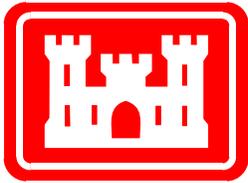


Appendix A
Performance Work Statement



US Army Corps
of Engineers

**FORMERLY USED DEFENSE SITES
MILITARY MUNITIONS RESPONSE
PROGRAM
PERFORMANCE WORK STATEMENT
FOR
SITE INSPECTIONS
AT MULTIPLE SITES
(CONUS AND OCONUS)**

**PERFORMANCE WORK STATEMENT
FOR
Formerly Used Defense Sites (FUDS)
Military Munitions Response Program (MMRP)
Site Inspections (SI)
at Multiple Sites
(CONUS and OCONUS)
24 May 2005**

**Modification #1: 18 July 2005
This is a firm fixed price Task Order**

1.0 OBJECTIVE:

The objective of the MMRP SI is to determine whether the individual project sites within the FUDS program warrants further response action or no Department of Defense action indicated (NDAI).

2.0 BACKGROUND AND GENERAL STATEMENT OF WORK:

2.1 Regulatory Guidelines. The work required under this Scope of Work (SOW) falls under the Defense Environmental Restoration Program - Formerly Used Defense Sites (DERP-FUDS). Munitions and Explosives of Concern (MEC) exist on property formerly owned or leased by the Department of Army. USACE is conducting environmental response activities at FUDS in accordance with Engineer Regulation (ER) 200-3-1 and the *DoD Management Guidance for the Defense Environmental Response Program (DERP)*. USACE is conducting these activities in accordance with CERCLA.

2.1.1 MEC is a safety hazard and may constitute an imminent and substantial endangerment to the local populace and site personnel. The work associated with this Site Investigation(s) shall be performed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 104, and the National Contingency Plan (NCP), Sections 300.120(d) and 300.400(e), Executive Orders 12580 and 13016.

2.1.2 All activities involving work in areas potentially containing unexploded ordnance hazards shall be conducted in full compliance with Department of Defense (DoD), Department of Army,

US Army Corps of Engineers (USACE), state, local and federal requirements regarding safety, personnel, equipment, and procedures. 29 CFR 1910.120 shall apply to all actions taken at this site.

2.1.3 The project sites are not suspected to contain Recovered Chemical Warfare Materiel (RCWM); however, if the contractor identifies or suspects CWM, the contractor shall immediately withdraw upwind from the work area and notify the USAESCH Chemical Warfare Design Center and the USAESCH Ordnance and Explosives (OE) Safety Office for assistance and guidance. The contractor shall secure the area and locate two Unexploded Ordnance (UXO) Technicians at level II or above upwind of the suspect CWM to secure the site until relieved by the Technical Escort Unit (TEU) or Explosive Ordnance Disposal (EOD) personnel.

3.0 Performance Work Statement:

The following performance work statement will apply to all tasks/projects in this PWS.

The contractor shall perform the activities necessary to meet the objective in paragraph 1.0 of this PWS for munitions and explosives of concern (MEC) and munitions constituents (MC). MEC intrusive activities shall **not** be performed during this SI. Work shall be in accordance with (IAW) with ER 200-3-1, the *DoD Management Guidance for the Defense Environmental Response Program (DERP)*, and Engineering Pamphlet (EP) 75-1-2.

The contractor shall collect the minimum amount of information necessary to (i) eliminate from further consideration those releases that pose no significant threat to public health or the environment; (ii) determine the potential need for a time critical removal action; (iii) collect or develop additional data, as appropriate, for Hazard Ranking System (HRS) scoring by Environmental Protection Agency (EPA); and (iv) collect data, as appropriate, to characterize the release for effective and rapid initiation of the Remedial Investigation and Feasibility Study (RI/FS). The contractor shall also collect the appropriate data to complete the Munitions Response Site Prioritization Protocol (MRSPP).

Methods to be used to achieve the specified objectives shall be determined by the Contractor.

Quality Control. The Contractor shall implement an accepted Quality Control (QC) Program. The Quality Control Program shall include QC procedures for all aspects and types of work. The Contractor shall ensure that QC documentation is maintained, and provided in the Final Reports. If any Government QA review identifies a process failure or a work product failure, the contractor will be issued a Corrective Action Request (CAR). The Contractor shall provide full documentation detailing the cause of the failure, why it was not detected in the Contractor's QC Program, and how the problem was corrected. Failure can be defined as workmanship or work products not complying with the WP or not meeting project needs defined during TPP or other accepted industry practices or defined as not complying with basic safety concepts and other industry safety practices.

Kick Off Meeting: The Contractor(s) shall plan to attend a kick off meeting, after award, in Huntsville, Alabama for 1 day.

Work Plan: The contractor shall prepare and submit a programmatic SI Work Plan (WP) which will also address any contractor-specific programmatic information supplemental to the Programmatic Sampling and Analysis Plan provided by the government. The WP shall be prepared following the general format described in data item description (DID) MR-001. Deviations from this format will be accepted if they are for the purpose of consolidating topics into a single chapter or sub-chapter or for removing duplications. For each site, a site-specific Work Plan and SAP annex shall be prepared.

Geographic Information System (GIS). The Contractor shall create a GIS in accordance with DID MR-005-07. The coordinate system for these tasks/projects shall be UTM Coordinates. All geo-referenced data shall be submitted in UTM Coordinates.

Munitions Constituents Sampling and Analysis: MC sampling and analysis shall be performed IAW Final Programmatic SAP and applicable Site-Specific SAP. Any exceptions to the Programmatic SAP must be clearly indicated in the Site-Specific SAP. Contractor shall

determine in consultation with their subcontractor laboratory appropriate analytical methodology to meet or exceed the data quality objectives provided in Table 1 of the Programmatic SAP. If these DQOs cannot be met with standard analytical methodology, provide recommendation for best value approach. Technical proposal shall provide laboratory's proposed reporting limits along with their method detection limits. It shall also describe laboratory's procedures for subsampling and sample preparation for explosives and any method variations to address analytes not addressed by routine methods, such as PETN and nitroglycerine. For aqueous samples, solid phase extraction rather than salting out extraction shall be used.

The contractor shall address MC sampling and analysis requirements and deliverables IAW with DID MR-005-10, with the following exceptions:

- The USACE validation process has been replaced. The contractor shall use a laboratory that meets the requirements of the HTRW Chemical Data Quality Management (CDQM) Policy for Environmental Laboratory Testing (USACE, 2004), to include NELAP accreditation and self declaration of compliance with the DoD Quality Systems Manual (DoD QSM) (latest version). All laboratory requirements of DID MR 005-10 not related to the validation process continue to apply.

- Section 1.4 of DID MR-005-10 shall be modified as follows:

Electronic Data Deliverable; G.

All laboratory data for samples analyzed by commercial laboratories shall be submitted in the Staged Electronic Data Deliverable (SEDD) format. Details on the SEDD format are provided in SEDD Version 5.0 (or most recent version) specification located at <http://www.epa.gov/superfund/programs/clp/sedd.htm>. EDDs shall be provided to applicable Design Center and MM CX on a site-by-site basis IAW schedule provided in Contractor's proposal. SEDD Stage 2a is a mandatory submittal. SEDD Stage 2b should be provided if the laboratory is capable.

- Section 2.8 of DID MR-005-10 shall be modified as follows:

2.8 ELECTRONIC DATA DELIVERABLE

Chemical data shall also be provided electronically by the Contractor in the SEDD format and as part of the Geographic Information System. The SEDD formatted deliverable will require data parsing for use in the Automated Data Review (ADR)

software (most current version). Use of the ADR software will also require that the contractor develop a comprehensive library file for all of the methods to be analyzed under this PWS. The library file will accurately reflect all of the analytical quality requirements as documented in the Final Programmatic SAP (or site-specific SAP, if deviations from the Programmatic SAP are approved) and will be provided to the appropriate Design Center, MM CX, and the sub-contract lab for use in screening EDD submittals. All electronic data submitted by the contract laboratory is required to be error-free, and in complete agreement with the hardcopy data. Data files are to be delivered both by e-mail and on high density CD accompanying the hardcopy data reports. The disk must be submitted with a transmittal letter from the laboratory that certifies that the file is in agreement with hardcopy data reports and has been found to be free of errors using the latest version of the ADR evaluation software provided to the laboratory. The contract laboratory, at their cost, will correct any errors identified by USACE. The Contractor is responsible for the successful electronic transmission of field and laboratory data under this PWS. The Contractor's laboratory is responsible for archiving the electronic raw data and sufficient associated hardcopy data (e.g., sample login sheets and sample preparation log sheets) to completely reconstruct the analyses that were performed for a period of ten years after completion of this contract.

- The following software is available upon request to support this task as government furnished software: ADR, Environmental Data Management System (EDMS), SEDD parser, and Forms II Lite. Use of the SEDD parser and ADR software is mandatory, use of EDMS and Forms II Lite are optional.
- Information required for completion of main SI Report need not be duplicated in SI Report Appendix containing **CHEMICAL DATA FINAL REPORT**

Perchlorate Sampling and Analysis. Sites indicated on the table below as “Yes” will be included in a MMRP SI Request for Approval to Sample for Perchlorate to be submitted through HTRW CX. Perchlorate analysis must be provided by the Contractor's laboratory. Analysis must be performed by Liquid Chromatography/Mass Spectrometry or Ion Chromatography/Mass Spectrometry, preferably by SW6850 or SW6860. Either tandem or single mass spectrometry is acceptable. If the laboratory identified in the Contractor's initial proposal is unable to perform

perchlorate analysis by one of these methods, Contractor may propose a supplemental laboratory for perchlorate analysis. If a supplemental laboratory is proposed, it must meet all PWS requirements and all documentation for new laboratory that was required for initial proposal must be provided. Contractors should include costs for collection of additional sample volume, acquiring containers/coolers, etc., shipment of the containers to the Laboratory, and validation of analytical data..

SI Reports: The Contractor shall prepare a final report using DID MR-030 as a guideline for general document format. The report content outline is attached as Appendix A. Each report shall identify the specific members and title of the Contractor's staff and subcontractors that had significant and specific input into the reports' preparation or review. The contractor shall also include a cover letter signed by an authorized person (preferably the person who signed the Task Order) of the company certifying, on behalf of the company, that the requirements of this Task Order have been met.

Schedule: The Contractor shall submit a proposed programmatic project schedule in the proposal. Seven (7) days after Award the contractor shall submit and electronic copy (preferably by email) of the schedule. The schedule shall be adjusted and refined during the Technical Project Planning (TPP) process. The contractor shall update the schedule in accordance with DID MR-085, Project Status Report. A task/project specific schedule shall be submitted a minimum of 14 days after the completion of the TPP process. All schedules shall be in a format compatible with Primavera software.

Teleconferences: The Contractor shall participate in monthly MMRP teleconferences with HQ, MM CX, Technical PM, District PM, and other contractors to discuss project status and any issues that have arisen during the SI phase of work. The Contractor will be prepared to present issue resolution alternatives as part of these discussions.

In Progress Review Meetings: The Contractor shall attend Quarterly In-Progress Review (IPR) meetings on the MMRP SI with USACE representatives and other contractors at various CONUS locations. In addition, the Contractor will be expected to plan, coordinate, and host one

IPR meeting each year.

Reports/Minutes, Record of Meetings. The Contractor shall prepare and submit a report/minutes of all meetings attended in accordance with DID MR-045.

Telephone Conversations/Correspondence Records. The Contractor shall keep a record of each phone conversation and written correspondence concerning this Task Order in accordance with DID MR-055. A copy of this record shall be attached to the Project Status Report.

Project Status Reports. The Contractor shall prepare and submit project status reports in accordance with DID MR-085 and include any other items required in the PWS.

Specific Tasks/Projects:

The specific Tasks/Projects below are shown in the table below. Along with the project, the responsible Geographic FUDS USACE District is shown as well as the USACE design center that will provide technical management and execute the project. The 4 (four) design centers are the Huntsville Center MM Design Center (HNC), Omaha District MM Design Center (NWO), South Pacific Division Range Support Center (SPD), Baltimore District MM Design Center (NAB).

An additional list of project sites is attached as Appendix B. This list will be used for optional future SI Projects based on funding and priority from DoD.

Task #	District	FUDS ID	FUDS Name	MM DC	Perchlorate Sampling
1.1	SAW	I04NC107101	Corolla Naval Target	HNC	YES
1.2	SAS	I04GA004503	Camp Toccoa Mil Res	HNC	YES
1.3	SAJ	I04 FL 0405	Pinycastle Jeep Range	HNC	YES
1.4	POH	H09HI024901	Kane Puu	HNC	YES
1.5	LRL	G04KY0028	Camp Breckinridge	HNC	YES
1.6	SAM	I04AL06700	Fort McClellan	HNC	YES
1.7	POA	F10AK0291	Burma Road	HNC	YES
1.8	SAC	I04SC0040	Lake Murray Bombing & Gunnery Range	HNC	NO
1.9	SAW	I04NC080303	Charlotte Naval Ammo Depot	HNC	NO
1.10	SAS	I04GA106401	Arabia Mountain State Park	HNC	NO
1.11	SAJ	I04 FL 0856	Chaffee Road Bomb Target	HNC	NO

Task #	District	FUDS ID	FUDS Name	MM DC	Perchlorate Sampling
1.12	SAC	I04SC0023	Sand Hills Bombing & Gunnery Range	HNC	YES
1.13	POH	H09HI047601	Big Island Target – Mahukona Range	HNC	NO
1.14	LRL	G04KY016506	Kentucky Ordnance Works	HNC	NO
1.15	SAW	I04NC1085	Southern Shores	HNC	YES
1.16	SAC	I04SC0042	Lk Isaqueena Bom Rng	HNC	NO
1.17	SAJ			HNC	YES
2.1	NAB	C03MD0930	Assateague Island	NAB	NO
2.2	NAE	D01ME003200	Seal Island Gunnery Range	NAB	NO
2.3	NAN	C02NJ0004	Fort Hancock	NAB	YES
2.4	NAO	C03VA000901	NAAS Creeds	NAB	YES
2.5	NAB	CO3DE0526	Fort Delaware	NAB	NO
2.6	NAE	D01MA023204	Hingham NAD	NAB	YES
2.7	NAN	C02NJ0792	Millville Bomb & Gunnery Range	NAB	YES
2.8	NAO	C03VA020201	Plum Tree Island	NAB	YES
2.9	NAB	C03PA0048	Susquehanna Ordnance Sub-Depot	NAB	NO
2.10	NAO	C03VA0162	Virginia Ordnance Works	NAB	NO
2.11	NAB	C03DE0528	Governor Bacon Health Center	NAB	NO
2.12	NAO	C03VA0103	Ft. Monroe/Ft. Wool	NAB	NO
2.13	NAO	C03VA1012	Camp Wallace	NAB	YES
2.14	NAO	C03VA0194	Chopawamic Troop Trng	NAB	YES
2.15	NAO	C03VA0027	Ft. Lee	NAB	NO
3.1	LRL	G05OH0007	Lockbourne, AFB	NWO	YES
3.2	NWK	B07MO014601	Jefferson Barracks Target Range	NWO	YES
3.3	NWO	B08WY042601	Casper Ground Gunnery Range	NWO	NO
3.4	NWS	F10OR004102	Camp Abbott	NWO	YES
3.5	LRL	E05MI003402	Camp Claybanks AAA Firing Range	NWO	YES
3.6	NWK	B07KS002904	Olathe Naval Air Station	NWO	NO
3.7	NWO	B08WY042901	Casper Precision Bombing Range No. 3	NWO	NO
3.8	NWS	F10OR002903	Camp Adair	NWO	YES
3.9	LRL	G05IN0010	Camp Atterbury	NWO	NO
3.10	LRL	G05OH002706	Erie Army Depot	NWO	YES
3.11	LRL	G05IN001904	Kingsbury Ordnance Plant	NWO	NO
3.12	LRL	E05MI001303	Ft Custer Rec Area	NWO	YES
3.13	LRL	E05MI000501	Camp Lucas/Camp Brady Target Range	NWO	NO
3.14	LRL	E05IL009903	Green River Ordnance Plant	NWO	YES
3.15	LRL	E05IL010203	Sangamon Ordnance Plant	NWO	NO

Task #	District	FUDS ID	FUDS Name	MM DC	Perchlorate Sampling
4.1	SPA	K06NM042401	Fort Sumner	SPD	YES
4.2	SWF	K06TX1008	Matagorda Peninsula Bombing Range	SPD	YES
4.3	SPL	J09CA1110	Camp Matthews	SPD	YES
4.4	SWT	K06OK011001	Great Salt Plains Bombing Range	SPD	YES
4.5	SPL	J09AZ057601	Sahuarita AFR	SPD	YES
4.6	SWF	A06LA0008	Camp Livingston	SPD	YES
4.7	SPL	J09CA707802	Camp Lockett - Target Pit	SPD	YES
4.8	SWT	K06OK001301	Camp Gruber	SPD	YES
4.9	SPA	K06NM005206	Walker AFB	SPD	YES
4.10	SWF	K06TX0058	Matagorda Island AF Range	SPD	YES
4.11	SPL	J09CA711501	Naval Air Base - Ordnance Areas	SPD	YES
4.12	SPL	J09CA724201	Camp Vista Army - Green Oak Ranch Small Arms Range	SPD	NO
4.13	SWF	K06TX0144	Pyote AAF Bomb Range #1	SPD	NO
4.14	SWF	K06TX0293	Childress AAF Bombing Range #1	SPD	NO
4.15	SWF			SPD	NO
4.16					
4.17					
4.18					

Design Center-Specific Requirements:

Huntsville Design Center Projects: Southeast and Pacific IMA Regions (Tasks 1.X)

The contractor that is awarded the tasks/projects assigned to the Huntsville MM Design Center shall plan for an onboard review of draft programmatic work plan and the internal draft SI report at USAESCH in Huntsville, AL. This onboard review shall take place after the contractor has received comments on the draft WP and after receiving comments on the internal draft SI Report. The contract shall be expected to provide a CD of the draft version at the conclusion of the onboard review.

Baltimore MM Design Center Projects: Northeast IMA Region (Tasks 2.X)

The contractor that is awarded the tasks/projects assigned to the Baltimore MM Design Center shall plan for an onboard review of the draft SI report at the District office in Baltimore, MD.

This onboard review shall take place after the contractor has received comments on the internal draft version.

Omaha District Design Center Projects: Northwest IMA Region (Tasks 3.X)

The contractor that is awarded the tasks/projects assigned to the Omaha District MM Design Center shall plan for an onboard review of the draft SI report at the District office in Omaha, NE. This onboard review shall take place after the contractor has received comments on the internal draft version.

South Pacific Division Range Support Center Projects: Southwest IMA Region (Tasks 4.X)

The contractor that is awarded the tasks/projects assigned to the South Pacific Division Range Support Center shall plan for an onboard review of draft programmatic work plan and the internal draft SI report at the South Pacific Division USACE Headquarters, San Francisco, Ca. This onboard review shall take place after the contractor has received comments on the draft WP and after receiving comments on the internal draft SI Report. The contract shall be expected to provide a CD of the draft version at the conclusion of the onboard review.

4.0 SUBMITTALS AND CORRESPONDENCE:

Computer Files. All final text files generated by the Contractor under this task order shall be furnished to the Contract Officer in Microsoft Word 6.0 or higher software. Spreadsheets shall be provided in Microsoft EXCEL format. All final CADD drawings shall be in Microstation 95 or higher. All GIS data shall be in ESRI (Arcview/Arcinfo) format. All chemical sampling data submittals shall be IAW DID MR 005-10 except as noted above. These documents shall be submitted on CD or DVD.

PDF Deliverables. In addition to the paper and digital copies of submittals, the final version of any and all reports and/or plans shall be submitted, uncompressed, on CD or DVD in PDF format along with a linked table of contents, linked tables, linked photographs, linked graphs and linked figures, all of which shall be suitable for viewing on the Internet. PDF files shall be produced from source documents wherever possible.

Review Comments. Various reviewers will have the opportunity to review submittals made by the Contractor under this contract. The Contractor shall review all comments received through the Technical or Project Manager/Contracting Officer and evaluate their appropriateness based upon their merit and the requirements of the PWS. The Contractor shall issue to the Project Manager a formal, annotated response to each. The Contractor shall not non-concur with a comment without discussing with the PM and/or comment maker.

Public Affairs. The Contractor shall not publicly disclose any data generated or reviewed under this contract. The Contractor shall refer all requests for information concerning site conditions to the subject FUDS Geographic USACE Corps of Engineers District with a copy furnished to the Technical Manager. Reports and data generated under this contract are the property of DoD and distribution to any other source by the Contractor, unless authorized by the Contracting Officer, is prohibited.

Submittals: The contractor shall furnish copies of the plans, maps, and reports as identified in table below, or as specified in this PWS, to each addressee listed below in the quantities indicated.

Document Distribution: For the purposes of determining when documents get submitted to specific organizations, the attached document distribution table is provided.

Document Description	HTRW CX		MM Design Center		District PM		MM CX		HQ USACE
	Hard CD Copy		Hard CD Copy		Hard CD Copy		Hard CD Copy		CD
CSM:									
Draft	2		3		6		2		
Working Final	2		3		6		2		1
TPP Memorandum:									
Draft	1	2	1	3	1	6	1	2	1
Final Memorandum	1	2	1	3	1	6	1	2	1
SI Work Plan:									
Draft	1	2	1	3	1	6	1	2	1
Final	1	2	1	3	1	6	1	2	1

SI Report:									
Draft	1	2	1	3	1	6	1	2	
Draft Final	1	2	1	3	1	6	1	2	1
Final	1	2	1	3	1	6	1	2	1

Notes:

1. The number of final copies distributed may vary from that shown above

Period of Performance: All work shall be completed by 30 November 2006

Milestones:

TPP Memorandum (accepted)

Work Plan (accepted)

Field Work Completed

Final SI Report (accepted)

Milestones will be considered met or completed when the appropriate QC documentation has been submitted and QA completed and the submittal and/or product is accepted.

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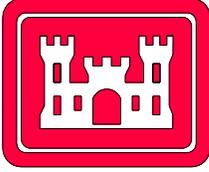
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5.0 REFERENCES

- 5.1 Basic Contract
- 5.2 USACE, 2004 - HTRW Chemical Data Quality Management (CDQM) Policy for Environmental Laboratory Testing, September 30, 2004
- 5.3 DoD Quality Systems Manual (DoD QSM) (latest version).
- 5.4 USEPA, 1992 - Guidance for Performing Site Inspections under CERCLA; Interim Final, September 1992, PB92-963375, EPA 9345.1-05
- 5.5 EM 200-1-3, Requirements for the Preparation of Sampling and Analysis Plans
- 5.6 ER 1110-1-263, Chemical Data Quality Management for Hazardous, Toxic, Radioactive Waste Remedial Activities
- 5.7 DOD's Interim Policy on Perchlorate Sampling, 29 September 2003, http://www.epa.gov/swerffrr/pdf/perchlorate_sampling_interim_policy_9-23-03.pdf.
- 5.8 DoD Interim Guidance on Sampling and Testing for Perchlorate, 5 February 2004, <http://www.navylabs.navy.mil/Archive/PerchlorateInterim.pdf>.
- 5.9 DAIM, Department of Army Guidance for Addressing Potential Perchlorate Contamination, 11 June 2004, <http://www.itrcweb.org/armyguidance.pdf>.
- 5.10 DOD Memorandum on Definitions Related to Munitions Response Actions, 18 December 2003, http://www.epa.gov/fedfac/pdf/MRP_Definitions_12-18-03.pdf.
- 5.11 Military Munitions Center of Expertise Technical Update Munitions Constituent (MC) Sampling March 2005.

Appendix B
***Technical Project Planning Session Documentation/
Meeting Minutes***



**U.S. Army Corps of Engineers
Omaha District**

**Final Technical Project Planning
Memorandum
Central Oregon Gunnery Range
FUDS ID F10OR0170**

**Site Inspections at Multiple Sites, NWO Region
Formerly Used Defense Sites, Military Munitions
Response Program**

**Contract No. W912DY-04-D-0010
Delivery Order No. 003**

November 1, 2006



9201 East Dry Creek Road
Centennial, CO 80112

Final Technical Project Planning Memorandum

**Site Inspection
Central Oregon Gunnery Range
Formerly Used Defense Site
FUDS ID F10OR0170**

Military Munitions Response Program

Documentation for Technical Project Planning Meeting
Bureau of Land Management
Lakeview, Oregon
July 17, 2006

Hosted by U.S. Army Corps of Engineers

Prepared by Shaw Environmental, Inc.

November 1, 2006

Concurrences

USACE Omaha Design Center

Michael Watson

USACE Seattle District

Mike Nelson

Oregon Department of Environmental Quality

David Anderson

Shaw Environmental, Inc.

Peter Kelsall

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ABBREVIATIONS AND ACRONYMS

AOC	area of concern
ASR	Archives Search Report
BLM	Bureau of Land Management
COGR	Central Oregon Gunnery Range
CSM	Conceptual Site Model
DFW	Department of Fish and Wildlife
DoD	Department of Defense
DOI	Department of the Interior
DQO	data quality objective
°F	degrees Fahrenheit
ft	foot or feet
FUDS	Formerly Used Defense Site
HRS	Hazard Ranking System
LC/MS	liquid chromatography/mass spectrometry
MC	munitions constituents
MEC	munitions and explosives of concern
mm	millimeter
MMRP	Military Munitions Response Program
MRSP	Munitions Response Site Prioritization Protocol
NDAI	No Department of Defense Action Indicated
ODEQ	Oregon Department of Environmental Quality
PCOC	potential contaminant of concern
PRG	Preliminary Remediation Goal
RAC	Risk Assessment Code
RI/FS	Remedial Investigation/Feasibility Study
Shaw	Shaw Environmental, Inc.
SHPO	State Historic Preservation Office
SI	Site Inspection
SSWP	Site-Specific Work Plan
TPP	Technical Project Planning
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USEPA	U.S. Environmental Protection Agency
UXO	unexploded ordnance

Administrative Information

***Site Inspection
Central Oregon Gunnery Range***

***Technical Project Planning Meeting
July 17, 2006***

The Technical Project Planning (TPP) Memorandum is one in a series of documents used during the Site Inspection (SI) process to document the information collected and processes used to evaluate Formerly Used Defense Sites (FUDS) for the possible presence of munitions and explosives of concern (MEC) and/or munitions constituents (MC). TPP meeting information provided in the Memorandum reflects both the original version of information shared with meeting participants, as well as changes/updates to site-specific information obtained during the TPP meeting.

The TPP meeting for the former Central Oregon Gunnery Range (COGR) was conducted on July 17, 2006 at the Bureau of Land Management (BLM) offices located in Lakeview, Oregon. Representatives from the U.S. Army Corps of Engineers (USACE) – Seattle District, the Oregon Department of Environmental Quality (ODEQ), BLM, and Shaw Environmental, Inc. (Shaw) were in attendance. By agreement with the USACE, landowners (other than BLM) were not present at this meeting. A separate meeting for the public was held in the evening on the same day. A site tour was not conducted as part of this meeting.

The TPP Memorandum documents discussions for the TPP meeting and includes the sections described below:

- **Administrative Information:** includes meeting logistics, the list of attendees, and a summary of the meeting;
- **Site Inspection Objectives:** provides the goal and objectives of the SI, roles and responsibilities, the SI process, and the TPP process;
- **Background Information:** includes site and project history, area physical setting, a summary of previous environmental work, and an introduction to the areas of concern (AOCs) addressed by the SI;
- **Conceptual Site Model (CSM):** identifies environmental attributes, potential human and ecological receptors in the area's environment, and the relationships between these factors;
- **Proposed Sampling Scheme:** describes the type and quantity of samples to be taken, and the analytical methods to be used for characterizing the AOC;
- **TPP Notes and Data Quality Objectives (DQOs):** captures project and site-specific information as discussed during the TPP meeting to ensure the necessary and appropriate information is shared among meeting participants, and that meeting participants concur with the identified goal, objectives, and approach used to complete the SI process; and
- **Worksheets:** includes the **Site Information Worksheet, Draft Munitions Response Site Prioritization Protocol (MRSPP) Data Gaps, and Hazard Ranking System (HRS) Data Gaps.**

Site: Central Oregon Gunnery Range

Location: Lakeview, Oregon

USACE District: Seattle

TPP #1 Meeting Location: Bureau of Land Management, Lakeview, Oregon

TPP #1 Meeting Date: 7/17/06

Agenda

Monday, July 17, 2006

- **Convene at BLM Office**
 - Introductions
 - Review Site Inspection Objectives
 - Goals, Objectives, Roles & Responsibilities
 - Site Inspection Process
 - Technical Project Planning Process
 - Review of Background Information

- **Technical Project Planning Discussion**

- **Conclude Meeting**

- **Evening Public Meeting**

TPP Meeting Attendees

Mike Nelson	USACE – Seattle District
David Anderson	ODEQ
Dale Landon	Shaw
Dan Stewardson	BLM
Todd Forbes	BLM
Tom Rasmussen	BLM
William Cannon	BLM
Paul Whitman	BLM
Lynn Miracle	BLM
Rebecca Lange	BLM
Ken Tillman	BLM

Technical Project Planning Meeting Summary

The TPP meeting for the former COGR was held at the BLM offices in Lakeview, Oregon on July 17, 2006. Representatives from the USACE – Seattle District, ODEQ, BLM – Lakeview office, and Shaw were in attendance. A representative from the USACE – Omaha District was unable to attend this meeting.

Shaw reviewed the site information and presented a summary of the site and the proposed approach for the SI, addressing reconnaissance for MEC and sampling for MC. All parties were in general agreement with the approach, but reserved judgment until the Draft Technical Project Planning Memorandum was issued. Comments on the Draft Technical Project Planning Memorandum have been received from stakeholders and incorporated in this document and the Draft Site-Specific Work Plan (SSWP). Specific discussions included:

Types of MEC Used at the Site: The archeologist for BLM pointed out that the scattered occurrences of practice bombs have been identified throughout the range. An inert example was shown to the meeting participants and the practice bomb appeared to be an AN-MK 23, AN-MK 43 type. The archeologist indicated that anecdotal accounts suggest that pilots would target small playa lakes (ponds) within the range for unregulated bombing practice.

AOCs: It was agreed that while the entire 795,056 acres were used for air-to-air gunnery practice and unregulated bombing practice, the SI would focus on the two target areas located near Alkali Lake where air-to-ground gunnery practice occurred. It was discussed and agreed that because the primary MEC used at the site was 50-caliber and 20-millimeter (mm) small and medium arms ammunition for air-to-air gunnery practice, identifying a particular location to sample for either MEC or MC was neither warranted nor practical.

The BLM archeologist discussed that he had walked most of the area and had found projectiles and casings (mostly 50-caliber, very few 20-mm) throughout the COGR. He also noted that he had found a few discarded 50-caliber ammunition belts within the range. He has prepared several archeological reports that include discussions of the density of munitions. These reports were to be sent to Mr. Mike Nelson of the USACE but to date have not been received by Shaw.

ODEQ discussed that the COGR lies within the Northwest Maneuver Area FUDS that was used in 1943 by the U.S. Army. Several of the reported training areas in COGR (e.g., Alkali Lake machine gun and rocket firing, the sand dune area in the northern portion of the COGR with unexploded ordnance [UXO] finds) are likely from activity during the Northwest Maneuver Area operations. It was agreed to by the USACE and Shaw that those locations would not be included in the COGR but would be addressed in the Northwest Maneuver Area FUDS project.

Pathways: ODEQ indicated that because of the arid environment and likely blowing dust and sand problem, the air pathway should be addressed using the soil data.

Background: ODEQ indicated that a soil background study is currently being completed for the south central and southeastern part of Oregon, and that that data would be made available for use as background soil data. Note the data have been provided by ODEQ

General Discussion: A report was prepared by the Oregon National Guard in 1991 evaluating the use of a portion of the COGR as a new practice bombing range for the Guard.

In 1987, the Sierra Army Depot Explosive Ordnance Disposal unit responded to a UXO find in the northern portion of the COGR. USACE agreed to follow up with the Sierra Army Depot to obtain the report. A copy of the report was provided to Shaw by USACE following the TPP Meeting.

Additional information from the TPP meeting is included in the Technical Project Planning Notes and Data Quality Objectives section of this TPP Memorandum.

Site Inspection Objectives

***Site Inspection
Central Oregon Gunnery Range***

***Technical Project Planning Meeting
July 17, 2006***

Goal

- The USACE is conducting SIs of FUDS properties to determine if any MEC or related MC are present on property formerly owned or leased by the U.S. Department of Defense (DoD).

Objectives

- Determine if the site requires further response action because of the presence of MEC/MC.
- Collect minimum information needed to:
 - Eliminate a site from further consideration if:
 - No evidence of MEC and/or
 - Concentrations of MC in samples are below risk-based action levels, or below background concentrations; or
 - Determine the potential need for removal action or initiation of the Remedial Investigation/Feasibility Study (RI/FS) if:
 - MEC identified and/or
 - Concentrations of MC in samples exceed risk-based action levels and background concentrations.
 - Provide sufficient data to prioritize future actions using the HRS and MRSPP.

Roles & Responsibilities

- **USACE:** Acts as the executing agency for the DoD with regard to the FUDS program. In this role, the USACE has decision making authority and is responsible for ensuring work is conducted in accordance with applicable USACE and federal guidance. Additionally, USACE coordinates and works with project team members to meet needs expressed by regulatory agencies and stakeholders to the extent possible within programmatic guidelines.
- **Regulatory Agency:** Participates in planning of SI activities to ensure the project meets applicable state regulatory standards and requirements.
- **Property Owner(s):** Provides available and pertinent information about the area, provides in sight on current and anticipated future land uses for the property, and participates in project team discussions.
- **Shaw:** As a contractor to the USACE, conducts work on behalf of the USACE, provides TPP materials, makes site information available to the project team through a web-based information portal or other means, and conducts and reports SI activities.

Site Inspection Process

- Data review,
- TPP,
- SSWP,
- SI field activities – reconnaissance, sampling, and analysis, and
- SI Report.

Technical Project Planning Process

- Conduct TPP meeting(s) with key organizations and stakeholders;
- Identify stakeholder(s) concerns;
- Identify all AOCs for this SI;
- Review site information;
- Verify current and anticipated future land use;
- Develop CSM;
- Identify data gaps;
- Plan how to address data gaps;
- Develop DQOs for meeting SI requirements; and
- Concur on SI field work approach.

Background Information

***Site Inspection
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Site Description and Regulatory History

Historical information (including references to interviews and historical documents) contained in this package was obtained from the USACE 1995 Archives Search Report (ASR) and 2004 ASR Supplement for the COGR.

Site Location

- The former COGR is located in Lake County, Oregon. The southern boundary of the FUDS is approximately 50 miles north of Lakeview, Oregon. It is located in the south central portion of Oregon (Figure 1).
- The COGR occupied 795,056 acres that was acquired in 1942.
- The former COGR has one AOC which includes air-to-air, air-to-ground, and ground-to-air ranges.
- The COGR lies entirely within the Northwest Maneuver Area FUDS. The Northwest Maneuver Area FUDS was used briefly in 1943 for a major practice maneuver that occurred in eastern Oregon. The maneuver area included over 8 million acres in eastern Oregon. Portions of the northwest COGR and areas near Alkali Lake were used during the maneuvers.

Physical Setting

- The COGR lies within the Walla Walla Plateaus section of the Columbia Intermontane Physiographic Province.
- The elevation of the area ranges from approximately 4,100 feet (ft) near Alkali Lake on the east boundary to nearly 6,000 ft at St. Patrick Mountain to the west.
- The COGR is a relatively flat region characterized by sand dunes and alkali lakes. Elevated features are predominantly volcanic in origin.
- The site is currently used for agricultural purposes and grazing on open range land.
- Lakeview, Oregon is the nearest incorporated community (approximately 50 miles south) with a population of 2,420 (2004 estimated census).
- The climate in the COGR area is semi-arid. It is warm and dry in the summer and cool and dry in the winter. The wettest months are generally January and December with the driest months being July and August. The highest monthly average temperature is 84.2 degrees Fahrenheit (°F) in July and the lowest monthly average temperature is 19.0 °F in January. Lakeview's average annual precipitation is 14.93 inches per year, with an average annual snowfall of 57 inches.
- Current landowners include private citizens, the BLM, and the State of Oregon.
- The Alkali Lake Disposal Site is located adjacent to and south of the southern target site. The site is a hazardous waste disposal site consisting of a series of 12 shallow unlined disposal trenches each approximately 400 ft long. Wastes disposed include herbicide residue, metallic chloride waste, paint and paint solvent, and dioxins/furans. There is an

approximately 2,000-ft-long groundwater plume extending to the west-northwest. The site is currently monitored by the ODEQ.

- The FUDS access is uncontrolled.

Previous Investigations and Regulatory History

- A letter from the USACE to the Department of the Interior (DOI) in 1947 informed that “The lands had been examined and have been cleared of all explosives or explosive objects reasonably possible to detect by visual inspection.”
- In 1988, the 34th Ordnance Detachment at the Sierra Army Depot, in Herlong, CA disposed by detonation an AN-MK 43 practice bomb, near the town of Millican, Oregon. This location is outside but near the COGR FUDS northwest boundary. It is likely related to the Northwest Maneuvers of 1943 as it was found outside of the COGR FUDS boundary.
- A 50-caliber ammunition belt was found in the northern portion of the AOC in 1990.
- The USACE prepared an Inventory Project Report and Findings and Determinations of Eligibility for the COGR in 1993. The report determined that the site was eligible for Defense Environmental Restoration Program for FUDS.
- The USACE issued an ASR in 1995, which compiled available information for COGR with emphasis on types and areas of ordnance use and disposal. The ASR included a visit to the site in August of 1995. The primary purpose of the site visit was to assess the presence of MEC through non-intrusive means. Interviews, historical research, and site reconnaissance confirmed that nothing other than small and medium arms (50-caliber and 20-mm, respectively) were used at COGR.
- An ASR Supplement completed in 2004 identified the entire range as one AOC. A Risk Assessment Code (RAC) scoring was conducted by the USACE in 2004. Possible scores range from 5 (no risk) to 1 (high risk). The RAC score was 4.

Operational History and MEC/MC Characteristics

Historic Military Operations

- In 1942, the United States Government acquired 795,056 acres for the purpose of an aerial gunnery range.
- The COGR served as an aerial gunnery range and included air-to-air training and air-to-ground practice.
- The BLM archeologist reported that spent 50-caliber cartridges are found throughout the 795,056-acre site as well as a lesser amount of 20-mm spent cartridges. Discarded 50-caliber ammunition belts from aircraft have also been reported at the FUDS.
- Two target areas are located near Alkali Lake (Figure 2), and 50-caliber and 20-mm rounds are found in the area. The southern target area is a circular mound, approximately 15 feet high, and covering an area of approximately 10 acres. The remnants of seven wood structures, presumably targets, are located on the mound, in an east-west line. The layout seems to represent a convoy. The northern target area is triangular in appearance

situated on a naturally occurring rise. Some wood, possibly used for a target, was found at this location.

- The COGR FUDS may have been used to some extent for air-to-ground bombing purposes. As reported by a BLM archeologist, AN-MK 5, AN-MK 23, and AN-MK 43 practice bombs have been found throughout the FUDS. No bombing target locations have been identified and the bombing practice likely was unregulated. In addition, scattered occurrences of discarded 50-caliber ammunition belts have been documented by the archeologist.
- It was reported that a portion of the FUDS near Alkali Lake was used for 50-caliber machine gun training. In addition, it was reported that rockets were fired from the same location (Lake County Examiner, 1943). These activities likely were associated with the Northwest Maneuvers of conducted in 1943. Note that the Northwest Maneuver Area is a separate FUDS and that the COGR FUDS is entirely within the Northwest Maneuver Area FUDS.
- The COGR was declared excess in June 1947 and transferred to the DOI.

MEC/MC Characteristics

- The MEC reported in the ASR and ASR Supplement as being used at the COGR was limited to small arms ranging from 50-caliber to 20-mm ball munitions.
- AN-MK 5, AN-MK 23, and AN-MK 43 practice bombs have been found scattered throughout the FUDS. These practice bombs contained a spotting charge consisting of a 10 gauge shotgun shell with a red or white phosphorus pyrotechnic charge.
- Table 1 lists the constituents of the munitions.
- No chemical warfare materiel has been used at the site.

Groundwater

- Where present, the soils at COGR are thin. For the most part, the surface is composed of various rock outcroppings, mostly of basalt.
- The area is heavily faulted, with northwest trending faults that have been softened by erosion and are visible from the air. The faults are collectively named the Brothers fault zone. South of the fault line the lava plateau is broken into big fault block mountains and a valley, and to the north the lava plateau is mostly unbroken by faulting (Alt and Hyndman, 1990).
- Depth to shallow groundwater near the target areas is approximately 6 ft, based on groundwater monitoring studies at the Alkali Lake Disposal Site. The shallow groundwater is saline and alkaline in chemistry. Depth to non-saline/alkaline water is much deeper (250 ft below ground surface), as this area is overlain by basalt. Groundwater from the deeper artesian water bearing zone is thought to feed portions of the Hutton Springs located north of the two target areas.
- There are numerous private groundwater wells within the 795,056-acre COGR. Most of the wells are used for irrigation purposes and are completed in deep aquifers. There are a

number of groundwater monitoring wells located near the target areas at Alkali Lake Disposal Site.

Surface Water

- The COGR is located within the Summer Lake and Lake Abert Watersheds.
- Because of the flat topography, there is little developed stream drainage and most precipitation collects in shallow ponds and lakes that evaporate in the summer.
- Much of the water in the area lakes is alkaline in chemistry, as a result of the high evaporative rates in the summer and low stream inflows/outflows.
- There is thought to be some surface water to shallow groundwater communication. However, an upward groundwater flow gradient from the deep aquifer to the shallow water bearing zone would prevent the downward migration of any impacted surface water or groundwater into deeper water bearing units with higher groundwater quality.

Terrestrial Exposure

- Based on the size and population of Lake County, Oregon, the population density is less than 1 person per square mile. There are no residences or schools/day care facilities in the vicinity of the two target areas at Alkali Lake.
- The following table lists potential endangered or threatened wildlife and vegetation that may be found within or near the former COGR area. The Oregon Department of Fish and Wildlife (DFW), Oregon Department of Agriculture, and the U.S. Fish and Wildlife (USFWS) are being contacted to provide specific information about the site. The table below lists the endangered or threatened species that may be in the area.

