO FURNACE AA ONLY;

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FOUR

DATA EVALUATION SUMMARY Ft. Stewart RFI

PROJECT NAME: Ft Stewart Burn Pit PROJECT NUMBER: FST-004B
QA REPORTING LEVEL: II VALIDATION DATE: 28 Sept 03

ALL QA REPORTING LEVELS (I, II, III)

SUMMARY OF CHECKLIST FINDINGS	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. FIELD MEASUREMENTS OF PH AND SPECIFIC CONDUCTANCE ARE CONSISTENT WITH HISTORICAL DATA					
2. FIELD RECORDS	—	✓	—	✓	—
3. METHODS (GEN. INFO. SECTION ONE)	—	✓	—	✓	—
4. HOLDING TIMES (MASTER SAMPLE LIST)	—	✓	—	✓	—
A. EXTRACTION HOLDING TIMES					
B. ANALYSIS HOLDING TIMES	—	✓	—	✓	—
5. DETECTION LIMITS (SECTION ONE)	—	✓	—	✓	—
6. BLANKS (SECTIONS TWO OR THREE)	—	✓	—	✓	—
A. EQUIPMENT RINSATE BLANKS					
B. FIELD BLANKS	—	—	—	—	✓
C. TRIP BLANKS	—	—	—	—	✓
D. LABORATORY BLANKS	—	✓	—	✓	—
7. FIELD REPLICATES	—	✓	—	✓	—
8. FIELD SPLITS	—	✓	—	✓	—
9. GEOPHYSICAL COMPARISONS	—	—	—	—	✓
A. CATION VS ANION					
B. TDS VS SPEC. CONDUCTANCE	—	—	—	—	✓
C. PH VS ALK/ACIDITY	—	—	—	—	✓
D. OTHER	—	—	—	—	✓
10. METALS QA DATA (SECTION TWO)	—	✓	—	✓	—
11. INORGANIC WET CHEMISTRY (SEC. TWO)	—	✓	—	✓	—
12. ORGANIC QA DATA-GC (SECTION THREE-A)	—	✓	—	✓	—
13. ORGANIC WET CHEMISTRY (SEC. THREE-A)	—	✓	—	✓	—
14. ORGANIC QA DATA-GC/MS (SEC. THREE-B)	—	✓	—	✓	—

AFTER COMPLETING THIS SECTION GO TO SECTION FIVE.
COMMENTS:

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FIVE

DATA VALIDATION CODING Ft. Stewart RFI

PROJECT NAME: Ft. Stewart Aerial Pit PROJECT NUMBER: FST-0048
QA REPORTING LEVEL: II VALIDATION DATE: 28 Sept 93

1. QUALIFIER CODES ASSIGNED TO DATA: R, U, J, U/J, B, NO FLAG

2. IDENTIFICATION OF SAMPLES AND PARAMETERS WITH CODES:

	SAMPLE ID	PARAMETERS
R CODE		
B CODE		
U CODE		
J CODE		
U/J CODE		

EXPLANATION: all Acceptable

VALIDATION PERFORMED BY: FRANZ FROELICHER

SIGNED:

DATE: 28 Sept 93

Ft. Stewart RFA

DATA VALIDATION CHECKLIST
SECTION ONE

PROJECT NAME: Burn Pit
PROJECT NUMBER: FST-004c
SAMPLING DATE: 27 Jul 93, 10 Aug 93, 11 Aug 93 VALIDATION DATE: 21 Dec 93
SAMPLE IDENTIFICATION: 004c-1-11-93, 2-11-93, 3-11-93, 4-11-93

SAMPLING TEAM: J. Smith, J. Bistable
ANALYZING LABORATORY: Carr Laboratories
ANALYSES PERFORMED: 8240 RCRA Metals

SAMPLE MATRIX: Aqueous
QA REPORTING LEVEL: IV

FIELD DATA PACKAGE DOCUMENTATION

FIELD SAMPLING LOGS: 1/	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLING DATES NOTED	—	✓	—	✓	—
2. SAMPLING TEAM INDICATED	—	✓	—	✓	—
3. SAMPLE IDENTIFICATION TRACEABLE TO LOCATION COLLECTED	—	✓	—	✓	—
4. SAMPLE LOCATION	—	✓	—	✓	—
5. SAMPLE DEPTH FOR SOILS	—	✓	—	✓	—
6. COLLECTION TECHNIQUE (BAILER, PUMP ETC	—	✓	—	✓	—
7. FIELD SAMPLE PREPARATION TECHNIQUES	—	✓	—	✓	—
8. SAMPLE TYPE (GRAB, COMPOSITE)	—	✓	—	✓	—
9. SAMPLE CONTAINER TYPE	—	✓	—	✓	—
10. PRESERVATION METHODS	—	✓	—	✓	—
11. CHAIN OF CUSTODY FORM COMPLETED	—	✓	—	✓	—
12. REQUIRED ANALYTICAL METHODS REQUESTED	—	✓	—	✓	—
13. FIELD (WATER AND SOIL) SAMPLE LOGS COMPLETED PROPERLY AND SIGNED	—	✓	—	✓	—
14. NUMBER AND TYPE OF FIELD QC SAMPLES COLLECTED (BLANKS, REPLICATES, SPLITS, ETC.)	—	✓	—	✓	—
15. FIELD EQUIPMENT CALIBRATION	—	✓	—	✓	—
16. FIELD EQUIPMENT DECONTAMINATION	—	✓	—	✓	—
17. SAMPLE SHIPPING	—	✓	—	✓	—
18. LABORATORY TASK ORDER	—	✓	—	✓	—

1/ FIELD SAMPLING LOGS = WATER AND/OR SOIL/SEDIMENT SAMPLING LOGS

COMMENTS:

DATA VALIDATION CHECKLIST
SECTION ONE CONTINUED

ANALYTICAL DATA PACKAGE DOCUMENTATION
GENERAL INFORMATION

ALL QA REPORTING LEVELS	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLE RESULTS	—	✓	—	✓	—
2. PARAMETERS ANALYZED	—	✓	—	✓	—
3. METHOD OF ANALYSIS	—	✓	—	✓	—
4. DETECTION LIMITS OF ANALYSIS	—	✓	—	✓	—
5. MASTER TRACKING LIST	—	✓	—	✓	—
6. SAMPLE COLLECTION DATE	—	✓	—	✓	—
7. LAB SAMPLE RECEIVED DATE	—	✓	—	✓	—
8. SAMPLE PREPARATION/EXTRACTION DATE	—	✓	—	✓	—
9. SAMPLE ANALYSIS DATE	—	✓	—	✓	—
10. COPY OF CHAIN-OF-CUSTODY FORM SIGNED BY THE LAB SAMPLE CUSTODIAN	—	✓	—	✓	—
11. A NARRATIVE SUMMARY OF QA OR SAMPLE PROBLEMS IS PROVIDED.	—	✓	—	✓	—

COMMENTS: _____

AFTER COMPLETING SECTION ONE PROCEED TO THE APPROPRIATE QA REPORTING LEVEL OF SECTION TWO (INORGANIC ANALYSES) AND/OR SECTION THREE (ORGANIC ANALYSES). FOLLOWING COMPLETION OF THESE SECTIONS PROCEED TO SECTION FOUR (DATA EVALUATION SUMMARY).

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES
METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: I REQUIREMENTS (BATCH SPECIFIC QA)[1]	REPORTED NO	REPORTED YES	IN LIMITS NO	IN LIMITS YES	NOT REQUIRED
1. METHOD BLANKS	—	—	—	—	—
2. MS[2] OR RWS[3] % RECOVERY (%R)	—	—	—	—	—
3. MSD[4] OR RWSD[5] OR LD[6] %R	—	—	—	—	—
4. RPD[7]	—	—	—	—	—

COMMENTS: _____

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH REGARDLESS OF THE SOURCE.
2/ MS = MATRIX SPIKE;
3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.;
5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE;
7/ RPD = RELATIVE PERCENT DIFFERENCE

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES
METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: II
REQUIREMENTS (BATCH SPECIFIC QA)1/

	Reported		In Limits		Not
	No	Yes	No	Yes	Required
1. METHOD BLANKS		✓		✓	
2. MS % RECOVERY (%R)		✓		✓	
3. MSD OR ~~LAB DUPLICATE~~ % R		✓		✓	
4. RWS % R					✓
5. RWSD % R					✓
6. RPDs FOR MS/MSD, ~~SAMPLE/LD, RWS/RWSD~~		✓		✓	
7. LCS8/ %R					✓
8. ICVS 9/ %R					✓

COMMENTS: _____

QA REPORTING LEVEL: III
REQUIREMENTS (SAMPLE SPECIFIC QA)10/

1. CALIBRATION CURVE STANDARDS					
2. ICVS %R					
3. CCVS11/ %R					
4. LCS %R					
5. METHOD BLANKS					
6. ICS12/ %R (ICP ONLY)					
7. DCS13/ %R (ICP ONLY)					
8. MS %R					
9. LD OR MSD %R AND RPD					
10. POST DIGESTION ANALYTICAL SPIKE14/					

COMMENTS: _____

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH.
2/ MS = MATRIX SPIKE; 3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.; 5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE; 7/ RPD = RELATIVE PERCENT DIFFERENCE
8/ LCS = LABORATORY CONTROL SAMPLE;
9/ ICVS = INITIAL CALIBRATION VERIFICATION STANDARD;
10/ SAMPLE SPECIFIC QA: APPLIES TO PROJECT SPECIFIC SAMPLES..
11/ CCVS = CONTINUING CALIBRATION VERIFICATION STANDARD;
12/ ICS = INTERFERENCE CHECK SAMPLE; 13/ DCS = DILUTION CHECK SAMPLE;
14/ POST DIGESTION ANALYTICAL SPIKE APPLIES TO FURNACE AA ONLY;

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION THREE

ORGANIC ANALYSES

QA REPORTING LEVEL: I
REQUIREMENTS

	Reported No	Reported Yes	In Limits No	In Limits Yes	Not Required
1. Water Blanks					
2. Extraction Blanks					
3. RWS[1/]					
4. RWSD[2/]					
5. RPD[3/]					

Comments:

QA REPORTING LEVEL: II
REQUIREMENTS

A. GAS CHROMATOGRAPHY (NO MASS SPEC) OR WET CHEMISTRY PROCEDURE

1. Water Blanks		✓		✓	
2. Extraction Blanks					✓
3. MS[4/] (Batch Specific)		✓		✓	
4. MSD[5/] (Batch Specific)		✓		✓	
5. LD[6/] (Optional)					✓
6. MS/MSD RPD ~~OR SAMPLE/LD~~ RPD		✓		✓	
7. RWS					✓
8. RWSD					✓
9. RWS RPD					✓
10. Surrogate Spikes		✓		✓	

B. GAS CHROMATOGRAPH/MASS SPECTROMETER

1. Water Blanks		✓		✓	
2. Extraction Blanks					✓
3. MS (Batch Specific)		✓		✓	
4. MSD (Batch Specific)		✓		✓	
5. LD (Optional)					✓
6. MS/MSD RPD ~~OR SAMPLE/LD~~ RPD		✓		✓	
7. RWS					✓
8. RWSD					✓
9. RWS RPD					✓
10. Surrogate Spikes		✓		✓	

COMMENTS:

1/ RWS = REAGENT WATER SPIKE; 2/ RWSD = REAGENT WATER SPIKE DUPLICATE;
3/ RPD = RELATIVE PERCENT DIFFERENCE; 4/ MS = MATRIX SPIKE;
5/ MSD = MATRIX SPIKE DUPLICATE; 6/ LD = LAB DUP

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FOUR

DATA EVALUATION SUMMARY Ft Stewart RCRA

PROJECT NAME: Burn Pit PROJECT NUMBER: FST-004C
QA REPORTING LEVEL: II VALIDATION DATE: 21 Dec 93

ALL QA REPORTING LEVELS (I, II, III)

SUMMARY OF CHECKLIST FINDINGS

	Reported No	Reported Yes	Performance Acceptable No	Performance Acceptable Yes	Not Required
1. Field measurements of pH and specific conductance are consistent with historical data		✓		✓	
2. Field Records		✓		✓	
3. Methods (Gen. Info. Section One)		✓		✓	
4. Holding Times (Master Sample List)					
A. Extraction holding times		✓		✓	
B. Analysis holding times		✓		✓	
5. Detection Limits (Section One)		✓		✓	
6. Blanks (Sections Two or Three)					
A. Equipment rinsate blanks					✓
B. Field blanks		✓		✓	
C. Trip blanks					✓
D. Laboratory blanks		✓		✓	
7. Field replicates		✓		✓	
8. Field splits					
9. Geophysical comparisons					✓
A. Cation vs Anion					✓
B. TDS vs Spec. Conductance					✓
C. pH vs Alk/Acidity					✓
D. Other					✓
10. Metals QA Data (Section Two)		✓		✓	
11. Inorganic Wet Chemistry (Sec. Two)		✓		✓	
12. Organic QA Data-GC (Section Three-A)		✓		✓	
13. Organic Wet Chemistry (Sec. Three-A)					
14. Organic QA Data-GC/MS (Sec. Three-B)		✓		✓	

AFTER COMPLETING THIS SECTION GO TO SECTION FIVE.
COMMENTS:

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FIVE

DATA VALIDATION CODING Ft. Stewart RFI

PROJECT NAME: Burn Pit PROJECT NUMBER: FST-0042
QA REPORTING LEVEL: IV VALIDATION DATE: 21 Dec 93

1. QUALIFIER CODES ASSIGNED TO DATA: R, U, J, U/J, B, NO FLAG

2. IDENTIFICATION OF SAMPLES AND PARAMETERS WITH CODES:

	SAMPLE ID	PARAMETERS
R CODE		
S CODE		
U CODE		
J CODE		
U/J CODE		

EXPLANATION: all acceptable

VALIDATION PERFORMED BY: FRANZ FROELICHER

SIGNED: [signature]

DATE: 21 Dec 93

Ft. Stewart RFI

DATA VALIDATION CHECKLIST
SECTION ONE

PROJECT NAME: Ft Stewart Burn Pit
PROJECT NUMBER: EST-0040
SAMPLING DATE: 30 Jul 93 VALIDATION DATE: 28 Sept 93
SAMPLE IDENTIFICATION: MW1-7-93, MW2-7-93, MW3-7-93 MW4-7-93
SAMPLING TEAM: J. Smith, T. Haley
ANALYZING LABORATORY: Carr's Laboratory
ANALYSES PERFORMED: 624/8240 & PP Metals
SAMPLE MATRIX: aqueous
QA REPORTING LEVEL: II

FIELD DATA PACKAGE DOCUMENTATION

FIELD SAMPLING LOGS: 1/	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLING DATES NOTED		✓		✓	
2. SAMPLING TEAM INDICATED		✓		✓	
3. SAMPLE IDENTIFICATION TRACEABLE TO LOCATION COLLECTED		✓		✓	
4. SAMPLE LOCATION		✓		✓	
5. SAMPLE DEPTH FOR SOILS		✓		✓	
6. COLLECTION TECHNIQUE (BAILER, PUMP ETC		✓		✓	
7. FIELD SAMPLE PREPARATION TECHNIQUES		✓		✓	
8. SAMPLE TYPE (GRAB, COMPOSITE)		✓		✓	
9. SAMPLE CONTAINER TYPE		✓		✓	
10. PRESERVATION METHODS		✓		✓	
11. CHAIN OF CUSTODY FORM COMPLETED		✓		✓	
12. REQUIRED ANALYTICAL METHODS REQUESTED		✓		✓	
13. FIELD (WATER AND SOIL) SAMPLE LOGS COMPLETED PROPERLY AND SIGNED		✓		✓	
14. NUMBER AND TYPE OF FIELD QC SAMPLES COLLECTED (BLANKS, REPLICATES, SPLITS, ETC.)		✓		✓	
15. FIELD EQUIPMENT CALIBRATION		✓		✓	
16. FIELD EQUIPMENT DECONTAMINATION		✓		✓	
17. SAMPLE SHIPPING		✓		✓	
18. LABORATORY TASK ORDER		✓		✓	

1/ FIELD SAMPLING LOGS = WATER AND/OR SOIL/SEDIMENT SAMPLING LOGS

COMMENTS:

DATA VALIDATION CHECKLIST
SECTION ONE CONTINUED

ANALYTICAL DATA PACKAGE DOCUMENTATION
GENERAL INFORMATION

ALL QA REPORTING LEVELS	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLE RESULTS		✓		✓	
2. PARAMETERS ANALYZED		✓		✓	
3. METHOD OF ANALYSIS		✓		✓	
4. DETECTION LIMITS OF ANALYSIS		✓		✓	
5. MASTER TRACKING LIST		✓		✓	
6. SAMPLE COLLECTION DATE		✓		✓	
7. LAB SAMPLE RECEIVED DATE		✓		✓	
8. SAMPLE PREPARATION/EXTRACTION DATE		✓		✓	
9. SAMPLE ANALYSIS DATE		✓		✓	
10. COPY OF CHAIN-OF-CUSTODY FORM SIGNED BY THE LAB SAMPLE CUSTODIAN		✓		✓	
11. A NARRATIVE SUMMARY OF QA OR SAMPLE PROBLEMS IS PROVIDED.		✓		✓	

COMMENTS: _____

AFTER COMPLETING SECTION ONE PROCEED TO THE APPROPRIATE QA REPORTING LEVEL OF SECTION TWO (INORGANIC ANALYSES) AND/OR SECTION THREE (ORGANIC ANALYSES). FOLLOWING COMPLETION OF THESE SECTIONS PROCEED TO SECTION FOUR (DATA EVALUATION SUMMARY).

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES
METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: I REQUIREMENTS (BATCH SPECIFIC QA)[1]	REPORTED NO	REPORTED YES	IN LIMITS NO	IN LIMITS YES	NOT REQUIRED
1. METHOD BLANKS					
2. MS[2] OR RWS[3] % RECOVERY (%R)					
3. MSD[4] OR RWSD[5] OR LD[6] %R					
4. RPD[7]					

COMMENTS: _____

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH REGARDLESS OF THE SOURCE.
2/ MS = MATRIX SPIKE;
3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.;
5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE;
7/ RPD = RELATIVE PERCENT DIFFERENCE

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES
METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: II
REQUIREMENTS (BATCH SPECIFIC QA)[1/]

	Reported		In Limits		Not
	No	Yes	No	Yes	Required
1. Method Blanks		✓		✓	
2. MS % Recovery (%R)		✓		✓	
3. MSD or Lab Duplicate % R					✓
4. RWS % R		✓		✓	
5. RWSD % R		✓		✓	
6. RPDs for MS/MSD, Sample/LD, RWS/RWSD		✓		✓	
7. LCS[8/] %R		✓		✓	
8. ICVS [9/] %R		✓		✓	

COMMENTS: _____

QA REPORTING LEVEL: III
REQUIREMENTS (SAMPLE SPECIFIC QA)[10/]

1. Calibration Curve Standards					
2. ICVS %R					
3. CCVS[11/] %R					
4. LCS %R					
5. Method Blanks					
6. ICS[12/] %R (ICP only)					
7. DCS[13/] %R (ICP only)					
8. MS %R					
9. LD or MSD %R and RPD					
10. Post Digestion Analytical Spike[14/]					

COMMENTS: _____

1/ Batch specific QA: applies to any samples in analytical batch.
2/ MS = matrix spike; 3/ RWS = reagent water spike;
4/ MSD = matrix spike dup.; 5/ RWSD = reagent water spike dup.;
6/ LD = laboratory duplicate; 7/ RPD = relative percent difference
8/ LCS = laboratory control sample;
9/ ICVS = initial calibration verification standard;
10/ Sample specific QA: applies to project specific samples.
11/ CCVS = continuing calibration verification standard;
12/ ICS = interference check sample; 13/ DCS = dilution check sample;
14/ Post digestion analytical spike applies to furnace AA only;

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION THREE

ORGANIC ANALYSES

QA REPORTING LEVEL: I_
REQUIREMENTS_____

	Reported No	Reported Yes	In Limits No	In Limits Yes	Not Required
1. WATER BLANKS					
2. EXTRACTION BLANKS					
3. RWS[1/]					
4. RWSD[2/]					
5. RPD[3/]					

COMMENTS: _____

QA REPORTING LEVEL: II
REQUIREMENTS

A. GAS CHROMATOGRAPHY (NO MASS SPEC) OR WET CHEMISTRY PROCEDURE

	Reported No	Reported Yes	In Limits No	In Limits Yes	Not Required
1. WATER BLANKS	✓				✓
2. EXTRACTION BLANKS		✓		✓	
3. MS[4/] (BATCH SPECIFIC)		✓		✓	
4. MSD[5/] (BATCH SPECIFIC)		✓		✓	
5. LD[6/] (OPTIONAL)					✓
6. MS/MSD RPD OR SAMPLE/LD RPD					✓
7. RWS		✓		✓	
8. RWSD		✓		✓	
9. RWS RPD		✓		✓	
10. SURROGATE SPIKES		✓		✓	

B. GAS CHROMATOGRAPH/MASS SPECTROMETER

	Reported No	Reported Yes	In Limits No	In Limits Yes	Not Required
1. WATER BLANKS	✓				✓
2. EXTRACTION BLANKS		✓		✓	
3. MS (BATCH SPECIFIC)		✓		✓	
4. MSD (BATCH SPECIFIC)		✓		✓	
5. LD (OPTIONAL)					✓
6. MS/MSD RPD OR SAMPLE/LD RPD					✓
7. RWS		✓		✓	
8. RWSD		✓		✓	
9. RWS RPD		✓		✓	
10. SURROGATE SPIKES		✓		✓	

COMMENTS: _____

1/ RWS = REAGENT WATER SPIKE; 2/ RWSD = REAGENT WATER SPIKE DUPLICATE;
3/ RPD = RELATIVE PERCENT DIFFERENCE; 4/ MS = MATRIX SPIKE;
5/ MSD = MATRIX SPIKE DUPLICATE; 6/ LD = LAB DUP

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FOUR

DATA EVALUATION SUMMARY Ft. Stewart RFI

PROJECT NAME: Ft. Stewart Burn Pit PROJECT NUMBER: FST-004D
QA REPORTING LEVEL: II VALIDATION DATE: 28 Sept. 93

ALL QA REPORTING LEVELS (I, II, III)

