QUALITY CONTROL SUMMARY REPORT
FOR
LANDFILLS 2, 5, AND 6
(FTC-006, FTC-009, AND FTC-010)
(SWMU 2, SWMU 5, AND SWMU 6)
FORT CARSON, COLORADO

Contract No. DACW45-93-D-0007
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Omaha District

Prepared by:
Rust Environment & Infrastructure
Englewood, Colorado

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Rust Environment & Infrastructure
5575 DTC Parkway, Suite 200
Englewood, Colorado 80111

Prepared by:

Caroline W. Whitesides, CPG
Project Hydrogeologist

Donna Fabyanic
Administrative Assistant

Terry Riddle
Project Chemist

Reviewed by:

Janet Hruby, P.E.
Landfills Task Manager

John England, P.E.
Project Manager

DISTRIBUTION LIST

Recipients	Copies
1. U.S. Army Engineer District, Omaha ATTN: CEMRO-ED-EA (L. White) 2 Central Park Plaza, 10th Floor 222 South 15th Street Omaha, Nebraska 68102	5[1]
2. HQ, Fort Carson AFZC-ECM-EC ATTN: Jim Henderson Building 302 Fort Carson, Colorado 80913-5000	1

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LIST OF ABBREVIATIONS AND ACRONYMS

Aero-Metric	Aero-Metric Engineering, Inc.
ASTM	American Society for Testing and Materials
CDPHE	Colorado Department of Public Health and Environment
CMS	Corrective Measure Study
COC	Chain of Custody
DCS	Duplicate Control Samples
DECAM	Directorate of Environmental Compliance and Management
DNAPL	Dense Non-Aqueous Phase Liquid
DOT	Department of Transportation
DQCR	Daily Quality Control Report
DQO	Data Quality Objective
EPA	Environmental Protection Agency
Fort Carson	Fort Carson Military Reservation
GC	Gas Chromatography
GEO	GEO Environmental, Inc.
Geo-Centers	Geo-Centers, Inc.
HTW	Hazardous and Toxic Waste
HydroLogic	HydroLogic Laboratories, Inc.
ID	Inside Diameter
IDW	Investigation Derived Waste
LIMS	Laboratory Information Management System
LNAPL	Light Non-Aqueous Phase Liquid
MRL	Missouri River Laboratory
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NAVD	National Adjusted Vertical Datum
OD	Outside Diameter
OHM	OHM Remedial Services
PARCC	Precision, Accuracy, Representativeness, Completeness, and Comparability
Part B Permit	Hazardous Waste Part B Permit No. CO-95-09-29-03
PCB	Polychlorinated Biphenyl
PID	Photoionization Detector
POL	Petroleum, Oil, and Lubricants
PQL	Practical Quantitation Limit
PVC	Polyvinyl Chloride
QA	Quality Assurance
QAPP	Quality Assurance Program Plan
QC	Quality Control
QCSR	Quality Control Summary Report
Quanterra	Quanterra Environmental Services
RCRA	Resource Conservation and Recovery Act

LIST OF ABBREVIATIONS AND ACRONYMS (cont'd)

RFI	RCRA Facility Investigation
RPD	Relative Percent Difference
Rust	Rust Environment & Infrastructure
SAP	Sampling and Analysis Plan
Site Services	Site Services, Inc.
SOP	Standard Operating Procedure
SOS	Scope of Services
SVOC	Semivolatile Organic Compound
SWMU	Solid Waste Management Unit
USACE	U.S. Army Corps of Engineers
USCS	Unified Soils Classification System
UST	Underground Storage Tank
VOC	Volatile Organic Compound

1.0 INTRODUCTION

1.1 QUALITY CONTROL SUMMARY

This Quality Control Summary Report (QCSR) has been prepared for Landfills 2 (FTC-006), 5 (FTC-009), and 6 (FTC-010) (herein referred to as the landfills) at the Fort Carson Military Reservation (Fort Carson), Colorado. These sites are also designated with the following Solid Waste Management Units (SWMUs) in the Resource Conservation and Recovery Act (RCRA) Hazardous Waste Part B Permit No. CO-95-09-29-03 (Part B Permit) issued to Fort Carson: Landfill 2 - SWMU 2; Landfill 5 - SWMU 5; and Landfill 6 - SWMU 6. This report describes the operations and procedures followed by Rust Environment & Infrastructure (Rust) and its subcontractors to collect quality data for the Voluntary Site Investigation/RCRA Facility Investigation (RFI), Risk Assessment, and Corrective Measures Study (CMS) for these sites. The following subcontractors provided services: Aero-Metric Engineering, Inc. (Aero-Metric) of Fort Collins, Colorado; Geo-Centers, Inc. (Geo-Centers) of Newton Centre, Massachusetts; OHM Remedial Services (OHM) of Denver, Colorado; Site Services, Inc. (Site Services) of Golden, Colorado; GEO Environmental, Inc. (GEO) of Golden, Colorado; HydroLogic Labs Inc. (HydroLogic) of Brighton, Colorado; Quanterra Environmental Services (Quanterra) of Arvada, Colorado; Montgomery-Phillips, Inc. of Denver, Colorado; and Leigh Whitehead & Associates, Inc. of Colorado Springs, Colorado.

In November 1994, the U.S. Army Corps of Engineers (USACE) initiated voluntary site investigations in support of remedial designs for the landfills. During the implementation of the voluntary investigations, the Part B Permit became effective (October 1995), requiring an RFI of the soil, groundwater, and surface water for each of the sites as outlined in Part B Permit Sections IV.G.1.b, IV.G.1.e, and IV.G.1.f. A permit modification request was submitted to the Colorado Department of Public Health and Environment (CDPHE) requesting that (1) soil sampling not be included for the RFI, and (2) Landfill 3 be considered contiguous with Landfill 2. CDPHE has indicated that the modification request will be approved, however, a formal response has not been received as of this report submission date. These requirements were covered in the Sampling and Analysis Plans (SAPs) and addendums for the landfills. For this report and the RFI reports, Landfill 2 and Landfill 3 are considered contiguous sites and will be referred to as Landfill 2.

This QCSR follows 13 documents already submitted regarding the landfill investigations, and include:

- The Draft Sampling and Analysis Plan for Remedial Design, Landfills 2 (FTC-006), 5 (FTC-009), and 6 (FTC-010) and Vapor Degreaser was submitted in September 1994 prior to commencing field activities, and discusses the sampling methods (Rust, 1994).

- A SAP modification letter was submitted to the USACE in April 1995 and adjusts the number of direct push groundwater samples and existing monitoring well samples to be collected at all three landfills (Rust, 1995a).

- Another SAP modification letter was submitted to USACE in May 1995 which adjusts the number of direct push groundwater samples to be collected at Landfill 6 (Rust, 1995b).

- An Analytical Data Package was submitted in July 1995 and contains all of the laboratory analytical data packages for samples collected through May 1995 and analyzed by HydroLogic (Rust, 1995c).

- The Draft Landfills 2, 5, and 6 - Cap Installation Project Work Plan was submitted in November 1995 (Rust, 1995d) and includes a summary of completed investigation activities and additional sampling activities required for construction of caps at the landfills.

- The Final RCRA Facility Investigation Work Plan Addendum for Landfill 6 was submitted in October 1995 (Rust, 1995e) and includes an additional groundwater investigation based on the preliminary results of the Landfill 6 RFI.

- The Revised Final SAP for Landfills 2 (FTC-006), 3 (FTC-007), 5 (FTC-009), and 6 (FTC-010), and Vapor Degreasing/Spray Jet Washers (FTC-058) was submitted in December 1995 (Rust, 1995f), was approved by USACE, and includes updated field program information. Final Design Analysis Reports were submitted for Landfill 6 in March 1996 (Rust, 1996a), Landfill 5 in April 1996 (Rust, 1996b), and Landfill 2 in May 1996 (Rust, 1996c) that summarize the work performed at each landfill and present cap designs for each of the landfills.

- The Letter Work Plan for Surface Water and Sediment Sampling at Landfills 2, 5, and 6 was submitted in April 1996 (Rust, 1996d) and includes required sampling of surface water and sediment to comply with the Part B Permit.

- Another Letter Work Plan Addendum for collection of two direct push groundwater samples at Landfill 6 was submitted in April 1996 (Rust, 1996e).

- The second Analytical Data Package was submitted in September 1996 (Rust, 1996f) and contains all of the laboratory analytical data packages for samples collected since May 1995 and analyzed by both HydroLogic and Quanterra.

This report includes a summary of the quality assurance (QA) and quality control (QC) procedures and evaluation of data quality with respect to the data quality objectives (DQOs) established for these investigations. Results of these investigations will be presented in individual RFI reports, one for each landfill site, currently in preparation by Rust. These investigations are being conducted for the Department of the Army, Omaha District, USACE, under Contract Number DACW45-93-D-007, Delivery Order Number 0027.

1.2 REPORT ORGANIZATION

Section 2.0 of this report provides a discussion of project objectives, a description of Fort Carson, and background information for the landfills. Procedures employed to perform field investigation methods and to control and evaluate the quality of sample collection, transportation, storage, and analysis are presented in Section 3.0. Section 4.0 includes a review of the methods employed by the laboratories and Rust to evaluate the quality of the data. Section 5.0 includes a discussion of the results of QC evaluations. Conclusions and recommendations are presented in Section 6.0. Daily Quality Control Reports (DQCRs) are summarized in this document and are consolidated in Appendix A. Appendix B contains Corrective Action Forms documenting any deviations from planned procedures and their resolution.

2.0 PROJECT DESCRIPTION

2.1 PROJECT OBJECTIVE

The objective of the landfill RFIs is to assess the nature and the vertical and lateral extent of any potential contamination associated with Landfills 2, 5, and 6 at Fort Carson to support remedial design. The purpose of this QCSR is to present, in specific terms, the QA and QC practices utilized to achieve the goals of the investigation. The analytical program for this project was designed to conform with the USACE-Omaha District Chemistry General Scope of Services (SOS) (USACE, 1996) and the USACE General Geology SOS (USACE, 1992). Data collected will be used to evaluate risk to human health and the environment and to make risk-based recommendations regarding whether or not further investigation or remediation is warranted.

2.2 FACILITY LOCATION AND OPERATIONS

Fort Carson is located in east-central Colorado, adjacent to the eastern flank of the Rocky Mountain Front Range. The northern edge of the installation is approximately 8 miles south of Colorado Springs in El Paso County, and occupies approximately 220 square miles. The installation is bounded on the northeast by Interstate Highway 25, on the north by Colorado State Highway 83 (Academy Boulevard), and on the west by Colorado State Highway 115, as shown in Figure 2-1. The southern boundary is approximately 10 miles north and parallel to U.S. Highway 50, in Pueblo County. A small area in the southwestern portion of the installation is located in Fremont County. All of the landfills are located in the Cantonment Area of Fort Carson as shown in Figure 2-2.

Fort Carson is an active military training installation for both weapons qualification and field training. The primary mission of Fort Carson is the training of troops to ensure combat readiness. The principal industrial operation at Fort Carson has been the repair and maintenance of vehicles and aircraft.

2.3 SITE SPECIFIC SUMMARY

Historical information on Landfills 2, 5, and 6 presented below was compiled from the Final RCRA Facility Assessment for Fort Carson (Science Applications International Corporation, 1994).

2.3.1 Landfill 2

The former Landfill 2 is located in the eastern portion of the Cantonment Area, as shown in Figure 2-2. The site was reportedly operated between 1960 and 1978, covers approximately 140 acres (pre-design estimate), and was operated as a combined trench and fill landfill. The trenches were oriented perpendicular to the topographic slope. Some of the cover material was hauled to this site from other sites on Fort Carson. The types of waste reportedly received at this site included mixed loads of sanitary wastes, sludge, and waste petroleum, oil, and lubricants (POL).

The former Landfill 3 is located northwest of Landfill 2, and specific boundaries of Landfill 3, or a separation between Landfills 2 and 3, are not apparent. According to historical site descriptions, the landfill covers approximately 64 acres (inclusive with the 140 acres of Landfill 2) and was reportedly in operation from 1957 to 1960. The types of wastes reportedly disposed in the landfill are similar to the type disposed of in Landfill 2 and include mixed sanitary waste, sludges, and waste POL. The landfill may have been used primarily for construction wastes. The depth of cover at the landfill is unknown.

2.3.2 Landfill 5

The former Landfill 5 is located in the northeast corner of the Cantonment Area as shown in Figure 2-2. A dog kennel (Building No. 8999) borders the northern edge of the landfill, and a motor pool (Building No. 8903) is adjacent to the northwest corner of the landfill. The landfill was reportedly operated between 1946 and 1956 and covers approximately 26 acres (pre-design estimate) according to information received by the USACE. However, additional information contained in a Ground Water Quality Study (38-26-0897-89) prepared by the USAEHA in 1989 indicates that the landfill may be approximately 55 acres in area (pre-design estimate). Although the site operations are undocumented, site inspections indicate that the landfill can be classified as an "area fill" type of landfill. The types of waste reportedly received at the site included construction debris, mixed

sanitary waste, waste POL, waste from an old horse barn, coal cinders and ash. In addition, the area around Landfill 5 was formerly used for a mule barn.

2.3.3 Landfill 6

The former Landfill 6 is located in the west central portion of the Cantonment Area as shown in Figure 2-2. It is bounded on the north by Ellis Street, on the east by a branch of Third Ditch and Chiles Avenue, and on the south and west by a branch of Third Ditch and softball fields. The site was reportedly operated between 1942 and 1946, covers approximately eight acres (pre-design estimate), and was operated as a trench type landfill. Refuse was placed in trenches, compacted by several passes of a bulldozer, and covered with locally obtained soil fill. The trenches are oriented southwest to northeast. The types of waste reportedly received at the site included construction debris, mixed sanitary waste, sludge, and waste POL.

2.4 ANALYTICAL SERVICES

HydroLogic and Quanterra provided analytical services for the landfill investigations at Fort Carson. HydroLogic provided analytical services for all analytical samples collected prior to July 1995. HydroLogic was a conditionally-validated laboratory under the Missouri River Laboratory (MRL) of the USACE during site investigation activities. A performance evaluation set of samples analyzed by HydroLogic was successfully completed with the exception of explosives in soils, required for another site. After completion of 1995 field investigation activities, HydroLogic completed all MRL performance evaluation samples, passed an onsite laboratory evaluation by Techlaw, and is now a fully-validated laboratory. Quanterra, another fully-validated laboratory under the MRL, provided analytical services for all analytical samples collected after July 1995.

HydroLogic was instructed to use the laboratory derived method detection limit (MDL) as the reporting limit for both hard copy and electronic data submittals. The MDL is operationally defined as the analyte concentration that can be measured and reported at the 99 percent confidence level that the concentration is greater than zero. It is typically determined by analyzing seven replicate measurements of the analyte of interest at a concentration 2.5 to 5 times the estimated MDL. The standard deviation of the seven measurements is multiplied by the Student's t-value at the 99 percent

confidence limit, resulting in the MDL. This value represents the decision point for determining whether or not a compound is present in the investigative sample. All detected analytes that had a result between the MDL and the practical quantitation limit (PQL) were flagged with a 'J' code to indicate that the quantitative value should be considered estimated. The PQL is defined by the U.S. Environmental Protection Agency (EPA) as the lowest concentration of an analyte that can be reliably achieved within specified limits of precision and accuracy during routine operations. The PQL is determined by the contract laboratories, taking into account impacts from sample matrix, sample preparation, and instrument limitations. The PQL represents the concentration at which the laboratory can both determine the presence of an analyte and accurately quantify the amount present. The PQL may be 5 to 500 times above the MDL, depending on matrix or method effects. Values between the MDL and the PQL represent concentrations with higher confidence of detection, but lower confidence of quantitation. Table 2-1 is a listing of MDLs for target analytes in groundwater for HydroLogic, and Table 2-2 is a listing of PQLs for the target analytes in groundwater and surface water samples for Quanterra. Table 2-3 is a listing of PQLs for the target analytes in soil and sediment samples for Quanterra.

Quanterra reported all non-detect results as 'ND' with a reporting limit equal to the laboratory PQL. Both laboratories reported detections below the PQL, but supplemented the reported result with a laboratory qualifier ('J'), to indicate a greater degree of uncertainty associated with the quantitative result. The 'J' value results are valid and usable.

The reporting limits may increase for an individual environmental sample due to high concentrations of target analytes, matrix effect, or other interferences. When required, the laboratory dilutes the sample aliquot to bring the target analytes into the linear range of the analytical method or to minimize interferences. In the process, other target analytes are diluted and the reporting limit increases to reflect the impact of the dilution. In addition to the 'J' code applied by the laboratory, Rust also used a 'J' qualifier as part of its independent data review process. The Rust 'J' qualifier was applied for a wide variety of QC-related issues, including poor surrogate performance, method blank contamination, and non-compliant calibration performance. The Rust 'J' qualifier could be applied to both detected values and non-detected values. Both the HydroLogic, Quanterra, and Rust

'J' codes indicate that the reported value is an estimated quantity. Additional laboratory qualifier codes are discussed in Section 4.1. Results flagged with the Rust 'J' code are considered valid and usable.

2.5 DATA QUALITY OBJECTIVES

The DQOs for the Landfill RFIs are based on the objectives of the investigation which are:

- Evaluate the extent of the landfill boundaries and estimate the general types of landfilled materials;
- Determine if shallow groundwater is present below the landfills and if it has been impacted by the landfills; and
- Determine if adjacent surface water has been impacted by the landfill.

In addition, the results of the investigation will be used to provide support for a Risk Assessment and a CMS. The sampling scheme included geophysical and geotechnical analysis of the subsurface materials; observation of the surface and subsurface materials; and analysis of groundwater, surface water, seeps and sediments, if present, from beneath and adjacent to the landfills.

Specific goals for achieving the DQOs are as follows:

- Collect samples utilizing approved and accepted procedures (American Society for Testing and Materials [ASTM] or EPA);
- Assure that laboratory QC is performed within laboratory QA historical limits as specified in the laboratory Quality Assurance Program Plan (QAPP) (see Appendices C and D of the Draft SAP);
- Establish and implement a corrective action process for all data not within control limits.

Listed below are the site-specific parameters addressed during development of the DQOs.

- Current data used for the investigation includes characterization and source identification of site-related chemicals identified at the landfills.
- Data from the investigation may support an interim corrective action, human health and environmental RA, and CMS.

- The primary contaminants of concern are volatile organic compounds (VOCs) and leachate specific compounds.

- Levels of concern for the investigation are based on the site-specific assessment criteria. The more stringent of either the Colorado Ground Water Standards or the Federal Drinking Water Standards will be used as a comparison for groundwater and seep water results. Surface water results were compared to the Ambient Water Quality Criteria. Sediment results were compared to EPA Region III RBCs for Soil-Residential.

- Analytical methods for the investigation are from EPA SW846, Third Edition (1986) and Updates I (1992), II, and IIA (1994).

Two levels of data are defined by the EPA guidance (EPA, 1993):

- Screening Data - Screening data are generated by rapid, less precise methods of analysis with less rigorous sample preparation. Sample preparation steps may be restricted to simple procedures such as dilution with a solvent, instead of elaborate extraction/digestion and cleanup. Screening data provide analyte identification and quantification, although the quantification may be relatively imprecise. At least 10 percent of the screening data are confirmed using analytical methods and QA/QC procedures and criteria associated with definitive data. Screening data without associated confirmation data are not considered to be of known quality. Screening Data, however, was not collected for these RFIs.

- Definitive Data - Definitive data are generated using rigorous analytical methods, such as approved EPA reference methods. Data are analyte-specific, with confirmation of analyte identity and concentration. Methods produce tangible raw data (e.g., chromatograms, spectra, digital values) in the form of paper printouts or computer-generated electronic files. Data may be generated at the site or at an off-site location, as long as the QA/QC requirements are satisfied. For the data to be definitive, either analytical or total measurement error must be determined.

  Applicable EPA SW-846 Test Methods for Evaluating Solid Waste (EPA, 1994) and USACE-approved procedures will be used for all analyses, documentation, validation, and data assessment. The data meeting quality criteria are suitable for site assessments, risk assessments, and remedial design processes and remediation effort.

In addition, a third category of data defined by Rust was collected:

- Field Measurements - Field screening or analysis using portable instruments. Results are often not compound-specific and not quantitative, but results are available in real-time. It is the least costly of the analytical options, but the least defensible due to greatest potential for error, and precision and accuracy limitations. This level is normally used for field investigation and health and safety screening, but can also be used to identify media or samples for consideration of

further analyses. Field pH, conductivity, temperature, turbidity, dissolved oxygen, and organic vapor measurements are included in this level.

Both Field Measurements and Definitive Data were collected during the field investigation. Field Measurements were collected from field instruments and include: pH, specific conductance, temperature, and turbidity of water removed from the wells during well development and purging using field equipment; photoionization detector (PID) readings to measure organic vapors in the breathing zone to evaluate health and safety conditions; instrument readings to measure hydrogen sulfide, methane, and total organic vapor concentrations in the soil gas survey; and dust dosimeter readings to measure dust particles in the breathing zone to evaluate health and safety conditions.

Definitive Data quality for all other groundwater, surface water, seep, soil, and sediment samples were provided by an offsite laboratory using EPA SW846 methods. Methods for collecting data analytical activities included in this site investigation are discussed in Section 3.0. An evaluation of analytical data quality is found in Section 4.0, and results of this evaluation is found in Section 5.0.

3.0 FIELD QUALITY CONTROL PROCEDURES

This section of the report summarizes methods used to collect data for the landfills RFIs. Groundwater samples were also collected from the landfills as part of the Fort Carson Quarterly Groundwater Monitoring Program. Results from the first two quarters of sampling were included in the RFI QC checking procedures so they can be included in the individual RFI reports, and the same methods were employed for sampling these wells as discussed below for the RFI samples. No comparisons are made between the groundwater monitoring program work plan's specifications and actual quantities collected. Details of scope specifications and actual samples collected for the quarterly samples will be included in the Quarterly Groundwater Monitoring Reports. Table 3-1 is a summary of samples collected under the RFI program and under the Groundwater Monitoring Program.

3.1 PROJECT PLANNING

The Revised Final SAP, Draft Cap Installation Project Work Plan, and the Work Plan Addendums for Landfill 6 were prepared for and approved by the USACE for this project and provide detailed procedures that ensure the high quality of data that was derived from this site investigation. These documents provide detailed discussions of the project work scope and procedures for all field and laboratory activities. Data reduction, assessment, and reporting are also addressed in these documents. A summary of the sampling conducted at the landfills, including the number of samples collected for each sampling method and analyses performed, is provided in Table 3-2.

3.2 FIELD METHODS

This section summarizes the equipment, procedures, and methods undertaken to ensure high quality sample collection during the investigation activities. Investigation activities and QC procedures were recorded and documented in the field using appropriate field forms which are discussed in Section 3.2.18. More detailed discussion on field procedures are provided in the SAP and addendums approved for this work.

Sample containers, preservatives, and holding times are found in Table 3-3. Borehole abandonment procedures are discussed in Section 3.2.5. Decontamination procedures are discussed in Section 3.2.15. Management of investigation derived waste (IDW) is discussed in Section 3.2.16. Sample labeling, handling, and shipping are discussed in Section 3.2.20.

3.2.1 Field Mapping

Prior to conducting intrusive investigations at each site, preliminary field mapping was performed in an effort to establish the approximate limit of waste. Field mapping performed after the geophysics survey work was aided by the availability of site topography maps, which were prepared by Aero-Metric from air photos of the site.

3.2.2 Direct Push Groundwater Sampling

Direct push groundwater sampling was performed to evaluate the groundwater chemistry in the vicinity of each of the landfills and to supplement information obtained from groundwater samples collected from existing monitoring wells. These samples were collected to monitor the quality and direction of groundwater flow at the landfills. Data was used to guide the subsequent selection of locations for additional groundwater samples from additional direct push locations or new groundwater monitoring wells.

A total of 23 direct push groundwater samples were collected from the landfills: eight from Landfill 2; six from Landfill 5; and nine from Landfill 6. This sampling was performed at four different times and included two phases at each site: initial sampling at Landfills 2 and 5 in May and June 1995; initial sampling at Landfill 6 in November 1995, a second round of sampling at Landfills 2 and 5 to further evaluate the presence of compounds detected in the first round in March 1996; and a second round in April 1996 at Landfill 6 to provide additional information at locations downgradient of detected contamination. This total quantity of collected direct push groundwater samples did not meet the total quantity of 29 direct push groundwater samples specified in the SAP, Addendums, Work Plan, and letters due to the absence of groundwater at four locations and tubing blockage in two locations. In addition, due to the limited production capabilities from several sampling locations, not all of the scheduled compounds were analyzed.

Direct push groundwater sampling was performed by GEO and Site Services under the direction of the Rust field geologist. The samples were collected using a hydraulic penetrometer rig mounted on an all-terrain vehicle or a truck. One-inch diameter probe rods with an attached hardened steel expendable point were hydraulically driven to just below the water table. Depth to water information was obtained from nearby existing monitoring wells. Perforated Polyflow (polyethylene and polybutylene) tubing was inserted into the rod and screwed into the expendable point. The rods were then retracted to expose the perforations, allowing groundwater to flow into the tubing. A water sample was then obtained with a peristaltic pump and poured directly into sampling containers provided by the contract laboratories. If refusal occurred prior to reaching groundwater, an additional attempt was made to collect a groundwater sample by moving a few feet away and re-drilling. The pumped water did not come into contact with the pump, and down hole and pump tubing were discarded after each use. Sample information and required analyses were recorded on a Chain of Custody (COC) form and submitted to the contract laboratories with the groundwater samples for analysis.

At some locations (LF6-DPW5 through DPW9), soil samples were collected at 2-foot intervals for geologic logging and identification of saturated conditions in the direct push borings. A 2-foot long, 1.5-inch outside diameter (OD) stainless steel soil sampler, containing a polybutyrate liner and attached to the end of a probe pipe, was driven to the desired sampling depth. The sampler was opened mechanically and driven another 2 feet to obtain the sample. The pipe was then withdrawn to the surface, and the liner was removed from the rod. These samples were collected to a maximum depth of 14 feet. All soil samples were classified and logged in the field by a Rust geologist using visual/manual techniques described in ASTM D-2487-92 and D-2488-90 (ASTM, 1994), and in accordance with the Unified Soils Classification System (USCS). Soil descriptions and observations made during direct push soil sampling were recorded on Hazardous and Toxic Waste (HTW) Boring Logs (USACE-designated borehole logs). These soil samples were not submitted to the contract laboratories for analysis.

3.2.3 Soil Borings

Soil borings were drilled to collect subsurface soil samples for geotechnical analysis of landfill cover materials and existing foundation conditions, in addition to identifying landfill contents and determining the limit of waste. These samples were submitted to Rust's geotechnical laboratory for the following analyses: index properties of water content, dry density, grain size distribution and Atterberg limits; engineering properties of triaxial shear; and permeability testing. In addition, one soil sample was collected for laboratory analysis based on the presence of soil staining and hydrocarbon odors. This preserved soil sample was analyzed by the offsite contract laboratory (Quanterra) for petroleum hydrocarbons and is considered Definitive Level Data. Soil boring locations were approved by the USACE-Technical Manager prior to drilling.

A total of 62 soil borings were constructed at the landfills: 43 at Landfill 2; 13 at Landfill 5; and 6 at Landfill 6. The sample collection was conducted in accordance with the SAP and addendum however, 32 borings were constructed above the amount specified in the SAP and addendum: 29 (of 43 total) at Landfill 2 for additional landfill cap information (Cap Verification Test [CVT] borings) and three (of 13 total) at Landfill 5 for additional information on cover soils and existing foundation conditions. Shallow soil borings to evaluate cover soils were distributed across the known limit of each landfill. Deep soil borings, to evaluate the geotechnical characteristics of each site, were distributed as follows: Landfill 2 - deep borings were located along the south side of the site, in the direction of lower elevations where the greatest potential for a slope failure would be anticipated; Landfill 5 - deep borings were located along the B Ditch side of the site, where softer soil conditions would be expected; and Landfill 6 - deep borings were located along the south and east sides of the site, where existing drainage channels/ditches exist and, as a result, where softer soils may be expected in conjunction with the lack of buttressing soils.

Borehole drilling was performed by Site Services using a conventional truck-mounted CME-75 drilling rig fully equipped for hollow-stem auger drilling. A Rust field geologist continuously supervised and observed all drilling operations. All borings were drilled using 3 1/4-inch inside diameter (ID), 6-inch OD hollow stem augers. Subsurface materials were obtained by two methods:

(1) Drive sampling using split-spoon sampler; and
(2) Push sampling using Shelby tube samplers.

Drive sampling was performed using a 24-inch long, 1 3/8-inch ID and 2-inch OD standard penetration test split-spoon sampler driven by a 140-pound auto-hammer free-falling from 30 inches, in accordance with ASTM Method D1586 (ASTM, 1994). Split spoon soil samples were retained in labeled plastic bags. Push sampling was performed using 3-inch OD by 30-inch long Shelby tubes handled in accordance with ASTM Method D1587 (ASTM, 1994). Following the collection of each Shelby tube sample, both ends were sealed with wax, any void space was filled with silica sand, and both ends were taped and capped prior to transport from the drill site.

Continuous sampling was conducted through cover materials using Shelby tube samplers in fine materials (i.e. clays), and split spoon samplers were driven through granular material such as clayey sand. These borings were generally terminated as soon as waste was encountered (usually two consecutive samples). For borings located in perimeter areas to investigate existing foundation conditions, the first 6 feet were sampled continuously and at 5-foot intervals thereafter, unless soft or loose soils were encountered. In this event, continuous samples were obtained until competent soil or bedrock was encountered. These borings were terminated approximately 5 feet into bedrock, into soil that was either hard or dense, or at refusal.

Soil encountered in each boring was described and logged by the Rust field geologist using visual/manual techniques described in ASTM D-2487-92 and D-2488-90, and in accordance with the USCS. Observations made while drilling and the results of field headspace screening were recorded on HTW boring logs. Field headspace screening was performed on aliquots of selected soil samples collected during the installation of soil borings to assess the potential presence of VOCs utilizing the procedures outlined in Section 3.2.4.

3.2.4 Field Headspace Screening

Field headspace screening was performed on aliquots of selected soil samples collected during the construction of soil borings to assess the potential presence of VOCs. Field screening was performed

using a calibrated Thermo Environmental Instruments Model 580B PID. Preventive maintenance and calibration of the PID is discussed in Appendix D of the SAP.

Soil was collected in a clean, new, sealable, plastic bag lining the inside of a clean 16-ounce jar, and the jar was about half filled. The jar was sealed with a continuous sheet of aluminum foil and secured with the jar lid. The foil was tight against the mouth of the jar. The sample jars were agitated vigorously for 15 seconds, and then the sample was allowed to volatilize for a minimum of 10 minutes. During cold weather, the samples were warmed in a vehicle. Following the 10-minute volatilization period, the jar was agitated again and the lid was removed. The headspace was sampled with the PID by piercing the aluminum foil cap with the probe tip to create a small hole and inserting the PID probe into the headspace. The peak volatile concentration detected was read directly off the display screen of the PID. An ambient air background PID reading and an estimated temperature measurement were also collected simultaneously with the headspace readings. However, headspace readings were not adjusted to compensate for background readings.

Field PID measurements from headspace soil samples were recorded on Jar Headspace Testing Logs; PID measurements for health and safety purposes were recorded on Direct Reading Instrument Logs; and background readings, field breathing zone measurements, and headspace readings were recorded on the HTW Boring Logs.

Upon completion of headspace analysis, the excess soil from headspace was disposed in the drums with the drill cuttings. The resealable bags were segregated and collected in a separate drum for disposal with other used sampling equipment at each site. The 16-ounce jars were decontaminated and reused or disposed with other sampling equipment, as appropriate.

3.2.5 Borehole Abandonment

All boreholes created by the direct push method or by auger drilling were abandoned by backfilling with cement grout in accordance with requirements of the State of Colorado Water Resources Division. The grout consisted of a mixture of Portland cement and water in the proportion of approximately 6 gallons of approved water per 94-pound bag of cement. In addition, approximately

3 percent by weight sodium bentonite powder was added to the mixture. A survey stake, pin flag, or other marker was inserted in the center of each borehole so that the area could be relocated and surveyed.

3.2.6 Monitoring Wells

Monitoring wells were constructed to collect groundwater samples and determine whether chemicals that may have been released from the landfills have impacted the local groundwater at each site. Existing monitoring wells were also developed and sampled for water chemistry information. Analytical data from the monitoring wells will be used to support the risk assessment.

The SAP specified two new monitoring wells to be installed at each of the landfills, and the addendum specified an additional five new wells to be installed at Landfill 6. However, a total of five new wells were installed, and these were all installed at Landfill 6. New wells were not installed at Landfill 2 since: (1) the soil borings indicated there was no groundwater in the northern portion of the landfill; (2) there were several existing monitoring wells along the southern border of the landfill; and (3) it was decided to place new wells within and surrounding the landfill boundary after cap construction activities. New wells were not installed at Landfill 5 since: (1) there were several existing monitoring wells along the southern border of the landfill/B Ditch area; and (2) it was decided to place new wells within the landfill boundary after cap construction activities. The two new wells at Landfill 6 were not installed as specified in the SAP since there were several existing wells to sample. In addition, the SAP does not include the installation and sampling of the monitoring wells specified in the Draft Cap Installation Work Plan (Rust, 1995d). The installation of wells at all three landfills after construction of the caps will be addressed in the Final Cap Installation Work Plan.

A total of 23 wells (18 existing wells and 11 new wells) were sampled for the RFI: six existing wells at Landfill 2; nine existing wells at Landfill 5; and a combination of three existing wells and five new wells at Landfill 6. Based on the SAP and a modification letter, a total of 31 wells were specified for sampling: 20 existing wells and 11 new wells. In accordance with the Addendum, all new wells were installed and sampled with the exception of the six new wells (two at each of the landfills) that have not yet been installed as discussed above. However, only 18 of the 20 existing wells specified in the

SAP and modification letter were developed and sampled. One existing well at Landfill 2 and one existing well at Landfill 5 were not sampled due to well damage and lack of water, respectively. In addition, not all parameters were analyzed as specified in the SAP and Addendum due to limited sample volume and a change in parameters to be analyzed as specified in the Landfill 6 Work Plan Addendum. The following sections describe the procedures for drilling and installation of new wells, and development, purging, and sampling of existing and new monitoring wells.

3.2.6.1 Drilling and Installation

New monitoring wells were only installed at Landfill 6. Monitoring well locations were approved by the USACE-Technical Manager prior to well installation. An experienced Rust field geologist continuously supervised, observed, and recorded all drilling and well construction operations. Drilling and well installation was performed by Site Services using a conventional, truck-mounted drilling rig (CME-75), fully equipped for hollow stem auger drilling. The work area of the drill rig, augers, drilling tools, and all down hole equipment was steam cleaned prior to use at the site, between borings, and prior to demobilization from the site. Fort Carson provided a potable water supply for equipment decontamination.

Boreholes for the 2-inch ID groundwater monitoring wells were drilled using 3.25-inch ID/6.25-inch OD hollow stem augers, which allowed sufficient annular space for proper well construction. The soil encountered during the drilling was described and logged by the Rust field geologist using procedures discussed previously in Section 3.2.3.

Monitoring well screens consisted of new, threaded, flush joint, 2-inch ID, continuous wire-wrapped, schedule 40, polyvinyl chloride (PVC) with a 0.010-inch slot width. Well screens were 10 to 40 feet in length and were installed to intersect the water table and so that potential light non-aqueous phase liquids (LNAPLs) floating on the water surface could be detected and monitored. In addition, the screen was placed at the bottom of the aquifer so potential dense non-aqueous phase liquids (DNAPLs) could be detected and monitored. The riser pipe consisted of new, threaded, flush joint, 2-inch ID schedule 40 PVC. Clean, new disposable nitrile gloves were worn when handling well screens and casings. All well casings and screens were transported and stored in plastic wrap, and

personnel handling these items were not handling tools or drilling equipment while installing the well. All well materials were steam cleaned immediately prior to installation.

The lengths of all screen and riser sections, bottom caps, etc. were measured and recorded. The desired sections of well screen and riser pipe were assembled and lowered through the augers to the bottom of the borehole. The aquifer thickness was less than 10 feet at the north edge of Landfill 6 and increased southward to 38 feet thick at the southernmost new well location, and wells were set on top of the competent bedrock. Clean silica filter 10-20 or 20-40 grade sand was poured through the augers while the augers were pulled back incrementally to construct a continuous filter pack within the borehole annulus. A 20-40 grade sand was used at some locations to try and reduce the turbidity of the wells. However, this fine sand did not settle through the water column very well, and 10-20 sand was used on the remaining wells. The depth to the sand pack was measured frequently using a properly decontaminated stainless steel tag bar attached to a fiberglass measuring tape to monitor the sand level inside the augers as the filter pack was constructed. The SAP specified a filter pack extending from 1 foot below the bottom of the well screen to a minimum of 2 feet above the slotted section. Once the presence of compounds which could occur as DNAPLs had been identified during direct push groundwater sampling, the bottom of the screen was set with only a few inches of filter pack sand beneath it to increase the probability of detection of DNAPLs, if present.

A 2-foot thick bentonite seal was constructed by pouring commercially manufactured sodium bentonite chips and pellets through the augers. The bentonite seal was installed in two 1-foot lifts, with each lift hydrated with potable water before proceeding with the next lift. The lower foot of the seal was constructed of the finer bentonite chips and the upper foot was constructed of the coarser pellets. After placement of the final lift, the bentonite seal was allowed to hydrate for a minimum of two hours prior to grouting. The SAP required that the bentonite seal be installed in four 6-inch lifts. This deviation from the SAP is documented in a Corrective Action Form found in Appendix B of this report. This deviation, however, will not affect the quality of the monitoring well construction or quality of the groundwater sampled since the seal appears to have prevented grout material from infiltrating into the screened interval. The remaining annular space was tremie grouted from the top of the sand pack to near surface grade with a cement grout mix, defined previously in Section 3.2.5.

The plumbness of each well was checked with a 10-foot long section of 1-inch OD PVC pipe. The pipe was passed through the entire length of the well to check the alignment. Results of each well test were indicated on the DQCRs. All wells were found to be straight and true.

A total of four wells were completed above ground, and one of the wells was completed at grade since it was located off site on a paved surface with vehicle traffic. For the above-ground completions, a protective steel casing was set and cemented below the ground surface extending 2 to 3 feet above the ground surface. The casing contains a locking cap and brass lock, keyed alike to other wells installed as part of this project. All protective casings were designed with a weep hole to facilitate drainage of any water which could collect in the annular space between the well riser and protective casing. The outside of the protective casing was painted white as specified by Directorate of Environmental Compliance and Management (DECAM). In addition, identification tags containing the following information: well number; depth; date of installation; adjusted top of casing elevation; and "U.S. Army Corps of Engineers, Omaha District" was attached to each new monitoring well after completion of investigation activities. Square concrete pads, a minimum of 3 feet on each side and 6 inches in thickness, and sloping away from the well, were constructed after completion of well installation activities. Three, 3-inch diameter, concrete-filled steel posts, equally spaced around the well, were cemented firmly into the ground around the concrete pad to protect each well. For the at-grade completion, a traffic-rated cast iron assembly with a protective lid was cemented in. The pad around the assembly was constructed so that the sides are sloping away from the protective lid. The PVC-casing was equipped with a locking, water-tight cap.

3.2.6.2 Well Development

Well development for new wells commenced between 48 hours and one week after well completion. Well development was also performed on existing wells due to a lack of well development information. Well development was accomplished by a combination of methods including mechanical surging and bailing with a stainless steel or PVC bailer for a period of two hours, followed by continuous pumping using a pneumatic driven piston pump if the wells were able to produce a sufficient amount of water. Groundwater temperature, pH, specific conductance, and turbidity were monitored as indicator parameters during pumping. Frequencies of parameter measurements ranged

from one measurement per each casing volume removed (wells with low yields) to one measurement every 15 minutes (wells with higher yields). Development continued until the suspended solids were removed from the filter pack and the nearby formation so that groundwater samples were not highly turbid and that silting of the well did not occur as specified in Section 5.6.3 of the SAP. In addition, development continued until the indicator parameters stabilized within 0.2 pH units or a 10 percent deviation from the average of four successive specific conductance measurements taken at least five minutes apart, in accordance with the SAP. When the well yields were too low to permit continuous pumping or bailing, development was performed in cycles of bailing the well dry and allowing recharge for a total of two hours or until continuous pumping was achieved. After final development of any new well, water was collected from the well in a clear glass jar and the water sample was labeled and photographed. These photos will be submitted with the final well construction logs in the RFI reports. Well development information was recorded on the Well Development Record.

3.2.6.3 Purging and Sampling

One suite of groundwater samples was collected from the new and existing monitoring wells no sooner than two weeks following well development for the new wells. Groundwater sampling data for all wells monitored, including a description of the sampling locations, names of sampling personnel, ambient weather conditions, environmental conditions that may affect sample representativeness, indicator parameter measurements, and well purging information were recorded on the Groundwater Sample Collection Log. The visible monitoring well construction materials and apparent integrity of each well were also evaluated and noted.

Each well was purged prior to sampling to ensure that collected samples were representative of the groundwater in the aquifer being sampled. Prior to purging, the depth to groundwater and total well depth were measured with a water level meter. The depth to water was measured from the top of the well riser pipe and was determined with an accuracy of ±0.01 foot. Analytical samples were collected after three to five well volumes were purged from each well, when possible, and field parameters (pH, temperature, specific conductance, turbidity, and Eh [quarterly sampling only]) stabilized to within 0.2 pH units or a 10 percent variation around the mean of four successive specific conductance measurements. Field parameters were measured at the start of purging and twice per

casing volume removed, when the well yield was sufficient. Purging ceased when a well was pumped or bailed dry, or when three consecutive stable readings of parameters were obtained while purging three well volumes. Purging was accomplished using a clean, disposable polyethylene bailer, attached to a new, clean nylon rope or using the piston pump. Both bailers and the pump were used for purging and sampling due to well production capabilities and to access conditions at the time of sampling.

Sampling was typically conducted immediately after purging, and no later than three hours following purging unless recharge of the well required a longer recovery time. A well was only visited twice per sampling event to obtain required sample volume. Collected samples followed a priority list for low recharge wells (from highest to lowest): VOCs; semivolatile organic compounds (SVOCs); pesticides/ polychlorinated biphenyls (PCBs); and metals. Sampling was accomplished using a new, polyethylene disposable bailer or the piston pump. Only samples for metals analyses were filtered using a disposable 0.45 micron in-line membrane filter. Disposable pressurized bailers were used for sample filtering when the pump was not utilized. Dedicated nylon cord was used to lower and retrieve the bailer from the well. The cord was not allowed to contact the ground during the purging or sampling procedure, and the cord was discarded after use at each well. The samples were subject to COC protocols as discussed in Section 5.14 of the SAP. Samples requiring chemical preservatives were placed in pre-preserved sample containers.

Groundwater samples collected from the new and existing monitoring wells were analyzed by the offsite contract laboratories. Data from these chemical analyses is considered Definitive Level Data. These analyses provided quantitative detection and identification of target analytes which may be in groundwater at the site.

3.2.7 Background Soil Sampling

Background soil samples, collected as part of the Voluntary Site Investigations, were used in the landfills investigations to characterize the naturally occurring local concentrations for selected parameters and to provide a comparison for soils collected from different lithologic units. These concentrations were then used to screen all of the metals results for the landfills to determine which

values are higher than background values in the soil. Five background soil sampling locations were selected where soil types and geology characteristics similar to those at the landfills and other sites under investigation are present, and no known previous impacts by Fort Carson activities have occurred. Additionally, a review of U.S. Geological Survey maps for geologic units found at Fort Carson was conducted. The background soil sampling procedures, analytical methods, and QC results are discussed in the Group A QCSR (Rust, August 1995). Background soil investigation results are discussed in detail in the Group A Voluntary Site Investigation Report. Results from background samples collected during the site investigation of multiple underground storage tanks (USTs) at Fort Carson in July 1994 will also be used for comparison (Rust, 1995h).

The five soil borings were drilled to a depth of 10 feet or to bedrock to obtain background samples. Each boring was drilled with a CME-75 hollow stem auger rig equipped with 3.25-inch ID augers. The boreholes were logged using procedures discussed previously in Section 3.2.3. Samples were examined using headspace analysis, as described in Section 3.2.4, to screen these locations for possible VOC contaminants. Only soils exhibiting non-detect headspace results were submitted for laboratory analysis. Because the purpose of collecting the background samples was to make comparisons to soil samples collected from the landfills, the background samples were collected from the surface, from the deepest interval or bedrock depth, where applicable, and at an intermediate depth for a total of three samples per boring. Quanterra provided analytical services for one set of background boring samples. All other background soil boring samples were analyzed by HydroLogic.

3.2.8 Seep Water Sampling

Due to the presence of a seep at Landfill 5, one seep water sample was collected. This sampling was not specified in the SAP or Addendums, and so it was analyzed for the same parameters as a regular groundwater sample. The seep sample was collected by digging a hole at the lower interface of the seep using a shovel or spoon. The hole was allowed to fill in with the seep water. With a pressurized bailer, water was sucked up into the bailer and transferred to laboratory-supplied containers.

3.2.9 Surface Water Sampling

Surface water samples were collected to evaluate whether potential contamination may exist in the surface water bodies. The work plan specified a total of ten surface water samples: four from Landfill 2; two from Landfill 5; and four from Landfill 6. A total of four surface water samples were actually collected: the two specified at Landfill 5 and two of the four proposed at Landfill 6. Surface water was not present at Landfill 2 and at two of the sampling locations at Landfill 6. Data from these chemical analyses is considered Definitive Level Data. The data will be used to support the site risk assessment. Where surface water was available, all samples were analyzed for the analytes specified in the Work Plan.

Surface water samples were collected from an area that was free of vegetation and other floating debris. The surface water samples were collected by dipping the unpreserved bottles beneath the water surface, or using a pressurized bailer and sucking water into the bailer and transferring the water to laboratory-supplied containers. A filter was used for metals samples.

3.2.10 Sediment Sampling

Sediment samples were collected to evaluate whether potential soil contamination may exist in the surface water bodies. A total of ten sediment samples were collected: four at Landfill 2; two at Landfill 5; and four from Landfill 6. This quantity of field samples was in accordance with the Work Plan. These samples were collected from beneath the surface water (if present) of the stream bed in the drainage. Data from these chemical analyses is considered Definitive Level Data. The data will be used to support the site risk assessment. In addition, all samples were analyzed for the analytes specified in the Work Plan.

Sediment samples (saturated and dry) were collected from an area that was free of vegetation and rubble. These grab samples were collected from a depth of 0 to 6 inches using a clean, decontaminated shovel, and placed in a stainless steel mixing bowl for homogenization. Subsamples were then transferred into clean, labeled, laboratory-supplied sample jars. Stream sediment sampling sites were allowed to fill in naturally, and dry sediment sampling sites were backfilled with surrounding soil. The soil or sediment color and type was recorded for each sample.

3.2.11 Source Water Sampling

Several samples of the potable water at Fort Carson were collected to ensure water used for decontamination and other investigation activities did not contain chemicals which could adversely impact the results of this study. Fort Carson personnel identified water taps at Building 1399, near the Equalization Basin, and at Building 1304, near the intersection of Wetzel Avenue and Ellis Street, as the collection points for Fort Carson's potable water source that the field program would utilize for steam cleaning, well drilling, borehole grouting, and other field activities. These taps accessed the City of Colorado Springs water supply.

Samples were collected from the tap at Building 1399 and analyzed as part of the Fire Training Area investigation and the quarterly groundwater monitoring program (second and third quarters). Source water samples FTA-SW, 1399-SW1, and 1399-SW2 were sampled directly from a hose connected to the source water discharge point, and the metals samples were filtered with a pressurized disposable bailer and a 0.45 micron filter.

Samples were collected from the tap at Building 1304 and analyzed as part of the Group A investigations and the quarterly groundwater monitoring program (second and third quarters). This source consists of a high flow overhead hose typically used for filling large tanks. Sample GPA-SW was collected in the driller's holding tank on the drill rig and the sample was taken from the spout of the steam cleaner hose while the burner was turned off. This metals sample was not filtered, however, the other metals samples were filtered. The source water samples collected during the quarterly groundwater monitoring program, 1304-SW1 and 1304-SW2, were obtained by collecting a volume of water in a new, rinsed 5-gallon bucket, sucking up the water in a new pressurized disposable bailer, and filling the sample containers from the bailer.

3.2.12 Geophysical Survey

The goal of the geophysical survey was to define, to the highest degree of accuracy possible, the location of the outer perimeter of the landfill, thereby determining the extent of landfill. The geophysical surveys at each landfill were performed by Geo-Centers utilizing a continuous wave electromagnetic sensor. A Geonics EM31 was selected as the most appropriate sensor to detect the

landfill perimeter since this device can detect changes in bulk conductivity of the subsurface caused by the existence of underground conductive bodies, buried metals, conductive fluids, etc. Geo-Centers deployed a new, state-of-the-art field data acquisition system which integrates the satellite based global positioning system (GPS) navigation technology with the EM31. A geophysics survey was conducted at each landfill as specified in the SAP.

Since accurate records describing the lateral extent of the landfills were not available, the approach at the beginning of the surveys was to conduct a series of surveys designed to delineate the boundaries of the landfill within the general area suspected to contain the landfills. To accomplish this, a number of transects were formed across the landfill. A preliminary survey was conducted along what was estimated as the outer perimeter of the landfill based on historic records and field observations. The strategy of the subsequent surveys was based on the preliminary survey, and either consisted of a number of directional transects or radial surveys from the preliminary survey.

3.2.13 Soil Gas Survey

A soil gas survey was performed at all three landfills to evaluate the performance of the landfill cover, determine if landfill gas (hydrogen sulfide, methane and total organic vapor) is present, and to determine if landfill gas has migrated from the landfill site, in accordance with the SAP. Measurements were collected at grid locations, and additional locations were sampled along the landfill perimeter. The procedure used to collect the active soil gas measurements consisted of driving a gas sampler as discussed below:

- A steel tip was placed onto the end of 5-foot hollow steel rod and the steel rod was driven into the soil;
- A slide hammer was attached to the steel rod and the steel rod was hammered into the soil to 3.5 to 4-foot depth;
- The steel rod was pulled upward 2 to 3 inches towards the ground surface;
- The slide hammer was removed from the steel rod and tygon tubing/tee assembly/sample vacuum bulb are attached;
- The tubing was filled with the soil gas using the vacuum bulb;
- The tygon tubing was attached to each instrument individually and the soil gas measured (methane, hydrogen sulfide, and total organic vapors); and
- The slide hammer was placed back onto the steel rod, and the steel rod was removed from the soil.

In addition to the soil vapor measurements listed above, monitoring was performed for passive soil gas pressure and applied vacuum.

3.2.14 Trenching

Trenching was performed at all three landfills to assist in determining the limit of waste. A total of 49 trenches were excavated around the periphery of the landfills: 24 at Landfill 2; 12 at Landfill 5; and 13 at Landfill 6. The Draft Cap Installation Project Work Plan specified the construction of a total of 40 trenches: 19 at Landfill 2; eight at Landfill 5; and 13 at Landfill 6. The additional trenches (five at Landfill 2 and four at Landfill 5) were constructed to better delineate the limit of waste.

The trenches were excavated around the periphery of the landfill using a backhoe provided and operated by OHM, with observations and direction provided by a Rust field engineer. The trenches were typically extended from the exterior of the landfill toward the landfill interior, and trenching was terminated once waste was encountered. Total depth for the trenches was reached after soil conditions indicated native material was encountered. Trenches were logged for color, soil type, moisture, and waste material encountered. Start and end points, as well as the limit of waste for each trench, were staked and surveyed.

Trenches were continuously monitored for organic vapors using a Microtip PID; air particulates using a Miniram; and hydrogen sulfide, carbon dioxide, and oxygen using a Gastech instrument.

3.2.15 Decontamination Procedures

All augers and down hole tools used for drilling were decontaminated between boring and well locations using pressurized hot water from a steam cleaner. Potable water supplied by Fort Carson was used for the water source. All decontamination was conducted using a mobile decontamination rig including a steam cleaner and a trough that collected the decontamination water, which was then transferred into new 55-gallon drums located at each site.

Smaller equipment, such as direct push probe rods, stainless steel bowls, water level probes, bailers, down hole pumps, and shovels, were decontaminated between each sample with a non-phosphate

laboratory detergent and potable water wash with a brush, followed by a potable water rinse and deionized water rinse. When possible, smaller equipment was steam cleaned in place of the detergent wash and rinse. If any soil or contamination was visible after decontamination, the equipment was re-steam cleaned or washed and rinsed until clean. Following decontamination procedures, all sampling equipment was wrapped in aluminum foil or stored on a clean surface to prevent possible recontamination.

The piston pump used for well development and sampling was decontaminated prior to sampling and after collecting each groundwater sample. The outside of the pump and tubing that came in contact with groundwater was washed with a mixture of potable water and detergent and rinsed with deionized water. The inside of the pump and tubing was decontaminated by pumping through five gallons of a mixture of potable water and detergent followed by two gallons of deionized water.

Upon completion of each trench that encountered waste, the backhoe bucket was decontaminated. The decontamination procedures consisted of removing soil and debris with shovels and picks and placing materials into the 55-gallon drums.

3.2.16 Management of Investigation Derived Waste

Soil cuttings and discarded soil samples from intrusive sampling activities were placed in reconditioned Department of Transportation (DOT) approved 55-gallon drums. Wastewater, including decontamination, well development, and purge water, was containerized in new, 55-gallon drums. The drums were sealed, labeled, and collected in one central location at each site for the duration of the field activities. Analytical results of groundwater samples collected from the monitoring wells at the landfills were used for determining disposal. These sample results were compared with the influent criteria (Toxicity Characteristic). The wastewater was placed in the Industrial Wastewater Treatment Plant.

Soil IDW, including drill cuttings from geotechnical borings, monitoring well construction, trenching, and well abandonment was containerized in reconditioned 55-gallon drums. The soil generated from landfill investigations was either landfilled or stored onsite pending corrective action. Soil generated

from the geotechnical borings was landfilled at the on-post landfill. Soil generated from trenching and well abandonment at Landfills 2 and 5 was staged onsite pending cap placement. Soil cuttings in contact with waste from each trench were contained in labeled and sealed 55-gallon drums, and soil cuttings that were not in contact with waste were backfilled in the trench. Soil generated at Landfill 6, including soil generated from trenching, monitoring well construction, and well abandonment was stored at the Equalization Basin for security reasons. Composite waste characterization soil samples were collected from the drums of soil generated during the well construction activities at Landfill 6. The samples were collected by mixing some soil from each drum in a stainless steel bowl and then collecting a composite subsample in the appropriate sample containers. The sample for VOC analysis was collected directly from the drums into the sample container to minimize exposure and volatilization.

3.2.17 Survey of Sampling Locations

Surveying of all new and existing monitoring wells, direct push groundwater sampling locations, soil boring sampling locations, trenching locations was performed by registered land surveyors, licensed in the State of Colorado. Coordinates and elevations of the ground surface and the top of the PVC well casing were determined to the closest 0.01 feet vertically and 1 foot horizontally. The surveyed coordinates were referenced to the North American Datum of 1983 and the Colorado State Plane Coordinate System, and the elevations were referenced to the National Adjusted Vertical Datum (NAVD) of 1988. The surveyed reference point on each well casing was permanently marked. Survey data were recorded in the Monitoring Well Log Book by Rust personnel.

3.2.18 Field Equipment Calibration and Preventative Maintenance

Calibration and maintenance of PIDs, dust dosimeters, LEL/O_2/H_2S meters, pH meter, conductivity meter, turbidity meter, purge saver, and water level measuring device used on this project were accomplished on a daily basis, as described in Section 5.17 of the SAP.

3.2.18.1 Photoionization Detector

Health and safety monitoring and headspace screening for volatile organic vapors was performed with a Thermo Environmental Instruments Model 580B PID. This instrument was calibrated daily before

use and at the end of the day, with compressed isobutylene gas by the method presented in Appendix F of the SAP. The PID was checked periodically during use to ensure appropriate response to contaminants. The cap from a felt tip marker was used as a source of volatile gas to demonstrate that the instrument was responding accurately.

3.2.18.2 Dust Dosimeter

A Miniram Aerosol dust dosimeter was used during all intrusive activities for this project. This instrument was calibrated daily, at a miniram, using filtered air as described in the instruction manual.

3.2.18.3 LEL/O_2/H_2S Meter

An LEL/O_2/H_2S Meter (Gastech or other) was used during all investigation activities at the landfills for health and safety purposes. This instrument was calibrated daily using LEL, H_2S, and O_2 gases as described in the instruction manual. The gas meter used during trenching also included CO.

3.2.18.4 pH Meter

A Beckman P-10 pH meter was used to determine the pH of the groundwater. The pH meter was calibrated daily before use and at the end of the day with buffers that spanned the expected range of pH of the day's samples. The Beckman P-10 is automatically temperature compensating. Sections of the Beckman P-10 pH meter instruction manual, which describe calibration and operation methods, are included in Appendix D of the SAP. The instruction manual was kept with the instrument at all times.

3.2.18.5 Specific Conductance Meter

A Hydac temperature, pH, and conductance meter was used to measure specific conductance of the groundwater. The Hydac is not automatically temperature compensating, so the temperature of the water had to be manually adjusted on the instrument for an accurate measurement of specific conductance. The specific conductance meter was calibrated daily before use and at the end of the day, with two standards that spanned the expected range of the day's samples, as described in the SAP.

3.2.18.6 Turbidity Meter

An HF Scientific Inc. (DRT-15CE) turbidity meter, or nephelometer, was used to quantify the turbidity of development and purge waters caused by the presence of suspended clay, silt, and organic matter. Measurements were conducted in accordance with the published procedure (ASTM D-1889) for a photoelectric nephelometer. The instrument was calibrated daily, at a minimum, using prepared standards following the manufacturer's instructions.

3.2.18.7 Purge Saver

A Purge Saver was used during groundwater sampling for the first and second quarters of the Quarterly Groundwater Monitoring Program. This instrument measures temperature, pH, conductivity, Eh and dissolved oxygen. This instrument was calibrated daily or monthly using prepared standards following the manufacturer's instructions as described in the instruction manual.

3.2.18.8 Water Level Measuring Device

A water level measuring device (Solinst), using electronic conductance, was used to measure the water levels in the wells. This instrument was checked at the beginning of each day it was used to ensure that it was responding properly. The instrument was equipped with a cable permanently marked in hundredths of a foot and, therefore, did not require additional calibration.

3.2.19 Documentation and Reporting of Field Activities

All field activities were thoroughly documented in indelible ink using the following forms which are also presented in Appendix C of the SAP:

- Daily Report;
- Daily Quality Control Report;
- HTW Drilling Log;
- Jar Headspace Testing for Volatiles;
- Well Completion Details;
- Well Development Record;
- Water Level Data Summary;
- Groundwater Sample Collection Log;
- Chain of Custody Record;
- Trench Log;

- Soil Gas Survey Log;
- Instrument Reading Log; and
- Vehicle Inspection Form.

A Daily Report, or activity log, was maintained throughout each day, and DQCRs were also completed each day. The completed DQCRs are included in Appendix A of this report. Copies of these two forms, with attached Health and Safety forms, updated site maps, boring logs, analytical data, and COC forms were faxed daily to the Rust Project Manager. The original signed forms were delivered weekly to the Project Manager. The DQCRs and Daily Report forms were also faxed daily to the USACE-Technical Manager for review and comment.

A package of information was submitted to the USACE on a weekly basis. This package included DQCRs, records of communication (telecons), and boring logs/well completion diagrams for the preceding week. These reports documented ongoing field activities at the landfills, as well as at other sites on Fort Carson.

COC documentation was initiated by Rust as samples were collected and selected for laboratory analysis. Sample custody was maintained by Rust project personnel until samples were relinquished for shipment to the analytical laboratories. Custody documentation was confirmed at the subcontract laboratories upon receipt of the samples by facsimile. Details of other specific field activities were logged on specially developed forms, as included in Appendix C of the SAP. Additionally, a Monitoring Well Log Book was established for the wells installed as part of this project.

3.2.20 Sample Labeling, Handling, and Shipping

Each soil and groundwater sample was labeled with a unique identification number consisting of a site identifier, sample type identifier, sample location number, and optional QC suffix:

- <u>Site Identifier (for Rust investigative sites)</u>

LF2	Landfill 2
LF5	Landfill 5
LF6	Landfill 6
GPA	Group A

Existing monitoring wells at the landfills have Site Identifiers of: FCMW, W(landfill#)-, and NUD.

- Sample Type Identifier:

BB	Background Boring
DPW	Direct Push Groundwater Sample
SB	Soil Boring
SD	Sediment Sample
SW	Surface Water Sample
MW	Monitoring Well
RW	Rinse Water (Rinse Blank)
SW	Source Water
WC	Waste Characterization
S	Soil (Designating waste characterization sample type)

- Sample Location Number: A unique number was used to identify each sampling location. The numbers were sequential. For subsurface soil samples, the sample location number was also followed by the depth at which the sample was collected. For example, if a sample was collected from a depth of 10 to 12 feet, this was designated 10/12. Waste Characterization site-identifiers had a suffix of "-S" to indicate that the sample was a soil sample.

The following are examples of sample designations that were used for the samples collected from the landfills:

Sediment Sample	Soil Borings	Monitoring Wells	Waste Characterization	Direct Push Groundwater Sample
LF2-SD1	LF2-SB1-1/3	FCMW-75	LF6-WC-S	LF2-DPW3
LF5-SD2	LF5-SB3-8/10	W5-2		LF5-DPW1
LF6-SD3	LF6-SB5-1/3	LF6-MW9		LF6-DPW9
etc.	etc.	etc.		etc.

The sampling team leader supervised and assisted in sample collection, sample labeling, and sample shipping. Samples were collected in the appropriate sample containers provided by the contract laboratories. Where necessary, the sample containers were pre-preserved by the laboratories. Sample containers and preservatives are noted on Table 3-3. The sample containers were identified with waterproof labels, and all writing was completed in indelible ink. A pre-determined number of split samples (specified in the SAP and addendums) were sent to the USACE MRL with the Missouri

River Laboratory Information Management Systems (LIMS) Project Identification Number of 3086. This identification number was also indicated on the COC form.

Labeled samples were placed in sealed, plastic bubble-pack bags and packed in waterproof plastic ice chests with sufficient packaging material placed around and between the sample jars. Ice was placed around the sample containers, and on top of the sample containers to achieve and maintain preservation at 4°C from the time of collection until receipt by the laboratories. All loose ice was double-bagged to prevent ice meltwater from commingling with the sample containers. A temperature blank, provided by the laboratories, was included in each cooler to allow the laboratories to verify that the samples were at the proper temperature upon receipt. All sample containers were checked for integrity and proper lid closure.

Every cooler contained a COC form, prepared in duplicate, which identified all of the sample containers, analytical requirements, time and date sampled, preservatives, and other pertinent field data. Samples were shipped daily in coordination with the analytical laboratories to enable analysis within holding times. Upon receipt in the laboratories, the Sample Receiving Supervisor opened the shipping containers, compared the contents with the COC record, ensured that document control information was accurate and complete, and dated the form. Confirmation of custody documentation was from the laboratories by facsimile. A sample receipt form was also used by the laboratories to log in samples and document their integrity upon arrival. These forms are provided in both of the Analytical Data Packages.

3.3 FIELD QUALITY CONTROL SAMPLES

Field QC samples were collected throughout the landfills sampling program to provide a quantitative measure for meeting project DQOs. These field QC samples consisted of field duplicates, matrix spike/matrix spike duplicate (MS/MSD) samples, field blanks (trip blanks and rinsate blanks), source water samples, and MRL splits. The required number of QC samples collected during field events are listed in the SAPs and addendums.

Field duplicates were collected as a measure of sampling and analytical precision. In general, the frequency for the collection (per matrix) of field duplicates was 10 percent. MS/MSD samples are primarily used to evaluate the effect of the sample matrix upon analytical methodology, and can also be used to evaluate laboratory precision and accuracy. In an MS/MSD analysis, two separate aliquot samples are spiked with a standard mix of compounds appropriate to a given analysis. The frequency for the collection (per matrix) of MS/MSD samples was 5 percent (when enough sample volume was available). Trip blanks are utilized to evaluate the presence (if any) of cross-contamination of VOC compounds in the sample coolers. At a minimum, trip blanks were included at one per cooler where VOC samples were included. Equipment and rinsate blanks were collected to evaluate the effectiveness of the decontamination procedures. These blanks were included at one per equipment type (when dedicated or disposable equipment was not used). Source water samples were collected to evaluate the quality of the water being used for equipment decontamination and borehole grouting. Source water samples were collected as specified in the SAP for Group A sites and the Fire Training Area. MRL QA split samples were collected as field duplicates and submitted to the USACE QA laboratory for government monitoring of sampling and contract laboratory performance. The sampling frequency of these samples is specified in the SAP. The results of these field QC samples and their impact on data quality are discussed in Section 5.0. QC samples, including MS/MSDs and field duplicates, were collected to provide Definitive Level Data documentation.

4.0 EVALUATION OF DATA QUALITY

The laboratory analytical data was reviewed and verified by the contract laboratories (HydroLogic and Quanterra) and evaluated by Rust for compliance with project objectives. The following sections include a description of laboratory QC samples, laboratory review procedures used to ensure data quality, and the Rust assessment of project deliverables. Data usability was determined by comparing the project DQOs against the quality of the final analytical results. The DQOs are discussed in Section 2.5. These QC procedures were applied to both landfill RFI-specific samples and quarterly groundwater monitoring samples.

4.1 LABORATORY QUALITY CONTROL SAMPLES

This section includes a summary of the following laboratory QC samples: duplicate control samples (DCS), method blanks, and surrogate spike samples.

4.1.1 Duplicate Control Samples

Both contract laboratories analyzed spiked blank samples in duplicate to evaluate the precision and accuracy within an analytical batch. HydroLogic's nomenclature for these samples is Laboratory Control Sample (LCS) and Quanterra's nomenclature for these samples is DCS. These LCS and DCS sample pairs consisted of analyte-free water which were spiked with selected target compounds. LCS and DCS results are included in the QC section of each laboratories' data package which are included in the Analytical Data Packages.

4.1.2 Method Blank Analyses

A Laboratory Method Blank is a contaminant-free matrix sample (e.g., a method blank is often a volume of distilled water carried through the entire analytical scheme) that is subjected to the same analytical procedure as the field samples. The method blank is used in all analyses to verify that the determined concentrations do not reflect contamination from laboratory procedures. One method blank is performed with every batch of samples. If consistent high blank values are observed, laboratory glassware and reagents are checked for contamination and the analysis is halted until the errors can be corrected.

4.1.3 Surrogate Spike Analysis

Organic surrogate compounds are spiked into all investigative samples for pesticides, SVOC, and VOC analyses. These surrogates are compared to laboratory-derived control limits to evaluate the matrix effect of each sample and monitor the overall system performance. The control limits define an upper and lower boundary for acceptable routine performances. Low surrogate recoveries are indicative of problems in instrument performance, extraction procedure, or severe matrix effects. Samples which have surrogate recoveries above the laboratory control limits typically do not demonstrate performance problems unless the recoveries are high enough to indicate double spiking of surrogate compounds or extremely low internal standard recoveries.

4.2 LABORATORY DATA VALIDATION ACTIVITIES

All analytical data generated by HydroLogic and Quanterra were checked for completeness and evaluated for overall quality prior to final report generation as outlined in the QAPP and specified in each laboratory's Standard Operating Procedures (SOPs). The validation process consisted of data generation and reduction, plus three levels of documented review. Each step of the review process involved evaluation of data quality based on both QC data results and the professional judgement of the reviewer(s). All reviews were performed according to guidelines established in the laboratory QAPPs, with each stage documented by the reviewer's signature and the date reviewed.

The first level review was performed by the analyst who generated the raw analytical data, with primary emphasis on correctness and completeness of the data set. All data were generated and reduced following method-specific SOPs. Each analyst reviewed the quality of the work based on the guidelines established in the SOP. The first review ensured that:

- Sample preparation and analysis information was correct and complete;
- The appropriate SOPs had been followed;
- QC parameters were within method control limits;
- Documentation was complete.