Endangered or Threatened Wildlife	Endangered or Threatened Vegetation
Oregon Chub Hutton Tui Chub Foskett Speckled Dace Warner Sucker Lost River Sucker Shortnose Sucker Bald Eagle Fairy Shrimp	Malheur wire-lettuce

- The northern and southern air-to-ground target areas are near Hutton Springs, which is a primary habitat of the Hutton Tui Chub. The Hutton Tui Chub is classified as a threatened subspecies by the USFWS and Oregon DFW.
- Specific archeological sites located within the COGR are not known. The State Historic Preservation Office (SHPO) is being contacted to provide up-to-date information on the presence of historic or archeological sites.

Air

- The nearest individual is approximately 10 miles from the two air-to-ground targets. The town of Lakeview is approximately 70 miles southwest of the two target areas. Occasional human contact from property users (ranchers and recreationists) does occur.
- The predominate wind direction in the vicinity of Alkali Lake is to the north-northeast.

Conceptual Site Model

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***Technical Project Planning Meeting
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Overview

A site-specific CSM summarizes available site information and identifies relationships between exposure pathways and associated receptors. A CSM is used to determine the data types necessary to describe site conditions and quantify receptor exposure, and discusses the following information:

- Current site conditions and future land use;
- Potential contaminant sources (e.g., lead projectiles in an impact berm);
- Affected media;
- Governing fate and transport processes (e.g., surface water runoff and/or groundwater migration);
- Exposure media (i.e., media through which receptors could contact site-related contamination);
- Routes of exposure (e.g., inhalation, incidental ingestion, and dermal contact); and
- Potential human and/or representative ecological receptors at the exposure point. Receptors likely to be exposed to site contaminants are identified based on current and expected future land uses.

The CSM is evaluated for completeness and further developed as needed through TPP meetings. Based on a review of documents and the discussion during the TPP meeting, the following AOC was identified within the COGR FUDS:

- Air-to-Air Gunnery Range.

The Air-to-Air Gunnery Range includes the air-to-ground target areas.

On agreement between stakeholders at the TPP meeting, locations within the COGR that likely were occupied solely during the 1943 Northwest Maneuvers are not included in the COGR FUDS, but will be included as part of the 1943 Northwest Maneuvers FUDS SI.

The following presents the CSM for the COGR FUDS.

Conceptual Site Model – Air-to-Air Gunnery Range AOC

The CSM evaluates potential exposure pathways related to range operation and configuration relative to physical features and land use. Based on the CSM, sampling schemes are proposed for each area to evaluate potential human health and ecological impacts. Historical photos of the ranges (if available) are carefully examined for possible disturbances or other site features of interest in order to focus the efforts on areas where MC contamination is most likely to occur.

While the AOC is termed the Air-to-Air Gunnery Range, there were two primary uses for the AOC. These were air-to-air gunnery training that occurred over much of the 795,056-acre site and the air-to-ground gunnery training that was focused on two targets located on the eastern border of the AOC adjacent to Alkali Lake. Figure 2 shows the location of the air-to-ground gunnery target areas. In addition, unregulated practice bombing occurred at the FUDS and practice bombs have been found at the FUDS.

There was also a reported use of the AOC for ground-to-air gunnery practice and machine gun and rocket firing in 1943, about the time of the Northwest Maneuvers. The location of the ground-to-air gunnery training and machine gun and rocket firing is not known, other than it was near Alkali Lake. These activities will be evaluated in the SI for the Northwest Maneuver Area FUDS.

Current and Future Land Use

- Currently, the site is used primarily for livestock grazing.
- Use of the range for agricultural purposes (i.e., grazing and farming) will likely continue into the foreseeable future.

Potential Contaminant Sources – Air-to-Air Gunnery Range AOC

- The ASR identified that the AOC was used for air-to-air and air-to-ground gunnery practice. The air-to-air portion would have used towed targets. No target remnants have been reported. The air-to-ground practice is supported by the wooden targets on the southern and northern target areas. Although not identified in the ASR or ASR Supplement AN-MK 5, AN-MK 23, and AN-MK 43 practice bomb have also been found throughout the FUDS.
- DoD records indicate that small arms and medium caliber munitions were used at the FUDS. Predominantly, 50-caliber, and 20-mm ammunition were used.
- Reported MEC includes a belt of live 50-caliber ammunition found in the northern part of the FUDS (Figure 1) and elsewhere (based on reports from the BLM archeologist) and expended AN-MK 5, AN-MK 23, and AN-MK 43 practice bombs.
- The 50-caliber rounds had tracers that may have contained perchlorate.

MEC Evaluation

Types of MEC

- Potential MEC within the Air-to-Air Gunnery Range AOC are 50-caliber and 20-mm ammunition and practice bombs. An explosive hazard from the 50-caliber and 20-mm ammunition is not expected. However, an explosive hazard does exist for the practice bombs, primarily from the 10 gauge shotgun shell and red or white phosphorous pyrotechnic.

Surface Exposure Pathway

- The potential route of human exposure to MEC or munitions debris includes direct contact by vehicles, foot traffic, or handling. This would include BLM and ranch workers, and recreationists.
- The potential route of wildlife exposure to MEC or munitions debris would be by directly walking on them.

Subsurface Exposure Pathway

- The potential routes of human exposure to MEC or munitions debris would be by intrusive drilling or digging activities. This includes BLM, ranch workers, and recreationists.
- The potential route of wildlife exposure to MEC or munitions debris would be by burrowing activities.

An analysis of the exposure pathways and receptors for MEC is provided in Table 2.

MEC Evaluation/Investigation Needed

- No visual reconnaissance surveys will be completed within the air-to-air gunnery range because of the expansive area to be surveyed (1,242 square miles). MEC in the form of ammunition belts and expended practice bombs have been found on the FUDS.
- A visual (magnetometer assisted) reconnaissance survey will be completed at two air-to-ground gunnery range target areas. This survey will be completed to clear soil and sediment sampling sites.

MC Evaluation

Types of MC

- The anticipated MC at the COGR is lead and steel from projectiles, brass from spent cartridges, and cast iron or sheet metal from practice bombs.
- Metal contaminants of concern from these munitions include chromium, copper, lead, and nickel.
- The propellants were either single base or double base type. However, the munitions were fired from aircraft and any residue from the firing would be distributed over a wide area because of dispersion in the air.

- Tracers were used in the 50-caliber rounds, potentially containing perchlorate.

Overview of Pathways

Affected media and potential pathways for MC include:

- **Soil:** At the COGR, soil is the primary medium of concern because of possible MC in the soil from training activities. The soil also serves as a secondary source of potential sediment/surface water, groundwater, or air contamination.
- **Sediment/Surface Water:** Surface water may act as a migration pathway to humans and ecological receptors from potential sources in soils and sediments. Accumulation of metals in the sediments in pond and lake bottoms may occur. There is no developed surface water drainage between the ponds and lakes and high evaporation rates in the summer reduce the size of the ponds and lakes in the summer.
- **Groundwater:** Groundwater is considered a potentially affected media because of the near surface upper water bearing zone.
- **Air:** Air is a potential media of concern because of the possibility of inhalation of contaminated soil particles. Air is an affected media because of the potential for dust entrainment during high winds.

Exposure media at the COGR include soil, sediment/surface water, groundwater, and air. A pathway evaluation for each media is discussed below and provided in Table 2.

Figure 3 illustrates the conceptual site model for the Air-to-Air Gunnery Range and potential pathways of MC contamination.

Soil Exposure Pathway

Exposure Routes

- The potential routes of human exposure to contaminated soils include incidental ingestion of and dermal contact with contaminated media, as well as inhalation of soil particulates during intrusive work.
- The potential routes of wildlife exposure to contaminated soils include ingestion of and direct contact with contaminated media. Plants may uptake MC and then subsequently be eaten by wildlife. Burrowing animals may ingest MC-contaminated soil and subsequently be eaten by predators.

Receptors

- Workers (BLM and ranch workers).
- Recreationists.
- Wildlife.

MC Soil Evaluation/Investigation Needed

- No soil samples will be collected from the larger air-to-air gunnery range because of the size and inability to focus on one specific area to sample. Sampling activities will be focused on the two air-to-ground targets containing the highest density of activity. These two locations are where the highest level of training activity occurred. Air-to-air

gunnery training and unregulated practice bombing was conducted over the entire 795,056-acre FUDS and MC sampling over this larger area would not be productive.

- Three soil samples are proposed to be collected from each of the two target areas near Alkali Lake.
- All samples to be analyzed for select metals (aluminum, chromium, copper, iron, lead, manganese, molybdenum, and nickel). One soil sample from each target area will also be analyzed for explosives including nitroglycerine. The above list of metals for analysis was developed from the expected common components of projectiles, lead and steel (chromium, copper, iron, lead, molybdenum, and nickel). In addition, aluminum and manganese will be analyzed for to aid in background comparisons using geochemical methods.
- Sampling for perchlorate in soils is not warranted. The source for perchlorate would be from incomplete ignition and burning of the perchlorate containing tracers in the 50 caliber ammunition fired from aircraft. While incomplete ignition and burning may occur, once the ammunition reached the surface 60 years of precipitation would have dissolved the perchlorate and no residual would remain in the soil.

Sediment/Surface Water Exposure Pathway

Exposure Routes

- The potential routes of human exposure to contaminated sediment/surface water include incidental ingestion and dermal contact with surface water.
- The potential routes of wildlife (including aquatic organisms) exposure to contaminated sediment/surface water include ingestion of and direct contact with surface water present at or near the AOC.
- A potential exposure point is at Hutton Springs located north of the target areas. The springs are a critical habitat for the Hutton Tui Chub, a threatened species.

Receptors

- Workers (BLM and ranch workers).
- Recreationists.
- Wildlife.

MC Sediment/Surface Water Evaluation/Investigation Needed

- One sediment sample will be collected from ponds or lakes located near each of the two target areas.
- If water is present in the ponds or lakes sampled near the target areas, water samples will be collected.
- One water sample will be collected from Hutton Springs located north of the target areas.
- Sediment samples to be analyzed for select metals (aluminum, chromium, copper, iron, lead, manganese, molybdenum, and nickel) and explosives including nitroglycerine.

- Water samples from small ponds and lakes to be analyzed for select total and dissolved metals (aluminum, chromium, copper, iron, lead, manganese, molybdenum, and nickel), explosives, and perchlorate.
- Water sample from Hutton Springs to be analyzed for perchlorate only.

Groundwater Exposure Pathway

Exposure Routes

- The potential routes of human exposure to contaminated groundwater include ingestion of and dermal contact with groundwater.
- Wildlife exposure to groundwater is not anticipated.
- A potential exposure point for groundwater surfacing is at Hutton Springs located north of the target areas. The springs are a critical habitat for the Tui Chub, a threatened species. Evaluation of the springs is addressed above under the Sediment/Surface Water Exposure Pathway.

Receptors

- Workers (BLM and ranch workers).

MC Groundwater Evaluation/Investigation Needed

- One groundwater sample will be collected from a well located adjacent to the southern target. The well is part of the monitoring well network for the adjacent Alkali Lake Disposal Site.
- The groundwater sample will be analyzed for perchlorate only.
- Analysis for metals will not be completed. Discussions at the TPP meeting indicated that metals in groundwater were not a concern due to the relatively low mobility of the metals in the semi-arid environment at the COGR. In addition, there is a contaminated groundwater plume (phenols, and 2,4-toluenediamene) from a nearby chemical waste disposal site that runs under the two target areas. The plume has degraded the groundwater quality to above accepted regulatory standards.

Air Exposure Pathway

Exposure Routes

- The potential route of human exposure to contaminated air includes inhalation during times of blowing dust.
- The potential route of wildlife exposure to contaminated air includes inhalation of air during times of blowing dust.

Receptors

- Workers (BLM and ranch workers).
- Wildlife.

MC Air Evaluation/Investigation Needed

- No air samples will be collected from the COGR. Analytical results from soil samples will be used in the evaluation of the air pathway. The U.S. Environmental Protection Agency (USEPA) Region 9 Preliminary Remediation Goals (PRGs) (USEPA, 2004) incorporate dust exposure into the values and additional exposure data beyond soil data is not required.

Data Gaps

- SI being performed for the COGR will identify MEC and MC impacts to soil and sediments/surface water at the former range.
- The presence of MEC has been established at the COGR by the discovery of scattered 50-caliber ammunition belts and practice bombs over the 1,242-square mile COGR. The likely source was from being dropped from aircraft flying over the area.
- No other MEC has been reported.

Results of the current status of data requirements with respect to MEC and MC for the AOCs located at the former COGR are summarized below:

AOC	Presence of MEC	Presence of MC	Proposed Inspection Activities
Air-to-Air Gunnery Range (includes air-to-ground training)	Established, scattered finds of 50-caliber ammo belts and practice bombs	Unknown	Collect soil, sediment/surface water, and groundwater samples at target areas to determine presence of MC

Background data for soils have been provided by ODEQ. However, no background data exist for metals in sediments, surface water, or groundwater or for perchlorate in surface water and groundwater.

Proposed Sampling Scheme

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July 17, 2006*

Proposed Field Investigation

The proposed field investigation sampling to be conducted at the former COGR is detailed below. The investigation approach will be defined in more detail in an SSWP that will be submitted to ODEQ and other stakeholders for review. The SSWP will reference technical details including sampling and analytical methods that are described in the *Type I Work Plan, Site Inspections at Multiple Sites*, prepared by Shaw and submitted to USACE as final in February 2006.

Reconnaissance

A visual reconnaissance of the air-to-ground target areas will be performed prior to any sampling. Although MEC is not expected to be present on the land surface, a magnetometer-assisted, visual inspection will be conducted by a qualified UXO technician at proposed sampling locations within the AOC. A global positioning system (GPS) receiver unit will be used to record discovered MEC, munitions debris, and sample point locations. Digital photographs will be taken to document significant features.

Soils

Proposed SI sampling at the two air-to-ground target areas will consist of the collection of six composite surface soil samples. Three soil samples will be collected near each of the two targets. Surface soil samples will be composite samples (7-point, wheel pattern with 2-ft radius). All samples will be analyzed for select metals (aluminum, chromium, copper, iron, lead, manganese, molybdenum, and nickel). One sample from each target area will also be analyzed for explosives including nitroglycerine. The proposed sampling for the COGR is summarized in Table 3.

Sediment/Surface Water

One sediment sample will be collected near each of the two air-to-ground gunnery range targets. Sediment samples will be discrete grab samples. If water is present, one surface water grab sample will be collected from the ponds or lakes sampled for sediment near each of the target areas. The sediment samples will be analyzed for select metals (aluminum, chromium, copper, iron, lead, manganese, molybdenum, and nickel) and explosives. The surface water samples will be analyzed for select metals (aluminum, chromium, copper, iron, lead, manganese, molybdenum, and nickel), explosives including nitroglycerine, and perchlorate. The proposed sampling for the COGR is summarized in Table 3.

One surface water sample will be collected from Hutton Springs to evaluate the potential groundwater to surface water pathway. The sample will be analyzed for perchlorate only.

Groundwater

One groundwater sample will be collected from a monitoring well located near the southern target. The well is part of the Alkali Lake Disposal Site groundwater monitoring network. The sample will be analyzed for perchlorate only.

Analyses

Metals analyses (aluminum, chromium, copper, iron, lead, manganese, molybdenum, and nickel) for soil, sediment, surface water, and groundwater will be by USEPA SW-846 Method 6020A.

Soil and sediment explosives analyses will be by USEPA SW-846 Method 8330A. Nitroglycerin analysis will be by USEPA SW-846 Method 8330A (Modified). Soil and sediment samples may have been impacted by small arms fire will be passed through an ASTM No. 10 (2-mm) wire mesh sieve at the laboratory prior to analysis for metals in order to remove coarser particles and foreign objects, including large metallic fragments from bullets, which have a low degree of bio-availability (Interstate Technical and Regulatory Council, 2003, *Characterization and Remediation of Soils at Closed Small Arms Firing Ranges*).

The surface water samples will be analyzed for select total and dissolved metals by USEPA SW-846 Method 6020A. Surface water samples to be analyzed for explosives will be by USEPA SW-846 Method 8330A. Nitroglycerin analysis will be by USEPA SW-846 Method 8330A (Modified). Water samples to be analyzed for perchlorate will be by liquid chromatography/mass spectrometry (LC/MS) using DataChem Standard Operating Procedure Document Control # LCMS-CL04-Rev 2, *The Determination of Perchlorate in Water, Soil and Biota by LC/MS*, dated July 19, 2006.

Background Sampling

There is existing soil background data for the vicinity. The existing soil background data will be used to develop an upper tolerance limit for comparison of metals soil concentrations at the target areas.

One background sediment sample will be collected from Alkali Lake south of the target areas. The sample will be analyzed for metals. One surface water sample will be collected from Alkali Lake and analyzed for metals and perchlorate. One background groundwater sample will be collected from an upgradient groundwater monitoring well located at the Alkali Lake Disposal Area, and will be analyzed for perchlorate.

During the TPP Meeting it was agreed that a background water sample would be collected from a spring located upgradient and within the same hydrogeologic system as Hutton Springs. At the time of the meeting it was suggested that "XL Spring" may be an appropriate location. However, after evaluation of the spring location it was concluded that the water at the spring was not within the same hydrogeologic system as Hutton Spring. Discussions with the ODEQ, which has done geologic studies for the Alkali Lake Disposal Area, indicated that there was no nearby spring that could be used as a background sample location. It was suggested that a groundwater sample be collected from the nearby "SY" deep well (250 ft below ground surface) (Figure 2) that is thought to penetrate the same aquifer that feeds Hutton Springs via a fault zone. One groundwater sample will be collected from this well and the sample will serve as a background sample for both Hutton Springs and groundwater. The sample will be analyzed for perchlorate only.

The background sediment and water sample data will provide data for direct comparison of sediment and water sample data to background values. Collection of a large data set (i.e. 10 samples) to determine metals background for sediment and surface water is not cost effective when only two sediment samples are to be collected. The proposed background sampling is summarized in Table 3.

TPP Notes and Data Quality Objectives

***Site Inspection
Central Oregon Gunnery Range***

***Technical Project Planning Meeting
July 17, 2006***

Technical Project Planning and Development of Data Quality Objectives

- The USACE TPP process is a four-phase process:
 - Identify the current project,
 - Determine data needs,
 - Develop data collection options, and
 - Finalize data collection program.
- The purpose of TPP is to develop DQOs that document how the project makes decisions.
- DQOs are intended to capture project-specific information such as the intended data use(s), data needs, and how these items will be achieved.
- Information captured through DQOs will be used as a benchmark for determining whether identified objectives are met.

TPP Phases

Phase I: Identify the Current Project

1. Team members identified to date include: USACE – representatives from the Omaha Design Center and the Seattle District, Shaw as a USACE contractor, ODEQ, BLM, and USEPA Region 10.

Question: Is there any person or organization missing from this Team?

Potential need for tribal involvement. USACE to contact local tribe.

2. The one AOC is identified as:

- Air-to-Air Gunnery Range, including the air-to-ground gunnery range.

The ASR Supplement identified the air-to-air gunnery range as the only AOC. However, the air-to-ground range was included in it. The locations of the air-to-air and air-to-ground gunnery ranges are known. Based on information gathered during the TPP meeting, the FUDS was also used for unregulated practice bombing. The air-to-air gunnery range is known to contain MEC, based on a finds of 50-caliber ammunition belts and practice bombs. Explosive MEC has not been located air-to-ground target area. Munitions debris (projectiles and cartridge casings) have been identified at the air-to-ground gunnery range. A RAC score of 4 was assigned to the site. Records indicate that only 50-caliber and 20-mm ammunition were used at the target areas. Records indicate that the range was used on a daily basis.

Question: Are there any other AOCs to be identified?

No additional AOCs.

Does it make sense to separate the air-to-ground range from the air-to-air range?

No.

Is there sufficient evidence that there was a ground-to-air range use at the FUDS and where was it located?

The ground-to-air range was likely used during the 1943 Northwest Maneuvers and will be addressed under that FUDS.

3. Based on information available about the site and shared through discussions with USACE, concerns about this area have been expressed by the ODEQ or USEPA, as well as by landowners.

Question: Are there additional concerns or issues from landowners or other stakeholders regarding the COGR area?

The target areas may be classified as historical sites because of their use for WWII military training. Need to contact the BLM archeologist prior to sampling.

Field work must be performed during the months of mid-May to November because of the likelihood of snow cover in the other months.

Fire restrictions during the summer and early fall months may impact ability to work in the field. Sampling is expected to occur in early November time frame and this is likely not a concern.

Question: Are there any administrative or stakeholder concerns or constraints that would prevent site inspection activities from going forward on the decision path for this site?

None.

Phase II: Determine Data Needs

4. Existing site information includes an ASR and ASR Supplement both prepared by the USACE in 1995 and 2004, respectively.

Question: Are there any other pertinent documents relating to the site available?

*Archeological survey reports to be made available by BLM.
Hazardous Waste Landfill Site reports to be made available by ODEQ.*

Southeast Oregon soil background data to be made available by ODEQ.

5. The site-specific approach for this SI involves collating and assessing available site information, to include site geology, hydrogeology, groundwater, surface water, ecological information, human use/access, and current and future land uses; as well as considering conduct of site inspection and sampling activities.

Question: Are there any other site aspects/information that should be considered?

BLM provided the “Lakeview Resource Management Plan and Record of Decision” (BLM, 2003).

BLM is to provide the Oregon National Guard report for potential use of the site for training activities.

6. Soil is the primary affected medium at the COGR. Sediment/Surface water is a potential pathway of MC because of the existence of livestock grazing in the area. Air is also a potential pathway if soil particles become airborne. Considering current and future land use, primary receptors of any contaminants that may be present would most likely be individuals and animals using the area for ranching and grazing and human recreational activities.

Question: Do team members concur with the CSM?

- **MEC and MC will only be evaluated in the air-to-ground target areas.**
Agreement.
- **MC contaminants of concern are metals.**
Also include explosives in soil, sediment, and water. Include perchlorate in water samples.
- **Exposure pathways are through soils and sediments/surface water.**
Also include air from blowing dust and groundwater (for perchlorate only).

Collect surface water sample from Hutton Springs located north of target areas. Springs contain threatened species (Hutton Tui Chub).

7. Technical considerations and/or constraints need to be identified and addressed before conducting any additional sampling, and would depend on the approach and additional data needs decided upon by team members.

Questions:

- **Are any data missing?**
Yes.
- **What is the nature of needed data?**
Soil, sediment, surface water, and groundwater data.

- **What information is necessary to support a decision of No Department of Defense Action Indicated (NDAI) or further action with regards to MEC. Is reconnaissance during the SI, together with the historical record of a munitions clearance at the time of range closure and a period of approximately 60 years without known MEC-related incidents considered sufficient to determine the need for NDAI versus further action with respect to MEC.**

Agreement.

- **What data gaps would additional data meet for making a decision about the site?**
Make recommendation in SI to look at other locations within the COGR (e.g., report of machine gun practice and ground-to-ground rocket firing, and UXO find in northern portion of COGR) be incorporated into the Northwest Maneuver Area FUDS. The other locations were likely associated with the maneuvers.

- **Are there any considerations/constraints that need to be addressed for collecting additional data?**

None.

Phase III: Develop Data Collection Options

8. Proposed approach:

1. Conduct surface reconnaissance in the air-to-ground gunnery range AOC.
2. Find suitable soil background sample locations (3 total) and sample.
3. Find suitable sediment background sample location (1 total) and sample.
4. Collect three composite soil samples from the each of the two air-to-ground gunnery range targets and analyzed for select metals (aluminum, chromium, copper, iron, lead, manganese, molybdenum, and nickel).
5. Collect sediment sample from two ponds near target areas and analyze for select metals.

Question: Are the stakeholders in agreement with the sampling approach program?

Soil background data to be provided from a USGS study currently being completed. No additional soil background data necessary.

Collect one surface water background sample from Alkali Lake. Collect one water sample from a nearby spring located upgradient from Hutton Springs. Collect one groundwater sample from Oregon State monitoring well located at adjacent Alkali Lake Disposal Site.

Collect one surface water sample from Hutton Springs; the Hutton Tui Chub is a threatened species and potential receptor. Analyze for perchlorate only.

Collect one groundwater sample from nearby groundwater well located downgradient from targets; analyze for perchlorate only.

Sediment background sample to be analyzed for metals only.

Question: Are the stakeholders in agreement with the proposed approach for collecting background data?

Yes.

Phase IV: Finalize Data Collection Program

9. What concentrations of PCOCs (metals and explosives) lead to decision end-points?

Note: Oregon state standards for human health screening values are provided in Tables 4, 5, and 6. Ecological screening toxicity values are provided in Tables 7, 8, and 9.

Question: Are these the correct standards to be applied as screening values for human health and ecological risk assessment?

ODEQ will review and comment in Draft TPP Memorandum.

Question: Are there any additional sampling and analysis methodologies needed for all team members to arrive at a decision end-point?

None.

Question: Given the additional sampling and analysis methodologies, are there impacts to the project schedule that need to be accommodated?

None.

Data Quality Objectives

Upon agreement at the TPP meeting, the following decision rules will be applied with regard to MC sampling results:

- Below risk-based screening levels = NDAI;
- Above risk-based screening levels and background = RI/FS.

The following expanded project objectives have been developed.

Objective 1: Determine if the site requires additional investigation or can be recommended for NDAI based on the presence or absence of MEC.

DQO #1 – Utilizing trained UXO personnel and handheld magnetometers, a visual search of the air-to-ground gunnery range will be conducted searching for physical evidence to indicate the presence of MEC (ammunition belts, MEC on the surface, munitions debris, and soil

discoloration indicative of explosives). The visual search will consist of a meandering path survey along trails and in accessible areas. The following decision rules will apply:

- The following reconnaissance results would support a recommendation for further action with respect to MEC:
 - Direct evidence is found of the presence of MEC, other than incidental small and medium arms rounds, or evidence of potential MEC that is inconsistent with the air-to-ground gunnery range CSM (e.g., debris from munitions other than small and medium arms).
 - Direct evidence of MEC is not found, but abundant munitions debris and/or magnetic anomalies, other than from small or medium arms, are identified suggesting a potential for the presence of unexploded spotting charges or other MEC.
- The following reconnaissance results would support a recommendation for NDAI with respect to MEC:
 - Direct evidence of MEC is not found; isolated munitions debris and/or magnetic anomalies consistent with the air-to-ground gunnery range CSM are identified.
 - No evidence of MEC, munitions debris, or magnetic anomalies are identified.
- If there is indication of an imminent MEC hazard, the site may be recommended for a time-critical removal action.

Objective 2: Determine if the site requires additional investigation or can be recommended for NDAI based on the presence or absence of MC above screening values.

DQO#2 – Soil, sediment, surface water, and groundwater samples will be collected and analyzed as proposed in Table 3. Analytical results will be compared to screening values for human health and ecological risk assessment, and to background values for naturally occurring substances. The following decision rules will apply:

- If sample results are less than human health and ecological screening values, the site will be recommended for NDAI relative to MC.
- If sample results exceed both human health screening values and background values, the site will be recommended for additional investigation.
- If sample results do not exceed human health screening values but do exceed both ecological screening values and background values, additional evaluation of the data will be conducted in conjunction with the stakeholders to determine if additional investigation is warranted.

Objective 3: Obtain data required for HRS scoring.

Data required for HRS scoring are identified in the HRS Data Gaps worksheet.

Objective 4: Obtain data required for MRSPP ranking.

Data required for MRSPP ranking are identified in the MRSPP worksheet.

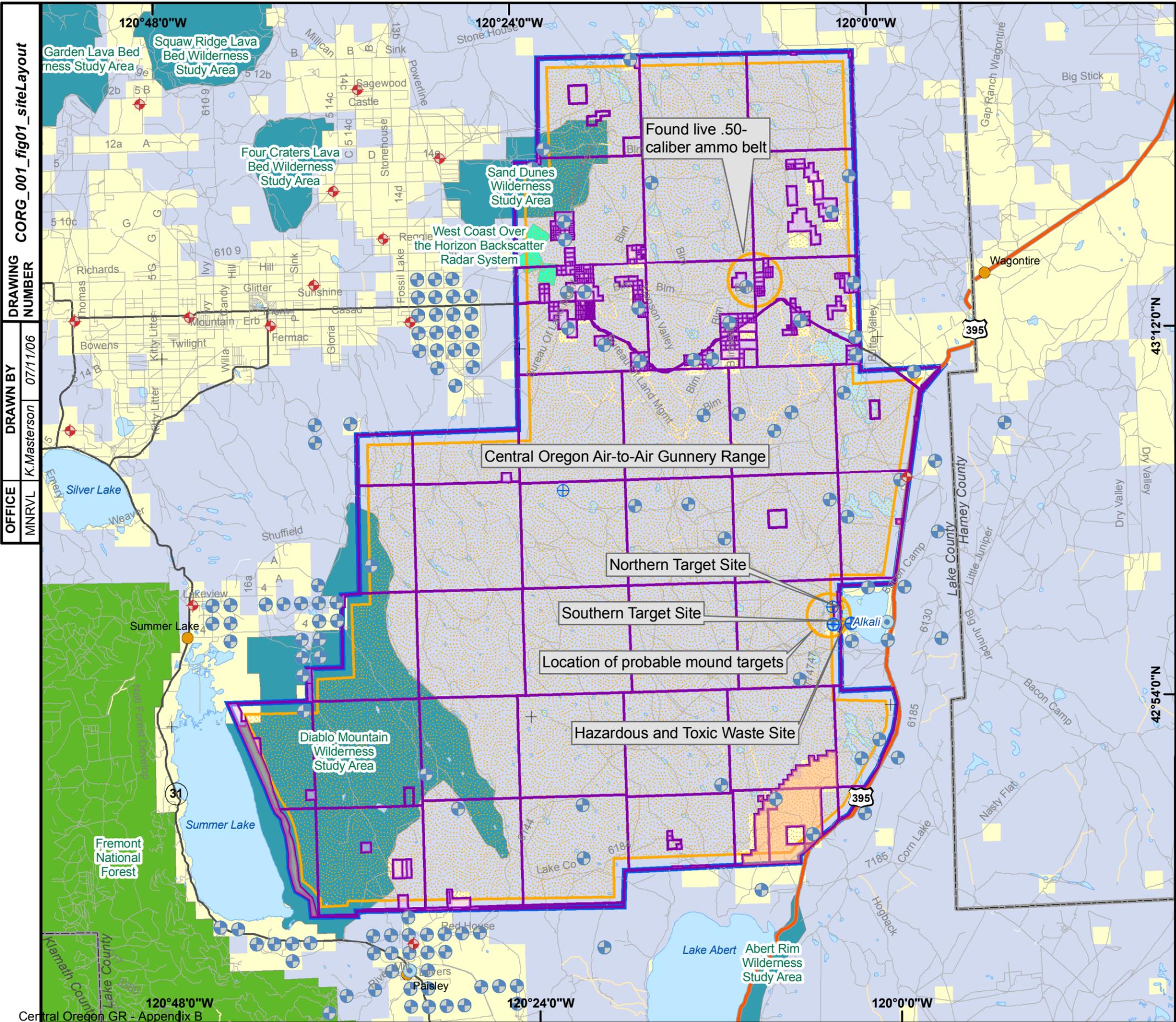
Next Steps

- Shaw will prepare the TPP Memorandum and distribute for concurrence.
- The USACE will provide additional documents identified during the TPP meetings.
- Shaw will prepare the SSWP for review and comment.
- The USACE will provide ROE for landowners.
- Shaw will conduct SI activities.
- Shaw will prepare the SI Report.

Figures

*Site Inspection
Central Oregon Gunnery Range*

*Technical Project Planning Meeting
July 17, 2006*

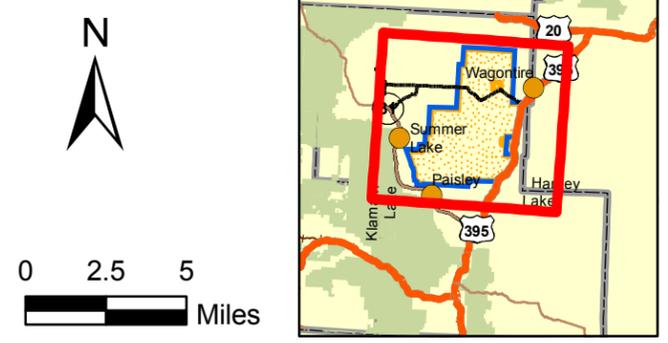


DRAWING NUMBER: CORG_001_fig01_siteLayout
 DRAWN BY: K.Masterson
 DATE: 07/11/06
 OFFICE: MNRVL

Legend

- Central Oregon Gunnery Range Property Boundary
- Central Oregon Air-to-Air Gunnery Range - Area of Concern
- Taxlot Parcel
- Private Land
- STATE OF OREGON
- Air Force DOD
- National Forest FS
- Public Domain Land BLM
- Wilderness Study Area BLM
- Geotechnical Well
- ⊕ Monitoring Well
- + Water Supply Well
- ◆ Well (Water Resources Dept)

- NOTES:**
- 1) MRA/MRS boundary was derived from the Central Oregon Gunnery Range ASR Supplement.
 - 2) Groundwater well data were obtained from Oregon State Water Resources Dept and approximated to the nearest 1200 meters.
 - 3) These ranges are located within the Summer Lake and Lake Abert watersheds.

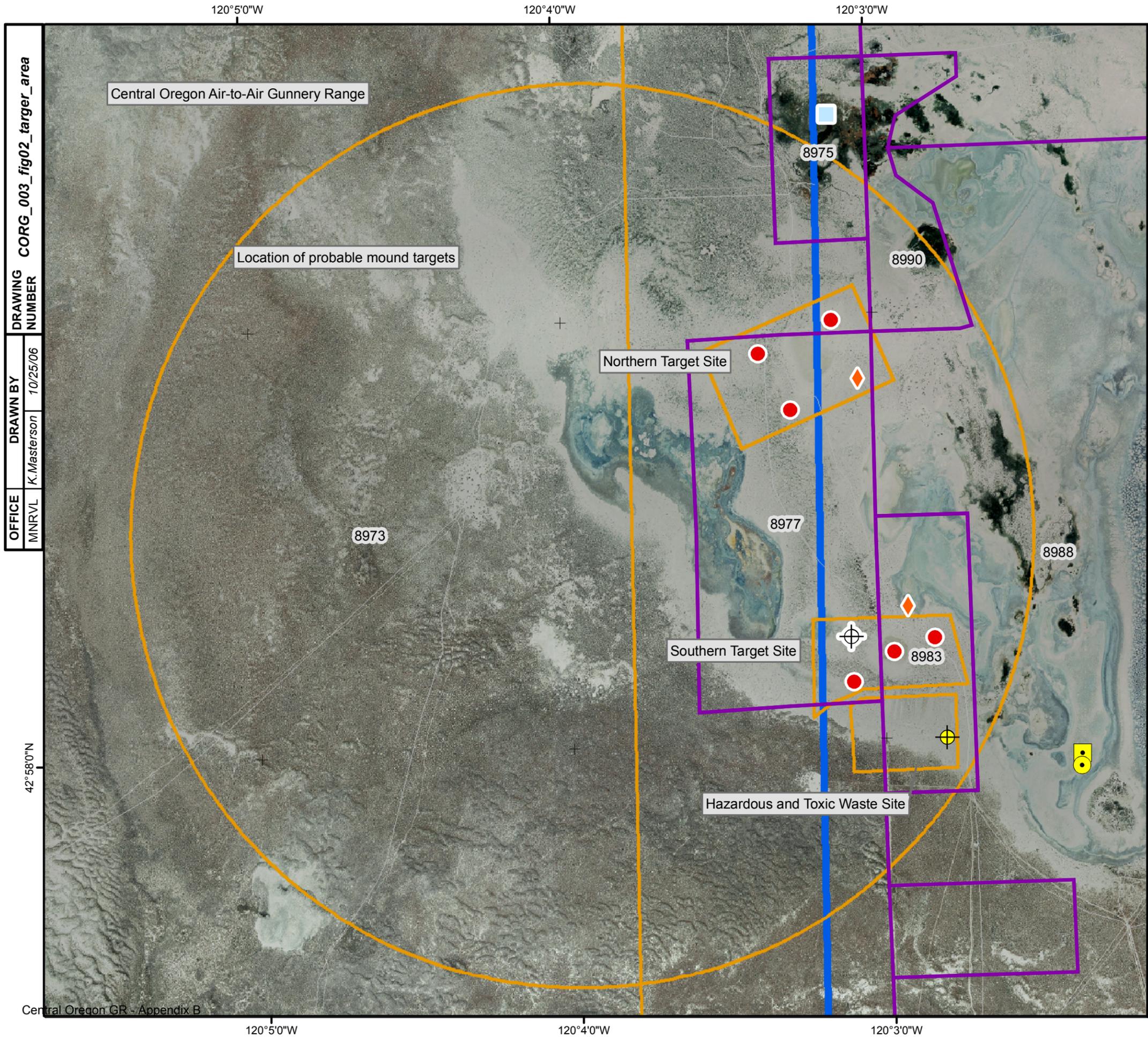


REFERENCE/PROJECTION: NAD 83 UTM Zone 10N

U.S. ARMY CORPS OF ENGINEERS
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FIGURE 1
SITE LAYOUT
 CENTRAL OREGON GUNNERY RANGE

Shaw Environmental, Inc.

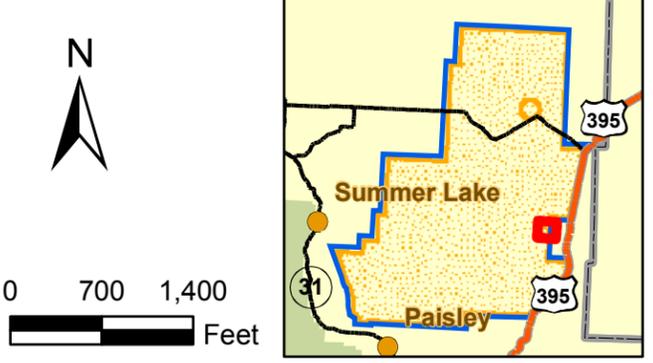


Legend

- Central Oregon Gunnery Range Property Boundary
- Central Oregon Air-to-Air Gunnery Range - AOC
- Taxlot Parcel
- Well (Water Resources Dept)
- Prop Surface Wat
- Proposed Background Surface Water
- Proposed Sediment Sample
- Proposed Background Sediment
- Proposed Soil Sample
- Proposed Background Groundwater Sample
- Proposed Groundwater Sample

NOTES:

- 1) AOC boundaries were derived from the Central Oregon Gunnery Range ASR Supplement.
- 2) Groundwater well data were obtained from Oregon State Water Resources Dept and approximated to the nearest 1200 meters.
- 3) These ranges are located within the Summer Lake and Lake Albert watersheds.
- 4) 2005 Aerial photo was obtained from the Oregon Department of Environmental Quality.



REFERENCE/PROJECTION: NAD 83 UTM Zone 10N

U.S. ARMY CORPS OF ENGINEERS
OMAHA DESIGN CENTER

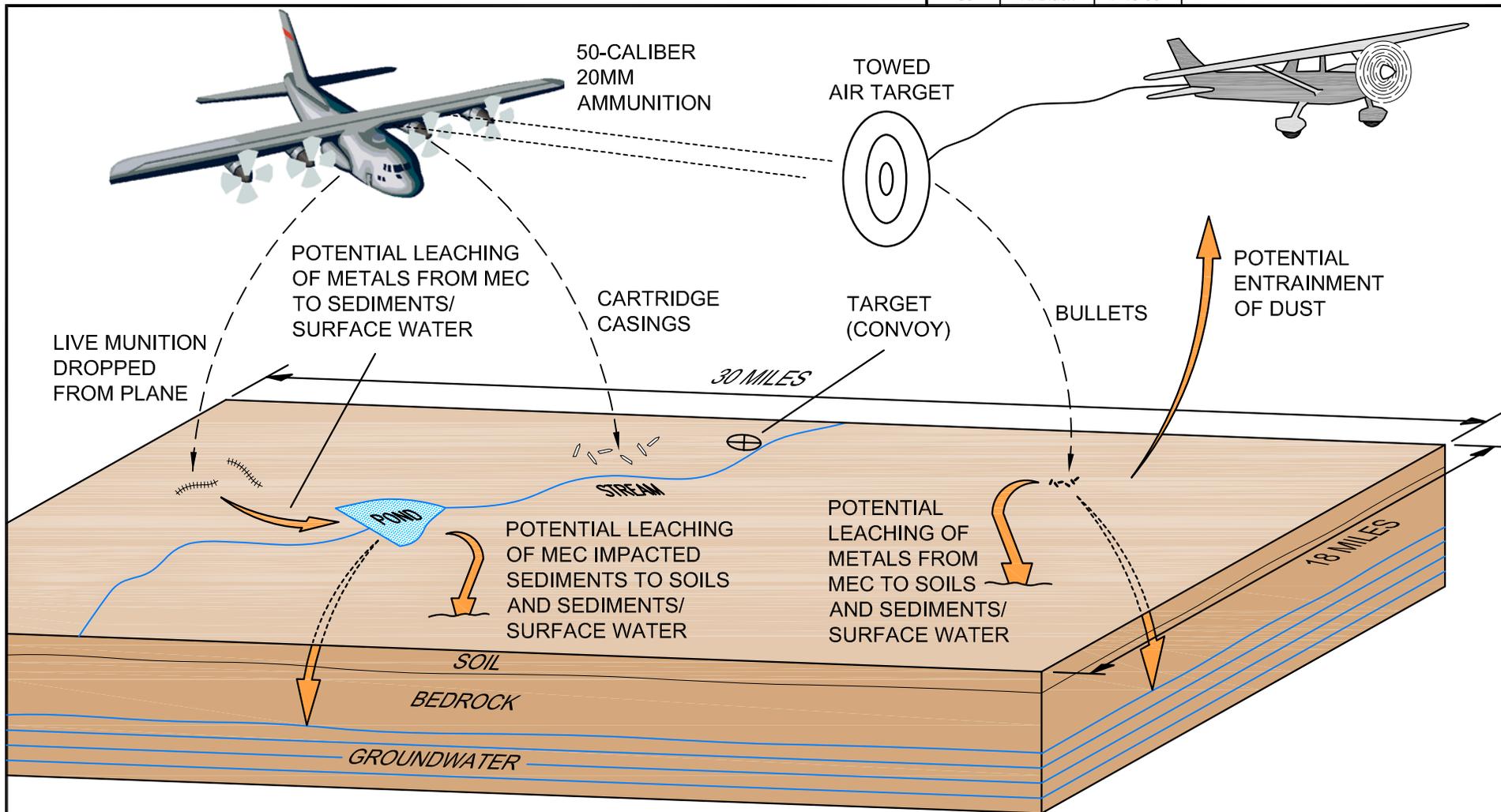
FIGURE 2
AIR TO GROUND TARGET AREAS
CENTRAL OREGON GUNNERY RANGE

Shaw Shaw Environmental, Inc.