SUMMARY OF CHECKLIST FINDINGS	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. FIELD MEASUREMENTS OF PH AND SPECIFIC CONDUCTANCE ARE CONSISTENT WITH HISTORICAL DATA		✓		✓	
2. FIELD RECORDS		✓		✓	
3. METHODS (GEN. INFO. SECTION ONE)		✓		✓	
4. HOLDING TIMES (MASTER SAMPLE LIST)					
A. EXTRACTION HOLDING TIMES		✓		✓	
B. ANALYSIS HOLDING TIMES		✓		✓	
5. DETECTION LIMITS (SECTION ONE)					✓
6. BLANKS (SECTIONS TWO OR THREE)					
A. EQUIPMENT RINSATE BLANKS					✓
B. FIELD BLANKS					✓
C. TRIP BLANKS					✓
D. LABORATORY BLANKS					✓
7. FIELD REPLICATES					✓
8. FIELD SPLITS					✓
9. GEOPHYSICAL COMPARISONS					
A. CATION VS ANION					✓
B. TDS VS SPEC. CONDUCTANCE					✓
C. PH VS ALK/ACIDITY					✓
D. OTHER					✓
10. METALS QA DATA (SECTION TWO)		✓		✓	
11. INORGANIC WET CHEMISTRY (SEC. TWO)		✓		✓	
12. ORGANIC QA DATA-GC (SECTION THREE-A)		✓		✓	
13. ORGANIC WET CHEMISTRY (SEC. THREE-A)		✓		✓	
14. ORGANIC QA DATA-GC/MS (SEC. THREE-B)		✓		✓	

AFTER COMPLETING THIS SECTION GO TO SECTION FIVE.
COMMENTS:

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FIVE

DATA VALIDATION CODING Ft. Stewart RFI

PROJECT NAME: FStewart Burn Pit PROJECT NUMBER: FST-004D
QA REPORTING LEVEL: II VALIDATION DATE: 28 Sept 93

1. QUALIFIER CODES ASSIGNED TO DATA: R, U, J, U/J, B, NO FLAG

2. IDENTIFICATION OF SAMPLES AND PARAMETERS WITH CODES:

	SAMPLE ID	PARAMETERS
R CODE		
B CODE		
U CODE		
J CODE		
U/J CODE		

EXPLANATION: all acceptable

VALIDATION PERFORMED BY: FRANZ FROELICHER

SIGNED: [signature]

DATE: 28 Sept 93

Ft. Stewart RFI

DATA VALIDATION CHECKLIST
SECTION ONE

PROJECT NAME: FT Stewart Burn Pit
PROJECT NUMBER: FST-004F
SAMPLING DATE: 18/20 Aug 93 VALIDATION DATE: 28-Sep 93
SAMPLE IDENTIFICATION: MW1, MW2, MW3, MW4 all 8-93

SAMPLING TEAM: J. Smith, W. Townsend
ANALYZING LABORATORY: Corr Laboratory
ANALYSES PERFORMED: 624/8240 & PP Metals

SAMPLE MATRIX: aqueous
QA REPORTING LEVEL: II

FIELD DATA PACKAGE DOCUMENTATION

FIELD SAMPLING LOGS: 1/	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLING DATES NOTED		✓		✓	
2. SAMPLING TEAM INDICATED		✓		✓	
3. SAMPLE IDENTIFICATION TRACEABLE TO LOCATION COLLECTED		✓		✓	
4. SAMPLE LOCATION		✓		✓	
5. SAMPLE DEPTH FOR SOILS		✓		✓	
6. COLLECTION TECHNIQUE (BAILER, PUMP ETC		✓		✓	
7. FIELD SAMPLE PREPARATION TECHNIQUES		✓		✓	
8. SAMPLE TYPE (GRAB, COMPOSITE)		✓		✓	
9. SAMPLE CONTAINER TYPE		✓		✓	
10. PRESERVATION METHODS		✓		✓	
11. CHAIN OF CUSTODY FORM COMPLETED		✓		✓	
12. REQUIRED ANALYTICAL METHODS REQUESTED		✓		✓	
13. FIELD (WATER AND SOIL) SAMPLE LOGS COMPLETED PROPERLY AND SIGNED		✓		✓	
14. NUMBER AND TYPE OF FIELD QC SAMPLES COLLECTED (BLANKS, REPLICATES, SPLITS, ETC.)		✓		✓	
15. FIELD EQUIPMENT CALIBRATION		✓		✓	
16. FIELD EQUIPMENT DECONTAMINATION		✓		✓	
17. SAMPLE SHIPPING		✓		✓	
18. LABORATORY TASK ORDER		✓		✓	

1/ FIELD SAMPLING LOGS = WATER AND/OR SOIL/SEDIMENT SAMPLING LOGS

COMMENTS:

DATA VALIDATION CHECKLIST
SECTION ONE CONTINUED

ANALYTICAL DATA PACKAGE DOCUMENTATION

GENERAL INFORMATION

ALL QA REPORTING LEVELS	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLE RESULTS		✓		✓	
2. PARAMETERS ANALYZED		✓		✓	
3. METHOD OF ANALYSIS		✓		✓	
4. DETECTION LIMITS OF ANALYSIS		✓		✓	
5. MASTER TRACKING LIST		✓		✓	
6. SAMPLE COLLECTION DATE		✓		✓	
7. LAB SAMPLE RECEIVED DATE		✓		✓	
8. SAMPLE PREPARATION/EXTRACTION DATE		✓		✓	
9. SAMPLE ANALYSIS DATE		✓		✓	
10. COPY OF CHAIN-OF-CUSTODY FORM SIGNED BY THE LAB SAMPLE CUSTODIAN		✓		✓	
11. A NARRATIVE SUMMARY OF QA OR SAMPLE PROBLEMS IS PROVIDED.		✓		✓	

COMMENTS: _____

AFTER COMPLETING SECTION ONE PROCEED TO THE APPROPRIATE QA REPORTING LEVEL OF SECTION TWO (INORGANIC ANALYSES) AND/OR SECTION THREE (ORGANIC ANALYSES). FOLLOWING COMPLETION OF THESE SECTIONS PROCEED TO SECTION FOUR (DATA EVALUATION SUMMARY).

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES
METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: I

REQUIREMENTS (BATCH SPECIFIC QA)[1]	REPORTED NO	REPORTED YES	IN LIMITS NO	IN LIMITS YES	NOT REQUIRED
1. METHOD BLANKS					
2. MS[2] OR RWS[3] % RECOVERY (%R)					
3. MSD[4] OR RWSD[5] OR LD[6] %R					
4. RPD[7]					

COMMENTS: _____

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH REGARDLESS OF THE SOURCE.
2/ MS = MATRIX SPIKE;
3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.;
5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE;
7/ RPD = RELATIVE PERCENT DIFFERENCE

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES
METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: II
REQUIREMENTS (BATCH SPECIFIC QA)[1/]

	Reported		In Limits		Not
	No	Yes	No	Yes	Required
1. Method Blanks		✓		✓	
2. MS % Recovery (%R)		✓		✓	
3. MSD or Lab Duplicate % R					✓
4. RWS % R		✓		✓	
5. RWSD % R		✓		✓	
6. RPDs for MS/MSD, Sample/LD, RWS/RWSD		✓		✓	
7. LCS[8/] %R		✓		✓	
8. ICVS [9/] %R		✓		✓	
					✓

Comments: _____

QA REPORTING LEVEL: III
REQUIREMENTS (SAMPLE SPECIFIC QA)[10/]

1. Calibration Curve Standards					
2. ICVS %R					
3. CCVS[11/] %R					
4. LCS %R					
5. Method Blanks					
6. ICS[12/] %R (ICP only)					
7. DCS[13/] %R (ICP only)					
8. MS %R					
9. LD or MSD %R and RPD					
10. Post Digestion Analytical Spike[14/]					

Comments: _____

1/ Batch specific QA: applies to any samples in analytical batch.
2/ MS = matrix spike; 3/ RWS = reagent water spike;
4/ MSD = matrix spike dup.; 5/ RWSD = reagent water spike dup.;
6/ LD = laboratory duplicate; 7/ RPD = relative percent difference
8/ LCS = laboratory control sample;
9/ ICVS = initial calibration verification standard;
10/ Sample specific QA: applies to project specific samples..
11/ CCVS = continuing calibration verification standard;
12/ ICS = interference check sample; 13/ DCS = dilution check sample;
14/ Post digestion analytical spike applies to furnace AA only;

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION THREE

ORGANIC ANALYSES

QA REPORTING LEVEL: I
REQUIREMENTS

	Reported		In Limits		Not
	No	Yes	No	Yes	Required
1. Water Blanks					
2. Extraction Blanks					
3. RWS[1/]					
4. RWSD[2/]					
5. RPD[3/]					

Comments:

QA REPORTING LEVEL: II
REQUIREMENTS

A. GAS CHROMATOGRAPHY (NO MASS SPEC) OR WET CHEMISTRY PROCEDURE

1. Water Blanks	✓				✓
2. Extraction Blanks		✓		✓	
3. MS[4/] (Batch Specific)		✓		✓	
4. MSD[5/] (Batch Specific)		✓		✓	
5. LD[6/] (Optional)		-			✓
6. MS/MSD RPD or Sample/LD RPD		✓			✓
7. RWS		✓		✓	
8. RWSD		✓		✓	
9. RWS RPD		✓		✓	
10. Surrogate Spikes		✓		✓	

B. GAS CHROMATOGRAPH/MASS SPECTROMETER

1. Water Blanks	✓				✓
2. Extraction Blanks		✓		✓	
3. MS (Batch Specific)				-	✓
4. MSD (Batch Specific)		-		-	✓
5. LD (Optional)					✓
6. MS/MSD RPD or Sample/LD RPD					✓
7. RWS		✓		✓	
8. RWSD		✓		✓	
9. RWS RPD		✓		✓	
10. Surrogate Spikes		✓		✓	

COMMENTS:

1/ RWS = REAGENT WATER SPIKE; 2/ RWSD = REAGENT WATER SPIKE DUPLICATE;
3/ RPD = RELATIVE PERCENT DIFFERENCE; 4/ MS = MATRIX SPIKE;
5/ MSD = MATRIX SPIKE DUPLICATE; 6/ LD = LAB DUP

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FOUR

DATA EVALUATION SUMMARY Ft Stewart RFI

PROJECT NAME: Burn Pits PROJECT NUMBER: FS4-0041E
QA REPORTING LEVEL: II VALIDATION DATE: 28 Sept 93

ALL QA REPORTING LEVELS (I, II, III)

SUMMARY OF CHECKLIST FINDINGS	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. FIELD MEASUREMENTS OF PH AND SPECIFIC CONDUCTANCE ARE CONSISTENT WITH HISTORICAL DATA		✓		✓	
2. FIELD RECORDS		✓		✓	
3. METHODS (GEN. INFO. SECTION ONE)		✓		✓	
4. HOLDING TIMES (MASTER SAMPLE LIST)					
A. EXTRACTION HOLDING TIMES		✓		✓	
B. ANALYSIS HOLDING TIMES		✓		✓	
5. DETECTION LIMITS (SECTION ONE)		✓		✓	
6. BLANKS (SECTIONS TWO OR THREE)					
A. EQUIPMENT RINSATE BLANKS					✓
B. FIELD BLANKS					✓
C. TRIP BLANKS					✓
D. LABORATORY BLANKS		✓		✓	
7. FIELD REPLICATES					✓
8. FIELD SPLITS					✓
9. GEOPHYSICAL COMPARISONS					
A. CATION VS ANION					✓
B. TDS VS SPEC. CONDUCTANCE					✓
C. PH VS ALK/ACIDITY					✓
D. OTHER					✓
10. METALS QA DATA (SECTION TWO)		✓		✓	
11. INORGANIC WET CHEMISTRY (SEC. TWO)		✓		✓	
12. ORGANIC QA DATA-GC (SECTION THREE-A)		✓		✓	
13. ORGANIC WET CHEMISTRY (SEC. THREE-A)		✓		✓	
14. ORGANIC QA DATA-GC/MS (SEC. THREE-B)		✓		✓	

AFTER COMPLETING THIS SECTION GO TO SECTION FIVE.
COMMENTS:

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ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FIVE

DATA VALIDATION CODING Ft Stewart RF1

PROJECT NAME: Ft. Stewart Burn Pit PROJECT NUMBER: FST-004E
QA REPORTING LEVEL: II VALIDATION DATE: 28 Sept 93

1. QUALIFIER CODES ASSIGNED TO DATA: R, U, J, U/J, B, NO FLAG

2. IDENTIFICATION OF SAMPLES AND PARAMETERS WITH CODES:

	SAMPLE ID	PARAMETERS
R CODE		
B CODE		
U CODE		
J CODE		
U/J CODE		

EXPLANATION: all acceptable

VALIDATION PERFORMED BY: FRANZ FROELICHER

SIGNED: [signature]

DATE: 28 Sept 93

Ft Stewart RFA

DATA VALIDATION CHECKLIST
SECTION ONE

PROJECT NAME: Ft. Stewart Burn Pit
PROJECT NUMBER: FST-004F
SAMPLING DATE: 20 Aug 93 VALIDATION DATE: 28 ~~Aug~~ Sept 93
SAMPLE IDENTIFICATION: MW1-8-93, MW2, MW3, MW4, all ID's Prefixed with FST004F
SAMPLING TEAM: J. Smith W. Townsend
ANALYZING LABORATORY: Carr Laboratory
ANALYSES PERFORMED: 624/8240 & PP Metals
SAMPLE MATRIX: Aqueous
QA REPORTING LEVEL: II

FIELD DATA PACKAGE DOCUMENTATION

FIELD SAMPLING LOGS: 1/	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLING DATES NOTED	—	✓	—	✓	—
2. SAMPLING TEAM INDICATED	—	✓	—	✓	—
3. SAMPLE IDENTIFICATION TRACEABLE TO LOCATION COLLECTED	—	✓	—	✓	—
4. SAMPLE LOCATION	—	✓	—	✓	—
5. SAMPLE DEPTH FOR SOILS	—	✓	—	✓	—
6. COLLECTION TECHNIQUE (BAILER, PUMP ETC	—	✓	—	✓	—
7. FIELD SAMPLE PREPARATION TECHNIQUES	—	✓	—	✓	—
8. SAMPLE TYPE (GRAB, COMPOSITE)	—	✓	—	✓	—
9. SAMPLE CONTAINER TYPE	—	✓	—	✓	—
10. PRESERVATION METHODS	—	✓	—	✓	—
11. CHAIN OF CUSTODY FORM COMPLETED	—	✓	—	✓	—
12. REQUIRED ANALYTICAL METHODS REQUESTED	—	✓	—	✓	—
13. FIELD (WATER AND SOIL) SAMPLE LOGS COMPLETED PROPERLY AND SIGNED	—	✓	—	✓	—
14. NUMBER AND TYPE OF FIELD QC SAMPLES COLLECTED (BLANKS, REPLICATES, SPLITS, ETC.)	—	✓	—	✓	—
15. FIELD EQUIPMENT CALIBRATION	—	✓	—	✓	—
16. FIELD EQUIPMENT DECONTAMINATION	—	✓	—	✓	—
17. SAMPLE SHIPPING	—	✓	—	✓	—
18. LABORATORY TASK ORDER	—	✓	—	✓	—

1/ FIELD SAMPLING LOGS = WATER AND/OR SOIL/SEDIMENT SAMPLING LOGS

COMMENTS:

DATA VALIDATION CHECKLIST
SECTION ONE CONTINUED

ANALYTICAL DATA PACKAGE DOCUMENTATION
GENERAL INFORMATION

ALL QA REPORTING LEVELS	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLE RESULTS		✓		✓	
2. PARAMETERS ANALYZED		✓		✓	
3. METHOD OF ANALYSIS		✓		✓	
4. DETECTION LIMITS OF ANALYSIS		✓		✓	
5. MASTER TRACKING LIST		✓		✓	
6. SAMPLE COLLECTION DATE		✓		✓	
7. LAB SAMPLE RECEIVED DATE		✓		✓	
8. SAMPLE PREPARATION/EXTRACTION DATE		✓		✓	
9. SAMPLE ANALYSIS DATE		✓		✓	
10. COPY OF CHAIN-OF-CUSTODY FORM SIGNED BY THE LAB SAMPLE CUSTODIAN		✓		✓	
11. A NARRATIVE SUMMARY OF QA OR SAMPLE PROBLEMS IS PROVIDED.		✓		✓	

COMMENTS: _____

AFTER COMPLETING SECTION ONE PROCEED TO THE APPROPRIATE QA REPORTING LEVEL OF SECTION TWO (INORGANIC ANALYSES) AND/OR SECTION THREE (ORGANIC ANALYSES). FOLLOWING COMPLETION OF THESE SECTIONS PROCEED TO SECTION FOUR (DATA EVALUATION SUMMARY).

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES
METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: I REQUIREMENTS (BATCH SPECIFIC QA)[1]	REPORTED NO	REPORTED YES	IN LIMITS NO	IN LIMITS YES	NOT REQUIRED
1. METHOD BLANKS					
2. MS[2] OR RWS[3] % RECOVERY (%R)					
3. MSD[4] OR RWSD[5] OR LD[6] %R					
4. RPD[7]					

COMMENTS: _____

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH REGARDLESS OF THE SOURCE.
2/ MS = MATRIX SPIKE;
3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.;
5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE;
7/ RPD = RELATIVE PERCENT DIFFERENCE

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES
METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: II
REQUIREMENTS (BATCH SPECIFIC QA)[1/]

	Reported No	Reported Yes	In Limits No	In Limits Yes	Not Required
1. METHOD BLANKS		✓		✓	
2. MS % RECOVERY (%R)		✓		✓	
3. MSD OR LAB DUPLICATE % R		✓		✓	
4. RWS % R		✓		✓	
5. RWSD % R		✓		✓	
6. RPDs FOR MS/MSD, SAMPLE/LD, RWS/RWSD		✓		✓	
7. LCS[8/] %R		✓		✓	✓
8. ICVS [9/] %R		✓		✓	
					✓

COMMENTS: _____

QA REPORTING LEVEL: III
REQUIREMENTS (SAMPLE SPECIFIC QA)[10/]

1. CALIBRATION CURVE STANDARDS					
2. ICVS %R					
3. CCVS[11/] %R					
4. LCS %R					
5. METHOD BLANKS					
6. ICS[12/] %R (ICP ONLY)					
7. DCS[13/] %R (ICP ONLY)					
8. MS %R					
9. LD OR MSD %R AND RPD					
10. POST DIGESTION ANALYTICAL SPIKE[14/]					

COMMENTS: _____

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH.
2/ MS = MATRIX SPIKE; 3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.; 5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE; 7/ RPD = RELATIVE PERCENT DIFFERENCE
8/ LCS = LABORATORY CONTROL SAMPLE;
9/ ICVS = INITIAL CALIBRATION VERIFICATION STANDARD;
10/ SAMPLE SPECIFIC QA: APPLIES TO PROJECT SPECIFIC SAMPLES..
11/ CCVS = CONTINUING CALIBRATION VERIFICATION STANDARD;
12/ ICS = INTERFERENCE CHECK SAMPLE; 13/ DCS = DILUTION CHECK SAMPLE;
14/ POST DIGESTION ANALYTICAL SPIKE APPLIES TO FURNACE AA ONLY;

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION THREE

ORGANIC ANALYSES

QA REPORTING LEVEL: I_
REQUIREMENTS_____

	Reported No	Reported Yes	In Limits No	In Limits Yes	Not Required
1. Water blanks					
2. Extraction blanks					
3. RWS[1/]					
4. RWSD[2/]					
5. RPD[3/]					

Comments: _____

QA REPORTING LEVEL: II
REQUIREMENTS
A. Gas chromatography (no mass spec) or wet chemistry procedure

1. Water blanks					✓
2. Extraction blanks		✓		✓	
3. MS[4/] (batch specific)		→			
4. MSD[5/] (batch specific)		→			
5. LD[6/] (optional)					
6. MS/MSD RPD or sample/LD RPD		✓		✓	
7. RWS		✓		✓	
8. RWSD		✓		✓	
9. RWS RPD		✓		✓	
10. Surrogate spikes		✓		✓	

B. Gas chromatograph/mass spectrometer

1. Water blanks	~		✓		✓
2. Extraction blanks		✓		✓	
3. MS (Batch specific)		→			✓
4. MSD (Batch specific)		→			✓
5. LD (Optional)		→		→	✓
6. MS/MSD RPD or sample/LD RPD		→		→	✓
7. RWS		✓		✓	
8. RWSD		✓		✓	
9. RWS RPD		✓		✓	
10. Surrogate spikes		✓		✓	

COMMENTS: _____

1/ RWS = REAGENT WATER SPIKE; 2/ RWSD = REAGENT WATER SPIKE DUPLICATE;
3/ RPD = RELATIVE PERCENT DIFFERENCE; 4/ MS = MATRIX SPIKE;
5/ MSD = MATRIX SPIKE DUPLICATE; 6/ LD = LAB DUP

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FOUR

DATA EVALUATION SUMMARY Ft. Stewart RFI

PROJECT NAME: Ft. Stewart Burn Pit PROJECT NUMBER: FST-004F
QA REPORTING LEVEL: II VALIDATION DATE: 28 Sept 93

ALL QA REPORTING LEVELS (I, II, III)

SUMMARY OF CHECKLIST FINDINGS	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. FIELD MEASUREMENTS OF PH AND SPECIFIC CONDUCTANCE ARE CONSISTENT WITH HISTORICAL DATA		✓		✓	
2. FIELD RECORDS		✓		✓	
3. METHODS (GEN. INFO. SECTION ONE)		✓		✓	
4. HOLDING TIMES (MASTER SAMPLE LIST)		✓		✓	
A. EXTRACTION HOLDING TIMES		✓		✓	
B. ANALYSIS HOLDING TIMES		✓		✓	
5. DETECTION LIMITS (SECTION ONE)		✓		✓	
6. BLANKS (SECTIONS TWO OR THREE)		✓		✓	✓
A. EQUIPMENT RINSATE BLANKS					
B. FIELD BLANKS					✓
C. TRIP BLANKS					✓
D. LABORATORY BLANKS					✓
7. FIELD REPLICATES					
8. FIELD SPLITS					✓
9. GEOPHYSICAL COMPARISONS					✓
A. CATION VS ANION					
B. TDS VS SPEC. CONDUCTANCE					✓
C. PH VS ALK/ACIDITY					✓
D. OTHER					✓
10. METALS QA DATA (SECTION TWO)		✓		✓	
11. INORGANIC WET CHEMISTRY (SEC. TWO)		✓		✓	
12. ORGANIC QA DATA-GC (SECTION THREE-A)		✓		✓	
13. ORGANIC WET CHEMISTRY (SEC. THREE-A)		✓		✓	
14. ORGANIC QA DATA-GC/MS (SEC. THREE-B)		✓		✓	