The second level review was structured so that all calibration data and QC sample results were reviewed and 10 percent of the analytical results were confirmed against the bench and instrument

sheets. If no problems were found with the data package, the review was considered complete. If any problems were found with the data package, an additional 10 percent of the samples were checked to the bench sheet. The process was continued for each batch until no errors were found or until each data package was reviewed in its entirety. All second level reviews were performed by a laboratory supervisor, data review specialist, or QA officer to ensure that:

- Calibration data were appropriate to the method and completely documented;
- QC samples were within established guidelines;
- Qualitative identification of sample components was correct;
- Quantitative values were calculated correctly;
- Documentation was complete and correct;
- The data were ready for final reporting; and
- The data package was complete and ready for data archive.

An important element of the second review was the documentation of any errors identified and corrected during the review process.

Before the report was released, a third review was performed to check each data package for completeness and to ensure that the data met the overall objectives of the project. This review was done by the Laboratory Program Administrator, as stated in the QAPP. The review was performed to ensure that:

- Target analyte list was complete as specified in the project SAP;
- Data package checklist items were present;
- Case narratives accurately represented analytical conditions;
- Electronic format met project requirements;
- All non-conformances were addressed and closed.

QC information was included in each laboratory analytical report generated by the contract laboratories. Each report contains:

- Case Narrative - Description of sample types, tests performed, any problems encountered and general comments.

- Sample Description Information/Analytical Test Requests - A list of all samples received together with the laboratory identification number assigned for each sample. The analytical test request lists the analyses performed on each sample.

- Analytical Results - Analytical results are tabulated and include the analyte concentrations and units. The results also include dates samples were collected, received, prepared, and extracted. The reporting limits and data qualifiers for each analyte are also given.

- Quality Control Report - The results of QC sample analyses are listed together with the associated control limits.

- Raw Data Report - A package containing the following: sample raw data; instrument tuning data (where applicable); calibration data; method blank data; QC raw data; and sample receipt, preparation and extraction logs.

- COC Documentation and Cooler Receipt Forms - Documents the samples submitted, and the condition of all samples received.

As part of the review process, both contract laboratories applied data qualifiers to specific results to indicate useability and/or special analytical conditions. Quanterra used the following qualifiers to flag data:

B	The compound was detected in the associated method blank.
J	The reported detect/reporting limit is an estimated quantitative value.
t	Sample was diluted due to concentration of target analytes.
G	Reporting limit was raised due to matrix interferences.
T	For gas chromatography (GC) methods, this flag indicates the first analyte on the preferred (primary) column on dual column analyses.
V	For gas chromatograph methods, the secondary column test is the preferred value.
U	The compound was not detected.
0-3	Numeric qualifier for Tentatively Identified Compounds indicating the quality of the match against standard library spectra. A "0" indicates a poor match and a "3" indicates a good match. Only TICs with a flag code of "3" were considered usable.

HydroLogic used the following qualifiers to flag data:

B	The compound was detected in the associated method blank.
J	The reported detect/reporting limit is an estimated quantitative value.
U	The compound was not detected.

All investigative and QC sample summary results have been submitted by Rust in the Landfills 2, 5 and 6 Analytical Data Package (Volumes 1 and 2) (Rust, 1995c; Rust, 1996f). A summary of laboratory control issues is found on Table 4-1.

4.3 RUST QUALITY EVALUATION

In addition to the internal validation conducted by Quanterra and HydroLogic, Rust performed a review of the analytical data, including evaluation of:

- Field duplicate results;
- MS/MSD analyses;
- Field blank analyses;
- Source water sampling;
- MRL Splits;
- Samples and COC documentation;
- Holding times;
- DCS/LCS performance;
- Laboratory (method) blank analyses;
- Surrogate recoveries;
- The precision, accuracy, representativeness, completeness, and comparability (PARCC) parameters as they apply to this QCSR; and
- An overall assessment of data compared to the project DQOs.

The results of this assessment are found in Section 5.0

Rust received data from the laboratories in both electronic and hard copy formats. Prior to using any of the data, the above parameters were compared against project DQOs to assess any impacts on the investigative sample results. All spike compounds had a percent recovery calculated using the following formula:

$$\text{Percent Recovery} = \frac{(C_r) * 100}{(C_s)}$$

where C_r = Spike compound result

C_s = Spike compound concentration

Duplicate pairs (field duplicates, MS/MSD, and DCS/LCS samples) had a relative percent difference (RPD) calculated for the appropriate analytes using the following formula:

$$RPD = \frac{(D_1 - D_2) * 100}{(D_1 + D_2)/2}$$

where D_1 = Larger of the two spike compound results
D_2 = Smaller of the two spike compound results

After completing these checks, sample results were translated into summary tables to facilitate evaluation of the chemical data. Quanterra's and HydroLogic's laboratory control limits for MS, MSD, and DCS/LCS analyses are presented on Tables 4-2 and 4-3.

After evaluation of all laboratory and field QC parameters, Rust flagged specific analytical results with the following qualifiers to indicate data useability:

J1, UJ1, R1:	Data results considered estimated or rejected due to non-compliant surrogate compound recoveries.
U0, U1:	Compound considered a non-detect due to its presence in an associated method blank.
U2:	Compound not confirmed in a dual column GC analysis, considered a false positive.
UJ4, J4:	Data results considered estimated due to holding time exceedance.

Daily Activity Reports, DQCRs, and COC documentation were compared against laboratory reports to check conformity of sample identification numbers. Analytical results were compared to daily activity logs to identify sampling procedures/activities that may have impacted data quality.

The Project Manager maintained ultimate responsibility for the quality of all work products generated by the Rust project team. In addition, a final QA review of each Rust deliverable was performed by an independent staff member to ensure technical adequacy and editorial clarity.

5.0 RESULTS OF QUALITY CONTROL ACTIVITIES AND ANALYSES

As discussed in Section 4.0, QC procedures were applied to RFI-specific samples and samples collected at the landfill sites as part of the Quarterly Groundwater Monitoring Program (first two quarters). The results of those QC procedures are presented below.

5.1 RESULTS OF FIELD QC ACTIVITIES AND FIELD QC ANALYSES

Field QC activities consisted of collecting appropriate field QC samples (field duplicates, QC samples or MRL splits, MS/MSD samples, field blanks), daily communication between the Rust field team and Project Manager, and consistent interaction between the analytical laboratory, Rust, and the USACE-Technical Manager.

5.1.1 Field Duplicate Analyses

In accordance with the Landfill SAP and addendums, five field duplicate samples (LF6NUD-1, LF5DPW4, LF6-MW9 [two different dates], and LF2DPW6) were collected at the landfill sites and analyzed to evaluate sampling and laboratory precision. All field duplicates were collected and analyzed as specified in the SAP. Duplicate samples of surface water and sediment were not collected where the Work Plan specified collection of one sample of each.

Results for the primary and duplicate sample analyses are presented in Tables 5-1 and 5-2. The RPD for each compound detected in both samples is also provided in the table. Rust set an RPD goal of 20 percent or less for field duplicates. In cases where a target analyte was not detected in either sample or in only one of the samples, the RPDs could not be calculated. The formula used to calculate RPDs is presented in Section 4.3. A total of 96 compounds (80 from monitoring wells and 16 from direct push samples) were detected in both the investigative and duplicate sample for all of the pairs collected as shown in Tables 5-1 and 5-2. Of these 96 compounds, 74 had an RPD less than 20 percent and 22 had an RPD greater than 20 percent. An additional 25 compounds were detected in only one sample of the duplicate pair.

The RPD values calculated for the Landfill field duplicates indicate the combined variability introduced by sampling procedures and laboratory analyses is acceptable and data useability is not affected. The high RPDs for specific compounds indicate that some sample aliquots were not homogenous for all analytes detected, but the data should still be considered valid.

5.1.2 MRL Split Samples

In addition to submitting a field duplicate sample, the following six split samples were submitted to the respective contract laboratories and to the USACE MRL for confirmational analysis: LF2FCMW76, LF5DP03, LF5MW02, LF5-SW1, LF6W6-3, and LF6-MW10. The analytical suites requested for each sample are indicated on Table 3-1. These QC samples were collected and submitted to MRL as specified in the SAP and Addendums with the following exceptions: only one of the three split samples specified in the SAP was collected for Landfill 2; only two of the three split samples specified in the SAP were collected for Landfill 6; and a split of a sediment sample was not collected as specified in the Letter Work Plan. Results from the MRL analyses of the split samples are generally not provided to Rust; however MRL reviews the data and informs the project manager of any major discrepancies which are resolved under separate cover. Rust's Project Manager has not been informed of any discrepancies at the time of this report submittal.

5.1.3 MS/MSD Sample Analyses

Additional aliquots were collected for five Landfill samples (LF2FCMW81, LF5-MW01,LF5-SW1, LF6-A, and LF6-MW6) to assess the impact of sampling matrices on target compound recovery (accuracy) and RPD (precision). Results of MS/MSD analyses are included in the QC section of the Quanterra and HydroLogic reports and are summarized in Table 5-3. The percent recoveries of these compounds and the RPD between the MS and the MSD were calculated and compared to control limits found in Tables 4-2 and 4-3.

These QC samples were collected and analyzed as specified in the SAP, Addendum, and Work Plan with the following exception: a sediment sample was not collected where the Work Plan for collecting surface water and sediment samples specified the collection of one sample.

Recoveries and RPDs of MS/MSD analyses were generally within control limits. As shown in Table 5-3, however, some analytes had percent recoveries that were below the required control limits, some analytes had percent recoveries that were above the required control limits, and some analytes had an RPD that was above the required control limit. The MS/MSD sample results indicate that the impact of sample matrix on overall precision and accuracy was minimal and did not affect data useability. No qualifications were required.

5.1.4 Field Blank Analyses

As discussed in Section 3.3, field blanks consist of trip blanks and rinsate blanks. A total of 31 trip blank samples were collected and analyzed during the Landfill sites sampling events. In general, trip blanks were included in each cooler containing soil or water samples for VOC analysis. However, trip blanks were not collected on three days where investigative VOC samples were collected: May 2, 1995; May 24, 1995; and June 22, 1995. Trip blank detections are presented in Table 5-4. Toluene, methylene chloride, and acetone were detected in one or more trip blank samples. These compounds were qualified as non-detects (U0, U1) if the amount present in an investigative sample was less than 10 times the amount present in the associated trip blank.

Two rinsate blanks (LF5RW, LF6DP05RW) were collected during the Landfill sites sampling effort. Rinsate blank detections are found in Table 5-5. Sample LF5RW, collected on May 3, 1995, had the following inorganic detections: calcium, cobalt, magnesium, manganese, and sodium. No data qualifications were required for investigative samples collected on the same day since inorganic compounds listed above had concentrations (in the investigative samples) that were all greater than five times the amount found in the rinsate blank. Sample LF6DP05RW, collected on May 19, 1995, had the following inorganic detections: antimony, barium, lead, thallium, and zinc; and the following SVOC compounds: Di-n-butyl phthalate and Bis(2-ethylhexyl) phthalate. The following samples were collected on the same day as LF6DP05RW and had detections for the compounds listed above that were also detected at concentrations less than five times the amount found in the rinse blank:

Sample ID	Compounds
LF6DP02	barium, thallium, zinc
LF6DP03	barium, lead, thallium, zinc, di-n-butyl phthalate
LF6DP04	barium, lead, thallium, zinc

These compounds were determined to be false positives, given a validation code (U0 or U1) and categorized as non-detects by Rust.

5.1.5 Source Water Evaluation

Source water samples were collected and analyzed as part of site investigations and the quarterly groundwater monitoring program as discussed in Section 3.2.11. The results of these analyses are summarized in Table 5-6.

Organic compounds detected in the source water samples include bromodichloromethane, bromomethane, chloroform, dibromochloromethane, and methylene chloride. Bromodichloromethane and chloroform are trihalomethane compounds commonly associated with potable water treated by chlorination. In addition, methylene chloride is a common laboratory contaminant. These samples also contained the following metals: antimony, barium, calcium, copper, iron, magnesium, manganese, potassium, sodium, selenium, zinc, lead, aluminum, and nickel. Metals concentrations did not exceed any drinking water standard. Additional inorganic results were also obtained for the source water samples: total organic carbon, alkalinity, anions, nitrate, and total dissolved solids.

The source water results indicate that the water used at Fort Carson contains low levels of trihalomethanes and a selection of metals. Comparison to the investigative samples collected at the same time as these samples shows that the investigative results are not impacted by the compounds present in the source water supply.

5.1.6 Documentation of Field Quality Procedures

As discussed in Section 3.2.19, Daily Reports and DQCRs were completed to summarize daily investigative procedures and document QC activities. These documents were provided to the

USACE-Technical Manager on a regular basis as the investigation proceeded. The DQCRs are included in Appendix A of this report. These reports summarize samples collected, environmental conditions, instrument problems, and any non-routine situations which may have impacted sample integrity. These reports were reviewed concurrently with the COC forms and the analytical results from the contract laboratories to identify potential sampling anomalies or confirm sample identifications. The DQCRs show collection procedures were adequate to ensure data results met project objectives. In addition, deviations from the SAP are documented and presented on Corrective Action Forms found in Appendix B. These deviations were determined not to impact data quality.

5.2 RESULTS OF LABORATORY QC PROCEDURES AND LABORATORY QC ANALYSES

A review of laboratory QC procedures and analyses was conducted as described in Section 4.1. All issues identified, and their respective resolutions, are summarized in Table 4-1.

5.2.1 Initial Sample Inspection and COC Documentation

HydroLogic and Quanterra inspected all shipping containers and compared the contents with the appropriate COC documentation associated with each cooler. Information from the sample check-in procedures were recorded on the Sample Checklist, Log-In Review, and Cooler Receipt Forms. These forms were used to document that samples listed on the COC forms agreed with samples contained in the coolers; COC forms were filled out properly; samples were not broken; custody seals were intact on all sample shipments received at the laboratory; and cooler temperatures were less than or equal to 4°C. These forms are included in the Analytical Data Packages. All instances of COC discrepancies were discussed with the Project Manager and the field team to ensure proper identification of samples.

5.2.2 Holding Times

Samples were shipped in coordination with the laboratories to ensure all analyses were completed within the required holding times. Part of the Rust evaluation process included reviewing sample extraction and analysis dates to ensure holding times were met. Based on Rust's review of the laboratory data, six analyses were identified as being performed outside of the recommended holding

times. This data was given a validation code of J4 or UJ4. All other analyses were completed within the required holding times.

5.2.3 Duplicate Control Samples

The percent recoveries of the spiking compounds were calculated as an indication of laboratory accuracy, and the RPD between the compound percent recoveries was calculated to gauge laboratory precision. The percent recoveries and the RPDs were compared to the control limits for DCS/LCS analytes found in Tables 4-2 and 4-3. Only one of HydroLogic's 870 LCS percent recoveries was outside the laboratory control limits, and 11 of 435 LCS RPDs were outside the laboratory control limits. A total of 84 of Quanterra's 5,710 DCS recoveries were outside the laboratory control limits, and 23 of 2,855 DCS RPDs were outside the laboratory control limits. Both labs had greater than 90 percent of total blank spike data points within control limits. Data useability was not affected and the data has not been qualified.

5.2.4 Method Blank Analyses

As discussed in Section 4.1.2, method blanks were analyzed to assess the level of background interference or contamination present in the analytical system. In situations where an analyte is detected in an investigative sample and the corresponding method blank, the investigative result is flagged as a non-detect if the quantitative value is less than five or ten times the method blank concentration. The ten times rule apples to 'common laboratory contaminants' and the five times rule applies to all other compounds. A result flagged as a non-detect due to method blank contamination is still useable for risk assessment evaluations and is treated the same as all non-detect values.

The following compounds were detected in method blanks during analyses of Landfill samples: barium, calcium, lead, sodium, zinc, acetone, Di-n-butyl phthalate, Bis(2-ethylhexyl)phthalate, 2-Hexanone, acetonitrile, and phenol. Method blank data and associated investigative sample results are presented in Table 5-7. A qualifier of U0, U1, or UJ1 was applied to the investigative results when they were considered non-detect based on this evaluation.

For all other instances where analytes were detected in both the method blank and investigative samples and analyte concentrations in the investigative samples were greater than five times the concentration in the method blank, no qualifications were necessary.

5.2.5 Surrogate Recovery

Surrogate recoveries were compared to the laboratory control limits as discussed in Section 4.1.3. Samples with one or more surrogate compounds below the lower control limits were qualified as estimated and/or rejected for the listed methods. The non-compliant surrogates and the associated control limits are listed on Table 5-8.

5.3 PARCC

DQOs and their corresponding measurement indicators were specified in the Landfills 2, 5, and 6 SAP, and are summarized in Section 2.5 of this document. To achieve the project DQOs, specific PARCC goals are established for laboratory and field sampling procedures. These PARCC parameters are the measurement tools for determining the usability of generated data. Laboratory PARCC parameters are discussed in the HydroLogic and Quanterra QAPPs, located in the SAP. Deviations from laboratory PARCC parameters are discussed in narratives to the data submittals which are found in the Analytical Data Packages and summarized in Table 4-1.

Precision and accuracy goals were based on knowledge of each analytical measurement system. For this QCSR, precision was measured using the RPD between two replicated sample analyses. The precision evaluation encompassed field precision (field duplicates), laboratory precision (DCS and LCS samples), and combined field/laboratory precision (MS/MSD samples). The individual sample results were within the required RPD limits except as noted in Sections 5.1 and 5.2, and Tables 5-1, 5-2, 5-3, and 5-4.

Accuracy was measured using the percent recovery of surrogates, MS/MSD samples and DCS and LCS sample pairs. Spike recoveries from field samples and laboratory QC samples are compared to established control limits to determine a laboratory's ability to accurately determine both qualitative and quantitative results. The recoveries of spiked compounds are discussed in Section 5.1.3, 5.2.3,

and 5.2.4. Some compounds were qualified as estimated and/or rejected due to surrogate recoveries below the established control limits. These data points are acceptable for the intended data uses listed in Section 2.5.

Representativeness is the degree to which the data accurately and precisely portrayed the environmental conditions being studied. For the Landfills 2, 5, and 6 RFIs, sampling procedures and locations were selected to accurately represent overall site conditions. All sampling was conducted using known, approved field procedures to minimize variability introduced during field sampling. These field procedures are discussed in Section 3.2, and meet the sample collection DQO goal listed in Section 2.5.

Completeness refers to the amount of valid data obtainable from a measurement system compared to the expected amount of data. The Landfills 2, 5, and 6 SAP and addendum established a 'completeness goal' of 90 percent for laboratory QC requirements, and 100 percent for holding times. As part of measuring this completeness goal for laboratory QC requirements, the number of non-compliant MS/MSD, DCS, LCS and surrogate results were compared to the total number of data points generated for each of these QC parameters. The following results were calculated:

Out of 902 recorded surrogate results by Quanterra, 23 had percent recoveries outside the established control limits, resulting in a 'completeness' value of 97 percent.

Out of 392 recorded surrogate results by HydroLogic, 21 had percent recoveries outside the established control limits, resulting in a 'completeness' value of 95 percent.

Out of 5,710 recorded DCS results by Quanterra, 84 had percent recoveries outside the established control limits, resulting in a 'completeness' value of 98 percent.

Out of 2,855 recorded DCS results by Quanterra, 23 had RPDs outside the established control limits, resulting in a 'completeness' value of 99 percent.

Out of 870 recorded LCS results by HydroLogic, one compound had a percent recovery outside the established control limits, resulting in a 'completeness' value of 99 percent.

Out of 435 recorded LCS results by HydroLogic, 11 had RPDs outside the established control limits, resulting in a 'completeness' value of 97 percent.

Out of 138 recorded MS/MSD results by Quanterra, 18 had percent recoveries outside the established control limits, resulting in a 'completeness' value of 87 percent.

Out of 69 recorded MS/MSD results by Quanterra, four had RPDs outside the established control limits, resulting in a 'completeness' value of 94 percent.

Out of recorded 336 MS/MSD results by HydroLogic, 59 had percent recoveries outside the established control limits, resulting in a 'completeness' value of 82 percent.

Out of 71 recorded MS/MSD results by HydroLogic, 12 had RPDs outside the established control limits, resulting in a 'completeness' value of 83 percent.

The combined 'completeness' value for laboratory QC parameters is approximately 93 percent, above the 90 percent goal established in the SAP. Individual analytes and/or samples have been qualified based on the results of these QC parameters, however the overall precision and accuracy of the analytical system was adequate to address the primary goals of the sampling program.

The holding time project goal of 100 percent was not met due to the hold time exceedance in samples LF2FCMW75, LF2FCMW73, LF2FCMW74, LF2-WQ for nitrite or TDS. Holding times are discussed in Section 5.2.2.

In addition, all data packages were reviewed by Rust and the completeness of the data packages was confirmed. Some packages required addendum sheets or resubmittals from the contract laboratories to address quality issues.

Comparability expresses the confidence with which one data set can be compared to another. Comparability objectives were met by minimizing the number of contract laboratories used, using EPA methods for all analyses, and reporting results in standardized units.

5.4 SUMMARY

The laboratory data validation activities and Rust's quality evaluation have resulted in a set of qualified data and a database of valid laboratory results. The valid data can be used in subsequent RFI reports which will include Risk Assessments and CMSs. The valid data will allow a more accurate portrayal of conditions existing at the landfills sampling sites. A summary of qualified data is found in Table 5-9. A summary of detected compounds (or valid detections) is found in Table 5-10.

6.0 CONCLUSIONS

This QCSR presents, in specific terms, the QA and QC practices utilized to achieve the goals of the investigation. The analytical program for this project conformed with the USACE-Omaha District Chemistry General SOS and the General Geology SOS. Samples were also collected and analyzed in accordance with ASTM and EPA, and using laboratory specific QA/QC procedures. These procedures were followed to generate high quality data.

Several of the quality issues addressed in Sections 4.0 and 5.0 of this report impact the usability of the data. The data were generally acceptable with the following exceptions: several compounds have been qualified as estimated or rejected due to low surrogate recoveries and because some analyses were not performed within their holding times; and several compounds detected in investigative samples have been qualified as non-detects due to their presence in the associated blank samples.

Removing false positives from the data set and qualifying estimated quantitative results provides a more accurate portrayal of conditions existing at the landfills sampling sites and complies with the corrective action DQO goal described in Section 2.5. The reviewed and qualified data from the RFI and quarterly sampling (first two quarters) are suitable for addressing the overall objective of this investigation: to evaluate the nature and vertical and lateral extent of contamination associated with Landfills 2, 5, and 6 at Fort Carson. In addition, the collected data can be used to evaluate risk to human health and the environment and to make risk-based recommendations regarding whether or not further investigation or remediation is warranted. The results of this investigation will be presented in an investigation report for each landfill which will include a risk assessment and a CMS.

7.0 REFERENCES

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TABLES

TABLE 2-1
SUMMARY OF AQUEOUS METHOD DETECTION LIMITS FOR HYDROLOGIC
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Analyte	Method	MDL	Units
TDS	160.1	11	mg/L
TSS	160.2	3.8	mg/L
Copper (diss.)	200.7	.0073	mg/L
Manganese (diss.)	200.7	.00041	mg/L
Zinc (diss.)	200.7	.0052	mg/L
Lead (diss.)	239.2	.00089	mg/L
Chloride	300	.064	mg/L
Nitrate	300	.053	mg/L
Nitrite	300	.016	mg/L
Sulfate	300	.14	mg/L
Sulfate	300	14.9	mg/L
Alkalinity	310.1	.7	mg/L
Bicarbonate	310.1	.7	mg/L
Carbonate	310.1	.7	mg/L
Hydroxide	310.1	.7	mg/L
Nitrate + Nitrite	353	.025	mg/L
BOD	405	.32	mg/L
COD	410	2.8	mg/L
Aluminum	6010	.069	mg/L
Aluminum (diss.)	6010	.069	mg/L
Barium	6010	.00026	mg/L
Barium (diss.)	6010	.00026	mg/L
Beryllium	6010	.00016	mg/L
Beryllium (diss.)	6010	.00016	mg/L
Cadmium	6010	.0019	mg/L
Cadmium (diss.)	6010	.0019	mg/L
Calcium (diss.)	6010	.01	mg/L
Chromium	6010	.0045	mg/L
Chromium (diss.)	6010	.0045	mg/L
Cobalt	6010	.0053	mg/L
Cobalt (diss.)	6010	.0053	mg/L
Copper	6010	.0073	mg/L
Copper (diss.)	6010	.0073	mg/L
Iron (diss.)	6010	.029	mg/L
Lead	6010	.037	mg/L
Magnesium	6010	.012	mg/L
Magnesium (diss.)	6010	.012	mg/L
Manganese	6010	.00041	mg/L
Manganese (diss.)	6010	.00041	mg/L
Molybdenum	6010	.008	mg/L
Nickel	6010	.0056	mg/L
Nickel (diss.)	6010	.0056	mg/L
Potassium	6010	.021	mg/L
Potassium (diss.)	6010	.021	mg/L
Silver	6010	.0019	mg/L
Silver (diss.)	6010	.0019	mg/L
Sodium (diss.)	6010	.027	mg/L
Vanadium	6010	.0017	mg/L
Vanadium (diss.)	6010	.0017	mg/L
Zinc (diss.)	6010	.0052	mg/L
Antimony	7041	.00068	mg/L
Antimony (diss.)	7041	.00068	mg/L
Arsenic	7060	.00073	mg/L
Arsenic (diss.)	7060	.00073	mg/L

TABLE 2-1
SUMMARY OF AQUEOUS METHOD DETECTION LIMITS FOR HYDROLOGIC
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Analyte	Method	MDL	Units
Lead	7421	.00089	mg/L
Lead (diss.)	7421	.00089	mg/L
Mercury	7470	.00005	mg/L
Mercury (diss)	7470	.00005	mg/L
Selenium	7740	.00074	mg/L
Selenium (diss.)	7740	.00074	mg/L
Thallium	7841	.00079	mg/L
Thallium (diss.)	7841	.00079	mg/L
4,4'-DDD	8080	.078	ug/L
4,4'-DDE	8080	.017	ug/L
4,4'-DDT	8080	.031	ug/L
Aldrin	8080	.05	ug/L
Aroclor-1016	8080	.18	ug/L
Aroclor-1221	8080	.11	ug/L
Aroclor-1232	8080	.11	ug/L
Aroclor-1242	8080	.11	ug/L
Aroclor-1248	8080	.11	ug/L
Aroclor-1254	8080	.11	ug/L
Aroclor-1260	8080	.11	ug/L
Chlordane	8080	.1	ug/L
Dieldrin	8080	.012	ug/L
Endosulfan I	8080	.015	ug/L
Endosulfan II	8080	.013	ug/L
Endosulfan sulfate	8080	.018	ug/L
Endrin	8080	.013	ug/L
Endrin aldehyde	8080	.081	ug/L
Endrin ketone	8080	.014	ug/L
Heptachlor	8080	.036	ug/L
Heptachlor epoxide	8080	.014	ug/L
Methoxychlor	8080	.049	ug/L
Toxaphene	8080	.24	ug/L
alpha-BHC	8080	.018	ug/L
beta-BHC	8080	.015	ug/L
delta-BHC	8080	.011	ug/L
gamma-BHC	8080	.013	ug/L
(m+p)-Xylene	8260	.46	ug/L
1,1,1,2-Tetrachloroethane	8260	.089	ug/L
1,1,1-Trichloroethane	8260	.34	ug/L
1,1,2,2-Tetrachloroethane	8260	.13	ug/L
1,1,2-Trichloroethane	8260	.25	ug/L
1,1-Dichloroethane	8260	.34	ug/L
1,1-Dichloroethene	8260	.095	ug/L
1,1-Dichloropropene	8260	.34	ug/L
1,2,3-Trichlorobenzene	8260	.19	ug/L
1,2,3-Trichloropropane	8260	.22	ug/L
1,2,4-Trichlorobenzene	8260	.17	ug/L
1,2,4-Trimethylbenzene	8260	.11	ug/L
1,2-Dibromo-3-chloropropane	8260	.12	ug/L
1,2-Dibromoethane	8260	.099	ug/L
1,2-Dichlorobenzene	8260	.15	ug/L
1,2-Dichloroethane	8260	.42	ug/L
1,2-Dichloropropane	8260	.1	ug/L
1,3,5-Trimethylbenzene	8260	.11	ug/L
1,3-Dichlorobenzene	8260	.14	ug/L
1,3-Dichloropropane	8260	.29	ug/L
1,4-Dichlorobenzene	8260	.11	ug/L
2,2-Dichloropropane	8260	.66	ug/L

TABLE 2-1
SUMMARY OF AQUEOUS METHOD DETECTION LIMITS FOR HYDROLOGIC
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Analyte	Method	MDL	Units
2-Chlorotoluene	8260	.1	ug/L
4-Chlorotoluene	8260	.1	ug/L
Benzene	8260	.078	ug/L
Bromobenzene	8260	.11	ug/L
Bromochloromethane	8260	.14	ug/L
Bromodichloromethane	8260	.13	ug/L
Bromoform	8260	.093	ug/L
Bromomethane	8260	.097	ug/L
Carbon tetrachloride	8260	.27	ug/L
Chlorobenzene	8260	.087	ug/L
Chloroethane	8260	.11	ug/L
Chloroform	8260	.27	ug/L
Chloromethane	8260	.4	ug/L
Dibromochloromethane	8260	.1	ug/L
Dibromomethane	8260	.28	ug/L
Dichlorodifluoromethane	8260	.085	ug/L
Ethylbenzene	8260	.15	ug/L
Hexachlorobutadiene	8260	.22	ug/L
Isopropylbenzene	8260	.11	ug/L
Methylene chloride	8260	.15	ug/L
Naphthalene	8260	.21	ug/L
Styrene	8260	.14	ug/L
Tetrachloroethene	8260	.098	ug/L
Toluene	8260	.17	ug/L
Trichloroethene	8260	.084	ug/L
Trichlorofluoromethane	8260	.12	ug/L
Vinyl chloride	8260	.094	ug/L
cis-1,2-Dichloroethene	8260	.35	ug/L
cis-1,3-Dichloropropene	8260	.16	ug/L
n-Butylbenzene	8260	.12	ug/L
n-Propylbenzene	8260	.12	ug/L
o-Xylene	8260	.28	ug/L
p-Isopropyltoluene	8260	.13	ug/L
sec-Butylbenzene	8260	.13	ug/L
tert-Butylbenzene	8260	.12	ug/L
trans-1,2-Dichloroethene	8260	.11	ug/L
trans-1,3-Dichloropropene	8260	.11	ug/L
1,2,4,5-Tetrachlorobenzene	8270	5.1	ug/L
1,2,4-Trichlorobenzene	8270	3.2	ug/L
1,2-Dichlorobenzene	8270	2.6	ug/L
1,2-Diphenylhydrazine	8270	4	ug/L
1,3-Dichlorobenzene	8270	3	ug/L
1,4-Dichlorobenzene	8270	2.9	ug/L
1-Chloronaphthalene	8270	8.9	ug/L
1-Methylnaphthalene	8270	5	ug/L
1-Naphthylamine	8270	3.8	ug/L
2,3,4,6-Tetrachlorophenol	8270	4.5	ug/L
2,4,5-Trichlorophenol	8270	5.6	ug/L
2,4,6-Trichlorophenol	8270	4.4	ug/L
2,4-Dichlorophenol	8270	4.4	ug/L
2,4-Dimethylphenol	8270	3.2	ug/L
2,4-Dinitrophenol	8270	6.9	ug/L
2,4-Dinitrotoluene	8270	2.9	ug/L
2,6-Dichlorophenol	8270	4.4	ug/L
2,6-Dinitrotoluene	8270	3.8	ug/L
2-Chloronaphthalene	8270	4.2	ug/L
2-Chlorophenol	8270	2.9	ug/L
2-Methylnaphthalene	8270	2.8	ug/L

TABLE 2-1
SUMMARY OF AQUEOUS METHOD DETECTION LIMITS FOR HYDROLOGIC
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Analyte	Method	MDL	Units
2-Methylphenol	8270	1.9	ug/L
2-Naphthylamine	8270	3.9	ug/L
2-Nitroaniline	8270	3.7	ug/L
2-Nitrophenol	8270	4.3	ug/L
2-Picoline	8270	3.6	ug/L
3&4-Methylphenol	8270	2	ug/L
3,3'-Dichlorobenzidine	8270	3.6	ug/L
3-Methylcholanthrene	8270	2.7	ug/L
3-Nitroaniline	8270	3.4	ug/L
4,6-Dinitro-2-methylphenol	8270	4.3	ug/L
4-Aminobiphenyl	8270	3.3	ug/L
4-Bromophenyl phenyl ether	8270	2.6	ug/L
4-Chloro-3-methylphenol	8270	3.2	ug/L
4-Chloroaniline	8270	3.8	ug/L
4-Chlorophenyl phenyl ether	8270	3.9	ug/L
4-Methylphenol	8270	2	ug/L
4-Nitroaniline	8270	6.4	ug/L
4-Nitrophenol	8270	8.4	ug/L
6-Methylchrysene	8270	5	ug/L
7,12-Dimethylbenz(a)anthracene	8270	3.4	ug/L
Acenaphthene	8270	4.2	ug/L
Acenaphthylene	8270	3.5	ug/L
Acetophenone	8270	2.9	ug/L
Aniline	8270	2.4	ug/L
Anthracene	8270	2.6	ug/L
Benz(a)anthracene	8270	2.8	ug/L
Benzenethiol	8270	5	ug/L
Benzidine	8270	6.5	ug/L
Benzo(a)anthracene	8270	2.8	ug/L
Benzo(a)pyrene	8270	3.5	ug/L
Benzo(b)fluoranthene	8270	2.6	ug/L
Benzo(g,h,i)perylene	8270	3.1	ug/L
Benzo(k)fluoranthene	8270	3.9	ug/L
Benzoic acid	8270	61	ug/L
Benzyl alcohol	8270	2.4	ug/L
Bis(2-chloroethoxy)methane	8270	2.9	ug/L
Bis(2-chloroethyl) ether	8270	2.1	ug/L
Bis(2-chloroisopropyl) ether	8270	1.9	ug/L
Bis(2-ethylhexyl) phthalate	8270	3.6	ug/L
Butyl benzyl phthalate	8270	2.7	ug/L
Chrysene	8270	4.2	ug/L
Di-n-butyl phthalate	8270	5.2	ug/L
Di-n-octyl phthalate	8270	2.7	ug/L
Dibenz(a,h)acridine	8270	5.3	ug/L
Dibenz(a,h)anthracene	8270	3.4	ug/L
Dibenz(a,j)acridine	8270	5.3	ug/L
Dibenzofuran	8270	4	ug/L
Diethyl phthalate	8270	5.1	ug/L
Dimethyl phthalate	8270	4.8	ug/L
Diphenylamine	8270	4.2	ug/L
Ethyl methanesulfonate	8270	2.6	ug/L
Fluoranthene	8270	4	ug/L
Fluorene	8270	3.3	ug/L
Hexachlorobenzene	8270	2.5	ug/L
Hexachlorobutadiene	8270	3	ug/L
Hexachlorocyclopentadiene	8270	2.2	ug/L
Hexachloroethane	8270	4.7	ug/L
Indene	8270	5	ug/L
Indeno(1,2,3-cd)pyrene	8270	3.1	ug/L

TABLE 2-1 SUMMARY OF AQUEOUS METHOD DETECTION LIMITS FOR HYDROLOGIC LANDFILLS 2, 5, AND 6 FORT CARSON, COLORADO			
Analyte	**Method**	**MDL**	**Units**
Isophorone	8270	3	ug/L
Methyl methanesulfonate	8270	2.9	ug/L
N-Nitroso-di-n-butylamine	8270	3	ug/L
N-Nitrosodimethylamine	8270	2	ug/L
N-Nitrosodiphenylamine	8270	5.2	ug/L
N-Nitrosodipropylamine	8270	3.1	ug/L
N-Nitrosopiperidine	8270	3.4	ug/L
Naphthalene	8270	2.4	ug/L
Nitrobenzene	8270	4.7	ug/L
Pentachlorobenzene	8270	3.9	ug/L
Pentachloronitrobenzene	8270	4.7	ug/L
Pentachlorophenol	8270	5.7	ug/L
Phenacetin	8270	5.9	ug/L
Phenanthrene	8270	2.5	ug/L
Phenol	8270	3.4	ug/L
Pronamide	8270	3.8	ug/L
Pyrene	8270	3.5	ug/L
Pyridine	8270	5	ug/L
Quinoline	8270	5	ug/L
a,a-Dimethylphenethylamine	8270	4.5	ug/L
p-Dimethylaminoazobenzene	8270	2.5	ug/L
Total Organic Carbon	9012	.15	mg/L

TABLE 2-2
SUMMARY OF AQUEOUS PRACTICAL QUANTITATION LIMITS FOR QUANTERRA
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Analyte	Method	PQL	Units
Total Dissolved Solids	160.1	10.0	mg/L
Total Suspended Solids	160.2	2.0	mg/L
Chloride	300.0	3.0	mg/L
Fluoride	300.0	0.10	mg/L
Nitrate as N	300.0	0.10	mg/L
Orthophosphate as P	300.0	0.50	mg/L
Sulfate	300.0	5.0	mg/L
Alkalinity, Bicarb. as CaCO3 at pH 4.5	310.1	5.0	mg/L
Alkalinity, Carb. as CaCO3 at pH 8.3	310.1	5.0	mg/L
Alkalinity, Hydrox. as CaCO3	310.1	5.0	mg/L
Alkalinity, Total as CaCO3 at pH 4.5	310.1	5.0	mg/L
Nitrate plus Nitrite as N	353.2	0.10	mg/L
Nitrite as N	354.1	0.010	mg/L
Biochemical Oxygen Demand	405.1	2.0	mg/L
Chemical Oxygen Demand (Regular)	410.4	20.0	mg/L
Aluminum	6010	0.10	mg/L
Antimony	6010	0.060	mg/L
Arsenic	6010	0.50	mg/L
Barium	6010	0.010	mg/L
Beryllium	6010	0.0020	mg/L
Cadmium	6010	0.0050	mg/L
Calcium	6010	0.20	mg/L
Chromium	6010	0.010	mg/L
Cobalt	6010	0.010	mg/L
Copper	6010	0.020	mg/L
Iron	6010	0.10	mg/L
Lead	6010	0.50	mg/L
Magnesium	6010	0.20	mg/L
Manganese	6010	0.010	mg/L
Nickel	6010	0.040	mg/L
Potassium	6010	5.0	mg/L
Selenium	6010	0.25	mg/L
Silica as SiO2	6010	0.50	mg/L
Silver	6010	0.010	mg/L
Sodium	6010	5.0	mg/L
Vanadium	6010	0.010	mg/L
Zinc	6010	0.020	mg/L
Antimony	7041	0.010	mg/L
Arsenic	7060	0.0050	mg/L
Lead	7421	0.0050	mg/L
Mercury	7470	0.00020	mg/L
Selenium	7740	0.0050	mg/L
Thallium	7841	0.0050	mg/L
4,4'-DDD	8080	0.10	ug/L
4,4'-DDE	8080	0.10	ug/L
4,4'-DDT	8080	0.10	ug/L
Aldrin	8080	0.050	ug/L
Aroclor 1016	8080	1.0	ug/L
Aroclor 1221	8080	1.0	ug/L
Aroclor 1232	8080	1.0	ug/L
Aroclor 1242	8080	1.0	ug/L
Aroclor 1248	8080	1.0	ug/L
Aroclor 1254	8080	1.0	ug/L

TABLE 2-2
SUMMARY OF AQUEOUS PRACTICAL QUANTITATION LIMITS FOR QUANTERRA
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Analyte	Method	PQL	Units
Aroclor 1260	8080	1.0	ug/L
Chlordane	8080	0.0050	mg/L
Chlorobenzilate	8080	1.0	ug/L
Diallate	8080	1.0	ug/L
Dieldrin	8080	0.050	ug/L
Endosulfan I	8080	0.050	ug/L
Endosulfan II	8080	0.10	ug/L
Endosulfan sulfate	8080	0.10	ug/L
Endrin	8080	0.10	ug/L
Endrin aldehyde	8080	0.10	ug/L
Heptachlor	8080	0.050	ug/L
Heptachlor Epoxide	8080	0.05	ug/L
Isodrin	8080	0.10	ug/L
Kepone	8080	1.0	ug/L
Methoxychlor	8080	0.5	ug/L
Toxaphene	8080	5.0	ug/L
alpha-BHC	8080	0.050	ug/L
alpha-Chlordane	8080	0.050	ug/L
beta-BHC	8080	0.050	ug/L
delta-BHC	8080	0.050	ug/L
gamma-BHC (Lindane)	8080	0.05	ug/L
gamma-Chlordane	8080	0.050	ug/L
2,4,5-T	8150	0.5	ug/L
2,4,5-TP (Silvex)	8150	0.5	ug/L
2,4-D	8150	2.0	ug/L
2,4-DB	8150	5.0	ug/L
Dalapon	8150	5.0	ug/L
Dicamba	8150	0.50	ug/L
Dichlorprop	8150	1.0	ug/L
Dinoseb	8150	1.0	ug/L
MCPA	8150	250	ug/L
MCPP	8150	250	ug/L
1,1,1,2-Tetrachloroethane	8240	5.0	ug/L
1,1,1-Trichloroethane	8240	5.0	ug/L
1,1,2,2-Tetrachloroethane	8240	5.0	ug/L
1,1,2-Trichloroethane	8240	5.0	ug/L
1,1-Dichloroethane	8240	5.0	ug/L
1,1-Dichloroethene	8240	5.0	ug/L
1,2,3-Trichloropropane	8240	5.0	ug/L
1,2-Dibromo-3-chloro-propane (DBCP)	8240	10	ug/L
1,2-Dibromoethane (EDB)	8240	10	ug/L
1,2-Dichloroethane	8240	5.0	ug/L
1,2-Dichloroethene (cis)	8240	5.0	ug/L
1,2-Dichloroethene (total)	8240	5.0	ug/L
1,2-Dichloroethene (trans)	8240	5.0	ug/L
1,2-Dichloropropane	8240	5.0	ug/L
1,4-Dioxane	8240	500	ug/L
2-Butanone (MEK)	8240	10	ug/L
2-Hexanone	8240	10	ug/L
4-Methyl-2-pentanone (MIBK)	8240	10	ug/L
Acetone	8240	10	ug/L
Acetonitrile	8240	200	ug/L
Acrolein	8240	100	ug/L
Acrylonitrile	8240	100	ug/L
Allyl chloride	8240	10	ug/L
Benzene	8240	5.0	ug/L
Bromodichloromethane	8240	5.0	ug/L

TABLE 2-2
SUMMARY OF AQUEOUS PRACTICAL QUANTITATION LIMITS FOR QUANTERRA
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Analyte	Method	PQL	Units
Bromoform	8240	5.0	ug/L
Bromomethane	8240	10	ug/L
Carbon disulfide	8240	5.0	ug/L
Carbon tetrachloride	8240	5.0	ug/L
Chlorobenzene	8240	5.0	ug/L
Chloroethane	8240	10	ug/L
Chloroform	8240	5.0	ug/L
Chloromethane	8240	10	ug/L
Chloroprene	8240	5.0	ug/L
Dibromochloromethane	8240	5.0	ug/L
Dibromomethane	8240	5.0	ug/L
Dichlorodifluoromethane	8240	20	ug/L
Ethyl methacrylate	8240	20	ug/L
Ethylbenzene	8240	5.0	ug/L
Iodomethane	8240	5.0	ug/L
Isobutanol (2-Methyl-1-propanol)	8240	200	ug/L
Methacrylonitrile	8240	5.0	ug/L
Methyl methacrylate	8240	20	ug/L
Methylene chloride	8240	5.0	ug/L
Propionitrile	8240	5.0	ug/L
Styrene	8240	5.0	ug/L
Tetrachloroethene	8240	5.0	ug/L
Toluene	8240	5.0	ug/L
Trichloroethene	8240	5.0	ug/L
Trichlorofluoromethane	8240	5.0	ug/L
Vinyl acetate	8240	10	ug/L
Vinyl chloride	8240	10	ug/L
Xylenes (total)	8240	5.0	ug/L
cis-1,2-Dichloroethene	8240	5.0	ug/L
cis-1,3-Dichloropropene	8240	5.0	ug/L
trans-1,2-Dichloroethene	8240	5.0	ug/L
trans-1,3-Dichloropropene	8240	5.0	ug/L
trans-1,4-Dichloro-2-butene	8240	5.0	ug/L
1,1,1,2-Tetrachloroethane	8260	5.0	ug/L
1,1,1-Trichloroethane	8260	5.0	ug/L
1,1,2,2-Tetrachloroethane	8260	5.0	ug/L
1,1,2-Trichloroethane	8260	5.0	ug/L
1,1-Dichloroethane	8260	5.0	ug/L
1,1-Dichloroethene	8260	5.0	ug/L
1,1-Dichloropropene	8260	5.0	ug/L
1,2,3-Trichlorobenzene	8260	5.0	ug/L
1,2,3-Trichloropropane	8260	5.0	ug/L
1,2,4-Trichlorobenzene	8260	5.0	ug/L
1,2,4-Trimethylbenzene	8260	5.0	ug/L
1,2-Dichlorobenzene	8260	5.0	ug/L
1,2-Dichloroethane	8260	5.0	ug/L
1,2-Dichloropropane	8260	5.0	ug/L
1,3,5-Trimethylbenzene	8260	5.0	ug/L
1,3-Dichlorobenzene	8260	5.0	ug/L
1,3-Dichloropropane	8260	5.0	ug/L
1,4-Dichlorobenzene	8260	5.0	ug/L
2,2-Dichloropropane	8260	5.0	ug/L
2-Chlorotoluene	8260	5.0	ug/L
4-Chlorotoluene	8260	5.0	ug/L
Benzene	8260	5.0	ug/L
Bromobenzene	8260	5.0	ug/L
Bromochloromethane	8260	5.0	ug/L
Bromodichloromethane	8260	5.0	ug/L

TABLE 2-2
SUMMARY OF AQUEOUS PRACTICAL QUANTITATION LIMITS FOR QUANTERRA
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Analyte	Method	PQL	Units
Bromoform	8260	5.0	ug/L
Bromomethane	8260	10	ug/L
Carbon tetrachloride	8260	5.0	ug/L
Chlorobenzene	8260	5.0	ug/L
Chloroethane	8260	10	ug/L
Chloroform	8260	5.0	ug/L
Chloromethane	8260	10	ug/L
DBCP (1,2-Dibromo-3-chloropropane)	8260	10	ug/L
Dibromochloromethane	8260	5.0	ug/L
Dibromomethane	8260	5.0	ug/L
Dichlorodifluoromethane	8260	5.0	ug/L
EDB (1,2-Dibromoethane)	8260	10	ug/L
Ethylbenzene	8260	5.0	ug/L
Hexachlorobutadiene	8260	5.0	ug/L
Isopropylbenzene (Cumene)	8260	5.0	ug/L
Methylene chloride	8260	5.0	ug/L
Naphthalene	8260	5.0	ug/L
Styrene	8260	5.0	ug/L
Tetrachloroethene	8260	5.0	ug/L
Toluene	8260	5.0	ug/L
Trichloroethene	8260	5.0	ug/L
Trichlorofluoromethane	8260	5.0	ug/L
Vinyl chloride	8260	10	ug/L
cis-1,2-Dichloroethene	8260	5.0	ug/L
cis-1,3-Dichloropropene	8260	5.0	ug/L
m- & p-Xylenes	8260	5.0	ug/L
n-Butylbenzene	8260	5.0	ug/L
n-Propylbenzene	8260	5.0	ug/L
o-Xylene	8260	5.0	ug/L
p-Isopropyltoluene (p-Cymene)	8260	5.0	ug/L
sec-Butylbenzene	8260	5.0	ug/L
tert-Butylbenzene	8260	5.0	ug/L
trans-1,2-Dichloroethene	8260	5.0	ug/L
trans-1,3-Dichloropropene	8260	5.0	ug/L
1,2,4,5-Tetrachloro-benzene	8270	10	ug/L
1,2,4-Trichlorobenzene	8270	10	ug/L
1,2-Dichlorobenzene	8270	10	ug/L
1,3,5-Trinitrobenzene	8270	10	ug/L
1,3-Dichlorobenzene	8270	10	ug/L
1,3-Dinitrobenzene	8270	10	ug/L
1,4-Dichlorobenzene	8270	10	ug/L
1,4-Naphthoquinone	8270	10	ug/L
1-Naphthylamine	8270	10	ug/L
2,3,4,6-Tetrachlorophenol	8270	50	ug/L
2,4,5-Trichlorophenol	8270	50	ug/L
2,4,6-Trichlorophenol	8270	10	ug/L
2,4-Dichlorophenol	8270	10	ug/L
2,4-Dimethylphenol	8270	10	ug/L
2,4-Dinitrophenol	8270	50	ug/L
2,4-Dinitrotoluene	8270	10	ug/L
2,6-Dichlorophenol	8270	10	ug/L
2,6-Dinitrotoluene	8270	10	ug/L
2-Acetylaminofluorene	8270	100	ug/L
2-Chloronaphthalene	8270	10	ug/L
2-Chlorophenol	8270	10	ug/L
2-Methylnaphthalene	8270	10	ug/L
2-Methylphenol	8270	10	ug/L
2-Naphthylamine	8270	10	ug/L

TABLE 2-2
SUMMARY OF AQUEOUS PRACTICAL QUANTITATION LIMITS FOR QUANTERRA
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Analyte	Method	PQL	Units
2-Nitroaniline	8270	50	ug/L
2-Nitrophenol	8270	10	ug/L
2-Picoline	8270	10	ug/L
2-Toluidine	8270	10	ug/L
2-sec-Butyl-4,6-dinitro-phenol	8270	10	ug/L
3,3'-Dichlorobenzidine	8270	20	ug/L
3,3'-Dimethylbenzidine	8270	10	ug/L
3-Methylcholanthrene	8270	10	ug/L
3-Nitroaniline	8270	50	ug/L
3/4-Methylphenol	8270	10	ug/L
4,6-Dinitro-2-methylphenol	8270	50	ug/L
4-Aminobiphenyl	8270	10	ug/L
4-Bromophenyl phenyl ether	8270	10	ug/L
4-Chloro-3-methylphenol	8270	10	ug/L
4-Chloroaniline	8270	10	ug/L
4-Chlorophenyl phenyl ether	8270	10	ug/L
4-Nitroaniline	8270	50	ug/L
4-Nitrophenol	8270	50	ug/L
4-Nitroquinoline-1-oxide	8270	100	ug/L
4-Phenylenediamine	8270	100	ug/L
5-Nitro-o-toluidine	8270	10	ug/L
7,12-Dimethylbenz(a)-anthracene	8270	10	ug/L
Acenaphthene	8270	10	ug/L
Acenaphthylene	8270	10	ug/L
Acetophenone	8270	10	ug/L
Aniline	8270	10	ug/L
Anthracene	8270	10	ug/L
Aramite	8270	10	ug/L
Benzidine	8270	100	ug/L
Benzo(a)anthracene	8270	10	ug/L
Benzo(a)pyrene	8270	10	ug/L
Benzo(b)fluoranthene	8270	10	ug/L
Benzo(g,h,i)perylene	8270	10	ug/L
Benzo(k)fluoranthene	8270	10	ug/L
Benzoic acid	8270	50	ug/L
Benzyl alcohol	8270	10	ug/L
Butyl benzyl phthalate	8270	10	ug/L
Chrysene	8270	10	ug/L
Di-n-butyl phthalate	8270	10	ug/L
Di-n-octyl phthalate	8270	10	ug/L
Dibenz(a,h)anthracene	8270	10	ug/L
Dibenzofuran	8270	10	ug/L
Diethyl phthalate	8270	10	ug/L
Dimethoate	8270	50	ug/L
Dimethyl phthalate	8270	10	ug/L
Diphenylamine	8270	10	ug/L
Disulfoton	8270	50	ug/L
Ethyl methanesulfonate	8270	10	ug/L
Famphur	8270	50	ug/L
Fluoranthene	8270	10	ug/L
Fluorene	8270	10	ug/L
Hexachlorobenzene	8270	10	ug/L
Hexachlorobutadiene	8270	10	ug/L
Hexachlorocyclopentadiene	8270	10	ug/L
Hexachloroethane	8270	10	ug/L
Hexachlorophene	8270	--	--
Hexachloropropene	8270	10	ug/L
Indeno(1,2,3-cd)pyrene	8270	10	ug/L
Isophorone	8270	10	ug/L

TABLE 2-2
SUMMARY OF AQUEOUS PRACTICAL QUANTITATION LIMITS FOR QUANTERRA
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Analyte	Method	PQL	Units
Isosafrole	8270	20	ug/L
Methapyrilene	8270	10	ug/L
Methyl methanesulfonate	8270	10	ug/L
Methyl parathion	8270	50	ug/L
N-Nitroso-di-n-butylamine	8270	10	ug/L
N-Nitroso-di-n-propylamine	8270	10	ug/L
N-Nitrosodiethylamine	8270	10	ug/L
N-Nitrosodimethylamine	8270	10	ug/L
N-Nitrosodiphenylamine	8270	10	ug/L
N-Nitrosomethylethylamine	8270	10	ug/L
N-Nitrosomorpholine	8270	10	ug/L
N-Nitrosopiperidine	8270	10	ug/L
N-Nitrosopyrrolidine	8270	10	ug/L
Naphthalene	8270	10	ug/L
Nitrobenzene	8270	10	ug/L
O,O,O-Triethylphosphoro-thioate	8270	10	ug/L
Parathion	8270	50	ug/L
Pentachlorobenzene	8270	10	ug/L
Pentachloroethane	8270	10	ug/L
Pentachloronitrobenzene	8270	50	ug/L
Pentachlorophenol	8270	50	ug/L
Phenacetin	8270	10	ug/L
Phenanthrene	8270	10	ug/L
Phenol	8270	10	ug/L
Phorate	8270	100	ug/L
Pronamide	8270	10	ug/L
Pyrene	8270	10	ug/L
Pyridine	8270	10	ug/L
Safrole	8270	10	ug/L
Sulfotepp	8270	50	ug/L
Thionazin	8270	50	ug/L
a,a-Dimethylphenethyl-amine	8270	10	ug/L
bis(2-Chloroethoxy)methane	8270	10	ug/L
bis(2-Chloroethyl) ether	8270	10	ug/L
bis(2-Chloroisopropyl)ether	8270	10	ug/L
bis(2-Ethylhexyl)phthalate	8270	10	ug/L
p-Dimethylaminoazobenzene	8270	10	ug/L
1,3,5-Trinitrobenzene	8321	0.25	ug/L
1,3-Dinitrobenzene	8321	0.10	ug/L
2,4,6-Trinitrotoluene	8321	0.10	ug/L
2,4-Dinitrotoluene	8321	0.10	ug/L
2,6-Dinitrotoluene	8321	0.25	ug/L
2-Amino-4,6-dinitrotoluene	8321	0.10	ug/L
2/4-Nitrotoluene	8321	0.25	ug/L
3-Nitrotoluene	8321	0.25	ug/L
4-Amino-2,6-dinitrotoluene	8321	0.10	ug/L
HMX	8321	0.25	ug/L
Nitrobenzene	8321	0.25	ug/L
Nitroglycerin	8321	2.5	ug/L
PETN	8321	10	ug/L
RDX	8321	0.25	ug/L
Tetryl	8321	0.50	ug/L
1,3,5-Trinitrobenzene	8330	0.26	ug/L
1,3-Dinitrobenzene	8330	0.11	ug/L
2,4,6-Trinitrotoluene	8330	0.11	ug/L
2,4-Dinitrotoluene	8330	0.020	ug/L
2,6-Dinitrotoluene	8330	0.31	ug/L

TABLE 2-2
SUMMARY OF AQUEOUS PRACTICAL QUANTITATION LIMITS FOR QUANTERRA
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Analyte	Method	PQL	Units
2-Amino-4,6-dinitrotoluene	8330	0.035	ug/L
2-Nitrotoluene	8330	0.25	ug/L
3-Nitrotoluene	8330	0.25	ug/L
4-Amino-2,6-dinitrotoluene	8330	0.060	ug/L
4-Nitrotoluene	8330	0.25	ug/L
HMX	8330	0.80	ug/L
Nitrobenzene	8330	0.25	ug/L
RDX	8330	0.84	ug/L
Tetryl	8330	0.80	ug/L
Cyanide	9012	0.010	mg/L
Total Organic Carbon	9060	1.0	mg/L

TABLE 2-3
QUANTERRA SUMMARY OF PRACTICAL QUANTITATION LIMITS FOR SOIL AND SEDIMENT
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Analyte	Method	PQL	Units
Antimony	6010	6.0	mg/kg
Barium	6010	1.0	mg/kg
Cadmium	6010	0.50	mg/kg
Chromium	6010	1.0	mg/kg
Manganese	6010	1.0	mg/kg
Silver	6010	1.0	mg/kg
Arsenic	7060	0.50	mg/kg
Lead	7421	0.50	mg/kg
Mercury	7471	0.10	mg/kg
Selenium	7740	0.50	mg/kg
Thallium	7841	0.50	mg/kg
4,4'-DDD	8080	3.3	ug/kg
4,4'-DDE	8080	3.3	ug/kg
4,4'-DDT	8080	3.3	ug/kg
Aldrin	8080	1.7	ug/kg
Aroclor 1016	8080	33	ug/kg
Aroclor 1221	8080	33	ug/kg
Aroclor 1232	8080	33	ug/kg
Aroclor 1242	8080	33	ug/kg
Aroclor 1248	8080	33	ug/kg
Aroclor 1254	8080	33	ug/kg
Aroclor 1260	8080	33	ug/kg
Dieldrin	8080	3.3	ug/kg
Endosulfan I	8080	1.7	ug/kg
Endosulfan II	8080	3.3	ug/kg
Endosulfan sulfate	8080	3.3	ug/kg
Endrin	8080	3.3	ug/kg
Endrin aldehyde	8080	3.3	ug/kg
Endrin ketone	8080	3.3	ug/kg
Heptachlor	8080	1.7	ug/kg
Heptachlor epoxide	8080	1.7	ug/kg
Methoxychlor	8080	17	ug/kg
Toxaphene	8080	170	ug/kg
alpha-BHC	8080	1.7	ug/kg
alpha-Chlordane	8080	1.7	ug/kg
beta-BHC	8080	1.7	ug/kg
delta-BHC	8080	1.7	ug/kg
gamma-BHC (Lindane)	8080	1.7	ug/kg
gamma-Chlordane	8080	1.7	ug/kg
2,4,5-T	8150	10	ug/kg
2,4,5-TP (Silvex)	8150	10	ug/kg
2,4-D	8150	40	ug/kg
2,4-DB	8150	100	ug/kg
Dalapon	8150	100	ug/kg
Dicamba	8150	10	ug/kg
Dichlorprop	8150	20	ug/kg
Dinoseb	8150	20	ug/kg
MCPA	8150	5000	ug/kg
MCPP	8150	5000	ug/kg
1,1,1-Trichloroethane	8260	5.0	ug/kg
1,1,2,2-Tetrachloroethane	8260	5.0	ug/kg
1,1,2-Trichloroethane	8260	5.0	ug/kg
1,1-Dichloroethane	8260	5.0	ug/kg
1,1-Dichloroethene	8260	5.0	ug/kg
1,2-Dichloroethane	8260	5.0	ug/kg

TABLE 2-3
QUANTERRA SUMMARY OF PRACTICAL QUANTITATION LIMITS FOR SOIL AND SEDIMENT
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Analyte	Method	PQL	Units
1,2-Dichloropropane	8260	5.0	ug/kg
1,4-Dioxane	8260		ug/kg
2-Butanone (MEK)	8260	10	ug/kg
2-Hexanone	8260	10	ug/kg
4-Methyl-2-pentanone (MIBK)	8260	10	ug/kg
Acetone	8260	10	ug/kg
Benzene	8260	5.0	ug/kg
Bromodichloromethane	8260	5.0	ug/kg
Bromoform	8260	5.0	ug/kg
Bromomethane	8260	10	ug/kg
Carbon disulfide	8260	5.0	ug/kg
Carbon tetrachloride	8260	5.0	ug/kg
Chlorobenzene	8260	5.0	ug/kg
Chloroethane	8260	10	ug/kg
Chloroform	8260	5.0	ug/kg
Chloromethane	8260	10	ug/kg
Dibromochloromethane	8260	5.0	ug/kg
Ethylbenzene	8260	5.0	ug/kg
Methylene chloride	8260	5.0	ug/kg
Styrene	8260	5.0	ug/kg
Tetrachloroethene	8260	5.0	ug/kg
Toluene	8260	5.0	ug/kg
Trichloroethene	8260	5.0	ug/kg
Vinyl acetate	8260	10	ug/kg
Vinyl chloride	8260	10	ug/kg
Xylenes (total)	8260	5.0	ug/kg
cis-1,2-Dichloroethene	8260	5.0	ug/kg
cis-1,3-Dichloropropene	8260	5.0	ug/kg
trans-1,2-Dichloroethene	8260	5.0	ug/kg
trans-1,3-Dichloropropene	8260	5.0	ug/kg
1,2,4-Trichlorobenzene	8270	330	ug/kg
1,2-Dichlorobenzene	8270	330	ug/kg
1,3-Dichlorobenzene	8270	330	ug/kg
1,4-Dichlorobenzene	8270	330	ug/kg
2,3,4,6-Tetrachlorophenol	8270	1600	ug/kg
2,4,5-Trichlorophenol	8270	1600	ug/kg
2,4,6-Trichlorophenol	8270	330	ug/kg
2,4-Dichlorophenol	8270	330	ug/kg
2,4-Dimethylphenol	8270	330	ug/kg
2,4-Dinitrophenol	8270	1600	ug/kg
2,4-Dinitrotoluene	8270	330	ug/kg
2,6-Dinitrotoluene	8270	330	ug/kg
2-Chloronaphthalene	8270	330	ug/kg
2-Chlorophenol	8270	330	ug/kg
2-Methylnaphthalene	8270	330	ug/kg
2-Methylphenol	8270	330	ug/kg
2-Nitroaniline	8270	1600	ug/kg
2-Nitrophenol	8270	330	ug/kg
3,3'-Dichlorobenzidine	8270	660	ug/kg
3-Methylcholanthrene	8270	330	ug/kg
3-Nitroaniline	8270	1600	ug/kg
3/4-Methylphenol	8270	330	ug/kg
4,6-Dinitro-2-methylphenol	8270	1600	ug/kg
4-Bromophenyl phenyl ether	8270	330	ug/kg
4-Chloro-3-methylphenol	8270	330	ug/kg
4-Chloroaniline	8270	330	ug/kg
4-Chlorophenyl phenyl ether	8270	330	ug/kg

TABLE 2-3
QUANTERRA SUMMARY OF PRACTICAL QUANTITATION LIMITS FOR SOIL AND SEDIMENT
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Analyte	Method	PQL	Units
4-Nitroaniline	8270	1600	ug/kg
4-Nitrophenol	8270	1600	ug/kg
7,12-Dimethylbenz(a)-anthracene	8270	330	ug/kg
Acenaphthene	8270	330	ug/kg
Acenaphthylene	8270	330	ug/kg
Anthracene	8270	330	ug/kg
Benzo(a)anthracene	8270	330	ug/kg
Benzo(a)pyrene	8270	330	ug/kg
Benzo(b)fluoranthene	8270	330	ug/kg
Benzo(g,h,i)perylene	8270	330	ug/kg
Benzo(k)fluoranthene	8270	330	ug/kg
Benzoic acid	8270	1600	ug/kg
Benzyl alcohol	8270	330	ug/kg
Butyl benzyl phthalate	8270	330	ug/kg
Chrysene	8270	330	ug/kg
Di-n-octyl phthalate	8270	330	ug/kg
Dibenz(a,h)anthracene	8270	330	ug/kg
Dibenzofuran	8270	330	ug/kg
Diethyl phthalate	8270	330	ug/kg
Dimethoate	8270	1600	ug/kg
Dimethyl phthalate	8270	330	ug/kg
Disulfoton	8270	1600	ug/kg
Famphur	8270	1600	ug/kg
Fluoranthene	8270	330	ug/kg
Fluorene	8270	330	ug/kg
Hexachlorobenzene	8270	330	ug/kg
Hexachlorobutadiene	8270	330	ug/kg
Hexachlorocyclopentadiene	8270	330	ug/kg
Hexachloroethane	8270	330	ug/kg
Hexachlorophene	8270	--	ug/kg
Indeno(1,2,3-cd)pyrene	8270	330	ug/kg
Isophorone	8270	330	ug/kg
Methyl parathion	8270	1600	ug/kg
N-Nitroso-di-n-propylamine	8270	330	ug/kg
N-Nitrosodimethylamine	8270	330	ug/kg
N-Nitrosodiphenylamine	8270	330	ug/kg
Naphthalene	8270	330	ug/kg
Nitrobenzene	8270	330	ug/kg
O,O,O-Triethylphosphoro-thioate	8270	330	ug/kg
Parathion	8270	1600	ug/kg
Pentachlorophenol	8270	1600	ug/kg
Phenanthrene	8270	330	ug/kg
Phenol	8270	330	ug/kg
Phorate	8270	3300	ug/kg
Pronamide	8270	330	ug/kg
Pyrene	8270	330	ug/kg
Pyridine	8270	660	ug/kg
Sulfotepp	8270	1600	ug/kg
Thionazin	8270	1600	ug/kg
bis(2-Chloroethoxy)methane	8270	330	ug/kg
bis(2-Chloroethyl) ether	8270	330	ug/kg
bis(2-Chloroisopropyl)ether	8270	330	ug/kg
bis(2-Ethylhexyl)phthalate	8270	330	ug/kg

TABLE 3-1
SAMPLING OVERVIEW
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO
Page 1 of 3

Sampling Location	RFI Specific	1st Quarter QGMP	2nd Quarter QGMP
Landfill 2			
LF2DPW3	June 23, 1995		
LF2DPW4	June 23, 1995		
LF2DPW6	March 21, 1996		
LF2DPW7	March 21, 1996		
LF2DPW9	March 22, 1996		
LF2DPW10	March 25, 1996		
LF2DPW11	March 22, 1996		
LF2DPW12	March 22, 1996		
FCMW-62		January 29, 1996	April 22, 1996
FCMW-65			April 22, 1996
FCMW-66			April 23, 1996
FCMW-68		January 29, 1996	April 23, 1996
FCMW-70		January 30, 1996	April 23, 1996
FCMW-71			April 23, 1996
FCMW-72			April 24, 1996
FCMW-73	May 10, 1995	January 30, 1996	April 23, 1996
FCMW-74	May 10, 1995	January 30, 1996	April 24, 1996
FCMW-75	May 9, 1995		April 25, 1996
FCMW-76	May 9, 1995	January 30, 1996	April 24, 1996
FCMW-78	May 10, 1995		April 26, 1996
FCMW-81	May 9, 1995		
LF2-SD1	April 26, 1996		
LF2-SD2	April 26, 1996		
LF2-SD3	April 26, 1996		
LF2-SD4	April 26, 1996		

TABLE 3-1
SAMPLING OVERVIEW
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO
Page 2 of 3

Sampling Location	RFI Specific	1st Quarter QGMP	2nd Quarter QGMP
Landfill 5			
LF5DPW1	June 23, 1995		
LF5DPW2	June 23, 1995		
LF5DPW3	June 22, 1995		
LF5DPW4	March 23, 1996		
LF5DPW5	March 23, 1996		
LF5DPW6	March 23, 1996		
FCMW-82	May 2, 1995		
FCMW-84	May 2, 1995		
LF5-MW1	May 1, 1995		April 23, 1996
LF5-MW2	May 2, 1995	January 31, 1996	
LF5-MW3	May 4, 1995		
LF5-MW4	May 3, 1995	February 1, 1996	April 24, 1996
LF5-MW5	May 3, 1995		April 24, 1996
LF5-MW6	May 4, 1995		
W5-2	May 3, 1995	February 1, 1996	April 24, 1996
LF5-SP1	March 28, 1996		
LF5-SW1	April 26, 1996		
LF5-SW2	April 26, 1996		
LF5-SD1	April 26, 1996		
LF5-SD2	April 26, 1996		

TABLE 3-1
SAMPLING OVERVIEW
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO
Page 3 of 3

Sampling Location	RFI Specific	1st Quarter QGMP	2nd Quarter QGMP
Landfill 6			
LF6DPW1	May 19, 1995		
LF6DPW2	May 19, 1995		
LF6DPW3	May 19, 1995		
LF6DPW4	May 19, 1995		
LF6DPW5	November 27, 1995		
LF6DPW6	November 27, 1995		
LF6DPW7	November 27, 1995		
LF6DPW8	April 26, 1996		
LF6DPW9	April 26, 1996		
LF6-A	May 8, 1995		
LF6-MW6	January 2, 1996		April 22, 1996
LF6-MW7	January 3, 1996		April 23, 1996
LF6-MW8	January 4, 1996		April 22, 1996
LF6-MW9	January 3, 1996	February 1, 1996	April 22, 1996
LF6-MW10	January 3, 1996	February 1, 1996	April 23, 1996
NUD-1	May 4, 1995	February 1, 1996	
W6-3	May 4, 1995	February 1, 1996	April 22, 1996
W6-5			April 23, 1996
LF6-SD1	April 26, 1996		
LF6-SD2	April 26, 1996		
LF6-SD3	May 1, 1996		
LF6-SD4	May 1, 1996		
LF6-SW2	April 26, 1996		
LF6-SW3	May 1, 1996		
LF6-MW8-7/9	December 6, 1995		

Note: Some samples were collected as part of the Quarterly Groundwater Monitoring Program (QGMP).