OFFICE: MNRVL
 DRAWN BY: K. Masterson
 DRAWING NUMBER: CORG_003_fig02_target_area
 DATE: 10/25/06

OFFICE	DRAWN BY	DRAWING NUMBER
SJ	K. Black	7-15-06

116188SJ-A52



RECEPTORS:

- BLM Workers/Ranch Workers
- Local Residents
- Biota (Wildlife/Livestock)



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FIGURE 3
CONCEPTUAL SITE MODEL
AIR-TO-AIR AND AIR-TO-GROUND
GUNNERY RANGES
CENTRAL OREGON GUNNERY RANGE



Tables

***Site Inspection
Central Oregon Gunnery Range***

***Technical Project Planning Meeting
July 17, 2006***

**Table 1
Potential MEC and MC at Central Oregon Gunnery Range**

Area of Concern	Munitions	Munitions Constituents	Land Use Controls
Air-to-Air Gunnery Range	50-caliber machine gun	Lead, single- (nitrocellulose) or double-base (nitrocellulose and nitroglycerin) propellant, perchlorate	No
	20-mm ball M55A1, MK1	Steel, double-base (nitrocellulose and nitroglycerin) propellant	No
	AN-MK 5, AN-MK 23, and AN-MK 43 practice bombs	Cast iron, sheet metal, 10 gauge shotgun shell with single- (nitrocellulose) or double-base (nitrocellulose and nitroglycerin) propellant, red and white phosphorus	No

**Table 2
MEC and MC Exposure Pathway Analysis**

Range Area & Type	MMRP Concern	Potential Contaminant of Concern (PCOCs)	Affected Media (Potential Contaminant Sources) (Fate and Transport)	Exposure Routes and Potential Receptors			Data Gaps	Activities to Address Data Gaps (i.e., Sampling)
				Site Workers/ Contractor Personnel	Residents/ General Public	Ecological (Biota)		
Air-to-Air Gunnery Range & Air-to-Ground Gunnery Range	MEC	MEC in the form of unfired 50-caliber and 20-mm ammunition may exist within the 795,056-acre range and two target areas. Dud AN-MK 5, AN-Mk23, and AN-MK 43 practice bombs may exist	Surface Soil <ul style="list-style-type: none"> MEC (unfired ammunition or dud practice bombs) are a hazard. MEC found on surface. 	<ul style="list-style-type: none"> Potentially complete pathway. Exposure routes: <ul style="list-style-type: none"> Vehicle & foot traffic. 	<ul style="list-style-type: none"> Potentially complete pathway. Exposure routes: <ul style="list-style-type: none"> Vehicle & foot traffic. 	<ul style="list-style-type: none"> Potentially complete pathway. Exposure routes: <ul style="list-style-type: none"> Foot traffic. 	<ul style="list-style-type: none"> None; MEC has been reported. 	Air-to-Air Gunnery Range <ul style="list-style-type: none"> None; very low likelihood of finding MEC over the 795,056-acre site. Air-to-Ground Gunnery Range <ul style="list-style-type: none"> Visual (magnetometer assisted) reconnaissance of the two target areas.
			Subsurface Soil <ul style="list-style-type: none"> None 	<ul style="list-style-type: none"> Incomplete pathway. 	<ul style="list-style-type: none"> Incomplete pathway. 	<ul style="list-style-type: none"> Not applicable. 	<ul style="list-style-type: none"> None; subsurface burial not documented. 	<ul style="list-style-type: none"> Historical documents do not indicate ranges have buried MEC.
	MC	Metals, explosives, and perchlorate from 50-caliber and 20-mm munitions used on ranges	Soil <ul style="list-style-type: none"> Directly affected media. Potential metals and explosives contamination. Fate & Transport: Secondary source of potential surface water, sediment, and air contamination. 	<ul style="list-style-type: none"> Potentially complete pathway. Exposure routes: <ul style="list-style-type: none"> Incidental ingestion, Dermal contact, and Inhalation of soil particulates during intrusive work. 	<ul style="list-style-type: none"> Potentially complete pathway. 	<ul style="list-style-type: none"> Potentially complete pathway. Exposure routes: <ul style="list-style-type: none"> Ingestion, and Direct contact by area fauna. 	<ul style="list-style-type: none"> Analytical data for metals in soil do not exist. Field data for Screening Level Ecological Risk Assessment do not exist. 	Air-to-Air Gunnery Range <ul style="list-style-type: none"> None, very low likelihood of finding impacted soil over the 795,056-acre site. Air-to-Ground Gunnery Range <ul style="list-style-type: none"> Three composite soil samples will be collected near each target area. Soil samples will be analyzed for metals. One sample from each target area will be analyzed for explosives.
			Sediment/Surface Water <ul style="list-style-type: none"> Potentially affected media – ponds, lakes, and springs. Potential metal and explosive contamination in sediments. Potential perchlorate contamination in surface water Fate & Transport: Via surface runoff from impacted soil. 	<ul style="list-style-type: none"> Potentially complete pathway. Exposure routes: <ul style="list-style-type: none"> Incidental ingestion, Dermal contact, and Inhalation of surface water. 	<ul style="list-style-type: none"> Potentially complete pathway. 	<ul style="list-style-type: none"> Potentially complete pathway. Exposure routes: <ul style="list-style-type: none"> Ingestion, Direct contact by area fauna, and Direct contact by aquatic organisms. 	<ul style="list-style-type: none"> Analytical data for metals and explosives in sediment/surface water do not exist. Analytical data for perchlorate in surface water do not exist. Field data for Screening Level Ecological Risk Assessment do not exist. 	Air-to-Air Gunnery Range <ul style="list-style-type: none"> None; very low likelihood of finding impacted sediment/surface water over the 795,056-acre site. Air-to-Ground Gunnery Range <ul style="list-style-type: none"> Two sediment samples will be collected from nearby ponds. Samples will be analyzed for metals and explosives. Surface water samples from ponds will be analyzed for metals and explosives Sample from Hutton Springs will be analyzed for perchlorate only.
			Groundwater <ul style="list-style-type: none"> Potentially affected media. Potential perchlorate contamination. Upward flow gradient from deeper aquifer to shallow water bearing zone and surface water and springs. Fate & Transport: Migration of perchlorate directly to groundwater is possible because of high solubility of perchlorate. Transport of metals to groundwater is unlikely because of the low solubility of metals. Transport of explosives to groundwater is unlikely because of assumed low concentrations of explosives in soils. Firing was done from aircraft not from ground. 	<ul style="list-style-type: none"> Potentially complete pathway. Exposure routes: <ul style="list-style-type: none"> Incidental ingestion, Dermal contact 	<ul style="list-style-type: none"> Potentially complete pathway. 	<ul style="list-style-type: none"> Potentially complete pathway. Exposure routes: <ul style="list-style-type: none"> Incidental ingestion, Dermal contact 	<ul style="list-style-type: none"> No groundwater analytical data exist for perchlorate. 	<ul style="list-style-type: none"> One groundwater sample will be collected from a nearby well and analyzed for perchlorate.
			Air <ul style="list-style-type: none"> Potentially affected media from blowing soil and dust. 	<ul style="list-style-type: none"> Potentially complete pathway. Exposure routes: <ul style="list-style-type: none"> Inhalation 	<ul style="list-style-type: none"> Potentially complete pathway. 	<ul style="list-style-type: none"> Potentially complete pathway. Exposure routes: <ul style="list-style-type: none"> Inhalation 	<ul style="list-style-type: none"> No soil analytical data to evaluate dust impacts. 	<ul style="list-style-type: none"> Will use soil analytical data in risk screening.

**Table 3
Proposed Sampling Approach**

Area of Concern	Media	Contaminants of Concern			Comments
		Metals *	Explosives**	Perchlorate	
Air-to-Air and Air-to-Ground Gunnery Range	Soil	6	2	--	Air-to-Air Gunnery Range - No sampling; very low likelihood of finding impacted soil over the 795,056-acre site. Air-to-Ground Gunnery Range - MC not previously assessed. Composite soil samples will be collected around the target areas.
	Sediment	2	2	--	Air-to-Air Gunnery Range - No sampling; very low likelihood of finding impacted sediment over the 795,056-acre site. Air-to-Ground Gunnery Range - Sediment samples will be collected from nearby ponds.
	Surface Water	2	2	3	Air-to-Air Gunnery Range - No sampling; very low likelihood of finding impacted surface water over the 795,056-acre site. Air-to-Ground Gunnery Range - Surface water samples will be collected from nearby ponds if water is present. One sample to be collected from nearby Hutton Springs and analyzed for perchlorate only.
	Groundwater	--	--	1	Sample from nearby Alkali Lake Disposal Site monitoring well.
Background	Soil	--	--	--	Existing soil background data set will be used.
	Sediment	1	--	--	Sediment background sample will be collected from Alkali Lake.
	Surface Water	1	--	2	Surface water sample will be collected from Alkali Lake for metals and perchlorate. Background sample for Hutton Springs will be collected from the background groundwater sample well ("SY" Well). Well is thought to be completed in same aquifer as spring source water. Sample analyzed for perchlorate only.
	Groundwater	--	--	2	Collect from nearby State of Oregon well ("SY" well), and an upgradient well located in the Hazardous Waste Disposal Area, and analyze for perchlorate only.
Sample Totals		12	6	7	

Notes:

* Metals to be analyzed include aluminum, chromium, copper, iron, lead, manganese, molybdenum, and nickel.

** Explosives analysis will include nitroglycerin.

Quality control samples will be addressed in the SSWP.

Surface soil samples are composite samples (7-point, wheel pattern with 2-foot radius). All other samples are discrete grab samples.

Table 4
Human Health Soil/Sediment Screening Values at Oregon Sites ^a

Potential Contaminant of Concern	Abbreviation	CAS No.	Laboratory Method Detection Limit (mg/kg)	USEPA Region 9 Human Health Screening Values		
				Residential PRG ^b (mg/kg)	SSLs ^c DAF=1 (mg/kg)	SSLs ^c DAF=20 (mg/kg)
Hexahydro-1,3,5-trinitro-1,3,5-triazine	RDX	121-82-4	0.075	4.4		
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine	HMX	2691-41-0	0.050	3,100		
2,4,6-Trinitrotoluene	2,4,6-TNT	118-96-7	0.040	16		
1,3,5-Trinitrobenzene	1,3,5-TNB	99-35-4	0.020	1,800		
1,3-Dinitrobenzene	1,3-DNB	99-65-0	0.020	6.1		
2,4-Dinitrotoluene ^d	2,4-DNT	121-14-2	0.040	0.72	0.00004	0.0008
2,6-Dinitrotoluene ^d	2,6-DNT	606-20-2	0.040	0.72	0.00004	0.0008
2-Amino-4,6-dinitrotoluene	2-Am-DNT	35572-78-2	0.040	12		
2-Nitrotoluene	2-NT	88-72-2	0.075	0.88		
3-Nitrotoluene	3-NT	99-08-1	0.050	730		
4-Amino-2,6-dinitrotoluene	4-Am-DNT	19406-51-0	0.040	12		
4-Nitrotoluene	4-NT	99-99-0	0.040	12		
Nitrobenzene	NB	98-05-3	0.020	20	0.007	0.1
Methyl-2,4,6-trinitrophenylnitramine	Tetryl	479-45-8	0.065	610		
Nitroglycerin	NG	55-63-0	10	35		
Aluminum	Al	7429-90-5	20.0	76,000		
Chromium ^e	Cr	7440-47-3	1.0	210	2	38
Copper	Cu	7440-50-8	1.0	3,100		
Iron	Fe	7439-89-6	15.0	23,000		
Lead	Pb	7439-92-1	1.0	400		
Manganese	Mn	7439-96-5	0.5	1,800		
Molybdenum	Mo	7439-98-7	0.5	390		
Nickel	Ni	7440-02-0	1.0	1,600	7	130

DAF = Dilution Attenuation Factor

MDL = Method Detection Limit

PQL = Practical Quantitation Limit

PRG = Preliminary Remediation Goal

QA/QC = Quality Assurance/Quality Control

SSL = Soil Screening Level

mg/kg = milligrams per kilogram.

^a Screening value is shown in bold face if it is less than the PQL. If the laboratory cannot achieve PQL at or below the screening values with routine methodology, as supported by MDLs that are no greater than 1/3 PQL, the laboratory's PQL must be identified in the Analytical Data QA/QC Report as failing to meet the applicable screening value. Some screening values cannot be obtained with routine methodology. In those cases, the PQL achievable by routine methodology is acceptable..

^b PRGs from EPA Region 9 PRG Table dated October 2004 and addendum dated 28 December 2004, based on single chemical.

^c SSLs from EPA Region 9 PRG Table dated October 2004 and revision note dated 28 December 2004.

^d Carcinogenic DNT mixture values used if more conservative than noncarcinogenic isomer-specific values.

^e Total chromium values used.

Table 5
Human Health Surface Water Screening Values at Oregon Sites ^a

Analyte	Abbreviation	CAS Number	Laboratory Method Detection Limit (µg/L)	USEPA Region 9 Tap Water PRG ^b (µg/L)	Oregon DEQ Water Quality Criteria ^c	
					Water and Fish Ingestion ^d (µg/L)	Fish Consumption Only ^e (µg/L)
Hexahydro-1,3,5-trinitro-1,3,5-triazine	RDX	121-82-4	0.8	0.61		
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine	HMX	2691-41-0	0.4	1,800		
2,4,6-Trinitrotoluene	2,4,6-TNT	118-96-7	0.3	2.2		
1,3,5-Trinitrobenzene	1,3,5-TNB	99-35-4	0.2	1,100		
1,3-Dinitrobenzene	1,3-DNB	99-65-0	0.2	3.6		
2,4-Dinitrotoluene ^f	2,4-DNT	121-14-2	0.3	0.099	0.11 ^g	9.1 ^g
2,6-Dinitrotoluene ^f	2,6-DNT	606-20-2	0.3	0.099		
2-Amino-4,6-dinitrotoluene	2-Am-DNT	35572-78-2	0.2	7.3		
2-Nitrotoluene	2-NT	88-72-2	0.4	0.049		
3-Nitrotoluene	3-NT	99-08-1	0.8	120		
4-Amino-2,6-dinitrotoluene	4-Am-DNT	19406-51-0	0.2	7.3		
4-Nitrotoluene	4-NT	99-99-0	0.4	0.66		
Nitrobenzene	NB	98-05-3	0.2	3.4	19,800	
Nitroglycerin	NG	55-63-0	0.75	4.8		
Methyl-2,4,6-trinitrophenylnitramine	Tetryl	479-45-8	1.3	360		
Aluminum	Al	7429-90-5	6.0E-02	36,000		
Chromium ^h	Cr	7440-47-3	2.0E-03	110	50	
Copper	Cu	7440-50-8	3.0E-03	1,500		
Iron	Fe	7439-89-6	5.0E-02	11,000	300	
Lead	Pb	7439-92-1	1.0E-03		50	
Manganese	Mn	7439-96-5	2.0E-03	880	50	100
Molybdenum	Mo	7439-98-7	5.0E-03	180		
Nickel	Ni	7440-02-0	1.0E-03	730	13.4	100
Perchlorate	ClO ₄	14797-73-0	3.0	24 ⁱ		

MCL = Maximum Contaminant Level

MDL = Method Detection Limit

PQL = Practical Quantitation Limit

PRG = Preliminary Remediation Goal

QA/QC = Quality Assurance/Quality Control

µg/L = micrograms per liter

^a Screening value is shown in bold face if it is less than the PQL. If the laboratory cannot achieve PQL at or below the screening values with routine methodology, as supported by MDLs that are no greater than 1/3 PQL, the laboratory's PQL must be identified in the Analytical Data QA/QC Report as failing to meet the applicable screening value. Some screening values cannot be obtained with routine methodology. In those cases, the PQL achievable by routine methodology is acceptable.

^b EPA Region 9 PRG Table dated October 2004 and revision note dated 28 December 2004, based on single chemical.

^c Values from Oregon DEQ Water Quality Criteria (OAR 340 Division 41, Table 20).

^d Values represent the maximum ambient water concentration for consumption of both contaminated water and fish or other aquatic organisms.

^e Values represent the maximum ambient water concentration for consumption of fish or other aquatic organisms.

^f Carcinogenic DNT mixture values used if more conservative than noncarcinogenic isomer-specific values.

^g Value is based on a cancer risk of 1.0 x 10⁻⁶.

^h Because the form of chromium has not yet been determined, the values for Chromium VI are used as a conservative measure.

ⁱ Value based on memorandum from Department of Defense entitled "Policy on DoD Required Actions Related to Perchlorate", dated 26 January 2006.

Table 6
Human Health Groundwater Screening Values at Oregon Sites ^a

Potential Contaminant of Concern	Abbreviation	CAS No.	Laboratory Method Detection Limit (µg/L)	USEPA Region 9 Tap Water PRG ^b (µg/L)	Federal Drinking Water Criteria MCLs ^c (µg/L)
Hexahydro-1,3,5-trinitro-1,3,5-triazine	RDX	121-82-4	0.8	0.61	
Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine	HMX	2691-41-0	0.4	1,800	
2,4,6-Trinitrotoluene	2,4,6-TNT	118-96-7	0.3	2.2	
1,3,5-Trinitrobenzene	1,3,5-TNB	99-35-4	0.2	1,100	
1,3-Dinitrobenzene	1,3-DNB	99-65-0	0.2	3.6	
2,4-Dinitrotoluene ^d	2,4-DNT	121-14-2	0.3	0.099	
2,6-Dinitrotoluene ^d	2,6-DNT	606-20-2	0.3	0.099	
2-Amino-4,6-dinitrotoluene	2-Am-DNT	35572-78-2	0.2	7.3	
2-Nitrotoluene	2-NT	88-72-2	0.4	0.049	
3-Nitrotoluene	3-NT	99-08-1	0.8	120	
4-Amino-2,6-dinitrotoluene	4-Am-DNT	19406-51-0	0.2	7.3	
4-Nitrotoluene	4-NT	99-99-0	0.4	0.66	
Nitrobenzene	NB	98-05-3	0.2	3.4	
Methyl-2,4,6-trinitrophenylnitramine	Tetryl	479-45-8	0.75	360	
Nitroglycerin	NG	55-63-0	0.5	4.8	
Aluminum	Al	7429-90-5	6.0E-02	36,000	50 ^e
Chromium ^f	Cr	7440-47-3	2.0E-03	110	100
Copper	Cu	7440-50-8	3.0E-03	1,500	1,000 ^e 1,300 ^g
Iron	Fe	7439-89-6	5.0E-02	11,000	300 ^e
Lead	Pb	7439-92-1	1.0E-03		15 ^g
Manganese	Mn	7439-96-5	2.0E-03	880	50 ^e
Molybdenum	Mo	7439-98-7	5.0E-03	180	
Nickel	Ni	7440-02-0	1.0E-03	730	
Perchlorate	ClO ₄	14797-73-0	3.0	24 ^h	

MCL = Maximum Contaminant Level
MDL = Method Detection Limit
PQL = Practical Quantitation Limit
PRG = Preliminary Remediation Goal
QA/QC = Quality Assurance/Quality Control
µg/L = micrograms per liter

^a Screening value is shown in bold face if it is less than the PQL. If the laboratory cannot achieve PQL at or below the screening values with routine methodology, as supported by MDLs that are no greater than 1/3 PQL, the laboratory's PQL must be identified in the Analytical Data QA/QC Report as failing to meet the applicable screening value. Some screening values cannot be obtained with routine methodology. In those cases, the PQL achievable by routine methodology is acceptable.

^b EPA Region 9 PRG Table dated October 2004 and revision note dated 28 December 2004, based on single chemical.

^c Primary MCL from the 2004 Edition of the Drinking Water Standards and Health Advisories, dated Winter 2004, unless otherwise indicated.

^d Carcinogenic DNT mixture values used if more conservative than noncarcinogenic isomer-specific values.

^e Secondary MCL from the 2004 Edition of the Drinking Water Standards and Health Advisories, dated Winter 2004.

^f Total chromium values used if available.

^g Action level from the 2004 Edition of the Drinking Water Standards and Health Advisories, dated Winter 2004.

^h Value based on memorandum from Department of Defense entitled "Policy on DoD Required Actions Related to Perchlorate", dated 26 January 2006.

Table 7
Selection of Ecological Soil Screening Toxicity Values for Constituents of Potential Ecological Concern (Oregon Sites)

Parameter	ODEQ Level II Screening Level ^a	Proposed Benchmarks											Potential Bioaccumulative Constituent? ^h	Final Ecological Screening Value Soil ⁱ (mg/kg)	Practical Quantitation Limit (mg/kg)	
	Lowest Value for Plants/Inverts./ Birds/Mammals (mg/kg)	Region 5 ESLs ^b (2003) (mg/kg)	Dutch intervention value (2000) (mg/kg)	Adjusted Dutch intervention (mg/kg)	Region 7 ^c (mg/kg)	Region 8 ^d (mg/kg)	Region 10 ^e (mg/kg)	Other Values: Talmage et al. (1999) ^f or LANL (2005) ^g (mg/kg)								
Metals/Inorganics																
Aluminum	50	NVA			50	EPA-R4	NVA		50		EPA-R4	5.5	LANL		50	20.0
Chromium (total)	0.4	0.4			26	SSL	26	SSL	26		SSL	2.3	LANL	Yes	0.4	1.0
Copper	50	5.4	190	19	60	ORNL	190	Dutch	60		ORNL	10	LANL	Yes	50	1.0
Iron	10	NVA			200	EPA-R4	NVA		200	200	EPA-R4	NVA			10	15.0
Lead	16	0.0537	530	53	11	SSL	11	SSL	11		SSL	14	LANL	Yes	16	1.0
Manganese	100	NVA			100	EPA-R4	NVA		100		EPA-R4	50	LANL		100	0.5
Molybdenum	2	NVA			2	ORNL	2	ORNL	2	2	ORNL	NVA			2	0.5
Nickel	30	13.6	210	21	30	ORNL	30	ORNL	30		ORNL	20	LANL	Yes	30	1.0
Explosives																
2,4-Dinitrotoluene	NVA	1.28			1.28	EPA-R4	NVA		1.28		EPA-R4	0.52	LANL		1.28	0.040
2,6-Dinitrotoluene	NVA	0.0328			0.0328	EPA-R4	NVA		0.0328		EPA-R4	0.37	LANL		0.0328	0.040
2-Amino-4,6-Dinitrotoluene	NVA	NVA			NVA	NVA	NVA		NVA	NVA		2.1	LANL		2.1	0.040
4-Amino-2,6-Dinitrotoluene	NVA	NVA			NVA	NVA	NVA		NVA	NVA		0.73	LANL		0.73	0.040
1,3-Dinitrobenzene	NVA	0.655			0.655	EPA-R4	NVA		0.655		EPA-R4	0.073	LANL		0.655	0.020
HMX	NVA	NVA			NVA	NVA	NVA		NVA	NVA		27	LANL		27	0.050
Nitrobenzene	8	1.31			1.31	EPA-R4	NVA		1.31		EPA-R4	2.2	LANL		8	0.020
RDX	NVA	NVA			NVA	NVA	NVA		NVA			7.5	LANL		7.5	0.075
1,3,5-Trinitrobenzene	NVA	0.376			0.376	EPA-R4	NVA		0.376		EPA-R4	6.6	LANL		0.376	0.020
2,4,6-Trinitrotoluene	NVA	NVA			NVA	NVA	NVA		NVA	NVA		6.4	LANL		6.4	0.040
2-Nitrotoluene	NVA	NVA			NVA	NVA	NVA		NVA			2.0	LANL		2.0	0.075
3-Nitrotoluene	NVA	NVA			NVA	NVA	NVA		NVA			2.4	LANL		2.4	0.050
4-Nitrotoluene	NVA	NVA			NVA	NVA	NVA		NVA			4.4	LANL		4.4	0.040
Nitroglycerin	NVA	NVA			NVA	NVA	NVA		NVA			71	LANL		71	10
Tetryl	NVA	NVA			NVA	NVA	NVA		NVA			0.99	LANL		0.99	0.065

NVA: No value available

^a Oregon Department of Environmental Quality Screening Level Values (December 2001).

^b Ecological Screening Levels (ESLs), US EPA Region V, August 2003.

^c USEPA Region 7: Catherine Wooster-Brown (Eco Risk Assessor) recommends the following hierarchy: USEPA EcoSSLs; ORNL Efrogmson values; USEPA Region 4 values; other published values.

^d USEPA Region 8: Dale Hoff (Eco Risk Assessor) recommends the following hierarchy: USEPA SSLs; Dutch Intervention Values or ORNL Efrogmson values.

^e USEPA Region 10: Joseph Goulet (Eco Risk Assessor) says Region 10 has no recommended hierarchy, therefore, values from the USEPA Region 7 Approach were used.

^f Talmage, S.S., D.M. Opresko, C.J. Maxwell, C.J.E. Welsh, F.M. Cretella, P.H. Reno, and F.B. Daniel, 1999. Nitroaromatic Munition Compounds: Environmental Effects and Screening Values, **Rev. Environ. Contam. Toxicol.**

^g Los Alamos National Laboratory (LANL), Eco Risk Database, Release 2.2, September 2005.

^h Potential bioaccumulative constituents will be evaluated in more detail, as some screening values do not take into account bioaccumulation.

Potential bioaccumulative potential from: *Bioaccumulation and Interpretation for the Purposes of Sediment Quality Assessment: Status and Needs* (USEPA, 2000) and ODEQ EQSLVs (ODEQ, 2001).

ⁱ Final Screening Value selected using the following hierarchy:

1. State Value (Oregon)
2. USEPA Region State Located In (USEPA Region 10)
3. Lower of Talmage et al. (1999) or LANL (2005) values.

EPA-R4=USEPA Region 4

LANL= Los Alamos National Laboratory

SSL=USEPA Eco Soil Screening Levels

Dutch=Dutch Intervention Values

ORNL= Oak Ridge National Laboratory Ecological PRGs (Efrogmson et al)

Other References:

U.S. Environmental Protection Agency, 2005. *Guidance for Developing Ecological Soil Screening Levels (Eco-SSLs)* . Office of Solid Waste and Emergency Response, Website version last updated March 15, 2005: <http://www.epa.gov/ecotox/ecoss/>.

U.S. Environmental Protection Agency, 2001. *Supplemental Guidance to RAGS: Region 4 Bulletins, Ecological Risk Assessment* . Originally published November 1995.

Website version last updated November 30, 2001: <http://www.epa.gov/region4/waste/ots/ecolbul.htm>.

Efrogmson, R.A., Suter II, G.W., Sample, B.E. and Jones, D.S., 1997. Preliminary Remediation Goals for Ecological Endpoints. Lockheed Martin Energy Systems, Inc. (ORNL) ES/ER/TM-162/R2.

Dutch Intervention Values:

Swartjes, F.A. 1999. *Risk-based Assessment of Soil and Groundwater Quality in the Netherlands: Standards and Remediation Urgency* . Risk Analysis 19(6): 1235-1249

The Netherlands Ministry of Housing, Spatial Planning and Environment's Circular on target values and intervention values for soil remediation http://www2.minvrom.nl/Docs/international/S_I2000.pdf and Annex A:

Target Values, Soil Remediation Intervention Values and Indicative Levels for Serious Contamination http://www2.minvrom.nl/Docs/international/annexS_I2000.pdf were also consulted.

Table 8
Selection of Ecological Sediment Screening Toxicity Values for Constituents of Potential Ecological Concern (Oregon Sites)

Parameter	ODEQ Screening Level Values ^a (mg/kg) Freshwater	Region 5 Ecological Screening Levels ^b (mg/kg)	EPA Region 7 ^c (mg/kg)	EPA Region 8 ^d (mg/kg)	EPA Region 10 ^e (mg/kg)	Other Ecological Screening Levels ^f (mg/kg)	Potential Bioaccumulative Constituent? ^g	Final Ecological Screening Value Sediment ^h (mg/kg)	Practical Quantitation Limit (mg/kg)				
Metals/Inorganics													
Aluminum	NVA	NVA	NVA	NVA	NVA	NVA		2.80E+02	LANL	2.80E+02	20.0		
Chromium	3.70E+01	4.34E+01	4.34E+01	MAC	4.34E+01	MAC	4.34E+01	MAC	5.60E+01	LANL	Yes	3.70E+01	1.0
Copper	1.00E+01	3.16E+01	3.16E+01	MAC	3.16E+01	MAC	3.16E+01	MAC	1.70E+01	LANL	Yes	1.00E+01	1.0
Iron	NVA	NVA	NVA	NVA	NVA	NVA	NVA	2.00E+01	LANL			2.00E+01	15.0
Lead	3.50E+01	3.58E+01	3.58E+01	MAC	3.58E+01	MAC	3.58E+01	MAC	2.70E+01	LANL	Yes	3.50E+01	1.0
Manganese	1.10E+03	NVA	NVA	NVA	NVA	NVA	NVA	7.20E+02	LANL			1.10E+03	0.5
Molybdenum	NVA	NVA	NVA	NVA	NVA	NVA	NVA	NVA				NVA	0.5
Nickel	1.80E+01	2.27E+01	2.27E+01	MAC	2.27E+01	MAC	2.27E+01	MAC	3.90E+01	LANL	Yes	1.80E+01	1.0
Explosives													
RDX	NVA	NVA	NVA	NVA	NVA	NVA	NVA	1.30E-01	TAL			1.30E-01	0.075
HMX	NVA	NVA	NVA	NVA	NVA	NVA	NVA	4.70E-02	TAL			4.70E-02	0.050
1,3,5-Trinitrobenzene	NVA	NVA	NVA	NVA	NVA	NVA	NVA	2.40E-02	TAL			2.40E-02	0.020
1,3-Dinitrobenzene	NVA	8.61E-03	NVA	NVA	NVA	NVA	NVA	6.70E-02	TAL			6.70E-02	0.020
2,4-Dinitrotoluene	NVA	1.44E-03	NVA	NVA	NVA	NVA	NVA	2.90E-01	LANL			2.90E-01	0.040
2,6-Dinitrotoluene	NVA	3.98E-03	NVA	NVA	NVA	NVA	NVA	1.90E+00	LANL			1.90E+00	0.040
2,4,6-TNT	NVA	NVA	NVA	NVA	NVA	NVA	NVA	9.20E-01	TAL			9.20E-01	0.040
2-Amino-4,6,-Dinitrotoluene	NVA	NVA	NVA	NVA	NVA	NVA	NVA	7.00E+00	LANL			7.00E+00	0.040
4-Amino-2,6,-Dinitrotoluene	NVA	NVA	NVA	NVA	NVA	NVA	NVA	1.90E+00	LANL			1.90E+00	0.040
2-Nitrotoluene	NVA	NVA	NVA	NVA	NVA	NVA	NVA	5.60E+00	LANL			5.60E+00	0.075
3-Nitrotoluene	NVA	NVA	NVA	NVA	NVA	NVA	NVA	4.90E+00	LANL			4.90E+00	0.050
4-Nitrotoluene	NVA	NVA	NVA	NVA	NVA	NVA	NVA	1.00E+01	LANL			1.00E+01	0.040
Nitrobenzene	NVA	1.45E-01	NVA	NVA	NVA	NVA	NVA	3.20E+01	LANL			3.20E+01	0.020
Nitroglycerin	NVA	NVA	NVA	NVA	NVA	NVA	NVA	1.70E+03	LANL			1.70E+03	10
Tetryl	NVA	NVA	NVA	NVA	NVA	NVA	NVA	1.00E+02	LANL			1.00E+02	0.065

NVA = No Value Available

^a Oregon Department of Environmental Quality Screening Level Values (December 2001).

^b Ecological Screening Levels (ESLs), USEPA Region V, August 2003.

^c USEPA Region 7: Catherine Wooster-Brown (Eco Risk Assessor) recommends the following hierarchy: MacDonald Consensus Values (MacDonald, 2000); ORNL Efrogmson values (ORNL, 1977).

^d USEPA Region 8: Dale Hoff (Eco Risk Assessor) recommends the following hierarchy: MacDonald Consensus Values (MacDonald, 2000); Canadian ISQG values (CCME, 2003) or ORNL Efrogmson values (ORNL, 1977).

^e USEPA Region 10: Joseph Goulet (Eco Risk Assessor) says Region 10 has no recommended hierarchy, therefore, values from the USEPA Region 7 Approach were used.

^f Talmage, S.S., D.M. Opresko, C.J. Maxwell, C.J.E. Welsh, F.M. Cretella, P.H. Reno, and F.B. Daniel (TAL), 1999, *Nitroaromatic Munition Compounds: Environmental Effects and Screening Values*, **Rev. Environ. Contam. Toxicol.** or Los Alamos National Laboratory (LANL), Eco Risk Database, Release 2.2, September 2005.

^g Potential bioaccumulative constituents will be evaluated in more detail, as some screening values do not take into account bioaccumulation.

^h Potential bioaccumulative potential from: *Bioaccumulation and Interpretation for the Purposes of Sediment Quality Assessment: Status and Needs* (USEPA, 2000) and ODEQ EQSLVs (ODEQ, 2001).

^h Final Screening Value selected using the following hierarchy:

1. State Value (Oregon)
2. USEPA Region State Located In (USEPA Region 10)
3. Lower of Talmage et al. [TAL] (1999) or LANL (2005) values.

Note: The Talmage [TAL] screening values assume 10% organic carbon in the sediment.

MAC=MacDonald Consensus Values
 EPRGs=Oak Ridge National Laboratory Ecological PRGs
 ISQGs=Canadian Interim Sediment Quality Guideline:
 LANL=Los Alamos National Laboratory
 TAL=Talmage et al (1999)

Other References:

Efrogmson, R.A., et al., 1997, *Preliminary Remediation Goals* (EPRGs), ORNL, ES/ER/TM-162/R2,
 Canadian Interim Sediment Quality Guidelines (ISQGs) Summary Table, CCME, December 2003

MacDonald, D.D, C.G. Ingersoll and T.A. Berger, 2000, *Development and Evaluation of Consensus-Based Sediment Quality Criteria for Freshwater Ecosystems*, Archives of Environmental Contamination and Toxicology 39:20-31

Table 9
Selection of Ecological Surface Water Screening Toxicity Values for Constituents of Potential Ecological Concern (Oregon Sites)

Parameter	ODEQ Screening Level Values ^a (mg/L) Freshwater	Region 5 Ecological Screening Levels ^b (mg/L)	EPA Region 7 ^c (mg/L)		EPA Region 8 ^d (mg/L)		EPA Region 10 ^e (mg/L)		Other Ecological Screening Values ^f (mg/L)		Potential Bioaccumulative Constituent? ^g	Final Ecological Value Surface Water ^h (mg/L)	Practical Quantitation Limit (mg/L)
Metals/Inorganics													
Aluminum	8.70E-02	NVA	8.70E-02	AWQC	8.70E-02	AWQC	8.70E-02	AWQC	8.70E-02	LANL		8.70E-02	6.0E-02
Chromium (Cr-III)	7.40E-02	4.20E-02	7.40E-02	AWQC	7.40E-02	AWQC	7.40E-02	AWQC	7.70E-02	LANL	Yes	7.40E-02	2.0E-03
Copper	9.00E-03	1.58E-03	9.00E-03	AWQC	9.00E-03	AWQC	9.00E-03	AWQC	5.00E-03	LANL	Yes	9.00E-03	3.0E-03
Iron	1.00E+00	NVA	1.00E+00	AWQC	1.00E+00	AWQC	1.00E+00	AWQC	1.00E+00	LANL		1.00E+00	5.0E-02
Lead	2.50E-03	1.17E-03	2.50E-03	AWQC	2.50E-03	AWQC	2.50E-03	AWQC	1.20E-03	LANL	Yes	2.50E-03	1.0E-03
Manganese	1.20E-01	NVA	1.20E-01	EPRG	1.20E-01	Tier II	1.20E-01	EPRG	8.00E-02	LANL		1.20E-01	2.0E-03
Molybdenum	3.70E-01	NVA	3.70E-01	EPRG	3.70E-01	Tier II	3.70E-01	EPRG	NVA			3.70E-01	5.0E-03
Nickel	5.20E-02	2.89E-02	5.20E-02	AWQC	5.20E-02	AWQC	5.20E-02	AWQC	2.80E-02	LANL	Yes	5.20E-02	1.0E-03
Perchlorate	NVA	NVA	NVA		NVA		NVA		3.50E+01	LANL		3.50E+01	
Explosives													
RDX	NVA	NVA	NVA		NVA		NVA		1.90E-01	TAL		1.90E-01	8.0E-04
HMX	NVA	NVA	NVA		NVA		NVA		3.30E-01	TAL		3.30E-01	4.0E-04
1,3-Dinitrobenzene	NVA	2.20E-02	NVA		NVA		NVA		2.00E-02	TAL		2.00E-02	2.0E-04
1,3,5-Trinitrobenzene	NVA	NVA	NVA		NVA		NVA		1.00E-02	TAL		1.00E-02	2.0E-04
2-Nitrotoluene	NVA	NVA	NVA		NVA		NVA		8.00E+00	LANL		8.00E+00	4.0E-04
3-Nitrotoluene	NVA	NVA	NVA		NVA		NVA		9.60E+00	LANL		9.60E+00	8.0E-04
4-Nitrotoluene	NVA	NVA	NVA		NVA		NVA		1.70E+01	LANL		1.70E+01	4.0E-04
2,4-Dinitrotoluene	2.30E-01	4.40E-02	NVA		NVA		NVA		3.10E-01	LANL		2.30E-01	3.0E-04
2,6-Dinitrotoluene	2.30E-01	8.10E-02	NVA		NVA		NVA		6.00E-02	LANL		2.30E-01	3.0E-04
2-Amino,4,6-Dinitrotoluene	NVA	NVA	NVA		NVA		NVA		2.00E-02	TAL		2.00E-02	2.0E-04
4-Amino-2,6-Dinitrotoluene	NVA	NVA	NVA		NVA		NVA		8.60E+00	LANL		8.60E+00	2.0E-04
2,4,6-Trinitrotoluene	NVA	NVA	NVA		NVA		NVA		9.00E-02	TAL		9.00E-02	3.0E-04
Nitrobenzene	5.40E-01	2.20E-01	NVA		NVA		NVA		2.70E-01	LANL		5.40E-01	2.0E-04
Nitroglycerin	NVA	NVA	NVA		NVA		NVA		4.30E+02	LANL		4.30E+02	5.0E-02
Tetryl	NVA	NVA	NVA		NVA		NVA		5.80E+00	LANL		5.80E+00	7.5E-04

NVA = No Value Available

^a Oregon Department of Environmental Quality Screening Level Values (December 2001);

^b Ecological Screening Levels (ESLs), USEPA Region 5, August 2003

^c USEPA Region 7: Catherine Wooster-Brown (Eco Risk Assessor) recommends the following hierarchy: National Ambient Water Quality Criteria; ORNL Efromson values (ORNL, 1977);

^d USEPA Region 8: Dale Hoff (Eco Risk Assessor) recommends the following hierarchy: National Ambient Water Quality Criteria; Great Lakes Tier II Value;

Canadian Environmental Quality Guidelines (CCME, 2003) or ORNL Efromson values (ORNL, 1977);

^e USEPA Region 10: Joseph Goulet (Eco Risk Assessor) says Region 10 has no recommended hierarchy, therefore, values from the USEPA Region 7 Approach were used.

^f Talmage, S.S., D.M. Opresko, C.J. Maxwell, C.J.E. Welsh, F.M. Cretella, P.H. Reno, and F.B. Daniel (TAL), 1999 *Nitroaromatic Munition Compounds: Environmental Effects and Screening Values*.

Rev. Environ. Contam. Toxicol.

Los Alamos National Laboratory (LANL), Eco Risk Database, Release 2.2, September 2005.

^g Potential bioaccumulative constituents will be evaluated in more detail, as some screening values do not take into account bioaccumulation.

Potential bioaccumulative potential from: *Bioaccumulation and Interpretation for the Purposes of Sediment Quality Assessment: Status and Needs* (USEPA, 2000) and ODEQ EQSLVs (ODEQ, 2001).

^h Final Screening Value selected using the following hierarchy:

1. State Value (Oregon)
2. USEPA Region State Located In (USEPA Region 10)
3. Lower of Talmage et al. [TAL] (1999) or LANL (2005) values.

AWQC=National Ambient Water Quality Criteria;

LANL= Los Alamos National Laboratory

Tier II=Great Lakes Tier II Water Quality Criteria;

EPRGs=Oak Ridge National Laboratory Ecological PRG;

TAL=Talmage et al (1999)

CCME=Canadian Council of Ministers of the Environment, Environmental Quality Guideline

Other References:

Efromson, R.A., et al., 1997, *Preliminary Remediation Goals* (EPRGs), ORNL, ES/ER/TM-162/R2,

Canadian Environmental Quality Guidelines (for Freshwater) Summary Table, CCME, December 2000;

Great Lakes Tier II Values from Suter, G.W. and C.L. Tsao, 1996, *Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Aquatic Biota: 1996 Rev*, ES/ER/TM-96/R2.