AFTER COMPLETING THIS SECTION GO TO SECTION FIVE.
COMMENTS:

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FIVE

DATA VALIDATION CODING Ft. Stewart RFI

PROJECT NAME: Ft. Stewart Burn Pit PROJECT NUMBER: FST-004F
QA REPORTING LEVEL: II VALIDATION DATE: 28 Sept 93

1. QUALIFIER CODES ASSIGNED TO DATA: R, U, J, U/J, B, NO FLAG

2. IDENTIFICATION OF SAMPLES AND PARAMETERS WITH CODES:

	SAMPLE ID	PARAMETERS
R CODE		
B CODE		
U CODE		
J CODE		
U/J CODE		

EXPLANATION: All Acceptable

VALIDATION PERFORMED BY: Frank Froelicher

SIGNED: [signature]

DATE: 28 Sept 93

Ft. Stewart

DATA VALIDATION CHECKLIST
SECTION ONE

PROJECT NAME: EOD site
PROJECT NUMBER: FST-009
SAMPLING DATE: 22 Nov 93 VALIDATION DATE: 30 Dec 93
SAMPLE IDENTIFICATION: SS-1-11-93, SS2-11-93, SS3, SS4, SS5, SS5 dup, SS6-11-93
SAMPLING TEAM: T. Smith D. Orridan T. Biddle E. Harris
ANALYZING LABORATORY: Cass Laboratories and IT International Labs
ANALYSES PERFORMED: 8240, RCRA metals, Pb, conductivity
SAMPLE MATRIX: Soil
QA REPORTING LEVEL: II

FIELD DATA PACKAGE DOCUMENTATION

FIELD SAMPLING LOGS:[1]	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLING DATES NOTED		✓		✓	
2. SAMPLING TEAM INDICATED		✓		✓	
3. SAMPLE IDENTIFICATION TRACEABLE TO LOCATION COLLECTED		✓		✓	
4. SAMPLE LOCATION		✓		✓	
5. SAMPLE DEPTH FOR SOILS		✓		✓	
6. COLLECTION TECHNIQUE (BAILER, PUMP ETC		✓		✓	
7. FIELD SAMPLE PREPARATION TECHNIQUES		✓		✓	
8. SAMPLE TYPE (GRAB, COMPOSITE)		✓		✓	
9. SAMPLE CONTAINER TYPE		✓		✓	
10. PRESERVATION METHODS		✓		✓	
11. CHAIN OF CUSTODY FORM COMPLETED		✓		✓	
12. REQUIRED ANALYTICAL METHODS REQUESTED		✓		✓	
13. FIELD (WATER AND SOIL) SAMPLE LOGS COMPLETED PROPERLY AND SIGNED		✓		✓	
14. NUMBER AND TYPE OF FIELD QC SAMPLES COLLECTED (BLANKS, REPLICATES, SPLITS, ETC.)		✓		✓	
15. FIELD EQUIPMENT CALIBRATION		✓		✓	
16. FIELD EQUIPMENT DECONTAMINATION		✓		✓	
17. SAMPLE SHIPPING		✓		✓	
18. LABORATORY TASK ORDER		✓		✓	

1/ FIELD SAMPLING LOGS = WATER AND/OR SOIL/SEDIMENT SAMPLING LOGS

COMMENTS:

DATA VALIDATION CHECKLIST
SECTION ONE CONTINUED

ANALYTICAL DATA PACKAGE DOCUMENTATION
GENERAL INFORMATION

ALL QA REPORTING LEVELS	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLE RESULTS		✓		✓	
2. PARAMETERS ANALYZED		✓		✓	
3. METHOD OF ANALYSIS		✓		✓	
4. DETECTION LIMITS OF ANALYSIS		✓		✓	
5. MASTER TRACKING LIST		✓		✓	
6. SAMPLE COLLECTION DATE		✓		✓	
7. LAB SAMPLE RECEIVED DATE		✓		✓	
8. SAMPLE PREPARATION/EXTRACTION DATE		✓		✓	
9. SAMPLE ANALYSIS DATE		✓		✓	
10. COPY OF CHAIN-OF-CUSTODY FORM SIGNED BY THE LAB SAMPLE CUSTODIAN		✓		✓	
11. A NARRATIVE SUMMARY OF QA OR SAMPLE PROBLEMS IS PROVIDED.		✓		✓	

COMMENTS: _____

AFTER COMPLETING SECTION ONE PROCEED TO THE APPROPRIATE QA REPORTING LEVEL OF SECTION TWO (INORGANIC ANALYSES) AND/OR SECTION THREE (ORGANIC ANALYSES). FOLLOWING COMPLETION OF THESE SECTIONS PROCEED TO SECTION FOUR (DATA EVALUATION SUMMARY).

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES
METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: I REQUIREMENTS (BATCH SPECIFIC QA)[1]	REPORTED NO	REPORTED YES	IN LIMITS NO	IN LIMITS YES	NOT REQUIRED
1. METHOD BLANKS					
2. MS[2] OR RWS[3] % RECOVERY (%R)					
3. MSD[4] OR RWSD[5] OR LD[6] %R					
4. RPD[7]					

COMMENTS: _____

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH REGARDLESS OF THE SOURCE.
2/ MS = MATRIX SPIKE;
3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.;
5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE;
7/ RPD = RELATIVE PERCENT DIFFERENCE

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES
METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: II
REQUIREMENTS (BATCH SPECIFIC QA)[1/]

	Reported No	Reported Yes	In Limits No	In Limits Yes	Not Required
1. METHOD BLANKS					
2. MS % RECOVERY (%R)		✓		✓	
3. MSD OR ~~LAB DUPLICATE~~ % R		✓		✓	
4. RWS % R					✓
5. RWSD % R					✓
6. RPDs FOR MS/MSD, ~~SAMPLE/LD~~, ~~RWS/RWSD~~					✓
7. LCS[8/] %R		✓		✓	
8. ICVS [9/] %R		✓		✓	
					✓

COMMENTS: _____

QA REPORTING LEVEL: III
REQUIREMENTS (SAMPLE SPECIFIC QA)[10/]

1. CALIBRATION CURVE STANDARDS					
2. ICVS %R					
3. CCVS[11/] %R					
4. LCS %R					
5. METHOD BLANKS					
6. ICS[12/] %R (ICP ONLY)					
7. DCS[13/] %R (ICP ONLY)					
8. MS %R					
9. LD OR MSD %R AND RPD					
10. POST DIGESTION ANALYTICAL SPIKE[14/]					

COMMENTS: _____

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH.
2/ MS = MATRIX SPIKE; 3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.; 5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE; 7/ RPD = RELATIVE PERCENT DIFFERENCE
8/ LCS = LABORATORY CONTROL SAMPLE;
9/ ICVS = INITIAL CALIBRATION VERIFICATION STANDARD;
10/ SAMPLE SPECIFIC QA: APPLIES TO PROJECT SPECIFIC SAMPLES..
11/ CCVS = CONTINUING CALIBRATION VERIFICATION STANDARD;
12/ ICS = INTERFERENCE CHECK SAMPLE; 13/ DCS = DILUTION CHECK SAMPLE;
14/ POST DIGESTION ANALYTICAL SPIKE APPLIES TO FURNACE AA ONLY;

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION THREE

ORGANIC ANALYSES

QA REPORTING LEVEL: I_
REQUIREMENTS_____

	Reported		In Limits		Not
	No	Yes	No	Yes	Required
1. Water Blanks					
2. Extraction Blanks					
3. RWS[1/]					
4. RWSD[2/]					
5. RPD[3/]					

Comments: _____

QA REPORTING LEVEL: II
REQUIREMENTS
A. GAS CHROMATOGRAPHY (NO MASS SPEC) OR WET CHEMISTRY PROCEDURE

1. Water Blanks					
2. Extraction Blanks					
3. MS[4/] (Batch Specific)					
4. MSD[5/] (Batch Specific)					
5. LD[6/] (Optional)					
6. MS/MSD RPD or Sample/LD RPD					
7. RWS					
8. RWSD					
9. RWS RPD					
10. Surrogate Spikes					

B. GAS CHROMATOGRAPH/MASS SPECTROMETER

1. Water Blanks		✓		✓	
2. Extraction Blanks		✓			✓
3. MS (Batch Specific)		✓		✓	
4. MSD (Batch Specific)		✓		✓	
5. LD (Optional)		✓		✓	
6. MS/MSD RPD ~~or Sample/LD RPD~~		✓		✓	
7. RWS					✓
8. RWSD					✓
9. RWS RPD					✓
10. Surrogate Spikes		✓		✓	

COMMENTS: _____

1/ RWS = Reagent Water Spike; 2/ RWSD = Reagent Water Spike Duplicate;
3/ RPD = Relative Percent Difference; 4/ MS = Matrix Spike;
5/ MSD = Matrix Spike Duplicate; 6/ LD = Lab Dup

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FOUR

DATA EVALUATION SUMMARY Ft. Stewart RFI

PROJECT NAME: EOD Site PROJECT NUMBER: FST-009
QA REPORTING LEVEL: II VALIDATION DATE: 10 Nov 93

ALL QA REPORTING LEVELS (I, II, III)

SUMMARY OF CHECKLIST FINDINGS	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. FIELD MEASUREMENTS OF PH AND SPECIFIC CONDUCTANCE ARE CONSISTENT WITH HISTORICAL DATA		✓		✓	
2. FIELD RECORDS		✓		✓	
3. METHODS (GEN. INFO. SECTION ONE)		✓		✓	
4. HOLDING TIMES (MASTER SAMPLE LIST)					
A. EXTRACTION HOLDING TIMES		✓		✓	
B. ANALYSIS HOLDING TIMES		✓		✓	
5. DETECTION LIMITS (SECTION ONE)		✓		✓	
6. BLANKS (SECTIONS TWO OR THREE)					
A. EQUIPMENT RINSATE BLANKS					✓
B. FIELD BLANKS					✓
C. TRIP BLANKS					✓
D. LABORATORY BLANKS		✓		✓	
7. FIELD REPLICATES		✓		✓	
8. FIELD SPLITS					✓
9. GEOPHYSICAL COMPARISONS					
A. CATION VS ANION					✓
B. TDS VS SPEC. CONDUCTANCE					✓
C. PH VS ALK/ACIDITY					✓
D. OTHER					✓
10. METALS QA DATA (SECTION TWO)		✓		✓	
11. INORGANIC WET CHEMISTRY (SEC. TWO)					✓
12. ORGANIC QA DATA-GC (SECTION THREE-A)					✓
13. ORGANIC WET CHEMISTRY (SEC. THREE-A)					✓
14. ORGANIC QA DATA-GC/MS (SEC. THREE-B)		✓		✓	

AFTER COMPLETING THIS SECTION GO TO SECTION FIVE.
COMMENTS:

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FIVE

DATA VALIDATION CODING Ft. Stewart RFI

PROJECT NAME: EOD Site PROJECT NUMBER: FST-009
QA REPORTING LEVEL: II VALIDATION DATE: 20 Dec 93

1. QUALIFIER CODES ASSIGNED TO DATA: R, U, J, U/J, B, NO FLAG

2. IDENTIFICATION OF SAMPLES AND PARAMETERS WITH CODES:

	SAMPLE ID	PARAMETERS
R CODE		
B CODE		
U CODE		
J CODE		
U/J CODE		

EXPLANATION: all acceptable

VALIDATION PERFORMED BY: Frauke Froelichen

SIGNED: [signature]

DATE: 20 Dec 93

Ft. Stewart RFI

DATA VALIDATION CHECKLIST
SECTION ONE

PROJECT NAME: Inactive EOD Site
PROJECT NUMBER: EST-010
SAMPLING DATE: 4 Nov 93 VALIDATION DATE: 11 Jan 94
SAMPLE IDENTIFICATION: SS1-11-93, SS2, SS3, SS4, SS4Dup, SS5, SS6
SAMPLING TEAM: T. Smith, Mike Stevens, R. Harris
ANALYZING LABORATORY: Con Laboratory and I.T. International Golfo
ANALYSES PERFORMED: Explosive Residue 8330, VOC, RCRA Metals
SAMPLE MATRIX: Non Aqueous, Soil
QA REPORTING LEVEL: II

FIELD DATA PACKAGE DOCUMENTATION

FIELD SAMPLING LOGS: 1/	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLING DATES NOTED		✓		✓	
2. SAMPLING TEAM INDICATED		✓		✓	
3. SAMPLE IDENTIFICATION TRACEABLE TO LOCATION COLLECTED		✓		✓	
4. SAMPLE LOCATION		✓		✓	
5. SAMPLE DEPTH FOR SOILS		✓		✓	
6. COLLECTION TECHNIQUE (BAILER, PUMP ETC		✓		✓	
7. FIELD SAMPLE PREPARATION TECHNIQUES		✓		✓	
8. SAMPLE TYPE (GRAB, COMPOSITE)		✓		✓	
9. SAMPLE CONTAINER TYPE		✓		✓	
10. PRESERVATION METHODS		✓		✓	
11. CHAIN OF CUSTODY FORM COMPLETED		✓		✓	
12. REQUIRED ANALYTICAL METHODS REQUESTED		✓		✓	
13. FIELD (WATER AND SOIL) SAMPLE LOGS COMPLETED PROPERLY AND SIGNED		✓		✓	
14. NUMBER AND TYPE OF FIELD QC SAMPLES COLLECTED (BLANKS, REPLICATES, SPLITS, ETC.)		✓		✓	
15. FIELD EQUIPMENT CALIBRATION		✓		✓	
16. FIELD EQUIPMENT DECONTAMINATION		✓		✓	
17. SAMPLE SHIPPING		✓		✓	
18. LABORATORY TASK ORDER		✓		✓	

1/ FIELD SAMPLING LOGS = WATER AND/OR SOIL/SEDIMENT SAMPLING LOGS

COMMENTS:

DATA VALIDATION CHECKLIST
SECTION ONE CONTINUED

ANALYTICAL DATA PACKAGE DOCUMENTATION
GENERAL INFORMATION

ALL QA REPORTING LEVELS	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLE RESULTS		✓		✓	
2. PARAMETERS ANALYZED		✓		✓	
3. METHOD OF ANALYSIS		✓		✓	
4. DETECTION LIMITS OF ANALYSIS		✓		✓	
5. MASTER TRACKING LIST		✓		✓	
6. SAMPLE COLLECTION DATE		✓		✓	
7. LAB SAMPLE RECEIVED DATE		✓		✓	
8. SAMPLE PREPARATION/EXTRACTION DATE		✓		✓	
9. SAMPLE ANALYSIS DATE		✓		✓	
10. COPY OF CHAIN-OF-CUSTODY FORM SIGNED BY THE LAB SAMPLE CUSTODIAN		✓		✓	
11. A NARRATIVE SUMMARY OF QA OR SAMPLE PROBLEMS IS PROVIDED.		✓		✓	

COMMENTS: _____

AFTER COMPLETING SECTION ONE PROCEED TO THE APPROPRIATE QA REPORTING LEVEL OF SECTION TWO (INORGANIC ANALYSES) AND/OR SECTION THREE (ORGANIC ANALYSES). FOLLOWING COMPLETION OF THESE SECTIONS PROCEED TO SECTION FOUR (DATA EVALUATION SUMMARY).

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES
METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: I REQUIREMENTS (BATCH SPECIFIC QA)[1]	REPORTED NO	REPORTED YES	IN LIMITS NO	IN LIMITS YES	NOT REQUIRED
1. METHOD BLANKS					
2. MS[2] OR RWS[3] % RECOVERY (%R)					
3. MSD[4] OR RWSD[5] OR LD[6] %R					
4. RPD[7]					

COMMENTS: _____

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH REGARDLESS OF THE SOURCE.
2/ MS = MATRIX SPIKE;
3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.;
5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE;
7/ RPD = RELATIVE PERCENT DIFFERENCE

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES
METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: II
REQUIREMENTS (BATCH SPECIFIC QA)1/

	Reported No	Reported Yes	In Limits No	In Limits Yes	Not Required
1. METHOD BLANKS					
2. MS % RECOVERY (%R)		✓		✓	
3. MSD OR LAB DUPLICATE % R		✓		✓	
4. RWS % R		✓		✓	
5. RWSD % R					✓
6. RPDs FOR MS/MSD, SAMPLE/LD, RWS/RWSD		✓		✓	✓
7. LCS8/ %R		✓		✓	
8. ICVS 9/ %R		✓		✓	
					✓

COMMENTS:

QA REPORTING LEVEL: III
REQUIREMENTS (SAMPLE SPECIFIC QA)10/

1. CALIBRATION CURVE STANDARDS					
2. ICVS %R					
3. CCVS11/ %R					
4. LCS %R					
5. METHOD BLANKS					
6. ICS12/ %R (ICP ONLY)					
7. DCS13/ %R (ICP ONLY)					
8. MS %R					
9. LD OR MSD %R AND RPD					
10. POST DIGESTION ANALYTICAL SPIKE14/					

COMMENTS:

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH.
2/ MS = MATRIX SPIKE; 3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.; 5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE; 7/ RPD = RELATIVE PERCENT DIFFERENCE
8/ LCS = LABORATORY CONTROL SAMPLE;
9/ ICVS = INITIAL CALIBRATION VERIFICATION STANDARD;
10/ SAMPLE SPECIFIC QA: APPLIES TO PROJECT SPECIFIC SAMPLES..
11/ CCVS = CONTINUING CALIBRATION VERIFICATION STANDARD;
12/ ICS = INTERFERENCE CHECK SAMPLE; 13/ DCS = DILUTION CHECK SAMPLE;
14/ POST DIGESTION ANALYTICAL SPIKE APPLIES TO FURNACE AA ONLY;

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION THREE

ORGANIC ANALYSES

QA REPORTING LEVEL: I_
REQUIREMENTS_____

	Reported No	Reported Yes	In Limits No	In Limits Yes	Not Required
1. WATER BLANKS					
2. EXTRACTION BLANKS					
3. RWS[1/]					
4. RWSD[2/]					
5. RPD[3/]					

COMMENTS: _____

QA REPORTING LEVEL: II
REQUIREMENTS

A. GAS CHROMATOGRAPHY (NO MASS SPEC) OR WET CHEMISTRY PROCEDURE

	Reported No	Reported Yes	In Limits No	In Limits Yes	Not Required
1. WATER BLANKS		✓		✓	
2. EXTRACTION BLANKS		✓		✓	
3. MS[4/] (BATCH SPECIFIC)		✓		✓	
4. MSD[5/] (BATCH SPECIFIC)					
5. LD[6/] (OPTIONAL)					✓
6. MS/MSD RPD OR SAMPLE/LD RPD		✓		✓	
7. RWS		✓		✓	
8. RWSD		✓		✓	
9. RWS RPD		✓		✓	
10. SURROGATE SPIKES		✓		✓	

B. GAS CHROMATOGRAPH/MASS SPECTROMETER

	Reported No	Reported Yes	In Limits No	In Limits Yes	Not Required
1. WATER BLANKS					✓
2. EXTRACTION BLANKS					✓
3. MS (BATCH SPECIFIC)		✓		✓	
4. MSD (BATCH SPECIFIC)		✓		✓	
5. LD (OPTIONAL)					✓
6. MS/MSD RPD OR SAMPLE/LD RPD		✓		✓	
7. RWS					
8. RWSD					✓
9. RWS RPD					✓
10. SURROGATE SPIKES		✓		✓	✓

COMMENTS: _____

1/ RWS = REAGENT WATER SPIKE; 2/ RWSD = REAGENT WATER SPIKE DUPLICATE;
3/ RPD = RELATIVE PERCENT DIFFERENCE; 4/ MS = MATRIX SPIKE;
5/ MSD = MATRIX SPIKE DUPLICATE; 6/ LD = LAB DUP

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FOUR

DATA EVALUATION SUMMARY Ft. Stewart RFI

PROJECT NAME: Inactive EOD Site PROJECT NUMBER: FST-010
QA REPORTING LEVEL: II VALIDATION DATE: 11 Jan 94

ALL QA REPORTING LEVELS (I,II,III)

SUMMARY OF CHECKLIST FINDINGS

	Reported No	Reported Yes	Performance Acceptable No	Performance Acceptable Yes	Not Required
1. FIELD MEASUREMENTS OF PH AND SPECIFIC CONDUCTANCE ARE CONSISTENT WITH HISTORICAL DATA		✓		✓	
2. FIELD RECORDS		✓		✓	
3. METHODS (GEN.INFO. SECTION ONE)		✓		✓	
4. HOLDING TIMES (MASTER SAMPLE LIST)					
A. EXTRACTION HOLDING TIMES		✓		✓	
B. ANALYSIS HOLDING TIMES		✓		✓	
5. DETECTION LIMITS (SECTION ONE)		✓		✓	
6. BLANKS (SECTIONS TWO OR THREE)					
A. EQUIPMENT RINSATE BLANKS					✓
B. FIELD BLANKS		✓		✓	
C. TRIP BLANKS					✓
D. LABORATORY BLANKS		✓		✓	
7. FIELD REPLICATES		✓		✓	
8. FIELD SPLITS					✓
9. GEOPHYSICAL COMPARISONS					
A. CATION VS ANION					✓
B. TDS VS SPEC. CONDUCTANCE					✓
C. PH VS ALK/ACIDITY					✓
D. OTHER					✓
10. METALS QA DATA (SECTION TWO)		✓		✓	
11. INORGANIC WET CHEMISTRY (SEC. TWO)		✓		✓	
12. ORGANIC QA DATA-GC (SECTION THREE-A)		✓		✓	
13. ORGANIC WET CHEMISTRY (SEC. THREE-A)					✓
14. ORGANIC QA DATA-GC/MS (SEC. THREE-B)		✓		✓	

AFTER COMPLETING THIS SECTION GO TO SECTION FIVE.
COMMENTS:

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FIVE

DATA VALIDATION CODING Ft. Stewart RFI

PROJECT NAME: Investigate EOD pits PROJECT NUMBER: FST-010
QA REPORTING LEVEL: II VALIDATION DATE: 11 Jan 94

1. QUALIFIER CODES ASSIGNED TO DATA: R, U, J, U/J, B, NO FLAG

2. IDENTIFICATION OF SAMPLES AND PARAMETERS WITH CODES:

	SAMPLE ID	PARAMETERS
R CODE		
B CODE		
U CODE		
J CODE		
U/J CODE		

EXPLANATION: all acceptable

VALIDATION PERFORMED BY: [signature]

SIGNED: FRANZ FROELICHER

DATE: 11 Jan 94

Ft. Stewart RFI

DATA VALIDATION CHECKLIST
SECTION ONE

PROJECT NAME: EOD Sites
PROJECT NUMBER: EST-011
SAMPLING DATE: 1-2 Nov-93 VALIDATION DATE: 11 Jan 94
SAMPLE IDENTIFICATION: EST-011-SS4-11-93 for Explosives SS1 thru SS6 plus a Duplicate of SS4 (SS4 Dup)
SAMPLING TEAM: T. Smith, M. Stevens, Dandy Harris
ANALYZING LABORATORY: IT Laboratories and Carr Laboratory
ANALYSES PERFORMED: 8330, 8240, RCRA Metals
SAMPLE MATRIX: Non-Aqueous Soil
QA REPORTING LEVEL: II

FIELD DATA PACKAGE DOCUMENTATION

FIELD SAMPLING LOGS: 1/	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLING DATES NOTED		✓		✓	
2. SAMPLING TEAM INDICATED		✓		✓	
3. SAMPLE IDENTIFICATION TRACEABLE TO LOCATION COLLECTED		✓		✓	
4. SAMPLE LOCATION		✓		✓	
5. SAMPLE DEPTH FOR SOILS		✓		✓	
6. COLLECTION TECHNIQUE (BAILER, PUMP ETC		✓		✓	
7. FIELD SAMPLE PREPARATION TECHNIQUES		✓		✓	
8. SAMPLE TYPE (GRAB, COMPOSITE)		✓		✓	
9. SAMPLE CONTAINER TYPE		✓		✓	
10. PRESERVATION METHODS		✓		✓	
11. CHAIN OF CUSTODY FORM COMPLETED		✓		✓	
12. REQUIRED ANALYTICAL METHODS REQUESTED		✓		✓	
13. FIELD (WATER AND SOIL) SAMPLE LOGS COMPLETED PROPERLY AND SIGNED		✓		✓	
14. NUMBER AND TYPE OF FIELD QC SAMPLES COLLECTED (BLANKS, REPLICATES, SPLITS, ETC.)		✓		✓	
15. FIELD EQUIPMENT CALIBRATION		✓		✓	
16. FIELD EQUIPMENT DECONTAMINATION		✓		✓	
17. SAMPLE SHIPPING		✓		✓	
18. LABORATORY TASK ORDER		✓		✓	

1/ FIELD SAMPLING LOGS = WATER AND/OR SOIL/SEDIMENT SAMPLING LOGS

COMMENTS:

DATA VALIDATION CHECKLIST
SECTION ONE CONTINUED

ANALYTICAL DATA PACKAGE DOCUMENTATION
GENERAL INFORMATION

ALL QA REPORTING LEVELS	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLE RESULTS		✓		✓	
2. PARAMETERS ANALYZED		✓		✓	
3. METHOD OF ANALYSIS		✓		✓	
4. DETECTION LIMITS OF ANALYSIS		✓		✓	
5. MASTER TRACKING LIST		✓		✓	
6. SAMPLE COLLECTION DATE		✓		✓	
7. LAB SAMPLE RECEIVED DATE		✓		✓	
8. SAMPLE PREPARATION/EXTRACTION DATE		✓		✓	
9. SAMPLE ANALYSIS DATE		✓		✓	
10. COPY OF CHAIN-OF-CUSTODY FORM SIGNED BY THE LAB SAMPLE CUSTODIAN		✓		✓	
11. A NARRATIVE SUMMARY OF QA OR SAMPLE PROBLEMS IS PROVIDED.		✓		✓	

COMMENTS: _____

AFTER COMPLETING SECTION ONE PROCEED TO THE APPROPRIATE QA REPORTING LEVEL OF SECTION TWO (INORGANIC ANALYSES) AND/OR SECTION THREE (ORGANIC ANALYSES). FOLLOWING COMPLETION OF THESE SECTIONS PROCEED TO SECTION FOUR (DATA EVALUATION SUMMARY).

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES
METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: I REQUIREMENTS (BATCH SPECIFIC QA)[1]	REPORTED NO	REPORTED YES	IN LIMITS NO	IN LIMITS YES	NOT REQUIRED
1. METHOD BLANKS					
2. MS[2] OR RWS[3] % RECOVERY (%R)					
3. MSD[4] OR RWSD[5] OR LD[6] %R					
4. RPD[7]					

COMMENTS: _____

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH REGARDLESS OF THE SOURCE.
2/ MS = MATRIX SPIKE;
3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.;
5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE;
7/ RPD = RELATIVE PERCENT DIFFERENCE

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES
METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: II
REQUIREMENTS (BATCH SPECIFIC QA)1/

	Reported NO	Reported YES	In Limits NO	In Limits YES	Not Required
1. Method Blanks		✓		✓	
2. MS % Recovery (%R)		✓		✓	
3. MSD or Lab Duplicate % R		✓		✓	
4. RWS % R					✓
5. RWSD % R					✓
6. RPDs for MS/MSD, Sample/LD, RWS/RWSD		✓		✓	
7. LCS8/ %R		✓		✓	
8. ICVS 9/ %R					✓

COMMENTS: _____

QA REPORTING LEVEL: III
REQUIREMENTS (SAMPLE SPECIFIC QA)10/

	NO	YES	NO	YES	
1. Calibration Curve Standards					
2. ICVS %R					
3. CCVS11/ %R					
4. LCS %R					
5. Method Blanks					
6. ICS12/ %R (ICP only)					
7. DCS13/ %R (ICP only)					
8. MS %R					
9. LD or MSD %R and RPD					
10. Post Digestion Analytical Spike14/					

COMMENTS: _____

1/ Batch specific QA: applies to any samples in analytical batch.
2/ MS = matrix spike; 3/ RWS = reagent water spike;
4/ MSD = matrix spike dup.; 5/ RWSD = reagent water spike dup.;
6/ LD = laboratory duplicate; 7/ RPD = relative percent difference
8/ LCS = laboratory control sample;
9/ ICVS = initial calibration verification standard;
10/ Sample specific QA: applies to project specific samples.
11/ CCVS = continuing calibration verification standard;
12/ ICS = interference check sample; 13/ DCS = dilution check sample;
14/ Post digestion analytical spike applies to furnace AA only;

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION THREE

ORGANIC ANALYSES

QA REPORTING LEVEL: I_
REQUIREMENTS_____

	Reported No	Reported Yes	In Limits No	In Limits Yes	Not Required
1. Water Blanks					
2. Extraction Blanks					
3. RWS[1/]					
4. RWSD[2/]					
5. RPD[3/]					

Comments: _____

QA REPORTING LEVEL: II
REQUIREMENTS
A. GAS CHROMATOGRAPHY (NO MASS SPEC) OR WET CHEMISTRY PROCEDURE

1. Water Blanks		✓		✓	
2. Extraction Blanks		✓		✓	
3. MS[4/] (Batch Specific)		✓		✓	
4. MSD[5/] (Batch Specific)		✓		✓	
5. LD[6/] (Optional)		✓		✓	
6. MS/MSD RPD or Sample/LD RPD		✓		✓	
7. RWS		✓			✓
8. RWSD					✓
9. RWS RPD					✓
10. Surrogate Spikes		✓		✓	

B. GAS CHROMATOGRAPH/MASS SPECTROMETER

1. Water Blanks					✓
2. Extraction Blanks					✓
3. MS (Batch Specific)		✓		✓	
4. MSD (Batch Specific)		✓		✓	
5. LD (Optional)					✓
6. MS/MSD RPD or Sample/LD RPD		✓		✓	
7. RWS					✓
8. RWSD					✓
9. RWS RPD					✓
10. Surrogate Spikes		✓		✓	

COMMENTS: _____

1/ RWS = REAGENT WATER SPIKE; 2/ RWSD = REAGENT WATER SPIKE DUPLICATE;
3/ RPD = RELATIVE PERCENT DIFFERENCE; 4/ MS = MATRIX SPIKE;
5/ MSD = MATRIX SPIKE DUPLICATE; 6/ LD = LAB DUP

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FOUR

DATA EVALUATION SUMMARY Ft. Stewart RFI

PROJECT NAME: EOD Site PROJECT NUMBER: 011
QA REPORTING LEVEL: II VALIDATION DATE: 11 Jan 94

ALL QA REPORTING LEVELS (I,II,III)

SUMMARY OF CHECKLIST FINDINGS

	Reported No	Reported Yes	Performance Acceptable No	Performance Acceptable Yes	Not Required
1. FIELD MEASUREMENTS OF PH AND SPECIFIC CONDUCTANCE ARE CONSISTENT WITH HISTORICAL DATA		✓		✓	
2. FIELD RECORDS		✓		✓	
3. METHODS (GEN.INFO. SECTION ONE)		✓		✓	
4. HOLDING TIMES (MASTER SAMPLE LIST)					
A. EXTRACTION HOLDING TIMES		✓		✓	
B. ANALYSIS HOLDING TIMES		✓		✓	
5. DETECTION LIMITS (SECTION ONE)		✓		✓	
6. BLANKS (SECTIONS TWO OR THREE)					
A. EQUIPMENT RINSATE BLANKS					✓
B. FIELD BLANKS		✓		✓	
C. TRIP BLANKS		✓		✓	
D. LABORATORY BLANKS		✓		✓	
7. FIELD REPLICATES		✓		✓	
8. FIELD SPLITS					✓
9. GEOPHYSICAL COMPARISONS					✓
A. CATION VS ANION					✓
B. TDS VS SPEC. CONDUCTANCE					✓
C. PH VS ALK/ACIDITY					✓
D. OTHER					✓
10. METALS QA DATA (SECTION TWO)		✓		✓	
11. INORGANIC WET CHEMISTRY (SEC. TWO)		✓		✓	
12. ORGANIC QA DATA-GC (SECTION THREE-A)		✓		✓	
13. ORGANIC WET CHEMISTRY (SEC. THREE-A)		✓		✓	
14. ORGANIC QA DATA-GC/MS (SEC. THREE-B)		✓		✓	

AFTER COMPLETING THIS SECTION GO TO SECTION FIVE.
COMMENTS:

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FIVE

DATA VALIDATION CODING Ft. Stewart (CF)

PROJECT NAME: EOD Site PROJECT NUMBER: FST-011
QA REPORTING LEVEL: II VALIDATION DATE: 11 Jan 94

1. QUALIFIER CODES ASSIGNED TO DATA: R, U, J, U/J, B, NO FLAG

2. IDENTIFICATION OF SAMPLES AND PARAMETERS WITH CODES:

	SAMPLE ID	PARAMETERS
R CODE		
B CODE		
U CODE		
J CODE		
U/J CODE		

EXPLANATION: all acceptable

VALIDATION PERFORMED BY: Franz Froelichen

SIGNED:

DATE: 11 Jan 94

Ft. Stewart RFI

DATA VALIDATION CHECKLIST
SECTION ONE

PROJECT NAME: active EOD SITE
PROJECT NUMBER: FST-012
SAMPLING DATE: 3 Nov-93 VALIDATION DATE:
SAMPLE IDENTIFICATION: FST-012-SS1 thru SS10 one duplicate of SS5 plus an additional SS for the testing
SAMPLING TEAM: T. Smith, M. Stevens, Randy Harris, Sgt. Irwin
ANALYZING LABORATORY: IT Laboratories & I.T. Laboratory
ANALYSES PERFORMED: 8330 and 8330 plus 8240, TPH Heavy and Light RCRA Metals
SAMPLE MATRIX: Non-Aqueous Soil
QA REPORTING LEVEL: II

FIELD DATA PACKAGE DOCUMENTATION

FIELD SAMPLING LOGS: 1/	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLING DATES NOTED		✓		✓	
2. SAMPLING TEAM INDICATED		✓		✓	
3. SAMPLE IDENTIFICATION TRACEABLE TO LOCATION COLLECTED		✓		✓	
4. SAMPLE LOCATION		✓		✓	
5. SAMPLE DEPTH FOR SOILS		✓		✓	
6. COLLECTION TECHNIQUE (BAILER, PUMP ETC		✓		✓	
7. FIELD SAMPLE PREPARATION TECHNIQUES		✓		✓	
8. SAMPLE TYPE (GRAB, COMPOSITE)		✓		✓	
9. SAMPLE CONTAINER TYPE		✓		✓	
10. PRESERVATION METHODS		✓		✓	
11. CHAIN OF CUSTODY FORM COMPLETED		✓		✓	
12. REQUIRED ANALYTICAL METHODS REQUESTED		✓			
13. FIELD (WATER AND SOIL) SAMPLE LOGS COMPLETED PROPERLY AND SIGNED		✓		✓	
14. NUMBER AND TYPE OF FIELD QC SAMPLES COLLECTED (BLANKS, REPLICATES, SPLITS, ETC.)		✓		✓	
15. FIELD EQUIPMENT CALIBRATION		✓		✓	
16. FIELD EQUIPMENT DECONTAMINATION		✓		✓	
17. SAMPLE SHIPPING		✓		✓	
18. LABORATORY TASK ORDER		✓		✓	

1/ FIELD SAMPLING LOGS = WATER AND/OR SOIL/SEDIMENT SAMPLING LOGS

COMMENTS:

DATA VALIDATION CHECKLIST
SECTION ONE CONTINUED

ANALYTICAL DATA PACKAGE DOCUMENTATION

GENERAL INFORMATION

ALL QA REPORTING LEVELS	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLE RESULTS		✓		✓	
2. PARAMETERS ANALYZED		✓		✓	
3. METHOD OF ANALYSIS		✓		✓	
4. DETECTION LIMITS OF ANALYSIS		✓		✓	
5. MASTER TRACKING LIST		✓		✓	
6. SAMPLE COLLECTION DATE		✓		✓	
7. LAB SAMPLE RECEIVED DATE		✓		✓	
8. SAMPLE PREPARATION/EXTRACTION DATE		✓		✓	
9. SAMPLE ANALYSIS DATE		✓		✓	
10. COPY OF CHAIN-OF-CUSTODY FORM SIGNED BY THE LAB SAMPLE CUSTODIAN		✓		✓	
11. A NARRATIVE SUMMARY OF QA OR SAMPLE PROBLEMS IS PROVIDED.		✓		✓	

COMMENTS: _____

AFTER COMPLETING SECTION ONE PROCEED TO THE APPROPRIATE QA REPORTING LEVEL OF SECTION TWO (INORGANIC ANALYSES) AND/OR SECTION THREE (ORGANIC ANALYSES). FOLLOWING COMPLETION OF THESE SECTIONS PROCEED TO SECTION FOUR (DATA EVALUATION SUMMARY).

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES
METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: I

REQUIREMENTS (BATCH SPECIFIC QA)[1]	REPORTED NO	REPORTED YES	IN LIMITS NO	IN LIMITS YES	NOT REQUIRED
1. METHOD BLANKS					
2. MS[2] OR RWS[3] % RECOVERY (%R)					
3. MSD[4] OR RWSD[5] OR LD[6] %R					
4. RPD[7]					

COMMENTS: _____

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH REGARDLESS OF THE SOURCE.
2/ MS = MATRIX SPIKE;
3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.;
5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE;
7/ RPD = RELATIVE PERCENT DIFFERENCE

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES
METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: II

REQUIREMENTS (BATCH SPECIFIC QA)[1]	REPORTED NO	REPORTED YES	IN LIMITS NO	IN LIMITS YES	NOT REQUIRED
1. METHOD BLANKS		✓		✓	
2. MS % RECOVERY (%R)		✓		✓	
3. MSD OR LAB DUPLICATE % R		✓		✓	
4. RWS % R					✓
5. RWSD % R					✓
6. RPDs FOR MS/MSD, SAMPLE/LD, RWS/RWSD		✓		✓	
7. LCS[8] %R					✓
8. ICVS [9] %R					✓

COMMENTS: _____

QA REPORTING LEVEL: III

REQUIREMENTS (SAMPLE SPECIFIC QA)[10]					
1. CALIBRATION CURVE STANDARDS					
2. ICVS %R					
3. CCVS[11] %R					
4. LCS %R					
5. METHOD BLANKS					
6. ICS[12] %R (ICP ONLY)					
7. DCS[13] %R (ICP ONLY)					
8. MS %R					
9. LD OR MSD %R AND RPD					
10. POST DIGESTION ANALYTICAL SPIKE[14]					

COMMENTS: _____

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH.
2/ MS = MATRIX SPIKE; 3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.; 5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE; 7/ RPD = RELATIVE PERCENT DIFFERENCE
8/ LCS = LABORATORY CONTROL SAMPLE;
9/ ICVS = INITIAL CALIBRATION VERIFICATION STANDARD;
10/ SAMPLE SPECIFIC QA: APPLIES TO PROJECT SPECIFIC SAMPLES..
11/ CCVS = CONTINUING CALIBRATION VERIFICATION STANDARD;
12/ ICS = INTERFERENCE CHECK SAMPLE; 13/ DCS = DILUTION CHECK SAMPLE;
14/ POST DIGESTION ANALYTICAL SPIKE APPLIES TO FURNACE AA ONLY;

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION THREE

ORGANIC ANALYSES

QA REPORTING LEVEL: I_
REQUIREMENTS_____

	Reported		In Limits		Not
	No	Yes	No	Yes	Required
1. Water Blanks					
2. Extraction Blanks					
3. RWS[1/]					
4. RWSD[2/]					
5. RPD[3/]					

Comments: _____

QA REPORTING LEVEL: II
REQUIREMENTS
A. GAS CHROMATOGRAPHY (NO MASS SPEC) OR WET CHEMISTRY PROCEDURE

1. Water Blanks					✓
2. Extraction Blanks		✓		✓	
3. MS[4/] (Batch Specific)		✓		✓	
4. MSD[5/] (Batch Specific)		✓		✓	
5. LD[6/] (Optional)					✓
6. MS/MSD RPD or Sample/LD RPD		✓		✓	
7. RWS					✓
8. RWSD					✓
9. RWS RPD					✓
10. Surrogate Spikes		✓		✓	

B. GAS CHROMATOGRAPH/MASS SPECTROMETER

1. Water Blanks					✓
2. Extraction Blanks		✓		✓	
3. MS (Batch Specific)		✓		✓	
4. MSD (Batch Specific)		✓		✓	
5. LD (Optional)					✓
6. MS/MSD RPD or Sample/LD RPD		✓		✓	
7. RWS					✓
8. RWSD					✓
9. RWS RPD					✓
10. Surrogate Spikes		✓		✓	

COMMENTS: _____

1/ RWS = REAGENT WATER SPIKE; 2/ RWSD = REAGENT WATER SPIKE DUPLICATE;
3/ RPD = RELATIVE PERCENT DIFFERENCE; 4/ MS = MATRIX SPIKE;
5/ MSD = MATRIX SPIKE DUPLICATE; 6/ LD = LAB DUP

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FOUR

DATA EVALUATION SUMMARY Ft. Stewart RFI

PROJECT NAME: EOD Site PROJECT NUMBER: FST-012
QA REPORTING LEVEL: II VALIDATION DATE: 11 Jan. 94

ALL QA REPORTING LEVELS (I,II,III)

SUMMARY OF CHECKLIST FINDINGS

	Reported No	Reported Yes	Performance Acceptable No	Performance Acceptable Yes	Not Required
1. FIELD MEASUREMENTS OF PH AND SPECIFIC CONDUCTANCE ARE CONSISTENT WITH HISTORICAL DATA		✓		✓	
2. FIELD RECORDS		✓		✓	
3. METHODS (GEN.INFO. SECTION ONE)		✓		✓	
4. HOLDING TIMES (MASTER SAMPLE LIST)		✓		✓	
A. EXTRACTION HOLDING TIMES		✓		✓	
B. ANALYSIS HOLDING TIMES		✓		✓	
5. DETECTION LIMITS (SECTION ONE)		✓		✓	
6. BLANKS (SECTIONS TWO OR THREE)					
A. EQUIPMENT RINSATE BLANKS					✓
B. FIELD BLANKS		✓		✓	
C. TRIP BLANKS					✓
D. LABORATORY BLANKS		✓		✓	
7. FIELD REPLICATES		✓		✓	
8. FIELD SPLITS					✓
9. GEOPHYSICAL COMPARISONS					✓
A. CATION VS ANION					✓
B. TDS VS SPEC. CONDUCTANCE					✓
C. PH VS ALK/ACIDITY					✓
D. OTHER					✓
10. METALS QA DATA (SECTION TWO)		✓		✓	
11. INORGANIC WET CHEMISTRY (SEC. TWO)		✓		✓	
12. ORGANIC QA DATA-GC (SECTION THREE-A)		✓		✓	
13. ORGANIC WET CHEMISTRY (SEC. THREE-A)		✓		✓	
14. ORGANIC QA DATA-GC/MS (SEC. THREE-B)		✓		✓	

AFTER COMPLETING THIS SECTION GO TO SECTION FIVE.
COMMENTS:

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FIVE

DATA VALIDATION CODING Ft. Stewart RFI

PROJECT NAME: EOD site PROJECT NUMBER: FST-012
QA REPORTING LEVEL: II VALIDATION DATE: 11 Jan 94

1. QUALIFIER CODES ASSIGNED TO DATA: R, U, J, U/J, B, NO FLAG

2. IDENTIFICATION OF SAMPLES AND PARAMETERS WITH CODES:

	SAMPLE ID	PARAMETERS
R CODE		
B CODE		
U CODE		
J CODE		
U/J CODE		

EXPLANATION: all acceptable

VALIDATION PERFORMED BY: FRANZ FROELICHER

SIGNED:

DATE: 11 Jan 94

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Ft. Stewart RFI

DATA VALIDATION CHECKLIST
SECTION ONE

PROJECT NAME: Ft. Stewart (FST) old Fire Training Pit
PROJECT NUMBER: FST-014
SAMPLING DATE: 28 July 93 VALIDATION DATE: 28 Sept 93
SAMPLE IDENTIFICATION: (FST-014) MW1, MW1Dup, MW2, MW3, MW4, MW5 all 7-93 FST-014-Blk-7-93
SAMPLING TEAM: J. Smith J. Haley
ANALYZING LABORATORY: Carr Laboratory
ANALYSES PERFORMED: 8015, 624/8240, 3510, & PP Metals
SAMPLE MATRIX: Aqueous
QA REPORTING LEVEL: II

FIELD DATA PACKAGE DOCUMENTATION

FIELD SAMPLING LOGS: 1/	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLING DATES NOTED		✓		✓	
2. SAMPLING TEAM INDICATED		✓		✓	
3. SAMPLE IDENTIFICATION TRACEABLE TO LOCATION COLLECTED		✓		✓	
4. SAMPLE LOCATION		✓		✓	
5. SAMPLE DEPTH FOR SOILS		✓		✓	
6. COLLECTION TECHNIQUE (BAILER, PUMP ETC		✓		✓	
7. FIELD SAMPLE PREPARATION TECHNIQUES		✓		✓	
8. SAMPLE TYPE (GRAB, COMPOSITE)		✓		✓	
9. SAMPLE CONTAINER TYPE		✓		✓	
10. PRESERVATION METHODS		✓		✓	
11. CHAIN OF CUSTODY FORM COMPLETED		✓		✓	
12. REQUIRED ANALYTICAL METHODS REQUESTED		✓		✓	
13. FIELD (WATER AND SOIL) SAMPLE LOGS COMPLETED PROPERLY AND SIGNED		✓		✓	
14. NUMBER AND TYPE OF FIELD QC SAMPLES COLLECTED (BLANKS, REPLICATES, SPLITS, ETC.)		✓		✓	
15. FIELD EQUIPMENT CALIBRATION		✓		✓	
16. FIELD EQUIPMENT DECONTAMINATION		✓		✓	
17. SAMPLE SHIPPING		✓		✓	
18. LABORATORY TASK ORDER		✓		✓	

1/ FIELD SAMPLING LOGS = WATER AND/OR SOIL/SEDIMENT SAMPLING LOGS

COMMENTS:

DATA VALIDATION CHECKLIST
SECTION ONE CONTINUED

ANALYTICAL DATA PACKAGE DOCUMENTATION

GENERAL INFORMATION

ALL QA REPORTING LEVELS	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLE RESULTS		✓		✓	
2. PARAMETERS ANALYZED		✓		✓	
3. METHOD OF ANALYSIS		✓		✓	
4. DETECTION LIMITS OF ANALYSIS		✓		✓	
5. MASTER TRACKING LIST		✓		✓	
6. SAMPLE COLLECTION DATE		✓		✓	
7. LAB SAMPLE RECEIVED DATE		✓		✓	
8. SAMPLE PREPARATION/EXTRACTION DATE		✓		✓	
9. SAMPLE ANALYSIS DATE		✓		✓	
10. COPY OF CHAIN-OF-CUSTODY FORM SIGNED BY THE LAB SAMPLE CUSTODIAN		✓		✓	
11. A NARRATIVE SUMMARY OF QA OR SAMPLE PROBLEMS IS PROVIDED.		✓		✓	

COMMENTS: _____

AFTER COMPLETING SECTION ONE PROCEED TO THE APPROPRIATE QA REPORTING LEVEL OF SECTION TWO (INORGANIC ANALYSES) AND/OR SECTION THREE (ORGANIC ANALYSES). FOLLOWING COMPLETION OF THESE SECTIONS PROCEED TO SECTION FOUR (DATA EVALUATION SUMMARY).

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES
METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: I REQUIREMENTS (BATCH SPECIFIC QA)[1]	REPORTED NO	REPORTED YES	IN LIMITS NO	IN LIMITS YES	NOT REQUIRED
1. METHOD BLANKS					
2. MS[2] OR RWS[3] % RECOVERY (%R)					
3. MSD[4] OR RWSD[5] OR LD[6] %R					
4. RPD[7]					

COMMENTS: _____

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH REGARDLESS OF THE SOURCE.
2/ MS = MATRIX SPIKE;
3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.;
5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE;
7/ RPD = RELATIVE PERCENT DIFFERENCE

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES
METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: II
REQUIREMENTS (BATCH SPECIFIC QA)[1/]

	Reported No	Reported Yes	In Limits No	In Limits Yes	Not Required
1. METHOD BLANKS		✓		✓	
2. MS % RECOVERY (%R)		✓		✓	
3. MSD OR LAB DUPLICATE % R		✓		✓	
4. RWS % R		✓		✓	
5. RWSD % R		✓		✓	
6. RPDs FOR MS/MSD, SAMPLE/LD, RWS/RWSD		✓		✓	
7. LCS[8/] %R		✓		✓	✓
8. ICVS [9/] %R		✓		✓	✓
					✓

COMMENTS: _____

QA REPORTING LEVEL: III
REQUIREMENTS (SAMPLE SPECIFIC QA)[10/]

1. CALIBRATION CURVE STANDARDS					
2. ICVS %R					
3. CCVS[11/] %R					
4. LCS %R					
5. METHOD BLANKS					
6. ICS[12/] %R (ICP ONLY)					
7. DCS[13/] %R (ICP ONLY)					
8. MS %R					
9. LD OR MSD %R AND RPD					
10. POST DIGESTION ANALYTICAL SPIKE[14/]					

COMMENTS: _____

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH.
2/ MS = MATRIX SPIKE; 3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.; 5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE; 7/ RPD = RELATIVE PERCENT DIFFERENCE
8/ LCS = LABORATORY CONTROL SAMPLE;
9/ ICVS = INITIAL CALIBRATION VERIFICATION STANDARD;
10/ SAMPLE SPECIFIC QA: APPLIES TO PROJECT SPECIFIC SAMPLES..
11/ CCVS = CONTINUING CALIBRATION VERIFICATION STANDARD;
12/ ICS = INTERFERENCE CHECK SAMPLE; 13/ DCS = DILUTION CHECK SAMPLE;
14/ POST DIGESTION ANALYTICAL SPIKE APPLIES TO FURNACE AA ONLY;

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION THREE

ORGANIC ANALYSES

QA REPORTING LEVEL: I
REQUIREMENTS

	Reported		In Limits		Not
	No	Yes	No	Yes	Required
1. Water blanks					
2. Extraction blanks					
3. RWS[1/]					
4. RWSD[2/]					
5. RPD[3/]					

Comments:

QA REPORTING LEVEL: II
REQUIREMENTS

A. GAS CHROMATOGRAPHY (NO MASS SPEC) OR WET CHEMISTRY PROCEDURE

1. Water blanks		✓		✓	
2. Extraction blanks		✓		✓	
3. MS[4/] (batch specific)					✓
4. MSD[5/] (batch specific)					✓
5. LD[6/] (optional)					✓
6. MS/MSD RPD or sample/LD RPD		✓			✓
7. RWS		✓		✓	
8. RWSD		✓		✓	
9. RWS RPD		✓		✓	
10. Surrogate spikes		✓		✓	

B. GAS CHROMATOGRAPH/MASS SPECTROMETER

1. Water blanks		✓		✓	
2. Extraction blanks		✓		✓	
3. MS (Batch specific)					✓
4. MSD (Batch specific)					✓
5. LD (Optional)					✓
6. MS/MSD RPD or sample/LD RPD					✓
7. RWS		✓		✓	
8. RWSD		✓		✓	
9. RWS RPD		✓		✓	
10. Surrogate spikes		✓		✓	

COMMENTS:

1/ RWS = REAGENT WATER SPIKE; 2/ RWSD = REAGENT WATER SPIKE DUPLICATE;
3/ RPD = RELATIVE PERCENT DIFFERENCE; 4/ MS = MATRIX SPIKE;
5/ MSD = MATRIX SPIKE DUPLICATE; 6/ LD = LAB DUP

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FOUR

DATA EVALUATION SUMMARY Ft. Stewart RFI

PROJECT NAME: FT. Stewart old Fire Training Pit PROJECT NUMBER: FST-014
QA REPORTING LEVEL: II VALIDATION DATE: 28 Sept 93

ALL QA REPORTING LEVELS (I, II, III)

SUMMARY OF CHECKLIST FINDINGS

	Reported No	Reported Yes	Performance Acceptable No	Performance Acceptable Yes	Not Required
1. FIELD MEASUREMENTS OF PH AND SPECIFIC CONDUCTANCE ARE CONSISTENT WITH HISTORICAL DATA		✓		✓	
2. FIELD RECORDS		✓		✓	
3. METHODS (GEN. INFO. SECTION ONE)		✓		✓	
4. HOLDING TIMES (MASTER SAMPLE LIST)		✓		✓	
A. EXTRACTION HOLDING TIMES		✓		✓	
B. ANALYSIS HOLDING TIMES		✓		✓	
5. DETECTION LIMITS (SECTION ONE)		✓		✓	
6. BLANKS (SECTIONS TWO OR THREE)					
A. EQUIPMENT RINSATE BLANKS		✓		✓	
B. FIELD BLANKS		✓		✓	
C. TRIP BLANKS		✓		✓	
D. LABORATORY BLANKS		✓		✓	
7. FIELD REPLICATES		✓		✓	
8. FIELD SPLITS					✓
9. GEOPHYSICAL COMPARISONS					
A. CATION VS ANION					✓
B. TDS VS SPEC. CONDUCTANCE					✓
C. PH VS ALK/ACIDITY					✓
D. OTHER					✓
10. METALS QA DATA (SECTION TWO)		✓		✓	
11. INORGANIC WET CHEMISTRY (SEC. TWO)		✓		✓	
12. ORGANIC QA DATA-GC (SECTION THREE-A)		✓		✓	
13. ORGANIC WET CHEMISTRY (SEC. THREE-A)		✓		✓	
14. ORGANIC QA DATA-GC/MS (SEC. THREE-B)		✓		✓	

AFTER COMPLETING THIS SECTION GO TO SECTION FIVE.
COMMENTS:

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FIVE

DATA VALIDATION CODING Ft. Stewart RFI

PROJECT NAME: Old Fire Training Pit PROJECT NUMBER: FST-014
QA REPORTING LEVEL: II VALIDATION DATE: 28 Sept 93

1. QUALIFIER CODES ASSIGNED TO DATA: R, U, J, U/J, B, NO FLAG

2. IDENTIFICATION OF SAMPLES AND PARAMETERS WITH CODES:

	SAMPLE ID	PARAMETERS
R CODE		
B CODE		
U CODE		
J CODE		
U/J CODE		

EXPLANATION: all Acceptable

VALIDATION PERFORMED BY: Frank Frohlocher

SIGNED:

DATE: 28 Sept 93

Ft. Stewart RFI

DATA VALIDATION CHECKLIST
SECTION ONE

PROJECT NAME: Ft Stewart Hazardous Waste Site DRMO
PROJECT NUMBER: FST-017
SAMPLING DATE: 9/10/11 Aug 93 VALIDATION DATE: 28 Sept 93
SAMPLE IDENTIFICATION: FST-017 SB1, SB2, SB3, SB4, SB4 Dup

SAMPLING TEAM: J. Smith, Larry Olliff, H. Fulsher, D. LaBauche
ANALYZING LABORATORY: Carr Laboratory
ANALYSES PERFORMED: 624/8240, 1311, TCLP

SAMPLE MATRIX: Soil non aqueous
QA REPORTING LEVEL: II

FIELD DATA PACKAGE DOCUMENTATION

FIELD SAMPLING LOGS:[1]	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLING DATES NOTED		✓		✓	
2. SAMPLING TEAM INDICATED		✓		✓	
3. SAMPLE IDENTIFICATION TRACEABLE TO LOCATION COLLECTED		✓		✓	
4. SAMPLE LOCATION		✓		✓	
5. SAMPLE DEPTH FOR SOILS		✓		✓	
6. COLLECTION TECHNIQUE (BAILER, PUMP ETC		✓		✓	
7. FIELD SAMPLE PREPARATION TECHNIQUES		✓		✓	
8. SAMPLE TYPE (GRAB, COMPOSITE)		✓		✓	
9. SAMPLE CONTAINER TYPE		✓		✓	
10. PRESERVATION METHODS		✓		✓	
11. CHAIN OF CUSTODY FORM COMPLETED		✓		✓	
12. REQUIRED ANALYTICAL METHODS REQUESTED		✓		✓	
13. FIELD (WATER AND SOIL) SAMPLE LOGS COMPLETED PROPERLY AND SIGNED		✓		✓	
14. NUMBER AND TYPE OF FIELD QC SAMPLES COLLECTED (BLANKS, REPLICATES, SPLITS, ETC.)		✓		✓	
15. FIELD EQUIPMENT CALIBRATION		✓		✓	
16. FIELD EQUIPMENT DECONTAMINATION		✓		✓	
17. SAMPLE SHIPPING		✓		✓	
18. LABORATORY TASK ORDER		✓		✓	

1/ FIELD SAMPLING LOGS = WATER AND/OR SOIL/SEDIMENT SAMPLING LOGS

COMMENTS:

DATA VALIDATION CHECKLIST
SECTION ONE CONTINUED

ANALYTICAL DATA PACKAGE DOCUMENTATION

GENERAL INFORMATION

ALL QA REPORTING LEVELS	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLE RESULTS		✓		✓	
2. PARAMETERS ANALYZED		✓		✓	
3. METHOD OF ANALYSIS		✓		✓	
4. DETECTION LIMITS OF ANALYSIS		✓		✓	
5. MASTER TRACKING LIST		✓		✓	
6. SAMPLE COLLECTION DATE		✓		✓	
7. LAB SAMPLE RECEIVED DATE		✓		✓	
8. SAMPLE PREPARATION/EXTRACTION DATE		✓		✓	
9. SAMPLE ANALYSIS DATE		✓		✓	
10. COPY OF CHAIN-OF-CUSTODY FORM SIGNED BY THE LAB SAMPLE CUSTODIAN		✓		✓	
11. A NARRATIVE SUMMARY OF QA OR SAMPLE PROBLEMS IS PROVIDED.		✓		✓	

COMMENTS: _____

AFTER COMPLETING SECTION ONE PROCEED TO THE APPROPRIATE QA REPORTING LEVEL OF SECTION TWO (INORGANIC ANALYSES) AND/OR SECTION THREE (ORGANIC ANALYSES). FOLLOWING COMPLETION OF THESE SECTIONS PROCEED TO SECTION FOUR (DATA EVALUATION SUMMARY).

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES

METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: I REQUIREMENTS (BATCH SPECIFIC QA)[1]	REPORTED NO	REPORTED YES	IN LIMITS NO	IN LIMITS YES	NOT REQUIRED
1. METHOD BLANKS					
2. MS[2] OR RWS[3] % RECOVERY (%R)					
3. MSD[4] OR RWSD[5] OR LD[6] %R					
4. RPD[7]					

COMMENTS: _____

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH REGARDLESS OF THE SOURCE.
2/ MS = MATRIX SPIKE;
3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.;
5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE;
7/ RPD = RELATIVE PERCENT DIFFERENCE

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES
METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: II
REQUIREMENTS (BATCH SPECIFIC QA)[1/]

	Reported No	Reported Yes	In Limits No	In Limits Yes	Not Required
1. METHOD BLANKS		✓		✓	
2. MS % RECOVERY (%R)		✓		✓	
3. MSD OR LAB DUPLICATE % R		✓		✓	
4. RWS % R		✓		✓	
5. RWSD % R		✓		✓	
6. RPDs FOR MS/MSD, SAMPLE/LD, RWS/RWSD		✓		✓	
7. LCS[8/] %R		✓		✓	
8. ICVS [9/] %R		✓		✓	

COMMENTS: _____

QA REPORTING LEVEL: III
REQUIREMENTS (SAMPLE SPECIFIC QA)[10/]

1. CALIBRATION CURVE STANDARDS					
2. ICVS %R					
3. CCVS[11/] %R					
4. LCS %R					
5. METHOD BLANKS					
6. ICS[12/] %R (ICP ONLY)					
7. DCS[13/] %R (ICP ONLY)					
8. MS %R					
9. LD OR MSD %R AND RPD					
10. POST DIGESTION ANALYTICAL SPIKE[14/]					

COMMENTS: _____

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH.
2/ MS = MATRIX SPIKE; 3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.; 5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE; 7/ RPD = RELATIVE PERCENT DIFFERENCE
8/ LCS = LABORATORY CONTROL SAMPLE;
9/ ICVS = INITIAL CALIBRATION VERIFICATION STANDARD;
10/ SAMPLE SPECIFIC QA: APPLIES TO PROJECT SPECIFIC SAMPLES..
11/ CCVS = CONTINUING CALIBRATION VERIFICATION STANDARD;
12/ ICS = INTERFERENCE CHECK SAMPLE; 13/ DCS = DILUTION CHECK SAMPLE;
14/ POST DIGESTION ANALYTICAL SPIKE APPLIES TO FURNACE AA ONLY;

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION THREE

ORGANIC ANALYSES

QA REPORTING LEVEL: I
REQUIREMENTS

	Reported		In Limits		Not
	No	Yes	No	Yes	Required
1. Water Blanks					
2. Extraction Blanks					
3. RWS[1/]					
4. RWSD[2/]					
5. RPD[3/]					

Comments:

QA REPORTING LEVEL: II
REQUIREMENTS

A. GAS CHROMATOGRAPHY (NO MASS SPEC) OR WET CHEMISTRY PROCEDURE

1. Water Blanks				✓
2. Extraction Blanks		✓		✓
3. MS[4/] (Batch Specific)		✓		✓
4. MSD[5/] (Batch Specific)		✓		✓
5. LD[6/] (Optional)				✓
6. MS/MSD RPD or Sample/LD RPD		✓		✓
7. RWS		✓		✓
8. RWSD		✓		✓
9. RWS RPD		✓		✓
10. Surrogate Spikes		✓		✓

B. GAS CHROMATOGRAPH/MASS SPECTROMETER

1. Water Blanks				✓
2. Extraction Blanks		✓		✓
3. MS (Batch Specific)		✓		✓
4. MSD (Batch Specific)		✓		✓
5. LD (Optional)				✓
6. MS/MSD RPD or Sample/LD RPD		✓		✓
7. RWS		✓		✓
8. RWSD		✓		✓
9. RWS RPD		✓		✓
10. Surrogate Spikes		✓		✓

COMMENTS:

1/ RWS = Reagent Water Spike; 2/ RWSD = Reagent Water Spike Duplicate;
3/ RPD = Relative Percent Difference; 4/ MS = Matrix Spike;
5/ MSD = Matrix Spike Duplicate; 6/ LD = Lab Dup

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FOUR

DATA EVALUATION SUMMARY Ft. Stewart RFI

PROJECT NAME: Ft Stewart DRMO PROJECT NUMBER: FST-017
QA REPORTING LEVEL: II VALIDATION DATE: 28 Sept 93

ALL QA REPORTING LEVELS (I, II, III)

SUMMARY OF CHECKLIST FINDINGS	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. FIELD MEASUREMENTS OF PH AND SPECIFIC CONDUCTANCE ARE CONSISTENT WITH HISTORICAL DATA		✓		✓	
2. FIELD RECORDS		✓		✓	
3. METHODS (GEN. INFO. SECTION ONE)		✓		✓	
4. HOLDING TIMES (MASTER SAMPLE LIST)					
A. EXTRACTION HOLDING TIMES		✓		✓	
B. ANALYSIS HOLDING TIMES		✓		✓	
5. DETECTION LIMITS (SECTION ONE)		✓		✓	
6. BLANKS (SECTIONS TWO OR THREE)					
A. EQUIPMENT RINSATE BLANKS					✓
B. FIELD BLANKS					✓
C. TRIP BLANKS					✓
D. LABORATORY BLANKS		✓		✓	
7. FIELD REPLICATES					✓
8. FIELD SPLITS					✓
9. GEOPHYSICAL COMPARISONS					
A. CATION VS ANION					✓
B. TDS VS SPEC. CONDUCTANCE					✓
C. PH VS ALK/ACIDITY					✓
D. OTHER					
10. METALS QA DATA (SECTION TWO)		✓		✓	
11. INORGANIC WET CHEMISTRY (SEC. TWO)		✓		✓	
12. ORGANIC QA DATA-GC (SECTION THREE-A)		✓		✓	
13. ORGANIC WET CHEMISTRY (SEC. THREE-A)		✓		✓	
14. ORGANIC QA DATA-GC/MS (SEC. THREE-B)		✓		✓	

AFTER COMPLETING THIS SECTION GO TO SECTION FIVE.