TABLE 3-2
GROUNDWATER, SEEP WATER, SURFACE WATER, AND SEDIMENT SAMPLING SUMMARY
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample Type	Volatile Organic Compounds	Semivolatile Organic Compounds	Pesticides/ PCBs	Metals	Metals (As, Pb, Se, Sb, and Tl - some or all)	Mercury	Nitrate, Nitrite	Nitrate plus Nitrite	General Water Quality[b] Parameters
	Method 8260	Method 8270	Method 8080	Method 6010 (ICAP[c])	7000 Series Methods (Graphite Furnace AA)	Method 7470/7471 (Cold Vapor AA)	Method 300.0	Method 353.0	
GROUNDWATER - Monitoring Well									
Landfill 2									
Field Sample	6	5	5	5	5	5	5	3	1
Split (MRL)	1	1	1	1	1	1	1	1	
Trip Blank (MRL)[a]	1								
MS	1	1	1	1	1	1	1	1	
MSD	1	1	1	1	1	1	1	1	
Landfill 5									
Field Sample	9	9	8	7	7	7	7		1
Split (MRL)	1	1	1	1	1	1	1		
Trip Blank (MRL)[a]	1								
MS	1	1	1	1	1	1	1		
MSD	1	1	1	1	1	1	1		
Rinsate		1	1	1	1	1	1		

TABLE 3-2
GROUNDWATER, SEEP WATER, SURFACE WATER, AND SEDIMENT SAMPLING SUMMARY
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample Type	Volatile Organic Compounds	Semivolatile Organic Compounds	Pesticides/ PCBs	Metals	Metals (As, Pb, Se, Sb, and Tl - some or all)	Mercury	Nitrate, Nitrite	Nitrate plus Nitrite	General Water Quality[b] Parameters
	Method 8260	Method 8270	Method 8080	Method 6010 (ICAP[c])	7000 Series Methods (Graphite Furnace AA)	Method 7470/7471 (Cold Vapor AA)	Method 300.0	Method 353.0	
Landfill 6									
Field Sample	8	8	3	8	8	8	3		1
Duplicate	2	2	1	2	2	2	1		
Split (MRL)	1	1	1	1	1	1	1		
Trip Blank (MRL)[a]	1								
MS	2	2	2	2	2	2	2		
MSD	2	2	2	2	2	2	2		
Rinsate		1	1	1	1	1			
GROUNDWATER - Direct Push									
Landfill 2									
Field Sample	8	5	1	4	4	4	3	6	
Duplicate	1	1		1	1	1	1	1	

TABLE 3-2
GROUNDWATER, SEEP WATER, SURFACE WATER, AND SEDIMENT SAMPLING SUMMARY
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample Type	Volatile Organic Compounds	Semivolatile Organic Compounds	Pesticides/ PCBs	Metals	Metals (As, Pb, Se, Sb, and Tl - some or all)	Mercury	Nitrate, Nitrite	Nitrate plus Nitrite	General Water Quality[b] Parameters
	Method 8260	Method 8270	Method 8080	Method 6010 (ICAP[c])	7000 Series Methods (Graphite Furnace AA)	Method 7470/7471 (Cold Vapor AA)	Method 300.0	Method 353.0	
Landfill 5									
Field Sample	6	5	2	3	3	3	2	4	
Duplicate	1	1		1	1	1			
Split (MRL)	1	1	1	1	1	1	1		
Trip Blank (MRL)[a]	1								
Landfill 6[d,e]									
Field Sample	9	8	5	8	8	8		2	1
Rinsate		1	1	1	1	1			
SEEP WATER									
Landfill 5									
Field Sample	1	1		1	1	1	1	1	

TABLE 3-2
GROUNDWATER, SEEP WATER, SURFACE WATER, AND SEDIMENT SAMPLING SUMMARY
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample Type	Volatile Organic Compounds	Semivolatile Organic Compounds	Pesticides/ PCBs	Metals	Metals (As, Pb, Se, Sb, and Tl - some or all)	Mercury	Nitrate, Nitrite	Nitrate plus Nitrite	General Water Quality[b] Parameters
	Method 8260	Method 8270	Method 8080	Method 6010 (ICAP[c])	7000 Series Methods (Graphite Furnace AA)	Method 7470/7471 (Cold Vapor AA)	Method 300.0	Method 353.0	
SURFACE WATER[d]									
Landfill 5									
Field Sample	2	2	2	2	2	2	2	2	2
Split (MRL)	1	1	1	1	1	1	1	1	1
Trip Blank (MRL)[a]	1								
MS	1	1	1	1	1	1	1	1	1
MSD	1	1	1	1	1	1	1	1	1
Landfill 6									
Field Sample	2	2	2	2	2	2	2	2	2

TABLE 3-2
GROUNDWATER, SEEP WATER, SURFACE WATER, AND SEDIMENT SAMPLING SUMMARY
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample Type	Volatile Organic Compounds	Semivolatile Organic Compounds	Pesticides/ PCBs	Metals	Metals (As, Pb, Se, Sb, and Tl - some or all)	Mercury	Nitrate, Nitrite	Nitrate plus Nitrite	General Water Quality[b] Parameters
	Method 8260	Method 8270	Method 8080	Method 6010 (ICAP[c])	7000 Series Methods (Graphite Furnace AA)	Method 7470/7471 (Cold Vapor AA)	Method 300.0	Method 353.0	
SEDIMENT[d]									
Landfill 2									
Field Sample	4	4	4	4	4	4			
Landfill 5									
Field Sample	2	2	2	2	2	2			
Landfill 6									
Field Sample	4	4	4	4	4	4			

[a] One trip blank was included in each cooler shipped from and returned to the laboratory which contained water samples for volatile organic compounds.
[b] Water quality analysis includes: Major Cations (Ca, Mg, Na, K), Major Anions (HCO3, CO3, SO4, C1, NO3), Biochemical Oxygen Demand, Chemical Oxygen Demand, Total Dissolved Solids, and Total Suspended Solids and Total Organic Carbon, Alkalinity, Hardness, and Anion/Cation Balance will be calculated from analytical data.
[c] ICAP: Inductively Coupled Plasma Atomic Emission Spectroscopy.
[d] Samples were also analyzed for herbicides by Method 8150.
[e] Samples were also analyzed for cyanide by Method 9012.
MRL USACE Missouri River Laboratory
MS Matrix Spike
MSD Matrix Spike Duplicate
Note: One soil sample (LF6-MW8-4/9) was analyzed for BTEX by API GRO, TPH by 418.1, and DRO by GC/FID.
Nitrate and nitrite samples were analyzed by HydroLogic using Method 300.0 instead of 353 and 354 as specified in the SAP.

TABLE 3-3
SAMPLE CONTAINERS, PRESERVATION, AND HOLDING TIME SPECIFICATIONS
LANDFILLS 2, 5 AND 6
FORT CARSON, COLORADO

			Volume Required		Preservation		Maximum Holding Times[b]	
Method	**Parameter**	**Container[a]**	**Water (mL)**	**Soil (g)**	**Water**	**Soil**	**Water (days)**	**Soil (days)**
Organic Methods								
8260	Volatile Organics	G; Teflon® lined septum	4x40	10	4°C; HCL to pH<2	4°C	14, 7 if not pH adjusted	14
8270	Semivolatile Organics	Amber G; Teflon® lined cap	2x1000	100	4°C	4°C	7/40	14/40
8080	Pesticides/PCB	Amber G; Teflon® lined septum	2x1000	100	4°C; pH 5-9	4°C	7/40	14/40
8150	Chlorinated Herbicides	Teflon® lined septum	2x1000	100	4°C	4°C	7/40	14/40
413.2	Oil and Grease	G	2x1000	40	4°C, H_2SO_4 to 3 pH<2	4°C	28	28
Inorganic Methods								
7470 (water) 7471 (soil)	Mercury	P,G	500	10	4°C; HNO_3 to pH<2	4°C	28	28
6010	ICAP Metals	P,G	500	10	4°C; HNO_3 to pH<2	4°C	180	180
9012	Cyanide	P	500	100	4°C; NaOH to pH>12	4°C	14	14
7421	GFAA Metals	P	500	10	4°C; HNO_3 to pH<2	4°C	180	180
300.0	Common Anions (Cl, SO_4, NO_3, NO_2)	P	500	NA	4°C	NA	28(Cl, SO_4) 48 hr (NO_3)	NA
310.1	Alkalinity (HCO_3, CO_3)	P	50	NA	4°C	NA	14	NA

TABLE 3-3
SAMPLE CONTAINERS, PRESERVATION, AND HOLDING TIME SPECIFICATIONS
LANDFILLS 2, 5 AND 6
FORT CARSON, COLORADO

Method	Parameter	Container[a]	Volume Required		Preservation		Maximum Holding Times[b]	
			Water (mL)	Soil (g)	Water	Soil	Water (days)	Soil (days)
405.1	Biochemical Oxygen Demand	P	200	NA	4°C	NA	2	NA
410.4	Chemical Oxygen Demand	G	100	NA	4°C, H_2SO_4 to pH<2	NA	28	NA
160.1	Total Dissolved Solids	P,G	250	NA	4°C	NA	7	NA
160.2	Total Suspended Solids	P,G	250	NA	4°C	NA	7	NA
Toxicity Characteristic Leaching Procedure (TCLP)								
8240	Volatile Organics	G	NA	4 oz	NA	4°C	NA	14/14
8270	Semivolatile Organics	G	NA	8 oz	NA	4°C	NA	14/7/40[c]
8080	Pesticides/PCBs							
8150	Herbicides							
7470	Mercury	G	NA	8 oz	NA	4°C	NA	28/28
6010	Metals	G	NA	8 oz	NA	4°C	NA	180/180

[a] Polyethylene (P) or glass (G).
[b] Holding times are in days unless otherwise noted. When a method has only a single holding time (i.e., total of both preparation and instrument holding time), it is stated; for methods with a distinct preparation and instrument holding time, the format used is: preparation holding time/instrument holding time.
[c] Holding time is 14 days for leaching, 7 days for extraction, and 40 days for extraction analysis.

TABLE 4-1
LABORATORY QUALITY CONTROL ISSUES
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Lab Batch ID	Sample ID	Issue	Resolution
L1453	LF5MW01 LF5MW01MS LF5MW01MSD LF5MW01TRIP	a. Samples LF5MW01MS and LF5MW01MSD were to be analyzed as matrix spike and matrix spike duplicate (MS/MSD). Due to a laboratory error, the samples were not spiked and actually analyzed as duplicates.	a. After discussion with Rust, it was decided that the results for LF5MW01MS would be reported as a duplicate. Data is available for all parameters except nitrate and nitrite. Sample LF5MW01MSD was not reported.
		b. For Method 8260, the RPD value for trichloroethene was outside of acceptable limits.	b. No action taken.
		c. For Method 8260, the SPCCs for chloromethane, 1,1,2,2,-tetrachloroethane, and bromoform did not meet minimum average response factor criteria.	c. This is most likely due to the 25 ml sample purge. The high volume purge is used in order to achieve lower detection
		d. For Method 6010, percent recoveries for several of the matrix spikes were outside acceptable limits. Cadmium and barium recoveries were low but reproducible, most likely due to matrix interference. Sodium and magnesium recoveries were outside acceptable limits, because the sample concentration was four times the concentration of the spike levels for these metals.	d. No action taken.
		e. For Method 7000, MS/MSD samples had percent recoveries which were outside of acceptable limits for almost all metals. It appears that the poor recoveries are most likely due to matrix interference.	e. No action taken.
L1463	LF5MW02 LF5FCMW82 LF5FCMW84	a. For Method 8260, the RPD value for trichloroethene was outside of acceptable limits.	a. No action taken.
		b. For Method 8260, the SPCCs for chloromethane, 1,1,2,2,-tetrachloroethane, and bromoform did not meet minimum average response factor criteria.	b. No action taken.
		c. For Method 6010, percent recoveries for several of the matrix spikes were outside acceptable limits. Cadmium and Barium recoveries were low but reproducible, most likely due to matrix interference. Sodium and Magnesium recoveries were outside acceptable limits, because the sample concentration was four times the concentration of the spike levels for these metals.	c. No action taken.
		d. For Method 7000, MS/MSD samples had percent recoveries which were outside of acceptable limits for almost all metals. It appears that the poor recoveries are most likely due to matrix interference.	d. No action taken.

TABLE 4-1
LABORATORY QUALITY CONTROL ISSUES
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Lab Batch ID	Sample ID	Issue	Resolution
L1470	LF5-MW4TRIP LF5MW05 LF5MW04 LF5W5-2 LF5-RW	a. For Method 8260, the RPD value for trichloroethene was outside of acceptable limits.	a. No action taken.
		b. For Method 8260, the SPCCs for chloromethane, 1,1,2,2,-tetrachloroethane, and bromoform did not meet minimum average response factor criteria.	b. No action taken.
		c. Sample LF5MW05 for Method 8270 showed surrogate recoveries for 2-Flourophenol and Phenol-d6 outside acceptable limits.	c. Reanalysis would have been done outside of required holding times, therefore, it was not reanalyzed.
		d. For Method 6010, percent recoveries for several of the matrix spikes were outside acceptable limits. Cadmium and barium recoveries were low but reproducible, most likely due to matrix interference. Sodium and magnesium recoveries were outside acceptable limits, because the sample concentration was four times the concentration of the spike levels for these metals.	d. No action taken.
		e. For Method 7000, MS/MSD samples had percent recoveries which were outside of acceptable limits for almost all metals. It appears that the poor recoveries are most likely due to matrix interference.	e. No action taken.
L1475	LF6NUD-1DUP LF6NUD-1TRIP LF6NUD-1 LF5MW03 LF5MW06	a. For Method 8260, the RPD value for trichloroethene was outside of acceptable limits.	a. No action taken.
		b. For Method 8260, the SPCCs for chloromethane, 1,1,2,2,-tetrachloroethane and bromoform did not meet minimum average response factor criteria.	b. No action taken.
		c. For Method 8270, the LCS recovery for 4-chloro-3-methylphenol was outside of normally accepted limits.	c. No action taken.
		d. For Method 6010, percent recoveries for several of the matrix spikes were outside acceptable limits. Silver and barium recoveries were low but reproducible, most likely due to matrix interference. Calcium, magnesium, and manganese recoveries were outside acceptable limits, because the sample concentration was four times the concentration of the spike levels for these metals.	d. No action taken.

TABLE 4-1
LABORATORY QUALITY CONTROL ISSUES
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Lab Batch ID	Sample ID	Issue	Resolution
L1475 (cont.)		e. For Method 7000, MS/MSD samples had percent recoveries which were outside of acceptable limits for Lead and thallium. It appears that the poor but reproducible recoveries are most likely due to matrix interference.	e. No action taken.
L1479	LF5MW06 LF6W6-3 LF6NUD-1 LF6NUD-1DUP LF5MW03TRIP	a. For Method 8260, the RPD value for trichloroethene was outside of acceptable limits.	a. No action taken.
		b. For Method 8270, the LCS recovery for 4-chloro-3-methylphenol was outside of normally accepted limits.	b. No action taken.
		c. For Method 6010, percent recoveries for several of the matrix spikes were outside acceptable limits. Silver recoveries were low but reproducible, most likely due to matrix interference. Sodium, calcium, magnesium, and manganese recoveries were outside acceptable limits, because the sample concentration was four times the concentration of the spike levels for these metals.	c. No action taken.
		d. For Method 7000, the MS/MSD samples had percent recoveries that were low but reproducible. There appears to be a strong matrix effect present for these analysis.	d. No action taken.
L1487	LF6-A LF6-AMS LF6-AMSD LF6-A-TRIP	a. For Method 8260, the RPD value for trichloroethene and 1,1-dichloroethene were outside of acceptable limits.	a. No action taken.
		b. For Method 8270, the LCS recovery for 4-chloro-3-methylphenol was outside of normally accepted limits.	b. No action taken.
		c. For Method 6010, percent recoveries for several of the matrix spikes were outside acceptable limits. Silver and barium recoveries were low but reproducible, most likely due to matrix interference. The recoveries for several cations were outside acceptable limits, because the sample concentration was four times the concentration of the spike levels for these metals.	c. No action taken.
		d. For Method 7000, the MS/MSD samples had percent recoveries that were low but reproducible. There appears to be a strong matrix effect present for these analysis.	d. No action taken.

TABLE 4-1
LABORATORY QUALITY CONTROL ISSUES
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Lab Batch ID	Sample ID	Issue	Resolution
L1497	LF2FCMW75 LF2FCMW76 LF2FCMW81 LF2FCMW81MS LF2FCMW81MSD LF2FCMW81TRIP	a. For Method 8260, the RPD value for benzene, trichloroethene and 1,1-dichloroethene were outside of acceptable limits.	a. No action taken.
		b. For Method 8270, the method blank contained Bis(2-ehtylhexyl)phthalate in concentrations above the reporting limit.	b. This is a common laboratory contaminant and was probably introduced into the sample during the extraction process.
		c. For Method 8270, the matrix spike for pyrene was outside acceptable limits. The low recovery for matrix spike caused the RPD to be out for the MS/MSD on this compound.	c. No action taken.
		d. For Method 8270, the QC summary sheet shows Bis(2-ethylhexyl)phthalate, due to the fact that this compound was detected in these samples. The compound was not spiked into the samples.	d. No action taken.
		e. For Method 8080, the percent recoveries for the MSD for dieldrin were low. This caused the RPD to be out for this compound.	e. No action taken.
		f. For Method 6010, percent recoveries for several of the matrix spikes were outside acceptable limits. Silver and Barium recoveries were low but reproducible, most likely due to matrix interference. Calcium, magnesium, and manganese recoveries were outside acceptable limits, because the sample concentration was four times the concentration of the spike levels for these metals.	f. No action taken.
		g. For Method 7000, the MS/MSD samples had percent recoveries that were low but reproducible. There appears to be a strong matrix effect present for these analysis.	g. No action taken.
L1550	LF6DP01 LF6DP02 LF6DP03 LF6DP03TRP LF6DP04 LF6DP03RW	a. The cooler containing samples LF6DP03, LF6DP03TRP, and LF6DP03RW was at 6 degrees C at the time of sample receipt.	a. No action taken.
		b. For Method 8260, the matrix spike recoveries for the LCS for trichloroethene was below acceptable limits. The low recovery also caused the RPD to be out of acceptable limits for this compound.	b. No action taken.

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L1550 (Cont.)		c. For Method 8270, the QC summary sheet shows Bis(2-ethylhexyl)phthalate, due to the fact that this compound was detected in these samples. The compound was not spiked into the samples.	c. No action taken.
		d. For Method 8080, the RPD for Heptachlor is outside normally accepted limits.	d. No action taken.
		e. For Method 6010, the concentration of zinc was above the reporting limit. There were also several other metals that had low level values with qualifiers	e. No action taken.
		f. For Method 6010, percent recoveries for several of the matrix spikes were outside acceptable limits. Silver and barium recoveries were low but reproducible, most likely due to matrix interference. Calcium, magnesium, and sodium recoveries were outside acceptable limits, because the sample concentration was four times the concentration of the spike levels for these metals.	f. No action taken.
		g. For Method 7000, the laboratory control spike samples for antimony was outside acceptable limits.	g. No action taken. The MS/MSD for this metal was within acceptable limits therefore the data met minimum quality control parameters.
		h. For Method 7000, the percent recoveries for dissolved thallium and antimony, and total selenium were outside acceptable limits. The low but reproducible spike recoveries are indicative of a matrix interference.	h. No action taken.
L1707	LF5DP03 LF2DP03 LF5DP01 LF5DP02 LF2DP04 LF2DP03TRP	** No information from lab.	
46501	LF6-WC-S1	a. The sample was analyzed by Method 8260, however, due to laboratory error the holding time was missed by two days.	a. Rust was informed and instructed the lab to proceed.
46612	LF6-MW6 LF6-MW6MS LF6-MW6MSD 010296TRIP	a. For Method 8270, the duplicate control samples (DCSs) and MSD showed recoveries for pyrene above control limits.	a. No concentrations of pyrene

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46612 (Cont.)		b. One of the DCSs showed negligible recoveries for the spiking compounds pentachlorophenol and 4-nitrophenol and the RPD for 2,4-dinitrotoluene outside control limits.	b. The MS/MSD analyzed with these samples showed the compounds within control limits, therefore, no further action was taken.
		c. For Method 6010, sample LF6-MW6 was diluted due to sodium concentrations above calibration range of the method.	c. The reporting limits were raised accordingly.
		d. Sample LF6-MW6 was analyzed for arsenic, lead, and selenium by Methods 7060, 7421, & 7740 respectively. The was diluted due to matrix interferences for lead and selenium. The reporting limit was raised for arsenic due to matrix interferences.	d. The reporting limits were raised accordingly.
		e. The MS/MSD analyzed on sample LF6-MW6 showed percent recovery for arsenic below control limits.	e. The DCSs were in control and therefore no further action was taken.
46634	LF6-MW10 LF6-MW7 LF6-MW9 LF6-MW9DUP 010396TRIP	a. Due to instrument failure the MSD analysis was not acquired by the mass spectrometer.	a. The DCSs were within control limits, therefore, no further action was taken.
		b. Due to limited sample volume, no MS/MSD were prepared with the SVOCs. The DCSs analyzed showed the RPD spiking compound 1,2,4-trichlorobenzene outside control limits.	b. No concentrations of this compound were detected in the samples, therefore, no further action was taken.
		c. Samples LF6-MW10, LF6-MW7, LF6-MW9 and LF6-MW9DUP were analyzed by Method 7421. The samples were diluted due to matrix interferences. The MS/MSD showed no percent recoveries for the spike due to matrix interferences.	c. The reporting limits were raised accordingly. The DCSs were within control limits and, therefore, no further action was taken
		d. Samples LF6-MW10, LF6-MW7, and LF6-MW9 were analyzed by Method 7740 and diluted due to matrix interferences.	d. The reporting limits were raised accordingly.
46642	LF6-MW8 TRIP08	a. Due to instrument failure the MSD analysis was not acquired by the mass spectrometer.	a. The DCSs were within control limits, therefore, no further action was taken.
		b. Due to limited sample volume no MS/MSD were prepared with the SVOCs. The DCSs analyzed showed the RPD spiking compound 1,2,4-trichlorobenzene outside control limits.	b. No concentrations of this compound were detected in the samples and therefore no further action was taken.

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Lab Batch ID	Sample ID	Issue	Resolution
46642 (Cont.)		c. Samples LF6-MW8 were analyzed by Method 7060. The sample was diluted due to matrix interferences. The MS/MSD showed percent recoveries for the spiked arsenic below control limits due to matrix interferences.	c. The reporting limits were raised accordingly. The DCSs were within control limits and therefore no further action was taken.
		d. Sample LF6-MW8 was analyzed by Method 7421. The sample was diluted due to matrix interferences. The MS/MSD showed no percent recoveries for the spiked lead due to matrix interferences.	d. The reporting limits were raised accordingly. The DCSs were within control limits and therefore no further action was taken
		e. Sample LF6-MW8 was analyzed by Method 7740, the reporting limit was raised due to matrix interferences (no dilution required).	e. No action taken.
47029	FCMW-62 FCMW-68	a. Samples FCMW-62 and FCMW-68 were analyzed by Method 8270, insufficient sample volume was received to perform MS/MSD on samples.	a. The DCSs were within control limits.
	012996TRIP	b. Sample FCMW-68 was analyzed by Method 8080 and showed percent recovery for the surrogate dibutyl chlorendate below control limits.	b. The surrogate tetrachloro-m-xylene was within control limits, therefore, no further action was taken.
		c. Sample FCMW-68 was analyzed by Method 8080 insufficient sample volume was received to perform MS/MSD with this sample.	c. The DCSs were within control limits, therefore, no further action was taken.
		d. Samples FCMW-62 and FCMW-68 were analyzed by Method 8150. Insufficient sample volume was received to perform MS/MSD with these samples.	d. The DCSs were within control limits, therefore, no further action was taken.
		e. Sample FCMW-68 was analyzed by Method 6010 and diluted to bring the concentration of sodium within the calibration range of the method.	e. The reporting limits were raised accordingly.
		f. The MS/MSD analyzed with these samples showed the percent recoveries for a non-target analyte by Method 6010 outside control limits due to the sample matrix.	f. The DCSs were within control limits, therefore, no further action was taken.
		g. Samples FCMW-62 and FCMW-68 were analyzed by Methods 7041, 7060, 7421, 7740, and 7841 respectively. All the samples were diluted due to matrix interferences.	g. The reporting limits were raised accordingly.
		h. The MS/MSD for each of the methods listed above for these samples showed percent recoveries and/or RPDs outside control limits due to the sample matrix.	h. The DCSs were within control limits, therefore, no further action was taken.

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Lab Batch ID	Sample ID	Issue	Resolution
47029 (Cont.)		i. Samples FCMW-62 and FCMW-68 were analyzed by Method 300.0, the samples were diluted due to matrix interferences for fluoride and orthophosphate and to bring the concentrations of chloride, nitrate, and sulfate within calibration range of the method.	i. The reporting limits were raised accordingly.
		j. Samples FCMW-62 and FCMW-68 were analyzed by Method 353.2, the samples were diluted to bring the concentrations of nitrite as nitrogen within calibration range of the method.	j. The reporting limits were raised accordingly.
		k. Samples FCMW-62 and FCMW-68 were analyzed by Methods 160.1 and 160.2, respectively The samples were diluted to bring the concentrations of total dissolved solids within calibration range of the method.	k. The reporting limits were raised accordingly.
		l. Sample FCMW-68 was diluted for total suspended solids to prevent the filter from clogging.	l. The reporting limits were raised accordingly.
47036	FCMW-62 FCMW-68 FCMW-76 FCMW-70 FCMW-73 FCMW-74 013096TRIP	a. Sample FCMW-74 was analyzed by Method 8270 and insufficient sample volume was received to perform an MS/MSD with these samples.	a. The DCSs were within control limits.
		b. Sample FCMW-73 was analyzed by Method 8080 and showed the surrogate dibutyl chlorendate below control limits.	b. The surrogate tetrachloro-m-xylene was within control limits, therefore, no further action was taken.
		c. Samples FCMW-76, FCMW-70, FCMW-73, and FCMW-74 were analyzed by Method 8080, however, there was insufficient sample volume to perform an MS/MSD with these samples.	c. The DCSs were within control limits.
		d. Samples FCMW-76, FCMW-70, FCMW-73, and FCMW-74 were analyzed by Method 8150, however, there was insufficient sample volume to perform an MS/MSD with these samples.	d. The DCSs were within control limits.
		e. Samples FCMW-76, FCMW-70, FCMW-73, and FCMW-74 were analyzed by Method 6010 and were diluted to bring the concentration of sodium within the calibration range of the method.	e. The reporting limits were raised accordingly.

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Lab Batch ID	Sample ID		Issue		Resolution
47036 (Cont.)		f.	Samples FCMW-76, FCMW-70, FCMW-73, and FCMW-74 were analyzed by Methods 7041, 7060, 7421, 7740 and 7841, respectively, and were then diluted due to matrix interferences.	f.	The reporting limits were raised accordingly.
		g.	The MS/MSD associated with Methods 6010, 7041, 7060, 7421, 7740 and 7841 and analyzed with samples FCMW-76, FCMW-70, FCMW-73, and FCMW-74 showed several percent recoveries and/or RPDs outside control limits due to the sample matrix.	g.	The DCSs were within control limits, therefore, no further action was taken
		h.	FCMW-76, FCMW-70, FCMW-73, and FCMW-74 were analyzed by Method 300.0 and were diluted due to matrix interferences for fluoride, nitrate, and orthophosphate and to bring the concentrations of chloride and sulfate within calibration range of the method.	h.	The reporting limits were raised accordingly.
		i.	FCMW-76, FCMW-70, FCMW-73, and FCMW-74 were analyzed by Method 310.1 and were diluted to bring the concentrations of alkalinity within calibration range of the method.	i.	The reporting limits were raised accordingly.
		j.	FCMW-76, FCMW-70, FCMW-73, and FCMW-74 were analyzed by Method 353.2 and were diluted to bring the concentrations of nitrate plus nitrite as nitrogen within calibration range of the method.	j.	The reporting limits were raised accordingly.
		k.	FCMW-76, FCMW-70, FCMW-73, and FCMW-74 were analyzed by Method 160.1 and were diluted to bring the concentrations of total dissolved solids within calibration range of the method.	k.	The reporting limits were raised accordingly.
		l.	FCMW-73 and FCMW-74 were analyzed by Method 160.2 and were diluted to prevent the filter from clogging.	l.	The reporting limits were raised accordingly.
47055	LF5-MW2	a.	Sample LF5-MW2 was analyzed by Method 8270 and insufficient sample volume was received to perform an MS/MSD with these samples.	a.	The DCSs were within control limits.
		b.	Sample LF5-MW2 was analyzed by Method 8080 and insufficient sample volume was received to perform an MS/MSD with these samples.	b.	The DCSs were within control limits.
		c.	Sample LF5-MW2 was analyzed by Method 8150 and insufficient sample volume was received to perform an MS/MSD with these samples.	c.	The DCSs were within control limits.

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Lab Batch ID	Sample ID	Issue	Resolution
47055 (Cont.)		d. LF5-MW2 was analyzed by Method 6010 and was diluted to bring the concentrations of sodium within calibration range of the method.	d. The reporting limits were raised accordingly.
		e. Sample LF5-MW2 was diluted due to matrix interferences for lead and thallium.	e. The reporting limits were raised accordingly.
		f. Sample LF5-MW2 had the reporting limits raised for arsenic and selenium due to matrix interferences (no dilutions required).	f. No action taken.
		g. The MS/MSD associated with Methods 6010, 7041, 7060, 7421, 7740 and 7841 and analyzed with sample LF5-MW2 showed several percent recoveries and/or RPDs outside control limits due to the sample matrix.	g. The DCSs were within control limits, therefore, no further action was taken
		h. LF5-MW2 was analyzed by Method 300.0 and were diluted due to matrix interferences for chloride, fluoride, nitrate, and orthophosphate and to bring the concentrations of sulfate within calibration range of the method.	h. The reporting limits were raised accordingly.
		i. LF5-MW2 was analyzed by Method 160.1 and was diluted to bring the concentrations of total dissolved solids within calibration range of the method.	i. The reporting limits were raised accordingly.
47079	LF5-MW4 W5-2 LF6-MW10 LF6-MW9 NUD-1 W6-3 BD-2DUP BD-2	a. Sample LF6-MW10 was analyzed by Method 8270 and showed surrogate terphenyl-d14 below control limits due to matrix interferences.	a. The sample was reanalyzed and showed similar results, therefore, no further action was taken.
		b. The MS/MSD analyzed by Method 8270 with samples LF5-MW4, W6-3, BD-2DUP, and BD-3 showed the RPD for spiking compound 1,2,4-trichlorobenzene and 4-chloro-3-methylphenol outside control limits.	b. The DCSs were within control limits, therefore, no further action was taken.
		c. Sample LF6-MW9 was analyzed by Method 8080 and showed the surrogate dibutyl chlorendate below control limits.	c. The surrogate terachloro-m-xylene was within control limits, therefore, no further action was taken.
		d. Sample BD-3 was analyzed by Method 8080 and showed no surrogate recoveries.	d. It appears not to have been spiked with surrogates, Rust was notified and the results were reported.

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Lab Batch ID	Sample ID	Issue	Resolution
47079 (Cont.)		e. Samples LF5-MW4, W5-2, LF6-MW10, LF6-MW9, NUD-1, W6-3, BD-2, and BD-3 were analyzed by Method 8080 had insufficient sample volume to perform MS/MSD with these samples.	e. The DCSs were within control limits.
		f. Sample BD-2 was analyzed by Method 8150 and showed percent recovery for the surrogate DCAA below control limits due to matrix interferences and a sample prep error.	f. No action taken.
		g. Samples LF5-MW4, W5-2, LF6-MW10, LF6-MW9, NUD-1, W6-3, BD-2, and BD-3 were analyzed by Method 8150 had insufficient sample volume to perform MS/MSD with these samples.	g. The DCSs were within control limits.
		h. Sample W6-3 was analyzed by Method 6010 and diluted to bring the concentration of sodium within the calibration range of the method.	h. The reporting limits were raised accordingly.
		i. The following samples were diluted due to matrix interferences, W6-3 for antimony; LF5-MW4, LF6MW10, LF6-MW9, NUD-1, W6-3, BD2-DUP, BD-2, BD-3 for lead; LF5-MW4, BD2-DUP, BD-2, BD-3 for selenium; NUD-1, W6-3 for thallium.	i. The reporting limits were raised accordingly.
		j. The following samples had their reporting limits raised due to matrix interferences, W6-3, NUD-1, BD2-DUP, BD-2, BD-3 for antimony; LF6-MW9, BD-2, BD-3 for lead; NUD-1, W6-3, BD2-DUP for selenium;LF5-MW4, LF6-MW10, NUD-1, W6-3, BD2-DUP, BD-2, BD-3 for thallium (no dilutions required).	j. No action required.
		k. The MS/MSD associated with all metals methods with these samples showed several percent recoveries and/or RPDs outside control limits due to the sample matrix.	k. The DCSs were within control limits, therefore, no further action was taken.
		l. All samples were analyzed by Method 300.0 and all were diluted due to matrix interferences for fluoride, nitrate, and orthophosphate except sample LF6-MW9.	l. The reporting limits were raised accordingly.
		m. All samples were analyzed by Method 300.0 and all were diluted due to matrix interferences for chloride except sample LF6-MW9 and NUD-1.	m. The reporting limits were raised accordingly.
		n. W5-2 and NUD-1 were analyzed by Method 300.0 and were diluted to bring the concentrations of chloride and within calibration range of the method.	n. The reporting limits were raised accordingly.
		o. W5-2 was analyzed by Method 300.0 and was diluted to bring the concentrations of sulfate within calibration range of the method.	o. The reporting limits were raised accordingly.

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Lab Batch ID	Sample ID	Issue	Resolution
47079 (Cont.)		p. Samples W5-2, LF6-MW10, LF6-MW9, BD2-Dup, and BD2 were analyzed by Method 353.2 and were diluted to bring the concentrations of nitrate plus nitrite as nitrogen within calibration range of the method.	p. The reporting limit was raised accordingly.
		q. All samples showed inconsistent results between Method 353.2 and 300.0, the discrepancies may be due to the analyses being performed from two different bottles.	q. No action was taken.
		r. Sample NUD-1 was analyzed by Method 310.1 and diluted to bring the concentration within the calibration range of the method.	r. The reporting limit was raised accordingly.
		s. For Method 160.1. all the samples were diluted except LF6-MW10 to bring the concentrations of total dissolved solids within calibration range of the method.	s. The reporting limits were raised accordingly.
		t. For Method 160.2, all the samples were diluted except W5-2 to prevent the filter from clogging.	t. The reporting limits were raised accordingly.
47090	W5-2	a. Sample W5-2 was analyzed by Method 6010 and diluted to bring the concentration of sodium within the calibration range of the method.	a. The reporting limits were raised accordingly.
		b. The MS/MSD analyzed by Method 6010, with this sample, showed several percent recoveries for target analytes outside control limits.	b. The DCSs were within control limits for all target analytes, therefore, no further action was taken.
		c. The sample was analyzed by Methods 7041, 7060, 7421, 7740, and 7841 and was diluted due to matrix interferences for antimony, lead, and thallium. The reporting limits for arsenic and selenium were raised due to matrix interferences (no dilution).	c. The reporting limits were raised accordingly.
		d. The MS/MSD for arsenic, lead, and thallium for the sample showed the percent recoveries and/or RPDs outside control limits due to the sample matrix.	d. The DCSs were within control limits, therefore, no further action was taken.
47269	LF6-WC-1	No problems encountered.	
47418	BD-3* BD-3 FCMW-70 FCMW-74 TRIP26	a. Sample BD-3* was analyzed by Method 8080 and insufficient sample volume was received to perform MS/MSD.	a. The DCSs analyzed with this sample were within control limits, therefore, no further action was taken.

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47964	LF2DPW6 LF2DPW7 LF2DPW9 DUPE08 TRIP33	a. Samples LF2DPW6, LF2DPW7, DUPE08 were analyzed by Method 8270 and were analyzed at dilutions due to the presence of non-target compounds.	a. The reporting limits have been raised relative to the dilutions required.
		b. Samples LF2DPW7, DUPE08 were analyzed by Method 8270 and the surrogate terphenyl-d14 were below the Quanterra quality control limits due to matrix interferences.	b. The quality control samples were within acceptable limits, therefore, the data was deemed acceptable for reporting.
		c. Sample LF2DPW6 was analyzed by Method 6010 and the reporting limit was raised due to matrix interferences (no dilution).	c. No action required.
		d. Samples LF2DPW7 and DUPE08 were analyzed by Method 7060 and diluted due to matrix interferences.	d. The reporting limit was raised accordingly.
		e. Sample DUPE08 was and analyzed by Method 7421 and diluted due to matrix interferences.	e. The reporting limit was raised accordingly.
		f. Sample LF2DPW6 and DUPE08 were analyzed by Method 7740 and the reporting limit was raised due to matrix interferences (no dilution).	f. The reporting limits were raised relative to the dilution required.
		g. The percent recoveries for nitrite in the MS/MSD analyzed with samples were below the Quanterra quality control limits due to matrix interferences.	g. The DCS was within acceptable limits, no further action was required.
47983	LF2DPW6 LF2DPW7 LF2DPW9 LF2DPW11 LF2DPW12 LF5DPW4 LF5DPW5 DUPE09 TRIP 34	a. Method 8270 was requested for sample LF2DPW9, due to limited sample volume the lab was unable to analyze.	a. No action required.
		b. For Method 8270, Bis(2-ethylhexyl phthalate and phenol were detected below the reporting limit in the method blank.	b. Sample results were flagged accordingly.

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Lab Batch ID	Sample ID	Issue	Resolution
47983 (Cont.)		c. Samples LF5DPW4, LF5DPW5, and DUPE09 were analyzed by Method 6010, the reporting limit for cadmium was raised due to matrix interferences (no dilution).	c. No action required.
		d. Samples LF5DPW4, LF5DPW5, and DUPE09 were analyzed by Method 7421and were diluted due to matrix interferences.	d. The reporting limits were raised accordingly.
		e. Samples LF5DPW4, LF5DPW5, and DUPE09 were analyzed by Method 7740 and were diluted due to matrix interferences.	e. The reporting limits were raised accordingly.
		f. Sample LF5DPW4 was diluted for Methods 353.2 and 354.1 due to concentrations of target analytes being outside of linear range.	f. The reporting limits were raised accordingly.
48004	LF2DPW9 LF2DPW10 LF2DPW11 LF2DPW12 LF5DPW6 TRIP35	a. Method 8260 analysis for sample LF2DPW11 was canceled because data for this analysis was reported under sample LF2DPW12.	a. No action required.
		b. Sample LF2DPW12 was analyzed by Method 8270 and the reporting limits have been raised because limited volume of sample was available for analysis.	b. No action required.
		c. Sample LF2DPW9 was analyzed by Method 6010 and the sample was diluted due to the presence of sodium outside linear range.	c. The reporting limits for all compounds were raised accordingly.
		d. Sample LF2DPW9 was analyzed by Methods 7740, 7421, 7740 and the sample was diluted due to matrix interference.	d. The reporting limits were raised accordingly.
		e. Sample LF2DPW9 was analyzed by Method 354.1 and the sample was analyzed with a dilution due to the concentration of the target analyte.	e. The reporting limits were raised accordingly.
		f. Samples LF2DPW11 and LF5DPW6 were analyzed by Method 353.2 and were diluted due to the concentrations of the target analyte.	f. The reporting limits have been raised relative to the dilution required.

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48089	LF5SP1 TRIP36	a. Sample LF5SP1 was analyzed by Method 6010 and diluted due the concentration of magnesium.	a. The reporting limits have been raised relative to the dilution required.
		b. Sample LF5SP1 was analyzed by Methods 7421 and 7740 and diluted due to matrix interferences.	b. The reporting limits have been raised relative to the dilutions required.
48459	FCMW-62 FCMW-65 LF6-MW6 LF6-MW8 LF6-MW9 W6-3 DUPE02 DUPE05 TRIP02	a. Methylene chloride and 2-Hexanone were detected in method blanks associated with samples FCMW-62 thru DUPE02 that were analyzed by Method 8260.	a. These compounds were not detected above the reporting limits in these project samples, no further action was required.
		b. Samples LF6-MW6, W6-3, DUPE02 were analyzed by Method 8270 and surrogate recoveries for phenol-d5 were outside control limits, the surrogate recovery for 2-Flourobiphenyl was outside control limits in sample W6-3.	b. The surrogate samples were re-allocated and reanalyzed yielding mixed results, the DCSs and SCSs were within control, a matrix effect was suspected and no further action was taken.
		c. Samples FCMW-62, FCMW-65, and LF6-MW6 were analyzed by Method 7041 and diluted due to matrix interference, reporting limits were raised for antimony in sample W6-3 (no dilution).	c. The reporting limits were raised accordingly.
		d. Percent recoveries of antimony were below control limits in the MS/MSD samples.	d. Recoveries of antimony were within control limits in the DCSs, no further action was taken.
		e. Samples FCMW-62, LF6-MW6, and DUPE02 were analyzed by Method 7060 and diluted due to matrix interference, reporting limits were raised for arsenic in samples LF6-MW8 and W6-3 (no dilution).	e. The reporting limits were raised accordingly.
		f. Percent recoveries of arsenic were below control limits in the MS/MSD samples.	f. Recoveries of arsenic were within control limits in the DCSs, no further action was taken.
		g. Samples FCMW-62, LF6-MW8, W6-3 and DUPE02 were analyzed by Method 7421 and diluted due to matrix interference, reporting limits were raised for arsenic in samples W6-3 and DUPE02 (no dilution).	g. The reporting limits were raised accordingly.

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48459 (Cont.)		h. Percent recoveries of lead were below control limits in the MS/MSD samples.	h. Recoveries of arsenic were within control limits in the DCSs, no further action was taken.
		i. Samples FCMW-62, FCMW-65, and DUPE02 were analyzed by Method 7740 and diluted due to matrix interference, reporting limits were raised for arsenic in sample W6-3 (no dilution) and sample LF6-MW6 was diluted due to concentrations of selenium within calibration range of the method.	i. The reporting limits were raised accordingly.
		j. Percent recoveries of selenium were below control limits in the MS/MSD samples.	j. Recoveries of arsenic were within control limits in the DCSs, no further action was taken.
		k. Sample LF6-MW6 was analyzed by Method 7841 and diluted due to matrix interference, reporting limits were raised for thallium in samples FCMW-62, FCMW-65, LF6-MW8, and DUPE05 (no dilution).	k. The reporting limits were raised accordingly.
		l. Percent recoveries of thallium were below control limits in the MS/MSD samples.	l. Recoveries of thallium were within control limits in the DCSs, no further action was taken.
		m. Samples FCMW-62, FCMW-65, LF6-MW6, W6-3 and DUPE02 were analyzed for ICP metals Method 6010 and were diluted due to concentrations of sodium outside the linear range of the instrument.	m. The reporting limits were raised accordingly.
		n. Percent recoveries of silicon were below control limits in the MS/MSD samples.	n. Silicon is not a target analyte for these samples, no further action was required.
		o. For inorganic analysis, samples were diluted due to matrix interferences and concentrations of target analytes exceeding the linear range of the instrument and some reporting limits were raised due to high concentrations of chemicals (no dilutions).	o. The reporting limits were raised accordingly.
		p. The RPD was above historical limits in the DCSs associated with the TDS analysis, sample was reanalyzed yielding similar results.	p. The average percent recovery was within control limits in the DCSs, no further action was required.
		q. The TSS reporting limits were raised due to matrix interferences.	q. No further action was required.

TABLE 4-1
LABORATORY QUALITY CONTROL ISSUES
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Lab Batch ID	Sample ID	Issue	Resolution
48484	LF5-MW1 FCMW-66 FCMW-68 FCMW-70 FCMW-71 FCMW-73 LF6-MW10 LF6-MW7 LF6-MW8 W6-5 TRIP03	a. Surrogate recoveries for phenol-d5 were below historical control limits.	a. The DCSs and SCSs were within control, a matrix effect was suspected and no further action was taken.
		b. Surrogate recovery of DCAA was above historical control limits. The sample was re-methylated and reanalyzed unsuccessfully due to matrix related problems.	b. The client was notified on May14,1996 and instructed the lab to report the results.
		c. Samples were diluted due to matrix interference and due to concentrations of chemicals exceeding the range of the instrument. The reporting limits were also raised (without dilutions) due to concentrations of target analytes exceeding the instrument.	c. Reporting limits were raised accordingly.
		d. Percent recoveries and/or RPD were outside control limits for some samples.	d. The DCSs were within control limits, therefore, no further action was required.
48511	LF5-MW4 LF5-MW5 W5-2 FCMW-72 FCMW-74 FCMW-76 042496TB	a. For Method 8080, the surrogate recoveries for dibutyl chlorendate were below historical limits in some samples.	a. The secondary surrogate and DCSs were within control limits, no further action was required.
		b. Samples were diluted due to matrix interference and due to concentrations of chemicals exceeding the range of the instrument. The reporting limits were also raised (without dilutions) due to concentrations of target analytes exceeding the instrument.	b. Reporting limits were raised accordingly.
		c. Percent recoveries and/or RPD were outside control limits for some samples.	c. The DCSs were within control limits, therefore, no further action was required.

TABLE 4-1
LABORATORY QUALITY CONTROL ISSUES
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Lab Batch ID	Sample ID	Issue	Resolution
48511 (Cont.)		d. Due to laboratory error the labels on sample LF5-MW4 (Method 405.1) and LF5-MW5 (Method 300.0) were switched.	d. The client was notified May 3, 1996 and instructed the lab to cancel the analysis.
48538	W5-2 FCMW-75	a. For Method 8270 the RPDs were outside control limits in the DCSs for 2-chlorophenol.	a. The samples were reanalyzed yielding similar results indicating a matrix effect. Since 2-chlorophenol was not detected in the project samples no further action was required.
		b. For Method 8270 the RPDs of Acenaphthene, 4-Nitrophenol, and Pentachlorophenol were outside control limits in the MS/MSD.	b. These compounds were within control limits in the DCSs, no further action was required.
		c. For Method 8321, the percent recoveries of Tetryl were below control limits in the DCSs.	c. Control limits for Method 8321 are not yet based on historical data, no further action was required.
		d. Samples were diluted due to matrix interference and due to concentrations of chemicals exceeding the range of the instrument. The reporting limits were also raised (without dilutions) due to concentrations of target analytes exceeding the instrument.	d. Reporting limits were raised accordingly.
		e. Percent recoveries and/or RPD were outside control limits for some samples.	e. The DCSs were within control limits, therefore, no further action was required.
48572	LF6DP8 LF6DP9 LF5-SW1 LF5-SW1MS LF5-SW1MD LF5-SW2 LF6-SW2 FCMW-78	a. The RPD were outside control limits for 2,4-D, 2,4,5-TP(silvex), and 2,4,5-T in the DCSs.	a. Rust was informed and instructed the lab to report the results.
		b. Samples were diluted due to matrix interference and due to concentrations of chemicals exceeding the range of the instrument. The reporting limits were also raised (without dilutions) due to concentrations of target analytes exceeding the instrument.	b. Reporting limits were raised accordingly.
		c. Percent recoveries and/or RPD were outside control limits for some samples.	c. The DCSs were within control limits, therefore, no further action was required.

TABLE 4-1
LABORATORY QUALITY CONTROL ISSUES
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Lab Batch ID	Sample ID	Issue	Resolution
48572 (Cont.)		d. For ICP metals Method 6010, the percent recoveries for aluminum, cadmium, and silicon were below historical control limits in the MS/MSD.	d. Silicon is not a target analyte for these samples and percent recoveries were within control limits in the DCSs, no further action was required.
48598	LF2-SD1 LF5-SD2 LF2-SD2 LF2-SD3 LF2-SD4 LF5-SD1 LF6-SD1 LF6-SD2	a. For Method 8260, the surrogate recoveries of Toluene-d8 were outside historical control limits in some samples.	a. The samples were reanalyzed with similar results indicating a matrix effect, no further action was required.
		b. For Method 8260, acetone was detected below reporting limits in the method blank.	b. Acetone is a common lab contaminant and was not detected in the project samples, no further action was required.
		c. For Method 8080, the surrogate recoveries of Dibutyl Chlorendate were below historical limits in the SCS.	c. Percent recoveries of Tetrachloro-m-xylene and Decachlorobiphenyl and the DCSs were all within control limits, no further action was required.
		d. For Method 8080, several samples were diluted due to high concentrations of non-target analytes.	d. The reporting limits were raised accordingly.
		e. Samples were diluted due to matrix interference and due to concentrations of chemicals exceeding the range of the instrument. The reporting limits were also raised (without dilutions) due to concentrations of target analytes exceeding the instrument.	e. Reporting limits were raised accordingly.
		f. Percent recoveries and/or RPD were outside control limits for some samples.	f. The DCSs were within control limits, therefore, no further action was required.
48673	LF6-SW3 LF6-SD3 LF6-SD4	a. For Method 8260, toluene-d8 surrogate exceeded control limits.	a. Client contacted and accepted data because no target compounds were detected above the reporting limits.
		b. For Method 8270, the extract could not be concentrated to a final volume of 1.0 ml due to the physical characteristics of the sample matrix.	b. Reporting limits have been adjusted relative to the final volume of the extract. Sample surrogates were diluted to less than detectable concentrations in the sample.
		c. For Method 8270, the method blank associated with the soil QC lot 14 MAY 96-N1 had Di-n-butyl phthalate detected above the reporting limit.	c. This is a common lab contaminant and the concentration detected was less than five times the reporting limit, therefore, no further action was required.

TABLE 4-1
LABORATORY QUALITY CONTROL ISSUES
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Lab Batch ID	Sample ID	Issue	Resolution
48673 (Cont.)		d. Samples were diluted due to matrix interference and due to concentrations of chemicals exceeding the range of the instrument. The reporting limits were also raised (without dilutions) due to concentrations of target analytes exceeding the instrument.	d. Reporting limits were raised accordingly.
		e. Percent recoveries and/or RPD were outside control limits for some samples.	e. The DCSs were within control limits, therefore, no further action was required.
48872	BD-2 BD-3 TRIP 17	a. For Method 8150, the DCSs showed no recovery of the surrogate compound, DCAA. The analysis was repeated with similar results.	a. The client was notified and told instructed the lab to report the data.
		b. Samples were diluted due to matrix interference and due to concentrations of chemicals exceeding the range of the instrument. The reporting limits were also raised (without dilutions) due to concentrations of target analytes exceeding the instrument.	b. Reporting limits were raised accordingly.
		c. Percent recoveries and/or RPD were outside control limits for some samples.	c. The DCSs were within control limits, therefore no further action was required.
48900	BD-2 BD-3 TRIP 19	No problems were encountered.	
49094	LF5-MW4 LF5-MW5 TRIP 02	a. For Method 8270, 2-Flourophenol was recovered outside control limits in the SCS associated with this project.	a. All sample surrogate compounds and DCS compounds were in control, no further action was required.
		b. Samples were diluted due to matrix interference and due to concentrations of chemicals exceeding the range of the instrument. The reporting limits were also raised (without dilutions) due to concentrations of target analytes exceeding the instrument.	b. Reporting limits were raised accordingly.

TABLE 4-2
HYDROLOGIC CONTROL LIMITS FOR MATRIX SPIKE AND DUPLICATE CONTROL SAMPLES
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Method	Spiking Compound	LCS Percent Recovery (%)	LCS Relative Percent Difference (%)	MS/MSD Percent Recovery (%)	MS/MSD Relative Percent Difference (%)
160	TDS	75-125	20	NA	NA
160	TSS	75-125	20	NA	NA
300	Chloride	80-120	20		
300	Nitrate	85-120	20	80-125	20
300	Nitrite	85-120	20	80-125	20
300	Sulfate	80-120	20	75-125	20
310.1	Alkalinity	80-120	20	NA	NA
310.1	Bicarbonate	80-120	20	NA	NA
310.1	Carbonate	80-120	20	NA	NA
310.1	Hydroxide	80-120	20	NA	NA
353	Nitrate + Nitrite	80-120	20	75-125	20
405	BOD	80-120	20	NA	NA
410	COD	80-120	20	NA	NA
6010	Aluminum	80-120	20	75-125	20
6010	Aluminum (diss.)	80-120	20	75-125	20
6010	Barium	80-120	20	75-125	20
6010	Barium (diss.)	80-120	20	75-125	20
6010	Beryllium	80-120	20	75-125	20
6010	Beryllium (diss.)	80-120	20	75-125	20
6010	Cadmium	80-120	20	75-125	20
6010	Cadmium (diss.)	80-120	20	75-125	20
6010	Calcium	80-120	20	75-125	20
6010	Calcium (diss.)	80-120	20	75-125	20
6010	Chromium	80-120	20	75-125	20
6010	Chromium (diss.)	80-120	20	75-125	20
6010	Cobalt	80-120	20	75-125	20
6010	Cobalt (diss.)	80-120	20	75-125	20
6010	Copper	80-120	20	75-125	20
6010	Copper (diss.)	80-120	20	75-125	20
6010	Iron	80-120	20	75-125	20
6010	Iron (diss.)	80-120	20	75-125	20
6010	Lead	80-120	20	75-125	20
6010	Magnesium	80-120	20	75-125	20
6010	Magnesium (diss.)	80-120	20	75-125	20
6010	Manganese	80-120	20	75-125	20
6010	Manganese (diss.)	80-120	20	75-125	20
6010	Molybdenum	80-120	20	75-125	20
6010	Nickel	80-120	20	75-125	20
6010	Nickel (diss.)	80-120	20	75-125	20
6010	Potassium	80-120	20	75-125	20
6010	Potassium (diss.)	80-120	20	75-125	20
6010	Silver	80-120	20	75-125	20
6010	Silver (diss.)	80-120	20	75-125	20
6010	Sodium	80-120	20	75-125	20
6010	Sodium (diss.)	80-120	20	75-125	20
6010	Vanadium	80-120	20	75-125	20
6010	Vanadium (diss.)	80-120	20	75-125	20
6010	Zinc	80-120	20	75-125	20
6010	Zinc (diss.)	80-120	20	75-125	20
7041	Antimony	75-125	20	75-125	20
7041	Antimony (diss.)	75-125	20	75-125	20
7060	Arsenic	75-125	20	75-125	20

TABLE 4-2
HYDROLOGIC CONTROL LIMITS FOR MATRIX SPIKE AND DUPLICATE CONTROL SAMPLES
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Method	Spiking Compound	LCS Percent Recovery (%)	LCS Relative Percent Difference (%)	MS/MSD Percent Recovery (%)	MS/MSD Relative Percent Difference (%)
7060	Arsenic (diss.)	75-125	20	75-125	20
7421	Lead	75-125	20	75-125	20
7421	Lead (diss.)	75-125	20	75-125	20
7470	Mercury	80-120	20	75-125	20
7470	Mercury (diss)	80-120	20	75-125	20
7740	Selenium	75-125	20	75-125	20
7740	Selenium (diss.)	75-125	20	75-125	20
7841	Thallium	75-125	20	75-125	20
7841	Thallium (diss.)	75-125	20		
8080	4,4'-DDT	38-127	27	38-127	27
8080	Aldrin	40-120	22	40-120	22
8080	Dieldrin	52-126	18	52-126	18
8080	Endrin	56-121	21	56-121	21
8080	Heptachlor	40-131	20	40-131	20
8080	gamma-BHC	56-123	15	56-123	15
8260	1,1-Dichloroethene	61-145	14	61-145	14
8260	Benzene	76-127	13	76-127	13
8260	Chlorobenzene	75-130	13	75-130	13
8260	Toluene	76-125	13	76-125	13
8260	Trichloroethene	71-120	14	71-120	14
8270	1,2,4-Trichlorobenzene	44-98	28	44-98	28
8270	1,4-Dichlorobenzene	36-97	28	36-97	28
8270	2,4-Dinitrotoluene	39-96	38	39-96	38
8270	2-Chlorophenol	27-123	27	27-123	27
8270	4-Chloro-3-methylphenol	23-97	23	23-97	23
8270	4-Nitrophenol	10-80	50	10-80	50
8270	Acenaphthene	47-118	31	47-118	31
8270	N-Nitrosodipropylamine	41-116	38	41-116	38
8270	Pentachlorophenol	14-103	50	14-103	50
8270	Phenol	12-89	42	12-89	42
8270	Pyrene	52-115	31	52-115	31
9060	Total Organic Carbon	80-120	20	NA	NA

NA - Compounds not analyzed in MS/MSD samples.

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TABLE 4-3
QUANTERRA CONTROL LIMITS FOR MATRIX SPIKE AND DUPLICATE CONTROL SAMPLES
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Method	Spiking Compound	Percent Recovery (%)	Relative Percent Difference (%)
6010	Aluminum	75-125	20
	Antimony	75-125	20
	Arsenic	75-125	20
	Barium	75-125	20
	Beryllium	75-125	20
	Boron	75-125	20
	Cadmium	75-125	20
	Calcium	75-125	20
	Chromium	75-125	20
	Cobalt	75-125	20
	Copper	75-125	20
	Iron	75-125	20
	Lead	75-125	20
	Magnesium	75-125	20
	Manganese	75-125	20
	Nickel	75-125	20
	Potassium	75-125	20
	Silver	75-125	20
	Sodium	75-125	20
	Thallium	75-125	20
	Vanadium	75-125	20
	Zinc	75-125	20
7000	Antimony	75-125	20
	Arsenic	75-125	20
	Lead	75-125	20
	Selenium	75-125	20
	Thallium	75-125	20
	Mercury	75-125	20
413.2	Oil & Grease	70-114	13
8080	4,4'-DDT	25-160	50
	Aldrin	42-122	43
	Dieldrin	36-146	38
	Endrin	42-139	4
	Heptachlor	34-111	31
	gamma-BHC (Lindane)	41-125	12
8260	1,1-Dichloroethene	59-172	22
	1,1-Dichloroethane	70-130	20
	Benzene	60-142	21
	Chlorobenzene	60-133	21
	Toluene	59-139	21
	Trichloroethene	62-137	24

TABLE 4-3
QUANTERRA CONTROL LIMITS FOR MATRIX SPIKE AND DUPLICATE CONTROL SAMPLES
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Method	Spiking Compound	Percent Recovery (%)	Relative Percent Difference (%)
8260 cont.	1,3-dichlorobenzene	70-130	20
	Bromodichloromethane	70-130	20
	Chloroform	70-130	20
	Ethylbenzene	70-130	20
	Hexachlorobutadiene	70-130	20
8270	1,2,4-Trichlorobenzene	38-107	23
	1,4-Dichlorobenzene	28-104	27
	2,4-Dinitrotoluene	28-89	47
	2-Chlorophenol	25-102	50
	4-Chloro-3-methylphenol	26-103	33
	4-Nitrophenol	11-114	50
	Acenaphthene	31-137	19
	N-Nitroso-di-n-propylamine	41-126	38
	Pentachlorophenol	17-109	47
	Phenol	26-90	35
	Pyrene	35-142	36

TABLE 4-4
HYDROLOGIC CONTROL LIMITS FOR SURROGATE SPIKE COMPOUNDS
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Method	Spiking Compound	Lower Recovery Limit (%)	Upper Recovery Limit (%)	Matrix
8080	Decachlorobiphenyl	24	154	Aqueous
8080	Tetrachloro-m-xylene	20	150	Aqueous
8260	4-Bromofluorobenzene	86	115	Aqueous
8260	Dibromofluoromethane	86	118	Aqueous
8260	Toluene-d8	88	110	Aqueous
8270	2,4,6-Tribromophenol	10	123	Aqueous
8270	2-Fluorobiphenyl	43	116	Aqueous
8270	2-Fluorophenol	21	100	Aqueous
8270	Nitrobenzene-d5	36	114	Aqueous
8270	Phenol-d6	10	94	Aqueous
8270	p-Terphenyl-d14	33	141	Aqueous

TABLE 4-5
QUANTERRA CONTROL LIMITS FOR SURROGATE SPIKE COMPOUNDS
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Method	Spiking Compound	Lower Recovery Limit (%)	Upper Recovery Limit (%)	Matrix
8080	Dibutyl chlorendate	56	138	Aqueous
8080	Tetrachloro-m-xylene	54	106	Aqueous
8150	DCAA	45	123	Aqueous
8260	1,2-Dichloroethane-d4	76	114	Aqueous
8260	4-Bromofluorobenzene	86	115	Aqueous
8260	Toluene-d8	88	110	Aqueous
8270	2,4,6-Tribromophenol	10	123	Aqueous
8270	2-Fluorobiphenyl	43	116	Aqueous
8270	2-Fluorophenol	21	100	Aqueous
8270	Nitrobenzene-d5	36	114	Aqueous
8270	Phenol-d5	10	94	Aqueous
8270	Terphenyl-d14	33	141	Aqueous
8080	Dibutyl chlorendate	33	155	Solid
8080	Tetrachloro-m-xylene	42	114	Solid
8150	DCAA	42	125	Solid
8240	1,2-Dichloroethane-d4	79	126	Solid
8240	4-Bromofluorobenzene	74	121	Solid
8240	Toluene-d8	81	117	Solid
8270	2,4,6-Tribromophenol	19	122	Solid
8270	2-Fluorobiphenyl	30	116	Solid
8270	2-Fluorophenol	25	121	Solid
8270	Nitrobenzene-d5	23	120	Solid
8270	Phenol-d5	24	113	Solid
8270	Terphenyl-d14	18	137	Solid

TABLE 5-1
FIELD DUPLICATE AND CORRESPONDING RESULTS FOR GROUNDWATER (MONITORING WELL) SAMPLES
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Parameter	Method	LF6-MW9	LF6-MW9 DUPLICATE	%RPD	LF6-MW9	LF6-MW9 DUPLICATE	%RPD
Total Dissolved Solids (mg/L)	160.1	1160	1180	2			
Total Suspended Solids (mg/L)	160.2	1640	2150	27			
Anions (mg/L)							
Chloride	300.0	63.6	65.8	3			
Fluoride	300.0	1.4	1.4	0			
Nitrate as N	300.0	8	8	0			
Nitrate plus Nitrite as N	353.2	8.2	7.8	5			
Sulfate	300.0	461	465	1			
Alkalinity (mg/L)							
Alkalinity, Bicarb. as CaCO3	310.1	366	376	3			
Alkalinity, Total as CaCO3	310.1	366	376	3			
Total Organic Carbon (mg/L)	415.1	11	2.8	119			
Metals (mg/L)							
Barium	6010	0.037	0.037	0	0.032	0.030	6
Calcium	6010	126	128	2			
Magnesium	6010	49.9	50.7	2			
Manganese	6010	0.012	0.011	9			
Potassium	6010	3.7	3.8	3			
Silica as SiO2	6010	14.3	14.6	2			
Sodium	6010	172	176	2			
Selenium	7740	0.012	0.012	0	0.0092	LT	NC
Volatile Organics (ug/L)							
Chloroform	8260				1.6	2	22
		* Samples collected on April 22, 1996			* Samples collected on January 3, 1996		

TABLE 5-1
FIELD DUPLICATE AND CORRESPONDING RESULTS FOR GROUNDWATER (MONITORING WELL) SAMPLES
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Parameter	Method	LF6NUD-1	LF6NUD-1 DUPLICATE	%RPD	BD-2	BD-2 DUPLICATE	%RPD
Total Dissolved Solids (mg/L)	160.1				6040	5920	2
Total Suspended Solids (mg/L)	160.2				99870	4810	69
Anions (mg/L)							
Chloride	300.0				89.3	87	3
Fluoride	300.0				5.7	5.9	3
Nitrate as N	300.0				14.6	12.3	17
Nitrate plus Nitrite as N	353.2				14.2	13.6	4
Sulfate	300.0				3480	3440	1
Alkalinity (mg/L)							
Alkalinity, Bicarb. as CaCO3	310.1				703	558	23
Alkalinity, Total as CaCO3	310.1				703	558	23
BOD (mg/L)					4.5	LT	NC
Total Organic Carbon (mg/L)	415.1				4.8	4.9	2
Metals (mg/L)							
Aluminum							
Barium	6010	0.018	0.019	5	0.01	0.01	0
Calcium	6010	425	423	0.5	287	302	5
Magnesium	6010	684	687	0.4	238	246	3
Manganese	6010	1.38	1.23	11	0.39	0.4	3
Potassium	6010	35.8	37.5	5	7.3	7.9	8
Silver	6010	0.0023	0.0026	12			
Sodium	6010				1000	1060	6
Antimony	7041	0.012	0.016	29	0.0021	LT	NC
Selenium	7740				0.05	0.06	15
Arsenic					LT	0.0012	NC
Thallium					0.0011	LT	NC
Volatile Organics (ug/L)							
1,2-Dichloroethene (cis)	8260	4.1	4.2	2			
Methylene Chloride	8260				1.2	1.4	15
Acetone	8260				5	4.6	8
Semivolatile Organics (ug/L)							
Bis(2-Ethylhexyl)Phthalate	8270				1.5	LT	NC

TABLE 5-1
FIELD DUPLICATE AND CORRESPONDING RESULTS FOR GROUNDWATER (MONITORING WELL) SAMPLES
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Parameter	Method	FCMW-65	FCMW-65 DUPLICATE	%RPD	LF5DPW5	LF5DPW5 DUPLICATE	%RPD
Total Dissolved Solids (mg/L)		22800	18300	22			
Total Suspended Solids (mg/L)		75.2	134	56			
Anions (mg/L)							
Chloride		346	358	3			
Nitrate as N		160	164	3			
Nitrate plus Nitrite as N		150	150	0			
Sulfate		10700	10900	2			
Alkalinity (mg/L)							
Alkalinity, Bicarb. as CaCO3		506	506	0			
Alkalinity, Total as CaCO3		506	506	0			
COD (mg/L)		22.3	20	11			
Total Organic Carbon (mg/L)		11	11	0			
Metals (mg/L)							
Aluminum		0.1	LT	NC			
Barium		0.01	0.01	0	0.05	0.05	0
Calcium		365	377	3			
Copper					LT	2.5	NC
Iron		0.11	LT	NC			
Magnesium		670	695	4			
Manganese		6.3	6.6	5	2.7	2.5	8
Silica as SiO2		24.9	25.3	2			
Sodium		3430	3570	4			
Antimony		0.0046	LT	NC			
Selenium		0.05	LT	NC			
Arsenic					0.0025	0.0025	0
Thallium		0.002	LT	NC			
Mercury		LT	0.0002	NC			
Volatile Organics (ug/L)							
Methylene Chloride		2	1.3	42			
Acetone		20	LT	NC			
Semivolatile Organics (ug/L)							
Di-n-butyl phthalate					1	LT	NC

TABLE 5-1
FIELD DUPLICATE AND CORRESPONDING RESULTS FOR GROUNDWATER (MONITORING WELL) SAMPLES
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Parameter	Method	LF2DPW6	LF2DPW6 DUPLICATE	%RPD
Metals (mg/L)				
Barium		0.33	0.45	31
Chromium		0.05	0.045	11
Lead		0.0045	0.0025	57
Manganese		0.26	0.57	75
Antimony		0.07	0.07	0
Selenium		0.0029	LT	NC
Arsenic		.0.1	LT	NC
Volatile Organics (ug/L)				
Acetone		11	LT	NC
Benzene		4.3	4.5	5
Chlorobenzene		1.1	1.3	17
Ethylbenzene		5.8	7.6	27
Toluene		3.5	2.6	30
Vinyl Chloride		5.1	4.6	10
Xylenes (total)		8.3	12	36
Semivolatile Organics (ug/L)				
2,4-dimethylphenol		5	LT	NC
4-chloro-3-methylphenol		65	76	16
Naphthalene		130	120	8

LT = Less than the Laboratory Reporting Limit.
NC = Not calculated, compound detected in only one sample.