National AWQC from USEPA Water Quality Criteria Web Site: <http://www.epa.gov/waterscience/criteria/wqcriteria.htm>

Draft Worksheets

Site Information Worksheet MRSPP Data Gaps HRS Data Gaps

***Site Inspection
Central Oregon Gunnery Range***

***Technical Project Planning Meeting
July 17, 2006***

Site Information Worksheet

Site: Air-to-Air Gunnery Range

Project: Central Oregon Gunnery Range

	Site Information Needed^a	Suggested Means to Obtain Site Information	Potential Source(s) of Site Information	Responsible for Obtaining	Deadline for Obtaining Site Information
1	Use existing background values from work being performed nearby	ODEQ protocol	ODEQ will determine	ODEQ	Background data for soils are available from ODEQ; no background available for surface water and groundwater.
2	Background sampling requirements for metals	ODEQ protocol	ODEQ guidance document	ODEQ	Background metals data for soils is available; will collect background samples for perchlorate in surface water and groundwater. No metals background data required for surface water and groundwater per ODEQ.
3	Background metals data	Sampling	Add more samples to field program	Shaw	No additional background metals data are required.
4	Schedule for sampling Oregon sites	Consultation	BLM	Shaw	Prior to field work.
5	Additional historical information	Records review	BLM to provide archeological survey data	Shaw	For inclusion in Site Inspection Report.
6	Oregon HH Screening Standards	ODEQ regulations and consultation	ODEQ	Shaw	For inclusion in TPP Memo.
7	Point of contact for community	Not applicable	USACE Seattle and Portland Districts	USACE	Before start of field work.
8	Access agreements	Letters, call, or visit stakeholders	Letters/conversations with stakeholders	USACE	Before start of field work.
9	Conceptual site model	Report review	Report prepared for target areas near Alkali Lake	Shaw	For inclusion in TPP Memo.
10	Threatened or endangered species within AOC	Phone	OR Fish and Wildlife U.S. Fish and Wildlife	Shaw	For inclusion in TPP Memo.
11	Areas of cultural significance within AOC	SHPO	Phone SHPO	Shaw	For inclusion in Site-Specific Work Plan.

^a Refer to EM 200-1-2, Paragraphs 1.1.3 and 2.2.

**Munitions Response Site Prioritization Protocol (MRSPP) Data Gaps
32 CRF Part 179**

Installation: Central Oregon Gunnery Range
 AOC: Air to Air Gunnery Range
 RMIS Range ID: F10OR0170

Module	Table No.	Table Description	Data Gap	Potential Source of Information to Fill Data Gap	No Data Gap	Description of Known Data
Explosive Hazard Evaluation (EHE)	1	Munitions Type			x	Small and medium caliber arms
	2	Source of Hazard			x	Air to air, air to ground, and ground to air gunnery range
	3	Location of Munitions			x	Confirmed surface
	4	Ease of Access			x	No barrier
	5	Status of Property			x	Non-DoD control
	6	Population Density			x	< 100 persons per square mile
	7	Population Near Hazard			x	0 inhabited structures w/in 2 miles
	8	Activities/Structures			x	Agricultural - livestock grazing
	9	Ecological and/or Cultural Resources	x	U.S. Fish and wildlife, SHPO		
	10	EHE Module Score				60 to 70 EHE Rating D (Preliminary)
Chemical Warfare Materiel (CWM) Hazard Evaluation (CHE)	11	CWM Configuration			x	Historical evidence indicates that CWM are not present
	12	Sources of CWM			x	Historical evidence indicates that CWM are not present
	13	Location of CWM			x	Historical evidence indicates that CWM are not present
	14	Ease of Access			x	No barrier
	15	Status of Property			x	Non-DoD control
	16	Population Density			x	< 100 persons per square mile
	17	Population Near Hazard			x	0 inhabited structures w/in 2 miles
	18	Activities/Structures			x	Agricultural - livestock grazing
	19	Ecological and/or Cultural Resources			x	Ecological resources present
	20	CHE Module Score				< 38 CHE Rating G (Preliminary)
Health Hazard Evaluation (HHE)	21	Groundwater Data Element	x	Evaluation Pending		
	22	Surface Water (Human Endpoint) Data Element	x	Evaluation Pending		
	23	Sediment (Human Endpoint) Data Element Table	x	Evaluation Pending		
	24	Surface Water (Ecological Endpoint) Data Element	x	Evaluation Pending		
	25	Sediment (Ecological Endpoint) Data Element	x	Evaluation Pending		
	26	Surface Soil Data Element	x	Evaluation Pending		
	27	Supplemental Contaminant Hazard Factor	x	Evaluation Pending		
	28	HHE Module Score	x	Module Score Pending		
MRS Priority	29	MRS Priority (Based on Highest Hazard Evaluation Module Rating)	x	Final Score Pending		
	A	MRS Background Information	x	Pending		

Central Oregon Gunnery Range HRS Data Gaps

Information required to complete the MEC-HRS data collection form:

Item	Number	Comment – Missing Data Element
1	1.8	Confirm the latitude / longitude of potential source(s) and the accuracy of the information (in meters)
2		Source scale (i.e., 1:24,000, etc.)
3	1.12	Site Permits
4	6	Water use (GW within 4 miles, SW within 15 miles)
5	6.1	Total drinking water population served (by distance)
6	6.2	Type of drinking water supply system (GW or SW?)
7	6.3	Other water uses of GW within 4 miles
8	6.4	Depth to Aquifer
9	6.5	Other surface water uses
10	7.1	Existence of sensitive or potentially vulnerable environment

Appendix C
Interview Documentation



Oregon

Theodore R. Kulongoski, Governor

Parks and Recreation Department

State Historic Preservation Office

725 Summer St. NE, Suite C

Salem, OR 97301-1271

(503) 986-0707

FAX (503) 986-0793

www.hcd.state.or.us

November 01, 2006

Ms. Lisa Stahl
Shaw Environmental Inc
9201 E Dry Creek Rd
Centennial, CO 80112

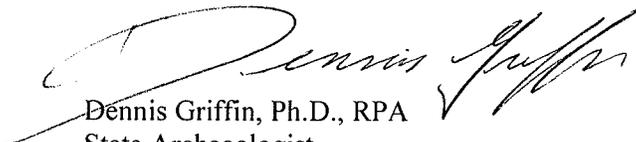
RE: SHPO Case No. 06-2596
Boardman Air Force Base/Central OR Gunnery Range
LOE
Shaw Environmental/COE
Multiple legals, Lakeview vicinity, Morrow/Lake County

Dear Ms. Stahl:

Our office recently received a request to review the proposal for the projects referenced above. In checking our statewide cultural resource database, I find that there have been no previous cultural resource surveys completed near the proposed project areas. However, the project areas lie within an area generally perceived to have a high probability for possessing archaeological sites and/or buried human remains. World War II related structures and artifacts are known to exist in the Northern and Southern Target areas [REDACTED]. Care should be taken to be sure that no clean up activities disturb identified site deposits. The original application also requested information on a second area where work was proposed [REDACTED]. This area was not adequately described in the original request so additional information was requested as to the specific area to be tested. We have subsequently been informed that no work will occur in this area so this area has been withdrawn from consideration and a review of this area has not been completed.

While not having sufficient knowledge to predict the likelihood of cultural resources being within your project area, extreme caution is recommended during future ground disturbing activities. ORS 358.905 and ORS 97.740 protect archaeological sites and objects and human remains on state public and private lands in Oregon. If any cultural material is discovered during construction activities, all work should cease immediately until a professional archaeologist can assess the discovery.

If you have any questions about my comments or would like additional information, please feel free to contact our office at your convenience. In order to help us track your project accurately, please be sure to reference the SHPO case number above in all correspondence.



Dennis Griffin, Ph.D., RPA
State Archaeologist
(503) 986-0674
dennis.griffin@state.or.us

FUDS SI, NWO REGION, Shaw Project 116188

MINUTES

17 AUGUST 2006

11.30 AM

INITIATED CALL

MEETING CALLED BY	Dennis Griffin, Oregon SHPO		
TYPE OF MEETING	Initiated Phone Call		
ATTENDEES	Shaw		
	<input checked="" type="checkbox"/> Dennis Griffin, OR SHPO	<input type="checkbox"/> Kelsall	Peter
	<input type="checkbox"/>	<input checked="" type="checkbox"/> Stahl	Lisa

DISCUSSION	Phone call regarding the presence of any cultural resources in the Oregon Project Areas
	<ul style="list-style-type: none"> I phoned Mr. Griffin to discuss the possibility of fine-tuning the SHPO findings for the OR project sites. I explained the scope of the work we are doing for the Corps and the anticipated degree of ground disturbance. Following my description of project-specific activities, he commented that he didn't think we any sort of significant impact on any archaeological or cultural resources present in the project areas. He did say that before he could say anything definitively, he would have to revisit his records while looking at the figures provided with the APE areas identified. He also commented that this was the sort of thing that we (Shaw) should be paying a contractor to do, but he'd take a look and see if he can fine-tune any potential impact areas. I asked for clarification as to whether or not there were any potential sites present at Camp Abbot. He didn't realize that there was another site attached to the package since when it arrived at their office, the person assigning case numbers stapled both sites together and he thought it was all just for Adair. He did a cursory look in his database and realized there were a number of sites present in just 2 of the project section areas. He indicated that he would need to take a closer look, based on our conversation, to focus on the APE areas in comparison to their known areas and issue a new letter to Shaw for Abbot. He indicated he would get to that as soon as possible. Given our conversation and the relatively large numbers of resources present in both project areas, I asked if one way around to ensure we didn't disturb any resources was to have an archaeologist accompany the field crews. He indicated that could be a solution. However, he would know more once he revisited the project areas.
	ADDENDUM – Follow-up phone call on 8/21/06 at 10.18 am.
	<ul style="list-style-type: none"> Mr. Griffin forgot that we already spoke, so he called to make sure we touched base. I reminded him of our call from the 17th and he remembered speaking with me. He indicated that he was examining Camp Abbot that day and was hoping to reissue letter to Shaw regarding this reexamination. He also mentioned that because his schedule was becoming overloaded, he pulled in another person to assist him – Mollie Manion. She would be the one to actually forward the revised letters to Shaw. Based on his re-evaluation of Adair, he found that there were no archaeological or cultural resources within our project area. However, there were some resources adjacent to our identified APEs. So, the letter would identify these areas so we could identify them as areas to avoid on our field figures. Re: Camp Abbot, he noted that closer examination of their records showed several resources within and adjacent to our APE areas. He indicated that once we received their information, we could work together to identify areas to avoid and how to proceed with the environmental sampling.
	ADDENDUM 2 – Follow-up phone call on 8/31/06 at 3.05 pm
	<ul style="list-style-type: none"> Called Mr. Griffin regarding follow-up letter from Mollie Manion. This letter provided some details as to the locations or lack thereof of archaeological sites at Camps Adair and Abbot. The call was to try and determine if our field activities would have a significant enough impact on the sites to warrant having an archaeologist accompany the field teams. Mr. Griffin indicated that Ms. Manion would be the best person to talk with next as she conducted the record research regarding archaeological sites and therefore should have an idea as to the nature and extent of the sites. According to Mr. Griffin, once we have an idea of the sites, we can move forward as far as deciding on the need for an archaeologist to be present. We concluded the call with the agreement that Mr. Griffin would have some further discussions with Ms. Manion next Tuesday as to the limited extent of our sampling activities. I left a message for Ms. Manion to this effect.

FUDS SI, NWO REGION, Shaw Project 116188

MINUTES

25 SEPTEMBER 2006

1.42 PM

INITIATED CALL

MEETING CALLED BY	Susan White, Oregon SHPO		
TYPE OF MEETING	Initiated Phone Call		
ATTENDEES	Shaw		
	<input checked="" type="checkbox"/> Susan White, OR SHPO	<input type="checkbox"/> Kelsall	Peter
	<input type="checkbox"/>	<input checked="" type="checkbox"/> Stahl	Lisa

DISCUSSION	Phone call regarding the qualifications and insurance status of Ward Tonsfeldt
	<ul style="list-style-type: none"> The OR SHPO was contacted to discuss if it is common practice for archaeologists to not have professional liability coverage. As I was discussing this matter with Ms. White, she asked the archaeologist's name so she could see if it was a known person for their office. Ms. White knew immediately of Ward Tonsfeldt and indicated that their office has worked with him often and was familiar with his reports. I specifically asked her if her office considered him as "qualified" to conduct the sort of work we were asking him to do; to which she replied, "Absolutely." She indicated that if we had any further questions, to not hesitate to phone them.

FUDS SI, NWO REGION, Shaw Project 116188

MINUTES

03 AUGUST 2006

2:00 EDT

RETURNED CALL

MEETING CALLED BY	Charlie Bruce, ODFW 503-947-6317		
TYPE OF MEETING	Returned Phone Call		
ATTENDEES	USFS	Shaw	
	<input checked="" type="checkbox"/> Charlie Bruce	<input type="checkbox"/> McGraw	<input type="checkbox"/> Greg

DISCUSSION	Phone call regarding the presence of any threatened or endangered species in Oregon
	<ul style="list-style-type: none"> Spoke with Mr. Bruce about the potential for impacting and T&E species. He said he didn't think we would affect any land animals but was not familiar with all the areas I mentioned. He asked that we send a letter or email along with a map showing the locations. That letter should discuss the types of sampling activities we plan. He mentioned the possibility of impacting a ground squirrel in the Hermiston area as well as certain aquatic animals. He can give us an answer quickly once he has the letter and map. Mail to: Charlie Bruce, Oregon Fish and Wildlife, Wildlife Division, 3406 Cherry Ave. NE, salem, OR 97303 or email to: Charles.R.Bruce@state.or.us



Shaw Environmental, Inc. (Contact Records Form)

CONTACT INFORMATION

Site Name: Central Oregon Gunnery Range, OR Date 11/2/06 1455 hrs
 Name of Individual: Chris Carry Means of Contact Phone (Drop Down)
 Title or Position Biologist Shaw Employee: Dale Landon (Drop Down)
 Company Oregon department of Fish and Wildlife
 Name/Address: Bend Oregon

SUMMARY OF CONTACT

Documented Conversation:

Mr. Carry responded to my email requesting ODFW review of the sampling activities at Central Oregon Gunnery Range. He stated that he saw no problem with our activities and in his opinion there would be no impact to listed species.

He stated that the Hutton Tui Chub is located in the area and it is a federally listed species and the Snowy Plover is a State listed bird.

He said that he would followup this phone call with an email summarizing his review.

He also stated that the ODFW review of the Boardman AFR FUDS should be handled by Mr. Russ Morgan in the La Grande field office. his email address is Russ.Morgan@State.or.us.gov.

NOTE – Attach all supporting documentation.

Process Flow Instructions:

Complete the form and email to Barbara.Cline@shawgrp.com to be placed in the appropriate file folder on the network, Portal and in our hard copy files. Network and Portal Locations TBD



Oregon Department of Fish and Wildlife

Search ODFW Site:

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- [Diversity Plan Order Form](#)

Oregon Threatened and Endangered Species List

- ➔ [Backgrounder: Q&A about the Oregon Threatened and Endangered Species Act \(pdf\)](#)
- ➔ [Species at Risk Order Form and Information](#)

Common Name Scientific Name Category

Fish

Hutton Spring Tui Chub	<i>Gila bicolor sap.</i>	*T
Borax Lake Chub	<i>Gila boraxobius</i>	*E
Foskett Speckled Dace	<i>Rhinichthys osculus ssp</i>	*T
Warner Sucker	<i>Catostomus warnerensis</i>	*T
Snake River Chinook Salmon (Spring/Summer)	<i>Oncorhynchus tshawytscha</i>	*T
Snake River Chinook Salmon (Fall)	<i>Oncorhynchus tshawytscha</i>	*T
Lower Columbia River Coho Salmon	<i>Oncorhynchus kisutch</i>	E
Lahontan Cutthroat Trout	<i>Oncorhynchus clarki henshawi</i>	*T
Lost River Sucker	<i>Deltistes luxatus</i>	*E
Shortnose Sucker	<i>Chasmistes brevirostris</i>	*E

Amphibians and Reptiles

--	--	--

Green Sea Turtle	<i>Chelonia mydas</i>	*E
Leatherback Sea Turtle	<i>Dermochelys coriacea</i>	*E
Loggerhead Sea Turtle	<i>Caretta caretta</i>	*T
Pacific Ridley Sea Turtle	<i>Lepidochelys olivacea</i>	*T

Birds

Short-tailed Albatross	<i>Diomedea albatrus</i>	*E
Brown Pelican	<i>Pelecanus occidentalis</i>	*E
Bald Eagle	<i>Haliaeetus leucocephalus</i>	*T
American Peregrine Falcon	<i>Falco peregrinus anatum</i>	E
Arctic Peregrine Falcon	<i>Falco peregrinus tundrius</i>	E
Western Snowy Plover	<i>Charadrius alexandrinus nivosus</i>	T(*T-1)
California Least Tern	<i>Sterna antillarum browni</i>	*E
Marbled Murrelet	<i>Brachyramphus marmoratus</i>	*T
Northern Spotted Owl	<i>Strix occidentalis caurina</i>	*T

Mammals

Gray Wolf	<i>Canis lupus</i>	*E
Kit Fox	<i>Vulpes macrotis</i>	T
Sea Otter	<i>Enhydra lutris</i>	*T
Wolverine	<i>Gulo gulo</i>	T
Sei Whale	<i>Balaenoptera borealis</i>	*E
Blue Whale	<i>Balaenoptera musculus</i>	*E
Fin Whale	<i>Balaenoptera physalus</i>	*E
Gray Whale	<i>Eschrichtius robustus</i>	E
North Pacific Right Whale	<i>Eubalaena japonica</i>	*E
Humpback Whale	<i>Megaptera novaeangliae</i>	*E
Sperm Whale	<i>Physeter macrocephalus</i>	*E
Washington Ground Squirrel	<i>Spermophilus washingtoni</i>	E

Oregon Species Listed Under the Federal Endangered Species Act; but which are not state listed.

Common Name	Scientific Name	Category
Oregon Chub	<i>Oregonichthys crameri</i>	E
Columbia River Chum Salmon	<i>Oncorhynchus keta</i>	T



Oregon Coast Coho Salmon	<i>Oncorhynchus kisutch</i>	T-2
Southern Oregon Coho Salmon	<i>Oncorhynchus kisutch</i>	T
Upper Willamette River Steelhead	<i>Oncorhynchus mykiss irideus</i>	T
Lower Columbia River Steelhead	<i>Oncorhynchus mykiss irideus</i>	T
Middle Columbia River Steelhead	<i>Oncorhynchus mykiss gairdneri</i>	T
Snake River Steelhead	<i>Oncorhynchus mykiss gairdneri</i>	T
Snake River Sockeye Salmon	<i>Oncorhynchus nerka</i>	E
Upper Columbia River Spring Chinook Salmon	<i>Oncorhynchus tshawytscha</i>	E
Lower Columbia River Chinook Salmon	<i>Oncorhynchus tshawytscha</i>	T
Upper Willamette River Chinook Salmon	<i>Oncorhynchus tshawytscha</i>	T
Bull Trout	<i>Salvelinus confluentus</i>	T
Canadian Lynx	<i>Lynx canadensis</i>	T
Northern (Steller) Sea Lion	<i>Eumetopias jubatus</i>	T
Columbian White-tailed Deer (Lower Columbia River population only)	<i>Odocoileus virginianus leucurus</i>	E

Key:

T = Threatened

E = Endangered *Denotes species listed by federal government;

() denotes federal listing if different.

1 - Federally listed for coastal population only.

2 - No National Marine Fisheries Service "take" prohibitions as of 2-24-04.

For more information, contact the U.S. Fish and Wildlife Service or National Marine Fisheries Service (NOAA Fisheries).

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Do you have a question or comment for ODFW? Contact ODFW's Public Service Representative at: odfw.info@state.or.us

Do you want to enter your opinion about a specific issue into the public record? Contact: odfw.comments@state.or.us

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This page was last updated: 09/01/2005 5:45 PM



U.S. Fish & Wildlife Service

USFWS Threatened and Endangered Species System (TESS)

TESS

Help Desk

Notes:

- This report shows the listed species associated in some way with this state.
- This list does not include experimental populations and similarity of appearance listings.
- This list includes non-nesting sea turtles and whales in State/Territory coastal waters.
- This list includes species or populations under the sole jurisdiction of the National Marine Fisheries Service.
- Click on the highlighted scientific names below to view a Species Profile for each listing.

Listings and occurrences for Oregon – 56 listings

- 48 occurring in Oregon
- 8 not occurring in Oregon
- 5 species listed in some other state occurring in Oregon

Animals – 41 listings

- 33 occurring in Oregon
- 8 not occurring in Oregon
- 3 species listed in some other state occurring in Oregon

Status Species listed in this state and that occur in this state

E	Albatross, short-tailed (<i>Phoebastria (=Diomedea) albatrus</i>)
E	Butterfly, Fender's blue (<i>Icaricia icarioides fenderi</i>)
T	Butterfly, Oregon silverspot (<i>Speyeria zerene hippolyta</i>)
E	Chub, Borax Lake (<i>Gila boraxobius</i>)
T	Chub, Hutton tui Hutton (<i>Gila bicolor ssp.</i>)
E	Chub, Oregon (<i>Oregonichthys crameri</i>)
T	Dace, Foskett speckled Foskett (<i>Rhinichthys osculus ssp.</i>)
E	Deer, Columbian white-tailed Columbia River DPS (<i>Odocoileus virginianus leucurus</i>)
T	Eagle, bald lower 48 States (<i>Haliaeetus leucocephalus</i>)
T	Fairy shrimp, vernal pool (<i>Branchinecta lynchi</i>)
T	Lynx, Canada lower 48 States DPS (<i>Lynx canadensis</i>)
T	Murrelet, marbled CA, OR, WA (<i>Brachyramphus marmoratus marmoratus</i>)
T	Owl, northern spotted (<i>Strix occidentalis caurina</i>)

E	Pelican, brown except U.S. Atlantic coast, FL, AL (<i>Pelecanus occidentalis</i>)
T	Plover, western snowy Pacific coastal pop. (<i>Charadrius alexandrinus nivosus</i>)
T	Salmon, chinook fall Snake R. (<i>Oncorhynchus (=Salmo) tshawytscha</i>)
T	Salmon, chinook lower Columbia R. (<i>Oncorhynchus (=Salmo) tshawytscha</i>)
T	Salmon, chinook spring/summer Snake R. (<i>Oncorhynchus (=Salmo) tshawytscha</i>)
T	Salmon, chinook upper Willamette R. (<i>Oncorhynchus (=Salmo) tshawytscha</i>)
T	Salmon, chum Columbia R. (<i>Oncorhynchus (=Salmo) keta</i>)
T	Salmon, coho OR, CA pop. (<i>Oncorhynchus (=Salmo) kisutch</i>)
T	Sea turtle, green except where endangered (<i>Chelonia mydas</i>)
E	Sea turtle, leatherback (<i>Dermochelys coriacea</i>)
T	Sea turtle, loggerhead (<i>Caretta caretta</i>)
T	Sea-lion, Steller eastern pop. (<i>Eumetopias jubatus</i>)
T	Steelhead Snake R. Basin (<i>Oncorhynchus (=Salmo) mykiss</i>)
T	Steelhead middle Columbia R. (<i>Oncorhynchus (=Salmo) mykiss</i>)
T	Steelhead upper Willamette R. (<i>Oncorhynchus (=Salmo) mykiss</i>)
E	Sucker, Lost River (<i>Deltistes luxatus</i>)
E	Sucker, shortnose (<i>Chasmistes brevirostris</i>)
T	Sucker, Warner (<i>Catostomus warnerensis</i>)
T	Trout, Lahontan cutthroat (<i>Oncorhynchus clarki henshawi</i>)
E	Whale, humpback (<i>Megaptera novaeangliae</i>)

Status Species listed in this state that do not occur in this state

T	Bear, grizzly lower 48 States, except where listed as an experimental population or the Yellowstone population (<i>Ursus arctos horribilis</i>)
E	Condor, California U.S.A. only (<i>Gymnogyps californianus</i>)
E	Curlew, Eskimo (<i>Numenius borealis</i>)
T	Otter, southern sea except where XN (<i>Enhydra lutris nereis</i>)
E	Rabbit, pygmy Columbia Basin DPS (<i>Brachylagus idahoensis</i>)
T	Salmon, coho Lower Columbia River (<i>Oncorhynchus (=Salmo) kisutch</i>)
E	Sea-lion, Steller western pop. (<i>Eumetopias jubatus</i>)
E	Wolf, gray lower 48 States, except MN and where XN; Mexico (<i>Canis lupus</i>)

Status *Listed species occurring in this state that are not listed in this state*

- E Salmon, sockeye U.S.A. (Snake River, ID stock wherever found.) (*Oncorhynchus* (=Salmo) *nerka*)
- T Steelhead lower Columbia R. (*Oncorhynchus* (=Salmo) *mykiss*)
- T Trout, bull U.S.A., conterminous, lower 48 states (*Salvelinus confluentus*)

Plants -- 15 listings

- 15 occurring in Oregon
- 0 not occurring in Oregon
- 2 species listed in some other state occurring in Oregon

Status *Species listed in this state and that occur in this state*

- T Catchfly, Spalding's (*Silene spaldingii*)
- T Checker-mallow, Nelson's (*Sidalcea nelsoniana*)
- E Daisy, Willamette (*Erigeron decumbens* var. *decumbens*)
- E Desert-parsley, Bradshaw's (*Lomatium bradshawii*)
- T Four-o'clock, MacFarlane's (*Mirabilis macfarlanei*)
- E Fritillary, Gentner's (*Fritillaria gentneri*)
- T Howellia, water (*Howellia aquatilis*)
- E Lily, Western (*Lilium occidentale*)
- E Lomatium, Cook's (*Lomatium cookii*)
- T Lupine, Kincaid's (*Lupinus sulphureus* (=oreganus) ssp. *kincaidii* (=var. *kincaidii*))
- E Meadowfoam, large-flowered woolly (*Limnanthes floccosa* ssp. *grandiflora*)
- E Milk-vetch, Applegate's (*Astragalus applegatei*)
- E Popcornflower, rough (*Plagiobothrys hirtus*)
- T Thelypody, Howell's spectacular (*Thelypodium howellii spectabilis*)
- E Wire-lettuce, Malheur (*Stephanomeria malheurensis*)

Status *Listed species occurring in this state that are not listed in this state*

- T Paintbrush, golden (*Castilleja levisecta*)
- E Rock-cress, McDonald's (*Arabis mcdonaldiana*)

[TESS](#) | [ECOS](#) | [USFWS Home](#) | [Privacy](#)

Appendix D
Field Notes and Field Forms

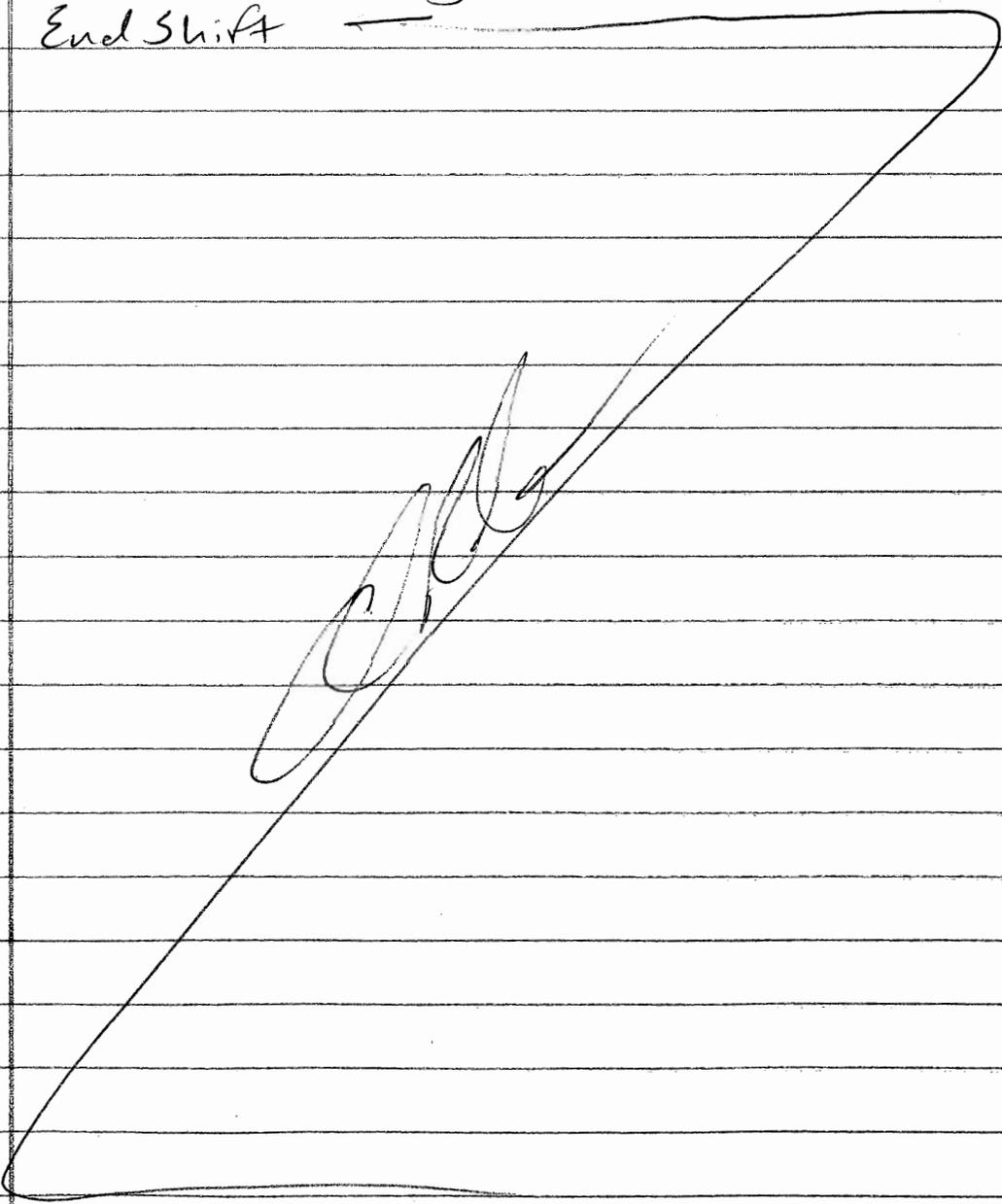
CENTRAL OREGON Gunnery Range
Rob Irons

13 Feb 07

- 0700 Departed Burns OR, Iron, Pollyea - 24°F pic 2133
- 0830 Arrived COGR - WP 001 - start point ↙
- ✓ 0940 Arrived sample location 033A012 wp 002 pic 2134
- 1000 Collected sample NWO-033-6002 - pic 2135, 50 cal
- 1100 Ken Tillman from BLM arrived
- 1115 Arrived sample location 033A010 well locked pic 2136
- WP-003
- ✓ 1150 Arrived sample location 033A002 - WP-004 pic # 2137
- 1155 sample # NWO-033-0002 Collected
- 1207 Arrived sample location 033A001 - wp 005 pic # 2138
- ✓ 1210 Collected sample NWO-033-001, MS, MSD
- ✓ 1236 Arrived @ sample location 033A004 wp 006 pic # 39-42 NESW
- ✓ 1245 Sample NWO-033-1001 collected
- ✓ 1245 Arrived sample location 033A003 wp 007 pic # 43
- ✓ 1350 collected sample nwo-033-0003
- ✓ 1336 Arrived sample location 033A008 wp 008 pic # 44
- ✓ 1335 Collected sample # NWO 033-1002
- 1400 Photo ^{Burn} 001 - wp 009 Dry lake bed stn 033A005³ 033A007. pic 001
- ✓ 1405 Arrived sample location 033A007 wp 010 pic # ~~000~~ ⁰⁰²
- ✓ 1410 Collected sample ID NWO-033-0006 - dry lake bed
- ✓ 1415 Arrived sample location 033A006 wp 011 pic # 003
- ✓ 1420 Collected sample ID NWO-033-0005
- 1430 Arrived sample location 033A005 wp 012 pic # 004
- 1440 collected sample id NWO-033-0004 / NWO-033-0007 (mud cracks)
- 1515 offsite

13.5

1700	Return to Burns, OR	070
1705	Prep coolers & set up chairs & buy ice	085
1830	Start paperwork & GPS download & label photos	1010
	& reconcile waypoints	1020
2030	End Shift	1140



120
12
143
153
213

14 Feb 07

0700 Depart Hotel, Fuel vehicle

0850 Arrived Site - wp 013 start track log

1010 Arrived Sample Location 033A011 wp 014

1020 Collected sample NWD-033 5001 ^{N E S W} pc 1, 2, 3, 4

1140 Arrived Alternate well for 033A010 - wp 015
well MW-60

1207 Collected sample NWD-033-3001 pc 5, 6

1230 Stop track log, departing site

1430 Arrived Burns, clean truck, repack gear

1530 Depart Burns for Boardman OR.

2130 Arrived Boardman, OR. END shift

CENTRAL OREGON GUNNERY
RANGE, RYAN POLLYEA

Am: 22F, Fog
Pm: 45F, partly cloudy

2-13-07 TUESDAY

R. POLLYEA

- 0700 Leave Burns - R. Pollyea & C. Evans
- 0830 Onsite - set up GPS - Temp ~ 22F - ground is frozen
Tailgate safety mtg
- 0900 Key for gate will not open lock. Will have
to cross fence on foot.
- 0940 Set up @ 033A012 - monitoring well MW-42 - ^{Calibrate} U22.3 PID
Sample for background groundwater perchlorate.
- 1000 Collect sample NW0-033-6002
- 1045 - Return to truck - ~~pe~~ move to closer proximity to
033A010
- 1100 Keh Tillman (BLM) onsite (offs, to @ 1110)
- 1120 Set up @ 033A010 - vault locked - key doesn't open
lock - unable to sample well.
- 1130 Fog has lifted - frost melting - site becoming very muddy.
- 1150 Set up at 033A002 (South Target area)
- 1155 Sample NW0-033-0002 (Sample on what appears to be
artificial fill pit)
- 1205 Set up at 033A001
- 1210 Sample NW0-033-0001 (MS/MSD)
- 1235 Set up @ 033A004 - location on dry lake bed
Sediment sample is soil / No surface water sample.
No surface water anywhere on site.
- 1245 Sample NW0-033-1001 → Rob locating 033A003
Set up at 033A003
- 1250 Sample NW0-033-0003

2-13-07 (cont.) R. POZUEA

1300 Move to North Tugot area 07

1330 Set up at 033A008 - location is dry - no surface water.
Sediment ~~water~~ sample is surface soil. 07.

1335 Sample NWO-033-1002

1405 Set up at 033A007 - Location is a dry
lake bed - mud cracks are visible

1410 Sample NWO-033-0006

1415 Set up at 033A006

1420 Sample NWO-033-0005 085

1430 Set up at 033A005

1440 Sample NWO-033-0004 ³ NWO-033-0007 (field dup) 091

1515 Off site

1700 Return to Buns, OR 093

1705 Buy ice, prep cooler, set up chains, & Q/C samples 100

1830 Start paper work - GPS download - label photos
reconcile waypoints 101

2030 End Shift (135) 102

~~1900~~ 2100 → 2200 - do DCQR ³ H/S Report ³ email
to Dale Landau. 104

Junkhouse by
Blank

2-14-07 WEDNESDAY

R. POLLEYA

0700 Fed up & drive from Burns, OR to COOR

Rob Irons & Ryan Polleya

0730 Call to speak w/ James Evans - he is not in - I speak w/ Bob Evans. He gives us permission to access their land for soil sample. I tell him that I think a surface water sample is unlikely b/c lake looked dry yesterday.

0850 Onsite - Start tracking wP = 013

Tailgate Safety Mtg

0915 Bob Evans drives by - speak w/ Bob for 15 minutes

0930 Walk Alkali Lake to look for surface water

1000 No surface water in lake - proceed to 033A011.

1010 Set up at 033A011.

1020 Sample NW0-033-5001.

1030 Move to North Target area

1045 Walk site to look for replacement groundwater & well for 033A010.

1110 Find unlabeled well ~330' northwest of original 033A010 - New well = MW-60

1125 Pack gear on foot to MW-60 (033A010)

1140 #5 Set up at MW-60 - replacement for (033A010)
* See notes on collection form NW0-033-3001

(14)

1207 Sample NW0-033-3001

08

1215 Pick up cooler & truck

1245 Offsite - Drive to Burns, OR

1430 In Burns - clean truck - call Dale to
figure out plan - Dale says Beardman
work canceled, ~~Bob~~

1530 Leave Burns, OR - drive to Boardman, OR

2130 Arrive Boardman, OR - end shift

Interactively Blank

USACE PROJECT MANAGER:

John Miller

PROJECT NUMBER: 116188.33

CTO/WAD NO.: NA

CONTRACT NO.: W912DY-04-D-0010

**Site Inspections at Multiple Sites, NWO Region
 Formerly Used Defense Sites — COGR**

DAY OF THE WEEK

S	M	T	W	TH	F	S
	X					

February 12, 2007

WEATHER CONDITIONS

WEATHER	40 – 45F, moderate wind, mostly cloudy	
TEMP: F	am: 40	pm: 45
WIND	Moderate	Report No.: 1
HUMIDITY	Low	

1. Contract/Subcontractor Personnel and Areas of Responsibility:

Number	Trade	Hours	Employer	Location & Description of Work
1	Site Supervisor	11	Shaw Environmental, Inc	Kick-off meeting in Richland, WA, office. Drive to Burns, Oregon. Prepare sample bottles for COGR work.
1	UXO Tech II	11	Shaw Environmental, Inc	Kick-off meeting in Richland, WA, office. Drive to Burns, Oregon. Prepare sample bottles for COGR work.

2. Operating Plant or Equipment (Not hand tools):

Plant / Equipment	Subcontractor Equipment? (Y/N)	Date of Arr. / Dep.	Date of Safety Check	Hours Used ^a	Hours Idle ^a	Hours Repair ^a
SUV	N –Rental (Avis)	Arr. 02/11/07 Dep.	02/11/07	7	17	0

^a Total hours used, idle, and repair is based upon 24 hour day.
 Hours based upon 12 hour day.

3. Work Performed Today: (Indicate location and description of work performed by prime and/or subcontractors. When network analysis is used, identify work by NAS activity number.)

Activities Conducted

Activities Conducted
<ul style="list-style-type: none"> • Kick-off meeting in Richland, WA. • Make phone contact with property owner for COGR background sample access. • Purchase field supplies in Richland, WA. • Drive from Richland, WA, to Burns, OR. • Prepare sample bottle sets.

4. Control Activities Performed: (Specify feature of work/NAS number and indicate whether P for Preparatory, I for Initial, or F for Follow-up Phase. For Preparatory Inspections: Identify feature of work and attach completed checklist, list RFIs issued and responses. For Initial Inspections: Identify feature of work and attach completed checklist. For Follow-up Inspections: List inspection milestones reached (hold/witness points), inspections performed, results of inspection compared to specification requirements, CARs issued/closed, and corrective actions taken.)

None

5. Tests Performed and Test Results: (Identify test requirements by paragraph number in specifications and/or sheet number in plans).

None

6. Material Received: (Note inspection results and storage provided).

None

7. Submittals Reviewed:

Submittal No.	Spec/Plan Reference	By Whom	Action
NA			

8. Off-site Surveillance Activities, including Action Taken:

None

9. Job Safety: (List items checked, results, instructions and corrective actions taken).

None



10. Remarks: (Instructions received or given. Conflict(s) in plans and/or specifications. Delays encountered).

• None

11. List of Attachments: (List all attachments to this report, include date and reference number where applicable. Attachments are to include copies of inspection checklists, test reports, data reports, and field measurement/calculation sheets.)

Daily Health and Safety Report

Contractor's Verification: On behalf of Shaw Environmental, Inc., I certify this report is complete and correct, and all materials and equipment used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as may be noted above.

Dale Landon
CQC Representative

2/13/07
Date

USACE PROJECT MANAGER:

John Miller

PROJECT NUMBER: 116188.33

CTO/WAD NO.: NA

CONTRACT NO.: W912DY-04-D-0010

**Site Inspections at Multiple Sites, NWO Region
 Formerly Used Defense Sites — COGR**

DAY OF THE WEEK

S	M	T	W	TH	F	S
		X				

February 13, 2007

WEATHER CONDITIONS

WEATHER	22 – 45F, moderate wind, mostly cloudy	
TEMP: F	am: 22	pm: 45
WIND	Slight Breeze	Report No.: 2
HUMIDITY	Low	

1. Contract/Subcontractor Personnel and Areas of Responsibility:

Number	Trade	Hours	Employer	Location & Description of Work
1	Site Supervisor	13.5	Shaw Environmental, Inc	Central Oregon Gunnery Range: North & South Target Areas Soil Sampling.
1	UXO Tech II	13.5	Shaw Environmental, Inc	Central Oregon Gunnery Range: North & South Target Areas UXO Site Clearance.

2. Operating Plant or Equipment (Not hand tools):

Plant / Equipment	Subcontractor Equipment? (Y / N)	Date of Arr. / Dep.	Date of Safety Check	Hours Used ^a	Hours Idle ^a	Hours Repair ^a
SUV	N –Rental (Avis)	Arr. 02/11/07 Dep.	02/11/07	10	14	0

^a Total hours used, idle, and repair is based upon 24 hour day.
 Hours based upon 12 hour day.

3. Work Performed Today: (Indicate location and description of work performed by prime and/or subcontractors. When network analysis is used, identify work by NAS activity number.