COMMENTS: chloroform in Dup SB-4-8-93 44 ppm
" " original " " " 9.4 ppm
neither limits

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FIVE

DATA VALIDATION CODING Ft. Stewart RFI

PROJECT NAME: FST Hog Waste DRMO PROJECT NUMBER: FST-017
QA REPORTING LEVEL: II VALIDATION DATE: 28 Sept 93

1. QUALIFIER CODES ASSIGNED TO DATA: R, U, J, U/J, B, NO FLAG

2. IDENTIFICATION OF SAMPLES AND PARAMETERS WITH CODES:

	SAMPLE ID	PARAMETERS
R CODE		
B CODE		
U CODE		
J CODE		
U/J CODE		

EXPLANATION: all Acceptable

VALIDATION PERFORMED BY: Frauz Froelichen

SIGNED:

DATE: 28 Sept 93

Ft. Stewart RFI

DATA VALIDATION CHECKLIST
SECTION ONE

PROJECT NAME: Ft Stewart Industrial Waste Treatment Plant
PROJECT NUMBER: FST-018
SAMPLING DATE: 28, 29, 30/Aug 93 VALIDATION DATE: 19 Oct 93
SAMPLE IDENTIFICATION: see next page for list of samples
SAMPLING TEAM: J. Smith, Mike Daily
ANALYZING LABORATORY: Carr Laboratories
ANALYSES PERFORMED: 608/8080, 624/8240, 3550, 8PP metal 15.1 9040/9045 BH, TCLP 57 components.
SAMPLE MATRIX: aqueous, soil non-aqueous,
QA REPORTING LEVEL: II

FIELD DATA PACKAGE DOCUMENTATION

FIELD SAMPLING LOGS:1/

	Reported No	Reported Yes	Performance Acceptable No	Performance Acceptable Yes	Not Required
1. Sampling dates noted		✓		✓	
2. Sampling team indicated		✓		✓	
3. Sample identification traceable to location collected		✓		✓	
4. Sample location		✓		✓	
5. Sample depth for soils		✓		✓	
6. Collection technique (bailer, pump etc		✓		✓	
7. Field sample preparation techniques		✓		✓	
8. Sample type (grab, composite)		✓		✓	
9. Sample container type		✓		✓	
10. Preservation methods		✓		✓	
11. Chain of custody form completed		✓		✓	
12. Required analytical methods requested		✓		✓	
13. Field (water and soil) sample logs completed properly and signed		✓		✓	
14. Number and type of field QC samples collected (blanks, replicates, splits, etc.)		✓		✓	
15. Field equipment calibration		✓		✓	
16. Field equipment decontamination		✓		✓	
17. Sample shipping		✓		✓	
18. Laboratory task order		✓		✓	

1/ FIELD SAMPLING LOGS = WATER AND/OR SOIL/SEDIMENT SAMPLING LOGS

COMMENTS:

FT. STEWART Number Key

JOB NUMBER FST-018

Carr Lab No.	FT STEWART ID
10-6528-93	FST-018 SB1-9-93
10-6529-93	" SB2-9-93
10-6530-93	" SB3-9-93
10-6531-93	" SB3DUP-9-93
10-6532-93	" SB4-9-93
10-6533-93	" SLD-9-93
10-6534-93	
10-6535-93	" SED-9-93
10-6536-93	" SW1-9-93
10-6537-93	" INF-9-93
10-6538-93	" SW2-9-93
10-6539-93	" SW3-9-93
10-6540-93	" SW4-9-93
10-6541-93	" SW5-9-93
10-6542-93	" SW6-9-93
10-6543-93	" SW7-9-93
10-6544-93	" SW7DUP-9-93
10-6545-93	" BLANK-9-93
10-6546-93	" EFF-9-93
10-6547-93	" EFF-BLANK-9-93
10-6548-93	" EFF-DUP-9-93
10-6549-93	" TRIP BLANK
10-6550-93	" SED-1-9-93
10-6551-93	" SED-2-9-93
10-6552-93	" SED-3-9-93
10-6553-93	" SED-4-9-93
10-6554-93	" SED-5-9-93
10-6555-93	" SED-6-9-93
10-6556-93	" SED-7-9-93
10-6557-93	" SED-7-DUP-93

DATA VALIDATION CHECKLIST
SECTION ONE CONTINUED

ANALYTICAL DATA PACKAGE DOCUMENTATION
GENERAL INFORMATION

ALL QA REPORTING LEVELS	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLE RESULTS		✓		✓	
2. PARAMETERS ANALYZED		✓		✓	
3. METHOD OF ANALYSIS		✓		✓	
4. DETECTION LIMITS OF ANALYSIS		✓		✓	
5. MASTER TRACKING LIST		✓		✓	
6. SAMPLE COLLECTION DATE		✓		✓	
7. LAB SAMPLE RECEIVED DATE		✓		✓	
8. SAMPLE PREPARATION/EXTRACTION DATE		✓		✓	
9. SAMPLE ANALYSIS DATE		✓		✓	
10. COPY OF CHAIN-OF-CUSTODY FORM SIGNED BY THE LAB SAMPLE CUSTODIAN		✓		✓	
11. A NARRATIVE SUMMARY OF QA OR SAMPLE PROBLEMS IS PROVIDED.		✓		✓	

COMMENTS: _____

AFTER COMPLETING SECTION ONE PROCEED TO THE APPROPRIATE QA REPORTING LEVEL OF SECTION TWO (INORGANIC ANALYSES) AND/OR SECTION THREE (ORGANIC ANALYSES). FOLLOWING COMPLETION OF THESE SECTIONS PROCEED TO SECTION FOUR (DATA EVALUATION SUMMARY).

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES
METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: I REQUIREMENTS (BATCH SPECIFIC QA)[1]	REPORTED NO	REPORTED YES	IN LIMITS NO	IN LIMITS YES	NOT REQUIRED
1. METHOD BLANKS					
2. MS[2] OR RWS[3] % RECOVERY (%R)					
3. MSD[4] OR RWSD[5] OR LD[6] %R					
4. RPD[7]					

COMMENTS: _____

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH REGARDLESS OF THE SOURCE.
2/ MS = MATRIX SPIKE;
3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.;
5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE;
7/ RPD = RELATIVE PERCENT DIFFERENCE

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES
METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: II

REQUIREMENTS (BATCH SPECIFIC QA)[1]	REPORTED NO	REPORTED YES	IN LIMITS NO	IN LIMITS YES	NOT REQUIRED
1. METHOD BLANKS		✓		✓	
2. MS % RECOVERY (%R)		✓		✓	
3. MSD OR LAB DUPLICATE % R		✓		✓	
4. RWS % R		✓		✓	
5. RWSD % R		✓		✓	
6. RPDs FOR MS/MSD, SAMPLE/LD, RWS/RWSD		✓		✓	
7. LCS[8] %R		✓		✓	
8. ICVS [9] %R		✓			✓
					✓

COMMENTS:

QA REPORTING LEVEL: III

REQUIREMENTS (SAMPLE SPECIFIC QA)[10]					
1. CALIBRATION CURVE STANDARDS					
2. ICVS %R					
3. CCVS[11] %R					
4. LCS %R					
5. METHOD BLANKS					
6. ICS[12] %R (ICP ONLY)					
7. DCS[13] %R (ICP ONLY)					
8. MS %R					
9. LD OR MSD %R AND RPD					
10. POST DIGESTION ANALYTICAL SPIKE[14]					

COMMENTS:

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH.
2/ MS = MATRIX SPIKE; 3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.; 5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE; 7/ RPD = RELATIVE PERCENT DIFFERENCE
8/ LCS = LABORATORY CONTROL SAMPLE;
9/ ICVS = INITIAL CALIBRATION VERIFICATION STANDARD;
10/ SAMPLE SPECIFIC QA: APPLIES TO PROJECT SPECIFIC SAMPLES..
11/ CCVS = CONTINUING CALIBRATION VERIFICATION STANDARD;
12/ ICS = INTERFERENCE CHECK SAMPLE; 13/ DCS = DILUTION CHECK SAMPLE;
14/ POST DIGESTION ANALYTICAL SPIKE APPLIES TO FURNACE AA ONLY;

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION THREE

ORGANIC ANALYSES

QA REPORTING LEVEL: I
REQUIREMENTS

	Reported		In Limits		Not
	No	Yes	No	Yes	Required
1. Water Blanks					
2. Extraction Blanks					
3. RWS[1/]					
4. RWSD[2/]					
5. RPD[3/]					

Comments:

QA REPORTING LEVEL: II
REQUIREMENTS

A. GAS CHROMATOGRAPHY (NO MASS SPEC) OR WET CHEMISTRY PROCEDURE

1. Water Blanks		✓		✓	
2. Extraction Blanks		✓		✓	
3. MS[4/] (Batch Specific)		✓		✓	
4. MSD[5/] (Batch Specific)		✓		✓	
5. LD[6/] (Optional)		✓		✓	
6. MS/MSD RPD or Sample/LD RPD		✓		✓	
7. RWS		✓		✓	
8. RWSD		✓		✓	
9. RWS RPD		✓		✓	
10. Surrogate Spikes		✓		✓	

B. GAS CHROMATOGRAPH/MASS SPECTROMETER

1. Water Blanks		✓		✓	
2. Extraction Blanks		✓		✓	
3. MS (Batch Specific)		✓		✓	
4. MSD (Batch Specific)		✓		✓	
5. LD (Optional)		✓		✓	
6. MS/MSD RPD or Sample/LD RPD		✓		✓	
7. RWS		✓		✓	
8. RWSD		✓		✓	
9. RWS RPD		✓		✓	
10. Surrogate Spikes		✓		✓	

COMMENTS:

1/ RWS = REAGENT WATER SPIKE; 2/ RWSD = REAGENT WATER SPIKE DUPLICATE;
3/ RPD = RELATIVE PERCENT DIFFERENCE; 4/ MS = MATRIX SPIKE;
5/ MSD = MATRIX SPIKE DUPLICATE; 6/ LD = LAB DUP

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FOUR

DATA EVALUATION SUMMARY Ft. Stewart RFI

PROJECT NAME: FST Waste Treatment Plant PROJECT NUMBER: FST - 018
QA REPORTING LEVEL: II VALIDATION DATE: 19 Oct 93

ALL QA REPORTING LEVELS (I, II, III)

SUMMARY OF CHECKLIST FINDINGS

	Reported No	Reported Yes	Performance Acceptable No	Performance Acceptable Yes	Not Required
1. FIELD MEASUREMENTS OF PH AND SPECIFIC CONDUCTANCE ARE CONSISTENT WITH HISTORICAL DATA		✓		✓	
2. FIELD RECORDS		✓		✓	
3. METHODS (GEN. INFO. SECTION ONE)		✓		✓	
4. HOLDING TIMES (MASTER SAMPLE LIST)		✓		✓	
A. EXTRACTION HOLDING TIMES		✓		✓	
B. ANALYSIS HOLDING TIMES		✓		✓	
5. DETECTION LIMITS (SECTION ONE)		✓		✓	
6. BLANKS (SECTIONS TWO OR THREE)					✓
A. EQUIPMENT RINSATE BLANKS		✓		✓	
B. FIELD BLANKS		✓		✓	
C. TRIP BLANKS		✓		✓	
D. LABORATORY BLANKS		✓		✓	
7. FIELD REPLICATES		✓		✓	
8. FIELD SPLITS					✓
9. GEOPHYSICAL COMPARISONS				-	✓
A. CATION VS ANION					✓
B. TDS VS SPEC. CONDUCTANCE					✓
C. PH VS ALK/ACIDITY					✓
D. OTHER					✓
10. METALS QA DATA (SECTION TWO)		✓		✓	
11. INORGANIC WET CHEMISTRY (SEC. TWO)		✓		✓	
12. ORGANIC QA DATA-GC (SECTION THREE-A)		✓		✓	
13. ORGANIC WET CHEMISTRY (SEC. THREE-A)		✓		✓	
14. ORGANIC QA DATA-GC/MS (SEC. THREE-B)		✓		✓	

AFTER COMPLETING THIS SECTION GO TO SECTION FIVE.
COMMENTS:

SW7-9-93 → 276 ppb
SW7Dup 9-93 → 94 ppb.
Lab error

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FIVE

DATA VALIDATION CODING Ft. Stewart RFI

PROJECT NAME: FST Waste Treatment Plant PROJECT NUMBER: FST-008
QA REPORTING LEVEL: II VALIDATION DATE: 19 Oct 93

1. QUALIFIER CODES ASSIGNED TO DATA: R, U, J, U/J, B, NO FLAG

2. IDENTIFICATION OF SAMPLES AND PARAMETERS WITH CODES:

	SAMPLE ID	PARAMETERS
R CODE		
B CODE		
U CODE		
J CODE		
U/J CODE		

EXPLANATION: SW7-9-93 rerun again all acceptable

VALIDATION PERFORMED BY: FRANZ FROELICHER

SIGNED: [signature]

DATE: 28 Nov 93

Ft. Stewart RFI

DATA VALIDATION CHECKLIST
SECTION ONE

PROJECT NAME: Ft. Stewart Radiator Shop
PROJECT NUMBER: FST-024
SAMPLING DATE: 11 Aug. 93 VALIDATION DATE: 28 Sept 93
SAMPLE IDENTIFICATION: FST024 SB3-8-93, SB2, SB1, SB3 Dup
SAMPLING TEAM: T. Smith L. Olliff H. Futch, D. La Rouche
ANALYZING LABORATORY: Carr Laboratory
ANALYSES PERFORMED: TCLP 1311, TCL 8 5's components
SAMPLE MATRIX: Non Aqueous (Soil)
QA REPORTING LEVEL: II

FIELD DATA PACKAGE DOCUMENTATION

FIELD SAMPLING LOGS: 1/	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLING DATES NOTED	—	✓	—	✓	—
2. SAMPLING TEAM INDICATED	—	✓	—	✓	—
3. SAMPLE IDENTIFICATION TRACEABLE TO LOCATION COLLECTED	—	✓	—	✓	—
4. SAMPLE LOCATION	—	✓	—	✓	—
5. SAMPLE DEPTH FOR SOILS	—	✓	—	✓	—
6. COLLECTION TECHNIQUE (BAILER, PUMP ETC	—	✓	—	✓	—
7. FIELD SAMPLE PREPARATION TECHNIQUES	—	✓	—	✓	—
8. SAMPLE TYPE (GRAB, COMPOSITE)	—	✓	—	✓	—
9. SAMPLE CONTAINER TYPE	—	✓	—	✓	—
10. PRESERVATION METHODS	—	✓	—	✓	—
11. CHAIN OF CUSTODY FORM COMPLETED	—	✓	—	✓	—
12. REQUIRED ANALYTICAL METHODS REQUESTED	—	✓	—	✓	—
13. FIELD (WATER AND SOIL) SAMPLE LOGS COMPLETED PROPERLY AND SIGNED	—	✓	—	✓	—
14. NUMBER AND TYPE OF FIELD QC SAMPLES COLLECTED (BLANKS, REPLICATES, SPLITS, ETC.)	—	✓	—	✓	—
15. FIELD EQUIPMENT CALIBRATION	—	✓	—	✓	—
16. FIELD EQUIPMENT DECONTAMINATION	—	✓	—	✓	—
17. SAMPLE SHIPPING	—	✓	—	✓	—
18. LABORATORY TASK ORDER	—	✓	—	✓	—

1/ FIELD SAMPLING LOGS = WATER AND/OR SOIL/SEDIMENT SAMPLING LOGS

COMMENTS:

DATA VALIDATION CHECKLIST
SECTION ONE CONTINUED

ANALYTICAL DATA PACKAGE DOCUMENTATION

GENERAL INFORMATION

ALL QA REPORTING LEVELS	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLE RESULTS		✓		✓	
2. PARAMETERS ANALYZED		✓		✓	
3. METHOD OF ANALYSIS		✓		✓	
4. DETECTION LIMITS OF ANALYSIS		✓		✓	
5. MASTER TRACKING LIST		✓		✓	
6. SAMPLE COLLECTION DATE		✓		✓	
7. LAB SAMPLE RECEIVED DATE		✓		✓	
8. SAMPLE PREPARATION/EXTRACTION DATE		✓		✓	
9. SAMPLE ANALYSIS DATE		✓		✓	
10. COPY OF CHAIN-OF-CUSTODY FORM SIGNED BY THE LAB SAMPLE CUSTODIAN		✓		✓	
11. A NARRATIVE SUMMARY OF QA OR SAMPLE PROBLEMS IS PROVIDED.		✓		✓	

COMMENTS: _____

AFTER COMPLETING SECTION ONE PROCEED TO THE APPROPRIATE QA REPORTING LEVEL OF SECTION TWO (INORGANIC ANALYSES) AND/OR SECTION THREE (ORGANIC ANALYSES). FOLLOWING COMPLETION OF THESE SECTIONS PROCEED TO SECTION FOUR (DATA EVALUATION SUMMARY).

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES
METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: I REQUIREMENTS (BATCH SPECIFIC QA)[1]	REPORTED NO	REPORTED YES	IN LIMITS NO	IN LIMITS YES	NOT REQUIRED
1. METHOD BLANKS					
2. MS[2] OR RWS[3] % RECOVERY (%R)					
3. MSD[4] OR RWSD[5] OR LD[6] %R					
4. RPD[7]					

COMMENTS: _____

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH REGARDLESS OF THE SOURCE.
2/ MS = MATRIX SPIKE;
3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.;
5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE;
7/ RPD = RELATIVE PERCENT DIFFERENCE

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES
METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: II
REQUIREMENTS (BATCH SPECIFIC QA)1/

	Reported		In Limits		Not
	No	Yes	No	Yes	Required
1. Method Blanks		✓		✓	
2. MS % Recovery (%R)		✓		✓	
3. MSD or Lab Duplicate % R		✓		✓	
4. RWS % R		✓		✓	
5. RWSD % R		✓		✓	
6. RPDs for MS/MSD, Sample/LD, RWS/RWSD		✓		✓	
7. LCS8/ %R		✓		✓	
8. ICVS 9/ %R		✓		✓	

COMMENTS: _____

QA REPORTING LEVEL: III
REQUIREMENTS (SAMPLE SPECIFIC QA)10/

1. Calibration Curve Standards					
2. ICVS %R					
3. CCVS11/ %R					
4. LCS %R					
5. Method Blanks					
6. ICS12/ %R (ICP only)					
7. DCS13/ %R (ICP only)					
8. MS %R					
9. LD or MSD %R and RPD					
10. Post Digestion Analytical Spike14/					

COMMENTS: _____

1/ Batch specific QA: applies to any samples in analytical batch.
2/ MS = matrix spike; 3/ RWS = reagent water spike;
4/ MSD = matrix spike dup.; 5/ RWSD = reagent water spike dup.;
6/ LD = laboratory duplicate; 7/ RPD = relative percent difference
8/ LCS = laboratory control sample;
9/ ICVS = initial calibration verification standard;
10/ Sample specific QA: applies to project specific samples.
11/ CCVS = continuing calibration verification standard;
12/ ICS = interference check sample; 13/ DCS = dilution check sample;
14/ Post digestion analytical spike applies to furnace AA only;

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION THREE

ORGANIC ANALYSES

QA REPORTING LEVEL: I
REQUIREMENTS

	Reported No	Reported Yes	In Limits No	In Limits Yes	Not Required
1. Water blanks					
2. Extraction blanks					
3. RWS[1/]					
4. RWSD[2/]					
5. RPD[3/]					

Comments:

QA REPORTING LEVEL: II
REQUIREMENTS

A. GAS CHROMATOGRAPHY (NO MASS SPEC) OR WET CHEMISTRY PROCEDURE

1. Water blanks					✓
2. Extraction blanks		✓		✓	
3. MS[4/] (batch specific)		✓		✓	
4. MSD[5/] (batch specific)		✓		✓	
5. LD[6/] (optional)		✓		✓	
6. MS/MSD RPD or sample/LD RPD		✓		✓	
7. RWS		✓		✓	
8. RWSD		✓		✓	
9. RWS RPD		✓		✓	
10. Surrogate spikes		✓		✓	

B. GAS CHROMATOGRAPH/MASS SPECTROMETER

1. Water blanks					✓
2. Extraction blanks		✓		✓	
3. MS (Batch specific)		✓		✓	
4. MSD (Batch specific)		✓		✓	
5. LD (Optional)		✓		✓	
6. MS/MSD RPD or sample/LD RPD		✓		✓	
7. RWS		✓		✓	
8. RWSD		✓		✓	
9. RWS RPD		✓		✓	
10. Surrogate spikes		✓		✓	

COMMENTS:

1/ RWS = REAGENT WATER SPIKE; 2/ RWSD = REAGENT WATER SPIKE DUPLICATE;
3/ RPD = RELATIVE PERCENT DIFFERENCE; 4/ MS = MATRIX SPIKE;
5/ MSD = MATRIX SPIKE DUPLICATE; 6/ LD = LAB DUP

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FOUR

DATA EVALUATION SUMMARY Ft. Stewart RFI

PROJECT NAME: FST Radiator Shop PROJECT NUMBER: FST-024
QA REPORTING LEVEL: II VALIDATION DATE: 26 Sept 93

ALL QA REPORTING LEVELS (I,II,III)

SUMMARY OF CHECKLIST FINDINGS

	Reported No	Reported Yes	Performance Acceptable No	Performance Acceptable Yes	Not Required
1. FIELD MEASUREMENTS OF PH AND SPECIFIC CONDUCTANCE ARE CONSISTENT WITH HISTORICAL DATA		✓		✓	
2. FIELD RECORDS		✓		✓	
3. METHODS (GEN.INFO. SECTION ONE)		✓		✓	
4. HOLDING TIMES (MASTER SAMPLE LIST)					
A. EXTRACTION HOLDING TIMES		✓		✓	
B. ANALYSIS HOLDING TIMES		✓		✓	
5. DETECTION LIMITS (SECTION ONE)		✓		✓	
6. BLANKS (SECTIONS TWO OR THREE)					
A. EQUIPMENT RINSATE BLANKS					✓
B. FIELD BLANKS					✓
C. TRIP BLANKS					✓
D. LABORATORY BLANKS					
7. FIELD REPLICATES		✓		✓	
8. FIELD SPLITS					
9. GEOPHYSICAL COMPARISONS					✓
A. CATION VS ANION					✓
B. TDS VS SPEC. CONDUCTANCE					✓
C. PH VS ALK/ACIDITY					✓
D. OTHER					✓
10. METALS QA DATA (SECTION TWO)		✓		✓	
11. INORGANIC WET CHEMISTRY (SEC. TWO)		✓		✓	
12. ORGANIC QA DATA-GC (SECTION THREE-A)		✓		✓	
13. ORGANIC WET CHEMISTRY (SEC. THREE-A)		✓		✓	
14. ORGANIC QA DATA-GC/MS (SEC. THREE-B)		✓		✓	

AFTER COMPLETING THIS SECTION GO TO SECTION FIVE.
COMMENTS:

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FIVE

DATA VALIDATION CODING Ft. Stewart RFI

PROJECT NAME: FST Berlata Sharp PROJECT NUMBER: FST-024
QA REPORTING LEVEL: II VALIDATION DATE: 28 Sept 93

1. QUALIFIER CODES ASSIGNED TO DATA: R, U, J, U/J, B, NO FLAG

2. IDENTIFICATION OF SAMPLES AND PARAMETERS WITH CODES:

	SAMPLE ID	PARAMETERS
R CODE		
B CODE		
U CODE		
J CODE		
U/J CODE		

EXPLANATION: all acceptable

VALIDATION PERFORMED BY: FRANZ FROELICHER

SIGNED:

DATE: 28 Sept 93

Ft. Stewart RFI

DATA VALIDATION CHECKLIST
SECTION ONE

PROJECT NAME: Ft Stewart Waste oil tanks
PROJECT NUMBER: EST-025
SAMPLING DATE: 8/27, 8/31, 9/1, 9/2 9/3 VALIDATION DATE: 22 Dec. 93
SAMPLE IDENTIFICATION: see next page for Sample numbers
SAMPLING TEAM: J. Smith, D. LaRoche, M. Fulcher, D. Arniotes
ANALYZING LABORATORY: Corr Laboratory
ANALYSES PERFORMED: 8015, 624/8240 350, 8550, 8PP metals #50.1/9040/9045, TCLP 52 Compounds.
SAMPLE MATRIX: aqueous + Non-Aqueous soil
QA REPORTING LEVEL: II