TABLE 5-2
FIELD DUPLICATE AND CORRESPONDING RESULTS FOR GROUNDWATER (DIRECT PUSH) SAMPLES
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Parameter	Method	LF2DPW6	LF2DPW6DUP	% RPD	LF5DPW5	LF5DPW5DUP	% RPD
Metals (mg/L)							
Antimony	6010	0.074	0.074	0%	LT	LT	
Barium	6010	0.33	0.45	31%	0.051	0.046	10%
Cadmium	6010	LT	LT		LT	LT	
Chromium	6010	0.05	0.045	11%	LT	LT	
Copper	6010	LT	LT		LT	2.5	NC
Manganese	6010	0.26	0.57	75%	2.7	2.5	8%
Arsenic	7060	0.0064	LT	NC	0.0025	0.0025	0%
Lead	7421	0.0045	0.0025	57%	LT	LT	
Mercury	7470	LT	LT		LT	LT	
Selenium	7740	0.0029	LT	NC	LT	LT	
VOCs (ug/L)							
1,1,1-Trichloroethane	8260	LT	LT		LT	LT	
1,1,2,2-Tetrachloroethane	8260	LT	LT		LT	LT	
1,1,2-Trichloroethane	8260	LT	LT		LT	LT	
1,1-Dichloroethane	8260	LT	LT		LT	LT	
1,1-Dichloroethene	8260	LT	LT		LT	LT	
1,2-Dichloroethane	8260	LT	LT		LT	LT	
1,2-Dichloropropane	8260	LT	LT		LT	LT	
2-Butanone (MEK)	8260	LT	LT		LT	LT	
2-Hexanone	8260	LT	LT		LT	LT	
4-Methyl-2-pentanone (MIBK)	8260	LT	LT		LT	LT	
Acetone	8260	11	LT		LT	LT	
Benzene	8260	4.3	4.5	5%	LT	LT	
Bromodichloromethane	8260	LT	LT		LT	LT	
Bromoform	8260	LT	LT		LT	LT	
Bromomethane	8260	LT	LT		LT	LT	
Carbon disulfide	8260	LT	LT		LT	LT	
Carbon tetrachloride	8260	LT	LT		LT	LT	
Chlorobenzene	8260	1.1	1.3	17%	LT	LT	
Chloroethane	8260	LT	LT		LT	LT	
Chloroform	8260	LT	LT		LT	LT	
Chloromethane	8260	LT	LT		LT	LT	
cis-1,2-Dichloroethene	8260	LT	LT		LT	LT	
cis-1,3-Dichloropropene	8260	LT	LT		LT	LT	
Dibromochloromethane	8260	LT	LT		LT	LT	
Ethylbenzene	8260	5.8	7.6	27%	LT	LT	
Methylene chloride	8260	LT	LT		LT	LT	
Styrene	8260	LT	LT		LT	LT	
Tetrachloroethene	8260	LT	LT		LT	LT	

TABLE 5-2
FIELD DUPLICATE AND CORRESPONDING RESULTS FOR GROUNDWATER (DIRECT PUSH) SAMPLES
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Parameter	Method	LF2DPW6	LF2DPW6DUP	% RPD	LF5DPW5	LF5DPW5DUP	% RPD
Toluene	8260	3.5	2.6	30%	LT	LT	
trans-1,2-Dichloroethene	8260	LT	LT		LT	LT	
trans-1,3-Dichloropropene	8260	LT	LT		LT	LT	
Trichloroethene	8260	LT	LT		LT	LT	
Vinyl acetate	8260	LT	LT		LT	LT	
Vinyl chloride	8260	5.1	4.6	10%	LT	LT	
Xylenes (total)	8260	8.3	12	36%	LT	LT	
SVOCs (ug/L)							
1,2,4-Trichlorobenzene	8270	LT	LT		LT	LT	
1,2-Dichlorobenzene	8270	LT	LT		LT	LT	
1,3-Dichlorobenzene	8270	LT	LT		LT	LT	
1,4-Dichlorobenzene	8270	LT	LT		LT	LT	
2,4,5-Trichlorophenol	8270	LT	LT		LT	LT	
2,4,6-Trichlorophenol	8270	LT	LT		LT	LT	
2,4-Dichlorophenol	8270	LT	LT		LT	LT	
2,4-Dimethylphenol	8270	5	LT	NC	LT	LT	
2,4-Dinitrophenol	8270	LT	LT		LT	LT	
2,4-Dinitrotoluene	8270	LT	LT		LT	LT	
2,6-Dinitrotoluene	8270	LT	LT		LT	LT	
2-Chloronaphthalene	8270	LT	LT		LT	LT	
2-Chlorophenol	8270	LT	LT		LT	LT	
2-Methylnaphthalene	8270	LT	LT		LT	LT	
2-Methylphenol	8270	LT	LT		LT	LT	
2-Nitroaniline	8270	LT	LT		LT	LT	
2-Nitrophenol	8270	LT	LT		LT	LT	
3,3'-Dichlorobenzidine	8270	LT	LT		LT	LT	
3-Nitroaniline	8270	LT	LT		LT	LT	
3/4-Methylphenol	8270	LT	LT		LT	LT	
4,6-Dinitro-2-methylphenol	8270	LT	LT		LT	LT	
4-Bromophenyl phenyl ether	8270	LT	LT		LT	LT	
4-Chloro-3-methylphenol	8270	65	76	16%	LT	LT	
4-Chloroaniline	8270	LT	LT		LT	LT	
4-Chlorophenyl phenyl ether	8270	LT	LT		LT	LT	
4-Nitroaniline	8270	LT	LT		LT	LT	
4-Nitrophenol	8270	LT	LT		LT	LT	
Acenaphthene	8270	LT	LT		LT	LT	
Acenaphthylene	8270	LT	LT		LT	LT	
Anthracene	8270	LT	LT		LT	LT	
Benzo(a)anthracene	8270	LT	LT		LT	LT	
Benzo(a)pyrene	8270	LT	LT		LT	LT	

TABLE 5-2
FIELD DUPLICATE AND CORRESPONDING RESULTS FOR GROUNDWATER (DIRECT PUSH) SAMPLES
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Parameter	Method	LF2DPW6	LF2DPW6DUP	% RPD	LF5DPW5	LF5DPW5DUP	% RPD
Benzo(b)fluoranthene	8270	LT	LT		LT	LT	
Benzo(g,h,i)perylene	8270	LT	LT		LT	LT	
Benzo(k)fluoranthene	8270	LT	LT		LT	LT	
Benzoic acid	8270	LT	LT		LT	LT	
Benzyl alcohol	8270	LT	LT		LT	LT	
bis(2-Chloroethoxy)methane	8270	LT	LT		LT	LT	
bis(2-Chloroethyl) ether	8270	LT	LT		LT	LT	
bis(2-Chloroisopropyl)ether	8270	LT	LT		LT	LT	
bis(2-Ethylhexyl)phthalate	8270	LT	LT		8	LT	NC
Butyl benzyl phthalate	8270	LT	LT		LT	LT	
Chrysene	8270	LT	LT		LT	LT	
Di-n-butyl phthalate	8270	LT	LT		1	LT	NC
Di-n-octyl phthalate	8270	LT	LT		LT	LT	
Dibenz(a,h)anthracene	8270	LT	LT		LT	LT	
Dibenzofuran	8270	LT	LT		LT	LT	
Diethyl phthalate	8270	LT	LT		LT	LT	
Dimethyl phthalate	8270	LT	LT		LT	LT	
Fluoranthene	8270	LT	LT		LT	LT	
Fluorene	8270	LT	LT		LT	LT	
Hexachlorobenzene	8270	LT	LT		LT	LT	
Hexachlorobutadiene	8270	LT	LT		LT	LT	
Hexachlorocyclopentadiene	8270	LT	LT		LT	LT	
Hexachloroethane	8270	LT	LT		LT	LT	
Indeno(1,2,3-cd)pyrene	8270	LT	LT		LT	LT	
Isophorone	8270	LT	LT		LT	LT	
N-Nitroso-di-n-propylamine	8270	LT	LT		LT	LT	
N-Nitrosodimethylamine	8270	LT	LT		LT	LT	
N-Nitrosodiphenylamine	8270	LT	LT		LT	LT	
Naphthalene	8270	130	120	8%	LT	LT	
Nitrobenzene	8270	LT	LT		LT	LT	
Pentachlorophenol	8270	LT	LT		LT	LT	
Phenanthrene	8270	LT	LT		LT	LT	
Phenol	8270	LT	LT		LT	LT	
Pyrene	8270	LT	LT		LT	LT	
Pyridine	8270	LT	LT		LT	LT	

LT = Less than the Laboratory Reporting Limit.
NC = Not calculated, compound detected in only one sample.

TABLE 5-3
MATRIX SPIKE AND MATRIX SPIKE DUPLICATE ANALYSIS
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Method	Parameter	Sample Result	MS Result	MSD Result	Spike Concentration	Percent Recovery MS	Percent Recovery MSD	RPD (%)
LF2FCMW81	Volatile Organic Compounds (ug/L) 8260	Benzene	LT	9.7	9.1	10	97	91	6
		Chlorobenzene	LT	8.8	8.6	10	88	86	2
		1,1-Dichloroethene	LT	9.7	9.4	10	97	94	3
		Toluene	LT	10	9.4	10	100	94	6
		Trichloroethene	LT	10	8.9	10	100	89	12
LF2FCMW81	Metals (mg/L) 6010 and 7000	Aluminum	LT	1.75	1.68	2	88	84	5
		Barium	0.0051	0.0433	0.0391	2	2	2	0
		Beryllium	LT	0.0447	0.0432	0.05	89	86	3
		Cadmium	LT	0.0393	0.0381	0.05	79	76	4
		Calcium	385	399	398	25	57	53	7
		Chromium	LT	0.191	0.189	0.2	95	94	1
		Cobalt	LT	0.48	0.457	0.5	96	91	5
		Copper	LT	0.205	0.199	0.25	82	79	4
		Iron	LT	0.884	0.855	1	88	86	2
		Manganese	1.02	1.6	1.52	0.5	116	100	15
		Nickel	LT	0.488	0.484	0.5	97	96	1
		Potassium	18.8	49.9	49.3	25	124	122	2
		Silver	0.003	0.0242	0.0208	0.05	42	36	15
		Vanadium	LT	0.487	0.478	0.5	97	95	2
		Zinc	LT	0.476	0.468	0.5	95	94	1
		Antimony	0.021	0.0308	0.0334	0.02	49	62	23
		Arsenic	LT	LT	LT	0.04	0	0	NA
		Lead	LT	0.02	0.021	0.02	100	105	5
		Mercury	LT	0.002	0.0019	0.002	100	95	5
		Selenium	LT	0.0115	LT	0.01	114	0	NA
		Thallium	LT	0.0223	0.0265	0.05	44	53	19
LF2FCMW81	Semivolatile Organic Compounds (ug/L) 8270	Acenaphthene	LT	32	32	50	64	64	0
		4-Chloro-3-methylphenol	LT	49	53	100	49	53	8
		2-Chlorophenol	LT	39	53	100	39	53	30
		1,4-Dichlorobenzene	LT	32	30	50	64	60	6
		2,4-Dinitrotoluene	LT	35	34	50	70	68	3
		N-Nitroso-di-n-propylamine	LT	39	36	50	78	72	8
		4-Nitrophenol	LT	30	24	100	30	24	22
		Phenol	LT	43	52	100	43	52	19
		Pyrene	LT	12	28	50	24	56	80
		1,2,4-Trichlorobenzene	LT	32	29	50	64	58	10

TABLE 5-3
MATRIX SPIKE AND MATRIX SPIKE DUPLICATE ANALYSIS
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Method	Parameter	Sample Result	MS Result	MSD Result	Spike Concentration	Percent Recovery MS	Percent Recovery MSD	RPD (%)
LF2FCMW81	Pesticide/PCBs (ug/L)	4,4'-DDT	LT	0.482	0.464	0.2	94	91	300
	8080	Aldrin	LT	0.193	0.181	0.2	92	86	7
		Dieldrin	LT	0.514	0.517	0.5	101	103	2
		Endrin	LT	0.513	0.499	0.5	101	98	3
		Heptachlor	LT	0.176	0.173	0.2	83	82	1
LF2FCMW81	NO2/NO3 (mg/L)	Nitrate	LT	2.63	2.59	2.5	105	103	2
	300	Nitrite	LT	2.62	2.57	2.5	105	104	1
LF6A	Volatile Organic	Benzene	LT	11	10	10	110	100	10
	Compounds (ug/L)	Chlorobenzene	LT	11	10	10	110	100	10
	8260	1,1-Dichloroethene	LT	12	10	10	120	100	18
		Toluene	LT	12	11	10	120	110	9
		Trichloroethene	9.4	23	20	10	136	106	25
LF6A	Semivolatile Organic	Acenaphthene	LT	NR	NR	50	108	98	10
	Compounds (ug/L)	4-Chloro-3-methylphenol	LT	NR	NR	100	79	76	4
	8270	2-Chlorophenol	LT	NR	NR	100	72	62	15
		1,4-Dichlorobenzene	LT	NR	NR	50	82	74	10
		2,4-Dinitrotoluene	LT	NR	NR	50	78	78	0
		N-Nitroso-di-n-propylamine	LT	NR	NR	50	96	90	6
		4-Nitrophenol	LT	NR	NR	100	66	72	9
		Pentachlorophenol	LT	NR	NR	100	62	60	3
		Phenol	LT	NR	NR	100	67	56	18
		Pyrene	LT	NR	NR	50	92	104	12
		1,2,4-Trichlorobenzene	LT	NR	NR	50	84	80	5
LF6A	Pesticide/PCBs (ug/L)	4,4'-DDT	LT	0.56	0.483	0.5	110	95	15
	8080	Aldrin	LT	0.206	0.201	0.2	98	96	2
		Dieldrin	LT	0.492	0.484	0.5	96	95	1
		Endrin	LT	0.486	0.504	0.5	95	99	4
		Heptachlor	LT	0.184	0.206	0.2	87	98	12
		gamma-BHC	LT	0.142	0.141	0.2	66	66	0
LF6A	Metals (mg/L)	Aluminum	LT	1.72	1.68	2	86	84	2
	6010 and 7000	Barium	0.115	1.61	1.63	2	75	76	1
		Beryllium	LT	0.0476	0.0467	0.05	95	93	2
		Cadmium	LT	0.0482	0.0442	0.05	96	88	9
		Calcium	147	172	165	25	99	72	32
		Chromium	LT	0.205	0.2	0.2	102	100	2

TABLE 5-3
MATRIX SPIKE AND MATRIX SPIKE DUPLICATE ANALYSIS
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Method	Parameter	Sample Result	MS Result	MSD Result	Spike Concentration	Percent Recovery MS	Percent Recovery MSD	RPD (%)
		Cobalt	LT	0.498	0.504	0.5	99	100	1
		Copper	LT	0.238	0.233	0.25	95	93	2
		Iron	3.54	4.51	4.37	1	97	83	16
		Magnesium	63.4	87.4	84.5	25	96	84	13
		Manganese	1.33	1.81	1.76	0.5	96	85	12
		Nickel	0.01	0.523	0.518	0.5	103	102	1
		Potassium	18	44.3	42.7	25	105	99	6
		Silver	LT	0.0266	0.0275	0.05	52	54	4
		Vanadium	LT	0.521	0.509	0.5	104	102	2
		Zinc	0.0399	0.569	0.562	0.5	106	105	1
		Antimony	LT	0.0185	0.0214	0.02	92	107	15
		Arsenic	LT	0.0401	0.0388	0.04	100	97	3
		Lead	LT	0.0187	0.0185	0.02	93	92	1
		Mercury		0.0021	0.002	0.002	105	100	5
		Selenium	LT	0.0115	0.0114	0.01	114	113	1
		Thallium	LT	0.0318	0.0325	0.05	63	65	3
LF6A	NO2/NO3 (mg/L) 300	Nitrate	5.34	7.34	7.26	1.5	133	128	4
		Nitrite	LT	23.3	23.7	25	93	95	2
LF5-SW1MS	TDS (mg/L) 160.1	Total Dissolved Solids	3590	4030	4090	667	66	75	13
LF5-SW1MS	Anions (mg/L) 300.0	Chloride	83.7	311	314	250	91	92	1
		Fluoride	LT	49.3	50.3	50	99	101	2
		Nitrate as N	27.7	71.5	72.5	50	88	90	2
		Orthophosphate as P	LT	50.2	52.7	50	100	105	5
		Sulfate	1990	4700	4680	2500	108	108	1
LF5-SW1MS	Alkalinity, Total as CaCO3 (mg/L) 310.1	Alkalinity, Total	286	673	675	500	77	78	1
LF5-SW1MS	NO3/NO2 353.2	Nitrate plus Nitrite as N	27.7	86.8	87.4	60	99	100	1
LF5-SW1MS	COD (mg/L) 410.4	Chemical Oxygen Demand	LT	206	205	200	103	103	0

TABLE 5-3
MATRIX SPIKE AND MATRIX SPIKE DUPLICATE ANALYSIS
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Method	Parameter	Sample Result	MS Result	MSD Result	Spike Concentration	Percent Recovery MS	Percent Recovery MSD	RPD (%)
LF5-SW1MS	TOC (mg/L) 415.1	Total Organic Carbon	6.6	32	32	25	102	102	0
LF5-SW1MS	Metals (mg/L) 6010 and 7000	Antimony	LT	0.55	0.51	0.5	110	102	8
		Barium	0.04	2.3	2.1	2	113	103	9
		Cadmium	LT	0.06	0.06	0.05	120	120	0
		Chromium	LT	0.2	0.18	0.2	100	90	11
		Manganese	0.03	0.58	0.55	0.5	110	104	6
		Silver	LT	0.06	0.05	0.05	120	100	18
		Arsenic	LT	0.01	0.01	0.02	50	50	0
		Lead	LT	0.01	0	0.02	50	0	200
		Mercury	LT	0.001	0.001	0.001	100	100	0
		Selenium	0.064	0.055	0.055	0.02	0	0	NA
LF5-SW1MS	Pesticide/PCBs (ug/L) 8080	4,4'-DDT	LT	0.52	0.52	0.48	108	108	0
		Aldrin	LT	0.18	0.18	0.19	95	95	0
		Dieldrin	LT	0.45	0.46	0.48	94	96	2
		Endrin	LT	0.5	0.51	0.48	104	106	2
		Heptachlor	LT	0.19	0.19	0.19	100	100	0
		gamma-BHC (Lindane)	LT	0.18	0.18	0.19	95	95	0
LF5-SW1MS	Herbicides (ug/L) 8150	2,4,5-T	LT	0.75	0.92	1	75	92	20
		2,4,5-TP (Silvex)	LT	0.71	0.84	1	71	84	17
		2,4-D	LT	3.1	3.6	5.2	60	69	15
LF5-SW1MS	Volatile Organic Compounds (ug/L) 8260	1,1-Dichloroethene	LT	51	48	50	102	96	6
		Benzene	LT	48	47	50	96	94	2
		Chlorobenzene	LT	47	46	50	94	92	2
		Toluene	LT	47	45	50	94	90	4
		Trichloroethene	LT	49	47	50	98	94	4
LF5-SW1MS	Semivolatile Organic Compounds (ug/L) 8270	1,2,4-Trichlorobenzene	LT	29	30	48	60	63	3
		1,4-Dichlorobenzene	LT	33	31	48	69	65	6
		2,4-Dinitrotoluene	LT	42	42	48	88	88	0
		2-Chlorophenol	LT	75	76	97	77	78	1
		4-Chloro-3-methylphenol	LT	77	80	97	79	82	4
		4-Nitrophenol	LT	77	70	97	79	72	10
		Acenaphthene	LT	33	35	48	69	73	6
		N-Nitroso-di-n-propylamine	LT	39	40	48	81	83	3
		Pentachlorophenol	LT	86	80	97	89	82	7

TABLE 5-3
MATRIX SPIKE AND MATRIX SPIKE DUPLICATE ANALYSIS
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Method	Parameter	Sample Result	MS Result	MSD Result	Spike Concentration	Percent Recovery MS	Percent Recovery MSD	RPD (%)
		Phenol	LT	76	73	97	78	75	4
		Pyrene	LT	41	42	48	85	88	2
LF6-MW6	Metals (mg/L) 6010 and 7000	Barium	LT	9.7	9.8	10	97	98	1
		Cadmium	LT	0.25	0.22	0.25	100	88	13
		Chromium	LT	0.94	0.94	1	94	94	0
		Silver	LT	0.24	0.25	0.25	96	100	4
		Arsenic	LT	0.01	0.01	0.02	50	50	0
		Lead	LT	LT	LT	0.02	NA	NA	NA
		Mercury	LT	0.001	0.0011	0.001	100	110	10
		Selenium	LT	0.05	0.04	0.02	250	200	22
LF6-MW6	Volatile Organic Compounds (ug/L) 8260	1,1-Dichloroethene	LT	44	47	50	88	94	7
		Benzene	LT	46	50	50	92	100	8
		Chlorobenzene	LT	45	48	50	90	96	6
		Toluene	LT	45	47	50	90	94	4
		Trichloroethene	LT	45	47	50	90	94	4
LF6-MW6	Semivolatile Organic Compounds (ug/L) 8270	1,2,4-Trichlorobenzene	LT	38	36	48	79	75	5
		1,4-Dichlorobenzene	LT	42	39	48	88	81	7
		2,4-Dinitrotoluene	LT	58	52	48	121	108	11
		2-Chlorophenol	LT	92	82	97	95	85	11
		4-Chloro-3-Methylphenol	LT	73	72	97	75	74	1
		4-Nitrophenol	LT	88	75	97	91	77	16
		Acenaphthene	LT	44	42	48	92	88	5
		N-Nitroso-di-n-Propylamine	LT	36	37	48	75	77	3
		Pentachlorophenol	LT	97	89	97	100	92	9
		Phenol	LT	84	78	97	87	80	7
		Pyrene	LT	55	54	48	115	113	2
LF5-MW1	Metals (mg/L) 6010 and 7000	Aluminum (diss.)	LT	NR	NR	2	85	85	0
		Barium (diss.)	0.0096	NR	NR	2	3	3	0
		Beryllium (diss.)	LT	NR	NR	0.05	91	91	0
		Cadmium (diss.)	LT	NR	NR	0.05	90	94	4
		Calcium (diss.)	368	NR	NR	25	15	13	14
		Chromium (diss.)	LT	NR	NR	0.2	94	94	0
		Cobalt (diss.)	LT	NR	NR	0.5	94	93	1
		Copper (diss.)	LT	NR	NR	0.25	110	97	13
		Iron (diss.)	LT	NR	NR	1	95	94	1
		Magnesium (diss.)	913	NR	NR	25	-108	-113	-5

TABLE 5-3
MATRIX SPIKE AND MATRIX SPIKE DUPLICATE ANALYSIS
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Method	Parameter	Sample Result	MS Result	MSD Result	Spike Concentration	Percent Recovery MS	Percent Recovery MSD	RPD (%)
		Manganese (diss.)	0.417	NR	NR	0.5	94	93	1
		Nickel (diss.)	0.0208	NR	NR	0.5	93	94	1
		Potassium (diss.)	28.3	NR	NR	25	107	109	2
		Sodium (diss.)	2380	NR	NR	25	NC	NC	NC
		Vanadium (diss.)	LT	NR	NR	0.5	100	100	0
		Zinc (diss.)	LT	NR	NR	0.5	97	94	3
		Antimony (diss.)	0.0026	NR	NR	0.02	82	74	10
		Arsenic (diss.)	LT	NR	NR	0.04	24	28	15
		Lead (diss.)	LT	NR	NR	0.02	56	59	5
		Selenium (diss.)	0.15	NR	NR	0.01	80	120	40
		Thallium (diss.)	LT	NR	NR	0.05	51	53	4
LF5-MW1	Volatile Organic Compounds (ug/L) 8260	1,1-Dichloroethene	LT	NR	NR	10	82	79	4
		Benzene	LT	NR	NR	10	98	90	9
		Chlorobenzene	LT	NR	NR	10	100	100	0
		Toluene	LT	NR	NR	10	100	95	5
		Trichloroethene	LT	NR	NR	10	110	95	15
LF5-MW1	Semivolatile Organic Compounds (ug/L) 8270	1,2,4-Trichlorobenzene	LT	NR	NR	50	76	62	20
		1,4-Dichlorobenzene	LT	NR	NR	50	74	62	18
		2,4-Dinitrotoluene	LT	NR	NR	50	82	76	8
		2-Chlorophenol	LT	NR	NR	100	74	72	3
		4-Chloro-3-methylphenol	LT	NR	NR	100	83	84	1
		4-Nitrophenol	LT	NR	NR	100	41	55	29
		Acenaphthene	LT	NR	NR	50	90	92	2
		N-Nitrosodipropylamine	LT	NR	NR	50	96	92	4
		Pentachlorophenol	LT	NR	NR	100	86	94	9
		Phenol	LT	NR	NR	100	57	58	2
		Pyrene	LT	NR	NR	50	104	96	8

LT - Less than the laboratory reporting limit
NA - Not applicable
NC - Not calculated
NR - Not reported

TABLE 5-4
TRIP BLANK DETECTIONS
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Sample Date	Method	Analyte	Result	Units	Flag
TB01	27-Nov-95	8260	Bromodichloromethane	7	ug/L	
		8260	Chloroform	34	ug/L	
		8260	Methylene chloride	1.3	ug/L	J
121895 TB1	18-Dec-95	8260	Toluene	5.4	ug/L	
010396TRIP	03-Jan-96	8260	Acetone	7.2	ug/L	JB
	03-Jan-96	8260	Methylene Chloride	2.1	ug/L	JB
TRIP08	04-Jan-96	8260	Acetone	4.2	ug/L	JB
	04-Jan-96	8260	Methylene Chloride	1.6	ug/L	JB
012996TRIP	29-Jan-96	8260	Acetone	7.9	ug/L	J
	29-Jan-96	8260	Methylene Chloride	2.6	ug/L	J
013096TRIP	30-Jan-96	8260	Methylene Chloride	1.2	ug/L	J
TRIP12	31-Jan-96	8260	Methylene Chloride	10	ug/L	
020196TRIP	01-Feb-96	8260	Acetone	3.4	ug/L	JB
	01-Feb-96	8260	Methylene Chloride	2.2	ug/L	J
TRIP26	21-Feb-96	8260	Acetone	2.5	ug/L	J
	21-Feb-96	8260	Methylene Chloride	4.6	ug/L	J
TRIP34	22-Mar-96	8260	Acetone	14	ug/L	
38	25-Mar-96	8260	Methylene chloride	1.6	ug/L	J
TRIP35	25-Mar-96	8260	Methylene chloride	1.6	ug/L	J
TRIP03	23-Apr-96	8260	Methylene chloride	1.3	ug/L	J
042496TB	24-Apr-96	8260	Methylene chloride	1.3	ug/L	J
TRIP38	25-Apr-96	8260	Methylene chloride	1.2	ug/L	J
TRIP06	26-Apr-96	8260	Methylene chloride	1.4	ug/L	J
TRIP11	01-May-96	8260	Methylene chloride	2.7	ug/L	J
TRIP02	17-May-96	8260	Acetone	5.0	ug/L	JB
	17-May-96	8260	Methylene chloride	1.2	ug/L	J

Note: All trip blanks were analyzed for VOCs using Method 8260.

B = Analyte detected in method blank.
J = Estimated concentration or result is detected below the Practical Quantitation Limit.

TABLE 5-5
RINSATE BLANK DETECTIONS
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Sample Date	Method	Analyte	Result	Units
LF5RW	05/03/95	6010	Calcium (diss.)	.11	mg/L
		6010	Cobalt (diss.)	.0078	mg/L
		6010	Magnesium (diss.)	.013	mg/L
		6010	Manganese (diss.)	.0018	mg/L
		6010	Sodium (diss.)	.37	mg/L
LF6DP05RW	05/19/95	6010	Barium	.0255	mg/L
		6010	Barium (diss.)	.0229	mg/L
		6010	Zinc	.142	mg/L
		6010	Zinc (diss.)	.0999	mg/L
		7041	Antimony (diss.)	.0013	mg/L
		7421	Lead	.0011	mg/L
		7841	Thallium	.001	mg/L
		7841	Thallium (diss.)	.001	mg/L
		8270	Bis(2-ethylhexyl) phthalate	.1	ug/L
		8270	Di-n-butyl phthalate	63	ug/L

TABLE 5-6
DETECTED COMPOUNDS IN SOURCE WATER
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

		Concentration			
		Location			
	Method Number	Bldg. 1304		Bldg. 1399	
		GPA-SW		FTA-SW	
Organic Compounds (ug/l)		(1/18/95)		(4/24/95)	
Bromodichloromethane	8260	4	J	6.3	
Bromomethane	8260	--		2.8	J
Chloroform	8260	33		--	
Dibromochloromethane	8260	--		1.3	J
Methylene Chloride	8260	33		1.5	J
Metals (mg/l)					
Barium	6010	0.05		0.033	
Calcium	6010	13.7		25.1	
Copper	6010	0.04		--	
Iron	6010	13.6		--	
Magnesium	6010	2.7		5.2	
Manganese	6010	0.07		--	
Potassium	6010	1.8		1.1	J
Selenium	7740	--		0.0011	J
Sodium	6010	8.6		11.6	
Zinc	6010	0.07		--	
		1304-SW1		1399-SW1	
Organic Compounds (ug/l)		(5/16/96)		(5/16/96)	
Dibromochloromethane	8260	3.8	J	--	
Chloroform	8260	18		35	
Bromodichloromethane	8260	11		4.7	J
Metals (dissolved) (mg/l)					
Silica as Si02	6010	7.6		4.2	
Magnesium	6010	15.5		2.6	
Potassium	6010	2.5	J	0.86	J
Sodium	6010	22.7		10.8	
Barium	6010	0.056		0.023	
Calcium	6010	55.2		13.3	
Antimony	6010	0.0025	J	0.0035	J
Selenium	6010	0.0028	J	0.0029	J
		1304-SW2		1399-SW2	
Organic Compounds (ug/l)		(8/7/96)		(8/7/96)	
Bromodichloromethane	8260	4.4	J	3.7	J
Chloroform	8260	30		51	
Metals (dissolved) (mg/l)					
Lead	7421	0.0024	J	--	
Aluminum	6010	0.069	J	0.067	J
Barium	6010	0.018		0.023	
Calcium	6010	10.3		9.8	
Magnesium	6010	1.6		1.5	
Manganese	6010	0.0072	J	0.0054	J
Nickel	6010	0.017	J	0.017	J
Potassium	6010	0.99	J	--	
Sodium	6010	10.6		9.8	
Zinc	6010	--		0.0071	J
Inorganic Compounds (mg/l)					
Total Organic Carbon	415.1	1.3		1.3	
Alkalinity, Bicarb. as $CaCO_3$ at pH 4.5	310.1	34.6		30.8	
Alkalinity, Total as $CaCO_3$ at pH 4.5	310.1	34.6		30.8	
Chloride	300.0	3.4		--	
Fluoride	300.0	0.80		--	
Nitrate as N	300.0	0.18		0.12	
Sulfate	300.0	10.8		12.7	
Total Dissolved Solids	160.1	66.0		56.0	

J - Estimated Concentration or Result is Detected Below the Practical Quantitation Limit.
-- Not Detected.

TABLE 5-7
METHOD BLANK DETECTIONS AND ASSOCIATED SAMPLE RESULTS
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Method	Analyte		Result	Units	Qualifier	Blank Result	Lab
LF6DP02	6010	Barium		.135	mg/L		.0012	HY
LF6DP03	6010	Barium		.0799	mg/L		.0012	HY
LF6DP04	6010	Barium		.0406	mg/L		.0012	HY
LF6NUD-1	6010	Calcium (diss.)		425	mg/L		.097	HY
LF6NUD-1DUP	6010	Calcium (diss.)		423	mg/L		.097	HY
								HY
LF6W6-3	6010	Calcium (diss.)		394	mg/L		.097	HY
LF6-A	6010	Calcium (diss.)		147	mg/L		.097	HY
								HY
LF2FCMW75	6010	Calcium (diss.)		491	mg/L		.097	HY
LF2FCMW76	6010	Calcium (diss.)		422	mg/L		.097	HY
LF2FCMW81	6010	Calcium (diss.)		385	mg/L		.097	HY
LF2FCMW73	6010	Calcium (diss.)		407	mg/L		.098	HY
LF2FCMW74	6010	Calcium (diss.)		423	mg/L		.098	HY
LF6DP04	6010	Sodium		151	mg/L		.54	HY
LF2FCMW73	6010	Sodium (diss.)		3760	mg/L		.038	HY
LF2FCMW74	6010	Sodium (diss.)		9740	mg/L		.038	HY
LF6DP02	6010	Zinc		.0668	mg/L	U0	.025	HY
LF6DP03	6010	Zinc		.0436	mg/L	U0	.025	HY
LF6DP04	6010	Zinc		.015	mg/L	U0	.025	HY
LF2DP03	7421	Lead	LT	(0.0045)	mg/L		.0011	HY
LF5DPW3	7421	Lead		.0009	mg/L	U0	.0011	HY
FCMW82	8270	Bis(2-ethylhexyl) phthalate		9	ug/L	U0	11	HY
FCMW84	8270	Bis(2-ethylhexyl) phthalate		12	ug/L	U0	11	HY
LF5-MW2	8270	Bis(2-ethylhexyl) phthalate		24	ug/L	U0	11	HY
LF5-MW4	8270	Bis(2-ethylhexyl) phthalate		28	ug/L	U0	11	HY
LF5-MW5	8270	Bis(2-ethylhexyl) phthalate	LT	(3.6)	ug/L		11	HY
LF5RW	8270	Bis(2-ethylhexyl) phthalate	LT	(3.6)	ug/L		11	HY
W5-2	8270	Bis(2-ethylhexyl) phthalate	LT	(3.6)	ug/L		11	HY
LF2FCMW76	8270	Bis(2-ethylhexyl) phthalate		4	ug/L	U0	5	HY
LF2FCMW81	8270	Bis(2-ethylhexyl) phthalate		5	ug/L	U0	5	HY
LF2FCMW73	8270	Bis(2-ethylhexyl) phthalate		5	ug/L	U0	5	HY
LF2FCMW74	8270	Bis(2-ethylhexyl) phthalate		98	ug/L		5	HY
LF2FCMW75	8270	Bis(2-ethylhexyl) phthalate		12	ug/L	U0	5	HY
LF6DP02	8270	Bis(2-ethylhexyl) phthalate		.1	ug/L	U0	76	HY
LF6DP03	8270	Bis(2-ethylhexyl) phthalate		.1	ug/L	U0	76	HY
LF6DP04	8270	Bis(2-ethylhexyl) phthalate		.1	ug/L	U0	76	HY
LF2DP03	8270	Bis(2-ethylhexyl) phthalate	LT	(3.6)	ug/L		7	HY
LF2DP04	8270	Bis(2-ethylhexyl) phthalate	LT	(3.6)	ug/L		7	HY
LF5DPW1	8270	Bis(2-ethylhexyl) phthalate	LT	(3.6)	ug/L		7	HY
LF5DPW2	8270	Bis(2-ethylhexyl) phthalate		96	ug/L		7	HY
LF5DPW3	8270	Bis(2-ethylhexyl) phthalate	LT	(3.6)	ug/L		7	HY
LF2DP03	8270	Di-n-butyl phthalate	LT	(5.2)	ug/L		10	HY
LF2DP04	8270	Di-n-butyl phthalate		6	ug/L	U0	10	HY
LF5DPW1	8270	Di-n-butyl phthalate		13	ug/L	U0	10	HY

TABLE 5-7
METHOD BLANK DETECTIONS AND ASSOCIATED SAMPLE RESULTS
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Method	Analyte		Result	Units	Qualifier	Blank Result	Lab
LF5DPW2	8270	Di-n-butyl phthalate		40	ug/L	U0	10	HY
LF5DPW3	8270	Di-n-butyl phthalate	LT	(5.2)	ug/L		10	HY
FCMW-62	8260	2-Hexanone	LT	(10)	ug/L		7.8	QT
FCMW-65	8260	2-Hexanone	LT	(10)	ug/L		7.8	QT
LF6-MW6	8260	2-Hexanone	LT	(10)	ug/L		7.8	QT
LF6-MW8	8260	2-Hexanone	LT	(10)	ug/L		7.8	QT
LF6-MW9	8260	2-Hexanone	LT	(10)	ug/L		7.8	QT
W6-3	8260	2-Hexanone	LT	(10)	ug/L		7.8	QT
LF6-MW10	8260	Acetone		8.9	ug/L	U0	5.5	QT
LF6-MW7	8260	Acetone	LT	(10)	ug/L		5.5	QT
LF6-MW9	8260	Acetone		4.5	ug/L	U0	5.5	QT
BD-2	8260	Acetone		5.0	ug/L	U0	4.7	QT
BD-3	8260	Acetone		6.4	ug/L	U0	4.7	QT
LF5-MW4	8260	Acetone	LT	(10)	ug/L		4.7	QT
LF6-MW10	8260	Acetone		3.9	ug/L	U0	4.7	QT
LF6-MW9	8260	Acetone		5.7	ug/L	U0	4.7	QT
NUD-1	8260	Acetone	LT	(10)	ug/L		4.7	QT
W5-2	8260	Acetone		2.2	ug/L	U0	4.7	QT
W6-3	8260	Acetone	LT	(10)	ug/L		4.7	QT
LF2-SD3	8260	Acetone		2.2	ug/kg	U0	1.5	QT
LF2-SD4	8260	Acetone		4.0	ug/kg	U0	1.5	QT
LF5-SD1	8260	Acetone		2.9	ug/kg	U0	1.5	QT
LF5-SD2	8260	Acetone	LT	(15)	ug/kg		1.5	QT
LF6-MW10	8260	Acetonitrile	LT	(200)	ug/L		12	QT
LF6-MW7	8260	Acetonitrile	LT	(200)	ug/L		12	QT
LF6-MW9	8260	Acetonitrile	LT	(200)	ug/L		12	QT
								QT
LF6-SD3	8270	Di-n-butyl phthalate		740	ug/kg	UJ1	580	QT
LF6-SD4	8270	Di-n-butyl phthalate		660	ug/kg	U0	580	QT
LF2DPW6	8270	Phenol	LT	(40)	ug/L		1.1	QT
LF2DPW7	8270	Phenol	LT	(20)	ug/L		1.1	QT
LF5DPW4	8270	Phenol	LT	(10)	ug/L		1.1	QT
LF5DPW5	8270	Phenol	LT	(10)	ug/L		1.1	QT
LF2DPW6	8270	bis(2-Ethylhexyl)phthalate	LT	(40)	ug/L		1.3	QT
LF2DPW7	8270	bis(2-Ethylhexyl)phthalate		2.4	ug/L	U1	1.3	QT
LF5DPW4	8270	bis(2-Ethylhexyl)phthalate		3.5	ug/L	U0	1.3	QT
LF5DPW5	8270	bis(2-Ethylhexyl)phthalate		8.0	ug/L	U0	1.3	QT
LF6-SW3	8270	bis(2-Ethylhexyl)phthalate		4.9	ug/L	U0	1.2	QT

LT = Less Than the Laboratory Reporting Limit (Method Detection Limit for HydroLogic or Practical Quantitation Limit for Quanterra). The Laboratory Reporting Limit is in parentheses.
UO = Compound present in an associated blank, <5 times or <10 times (sample undiluted). Results are considered non-detect.
U1 = Compound present in associated blank, <5 times or <10 times (sample diluted). Results are considered non-detect.
UJ1 = Reporting Limit estimated due to surrogate recovery (too low or too high). Results are considered non-detect.

TABLE 5-8
NON-COMPLIANT SURROGATE RECOVERIES
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Method	Analyte	Surrogate Result	Limit	Qualifier
LF5-MW05	8270	2-Fluorophenol	0%	21%	R1
LF5-MW05	8270	Phenol-d6	0%	10%	
LF5-MW04	8270	2-Fluorophenol	15%	21%	None
LF6-A	8270	2-Fluorophenol	14%	21%	None
FCMW82	8080	Decachlorobiphenyl	21%	24%	UJ1
LF6DP01	8260	Dibromofluoromethane	77%	86%	UJ1
LF2DP03	8080	Decachlorobiphenyl	22%	24%	UJ1
LF2DP03	8270	Terphenyl-d14	14%	33%	None
LF2DPW7	8270	Terphenyl-d14	21%	33%	None
LF5DP01	8270	2-Fluorophenol	2%	21%	R1
LF5DP01	8270	Phenol-d6	2%	10%	
LF5DP01	8270	Nitrobenzene-d5	25%	36%	
LF5DP01	8270	Terphenyl-d14	8%	33%	
LF5DP01	8270	2,4,6-Tribromophenol	5%	10%	
LF6-MW6	8270	Phenol-d6	42%	54%	None
LF5DP03	8270	Terphenyl-d14	32%	33%	None
LF2DP04	8270	Terphenyl-d14	22%	33%	None
BD-2	8150	DCAA	0%	45%	R1
BD-2	8150	DCAA	33%	45%	UJ1
BD-3	8150	DCAA	0%	45%	R1
BD-3	8080	Tetrachloro-m-xylene	0%	54%	R1
FCMW-72	8080	Dibutyl chlorendate	55%	56%	UJ1
FCMW-74	8080	Dibutyl chlorendate	50%	56%	UJ1

TABLE 5-8
NON-COMPLIANT SURROGATE RECOVERIES
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Method	Analyte	Surrogate Result	Limit	Qualifier
LF6-SD3	8270	2-Fluorophenol	0%	25%	UJ1
LF6-SD3	8270	Phenol-d6	0%	24%	
LF6-SD3	8270	Nitrobenzene-d5	0%	23%	
LF6-SD3	8270	Terphenyl-d14	0%	18%	
LF6-SD3	8270	2,4,6-Tribromophenol	0%	19%	
LF6-SD3	8270	2-Fluorobiphenyl	0%	30%	
W6-3	8270	2-Fluorobiphenyl	36%	43%	None

R1 = Rejected value due to surrogate recovery (too low or too high).
UJ1 = Reporting limit estimated due to surrogate recovery (too low or too high).

TABLE 5-9
SUMMARY OF QUALIFIED DATA
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Method	Analyte		Result	Units	Lab Flag	Qualifier
Compounds flagged due to holding time exceedance:							
LF2-WQ	160	TDS		18200	mg/L		J4
LF2FCMW75	300	Nitrite	LT	.16	mg/L		UJ4
LF2FCMW73	300	Nitrite	LT	.16	mg/L		UJ4
LF2FCMW74	300	Nitrite	LT	.16	mg/L		UJ4
FCMW-74	8260	Acetone		5.8	ug/L	J	J4
FCMW-70	8260	Chloromethane		2.1	ug/L	J	J4
FCMW-74	8260	1,1,2,2-Tetrachloroethane	LT	5.0	ug/L	U	UJ4
FCMW-74	8260	Vinyl Chloride	LT	10	ug/L	U	UJ4
FCMW-74	8260	Methylene Chloride	LT	5.0	ug/L	U	UJ4
FCMW-74	8260	Chloroethane	LT	10	ug/L	U	UJ4
FCMW-74	8260	Chloromethane	LT	10	ug/L	U	UJ4
FCMW-74	8260	1,1,1-Trichloroethane	LT	5.0	ug/L	U	UJ4
FCMW-74	8260	Bromomethane	LT	10	ug/L	U	UJ4
FCMW-74	8260	Carbon Disulfide	LT	5.0	ug/L	U	UJ4
FCMW-74	8260	Bromoform	LT	5.0	ug/L	U	UJ4
FCMW-74	8260	1,1,2-Trichloroethane	LT	5.0	ug/L	U	UJ4
FCMW-74	8260	Trichloroethene	LT	5.0	ug/L	U	UJ4
FCMW-74	8260	1,2-Dichloropropane	LT	5.0	ug/L	U	UJ4
FCMW-74	8260	1,1-Dichloroethene	LT	5.0	ug/L	U	UJ4
FCMW-74	8260	Bromodichloromethane	LT	5.0	ug/L	U	UJ4
FCMW-74	8260	1,1-Dichloroethane	LT	5.0	ug/L	U	UJ4
FCMW-74	8260	Benzene	LT	5.0	ug/L	U	UJ4
FCMW-74	8260	Chloroform	LT	5.0	ug/L	U	UJ4
FCMW-70	8260	trans-1,3-Dichloropropene	LT	5.0	ug/L	U	UJ4
FCMW-70	8260	1,2-Dichloroethane	LT	5.0	ug/L	U	UJ4
FCMW-70	8260	cis-1,3-Dichloropropene	LT	5.0	ug/L	U	UJ4
FCMW-70	8260	Styrene	LT	5.0	ug/L	U	UJ4
FCMW-70	8260	2-Butanone (MEK)	LT	10	ug/L	U	UJ4
FCMW-70	8260	Ethylbenzene	LT	5.0	ug/L	U	UJ4
FCMW-70	8260	Vinyl Acetate	LT	10	ug/L	U	UJ4
FCMW-70	8260	Toluene	LT	5.0	ug/L	U	UJ4
FCMW-70	8260	Carbon Tetrachloride	LT	5.0	ug/L	U	UJ4
FCMW-70	8260	2-Hexanone	LT	10	ug/L	U	UJ4
FCMW-70	8260	Xylenes (total)	LT	5.0	ug/L	U	UJ4
FCMW-70	8260	Tetrachloroethene	LT	5.0	ug/L	U	UJ4
FCMW-70	8260	Chlorobenzene	LT	5.0	ug/L	U	UJ4
FCMW-70	8260	Dibromochloromethane	LT	5.0	ug/L	U	UJ4
FCMW-70	8260	1,2-Dichloroethene (trans)	LT	5.0	ug/L	U	UJ4
FCMW-70	8260	1,2-Dichloroethene (cis)	LT	5.0	ug/L	U	UJ4
FCMW-70	8260	4-Methyl-2-pentanone (MIBK)	LT	10	ug/L	U	UJ4
FCMW-70	8260	Chloroform	LT	5.0	ug/L	U	UJ4
FCMW-70	8260	Benzene	LT	5.0	ug/L	U	UJ4
FCMW-74	8260	trans-1,3-Dichloropropene	LT	5.0	ug/L	U	UJ4
FCMW-74	8260	1,2-Dichloroethane	LT	5.0	ug/L	U	UJ4
FCMW-74	8260	cis-1,3-Dichloropropene	LT	5.0	ug/L	U	UJ4
FCMW-74	8260	Styrene	LT	5.0	ug/L	U	UJ4
FCMW-74	8260	2-Butanone (MEK)	LT	10	ug/L	U	UJ4
FCMW-74	8260	Ethylbenzene	LT	5.0	ug/L	U	UJ4
FCMW-74	8260	Vinyl Acetate	LT	10	ug/L	U	UJ4
FCMW-74	8260	Toluene	LT	5.0	ug/L	U	UJ4
FCMW-74	8260	Carbon Tetrachloride	LT	5.0	ug/L	U	UJ4
FCMW-74	8260	2-Hexanone	LT	10	ug/L	U	UJ4
FCMW-74	8260	Xylenes (total)	LT	5.0	ug/L	U	UJ4
FCMW-74	8260	Tetrachloroethene	LT	5.0	ug/L	U	UJ4
FCMW-74	8260	Chlorobenzene	LT	5.0	ug/L	U	UJ4
FCMW-74	8260	Dibromochloromethane	LT	5.0	ug/L	U	UJ4

TABLE 5-9
SUMMARY OF QUALIFIED DATA
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Method	Analyte		Result	Units	Lab Flag	Qualifier
FCMW-74	8260	1,2-Dichloroethene (trans)	LT	5.0	ug/L	U	UJ4
FCMW-74	8260	1,2-Dichloroethene (cis)	LT	5.0	ug/L	U	UJ4
FCMW-74	8260	4-Methyl-2-pentanone (MIBK)	LT	10	ug/L	U	UJ4
FCMW-70	8260	Methylene Chloride	LT	5.0	ug/L	U	UJ4
FCMW-70	8260	Carbon Disulfide	LT	5.0	ug/L	U	UJ4
FCMW-70	8260	Vinyl Chloride	LT	10	ug/L	U	UJ4
FCMW-70	8260	Chloroethane	LT	10	ug/L	U	UJ4
FCMW-70	8260	1,1,1-Trichloroethane	LT	5.0	ug/L	U	UJ4
FCMW-70	8260	Bromomethane	LT	10	ug/L	U	UJ4
FCMW-70	8260	Bromoform	LT	5.0	ug/L	U	UJ4
FCMW-70	8260	Bromodichloromethane	LT	5.0	ug/L	U	UJ4
FCMW-70	8260	Trichloroethene	LT	5.0	ug/L	U	UJ4
FCMW-70	8260	1,1,2,2-Tetrachloroethane	LT	5.0	ug/L	U	UJ4
FCMW-70	8260	1,1,2-Trichloroethane	LT	5.0	ug/L	U	UJ4
FCMW-70	8260	1,2-Dichloropropane	LT	5.0	ug/L	U	UJ4
FCMW-70	8260	1,1-Dichloroethane	LT	5.0	ug/L	U	UJ4
FCMW-70	8260	1,1-Dichloroethene	LT	5.0	ug/L	U	UJ4
Compounds flagged due to low surrogate recovery:							
LF5-MW5	8270	2,3,4,6-Tetrachlorophenol	LT	4.5	ug/L		R1
LF5-MW5	8270	2,4,5-Trichlorophenol	LT	5.6	ug/L		R1
LF5-MW5	8270	2,4,6-Trichlorophenol	LT	4.4	ug/L		R1
LF5-MW5	8270	2,4-Dichlorophenol	LT	4.4	ug/L		R1
LF5-MW5	8270	2,4-Dimethylphenol	LT	3.2	ug/L		R1
LF5-MW5	8270	2,4-Dinitrophenol	LT	6.9	ug/L		R1
LF5-MW5	8270	2,6-Dichlorophenol	LT	4.4	ug/L		R1
LF5-MW5	8270	2-Chlorophenol	LT	2.9	ug/L		R1
LF5-MW5	8270	2-Methylphenol	LT	1.9	ug/L		R1
LF5-MW5	8270	2-Nitrophenol	LT	4.3	ug/L		R1
LF5-MW5	8270	4,6-Dinitro-2-methylphenol	LT	4.3	ug/L		R1
LF5-MW5	8270	4-Chloro-3-methylphenol	LT	3.2	ug/L		R1
LF5-MW5	8270	4-Methylphenol	LT	2	ug/L		R1
LF5-MW5	8270	4-Nitrophenol	LT	8.4	ug/L		R1
LF5-MW5	8270	Pentachlorophenol	LT	5.7	ug/L		R1
LF5-MW5	8270	Phenol	LT	3.4	ug/L		R1
LF5DPW1	8270	4-Nitroaniline	LT	11	ug/L		R1
LF5DPW1	8270	4-Nitrophenol	LT	14	ug/L		R1
LF5DPW1	8270	Benzyl alcohol	LT	4	ug/L		R1
LF5DPW1	8270	N-Nitrosopiperidine	LT	5.7	ug/L		R1
LF5DPW1	8270	4-Bromophenyl phenyl ether	LT	4.3	ug/L		R1
LF5DPW1	8270	2,4-Dimethylphenol	LT	5.3	ug/L		R1
LF5DPW1	8270	4-Methylphenol	LT	3.3	ug/L		R1
LF5DPW1	8270	1,4-Dichlorobenzene	LT	4.8	ug/L		R1
LF5DPW1	8270	4-Chloroaniline	LT	6.3	ug/L		R1
LF5DPW1	8270	Bis(2-chloroisopropyl) ether	LT	3.2	ug/L		R1
LF5DPW1	8270	Phenol	LT	5.7	ug/L		R1
LF5DPW1	8270	2-Picoline	LT	6	ug/L		R1
LF5DPW1	8270	Bis(2-chloroethyl) ether	LT	3.5	ug/L		R1
LF5DPW1	8270	Bis(2-chloroethoxy)methane	LT	4.8	ug/L		R1
LF5DPW1	8270	Bis(2-ethylhexyl) phthalate	LT	3.6	ug/L	UB	R1
LF5DPW1	8270	Di-n-octyl phthalate	LT	4.5	ug/L		R1
LF5DPW1	8270	Hexachlorobenzene	LT	4.2	ug/L		R1
LF5DPW1	8270	Anthracene	LT	4.3	ug/L		R1
LF5DPW1	8270	1,2,4-Trichlorobenzene	LT	5.3	ug/L		R1
LF5DPW1	8270	2,4-Dichlorophenol	LT	7.3	ug/L		R1
LF5DPW1	8270	2,4-Dinitrotoluene	LT	4.8	ug/L		R1
LF5DPW1	8270	a,a-Dimethylphenethylamine	LT	7.5	ug/L		R1
LF5DPW1	8270	Diphenylamine	LT	7	ug/L		R1

TABLE 5-9
SUMMARY OF QUALIFIED DATA
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Method	Analyte		Result	Units	Lab Flag	Qualifier
LF5DPW1	8270	1,2-Diphenylhydrazine	LT	6.7	ug/L		R1
LF5DPW1	8270	Pyrene	LT	5.8	ug/L		R1
LF5DPW1	8270	Dimethyl phthalate	LT	8	ug/L		R1
LF5DPW1	8270	Dibenzofuran	LT	6.7	ug/L		R1
LF5DPW1	8270	1-Naphthylamine	LT	6.3	ug/L		R1
LF5DPW1	8270	Benzo(g,h,i)perylene	LT	5.2	ug/L		R1
LF5DPW1	8270	Indeno(1,2,3-cd)pyrene	LT	5.2	ug/L		R1
LF5DPW1	8270	Benzo(b)fluoranthene	LT	4.3	ug/L		R1
LF5DPW1	8270	Fluoranthene	LT	6.7	ug/L		R1
LF5DPW1	8270	Benzo(k)fluoranthene	LT	6.5	ug/L		R1
LF5DPW1	8270	Acenaphthylene	LT	5.8	ug/L		R1
LF5DPW1	8270	Chrysene	LT	7	ug/L		R1
LF5DPW1	8270	Dibenz(a,j)acridine	LT	8.8	ug/L		R1
LF5DPW1	8270	Pronamide	LT	6.3	ug/L		R1
LF5DPW1	8270	Benzo(a)pyrene	LT	5.8	ug/L		R1
LF5DPW1	8270	2,4-Dinitrophenol	LT	12	ug/L		R1
LF5DPW1	8270	Dibenz(a,h)anthracene	LT	5.7	ug/L		R1
LF5DPW1	8270	4,6-Dinitro-2-methylphenol	LT	7.2	ug/L		R1
LF5DPW1	8270	1,3-Dichlorobenzene	LT	5	ug/L		R1
LF5DPW1	8270	3-Methylcholanthrene	LT	4.5	ug/L		R1
LF5DPW1	8270	Benzo(a)anthracene	LT	4.7	ug/L		R1
LF5DPW1	8270	7,12-Dimethylbenz(a)anthracene	LT	5.7	ug/L		R1
LF5DPW1	8270	2,3,4,6-Tetrachlorophenol	LT	7.5	ug/L		R1
LF5DPW1	8270	4-Chloro-3-methylphenol	LT	5.3	ug/L		R1
LF5DPW1	8270	p-Dimethylaminoazobenzene	LT	4.2	ug/L		R1
LF5DPW1	8270	2,6-Dinitrotoluene	LT	6.3	ug/L		R1
LF5DPW1	8270	Pentachlorobenzene	LT	6.5	ug/L		R1
LF5DPW1	8270	Phenacetin	LT	9.8	ug/L		R1
LF5DPW1	8270	Ethyl methanesulfonate	LT	4.3	ug/L		R1
LF5DPW1	8270	Aniline	LT	4	ug/L		R1
LF5DPW1	8270	N-Nitrosodimethylamine	LT	3.3	ug/L		R1
LF5DPW1	8270	N-Nitrosodipropylamine	LT	5.2	ug/L		R1
LF5DPW1	8270	Benzoic acid	LT	100	ug/L		R1
LF5DPW1	8270	Methyl methanesulfonate	LT	4.8	ug/L		R1
LF5DPW1	8270	Hexachloroethane	LT	7.8	ug/L		R1
LF5DPW1	8270	4-Chlorophenyl phenyl ether	LT	6.5	ug/L		R1
LF5DPW1	8270	Hexachlorocyclopentadiene	LT	3.7	ug/L		R1
LF5DPW1	8270	Isophorone	LT	5	ug/L		R1
LF5DPW1	8270	Pentachloronitrobenzene	LT	7.8	ug/L		R1
LF5DPW1	8270	Acenaphthene	LT	7	ug/L		R1
LF5DPW1	8270	Diethyl phthalate	LT	8.5	ug/L		R1
LF5DPW1	8270	Di-n-butyl phthalate		13	ug/L	BJ	R1
LF5DPW1	8270	Phenanthrene	LT	4.2	ug/L		R1
LF5DPW1	8270	Butyl benzyl phthalate	LT	4.5	ug/L		R1
LF5DPW1	8270	N-Nitrosodiphenylamine	LT	8.7	ug/L		R1
LF5DPW1	8270	Fluorene	LT	5.5	ug/L		R1
LF5DPW1	8270	2,6-Dichlorophenol	LT	7.3	ug/L		R1
LF5DPW1	8270	Hexachlorobutadiene	LT	5	ug/L		R1
LF5DPW1	8270	Pentachlorophenol	LT	9.5	ug/L		R1
LF5DPW1	8270	2,4,6-Trichlorophenol	LT	7.3	ug/L		R1
LF5DPW1	8270	2-Nitroaniline	LT	6.2	ug/L		R1
LF5DPW1	8270	2-Nitrophenol	LT	7.2	ug/L		R1
LF5DPW1	8270	1-Chloronaphthalene	LT	15	ug/L		R1
LF5DPW1	8270	Naphthalene	LT	4	ug/L		R1
LF5DPW1	8270	2-Methylnaphthalene	LT	4.7	ug/L		R1
LF5DPW1	8270	2-Chloronaphthalene	LT	7	ug/L		R1
LF5DPW1	8270	2-Naphthylamine	LT	6.5	ug/L		R1
LF5DPW1	8270	3,3'-Dichlorobenzidine	LT	6	ug/L		R1
LF5DPW1	8270	4-Aminobiphenyl	LT	5.5	ug/L		R1

TABLE 5-9
SUMMARY OF QUALIFIED DATA
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Method	Analyte		Result	Units	Lab Flag	Qualifier
LF5DPW1	8270	Benzidine	LT	11	ug/L		R1
LF5DPW1	8270	N-Nitroso-di-n-butylamine	LT	5	ug/L		R1
LF5DPW1	8270	2-Methylphenol	LT	3.2	ug/L		R1
LF5DPW1	8270	1,2-Dichlorobenzene	LT	4.3	ug/L		R1
LF5DPW1	8270	2-Chlorophenol	LT	4.8	ug/L		R1
LF5DPW1	8270	1,2,4,5-Tetrachlorobenzene	LT	8.5	ug/L		R1
LF5DPW1	8270	2,4,5-Trichlorophenol	LT	9.3	ug/L		R1
LF5DPW1	8270	Acetophenone	LT	4.8	ug/L		R1
LF5DPW1	8270	Nitrobenzene	LT	7.8	ug/L		R1
LF5DPW1	8270	3-Nitroaniline	LT	5.7	ug/L		R1
FCMW82	8080	4,4'-DDD	LT	.078	ug/L		UJ1
FCMW82	8080	4,4'-DDE	LT	.017	ug/L		UJ1
FCMW82	8080	4,4'-DDT	LT	.031	ug/L		UJ1
FCMW82	8080	Aldrin	LT	.05	ug/L		UJ1
FCMW82	8080	alpha-BHC	LT	.018	ug/L		UJ1
FCMW82	8080	Aroclor-1016	LT	.18	ug/L		UJ1
FCMW82	8080	Aroclor-1221	LT	.11	ug/L		UJ1
FCMW82	8080	Aroclor-1232	LT	.11	ug/L		UJ1
FCMW82	8080	Aroclor-1242	LT	.11	ug/L		UJ1
FCMW82	8080	Aroclor-1248	LT	.11	ug/L		UJ1
FCMW82	8080	Aroclor-1254	LT	.11	ug/L		UJ1
FCMW82	8080	Aroclor-1260	LT	.11	ug/L		UJ1
FCMW82	8080	beta-BHC	LT	.015	ug/L		UJ1
FCMW82	8080	Chlordane	LT	.1	ug/L		UJ1
FCMW82	8080	delta-BHC	LT	.011	ug/L		UJ1
FCMW82	8080	Dieldrin	LT	.012	ug/L		UJ1
FCMW82	8080	Endosulfan I	LT	.015	ug/L		UJ1
FCMW82	8080	Endosulfan II	LT	.013	ug/L		UJ1
FCMW82	8080	Endosulfan sulfate	LT	.018	ug/L		UJ1
FCMW82	8080	Endrin	LT	.013	ug/L		UJ1
FCMW82	8080	Endrin aldehyde	LT	.081	ug/L		UJ1
FCMW82	8080	Endrin ketone	LT	.014	ug/L		UJ1
FCMW82	8080	gamma-BHC	LT	.013	ug/L		UJ1
FCMW82	8080	Heptachlor	LT	.036	ug/L		UJ1
FCMW82	8080	Heptachlor epoxide	LT	.014	ug/L		UJ1
FCMW82	8080	Methoxychlor	LT	.049	ug/L		UJ1
FCMW82	8080	Toxaphene	LT	.24	ug/L		UJ1
LF6DP01	8260	(m+p)-Xylene	LT	.46	ug/L		UJ1
LF6DP01	8260	1,1,1,2-Tetrachloroethane	LT	.089	ug/L		UJ1
LF6DP01	8260	1,1,1-Trichloroethane	LT	.34	ug/L		UJ1
LF6DP01	8260	1,1,2,2-Tetrachloroethane	LT	.13	ug/L		UJ1
LF6DP01	8260	1,1,2-Trichloroethane	LT	.25	ug/L		UJ1
LF6DP01	8260	1,1-Dichloroethane	LT	.34	ug/L		UJ1
LF6DP01	8260	1,1-Dichloroethene	LT	.095	ug/L		UJ1
LF6DP01	8260	1,1-Dichloropropene	LT	.34	ug/L		UJ1
LF6DP01	8260	1,2,3-Trichlorobenzene	LT	.19	ug/L		UJ1
LF6DP01	8260	1,2,3-Trichloropropane	LT	.22	ug/L		UJ1
LF6DP01	8260	1,2,4-Trichlorobenzene	LT	.17	ug/L		UJ1
LF6DP01	8260	1,2,4-Trimethylbenzene	LT	.11	ug/L		UJ1
LF6DP01	8260	1,2-Dibromo-3-chloropropane	LT	.12	ug/L		UJ1
LF6DP01	8260	1,2-Dibromoethane	LT	.099	ug/L		UJ1
LF6DP01	8260	1,2-Dichlorobenzene	LT	.15	ug/L		UJ1
LF6DP01	8260	1,2-Dichloroethane	LT	.42	ug/L		UJ1
LF6DP01	8260	1,2-Dichloropropane	LT	.1	ug/L		UJ1
LF6DP01	8260	1,3,5-Trimethylbenzene	LT	.11	ug/L		UJ1
LF6DP01	8260	1,3-Dichlorobenzene	LT	.14	ug/L		UJ1
LF6DP01	8260	1,3-Dichloropropane	LT	.29	ug/L		UJ1
LF6DP01	8260	1,4-Dichlorobenzene	LT	.11	ug/L		UJ1
LF6DP01	8260	2,2-Dichloropropane	LT	.66	ug/L		UJ1

TABLE 5-9
SUMMARY OF QUALIFIED DATA
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Method	Analyte		Result	Units	Lab Flag	Qualifier
LF6DP01	8260	2-Chlorotoluene	LT	.1	ug/L		UJ1
LF6DP01	8260	4-Chlorotoluene	LT	.1	ug/L		UJ1
LF6DP01	8260	Benzene	LT	.078	ug/L		UJ1
LF6DP01	8260	Bromobenzene	LT	.11	ug/L		UJ1
LF6DP01	8260	Bromochloromethane	LT	.14	ug/L		UJ1
LF6DP01	8260	Bromodichloromethane	LT	.13	ug/L		UJ1
LF6DP01	8260	Bromoform	LT	.093	ug/L		UJ1
LF6DP01	8260	Bromomethane	LT	.097	ug/L		UJ1
LF6DP01	8260	Carbon tetrachloride	LT	.27	ug/L		UJ1
LF6DP01	8260	Chlorobenzene	LT	.087	ug/L		UJ1
LF6DP01	8260	Chloroethane	LT	.11	ug/L		UJ1
LF6DP01	8260	Chloroform	LT	.27	ug/L		UJ1
LF6DP01	8260	Chloromethane	LT	.4	ug/L		UJ1
LF6DP01	8260	cis-1,2-Dichloroethene	LT	.35	ug/L		UJ1
LF6DP01	8260	cis-1,3-Dichloropropene	LT	.16	ug/L		UJ1
LF6DP01	8260	Dibromochloromethane	LT	.1	ug/L		UJ1
LF6DP01	8260	Dibromomethane	LT	.28	ug/L		UJ1
LF6DP01	8260	Dichlorodifluoromethane	LT	.085	ug/L		UJ1
LF6DP01	8260	Ethylbenzene	LT	.15	ug/L		UJ1
LF6DP01	8260	Hexachlorobutadiene	LT	.22	ug/L		UJ1
LF6DP01	8260	Isopropylbenzene	LT	.11	ug/L		UJ1
LF6DP01	8260	Methylene chloride	LT	.15	ug/L		UJ1
LF6DP01	8260	n-Butylbenzene	LT	.12	ug/L		UJ1
LF6DP01	8260	n-Propylbenzene	LT	.12	ug/L		UJ1
LF6DP01	8260	Naphthalene	LT	.21	ug/L		UJ1
LF6DP01	8260	o-Xylene	LT	.28	ug/L		UJ1
LF6DP01	8260	p-Isopropyltoluene	LT	.13	ug/L		UJ1
LF6DP01	8260	sec-Butylbenzene	LT	.13	ug/L		UJ1
LF6DP01	8260	Styrene	LT	.14	ug/L		UJ1
LF6DP01	8260	tert-Butylbenzene	LT	.12	ug/L		UJ1
LF6DP01	8260	Tetrachloroethene	LT	.098	ug/L		UJ1
LF6DP01	8260	Toluene	LT	.17	ug/L		UJ1
LF6DP01	8260	trans-1,2-Dichloroethene	LT	.11	ug/L		UJ1
LF6DP01	8260	trans-1,3-Dichloropropene	LT	.11	ug/L		UJ1
LF6DP01	8260	Trichloroethene	LT	.084	ug/L		UJ1
LF6DP01	8260	Trichlorofluoromethane	LT	.12	ug/L		UJ1
LF6DP01	8260	Vinyl chloride	LT	.094	ug/L		UJ1
LF2DP03	8080	Heptachlor epoxide	LT	.014	ug/L		UJ1
LF2DP03	8080	Endosulfan sulfate	LT	.018	ug/L		UJ1
LF2DP03	8080	Aroclor-1260	LT	.11	ug/L		UJ1
LF2DP03	8080	Aroclor-1254	LT	.11	ug/L		UJ1
LF2DP03	8080	Aroclor-1221	LT	.11	ug/L		UJ1
LF2DP03	8080	Aroclor-1232	LT	.11	ug/L		UJ1
LF2DP03	8080	Aroclor-1248	LT	.11	ug/L		UJ1
LF2DP03	8080	Aroclor-1016	LT	.18	ug/L		UJ1
LF2DP03	8080	Aldrin	LT	.05	ug/L		UJ1
LF2DP03	8080	alpha-BHC	LT	.018	ug/L		UJ1
LF2DP03	8080	beta-BHC	LT	.015	ug/L		UJ1
LF2DP03	8080	delta-BHC	LT	.011	ug/L		UJ1
LF2DP03	8080	Endosulfan II	LT	.013	ug/L		UJ1
LF2DP03	8080	4,4'-DDT	LT	.031	ug/L		UJ1
LF2DP03	8080	Aroclor-1242	LT	.11	ug/L		UJ1
LF2DP03	8080	Endrin ketone	LT	.014	ug/L		UJ1
LF2DP03	8080	Chlordane	LT	.1	ug/L		UJ1
LF2DP03	8080	gamma-BHC	LT	.013	ug/L		UJ1
LF2DP03	8080	Dieldrin	LT	.012	ug/L		UJ1
LF2DP03	8080	Endrin	LT	.013	ug/L		UJ1
LF2DP03	8080	Methoxychlor	LT	.049	ug/L		UJ1
LF2DP03	8080	4,4'-DDD	LT	.078	ug/L		UJ1