Activities Conducted

Activities Conducted
<p>0700: Drive from Burns, OR to COGR. Buy ice on drive up.</p> <p>0830: Onsite – set up GPS and sample wheel. Ground is frozen, transportation OK. Tailgate Safety Meeting.</p> <p>0900: Arrive COGR gate. Key provided by ODEQ will not open gate. Due to high ground clearance at bottom of fence, decision is to cross beneath fence, carry gear, and perform site inspection on foot. Rob will have to perform continuous MEC avoidance survey. Begin work at Southern Target Area.</p> <p>0940: Set up at location 033A012. Marking on well casing are MW-42. Calibrate U-22 and PID. Rob discovers 0.50 cal rounds at surface near 033A012. He says they present no safety concern and we continue work.</p> <p>1000: Collect sample NWO-033-6002.</p> <p>1045: Return to truck to drive eastern fence line closer to location 033A010. Ground is becoming soft. Will have to leave truck on hard pan roads.</p> <p>1100: Ken Tillman (BLM) on site. Says he cannot cross fence into COGR. We discuss sampling program and make arrangements to call him when we're safely offsite. If he doesn't hear from us by 1900, he'll come looking for us.</p> <p>1120: Set up at 033A010. Well vault is locked. Key provided by ODEQ does not open lock. Unable to sample well.</p> <p>1130: Fog has lifted, ground is becoming very soft.</p> <p>1150: Set up at 033A002. Sample location is on mound of homogeneous soil. Appears to be a soil stockpile.</p> <p>1155: Sample NWO-033-0002.</p> <p>1205: Set up at 033A001.</p> <p>1210: Sample NWO-033-0001 (MS/MSD)</p> <p>1235: Set up at 033A004 – Sample location on dry lake bed. No surface water onsite. Planned sediment sample will be a surface soil sample from 0 – 6" bgs.</p> <p>1245: Sample NWO-033-1001. Rob is locating 033A003 and marking path.</p> <p>1250: Sample NWO-033-0003.</p> <p>1300: Drive as close as possible to North Target Area. Continue MEC avoidance survey in North Target Area.</p> <p>1330: Set up at 033A008– Sample location on dry lake bed. No surface water onsite. Planned sediment sample will be a surface soil sample from 0 – 6" bgs.</p> <p>1335: Sample NWO-033-1002.</p> <p>1405: Set up at 033A007 – Location is dry lake bed, mud cracks are visible.</p> <p>1410: Sample NWO-033-0006.</p> <p>1415: Set up at NWO-033A006.</p> <p>1420: Sample NWO-033-0005.</p> <p>1430: Set up at 033A005.</p> <p>1440: Sample NWO-033-0004 and NWO-033-0007 (field duplicate).</p> <p>1515: Offsite.</p> <p>1700: Arrive Burns, OR.</p> <p>1705: Buy ice, prep cooler, set up COCs, QC samples, wash mud off of truck.</p> <p>1830: Start paperwork – GPS download, label photos, reconcile waypoints, prepare daily reports, complete boring logs w/ geographic data.</p> <p>2030: End shift.</p>

Activities Conducted

- 4. Control Activities Performed:** (Specify feature of work/NAS number and indicate whether P for Preparatory, I for Initial, or F for Follow-up Phase. For Preparatory Inspections: Identify feature of work and attach completed checklist, list RFIs issued and responses. For Initial Inspections: Identify feature of work and attach completed checklist. For Follow-up Inspections: List inspection milestones reached (hold/witness points), inspections performed, results of inspection compared to specification requirements, CARs issued/closed, and corrective actions taken.)

None

- 5. Tests Performed and Test Results:** (Identify test requirements by paragraph number in specifications and/or sheet number in plans).

Calibrate PID and Horiba U-22.

- 6. Material Received:** (Note inspection results and storage provided).

None

- 7. Submittals Reviewed:**

Submittal No.	Spec/Plan Reference	By Whom	Action
NA			

- 8. Off-site Surveillance Activities, including Action Taken:**

None

- 9. Job Safety:** (List items checked, results, instructions and corrective actions taken).

Tailgate Safety Meeting @ 0830.

- 10. Remarks:** (Instructions received or given. Conflict(s) in plans and/or specifications. Delays encountered).

- DELAY: Key provided by ODEQ to unlock COGR gate does not open gate. Field crew must cross fence and walk to sample locations.
- DELAY: Key provided by ODEQ does not open well vault at 033A010—unable to sample well.

11. List of Attachments: (List all attachments to this report, include date and reference number where applicable. Attachments are to include copies of inspection checklists, test reports, data reports, and field measurement/calculation sheets.)

Daily Health and Safety Report
Sample Collection Logs for samples:
NWO-033-6002
NWO-033-0002
NWO-033-0001 (MS/MSD)
NWO-033-1001
NWO-033-0003
NWO-033-1002
NWO-033-0006
NWO-033-0005
NWO-033-0004 & NWO-033-0007 (field duplicate)
Boring Logs for Locations:
033A001
033A002
033A003
033A004
033A005
033A006
033A007
033A008
033A012
Tailgate Safety Meeting Log
Copies of COCs: NWO033-001 & NWO033-002.

Contractor's Verification: On behalf of Shaw Environmental, Inc., I certify this report is complete and correct, and all materials and equipment used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as may be noted above.

Dale Landon
CQC Representative

2/14/07
Date

USACE PROJECT MANAGER:

John Miller

PROJECT NUMBER: 116188.33

CTO/WAD NO.: NA

CONTRACT NO.: W912DY-04-D-0010

**Site Inspections at Multiple Sites, NWO Region
Formerly Used Defense Sites — COGR**

DAY OF THE WEEK

S	M	T	W	TH	F	S
			X			

February 14, 2007

WEATHER CONDITIONS

WEATHER	30 – 45F, moderate wind, cloudy AM, sunny PM.	
TEMP: F	am: 30	pm: 45
WIND	Slight Breeze	Report No.: 3
HUMIDITY	Low	

1. Contract/Subcontractor Personnel and Areas of Responsibility:

Number	Trade	Hours	Employer	Location & Description of Work
1	Site Supervisor	14.5	Shaw Environmental, Inc	Central Oregon Gunnery Range: Background, North Target Area & Transit to Boardman, OR. Soil Sampling.
1	UXO Tech II	14.5	Shaw Environmental, Inc	Central Oregon Gunnery Range: Background, North Target Area & Transit to Boardman, OR. UXO Site Clearance.

2. Operating Plant or Equipment (Not hand tools):

Plant / Equipment	Subcontractor Equipment? (Y / N)	Date of Arr. / Dep.	Date of Safety Check	Hours Used ^a	Hours Idle ^a	Hours Repair ^a
SUV	N –Rental (Avis)	Arr. 02/11/07 Dep.	02/11/07	14	10	0

^a Total hours used, idle, and repair is based upon 24 hour day.
Hours based upon 12 hour day.

3. Work Performed Today: (Indicate location and description of work performed by prime and/or subcontractors. When network analysis is used, identify work by NAS activity number.

Activities Conducted

Activities Conducted
<p>0700: Drive from Burns, OR to COGR. Fuel up, buy ice. 0730: Call to speak with James Evans. James is not available – I speak with Bob Evans. Bob Evans gives us permission to access their land for background samples at Alkalai Lake. 0850: Onsite – set up GPS. Ground is frozen, transportation OK. Tailgate Safety Meeting. 0915: Bob Evans drives by – speak with Bob for 15 minutes. 0930: Walk background area through Alkalai Lake (dry lake bed) to look for surface water for sample at location 033A011. 1000: No surface water in lake – proceed to planned location 033A011. 1010: Set up at 033A011 – location is dry lake bed. No surface water onsite. Sediment sample will be surface soil sample from 0 – 6” bgs. 1020: Sample NWO-033-5001. 1030: Move to North Target Area to find alternate well for sample location 033A010. All movement on North Target Area is on foot – Rob performs continuous MEC avoidance survey. 1045: Walk North Target Area. 1110: Find unlocked well ~550’ northwest of original 033A010. Markings on well are MW-60. 1125: Pack gear on foot to MW-60 (033A010). 1140: Set up at revised location 033A010. Casing diameter of MW-60 is ½”. Water level sounder won’t fit in casing. Measure well depth with GeoPump tubing. Estimate depth to water by wet end of tubing. ALL WELL CONSTRUCTION MEASUREMENTS FOR MW-60 ARE ESTIMATED. 1207: Sample NWO-033-3001. 1215: Pack up to leave site. 1245: Offsite – Drive to Burns, OR. 1430: Arrive Burns, OR. Clean mud off truck. Call Dale Landon. Dale informs us planned work for Boardman, OR is postponed. Decision is to drive to Boardman for the night and return to Richland on Thursday, February 15. 1530: Leave Burns, OR. 2130: Arrive Boardman, OR – End Shift.</p>

4. **Control Activities Performed:** (Specify feature of work/NAS number and indicate whether P for Preparatory, I for Initial, or F for Follow-up Phase. For Preparatory Inspections: Identify feature of work and attach completed checklist, list RFIs issued and responses. For Initial Inspections: Identify feature of work and attach completed checklist. For Follow-up Inspections: List inspection milestones reached (hold/witness points), inspections performed, results of inspection compared to specification requirements, CARs issued/closed, and corrective actions taken.)

None

5. Tests Performed and Test Results: (Identify test requirements by paragraph number in specifications and/or sheet number in plans).

Calibrate PID and Horiba U-22.

6. Material Received: (Note inspection results and storage provided).

None

7. Submittals Reviewed:

Submittal No.	Spec/Plan Reference	By Whom	Action
NA			

8. Off-site Surveillance Activities, including Action Taken:

None

9. Job Safety: (List items checked, results, instructions and corrective actions taken).

Tailgate Safety Meeting @ 0850.

10. Remarks: (Instructions received or given. Conflict(s) in plans and/or specifications. Delays encountered).

- DELAY: Key provided by ODEQ to unlock COGR gate does not open gate. Field crew must cross fence and walk to sample locations.
-

11. List of Attachments: (List all attachments to this report, include date and reference number where applicable. Attachments are to include copies of inspection checklists, test reports, data reports, and field measurement/calculation sheets.)

Daily Health and Safety Report
 Sample Collection Logs for samples:
 NWO-033-5001
 NWO-033-3001
 Boring Logs for Locations:
 033A011
 033A010 (revised)
 Tailgate Safety Meeting Log
 Copies of COCs: NWO033-001 & NWO033-002.



Shaw® Shaw Environmental, Inc.

Report No.: 03

P

- 4 -

Contractor's Verification: On behalf of Shaw Environmental, Inc., I certify this report is complete and correct, and all materials and equipment used and work performed during this reporting period are in compliance with the contract plans and specifications, to the best of my knowledge, except as may be noted above.

Dale Landon

CQC Representative

2/15/07

Date

Boring Log

FUDS MMRP SI - NWO Region
Project No: 116188

MMRP SITE ID: 033A

LOCATION ID: 033A001

LOCATION CLASSIFICATION (Circle one): BH - Borehole SI - Surface location ____ - Other

Geohydrologic Flow Classification (Circle one): U = Upgradient D = Downgradient C = Crossgradient

LOCATION CLASSIFICATION (Circle one): I = Inside or O = Outside - Base Boundaries

LOCATION PROXIMITY (Circle one): I = Inside Site Boundary O = Outside Site Boundary

ELEVATION: 4283

NORTH COORDINATE: 42 58.136

^{West}
EAST COORDINATE: 120 03.098

ESTABLISHING COMPANY: Shaw Environmental, Inc.

DRILLING COMPANY: NA

CONSTRUCTION METHOD (Circle one) ~~HA~~ - hand augered DT - driven tube (direct push) NA - not applicable

EXCAVATING COMPANY: NA

DATE ESTABLISHED: NA (Date finished)

DEPTH: 6" (XXXX.XX in Feet)

BORING HOLE DIAMETER: NA (XX.XX in In.)

LOCATION DESCRIPTION:

Surface soil sample 0-6"
See way point 005

Prepared by: RB 2-1307

Reviewed by: RBK 2/15/07



Boring Log

FUDS MMRP SI - NWO Region
Project No: 116188

MMRP SITE ID: 033A

LOCATION ID: 033A002

LOCATION CLASSIFICATION (Circle one): BH - Borehole SL Surface location ____ - Other

Geohydrologic Flow Classification (Circle one): U = Upgradient D = Downgradient C = Crossgradient

LOCATION CLASSIFICATION (Circle one): I = Inside or O = Outside - Base Boundaries

LOCATION PROXIMITY (Circle one): I = Inside Site Boundary O = Outside Site Boundary

ELEVATION: 4288

NORTH COORDINATE: 4258.204

^{WEST}
EAST COORDINATE: 12002.965

ESTABLISHING COMPANY: Shaw Environmental, Inc.

DRILLING COMPANY: NA

CONSTRUCTION METHOD (Circle one): ~~HA~~ hand augered DT - driven tube (direct push) NA not applicable

EXCAVATING COMPANY: NA

DATE ESTABLISHED: NA (Date finished)

DEPTH: 6" (XXXX.XX in Feet)

BORING HOLE DIAMETER: N/A (XX.XX in In.)

LOCATION DESCRIPTION:

Surface soil sample 0-6"

See waypoint 004

Prepared by: RP 2-13-07

Reviewed by: [Signature] 2/15/07

Boring Log

FUDS MMRP SI - NWO Region
Project No: 116188

MMRP SITE ID: 033A

LOCATION ID: 033A003

LOCATION CLASSIFICATION (Circle one): BH - Borehole SL - Surface location _____ - Other

Geohydrologic Flow Classification (Circle one): U = Upgradient D = Downgradient C = Crossgradient

LOCATION CLASSIFICATION (Circle one): I = Inside or O = Outside - Base Boundaries

LOCATION PROXIMITY (Circle one): I = Inside Site Boundary O = Outside Site Boundary

ELEVATION: 4279

NORTH COORDINATE: 42 58.234

^{WEST}
EAST COORDINATE: 120 02.835

ESTABLISHING COMPANY: Shaw Environmental, Inc.

DRILLING COMPANY: NA

CONSTRUCTION METHOD (Circle one): NA - hand augered DT - driven tube (direct push) NA - not applicable

EXCAVATING COMPANY: NA

DATE ESTABLISHED: NA (Date finished)

DEPTH: 0-6" (XXXX.XX in Feet)

BORING HOLE DIAMETER: _____ (XX.XX in In.)

LOCATION DESCRIPTION: see map point 7

Prepared by: RP 2-13-07

Reviewed by: [Signature] 2/15/07

Boring Log

FUDS MMRP SI - NWO Region
Project No: 116188

MMRP SITE ID: 033A

LOCATION ID: 033A004

LOCATION CLASSIFICATION (Circle one): BH - Borehole SL Surface location ____ - Other

Geohydrologic Flow Classification (Circle one): U = Upgradient D = Downgradient C = Crossgradient

LOCATION CLASSIFICATION (Circle one): I = Inside or O = Outside - Base Boundaries

LOCATION PROXIMITY (Circle one): I = Inside Site Boundary O = Outside Site Boundary

ELEVATION: 4280

NORTH COORDINATE: 42 58.309

^{WEST}
EAST COORDINATE: 120 02.918

ESTABLISHING COMPANY: Shaw Environmental, Inc.

DRILLING COMPANY: NA

CONSTRUCTION METHOD (Circle one): ~~HA~~^{POC} - hand augered DT - driven tube (direct push) NA - not applicable

EXCAVATING COMPANY: NA

DATE ESTABLISHED: NA (Date finished)

DEPTH: 6" (XXXX.XX in Feet)

BORING HOLE DIAMETER: NA (XX.XX in In.)

LOCATION DESCRIPTION: see way point #6

Prepared by: RP 2-13-07

Reviewed by: ROLC 2/15/07

Boring Log

FUDS MMRP SI - NWO Region
Project No: 116188

MMRP SITE ID: 033A

LOCATION ID: ~~033A006~~ 033A005

LOCATION CLASSIFICATION (Circle one): BH - Borehole SL - Surface location - Other

Geohydrologic Flow Classification (Circle one): U = Upgradient D = Downgradient C = Crossgradient

LOCATION CLASSIFICATION (Circle one): I = Inside or O = Outside - Base Boundaries

LOCATION PROXIMITY (Circle one): I = Inside Site Boundary O = Outside Site Boundary

ELEVATION: 4268

NORTH COORDINATE: 42 58.777

EAST COORDINATE: 120 03.272

ESTABLISHING COMPANY: Shaw Environmental, Inc.

DRILLING COMPANY: NA

CONSTRUCTION METHOD (Circle one): hand augered DT - driven tube (direct push) NA - not applicable

EXCAVATING COMPANY: NA

DATE ESTABLISHED: NA (Date finished)

DEPTH: 0-6" (XXXX.XX in Feet)

BORING HOLE DIAMETER: NA (XX.XX in In.)

LOCATION DESCRIPTION:

see waypoint 1R

Prepared by: MP 2-13-07

Reviewed by: RLC 2/15/07

Boring Log

FUDS MMRP SI - NWO Region
Project No: 116188

MMRP SITE ID: 033A

LOCATION ID: 033A 006

LOCATION CLASSIFICATION (Circle one): BH - Borehole SL - Surface location ____ - Other

Geohydrologic Flow Classification (Circle one): U = Upgradient D = Downgradient C = Crossgradient

LOCATION CLASSIFICATION (Circle one): I = Inside or O = Outside - Base Boundaries

LOCATION PROXIMITY (Circle one): I = Inside Site Boundary O = Outside Site Boundary

ELEVATION: 4278

NORTH COORDINATE: 4258.913

EAST COORDINATE: 12003.370

ESTABLISHING COMPANY: Shaw Environmental, Inc.

DRILLING COMPANY: NA

CONSTRUCTION METHOD (Circle one): HA - hand augered DT - driven tube (direct push) NA not applicable

EXCAVATING COMPANY: NA

DATE ESTABLISHED: NA (Date finished)

DEPTH: 0-6" (XXXX.XX in Feet)

BORING HOLE DIAMETER: NA (XX.XX in In.)

LOCATION DESCRIPTION:

See waypoint 11

Prepared by: RP 2-13-07

Reviewed by: R. D. 2/15/07

Boring Log

FUDS MMRP SI - NWO Region
Project No: 116188

MMRP SITE ID: 033A

LOCATION ID: 033A008

LOCATION CLASSIFICATION (Circle one): BH - Borehole SL Surface location ____ - Other

Geohydrologic Flow Classification (Circle one): U = Upgradient D = Downgradient C = Crossgradient

LOCATION CLASSIFICATION (Circle one): I = Inside or O = Outside - Base Boundaries

LOCATION PROXIMITY (Circle one): I = Inside Site Boundary O = Outside Site Boundary

ELEVATION: 4281

NORTH COORDINATE: 42 58.847

^{WEST}
EAST COORDINATE: 120.03053

ESTABLISHING COMPANY: Shaw Environmental, Inc.

DRILLING COMPANY: NA

CONSTRUCTION METHOD (Circle one): ~~HA~~ ^{Hand} - hand augered DT - driven tube (direct push) NA not applicable

EXCAVATING COMPANY: NA

DATE ESTABLISHED: NA (Date finished)

DEPTH: 0-6" (XXXX.XX in Feet)

BORING HOLE DIAMETER: N/A (XX.XX in In.)

LOCATION DESCRIPTION:

See map point 8

Prepared by: RP 2-13-07

Reviewed by: [Signature] 2/15/07

Boring Log

FUDS MMRP SI - NWO Region
Project No: 116188

MMRP SITE ID: 033A

LOCATION ID: 033A010 (REVISED LOCATION @ MW-60)

LOCATION CLASSIFICATION (Circle one): BH - Borehole SL - Surface location Other Monitoring wells

Geohydrologic Flow Classification (Circle one): U = Upgradient D = Downgradient C = Crossgradient

LOCATION CLASSIFICATION (Circle one): I = Inside or O = Outside - Base Boundaries

LOCATION PROXIMITY (Circle one): I = Inside Site Boundary O = Outside Site Boundary

ELEVATION: 4283

NORTH COORDINATE: 45 58.346

EAST COORDINATE: 120 03.189

ESTABLISHING COMPANY: Shaw Environmental, Inc.

DRILLING COMPANY: NA

CONSTRUCTION METHOD (Circle one): HA - hand augered DT - driven tube (direct push) NA - not applicable

EXCAVATING COMPANY: NA

DATE ESTABLISHED: NA (Date finished)

DEPTH: ~12.6 (XXXX.XX in Feet)

BORING HOLE DIAMETER: N/A (XX.XX in In.)

LOCATION DESCRIPTION:

See way point # 15

Prepared by: CP 2-14-07

Reviewed by: Rede 2/15/07

Boring Log

FUDS MMRP SI - NWO Region
Project No: 116188

MMRP SITE ID: 033A

LOCATION ID: 033A011

LOCATION CLASSIFICATION (Circle one): BH - Borehole Surface location _____ - Other

Geohydrologic Flow Classification (Circle one): U = Upgradient D = Downgradient C = Crossgradient

LOCATION CLASSIFICATION (Circle one): I = Inside or O = Outside - Base Boundaries

LOCATION PROXIMITY (Circle one): I = Inside Site Boundary O = Outside Site Boundary

ELEVATION: 4270

NORTH COORDINATE: 49 57.922

^{WEST}
EAST COORDINATE: 120 02.378

ESTABLISHING COMPANY: Shaw Environmental, Inc.

DRILLING COMPANY: NA

CONSTRUCTION METHOD (Circle one): HA - hand augered DT - driven tube (direct push) NA - not applicable

EXCAVATING COMPANY: NA

DATE ESTABLISHED: NA (Date finished)

DEPTH: 0-6" (XXXX.XX in Feet)

BORING HOLE DIAMETER: NA (XX.XX in In.)

LOCATION DESCRIPTION:

See p waypoint # 14

Prepared by: AR 2/14/07

Reviewed by: AR 2/15/07



Shaw Environmental, Inc.

Boring Log

FUDS MMRP SI - NWO Region
Project No: 116188

MMRP SITE ID: 033A

LOCATION ID: ^{00033A} 012

LOCATION CLASSIFICATION (Circle one): BH - Borehole SL - Surface location X - Other *Monitoring Well*

Geohydrologic Flow Classification (Circle one): U = Upgradient D = Downgradient C = Crossgradient

LOCATION CLASSIFICATION (Circle one): I = Inside or O = Outside - Base Boundaries

LOCATION PROXIMITY (Circle one): I = Inside Site Boundary O = Outside Site Boundary

ELEVATION: ~~4275~~ 4277 ft

NORTH COORDINATE: 42 57.997

~~EAST~~ WEST COORDINATE: 120 02.804

ESTABLISHING COMPANY: Shaw Environmental, Inc.

DRILLING COMPANY: NA

CONSTRUCTION METHOD (Circle one): HA - hand augered DT - driven tube (direct push) (NA) - not applicable

EXCAVATING COMPANY: NA

DATE ESTABLISHED: NA (Date finished)

DEPTH: 10.6 (XXXX.XX in Feet)

BORING HOLE DIAMETER: # (XX.XX in In.)

LOCATION DESCRIPTION:

~~ADD WAYPOINT #~~ SEE WAYPOINT 002

Prepared by: JP 2-13-07

Reviewed by: Rehe 2/15/07



Shaw E & I, Inc.

Sample Collection Log

116188 - FUDS SI - NWO Region

Manager: Peter Kelsall

RFA / COC Number: NWO033-001

Location Code: 033A001

Task: 116188-33A

Sample Number: NWO-033-0001

Collection Date: 2-13-07

Sample Name: 033A001-SS-NWO-033-0001-REG

Collection Time: 1210

Sampling Method: COMP

Start Depth: 0"

Sample Type: SS

Sample Purpose: REG

End Depth: 6"

Sampling Equip: Sterile Plastic Shovel

Sample Matrix: SOIL

QC Partners:

(TB) _____ (ER) _____ (FB) _____

Sample Team: RP / RE

Containers

Analytical Suite	Flt	Frtn	Qty	Size	Units	Type
COGR METALS	N	A	1	8	oz	CWM
EXPLOSIVES	N	B	1	8	oz	CWM
NG	N	B	1	8	oz	CWM

ERPIMS Values:

Sacode: _____

Lot Control#: _____

Comments: MS/MSD - triple volume

Sketch Location:

See photo # 033-COGR-6-13FEB07

Logged BY / Date: AP 2-13-07

Reviewed BY / Date: RLC 2/15/06



Sample Collection Log

116188 - FUDS SI - NWO Region

Manager: Peter Kelsall

RFA / COC Number: NWO 33-001

Location Code: 033A001

Task: 116188-33A

Sample Number: NWO-033-0001-MS

Collection Date: 2-13-07

Sample Name: 033A001-SS-NWO-033-0001-MS

Collection Time: 1210

Sampling Method: COMP

Start Depth: 0"

Sample Type: SS

Sample Purpose: MS

End Depth: 6"

Sampling Equip: Sterile Plastic Shovel

Sample Matrix: SOIL

QC Partners:

(TB) _____ (ER) _____ (FB) _____

Sample Team: RP/RT

Containers

Analytical Suite	Flt	Frtn	Qty	Size	Units	Type
COGR METALS	N	A	1	8	oz	CWM
EXPLOSIVES	N	B	1	8	oz	CWM
NG	N	B	1	8	oz	CWM

ERPIMS Values:

Sacode: _____

Lot Control#: _____

Comments: MS/MSD - triple volume

Sketch Location:

See photo # 033 COGR-6-13 FEB 07

Logged BY / Date: PK 2-13-07

Reviewed BY / Date: PK 2/15/07



Sample Collection Log

116188 - FUDS SI - NWO Region

Manager: Peter Kelsall

RFA / COC Number: NWO 033-001

Location Code: 033A001

Task: 116188-33A

Sample Number: NWO-033-0001-MSD

Collection Date: 2-13-07

Sample Name: 033A001-SS-NWO-033-0001-MSD

Collection Time: 1210

Sampling Method: COMP

Start Depth: 0"

Sample Type: SS

Sample Purpose: MSD

End Depth: 6"

Sampling Equip: Sterile Plastic Shovel

Sample Matrix: SOIL

QC Partners:

(TB) _____ (ER) _____ (FB) _____

Sample Team: RP / RP

Containers

Analytical Suite	Flt	Frtn	Qty	Size	Units	Type
COGR METALS	N	A	1	8	oz	CWM
EXPLOSIVES	N	B	1	8	oz	CWM
NG	N	B	1	8	oz	CWM

ERPIMS Values:

Sacode: _____

Lot Control#: _____

Comments:

Sketch Location:

SK See photo # 033-COGR-6-13 FEB 07

Logged BY / Date: RP 2-13-07

Reviewed BY / Date: RP 2/15/07



Sample Collection Log

116188 - FUDS SI - NWO Region

Manager: Peter Kelsall

RFA / COC Number: NWO 033-001

Location Code: 033A002

Task: 116188-33A

Sample Number: NWO-033-0002

Collection Date: 2-13-07

Sample Name: 033A002-SS-NWO-033-0002-REG

Collection Time: 1155

Sampling Method: COMP

Start Depth: NA 0"

Sample Type: SS

Sample Purpose: REG

End Depth: NA 6"

Sampling Equip: Sterile Shovel

Sample Matrix: SOIL

QC Partners:

(TB) _____ (ER) _____ (FB) _____

Sample Team: RP / RE

Containers

Analytical Suite	Flt	Frtn	Qty	Size	Units	Type
COGR METALS	N	A	1	8	oz	CWM

ERPIMS Values:

Sacode: _____

Lot Control#: _____

Comments:

Sketch Location:

See photo # ~~033-COGR-4-13 FEB 07 RP~~

033-COGR-5-13 FEB 07

Logged BY / Date: RP 2-13-07

Reviewed BY / Date: RP/RE 2/15/07



Sample Collection Log

116188 - FUDS SI - NWO Region

Manager: Peter Kelsall

RFA / COC Number: NWO 033-001

Location Code: 033A003

Task: 116188-33A

Sample Number: NWO-033-0003

Collection Date: 2-13-07

Sample Name: 033A003-SS-NWO-033-0003-REG

Collection Time: 1250

Sampling Method: COMP

Start Depth: 0"

Sample Type: SS

Sample Purpose: REG

End Depth: 6"

Sampling Equip: STERILE PLASTIC SHOVEL

Sample Matrix: SOIL

QC Partners:

(TB) _____ (ER) _____ (FB) _____

Sample Team: RP / RL

Containers

Analytical Suite	Flt	Frtn	Qty	Size	Units	Type
COGR METALS	N	A	1	8	oz	CWM

ERPIMS Values:

Sacode: _____

Lot Control#: _____

Comments:

Sketch Location:

See photo # 033-COGR-¹¹8-13 FEB 07
RP

Logged BY / Date: RP 2-13-07

Reviewed BY / Date: ROK 2/15/07



Shaw E & I, Inc.

Sample Collection Log

116188 - FUDS SI - NWO Region

Manager: Peter Kelsall

RFA / COC Number: NWO033-001

Location Code: **033A004**

Task: **116188-33A**

Sample Number: **NWO-033-1001**

Collection Date: 2-13-07

Sample Name: **033A004-SD-NWO-033-1001-REG**

Collection Time: 1245

Sampling Method: **GRAB**

Start Depth: 0

Sample Type: **SD**

Sample Purpose: **REG**

End Depth: 6"

Sampling Equip: STERILE PLASTIC SHOVEL

Sample Matrix: **SOIL**

QC Partners:

(TB)

(ER)

(FB)

Sample Team: RP / R1

Containers

Analytical Suite	Flt	Frtn	Qty	Size	Units	Type
COGR METALS	N	A	1	8	oz	CWM
EXPLOSIVES	N	B	1	8	oz	CWM
NG	N	B	1	8	oz	CWM

ERPIMS Values:

Sacode: _____

Lot Control#: _____

Comments: NO WATER ONSITE - SAMPLE COLLECTED FROM DRY LAKE BED

Sketch Location:

See photo # 033-COGR-7-13FEB07
033-COGR-8-13FEB07
033-COGR-9-13FEB07
033-COGR-10-13FEB07

Logged BY / Date: RP 2-13-07

Reviewed BY / Date: RP 2/15/07



Shaw E & I, Inc.

Sample Collection Log

116188 - FUDS SI - NWO Region

Manager: Peter Kelsall

RFA / COC Number: _____

Location Code: 033A004

Task: 116188-33A

Sample Number: NWO-033-2001-MSD

Sample Name: 033A004-SW-NWO-033-2001-MSD

Collection Date: _____

Collection Time: _____

Start Depth: _____

End Depth: _____

Sampling Method: GRAB

Sample Type: SW

Sample Purpose: MSD

Sample Matrix: WATER

Sample Team: _____

Sampling Equip: _____

QC Partners:

(TB) _____ (ER) _____ (FB) _____

ERPIMS Values:

Sacode: _____

Lot Control#: _____

Containers

Analytical Suite	Flt	Frtn	Qty	Size	Units	Type
COGR METALS	N	A	1	500	mL	HDPE
EXPLOSIVES	N	B	2	1	L	Amb. Glass
NG	N	B	2	1	L	Amb. Glass
PERCHLORATE	✓	✗	C	3	40	mL VOA VIAL

Surface Water Parameters:	Eh (mV)	pH (SU)	Conductivity (mS/cm)	Turbidity (NTU)	DissOxygen (ppm)	Temperature (C)

Comments: NO WATER AT LOCATION (OR ONSITE)
NO SAMPLE COLLECTED

Sketch Location:

Logged BY / Date: _____

Reviewed BY / Date: _____



Shaw E & I, Inc.

Sample Collection Log

116188 - FUDS SI - NWO Region

Manager: Peter Kelsall

RFA / COC Number: _____

Location Code: 033A004

Task: 116188-33A

Sample Number: NWO-033-2001-MS

Sample Name: 033A004-SW-NWO-033-2001-MS

Collection Date: _____

Collection Time: _____

Sampling Method: GRAB

Start Depth: _____

Sample Type: SW

Sample Purpose: MS

End Depth: _____

Sampling Equip: _____

Sample Matrix: WATER

QC Partners:

(TB) _____ (ER) _____ (FB) _____

Sample Team: _____

Containers

Analytical Suite	Flt	Frtn	Qty	Size	Units	Type
COGR METALS	N	A	1	500	mL	HDPE
EXPLOSIVES	N	B	2	1	L	Amb. Glass
NG	N	B	2	1	L	Amb. Glass
PERCHLORATE	Y	X	C	3	40	mL VOA VIAL

ERPIMS Values:

Sacode: _____

Lot Control#: _____

Surface Water Parameters:	Eh	pH	Conductivity	Turbidity	DissOxygen	Temperature
	(mV)	(SU)	(mS/cm)	(NTU)	(ppm)	(C)

Comments: NO WATER ON SITE
NO SAMPLE COLLECTED

Sketch Location:

Logged BY / Date: _____

Reviewed BY / Date: _____



Shaw E & I, Inc.

Sample Collection Log

116188 - FUDS SI - NWO Region

Manager: Peter Kelsall

RFA / COC Number: _____

Location Code: 033A004

Task: 116188-33A

Sample Number: NWO-033-2001-D15

Collection Date: _____

Sample Name: 033A004-SW-NWO-033-2001-REG

Collection Time: _____

Sampling Method: GRAB

Start Depth: _____

Sample Type: SW

Sample Purpose: REG

End Depth: _____

Sampling Equip: _____

Sample Matrix: WATER

QC Partners:

(TB) _____ (ER) _____ (FB) _____

Sample Team: _____

Containers

Analytical Suite Flt Frtn Qty Size Units Type

COGR METALS	4	X	A	1	500	mL	HDPE
-------------	---	---	---	---	-----	----	------

ERPIMS Values:

Sacode: _____

Lot Control#: _____

Surface Water Parameters:	Eh	pH	Conductivity	Turbidity	DissOxygen	Temperature
	(mV)	(SU)	(mS/cm)	(NTU)	(ppm)	(C)

Comments: NO WATER ON SITE
NO SAMPLE COLLECTED

Sketch Location:

Logged BY / Date: _____

Reviewed BY / Date: _____



Sample Collection Log

116188 - FUDS SI - NWO Region

Manager: Peter Kelsall

RFA / COC Number: _____

Location Code: 033A004

Task: 116188-33A

Sample Number: NWO-033-2001

Collection Date: _____

Sample Name: 033A004-SW-NWO-033-2001-REG

Collection Time: _____

Sampling Method: GRAB

Start Depth: _____

Sample Type: SW

Sample Purpose: REG

End Depth: _____

Sampling Equip: _____

Sample Matrix: WATER

QC Partners:

(TB) _____ (ER) _____ (FB) _____

Sample Team: _____

Containers

Analytical Suite	Flt	Frtn	Qty	Size	Units	Type
COGR METALS	N	A	1	500	mL	HDPE
EXPLOSIVES	N	B	2	1	L	Amb. Glass
NG	N	B	2	1	L	Amb. Glass
PERCHLORATE	4 X	C	3	40	mL	VOA VIAL

ERPIMS Values:

Sacode: _____

Lot Control#: _____

Surface Water Parameters:	Eh (mV)	pH (SU)	Conductivity (mS/cm)	Turbidity (NTU)	DissOxygen (ppm)	Temperature (C)

Comments: NO WATER ON SITE
NO SAMPLE COLLECTED

Sketch Location:

Logged BY / Date: _____

Reviewed BY / Date: _____



Shaw E & I, Inc.

Sample Collection Log

116188 - FUDS SI - NWO Region

Manager: Peter Kelsall

RFA / COC Number: NWO 033-001

Location Code: **033A005**

Task: **116188-33A**

Sample Number: **NWO-033-0004**

Collection Date: 2-13-07

Sample Name: **033A005-SS-NWO-033-0004-REG**

Collection Time: 1440

Sampling Method: **COMP**

Start Depth: 0'

Sample Type: **SS**

Sample Purpose: **REG**

End Depth: 6"

Sampling Equip: Stainless Plastic Shovel

Sample Matrix: **SOIL**

QC Partners:

(TB)

(ER)

(FB)

Sample Team: RP/R1

Containers

Analytical Suite	Flt	Frtn	Qty	Size	Units	Type
COGR METALS	N	A	1	8	oz	CWM
EXPLOSIVES	N	B	1	8	oz	CWM
NG	N	B	1	8	oz	CWM

ERPIMS Values:

Sacode: _____

Lot Control#: _____

Comments: field dupe = NWO-033-0007

Sketch Location:

See photo # 033-COR-16-13 FEB 07

Logged BY / Date: PK 2-13-07

Reviewed BY / Date: PK 2/16/07



Shaw E & I, Inc.

Sample Collection Log

116188 - FUDS SI - NWO Region

Manager: Peter Kelsall

RFA / COC Number: NWO033-001
~~2000~~

Location Code: 033A005

Task: 116188-33A

Sample Number: NWO-033-0007

Collection Date: 2-13-07

Sample Name: 033A005-SS-NWO-033-0007-FD

Collection Time: 1440

Sampling Method: COMP

Start Depth: 0"

Sample Type: SS

Sample Purpose: FD

End Depth: 6"

Sampling Equip: sterile plastic shovel

Sample Matrix: SOIL

QC Partners:

Sample Team: RP/R1

(TB) _____ (ER) _____ (FB) _____

Containers

Analytical Suite Flt Frtn Qty Size Units Type

Analytical Suite	Flt	Frtn	Qty	Size	Units	Type
COGR METALS	N	A	1	8	oz	CWM
EXPLOSIVES	N	B	1	8	oz	CWM
NG	N	B	1	8	oz	CWM

ERPIMS Values:

Sacode: _____

Lot Control#: _____

Comments: _____

Sketch Location:

See photo # 033-COGR-16-13 FEB 07

Logged BY / Date: RP 2-13-07

Reviewed BY / Date: ROK 2/15/07



Shaw E & I, Inc.

Sample Collection Log

116188 - FUDS SI - NWO Region

Manager: Peter Kelsall

RFA / COC Number: NWO 033-001

Location Code: **033A006**

Task: **116188-33A**

Sample Number: **NWO-033-0005**

Collection Date: 2-13-07

Sample Name: **033A006-SS-NWO-033-0005-REG**

Collection Time: 1420

Sampling Method: **COMP**

Start Depth: 0"

Sample Type: **SS**

Sample Purpose: **REG**

End Depth: 6"

Sampling Equip: sterile plastic shovel

Sample Matrix: **SOIL**

QC Partners:

(TB)

(ER)

(FB)

Sample Team: PP/PI

Containers

Analytical Suite	Flt	Frtn	Qty	Size	Units	Type
COGR METALS	N	A	1	8	oz	CWM

ERPIMS Values:

Sacode: _____

Lot Control#: _____

Comments: _____

Sketch Location:

See photo #
033-COGR-14^{pp}-13FEB07
15

Logged BY / Date: PP 2-13-07

Reviewed BY / Date: PK 2/15/07



Sample Collection Log

116188 - FUDS SI - NWO Region

Manager: Peter Kelsall

RFA / COC Number: NWO033-001

Location Code: 033A007

Task: 116188-33A

Sample Number: NWO-033-0006

Collection Date: 2-13-07

Sample Name: 033A007-SS-NWO-033-0006-REG

Collection Time: 1410

Sampling Method: COMP

Start Depth: 0"

Sample Type: SS

Sample Purpose: REG

End Depth: 6"

Sampling Equip: Sterile Plastic Shovel

Sample Matrix: SOIL

QC Partners:

(TB) _____ (ER) _____ (FB) _____

Sample Team: RP/R1

Containers

Analytical Suite	Flt	Frtn	Qty	Size	Units	Type
COGR METALS	N	A	1	8	oz	CWM

ERPIMS Values:

Sacode: _____

Lot Control#: _____

Comments:

Sketch Location:

See photo # 033-COGR-13th-13FEB07
14

033

Logged BY / Date: RP 2-13-07

Reviewed BY / Date: ROK 2/15/07



Shaw E & I, Inc.

Sample Collection Log

116188 - FUDS SI - NWO Region

Manager: Peter Kelsall

RFA / COC Number: NWO 33-001

Location Code: 033A008

Task: 116188-33A

Sample Number: NWO-033-1002

Collection Date: 2-13-07

Sample Name: 033A008-SD-NWO-033-1002-REG

Collection Time: 1330

Sampling Method: GRAB

Start Depth: 0"

Sample Type: SD

Sample Purpose: REG

End Depth: 6"

Sampling Equip: STERILE PLASTIC SHOVEL

Sample Matrix: SOIL

QC Partners:

(TB)

(ER)

(FB)

Sample Team: RP/R1

Containers

Analytical Suite Flt Frtn Qty Size Units Type

Analytical Suite	Flt	Frtn	Qty	Size	Units	Type
COGR METALS	N	A	1	8	oz	CWM
EXPLOSIVES	N	B	1	8	oz	CWM
NG	N	B	1	8	oz	CWM

ERPIMS Values:

Sacode: _____

Lot Control#: _____

Comments: NO WATER ON SITE - SAMPLE COLLECTED FROM DRY LAKE BED

Sketch Location:

See photo # 033-COGR-¹²9-13 FEB 07
~~033-COGR-10~~

Logged BY / Date: RP / 2-13-07

Reviewed BY / Date: RP / 2/15/07



Sample Collection Log

116188 - FUDS SI - NWO Region

Manager: Peter Kelsall

RFA / COC Number: _____

Location Code: **033A008**

Task: **116188-33A**

Sample Number: **NWO-033-2002**

Collection Date: _____

Sample Name: **033A008-SW-NWO-033-2002-REG**

Collection Time: _____

Sampling Method: **GRAB**

Start Depth: _____

Sample Type: **SW**

Sample Purpose: **REG**

End Depth: _____

Sampling Equip: _____

Sample Matrix: **WATER**

QC Partners:

(TB) _____ (ER) _____ (FB) _____

Sample Team: _____

Containers

Analytical Suite	Flt	Frtn	Qty	Size	Units	Type
COGR METALS	N	A	1	500	mL	HDPE
EXPLOSIVES	N	B	2	1	L	Amb. Glass
NG	N	B	2	1	L	Amb. Glass
PERCHLORATE	✓	✗ C	3	40	mL	VOA VIAL

ERPIMS Values:

Sacode: _____

Lot Control#: _____

Surface Water Parameters:	Eh (mV)	pH (SU)	Conductivity (mS/cm)	Turbidity (NTU)	DissOxygen (ppm)	Temperature (C)

Comments: NO WATER ON SITE

Sketch Location:

Logged BY / Date: _____

Reviewed BY / Date: _____



Shaw E & I, Inc.

Sample Collection Log

116188 - FUDS SI - NWO Region

Manager: Peter Kelsall

RFA / COC Number: _____

Location Code: 033A008

Task: 116188-33A

Sample Number: NWO-033-2002-D15

Collection Date: _____

Sample Name: 033A008-SW-NWO-033-2002-REG

Collection Time: _____

Sampling Method: GRAB

Start Depth: _____

Sample Type: SW

Sample Purpose: REG

End Depth: _____

Sampling Equip: _____

Sample Matrix: WATER

QC Partners:

(TB) _____ (ER) _____ (FB) _____

Sample Team: _____

Containers

Analytical Suite Flt Frtn Qty Size Units Type

COGR METALS	✓	✗	A	1	500	mL	HDPE
-------------	---	---	---	---	-----	----	------

ERPIMS Values:

Sacode: _____

Lot Control#: _____

Surface Water Parameters:	Eh	pH	Conductivity	Turbidity	DissOxygen	Temperature
	(mV)	(SU)	(mS/cm)	(NTU)	(ppm)	(C)

Comments: NO WATER ONSITE

Sketch Location:

Logged BY / Date: _____

Reviewed BY / Date: _____



Shaw E & I, Inc.