FIELD DATA PACKAGE DOCUMENTATION

FIELD SAMPLING LOGS: 1/	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLING DATES NOTED		✓		✓	
2. SAMPLING TEAM INDICATED		✓		✓	
3. SAMPLE IDENTIFICATION TRACEABLE TO LOCATION COLLECTED		✓		✓	
4. SAMPLE LOCATION		✓		✓	
5. SAMPLE DEPTH FOR SOILS		✓		✓	
6. COLLECTION TECHNIQUE (BAILER, PUMP ETC		✓		✓	
7. FIELD SAMPLE PREPARATION TECHNIQUES		✓		✓	
8. SAMPLE TYPE (GRAB, COMPOSITE)		✓		✓	
9. SAMPLE CONTAINER TYPE		✓		✓	
10. PRESERVATION METHODS		✓		✓	
11. CHAIN OF CUSTODY FORM COMPLETED		✓		✓	
12. REQUIRED ANALYTICAL METHODS REQUESTED		✓		✓	
13. FIELD (WATER AND SOIL) SAMPLE LOGS COMPLETED PROPERLY AND SIGNED		✓		✓	
14. NUMBER AND TYPE OF FIELD QC SAMPLES COLLECTED (BLANKS, REPLICATES, SPLITS, ETC.)		✓		✓	
15. FIELD EQUIPMENT CALIBRATION		✓		✓	
16. FIELD EQUIPMENT DECONTAMINATION		✓		✓	
17. SAMPLE SHIPPING		✓		✓	
18. LABORATORY TASK ORDER		✓		✓	

1/ FIELD SAMPLING LOGS = WATER AND/OR SOIL/SEDIMENT SAMPLING LOGS

COMMENTS:

FT. STEWART Number Key

JOB NUMBER FST-025

Carr Lab No.	FT STEWART ID
09-5866-93	FST-025 100A-9-93
09-5867-93	" 100A-9-93
09-5868-93	" 100B-9-93
09-5869-93	" 94C-9-93
09-5870-93	" 94B-9-93
09-5871-93	" 94B-9-93
09-5872-93	" 64-9-93
09-5873-93	" 64-9-93
09-5874-93	" 64-9-93DUP
09-5875-93	" 64-9-93DUP
09-5876-93	" 64A-9-93
09-5877-93	" BLK-9-93
09-5878-93	" TRIP BLANK
09-5879-93	" 67-9-93
09-5880-93	" 67-9-93

DATA VALIDATION CHECKLIST
SECTION ONE CONTINUED

ANALYTICAL DATA PACKAGE DOCUMENTATION

GENERAL INFORMATION

ALL QA REPORTING LEVELS	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLE RESULTS		✓	✓		
2. PARAMETERS ANALYZED		✓		✓	
3. METHOD OF ANALYSIS		✓		✓	
4. DETECTION LIMITS OF ANALYSIS		✓		✓	
5. MASTER TRACKING LIST		✓		✓	
6. SAMPLE COLLECTION DATE		✓		✓	
7. LAB SAMPLE RECEIVED DATE		✓		✓	
8. SAMPLE PREPARATION/EXTRACTION DATE		✓		✓	
9. SAMPLE ANALYSIS DATE		✓		✓	
10. COPY OF CHAIN-OF-CUSTODY FORM SIGNED BY THE LAB SAMPLE CUSTODIAN		✓		✓	
11. A NARRATIVE SUMMARY OF QA OR SAMPLE PROBLEMS IS PROVIDED.		✓		✓	

COMMENTS: _____

AFTER COMPLETING SECTION ONE PROCEED TO THE APPROPRIATE QA REPORTING LEVEL OF SECTION TWO (INORGANIC ANALYSES) AND/OR SECTION THREE (ORGANIC ANALYSES). FOLLOWING COMPLETION OF THESE SECTIONS PROCEED TO SECTION FOUR (DATA EVALUATION SUMMARY).

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES
METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: I

REQUIREMENTS (BATCH SPECIFIC QA)[1]	REPORTED NO	REPORTED YES	IN LIMITS NO	IN LIMITS YES	NOT REQUIRED
1. METHOD BLANKS					
2. MS[2] OR RWS[3] % RECOVERY (%R)					
3. MSD[4] OR RWSD[5] OR LD[6] %R					
4. RPD[7]					

COMMENTS: _____

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH REGARDLESS OF THE SOURCE.
2/ MS = MATRIX SPIKE;
3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.;
5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE;
7/ RPD = RELATIVE PERCENT DIFFERENCE

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES
METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: II
REQUIREMENTS (BATCH SPECIFIC QA)1/

	Reported No	Reported Yes	In Limits No	In Limits Yes	Not Required
1. METHOD BLANKS		✓	✓		
2. MS % RECOVERY (%R)		✓	✓		
3. MSD OR ~~LAB DUPLICATE~~ % R		✓	✓		
4. RWS % R					✓
5. RWSD % R		✓			✓
6. RPDs FOR MS/MSD, ~~SAMPLE/LD, RWS/RWSD~~		✓		→	
7. LCS8/ %R				✓	
8. ICVS 9/ %R					✓

COMMENTS:

QA REPORTING LEVEL: III
REQUIREMENTS (SAMPLE SPECIFIC QA)10/

1. CALIBRATION CURVE STANDARDS					
2. ICVS %R					
3. CCVS11/ %R					
4. LCS %R					
5. METHOD BLANKS					
6. ICS12/ %R (ICP ONLY)					
7. DCS13/ %R (ICP ONLY)					
8. MS %R					
9. LD OR MSD %R AND RPD					
10. POST DIGESTION ANALYTICAL SPIKE14/					

COMMENTS:

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH.
2/ MS = MATRIX SPIKE; 3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.; 5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE; 7/ RPD = RELATIVE PERCENT DIFFERENCE
8/ LCS = LABORATORY CONTROL SAMPLE;
9/ ICVS = INITIAL CALIBRATION VERIFICATION STANDARD;
10/ SAMPLE SPECIFIC QA: APPLIES TO PROJECT SPECIFIC SAMPLES..
11/ CCVS = CONTINUING CALIBRATION VERIFICATION STANDARD;
12/ ICS = INTERFERENCE CHECK SAMPLE; 13/ DCS = DILUTION CHECK SAMPLE;
14/ POST DIGESTION ANALYTICAL SPIKE APPLIES TO FURNACE AA ONLY;

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION THREE

ORGANIC ANALYSES

QA REPORTING LEVEL: I_
REQUIREMENTS_____

	Reported		In Limits		Not
	No	Yes	No	Yes	Required
1. Water Blanks					
2. Extraction Blanks					
3. RWS[1/]					
4. RWSD[2/]					
5. RPD[3/]					

Comments: _____

QA REPORTING LEVEL: II
REQUIREMENTS

A. GAS CHROMATOGRAPHY (NO MASS SPEC) OR WET CHEMISTRY PROCEDURE

1. Water Blanks					✓
2. Extraction Blanks					✓
3. MS[4/] (Batch Specific)		✓	✓		
4. MSD[5/] (Batch Specific)		✓	✓		
5. LD[6/] (Optional)					✓
6. MS/MSD RPD ~~or Sample/LD~~ RPD		✓	✓		
7. RWS					✓
8. RWSD					✓
9. RWS RPD					✓
10. Surrogate Spikes		✓		✓	

B. GAS CHROMATOGRAPH/MASS SPECTROMETER

1. Water Blanks					✓
2. Extraction Blanks					✓
3. MS (Batch Specific)		✓		✓	
4. MSD (Batch Specific)		✓		✓	
5. LD (Optional)					✓
6. MS/MSD RPD ~~or Sample/LD~~ RPD		✓	✓		
7. RWS					✓
8. RWSD					✓
9. RWS RPD					✓
10. Surrogate Spikes		✓		✓	

COMMENTS: _____

1/ RWS = REAGENT WATER SPIKE; 2/ RWSD = REAGENT WATER SPIKE DUPLICATE;
3/ RPD = RELATIVE PERCENT DIFFERENCE; 4/ MS = MATRIX SPIKE;
5/ MSD = MATRIX SPIKE DUPLICATE; 6/ LD = LAB DUP

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FOUR

DATA EVALUATION SUMMARY Ft. Stewart RFI

PROJECT NAME: FST-Waste oil tanks PROJECT NUMBER: FST-025
QA REPORTING LEVEL: II VALIDATION DATE: 22 Dec 93

ALL QA REPORTING LEVELS (I, II, III)

SUMMARY OF CHECKLIST FINDINGS

	Reported No	Reported Yes	Performance Acceptable No	Performance Acceptable Yes	Not Required
1. FIELD MEASUREMENTS OF PH AND SPECIFIC CONDUCTANCE ARE CONSISTENT WITH HISTORICAL DATA		✓		✓	
2. FIELD RECORDS		✓		✓	
3. METHODS (GEN. INFO. SECTION ONE)		✓		✓	
4. HOLDING TIMES (MASTER SAMPLE LIST)					
A. EXTRACTION HOLDING TIMES		✓		✓	
B. ANALYSIS HOLDING TIMES		✓		✓	
5. DETECTION LIMITS (SECTION ONE)		✓		✓	
6. BLANKS (SECTIONS TWO OR THREE)					
A. EQUIPMENT RINSATE BLANKS					✓
B. FIELD BLANKS					✓
C. TRIP BLANKS					✓
D. LABORATORY BLANKS		✓		✓	
7. FIELD REPLICATES		✓		✓	
8. FIELD SPLITS					✓
9. GEOPHYSICAL COMPARISONS					
A. CATION VS ANION					✓
B. TDS VS SPEC. CONDUCTANCE					✓
C. PH VS ALK/ACIDITY					✓
D. OTHER					✓
10. METALS QA DATA (SECTION TWO)		✓		✓	
11. INORGANIC WET CHEMISTRY (SEC. TWO)		✓		✓	
12. ORGANIC QA DATA-GC (SECTION THREE-A)		✓	✓		
13. ORGANIC WET CHEMISTRY (SEC. THREE-A)		✓		✓	
14. ORGANIC QA DATA-GC/MS (SEC. THREE-B)		✓	✓		

AFTER COMPLETING THIS SECTION GO TO SECTION FIVE.
COMMENTS:

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FIVE

DATA VALIDATION CODING Ft Stewart RFI

PROJECT NAME: FST Waste oil tanks PROJECT NUMBER: FST-025
QA REPORTING LEVEL: II VALIDATION DATE: 22 Dec 93

1. QUALIFIER CODES ASSIGNED TO DATA: R, U, J, U/J, B, NO FLAG

2. IDENTIFICATION OF SAMPLES AND PARAMETERS WITH CODES:

	SAMPLE ID	PARAMETERS
R CODE	4AA-L-11-93 4AA-9-11-93	Pesticide Delata BHC & Acid Base Neutrals Pesticide-Delata BHC & Acid Base Neutrals
B CODE		
U CODE		
J CODE		
U/J CODE		

EXPLANATION: Spike QC Sample #1 111193 for Pesticide showed Delta-BHC at an RPD of 56.4% ; within limits
Endrin aldelyde " " " " 49.1% ;
because of peak interference
also Acid Base Neutrals were missing Dups spike Samples for some Sample Locals.

VALIDATION PERFORMED BY: FRANZ FROELICHER

SIGNED:

DATE: 22 Dec 93

Ft. Stewart RFI

DATA VALIDATION CHECKLIST
SECTION ONE

PROJECT NAME: 74th Tanker Purging Station
PROJECT NUMBER: FST-026
SAMPLING DATE: 15-16 Sept 93 VALIDATION DATE: 11 Jan 94
SAMPLE IDENTIFICATION: FST-017 SB1-9-93, SB2, SB3, SB3 Dup, SB4, 5A-11-93, 5B, 6A, 6B
SAMPLING TEAM: J. Smith, Douglas, LaCouche, H. Fulalee, D. Amidon
ANALYZING LABORATORY: Carr' Solicitor
ANALYSES PERFORMED: 8015, 624/8240, 3550, 150.1/9040/9045, 1311 TCLP 52 comp.
SAMPLE MATRIX: nonaqueous soil
QA REPORTING LEVEL: II

FIELD DATA PACKAGE DOCUMENTATION

FIELD SAMPLING LOGS:1/	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLING DATES NOTED		✓		✓	
2. SAMPLING TEAM INDICATED		✓		✓	
3. SAMPLE IDENTIFICATION TRACEABLE TO LOCATION COLLECTED		✓		✓	
4. SAMPLE LOCATION		✓		✓	
5. SAMPLE DEPTH FOR SOILS		✓		✓	
6. COLLECTION TECHNIQUE (BAILER, PUMP ETC)		✓		✓	
7. FIELD SAMPLE PREPARATION TECHNIQUES		✓		✓	
8. SAMPLE TYPE (GRAB, COMPOSITE)		✓		✓	
9. SAMPLE CONTAINER TYPE		✓		✓	
10. PRESERVATION METHODS		✓		✓	
11. CHAIN OF CUSTODY FORM COMPLETED		✓		✓	
12. REQUIRED ANALYTICAL METHODS REQUESTED		✓		✓	
13. FIELD (WATER AND SOIL) SAMPLE LOGS COMPLETED PROPERLY AND SIGNED		✓		✓	
14. NUMBER AND TYPE OF FIELD QC SAMPLES COLLECTED (BLANKS, REPLICATES, SPLITS, ETC.)		✓		✓	
15. FIELD EQUIPMENT CALIBRATION		✓		✓	
16. FIELD EQUIPMENT DECONTAMINATION		✓		✓	
17. SAMPLE SHIPPING		✓		✓	
18. LABORATORY TASK ORDER		✓		✓	

1/ FIELD SAMPLING LOGS = WATER AND/OR SOIL/SEDIMENT SAMPLING LOGS

COMMENTS:

DATA VALIDATION CHECKLIST
SECTION ONE CONTINUED

ANALYTICAL DATA PACKAGE DOCUMENTATION

GENERAL INFORMATION

ALL QA REPORTING LEVELS	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLE RESULTS		✓		✓	
2. PARAMETERS ANALYZED		✓		✓	
3. METHOD OF ANALYSIS		✓		✓	
4. DETECTION LIMITS OF ANALYSIS		✓		✓	
5. MASTER TRACKING LIST		✓		✓	
6. SAMPLE COLLECTION DATE		✓		✓	
7. LAB SAMPLE RECEIVED DATE		✓		✓	
8. SAMPLE PREPARATION/EXTRACTION DATE		✓		✓	
9. SAMPLE ANALYSIS DATE		✓		✓	
10. COPY OF CHAIN-OF-CUSTODY FORM SIGNED BY THE LAB SAMPLE CUSTODIAN		✓		✓	
11. A NARRATIVE SUMMARY OF QA OR SAMPLE PROBLEMS IS PROVIDED.		✓		✓	

COMMENTS: _____

AFTER COMPLETING SECTION ONE PROCEED TO THE APPROPRIATE QA REPORTING LEVEL OF SECTION TWO (INORGANIC ANALYSES) AND/OR SECTION THREE (ORGANIC ANALYSES). FOLLOWING COMPLETION OF THESE SECTIONS PROCEED TO SECTION FOUR (DATA EVALUATION SUMMARY).

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES

METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: I

REQUIREMENTS (BATCH SPECIFIC QA)[1]	REPORTED NO	REPORTED YES	IN LIMITS NO	IN LIMITS YES	NOT REQUIRED
1. METHOD BLANKS					
2. MS[2] OR RWS[3] % RECOVERY (%R)					
3. MSD[4] OR RWSD[5] OR LD[6] %R					
4. RPD[7]					

COMMENTS: _____

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH REGARDLESS OF THE SOURCE.
2/ MS = MATRIX SPIKE;
3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.;
5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE;
7/ RPD = RELATIVE PERCENT DIFFERENCE

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES
METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: II
REQUIREMENTS (BATCH SPECIFIC QA)1/

	REPORTED NO	REPORTED YES	IN LIMITS NO	IN LIMITS YES	NOT REQUIRED
1. METHOD BLANKS		✓		✓	
2. MS % RECOVERY (%R)		✓		✓	
3. MSD OR LAB DUPLICATE % R		✓		✓	
4. RWS % R		✓		✓	
5. RWSD % R		✓		✓	
6. RPDs FOR MS/MSD, SAMPLE/LD, RWS/RWSD		✓		✓	
7. LCS8/ %R		✓		✓	
8. ICVS 9/ %R					✓

COMMENTS:

QA REPORTING LEVEL: III
REQUIREMENTS (SAMPLE SPECIFIC QA)10/

1. CALIBRATION CURVE STANDARDS					
2. ICVS %R					
3. CCVS11/ %R					
4. LCS %R					
5. METHOD BLANKS					
6. ICS12/ %R (ICP ONLY)					
7. DCS13/ %R (ICP ONLY)					
8. MS %R					
9. LD OR MSD %R AND RPD					
10. POST DIGESTION ANALYTICAL SPIKE14/					

COMMENTS:

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH.
2/ MS = MATRIX SPIKE; 3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.; 5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE; 7/ RPD = RELATIVE PERCENT DIFFERENCE
8/ LCS = LABORATORY CONTROL SAMPLE;
9/ ICVS = INITIAL CALIBRATION VERIFICATION STANDARD;
10/ SAMPLE SPECIFIC QA: APPLIES TO PROJECT SPECIFIC SAMPLES..
11/ CCVS = CONTINUING CALIBRATION VERIFICATION STANDARD;
12/ ICS = INTERFERENCE CHECK SAMPLE; 13/ DCS = DILUTION CHECK SAMPLE;
14/ POST DIGESTION ANALYTICAL SPIKE APPLIES TO FURNACE AA ONLY;

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION THREE

ORGANIC ANALYSES

QA REPORTING LEVEL: I_
REQUIREMENTS_____

	Reported No	Reported Yes	In Limits No	In Limits Yes	Not Required
1. Water blanks					
2. Extraction blanks					
3. RWS[1/]					
4. RWSD[2/]					
5. RPD[3/]					

Comments: _____

QA REPORTING LEVEL: II
REQUIREMENTS
A. GAS CHROMATOGRAPHY (NO MASS SPEC) OR WET CHEMISTRY PROCEDURE

	Reported No	Reported Yes	In Limits No	In Limits Yes	Not Required
1. Water blanks		✓		✓	
2. Extraction blanks					✓
3. MS[4/] (batch specific)		✓		✓	
4. MSD[5/] (batch specific)		✓		✓	
5. LD[6/] (optional)					✓
6. MS/MSD RPD or sample/LD RPD		✓		✓	
7. RWS					✓
8. RWSD					✓
9. RWS RPD					✓
10. Surrogate spikes		✓		✓	

B. GAS CHROMATOGRAPH/MASS SPECTROMETER

	Reported No	Reported Yes	In Limits No	In Limits Yes	Not Required
1. Water blanks		✓		✓	
2. Extraction blanks		✓		✓	
3. MS (Batch specific)		✓		✓	
4. MSD (Batch specific)		✓		✓	
5. LD (Optional)					✓
6. MS/MSD RPD or sample/LD RPD		✓		✓	
7. RWS					✓
8. RWSD					✓
9. RWS RPD					✓
10. Surrogate spikes		✓		✓	

COMMENTS: _____

1/ RWS = REAGENT WATER SPIKE; 2/ RWSD = REAGENT WATER SPIKE DUPLICATE;
3/ RPD = RELATIVE PERCENT DIFFERENCE; 4/ MS = MATRIX SPIKE;
5/ MSD = MATRIX SPIKE DUPLICATE; 6/ LD = LAB DUP

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FOUR

DATA EVALUATION SUMMARY Ft. Stewart RFI

PROJECT NAME: Tanker Purging Study PROJECT NUMBER: EST-026
QA REPORTING LEVEL: II VALIDATION DATE: 11 Jan 94

ALL QA REPORTING LEVELS (I,II,III)

SUMMARY OF CHECKLIST FINDINGS

	Reported No	Reported Yes	Performance Acceptable No	Performance Acceptable Yes	Not Required
1. Field measurements of pH and specific conductance are consistent with historical data		✓		✓	
2. Field Records		✓		✓	
3. Methods (Gen.Info. Section One)		✓		✓	
4. Holding Times (Master Sample List)					
a. Extraction holding times		✓		✓	
b. Analysis holding times		✓		✓	
5. Detection Limits (Section One)		✓		✓	
6. Blanks (Sections Two or Three)					
a. Equipment rinsate blanks					✓
b. Field blanks		✓		✓	
c. Trip blanks		✓		✓	
d. Laboratory blanks		✓		✓	
7. Field replicates		✓		✓	
8. Field splits					✓
9. Geophysical comparisons					
a. Cation vs Anion					✓
b. TDS vs Spec. Conductance					✓
c. pH vs Alk/Acidity					✓
d. Other					✓
10. Metals QA Data (Section Two)		✓		✓	
11. Inorganic Wet Chemistry (Sec. Two)		✓		✓	
12. Organic QA Data-GC (Section Three-A)		✓		✓	
13. Organic Wet Chemistry (Sec. Three-A)		✓		✓	
14. Organic QA Data-GC/MS (Sec. Three-B)		✓		✓	

AFTER COMPLETING THIS SECTION GO TO SECTION FIVE.
COMMENTS:

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FIVE

DATA VALIDATION CODING Ft. Stewart EFI

PROJECT NAME: Southern Pressure Sta. PROJECT NUMBER: FST-026
QA REPORTING LEVEL: II VALIDATION DATE: 11 Jan 94

1. QUALIFIER CODES ASSIGNED TO DATA: R, U, J, U/J, B, NO FLAG

2. IDENTIFICATION OF SAMPLES AND PARAMETERS WITH CODES:

	SAMPLE ID	PARAMETERS
R CODE		
B CODE		
U CODE		
J CODE		
U/J CODE		

EXPLANATION: all acceptable

VALIDATION PERFORMED BY: FRANZ FROESCHER

SIGNED:

DATE: 11 Jan 94

Ft. Stewart RFI

DATA VALIDATION CHECKLIST
SECTION ONE

PROJECT NAME: Ft. Stewart 25 Motor Pools
PROJECT NUMBER: FST-027
SAMPLING DATE: 16 Sep 93 VALIDATION DATE: 4 Oct 93
SAMPLE IDENTIFICATION: FST-027 SB1-9-93, SB2, SB2 Dup, SB3
SAMPLING TEAM: S. Smith, P. Armstrong, D. LaRoche, H. Fulcher
ANALYZING LABORATORY: Carr Laboratory
ANALYSES PERFORMED: 8015, 624/8240, 3550, 150.1/9040/9045 TCLP 1311, TCLP 52 components
SAMPLE MATRIX: Non aqueous (Soil)
QA REPORTING LEVEL: II

FIELD DATA PACKAGE DOCUMENTATION

FIELD SAMPLING LOGS: 1/	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLING DATES NOTED		✓		✓	
2. SAMPLING TEAM INDICATED		✓		✓	
3. SAMPLE IDENTIFICATION TRACEABLE TO LOCATION COLLECTED		✓		✓	
4. SAMPLE LOCATION		✓		✓	
5. SAMPLE DEPTH FOR SOILS		✓		✓	
6. COLLECTION TECHNIQUE (BAILER, PUMP ETC		✓		✓	
7. FIELD SAMPLE PREPARATION TECHNIQUES		✓		✓	
8. SAMPLE TYPE (GRAB, COMPOSITE)		✓		✓	
9. SAMPLE CONTAINER TYPE		✓		✓	
10. PRESERVATION METHODS		✓		✓	
11. CHAIN OF CUSTODY FORM COMPLETED		✓		✓	
12. REQUIRED ANALYTICAL METHODS REQUESTED		✓		✓	
13. FIELD (WATER AND SOIL) SAMPLE LOGS COMPLETED PROPERLY AND SIGNED		✓		✓	
14. NUMBER AND TYPE OF FIELD QC SAMPLES COLLECTED (BLANKS, REPLICATES, SPLITS, ETC.)		✓		✓	
15. FIELD EQUIPMENT CALIBRATION		✓		✓	
16. FIELD EQUIPMENT DECONTAMINATION		✓		✓	
17. SAMPLE SHIPPING		✓		✓	
18. LABORATORY TASK ORDER		✓		✓	

1/ FIELD SAMPLING LOGS = WATER AND/OR SOIL/SEDIMENT SAMPLING LOGS

COMMENTS:

DATA VALIDATION CHECKLIST
SECTION ONE CONTINUED

ANALYTICAL DATA PACKAGE DOCUMENTATION

GENERAL INFORMATION

ALL QA REPORTING LEVELS	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLE RESULTS		✓		✓	
2. PARAMETERS ANALYZED		✓		✓	
3. METHOD OF ANALYSIS		✓		✓	
4. DETECTION LIMITS OF ANALYSIS		✓		✓	
5. MASTER TRACKING LIST		✓		✓	
6. SAMPLE COLLECTION DATE		✓		✓	
7. LAB SAMPLE RECEIVED DATE		✓		✓	
8. SAMPLE PREPARATION/EXTRACTION DATE		✓		✓	
9. SAMPLE ANALYSIS DATE		✓		✓	
10. COPY OF CHAIN-OF-CUSTODY FORM SIGNED BY THE LAB SAMPLE CUSTODIAN		✓		✓	
11. A NARRATIVE SUMMARY OF QA OR SAMPLE PROBLEMS IS PROVIDED.		✓		✓	

COMMENTS: _____

AFTER COMPLETING SECTION ONE PROCEED TO THE APPROPRIATE QA REPORTING LEVEL OF SECTION TWO (INORGANIC ANALYSES) AND/OR SECTION THREE (ORGANIC ANALYSES). FOLLOWING COMPLETION OF THESE SECTIONS PROCEED TO SECTION FOUR (DATA EVALUATION SUMMARY).

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES

METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: I REQUIREMENTS (BATCH SPECIFIC QA)[1]	REPORTED NO	REPORTED YES	IN LIMITS NO	IN LIMITS YES	NOT REQUIRED
1. METHOD BLANKS					
2. MS[2] OR RWS[3] % RECOVERY (%R)					
3. MSD[4] OR RWSD[5] OR LD[6] %R					
4. RPD[7]					

COMMENTS: _____

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH REGARDLESS OF THE SOURCE.
2/ MS = MATRIX SPIKE;
3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.;
5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE;
7/ RPD = RELATIVE PERCENT DIFFERENCE

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES
METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: II
REQUIREMENTS (BATCH SPECIFIC QA)[1/]

	REPORTED NO	REPORTED YES	IN LIMITS NO	IN LIMITS YES	NOT REQUIRED
1. METHOD BLANKS		✓		✓	
2. MS % RECOVERY (%R)		✓		✓	
3. MSD OR LAB DUPLICATE % R		✓		✓	
4. RWS % R		✓		✓	
5. RWSD % R		✓		✓	
6. RPDs FOR MS/MSD, SAMPLE/LD, RWS/RWSD		✓		✓	
7. LCS[8/] %R		✓			
8. ICVS [9/] %R					✓

COMMENTS: _____

QA REPORTING LEVEL: III
REQUIREMENTS (SAMPLE SPECIFIC QA)[10/]

1. CALIBRATION CURVE STANDARDS					
2. ICVS %R					
3. CCVS[11/] %R					
4. LCS %R					
5. METHOD BLANKS					
6. ICS[12/] %R (ICP ONLY)					
7. DCS[13/] %R (ICP ONLY)					
8. MS %R					
9. LD OR MSD %R AND RPD					
10. POST DIGESTION ANALYTICAL SPIKE[14/]					

COMMENTS: _____

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH.
2/ MS = MATRIX SPIKE; 3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.; 5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE; 7/ RPD = RELATIVE PERCENT DIFFERENCE
8/ LCS = LABORATORY CONTROL SAMPLE;
9/ ICVS = INITIAL CALIBRATION VERIFICATION STANDARD;
10/ SAMPLE SPECIFIC QA: APPLIES TO PROJECT SPECIFIC SAMPLES..
11/ CCVS = CONTINUING CALIBRATION VERIFICATION STANDARD;
12/ ICS = INTERFERENCE CHECK SAMPLE; 13/ DCS = DILUTION CHECK SAMPLE;
14/ POST DIGESTION ANALYTICAL SPIKE APPLIES TO FURNACE AA ONLY;

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION THREE

ORGANIC ANALYSES

QA REPORTING LEVEL: I_
REQUIREMENTS_____

	Reported No	Reported Yes	In Limits No	In Limits Yes	Not Required
1. Water Blanks					
2. Extraction Blanks					
3. RWS[1/]					
4. RWSD[2/]					
5. RPD[3/]					

Comments: _____

QA REPORTING LEVEL: II
REQUIREMENTS
A. GAS CHROMATOGRAPHY (NO MASS SPEC) OR WET CHEMISTRY PROCEDURE

1. Water Blanks					✓
2. Extraction Blanks		✓		✓	
3. MS[4/] (Batch Specific)		✓		✓	
4. MSD[5/] (Batch Specific)		✓		✓	
5. LD[6/] (Optional)					✓
6. MS/MSD RPD or Sample/LD RPD		✓		✓	
7. RWS					✓
8. RWSD					✓
9. RWS RPD					✓
10. Surrogate Spikes		✓		✓	

B. GAS CHROMATOGRAPH/MASS SPECTROMETER

1. Water Blanks					✓
2. Extraction Blanks		✓		✓	
3. MS (Batch Specific)		✓		✓	
4. MSD (Batch Specific)		✓		✓	
5. LD (Optional)					✓
6. MS/MSD RPD or Sample/LD RPD		✓		✓	
7. RWS					✓
8. RWSD					✓
9. RWS RPD					✓
10. Surrogate Spikes		✓		✓	

COMMENTS: _____

1/ RWS = REAGENT WATER SPIKE; 2/ RWSD = REAGENT WATER SPIKE DUPLICATE;
3/ RPD = RELATIVE PERCENT DIFFERENCE; 4/ MS = MATRIX SPIKE;
5/ MSD = MATRIX SPIKE DUPLICATE; 6/ LD = LAB DUP

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FOUR

DATA EVALUATION SUMMARY Ft. Stewart RFI

PROJECT NAME: FST 25 Motor Pools PROJECT NUMBER: FST-027
QA REPORTING LEVEL: II VALIDATION DATE: 4/28/93

ALL QA REPORTING LEVELS (I,II,III)

SUMMARY OF CHECKLIST FINDINGS	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. FIELD MEASUREMENTS OF PH AND SPECIFIC CONDUCTANCE ARE CONSISTENT WITH HISTORICAL DATA		✓		✓	
2. FIELD RECORDS		✓		✓	
3. METHODS (GEN. INFO. SECTION ONE)		✓		✓	
4. HOLDING TIMES (MASTER SAMPLE LIST)					
A. EXTRACTION HOLDING TIMES		✓		✓	
B. ANALYSIS HOLDING TIMES		✓		✓	
5. DETECTION LIMITS (SECTION ONE)		✓		✓	
6. BLANKS (SECTIONS TWO OR THREE)					
A. EQUIPMENT RINSATE BLANKS					✓
B. FIELD BLANKS					✓
C. TRIP BLANKS					✓
D. LABORATORY BLANKS					
7. FIELD REPLICATES		✓		✓	
8. FIELD SPLITS		✓		✓	
9. GEOPHYSICAL COMPARISONS					✓
A. CATION VS ANION					✓
B. TDS VS SPEC. CONDUCTANCE					✓
C. PH VS ALK/ACIDITY					✓
D. OTHER					✓
10. METALS QA DATA (SECTION TWO)		✓		✓	
11. INORGANIC WET CHEMISTRY (SEC. TWO)		✓		✓	
12. ORGANIC QA DATA-GC (SECTION THREE-A)		✓		✓	
13. ORGANIC WET CHEMISTRY (SEC. THREE-A)		✓		✓	
14. ORGANIC QA DATA-GC/MS (SEC. THREE-B)		✓		✓	

AFTER COMPLETING THIS SECTION GO TO SECTION FIVE.
COMMENTS:

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ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FIVE

DATA VALIDATION CODING Ft. Stewart RFI

PROJECT NAME: 25 Mortar Pools PROJECT NUMBER: FST-027
QA REPORTING LEVEL: II VALIDATION DATE: 4 Oct 93

1. QUALIFIER CODES ASSIGNED TO DATA: R, U, J, U/J, B, NO FLAG

2. IDENTIFICATION OF SAMPLES AND PARAMETERS WITH CODES:

	SAMPLE ID	PARAMETERS
R CODE		
B CODE		
U CODE		
J CODE		
U/J CODE		

EXPLANATION: all acceptable

VALIDATION PERFORMED BY: FRANZ Feodrichea

SIGNED:

DATE: 4 Oct 93

Ft. Stewart RFI

DATA VALIDATION CHECKLIST
SECTION ONE

PROJECT NAME: Ft. Stewart Battery Shop
PROJECT NUMBER: FST-038
SAMPLING DATE: 24, 26 Aug 93 VALIDATION DATE: 28 Sept 93
SAMPLE IDENTIFICATION: FST-078 SB1-8-93, SB2, SB2 Dup, SB3, SB4
SAMPLING TEAM: J. Smith, Des. Arriston, D. LaBoude, H. Fulcher
ANALYZING LABORATORY: Carr Laboratory
ANALYSES PERFORMED: 8015, 3550, 150.1/9040/9045, TCLP 131, TCLP 51 comp.
SAMPLE MATRIX: non aqueous (soil)
QA REPORTING LEVEL: II

FIELD DATA PACKAGE DOCUMENTATION

FIELD SAMPLING LOGS:1/	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLING DATES NOTED		✓		✓	
2. SAMPLING TEAM INDICATED		✓		✓	
3. SAMPLE IDENTIFICATION TRACEABLE TO LOCATION COLLECTED		✓		✓	
4. SAMPLE LOCATION		✓		✓	
5. SAMPLE DEPTH FOR SOILS		✓		✓	
6. COLLECTION TECHNIQUE (BAILER, PUMP ETC		✓		✓	
7. FIELD SAMPLE PREPARATION TECHNIQUES		✓		✓	
8. SAMPLE TYPE (GRAB, COMPOSITE)		✓		✓	
9. SAMPLE CONTAINER TYPE		✓		✓	
10. PRESERVATION METHODS		✓		✓	
11. CHAIN OF CUSTODY FORM COMPLETED		✓		✓	
12. REQUIRED ANALYTICAL METHODS REQUESTED		✓		✓	
13. FIELD (WATER AND SOIL) SAMPLE LOGS COMPLETED PROPERLY AND SIGNED		✓		✓	
14. NUMBER AND TYPE OF FIELD QC SAMPLES COLLECTED (BLANKS, REPLICATES, SPLITS, ETC.)		✓		✓	
15. FIELD EQUIPMENT CALIBRATION		✓		✓	
16. FIELD EQUIPMENT DECONTAMINATION		✓		✓	
17. SAMPLE SHIPPING		✓		✓	
18. LABORATORY TASK ORDER		✓		✓	

1/ FIELD SAMPLING LOGS = WATER AND/OR SOIL/SEDIMENT SAMPLING LOGS

COMMENTS:

DATA VALIDATION CHECKLIST
SECTION ONE CONTINUED

ANALYTICAL DATA PACKAGE DOCUMENTATION

GENERAL INFORMATION

ALL QA REPORTING LEVELS	REPORTED NO	REPORTED YES	PERFORMANCE ACCEPTABLE NO	PERFORMANCE ACCEPTABLE YES	NOT REQUIRED
1. SAMPLE RESULTS		✓		✓	
2. PARAMETERS ANALYZED		✓		✓	
3. METHOD OF ANALYSIS		✓		✓	
4. DETECTION LIMITS OF ANALYSIS		✓		✓	
5. MASTER TRACKING LIST		✓		✓	
6. SAMPLE COLLECTION DATE		✓		✓	
7. LAB SAMPLE RECEIVED DATE		✓		✓	
8. SAMPLE PREPARATION/EXTRACTION DATE		✓		✓	
9. SAMPLE ANALYSIS DATE		✓		✓	
10. COPY OF CHAIN-OF-CUSTODY FORM SIGNED BY THE LAB SAMPLE CUSTODIAN		✓		✓	
11. A NARRATIVE SUMMARY OF QA OR SAMPLE PROBLEMS IS PROVIDED.		✓		✓	

COMMENTS: _____

AFTER COMPLETING SECTION ONE PROCEED TO THE APPROPRIATE QA REPORTING LEVEL OF SECTION TWO (INORGANIC ANALYSES) AND/OR SECTION THREE (ORGANIC ANALYSES). FOLLOWING COMPLETION OF THESE SECTIONS PROCEED TO SECTION FOUR (DATA EVALUATION SUMMARY).

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES
METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: I REQUIREMENTS (BATCH SPECIFIC QA)[1]	REPORTED NO	REPORTED YES	IN LIMITS NO	IN LIMITS YES	NOT REQUIRED
1. METHOD BLANKS					
2. MS[2] OR RWS[3] % RECOVERY (%R)					
3. MSD[4] OR RWSD[5] OR LD[6] %R					
4. RPD[7]					

COMMENTS: _____

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH REGARDLESS OF THE SOURCE.
2/ MS = MATRIX SPIKE;
3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.;
5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE;
7/ RPD = RELATIVE PERCENT DIFFERENCE

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION TWO

INORGANIC ANALYSES
METALS AND CLASSICAL WET CHEMISTRY METHODS

QA REPORTING LEVEL: II

REQUIREMENTS (BATCH SPECIFIC QA)[1]	REPORTED NO	REPORTED YES	IN LIMITS NO	IN LIMITS YES	NOT REQUIRED
1. METHOD BLANKS		✓		✓	
2. MS % RECOVERY (%R)		✓		✓	
3. MSD OR LAB DUPLICATE % R		✓		✓	
4. RWS % R		✓		✓	
5. RWSD % R		✓		✓	
6. RPDs FOR MS/MSD, SAMPLE/LD, RWS/RWSD		✓		✓	
7. LCS[8] %R		✓		✓	
8. ICVS [9] %R		✓		✓	

COMMENTS:

QA REPORTING LEVEL: III

REQUIREMENTS (SAMPLE SPECIFIC QA)[10]					
1. CALIBRATION CURVE STANDARDS					
2. ICVS %R					
3. CCVS[11] %R					
4. LCS %R					
5. METHOD BLANKS					
6. ICS[12] %R (ICP ONLY)					
7. DCS[13] %R (ICP ONLY)					
8. MS %R					
9. LD OR MSD %R AND RPD					
10. POST DIGESTION ANALYTICAL SPIKE[14]					

COMMENTS:

1/ BATCH SPECIFIC QA: APPLIES TO ANY SAMPLES IN ANALYTICAL BATCH.
2/ MS = MATRIX SPIKE; 3/ RWS = REAGENT WATER SPIKE;
4/ MSD = MATRIX SPIKE DUP.; 5/ RWSD = REAGENT WATER SPIKE DUP.;
6/ LD = LABORATORY DUPLICATE; 7/ RPD = RELATIVE PERCENT DIFFERENCE
8/ LCS = LABORATORY CONTROL SAMPLE;
9/ ICVS = INITIAL CALIBRATION VERIFICATION STANDARD;
10/ SAMPLE SPECIFIC QA: APPLIES TO PROJECT SPECIFIC SAMPLES..
11/ CCVS = CONTINUING CALIBRATION VERIFICATION STANDARD;
12/ ICS = INTERFERENCE CHECK SAMPLE; 13/ DCS = DILUTION CHECK SAMPLE;
14/ POST DIGESTION ANALYTICAL SPIKE APPLIES TO FURNACE AA ONLY;

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION THREE

ORGANIC ANALYSES

QA REPORTING LEVEL: I_
REQUIREMENTS_____

	Reported No	Reported Yes	In Limits No	In Limits Yes	Not Required
1. Water Blanks					
2. Extraction Blanks					
3. RWS[1/]					
4. RWSD[2/]					
5. RPD[3/]					

Comments: _____

QA REPORTING LEVEL: II
REQUIREMENTS
A. GAS CHROMATOGRAPHY (NO MASS SPEC) OR WET CHEMISTRY PROCEDURE

1. Water Blanks					✓
2. Extraction Blanks		✓		✓	
3. MS[4/] (Batch Specific)		✓		✓	
4. MSD[5/] (Batch Specific)		✓		✓	
5. LD[6/] (Optional)		✓		✓	
6. MS/MSD RPD or Sample/LD RPD		✓		✓	
7. RWS		✓		✓	
8. RWSD		✓		✓	
9. RWS RPD		✓		✓	
10. Surrogate Spikes		✓		✓	

B. GAS CHROMATOGRAPH/MASS SPECTROMETER

1. Water Blanks					✓
2. Extraction Blanks		✓		✓	
3. MS (Batch Specific)		✓		✓	
4. MSD (Batch Specific)		✓		✓	
5. LD (Optional)		✓		✓	
6. MS/MSD RPD or Sample/LD RPD		✓		✓	
7. RWS		✓		✓	
8. RWSD		✓		✓	
9. RWS RPD		✓		✓	
10. Surrogate Spikes		✓		✓	

COMMENTS: _____

1/ RWS = REAGENT WATER SPIKE; 2/ RWSD = REAGENT WATER SPIKE DUPLICATE;
3/ RPD = RELATIVE PERCENT DIFFERENCE; 4/ MS = MATRIX SPIKE;
5/ MSD = MATRIX SPIKE DUPLICATE; 6/ LD = LAB DUP

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FOUR

DATA EVALUATION SUMMARY Ft. Stewart RFI

PROJECT NAME: Battery Shop PROJECT NUMBER: FST-028
QA REPORTING LEVEL: I, II VALIDATION DATE: 28 Sept 93

ALL QA REPORTING LEVELS (I, II, III)

SUMMARY OF CHECKLIST FINDINGS

	Reported No	Reported Yes	Performance Acceptable No	Performance Acceptable Yes	Not Required
1. FIELD MEASUREMENTS OF PH AND SPECIFIC CONDUCTANCE ARE CONSISTENT WITH HISTORICAL DATA		✓		✓	
2. FIELD RECORDS		✓		✓	
3. METHODS (GEN. INFO. SECTION ONE)		✓		✓	
4. HOLDING TIMES (MASTER SAMPLE LIST)					
A. EXTRACTION HOLDING TIMES		✓		✓	
B. ANALYSIS HOLDING TIMES		✓		✓	
5. DETECTION LIMITS (SECTION ONE)		✓		✓	
6. BLANKS (SECTIONS TWO OR THREE)					
A. EQUIPMENT RINSATE BLANKS					✓
B. FIELD BLANKS					✓
C. TRIP BLANKS					✓
D. LABORATORY BLANKS					
7. FIELD REPLICATES		✓		✓	
8. FIELD SPLITS		✓		✓	
9. GEOPHYSICAL COMPARISONS					✓
A. CATION VS ANION					✓
B. TDS VS SPEC. CONDUCTANCE					✓
C. PH VS ALK/ACIDITY					✓
D. OTHER					✓
10. METALS QA DATA (SECTION TWO)		✓		✓	
11. INORGANIC WET CHEMISTRY (SEC. TWO)		✓		✓	
12. ORGANIC QA DATA-GC (SECTION THREE-A)		✓		✓	
13. ORGANIC WET CHEMISTRY (SEC. THREE-A)		✓		✓	
14. ORGANIC QA DATA-GC/MS (SEC. THREE-B)		✓		✓	

AFTER COMPLETING THIS SECTION GO TO SECTION FIVE.
COMMENTS:

ANALYTICAL DATA VALIDATION CHECKLIST
SECTION FIVE

DATA VALIDATION CODING Ft Stewart RG1

PROJECT NAME: Battery Shop PROJECT NUMBER: FST-028
QA REPORTING LEVEL: 1 VALIDATION DATE: 28 Sept 93

1. QUALIFIER CODES ASSIGNED TO DATA: R, U, J, U/J, B, NO FLAG

2. IDENTIFICATION OF SAMPLES AND PARAMETERS WITH CODES:

	SAMPLE ID	PARAMETERS
R CODE		
B CODE		
U CODE		
J CODE		
U/J CODE		

EXPLANATION: all Acceptable

VALIDATION PERFORMED BY: FRANZ FROEHLICHER

SIGNED: [redacted]

DATE: 28 Sept 93