TABLE 5-9
SUMMARY OF QUALIFIED DATA
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Method	Analyte		Result	Units	Lab Flag	Qualifier
LF2DP03	8080	4,4'-DDE	LT	.017	ug/L		UJ1
LF2DP03	8080	Endrin aldehyde	LT	.081	ug/L		UJ1
LF2DP03	8080	Heptachlor	LT	.036	ug/L		UJ1
LF2DP03	8080	Toxaphene	LT	.24	ug/L		UJ1
LF2DP03	8080	Endosulfan I	LT	.015	ug/L		UJ1
BD-3	8080	Dieldrin	LT	0.10	ug/L	U	R1
BD-3	8080	Gamma-BHC (Lindane)	LT	0.050	ug/L	U	R1
BD-3	8080	Aroclor 1242	LT	1.0	ug/L	U	R1
BD-3	8080	Endrin	LT	0.10	ug/L	U	R1
BD-3	8080	Gamma-Chlordane	LT	0.050	ug/L	U	R1
BD-3	8080	Alpha-Chlordane	LT	0.050	ug/L	U	R1
BD-3	8080	Endosulfan I	LT	0.050	ug/L	U	R1
BD-3	8080	Toxaphene	LT	5.0	ug/L	U	R1
BD-3	8080	Chlorobenzilate	LT	1.0	ug/L	U	R1
BD-3	8080	4,4'-DDE	LT	0.10	ug/L	U	R1
BD-3	8080	Heptachlor	LT	0.050	ug/L	U	R1
BD-3	8080	Methoxychlor	LT	0.50	ug/L	U	R1
BD-3	8080	4,4'-DDD	LT	0.10	ug/L	U	R1
BD-3	8080	Aroclor 1232	LT	1.0	ug/L	U	R1
BD-3	8080	Aroclor 1221	LT	1.0	ug/L	U	R1
BD-3	8080	Aroclor 1248	LT	1.0	ug/L	U	R1
BD-3	8080	Aroclor 1254	LT	1.0	ug/L	U	R1
BD-3	8080	Aroclor 1260	LT	1.0	ug/L	U	R1
BD-3	8080	Heptachlor Epoxide	LT	0.050	ug/L	U	R1
BD-3	8080	Endosulfan sulfate	LT	0.10	ug/L	U	R1
BD-3	8080	Aroclor 1016	LT	1.0	ug/L	U	R1
BD-3	8080	Diallate	LT	1.0	ug/L	U	R1
BD-3	8080	Kepone	LT	1.0	ug/L	U	R1
BD-3	8080	Endosulfan II	LT	0.10	ug/L	U	R1
BD-3	8080	Isodrin	LT	0.10	ug/L	U	R1
BD-3	8080	Delta-BHC	LT	0.050	ug/L	U	R1
BD-3	8080	Beta-BHC	LT	0.050	ug/L	U	R1
BD-3	8080	Aldrin	LT	0.050	ug/L	UT	R1
BD-3	8080	Alpha-BHC	LT	0.050	ug/L	U	R1
BD-3	8080	4,4'-DDT	LT	0.10	ug/L	U	R1
BD-3	8080	Endrin Aldehyde	LT	0.10	ug/L	U	R1
BD-3	8150	Dichlorprop	LT	1.0	ug/L	U	R1
BD-3	8150	Dinoseb	LT	1.0	ug/L	U	R1
BD-3	8150	Dicamba	LT	0.50	ug/L	U	R1
BD-3	8150	Dalapon	LT	5.0	ug/L	U	R1
BD-3	8150	MCPP	LT	250	ug/L	U	R1
BD-3	8150	2,4,5-T	LT	0.50	ug/L	U	R1
BD-3	8150	2,4,5-TP (Silvex)	LT	0.50	ug/L	U	R1
BD-2	8150	2,4-DB	LT	5.0	ug/L	U	R1
BD-2	8150	2,4-D	LT	2.0	ug/L	UT	R1
BD-2	8150	Dichlorprop	LT	1.0	ug/L	U	R1
BD-2	8150	Dinoseb	LT	1.0	ug/L	U	R1
BD-2	8150	MCPP	LT	250	ug/L	U	R1
BD-2	8150	2,4,5-TP (Silvex)	LT	0.50	ug/L	U	R1
BD-2	8150	Dalapon	LT	5.0	ug/L	U	R1
BD-2	8150	MCPA	LT	250	ug/L	U	R1
BD-2	8150	2,4,5-T	LT	0.50	ug/L	U	R1
BD-3	8150	MCPA	LT	250	ug/L	U	R1
BD-2	8150	Dicamba	LT	0.50	ug/L	U	R1
BD-3	8150	2,4-D	LT	2.0	ug/L	UT	R1
BD-3	8150	2,4-DB	LT	5.0	ug/L	U	R1
BD-2	8150	2,4-DB	LT	5.0	ug/L	U	UJ1
BD-2	8150	2,4-D	LT	2.0	ug/L	UT	UJ1
BD-2	8150	MCPA	LT	250	ug/L	U	UJ1

TABLE 5-9
SUMMARY OF QUALIFIED DATA
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Method	Analyte		Result	Units	Lab Flag	Qualifier
BD-2	8150	2,4,5T	LT	0.50	ug/L	U	UJ1
BD-2	8150	2,4,5-TP (Silvex)	LT	0.50	ug/L	U	UJ1
BD-2	8150	Dinoseb	LT	1.0	ug/L	U	UJ1
BD-2	8150	MCPP	LT	250	ug/L	U	UJ1
BD-2	8150	Dalapon	LT	5.0	ug/L	U	UJ1
BD-2	8150	Dicamba	LT	0.50	ug/L	U	UJ1
BD-2	8150	Dichlorprop	LT	1.0	ug/L	U	UJ1
FCMW-72	8080	4,4'-DDT	LT	0.10	ug/L	U	UJ1
FCMW-72	8080	Endosulfan II	LT	0.10	ug/L	U	UJ1
FCMW-72	8080	Isodrin	LT	0.10	ug/L	U	UJ1
FCMW-72	8080	alpha-Chlordane	LT	0.050	ug/L	U	UJ1
FCMW-72	8080	Aroclor 1242	LT	1.0	ug/L	U	UJ1
FCMW-72	8080	gamma-Chlordane	LT	0.050	ug/L	U	UJ1
FCMW-72	8080	Endrin	LT	0.060	ug/L	U	UJ1
FCMW-72	8080	gamma-BHC (Lindane)	LT	0.050	ug/L	U	UJ1
FCMW-72	8080	Dieldrin	LT	0.050	ug/L	U	UJ1
FCMW-72	8080	delta-BHC	LT	0.050	ug/L	U	UJ1
FCMW-72	8080	alpha-BHC	LT	0.050	ug/L	U	UJ1
FCMW-72	8080	beta-BHC	LT	0.050	ug/L	U	UJ1
FCMW-72	8080	Aroclor 1260	LT	1.0	ug/L	U	UJ1
FCMW-72	8080	Heptachlor epoxide	LT	0.050	ug/L	U	UJ1
FCMW-72	8080	Endosulfan sulfate	LT	0.10	ug/L	U	UJ1
FCMW-72	8080	Aroclor 1254	LT	1.0	ug/L	U	UJ1
FCMW-72	8080	Aroclor 1232	LT	1.0	ug/L	U	UJ1
FCMW-72	8080	Aroclor 1221	LT	1.0	ug/L	U	UJ1
FCMW-72	8080	Aldrin	LT	0.050	ug/L	UT	UJ1
FCMW-72	8080	Aroclor 1248	LT	1.0	ug/L	U	UJ1
FCMW-72	8080	Aroclor 1016	LT	1.0	ug/L	U	UJ1
FCMW-72	8080	Methoxychlor	LT	0.50	ug/L	U	UJ1
FCMW-72	8080	4,4'-DDD	LT	0.10	ug/L	U	UJ1
FCMW-74	8080	alpha-BHC	LT	0.050	ug/L	U	UJ1
FCMW-74	8080	Aroclor 1016	LT	1.0	ug/L	U	UJ1
FCMW-74	8080	Aldrin	LT	0.050	ug/L	UT	UJ1
FCMW-74	8080	beta-BHC	LT	0.050	ug/L	U	UJ1
FCMW-74	8080	Endosulfan II	LT	0.10	ug/L	U	UJ1
FCMW-74	8080	delta-BHC	LT	0.050	ug/L	U	UJ1
FCMW-74	8080	alpha-Chlordane	LT	0.050	ug/L	U	UJ1
FCMW-74	8080	Isodrin	LT	0.10	ug/L	U	UJ1
FCMW-74	8080	4,4'-DDT	LT	0.10	ug/L	U	UJ1
FCMW-74	8080	Aroclor 1248	LT	1.0	ug/L	U	UJ1
FCMW-74	8080	Aroclor 1221	LT	1.0	ug/L	U	UJ1
FCMW-74	8080	Aroclor 1232	LT	1.0	ug/L	U	UJ1
FCMW-72	8080	Heptachlor	LT	0.050	ug/L	U	UJ1
FCMW-72	8080	4,4'-DDE	LT	0.10	ug/L	U	UJ1
FCMW-72	8080	Endrin aldehyde	LT	0.10	ug/L	U	UJ1
FCMW-72	8080	Toxaphene	LT	2.0	ug/L	U	UJ1
FCMW-74	8080	Heptachlor epoxide	LT	0.050	ug/L	U	UJ1
FCMW-72	8080	Endosulfan I	LT	0.050	ug/L	U	UJ1
FCMW-74	8080	Aroclor 1254	LT	1.0	ug/L	U	UJ1
FCMW-74	8080	Endosulfan sulfate	LT	0.10	ug/L	U	UJ1
FCMW-74	8080	Aroclor 1260	LT	1.0	ug/L	U	UJ1
LF6-SD3	8270	Hexachlorobutadiene	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	N-Nitrosodiphenylamine	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	Fluorene	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	Pentachlorophenol	LT	29000	ug/k	U	UJ1
LF6-SD3	8270	2-Nitroaniline	LT	29000	ug/k	U	UJ1
LF6-SD3	8270	2,4,6-Trichlorophenol	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	2-Methylnaphthalene	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	2-Nitrophenol	LT	5900	ug/k	U	UJ1

TABLE 5-9
SUMMARY OF QUALIFIED DATA
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Method	Analyte		Result	Units	Lab Flag	Qualifier
LF6-SD3	8270	Naphthalene	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	Butyl benzyl phthalate	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	Di-n-butyl phthalate		740	ug/k	JB	UJ1
LF6-SD3	8270	Phenanthrene	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	4-Chlorophenyl phenyl ether	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	Benzoic acid	LT	29000	ug/k	U	UJ1
LF6-SD3	8270	Hexachloroethane	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	Hexachlorophene	LT	--	ug/k	U	UJ1
LF6-SD3	8270	3/4-Methylphenol	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	Hexachlorocyclopentadiene	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	Diethyl phthalate	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	Isophorone	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	Acenaphthene	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	2-Chloronaphthalene	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	3,3'-Dichlorobenzidine	LT	12000	ug/k	U	UJ1
LF6-SD3	8270	2-Chlorophenol	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	2-Methylphenol	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	1,2-Dichlorobenzene	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	2,4,5-Trichlorophenol	LT	29000	ug/k	U	UJ1
LF6-SD3	8270	3-Nitroaniline	LT	29000	ug/k	U	UJ1
LF6-SD3	8270	Nitrobenzene	LT	5900	ug/k	U	UJ1
FCMW-74	8080	gamma-Chlordane	LT	0.050	ug/L	U	UJ1
FCMW-74	8080	gamma-BHC (Lindane)	LT	0.050	ug/L	U	UJ1
FCMW-74	8080	Aroclor 1242	LT	1.0	ug/L	U	UJ1
FCMW-74	8080	Methoxychlor	LT	0.50	ug/L	U	UJ1
FCMW-74	8080	Dieldrin	LT	0.050	ug/L	U	UJ1
FCMW-74	8080	Endrin	LT	0.060	ug/L	U	UJ1
FCMW-74	8080	4,4'-DDD	LT	0.10	ug/L	U	UJ1
FCMW-74	8080	Endrin aldehyde	LT	0.10	ug/L	U	UJ1
FCMW-74	8080	4,4'-DDE	LT	0.10	ug/L	U	UJ1
FCMW-74	8080	Endosulfan I	LT	0.050	ug/L	U	UJ1
FCMW-74	8080	Heptachlor	LT	0.050	ug/L	U	UJ1
FCMW-74	8080	Toxaphene	LT	2.0	ug/L	U	UJ1
LF6-SD3	8270	N-Nitrosodimethylamine	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	N-Nitroso-di-n-propylamine	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	2,4-Dichlorophenol	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	Anthracene	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	1,2,4-Trichlorobenzene	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	2,4-Dinitrotoluene	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	O,O,O-Triethylphosphoro-thioate	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	Benzo(g,h,i)perylene	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	Dimethyl phthalate	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	Dibenzofuran	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	Hexachlorobenzene	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	Di-n-octyl phthalate	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	1,4-Dichlorobenzene	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	4-Bromophenyl phenyl ether	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	2,4-Dimethylphenol	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	4-Chloroaniline	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	Phenol	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	bis(2-Chloroisopropyl)ether	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	bis(2-Chloroethoxy)methane	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	Pyridine	LT	12000	ug/k	U	UJ1
LF6-SD3	8270	bis(2-Chloroethyl) ether	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	Indeno(1,2,3-cd)pyrene	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	3-Methylcholanthrene	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	Dibenz(a,h)anthracene	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	1,3-Dichlorobenzene	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	Benzo(a)anthracene	LT	5900	ug/k	U	UJ1

TABLE 5-9
SUMMARY OF QUALIFIED DATA
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Method	Analyte		Result	Units	Lab Flag	Qualifier
LF6-SD3	8270	2,3,4,6-Tetrachlorophenol	LT	29000	ug/k	U	UJ1
LF6-SD3	8270	7,12-Dimethylbenz(a)-anthracene	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	2,6-Dinitrotoluene	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	4-Chloro-3-methylphenol	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	Dimethoate	LT	29000	ug/k	U	UJ1
LF6-SD3	8270	4,6-Dinitro-2-methylphenol	LT	29000	ug/k	U	UJ1
LF6-SD3	8270	2,4-Dinitrophenol	LT	29000	ug/k	U	UJ1
LF6-SD3	8270	Famphur	LT	29000	ug/k	U	UJ1
LF6-SD3	8270	Acenaphthylene	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	Benzo(k)fluoranthene	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	Chrysene	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	Thionazin	LT	29000	ug/k	U	UJ1
LF6-SD3	8270	Pronamide	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	Benzo(a)pyrene	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	Methyl parathion	LT	29000	ug/k	U	UJ1
LF6-SD3	8270	Sulfotepp	LT	29000	ug/k	U	UJ1
LF6-SD3	8270	Benzyl alcohol	LT	5900	ug/k	U	UJ1
LF6-SD3	8270	4-Nitroaniline	LT	29000	ug/k	U	UJ1
LF6-SD3	8270	4-Nitrophenol	LT	29000	ug/k	U	UJ1
LF6-SD3	8270	Parathion	LT	29000	ug/k	U	UJ1
LF6-SD3	8270	Phorate	LT	59000	ug/k	U	UJ1
LF6-SD3	8270	Disulfoton	LT	29000	ug/k	U	UJ1
LF6-SD3	8270	Pyrene		830	ug/k	J	J1
LF6-SD3	8270	bis(2-Ethylhexyl)phthalate		3000	ug/k	J	J1
LF6-SD3	8270	Fluoranthene		870	ug/k	J	J1
LF6-SD3	8270	Benzo(b)fluoranthene		700	ug/k	J	J1
Compounds flagged due to blank contamination:							
LF5-MW4	8270	Bis(2-ethylhexyl) phthalate		28	ug/L	B	U0
LF5-MW2	8270	Bis(2-ethylhexyl) phthalate		24	ug/L	B	U0
FCMW82	8270	Bis(2-ethylhexyl) phthalate		9	ug/L	B	U0
FCMW84	8270	Bis(2-ethylhexyl) phthalate		12	ug/L	B	U0
LF2FCMW76	8270	Bis(2-ethylhexyl) phthalate		4	ug/L	JB	U0
LF2FCMW81	8270	Bis(2-ethylhexyl) phthalate		5	ug/L	JB	U0
LF2FCMW75	8270	Bis(2-ethylhexyl) phthalate		12	ug/L	B	U0
LF2FCMW73	8270	Bis(2-ethylhexyl) phthalate		5	ug/L	JB	U0
LF6DP02	8270	Bis(2-ethylhexyl) phthalate		.1	ug/L	UB	U0
LF6DP02	6010	Zinc		.0668	mg/L	B	U0
LF6DP03	8270	Bis(2-ethylhexyl) phthalate		.1	ug/L	UB	U0
LF6DP03	6010	Zinc		.0436	mg/L	B	U0
LF6DP04	8270	Bis(2-ethylhexyl) phthalate		.1	ug/L	UB	U0
LF6DP04	6010	Zinc		.015	mg/L	JB	U0
LF6DP05RW	8270	Bis(2-ethylhexyl) phthalate		.1	ug/L	UB	U0
LF5DPW3	7421	Lead		.0009	mg/L	J	U0
LF5DPW2	8270	Di-n-butyl phthalate		40	ug/L		U0
LF2DP04	8270	Di-n-butyl phthalate		6	ug/L	BJ	U0
LF2-SD4	8260	Acetone		4.0	ug/k	JB	U0
LF5-SD1	8260	Acetone		2.9	ug/k	JB	U0
LF5-MW2	8260	Methylene chloride		1.0	ug/L	J	U0
LF2-SD4	8260	Methylene chloride		2.0	ug/k	J	U0
W5-2	8260	Acetone		2.2	ug/L	JB	U0
FCMW-68	8260	Acetone		6.1	ug/L	J	U0
LF6-MW9	8260	Acetone		4.5	ug/L	JB	U0
LF6-MW10	8260	Methylene chloride		1.2	ug/L	JB	U0
LF6-MW7	8260	Methylene chloride		1.2	ug/L	JB	U0
LF6-MW9	8260	Methylene chloride		1.1	ug/L	JB	U0
LF6-MW8	8260	Acetone		7.5	ug/L	J	U0
LF5-SD1	8260	Methylene chloride		2.0	ug/k	J	U0

TABLE 5-9
SUMMARY OF QUALIFIED DATA
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Method	Analyte	Result	Units	Lab Flag	Qualifier
LF6-SD1	8260	Methylene chloride	4.4	ug/k	J	U0
LF6-MW10	8260	Acetone	8.9	ug/L	JB	U0
LF6-MW10	8260	Acetone	3.9	ug/L	JB	U0
LF6-MW9	8260	Acetone	5.7	ug/L	JB	U0
FCMW-70	8260	Acetone	12	ug/L		U0
LF2DPW9	8260	Acetone	16	ug/L		U0
LF2DPW12	8260	Acetone	8.0	ug/L	J	U0
LF5DPW4	8270	bis(2-Ethylhexyl)phthalate	3.5	ug/L	BJ	U0
LF5DPW6	8260	Methylene chloride	1.4	ug/L	J	U0
LF2DPW10	8260	Methylene chloride	1.3	ug/L	J	U0
LF5DPW5	8270	bis(2-Ethylhexyl)phthalate	8.0	ug/L	BJ	U0
FCMW-76	8260	Methylene chloride	1.3	ug/L	J	U0
W6-5	8260	Methylene chloride	1.4	ug/L	J	U0
LF6-MW7	8260	Methylene chloride	1.6	ug/L	J	U0
FCMW-71	8260	Methylene chloride	1.5	ug/L	J	U0
FCMW-70	8260	Methylene chloride	1.6	ug/L	J	U0
FCMW-73	8260	Methylene chloride	1.4	ug/L	J	U0
LF2-SD1	8260	Methylene chloride	2.1	ug/k	J	U0
LF6-MW10	8260	Methylene chloride	1.5	ug/L	J	U0
LF2-SD2	8260	Methylene chloride	3.5	ug/k	J	U0
LF5-SD2	8260	Methylene chloride	2.9	ug/k	J	U0
LF2-SD3	8260	Methylene chloride	2.4	ug/k	J	U0
W6-3	8260	Methylene chloride	1.3	ug/L	J	U0
BD-2	8260	Methylene chloride	1.2	ug/L	J	U0
LF2-SD3	8260	Acetone	2.2	ug/k	JB	U0
BD-2	8260	Acetone	5.0	ug/L	JB	U0
FCMW-68	8260	Methylene chloride	1.6	ug/L	J	U0
FCMW-66	8260	Methylene chloride	1.6	ug/L	J	U0
BD-3	8260	Acetone	6.4	ug/L	J	U0
BD-3	8260	Methylene chloride	1.2	ug/L	J	U0
LF6-SW3	8270	bis(2-Ethylhexyl)phthalate	4.9	ug/L	JB	U0
LF6DP9	8260	Methylene chloride	1.1	ug/L	J	U0
LF6DP8	8260	Methylene chloride	1.0	ug/L	J	U0
FCMW-78	8260	Methylene chloride	1.4	ug/L	J	U0
FCMW-78	8260	Methylene chloride	1.1	ug/L	J	U0
LF5-MW1	8260	Methylene chloride	1.6	ug/L	J	U0
LF6-SW2	8260	Methylene chloride	1.1	ug/L	J	U0
LF6DP8	8260	Methylene chloride	1.6	ug/L	J	U0
LF6-SD4	8270	Di-n-butyl phthalate	660	ug/k	B	U0
LF6DP9	8260	Methylene chloride	1.5	ug/L	J	U0
LF5-SW1	8260	Methylene chloride	1.3	ug/L	J	U0
LF2DPW7	8270	bis(2-Ethylhexyl)phthalate	2.4	ug/L	JB	U1
Compounds flagged due to false detection/GC second column confirmation:						
LF6-SD1	8150	2,4,5-TP (Silvex)	7.3	ug/k	J	U2
LF6-SD1	8150	2,4-DB	110	ug/k		U2
LF6-SD3	8080	Aldrin	11	ug/k	J	U2
LF6-SD1	8080	delta-BHC	4.6	ug/k	J	U2
LF6-SD1	8080	Aldrin	5.0	ug/k	TJ	U2
FCMW-66	8080	Heptachlor epoxide	0.90	ug/L		U2
LF6-SD1	8080	4,4'-DDT	17	ug/k		U2
LF6-SD1	8150	Dalapon	56	ug/k	J	U2
LF6-SD1	8150	MCPP	12000	ug/k		U2
FCMW-75	8080	Endosulfan sulfate	0.059	ug/L	J	U2
LF6-SW2	8080	beta-BHC	0.046	ug/L	J	U2
LF6-SW2	8080	Heptachlor	0.067	ug/L		U2
LF6-SW2	8080	alpha-BHC	0.091	ug/L		U2
LF6-SD3	8080	delta-BHC	8.7	ug/k	J	U2

TABLE 5-9
SUMMARY OF QUALIFIED DATA
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Method	Analyte	Result	Units	Lab Flag	Qualifier
FCMW-72	8150	2,4-DB	2.6	ug/L	J	U2
FCMW-66	8080	alpha-BHC	0.034	ug/L	J	U2
W5-2	8080	alpha-BHC	0.037	ug/L	J	U2
FCMW-75	8080	Aldrin	0.025	ug/L	J	U2
LF6-SD2	8080	4,4'-DDT	18	ug/k	J	U2
FCMW-75	8080	Endrin	0.083	ug/L		U2
LF2-SD1	8150	2,4-D	31	ug/k	J	U2
W6-3	8080	Delta-BHC	0.036	ug/L	J	U2
W6-3	8080	Alpha-BHC	0.052	ug/L		U2
BD-2	8080	Alpha-Chlordane	0.031	ug/L	J	U2
NUD-1	8080	Alpha-BHC	0.034	ug/L	J	U2
LF6-MW10	8080	Alpha-Chlordane	0.079	ug/L		U2
LF5-MW4	8080	Alpha-BHC	0.027	ug/L	J	U2
LF2-SD2	8080	Aldrin	2.1	ug/k	TJ	U2
LF2-SD1	8150	Dalapon	75	ug/k	J	U2
LF2-SD2	8080	4,4'-DDT	11	ug/k		U2
LF2-SD1	8150	MCPP	3400	ug/k	J	U2
LF2-SD2	8150	MCPP	28000	ug/k		U2
LF2-SD1	8150	Dinoseb	12	ug/k	J	U2
LF2-SD1	8150	Dichlorprop	14	ug/k	J	U2
FCMW-76	8080	delta-BHC	0.055	ug/L		U2
FCMW-76	8080	Aldrin	0.028	ug/L	J	U2
LF2-SD1	8080	Aldrin	2.6	ug/k	TJ	U2
LF2-SD2	8150	Dalapon	90	ug/k	J	U2
LF2-SD1	8080	4,4'-DDT	8.9	ug/k		U2
LF6-SD3	8080	4,4'-DDT	29	ug/k		U2
LF6DP8	8080	gamma-BHC (Lindane)	0.072	ug/L		U2
FCMW-68	8150	MCPP	140	ug/L	J	U2
FCMW-76	8080	Delta-BHC	0.037	ug/L	J	U2
LF6DP8	8080	beta-BHC	0.029	ug/L	J	U2

Lab Flags:
B - Compound was detected in the associated method blank.
J - Estimated concentration or result was detected below the PQL.
T - Sample was diluted due to concentration of target analytes.
U - The compound was not detected.

Qualifier Codes:
J1 - Estimated value due to surrogate recovery (too low or too high).
J4 - Estimated value due to holding time exceedance.
R1 - Rejected value due to surrogate recovery (too low or too high).
U0 - Compound present in an associated blank, <5x or <10x (sample undiluted).
U2 - Compound determined to be a false positive (2nd column).
UJ1 - Reporting limit estimated due to surrogate recovery (too low or too high).
UJ4 - Reporting limit estimated due to holding time exceedance.

TABLE 5-10
SUMMARY OF DETECTED COMPOUNDS
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Sample Date	Test Method	Analyte	Result	Lab Flag	Data Qualifier	Units	Dilution Factor	Lab
LF5-MW1	05/01/95	6010	Sodium (diss.)	2380			mg/L	5	HY
		6010	Silver (diss.)	.0038	J		mg/L	1	HY
		300	Nitrate	39			mg/L	25	HY
		7041	Antimony (diss.)	.0026	J		mg/L	2	HY
		7740	Selenium (diss.)	.15			mg/L	5	HY
		6010	Barium (diss.)	.0096	J		mg/L	1	HY
		6010	Calcium (diss.)	368			mg/L	1	HY
		6010	Magnesium (diss.)	913			mg/L	1	HY
		6010	Manganese (diss.)	.417			mg/L	1	HY
		6010	Nickel (diss.)	.0208			mg/L	1	HY
		6010	Potassium (diss.)	28.3			mg/L	1	HY
LF5-MW5	05/03/95	6010	Sodium (diss.)	2970			mg/L	5	HY
		6010	Silver (diss.)	.0021	J		mg/L	1	HY
		7060	Arsenic (diss.)	.0023	J		mg/L	1	HY
		6010	Barium (diss.)	.014	J		mg/L	1	HY
		6010	Calcium (diss.)	165			mg/L	1	HY
		6010	Magnesium (diss.)	91.7			mg/L	1	HY
		6010	Manganese (diss.)	.119			mg/L	1	HY
		6010	Potassium (diss.)	14.9			mg/L	1	HY
LF5-MW4	05/03/95	6010	Sodium (diss.)	808			mg/L	1	HY
		6010	Silver (diss.)	.002	J		mg/L	1	HY
		8260	Trichloroethene	1.8			ug/L	1	HY
		300	Nitrate	13			mg/L	10	HY
		7740	Selenium (diss.)	.037			mg/L	5	HY
		6010	Barium (diss.)	.0069	J		mg/L	1	HY
		6010	Calcium (diss.)	164			mg/L	1	HY
		6010	Magnesium (diss.)	147			mg/L	1	HY
		6010	Manganese (diss.)	.505			mg/L	1	HY
		6010	Potassium (diss.)	7.66			mg/L	1	HY
W5-2	05/03/95	6010	Sodium (diss.)	3550			mg/L	5	HY
		6010	Silver (diss.)	.0052	J		mg/L	1	HY
		300	Nitrate	353			mg/L	100	HY
		7740	Selenium (diss.)	.059			mg/L	10	HY
		6010	Barium (diss.)	.012	J		mg/L	1	HY
		6010	Calcium (diss.)	407			mg/L	1	HY
		6010	Magnesium (diss.)	850			mg/L	1	HY
		6010	Manganese (diss.)	7.44			mg/L	1	HY
		6010	Nickel (diss.)	.027			mg/L	1	HY
		6010	Potassium (diss.)	36			mg/L	1	HY
LF5-MW2	05/02/95	6010	Sodium (diss.)	1050			mg/L	2	HY
		6010	Silver (diss.)	.0051	J		mg/L	1	HY
		300	Nitrate	53.2			mg/L	25	HY
		7740	Selenium (diss.)	.12			mg/L	5	HY
		6010	Barium (diss.)	.013	J		mg/L	1	HY
		6010	Calcium (diss.)	431			mg/L	1	HY
		6010	Magnesium (diss.)	453			mg/L	1	HY
		6010	Manganese (diss.)	.549			mg/L	1	HY
		6010	Nickel (diss.)	.01	J		mg/L	1	HY
		6010	Potassium (diss.)	10.7			mg/L	1	HY
		6010	Zinc (diss.)	.0473			mg/L	1	HY

TABLE 5-10
SUMMARY OF DETECTED COMPOUNDS
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Sample Date	Test Method	Analyte	Result	Lab Flag	Data Qualifier	Units	Dilution Factor	Lab
FCMW82	05/02/95	6010	Sodium (diss.)	1560			mg/L	2	HY
		6010	Silver (diss.)	.004	J		mg/L	1	HY
		8260	Trichloroethene	5.4			ug/L	1	HY
		300	Nitrate	19.9			mg/L	10	HY
		7041	Antimony (diss.)	.0045	J		mg/L	1	HY
		7740	Selenium (diss.)	.024	J		mg/L	5	HY
		6010	Barium (diss.)	.0098	J		mg/L	1	HY
		6010	Calcium (diss.)	282			mg/L	1	HY
		6010	Magnesium (diss.)	515			mg/L	1	HY
		6010	Manganese (diss.)	1.67			mg/L	1	HY
		6010	Potassium (diss.)	11.2			mg/L	1	HY
FCMW84	05/02/95	6010	Sodium (diss.)	1590			mg/L	2	HY
		6010	Silver (diss.)	.0042	J		mg/L	1	HY
		8260	Trichloroethene	1.2			ug/L	1	HY
		300	Nitrate	101			mg/L	25	HY
		7740	Selenium (diss.)	.15			mg/L	10	HY
		6010	Barium (diss.)	.0067	J		mg/L	1	HY
		6010	Calcium (diss.)	390			mg/L	1	HY
		6010	Copper (diss.)	.0241			mg/L	1	HY
		6010	Magnesium (diss.)	615			mg/L	1	HY
		6010	Manganese (diss.)	.0717			mg/L	1	HY
		6010	Potassium (diss.)	12.7			mg/L	1	HY
LF6NUD-1DUP	05/04/95	8260	cis-1,2-Dichloroethene	4.2			ug/L	1	HY
		8270	Bis(2-ethylhexyl) phthalate	7			ug/L	1	HY
		7041	Antimony (diss.)	.016	J		mg/L	5	HY
		6010	Barium (diss.)	.019	J		mg/L	1	HY
		6010	Calcium (diss.)	423			mg/L	1	HY
		6010	Magnesium (diss.)	687			mg/L	1	HY
		6010	Manganese (diss.)	1.23			mg/L	1	HY
		6010	Potassium (diss.)	37.5			mg/L	1	HY
		6010	Silver (diss.)	.0026	J		mg/L	1	HY
LF6NUD-1	05/04/95	8260	cis-1,2-Dichloroethene	4.1			ug/L	1	HY
		7041	Antimony (diss.)	.012	J		mg/L	5	HY
		6010	Barium (diss.)	.018	J		mg/L	1	HY
		6010	Calcium (diss.)	425			mg/L	1	HY
		6010	Magnesium (diss.)	684			mg/L	1	HY
		6010	Manganese (diss.)	1.38			mg/L	1	HY
		6010	Potassium (diss.)	35.8			mg/L	1	HY
		6010	Silver (diss.)	.0023	J		mg/L	1	HY
LF5-MW3	05/04/95	8270	Bis(2-ethylhexyl) phthalate	10			ug/L	1	HY
LF5-MW6	05/04/95	8270	Bis(2-ethylhexyl) phthalate	16			ug/L	1	HY
LF6W6-3	05/05/95	6010	Barium (diss.)	.011	J		mg/L	1	HY
		6010	Calcium (diss.)	394			mg/L	1	HY
		6010	Magnesium (diss.)	396			mg/L	1	HY
		6010	Manganese (diss.)	2.97			mg/L	1	HY
		6010	Potassium (diss.)	24.3			mg/L	1	HY
		6010	Silver (diss.)	.003	J		mg/L	1	HY

TABLE 5-10
SUMMARY OF DETECTED COMPOUNDS
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Sample Date	Test Method	Analyte	Result	Lab Flag	Data Qualifier	Units	Dilution Factor	Lab
LF2FCMW75	05/09/95	7470	Mercury (diss)	.0007			mg/L	1	HY
		7041	Antimony (diss.)	.014	J		mg/L	5	HY
		7740	Selenium (diss.)	.0076	J		mg/L	2	HY
		6010	Barium (diss.)	.015	J		mg/L	1	HY
		6010	Calcium (diss.)	491			mg/L	1	HY
		6010	Cobalt (diss.)	.0075	J		mg/L	1	HY
		6010	Iron (diss.)	.458			mg/L	1	HY
		6010	Magnesium (diss.)	646			mg/L	1	HY
		6010	Manganese (diss.)	6.8			mg/L	1	HY
		6010	Nickel (diss.)	.0221			mg/L	1	HY
		6010	Potassium (diss.)	9.72			mg/L	1	HY
		6010	Silver (diss.)	.0045	J		mg/L	1	HY
LF2FCMW76	05/09/95	8260	1,2-Dichloroethane	2.9			ug/L	1	HY
		8260	1,2-Dichloropropane	3.8			ug/L	1	HY
		8260	cis-1,2-Dichloroethene	2.4			ug/L	1	HY
		7041	Antimony (diss.)	.022	J		mg/L	5	HY
		6010	Barium (diss.)	.011	J		mg/L	1	HY
		6010	Calcium (diss.)	422			mg/L	1	HY
		6010	Manganese (diss.)	4.78			mg/L	1	HY
		6010	Nickel (diss.)	.0447			mg/L	1	HY
		6010	Potassium (diss.)	13.6			mg/L	1	HY
		6010	Silver (diss.)	.0026	J		mg/L	1	HY
LF2FCMW81	05/09/95	7041	Antimony (diss.)	.021	J		mg/L	5	HY
		6010	Barium (diss.)	.0051	J		mg/L	1	HY
		6010	Calcium (diss.)	385			mg/L	1	HY
		6010	Manganese (diss.)	1.02			mg/L	1	HY
		6010	Potassium (diss.)	18.8			mg/L	1	HY
		6010	Silver (diss.)	.003	J		mg/L	1	HY
LF6-A	05/08/95	8260	cis-1,2-Dichloroethene	53			ug/L	5	HY
		8260	Tetrachloroethene	34			ug/L	1	HY
		8260	Trichloroethene	9.4			ug/L	1	HY
		8260	Vinyl chloride	36			ug/L	5	HY
		8270	Bis(2-ethylhexyl) phthalate	24			ug/L	1	HY
		300	Nitrate	5.34			mg/L	2	HY
		7060	Arsenic (diss.)	.0021	J		mg/L	1	HY
		7740	Selenium (diss.)	.0021	J		mg/L	1	HY
		7841	Thallium (diss.)	.0011	J		mg/L	1	HY
		6010	Barium (diss.)	.115			mg/L	1	HY
		6010	Calcium (diss.)	147			mg/L	1	HY
		6010	Iron (diss.)	3.54			mg/L	1	HY
		6010	Magnesium (diss.)	63.4			mg/L	1	HY
		6010	Manganese (diss.)	1.33			mg/L	1	HY
		6010	Nickel (diss.)	.01	J		mg/L	1	HY
		6010	Potassium (diss.)	18			mg/L	1	HY
		6010	Zinc (diss.)	.0399			mg/L	1	HY
		7060	Arsenic (diss.)	.0401			mg/L	1	HY
LF2FCMW75	05/10/95	353	Nitrate + Nitrite	.24			mg/L	2	HY
LF2FCMW73	05/10/95	6010	Sodium (diss.)	3760			mg/L	5	HY
		353	Nitrate + Nitrite	83			mg/L	100	HY
		7041	Antimony (diss.)	.0215	J		mg/L	5	HY
		7841	Thallium (diss.)	.0013	J		mg/L	1	HY
		6010	Barium (diss.)	.0063	J		mg/L	1	HY
		6010	Calcium (diss.)	407			mg/L	1	HY
		6010	Magnesium (diss.)	970			mg/L	1	HY
		6010	Manganese (diss.)	.0064	J		mg/L	1	HY

TABLE 5-10
SUMMARY OF DETECTED COMPOUNDS
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Sample Date	Test Method	Analyte	Result	Lab Flag	Data Qualifier	Units	Dilution Factor	Lab
LF2FCMW73 cont.		6010	Potassium (diss.)	5.57			mg/L	1	HY
		6010	Silver (diss.)	.0039	J		mg/L	1	HY
LF2FCMW74	05/10/95	6010	Magnesium (diss.)	2170			mg/L	5	HY
		6010	Sodium (diss.)	9740			mg/L	10	HY
		8270	Bis(2-ethylhexyl) phthalate	98	B		ug/L	1	HY
		353	Nitrate + Nitrite	113			mg/L	100	HY
		7041	Antimony (diss.)	.036	J		mg/L	10	HY
		7740	Selenium (diss.)	.052	J		mg/L	20	HY
		7841	Thallium (diss.)	.0046	J		mg/L	1	HY
		6010	Barium (diss.)	.0081	J		mg/L	1	HY
		6010	Calcium (diss.)	423			mg/L	1	HY
		6010	Cobalt (diss.)	.011	J		mg/L	1	HY
		6010	Manganese (diss.)	8.43			mg/L	1	HY
		6010	Nickel (diss.)	.0247			mg/L	1	HY
		6010	Potassium (diss.)	73			mg/L	1	HY
		6010	Silver (diss.)	.0045	J		mg/L	1	HY
LF2-WQ	05/10/95	310.1	Alkalinity	799			mg/L	1	HY
		310.1	Bicarbonate	799			mg/L	1	HY
		300	Sulfate	10900	B		mg/L	1000	HY
		90	Total Organic Carbon	12			mg/L	1	HY
		160	TDS	18200		J4	mg/L	1	HY
		300	Nitrate	97			mg/L	25	HY
		310.1	Alkalinity	515			mg/L	1	HY
		310.1	Bicarbonate	515			mg/L	1	HY
		300	Chloride	83.8			mg/L	25	HY
		90	Total Organic Carbon	5.5			mg/L	1	HY
		160	TDS	7450			mg/L	1	HY
		300	Nitrate	42.2			mg/L	10	HY
LF6-WQ	05/10/95	405	BOD	3			mg/L	1	HY
		310.1	Alkalinity	410			mg/L	1	HY
		310.1	Bicarbonate	410			mg/L	1	HY
		300	Chloride	43			mg/L	10	HY
		300	Sulfate	469			mg/L	25	HY
		90	Total Organic Carbon	15.9			mg/L	1	HY
		160	TDS	1100			mg/L	1	HY
		300	Nitrate	4.3	J		mg/L	10	HY
LF6DP02	05/19/95	7060	Arsenic	.004	J		mg/L	1	HY
		7421	Lead	.0134			mg/L	1	HY
		7740	Selenium (diss.)	.0031	J		mg/L	1	HY
		7740	Selenium	.0024	J		mg/L	1	HY
		7841	Thallium (diss.)	.0016	J		mg/L	1	HY
		6010	Barium (diss.)	.0207			mg/L	1	HY
		6010	Aluminum	10.1			mg/L	1	HY
		6010	Barium	.135			mg/L	1	HY
		6010	Beryllium	.0004	J		mg/L	1	HY
		6010	Chromium	.0122			mg/L	1	HY
		6010	Cobalt	.0075	J		mg/L	1	HY
		6010	Copper	.0101			mg/L	1	HY
		6010	Nickel	.01	J		mg/L	1	HY
		6010	Vanadium	.035	J		mg/L	1	HY
		7041	Antimony	.0024	J		mg/L	1	HY
LF6DP03	05/19/95	7421	Lead	.0047			mg/L	1	HY
		7740	Selenium (diss.)	.0063			mg/L	1	HY
		7740	Selenium	.0051			mg/L	1	HY
		7841	Thallium	.0013	J		mg/L	1	HY

TABLE 5-10
SUMMARY OF DETECTED COMPOUNDS
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Sample Date	Test Method	Analyte	Result	Lab Flag	Data Qualifier	Units	Dilution Factor	Lab
LF6DP03 cont.		8270	Di-n-butyl phthalate	57			ug/L	1	HY
		6010	Barium (diss.)	.0355			mg/L	1	HY
		6010	Aluminum	3.64			mg/L	1	HY
		6010	Barium	.0799			mg/L	1	HY
		6010	Nickel	.01	J		mg/L	1	HY
		6010	Vanadium	.012	J		mg/L	1	HY
		7041	Antimony	.0011	J		mg/L	1	HY
LF6DP04	05/19/95	6010	Sodium	151			mg/L	1	HY
		7421	Lead	.0013	J		mg/L	1	HY
		7841	Thallium	.0008	J		mg/L	1	HY
		7841	Thallium (diss.)	.0015	J		mg/L	1	HY
		6010	Barium (diss.)	.0466			mg/L	1	HY
		6010	Barium	.0406			mg/L	1	HY
		6010	Silver	.0023	J		mg/L	1	HY
LF2DP03	06/23/95	7470	Mercury	.0003			mg/L	1	HY
		353	Nitrate + Nitrite	.48			mg/L	2	HY
		6010	Silver	.0026	J		mg/L	1	HY
		6010	Barium	.116			mg/L	1	HY
		6010	Chromium	.0059	J		mg/L	1	HY
		7740	Selenium	.0024	J		mg/L	2	HY
LF5DPW3	06/22/95	353	Nitrate + Nitrite	7.3			mg/L	20	HY
		6010	Barium	.031			mg/L	1	HY
		7740	Selenium	.0215			mg/L	1	HY
LF5DPW2	06/23/95	8270	Bis(2-ethylhexyl) phthalate	96	B		ug/L	1	HY
LF6DPW05	11/27/95	8260	Toluene	1.5	J		ug/L	1.0	QT
		8270	2-Acetylaminofluorene	1.2	J		ug/L	1.0	QT
		8270	Di-n-butyl phthalate	11			ug/L	1.0	QT
		8270	3/4-Methylphenol	6.6	J		ug/L	1.0	QT
		8270	Phenol	1.2	J		ug/L	1.0	QT
		6010	Barium	0.21	J		mg/L	1.0	QT
		6010	Chromium	0.012	J		mg/L	1.0	QT
		7060	Arsenic	0.0040	J		mg/L	1.0	QT
		7470	Mercury	0.00022			mg/L	1.0	QT
LF6DPW06	11/27/95	8260	p-Isopropyltoluene^(p-Cymene)	1.3	J		ug/L	1.0	QT
		8260	Naphthalene	11			ug/L	1.0	QT
		8270	Naphthalene	5.7	J		ug/L	1.0	QT
		6010	Barium	0.050			mg/L	1.0	QT
		6010	Silver	0.0044	J		mg/L	1.0	QT
LF6DPW07	11/27/95	8260	Chloroform	1.3	J		ug/L	1.0	QT
		8260	Methylene chloride	1.0	J		ug/L	1.0	QT
		6010	Barium	0.034			mg/L	1.0	QT
		7740	Selenium	0.0077			mg/L	1.0	QT
LF6-WC-S1	12/18/95	6010	Barium	0.36	J		mg/L	1.0	QT
		6010	Selenium	0.13	J		mg/L	1.0	QT
LF6-MW6	01/02/96	7740	Selenium	0.086	J		mg/L	20	QT
		8270	Bis(2-Ethylhexyl)Phthalate	2.2	J		ug/L	1.0	QT
LF6-MW10	01/03/96	6010	Barium	0.022			mg/L	1.0	QT
		7470	Mercury	0.000060	J		mg/L	1.0	QT
		7740	Selenium	0.0088	J		mg/L	2.0	QT

TABLE 5-10
SUMMARY OF DETECTED COMPOUNDS
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Sample Date	Test Method	Analyte	Result	Lab Flag	Data Qualifier	Units	Dilution Factor	Lab
LF6-MW7	01/03/96	6010	Barium	0.064			mg/L	1.0	QT
		7740	Selenium	0.0073			mg/L	1.0	QT
		8270	Bis(2-Ethylhexyl)Phthalate	1.1	J		ug/L	1.0	QT
LF6-MW9	01/03/96	6010	Barium	0.032			mg/L	1.0	QT
		7740	Selenium	0.0092	J		mg/L	2.0	QT
		8260	Chloroform	1.6	J		ug/L	1.0	QT
LF6-MW9DUP	01/03/96	6010	Barium	0.030			mg/L	1.0	QT
		8260	Chloroform	2.0	J		ug/L	1.0	QT
LF6-MW8	01/04/96	6010	Barium	0.032			mg/L	1.0	QT
		8260	4-Methyl-2-pentanone (MIBK)	5.5	J		ug/L	1.0	QT
		8260	1,2-Dichloroethane	5.2			ug/L	1.0	QT
		8260	Xylenes (total)	1.4	J		ug/L	1.0	QT
		8260	Ethyl methacrylate	1.2	J		ug/L	1.0	QT
		8270	4-Nitroaniline	2.0	J		ug/L	1.0	QT
		8270	Bis(2-Ethylhexyl)Phthalate	11			ug/L	1.0	QT
		8270	Benzo(g,h,i)Perylene	1.8	J		ug/L	1.0	QT
		8270	Indeno(1,2,3-cd)Pyrene	1.2	J		ug/L	1.0	QT
		8270	Benzo(kFluoranthene	1.2	J		ug/L	1.0	QT
		8270	Chrysene	1.0	J		ug/L	1.0	QT
		8270	Dibenz(a,h)Anthracene	1.0	J		ug/L	1.0	QT
		8270	Di-n-butyl Phthalate	1.2	J		ug/L	1.0	QT
		8270	Pentachlorophenol	1.4	J		ug/L	1.0	QT
FCMW-62	01/29/96	160.1	Total Dissolved Solids	18000			mg/L	1.0	QT
		160.2	Total Suspended Solids	56.0			mg/L	1.0	QT
		300.0	Chloride	415			mg/L	5.0	QT
		300.0	Nitrate As N	115			mg/L	5.0	QT
		300.0	Sulfate	10200			mg/L	5.0	QT
		310.1	Alkalinity, Total As CaCO3 At Ph 4.5	538			mg/L	1.0	QT
		310.1	Alkalinity, Bicarb. As CaCO3 At Ph 4.	538			mg/L	1.0	QT
		353.2	Nitrate plus Nitrite as N	113			mg/L	200	QT
		410.4	Chemical Oxygen Demand (Regular)	29.8			mg/L	1.0	QT
		415.1	Total Organic Carbon	10			mg/L	1.0	QT
		6010	Magnesium	696			mg/L	2.0	QT
		6010	Manganese	2.3			mg/L	2.0	QT
		6010	Potassium	14.0			mg/L	2.0	QT
		6010	Sodium	3640			mg/L	2.0	QT
		6010	Barium	0.0072	J		mg/L	2.0	QT
		6010	Calcium	391			mg/L	2.0	QT
		7060	Arsenic	0.0055	J		mg/L	5.0	QT
		7740	Selenium	0.0078	J		mg/L	2.0	QT
		7841	Thallium	0.0044	J		mg/L	2.0	QT
FCMW-68	01/29/96	160.1	Total Dissolved Solids	16700			mg/L	1.0	QT
		160.2	Total Suspended Solids	1180			mg/L	1.0	QT
		300.0	Chloride	752			mg/L	5.0	QT
		300.0	Nitrate As N	170			mg/L	5.0	QT
		300.0	Sulfate	9010			mg/L	5.0	QT
		310.1	Alkalinity, Total As CaCO3 At Ph 4.5	820			mg/L	1.0	QT
		310.1	Alkalinity, Bicarb. As CaCO3 At Ph 4.	820			mg/L	1.0	QT
		353.2	Nitrate plus Nitrite as N	182			mg/L	200	QT
		405.1	BOD	3.0			mg/L	1.0	QT
		410.4	Chemical Oxygen Demand (Regular)	41.3			mg/L	1.0	QT
		415.1	Total Organic Carbon	14			mg/L	1.0	QT
		6010	Magnesium	321			mg/L	2.0	QT
		6010	Manganese	1.5			mg/L	2.0	QT
		6010	Potassium	27.1			mg/L	2.0	QT

TABLE 5-10
SUMMARY OF DETECTED COMPOUNDS
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Sample Date	Test Method	Analyte	Result	Lab Flag	Data Qualifier	Units	Dilution Factor	Lab
FCMW-68 cont.		6010	Sodium	3910			mg/L	2.0	QT
		6010	Calcium	396			mg/L	2.0	QT
		7060	Arsenic	0.0070	J		mg/L	2.0	QT
		7740	Selenium	0.0092	J		mg/L	2.0	QT
		7841	Thallium	0.0038	J		mg/L	2.0	QT
		8270	Bis(2-Ethylhexyl)Phthalate	8.7	J		ug/L	1.0	QT
W5-2	02/02/96	6010	Magnesium	825			mg/L	2.0	QT
		6010	Manganese	7.4			mg/L	2.0	QT
		6010	Nickel	0.026	J		mg/L	2.0	QT
		6010	Potassium	27.1			mg/L	2.0	QT
		6010	Sodium	3400			mg/L	2.0	QT
		6010	Barium	0.011	J		mg/L	2.0	QT
		6010	Calcium	382			mg/L	2.0	QT
		7421	Lead	0.011	J		mg/L	10	QT
		7740	Selenium	0.0024	J		mg/L	1.0	QT
		7841	Thallium	0.0013	J		mg/L	2.0	QT
FCMW-76	01/30/96	160.1	Total Dissolved Solids	20800			mg/L	1.0	QT
		160.2	Total Suspended Solids	9.6			mg/L	1.0	QT
		300.0	Chloride	210			mg/L	10	QT
		300.0	Sulfate	12200			mg/L	10	QT
		310.1	Alkalinity, Total As CaCO3 At Ph 4.5	2860			mg/L	10	QT
		310.1	Alkalinity, Bicarb. As CaCO3 At Ph 4.	2860			mg/L	10	QT
		353.2	Nitrate plus Nitrite as N	0.14			mg/L	1.0	QT
		410.4	Chemical Oxygen Demand (Regular)	56.1			mg/L	1.0	QT
		415.1	Total Organic Carbon	23			mg/L	1.0	QT
		6010	Magnesium	1120			mg/L	2.0	QT
		6010	Manganese	5.3			mg/L	2.0	QT
		6010	Nickel	0.051	J		mg/L	2.0	QT
		6010	Potassium	8.9	J		mg/L	2.0	QT
		6010	Sodium	3790			mg/L	2.0	QT
		6010	Barium	0.013	J		mg/L	2.0	QT
		6010	Zinc	0.049			mg/L	2.0	QT
		6010	Calcium	407			mg/L	2.0	QT
		7841	Thallium	0.0024	J		mg/L	2.0	QT
		8260	1,2-Dichloroethene (total)	2.3	J		ug/L	1.0	QT
		8260	1,2-Dichloroethane	3.2	J		ug/L	1.0	QT
		8260	1,2-Dichloropropane	3.6	J		ug/L	1.0	QT
		8270	Bis(2-Ethylhexyl)Phthalate	1.1	J		ug/L	1.0	QT
		9012	Cyanide	0.018			mg/L	1.0	QT
FCMW-70	01/30/96	160.1	Total Dissolved Solids	47200			mg/L	1.0	QT
		160.2	Total Suspended Solids	76.8			mg/L	1.0	QT
		300.0	Chloride	365			mg/L	10	QT
		300.0	Sulfate	30100			mg/L	500	QT
		310.1	Alkalinity, Total As CaCO3 At Ph 4.5	1400			mg/L	10	QT
		310.1	Alkalinity, Bicarb. As CaCO3 At Ph 4.	1400			mg/L	10	QT
		410.4	Chemical Oxygen Demand (Regular)	80.9			mg/L	1.0	QT
		415.1	Total Organic Carbon	36			mg/L	1.0	QT
		6010	Magnesium	2560			mg/L	5.0	QT
		6010	Manganese	16.7			mg/L	5.0	QT
		6010	Nickel	0.051	J		mg/L	5.0	QT
		6010	Potassium	46.9			mg/L	5.0	QT
		6010	Sodium	8450			mg/L	5.0	QT
		6010	Cobalt	0.028	J		mg/L	5.0	QT
		6010	Calcium	402			mg/L	5.0	QT
		7841	Thallium	0.0070	J		mg/L	5.0	QT

TABLE 5-10
SUMMARY OF DETECTED COMPOUNDS
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Sample Date	Test Method	Analyte	Result	Lab Flag	Data Qualifier	Units	Dilution Factor	Lab
FCMW-73	01/30/96	160.1	Total Dissolved Solids	18900			mg/L	1.0	QT
		160.2	Total Suspended Solids	305			mg/L	1.0	QT
		300.0	Chloride	353			mg/L	5.0	QT
		300.0	Nitrate As N	117			mg/L	5.0	QT
		300.0	Sulfate	11500			mg/L	5.0	QT
		310.1	Alkalinity, Total As CaCO3 At Ph 4.5	782			mg/L	2.0	QT
		310.1	Alkalinity, Bicarb. As CaCO3 At Ph 4.	782			mg/L	2.0	QT
		353.2	Nitrate plus Nitrite as N	119			mg/L	100	QT
		410.4	Chemical Oxygen Demand (Regular)	32.1			mg/L	5.0	QT
		415.1	Total Organic Carbon	13			mg/L	1.0	QT
		6010	Magnesium	903			mg/L	2.0	QT
		6010	Potassium	4.3	J		mg/L	2.0	QT
		6010	Sodium	3640			mg/L	2.0	QT
		6010	Calcium	381			mg/L	2.0	QT
		7060	Arsenic	0.0065	J		mg/L	5.0	QT
		7740	Selenium	0.0019	J		mg/L	1.0	QT
		7841	Thallium	0.0032	J		mg/L	2.0	QT
FCMW-74	01/30/96	160.1	Total Dissolved Solids	46000			mg/L	1.0	QT
		160.2	Total Suspended Solids	185			mg/L	1.0	QT
		300.0	Chloride	761			mg/L	10	QT
		300.0	Nitrate As N	113			mg/L	10	QT
		300.0	Sulfate	28700			mg/L	500	QT
		310.1	Alkalinity, Total As CaCO3 At Ph 4.5	1540			mg/L	10	QT
		310.1	Alkalinity, Bicarb. As CaCO3 At Ph 4.	1540			mg/L	10	QT
		353.2	Nitrate plus Nitrite as N	118			mg/L	100	QT
		410.4	Chemical Oxygen Demand (Regular)	93.9			mg/L	10	QT
		415.1	Total Organic Carbon	38			mg/L	1.0	QT
		6010	Magnesium	2070			mg/L	5.0	QT
		6010	Manganese	8.3			mg/L	5.0	QT
		6010	Potassium	44.6			mg/L	5.0	QT
		6010	Sodium	9350			mg/L	5.0	QT
		6010	Calcium	415			mg/L	5.0	QT
		7740	Selenium	0.023	J		mg/L	10	QT
		7841	Thallium	0.0080	J		mg/L	5.0	QT
		8270	Bis(2-Ethylhexyl)Phthalate	1.0	J		ug/L	1.0	QT
		8270	Di-n-butyl Phthalate	1.3	J		ug/L	1.0	QT
LF5-MW2	01/31/96	160.1	Total Dissolved Solids	8200			mg/L	1.0	QT
		160.2	Total Suspended Solids	31.2			mg/L	1.0	QT
		300.0	Chloride	94.5			mg/L	5.0	QT
		300.0	Nitrate As N	40.3			mg/L	5.0	QT
		300.0	Sulfate	4700			mg/L	50	QT
		310.1	Alkalinity, Total As CaCO3 At Ph 4.5	542			mg/L	1.0	QT
		310.1	Alkalinity, Bicarb. As CaCO3 At Ph 4.	542			mg/L	1.0	QT
		353.2	Nitrate plus Nitrite as N	41.0			mg/L	50	QT
		415.1	Total Organic Carbon	5.6			mg/L	1.0	QT
		6010	Iron	0.16			mg/L	1.0	QT
		6010	Magnesium	425			mg/L	1.0	QT
		6010	Manganese	0.73			mg/L	1.0	QT
		6010	Potassium	10.3			mg/L	1.0	QT
		6010	Sodium	1190			mg/L	1.0	QT
		6010	Barium	0.011			mg/L	1.0	QT
		6010	Zinc	0.047			mg/L	1.0	QT
		6010	Calcium	436			mg/L	1.0	QT
		7740	Selenium	0.088			mg/L	5.0	QT
		8270	Bis(2-Ethylhexyl)Phthalate	3.0	J		ug/L	1.0	QT

TABLE 5-10
SUMMARY OF DETECTED COMPOUNDS
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Sample Date	Test Method	Analyte	Result	Lab Flag	Data Qualifier	Units	Dilution Factor	Lab
LF5-MW4	02/01/96	160.1	Total Dissolved Solids	4410			mg/L	1.0	QT
		160.2	Total Suspended Solids	198			mg/L	1.0	QT
		300.0	Chloride	89.1			mg/L	5.0	QT
		300.0	Nitrate As N	8.2			mg/L	2.0	QT
		300.0	Sulfate	2520			mg/L	50	QT
		310.1	Alkalinity, Total As CaCO3 At Ph 4.5	400			mg/L	1.0	QT
		310.1	Alkalinity, Bicarb. As CaCO3 At Ph 4.	400			mg/L	1.0	QT
		353.2	Nitrate plus Nitrite as N	1.2			mg/L	1.0	QT
		410.4	Chemical Oxygen Demand (Regular)	23.3			mg/L	1.0	QT
		415.1	Total Organic Carbon	8.9			mg/L	1.0	QT
		6010	Magnesium	110			mg/L	1.0	QT
		6010	Manganese	0.57			mg/L	1.0	QT
		6010	Potassium	5.7			mg/L	1.0	QT
		6010	Sodium	811			mg/L	1.0	QT
		6010	Barium	0.0066	J		mg/L	1.0	QT
		6010	Calcium	115			mg/L	1.0	QT
		7740	Selenium	0.034	J		mg/L	10	QT
		8260	Trichloroethene	1.1	J		ug/L	1.0	QT
W5-2	02/01/96	160.1	Total Dissolved Solids	19900			mg/L	1.0	QT
		160.2	Total Suspended Solids	16.4			mg/L	1.0	QT
		300.0	Chloride	720			mg/L	10	QT
		300.0	Nitrate As N	362			mg/L	50	QT
		300.0	Sulfate	10500			mg/L	200	QT
		310.1	Alkalinity, Total As CaCO3 At Ph 4.5	884			mg/L	1.0	QT
		310.1	Alkalinity, Bicarb. As CaCO3 At Ph 4.	884			mg/L	1.0	QT
		353.2	Nitrate plus Nitrite as N	348			mg/L	200	QT
		410.4	Chemical Oxygen Demand (Regular)	68.6			mg/L	1.0	QT
		415.1	Total Organic Carbon	28			mg/L	1.0	QT
		8270	Bis(2-Ethylhexyl)Phthalate	12			ug/L	1.0	QT
		8270	Di-n-octyl Phthalate	1.4	J		ug/L	1.0	QT
		8270	Benzo(g,h,i)Perylene	1.0	J		ug/L	1.0	QT
		8270	Benzo(b)Fluoranthene	1.4	J		ug/L	1.0	QT
		8270	Benzo(kFluoranthene	1.1	J		ug/L	1.0	QT
		8270	Chrysene	2.0	J		ug/L	1.0	QT
LF6-MW10	02/01/96	160.1	Total Dissolved Solids	2770			mg/L	1.0	QT
		160.2	Total Suspended Solids	12300			mg/L	1.0	QT
		300.0	Chloride	61.2			mg/L	2.0	QT
		300.0	Nitrate As N	2.3			mg/L	2.0	QT
		300.0	Fluoride	3.0			mg/L	2.0	QT
		300.0	Sulfate	1390			mg/L	25	QT
		310.1	Alkalinity, Total As CaCO3 At Ph 4.5	650			mg/L	1.0	QT
		310.1	Alkalinity, Bicarb. As CaCO3 At Ph 4.	650			mg/L	1.0	QT
		353.2	Nitrate plus Nitrite as N	2.9			mg/L	2.0	QT
		415.1	Total Organic Carbon	3.3			mg/L	1.0	QT
		6010	Magnesium	141			mg/L	1.0	QT
		6010	Manganese	0.11			mg/L	1.0	QT
		6010	Potassium	3.4	J		mg/L	1.0	QT
		6010	Sodium	409			mg/L	1.0	QT
		6010	Barium	0.021			mg/L	1.0	QT
		6010	Calcium	239			mg/L	1.0	QT
		7740	Selenium	0.0048	J		mg/L	1.0	QT
LF6-MW9	02/01/96	160.1	Total Dissolved Solids	1090			mg/L	1.0	QT
		160.2	Total Suspended Solids	7060			mg/L	1.0	QT
		300.0	Chloride	60.1			mg/L	1.0	QT
		300.0	Nitrate As N	6.9			mg/L	1.0	QT
		300.0	Fluoride	1.5			mg/L	1.0	QT
		300.0	Sulfate	404			mg/L	5.0	QT

TABLE 5-10
SUMMARY OF DETECTED COMPOUNDS
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Sample Date	Test Method	Analyte	Result	Lab Flag	Data Qualifier	Units	Dilution Factor	Lab
LF6-MW9 cont.		310.1	Alkalinity, Total As CaCO3 At Ph 4.5	447			mg/L	1.0	QT
		310.1	Alkalinity, Bicarb. As CaCO3 At Ph 4.	447			mg/L	1.0	QT
		353.2	Nitrate plus Nitrite as N	7.5			mg/L	4.0	QT
		415.1	Total Organic Carbon	2.3			mg/L	1.0	QT
		6010	Magnesium	42.9			mg/L	1.0	QT
		6010	Manganese	0.090			mg/L	1.0	QT
		6010	Potassium	3.8	J		mg/L	1.0	QT
		6010	Sodium	205			mg/L	1.0	QT
		6010	Barium	0.035			mg/L	1.0	QT
		6010	Calcium	104			mg/L	1.0	QT
		7041	Antimony	0.0035	J		mg/L	1.0	QT
		7740	Selenium	0.0086			mg/L	1.0	QT
		8260	Chloroform	1.3	J		ug/L	1.0	QT
NUD-1	02/01/96	160.1	Total Dissolved Solids	6220			mg/L	1.0	QT
		160.2	Total Suspended Solids	2860			mg/L	1.0	QT
		300.0	Chloride	314			mg/L	5.0	QT
		300.0	Sulfate	3020			mg/L	1.0	QT
		310.1	Alkalinity, Total As CaCO3 At Ph 4.5	981			mg/L	2.0	QT
		310.1	Alkalinity, Bicarb. As CaCO3 At Ph 4.	981			mg/L	2.0	QT
		415.1	Total Organic Carbon	7.1			mg/L	1.0	QT
		6010	Magnesium	255			mg/L	1.0	QT
		6010	Manganese	1.4			mg/L	1.0	QT
		6010	Potassium	14.0			mg/L	1.0	QT
		6010	Sodium	1060			mg/L	1.0	QT
		6010	Barium	0.023			mg/L	1.0	QT
		6010	Calcium	407			mg/L	1.0	QT
		7060	Arsenic	0.0011	J		mg/L	1.0	QT
		7841	Thallium	0.0010	J		mg/L	2.0	QT
W6-3	02/01/96	160.1	Total Dissolved Solids	12800			mg/L	1.0	QT
		160.2	Total Suspended Solids	758			mg/L	1.0	QT
		300.0	Chloride	166			mg/L	5.0	QT
		300.0	Sulfate	7670			mg/L	200	QT
		310.1	Alkalinity, Total As CaCO3 At Ph 4.5	709			mg/L	1.0	QT
		310.1	Alkalinity, Bicarb. As CaCO3 At Ph 4.	709			mg/L	1.0	QT
		415.1	Total Organic Carbon	4.1			mg/L	1.0	QT
		6010	Magnesium	347			mg/L	2.0	QT
		6010	Manganese	3.1			mg/L	2.0	QT
		6010	Potassium	17.5			mg/L	2.0	QT
		6010	Sodium	2780			mg/L	2.0	QT
		6010	Barium	0.013	J		mg/L	2.0	QT
		6010	Beryllium	0.0012	J		mg/L	2.0	QT
		6010	Calcium	358			mg/L	2.0	QT
		7841	Thallium	0.0014	J		mg/L	2.0	QT
BD-2	02/01/96	160.1	Total Dissolved Solids	6040			mg/L	1.0	QT
		160.2	Total Suspended Solids	9870			mg/L	1.0	QT
		300.0	Chloride	89.3			mg/L	5.0	QT
		300.0	Nitrate As N	14.6			mg/L	5.0	QT
		300.0	Sulfate	3480			mg/L	100	QT
		300.0	Fluoride	5.7			mg/L	5.0	QT
		310.1	Alkalinity, Total As CaCO3 At Ph 4.5	703			mg/L	1.0	QT
		310.1	Alkalinity, Bicarb. As CaCO3 At Ph 4.	703			mg/L	1.0	QT
		353.2	Nitrate plus Nitrite as N	14.2			mg/L	10	QT
		405.1	BOD	4.5			mg/L	1.0	QT
		415.1	Total Organic Carbon	4.8			mg/L	1.0	QT
		6010	Magnesium	238			mg/L	1.0	QT
		6010	Manganese	0.39			mg/L	1.0	QT
		6010	Potassium	7.3			mg/L	1.0	QT