Sample Collection Log

116188 - FUDS SI - NWO Region

Manager: Peter Kelsall

RFA / COC Number: _____

Location Code: 033A008

Task: 116188-33A

Sample Number: NWO-033-2004

Collection Date: _____

Sample Name: 033A008-SW-NWO-033-2004-FD

Collection Time: _____

Sampling Method: GRAB

Start Depth: _____

Sample Type: SW

Sample Purpose: FD

End Depth: _____

Sampling Equip: _____

Sample Matrix: WATER

QC Partners:

(TB) _____ (ER) _____ (FB) _____

Sample Team: _____

Containers

Analytical Suite	Flt	Frtn	Qty	Size	Units	Type
COGR METALS	N	A	1	500	mL	HDPE
EXPLOSIVES	N	B	2	1	L	Amb. Glass
NG	N	B	2	1	L	Amb. Glass
PERCHLORATE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	C	3	40	mL VOA VIAL

ERPIMS Values:

Sacode: _____

Lot Control#: _____

Surface Water Parameters:	Eh (mV)	pH (SU)	Conductivity (mS/cm)	Turbidity (NTU)	DissOxygen (ppm)	Temperature (C)

Comments: NO WATER ON SITE

Sketch Location:

Logged BY / Date: _____

Reviewed BY / Date: _____



Shaw E & I, Inc.

Sample Collection Log

116188 - FUDS SI - NWO Region

Manager: Peter Kelsall

RFA / COC Number: _____

Location Code: 033A008

Task: 116188-33A

Sample Number: NWO-033-2004-D15

Collection Date: _____

Sample Name: 033A008-SW-NWO-033-2004-FD

Collection Time: _____

Sampling Method: GRAB

Start Depth: _____

Sample Type: SW

Sample Purpose: FD

End Depth: _____

Sampling Equip: _____

Sample Matrix: WATER

QC Partners:

(TB) _____ (ER) _____ (FB) _____

Sample Team: _____

Containers

Analytical Suite	Flt	Frtn	Qty	Size	Units	Type
COGR METALS	✓	A	1	500	mL	HDPE

ERPIMS Values:

Sacode: _____

Lot Control#: _____

Surface Water Parameters:	Eh	pH	Conductivity	Turbidity	DissOxygen	Temperature
	(mV)	(SU)	(mS/cm)	(NTU)	(ppm)	(C)

Comments: NO WATER ONSITE

Sketch Location:

Logged BY / Date: _____

Reviewed BY / Date: _____



Shaw E & I, Inc.

Sample Collection Log

116188 - FUDS SI - NWO Region

Manager: Peter Kelsall

RFA / COC Number: NWO033-002

Location Code: 033A010

Task: 116188-33A

Sample Number: NWO-033-3001

Collection Date: 2-14-07

Sample Name: 033A010-GW-NWO-033-3001-REG

Collection Time: 1207

Sampling Method: GRAB

Start Depth: NA

Sample Type: GW

Sample Purpose: REG

End Depth: NA

Sampling Equip: Geo Pump

Sample Matrix: WATER

QC Partners:

(TB) _____ (ER) _____ (FB) _____

Sample Team: PK/PL

Containers

Analytical Suite Flt Frtn Qty Size Units Type

PERCHLORATE	<u>Y</u>	<u>X</u>	A	3	40	mL	VOA VIAL
-------------	----------	----------	---	---	----	----	----------

ERPIMS Values:

Sacode: _____

Lot Control#: _____

Groundwater Information:

Measured Well Depth: NA ^{RP}

Depth To Water: ~8.65 TOL

Comments: ~12.6' bTOL
Filtered w/ 0.2 um filter

Sketch Location:

See photo 033-COGR-21-14FEB07
033-COGR-22-14FEB07

well ID = mw-60

Logged BY / Date: PK 2-14-07

Reviewed BY / Date: PK 2/15/07

Sample Collection Log

116188 - FUDS SI - NWO Region
 Manager: Peter Kelsall

Location Code: 033A010

Sample Number: NWO-033-3001

PURGE RECORD:

Initial Time(24hr)	DepthtoWater (ft)	Eh (mV)	pH (SU)	Conductivity (mS/cm)	Turbidity (NTU)	DissOxygen (ppm)	Temperature (C)	Purge Volume (gal)
1:57	N/A		10.32	3.57	0	0.52	8.9	~100 mL
1159			10.29	3.67	3.5	0	9.2	~600 mL
1201			10.35	3.66	0	0	7.3	~1100 mL
1203			10.38	3.64	0	0	9.4	~1600 mL
Sample:								

1140. Set up @ MW-60 (033A010) wP=15
 unable to tag bottom b/c casing is 1/2" ID & sonar won't pass opening. Estimate TD by running tube down to bottom & measuring tube - TD ~ 12.6' to c. TWC = 3.4' abs. DTW ~ 8.6' to c (~ 5.2' bss)
 TD ~ 9.2' bss

WELL = MW-60
 water color is ~~off~~ brownish
 flow rate ~ 250 mL/min

Logged BY / Date: PKP 2-14-07

Reviewed BY / Date: PKP 2/15/07



Shaw E & I, Inc.

Sample Collection Log

116188 - FUDS SI - NWO Region

Manager: Peter Kelsall

RFA / COC Number: NWO 033-001

Location Code: 033A011

Task: 116188-33A

Sample Number: NWO-033-5001

Collection Date: 2-14-07

Sample Name: 033A011-SD-NWO-033-5001-REG

Collection Time: 1020

Sampling Method: GRAB

Start Depth: 0"

Sample Type: SD

Sample Purpose: REG

End Depth: 6"

Sampling Equip: sterile plastic shovel

Sample Matrix: SOIL

QC Partners:

(TB) _____ (ER) _____ (FB) _____

Sample Team: RP / RI

Containers

Analytical Suite Flt Frtn Qty Size Units Type

COGR METALS	N	A	1	8	oz	CWM
-------------	---	---	---	---	----	-----

ERPIMS Values:

Sacode: _____

Lot Control#: _____

Comments: NO SURFACE WATER ONSITE. NO SEDIMENT
SAMPLE AVAILABLE. SAMPLE COLLECTED FROM SURFACE
TO 6" IN DRY LAKE BED.

Sketch Location:

See photos - 033-COGR-17-14 FEB 07 North
033-COGR-18-14 FEB 07 East South
033-COGR-19-14 FEB 07 South
033-COGR-20-14 FEB 07 West

Logged BY / Date: RP 2-14-07

Reviewed BY / Date: RP 2/15/07



Shaw E & I, Inc.

Sample Collection Log

116188 - FUDS SI - NWO Region

Manager: Peter Kelsall

RFA / COC Number: _____

Location Code: 033A011

Task: 116188-33A

Sample Number: NWO-033-6001

Collection Date: _____

Sample Name: 033A011-SW-NWO-033-6001-REG

Collection Time: _____

Sampling Method: GRAB

Start Depth: _____

Sample Type: SW

Sample Purpose: REG

End Depth: _____

Sampling Equip: _____

Sample Matrix: WATER

QC Partners:

(TB) _____ (ER) _____ (FB) _____

Sample Team: _____

Containers

Analytical Suite Flt Frtn Qty Size Units Type

COGR METALS	N	A	1	500	mL	HDPE
PERCHLORATE	4	B	3	40	mL	VOA VIAL

ERPIMS Values:

Sacode: _____

Lot Control#: _____

Surface Water Parameters:	Eh	pH	Conductivity	Turbidity	DissOxygen	Temperature
	(mV)	(SU)	(mS/cm)	(NTU)	(ppm)	(C)

Comments: NO SURFACE WATER ON SITE

Sketch Location:

Logged BY / Date: _____

Reviewed BY / Date: _____



Sample Collection Log

116188 - FUDS SI - NWO Region

Manager: Peter Kelsall

RFA / COC Number: _____

Location Code: 033A011

Task: 116188-33A

Sample Number: NWO-033-6001-D15

Collection Date: _____

Sample Name: 033A011-SW-NWO-033-6001-REG

Collection Time: _____

Sampling Method: GRAB

Start Depth: _____

Sample Type: SW

Sample Purpose: REG

End Depth: _____

Sampling Equip: _____

Sample Matrix: WATER

QC Partners:

(TB) _____ (ER) _____ (FB) _____

Sample Team: _____

Containers

Analytical Suite Flt Frtn Qty Size Units Type

COGR METALS	✓	A	1	500	mL	HDPE
-------------	---	---	---	-----	----	------

ERPIMS Values:

Sacode: _____

Lot Control#: _____

Surface Water Parameters:	Eh	pH	Conductivity	Turbidity	DissOxygen	Temperature
	(mV)	(SU)	(mS/cm)	(NTU)	(ppm)	(C)

Comments: NO SURFACE WATER ON SITE

Sketch Location:

Logged BY / Date: _____

Reviewed BY / Date: _____

Sample Collection Log

116188 - FUDS SI - NWO Region

Manager: Peter Kelsall

RFA / COC Number: NWO 033-602

Location Code: 033A012

Task: 116188-33A

Sample Number: NWO-033-6002

Collection Date: 2-13-07

Sample Name: 033A012-GW-NWO-033-6002-REG

Collection Time: 1000

Sampling Method: GRAB

Start Depth: ~ 9'

Sample Type: GW

Sample Purpose: REG

End Depth: ~ 9'

Sampling Equip: Geo Pump

Sample Matrix: WATER

QC Partners:

(TB) _____ (ER) _____ (FB) _____

Sample Team: RP / RI

Containers

Analytical Suite	Flt	Frtn	Qty	Size	Units	Type
PERCHLORATE	4*	B	3	40	mL	VOA VIAL

ERPIMS Values:

Sacode: _____

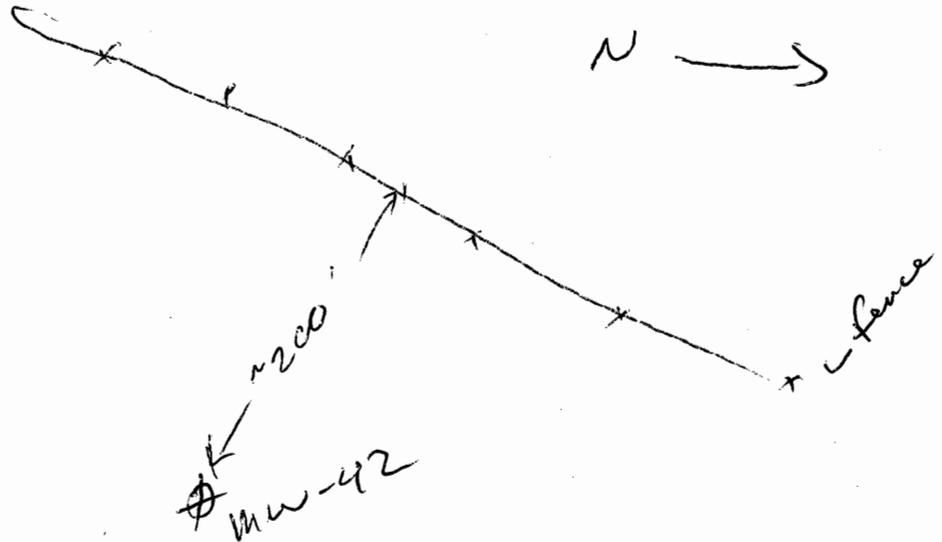
Lot Control#: _____

Groundwater Information:

Measured Well Depth: 10.60' Depth To Water: 8.30'

Comments: Filtered w/ 0.2um filter

Sketch Location: See photo # 033-COGR-2-13FEB07



Logged BY / Date: _____

Reviewed BY / Date: RP 2/15/07

Sample Collection Log

116188 - FUDS SI - NWO Region

Manager: Peter Kelsall

Location Code: 033A012

Sample Number: NWO-033-6002

DTW = 8.30 bss

TD = 10.60 bss

PURGE RECORD:

Initial	Time(24hr)	DepthtoWater (ft)	Eh (mV)	pH (SU)	Conductivity (mS/cm)	Turbidity (NTU)	DissOxygen (ppm)	Temperature (C)	Purge Volume (gal)
	0953	8.30		11.64	2.46	148	6.12	8.6	<250ml/min
	0955	8.35		11.50	2.73	47.4	1.50	9.3	<250ml/min
	0957	8.35		11.43	2.77	13.5	1.06	9.4	<250ml/min
	0959	8.35		11.42	2.78	9.6	1.01	9.4	<250ml/min
Sample:	1000								

Logged BY / Date: RP 2-13-07

Reviewed BY / Date: Pat 2/15/07



GPL LABORATORIES
7210A Corporate Ct.
Frederick, MD 21703
301-694-5310

CHAIN OF CUSTODY

CoC Number: NWO033- 001

PAGE: 1 OF 1

GPL Project Manager: Tim Mikesell	Client Name: Shaw Environmental, Inc. / Tim Roth	Phone: 865.560.5272	Disposal Instructions:
Project Name: FUDS MMRP NWO	Address: 312 Directors Drive	Cell:	Shipment Method: FedEx
Project Number: 116188	City, State: Knoxville, TN	Zip Code: 37923	Waybill Number:

Comments: H=Hold Analysis Request X=Analyze;		Preservatives and Containers											
Shaw MMRP FUDS Site - 033 Central Oregon Gunnery Range		8 oz CWM / 4 °C	N/A	8 oz CWM / 4 °C									

Sample Information					Methods for Analysis										Filter	TOTAL BOTTLES		
No.	FIELD Sample ID	Date Sampled	Time Sampled	Matrix	Sampler's Initials	Al, Cr, Cu, Fe, Pb, Mn, Mo, and Ni by SW-846 6020A	GPL SOP H36 & No. 10 Sieve	Explosives by SW-846 8330A	Nitroglycerin by SW-846 8330A (Modified)									
1	NWO-033-0001	2-13-07	1210	SO	RP	X	X	X	X								N	2
2	NWO-033-0001-MS	2-13-07	1210	SO	RP	X	X	X	X								N	2
3	NWO-033-0001-MSD	2-13-07	1210	SO	RP	X	X	X	X								N	2
4	NWO-033-0002	2-13-07	1155	SO	RP	X	X										N	1
5	NWO-033-0003	2-13-07	1250	SO	RP	X	X										N	1
6	NWO-033-1001	2-13-07	1245	SD	RP	X	X	X	X								N	2
7	NWO-033-0004	2-13-07	1440	SO	RP	X	X	X	X								N	2
8	NWO-033-0005	2-13-07	1420	SO	RP	X	X										N	1
9	NWO-033-0006	2-13-07	1410	SO	RP	X	X										N	1
10	NWO-033-0007	2-13-07	1440	SO	RP	X	X	X	X								N	2
11	NWO-033-1002	2-13-07	1330	SD	RP	X	X	X	X								N	2
12	NWO-033-5001	2-13-07	1620	SD	RP	X	X										N	1

Sample Matrix: WG= Groundwater; SO= Soil; WS= Surface Water; WQ= Water Quality				TAT Requirement: 21 Days		Total number of samples	
Relinquished By:	Date: 2-15-07	Time: 1400	For Lab Use				COOLER RECEIPT CONDITION
Received By: FEDEX	Date: 2-15-07	Time: 1400	GPL WORK ORDER #: _____				
Relinquished By:	Date:	Time:	PURCHASE ORDER #: _____				
Received By:	Date:	Time:					
Relinquished By:	Date:	Time:					



GPL LABORATORIES
7210A Corporate Ct.
Frederick, MD 21703
301-694-5310

CHAIN OF CUSTODY

CoC Number: NWO033-002

PAGE: 1 OF 1

GPL Project Manager: Tim Mikesell	Client Name: Shaw Environmental, Inc. / Tim Roth	Phone: 865.560.5272	Disposal Instructions:
Project Name: FUDS MMRP NWO	Address: 312 Directors Drive	Cell:	Shipment Method: FedEx
Project Number: 116188	City, State: Knoxville, TN	Zip Code: 37923	Waybill Number:

Comments: H=Hold Analysis Request X=Analyze; Shaw MMRP FUDS Site - 033 Central Oregon Gunnery Range	Preservatives and Containers											
	500mL Poly w/ HNO ₃ / 4 °C	2 x 1L Amber Glass / 4 °C	3 x 40 ml VOA Vial / 4 °C									

Sample Information						Methods for Analysis															
No.	FIELD Sample ID	Date Sampled	Time Sampled	Matrix	Sampler's Initials	Al, Cr, Cu, Fe, Pb, Mn, Mo, and Ni by SW-846 6020A	Explosives by SW-846 8330A	Nitroglycerin by SW-846 8330A (Modified)	Perchlorate by LC/MS (DataChem SOP No. LCMS-CLO4-Rev2)											Filter	TOTAL BOTTLES
1	NWO-033-2001			SW		X	X	X	X											N	6
2	NWO-033-2001-MS			SW		X	X	X	X											N	6
3	NWO-033-2001-MSD			SW		X	X	X	X											N	6
4	NWO-033-2001-DIS			SW		X														Y	1
5	NWO-033-2002			SW		X	X	X	X											N	6
6	NWO-033-2002-DIS			SW		X														Y	1
7	NWO-033-2004			SW		X	X	X	X											N	6
8	NWO-033-2004-DIS			SW		X														Y	1
9	NWO-033-3001	2-17-07	12:07	GW					X											N	3
10	NWO-033-6001			SW		X			X											N	4
11	NWO-033-6001-DIS			SW		X														Y	1
12	NWO-033-6002	2-13-07	1000	GW	RP				X											N	3

Sample Matrix: WG= Groundwater; SO= Soil; WS= Surface Water; WQ= Water Quality				TAT Requirement: 21 Days				Total number of samples			
Relinquished By:	Date: 2-15-07	Time: 1400		For Lab Use				COOLER RECEIPT CONDITION			
Received By: FEDEX	Date: 2-15-07	Time: 1400		GPL WORK ORDER #:							
Relinquished By:	Date:	Time:		PURCHASE ORDER #:							
Received By:	Date:	Time:									
Relinquished By:	Date:	Time:									



Project Name: Central Oregon Gunnery Range	Project Number: 116188.33007000
Date of Issue: 2/7/07	Linked w/NC No: (if applicable)
—Variance Report—	
V. Summary of the Change: (by the person identifying the change); The <i>Final SSWP Central Oregon Gunnery Range, Section 4.4, Field Team Leader and Appendix C, III Site Personnel and Responsibilities (Shaw, 2007)</i> , identified Mr. Tony Searls as the Field Team Leader for the field work. Change the field team leader from Tony Searls to Ryan Pollyea. Due to weather delays the field work was postponed and Mr. Searls is no longer available.	
Identified by: Dale Landon , Technical Lead	Date: 2/7/07
VI. Variance Requested: (by the person identifying the nonconformance)	
Change Field Team Lead from Mr. Tony Searls to Mr. Ryan Pollyea.	
To Be Performed by: Dale Landon	Date: 2/7/07
To Be Verified by: Mr. Paul Sadowski	Date: 2/12/07
VII. Justification for Variance: Due to weather delays the field work was postponed and Mr. Searls is no longer available.	
VIII. Applicable Document/Work Plan: (by the person identifying the change) <i>Final Site Specific Work Plan Central Oregon Gunnery Range, (Shaw, 2007)</i>	
Distribution List:	—Signatures—
	Requested by: <u>Dale Landon</u> Date: <u>2/7/07</u> (printed name and date) Signature:
	Proj. Mgr. Approval: <u>P. Kelsall</u> Date: <u>2/7/07</u> (printed name and date) Signature:
	QA Approval: <u>PAUL SADOWSKI</u> Date: <u>2/7/07</u> (printed name and date) Signature:
	USACE Approval by: <u>MICHAEL WATSON</u> Date: <u>2/22/07</u> (printed name and date) Signature:



Project Name: Central Oregon Gunnery Range	Project Number: 116188.33007000
Date of Issue: 2/15/07	Linked w/NC No: (if applicable)
—Variance Report—	
<p>V. Summary of the Change: (by the person identifying the change); The <i>Final SSWP Central Oregon Gunnery Range, Section 4.6.4, Groundwater and Figure 2</i>, identified that a groundwater sample (location 030A010) would be collected from a well located downgradient of the southern target area. The access key provided by the Oregon DEQ would not work in the well lock. An alternate well, located Approx. 550 ft downgradient (NW) of the original well and within the same hydrogeologic zone as the original well was located allowing a sample to be collected. Change sample point to that shown on attached figures.</p>	
Identified by: Dale Landon , Technical Lead	Date: 2/15/07
<p>VI. Variance Requested: (by the person identifying the nonconformance)</p> <p>Change sample location to new 033A010 shown on attached figure</p>	
To Be Performed by: Ryan Pollyea	Date: 2/14/07
To Be Verified by: Mr. Dale Landon	Date: 2/15/07
<p>VII. Justification for Variance: Well is located in a remote area of south central Oregon. Access to the preselected well at location D033A010 was prevented by the key not working in lock. An alternate well was located. Well is completed in the same hydrogeologic water-bearing zone as original location and is also located downgradient of the Southern Target Area.</p>	
<p>VIII. Applicable Document/Work Plan: (by the person identifying the change)</p> <p><i>Final Site Specific Work Plan Central Oregon Gunnery Range, (Shaw, 2007)</i></p>	
Distribution List:	—Signatures—
	<p>Requested by: <u>Dale Landon</u> Date: <u>2/15/07</u> (printed name and date)</p> <p>Signature: </p>
	<p>Proj. Mgr. Approval: <u>P. KESNER</u> Date: <u>2/16/07</u> (printed name and date)</p> <p>Signature: </p>
	<p>QA Approval: <u>PAUL SADOWSKI</u> Date: <u>2/19/07</u> (printed name and date)</p> <p>Signature: </p>
	<p>USACE Approval by: <u>MICHAEL WATSON</u> Date: <u>2/22/07</u> (printed name and date)</p> <p>Signature: </p>

Appendix E
Photodocumentation Log

CENTRAL OREGON GUNNERY RANGE - FIELD PHOTOGRAPHS

Site: Central Oregon Gunnery Range

Photographer: Rob Irons

Location Of Photograph: Sample Location 033A012, Sample No NWO-033-6002

GPS Coordinates: Y 4761339 X 740854
UTM Zone 10N

Direction Of Photo: Down

Comments: Upgradient well sampling.

Photograph No. 1:033-COGR-002-13Feb07 Date: 13-Feb-07 Time 9:40 AM

Site: Central Oregon Gunnery Range

Photographer: Rob Irons

Location Of Photograph: Sample Location 033A012, Sample No NWO-033-6002

GPS Coordinates: Y 4761339 X 740854
UTM Zone 10N

Direction Of Photo: Down

Comments: .50-caliber bullets found near background well sample location.

Photograph No. 2:033-COGR-003-13Feb07 Date: 13-Feb-07 Time 10:00 AM



CENTRAL OREGON GUNNERY RANGE - FIELD PHOTOGRAPHS

Site: Central Oregon Gunnery Range

Photographer: Ryan Pollyea

Location Of Photograph: Sample Location 033A002, Samp No. NWO-033-0002

GPS Coordinates: Y 4761717 X 740621
UTM Zone 10N

Direction Of Photo: North

Comments: Location of sample NWO-033-0002.

Photograph No. 3:033-COGR-005-13Feb07 Date: 13-Feb-07 Time 11:50:00 AM

Site: Central Oregon Gunnery Range

Photographer: Ryan Pollyea

Location Of Photograph: Sample Location 033A001, Samp No. NWO-033-0001

GPS Coordinates: Y 4761584 X 740445
UTM Zone 10N

Direction Of Photo: East

Comments: Note animal trails.

Photograph No. 4:033-COGR-0065-13Feb07 Date: 13-Feb-07 Time 12:07 PM



CENTRAL OREGON GUNNERY RANGE - FIELD PHOTOGRAPHS

Site: Central Oregon Gunnery Range

Photographer: Ryan Pollyea

Location Of Photograph: Samp. Location 033A004, Samp No. NWO-033-1001

GPS Coordinates: Y 4761913 X 740679
UTM Zone 10N

Direction Of Photo: North

Comments: Photo of terrain.

Photograph No. 5:033-COGR-007-13Feb07 Date: 13-Feb-07 Time 12:36:00 PM

Site: Central Oregon Gunnery Range

Photographer: Ryan Pollyea

Location Of Photograph: Samp. Location 033A004, Samp No. NWO-033-1001

GPS Coordinates: Y 4761913 X 740679
UTM Zone 10N

Direction Of Photo: East

Comments: Photo of terrain.

Photograph No. 6:033-COGR-008-13Feb07 Date: 13-Feb-07 Time 12:36:00 PM



CENTRAL OREGON GUNNERY RANGE - FIELD PHOTOGRAPHS

Site: Central Oregon Gunnery Range

Photographer: Ryan Pollyea

Location Of Photograph: Samp. Location 033A004, Samp No. NWO-033-1001

GPS Coordinates: Y 4761913 X 740679
UTM Zone 10N

Direction Of Photo: South

Comments: Photo of terrain.

Photograph No. 7:033-COGR-009-13Feb07 Date: 13-Feb-07 Time 12:36:00 PM

Site: Central Oregon Gunnery Range

Photographer: Ryan Pollyea

Location Of Photograph: Samp. Location 033A004, Samp No. NWO-033-1001

GPS Coordinates: Y 4761913 X 740679
UTM Zone 10N

Direction Of Photo: East

Comments: Looking at sediment sample location, note mud cracks.

Photograph No. 8:033-COGR-010-13Feb07 Date: 13-Feb-07 Time 12:36:00 PM



CENTRAL OREGON GUNNERY RANGE - FIELD PHOTOGRAPHS

Site: Central Oregon Gunnery Range

Photographer: Ryan Pollyea

Location Of Photograph: Sample Location 033A003, Samp No. NWO-033-0003

GPS Coordinates: Y 4761777 X 740796
UTM Zone 10N

Direction Of Photo: East

Comments: Soil sample location.

Photograph No. 9:033-COGR-011-13Feb07 Date: 13-Feb-07 Time 12:45:00 PM

Site: Central Oregon Gunnery Range

Photographer: Ryan Pollyea

Location Of Photograph: Sample Location 033A008, Samp No. NWO-033-1002

GPS Coordinates: Y 4762902 X 740460
UTM Zone 10N

Direction Of Photo: East

Comments: Photo of terrain near sediment sample number NWO-033-1002.

Photograph No. 10:033-COGR-011-13Feb07 Date: 13-Feb-07 Time 1:30:00 PM



CENTRAL OREGON GUNNERY RANGE - FIELD PHOTOGRAPHS

Site: Central Oregon Gunnery Range

Photographer: Ryan Pollyea

Location Of Photograph: between sample loc 033A0008 and 033A007

GPS Coordinates: Y 4763023 X 740394
UTM Zone 10N

Direction Of Photo: North

Comments: Photo of dry Alkali Lake lake bed.

Photograph No. 11:033-COGR-013-13Feb07 Date: 13-Feb-07 Time 2:00:00 PM

Site: Central Oregon Gunnery Range

Photographer: Ryan Pollyea

Location Of Photograph: Sample Location 033A007, Samp No. NWO-033-0006

GPS Coordinates: Y 4763155 X 740342
UTM Zone 10N

Direction Of Photo: North

Comments: Terrain at location 033A007.

Photograph No. 12:033-COGR-014-13Feb07 Date: 13-Feb-07 Time 2:05:00 PM



CENTRAL OREGON GUNNERY RANGE - FIELD PHOTOGRAPHS

Site: Central Oregon Gunnery Range

Photographer: Ryan Pollyea

Location Of Photograph: Sample Location 033A006, Samp No. NWO-033-0005

GPS Coordinates: Y 4763009 X 740025
UTM Zone 10N

Direction Of Photo: Northeast

Comments: Soil sample location.

Photograph No. 13:033-COGR-015-13Feb07 Date: 13-Feb-07 Time 2:15:00 PM

Site: Central Oregon Gunnery Range

Photographer: Ryan Pollyea

Location Of Photograph: Sample Location 033A005, Samp No. NWO-033-0004

GPS Coordinates: Y 4762763 X 740168
UTM Zone 10N

Direction Of Photo: Northeast

Comments: Soil sample location.

Photograph No. 14:033-COGR-016-13Feb07 Date: 13-Feb-07 Time 2:30:00 PM



CENTRAL OREGON GUNNERY RANGE - FIELD PHOTOGRAPHS

Site: Central Oregon Gunnery Range

Photographer: Ryan Pollyea

Location Of Photograph: Sample Location 033A011, Samp No. NWO-033-5001

GPS Coordinates: Y 4761223 X 741438
UTM Zone 10N

Direction Of Photo: North

Comments: Alkali Lake (dry), Background sediment sample location.

Photograph No. 15:033-COGR-017-14Feb07 Date: 14-Feb-07 Time 10:20:00 AM

Site: Central Oregon Gunnery Range

Photographer: Ryan Pollyea

Location Of Photograph: Sample Location 033A011, Samp No. NWO-033-5001

GPS Coordinates: Y 4761223 X 741438
UTM Zone 10N

Direction Of Photo: East

Comments: Alkali Lake (dry). Background sediment sample location.

Photograph No. 16:033-COGR-018-14Feb07 Date: 14-Feb-07 Time 10:20:00 AM



CENTRAL OREGON GUNNERY RANGE - FIELD PHOTOGRAPHS

Site: Central Oregon Gunnery Range

Photographer: Ryan Pollyea

Location Of Photograph: Sample Location 033A011, Samp No. NWO-033-5001

GPS Coordinates: Y 4761223 X 741438
 UTM Zone 10N

Direction Of Photo: South

Comments: Alkali Lake (dry). Background sediment sample location.

Photograph No. 17:033-COGR-019-14Feb07 Date: 14-Feb-07 Time 10:20:00 AM

Site: Central Oregon Gunnery Range

Photographer: Ryan Pollyea

Location Of Photograph: Sample Location 033A011, Samp No. NWO-033-5001

GPS Coordinates: Y 4761223 X 741438
 UTM Zone 10N

Direction Of Photo: West

Comments: Alkali Lake (dry). Background sediment sample location.

Photograph No. 18:033-COGR-020-14Feb07 Date: 14-Feb-07 Time 10:20:00 AM



CENTRAL OREGON GUNNERY RANGE - FIELD PHOTOGRAPHS

Site: Central Oregon Gunnery Range

Photographer: Ryan Pollyea

Location Of Photograph: Sample Location 033A010, Samp No. NWO-033-3001

GPS Coordinates: Y 4761967 X 740308
 UTM Zone 10N

Direction Of Photo: North

Comments: Photo of well sampling.

Photograph No. 19:033-COGR-021-14Feb07 Date: 14-Feb-07 Time 12:07:00 PM

Site: Central Oregon Gunnery Range

Photographer: Ryan Pollyea

Location Of Photograph: Sample Location 033A010, Samp No. NWO-033-3001

GPS Coordinates: Y 4761967 X 740308
 UTM Zone 10N

Direction Of Photo: Down

Comments: Photo of well sampling.

Photograph No. 20:033-COGR-022-14Feb07 Date: 14-Feb-07 Time 12:07:00 PM



CENTRAL OREGON GUNNERY RANGE - FIELD PHOTOGRAPHS

Site: Central Oregon Gunnery Range

Photographer: Ryan Pollyea

Location Of Photograph: Near Entrance to Hazardous Waste Site

GPS Coordinates: Y 740992 X 4761034
UTM Zone 10N

Direction Of Photo: West

Comments: Photo of Alkali Lake Hazardous Waste Site boundary sign.

Photograph No. 21:033-COGR-022-14Feb07 Date: 14-Feb-07 Time 12:30:00 PM

Site:

Photographer:

Location Of Photograph:

GPS Coordinates: N _____ W _____
(UTM Zone)

Direction Of Photo:

Comments:

Photograph No. _____ Date: _____ Time _____



Appendix F
Analytical Data

Analytical Report For 702081

for

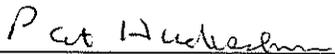
Shaw E&I, Inc

Project Manager: Tim Roth

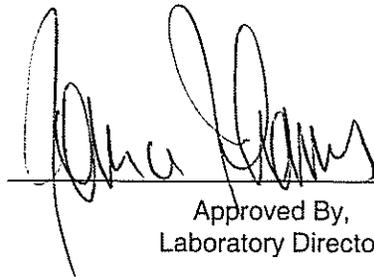
Project Name: Central Oregon Gunnery Range Site - 033

GPL
Laboratories

GPL Laboratories, LLLP certifies that the test results meet all requirements of the NELAC Standards unless otherwise noted.



Reviewed By,
Project Manager



Approved By,
Laboratory Director



Case Narrative

Shaw E&I, Inc

Central Oregon Gunnery Range Site - 033

Work Order: 702081

Reviewed By

The Case Narrative, Chain of Custody, Sample Receipt Checklist, and the cover page of the Sample Analysis Report, are integral parts of GPL Laboratories' report package. If you did not receive all of these documents, please contact GPL immediately.

Sample Receipt

Ten soil samples were received on 02/16/2007. The samples were delivered by Federal Express. Sample receipt conditions and temperatures are documented on the Sample Receipt checklist.

Sample Analysis

Samples were prepared and analyzed by GPL using the analytical methodologies indicated on the Sample Analysis Summary Report. In some chromatographic analyses, manual integration is used instead of automated integration because it produces more accurate results. All manual integrations are denoted on the sample quantitation report. Analysis results and limits for soil are reported on a dry weight basis unless otherwise specified on the report.

Explosives/Propellants

Five soil samples were extracted and analyzed for explosive compounds, using the EPA-SW846 method 8330A including Nitroglycerine.

The soil samples were air dried, crushed, and then sieved. The sieved samples were extracted for all analytes. All the samples are assumed one hundred percent solid because dried samples were used for the extractions.

All extraction and analysis holding times were met.

The laboratory originally used laboratory established limit of 31-129 to evaluate surrogate recoveries. However, as agreed, it should have been evaluated based on the MMRP surrogate limits of 50-150. As the result, three samples recovered lower than the MMRP QC limits. As a corrective action, these three samples that exhibited low surrogate recoveries in the original analytical run were re-extracted and re-analyzed. The surrogate recoveries of the reanalyses exhibited similar results. The performance of the instrument was proven by running the mid level acceptable standard and extraction process was proven to be acceptable because the method blank and LCS recoveries were acceptable. Therefore, the poor recoveries of these three re-extracted samples must be attributed to matrix interference.

The matrix spike and matrix spike duplicate analyses were performed on sample NWO-033-0001. The percent recovery for RDX was above the QC limits in both the MS and MSD. The percent recovery for Nitroglycerine was above the QC limits in the MS. All other recoveries were within the QC limits.

A laboratory control sample was extracted and analyzed along with the batch. All recoveries were within the QC limits.

Manual integration was performed on some data files, when automatic integration provided by the software was inappropriate.

Metals

Ten soil samples were analyzed for aluminum, chromium, copper, iron, lead, manganese, molybdenum and nickel by EPA SW846 methods.

The soil samples were air dried, crushed, and then sieved. The sieved samples were digested for all analytes. All the samples are assumed one hundred percent solid because dried samples were used for the digestions.

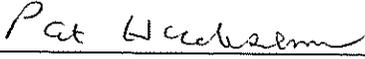
On form one, The software flags all results for specific elements with a B qualifier if they have a result above two times the MDL and less than ½ the reporting limit for a continuing calibration blank, initial calibration blank or interference check solution A.

The matrix spike, matrix spike duplicate, and serial dilutions were performed on sample NWO- 033-0001 for all required ICPMS analytes. No control limits were applied to the matrix spike and matrix spike duplicates for aluminum, iron and manganese due to

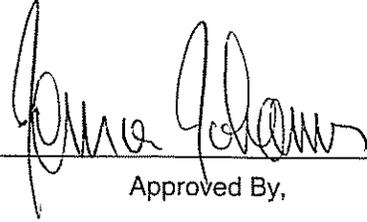
an insignificant spike addition.

Calibration standards are verified against independent check standards purchased from a commercial vendor of environmental standards.

All GPL QA/QC criteria were met with the exceptions of those mentioned above.



Reviewed By,
Project Manager



Approved By,
Laboratory Director

GPL Laboratories, LLLP

Sample Summary Report

Shaw E&I, Inc

Work Order: 702081

Client Sample ID	Lab Sample ID	Analytical Method	Matrix	Date Sampled	Date Recieved
NWO-033-0001	702081-001-001-1/3	SW8330	SOIL	02/13/2007	02/16/2007
	702081-001-001-1/3	SW8330A			
	702081-001-004-1/3	SW6020_SL			
NWO-033-0002	702081-002-007-1/1	SW6020_SL	SOIL	02/13/2007	02/16/2007
NWO-033-0003	702081-003-008-1/1	SW6020_SL	SOIL	02/13/2007	02/16/2007
NWO-033-0004	702081-005-015-1/2	SW8330	SOIL	02/13/2007	02/16/2007
	702081-005-015-1/2	SW8330A			
	702081-005-015-1/2	SW6020_SL			
NWO-033-0004RE	702081-005-015-1/2RE	SW8330A	SOIL	02/13/2007	02/16/2007
NWO-033-0005	702081-006-009-1/1	SW6020_SL	SOIL	02/13/2007	02/16/2007
NWO-033-0006	702081-007-010-1/1	SW6020_SL	SOIL	02/13/2007	02/16/2007
NWO-033-0007	702081-008-017-1/2	SW8330	SOIL	02/13/2007	02/16/2007
	702081-008-017-1/2	SW8330A			
	702081-008-017-1/2	SW6020_SL			
NWO-033-0007RE	702081-008-017-1/2RE	SW8330A	SOIL	02/13/2007	02/16/2007
NWO-033-1001	702081-004-013-1/2	SW8330	SOIL	02/13/2007	02/16/2007
	702081-004-013-1/2	SW8330A			
	702081-004-013-1/2	SW6020_SL			
NWO-033-1002	702081-009-019-1/2	SW8330	SOIL	02/13/2007	02/16/2007
	702081-009-019-1/2	SW8330A			
	702081-009-019-1/2	SW6020_SL			
NWO-033-1002RE	702081-009-019-1/2RE	SW8330A	SOIL	02/13/2007	02/16/2007
NWO-033-5001	702081-010-011-1/1	SW6020_SL	SOIL	02/14/2007	02/16/2007

Analytical Summary Report

Client Name:	Shaw E&I, Inc	Sample Matrix:	SOIL
Client Sample ID:	NWO-033-0001	Lab Sample ID:	702081-001-001-1/3
Sample Date/Time:	02/13/2007 12:10	Percent Moisture:	NA
Receipt Date/Time:	02/16/2007 15:17	Preparation Method:	EXT_SW8330
Prepared Date/Time:	02/21/2007 10:53	Analytical Method:	SW8330

#	Parameter	Reported Result	Q	Reporting Limit	Dil Fact	Units	Analysis Date/Time
1)	Nitroglycerine	BQL	U	4.0	1	mg/kg	02/24/07 05:29

Analytical Summary Report

Client Name:	Shaw E&I, Inc	Sample Matrix:	SOIL
Client Sample ID:	NWO-033-0001	Lab Sample ID:	702081-001-001-1/3
Sample Date/Time:	02/13/2007 12:10	Percent Moisture:	NA
Receipt Date/Time:	02/16/2007 15:17	Preparation Method:	EXT_SW8330
Prepared Date/Time:	02/21/2007 10:44	Analytical Method:	SW8330A

#	Parameter	Reported Result	Q	Reporting Limit	Dil Fact	Units	Analysis Date/Time	
1)	1,3,5-Trinitrobenzene	BQL	U	0.040	1	mg/kg	02/24/07	05:29
2)	1,3-Dinitrobenzene	BQL	U	0.040	1	mg/kg	02/24/07	05:29
3)	2,4,6-Trinitrotoluene	BQL	U	0.040	1	mg/kg	02/24/07	05:29
4)	2,4-Dinitrotoluene	BQL	U	0.040	1	mg/kg	02/24/07	05:29
5)	2,6-Dinitrotoluene	BQL	U	0.040	1	mg/kg	02/24/07	05:29
6)	2-Amino-4,6-Dinitrotoluene	BQL	U	0.040	1	mg/kg	02/24/07	05:29
7)	4-Amino-2,6-Dinitrotoluene	BQL	U	0.040	1	mg/kg	02/24/07	05:29
8)	HMX	BQL	U	0.080	1	mg/kg	02/24/07	05:29
9)	Nitrobenzene	BQL	U	0.040	1	mg/kg	02/24/07	05:29
10)	RDX	BQL	U	0.080	1	mg/kg	02/24/07	05:29
11)	Tetryl	BQL	U	0.080	1	mg/kg	02/24/07	05:29
12)	m-Nitrotoluene	BQL	U	0.080	1	mg/kg	02/24/07	05:29
13)	o-Nitrotoluene	BQL	U	0.080	1	mg/kg	02/24/07	05:29
14)	p-Nitrotoluene	BQL	U	0.080	1	mg/kg	02/24/07	05:29

#	Surrogate Parameter	Percent Recovery	Control Limits	Dil Fact	Analysis Date/Time	
15)	4-Nitroaniline	60 %	31 - 129	1	02/24/07	05:29

Analytical Summary Report

Client Name:	Shaw E&I, Inc	Sample Matrix:	SOIL
Client Sample ID:	NWO-033-0001	Lab Sample ID:	702081-001-004-1/3
Sample Date/Time:	02/13/2007 12:10	Percent Moisture:	NA
Receipt Date/Time:	02/16/2007 15:17	Preparation Method:	SW3050B
Prepared Date/Time:	02/22/2007 00:00	Analytical Method:	SW6020_SL

#	Parameter	Reported Result	Q	Reporting Limit	Dil Fact	Units	Analysis Date/Time
1)	Aluminum	14900	D	75.2	10	mg/kg	02/27/07 22:08
2)	Chromium	34.4	DB	1.5	10	mg/kg	02/27/07 22:08
3)	Copper	18.9	D	1.5	10	mg/kg	02/27/07 22:08
4)	Iron	15400	D	37.6	10	mg/kg	02/27/07 22:08
5)	Lead	3.3	D	1.5	10	mg/kg	02/27/07 22:08
6)	Manganese	335	D	1.5	10	mg/kg	02/27/07 22:08
7)	Molybdenum	0.51	JD	3.8	10	mg/kg	02/27/07 22:08
8)	Nickel	17.0	DB	0.75	10	mg/kg	02/27/07 22:08

Analytical Summary Report

Client Name:	Shaw E&I, Inc	Sample Matrix:	SOIL
Client Sample ID:	NWO-033-0002	Lab Sample ID:	702081-002-007-1/1
Sample Date/Time:	02/13/2007 11:55	Percent Moisture:	NA
Receipt Date/Time:	02/16/2007 15:17	Preparation Method:	SW3050B
Prepared Date/Time:	02/22/2007 00:00	Analytical Method:	SW6020_SL

#	Parameter	Reported Result	Q	Reporting Limit	Dil Fact	Units	Analysis Date/Time
1)	Aluminum	15300	D	73	10	mg/kg	02/27/07 22:39
2)	Chromium	18.7	DB	1.5	10	mg/kg	02/27/07 22:39
3)	Copper	19.9	D	1.5	10	mg/kg	02/27/07 22:39
4)	Iron	14800	D	36.5	10	mg/kg	02/27/07 22:39
5)	Lead	3.3	D	1.5	10	mg/kg	02/27/07 22:39
6)	Manganese	311	D	1.5	10	mg/kg	02/27/07 22:39
7)	Molybdenum	149	D	3.6	10	mg/kg	02/27/07 22:39
8)	Nickel	16.6	DB	0.73	10	mg/kg	02/27/07 22:39

Analytical Summary Report

Client Name:	Shaw E&I, Inc	Sample Matrix:	SOIL
Client Sample ID:	NWO-033-0003	Lab Sample ID:	702081-003-008-1/1
Sample Date/Time:	02/13/2007 12:50	Percent Moisture:	NA
Receipt Date/Time:	02/16/2007 15:17	Preparation Method:	SW3050B
Prepared Date/Time:	02/22/2007 00:00	Analytical Method:	SW6020_SL

#	Parameter	Reported Result	Q	Reporting Limit	Dil Fact	Units	Analysis Date/Time
1)	Aluminum	13900	D	76.9	10	mg/kg	02/27/07 22:45
2)	Chromium	27.7	DB	1.5	10	mg/kg	02/27/07 22:45
3)	Copper	17.4	D	1.5	10	mg/kg	02/27/07 22:45
4)	Iron	14100	D	38.5	10	mg/kg	02/27/07 22:45
5)	Lead	3.3	D	1.5	10	mg/kg	02/27/07 22:45
6)	Manganese	304	D	1.5	10	mg/kg	02/27/07 22:45
7)	Molybdenum	0.54	JD	3.8	10	mg/kg	02/27/07 22:45
8)	Nickel	15.6	DB	0.77	10	mg/kg	02/27/07 22:45

Analytical Summary Report

Client Name:	Shaw E&I, Inc	Sample Matrix:	SOIL
Client Sample ID:	NWO-033-1001	Lab Sample ID:	702081-004-013-1/2
Sample Date/Time:	02/13/2007 12:45	Percent Moisture:	NA
Receipt Date/Time:	02/16/2007 15:17	Preparation Method:	EXT_SW8330
Prepared Date/Time:	02/21/2007 10:53	Analytical Method:	SW8330

#	Parameter	Reported Result	Q	Reporting Limit	Dil Fact	Units	Analysis Date/Time
1)	Nitroglycerine	BQL	U	4.0	1	mg/kg	02/24/07 06:28

Analytical Summary Report

Client Name:	Shaw E&I, Inc	Sample Matrix:	SOIL
Client Sample ID:	NWO-033-1001	Lab Sample ID:	702081-004-013-1/2
Sample Date/Time:	02/13/2007 12:45	Percent Moisture:	NA
Receipt Date/Time:	02/16/2007 15:17	Preparation Method:	EXT_SW8330
Prepared Date/Time:	02/21/2007 10:44	Analytical Method:	SW8330A

#	Parameter	Reported Result	Q	Reporting Limit	Dil Fact	Units	Analysis Date/Time
1)	1,3,5-Trinitrobenzene	BQL	U	0.040	1	mg/kg	02/24/07 06:28
2)	1,3-Dinitrobenzene	BQL	U	0.040	1	mg/kg	02/24/07 06:28
3)	2,4,6-Trinitrotoluene	BQL	U	0.040	1	mg/kg	02/24/07 06:28
4)	2,4-Dinitrotoluene	BQL	U	0.040	1	mg/kg	02/24/07 06:28
5)	2,6-Dinitrotoluene	BQL	U	0.040	1	mg/kg	02/24/07 06:28
6)	2-Amino-4,6-Dinitrotoluene	BQL	U	0.040	1	mg/kg	02/24/07 06:28
7)	4-Amino-2,6-Dinitrotoluene	BQL	U	0.040	1	mg/kg	02/24/07 06:28
8)	HMX	BQL	U	0.080	1	mg/kg	02/24/07 06:28
9)	Nitrobenzene	0.029	J	0.040	1	mg/kg	02/24/07 06:28
10)	RDX	BQL	U	0.080	1	mg/kg	02/24/07 06:28
11)	Tetryl	BQL	U	0.080	1	mg/kg	02/24/07 06:28
12)	m-Nitrotoluene	BQL	U	0.080	1	mg/kg	02/24/07 06:28
13)	o-Nitrotoluene	BQL	U	0.080	1	mg/kg	02/24/07 06:28
14)	p-Nitrotoluene	BQL	U	0.080	1	mg/kg	02/24/07 06:28

#	Surrogate Parameter	Percent Recovery	Control Limits	Dil Fact	Analysis Date/Time
15)	4-Nitroaniline	52 %	31 - 129	1	02/24/07 06:28

Analytical Summary Report

Client Name:	Shaw E&I, Inc	Sample Matrix:	SOIL
Client Sample ID:	NWO-033-1001	Lab Sample ID:	702081-004-013-1/2
Sample Date/Time:	02/13/2007 12:45	Percent Moisture:	NA
Receipt Date/Time:	02/16/2007 15:17	Preparation Method:	SW3050B
Prepared Date/Time:	02/22/2007 00:00	Analytical Method:	SW6020_SL

#	Parameter	Reported Result	Q	Reporting Limit	Dil Fact	Units	Analysis Date/Time
1)	Aluminum	10800	D	73	10	mg/kg	02/27/07 22:51
2)	Chromium	18.0	DB	1.5	10	mg/kg	02/27/07 22:51
3)	Copper	12.4	D	1.5	10	mg/kg	02/27/07 22:51
4)	Iron	10300	D	36.5	10	mg/kg	02/27/07 22:51
5)	Lead	2.6	D	1.5	10	mg/kg	02/27/07 22:51
6)	Manganese	214	D	1.5	10	mg/kg	02/27/07 22:51
7)	Molybdenum	2.5	JD	3.6	10	mg/kg	02/27/07 22:51
8)	Nickel	10.3	DB	0.73	10	mg/kg	02/27/07 22:51

Analytical Summary Report

Client Name:	Shaw E&I, Inc	Sample Matrix:	SOIL
Client Sample ID:	NWO-033-0004	Lab Sample ID:	702081-005-015-1/2
Sample Date/Time:	02/13/2007 14:40	Percent Moisture:	NA
Receipt Date/Time:	02/16/2007 15:17	Preparation Method:	EXT_SW8330
Prepared Date/Time:	02/21/2007 10:53	Analytical Method:	SW8330

# Parameter	Reported Result	Q	Reporting Limit	Dil Fact	Units	Analysis Date/Time
1) Nitroglycerine	BQL	U	4.0	1	mg/kg	02/24/07 07:27

Analytical Summary Report

Client Name:	Shaw E&I, Inc	Sample Matrix:	SOIL
Client Sample ID:	NWO-033-0004	Lab Sample ID:	702081-005-015-1/2
Sample Date/Time:	02/13/2007 14:40	Percent Moisture:	NA
Receipt Date/Time:	02/16/2007 15:17	Preparation Method:	EXT_SW8330
Prepared Date/Time:	02/21/2007 10:44	Analytical Method:	SW8330A

#	Parameter	Reported Result	Q	Reporting Limit	Dil Fact	Units	Analysis Date/Time
1)	1,3,5-Trinitrobenzene	BQL	U	0.040	1	mg/kg	02/24/07 07:27
2)	1,3-Dinitrobenzene	BQL	U	0.040	1	mg/kg	02/24/07 07:27
3)	2,4,6-Trinitrotoluene	BQL	U	0.040	1	mg/kg	02/24/07 07:27
4)	2,4-Dinitrotoluene	BQL	U	0.040	1	mg/kg	02/24/07 07:27
5)	2,6-Dinitrotoluene	BQL	U	0.040	1	mg/kg	02/24/07 07:27
6)	2-Amino-4,6-Dinitrotoluene	BQL	U	0.040	1	mg/kg	02/24/07 07:27
7)	4-Amino-2,6-Dinitrotoluene	BQL	U	0.040	1	mg/kg	02/24/07 07:27
8)	HMX	BQL	U	0.080	1	mg/kg	02/24/07 07:27
9)	Nitrobenzene	0.049		0.040	1	mg/kg	02/24/07 07:27
10)	RDX	BQL	U	0.080	1	mg/kg	02/24/07 07:27
11)	Tetryl	BQL	U	0.080	1	mg/kg	02/24/07 07:27
12)	m-Nitrotoluene	BQL	U	0.080	1	mg/kg	02/24/07 07:27
13)	o-Nitrotoluene	BQL	U	0.080	1	mg/kg	02/24/07 07:27
14)	p-Nitrotoluene	BQL	U	0.080	1	mg/kg	02/24/07 07:27

#	Surrogate Parameter	Percent Recovery	Control Limits	Dil Fact	Analysis Date/Time
15)	4-Nitroaniline	44 %	31 - 129	1	02/24/07 07:27

Analytical Summary Report

Client Name:	Shaw E&I, Inc	Sample Matrix:	SOIL
Client Sample ID:	NWO-033-0004	Lab Sample ID:	702081-005-015-1/2
Sample Date/Time:	02/13/2007 14:40	Percent Moisture:	NA
Receipt Date/Time:	02/16/2007 15:17	Preparation Method:	SW3050B
Prepared Date/Time:	02/22/2007 00:00	Analytical Method:	SW6020_SL

#	Parameter	Reported Result	Q	Reporting Limit	Dil Fact	Units	Analysis Date/Time
1)	Aluminum	14500	D	70.4	10	mg/kg	02/27/07 22:57
2)	Chromium	24.0	DB	1.4	10	mg/kg	02/27/07 22:57
3)	Copper	20.0	D	1.4	10	mg/kg	02/27/07 22:57
4)	Iron	14800	D	35.2	10	mg/kg	02/27/07 22:57
5)	Lead	3.7	D	1.4	10	mg/kg	02/27/07 22:57
6)	Manganese	300	D	1.4	10	mg/kg	02/27/07 22:57
7)	Molybdenum	32.4	D	3.5	10	mg/kg	02/27/07 22:57
8)	Nickel	16.4	DB	0.7	10	mg/kg	02/27/07 22:57

Analytical Summary Report

Client Name:	Shaw E&I, Inc	Sample Matrix:	SOIL
Client Sample ID:	NWO-033-0004RE	Lab Sample ID:	702081-005-015-1/2RE
Sample Date/Time:	02/13/2007 14:40	Percent Moisture:	NA
Receipt Date/Time:	02/16/2007 15:17	Preparation Method:	EXT_SW8330
Prepared Date/Time:	03/07/2007 00:00	Analytical Method:	SW8330A

#	Parameter	Reported Result	Q	Reporting Limit	Dil Fact	Units	Analysis Date/Time
1)	1,3,5-Trinitrobenzene	BQL	U	0.040	1	mg/kg	03/07/07 19:17
2)	1,3-Dinitrobenzene	BQL	U	0.040	1	mg/kg	03/07/07 19:17
3)	2,4,6-Trinitrotoluene	BQL	U	0.040	1	mg/kg	03/07/07 19:17
4)	2,4-Dinitrotoluene	BQL	U	0.040	1	mg/kg	03/07/07 19:17
5)	2,6-Dinitrotoluene	BQL	U	0.040	1	mg/kg	03/07/07 19:17
6)	2-Amino-4,6-Dinitrotoluene	BQL	U	0.040	1	mg/kg	03/07/07 19:17
7)	4-Amino-2,6-Dinitrotoluene	BQL	U	0.040	1	mg/kg	03/07/07 19:17
8)	HMX	BQL	U	0.080	1	mg/kg	03/07/07 19:17
9)	Nitrobenzene	0.061		0.040	1	mg/kg	03/07/07 19:17
10)	RDX	BQL	U	0.080	-1	mg/kg	03/07/07 19:17
11)	Tetryl	BQL	U	0.080	1	mg/kg	03/07/07 19:17
12)	m-Nitrotoluene	BQL	U	0.080	1	mg/kg	03/07/07 19:17
13)	o-Nitrotoluene	BQL	U	0.080	1	mg/kg	03/07/07 19:17
14)	p-Nitrotoluene	BQL	U	0.080	1	mg/kg	03/07/07 19:17

#	Surrogate Parameter	Percent Recovery	Control Limits	Dil Fact	Analysis Date/Time
15)	4-Nitroaniline	17 %	31 - 129	1	03/07/07 19:17

Analytical Summary Report

Client Name:	Shaw E&I, Inc	Sample Matrix:	SOIL
Client Sample ID:	NWO-033-0005	Lab Sample ID:	702081-006-009-1/1
Sample Date/Time:	02/13/2007 14:20	Percent Moisture:	NA
Receipt Date/Time:	02/16/2007 15:17	Preparation Method:	SW3050B
Prepared Date/Time:	02/22/2007 00:00	Analytical Method:	SW6020_SL

#	Parameter	Reported Result	Q	Reporting Limit	Dil Fact	Units	Analysis Date/Time
1)	Aluminum	11600	D	73	10	mg/kg	02/27/07 23:03
2)	Chromium	16.0	DB	1.5	10	mg/kg	02/27/07 23:03
3)	Copper	14.6	D	1.5	10	mg/kg	02/27/07 23:03
4)	Iron	12400	D	36.5	10	mg/kg	02/27/07 23:03
5)	Lead	2.7	D	1.5	10	mg/kg	02/27/07 23:03
6)	Manganese	241	D	1.5	10	mg/kg	02/27/07 23:03
7)	Molybdenum	2.1	JD	3.6	10	mg/kg	02/27/07 23:03
8)	Nickel	12.4	DB	0.73	10	mg/kg	02/27/07 23:03

Analytical Summary Report

Client Name:	Shaw E&I, Inc	Sample Matrix:	SOIL
Client Sample ID:	NWO-033-0006	Lab Sample ID:	702081-007-010-1/1
Sample Date/Time:	02/13/2007 14:10	Percent Moisture:	NA
Receipt Date/Time:	02/16/2007 15:17	Preparation Method:	SW3050B
Prepared Date/Time:	02/22/2007 00:00	Analytical Method:	SW6020_SL

#	Parameter	Reported Result	Q	Reporting Limit	Dil Fact	Units	Analysis Date/Time
1)	Aluminum	18900	D	77.5	10	mg/kg	02/27/07 23:22
2)	Chromium	23.9	DB	1.6	10	mg/kg	02/27/07 23:22
3)	Copper	26.2	D	1.6	10	mg/kg	02/27/07 23:22
4)	Iron	19300	D	38.8	10	mg/kg	02/27/07 23:22
5)	Lead	4.3	D	1.6	10	mg/kg	02/27/07 23:22
6)	Manganese	391	D	1.6	10	mg/kg	02/27/07 23:22
7)	Molybdenum	20.9	D	3.9	10	mg/kg	02/27/07 23:22
8)	Nickel	22.1	DB	0.78	10	mg/kg	02/27/07 23:22

Analytical Summary Report

Client Name:	Shaw E&I, Inc	Sample Matrix:	SOIL
Client Sample ID:	NWO-033-0007	Lab Sample ID:	702081-008-017-1/2
Sample Date/Time:	02/13/2007 14:40	Percent Moisture:	NA
Receipt Date/Time:	02/16/2007 15:17	Preparation Method:	EXT_SW8330
Prepared Date/Time:	02/21/2007 10:53	Analytical Method:	SW8330

# Parameter	Reported Result	Q	Reporting Limit	Dil Fact	Units	Analysis Date/Time
1) Nitroglycerine	BQL	U	4.0	1	mg/kg	02/24/07 12:58

Analytical Summary Report

Client Name:	Shaw E&I, Inc	Sample Matrix:	SOIL
Client Sample ID:	NWO-033-0007	Lab Sample ID:	702081-008-017-1/2
Sample Date/Time:	02/13/2007 14:40	Percent Moisture:	NA
Receipt Date/Time:	02/16/2007 15:17	Preparation Method:	EXT_SW8330
Prepared Date/Time:	02/21/2007 10:44	Analytical Method:	SW8330A

#	Parameter	Reported Result	Q	Reporting Limit	Dil Fact	Units	Analysis Date/Time	
1)	1,3,5-Trinitrobenzene	BQL	U	0.040	1	mg/kg	02/24/07	12:58
2)	1,3-Dinitrobenzene	BQL	U	0.040	1	mg/kg	02/24/07	12:58
3)	2,4,6-Trinitrotoluene	BQL	U	0.040	1	mg/kg	02/24/07	12:58
4)	2,4-Dinitrotoluene	BQL	U	0.040	1	mg/kg	02/24/07	12:58
5)	2,6-Dinitrotoluene	BQL	U	0.040	1	mg/kg	02/24/07	12:58
6)	2-Amino-4,6-Dinitrotoluene	BQL	U	0.040	1	mg/kg	02/24/07	12:58
7)	4-Amino-2,6-Dinitrotoluene	BQL	U	0.040	1	mg/kg	02/24/07	12:58
8)	HMX	BQL	U	0.080	1	mg/kg	02/24/07	12:58
9)	Nitrobenzene	0.043		0.040	1	mg/kg	02/24/07	12:58
10)	RDX	BQL	U	0.080	1	mg/kg	02/24/07	12:58
11)	Tetryl	BQL	U	0.080	1	mg/kg	02/24/07	12:58
12)	m-Nitrotoluene	BQL	U	0.080	1	mg/kg	02/24/07	12:58
13)	o-Nitrotoluene	BQL	U	0.080	1	mg/kg	02/24/07	12:58
14)	p-Nitrotoluene	BQL	U	0.080	1	mg/kg	02/24/07	12:58

#	Surrogate Parameter	Percent Recovery	Control Limits	Dil Fact	Analysis Date/Time	
15)	4-Nitroaniline	44 %	31 - 129	1	02/24/07	12:58

Analytical Summary Report

Client Name:	Shaw E&I, Inc	Sample Matrix:	SOIL
Client Sample ID:	NWO-033-0007	Lab Sample ID:	702081-008-017-1/2
Sample Date/Time:	02/13/2007 14:40	Percent Moisture:	NA
Receipt Date/Time:	02/16/2007 15:17	Preparation Method:	SW3050B
Prepared Date/Time:	02/22/2007 00:00	Analytical Method:	SW6020_SL

#	Parameter	Reported Result	Q	Reporting Limit	Dil Fact	Units	Analysis Date/Time
1)	Aluminum	15100	D	74.1	10	mg/kg	02/27/07 23:28
2)	Chromium	24.0	DB	1.5	10	mg/kg	02/27/07 23:28
3)	Copper	19.8	D	1.5	10	mg/kg	02/27/07 23:28
4)	Iron	14900	D	37	10	mg/kg	02/27/07 23:28
5)	Lead	3.7	D	1.5	10	mg/kg	02/27/07 23:28
6)	Manganese	297	D	1.5	10	mg/kg	02/27/07 23:28
7)	Molybdenum	29.1	D	3.7	10	mg/kg	02/27/07 23:28
8)	Nickel	16.5	DB	0.74	10	mg/kg	02/27/07 23:28

Analytical Summary Report

Client Name:	Shaw E&I, Inc	Sample Matrix:	SOIL
Client Sample ID:	NWO-033-0007RE	Lab Sample ID:	702081-008-017-1/2RE
Sample Date/Time:	02/13/2007 14:40	Percent Moisture:	NA
Receipt Date/Time:	02/16/2007 15:17	Preparation Method:	EXT_SW8330
Prepared Date/Time:	03/07/2007 00:00	Analytical Method:	SW8330A

#	Parameter	Reported Result	Q	Reporting Limit	Dil Fact	Units	Analysis Date/Time	
1)	1,3,5-Trinitrobenzene	BQL	U	0.040	1	mg/kg	03/07/07	20:16
2)	1,3-Dinitrobenzene	BQL	U	0.040	1	mg/kg	03/07/07	20:16
3)	2,4,6-Trinitrotoluene	BQL	U	0.040	1	mg/kg	03/07/07	20:16
4)	2,4-Dinitrotoluene	BQL	U	0.040	1	mg/kg	03/07/07	20:16
5)	2,6-Dinitrotoluene	BQL	U	0.040	1	mg/kg	03/07/07	20:16
6)	2-Amino-4,6-Dinitrotoluene	BQL	U	0.040	1	mg/kg	03/07/07	20:16
7)	4-Amino-2,6-Dinitrotoluene	BQL	U	0.040	1	mg/kg	03/07/07	20:16
8)	HMX	BQL	U	0.080	1	mg/kg	03/07/07	20:16
9)	Nitrobenzene	0.056		0.040	1	mg/kg	03/07/07	20:16
10)	RDX	BQL	U	0.080	1	mg/kg	03/07/07	20:16
11)	Tetryl	BQL	U	0.080	1	mg/kg	03/07/07	20:16
12)	m-Nitrotoluene	BQL	U	0.080	1	mg/kg	03/07/07	20:16
13)	o-Nitrotoluene	BQL	U	0.080	1	mg/kg	03/07/07	20:16
14)	p-Nitrotoluene	BQL	U	0.080	1	mg/kg	03/07/07	20:16

#	Surrogate Parameter	Percent Recovery	Control Limits	Dil Fact	Analysis Date/Time	
15)	4-Nitroaniline	24 %	31 - 129	1	03/07/07	20:16

Analytical Summary Report

Client Name:	Shaw E&I, Inc	Sample Matrix:	SOIL
Client Sample ID:	NWO-033-1002	Lab Sample ID:	702081-009-019-1/2
Sample Date/Time:	02/13/2007 13:30	Percent Moisture:	NA
Receipt Date/Time:	02/16/2007 15:17	Preparation Method:	EXT_SW8330
Prepared Date/Time:	02/21/2007 10:53	Analytical Method:	SW8330

#	Parameter	Reported Result	Q	Reporting Limit	Dil Fact	Units	Analysis Date/Time
1)	Nitroglycerine	BQL	U	4.0	1	mg/kg	02/24/07 13:57

Analytical Summary Report

Client Name:	Shaw E&I, Inc	Sample Matrix:	SOIL
Client Sample ID:	NWO-033-1002	Lab Sample ID:	702081-009-019-1/2
Sample Date/Time:	02/13/2007 13:30	Percent Moisture:	NA
Receipt Date/Time:	02/16/2007 15:17	Preparation Method:	EXT_SW8330
Prepared Date/Time:	02/21/2007 10:44	Analytical Method:	SW8330A

#	Parameter	Reported Result	Q	Reporting Limit	Dil Fact	Units	Analysis Date/Time
1)	1,3,5-Trinitrobenzene	BQL	U	0.040	1	mg/kg	02/24/07 13:57
2)	1,3-Dinitrobenzene	BQL	U	0.040	1	mg/kg	02/24/07 13:57
3)	2,4,6-Trinitrotoluene	BQL	U	0.040	1	mg/kg	02/24/07 13:57
4)	2,4-Dinitrotoluene	BQL	U	0.040	1	mg/kg	02/24/07 13:57
5)	2,6-Dinitrotoluene	BQL	U	0.040	1	mg/kg	02/24/07 13:57
6)	2-Amino-4,6-Dinitrotoluene	BQL	U	0.040	1	mg/kg	02/24/07 13:57
7)	4-Amino-2,6-Dinitrotoluene	BQL	U	0.040	1	mg/kg	02/24/07 13:57
8)	HMX	BQL	U	0.080	1	mg/kg	02/24/07 13:57
9)	Nitrobenzene	0.041		0.040	1	mg/kg	02/24/07 13:57
10)	RDX	BQL	U	0.080	1	mg/kg	02/24/07 13:57
11)	Tetryl	BQL	U	0.080	1	mg/kg	02/24/07 13:57
12)	m-Nitrotoluene	BQL	U	0.080	1	mg/kg	02/24/07 13:57
13)	o-Nitrotoluene	BQL	U	0.080	1	mg/kg	02/24/07 13:57
14)	p-Nitrotoluene	BQL	U	0.080	1	mg/kg	02/24/07 13:57

#	Surrogate Parameter	Percent Recovery	Control Limits	Dil Fact	Analysis Date/Time
15)	4-Nitroaniline	37 %	31 - 129	1	02/24/07 13:57

Analytical Summary Report

Client Name:	Shaw E&I, Inc	Sample Matrix:	SOIL
Client Sample ID:	NWO-033-1002	Lab Sample ID:	702081-009-019-1/2
Sample Date/Time:	02/13/2007 13:30	Percent Moisture:	NA
Receipt Date/Time:	02/16/2007 15:17	Preparation Method:	SW3050B
Prepared Date/Time:	02/22/2007 00:00	Analytical Method:	SW6020_SL

#	Parameter	Reported Result	Q	Reporting Limit	Dil Fact	Units	Analysis Date/Time
1)	Aluminum	10800	D	73.5	10	mg/kg	02/27/07 23:34
2)	Chromium	11.1	DB	1.5	10	mg/kg	02/27/07 23:34
3)	Copper	10.7	D	1.5	10	mg/kg	02/27/07 23:34
4)	Iron	9400	D	36.8	10	mg/kg	02/27/07 23:34
5)	Lead	2.7	D	1.5	10	mg/kg	02/27/07 23:34
6)	Manganese	206	D	1.5	10	mg/kg	02/27/07 23:34
7)	Molybdenum	10.9	D	3.7	10	mg/kg	02/27/07 23:34
8)	Nickel	8.9	DB	0.74	10	mg/kg	02/27/07 23:34

Analytical Summary Report

Client Name:	Shaw E&I, Inc	Sample Matrix:	SOIL
Client Sample ID:	NWO-033-1002RE	Lab Sample ID:	702081-009-019-1/2RE
Sample Date/Time:	02/13/2007 13:30	Percent Moisture:	NA
Receipt Date/Time:	02/16/2007 15:17	Preparation Method:	EXT_SW8330
Prepared Date/Time:	03/07/2007 00:00	Analytical Method:	SW8330A

#	Parameter	Reported Result	Q	Reporting Limit	Dil Fact	Units	Analysis Date/Time	
1)	1,3,5-Trinitrobenzene	BQL	U	0.040	1	mg/kg	03/07/07	21:16
2)	1,3-Dinitrobenzene	BQL	U	0.040	1	mg/kg	03/07/07	21:16
3)	2,4,6-Trinitrotoluene	BQL	U	0.040	1	mg/kg	03/07/07	21:16
4)	2,4-Dinitrotoluene	BQL	U	0.040	1	mg/kg	03/07/07	21:16
5)	2,6-Dinitrotoluene	BQL	U	0.040	1	mg/kg	03/07/07	21:16
6)	2-Amino-4,6-Dinitrotoluene	BQL	U	0.040	1	mg/kg	03/07/07	21:16
7)	4-Amino-2,6-Dinitrotoluene	BQL	U	0.040	1	mg/kg	03/07/07	21:16
8)	HMX	BQL	U	0.080	1	mg/kg	03/07/07	21:16
9)	Nitrobenzene	0.054		0.040	1	mg/kg	03/07/07	21:16
10)	RDX	BQL	U	0.080	1	mg/kg	03/07/07	21:16
11)	Tetryl	BQL	U	0.080	1	mg/kg	03/07/07	21:16
12)	m-Nitrotoluene	BQL	U	0.080	1	mg/kg	03/07/07	21:16
13)	o-Nitrotoluene	BQL	U	0.080	1	mg/kg	03/07/07	21:16
14)	p-Nitrotoluene	BQL	U	0.080	1	mg/kg	03/07/07	21:16

#	Surrogate Parameter	Percent Recovery	Control Limits	Dil Fact	Analysis Date/Time	
15)	4-Nitroaniline	19 %	31 - 129	1	03/07/07	21:16

Analytical Summary Report

Client Name:	Shaw E&I, Inc	Sample Matrix:	SOIL
Client Sample ID:	NWO-033-5001	Lab Sample ID:	702081-010-011-1/1
Sample Date/Time:	02/14/2007 10:20	Percent Moisture:	NA
Receipt Date/Time:	02/16/2007 15:17	Preparation Method:	SW3050B
Prepared Date/Time:	02/22/2007 00:00	Analytical Method:	SW6020_SL

#	Parameter	Reported Result	Q	Reporting Limit	Dil Fact	Units	Analysis Date/Time	
1)	Aluminum	8680	D	76.3	10	mg/kg	02/27/07	23:41
2)	Chromium	11.4	DB	1.5	10	mg/kg	02/27/07	23:41
3)	Copper	9.9	D	1.5	10	mg/kg	02/27/07	23:41
4)	Iron	8060	D	38.2	10	mg/kg	02/27/07	23:41
5)	Lead	2.0	D	1.5	10	mg/kg	02/27/07	23:41
6)	Manganese	152	D	1.5	10	mg/kg	02/27/07	23:41
7)	Molybdenum	30.9	D	3.8	10	mg/kg	02/27/07	23:41
8)	Nickel	8.1	DB	0.76	10	mg/kg	02/27/07	23:41

GPL Laboratories, LLLP

Qualifier Definitions

Shaw E&I, Inc

Work Order: 702081

All Departments

- U Indicates that the compound was analyzed for but not detected
- BQL Below Quantitation Limit

Organics

- B Indicates that the analyte was found in the associated blank as well as in the sample
- D Indicates that the analyte was reported from a diluted analysis
- E Indicates that the concentration detected exceeded the calibration range of the instrument
- J Value is less than the reporting limit but greater than the MDL
- P Indicates that there is greater than 25% difference for detected pesticide/Arochlor results between the two GC columns

Metals

- J Indicates that the reported value was less than the reporting limit but greater than or equal to the IDL/MDL
- E Indicates that the reported value is estimated because of the possible presence of interference (i.e. the serial dilution not within control limits)
- H Indicates that the element was found in the associated blank as well as in the sample and the value is greater than or equal to the reporting limit
- D Indicates that the analyte was reported from a diluted analysis
- N Spiked sample recovery not within control limits
- * Duplicate analysis not within control limits

Chain of Custody

Shaw E&I, Inc

SDG: 702081

Soil
 CoC Number: **NW0033-001**
 PAGE: 1 OF 1

CHAIN OF CUSTODY

GPL LABORATORIES
 7210A Corporate Ct.
 Frederick, MD 21703
 301-694-5310

Client: Shaw E&I, Inc
 Project Name: FUDS MRP MAT
 Project Number: 110-90
 Date: 11-15-07
 Location: Knapville, TN
 Address: 3720 Shelby Drive
 City: Knapville, TN
 State: TN
 Zip: 37243
 Phone: 615-564-5222
 Fax: 615-564-5222
 Analyst: [Signature]
 Method: [Signature]
 Method Number: 37243

Procedure and Containment

Shaw MHRP FUDS Site - 033 Central Oregon Gunnery Range

No.	FIELD Sample ID	Date Sampled	Time Sampled	Matrix	Sampler's Initials	Method	Analysis	Filter	Total Kettles
1	NW0-033-001	2-17-07	12:06	SO	AD	AL Cr. Co. in Ph. Win. No. and 21 by SVS-346	X	X	N 2
2	NW0-033-001-RS	2-17-07	12:06	SO	AD	Explosives by SVS-346	X	X	N 2
3	NW0-033-001-RSPT	2-17-07	12:06	SO	AD	Explosives by SVS-346	X	X	N 2
4	NW0-033-002	2-17-07	11:55	SO	AD	Explosives by SVS-346	X	X	N 2
5	NW0-033-003	2-17-07	12:55	SO	AD	Explosives by SVS-346	X	X	N 1
6	NW0-033-004	2-17-07	12:45	SO	AD	Explosives by SVS-346	X	X	N 2
7	NW0-033-005	2-17-07	14:00	SO	AD	Explosives by SVS-346	X	X	N 2
8	NW0-033-006	2-17-07	14:20	SO	AD	Explosives by SVS-346	X	X	N 2
9	NW0-033-007	2-17-07	14:10	SO	AD	Explosives by SVS-346	X	X	N 1
10	NW0-033-008	2-17-07	14:40	SO	AD	Explosives by SVS-346	X	X	N 1
11	NW0-033-009	2-17-07	15:30	SO	AD	Explosives by SVS-346	X	X	N 2
12	NW0-033-001	2-17-07	16:20	SE	AD	Explosives by SVS-346	X	X	N 2

Sample Matrix: VS - Groundwater; SO - Soil; WS - Surface Water; WSW - Water Quality

Received By: [Signature] Date: 2-15-07 Time: 1:30
 Date: 2-15-07 Time: 1:30
 Date: 2-15-07 Time: 1:30

TAT Requirement: 21 Days
 Total number of samples: 12
 GC/MS RECEIPT CONDITION: 2.0

GPL WORK ORDER #: 702081
 PURCHASE ORDER #:

GPL Laboratories, LLLP

Chain of Custody

Shaw E&I, Inc

SDG: 702081

Doc Number: **NW033-002**
PAGE: 1 OF 1

CHAIN OF CUSTODY

GPL
Laboratories, LLLP
7210A Corporate Ct.
Frederick, MD 21703
Tel: (301) 694-5310 Fax: (301) 620-0731

Client Name: **Shaw E&I, Inc** | Address: **777 Jackson Drive** | City: **Elmer** | State: **OR** | Zip: **97112**

Project Name: **Central Oregon Quarry Range**

Sample ID: **170-35** | Date: **2/15/07**

Method: **210+ Polymers, XRF, etc.**

Sample Description: **210+ Polymers, XRF, etc.**

No.	FIELD Sample ID	Date Sampled	Time	Sample	Matrix	Sample Size	Method	Lab	Remarks	Y/N
1	NW033-001-D16	2-15-07	12:00	SW	SW	50g	210+ Polymers, XRF, etc.	GPL		N
2	NW033-002-D16	2-15-07	12:00	SW	SW	50g	210+ Polymers, XRF, etc.	GPL		N
3	NW033-003-D16	2-15-07	12:00	SW	SW	50g	210+ Polymers, XRF, etc.	GPL		N
4	NW033-004-D16	2-15-07	12:00	SW	SW	50g	210+ Polymers, XRF, etc.	GPL		N
5	NW033-005-D16	2-15-07	12:00	SW	SW	50g	210+ Polymers, XRF, etc.	GPL		N
6	NW033-006-D16	2-15-07	12:00	SW	SW	50g	210+ Polymers, XRF, etc.	GPL		N
7	NW033-007-D16	2-15-07	12:00	SW	SW	50g	210+ Polymers, XRF, etc.	GPL		N
8	NW033-008-D16	2-15-07	12:00	SW	SW	50g	210+ Polymers, XRF, etc.	GPL		N
9	NW033-009-D16	2-15-07	12:00	SW	SW	50g	210+ Polymers, XRF, etc.	GPL		N
10	NW033-010-D16	2-15-07	12:00	SW	SW	50g	210+ Polymers, XRF, etc.	GPL		N

Lab: **GPL** | Method: **210+ Polymers, XRF, etc.** | Matrix: **SW** | Sample Size: **50g**

Prepared By: **F. E. S. A.** | Date: **2-15-07** | Time: **12:00**

Received By: **[Signature]** | Date: **2-15-07** | Time: **12:30**

Method: **210+ Polymers, XRF, etc.** | Matrix: **SW** | Sample Size: **50g**

TAT Requirement: **21 Days** | Total number of samples: **10**

BPL WORK ORDER #: **702081** | PURCHASE ORDER #: _____

GPL Laboratories, LLLP

Chain of Custody

Shaw E&I, Inc

SDG: 702081

FedEx Billable Stamp
Express

1 From
FEDEX#: 00685493 - 1

PH: () - -

Expiration Date May 19 2008

FedEx Priority Overnight

2 To
GPL LABS
7210-A CORPORATE CT.
FREDERICK, MD 21703
(301)694-5310

FORM ED 4081

Barcode: 8546 9918 8272

GPL Laboratories, LLLP

Chain of Custody

Shaw E&I, Inc

SDG: 702081

GPL Laboratories, LLLP

Figure 1
SAMPLE RECEIPT CHECKLIST

W.O. No: 702081
 Client Name: Shaw
 Date Received: 2/16/07
 Time Received: 12:30
 Received By: Chino

Carrier Name: FRODOX
 Preparer (Logged In) By: MLD 02/16/07
Initials Date
 Project: _____
 Site: _____
 VOA Holding Blank I.D. No: _____

Alcohol Manifest Present? YES NO
 No. _____
 Shipping Container in Good Condition? YES NO
 Custody Seals Present on Shipping Container?
 Condition: Broken _____
 Intact-not dated or signed _____
 Intact-dated and signed
 Usage of Tamper Evident Type YES NO
 Chain-of-Custody Present? YES NO
 Chain-of-Custody Agrees with Sample Labels? YES NO
 Chain-of-Custody Signed? YES NO
 Packing Present in Shipping Container?
 Type of Packing Bubble Wrap
 Custody seals on Sample Bottles?
 Condition: Good Broken _____
 Total Number of Sample Boxes 25
 Total Number of Samples 12
 Samples Intact? YES NO
 Sufficient Sample Volume for Indicated Tests? YES NO

<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	Lab Blank: No. of Sets _____	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
	Field Blank: No. of Sets _____	
	Env'd. Blank: No. of Sets _____	
	Field Duplicate: No. of Sets _____	
	MS/MSD: No. of Sets _____	

VOA Vials Have Zero Headspace?
 If no, smaller or greater than a Green Seal (see comments) YES NO

Preservatives Added to Sample?
 or Check Required? YES NO
 Performed By? _____

Ice Present in Shipping Container? YES NO

Container #	Temp.	Container #	Temp.
-------------	-------	-------------	-------

<u>1</u>	<u>2.0</u>		
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Project Manager Contacted?
 Name: T. Lee
 Date Contacted: 02/16/07

Any NO response must be detailed in the comments section below. If items are not applicable to particular samples or contracts, they should be marked N/A

COMMENTS: _____

Checklist Completed By: MLD
 Date: 02/16/07

SOP No: F.2V18

LOW IMPACT EXPLOSIVES
AND PROPELLANTS

GPL Laboratories

A. QC Summary

1. Surrogate Percent Recovery Summary
2. Matrix Spike/Matrix Spike Duplicate Summary
3. Laboratory Control Standard Summary
(where applicable)
4. Method Blank Summary

GPL Laboratories

Surrogate Recovery Summary

Matrix : SOIL

Analytical Method : SW8330A

SDG No : 702081

Surrogate	NO2ANIL4
Lower QC Limits	31 50
Upper QC Limits	129 150
Sample ID	
BKS96595	118
BLK96595	119
NWO-033-0001	60
NWO-033-0001MS	67
NWO-033-0001MSD	52
NWO-033-0004	44 *
NWO-033-0007	44 *
NWO-033-1001	52
NWO-033-1002	37 *

* Value outside of QC Limts

NO2ANIL4 = 4-Nitroaniline

Surrogate Recovery Summary

Matrix : SOIL

Analytical Method : SW8330A

SDG No : 702081

Surrogate	NO2ANIL4
Lower QC Limits	34 50
Upper QC Limits	129 150
Sample ID	
BKS96779RE	108
BLK96779RE	101
NWO-033-0004RE	17 *
NWO-033-0007RE	24 *
NWO-033-1002RE	19 *

* Value outside of QC Limits

NO2ANIL4 = 4-Nitroaniline

MS/MSD RECOVERY

SAMPLE NO

NWO-033-0001MSD

Lab Name : GPL Laboratories

SDG NO : 702081

Method : SW8330A

Lab Code : GPL

Lab Sample ID : 702081-001-001-1/3MSD

Matrix : SOIL Analysis Date : 02/24/2007

Compound	Spike Added (mg/kg)		CONCENTRATION (mg/kg)			%RECOVERY		% RPD	RPD Limit	QC Limits
	MS	MSD	Sample	MS	MSD	MS	MSD			
1,3,5-Trinitrobenzene	.5	.5	0.0	0.51	0.52	102	104	2	25	75-125
1,3-Dinitrobenzene	.5	.5	0.0	0.58	0.58	116	116	0	25	80-125
2,4,6-Trinitrotoluene	.5	.5	0.0	0.60	0.61	120	122	2	25	55-140
2,4-Dinitrotoluene	.5	.5	0.0	0.56	0.56	112	112	0	25	80-125
2,6-Dinitrotoluene	.5	.5	0.0	0.57	0.58	114	116	2	25	80-120
2-Amino-4,6-Dinitrotoluene	.5	.5	0.0	0.51	0.51	102	102	0	25	80-125
4-Amino-2,6-Dinitrotoluene	.5	.5	0.0	0.44	0.40	88	80	10	25	80-125
HMX	.5	.5	0.0	0.59	0.60	118	120	2	25	75-125
Nitrobenzene	.5	.5	0.0	0.57	0.58	114	118	3	25	75-125
RDX	.5	.5	0.0	0.77	0.85	154 *	170 *	10	25	70-135
Tetryl	.5	.5	0.0	0.43	0.46	86	92	7	25	10-150
m-Nitrotoluene	.5	.5	0.0	0.56	0.55	112	110	2	25	75-120
o-Nitrotoluene	.5	.5	0.0	0.55	0.57	110	114	4	25	80-125
p-Nitrotoluene	.5	.5	0.0	0.54	0.55	108	110	2	25	75-125

Column to be used to flag recovery and RPD Values with an asterisk.

* Values Outside of QC Limits.

RPD 0 Out of 14 Outside Limit

Spike Recovery : 2 Out of 28 outside limit

MS/MSD RECOVERY

SAMPLE NO
NWO-033-0001MSD

Lab Name : GPL Laboratories SDG NO : 702081 Method : SW8330
 Lab Code : GPL Lab Sample ID : 702081-001-001-1/3MSD Matrix : SOIL Analysis Date : 02/24/2007

Compound	Spike Added (mg/kg)		CONCENTRATION (mg/kg)			%RECOVERY		% RPD	RPD Limit	QC Limits
	MS	MSD	Sample	MS	MSD	MS	MSD			
Nitroglycerine	10	10	0.0	17	15	170 *	150	13	25	50-150

Column to be used to flag recovery and RPD Values with an asterisk.