TABLE 5-10
SUMMARY OF DETECTED COMPOUNDS
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Sample Date	Test Method	Analyte	Result	Lab Flag	Data Qualifier	Units	Dilution Factor	Lab
BD-2 cont.		6010	Sodium	1000			mg/L	1.0	QT
		6010	Barium	0.0067	J		mg/L	1.0	QT
		6010	Calcium	287			mg/L	1.0	QT
		7041	Antimony	0.0021	J		mg/L	1.0	QT
		7740	Selenium	0.050			mg/L	10	QT
		7841	Thallium	0.0011	J		mg/L	1.0	QT
		8270	Bis(2-Ethylhexyl)Phthalate	1.5	J		ug/L	1.0	QT
BD-3	02/01/96	160.1	Total Dissolved Solids	12200			mg/L	1.0	QT
		160.2	Total Suspended Solids	446			mg/L	1.0	QT
		300.0	Chloride	55.4			mg/L	10	QT
		300.0	Nitrate As N	1.8			mg/L	10	QT
		300.0	Sulfate	7490			mg/L	200	QT
		310.1	Alkalinity, Total As CaCO3 At Ph 4.5	521			mg/L	1.0	QT
		310.1	Alkalinity, Bicarb. As CaCO3 At Ph 4.	521			mg/L	1.0	QT
		405.1	BOD	6.8			mg/L	1.0	QT
		415.1	Total Organic Carbon	8.9			mg/L	1.0	QT
		6010	Iron	0.18			mg/L	1.0	QT
		6010	Magnesium	516			mg/L	1.0	QT
		6010	Manganese	4.5			mg/L	1.0	QT
		6010	Nickel	0.0085	J		mg/L	1.0	QT
		6010	Potassium	14.1			mg/L	1.0	QT
		6010	Sodium	1780			mg/L	1.0	QT
		6010	Barium	0.012			mg/L	1.0	QT
		6010	Cobalt	0.010			mg/L	1.0	QT
		6010	Calcium	345			mg/L	1.0	QT
		7060	Arsenic	0.0013	J		mg/L	1.0	QT
		7841	Thallium	0.0012	J		mg/L	1.0	QT
FCMW-70	02/21/96	8260	Chloromethane	2.1	J	J4	ug/L	1.0	QT
FCMW-74	02/21/96	8260	Acetone	5.8	J	J4	ug/L	1.0	QT
LF2DPW6	03/21/96	6010	Manganese	0.26			mg/L	1.0	QT
		6010	Antimony	0.074			mg/L	1.0	QT
		6010	Barium	0.33			mg/L	1.0	QT
		6010	Chromium	0.050			mg/L	1.0	QT
		7060	Arsenic	0.0064			mg/L	1.0	QT
		7421	Lead	0.0045	J		mg/L	1.0	QT
		7740	Selenium	0.0029	J		mg/L	1.0	QT
		8260	Ethylbenzene	5.8			ug/L	1.0	QT
		8260	Toluene	3.5	J		ug/L	1.0	QT
		8260	Chlorobenzene	1.1	J		ug/L	1.0	QT
		8260	Xylenes (total)	8.3			ug/L	1.0	QT
		8260	Acetone	11			ug/L	1.0	QT
		8260	Benzene	4.3	J		ug/L	1.0	QT
		8260	Vinyl chloride	5.1	J		ug/L	1.0	QT
		8270	2,4-Dimethylphenol	5.0	J		ug/L	4.0	QT
		8270	4-Chloro-3-methylphenol	65			ug/L	4.0	QT
		8270	Naphthalene	130			ug/L	4.0	QT
LF2DPW7	03/21/96	6010	Manganese	0.19			mg/L	1.0	QT
		6010	Antimony	0.062			mg/L	1.0	QT
		6010	Barium	0.39			mg/L	1.0	QT
		6010	Chromium	0.060			mg/L	1.0	QT
		7421	Lead	0.0026	J		mg/L	1.0	QT
		8260	Ethylbenzene	3.4	J		ug/L	1.0	QT
		8260	Toluene	3.1	J		ug/L	1.0	QT
		8260	Chlorobenzene	2.2	J		ug/L	1.0	QT
		8260	Xylenes (total)	9.6			ug/L	1.0	QT

TABLE 5-10
SUMMARY OF DETECTED COMPOUNDS
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Sample Date	Test Method	Analyte	Result	Lab Flag	Data Qualifier	Units	Dilution Factor	Lab
LF2DPW7 cont.		8260	Acetone	9.8	J		ug/L	1.0	QT
		8260	Benzene	2.1	J		ug/L	1.0	QT
		8260	Vinyl chloride	14			ug/L	1.0	QT
		8270	4-Chloro-3-methylphenol	44			ug/L	2.0	QT
		8270	Diethyl phthalate	3.1	J		ug/L	2.0	QT
		8270	Naphthalene	23			ug/L	2.0	QT
LF2DPW9	03/21/96	353.2	Nitrate plus Nitrite as N	0.51			mg/L	1.0	QT
		8260	Toluene	2.3	J		ug/L	1.0	QT
		8260	tert-Butyl methyl ether	13	3		ug/L	1.0	QT
LF2DPW11	03/22/96	8260	Toluene	2.2	J		ug/L	1.0	QT
LF2DPW12	03/22/96	353.2	Nitrate plus Nitrite as N	0.60			mg/L	1.0	QT
		8260	Toluene	2.9	J		ug/L	1.0	QT
LF5DPW4	03/22/96	353.2	Nitrate plus Nitrite as N	27.0			mg/L	10	QT
		354.1	Nitrite as N	0.25			mg/L	2.0	QT
		6010	Manganese	2.4			mg/L	1.0	QT
		6010	Antimony	0.045	J		mg/L	1.0	QT
		6010	Barium	0.023			mg/L	1.0	QT
		8260	tert-Butyl methyl ether	53	3		ug/L	1.0	QT
		8270	Benzoic acid	2.2	J		ug/L	1.0	QT
LF5DPW5	03/22/96	6010	Manganese	2.7			mg/L	1.0	QT
		6010	Barium	0.051			mg/L	1.0	QT
		7060	Arsenic	0.0025	J		mg/L	1.0	QT
		8270	Di-n-butyl phthalate	1.0	J		ug/L	1.0	QT
LF2DPW9	25-Mar-96	354.1	Nitrite as N	0.73			mg/L	10	QT
		6010	Manganese	1.2			mg/L	5.0	QT
		6010	Barium	0.044	J		mg/L	5.0	QT
LF2DPW10	03/25/96	8260	Toluene	3.5	J		ug/L	1.0	QT
LF2DPW11	03/25/96	353.2	Nitrate plus Nitrite as N	1.8			mg/L	2.0	QT
LF2DPW12	03/25/96	8270	bis(2-Ethylhexyl)phthalate	2.2	J		ug/L	1.9	QT
		8270	Pentachlorophenol	3.6	J		ug/L	1.9	QT
LF5DPW6	03/25/96	353.2	Nitrate plus Nitrite as N	77.1			mg/L	50	QT
LF5SP1	03/28/96	353.2	Nitrate plus Nitrite as N	0.27			mg/L	1.0	QT
		6010	Manganese	1.1			mg/L	5.0	QT
		6010	Antimony	0.10	J		mg/L	5.0	QT
		6010	Barium	0.033	J		mg/L	5.0	QT
		6010	Copper	0.027	J		mg/L	5.0	QT
		7060	Arsenic	0.0038	J		mg/L	1.0	QT
		7470	Mercury	0.00012	J		mg/L	1.0	QT
		8260	Methylene chloride	1.0	J		ug/L	1.0	QT
		8270	bis(2-Ethylhexyl)phthalate	4.2	J		ug/L	1.0	QT
LF6-SW3	05/01/96	160.1	Total Dissolved Solids	8170			mg/L	4.0	QT
		160.2	Total Suspended Solids	197			mg/L	2.5	QT
		300.0	Chloride	54.6			mg/L	5.0	QT
		300.0	Nitrate as N	41.6			mg/L	5.0	QT
		300.0	Sulfate	5370			mg/L	100	QT
		310.1	Alkalinity, Total as CaCO3 at pH 4.5	339			mg/L	1.0	QT
		310.1	Alkalinity, Bicarb. as CaCO3 at pH 4.5	339			mg/L	1.0	QT
		353.2	Nitrate plus Nitrite as N	43.2			mg/L	20	QT

TABLE 5-10
SUMMARY OF DETECTED COMPOUNDS
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Sample Date	Test Method	Analyte	Result	Lab Flag	Data Qualifier	Units	Dilution Factor	Lab
LF6-SW3 cont.		410.4	Chemical Oxygen Demand (Regular)	58.4			mg/L	1.0	QT
		415.1	Total Organic Carbon	7.3			mg/L	1.0	QT
		6010	Manganese	0.038			mg/L	1.0	QT
		6010	Barium	0.032			mg/L	1.0	QT
		7060	Arsenic	0.0042	J		mg/L	1.0	QT
		7740	Selenium	0.14			mg/L	10	QT
LF6-SD3	05/01/96	6010	Manganese	169			mg/k	1.0	QT
		6010	Barium	101			mg/k	1.0	QT
		6010	Chromium	8.1			mg/k	1.0	QT
		7060	Arsenic	1.6			mg/k	1.0	QT
		7421	Lead	25.9			mg/k	5.0	QT
		7740	Selenium	9.6			mg/k	5.0	QT
		8080	Dieldrin	12	J		ug/k	4.0	QT
		8080	Dieldrin	15	J		ug/k	4.0	QT
		8260	Acetone	28			ug/k	1.0	QT
		8270	bis(2-Ethylhexyl)phthalate	3000	J	J1	ug/k	10	QT
		8270	Pyrene	830	J	J1	ug/k	10	QT
		8270	Benzo(b)fluoranthene	700	J	J1	ug/k	10	QT
		8270	Fluoranthene	870	J	J1	ug/k	10	QT
LF6-SD4	05/01/96	6010	Manganese	530			mg/k	1.0	QT
		6010	Barium	260			mg/k	1.0	QT
		6010	Chromium	28.8			mg/k	1.0	QT
		7060	Arsenic	4.2			mg/k	1.0	QT
		7421	Lead	26.4			mg/k	5.0	QT
		7740	Selenium	1.3	J		mg/k	2.0	QT
		8260	Toluene	1.6	J		ug/k	1.0	QT
		8270	bis(2-Ethylhexyl)phthalate	180	J		ug/k	1.0	QT
LF6DP8	04/26/96	160.1	Total Dissolved Solids	1130			mg/L	1.0	QT
		160.2	Total Suspended Solids	21200			mg/L	25	QT
		300.0	Chloride	107			mg/L	2.0	QT
		300.0	Nitrate as N	1.1			mg/L	1.0	QT
		300.0	Sulfate	372			mg/L	5.0	QT
		300.0	Fluoride	1.3			mg/L	2.0	QT
		310.1	Alkalinity, Total as CaCO3 at pH 4.5	797			mg/L	1.0	QT
		310.1	Alkalinity, Bicarb. as CaCO3 at pH 4.5	797			mg/L	1.0	QT
		353.2	Nitrate plus Nitrite as N	0.46			mg/L	1.0	QT
		405.1	Biochemical Oxygen Demand	4.7			mg/L	1.0	QT
		410.4	Chemical Oxygen Demand (Regular)	21.8			mg/L	1.0	QT
		415.1	Total Organic Carbon	13			mg/L	1.0	QT
		6010	Manganese	1.2			mg/L	1.0	QT
		6010	Barium	0.12			mg/L	1.0	QT
		7060	Arsenic	0.012			mg/L	1.0	QT
		8270	bis(2-Ethylhexyl)phthalate	1.5	J		ug/L	1.0	QT
		8270	Naphthalene	28			ug/L	1.0	QT
		8270	2-Methylnaphthalene	1.8	J		ug/L	1.0	QT
LF6DP9	04/26/96	160.1	Total Dissolved Solids	1440			mg/L	1.0	QT
		160.2	Total Suspended Solids	16100			mg/L	25	QT
		300.0	Chloride	47.1			mg/L	1.0	QT
		300.0	Nitrate as N	0.45			mg/L	1.0	QT
		300.0	Sulfate	464			mg/L	5.0	QT
		300.0	Fluoride	1.2			mg/L	2.0	QT
		310.1	Alkalinity, Total as CaCO3 at pH 4.5	946			mg/L	1.0	QT
		310.1	Alkalinity, Bicarb. as CaCO3 at pH 4.5	946			mg/L	1.0	QT
		353.2	Nitrate plus Nitrite as N	0.15			mg/L	1.0	QT
		405.1	Biochemical Oxygen Demand	2.2			mg/L	1.0	QT
		415.1	Total Organic Carbon	12			mg/L	1.0	QT

TABLE 5-10
SUMMARY OF DETECTED COMPOUNDS
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Sample Date	Test Method	Analyte	Result	Lab Flag	Data Qualifier	Units	Dilution Factor	Lab
LF6DP9 cont.		6010	Manganese	2.8			mg/L	1.0	QT
		6010	Barium	0.13			mg/L	1.0	QT
		7060	Arsenic	0.0022	J		mg/L	1.0	QT
		8260	Toluene	1.2	J		ug/L	1.0	QT
		8260	Xylenes (total)	1.6	J		ug/L	1.0	QT
		8260	Acetone	11			ug/L	1.0	QT
		8270	bis(2-Ethylhexyl)phthalate	8.6	J		ug/L	1.0	QT
		8270	Naphthalene	3.6	J		ug/L	1.0	QT
		8270	2-Methylnaphthalene	3.7	J		ug/L	1.0	QT
LF5-SW1	04/26/96	160.1	Total Dissolved Solids	3590			mg/L	2.0	QT
		160.2	Total Suspended Solids	2.0			mg/L	1.0	QT
		300.0	Chloride	83.7			mg/L	1.0	QT
		300.0	Nitrate as N	27.7			mg/L	2.0	QT
		300.0	Sulfate	1990			mg/L	50	QT
		310.1	Alkalinity, Total as CaCO3 at pH 4.5	286			mg/L	1.0	QT
		310.1	Alkalinity, Carb. as CaCO3 at pH 8.3	14.4			mg/L	1.0	QT
		310.1	Alkalinity, Bicarb. as CaCO3 at pH 4.5	271			mg/L	1.0	QT
		353.2	Nitrate plus Nitrite as N	27.7			mg/L	1.0	QT
		415.1	Total Organic Carbon	6.6			mg/L	1.0	QT
		6010	Manganese	0.029			mg/L	1.0	QT
		6010	Barium	0.044			mg/L	1.0	QT
		7060	Arsenic	0.0016	J		mg/L	1.0	QT
		7740	Selenium	0.064	J		mg/L	20	QT
		8270	bis(2-Ethylhexyl)phthalate	1.1	J		ug/L	1.0	QT
LF5-SW2	04/26/96	160.1	Total Dissolved Solids	4320			mg/L	2.0	QT
		300.0	Chloride	86.2			mg/L	1.0	QT
		300.0	Nitrate as N	25.9			mg/L	2.0	QT
		300.0	Sulfate	2460			mg/L	50	QT
		310.1	Alkalinity, Total as CaCO3 at pH 4.5	342			mg/L	1.0	QT
		310.1	Alkalinity, Bicarb. as CaCO3 at pH 4.5	342			mg/L	1.0	QT
		353.2	Nitrate plus Nitrite as N	26.9			mg/L	1.0	QT
		415.1	Total Organic Carbon	6.6			mg/L	1.0	QT
		6010	Manganese	0.026			mg/L	1.0	QT
		6010	Barium	0.039			mg/L	1.0	QT
		7060	Arsenic	0.0017	J		mg/L	1.0	QT
		7421	Lead	0.0060	J		mg/L	2.0	QT
		7740	Selenium	0.044	J		mg/L	10	QT
		8270	bis(2-Ethylhexyl)phthalate	1.5	J		ug/L	1.0	QT
		160.1	Total Dissolved Solids	2470			mg/L	1.0	QT
		160.2	Total Suspended Solids	384			mg/L	5.0	QT
		300.0	Chloride	41.1			mg/L	1.0	QT
		300.0	Nitrate as N	1.3			mg/L	2.0	QT
		300.0	Sulfate	1580			mg/L	50	QT
		310.1	Alkalinity, Total as CaCO3 at pH 4.5	173			mg/L	1.0	QT
		310.1	Alkalinity, Carb. as CaCO3 at pH 8.3	21.3			mg/L	1.0	QT
		310.1	Alkalinity, Bicarb. as CaCO3 at pH 4.5	152			mg/L	1.0	QT
		353.2	Nitrate plus Nitrite as N	1.5			mg/L	1.0	QT
		405.1	Biochemical Oxygen Demand	6.4			mg/L	1.0	QT
		410.4	Chemical Oxygen Demand (Regular)	42.0			mg/L	1.0	QT
		415.1	Total Organic Carbon	12			mg/L	1.0	QT
		6010	Manganese	0.045			mg/L	1.0	QT
		6010	Barium	0.059			mg/L	1.0	QT
		7060	Arsenic	0.0032	J		mg/L	2.0	QT
		7740	Selenium	0.0068	J		mg/L	2.0	QT
FCMW-78	04/26/96	8260	Acetone	10			ug/L	1.0	QT
		8260	Carbon disulfide	1.5	J		ug/L	1.0	QT

TABLE 5-10
SUMMARY OF DETECTED COMPOUNDS
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Sample Date	Test Method	Analyte	Result	Lab Flag	Data Qualifier	Units	Dilution Factor	Lab
LF6DP8	04/26/96	8260	Acetone	11			ug/L	1.0	QT
		8260	Toluene	1.3	J		ug/L	1.0	QT
		8260	Xylenes (total)	1.6	J		ug/L	1.0	QT
		8260	Acetone	11			ug/L	1.0	QT
FCMW-62	04/22/96	160.1	Total Dissolved Solids	19100			mg/L	4.0	QT
		160.2	Total Suspended Solids	37.6			mg/L	1.0	QT
		300.0	Chloride	419			mg/L	5.0	QT
		300.0	Nitrate as N	126			mg/L	5.0	QT
		300.0	Sulfate	11700			mg/L	5.0	QT
		310.1	Alkalinity, Total as CaCO3 at pH 4.5	534			mg/L	1.0	QT
		310.1	Alkalinity, Bicarb. as CaCO3 at pH 4.5	534			mg/L	1.0	QT
		353.2	Nitrate plus Nitrite as N	119			mg/L	1.0	QT
		410.4	Chemical Oxygen Demand (Regular)	25.9			mg/L	1.0	QT
		415.1	Total Organic Carbon	13			mg/L	4.0	QT
		6010	Silica as SiO2	15.4			mg/L	2.0	QT
		6010	Magnesium	645			mg/L	2.0	QT
		6010	Manganese	1.9			mg/L	2.0	QT
		6010	Potassium	12.4			mg/L	2.0	QT
		6010	Sodium	3360			mg/L	2.0	QT
		6010	Barium	0.013	J		mg/L	2.0	QT
		6010	Calcium	372			mg/L	2.0	QT
FCMW-65	04/22/96	160.1	Total Dissolved Solids	22800			mg/L	4.0	QT
		160.2	Total Suspended Solids	75.2			mg/L	1.0	QT
		300.0	Chloride	346			mg/L	5.0	QT
		300.0	Nitrate as N	160			mg/L	5.0	QT
		300.0	Sulfate	10700			mg/L	5.0	QT
		310.1	Alkalinity, Total as CaCO3 at pH 4.5	506			mg/L	1.0	QT
		310.1	Alkalinity, Bicarb. as CaCO3 at pH 4.5	506			mg/L	1.0	QT
		353.2	Nitrate plus Nitrite as N	150			mg/L	1.0	QT
		410.4	Chemical Oxygen Demand (Regular)	22.3			mg/L	1.0	QT
		415.1	Total Organic Carbon	11			mg/L	4.0	QT
		6010	Silica as SiO2	24.9			mg/L	2.0	QT
		6010	Aluminum	0.10	J		mg/L	2.0	QT
		6010	Iron	0.11	J		mg/L	2.0	QT
		6010	Magnesium	670			mg/L	2.0	QT
		6010	Potassium	6.3	J		mg/L	2.0	QT
		6010	Sodium	3430			mg/L	2.0	QT
		6010	Barium	0.014	J		mg/L	2.0	QT
		6010	Calcium	365			mg/L	2.0	QT
		7041	Antimony	0.0046	J		mg/L	2.0	QT
		7740	Selenium	0.046	J		mg/L	10	QT
		7841	Thallium	0.0020	J		mg/L	1.0	QT
		8260	Acetone	20			ug/L	1.0	QT
LF6-MW6	04/22/96	160.1	Total Dissolved Solids	23300			mg/L	4.0	QT
		160.2	Total Suspended Solids	199			mg/L	2.5	QT
		300.0	Chloride	101			mg/L	5.0	QT
		300.0	Nitrate as N	55.5			mg/L	5.0	QT
		300.0	Sulfate	15100			mg/L	5.0	QT
		310.1	Alkalinity, Total as CaCO3 at pH 4.5	660			mg/L	1.0	QT
		310.1	Alkalinity, Bicarb. as CaCO3 at pH 4.5	660			mg/L	1.0	QT
		353.2	Nitrate plus Nitrite as N	52.8			mg/L	1.0	QT
		410.4	Chemical Oxygen Demand (Regular)	30.8			mg/L	1.0	QT
		415.1	Total Organic Carbon	15			mg/L	4.0	QT
		6010	Silica as SiO2	10.8			mg/L	5.0	QT
		6010	Magnesium	752			mg/L	5.0	QT

TABLE 5-10
SUMMARY OF DETECTED COMPOUNDS
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Sample Date	Test Method	Analyte	Result	Lab Flag	Data Qualifier	Units	Dilution Factor	Lab
LF6-MW6 cont.		6010	Manganese	0.38			mg/L	5.0	QT
		6010	Potassium	28.1			mg/L	5.0	QT
		6010	Sodium	4890			mg/L	5.0	QT
		6010	Barium	0.025	J		mg/L	5.0	QT
		6010	Calcium	370			mg/L	5.0	QT
		7041	Antimony	0.012	J		mg/L	5.0	QT
		7740	Selenium	0.16			mg/L	20	QT
LF6-MW8	04/22/96	410.4	Chemical Oxygen Demand (Regular)	50.9			mg/L	1.0	QT
		415.1	Total Organic Carbon	21			mg/L	4.0	QT
		6010	Silica as SiO2	18.0			mg/L	1.0	QT
		6010	Iron	0.025	J		mg/L	1.0	QT
		6010	Magnesium	312			mg/L	1.0	QT
		6010	Manganese	4.7			mg/L	1.0	QT
		6010	Nickel	0.011	J		mg/L	1.0	QT
		6010	Potassium	18.6			mg/L	1.0	QT
		6010	Sodium	692			mg/L	1.0	QT
		6010	Barium	0.026			mg/L	1.0	QT
		6010	Cobalt	0.023			mg/L	1.0	QT
		6010	Calcium	514			mg/L	1.0	QT
		7041	Antimony	0.0028	J		mg/L	1.0	QT
		7740	Selenium	0.0027	J		mg/L	1.0	QT
		8260	1,2-Dichloroethane	4.0	J		ug/L	1.0	QT
LF6-MW9	04/22/96	160.1	Total Dissolved Solids	1160			mg/L	1.0	QT
		160.2	Total Suspended Solids	1640			mg/L	10	QT
		300.0	Chloride	63.6			mg/L	1.0	QT
		300.0	Nitrate as N	8.0			mg/L	1.0	QT
		300.0	Sulfate	461			mg/L	1.0	QT
		300.0	Fluoride	1.4			mg/L	1.0	QT
		310.1	Alkalinity, Total as CaCO3 at pH 4.5	366			mg/L	1.0	QT
		310.1	Alkalinity, Bicarb. as CaCO3 at pH 4.5	366			mg/L	1.0	QT
		353.2	Nitrate plus Nitrite as N	8.2			mg/L	1.0	QT
		415.1	Total Organic Carbon	11			mg/L	2.0	QT
		6010	Silica as SiO2	14.3			mg/L	1.0	QT
		6010	Magnesium	49.9			mg/L	1.0	QT
		6010	Manganese	0.012			mg/L	1.0	QT
		6010	Potassium	3.7	J		mg/L	1.0	QT
		6010	Sodium	172			mg/L	1.0	QT
		6010	Barium	0.037			mg/L	1.0	QT
		6010	Calcium	126			mg/L	1.0	QT
		7740	Selenium	0.012			mg/L	1.0	QT
W6-3	04/22/96	160.1	Total Dissolved Solids	12300			mg/L	4.0	QT
		160.2	Total Suspended Solids	432			mg/L	10	QT
		300.0	Chloride	171			mg/L	2.0	QT
		300.0	Sulfate	7820			mg/L	2.0	QT
		310.1	Alkalinity, Total as CaCO3 at pH 4.5	704			mg/L	1.0	QT
		310.1	Alkalinity, Bicarb. as CaCO3 at pH 4.5	704			mg/L	1.0	QT
		405.1	Biochemical Oxygen Demand	3.3			mg/L	1.0	QT
		415.1	Total Organic Carbon	6.0			mg/L	4.0	QT
		6010	Silica as SiO2	9.5			mg/L	2.0	QT
		6010	Magnesium	350			mg/L	2.0	QT
		6010	Manganese	2.6			mg/L	2.0	QT
		6010	Potassium	16.6			mg/L	2.0	QT
		6010	Sodium	2610			mg/L	2.0	QT
		6010	Barium	0.015	J		mg/L	2.0	QT
		6010	Calcium	372			mg/L	2.0	QT
		7841	Thallium	0.0021	J		mg/L	1.0	QT
		8270	bis(2-Ethylhexyl)phthalate	3.8	J		ug/L	0.94	QT

TABLE 5-10
SUMMARY OF DETECTED COMPOUNDS
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Sample Date	Test Method	Analyte	Result	Lab Flag	Data Qualifier	Units	Dilution Factor	Lab
LF6-MW8	04/22/96	8260	1,2-Dichloroethane	3.7	J		ug/L	1.0	QT
		8260	Methylene chloride	1.9	J		ug/L	1.0	QT
LF5-MW1	04/23/96	160.1	Total Dissolved Solids	14400			mg/L	4.0	QT
		160.2	Total Suspended Solids	41.2			mg/L	1.0	QT
		300.0	Chloride	85.3			mg/L	5.0	QT
		300.0	Nitrate as N	34.5			mg/L	5.0	QT
		300.0	Sulfate	8940			mg/L	100	QT
		310.1	Alkalinity, Total as CaCO3 at pH 4.5	337			mg/L	1.0	QT
		310.1	Alkalinity, Bicarb. as CaCO3 at pH 4.5	337			mg/L	1.0	QT
		353.2	Nitrate plus Nitrite as N	36.3			mg/L	20	QT
		405.1	Biochemical Oxygen Demand	2.2			mg/L	1.0	QT
		410.4	Chemical Oxygen Demand (Regular)	33.0			mg/L	1.0	QT
		415.1	Total Organic Carbon	11			mg/L	1.0	QT
		6010	Silica as SiO2	9.7			mg/L	2.0	QT
		6010	Magnesium	838			mg/L	2.0	QT
		6010	Manganese	0.42			mg/L	2.0	QT
		6010	Potassium	21.9			mg/L	2.0	QT
		6010	Sodium	2140			mg/L	2.0	QT
		6010	Cadmium	0.012			mg/L	2.0	QT
		6010	Calcium	369			mg/L	2.0	QT
		7740	Selenium	0.14			mg/L	2.0	QT
FCMW-66	04/23/96	160.1	Total Dissolved Solids	10900			mg/L	4.0	QT
		160.2	Total Suspended Solids	180			mg/L	1.0	QT
		300.0	Chloride	424			mg/L	5.0	QT
		300.0	Nitrate as N	67.6			mg/L	5.0	QT
		300.0	Sulfate	6630			mg/L	50	QT
		310.1	Alkalinity, Total as CaCO3 at pH 4.5	668			mg/L	1.0	QT
		310.1	Alkalinity, Bicarb. as CaCO3 at pH 4.5	668			mg/L	1.0	QT
		353.2	Nitrate plus Nitrite as N	71.5			mg/L	50	QT
		405.1	Biochemical Oxygen Demand	3.0			mg/L	1.0	QT
		410.4	Chemical Oxygen Demand (Regular)	36.6			mg/L	1.0	QT
		415.1	Total Organic Carbon	12			mg/L	1.0	QT
		6010	Silica as SiO2	12.2			mg/L	2.0	QT
		6010	Magnesium	280			mg/L	2.0	QT
		6010	Manganese	0.66			mg/L	2.0	QT
		6010	Potassium	14.3			mg/L	2.0	QT
		6010	Sodium	2450			mg/L	2.0	QT
		6010	Calcium	405			mg/L	2.0	QT
		7841	Thallium	0.0022	J		mg/L	1.0	QT
FCMW-68	04/23/96	160.1	Total Dissolved Solids	17600			mg/L	4.0	QT
		160.2	Total Suspended Solids	98.4			mg/L	1.0	QT
		300.0	Chloride	749			mg/L	10	QT
		300.0	Nitrate as N	184			mg/L	10	QT
		300.0	Sulfate	9830			mg/L	100	QT
		310.1	Alkalinity, Total as CaCO3 at pH 4.5	831			mg/L	1.0	QT
		310.1	Alkalinity, Bicarb. as CaCO3 at pH 4.5	831			mg/L	1.0	QT
		353.2	Nitrate plus Nitrite as N	190			mg/L	100	QT
		405.1	Biochemical Oxygen Demand	4.6			mg/L	1.0	QT
		410.4	Chemical Oxygen Demand (Regular)	56.6			mg/L	1.0	QT
		415.1	Total Organic Carbon	16			mg/L	1.0	QT
		6010	Silica as SiO2	12.4			mg/L	2.0	QT
		6010	Magnesium	361			mg/L	2.0	QT
		6010	Manganese	1.4			mg/L	2.0	QT
		6010	Potassium	27.4			mg/L	2.0	QT
		6010	Sodium	3950			mg/L	2.0	QT
		6010	Calcium	394			mg/L	2.0	QT
		7841	Thallium	0.0027	J		mg/L	1.0	QT

TABLE 5-10
SUMMARY OF DETECTED COMPOUNDS
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Sample Date	Test Method	Analyte	Result	Lab Flag	Data Qualifier	Units	Dilution Factor	Lab
FCMW-70	04/23/96	160.1	Total Dissolved Solids	48200			mg/L	10	QT
		160.2	Total Suspended Solids	30.5			mg/L	1.2	QT
		300.0	Chloride	371			mg/L	10	QT
		300.0	Sulfate	30800			mg/L	50	QT
		310.1	Alkalinity, Total as CaCO3 at pH 4.5	1420			mg/L	2.0	QT
		310.1	Alkalinity, Bicarb. as CaCO3 at pH 4.5	1420			mg/L	2.0	QT
		405.1	Biochemical Oxygen Demand	2.2			mg/L	1.0	QT
		410.4	Chemical Oxygen Demand (Regular)	89.9			mg/L	1.0	QT
		415.1	Total Organic Carbon	38			mg/L	1.0	QT
		6010	Silica as SiO2	12.6			mg/L	5.0	QT
		6010	Magnesium	2490			mg/L	5.0	QT
		6010	Manganese	15.4			mg/L	5.0	QT
		6010	Potassium	42.2			mg/L	5.0	QT
		6010	Sodium	8050			mg/L	5.0	QT
		6010	Calcium	385			mg/L	5.0	QT
FCMW-71	04/23/96	160.1	Total Dissolved Solids	18700			mg/L	4.0	QT
		160.2	Total Suspended Solids	769			mg/L	2.5	QT
		300.0	Chloride	246			mg/L	10	QT
		300.0	Nitrate as N	7.8			mg/L	10	QT
		300.0	Sulfate	11200			mg/L	100	QT
		310.1	Alkalinity, Total as CaCO3 at pH 4.5	1280			mg/L	2.0	QT
		310.1	Alkalinity, Bicarb. as CaCO3 at pH 4.5	1280			mg/L	2.0	QT
		353.2	Nitrate plus Nitrite as N	6.7			mg/L	5.0	QT
		410.4	Chemical Oxygen Demand (Regular)	29.2			mg/L	1.0	QT
		415.1	Total Organic Carbon	10			mg/L	1.0	QT
		6010	Silica as SiO2	13.9			mg/L	2.0	QT
		6010	Magnesium	914			mg/L	2.0	QT
		6010	Manganese	0.16			mg/L	2.0	QT
		6010	Sodium	3090			mg/L	2.0	QT
		6010	Calcium	365			mg/L	2.0	QT
		9012	Cyanide	0.015			mg/L	1.0	QT
FCMW-73	04/23/96	160.1	Total Dissolved Solids	19100			mg/L	4.0	QT
		160.2	Total Suspended Solids	104			mg/L	1.2	QT
		300.0	Chloride	360			mg/L	10	QT
		300.0	Nitrate as N	123			mg/L	10	QT
		300.0	Sulfate	11400			mg/L	50	QT
		310.1	Alkalinity, Total as CaCO3 at pH 4.5	796			mg/L	1.0	QT
		310.1	Alkalinity, Bicarb. as CaCO3 at pH 4.5	796			mg/L	1.0	QT
		353.2	Nitrate plus Nitrite as N	118			mg/L	50	QT
		405.1	Biochemical Oxygen Demand	2.5			mg/L	1.0	QT
		410.4	Chemical Oxygen Demand (Regular)	41.8			mg/L	1.0	QT
		415.1	Total Organic Carbon	14			mg/L	1.0	QT
		6010	Silica as SiO2	10.4			mg/L	5.0	QT
		6010	Magnesium	898			mg/L	5.0	QT
		6010	Sodium	3520			mg/L	5.0	QT
		6010	Calcium	372			mg/L	5.0	QT
LF6-MW10	04/23/96	160.1	Total Dissolved Solids	2290			mg/L	1.0	QT
		160.2	Total Suspended Solids	2830			mg/L	5.0	QT
		300.0	Chloride	56.0			mg/L	1.0	QT
		300.0	Nitrate as N	3.1			mg/L	1.0	QT
		300.0	Sulfate	1240			mg/L	20	QT
		310.1	Alkalinity, Total as CaCO3 at pH 4.5	454			mg/L	1.0	QT
		310.1	Alkalinity, Bicarb. as CaCO3 at pH 4.5	454			mg/L	1.0	QT
		353.2	Nitrate plus Nitrite as N	2.7			mg/L	2.0	QT
		415.1	Total Organic Carbon	2.5			mg/L	1.0	QT
		6010	Silica as SiO2	13.3			mg/L	1.0	QT
		6010	Magnesium	110			mg/L	1.0	QT

TABLE 5-10
SUMMARY OF DETECTED COMPOUNDS
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Sample Date	Test Method	Analyte	Result	Lab Flag	Data Qualifier	Units	Dilution Factor	Lab
LF6-MW10 cont.		6010	Manganese	0.035			mg/L	1.0	QT
		6010	Sodium	341			mg/L	1.0	QT
		6010	Barium	0.017			mg/L	1.0	QT
		6010	Calcium	204			mg/L	1.0	QT
		7041	Antimony	0.0034	J		mg/L	1.0	QT
		7740	Selenium	0.0049	J		mg/L	1.0	QT
LF6-MW7	04/23/96	160.1	Total Dissolved Solids	820			mg/L	1.0	QT
		160.2	Total Suspended Solids	4860			mg/L	10	QT
		300.0	Chloride	27.5			mg/L	1.0	QT
		300.0	Nitrate as N	6.9			mg/L	1.0	QT
		300.0	Sulfate	315			mg/L	5.0	QT
		300.0	Fluoride	1.8			mg/L	1.0	QT
		310.1	Alkalinity, Total as CaCO3 at pH 4.5	340			mg/L	1.0	QT
		310.1	Alkalinity, Bicarb. as CaCO3 at pH 4.5	340			mg/L	1.0	QT
		353.2	Nitrate plus Nitrite as N	6.2			mg/L	5.0	QT
		415.1	Total Organic Carbon	2.0			mg/L	1.0	QT
		6010	Silica as SiO2	17.4			mg/L	1.0	QT
		6010	Magnesium	39.5			mg/L	1.0	QT
		6010	Sodium	97.9			mg/L	1.0	QT
		6010	Barium	0.042			mg/L	1.0	QT
		6010	Calcium	127			mg/L	1.0	QT
		7740	Selenium	0.0047	J		mg/L	1.0	QT
LF6-MW8	04/23/96	160.1	Total Dissolved Solids	6480			mg/L	2.0	QT
		160.2	Total Suspended Solids	1610			mg/L	10	QT
		300.0	Chloride	36.7			mg/L	2.0	QT
		300.0	Sulfate	3220			mg/L	50	QT
		310.1	Alkalinity, Total as CaCO3 at pH 4.5	1720			mg/L	2.0	QT
		310.1	Alkalinity, Bicarb. as CaCO3 at pH 4.5	1720			mg/L	2.0	QT
		405.1	Biochemical Oxygen Demand	10.6			mg/L	1.0	QT
W6-5	04/23/96	160.1	Total Dissolved Solids	11800			mg/L	4.0	QT
		160.2	Total Suspended Solids	70.4			mg/L	1.0	QT
		300.0	Chloride	220			mg/L	5.0	QT
		300.0	Sulfate	7380			mg/L	100	QT
		310.1	Alkalinity, Total as CaCO3 at pH 4.5	676			mg/L	1.0	QT
		310.1	Alkalinity, Bicarb. as CaCO3 at pH 4.5	676			mg/L	1.0	QT
		405.1	Biochemical Oxygen Demand	2.3			mg/L	1.0	QT
		410.4	Chemical Oxygen Demand (Regular)	31.1			mg/L	1.0	QT
		415.1	Total Organic Carbon	12			mg/L	1.0	QT
		6010	Silica as SiO2	10.5			mg/L	2.0	QT
		6010	Magnesium	194			mg/L	2.0	QT
		6010	Manganese	2.6			mg/L	2.0	QT
		6010	Potassium	13.3			mg/L	2.0	QT
		6010	Sodium	2710			mg/L	2.0	QT
		6010	Calcium	396			mg/L	2.0	QT
		7060	Arsenic	0.0037	J		mg/L	1.0	QT
LF5-MW4	04/24/96	160.1	Total Dissolved Solids	3920			mg/L	2.0	QT
		160.2	Total Suspended Solids	254			mg/L	2.5	QT
		300.0	Chloride	99.2			mg/L	2.0	QT
		300.0	Nitrate as N	12.2			mg/L	2.0	QT
		300.0	Sulfate	2310			mg/L	50	QT
		310.1	Alkalinity, Total as CaCO3 at pH 4.5	369			mg/L	1.0	QT
		310.1	Alkalinity, Bicarb. as CaCO3 at pH 4.5	369			mg/L	1.0	QT
		353.2	Nitrate plus Nitrite as N	11.5			mg/L	5.0	QT
		415.1	Total Organic Carbon	3.7			mg/L	1.0	QT
		6010	Silica as SiO2	6.6			mg/L	1.0	QT
		6010	Magnesium	165			mg/L	1.0	QT

TABLE 5-10
SUMMARY OF DETECTED COMPOUNDS
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Sample Date	Test Method	Analyte	Result	Lab Flag	Data Qualifier	Units	Dilution Factor	Lab
LF5-MW4 cont.		6010	Manganese	0.66			mg/L	1.0	QT
		6010	Potassium	6.7			mg/L	1.0	QT
		6010	Sodium	810			mg/L	1.0	QT
		6010	Calcium	162			mg/L	1.0	QT
		7740	Selenium	0.038			mg/L	2.0	QT
		8260	Trichloroethene	1.9	J		ug/L	1.0	QT
LF5-MW5	04/24/96	160.1	Total Dissolved Solids	11500			mg/L	5.0	QT
		160.2	Total Suspended Solids	91.5			mg/L	1.2	QT
		310.1	Alkalinity, Total as CaCO3 at pH 4.5	931			mg/L	1.0	QT
		310.1	Alkalinity, Bicarb. as CaCO3 at pH 4.5	931			mg/L	1.0	QT
		353.2	Nitrate plus Nitrite as N	0.20			mg/L	1.0	QT
		405.1	Biochemical Oxygen Demand	3.0			mg/L	1.0	QT
		410.4	Chemical Oxygen Demand (Regular)	41.8			mg/L	1.0	QT
		415.1	Total Organic Carbon	5.9			mg/L	1.0	QT
		6010	Silica as SiO2	8.1			mg/L	2.0	QT
		6010	Magnesium	111			mg/L	2.0	QT
		6010	Manganese	0.51			mg/L	2.0	QT
		6010	Potassium	12.5			mg/L	2.0	QT
		6010	Sodium	3030			mg/L	2.0	QT
		6010	Barium	0.010	J		mg/L	2.0	QT
		6010	Calcium	202			mg/L	2.0	QT
		7060	Arsenic	0.0040	J		mg/L	2.0	QT
W5-2	04/24/96	353.2	Nitrate plus Nitrite as N	358			mg/L	200	QT
		410.4	Chemical Oxygen Demand (Regular)	75.5			mg/L	1.0	QT
		415.1	Total Organic Carbon	29			mg/L	1.0	QT
		6010	Silica as SiO2	11.3			mg/L	2.0	QT
		6010	Magnesium	893			mg/L	2.0	QT
		6010	Manganese	2.7			mg/L	2.0	QT
		6010	Potassium	28.5			mg/L	2.0	QT
		6010	Sodium	3580			mg/L	2.0	QT
		6010	Barium	0.0097	J		mg/L	2.0	QT
		6010	Calcium	399			mg/L	2.0	QT
		7060	Arsenic	0.0040	J		mg/L	2.0	QT
		7740	Selenium	0.0090	J		mg/L	2.0	QT
FCMW-72	04/24/96	160.1	Total Dissolved Solids	35600			mg/L	10	QT
		160.2	Total Suspended Solids	88.8			mg/L	1.0	QT
		300.0	Chloride	659			mg/L	10	QT
		300.0	Nitrate as N	65.6			mg/L	10	QT
		300.0	Sulfate	22500			mg/L	400	QT
		310.1	Alkalinity, Total as CaCO3 at pH 4.5	1160			mg/L	2.0	QT
		310.1	Alkalinity, Bicarb. as CaCO3 at pH 4.5	1160			mg/L	2.0	QT
		353.2	Nitrate plus Nitrite as N	77.2			mg/L	50	QT
		405.1	Biochemical Oxygen Demand	4.6			mg/L	1.0	QT
		410.4	Chemical Oxygen Demand (Regular)	98.2			mg/L	1.0	QT
		415.1	Total Organic Carbon	33			mg/L	1.0	QT
		6010	Silica as SiO2	9.9			mg/L	5.0	QT
		6010	Magnesium	1790			mg/L	5.0	QT
		6010	Manganese	5.6			mg/L	5.0	QT
		6010	Potassium	26.9			mg/L	5.0	QT
		6010	Sodium	6370			mg/L	5.0	QT
		6010	Calcium	382			mg/L	5.0	QT
		7060	Arsenic	0.012	J		mg/L	5.0	QT
FCMW-74	04/24/96	160.1	Total Dissolved Solids	46100			mg/L	10	QT
		160.2	Total Suspended Solids	107			mg/L	1.0	QT
		300.0	Chloride	772			mg/L	10	QT
		300.0	Nitrate as N	118			mg/L	10	QT

TABLE 5-10
SUMMARY OF DETECTED COMPOUNDS
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Sample Date	Test Method	Analyte	Result	Lab Flag	Data Qualifier	Units	Dilution Factor	Lab
FCMW-74 cont.		300.0	Sulfate	28400			mg/L	400	QT
		310.1	Alkalinity, Total as CaCO3 at pH 4.5	1580			mg/L	2.0	QT
		310.1	Alkalinity, Bicarb. as CaCO3 at pH 4.5	1580			mg/L	2.0	QT
		353.2	Nitrate plus Nitrite as N	124			mg/L	50	QT
		405.1	Biochemical Oxygen Demand	4.1			mg/L	1.0	QT
		410.4	Chemical Oxygen Demand (Regular)	105			mg/L	1.0	QT
		415.1	Total Organic Carbon	40			mg/L	1.0	QT
		6010	Silica as SiO2	8.9			mg/L	5.0	QT
		6010	Magnesium	2040			mg/L	5.0	QT
		6010	Manganese	8.0			mg/L	5.0	QT
		6010	Potassium	42.5			mg/L	5.0	QT
		6010	Sodium	9010			mg/L	5.0	QT
		6010	Cobalt	0.029	J		mg/L	5.0	QT
		6010	Calcium	397			mg/L	5.0	QT
		7060	Arsenic	0.015	J		mg/L	5.0	QT
		7740	Selenium	0.094	J		mg/L	20	QT
FCMW-76	04/24/96	160.1	Total Dissolved Solids	20800			mg/L	5.0	QT
		160.2	Total Suspended Solids	8.8			mg/L	1.0	QT
		300.0	Chloride	230			mg/L	10	QT
		300.0	Sulfate	12900			mg/L	200	QT
		310.1	Alkalinity, Total as CaCO3 at pH 4.5	2840			mg/L	4.0	QT
		310.1	Alkalinity, Bicarb. as CaCO3 at pH 4.5	2840			mg/L	4.0	QT
		353.2	Nitrate plus Nitrite as N	0.11			mg/L	1.0	QT
		405.1	Biochemical Oxygen Demand	4.4			mg/L	1.0	QT
		410.4	Chemical Oxygen Demand (Regular)	57.9			mg/L	1.0	QT
		415.1	Total Organic Carbon	49			mg/L	1.0	QT
		6010	Silica as SiO2	12.1			mg/L	2.0	QT
		6010	Magnesium	1010			mg/L	2.0	QT
		6010	Manganese	4.9			mg/L	2.0	QT
		6010	Nickel	0.044	J		mg/L	2.0	QT
		6010	Potassium	8.3	J		mg/L	2.0	QT
		6010	Sodium	3570			mg/L	2.0	QT
		6010	Barium	0.015	J		mg/L	2.0	QT
		6010	Cadmium	0.013			mg/L	2.0	QT
		6010	Cobalt	0.0083	J		mg/L	2.0	QT
		6010	Calcium	379			mg/L	2.0	QT
		7060	Arsenic	0.0050	J		mg/L	2.0	QT
		7740	Selenium	0.0021	J		mg/L	1.0	QT
		8260	1,2-Dichloroethene (cis)	1.5	J		ug/L	1.0	QT
		8260	1,2-Dichloroethane	3.0	J		ug/L	1.0	QT
		8260	1,2-Dichloropropane	3.8	J		ug/L	1.0	QT
		8270	bis(2-Ethylhexyl)phthalate	1.1	J		ug/L	1.0	QT
		9012	Cyanide	0.022			mg/L	1.0	QT
		8260	1,2-Dichloroethene (cis)	1.4	J		ug/L	1.0	QT
		8260	1,2-Dichloroethane	2.9	J		ug/L	1.0	QT
		8260	1,2-Dichloropropane	3.6	J		ug/L	1.0	QT
LF2-SD1	04/26/96	6010	Manganese	1300			mg/k	1.0	QT
		6010	Barium	199			mg/k	1.0	QT
		6010	Chromium	18.0			mg/k	1.0	QT
		7060	Arsenic	17.6			mg/k	2.0	QT
		7421	Lead	25.7			mg/k	5.0	QT
		7841	Thallium	0.26	J		mg/k	1.0	QT
		8150	MCPA	11000			ug/k	1.0	QT
		8260	Toluene	5.5			ug/k	1.0	QT
		8260	Tetrachloroethene	1.6	J		ug/k	1.0	QT
		8270	Pyrene	210	J		ug/k	4.0	QT
		8270	Benzo(b)fluoranthene	160	J		ug/k	4.0	QT

TABLE 5-10
SUMMARY OF DETECTED COMPOUNDS
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Sample Date	Test Method	Analyte	Result	Lab Flag	Data Qualifier	Units	Dilution Factor	Lab
LF2-SD1 cont.		8270	Fluoranthene	200	J		ug/k	4.0	QT
		8270	Phenanthrene	150	J		ug/k	4.0	QT
LF2-SD2	04/26/96	6010	Manganese	1860			mg/k	1.0	QT
		6010	Barium	244			mg/k	1.0	QT
		6010	Cadmium	0.91			mg/k	1.0	QT
		6010	Chromium	13.0			mg/k	1.0	QT
		7060	Arsenic	10.0			mg/k	1.0	QT
		7421	Lead	18.9			mg/k	5.0	QT
		8270	bis(2-Ethylhexyl)phthalate	54	J		ug/k	1.0	QT
		8270	Di-n-butyl phthalate	110	J		ug/k	1.0	QT
		6010	Manganese	784			mg/k	1.0	QT
		6010	Barium	171			mg/k	1.0	QT
		6010	Chromium	20.7			mg/k	1.0	QT
		7060	Arsenic	11.1			mg/k	5.0	QT
		7421	Lead	20.1			mg/k	5.0	QT
		7841	Thallium	0.34	J		mg/k	1.0	QT
		8150	MCPA	11000			ug/k	1.0	QT
		8260	Toluene	5.4	J		ug/k	1.0	QT
		8260	Tetrachloroethene	1.9	J		ug/k	1.0	QT
		8260	Acetone	15			ug/k	1.0	QT
		8270	Pyrene	120	J		ug/k	1.0	QT
		8270	Benzo(g,h,i)perylene	40	J		ug/k	1.0	QT
		8270	Benzo(b)fluoranthene	99	J		ug/k	1.0	QT
		8270	Fluoranthene	110	J		ug/k	1.0	QT
		8270	Chrysene	66	J		ug/k	1.0	QT
		8270	Benzo(a)pyrene	56	J		ug/k	1.0	QT
		8270	Benzo(a)anthracene	60	J		ug/k	1.0	QT
		8270	Di-n-butyl phthalate	940			ug/k	1.0	QT
		8270	Phenanthrene	38	J		ug/k	1.0	QT
LF2-SD3	04/26/96	6010	Manganese	469			mg/k	1.0	QT
		6010	Barium	207			mg/k	1.0	QT
		6010	Cadmium	0.73			mg/k	1.0	QT
		6010	Chromium	24.8			mg/k	1.0	QT
		7060	Arsenic	9.1			mg/k	5.0	QT
		7421	Lead	20.8			mg/k	5.0	QT
		7841	Thallium	0.31	J		mg/k	1.0	QT
		8260	Toluene	2.1	J		ug/k	1.0	QT
		8270	Pyrene	52	J		ug/k	1.0	QT
		8270	Benzo(b)fluoranthene	48	J		ug/k	1.0	QT
		8270	Fluoranthene	44	J		ug/k	1.0	QT
LF2-SD4	04/26/96	6010	Manganese	490			mg/k	1.0	QT
		6010	Barium	88.6			mg/k	1.0	QT
		6010	Cadmium	0.59			mg/k	1.0	QT
		6010	Chromium	23.8			mg/k	1.0	QT
		7060	Arsenic	32.5			mg/k	10	QT
		7421	Lead	34.8			mg/k	5.0	QT
		7841	Thallium	0.35	J		mg/k	1.0	QT
		8260	Toluene	1.3	J		ug/k	1.0	QT
LF6-SD1	04/26/96	6010	Manganese	1850			mg/k	1.0	QT
		6010	Barium	249			mg/k	1.0	QT
		6010	Chromium	20.9			mg/k	1.0	QT
		7060	Arsenic	15.3			mg/k	2.0	QT
		7421	Lead	16.2			mg/k	2.0	QT
		8270	bis(2-Ethylhexyl)phthalate	82	J		ug/k	1.0	QT
		6010	Manganese	400			mg/k	1.0	QT
		6010	Barium	220			mg/k	1.0	QT

TABLE 5-10
SUMMARY OF DETECTED COMPOUNDS
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Sample Date	Test Method	Analyte	Result	Lab Flag	Data Qualifier	Units	Dilution Factor	Lab
LF6-SD1 cont.		6010	Cadmium	1.1			mg/k	1.0	QT
		6010	Chromium	26.8			mg/k	1.0	QT
		7060	Arsenic	2.0			mg/k	2.0	QT
		7421	Lead	28.3			mg/k	10	QT
		7471	Mercury	0.00014	J		mg/k	1.0	QT
		7841	Thallium	0.39	J		mg/k	1.0	QT
		8080	Aldrin	4.9	VJ		ug/k	4.0	QT
		8260	Toluene	49			ug/k	1.0	QT
		8260	Tetrachloroethene	1.4	J		ug/k	1.0	QT
		8260	Acetone	31			ug/k	1.0	QT
		8260	Benzene	4.1	J		ug/k	1.0	QT
		8270	bis(2-Ethylhexyl)phthalate	420	J		ug/k	5.0	QT
		8270	Benzo(b)fluoranthene	180	J		ug/k	5.0	QT
LF6-SD2	04/26/96	6010	Manganese	915			mg/k	1.0	QT
		6010	Barium	184			mg/k	1.0	QT
		6010	Chromium	17.3			mg/k	1.0	QT
		7060	Arsenic	3.2			mg/k	2.0	QT
		7421	Lead	26.3			mg/k	5.0	QT
		8270	bis(2-Ethylhexyl)phthalate	2300	J		ug/k	5.0	QT
W5-2	04/25/96	300.0	Chloride	681			mg/L	10	QT
		300.0	Nitrate as N	345			mg/L	20	QT
		300.0	Sulfate	11600			mg/L	200	QT
FCMW-75	04/25/96	160.1	Total Dissolved Solids	15600			mg/L	5.0	QT
		160.2	Total Suspended Solids	102			mg/L	1.0	QT
		300.0	Chloride	380			mg/L	5.0	QT
		300.0	Sulfate	8940			mg/L	100	QT
		310.1	Alkalinity, Total as CaCO3 at pH 4.5	2620			mg/L	4.0	QT
		310.1	Alkalinity, Bicarb. as CaCO3 at pH 4.5	2620			mg/L	4.0	QT
		405.1	Biochemical Oxygen Demand	10.0			mg/L	1.0	QT
		410.4	Chemical Oxygen Demand (Regular)	147			mg/L	1.0	QT
		415.1	Total Organic Carbon	55			mg/L	5.0	QT
		6010	Silica as SiO2	17.1			mg/L	2.0	QT
		6010	Iron	0.89			mg/L	2.0	QT
		6010	Magnesium	551			mg/L	2.0	QT
		6010	Manganese	5.8			mg/L	2.0	QT
		6010	Nickel	0.038	J		mg/L	2.0	QT
		6010	Potassium	6.4	J		mg/L	2.0	QT
		6010	Sodium	3240			mg/L	2.0	QT
		6010	Barium	0.020			mg/L	2.0	QT
		6010	Cobalt	0.013	J		mg/L	2.0	QT
		6010	Calcium	406			mg/L	2.0	QT
		7060	Arsenic	0.012	J		mg/L	5.0	QT
		8270	bis(2-Chloroisopropyl)ether	5.7	J		ug/L	1.0	QT
		8270	Benzoic acid	2.1	J		ug/L	1.0	QT
		8270	Pentachlorophenol	2.4	J		ug/L	1.0	QT
		9012	Cyanide	0.012			mg/L	1.0	QT
BD-2	05/09/96	160.1	Total Dissolved Solids	5540			mg/L	5.0	QT
		160.2	Total Suspended Solids	1060			mg/L	5.0	QT
		300.0	Chloride	85.5			mg/L	2.0	QT
		300.0	Nitrate as N	13.9			mg/L	2.0	QT
		300.0	Sulfate	3400			mg/L	50	QT
		310.1	Alkalinity, Total as CaCO3 at pH 4.5	424			mg/L	1.0	QT
		310.1	Alkalinity, Bicarb. as CaCO3 at pH 4.5	424			mg/L	1.0	QT
		353.2	Nitrate plus Nitrite as N	12.9			mg/L	5.0	QT
		415.1	Total Organic Carbon	5.1			mg/L	2.0	QT
		6010	Silica as SiO2	8.9			mg/L	1.0	QT

TABLE 5-10
SUMMARY OF DETECTED COMPOUNDS
LANDFILLS 2, 5, AND 6
FORT CARSON, COLORADO

Sample ID	Sample Date	Test Method	Analyte	Result	Lab Flag	Data Qualifier	Units	Dilution Factor	Lab
BD-2 cont.		6010	Magnesium	244			mg/L	1.0	QT
		6010	Manganese	0.38			mg/L	1.0	QT
		6010	Potassium	7.3			mg/L	1.0	QT
		6010	Sodium	983			mg/L	1.0	QT
		6010	Barium	0.0063	J		mg/L	1.0	QT
		6010	Calcium	289			mg/L	1.0	QT
		7041	Antimony	0.0020	J		mg/L	1.0	QT
		7740	Selenium	0.072	J		mg/L	20	QT
		7841	Thallium	0.0032	J		mg/L	1.0	QT
BD-3	05/09/96	353.2	Nitrate plus Nitrite as N	0.61			mg/L	1.0	QT
		410.4	Chemical Oxygen Demand (Regular)	22.7			mg/L	1.0	QT
		415.1	Total Organic Carbon	8.6			mg/L	2.0	QT
		6010	Silica as SiO2	10.4			mg/L	1.0	QT
		6010	Iron	0.070	J		mg/L	1.0	QT
		6010	Magnesium	560			mg/L	1.0	QT
		6010	Manganese	4.2			mg/L	1.0	QT
		6010	Potassium	14.4			mg/L	1.0	QT
		6010	Sodium	1940			mg/L	1.0	QT
		6010	Barium	0.011			mg/L	1.0	QT
		6010	Cobalt	0.0041	J		mg/L	1.0	QT
		6010	Calcium	370			mg/L	1.0	QT
		160.1	Total Dissolved Solids	11000			mg/L	10	QT
		160.2	Total Suspended Solids	9.2			mg/L	1.0	QT
		300.0	Nitrate as N	1.4			mg/L	5.0	QT
		300.0	Sulfate	7390			mg/L	100	QT
		310.1	Alkalinity, Total as CaCO3 at pH 4.5	445			mg/L	1.0	QT
		310.1	Alkalinity, Bicarb. as CaCO3 at pH 4.5	445			mg/L	1.0	QT
		405.1	Biochemical Oxygen Demand	4.4			mg/L	1.0	QT
LF5-MW4	05/17/96	353.2	Nitrate plus Nitrite as N	4.7			mg/L	5.0	QT
LF5-MW5	05/17/96	405.1	Biochemical Oxygen Demand	3.2			mg/L	1.0	QT

HY = HydroLogic
QT = Quanterra

Lab Flags:
B = Analyte detected in method blank. Detected concentrations are greater than 5 or 10 times the concentration found in the method blank.
J = Reported concentration is an estimated value.
V = For gas chromatograph methods, the secondary column test is the preferred value.
3 = Fit indicator for Tentatively Identified Compounds.

Data Qualifiers:
J1 = Estimated value due to surrogate recovery (too low or too high).
J4 = Estimated value due to holding time exceedance.

FIGURES

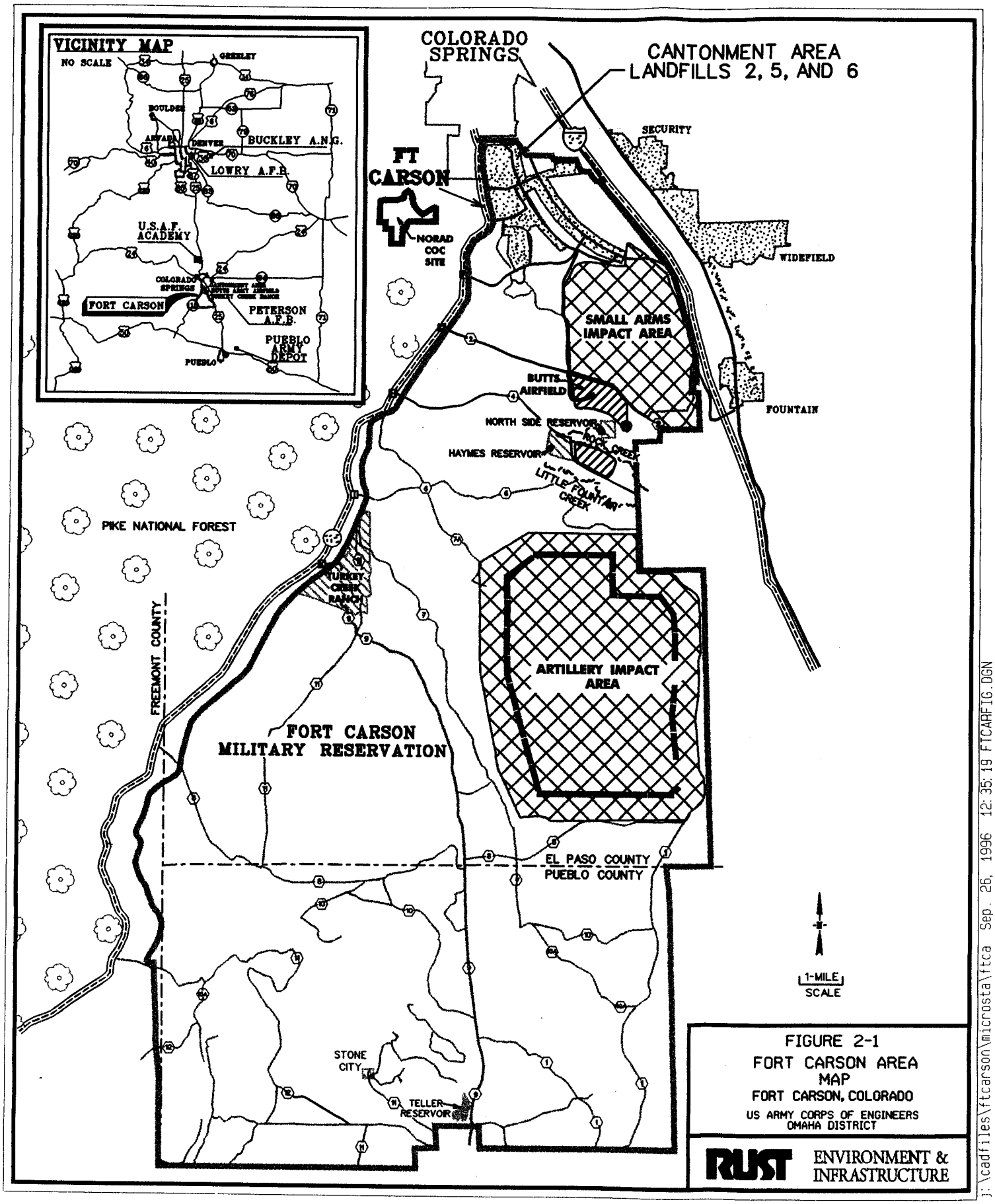
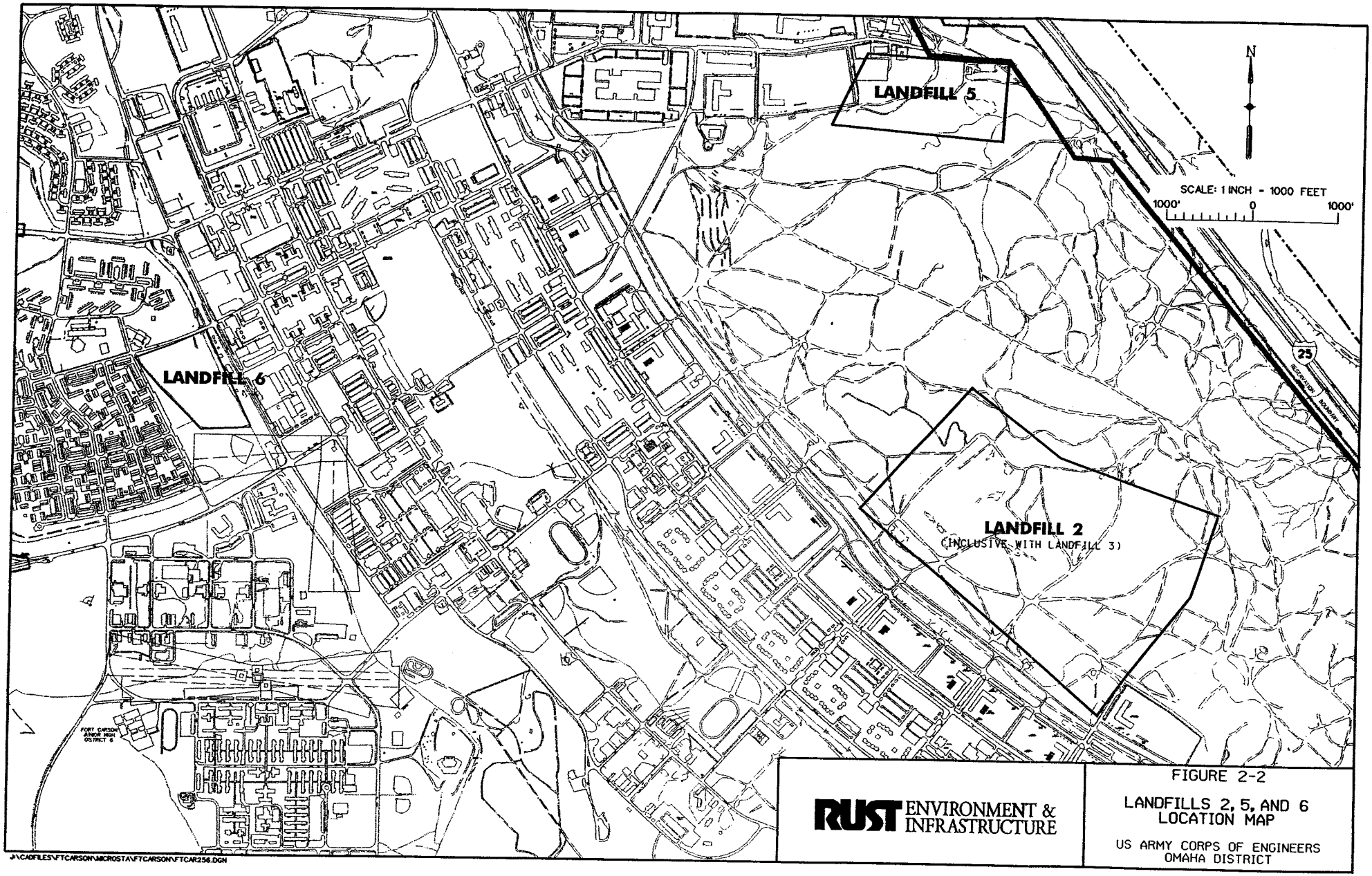


FIGURE 2-1
FORT CARSON AREA MAP
FORT CARSON, COLORADO
US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT

RUST ENVIRONMENT & INFRASTRUCTURE

J:\cadfiles\ftcarson\microsta\ftca Sep. 26, 1996 12:35:19 FTCARFIG.DGN



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RUST ENVIRONMENT & INFRASTRUCTURE

FIGURE 2-2

LANDFILLS 2, 5, AND 6
LOCATION MAP

US ARMY CORPS OF ENGINEERS
OMAHA DISTRICT

APPENDIX A

DAILY QUALITY CONTROL REPORTS

RUST ENVIRONMENT & INFRASTRUCTURE

DAILY QUALITY CONTROL REPORT

JOB NUMBER 89868.100 DATE 8/31/94 REPORT NUMBER

PROJECT & LOCATION Fort Carson

WEATHER Rainy TEMPERATURE RANGE 50-60°F WIND Mild

RUST E & I PERSONNEL ON SITE Todd Murray TIME ON SITE 0900 - 1500

CONTRACTORS/VISITORS —

SUMMARY OF FIELD ACTIVITIES Collected water levels at landfills #2, #5 and #6.

LEVEL OF HEALTH & SAFETY PROTECTION Mod. D

INSTRUMENTATION USED Water Level meter

CALABRATION(S) PERFORMED N/A

INSTRUMENT PROBLEMS/REMEDIES None

SAMPLES COLLECTED* No

SAMPLE COLLECTION METHOD(S) N/A

QUALITY CONTROL SAMPLES * N/A

ADDITIONAL REMARKS

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE, RINSATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE: Todd Murray

Quality through teamwork

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 12/12/1994 REPORT NUMBER

SITE AND PROJECT NUMBER: [ ] Group A (89840.200) [ ] Group B (89846.200)
[ ] Fire Training Area (89855.200) [ ] Equalization Basin (89863.200) [X] Landfills (89868.200)

LOCATION Landfill 2, 5, and 6

WEATHER cold, clear TEMPERATURE RANGE 20°F- WIND slight

RUST E&I PERSONNEL ON SITE Jim Chamness

CONTRACTORS/VISITORS Geo-Centers: Jack Foley, Alan Crandall, Thomas Glenn, Dennis Reidy

SUMMARY OF FIELD ACTIVITIES Geophysical Survey - initial site orientation/planning.

LEVEL OF HEALTH AND SAFETY PROTECTION D

INSTRUMENTATION USED EM-31
No ~~spec~~ H&S monitoring equipment required

CALIBRATION(S) PERFORMED See attached.

INSTRUMENT PROBLEMS/REMEDIES " "

SAMPLES COLLECTED * None

SAMPLE COLLECTION METHOD (S) NA

QUALITY CONTROL SAMPLES * NA

ADDITIONAL REMARKS Re-evaluated the proposed survey strategy to address unique conditions at each site.

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE Jim Chamness

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 12/13/1994 REPORT NUMBER 2

SITE AND PROJECT NUMBER: [ ] Group A (89840.200) [ ] Group B (89846.200)
[ ] Fire Training Area (89855.200) [ ] Equalization Basin (89863.200) [X] Landfills (89868.200)

LOCATION Fort Carson Landfills 6 and 2

WEATHER Clear, occasional clouds TEMPERATURE RANGE 20's to 40's °F WIND none

RUST E&I PERSONNEL ON SITE Jim Chamness

CONTRACTORS/VISITORS Geo Centers, Inc.

SUMMARY OF FIELD ACTIVITIES Completed EM-31 survey traverses at Landfill No. 6 (NS longitudinal lines), and performed 2 1/2 perimeter traverses at Landfill No. 2

LEVEL OF HEALTH AND SAFETY PROTECTION D

INSTRUMENTATION USED · EM-31
· No H&S monitoring equipment required

CALIBRATION(S) PERFORMED See attached

INSTRUMENT PROBLEMS/REMEDIES See attached

SAMPLES COLLECTED * None

SAMPLE COLLECTION METHOD (S) NA

QUALITY CONTROL SAMPLES * NA

ADDITIONAL REMARKS None.

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE Jim Chamness

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 12/14/1994 REPORT NUMBER

SITE AND PROJECT NUMBER: [ ] Group A (89840.200) [ ] Group B (89846.200)
[ ] Fire Training Area (89855.200) [ ] Equalization Basin (89863.200) [✓] Landfills (89868.200)

LOCATION Landfills Nos. 2 & 5

WEATHER Clear TEMPERATURE RANGE High 20°F to 40°F WIND Slight

RUST E&I PERSONNEL ON SITE Jim Chamness

CONTRACTORS/VISITORS Geo-Centers, Inc./ Robert Noyes

SUMMARY OF FIELD ACTIVITIES Completed EM-31 survey at Landfill No. 2 and began at Landfill No. 5

LEVEL OF HEALTH AND SAFETY PROTECTION D

INSTRUMENTATION USED EM-31
No H&S monitoring equipment required

CALIBRATION(S) PERFORMED See attached

INSTRUMENT PROBLEMS/REMEDIES See attached

SAMPLES COLLECTED * None

SAMPLE COLLECTION METHOD (S) N/A

QUALITY CONTROL SAMPLES * N/A

ADDITIONAL REMARKS

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE Jim Chamness

89868 7.3

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 12/15/1994 REPORT NUMBER

SITE AND PROJECT NUMBER: [ ] Group A (89840.200) [ ] Group B (89846.200)
[ ] Fire Training Area (89855.200) [ ] Equalization Basin (89863.200) [✓] Landfills (89868.200)

LOCATION Landfill No. 5

WEATHER _____ TEMPERATURE RANGE 20°F, to WIND _____

RUST E&I PERSONNEL ON SITE Jim Chamness

CONTRACTORS/VISITORS Geo-Centers, Inc./Robert Noyes

SUMMARY OF FIELD ACTIVITIES Completed EM-31 survey at Landfill No. 5. ~~and beg~~ JSC

LEVEL OF HEALTH AND SAFETY PROTECTION D

INSTRUMENTATION USED EM-31
No H&S monitoring equipment required

CALIBRATION(S) PERFORMED See attached

INSTRUMENT PROBLEMS/REMEDIES See attached.

SAMPLES COLLECTED * None

SAMPLE COLLECTION METHOD (S) N/A

QUALITY CONTROL SAMPLES * N/A

ADDITIONAL REMARKS _____

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE Jim Chamness

RUST ENVIRONMENT & INFRASTRUCTURE

DAILY QUALITY CONTROL REPORT

JOB NUMBER 89868.200 DATE 4/20/95 REPORT NUMBER 061

PROJECT & LOCATION Fort Carson - Landfill 2

WEATHER Cold, showers/snow TEMPERATURE RANGE 35-45°F WIND gusty to slight SE

RUST E & I PERSONNEL ON SITE Steve Fluke TIME ON SITE 10.5 hrs

CONTRACTORS/VISITORS none

SUMMARY OF FIELD ACTIVITIES Develop well FCMW-73 at Landfill 2.

LEVEL OF HEALTH & SAFETY PROTECTION Modified level D

INSTRUMENTATION USED OVM 580B; LEL/H_2S/O_2 meter,

CALABRATION(S) PERFORMED at beginning of day - see direct reading instrument log and daily report

INSTRUMENT PROBLEMS/REMEDIES none

SAMPLES COLLECTED* none

SAMPLE COLLECTION METHOD(S) NA

QUALITY CONTROL SAMPLES * NA

ADDITIONAL REMARKS None (LWW, 5/2/95)

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE, RINSATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE: [illegible]

RUST ENVIRONMENT & INFRASTRUCTURE

DAILY QUALITY CONTROL REPORT

JOB NUMBER 89868.200 DATE 4/21/95 REPORT NUMBER 062

PROJECT & LOCATION Fort Carson Landfill 6

WEATHER snow TEMPERATURE RANGE 30-40°F WIND southerly

RUST E & I PERSONNEL ON SITE Steve Fluke TIME ON SITE 0700-1700

CONTRACTORS/VISITORS NA

SUMMARY OF FIELD ACTIVITIES Development at Landfill 6 of well W6-3

LEVEL OF HEALTH & SAFETY PROTECTION Modified level D - steel toed boots, gloves, Syranax, safety glasses

INSTRUMENTATION USED 580B OVM, H_2S/LEL/O_2 meter

CALABRATION(S) PERFORMED daily on all meters - see daily log

INSTRUMENT PROBLEMS/REMEDIES 580B OVM didn't work. Used other OVM

SAMPLES COLLECTED* NA

SAMPLE COLLECTION METHOD(S) NA

QUALITY CONTROL SAMPLES * NA

ADDITIONAL REMARKS wet conditions, OVM breakdown, and drum management at Landfill 6 slowed down productivity.

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE, RINSATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE: [signature]

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 4/24/95 REPORT NUMBER 063

SITE AND PROJECT NUMBER: [ ] Group A (89840.200) [ ] Group B (89846.200)
[ ] Fire Training Area (89855.200) [ ] Equalization Basin (89863.200) [X] Landfills (89868.200)

LOCATION Landfill 5

WEATHER cool + clear TEMPERATURE RANGE 40-50 °F WIND slight south

RUST E&I PERSONNEL ON SITE Steve Fluke

CONTRACTORS/VISITORS NA

SUMMARY OF FIELD ACTIVITIES Landfill 5 water level measurements and well development of wells FCMW-84 and W5-2

LEVEL OF HEALTH AND SAFETY PROTECTION Modified level D

INSTRUMENTATION USED 580B OVM, H_2S/LEL/O_2 meter ID#'s TE-37 and 000874 respectively

CALIBRATION(S) PERFORMED daily on all - see daily log and cal. log

INSTRUMENT PROBLEMS/REMEDIES

SAMPLES COLLECTED * NA

SAMPLE COLLECTION METHOD (S) NA

QUALITY CONTROL SAMPLES * NA

ADDITIONAL REMARKS None (WW, 5/2/95)

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE Steve Fluke

RUST ENVIRONMENT & INFRASTRUCTURE

DAILY QUALITY CONTROL REPORT

JOB NUMBER 89868.200 DATE 9/25/95 REPORT NUMBER 064

PROJECT & LOCATION RD at LFs 2, 5 &6 and Vapor Degreaser/Fort Carson, Colorado

WEATHER partly cloudy TEMPERATURE RANGE 40-50 °F WIND slight southerly

RUST E & I PERSONNEL ON SITE Steve Fluke TIME ON SITE 0700 - 1810

CONTRACTORS/VISITORS none

SUMMARY OF FIELD ACTIVITIES Well development

LEVEL OF HEALTH & SAFETY PROTECTION Modified level D - steel toed boots, safety glasses, syranex, gloves

INSTRUMENTATION USED 580 B OVM, H_2S|LEL|O_2 meter ID #'s TE-37 + 000874 respectively

CALABRATION(S) PERFORMED daily - see log and daily report

INSTRUMENT PROBLEMS/REMEDIES ~~None~~ SF H_2S|LEL|O_2 meter wet from yesterday. Used sample crews meter.

SAMPLES COLLECTED* NA

SAMPLE COLLECTION METHOD(S) NA

QUALITY CONTROL SAMPLES * NA

ADDITIONAL REMARKS None (CWW 5/2/95)

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE, RINSATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE: Steve Fluke

RUST ENVIRONMENT & INFRASTRUCTURE

DAILY QUALITY CONTROL REPORT

JOB NUMBER 89868.200 DATE 4/26/95 REPORT NUMBER 065

PROJECT & LOCATION RD at LFs 2, 5 &6 and Vapor Degreaser/Fort Carson, Colorado

WEATHER cold, snow + ice TEMPERATURE RANGE ~35°F WIND strong northerly (30mph)

RUST E & I PERSONNEL ON SITE Steve Fluke, Todd Murray TIME ON SITE 0715-1800

CONTRACTORS/VISITORS none

SUMMARY OF FIELD ACTIVITIES Well development of well MW-5, 3, 6, +1.

LEVEL OF HEALTH & SAFETY PROTECTION Modified Level D- steel toe boots, syranex, gloves, safety glasses.

INSTRUMENTATION USED 580B OVM SN= TE-37, H_2S|LEL|O_2 meter SN = 000847, pH meter OR SA230 SN 4988, Conductivity - Orion 122

CALABRATION(S) PERFORMED daily - see calibration logs and daily log report

INSTRUMENT PROBLEMS/REMEDIES

SAMPLES COLLECTED* NA

SAMPLE COLLECTION METHOD(S) NA

QUALITY CONTROL SAMPLES * NA

ADDITIONAL REMARKS None (cmw, 5/2/95)

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE, RINSATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE: [signature]

RUST ENVIRONMENT & INFRASTRUCTURE

DAILY QUALITY CONTROL REPORT

JOB NUMBER 89868.200 DATE 4/27/95 REPORT NUMBER 066

PROJECT & LOCATION RD at LFs 2, 5 &6 and Vapor Degreaser/Fort Carson, Colorado

WEATHER Overcast TEMPERATURE RANGE 35-45°F WIND easterly

RUST E & I PERSONNEL ON SITE S. Fluke, T. Murray TIME ON SITE 0700-

CONTRACTORS/VISITORS

SUMMARY OF FIELD ACTIVITIES Develop wells MW-2, MW-1, + MW-5 at Landfill 5

LEVEL OF HEALTH & SAFETY PROTECTION Modified level D- syranex, steel toed boots, safety glasses, and gloves

INSTRUMENTATION USED 580B OVM #TE-037, H_2S(LEL)O_2 Gastech #000874, pH meter OR SA230 #4988, Conductivity 12.2, Turbidimeter DRT15C #000305

CALABRATION(S) PERFORMED daily - see daily log and calibration log

INSTRUMENT PROBLEMS/REMEDIES

SAMPLES COLLECTED* NA

SAMPLE COLLECTION METHOD(S) NA

QUALITY CONTROL SAMPLES * NA

ADDITIONAL REMARKS None, (initial, 5/2/95)

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE, RINSATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE: St Fluke

Quality through teamwork

RUST ENVIRONMENT & INFRASTRUCTURE

DAILY QUALITY CONTROL REPORT

JOB NUMBER 89868.200 DATE 4/28/95 REPORT NUMBER 067

PROJECT & LOCATION RD at LFs 2, 5 &6 and Vapor Degreaser/Fort Carson, Colorado

WEATHER partly cloudy TEMPERATURE RANGE 45-55 °F WIND slight easterly

RUST E & I PERSONNEL ON SITE S. Fluke, H. Hodson, T Murray TIME ON SITE 0710 -

CONTRACTORS/VISITORS — none —

SUMMARY OF FIELD ACTIVITIES Develop wells FCMW-82 and MW-6 at landfill 5.

LEVEL OF HEALTH & SAFETY PROTECTION Modified level D - syraner, safety glasses, steel toed boots, gloves

INSTRUMENTATION USED 580B OVM # TE-037, H_2S/O_2/LEL meter Gastech # 000874, pH meter OR SA230 # 4988, Conductivity 12.2, Turbidimeter DRT15C # 000305

CALABRATION(S) PERFORMED daily - see calibration log and daily log

INSTRUMENT PROBLEMS/REMEDIES

SAMPLES COLLECTED* NA

SAMPLE COLLECTION METHOD(S) NA

QUALITY CONTROL SAMPLES * NA

ADDITIONAL REMARKS None (5/2/95)

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE, RINSATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE: [illegible]

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RUST ENVIRONMENT & INFRASTRUCTURE

DAILY QUALITY CONTROL REPORT

JOB NUMBER 89868.200 DATE 4/28/95 REPORT NUMBER 067

PROJECT & LOCATION RD at LFs 2, 5 &6 and Vapor Degreaser/Fort Carson, Colorado

WEATHER Sunny/ptly cloudy TEMPERATURE RANGE 30-50° WIND None

RUST E & I PERSONNEL ON SITE T. Murray, H. Hodson, S. Fluke TIME ON SITE 0700-1245

CONTRACTORS/VISITORS —

SUMMARY OF FIELD ACTIVITIES Develop wells at Landfill 5. Developed well MW-4.

LEVEL OF HEALTH & SAFETY PROTECTION Modified Level D-Serenacs, steel toed boots, booties, eye wear, gloves

INSTRUMENTATION USED Hydac S/N 9311 (Conductivity), DRT-15CE Turbidimeter, Beckman S/N 219791, TermoEnv. Instruments Model 580B OVM S/N 000001, Gas Tech S/N 000874

CALABRATION(S) PERFORMED All instrument calibrated at beginning of day

INSTRUMENT PROBLEMS/REMEDIES None

SAMPLES COLLECTED* N/A

SAMPLE COLLECTION METHOD(S) N/A

QUALITY CONTROL SAMPLES * N/A

ADDITIONAL REMARKS None

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE, RINSATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE: [signature]

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RUST ENVIRONMENT & INFRASTRUCTURE

DAILY QUALITY CONTROL REPORT

JOB NUMBER 89868.200 DATE 5-1-95 REPORT NUMBER 068

PROJECT & LOCATION RD at LFs 2, 5 &6 and Vapor Degreaser/Fort Carson, Colorado

WEATHER Cloudy, cool TEMPERATURE RANGE 45-55°F WIND Mod-strong.

RUST E & I PERSONNEL ON SITE H. Hodson, C. Grosse (HSH) TIME ON SITE 1330 to 1525

CONTRACTORS/VISITORS —

SUMMARY OF FIELD ACTIVITIES Purge and sample monitoring wells LF5MW01

LEVEL OF HEALTH & SAFETY PROTECTION Modified Level D

INSTRUMENTATION USED OVM 580B (EI) S/N 000001 ThermoEnvironmental Instruments Inc; Conductivity - Hydac S/N 9311; Temp + pH Beckman S/N 219791; Industrial Scientific H_2S - Model SP202 - S/N 879 Gastechtor O_2 (LEL) Model 1214S S/N 538; Turbidimeter. HF Scientific Inc DRT 15CE

CALABRATION(S) PERFORMED All instrument calibrated @ beginning of day

INSTRUMENT PROBLEMS/REMEDIES —

SAMPLES COLLECTED* Groundwater LF5MW01, LF5MW01MS, LF5MW01MSD, LF5MW01TRIP,

SAMPLE COLLECTION METHOD(S) Bennett Piston Pump, Geotech disposable filters 0.45 micron

QUALITY CONTROL SAMPLES * LF5MW01MS and MSD and TRIP

ADDITIONAL REMARKS Temperature blanks included in 2 coolers.

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE, RINSATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE: [signature]

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RUST ENVIRONMENT & INFRASTRUCTURE

DAILY QUALITY CONTROL REPORT

JOB NUMBER 89868.200 DATE 5/1/95 REPORT NUMBER 068

PROJECT & LOCATION RD at LFs 2, 5 &6 and Vapor Degreaser/Fort Carson, Colorado

WEATHER cloudy TEMPERATURE RANGE 40-50 °F WIND slight easterly

RUST E & I PERSONNEL ON SITE S. Fluke TIME ON SITE 1040- 1710

CONTRACTORS/VISITORS

SUMMARY OF FIELD ACTIVITIES Develop wells NUD-1 at landfill 6

LEVEL OF HEALTH & SAFETY PROTECTION Modified level D - syranex, safety glasses, gloves, steel toed boots

INSTRUMENTATION USED 580B OVM #TE-037, H_2S/LEL/O_2 Gastech #000874, pH meter OR SA230 #4988, Conductivity 12.2, Turbidimeter DRT 15C #000305

CALABRATION(S) PERFORMED daily - see calibration log and daily log

INSTRUMENT PROBLEMS/REMEDIES only 1 gastech meter between 2 crews. Have to share.

SAMPLES COLLECTED* NA

SAMPLE COLLECTION METHOD(S) NA

QUALITY CONTROL SAMPLES * NA

ADDITIONAL REMARKS

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE, RINSATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE: S. Fluke

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RUST ENVIRONMENT & INFRASTRUCTURE

DAILY QUALITY CONTROL REPORT

tbH 5/2/95

JOB NUMBER 89868.200 DATE 5-2-95 REPORT NUMBER ~~068~~ 069

PROJECT & LOCATION RD at LFs 2, 5 &6 and Vapor Degreaser/Fort Carson, Colorado

WEATHER cloudy, cool, rainy in P.M. TEMPERATURE RANGE 45-55°F WIND light

RUST E & I PERSONNEL ON SITE H. Hodson, ~~C. Grost~~ (HSH) S. Rider TIME ON SITE 0945-1430

CONTRACTORS/VISITORS —

SUMMARY OF FIELD ACTIVITIES Purge and sample monitoring wells at Landfill 5 — LF5MW02, LF5~~MW~~FCMW82, LF5FCMW84. (HSH)

LEVEL OF HEALTH & SAFETY PROTECTION Modified Level D

INSTRUMENTATION USED OVM-580B (EI) S/N 000001 ThermoEnvironmental Instruments Inc, Conductivity - Hydac S/N 9311; Temp + pH Beckman S/N 8219791 (HSH); ~~Industrial Scientific H2S - Model SP202 - S/N 8?9~~ HE Scientific ~~Gastechtor (PEL) Model 1214 S/N 1558~~; Gastech 3220 S/N 000814 (tbH 5/2/95), Turbidimeter DET ISCO

CALABRATION(S) PERFORMED All instruments calibrated at trailer at beginning of day.

INSTRUMENT PROBLEMS/REMEDIES None

SAMPLES COLLECTED* LF5MW02, LF5MW02MRDSplit, LF5FCMW82, LF5FCMW84.

SAMPLE COLLECTION METHOD(S) LF5MW02 & LF5FCMW84 Bennett Piston Pump, LF5FCMW82 Disposable Bailer (because screwed in well wouldn't allow pump access).

QUALITY CONTROL SAMPLES * LF5MW02MRD, LF5MW02MRDTRIP,

ADDITIONAL REMARKS Corrections made on chain-of-custodies. Copies faxed to respective laboratories (Forgotten time, I forgotten, relinquishment) Too rushed @ end of day. Will plan on stopping by 3:30 @latest.

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE, RINSATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE: H. Hodson

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RUST ENVIRONMENT & INFRASTRUCTURE

DAILY QUALITY CONTROL REPORT

JOB NUMBER 89868.200 DATE 5/2/95 REPORT NUMBER 069

PROJECT & LOCATION RD at LFs 2, 5 &6 and Vapor Degreaser/Fort Carson, Colorado

WEATHER cloudy + cool TEMPERATURE RANGE 40-50 °F WIND slight southerly

RUST E & I PERSONNEL ON SITE S. Fluke TIME ON SITE 0700 - 1730

CONTRACTORS/VISITORS

SUMMARY OF FIELD ACTIVITIES Develop wells FCMW-76 + 75 at landfill 2. Finish development of well NUD-1 at landfill 6.

LEVEL OF HEALTH & SAFETY PROTECTION Modified level D - syranex, safety glasses, gloves, steel toed boots

INSTRUMENTATION USED 580B OVM #TE-037, H_2S/LEL/O_2 Gastech # 000~~874~~ 538 (SF), pH meter OR SA230 #4988, Conductivity 12.2, Turbidimeter DRT15C #000305

CALABRATION(S) PERFORMED daily - see calibration log and daily log

INSTRUMENT PROBLEMS/REMEDIES O_2 detector acting up. Don't use.

SAMPLES COLLECTED* NA

SAMPLE COLLECTION METHOD(S) NA

QUALITY CONTROL SAMPLES * NA

ADDITIONAL REMARKS none

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE, RINSATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE: S. Fluke

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RUST ENVIRONMENT & INFRASTRUCTURE

DAILY QUALITY CONTROL REPORT

JOB NUMBER 89868.200 DATE 5-3-95 REPORT NUMBER 070

PROJECT & LOCATION RD at LFs 2, 5 &6 and Vapor Degreaser/Fort Carson, Colorado

WEATHER Sunny-Rainy/cloudy TEMPERATURE RANGE 60-70 WIND light

RUST E & I PERSONNEL ON SITE H. Hodson C. Grose TIME ON SITE 0700 - 1515

CONTRACTORS/VISITORS — (in trailer - out field)

SUMMARY OF FIELD ACTIVITIES Purge and Sample monitoring wells LF5MW5-2, LF5-MW4 and LF5-MW5 at Landfill 5

LEVEL OF HEALTH & SAFETY PROTECTION Modified Level D - Saranex, gloves, glasses booties, steel toed boots

INSTRUMENTATION USED OVM 580B(EI) S/N 000001 Thermo Env. Instruments, Conductivity, Hydac - S/N 9311, Temp/pH Beckman - S/N 219791, ~~Industrial Scientific~~ (HH) Gastech 3220 S/N 000874 Turbidimeter HF Scientific Inc DRT 15CE

CALABRATION(S) PERFORMED All instruments calibrated @ beginning of day

INSTRUMENT PROBLEMS/REMEDIES None

SAMPLES COLLECTED* LF5W5-2, LF5MW-5, LF5MW-4, LF5-RW LF5MW4TRIP

SAMPLE COLLECTION METHOD(S) Bennett Piston Pump, Geotech 0.45 micron disposable filter

QUALITY CONTROL SAMPLES * LF5-RW (Rinsewater after LF5W5-2) LF5MW4TRIP (covered all VOCs - alternated w/ LF5MW04)

ADDITIONAL REMARKS Rained while collecting LF5MW-5.

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE, RINSATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE: H. Hodson

RUST ENVIRONMENT & INFRASTRUCTURE

DAILY QUALITY CONTROL REPORT

JOB NUMBER 89868.200 DATE 5/3/95 REPORT NUMBER 070

PROJECT & LOCATION RD at LFs 2, 5 &6 and Vapor Degreaser/Fort Carson, Colorado

WEATHER ptly. cloudy TEMPERATURE RANGE 40-55 °F WIND mild south

RUST E & I PERSONNEL ON SITE S. Fluke TIME ON SITE 0715 - 1700

CONTRACTORS/VISITORS —

SUMMARY OF FIELD ACTIVITIES Develop well FCMW-~~78~~ 81 and begin development of well FCMW-78, both at landfill 2. Locate LFG-A at landfill 6.

LEVEL OF HEALTH & SAFETY PROTECTION Modified level D - saranex, safety glasses, gloves, steel toed boots

INSTRUMENTATION USED 580B OVM #TE-037, H_2S/LEL/O_2 Gastech # 000~~879~~ 538, pH meter OR SA230 #4988, Conductivity 12.2, Turbidimeter DRT 15C #000305

CALABRATION(S) PERFORMED daily - see calibration log and daily log

INSTRUMENT PROBLEMS/REMEDIES

SAMPLES COLLECTED* NA

SAMPLE COLLECTION METHOD(S) NA

QUALITY CONTROL SAMPLES * NA

ADDITIONAL REMARKS none

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE, RINSATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE: S. Fluke

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DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 5/4/95 REPORT NUMBER 071

SITE AND PROJECT NUMBER: RD at Landfills #2, #5, #6 and Vapor Degreaser (89868.200)

LOCATION Landfill #4 (89840), 5, + 6

WEATHER Sunny-cloudy TEMPERATURE RANGE 40 - 60 WIND sl. breezy

RUST E&I PERSONNEL ON SITE C. Grose / H. Hodson / S. Fluke

CONTRACTORS/VISITORS —

SUMMARY OF FIELD ACTIVITIES Purge and sample monitoring wells at Landfill 4 (89840) and 6 and 5 (LF4MW4-4; LF6NUD-1+dup; LF5MW04 and LF5MW06) SMF - develop wells LF6-A + FCMW-74

LEVEL OF HEALTH AND SAFETY PROTECTION Modified Level D

INSTRUMENTATION USED HSH/CTG: OVM580B S/N 000001 Thermo Environmental Instruments; Cond. Hydac S/N 9311; T/pH Beckman S/N 219791; Gastech 3205 S/N 000574; Turbidimeter HF Scientific DRT15CE; SMF: 580B OVM S/N TE-037, Gastech Tor S/N 000538, pH meter OR SA230 #4988, Conductivity meter 12.2, Turbidimeter DRT15C S/N 000305

CALIBRATION(S) PERFORMED All instruments calibrated @ beginning of day.

INSTRUMENT PROBLEMS/REMEDIES None

SAMPLES COLLECTED * SVOCs = LF5MW03 (1 bottle); SVOC + PCB/Pest = LF5MW06; VOC, SVOC, Metals = LF6NUD-1 (and duplicate); VOC's = LF4MW4-4 (Caroline 89840)

SAMPLE COLLECTION METHOD (S) Bennett Piston Pump (LF6NUD-1 + dup) rest disposable bailer + LF4MW4-4 PVC Bailer

QUALITY CONTROL SAMPLES * LF6NUD-1 DUP, LF6NUD-1 TRIP, Temp blanks

ADDITIONAL REMARKS All VOC's went in one cooler w/ trip blank

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE Christi Hodson

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 5/5/95 REPORT NUMBER 072

SITE AND PROJECT NUMBER: RD at Landfills #2, #5, #6 and Vapor Degreaser (89868.200)

LOCATION Landfill # 4 (89840), 5, 6

WEATHER Cloudy TEMPERATURE RANGE 40-65°F WIND

RUST E&I PERSONNEL ON SITE H. Hudson, C. Grosse, S. Fluke

CONTRACTORS/VISITORS —

SUMMARY OF FIELD ACTIVITIES Sample monitoring wells at Landfills 4 (89840), 5, and 6 SMF - Develop wells FCMW-75+78 at landfill 2.

LEVEL OF HEALTH AND SAFETY PROTECTION Modified level D

INSTRUMENTATION USED H&H/CTG - OVM580B S/N 000001 (EI); Cond. Hydac S/N 930; T/pH Beckman S/N 29791; Gastech 32 205/N 000874; Turbidimeter HF Scientific DRT 15CE. SMF: 580B OVM S/N TE-037, pH meter OR SA230 #4988, Conductivity meter 12.2, GasTechTor S/N 000538, Turbidimeter DRT 15C S/N 000305

CALIBRATION(S) PERFORMED All instruments calibrated at beginning of day

INSTRUMENT PROBLEMS/REMEDIES None

SAMPLES COLLECTED * LF6WW6-3 (MRD Split) LF6WW6-3 TRIP (MRD); LF6WW6-3, LF5MW06 (VOCs only) LF5MW03 (VOCs only), LF5MW03TRIP LF6NUD-1 (Pest/PCB, Nitrite, NO_2/NO_3) * LF6NUD-1Dup (same analytes) w 4-4 (metals + Hg)

SAMPLE COLLECTION METHOD (S) Disposable Bailer

QUALITY CONTROL SAMPLES * LF6WW6-3 MRD Split and Trip, LF5MW03TRIP, LF6NUD-1Dup.

ADDITIONAL REMARKS None

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE H Hudson

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 5/8/95 REPORT NUMBER 013

SITE AND PROJECT NUMBER: RD at Landfills #2, #5, #6 and Vapor Degreaser (89868.200)

LOCATION Landfill 4, Landfill 6, and Landfill 4 (89840)

WEATHER Partly cloudy, little rain TEMPERATURE RANGE 40-60° F WIND gusty

RUST E&I PERSONNEL ON SITE H. Hodson, C. Grose

CONTRACTORS/VISITORS —

SUMMARY OF FIELD ACTIVITIES Purg and sample monitoring wells at Landfills 6 and purged Landfill 4 well 4-4 (LF6-A)

LEVEL OF HEALTH AND SAFETY PROTECTION Mod. Level D

INSTRUMENTATION USED OVM580B (EI) S/N 000001; Cond - Hydac S/N 9311; T/pH - Beckman S/N 219791; Gastech 3220 - S/N 000874; Turbidimeter HF Scientific DRT15CE.

CALIBRATION(S) PERFORMED All instruments calibrated @ beginning of day

INSTRUMENT PROBLEMS/REMEDIES None

SAMPLES COLLECTED * LF6-A, LF6-AMS, LF6-AMSD

SAMPLE COLLECTION METHOD (S) Bennett Piston Pump

QUALITY CONTROL SAMPLES * LF6-AMS+MSD, LF6-ATRIP (in MSD cooler w/all VOCs)

ADDITIONAL REMARKS None

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE H Hodson

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 5/9/95 REPORT NUMBER 074

SITE AND PROJECT NUMBER: RD at Landfills #2, #5, #6 and Vapor Degreaser (89868.200)

LOCATION Landfill 2 and Landfill 4 (89840)

WEATHER ptly cloudy TEMPERATURE RANGE 55-60 WIND slight

RUST E&I PERSONNEL ON SITE H. Hodson, C. Grose

CONTRACTORS/VISITORS —

SUMMARY OF FIELD ACTIVITIES Purge and Sample monitoring wells @ Landfill 2 (LF2FCMW76,

LEVEL OF HEALTH AND SAFETY PROTECTION Modified Level D

INSTRUMENTATION USED OVM 580B (EI) S/N 000001; Cond. Hydac S/N 9311; T/pH - Beckman S/N 219791; Gas Tech 3220 - S/N 000874; Turbidimeter HF Scientific DRT-15CE

CALIBRATION(S) PERFORMED All instruments calibrated @ beg. of day

INSTRUMENT PROBLEMS/REMEDIES None

SAMPLES COLLECTED * LF2FCMW76, LF2FCMW76 MRD Split, LF2FCMW81 LF2FCMW81 MS and MSD, LF4W4-4 SVOC (1 bottle), LF2FCMW75 VOC + metals only)

SAMPLE COLLECTION METHOD (S) Bennett Piston Pump

QUALITY CONTROL SAMPLES * LF2FCMW76 TRIP (MRD), LF2FCMW81 MS + MSD. LF2FCMW81 TRIP (for all trips/vocs to Hydrologic

ADDITIONAL REMARKS None

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE H S Hodson

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 5-10-95 REPORT NUMBER 075

SITE AND PROJECT NUMBER: RD at Landfills #2, #5, #6 and Vapor Degreaser (89868.200)

LOCATION Landfills 2,5,6+4

WEATHER cloudy/pt cloudy TEMPERATURE RANGE 40-60°F WIND light

RUST E&I PERSONNEL ON SITE H. Hudson, C. Grose

CONTRACTORS/VISITORS e

SUMMARY OF FIELD ACTIVITIES Purge and sample monitoring wells at Landfills 2 (LF2FCmw73, 74, 78) Landfill 5 (LF5-WQ @ LF5mw02), Landfill 6 (LF6-WQ @ LF6-A) and Landfill 4 (LF4W4-4 Grab A) (water quality also collected here)

LEVEL OF HEALTH AND SAFETY PROTECTION Modified Level D

INSTRUMENTATION USED QM580B (EI) S/N 000001; Conductivity - Hydac S/N 9311; T/pH Beckman S/N 219791; Gastech 3220 S/N 000874; Turbidimeter HF Scientific DRT15CE

CALIBRATION(S) PERFORMED All instruments calibrated at beg of day

INSTRUMENT PROBLEMS/REMEDIES None

SAMPLES COLLECTED * LF2FCmw73, LF2-WQ, LF5WQ, LF6-WQ, LF2FCmw78 (VOCs only) LF4W4-4 (1L amber + some plastic), LF2FCmw74,

SAMPLE COLLECTION METHOD (S)

QUALITY CONTROL SAMPLES * LF2-WQ, LF6-WQ, LF5-WQ, LF2FCmw74TRIP (Repurged all wells for water quality samples prior to sampling - LF2FCmw73, LF6-A, and LF5mw02, respectively).

ADDITIONAL REMARKS None

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE H. Hudson

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 5/19/95 REPORT NUMBER 077

SITE AND PROJECT NUMBER: RD at Landfills #2, #5, #6 and Vapor Degreaser (89868.200)

LOCATION LF # 6

WEATHER SUNNY CLEAR TEMPERATURE RANGE 65° F WIND 10 mph

RUST E&I PERSONNEL ON SITE Nelson DIAZ TODD MURRY

CONTRACTORS/VISITORS NONE

SUMMARY OF FIELD ACTIVITIES SOIL GAS SURVEY LF #6

LEVEL OF HEALTH AND SAFETY PROTECTION MODIFIED LEVEL D

INSTRUMENTATION USED H_2S METER, METHANE METER, OVM, METAL DETECTOR, MAGN. GAUGE, COMPASS, MAPS, BAROMETER

Calibrated in morning

CALIBRATION(S) PERFORMED (SEE CALIBRATION SHEET)

INSTRUMENT PROBLEMS/REMEDIES NONE

SAMPLES COLLECTED * NONE Sent to lab. Meter readings in field only for LF6-SG23 and SG24

SAMPLE COLLECTION METHOD (S) — Direct Push Soil Vapor Probe

QUALITY CONTROL SAMPLES * — None

ADDITIONAL REMARKS ~~NONE~~ cww 5/25 rain and thunderstorms in afternoon forced early end of day. Rain also causing access problems

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE Nelson D

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 5/19/95 REPORT NUMBER 077

SITE AND PROJECT NUMBER: RD at Landfills #2, #5, #6 and Vapor Degreaser (89868.200)

LOCATION Fort Carson - Landfill #6

WEATHER Clear, warm 70 to rainy in afternoon TEMPERATURE RANGE 65°F - 75°F WIND calm

RUST E&I PERSONNEL ON SITE Kelly Woodworth

CONTRACTORS/VISITORS GEO Environmental -

SUMMARY OF FIELD ACTIVITIES direct push water sampling

LEVEL OF HEALTH AND SAFETY PROTECTION Level D

INSTRUMENTATION USED PID, LEL

CALIBRATION(S) PERFORMED PID calibrated to 250 ppm isobutylene
LEL adjusted for new zero

INSTRUMENT PROBLEMS/REMEDIES no problems

SAMPLES COLLECTED * LF6 - DP01, DP02, DP03, DP04

SAMPLE COLLECTION METHOD (S) hydroprobe, pneumatically driven

QUALITY CONTROL SAMPLES * LF6 - DP03TRP, DP03RW

ADDITIONAL REMARKS Poor access to LF#5, too muddy

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE Carolin K. Whitsides for Kelly Woodworth

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 5/22/95 REPORT NUMBER 078

SITE AND PROJECT NUMBER: RD at Landfills #2, #5, #6 and Vapor Degreaser (89868.200)

LOCATION LANDFILL No. 5

WEATHER SUNNY/CLEAR TEMPERATURE RANGE 60°F WIND 35 mph

RUST E&I PERSONNEL ON SITE Nelson DIAZ, STEVE RIDER

CONTRACTORS/VISITORS NONE

SUMMARY OF FIELD ACTIVITIES SOIL GAS SURVEY LF No 5

LEVEL OF HEALTH AND SAFETY PROTECTION MODIFIED LEVEL-D

INSTRUMENTATION USED H_2S METER, METHANE METER, OVM, METAL DETECTOR, MAGN. GAUGE, COMPASS, MAPS, BAROMETER

CALIBRATION(S) PERFORMED (SEE CALIBRATION SHEET) Calibrated in morning

INSTRUMENT PROBLEMS/REMEDIES NONE

SAMPLES COLLECTED * NONE Sent to lab. Meter readings in Field only for LF6-SG-1 through SG-22

SAMPLE COLLECTION METHOD (S) — Direct Push Soil Vapor Prob

QUALITY CONTROL SAMPLES * — None

ADDITIONAL REMARKS NONE

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE Nelson Diaz

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 5/24/95 REPORT NUMBER 079

SITE AND PROJECT NUMBER: RD at Landfills #2, #5, #6 and Vapor Degreaser (89868.200)

LOCATION Vapor Degreaser

WEATHER Cloudy, rainy TEMPERATURE RANGE 40-50°F WIND odor

RUST E&I PERSONNEL ON SITE Kelly Woodworth

CONTRACTORS/VISITORS GEO- Jerry Schell, Chad Branica

SUMMARY OF FIELD ACTIVITIES Direct Push soil + ground water sampling

LEVEL OF HEALTH AND SAFETY PROTECTION Nitrile gloves with Level D

INSTRUMENTATION USED PID, LEL

CALIBRATION(S) PERFORMED PID - 250 ppm benzene equivalent isobutylene
LEL - H_2S + adjust to ambient fresh air

INSTRUMENT PROBLEMS/REMEDIES None

SAMPLES COLLECTED * VDGDP01 soil and water
VDGDP02 soil
Soil sampling intervals 0-4 ft, 6-10 ft, 13-17 ft ~~21-25 ft~~ KAW

SAMPLE COLLECTION METHOD (S) direct push soil sampling, direct push water sampling

QUALITY CONTROL SAMPLES * MRD split of VDGDP01 soil

ADDITIONAL REMARKS no water in VDGDP01 - so we set temporary well point with slip cap concreted in place for future sampling. Building interior was rife with grease.

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE Kelly Woodworth

RPT 080

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 6/12/95 REPORT NUMBER

SITE AND PROJECT NUMBER: RD at Landfills #2, #5, #6 and Vapor Degreaser (89868.200)

LOCATION LANDFILL #2

WEATHER SUNNY CLEAR TEMPERATURE RANGE 85° F WIND 5mph

RUST E&I PERSONNEL ON SITE Nelson Diaz, GLENN LEWIS

CONTRACTORS/VISITORS JIM CHAMNESS

SUMMARY OF FIELD ACTIVITIES SOIL GAS SURVEY LF #2

LEVEL OF HEALTH AND SAFETY PROTECTION MODIFIED LEVEL D

INSTRUMENTATION USED H_2S METER, METHANE METER, OVM, MAGN. GAUGE, BAROMETER, METAL DETECTOR, MAP, COMPASS, PROTRACTOR

CALIBRATION(S) PERFORMED INSTRUMENTS CALIBRATED IN MORNING

INSTRUMENT PROBLEMS/REMEDIES NONE

SAMPLES COLLECTED * METER READINGS IN FIELD W/ H_2S, CH_4 METERS AND OVM

SAMPLE COLLECTION METHOD (S) HOLLOW STEEL RODS - DIRECT PUSH W/ SLIDE HAMMER, SAMPLE VACUUM BULB AND TEE ASSEMBLY

QUALITY CONTROL SAMPLES * NOT APPLICABLE

ADDITIONAL REMARKS DIFFICULTY FINDING ENTRANCE TO LF #2

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE Nelson Diaz

DAILY QUALITY CONTROL REPORT

RPT 81

PROJECT Fort Carson DATE 6/13/95 REPORT NUMBER ~~TT~~ GW

SITE AND PROJECT NUMBER: RD at Landfills #2, #5, #6 and Vapor Degreaser (89868.200)

LOCATION Landfill #2

WEATHER Sunny Clear TEMPERATURE RANGE 85-90°F WIND 5 mph

RUST E&I PERSONNEL ON SITE Nelson Diaz, Glenn Lewis

CONTRACTORS/VISITORS

SUMMARY OF FIELD ACTIVITIES Soil Gas Survey Landfill #2

LEVEL OF HEALTH AND SAFETY PROTECTION Modified Level D

INSTRUMENTATION USED H_2S Meter, Methane meter, OVM, Magnetic Gauge, Barometer, Metal Detector, Map, Compass, Protractor

CALIBRATION(S) PERFORMED Instrument Calibrated in Morning

INSTRUMENT PROBLEMS/REMEDIES OVM detector is getting dirty because OVM background reading is ~~2.2~~ 2.7 ppm

SAMPLES COLLECTED * Meter Readings in Field w/ H_2S, CH_4 meter + OVM

SAMPLE COLLECTION METHOD (S) Hollow Steel Rods - Direct Push w/ slide Hammer, Sample Vacuum Bulb and Tee Assembly

QUALITY CONTROL SAMPLES * Not Applicable

ADDITIONAL REMARKS None

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE, AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 6/13/95 REPORT NUMBER 081

SITE AND PROJECT NUMBER: [ ] Group A (89840.200) [ ] Group B (89846.200)
[ ] Fire Training Area (89855.200) [ ] Equalization Basin (89863.200) [X] Landfills (89868.200)

LOCATION Landfill #6

WEATHER Clear, Warm TEMPERATURE RANGE 75-85 WIND S.E. ~10 mph

RUST E&I PERSONNEL ON SITE R. Heidrich, H. Hudson, N. Diaz, G. Lewis, J. Kaibel

CONTRACTORS/VISITORS D. Edelman, B. Dechant

SUMMARY OF FIELD ACTIVITIES Drilling + sampling in L.F. #6
SB-1, SB-2, SB-5

LEVEL OF HEALTH AND SAFETY PROTECTION Level D / Level C

INSTRUMENTATION USED OVM 580V + Gas tech
OVM w/ ISO-BUTYLENE, Gas tech w/ O_2 @ 50% LEL

CALIBRATION(S) PERFORMED

INSTRUMENT PROBLEMS/REMEDIES None

SAMPLES COLLECTED * Soil samples, SPT + shelby tubes for geotechnical purposes.

SAMPLE COLLECTION METHOD (S) Using drillrig, drive + push samples.

QUALITY CONTROL SAMPLES * N/A

ADDITIONAL REMARKS None

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE Rick Heidrich

DAILY QUALITY CONTROL REPORT

RPT 082

PROJECT Fort Carson DATE 6/14/95 REPORT NUMBER 082

SITE AND PROJECT NUMBER: RD at Landfills #2, #5, #6 and Vapor Degreaser (89868.200)

LOCATION Landfill #2

WEATHER Partly Sunny TEMPERATURE RANGE 85-90°F WIND 5-10 mph

RUST E&I PERSONNEL ON SITE Nelson Diaz & Glenn Lewis

CONTRACTORS/VISITORS None

SUMMARY OF FIELD ACTIVITIES Soil Gas Survey of Landfill #2

LEVEL OF HEALTH AND SAFETY PROTECTION Modified Level D

INSTRUMENTATION USED H_2S meter, Methane Meter, OVM, Magn. Gauge, Barometer, Metal Detector, Map Compass, Protractor

CALIBRATION(S) PERFORMED Calibration in Morning

INSTRUMENT PROBLEMS/REMEDIES Instrument (OVM) (#4-052-6263) has a dirty detector due to 3.2 ppm background readings

SAMPLES COLLECTED * Meter Readings in Field w/ H_2S meter, CH_4 meter, & OVM
SG#s - 22, 21, 20, 19, 17, 16, 15, 7, 6, 5, 72, 73, 74, 75, 76 & 77 through 85

SAMPLE COLLECTION METHOD (S) Hollow Steel Rods - Direct Push w/ Slide Hammer, Sample Vacuum Bulb & Tee Assembly

QUALITY CONTROL SAMPLES * Not Applicable

ADDITIONAL REMARKS None

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE Nelson Diaz

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 6/14/95 REPORT NUMBER 082

SITE AND PROJECT NUMBER: [ ] Group A (89840.200) [ ] Group B (89846.200)
[ ] Fire Training Area (89855.200) [ ] Equalization Basin (89863.200) [X] Landfills (89868.200)

LOCATION Landfill #6

WEATHER Clear Warm TEMPERATURE RANGE 80-85 WIND S.E ~15 mph

RUST E&I PERSONNEL ON SITE R. Heidrick, H. Hodson, N. Diaz, G. Lewis

CONTRACTORS/VISITORS D. Edelman, B. Dechant

SUMMARY OF FIELD ACTIVITIES Drilling + sampling in LF #6
SB-3, SB-4, SB-6

LEVEL OF HEALTH AND SAFETY PROTECTION Level D / Level C

INSTRUMENTATION USED OVM 580V + Gas tech

CALIBRATION(S) PERFORMED OVM w/ ISO-BUTYLENE; Gastech w/ O2 @ 50% LEL

INSTRUMENT PROBLEMS/REMEDIES None

SAMPLES COLLECTED * Soil samples for geotechnical purposes

SAMPLE COLLECTION METHOD (S) Drill rig.

QUALITY CONTROL SAMPLES * None

ADDITIONAL REMARKS None

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE Rick Heidrick

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 6/15/95 REPORT NUMBER RPT083

SITE AND PROJECT NUMBER: RD at Landfills #2, #5, #6 and Vapor Degreaser (89868.200)

LOCATION Landfill #2

WEATHER Partly Sunny / Rain TEMPERATURE RANGE 70-85°F WIND 5-20mph

RUST E&I PERSONNEL ON SITE Nelson Diaz & Glenn Lewis

CONTRACTORS/VISITORS —

SUMMARY OF FIELD ACTIVITIES Soil Gas Survey Landfill #2

LEVEL OF HEALTH AND SAFETY PROTECTION Level D

INSTRUMENTATION USED H_2S meter, methane meter, OVM, Magn. Gauge, Barometer, Metal Detector, Map, Compass, Protractor, Sensedyne Pump, Mini-Ram

CALIBRATION(S) PERFORMED Instruments Calibrated in morning

INSTRUMENT PROBLEMS/REMEDIES OVM detector was giving high false readings / OVM detector was cleaned

SAMPLES COLLECTED * Meter Readings in Field w/ H_2S meter, CH_4 meter & OVM
SG #s - 86-93, 102, 101, 115, 114, 113, 70, 96, 100, 99, 97, 69, 94, 71, 103

SAMPLE COLLECTION METHOD (S) Hollow steel Rods - Direct Push w/ slide hammer, Sample Vacuum Bulb & Tee Assemb.

QUALITY CONTROL SAMPLES * Not Applicable

ADDITIONAL REMARKS None

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE Nelson Diaz

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 6/15/95 REPORT NUMBER 083

SITE AND PROJECT NUMBER: [ ] Group A (89840.200) [ ] Group B (89846.200)
[ ] Fire Training Area (89855.200) [ ] Equalization Basin (89863.200) [X] Landfills (89868.200)

LOCATION Landfill #6 + #2

WEATHER Clear AM / stormy pm TEMPERATURE RANGE 70 - 85 WIND 5-20 mph

RUST E&I PERSONNEL ON SITE Rick Heidrick

CONTRACTORS/VISITORS B. Dechant D. Edelman

SUMMARY OF FIELD ACTIVITIES Tapping off grouted holes in L.F. #6
Drilling + sampling in L.F. #2. SB-4, SB-5, SB-8, SB-10, SB-11

LEVEL OF HEALTH AND SAFETY PROTECTION Level D / Level C

INSTRUMENTATION USED OVM 580V + Gas tech

CALIBRATION(S) PERFORMED OVM w/ ISO BUT; Gas tech w/ O2

INSTRUMENT PROBLEMS/REMEDIES None

SAMPLES COLLECTED * Soil samples for geotechnical purposes.

SAMPLE COLLECTION METHOD (S) Drill rig

QUALITY CONTROL SAMPLES * None

ADDITIONAL REMARKS None

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE Rick Heidrick

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 6/16/95 REPORT NUMBER 084

SITE AND PROJECT NUMBER: RD at Landfills #2, #5, #6 and Vapor Degreaser (89868.200)

LOCATION Landfill #2 & Landfill #5

WEATHER Partly Cloudy/windy TEMPERATURE RANGE 75-85°F WIND 15-30mph

RUST E&I PERSONNEL ON SITE Nelson Diaz & Glenn Lewis

CONTRACTORS/VISITORS Jim Chambers

SUMMARY OF FIELD ACTIVITIES Soil Gas Survey at Landfill #2 and Landfill #5

LEVEL OF HEALTH AND SAFETY PROTECTION Modified Level D

INSTRUMENTATION USED H_2S meter, Methane Meter, OVM, Magn. Gauge, Barometer, Metal Detector, Map, Compass, Protractor

CALIBRATION(S) PERFORMED Instruments Calibrated in Morning

INSTRUMENT PROBLEMS/REMEDIES OVM detector is getting dirty, OVM background is 2.2 ppm / cleaned OVM but background is 2.2 ppm

SAMPLES COLLECTED * Meter Readings in Field w/ H_2S meter, CH_4 meter & OVM Landfill #2: SG#'s - 36, 38, 110, 111, & 116; Landfill #5: SG#'s - 22, 23, 24, 25, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 54, & 55

SAMPLE COLLECTION METHOD (S) Hollow Steel Rods - Direct Push w/ slide Hammer, Sample Vacuum Bulb & Tee Assembly

QUALITY CONTROL SAMPLES * Not Applicable

ADDITIONAL REMARKS None

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE Glenn D. Lewis, ND

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 6/16/95 REPORT NUMBER 084

SITE AND PROJECT NUMBER: [ ] Group A (89840.200) [ ] Group B (89846.200)
[ ] Fire Training Area (89855.200) [ ] Equalization Basin (89863.200) [X] Landfills (89868.200)

LOCATION L.F. #2

WEATHER Ptly. cloudy TEMPERATURE RANGE 65-80 WIND 0-25

RUST E&I PERSONNEL ON SITE R. Heidrick

CONTRACTORS/VISITORS D. Edelman, B. Dechant

SUMMARY OF FIELD ACTIVITIES Drilling + Sampling in L.F. #2
SB-6, SB-7, SB-9

LEVEL OF HEALTH AND SAFETY PROTECTION Level D / Level C

INSTRUMENTATION USED OVM 580V + Gas tech

CALIBRATION(S) PERFORMED OVM w/ ISO-BUT.; Gastech w/ O_2

INSTRUMENT PROBLEMS/REMEDIES

SAMPLES COLLECTED * Soil samples for geotechnical purposes (see logs)

SAMPLE COLLECTION METHOD (S) Drill rig.

QUALITY CONTROL SAMPLES * None

ADDITIONAL REMARKS None

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE Rick Heidrick

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 6/19/95 REPORT NUMBER 085

SITE AND PROJECT NUMBER: [ ] Group A (89840.200) [ ] Group B (89846.200)
[ ] Fire Training Area (89855.200) [ ] Equalization Basin (89863.200) [X] Landfills (89868.200)

LOCATION Landfill #2

WEATHER Clear TEMPERATURE RANGE 70-85 WIND 0-10

RUST E&I PERSONNEL ON SITE Rick Heidrick

CONTRACTORS/VISITORS D. Edelman, B. Dechant

SUMMARY OF FIELD ACTIVITIES Drilling + sampling in L.F. #2
SB-1, 2, 3, 12, 13, 14

LEVEL OF HEALTH AND SAFETY PROTECTION Level D / Level C

INSTRUMENTATION USED OVM 580 V + Gas tech

CALIBRATION(S) PERFORMED OVM w/ ISO-BUT; Gastech w/ O_2

INSTRUMENT PROBLEMS/REMEDIES None

SAMPLES COLLECTED * Soil samples for geotechnical purposes

SAMPLE COLLECTION METHOD (S) Drill rig

QUALITY CONTROL SAMPLES * None

ADDITIONAL REMARKS None

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE Rick Heidrick

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 6/20/95 REPORT NUMBER 086

SITE AND PROJECT NUMBER: RD at Landfills #2, #5, #6 and Vapor Degreaser (89868.200)

LOCATION LF #2 + #5

WEATHER Clear TEMPERATURE RANGE 70-80 WIND 0-10

RUST E&I PERSONNEL ON SITE Rick Heidrick

CONTRACTORS/VISITORS Site Services, B. Dechant + D. Edelman

SUMMARY OF FIELD ACTIVITIES Grouting borings in L.F #2. Drilling + sampling in L.F #5 : SB 10, SB7 + grout

LEVEL OF HEALTH AND SAFETY PROTECTION Level D / Level C

INSTRUMENTATION USED OVM 580 + Gas tech

CALIBRATION(S) PERFORMED OVM w/ ISO-BUT, Gas tech w/ O_2

INSTRUMENT PROBLEMS/REMEDIES None

SAMPLES COLLECTED * Soil samples for geotechnical purposes

SAMPLE COLLECTION METHOD (S) Drill rig

QUALITY CONTROL SAMPLES * None

ADDITIONAL REMARKS None

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE Rick Heidrick

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 6/20/95 REPORT NUMBER 086

SITE AND PROJECT NUMBER: RD at Landfills #2, #5, #6 and Vapor Degreaser (89868.200)

LOCATION Landfill #5

WEATHER Sunny TEMPERATURE RANGE 80-85°F WIND 5-10mph

RUST E&I PERSONNEL ON SITE Glenn Lewis + Jon Thurston

CONTRACTORS/VISITORS None

SUMMARY OF FIELD ACTIVITIES Soil Gas Survey at Landfill #5

LEVEL OF HEALTH AND SAFETY PROTECTION Modified Level D

INSTRUMENTATION USED H_2S meter, methane meter, OVM, Magn Gauge, Barometer, Metal Detector, map, Compass Protractor

CALIBRATION(S) PERFORMED Instruments Calibrated in Morning

INSTRUMENT PROBLEMS/REMEDIES Not Applicable

SAMPLES COLLECTED * SG #'s: 21, 52, 53, 51, 48, 47, 46, 45, 26, 27, 28, 29, 30, 31, 32, 15, 14, 10, 9, 16, 17, 7, 6, 5, 18, 19, 20, 1, 13;

SAMPLE COLLECTION METHOD (S) Hollow Steel Rods - Direct Push w/ slide Hammer, Sample Vacuum Bulb + Tee Assembly

QUALITY CONTROL SAMPLES * Not Applicable

ADDITIONAL REMARKS None

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE Glenn D. Lewis

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 6/21/95 REPORT NUMBER 087

SITE AND PROJECT NUMBER: [ ] Group A (89840.200) [ ] Group B (89846.200)
[ ] Fire Training Area (89855.200) [ ] Equalization Basin (89863.200) [X] Landfills (89868.200)

LOCATION Landfill # 5

WEATHER Clear TEMPERATURE RANGE 70 - 80 WIND 0 - 20

RUST E&I PERSONNEL ON SITE Rick Heidrick

CONTRACTORS/VISITORS B. Dechant, D. Edelman

SUMMARY OF FIELD ACTIVITIES Drilling + sampling in Landfill # 5
SB-6, 5, 4, 3, 2, 11

LEVEL OF HEALTH AND SAFETY PROTECTION Level D / Level C

INSTRUMENTATION USED OVM 580 + Gas tech

CALIBRATION(S) PERFORMED OVM w/ ISO-BUT + Gastech w/ O_2

INSTRUMENT PROBLEMS/REMEDIES None

SAMPLES COLLECTED * Soil samples for geotech. purposes.

SAMPLE COLLECTION METHOD (S) Drill rig

QUALITY CONTROL SAMPLES * None

ADDITIONAL REMARKS None

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE Rick Heidrick

DAILY QUALITY CONTROL REPORT

R

PROJECT Fort Carson DATE 6/21/95 REPORT NUMBER 087

SITE AND PROJECT NUMBER: RD at Landfills #2, #5, #6 and Vapor Degreaser (89868.200)

LOCATION Landfills #2, #5, & #6

WEATHER Sunny TEMPERATURE RANGE 80-85°F WIND 5-10 mph

RUST E&I PERSONNEL ON SITE Glenn Lewis & Jon Thurston

CONTRACTORS/VISITORS None

SUMMARY OF FIELD ACTIVITIES Soil Gas Surveys at Landfills #5 and #6; Water Level Measurements at Landfills #2, #5, & #6

LEVEL OF HEALTH AND SAFETY PROTECTION Modified Level D

INSTRUMENTATION USED H_2S Meter, Methane Meter, OVM, Magn. Gauge, Barometer, Metal Detector, Map, Compass, Protractor

CALIBRATION(S) PERFORMED Instruments Calibrated in Morning

INSTRUMENT PROBLEMS/REMEDIES Not Applicable

SAMPLES COLLECTED * Landfill #5: SG-33, 34, 48, 50, 35N, 35S, 35E, 35W
Landfill #6: SG#-5N, 5S, 5E, 5W

SAMPLE COLLECTION METHOD (S) Hollow Steel Rods - Direct Push w/slide Hammer, Sample vacuum Bulb & Tee Assembly; Water Level Meter to the depth of water

QUALITY CONTROL SAMPLES * Not Applicable

ADDITIONAL REMARKS None

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE Glenn D. Lewis

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 6/22/95 REPORT NUMBER 088

SITE AND PROJECT NUMBER: [ ] Group A (89840.200) [ ] Group B (89846.200)
[ ] Fire Training Area (89855.200) [ ] Equalization Basin (89863.200) [X] Landfills (89868.200)

LOCATION Landfill #5

WEATHER Clear TEMPERATURE RANGE 70-75 WIND 0-10

RUST E&I PERSONNEL ON SITE Rick

CONTRACTORS/VISITORS B. Dechant, D. Edelman

SUMMARY OF FIELD ACTIVITIES Drilling + sampling in Landfill #5
SB-1, 12, 8, 14

LEVEL OF HEALTH AND SAFETY PROTECTION Level D / Level C

INSTRUMENTATION USED OVM 580 + GasTech

CALIBRATION(S) PERFORMED OVM w/ ISO-BUT + GasTech w/ O_2

INSTRUMENT PROBLEMS/REMEDIES None

SAMPLES COLLECTED * Soil samples for geotech. purposes

SAMPLE COLLECTION METHOD (S) Drill rig

QUALITY CONTROL SAMPLES * None

ADDITIONAL REMARKS None

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE Rick Kiedrick

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 06/22/95 REPORT NUMBER 088

SITE AND PROJECT NUMBER: RD at Landfills #2, #5, #6 and Vapor Degreaser (89868.200)

LOCATION Landfills #5 and #2

WEATHER Sunny, warm TEMPERATURE RANGE 60° - 80° WIND Variable to 5mph

RUST E&I PERSONNEL ON SITE Todd Murray

CONTRACTORS/VISITORS Site Services

SUMMARY OF FIELD ACTIVITIES Constructed temp. wells at LF5DP02, LF5DP01, LF2DP04, and LF2DP03. Collected sample plus MRD split at LF5DP03. Encountered refusal at LF2DP02.

LEVEL OF HEALTH AND SAFETY PROTECTION Level D

INSTRUMENTATION USED OVM Model 580B

CALIBRATION(S) PERFORMED 100 ppm Isobutelene Span Gas

INSTRUMENT PROBLEMS/REMEDIES Instrument background reads between 0.0 and 2.4 ppm.

SAMPLES COLLECTED * Grab groundwater samples LF5DP03 and MRD split here.

SAMPLE COLLECTION METHOD (S) Peristaltic pump, Vaccum pump.

QUALITY CONTROL SAMPLES * MRD split at LF5DP03, trip blanks.

ADDITIONAL REMARKS From 1445 - 1530 Site Services truck stuck in the mud. Unable to filter metals samples, all metals samples went unfiltered.

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE Todd B Murray

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 06/23/95 REPORT NUMBER 089

SITE AND PROJECT NUMBER: RD at Landfills #2, #5, #6 and Vapor Degreaser (89868.200)

LOCATION Landfills #2 and #5

WEATHER Sunny, warm TEMPERATURE RANGE 50°-70° WIND Variable to 5mph

RUST E&I PERSONNEL ON SITE Todd Murray

CONTRACTORS/VISITORS Site Services

SUMMARY OF FIELD ACTIVITIES Collected water samples from LF5DPW02, LF5DPW01, LF2DPW04, LF2DPW03. Drilled LF2DPW03

LEVEL OF HEALTH AND SAFETY PROTECTION Level D

INSTRUMENTATION USED OVM model 580 B

CALIBRATION(S) PERFORMED 100 ppm Isobutelene Span Gas

INSTRUMENT PROBLEMS/REMEDIES Instrument background reads between 0.0 and 2.4 ppm.

SAMPLES COLLECTED * Grab groundwater samples: LF5DPW02, LF5DPW01, LF2DPW04, LF2DPW03,

SAMPLE COLLECTION METHOD (S) Vaccum pump on field vehicle

QUALITY CONTROL SAMPLES * Trip Blanks.

ADDITIONAL REMARKS LF2DPW02 - Dry

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE Todd B Murray

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 6/23/95 REPORT NUMBER 089

SITE AND PROJECT NUMBER: [ ] Group A (89840.200) [ ] Group B (89846.200)
[ ] Fire Training Area (89855.200) [ ] Equalization Basin (89863.200) [X] Landfills (89868.200)

LOCATION Landfill #5

WEATHER Cloudy TEMPERATURE RANGE 60-65 WIND 5-10

RUST E&I PERSONNEL ON SITE Rick Heidrick

CONTRACTORS/VISITORS B. Dechant + D. Edelman

SUMMARY OF FIELD ACTIVITIES Drilling + Sampling in Landfill #5
SB-15

LEVEL OF HEALTH AND SAFETY PROTECTION Level D / Level C

INSTRUMENTATION USED OVM 580 + Gas Tech

CALIBRATION(S) PERFORMED OVM w/ ISO-BUT + Gas Tech w/ O_2

INSTRUMENT PROBLEMS/REMEDIES None

SAMPLES COLLECTED * Soil sampling in Landfill #5

SAMPLE COLLECTION METHOD (S) Drill rig

QUALITY CONTROL SAMPLES * None

ADDITIONAL REMARKS None

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE Rick Heidrick

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 11-27-95 REPORT NUMBER 17

SITE AND PROJECT NUMBER: [ ] Group A (89840.200) [ ] Group B (89846.200)
[ ] Fire Training Area (89855.200) [ ] Equalization Basin (89863.200) [X] Landfills (89868.200)

LOCATION LANDFILL 6

WEATHER LT. SNOW, WINDY, COLD TEMPERATURE RANGE 35 °F-25 °F WIND 10-20 MPH

RUST E&I PERSONNEL ON SITE C. LUYTEN, J. ENGLAND

CONTRACTORS/VISITORS SITE SERVICES

SUMMARY OF FIELD ACTIVITIES INSTALL + SAMPLE FROM 3 DIRECT PUSH WATER SAMPLING LOCATIONS

LEVEL OF HEALTH AND SAFETY PROTECTION MOD. LEVEL D

INSTRUMENTATION USED TEI 580 B PID, PASSPORT H_2S + O_2 METER

CALIBRATION(S) PERFORMED PID + H_2S, O_2 METER

INSTRUMENT PROBLEMS/REMEDIES NONE

SAMPLES COLLECTED * GROUND WATER / GRAB / 3 SAMPLES / ID # LF6-DPW05, LF6-DPW06, LF6-DPW07

SAMPLE COLLECTION METHOD (S) PER. PUMP

QUALITY CONTROL SAMPLES * TRIP BLANK / ID # TB01

ADDITIONAL REMARKS NONE

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE [signature]
reviewed CWW

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 12-5-95 REPORT NUMBER 123

SITE AND PROJECT NUMBER: [ ] Group A (89840.200) [ ] Group B (89846.200)
[X] Fire Training Area (89855.200) [ ] Equalization Basin (89863.200) [X] Landfills (89868.200)

LOCATION Landfill 6 & fire training area (Sewage treatment lagoons)

WEATHER Cool TEMPERATURE RANGE 20-50°F WIND 20 mph

RUST E&I PERSONNEL ON SITE Jeff Sanders

CONTRACTORS/VISITORS Site Services

SUMMARY OF FIELD ACTIVITIES Grout STL-MW3, begin landfill wells (drilling)

LEVEL OF HEALTH AND SAFETY PROTECTION mod. Level D.

INSTRUMENTATION USED OVM 580B, Dust Dosimeter

CALIBRATION(S) PERFORMED beginning and end of each day

INSTRUMENT PROBLEMS/REMEDIES Dust & OVM hard to turn on

SAMPLES COLLECTED * Geotech LF6-MW6 9/14, LF6-MW6 14/19

SAMPLE COLLECTION METHOD (S) Grab, Continuous Core

QUALITY CONTROL SAMPLES * none

ADDITIONAL REMARKS none

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE [signature]

reviewed CWW

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 12-6-95 REPORT NUMBER 124

SITE AND PROJECT NUMBER: [ ] Group A (89840.200) [ ] Group B (89846.200)
[X] Fire Training Area (89855.200) [ ] Equalization Basin (89863.200) [X] Landfills (89868.200)

LOCATION Landfill 6 / Fire Training Area

WEATHER Cool / clear TEMPERATURE RANGE 30-50°F WIND 15 mph

RUST E&I PERSONNEL ON SITE Jeff Sanders, Todd Murray, Steve Rider

CONTRACTORS/VISITORS Site Services

SUMMARY OF FIELD ACTIVITIES Drill and install LF6-MW7, LF6-MW8
Also Grout and Set pads for LF6-MW6 and LF6-MW7. Developed well FTA-MW5 and put tags on other FTA wells.

LEVEL OF HEALTH AND SAFETY PROTECTION mod. Level D.

INSTRUMENTATION USED OVM 580B, Dust Dosimeter, LEL, H_2S

CALIBRATION(S) PERFORMED Beg. and end of each day

INSTRUMENT PROBLEMS/REMEDIES none

SAMPLES COLLECTED * (GEOTECH) LF6-MW7 9/14, LF6-MW7 24/29, LF6-MW8 9/14, LF6-MW8 4/6
Analytical: LF6-MW8 4/6'. One photo sample of development water

SAMPLE COLLECTION METHOD (S) Grab - Via Continuous Core

QUALITY CONTROL SAMPLES * none

ADDITIONAL REMARKS none

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE, AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE [signature]
reviewed CWW

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 12-7-95 REPORT NUMBER 125

SITE AND PROJECT NUMBER: [ ] Group A (89840.200) [ ] Group B (89846.200)
[X] Fire Training Area (89855.200) [ ] Equalization Basin (89863.200) [X] Landfills (89868.200)

LOCATION ~~SF transect~~ JS Landfill / FTA

WEATHER Cool & cloudy TEMPERATURE RANGE 30 – 40 WIND 10mph

RUST E&I PERSONNEL ON SITE Jeff Sanderes, Todd Murray, Steve Rider

CONTRACTORS/VISITORS Site Services

SUMMARY OF FIELD ACTIVITIES Drill and install LF6-MW9, LF6-MW10. Developed monitoring well STL-MW2. Collected water levels from other new wells.

LEVEL OF HEALTH AND SAFETY PROTECTION Mod. Level D

INSTRUMENTATION USED OVM, Dust Dosimeter, H_2S meter, LEL meter Purgesaver

CALIBRATION(S) PERFORMED beg. and end of each day

INSTRUMENT PROBLEMS/REMEDIES Rust A OVM hard to turn on

SAMPLES COLLECTED * Purge water sample for picture only. LF6-MW6 4/9 and LF6-MW6 29/34 (Geotech), LF6-MW10 30/43, LF6-MW10 8/13

SAMPLE COLLECTION METHOD (S) Continuous Core – Grab
Continuous - purging

QUALITY CONTROL SAMPLES * none

ADDITIONAL REMARKS none

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE [signature]
Reviewed [signature]

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 12-8-95 REPORT NUMBER - 126

SITE AND PROJECT NUMBER: [ ] Group A (89840.200) [ ] Group B (89846.200)
[ ] Fire Training Area (89855.200) [ ] Equalization Basin (89863.200) [X] Landfills (89868.200)

LOCATION South of Landfill 6

WEATHER Cold TEMPERATURE RANGE 0-20 WIND 20 mph

RUST E&I PERSONNEL ON SITE J. Sanders, Todd Murray, Steve Rider

CONTRACTORS/VISITORS Site Services

SUMMARY OF FIELD ACTIVITIES Finish installing LF6-MW10 - Set pads

LEVEL OF HEALTH AND SAFETY PROTECTION mod Level D.

INSTRUMENTATION USED OVM, Dust Dosimeter, H_2S, LEL

CALIBRATION(S) PERFORMED Beg. and end of each day

INSTRUMENT PROBLEMS/REMEDIES Rust A OVM - hard to turn on

SAMPLES COLLECTED * none

SAMPLE COLLECTION METHOD (S) Grab

QUALITY CONTROL SAMPLES * none

ADDITIONAL REMARKS none

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE, AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE [signature]
Reviewed CWW

STL-MW1	29/34	11/30/95	1610
	34/39		1620
STL-MW2	34/37		1030
	29/34		1030
STL-MW3	14/24	12-4-95	1500
	14/19		1415
~~STL~~-FTA-MW5	29/30	11-28-95	1200
	34/45		1230
LFG-MW6	14/19	12-5-95	1230
	9/14		1215
LFG-MW7	9/14	12-6-95	825
	24/29		850
LFG-MW8	9/14		1215
	4/9		1215
LFG-MW9	29/34	12-7-95	1040
	4/9		840
LFG-MW10	38/43		1600
	8/13		1505

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 12-12-95 REPORT NUMBER 127

SITE AND PROJECT NUMBER: [ ] Group A (89840.200) [ ] Group B (89846.200)
[ ] Fire Training Area (89855.200) [ ] Equalization Basin (89863.200) [X] Landfills (89868.200)

LOCATION Landfill 6

WEATHER Cloudy TEMPERATURE RANGE 30-50 WIND light.

RUST E&I PERSONNEL ON SITE Robert McClure, Jeff Sanders

CONTRACTORS/VISITORS None

SUMMARY OF FIELD ACTIVITIES Develop wells LF6-MW6, LF6-MW7

LEVEL OF HEALTH AND SAFETY PROTECTION used D.

INSTRUMENTATION USED OVM 580B.

CALIBRATION(S) PERFORMED beg. and end of each day

INSTRUMENT PROBLEMS/REMEDIES none

SAMPLES COLLECTED * none

SAMPLE COLLECTION METHOD (S) none

QUALITY CONTROL SAMPLES * none

ADDITIONAL REMARKS none

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE [signature]
reviewed CWW

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 12-13-95 REPORT NUMBER 128

SITE AND PROJECT NUMBER: [ ] Group A (89840.200) [ ] Group B (89846.200)
[ ] Fire Training Area (89855.200) [ ] Equalization Basin (89863.200) [X] Landfills (89868.200)

LOCATION Landfill 6

WEATHER _____ TEMPERATURE RANGE 30-50 WIND mod.

RUST E&I PERSONNEL ON SITE Robert McCree, Jeff Sanders

CONTRACTORS/VISITORS _____

SUMMARY OF FIELD ACTIVITIES Develope wells LF6-MW6, LF6-MW7

- LEVEL OF HEALTH AND SAFETY PROTECTION mod. level D
- INSTRUMENTATION USED OVM 580B
  - CALIBRATION(S) PERFORMED beg. and end of each day
  - INSTRUMENT PROBLEMS/REMEDIES none

SAMPLES COLLECTED * NONE

SAMPLE COLLECTION METHOD (S) NONE

QUALITY CONTROL SAMPLES * NONE

ADDITIONAL REMARKS NONE

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE [signature]
Reviewed CWW

3141 ppm

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 12-14-95 REPORT NUMBER 129

SITE AND PROJECT NUMBER: [ ] Group A (89840.200) [ ] Group B (89846.200)
[ ] Fire Training Area (89855.200) [ ] Equalization Basin (89863.200) [X] Landfills (89868.200)

LOCATION Landfill 6

WEATHER Cold, Clear TEMPERATURE RANGE 25-50 WIND light

RUST E&I PERSONNEL ON SITE Jeff Sanders, Robert McCluze

CONTRACTORS/VISITORS None

SUMMARY OF FIELD ACTIVITIES Develop monitoring wells, LF6-MW9 and LF6-MW10

LEVEL OF HEALTH AND SAFETY PROTECTION Mod. D

INSTRUMENTATION USED OVM 580B, LEL, H_2S

CALIBRATION(S) PERFORMED beg. and end of each day

INSTRUMENT PROBLEMS/REMEDIES none

SAMPLES COLLECTED * none

SAMPLE COLLECTION METHOD (S) none

QUALITY CONTROL SAMPLES * none

ADDITIONAL REMARKS none

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT/DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE

Reviewed CWW

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 12-18-95 REPORT NUMBER 130

SITE AND PROJECT NUMBER: [ ] Group A (89840.200) [ ] Group B (89846.200)
[X] Fire Training Area (89855.200) [ ] Equalization Basin (89863.200) [X] Landfills (89868.200)

LOCATION Landfill 6, Fire training Area, Equalization Basin

WEATHER Cold TEMPERATURE RANGE 20-40° WIND light

RUST E&I PERSONNEL ON SITE Jeff Sanders, Robert McGuire

CONTRACTORS/VISITORS None

SUMMARY OF FIELD ACTIVITIES Take waste characterization samples of drill cuttings stored @ equalization basin and fire training area, Also finish developing well LF6-MW10

LEVEL OF HEALTH AND SAFETY PROTECTION mod. level D

INSTRUMENTATION USED OVM, H_2S meter, LEL meter

CALIBRATION(S) PERFORMED beg. and end of day

INSTRUMENT PROBLEMS/REMEDIES none

SAMPLES COLLECTED * LF6-WC-S1, STL-WC-S1, 121895 ~~FB1~~ JS

SAMPLE COLLECTION METHOD (S) Grab

QUALITY CONTROL SAMPLES * 121895 FB1

ADDITIONAL REMARKS none

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE [signature]

Reviewed CWW

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 2 JAN 96 REPORT NUMBER 135

SITE AND PROJECT NUMBER: [ ] Group A (89840.200) [ ] Group B (89846.200)
[ ] Fire Training Area (89855.200) [ ] Equalization Basin (89863.200) [X] Landfills (89868.200)

LOCATION Ft. Carson LF 6

WEATHER cold TEMPERATURE RANGE 17° WIND 10-20 mph

RUST E&I PERSONNEL ON SITE Robert McClure, Holly Hodson, Glen Lewis

CONTRACTORS/VISITORS NONE

SUMMARY OF FIELD ACTIVITIES WELL SAMPLING AT LF6

LEVEL OF HEALTH AND SAFETY PROTECTION MOD LEVEL D

INSTRUMENTATION USED OVM, Purge Saver, H_2S meter (CWW 1/5/96)

CALIBRATION(S) PERFORMED DAILY BEFORE & AFTER SHIFT

INSTRUMENT PROBLEMS/REMEDIES None

SAMPLES COLLECTED * LF6 MW6

SAMPLE COLLECTION METHOD (S) ~~Pump~~ (Bennet Piston Pump)

QUALITY CONTROL SAMPLES * MSD (LF6 MW6) MS (LF6 MW6) 010296 TRIP

ADDITIONAL REMARKS Snowy roads (CWW 1/5/96)

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE [signature]
reviewed CWW

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 3 JAN 96 REPORT NUMBER 136

SITE AND PROJECT NUMBER: RD at Landfills #2, #5, #6 and Vapor Degreaser (89868.200)

LOCATION Ft. Carson

WEATHER Cold TEMPERATURE RANGE 20° WIND 10 mph

RUST E&I PERSONNEL ON SITE Robert McClure, Glen Lewis

CONTRACTORS/VISITORS None

SUMMARY OF FIELD ACTIVITIES Well sampling at LF6

LEVEL OF HEALTH AND SAFETY PROTECTION Mod. Level D

INSTRUMENTATION USED OVM, Purge Saver,

CALIBRATION(S) PERFORMED Daily before & after shift

INSTRUMENT PROBLEMS/REMEDIES

SAMPLES COLLECTED * LF6-MW7, LF6-MW8, LF6-MW9, LF6-MW10

SAMPLE COLLECTION METHOD (S) Bennet Piston Pump

QUALITY CONTROL SAMPLES * LF6-MW9DUP, LF6-MW10 SPLT(MRD), trip (Quantera) trip (Split-MRD)

ADDITIONAL REMARKS FTA-MW6 Dry

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE [signature]

reviewed CWW

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 4 JAN 96 REPORT NUMBER 137

SITE AND PROJECT NUMBER: [ ] Group A (89840.200) [ ] Group B (89846.200)
[ ] Fire Training Area (89855.200) [ ] Equalization Basin (89863.200) [X] Landfills (89868.200)

LOCATION Ft. Carson

WEATHER Cold TEMPERATURE RANGE 20-30° WIND 10-15 mph

RUST E&I PERSONNEL ON SITE Robert McClure, Tom Conrad

CONTRACTORS/VISITORS None

SUMMARY OF FIELD ACTIVITIES Well sampling and water levels at STL (WL) at Landfill #6

LEVEL OF HEALTH AND SAFETY PROTECTION Mud Level D

INSTRUMENTATION USED OVM, Purge Saver, H_2S meter

CALIBRATION(S) PERFORMED Daily before & after shift

INSTRUMENT PROBLEMS/REMEDIES

SAMPLES COLLECTED * STL-MW1, LF6-MW8

SAMPLE COLLECTION METHOD (S) Plastic Bailers

QUALITY CONTROL SAMPLES * Trip08 (QT)

ADDITIONAL REMARKS Snow storm in PM

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE [signature]
reviewed CWW

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson - TERC DATE 2/5/96 REPORT NUMBER 154

SITE AND PROJECT NUMBER: Quarterly Groundwater Monitoring Program — 55251.000 WBS 332
Trenching - 55253.000 WBS 711, 712, 713

LOCATION Ft. Carson, Landfill 2 & 6; Golf Course Wells, Rock Creek, Wild Horse Creek.

WEATHER Sunny TEMPERATURE RANGE 55°-60°F WIND Smph

RUST PERSONNEL ON SITE T. Murray / J. Thurston / H. Hodson / T. Conrad / R. McClure / M. Finochio

CONTRACTORS/VISITORS John Meier, Steve Dickinson, Gary Metze

SUMMARY OF FIELD ACTIVITIES Water Sampling, trenching for landfills, also purged dry wells REP-1, -2, -3, -5,

LEVEL OF HEALTH AND SAFETY PROTECTION Modified Level D

INSTRUMENTATION USED OVM, Purge Sonde, PID, Gastech,

CALIBRATION(S) PERFORMED Pre & Post Calibration

INSTRUMENT PROBLEMS/REMEDIES None

SAMPLES COLLECTED * GC-18MSD, GC-18, GC-18MS, RC-2, WHC-1, WHC-1 SPLT03, GC-2, GC-15, GC-20, GC-3

SAMPLE COLLECTION METHOD (S) BAILER (DISPOSABLE);

QUALITY CONTROL SAMPLES * GC-18MS / GC-18MSD; WHC-1SPLT03; Trip 15

ADDITIONAL REMARKS Field audit done by Wendy Johnson (J. Thurston + H. Hodson)

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE Michael R. Finochio H. Hodson

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson - TERC DATE 2-6-96 REPORT NUMBER 0155

SITE AND PROJECT NUMBER: Quarterly Groundwater Monitoring Program - 55251.000 WBS 332
55253.000 WBS 711, 712, 713

LOCATION Land Fill 2, Cantonment Area + Trenching Downrange Wells.

WEATHER Sunny-ptly cloudy TEMPERATURE RANGE 30°-50° WIND slight

RUST PERSONNEL ON SITE H. Hodson, T. Conrad, T. Murray, J. Thurston, M. Finochio, R. McClure,

CONTRACTORS/VISITORS OHM - John Meier, Steve Dickenson, Gary Metze

SUMMARY OF FIELD ACTIVITIES Water Sampling for Quarterly Groundwater Monitoring program; trenching for landfills.

LEVEL OF HEALTH AND SAFETY PROTECTION Modified Level D

INSTRUMENTATION USED OVM, Purge Saver (QGMP) PID + Gasteck. (Landfill trenching)

CALIBRATION(S) PERFORMED Pre & Post

INSTRUMENT PROBLEMS/REMEDIES None

SAMPLES COLLECTED * PZ-21A, NUD-2, VWR-MW~~X~~ 3 (www 2/12/96), RED-1, RED-2, RED-3, RED-5 (partial), CD-3, AND CD-4.

SAMPLE COLLECTION METHOD (S) Bailer (Disposable); 1" PVC Bailer

QUALITY CONTROL SAMPLES * DUPE02 (NUD-2 DUP), Trip 16 (020696TRIP)

ADDITIONAL REMARKS On RED-1, 1 Liter plastic for Alk, BOD, TSS & TDS not collected; will try tomorrow. At RED-5, only VOA's & SVOC collected; will return tomorrow.

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE H. Hodson, Michael R. Finochio

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson - TERC DATE 2-7-96 REPORT NUMBER 0156

SITE AND PROJECT NUMBER: Quarterly Groundwater Monitoring Program Landfill Remediation • 55251.000 WBS 332 • 55253.000 WBS 711, 712, 713

LOCATION Cantonment Area, Downrange wells, Landfill 2

WEATHER Sunny-cloudy TEMPERATURE RANGE 30-50° WIND slight

RUST PERSONNEL ON SITE T. Conrad, T. Murray, J. Thurston, H. Hodson, R. Heidrick, M. Finochio

CONTRACTORS/VISITORS OHM - John Meier, Steve Dickenson, Gary Metze

SUMMARY OF FIELD ACTIVITIES Water Sampling for Quarterly Groundwater Monitoring Program, trenching + soil borings installation at Landfill 2

LEVEL OF HEALTH AND SAFETY PROTECTION Mod. Level D

INSTRUMENTATION USED OVM, Ring Saver Turbidimeter (GGMP); PID, Gastech, Anagas CD95 (Landfill 2), Mini Ram

CALIBRATION(S) PERFORMED Pre + Post

INSTRUMENT PROBLEMS/REMEDIES ~~PID + Mini Ram~~ OVM not charged or used on downrange wells

SAMPLES COLLECTED * CD-2A, CD-1, P2-45, DH2, PHD-1, RED-5 (Metals - 1/2 bottle) CVT3-0, -1, -3, -5, -6, -8 ; CVT4-0, -1, -3, -5.

SAMPLE COLLECTION METHOD (S) Bailer (Disposable) Split Spoon, Shelby tubes @ Landfill 2

QUALITY CONTROL SAMPLES * DUPE 01 (P2-45), 020796TRIP (TRIP 17)

ADDITIONAL REMARKS Purged GPMW-1, -2, -3

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE H. Hodson Mitch R. Finochio

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson - TERC DATE 2/8/96 REPORT NUMBER 157

SITE AND PROJECT NUMBER: Quarterly Groundwater Monitoring Program 55251.000 WBS 332

LOCATION Butts Army Airfield, Impact Area Wells, Landfill 2

WEATHER Partly Cloudy TEMPERATURE RANGE 30° WIND Windy

RUST PERSONNEL ON SITE J. Thurston, T. Conrad, T. Murray, H. Hodson, R. McClure, R. Hidrick

CONTRACTORS/VISITORS OHM, Site Services Lee Hackett + Antonio Rodriguez M. Finocchio

SUMMARY OF FIELD ACTIVITIES Purge + sample monitoring wells for Quarterly Groundwater Monitoring Program; Trenching + sampling (soil boring) @ Landfill 2.

LEVEL OF HEALTH AND SAFETY PROTECTION Mod. Level D.

INSTRUMENTATION USED OVM, Purge Saver, Turbidimeter, PID, Anagas

CALIBRATION(S) PERFORMED pre- and post-

INSTRUMENT PROBLEMS/REMEDIES none

SAMPLES COLLECTED * Drilling; CVT5-0,-1,-3; CVT6-0,-1,-3,-5; CVT7-0,-1,-3,-5,-6,-7; CVT8-0,-1,-3,-5,-6; CVT15-0,-1,-3,-5,-7,-8; CVT16-0,-1,-3,-5, STL-MW2, STL-MW1 (VOC + CN only), FTA-MW1, FTA-MW5, CU0-6 (all except filtered metals), BAA-7,

SAMPLE COLLECTION METHOD (S) disposable bailer, split spoon, Brass sleeves

QUALITY CONTROL SAMPLES * TRIPA-020596

ADDITIONAL REMARKS (metals samples at) YHD-1, LFC-4, LFC-3, IAN-1, IAS-1 for VOAs & ½ l for SVOC.

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE H. Hodson

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson - TERC DATE 2-9-96 REPORT NUMBER 0158

SITE AND PROJECT NUMBER: Quarterly Groundwater Monitoring Program 55251.000 WBS 332

LOCATION Central Unnamed Ditch, Downrange Wells, Landfill 2

WEATHER 70° Sunny TEMPERATURE RANGE 50-70° WIND —

RUST PERSONNEL ON SITE H. Hudson, T. Murray, J. Thurston, T. Conrad, R. McCure, R. Heidrick

CONTRACTORS/VISITORS Site Services (Lee Hackett, Antonio Rodriguez)

SUMMARY OF FIELD ACTIVITIES Purge + Sample monitoring wells, Soil Borings @ Landfill

LEVEL OF HEALTH AND SAFETY PROTECTION Mod. Level D

INSTRUMENTATION USED OVM (2) Purge Saver, Hydac, Orion 250A (pH, T, mV), turbidity meter (QGMP);

CALIBRATION(S) PERFORMED Pre- and Post- performed daily. See Cal. logbook

INSTRUMENT PROBLEMS/REMEDIES

SAMPLES COLLECTED * CUD-6 (metals only), STL-MW1 (SVOC's only, CUD-5, CUD-4, SC-2, IAS-1 (metals only), GPMW2 (Cyanide, metals, SVOC, VOC APP IX), GPMW1, GPMW3, Landfill #2 Soil Verification Test: CVT10-0, -2, -3.5, -4.5, -6.5, -8.5; CVT11-0, -1, -1.5, -3.5; CVT12-0, -1, -3, -5; CVT13-0, -1, -1.3, -2, -4; CVT14-0, -1, -3, -5, -6;

SAMPLE COLLECTION METHOD (S) Disposable Bailer

QUALITY CONTROL SAMPLES * CUD-5 (to MED), TRIP 20 (to Quanterra, GPMW3 (MED) SPLT07 (TRIP TO MED)

ADDITIONAL REMARKS

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE Hollister Hudson

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson - TERC DATE 2-12-96 REPORT NUMBER 0159

SITE AND PROJECT NUMBER: Quarterly Groundwater Monitoring Program 55251.000 WBS 332

LOCATION Landfill 2, Landfill 6

WEATHER Sunny TEMPERATURE RANGE 30-60° WIND Slight

RUST PERSONNEL ON SITE H. Hodson, R. McCuire, R. Heidrick, M. Finochio

CONTRACTORS/VISITORS Lee Hocket, Antonio Rodriguez, John M., Steve D. Gary M.

SUMMARY OF FIELD ACTIVITIES purge and sample monitoring wells for QGMP. Drilling + soil sampling in landfill #2, Trenching landfill 2 and landfill 6.

LEVEL OF HEALTH AND SAFETY PROTECTION Mod. Level D

INSTRUMENTATION USED OVM 580B, Turbidimeter, Purgesaver (QGMP), PID, Gasteck, Mini Ram

CALIBRATION(S) PERFORMED Pre- and Post-

INSTRUMENT PROBLEMS/REMEDIES Purgesaver pH meter not quite reading properly - recal at lunch, PID & Mini Ram not working

SAMPLES COLLECTED * OB-3, MW-9, EQB-MW1 ~~properly~~ (TBD) Landfill #2 Soil; CVT 2-0, -2, -4, -6, -7; CVT 9-0, -1, -2, -4, -6, -8; CVT 17-0, -0.5, -1.5, -2.5; CVT 18-0, -2, -4, -6, -7, -9; CVT 19-0, -2, -4, -6, -7; CVT 20-0, -0.5, -1.5, -3.5.

SAMPLE COLLECTION METHOD (S) Disposable bailer

QUALITY CONTROL SAMPLES * —

ADDITIONAL REMARKS —

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE Christine Hodson, Michael R. Finochio

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson - TERC DATE 2-13-96 REPORT NUMBER 0160

SITE AND PROJECT NUMBER: Quarterly Groundwater Monitoring Program 55251.000 WBS 332

LOCATION Cantonment Area (8000), Landfill 2, Landfill 6 55253.000 WBS 711

WEATHER Sunny TEMPERATURE RANGE 30-60° WIND Slight

RUST PERSONNEL ON SITE H. Hodson, R. Heidrick, M. Finochio, R. McClure

CONTRACTORS/VISITORS Site Services (L. Hackett, A. Rodriguez); OHM - John M., Steve D., Gary M.

SUMMARY OF FIELD ACTIVITIES purge and sample monitoring wells for QGMP Drilling + sampling (soil) in Landfill #2, Trenching @ Landfill 2/6.

LEVEL OF HEALTH AND SAFETY PROTECTION Mod. Level D

INSTRUMENTATION USED OVM 580B, Purge Saver, Turbidimeter - QGMP, PID, Mini Ram, Gastech

CALIBRATION(S) PERFORMED pre- and post-

INSTRUMENT PROBLEMS/REMEDIES PID - was not charging

SAMPLES COLLECTED * FCMW-9, 8200-MW5, 8000-6, purged FCMW-109 See pg. 2

SAMPLE COLLECTION METHOD (S) Disposable Bailer, Pressurized Bailer (filtered metals)

QUALITY CONTROL SAMPLES * TRIP22,

ADDITIONAL REMARKS None

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE H. Kristin Hodson, Michael R. Finochio

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson - TERC DATE 2-14-96 REPORT NUMBER 0161

SITE AND PROJECT NUMBER: Quarterly Groundwater Monitoring Program 55251.000 WBS 332
55253.000 WBS 711
712
713

LOCATION Landfill 2, Landfill 5, Cantonment Area Wells

WEATHER Sunny TEMPERATURE RANGE 40-65° WIND

RUST PERSONNEL ON SITE H. Hodson, R. Heidrick, M. Finochio, R McClure

CONTRACTORS/VISITORS Site SVCO: A. Rodriguez, J. Hackett, OHM - John M, Steve D, Gary Metze

SUMMARY OF FIELD ACTIVITIES Trenching at landfill 5

LEVEL OF HEALTH AND SAFETY PROTECTION Mod. Level D

INSTRUMENTATION USED OVM 580B, Purge Saver, Turbidimeter QGMP, gastech, mini ram

CALIBRATION(S) PERFORMED Pre- and Post -

INSTRUMENT PROBLEMS/REMEDIES

SAMPLES COLLECTED * STL-WC-S1; LF6-WC-1 (waste Characterization). Landfill #2: CVT1-0, -2, -5; CVT29-0, -1, -2, -4, -6; Landfill Borrow Area, LBA1-1, Bg-2, Bk-4; LBA1-2, BK-6.5, Bk-12.

SAMPLE COLLECTION METHOD (S) Grab/composite

QUALITY CONTROL SAMPLES *

ADDITIONAL REMARKS

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE H. Hodson, Michael R. Finochio

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson - TERC DATE 2-15-96 REPORT NUMBER 0162

SITE AND PROJECT NUMBER: Quarterly Groundwater Monitoring Program 55253.000 55251.000 WBS 332

LOCATION Rock Creek, Range 121, Cantonment Area, Landfill Borrow Area #1 + Industrial Borrow

WEATHER 30-50°F Sunny - cloudy TEMPERATURE RANGE 30°-50° WIND breezy

RUST PERSONNEL ON SITE H. Hodson, R. McCune, Rick Heidrich, Michael Finochio

CONTRACTORS/VISITORS Site Services: Tony Rodriguez + Lee Hochet/OHM: Steve D, Gary M, John

SUMMARY OF FIELD ACTIVITIES Purge + Sample Monitoring Wells, Drilling + sampling in borrow areas, Trenching landfill 5

LEVEL OF HEALTH AND SAFETY PROTECTION Mod. Level D, [illegible]

INSTRUMENTATION USED OVM580B, Purge Sonic, Turbidimeter, Gastech, minirom

CALIBRATION(S) PERFORMED Pre-and Post-Cal.

INSTRUMENT PROBLEMS/REMEDIES

SAMPLES COLLECTED * DUPE05, FCMW-109, R121-MW4, 1682-1 (VOC's only), 2492-MW3 IB-SB1 5'-5.4', IB-SB1 17'-17.5; IB-SB2 7'-7.5', IB-SB2 12'-12.5; LBA1-3, BK-0 LBA1-4, BK-1.5, BK-6.5

SAMPLE COLLECTION METHOD (S) Disposable + Pressurized Bailers,

QUALITY CONTROL SAMPLES * DUPE05 (blind duplicate of FCMW-109) TRIP07 (R.H. Soil sampl. TRIP23 (HSH)

ADDITIONAL REMARKS

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE H S Hodson Michael R. Finochio

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson - TERC DATE 2-16-96 REPORT NUMBER 0162
55253.000 WBS

SITE AND PROJECT NUMBER: Quarterly Groundwater Monitoring Program 55251.000 WBS 332

LOCATION Cantonment Area, Landfill 6, Sewage Treatment Lagoon

WEATHER Sunny, cold TEMPERATURE RANGE 15°-60° WIND Breezy

RUST PERSONNEL ON SITE H. Hodson, R. McClure, Rick Heidrick

CONTRACTORS/VISITORS Site Services: Lee Hackett + Anthony Rodriguez

SUMMARY OF FIELD ACTIVITIES purge + sample monitoring wells, transferring water from/taking drums to new drums @ LF6 + STL; Drilling + soil sampling for Landfill #2 Borrow Investigation

LEVEL OF HEALTH AND SAFETY PROTECTION Modified Level D

INSTRUMENTATION USED OVM 580B, purge saver, turbidimeter

CALIBRATION(S) PERFORMED pre- and post-calibration

INSTRUMENT PROBLEMS/REMEDIES none

SAMPLES COLLECTED * 1682-1
Landfill Perimeter Borings: PB-1, B-3 + B-8; PB-2, B-3.5; PB-3, B-8.5

SAMPLE COLLECTION METHOD (S) disposable bailer (+ pressurized disposable bailer

QUALITY CONTROL SAMPLES * ~~TRIP~~ 12/16/96

ADDITIONAL REMARKS Transferred H_2O out of 6 drums @ STL

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE Christie Hodson

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson - TERC DATE 02.19.96 REPORT NUMBER 164

SITE AND PROJECT NUMBER: Quarterly Groundwater Monitoring Program 55251.000 WBS 332 55252 7.1.1 7.12 7.13.

LOCATION Little Fountain Creek

WEATHER SUNNY AND BREEZY TEMPERATURE RANGE 40-60° F WIND 5-15 MPH

RUST PERSONNEL ON SITE H. HODSON, T. CONRAD, T. MURRAY, R. McCLURE, M. FINOCHIO

CONTRACTORS/VISITORS —

SUMMARY OF FIELD ACTIVITIES WATER SAMPLING AND SURVEYING. Surveyors - Landfill

LEVEL OF HEALTH AND SAFETY PROTECTION MODIFIED LEVEL D

INSTRUMENTATION USED (2) TEI-580B OVM-PID'S, (1) PURGE SAVER, (1) - ORION - 250A AND (1) - HYDAC FOR CONDUCTIVITY, AND (2) - TURBIDITY METERS.

CALIBRATION(S) PERFORMED PRECAL AND POSTCAL

INSTRUMENT PROBLEMS/REMEDIES NONE OVM NOT LIGHTING

SAMPLES COLLECTED * LFC-1, LFC-2, CUD 7, #4

SAMPLE COLLECTION METHOD (S) DISPOSABLE AND PRESSURIZED BAILERS.

QUALITY CONTROL SAMPLES * LFC-2 SPLIT

ADDITIONAL REMARKS None. T. Conrad + H. Hodson left early for CPR Training in Englewood

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE [signature]

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson - TERC DATE 3-18-96 REPORT NUMBER 174

SITE AND PROJECT NUMBER: ~~Quarterly Groundwater Monitoring Program~~ TBM 55251.000 WBS3.3.2 ~~55251.000 WBS 332~~ TBM 55253.000 7.11, 7.1.2

LOCATION Fort Carson

WEATHER Cool, Snowy TEMPERATURE RANGE ~25°-35°F WIND Moderate

RUST PERSONNEL ON SITE Todd Murray, Robert McClure, Doug Cross, Jon Thurston

CONTRACTORS/VISITORS Steve Rider

SUMMARY OF FIELD ACTIVITIES Health & Safety Kick-off, loaded trailer with supplies, packed coolers.

LEVEL OF HEALTH AND SAFETY PROTECTION D

INSTRUMENTATION USED None

CALIBRATION(S) PERFORMED NA

INSTRUMENT PROBLEMS/REMEDIES NONE

SAMPLES COLLECTED * NONE

SAMPLE COLLECTION METHOD (S) NA

QUALITY CONTROL SAMPLES * NA

ADDITIONAL REMARKS First day on the project. Lots of organizational challenges.

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE [signature]

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson - TERC DATE 3-18-96 REPORT NUMBER 174

SITE AND PROJECT NUMBER: ~~Quarterly Groundwater Monitoring Program~~ ~~55251.000 WBS 332~~ 55251.000 WBS 3.3.2 55253.000 7.11, 7.1.2

LOCATION Fort Carson

WEATHER Cool, Snowy TEMPERATURE RANGE ~25°-36°F WIND Moderate

RUST PERSONNEL ON SITE Todd Murray, Robert McClure, Doug Cross, Jon Thurston

CONTRACTORS/VISITORS Steve Rider

SUMMARY OF FIELD ACTIVITIES Health & Safety Kick-off, loaded trailer with supplies, packed coolers.

LEVEL OF HEALTH AND SAFETY PROTECTION D

INSTRUMENTATION USED None

CALIBRATION(S) PERFORMED NA

INSTRUMENT PROBLEMS/REMEDIES NONE

SAMPLES COLLECTED * NONE

SAMPLE COLLECTION METHOD (S) NA

QUALITY CONTROL SAMPLES * NA

ADDITIONAL REMARKS First day on the project. Lots of organizational challenges.

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE Todd B Murray

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson - TERC DATE 3-19-96 REPORT NUMBER 175

SITE AND PROJECT NUMBER: ~~Quarterly Groundwater Monitoring Program~~ ~~Ten~~ ~~55251.000 WBS 332~~
55251.000 1.3.2, 89855.200-
55253.000 7.11, 7.1.2

LOCATION Fort Carson

WEATHER Sunny, cool TEMPERATURE RANGE 30°-45° F WIND Slight

RUST PERSONNEL ON SITE Todd Murray, Robert McCluse, Doug Cross

CONTRACTORS/VISITORS NA

SUMMARY OF FIELD ACTIVITIES painted wells at FTA & inventoried drums; purged wells DP-3 & GPMW2 dry; staked geo-probe locations at LF2 & LF5.

LEVEL OF HEALTH AND SAFETY PROTECTION D & mod.-D

INSTRUMENTATION USED OVM580B, Purge Saver, H_2S meter.

CALIBRATION(S) PERFORMED Pre & post daily

INSTRUMENT PROBLEMS/REMEDIES NONE

SAMPLES COLLECTED * NONE

SAMPLE COLLECTION METHOD (S) NA

QUALITY CONTROL SAMPLES * NA

ADDITIONAL REMARKS NA

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE [signature]

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson - TERC DATE 3-19-96 REPORT NUMBER 175

SITE AND PROJECT NUMBER: ~~Quarterly Groundwater Monitoring Program~~ TBM ~~55251.000 WBS 332~~ 55251.000 1.3.2, 89855.200 - 55253.000 7.1.1, 7.1.2

LOCATION Fort Carson

WEATHER Sunny, cool TEMPERATURE RANGE 30°-45° F WIND Slight

RUST PERSONNEL ON SITE Todd Murray, Robert McClure, Doug Cross

CONTRACTORS/VISITORS NA

SUMMARY OF FIELD ACTIVITIES painted wells at FTA & inventoried drums; purged wells DP-3 & GPMW2 dry; staked geo-probe locations at LF2 & LF5.

LEVEL OF HEALTH AND SAFETY PROTECTION D & mod.-D

INSTRUMENTATION USED OVM580B, Purge Saver, H_2S meter.

CALIBRATION(S) PERFORMED Pre & post daily

INSTRUMENT PROBLEMS/REMEDIES NONE

SAMPLES COLLECTED * NONE

SAMPLE COLLECTION METHOD (S) NA

QUALITY CONTROL SAMPLES * NA

ADDITIONAL REMARKS NA

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE [signature]

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson - TERC DATE 3-20-96 REPORT NUMBER 176

SITE AND PROJECT NUMBER: Geo-Probe ~~Quarterly Groundwater Monitoring Program~~ TBM 55253.000 ~~55251.000~~ TBM WBS ~~332~~ 7.1.1 TBM 55253.000 1.3.2

LOCATION Landfill 2, Landfill 1/GritPit

WEATHER Sunny TEMPERATURE RANGE 45°F-60°F WIND None to slight (AM) Breezy (PM)

RUST PERSONNEL ON SITE Todd Murray, Doug Cross

CONTRACTORS/VISITORS Terry Feltis, Anthony Rodriguez

SUMMARY OF FIELD ACTIVITIES Geo Probe for grab groundwater samples at Landfill 2 collect water samples at GPMW2+OP-3

LEVEL OF HEALTH AND SAFETY PROTECTION D-mod.

INSTRUMENTATION USED OVM 580 B, H_2S meter

CALIBRATION(S) PERFORMED OVM w/100 ppm Isobutelene. H_2S factory calibrated.

INSTRUMENT PROBLEMS/REMEDIES H_2S problems with low CO.

SAMPLES COLLECTED * GPMW-2: 1 Liter Amber for 8080. OP-3: 4x40 ml VOA for 8260, 1 Liter Amber for 8270, 250 ml for Cyanide, 500 ml poly for metals.

SAMPLE COLLECTION METHOD (S) disposable bailer.

QUALITY CONTROL SAMPLES * None

ADDITIONAL REMARKS Punched 7 holes at LF2. Collected water samples from LF1-Grit Pit area.

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE [signature]

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson - TERC DATE 3-21-96 REPORT NUMBER 177

SITE AND PROJECT NUMBER: Quarterly Groundwater Monitoring Program ~~55251.000 WBS 332~~ TBM 55253.000 7.1.1 55251.000 1.3.2

LOCATION Landfills 2, 5 and 1 (Quit Pit)

WEATHER Sunny TEMPERATURE RANGE ~50°-60°F WIND Variable to 10mph

RUST PERSONNEL ON SITE Todd Murray, Robert McClure, Doug Cross

CONTRACTORS/VISITORS Site Services - Terry & Anthony

SUMMARY OF FIELD ACTIVITIES Sampled OP-3 for VOAs & 8080. Sampled LF2DPW6 along with Dup8, LF2DPW7 and LF2DPW9.

LEVEL OF HEALTH AND SAFETY PROTECTION Mod D.

INSTRUMENTATION USED OVM, H_2S

CALIBRATION(S) PERFORMED On-site.

INSTRUMENT PROBLEMS/REMEDIES H_2S has low CO reading.

SAMPLES COLLECTED * OP-3 VOA's & 8080. LF2DPW6 VOA's, 8270, metals, NO2/NO3, Nitrite plus a Dup (8). LF2DPW7 same suite minus the dup. LF2DPW9 for NO2/NO3 only.

SAMPLE COLLECTION METHOD (S) peristaltic pump.

QUALITY CONTROL SAMPLES * Dup 8 at LF2DPW6.

ADDITIONAL REMARKS Site Services stuck in the mud all day at Landfill 5. They got 1 hole in.

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE [signature]

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson - TERC DATE 3-22-96 REPORT NUMBER 178

SITE AND PROJECT NUMBER: Quarterly Groundwater Monitoring Program ~~55251.000 WBS 332~~ TBM 55253.000 7.1.1 7.1.2

LOCATION Landfill 2. Landfill 5

WEATHER Sunny TEMPERATURE RANGE 45°F - 55°F WIND Variable

RUST PERSONNEL ON SITE T. Murray, R. McClure, D. Cross

CONTRACTORS/VISITORS Site Services.

SUMMARY OF FIELD ACTIVITIES Sampled Geo-probe holes at LF2.

LEVEL OF HEALTH AND SAFETY PROTECTION D

INSTRUMENTATION USED OVM

CALIBRATION(S) PERFORMED 100 ppm Isobutylene gas.

INSTRUMENT PROBLEMS/REMEDIES H_2S meter - low CO

SAMPLES COLLECTED * LF2DPW6 - 2 VOA's preserved. LF2DPW7 - 2 VOA's preserved. LF2DPW-9 - 2 VOA's preserved, 2 VOA's unpreserved, part of a 1 RAG for SVOC's. LF2DPW11 - 1 pres. VOA. LF2DPW12 - 2 VOA's pres., 2 VOA's unpres., 500 ml amber for NO2/NO3. Complete bottle set at LF5DPW4 (+ DUP) and Complete set at LF5DPW5.

SAMPLE COLLECTION METHOD (S) Peristaltic pump.

QUALITY CONTROL SAMPLES * Duplicate at LF5DPW4

ADDITIONAL REMARKS

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE [signature]

RUST ENVIRONMENT & INFRASTRUCTURE	Date 3-26-96	# of pages 3
To Holly Hodson	From Todd Murray	
Co.	Phone # ~~1 303 694 6660~~	
Fax #	Fax # ~~1 303 694 4410~~	
Comments		

CONTROL REPORT

PROJECT Fort Carson - TERC DATE 3-25-96 REPORT NUMBER 189

SITE AND PROJECT NUMBER: Quarterly Groundwater Monitoring Program 55251.000 WBS ~~332~~ 1.3.2 7.1.2

LOCATION Landfill 5, Grit Pit, Landfill 2

WEATHER Cold, Cloudy TEMPERATURE RANGE 8°F - 22°F WIND light, variable

RUST PERSONNEL ON SITE T. Murray, J. Thurston, R. McClure, D. Cross, Holly Hodson

CONTRACTORS/VISITORS Ground Exploration

SUMMARY OF FIELD ACTIVITIES Sample Geo-probe locations at Landfill 5 and Seep. Well destruction at Landfill 5. Soil borings at Grit Pit.

LEVEL OF HEALTH AND SAFETY PROTECTION level D (mod)

INSTRUMENTATION USED OVM, Purge Saver

CALIBRATION(S) PERFORMED Pre- and Post daily

INSTRUMENT PROBLEMS/REMEDIES

SAMPLES COLLECTED * GPSB13-23/24, GPSB13-28/29, LF5DPW6 - 40ml's & 500ml for NO3/NO2, LF2DPW9 - metals and 50ml of the 1l Nitrate, LF2DPW10 - 2 VOA's pres. & 2 VOA's unpres., LF2DPW11 - 2 VOA's unpres. & 1/2 the 500ml Amber, LF2DPW12 - 1/2 l for SOOC.

SAMPLE COLLECTION METHOD (S) Peristaltic pump for Geo-probe holes. Preserved bailer for Seep.

QUALITY CONTROL SAMPLES * None.

ADDITIONAL REMARKS

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE [signature]

RUST ENVIRONMENT & INFRASTRUCTURE | Date 3-26-96 | # of pages 3

To Ms Holly Hodson	From Todd Murray
Co.	Phone # ~~1 303 694 6660~~
Fax #	Fax # ~~1 303 694 4410~~
Comments	

CONTROL REPORT

PROJECT Fort Carson - TERC DATE 3-25-96 REPORT NUMBER 189

SITE AND PROJECT NUMBER: Quarterly Groundwater Monitoring Program 55251.000 WBS ~~232~~ 1.3.2 7.1.2

LOCATION Landfill 5, Grit Pit, Landfill 2

WEATHER Cold, Cloudy TEMPERATURE RANGE 8°F - 22°F WIND light, variable

RUST PERSONNEL ON SITE T. Murray, J. Thurston, R. McClure, D. Cross

CONTRACTORS/VISITORS Ground Exploration

SUMMARY OF FIELD ACTIVITIES Sample Geo-probe locations at Landfill 5 and Seep. Well destruction at Landfill 5. Soil borings at Grit Pit.

LEVEL OF HEALTH AND SAFETY PROTECTION level D (mod.)

INSTRUMENTATION USED OVM, Purge Saver

CALIBRATION(S) PERFORMED Pre- and Post daily

INSTRUMENT PROBLEMS/REMEDIES

SAMPLES COLLECTED * GPSB13-23/24, GPSB13-28/29 LF5DPW6 - VOA's & 500ml for NO3/NO2, LF2DPW9 - metals and 50ml of the 1l Nitrate, LF2DPW10 - 2 VOA's pres. & 2 VOA's unpres., LF2DPW11 - 2 VOA's unpres. & 1/2 the 500ml Amber, LF2DPW12 - 1/2 l for SVOC.

SAMPLE COLLECTION METHOD (S) Peristaltic pump for Geo-probe holes. Preiswinced bailer for Seep.

QUALITY CONTROL SAMPLES * None.

ADDITIONAL REMARKS

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE [signature]

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 3/26/96 REPORT NUMBER 190

SITE AND PROJECT NUMBER: ~~RD at Landfills #2, #5, #6 and Vapor Degreaser (89868.200)~~ 55251.000 1.2.2.3.2 GRIT/OIL PIT

LOCATION GRIT / OIL PIT

WEATHER CLEAR / PARTLY CLOUDY TEMPERATURE RANGE 10° — 30° F WIND SLIGHT 5-10 mph

RUST E&I PERSONNEL ON SITE J. GILLESPIE, ROBERT

CONTRACTORS/VISITORS SITESERVICES / GEO ENVIRONMENTAL

SUMMARY OF FIELD ACTIVITIES DRILLED BORING GPMW-4 INSTALLED WELL 23'-33'
DRILLED SOIL BORING ~~GPMW~~ GPSB-14 TO 29 FT.
ABANDONED THREE WELLS @ LANDFILL #5 : FCMW82, MW-2, MW-3

LEVEL OF HEALTH AND SAFETY PROTECTION MODIFIED LEVEL D

INSTRUMENTATION USED OVM 128 & DUST DETECTOR

CALIBRATION(S) PERFORMED OVM /

INSTRUMENT PROBLEMS/REMEDIES N/A

SAMPLES COLLECTED * GPMW-4 3-4 FT; 24-25 FT; 33-34 FT
GPSB-14 14.5-15 FT; 19-20 FT; 28-29 FT;

SAMPLE COLLECTION METHOD (S) SPLIT SPOON 3" STEEL 5.04 LENGTH
HEAVY STEEL CONSTRUCTION

QUALITY CONTROL SAMPLES * DUPE COLLECTED @ GPMW4 33/34

ADDITIONAL REMARKS CLEAR TO PARTLY CLOUDY WARMING TREND

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE J. Gillespie

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 3/27/96 REPORT NUMBER

SITE AND PROJECT NUMBER: [ ] Group A (89840.200) [ ] Group B (89846.200)
[X] Fire Training Area (89855.200) [ ] Equalization Basin (89863.200) [ ] Landfills (89868.200)

LOCATION

WEATHER CLEAR WARM TEMPERATURE RANGE 30 – 60°F WIND 5-10 mph

RUST E&I PERSONNEL ON SITE J. GILLESPIE

CONTRACTORS/VISITORS Jim HENDERSON

SUMMARY OF FIELD ACTIVITIES MONITORING WELL / SOIL BORING INSTALLATION FTA MW6
Abandoned 4 well @ Landfill 6; W6-1, LF-6A, LF-6B, and NUD-1.

LEVEL OF HEALTH AND SAFETY PROTECTION MODIFIED LEVEL D

INSTRUMENTATION USED OVM / MINIRAM DUST MONITOR

CALIBRATION(S) PERFORMED AM

INSTRUMENT PROBLEMS/REMEDIES OVM 580B BATTERY DIED
AFTER BORING WAS COMPLETE BUT COULD NOT GET BAGGING HEADSPACE

SAMPLES COLLECTED * N/A

SAMPLE COLLECTION METHOD (S) N/A

QUALITY CONTROL SAMPLES * N/A

ADDITIONAL REMARKS N/A

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson DATE 3/28/96 REPORT NUMBER 0192

SITE AND PROJECT NUMBER: ~~RD at Landfills #2, #5, #6 and Vapor Degreaser (89868.200)~~ FIRE TRAINING AREA 89855.200

LOCATION FIRE TRAINING AREA DRUM STORAGE SITE

WEATHER CLEAR/Sunny TEMPERATURE RANGE 40 – 65°F WIND SLIGHT 5-10 mph

RUST E&I PERSONNEL ON SITE J. Gillespie, Doug Cross

CONTRACTORS/VISITORS GROUND EXPLORATION

SUMMARY OF FIELD ACTIVITIES Soil Boring/MW INSTALLATION FTA-MW7
Abandonment of one well at Landfill 2 (FLMW-81)

LEVEL OF HEALTH AND SAFETY PROTECTION LEVEL D

INSTRUMENTATION USED OVM 580B / MINIRAM AEROSOL MONITOR

CALIBRATION(S) PERFORMED AM (MINIRAM ZERO PARTICLE BAG) OVM 580B 100ppm ISOBUTYLENE

INSTRUMENT PROBLEMS/REMEDIES NONE

SAMPLES COLLECTED * SOIL SAMPLES FOR HEADSPACE AND LITHOLOGIC DESCRIPTION

SAMPLE COLLECTION METHOD (S) 3" 5.04 FT Split Spoon HSA 4.25"

QUALITY CONTROL SAMPLES * N/A

ADDITIONAL REMARKS —

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE J. E. Gillespie

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson - TERC DATE 4-1-96 REPORT NUMBER 194

SITE AND PROJECT NUMBER: Quarterly Groundwater Monitoring Program ~~55251.000 WBS 332~~ Bm 89855.200 55251.000 1.3.2

LOCATION Fire Training Area; Gift Pit

WEATHER Sunny, windy TEMPERATURE RANGE ~50°F - 65°F WIND Variable to 15mph

RUST PERSONNEL ON SITE T. Murray, R. McClure, J. Gillespie

CONTRACTORS/VISITORS Site Services

SUMMARY OF FIELD ACTIVITIES Developed monitoring wells. Installed new well FTA-MW8

LEVEL OF HEALTH AND SAFETY PROTECTION D / Mod. D

INSTRUMENTATION USED. OVM, Dust dosimeter, Purge Saver

CALIBRATION(S) PERFORMED Pre & post daily

INSTRUMENT PROBLEMS/REMEDIES Dust dosimeter - battery low.

SAMPLES COLLECTED * One water sample for picture - FTAMW7.

SAMPLE COLLECTION METHOD (S) Bennett piston pump.

QUALITY CONTROL SAMPLES * None

ADDITIONAL REMARKS

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson - TERC DATE 4/19/96 REPORT NUMBER

SITE AND PROJECT NUMBER: Quarterly Groundwater Monitoring Program 55251.000 WBS 332

LOCATION LANDFILL #6 ADJACENT LF6-1A

WEATHER WIND WARNING TEMPERATURE RANGE 30 - 70° WIND GUSTY 20 - 30 mph

RUST PERSONNEL ON SITE J. GILLESPIE

CONTRACTORS/VISITORS SITE SERVICES

SUMMARY OF FIELD ACTIVITIES INSTALL LF6DPW08 AND LF6DPW09 TO 19 FT SCREEN 6-19 FT WAIT FOR WATER CK ON 4/21/96

LEVEL OF HEALTH AND SAFETY PROTECTION LEVEL D

INSTRUMENTATION USED MINIRAE / WATERMAN MULTIGAS MONITOR H_2S

CALIBRATION(S) PERFORMED PRE @ 0700 & POST @ 1200

INSTRUMENT PROBLEMS/REMEDIES NONE

SAMPLES COLLECTED * FOR LITHOLOGY ONLY

SAMPLE COLLECTION METHOD (S) GEOPROBE DIRECT PUSH

QUALITY CONTROL SAMPLES * NONE

ADDITIONAL REMARKS WINDY

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE J. Gillespie

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson - TERC DATE 4-22-96 REPORT NUMBER 209

SITE AND PROJECT NUMBER: Quarterly Groundwater Monitoring Program 55251.000 WBS 332

LOCATION LANDFILL 2, LANDFILL 6; FTA; 89868.200 (FTA) 55253.000 (LF2 surveying)

WEATHER RAINY CLOUDY-SUNNY ~4 TEMPERATURE RANGE 30-50°F WIND 7.11. WINDY IN AM

RUST PERSONNEL ON SITE J. KAIBEL; R MCCLURE; T. CONRAD; H. HODSON; ~~R. MCCF~~ (H&H) T. MURRAY J. GILLESPIE

CONTRACTORS/VISITORS LEIGH WHITEHEAD & ASSOC. (RON RASH; SCOTT DUNN); [illegible]

SUMMARY OF FIELD ACTIVITIES PURGE & SAMPLE MONITORING WELLS AT LANDFILLS 2 & 6 SURVEYING AT FTA AND LF2 BY LWA.

LEVEL OF HEALTH AND SAFETY PROTECTION MOD. LEVEL D

INSTRUMENTATION USED OVM 580B; MSA WATCHMAN MULTIGAS MONITOR; SOLINST; QED PURGESAVER; HF SCIENTIFIC TURBIDIMETER;

CALIBRATION(S) PERFORMED PRE-CAL AND POST-CAL

INSTRUMENT PROBLEMS/REMEDIES OVM W/TODD & HOLLY HAD LOW BATTERY @ END OF DAY

SAMPLES COLLECTED * FCMW-65 (preserved, unpreserved - full suite); DUPE02 042296 @ FCMW-65 (full suite plus unpres.) (no herb, pest, pcb) FCMW-62; W6-3; LF6-MW8 (all but 2 liter water quality bottles, ~~[illegible]~~ unpreserved); collected LF6-MW6 (preserved & unpreserved); LF6-MW9; (DUPE05 042296 of LF6-MW9;

SAMPLE COLLECTION METHOD (S)

QUALITY CONTROL SAMPLES * DUPE02 (FCMW-65); DUPE05 (LF6-MW9); TRIP02

ADDITIONAL REMARKS NONE

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE Christie Hodson

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson - TERC DATE 4/24/96 REPORT NUMBER 211

SITE AND PROJECT NUMBER: Quarterly Groundwater Monitoring Program 55251.000 WBS 332
55253.000 WBS 7.3.2

LOCATION Landfill 2, Landfill 5, Building 8000

WEATHER Sunny, hot TEMPERATURE RANGE ~60°F - 80°F WIND Variable

RUST PERSONNEL ON SITE T. Murray, T. Conrad, J. Kaibel, R. McClure, J. Thurston, J. Gillespie, N. Diaz

CONTRACTORS/VISITORS Concrete Coring

SUMMARY OF FIELD ACTIVITIES Installed vent pipe & cored 4 holes, building 8000, for soil borings. Sampling groundwater monitoring wells.

LEVEL OF HEALTH AND SAFETY PROTECTION Mod level D

INSTRUMENTATION USED PurgeSaver, OVM 580B, Watchman multimeter, Dust dosimeter, Turbidity meter, PID mini Rae

CALIBRATION(S) PERFORMED Pre and Post daily

INSTRUMENT PROBLEMS/REMEDIES None

SAMPLES COLLECTED * LFS-MW04, LFS-MW05, WS-2, FCMW-76, FCMW-74

SAMPLE COLLECTION METHOD (S) Disposable bailers & filters

QUALITY CONTROL SAMPLES * None

ADDITIONAL REMARKS None

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE MBM

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson - TERC DATE 4-25-96 REPORT NUMBER 212

SITE AND PROJECT NUMBER: Quarterly Groundwater Monitoring Program 55251.000 WBS 332 55253 7.3.2

LOCATION Landfill 5, Landfill 11, Landfill 4, Bldg. 8000

WEATHER Partly Cloudy / Sunny TEMPERATURE RANGE 65°F - 75°F WIND Variable

RUST PERSONNEL ON SITE T. Murray, T. Conrad, J. Kaibel, R. McClure, J. Gillespie, J. Thurston

CONTRACTORS/VISITORS Rooney Smith

SUMMARY OF FIELD ACTIVITIES Sampled groundwater monitoring wells. Drilled & sampled four soil borings at bldg. 8000.

LEVEL OF HEALTH AND SAFETY PROTECTION Mod level D

INSTRUMENTATION USED PurgeSaver, Turbidity meter, OVM 580 B, Watchman multigas meter, mini rae pid, mini ram dust dosimeter

CALIBRATION(S) PERFORMED Pre & post daily

INSTRUMENT PROBLEMS/REMEDIES None

SAMPLES COLLECTED * WS-2 for pest/pcb, Anions, Alk, BOD, TSS, TDS, W11-3, LF4-MW2, LF4-MW3, LFD-2, FCMW-7S, LFD-3.
SOIL - VOC's & SVOC's - 3 depths at 3 borings.

SAMPLE COLLECTION METHOD (S) Disposable bailers & filters

QUALITY CONTROL SAMPLES * MS & MSD samples taken at W11-3.
1 Dup at VDG SB-EW1 13'-14' - SOIL

ADDITIONAL REMARKS

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE [signature]

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson - TERC DATE 4/26/96 REPORT NUMBER 213

SITE AND PROJECT NUMBER: Quarterly Groundwater Monitoring Program 55251.000 WBS 332

LOCATION LANDFILL #6, Landfills 2, 5, 1

WEATHER CLEAR TEMPERATURE RANGE 40 – 75° WIND SLIGHT TO GUSTS

RUST PERSONNEL ON SITE J. GILLESPIE

CONTRACTORS/VISITORS SURVEY & DESIGN / SITE SERVICES

SUMMARY OF FIELD ACTIVITIES SOIL BORINGS TEMP WELLS @ LF6 / SURVEYING @ LF1 GRIT/OIL PIT. Groundwater Sampling and sediment / Surface Water Sampling at Landfills 2, 5 & 6.

LEVEL OF HEALTH AND SAFETY PROTECTION MODIFIED LEVEL D

INSTRUMENTATION USED MINI RAE, MULTIGAS METER (CLATCHMAN) MSA), DUST METER

CALIBRATION(S) PERFORMED PRE w/ 100.0 ppm

INSTRUMENT PROBLEMS/REMEDIES

SAMPLES COLLECTED * GROUNDWATER ~~TP~~ Samples LF6 ( ) FCMW-78 (6 VOA's), LF6-SD1, LF6-SD2, LF6-SW2, LF4-MW2, LF2-SD1, LF2-SD2, LF2-SD3, LF2-SD4, LF5-SD1, LF5-SW1, LF5-SW1-SPLIT 11 (MRD), LF5-SW1MS, LF5-SW1MD, LF5-SW2, LF5-SD2, LF6-SW2, LF6-SD2.

SAMPLE COLLECTION METHOD (S) BAILER

QUALITY CONTROL SAMPLES * Split, MS & MSD taken at LF5-SW1

ADDITIONAL REMARKS NONE

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE [signature]

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson - TERC DATE 5/1/96 REPORT NUMBER 216

SITE AND PROJECT NUMBER: Quarterly Groundwater Monitoring Program 55251.000 WBS 332

LOCATION LANDFILL 1, CGD, Turkey Creek,

WEATHER cloudy/PTLY TEMPERATURE RANGE 40-60 WIND Calm

RUST PERSONNEL ON SITE TODD murray, Robert McClure, Tom Conrad

CONTRACTORS/VISITORS NONE

SUMMARY OF FIELD ACTIVITIES GROUNDWATER Sampling

LEVEL OF HEALTH AND SAFETY PROTECTION MODIFIED LEVEL D

INSTRUMENTATION USED PID, Mobil Phone

CALIBRATION(S) PERFORMED PRE + POST E 2 PID'S

INSTRUMENT PROBLEMS/REMEDIES NA

SAMPLES COLLECTED * TC-1, RED-5, TC-4, TC-5, WHC-1, CWD-2, LF6 SD4 LF6-SD3, LF6-SW3, MW1-5, OP-1, MW1-3, CWD-6

SAMPLE COLLECTION METHOD (S) BAILER

QUALITY CONTROL SAMPLES * DUPE-03 FOR WHC-1.

ADDITIONAL REMARKS

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE [signature]

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson - TERC DATE 5/21/96 REPORT NUMBER 230

SITE AND PROJECT NUMBER: Quarterly Groundwater Monitoring Program 55251.000 WBS 332

LOCATION SOIL VAPOR DEBREASER BLDG 8000

WEATHER CLEAR TO CLOUDY TEMPERATURE RANGE 65-80° WIND SLIGHT

RUST PERSONNEL ON SITE J. GILLESPIE / JOHN KAIBEL T. Murray w/ B. Schmalzer

CONTRACTORS/VISITORS GILL SCHOLLS USACE GEOLOGIST

SUMMARY OF FIELD ACTIVITIES ABANDON ~~FOOT~~ THREE BORINGS AND DRILL TO 29 FT IN EW-2. Surveyed in wells: JG BD-1, BLDG 501C, PZ-1C, PZ-2, BBW1, FCMW-106, PZ-39, NUD-2, PZ-8A, PZ-21A, PZ-41, GC-2, GC-3, GC-6, GC-7, GC-15, GC-16, GC-18, GC-20, OB-2, OB-3, FCMW-32, FCMW-33, CUD-4, CUD-5, CUD-6.

LEVEL OF HEALTH AND SAFETY PROTECTION LEVEL D

INSTRUMENTATION USED MINI RAE PID, DUST MONITOR, WATCHMAN H_2S, CO, O_2 METER

CALIBRATION(S) PERFORMED 5/21/96 ON ALL THREE INSTRUMENTS POST & PRE CAL

INSTRUMENT PROBLEMS/REMEDIES NONE

SAMPLES COLLECTED * VOCS / SVOCS / METALS FROM WASTE WATER DRAINING INTO BORING SOILS FROM VDGSB-EW2 23-24 FT MS/MSD / PLUS ORIGINAL ALSO @ 28 TO 29 FT AN ORIGINAL FOR VOCS & SVOCS

SAMPLE COLLECTION METHOD (S) GRAB FROM 3" CONTINUOUS SPLIT SPOON

QUALITY CONTROL SAMPLES * MS & MSD @ 23 TO 24 FT

ADDITIONAL REMARKS NONE — WORKED LATE ≈ 1 HOUR. DUE TO 30 MINUTE DELAY WHILE UNION STOPWORK FOR LECTURE — ALSO DIFFICULTY WITH BROKEN PIPE LINE CAUSED DELAY

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE, AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE [signature]

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson - TERC DATE 5/22/96 REPORT NUMBER 231

SITE AND PROJECT NUMBER:

LOCATION BLDG #8000 Vapor Degreaser Pit

WEATHER CLEAR TEMPERATURE RANGE 70-75° F WIND Slight/Gusty

RUST E&I PERSONNEL ON SITE J. Gillespie J. Kaibel T. Murray, B. Schmalzer

CONTRACTORS/VISITORS None

SUMMARY OF FIELD ACTIVITIES Complete concrete work on all 4 Bomb locations. Remove 4" vent piping — move drums of waste soil & water to beside wooden bldg near hazmat storage. Also pit where PVC 4" vent materials against fence behind wooden storage bldg. Surveyed wells - see below.

LEVEL OF HEALTH AND SAFETY PROTECTION Level D

INSTRUMENTATION USED None

CALIBRATION(S) PERFORMED None

INSTRUMENT PROBLEMS/REMEDIES None

SAMPLES COLLECTED * No samples collected @ Bldg #8000. Surveyed wells: 8000 c, CD-1, CD-2A, CD-3, CD-4, DH2, PZ-45, W11-1, W11-3, PZ94-1, PZ94-3, LFC-1, LFC-2, LFC-3, LFC-4, 4, TH-2, TH-3, TH-4, RC-2, 5, LFD-3, A, F, CND-2, CND-7, RC-1A.

SAMPLE COLLECTION METHOD (S) N/A for Bldg #8000

QUALITY CONTROL SAMPLES * N/A

ADDITIONAL REMARKS Discuss Repair of Broken Drain w/ Plumber, & Bldg Personnel

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE [signature]

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson - TERC DATE 5/28/96 REPORT NUMBER 233

SITE AND PROJECT NUMBER: Quarterly Groundwater Monitoring Program 89868.200 ~~55251.000 WBS 332~~

LOCATION LANDFILL 6

WEATHER Cloudy Rain TEMPERATURE RANGE 45-50 WIND 0-5

RUST PERSONNEL ON SITE JON KABEL

CONTRACTORS/VISITORS NA

SUMMARY OF FIELD ACTIVITIES FDW Management

LEVEL OF HEALTH AND SAFETY PROTECTION LEVEL D

INSTRUMENTATION USED NONE

CALIBRATION(S) PERFORMED NONE

INSTRUMENT PROBLEMS/REMEDIES NA

SAMPLES COLLECTED * NONE

SAMPLE COLLECTION METHOD (S) NONE

QUALITY CONTROL SAMPLES * NONE

ADDITIONAL REMARKS NONE

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE [signature]

P520861

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson - TERC DATE 5/30/96 REPORT NUMBER 235

SITE AND PROJECT NUMBER: ~~Quarterly Groundwater Monitoring Program~~ IDW mgmt / well Inspections 55251.000 WBS 332

LOCATION Ft Carson

WEATHER clear TEMPERATURE RANGE 70-75 WIND 5-10

RUST PERSONNEL ON SITE Jon Kistel, Norma Delgado

CONTRACTORS/VISITORS NA

SUMMARY OF FIELD ACTIVITIES well Inspections, IDW mgmt

LEVEL OF HEALTH AND SAFETY PROTECTION Mod level D / Level D

INSTRUMENTATION USED PID when opening wells

CALIBRATION(S) PERFORMED Pre + Post

INSTRUMENT PROBLEMS/REMEDIES NONE

SAMPLES COLLECTED * NONE

SAMPLE COLLECTION METHOD (S) NONE

QUALITY CONTROL SAMPLES * NONE

ADDITIONAL REMARKS —

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE, AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE [signature]

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson - TERC DATE 5/31/96 REPORT NUMBER 236

SITE AND PROJECT NUMBER: ~~Quarterly Groundwater Monitoring Program~~ IDW management 55251.000 WBS 332

LOCATION FT CARSON, FTA/STL, EQUILIZATION BASIN, Quarterly wells

WEATHER clear TEMPERATURE RANGE 70-75 WIND 0-10

RUST PERSONNEL ON SITE Jon Kaiber

CONTRACTORS/VISITORS NA

SUMMARY OF FIELD ACTIVITIES IDW management

LEVEL OF HEALTH AND SAFETY PROTECTION Level D

INSTRUMENTATION USED NONE

CALIBRATION(S) PERFORMED NONE

INSTRUMENT PROBLEMS/REMEDIES NONE

SAMPLES COLLECTED * NONE

SAMPLE COLLECTION METHOD (S) NONE

QUALITY CONTROL SAMPLES * NONE

ADDITIONAL REMARKS NONE

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE [signature] 5/31/96

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson - TERC DATE 6/3/96 REPORT NUMBER 237

SITE AND PROJECT NUMBER: Quarterly Groundwater Monitoring Program 55251.000 WBS 332

LOCATION Ft Carson - Equalization Basin

WEATHER Clear TEMPERATURE RANGE 70-75 WIND 0-10

RUST PERSONNEL ON SITE Jon Kaber

CONTRACTORS/VISITORS NONE

SUMMARY OF FIELD ACTIVITIES IDW management

LEVEL OF HEALTH AND SAFETY PROTECTION Level D

INSTRUMENTATION USED NONE

CALIBRATION(S) PERFORMED NONE

INSTRUMENT PROBLEMS/REMEDIES NONE

SAMPLES COLLECTED * NONE

SAMPLE COLLECTION METHOD (S) NONE

QUALITY CONTROL SAMPLES * NONE

ADDITIONAL REMARKS NONE

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE, AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE [signature] 6/3/96

DAILY QUALITY CONTROL REPORT

PROJECT Fort Carson - TERC DATE 8-8-96 REPORT NUMBER 260

SITE AND PROJECT NUMBER: Quarterly Groundwater Monitoring Program-3rd Qtr 55251.000 WBS 532

LOCATION FT. CARSON -- SITE WIDE

WEATHER SUNNY TEMPERATURE RANGE 70-85° F WIND 5-15 MPH

RUST PERSONNEL ON SITE J. THURSTON, T. CONRAD, T. MURRAY, J. KAIBEL

CONTRACTORS/VISITORS NONE

SUMMARY OF FIELD ACTIVITIES FINISH WATER SAMPLING, TAKE WATER LEVELS AT RANGE 121, AND BEGIN PAINTING "DECAM PROPERTY" ON PURGE WATER DRUMS. Checked well plumbness in below mentioned wells.

LEVEL OF HEALTH AND SAFETY PROTECTION LEVEL D AND MODIFIED LEVEL D

INSTRUMENTATION USED NONE

CALIBRATION(S) PERFORMED N/A

INSTRUMENT PROBLEMS/REMEDIES N/A

SAMPLES COLLECTED * FCMW-44: ~~4 pres. VOA's, 4 unpres. VOA's~~ Anions, Alk, BOD, TSS, TDS, Cyanide, metals, TOC/COD. FCMW-37 completed the Alk, BOD, TSS, TDS bottle. P2-39: Preserved & unpreserved VOA's, SVOC's, metals, Cyanide.

SAMPLE COLLECTION METHOD (S) DISPOSABLE BAILERS AND FILTERS

QUALITY CONTROL SAMPLES * None

ADDITIONAL REMARKS All wells checked for well plumbness passed. Wells Checked were: STL-MW1,2,3; FTA-MW5,6,7,8; EPMW-1,2,3,4; LF6-MW6,7,8,9,10.

* INDICATE SAMPLE MEDIA: GROUND WATER, SURFACE WATER, SOIL, OR SEDIMENT; SAMPLE TYPE: COMPOSITE, GRAB, SPLIT, DUPLICATE; AND SAMPLE I.D. NUMBERS.

SIGNATURE OF FIELD REPRESENTATIVE Thomas W. Conrad

APPENDIX B

CORRECTIVE ACTION FORMS

CORRECTIVE ACTION FORM - FORT CARSON

RUST Environment and Infrastructure (RUST E&I) **Laboratory:**_____
Task No. 89846.200/89840.200/89855.200/89863.200/89868.200
Date: 6/19/95

Initiated by: Field/Laboratory
Condition:

Monitoring well installation requires installation of the two foot thick bentonite seal in 4,6-inch lifts, with each lift hydrated before proceeding with the next lift. The bentonite was installed in 2 1-foot lifts (one foot chumbles, one foot pellets) in all wells installed on site at Ft. Carson (Group A, Group B, Fire Training Area and Equalization Basin) - Landfills also

Signature: Christie Sarah Hodson

Review and Corrective Action: Field/Laboratory Coordinator

Well installation protocol as discussed in the SAP will be followed for all future wells installed at Ft. Carson.

Signature: Christie Sarah Hodson

Acceptance: Project Manager/Chemist

Signature: [illegible]

File No._____

CORRECTIVE ACTION FORM - FORT CARSON

RUST Environment and Infrastructure (RUST E&I) **Laboratory:** Hydro Logic
Task No. 89868.200
Date: 5/24/95

Initiated by: Field/Laboratory
Condition: Missing items on the chain-of-custody forms for May 24, 1995.

Sample # 572 - Missing the corresponding sample identification of "VDG-DP01" for the MRD split sample.
Sample # 570 - Missing sample technique of "Direct Push"
Sample # 571 - " " " " "
Sample # 572 - " " " " " , and sample depth of "13-17 ft"

Signature: Carolin W. Whiteaulis

Review and Corrective Action: Field/Laboratory Coordinator

Missing information was entered by hand on the pink and yellow sheets of the chain-of-custody forms.

Signature: Julie Hampel Stephens Bruce B. Sugerson

Acceptance: Project Manager/Chemist

Signature: [signature]

File No.

CORRECTIVE ACTION FORM - FORT CARSON

RUST Environment and Infrastructure (RUST E&I) **Laboratory:** HydroLogic
Task No. 87868.200
Date: May 19, 1995

Initiated by: Field/Laboratory
Condition: Missing items on chain-of-custody forms for May 19, 1995
Sample No. 452 - Missing sample date of "5/19/95"
Sample No 453 - Missing sample date of "5/19/95"
Sample No. 456 - Missing sample date of "5/19/95"

Signature: Carolin W. Whiteside

Review and Corrective Action: Field/Laboratory Coordinator

Missing information was hand entered on the pink and yellow forms of the chain-of-custody forms

Signature: Janie Hampel Stephens Bruce B. Augerson

Acceptance: Project Manager/Chemist

Signature: [signature]

File No.