* Values Outside of QC Limits.

RPD 0 Out of 1 Outside Limit
 Spike Recovery : 1 Out of 2 outside limit

LCS SUMMARY

SAMPLE NO

BKS96595

Lab Name : GPL Laboratories
 Lab Code : GPL
 Matrix : SOIL
 Method : SW8330A

Contract. : Central Oregon Gunnery Range Site - 033
 SDG NO : 702081
 Lab Sample ID : BKS96595
 Analysis Date : 02/23/2007

COMPOUND	SPIKE ADDED (mg/kg)	BLANK CONCENTRATION (mg/kg)	LCS CONCENTRATION (mg/kg)	LCS % REC	QC LIMITS
1,3,5-Trinitrobenzene	.5	0	0.48	96	75-125
1,3-Dinitrobenzene	.5	0	0.52	104	80-125
2,4,6-Trinitrotoluene	.5	0	0.53	106	55-140
2,4-Dinitrotoluene	.5	0	0.50	100	80-125
2,6-Dinitrotoluene	.5	0	0.50	100	80-120
2-Amino-4,6-Dinitrotoluene	.5	0	0.50	100	80-125
4-Amino-2,6-Dinitrotoluene	.5	0	0.48	96	80-125
HMX	.5	0	0.56	112	75-125
Nitrobenzene	.5	0	0.48	96	75-125
RDX	.5	0	0.56	112	70-135
Tetryl	.5	0	0.42	84	10-150
m-Nitrotoluene	.5	0	0.51	102	75-120
o-Nitrotoluene	.5	0	0.52	104	80-125
p-Nitrotoluene	.5	0	0.48	96	75-125

* Values Outside of QC Limits.

Spike recovery - 0 out of 14 outside limits
 Central Oregon GR - Appendix F

SW8330A

LCS SUMMARY

SAMPLE NO

BKS96596

Lab Name : GPL Laboratories
 Lab Code : GPL
 Matrix : SOIL
 Method : SW8330

Contract : Central Oregon Gunnery Range Site - 033
 SDG NO : 702081
 Lab Sample ID : BKS96596
 Analysis Date : 02/24/2007

COMPOUND	SPIKE ADDED (mg/kg)	BLANK CONCENTRATION (mg/kg)	LCS CONCENTRATION (mg/kg)	LCS % REC	QC LIMITS
Nitroglycerine	10	0	9.5	95	50-150

* Values Outside of QC Limits.

Spike recovery : 0 out of 1 outside limits
 Central Oregon GR - Appendix F

SW8330

LCS SUMMARY

SAMPLE NO
BKS96779RE

Lab Name : GPL Laboratories Contract : Central Oregon Gunnery Range Site - 033
 Lab Code : GPL SDG NO : 702081
 Matrix : SOIL Lab Sample ID : BKS96779
 Method : SW8330A Analysis Date : 03/07/2007

COMPOUND	SPIKE ADDED (mg/kg)	BLANK CONCENTRATION (mg/kg)	LCS CONCENTRATION (mg/kg)	LCS % REC	QC LIMITS
1,3,5-Trinitrobenzene	.5	0	0.48	96	75-125
1,3-Dinitrobenzene	.5	0	0.52	104	80-125
2,4,6-Trinitrotoluene	.5	0	0.54	108	55-140
2,4-Dinitrotoluene	.5	0	0.50	100	80-125
2,6-Dinitrotoluene	.5	0	0.50	100	80-120
2-Amino-4,6-Dinitrotoluene	.5	0	0.51	102	80-125
4-Amino-2,6-Dinitrotoluene	.5	0	0.50	100	80-125
HMX	.5	0	0.53	106	75-125
Nitrobenzene	.5	0	0.48	96	75-125
RDX	.5	0	0.58	116	70-135
Tetryl	.5	0	0.42	84	10-150
m-Nitrotoluene	.5	0	0.51	102	75-120
o-Nitrotoluene	.5	0	0.52	104	80-125
p-Nitrotoluene	.5	0	0.50	100	75-125

* Values Outside of QC Limits.

Spike recovery : 0 out of 14 outside limits
Central Oregon GR - Appendix F

SW8330A

SAMPLE NO

BLK96595

Lab Name : GPL Laboratories Client : Shaw E&I, Inc
 Lab Code : GPL SAS NO. : 96595
 Lab File ID : LA19125.D SDG NO : 702081
 Date Analyzed 02/23/2007 Lab Sample ID : BLK96595
 Date Extracted : 02/21/2007 Time Analyzed : 22:32
 Matrix :(Soil/Water). SOIL Level :(Low/Med) _____

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES,MS AND MSD :

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed
BKS96595	BKS96595	LA19126.D	02/23/2007
NWO-033-0001MS	702081-001-001-1/3MS	LA19127.D	02/24/2007
NWO-033-0001MSD	702081-001-001-1/3MSD	LA19128.D	02/24/2007
NWO-033-0001	702081-001-001-1/3	LA19132.D	02/24/2007
NWO-033-1001	702081-004-013-1/2	LA19133.D	02/24/2007
NWO-033-0004	702081-005-015-1/2	LA19134.D	02/24/2007
NWO-033-0007	702081-008-017-1/2	LA19138.D	02/24/2007
NWO-033-1002	702081-009-019-1/2	LA19139.D	02/24/2007

SAMPLE NO BLK96596

Lab Name :	<u>GPL Laboratories</u>	Client. :	<u>Shaw E&I, Inc</u>
Lab Code :	<u>GPL</u>	SAS NO. :	<u>96596</u>
Lab File ID :	<u>LA19125.D</u>	SDG NO :	<u>702081</u>
Date Analyzed	<u>02/23/2007</u>	Lab Sample ID :	<u>BLK96596</u>
Date Extracted :	<u>02/21/2007</u>	Time Analyzed :	<u>22:32</u>
Matrix :(Soil/Water).	<u>SOIL</u>	Level :(Low/Med)	<u></u>

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES,MS AND MSD :

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed
BKS96596	BKS96596	LA19129.D	02/24/2007
NWO-033-0001MS	702081-001-001-1/3MS	LA19130.D	02/24/2007
NWO-033-0001MSD	702081-001-001-1/3MSD	LA19131.D	02/24/2007
NWO-033-0001	702081-001-001-1/3	LA19132.D	02/24/2007
NWO-033-1001	702081-004-013-1/2	LA19133.D	02/24/2007
NWO-033-0004	702081-005-015-1/2	LA19134.D	02/24/2007
NWO-033-0007	702081-008-017-1/2	LA19138.D	02/24/2007
NWO-033-1002	702081-009-019-1/2	LA19139.D	02/24/2007

SAMPLE NO

BLK96779RE

Lab Name : GPL Laboratories Client. : Shaw E&I, Inc
 Lab Code : GPL SAS NO. : 96779
 Lab File ID : LA19344.D SDG NO : 702081
 Date Analyzed 03/07/2007 Lab Sample ID : BLK96779
 Date Extracted : 03/07/2007 Time Analyzed : 17:18
 Matrix :(Soil/Water). SOIL Level :(Low/Med) _____

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES,MS AND MSD :

Client Sample ID	Lab Sample ID	Lab File ID	Date Analyzed
BKS96779RE	BKS96779	LA19345.D	03/07/2007
NWO-033-0004RE	702081-005-015-1/2	LA19346.D	03/07/2007
NWO-033-0007RE	702081-008-017-1/2	LA19347.D	03/07/2007
NWO-033-1002RE	702081-009-019-1/2	LA19348.D	03/07/2007

B. Sample Data

1. TCL Results
2. Chromatographs from Primary and Confirmatory Analyses
3. Integration Report for Primary and Confirmatory Analyses

GPL Laboratories

SAMPLE NO
NWO-033-0001

Lab Name :	GPL Laboratories	Client. :	Shaw E&I, Inc
Lab Code :	GPL	SAS NO. :	
Case No. :		SDG NO :	702081
Matrix : (Soil / Water)	SOIL	Lab Sample ID :	702081-001-001-1/3
Sample Volume :	10.02	Lab File ID :	LA19132.D
% Moisture:		Date Received	02/16/2007
Extraction:	EXT_SW8330	Date Extracted:	02/21/2007
Extract Volume:	40 mL	Date Analyzed	02/24/2007
Injection Volume :	μ L	Dilution Factor :	1
GPC Clean up (Y/N):	pH: _____		

Concentration Units (ug/L or ug/kg dry weight) : mg/kg

CAS NO	COMPOUND	Q	Q
99-35-4	1,3,5-Trinitrobenzene	0.040	U
99-65-0	1,3-Dinitrobenzene	0.040	U
118-96-7	2,4,6-Trinitrotoluene	0.040	U
121-14-2	2,4-Dinitrotoluene	0.040	U
606-20-2	2,6-Dinitrotoluene	0.040	U
35572-78-2	2-Amino-4,6-Dinitrotoluene	0.040	U
19406-51-0	4-Amino-2,6-Dinitrotoluene	0.040	U
2691-41-0	HMX	0.080	U
98-95-3	Nitrobenzene	0.040	U
121-82-4	RDX	0.080	U
479-45-8	Tetryl	0.080	U
99-08-1	m-Nitrotoluene	0.080	U
88-72-2	o-Nitrotoluene	0.080	U
99-99-0	p-Nitrotoluene	0.080	U

Data File : H:\LCDATA\LCA\022307\LA19132.D Vial: 21
 Acq On : 24 Feb 2007 5:29 Operator: SS
 Sample : 702081-001-001-1/3 Inst : LCA
 Misc : SOIL.SHAW Multiplr: 1.00
 IntFile : events.e
 Quant Time: Mar 1 12:01 2007 Quant Results File: 61110833.RES

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
 Title : 8330 Explosives
 Last Update : Mon Feb 26 09:04:57 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units
----------	------	----------	------------

System Monitoring Compounds

2) S 4-Nitroaniline	7.31	12164678	90.131 ng/mlm
Spiked Amount 150.000	Range 52 - 154	Recovery =	60.09%

Target Compounds

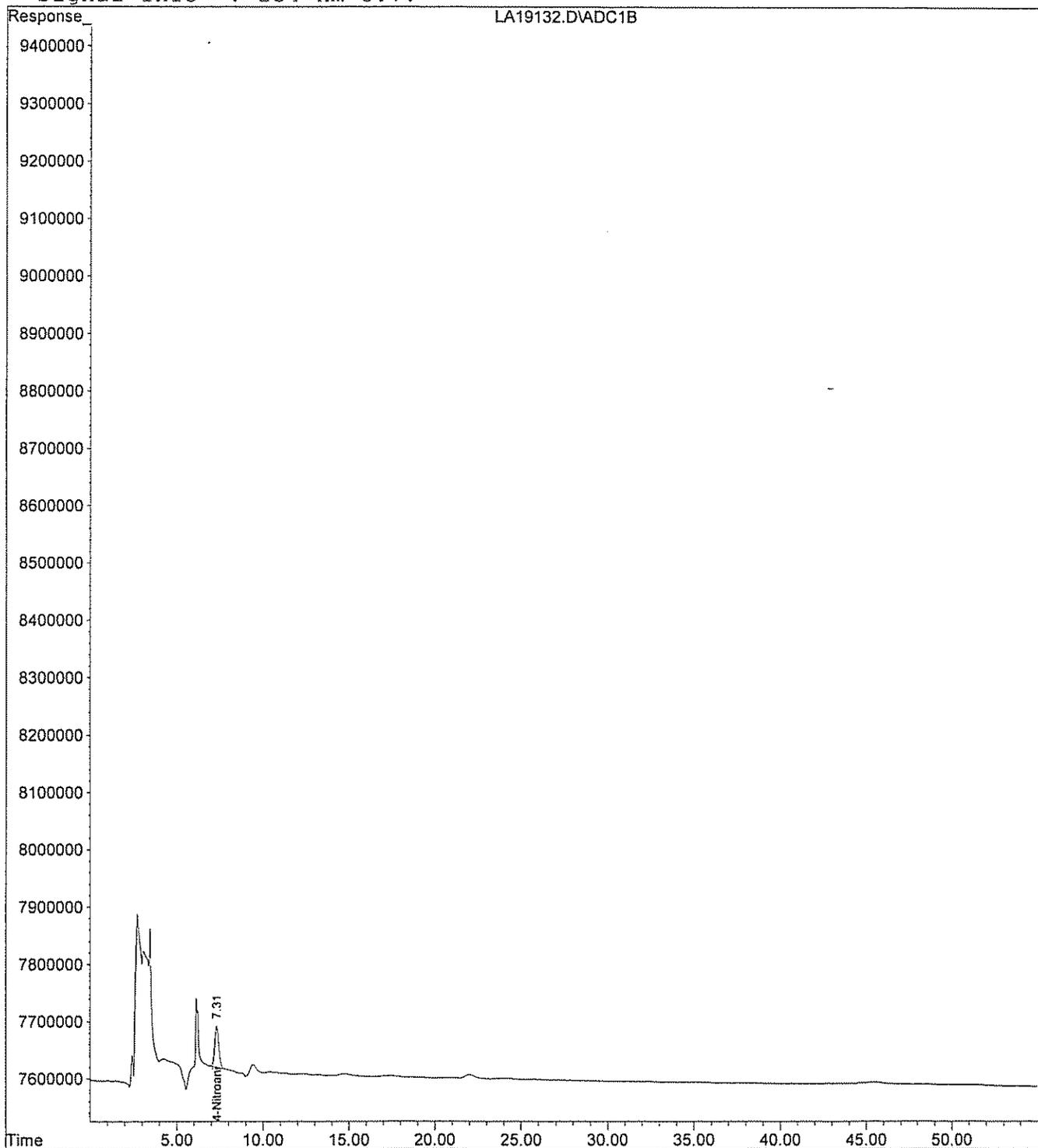
Quantitation Report

Data File : H:\LCDATA\LCA\022307\LA19132.D
Acq On : 24 Feb 2007 5:29
Sample : 702081-001-001-1/3
Misc : SOIL.SHAW
IntFile : events.e
Quant Time: Mar 1 12:01 2007 Quant Results File: 61110833.RES

Vial: 21
Operator: SS
Inst : LCA
Multiplr: 1.00

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
Title : 8330 Explosives
Last Update : Mon Feb 26 09:04:57 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



Data File : H:\LCDATA\LCA\022307\0223NG\LA19132.D Vial: 21
 Acq On : 24 Feb 2007 5:29 Operator: SS
 Sample : 702081-001-001-1/3 Inst : LCA
 Misc : SOIL.SHAW Multiplr: 1.00
 IntFile : events.e
 Quant Time: Feb 28 17:49 2007 Quant Results File: 61114NG.RES

Quant Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT IC PRIMARY
 Last Update : Mon Feb 26 09:30:17 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

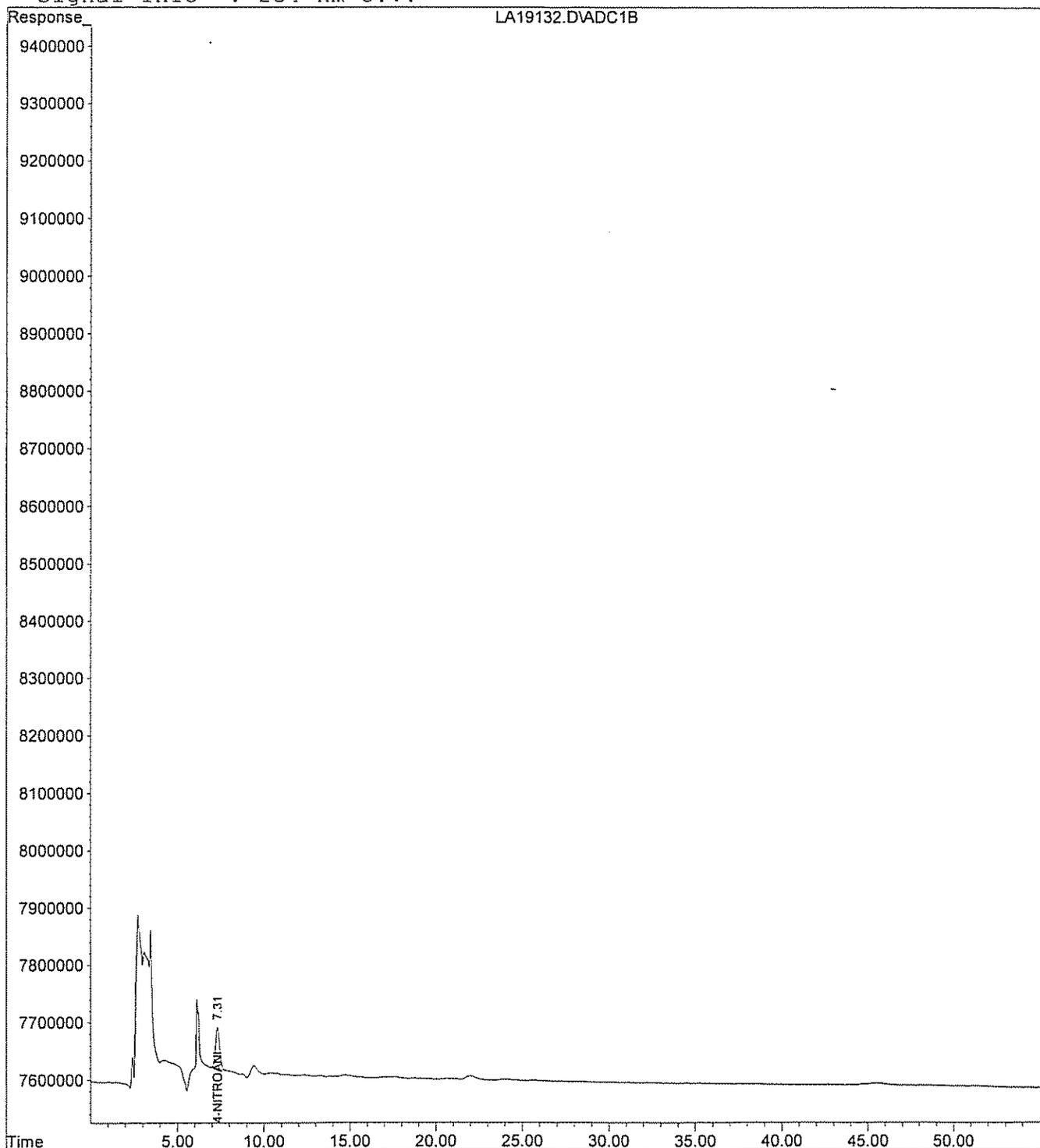
System Monitoring Compounds			
1) S 4-NITROANILINE	7.31	12181517	96.759 PPB
Spiked Amount 150.000		Recovery =	64.51%
Target Compounds			
2) M NITROGLYCERINE	0.00	0	N.D. PPM d

Quantitation Report

Data File : H:\LCDATA\LCA\022307\0223NG\LA19132.D Vial: 21
Acq On : 24 Feb 2007 5:29 Operator: SS
Sample : 702081-001-001-1/3 Inst : LCA
Misc : SOIL.SHAW Multiplr: 1.00
IntFile : events.e
Quant Time: Feb 28 17:49 2007 Quant Results File: 61114NG.RES

Quant Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
Title : NITROGLYCERINE- 5 POINT IC PRIMARY
Last Update : Mon Feb 26 09:30:17 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



Data File : H:\LCDATA\LCA\022607\LA19194.D Vial: 23
 Acq On : 27 Feb 2007 10:37 Operator: SS
 Sample : 702081-001 Inst : LCA
 Misc : SOIL.SHAW Multiplr: 1.00
 IntFile : events.e
 Quant Time: Mar 1 12:02 2007 Quant Results File: 61011CON.RES

Quant Method : I:\LCDATA\LCA\METHODS\61011CON.M (Chemstation Integrator)
 Title : 8330 Explosives Confirmation
 Last Update : Mon Feb 05 11:40:12 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : POLAR RP
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
2) S 4-Nitroaniline	8.53	6710483	56.026 ng/ml
Spiked Amount 150.000	Range 52 - 154	Recovery =	37.35%#
Target Compounds			
1) T HMX	0.00	0	N.D. ng/ml
3) T 1,3,5-Trinitrobenzene	0.00	0	N.D. ng/ml
4) T Tetryl	0.00	0	N.D. ng/ml
5) T 2,4,6-Trinitrotoluene	0.00	0	N.D. ng/ml
6) T 4-Amino-2,6-Dinitrotoluene	0.00	0	N.D. ng/ml
7) T 2,6-Dinitrotoluene	0.00	0	N.D. ng/ml
8) T 4-Nitrotoluene	0.00	0	N.D. ng/ml
9) M RDX	0.00	0	N.D. ng/ml
10) M 1,3-Dinitrobenzene	0.00	0	N.D. ng/ml
11) M Nitrobenzene	0.00	0	N.D. ng/ml
12) M 2-Amino-4,6-Dinitrotoluene	0.00	0	N.D. ng/ml
13) M 2,4-Dinitrotoluene	0.00	0	N.D. ng/ml
14) M 2-Nitrotoluene	0.00	0	N.D. ng/ml
15) M 3-Nitrotoluene	0.00	0	N.D. ng/ml

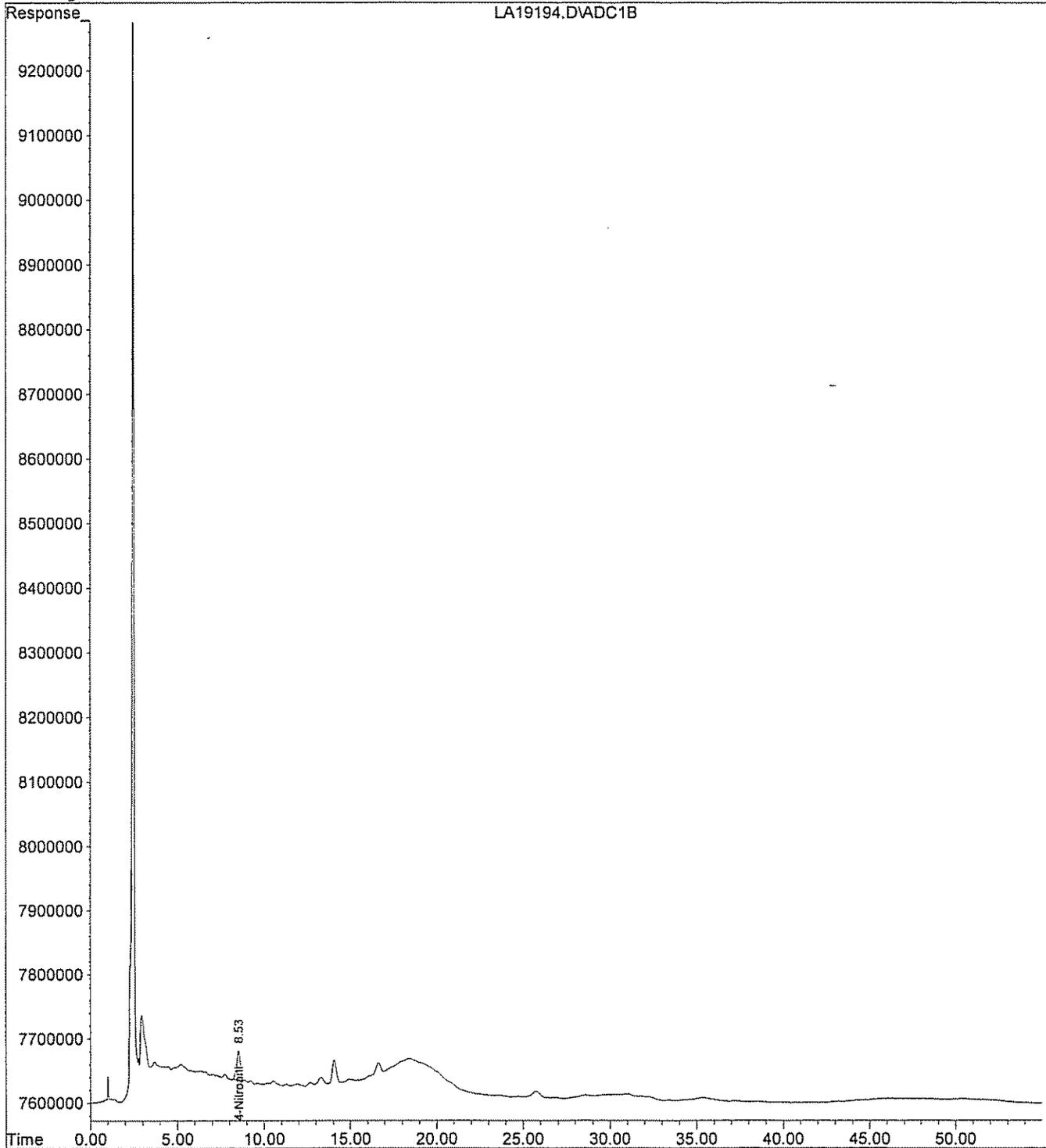
Quantitation Report

Data File : H:\LCDATA\LCA\022607\LA19194.D
Acq On : 27 Feb 2007 10:37
Sample : 702081-001
Misc : SOIL.SHAW
IntFile : events.e
Quant Time: Mar 1 12:02 2007 Quant Results File: 61011CON.RES

Vial: 23
Operator: SS
Inst : LCA
Multiplr: 1.00

Quant Method : I:\LCDATA\LCA\METHODS\61011CON.M (Chemstation Integrator)
Title : 8330 Explosives Confirmation
Last Update : Mon Feb 05 11:40:12 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : POLAR RP
Signal Info : 254 nm U.V.



Data File : H:\LCDATA\LCA\022607\0226NG\LA19194.D Vial: 23
 Acq On : 27 Feb 2007 10:37 Operator: SS
 Sample : 702081-001 Inst : LCA
 Misc : SOIL.SHAW Multiplr: 1.00
 IntFile : events.e
 Quant Time: Feb 28 17:45 2007 Quant Results File: 7122NGCO.RES

Quant Method : H:\LCDATA\LCA\METHODS\7122NGCO.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT 8330 confirmation
 Last Update : Wed Jan 03 13:44:41 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : Polar RP
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

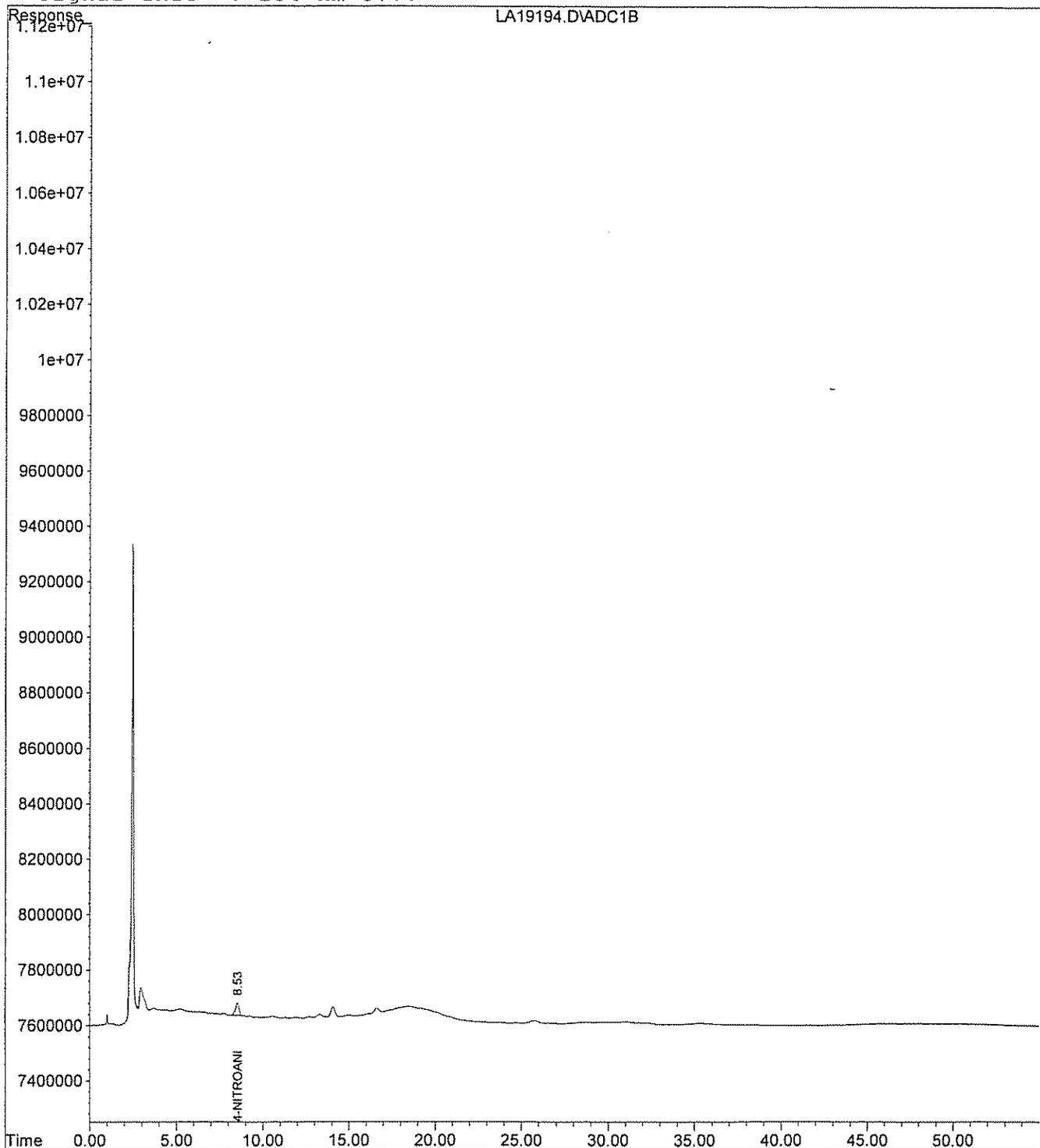
System Monitoring Compounds			
1) S 4-NITROANILINE	8.53	6663497	58.736 PPB
Spiked Amount 150.000		Recovery =	39.16%
Target Compounds			
2) M NITROGLYCERINE	0.00	0	N.D. PPM

Quantitation Report

Data File : H:\LCDATA\LCA\022607\0226NG\LA19194.D Vial: 23
Acq On : 27 Feb 2007 10:37 Operator: SS
Sample : 702081-001 Inst : LCA
Misc : SOIL.SHAW Multiplr: 1.00
IntFile : events.e
Quant Time: Feb 28 17:45 2007 Quant Results File: 7122NGCO.RES

Quant Method : H:\LCDATA\LCA\METHODS\7122NGCO.M (Chemstation Integrator)
Title : NITROGLYCERINE- 5 POINT 8330 confirmation
Last Update : Wed Jan 03 13:44:41 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : Polar RP
Signal Info : 254 nm U.V.



SAMPLE NO
NWO-033-1001

Lab Name :	GPL Laboratories	Client :	Shaw E&I, Inc
Lab Code :	GPL	SAS NO. :	
Case No. :		SDG NO :	702081
Matrix : (Soil / Water)	SOIL	Lab Sample ID :	702081-004-013-1/2
Sample Volume :	10	Lab File ID :	LA19133.D
% Moisture:		Date Received	02/16/2007
Extraction:	EXT_SW8330	Date Extracted:	02/21/2007
Extract Volume:	40 mL	Date Analyzed	02/24/2007
Injection Volume :	μ L	Dilution Factor :	1
GPC Clean up (Y/N):	pH: _____		

Concentration Units (ug/L or ug/kg dry weight) : mg/kg

CAS NO	COMPOUND		Q
99-35-4	1,3,5-Trinitrobenzene	0.040	U
99-65-0	1,3-Dinitrobenzene	0.040	U
118-96-7	2,4,6-Trinitrotoluene	0.040	U
121-14-2	2,4-Dinitrotoluene	0.040	U
606-20-2	2,6-Dinitrotoluene	0.040	U
35572-78-2	2-Amino-4,6-Dinitrotoluene	0.040	U
19406-51-0	4-Amino-2,6-Dinitrotoluene	0.040	U
2691-41-0	HMX	0.080	U
98-95-3	Nitrobenzene	0.029	J
121-82-4	RDX	0.080	U
479-45-8	Tetryl	0.080	U
99-08-1	m-Nitrotoluene	0.080	U
88-72-2	o-Nitrotoluene	0.080	U
99-99-0	p-Nitrotoluene	0.080	U

10A
EXPLOSIVES IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

EPA SAMPLE NO.

NWO-033-1001

Lab Name: GPL LABORATORIES Contract: SHAW

Lab Code: GPL LAB Case No.: N/A SAS No.: N/A SDG No.: N/A

Lab Sample ID: 702081-004 Date(s) Analyzed: 02/24/07 02/27/07

Instrument ID (1): HPLC-A Instrument ID (2): HPLC-A

GC Column(1): C8 ID: _____ (mm) GC Column(2): CN ID: _____ (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Nitrobenzene	1	21.98	21.31	22.41	0.029	
	2	14.07	13.61	14.71	0.049	50.6

Data File : H:\LCDATA\LCA\022307\LA19133.D Vial: 22
 Acq On : 24 Feb 2007 6:28 Operator: SS
 Sample : 702081-004-013-1/2 Inst : LCA
 Misc : SOIL.SHAW Multiplr: 1.00
 IntFile : events.e
 Quant Time: Mar 1 12:01 2007 Quant Results File: 61110833.RES

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
 Title : 8330 Explosives
 Last Update : Mon Feb 26 09:04:57 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
2) S 4-Nitroaniline	7.31	10530330	78.022 ng/mlm
Spiked Amount 150.000	Range 52 - 154	Recovery =	52.01%
Target Compounds			
11) M Nitrobenzene	21.98	2666630	7.274 ng/mlm .

Quantitation Report

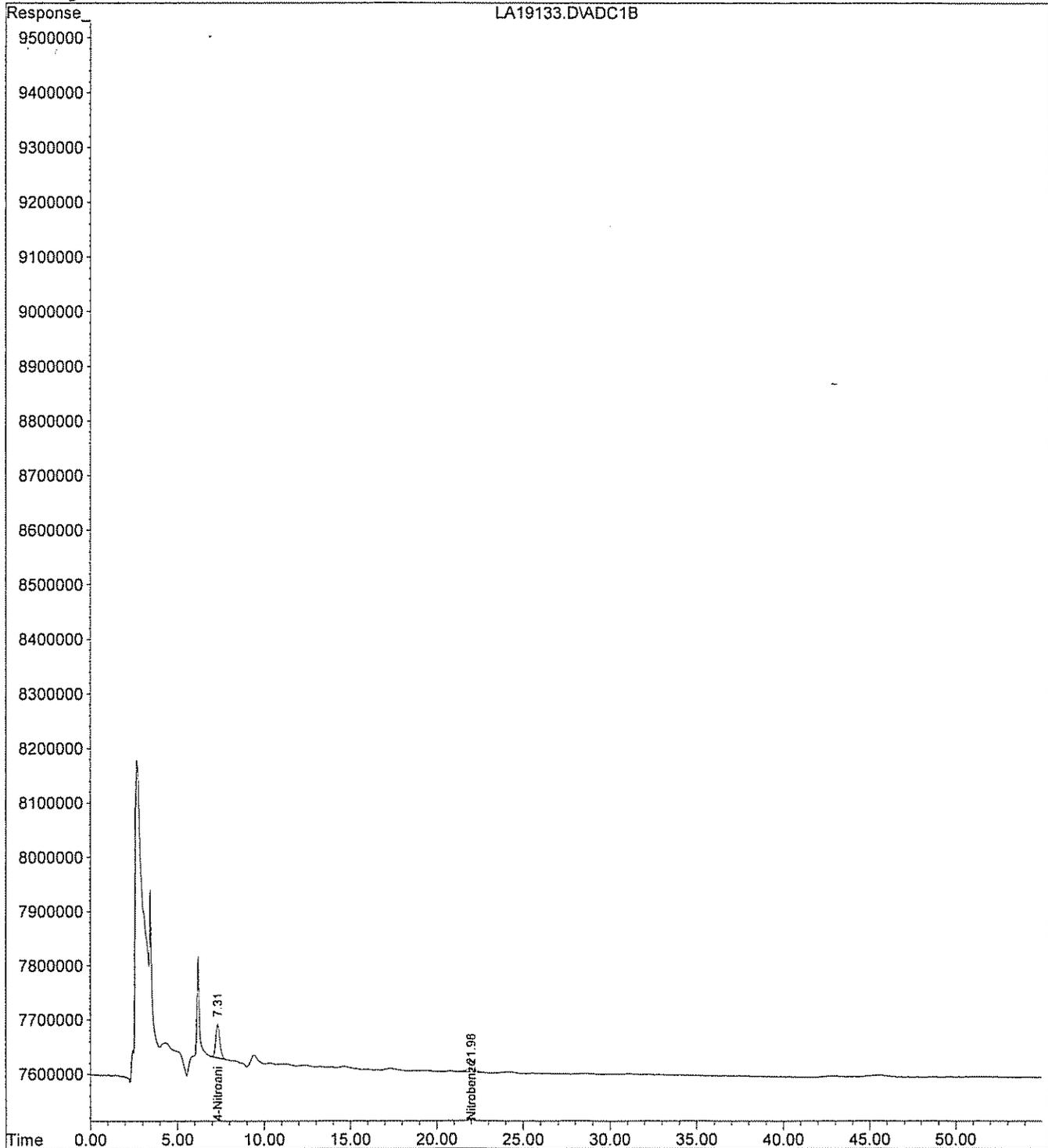
Data File : H:\LCDATA\LCA\022307\LA19133.D
Acq On : 24 Feb 2007 6:28
Sample : 702081-004-013-1/2
Misc : SOIL.SHAW
IntFile : events.e
Quant Time: Mar 1 12:01 2007

Vial: 22
Operator: SS
Inst : LCA
Multiplr: 1.00

Quant Results File: 61110833.RES

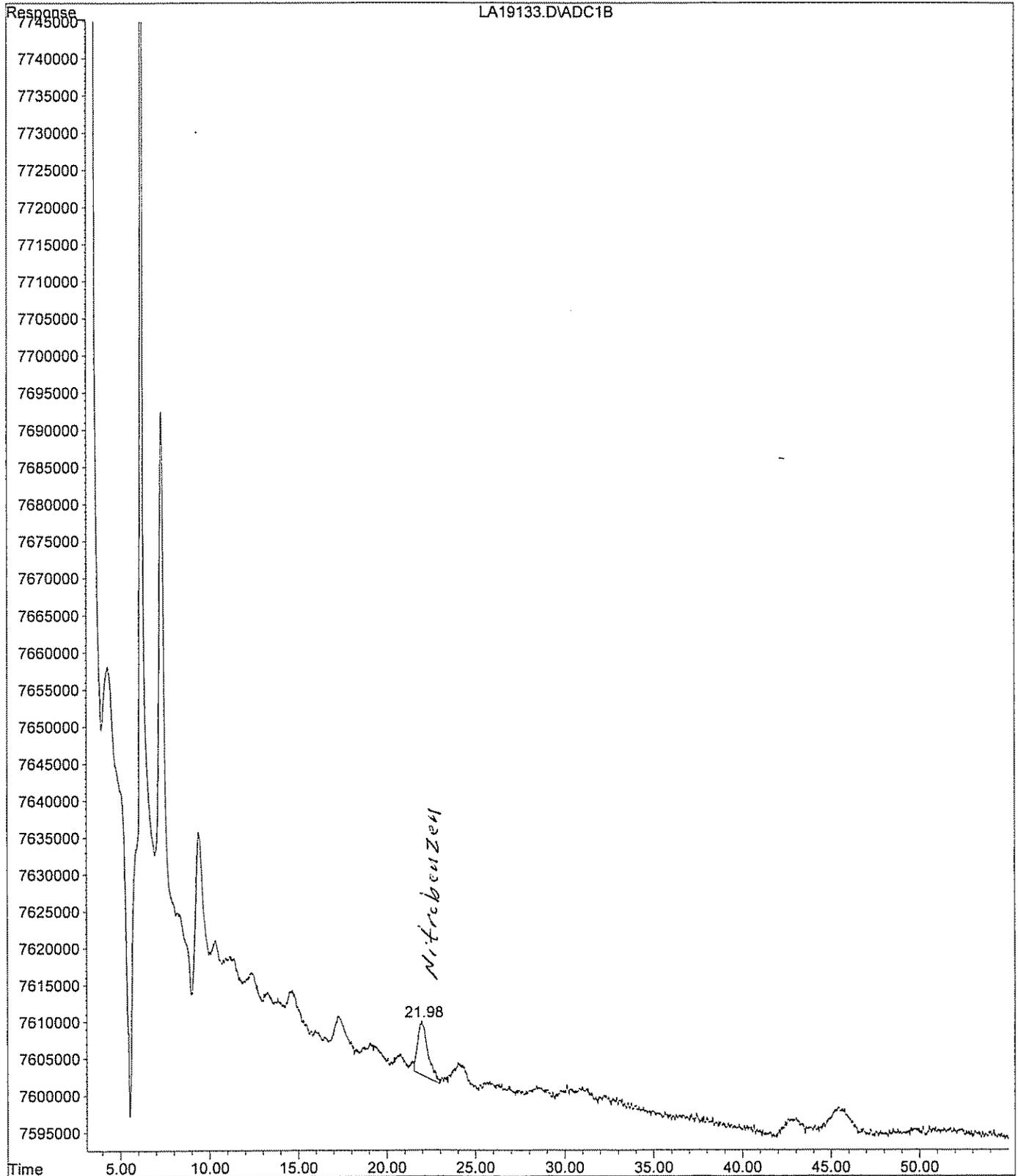
Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
Title : 8330 Explosives
Last Update : Mon Feb 26 09:04:57 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



File : H:\LCDATA\LCA\022307\LA19133.D
Operator : SS
Acquired : 24 Feb 2007 6:28 using AcqMethod 8330MIX.M
Instrument : LCA
Sample Name: 702081-004-013-1/2
Misc Info : SOIL.SHAW
Vial Number: 22

primary



Data File : H:\LCDATA\LCA\022307\0223NG\LA19133.D Vial: 22
 Acq On : 24 Feb 2007 6:28 Operator: SS
 Sample : 702081-004-013-1/2 Inst : LCA
 Misc : SOIL.SHAW Multiplr: 1.00
 IntFile : events.e
 Quant Time: Feb 28 17:50 2007 Quant Results File: 61114NG.RES

Quant Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT IC PRIMARY
 Last Update : Mon Feb 26 09:30:17 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc	Units

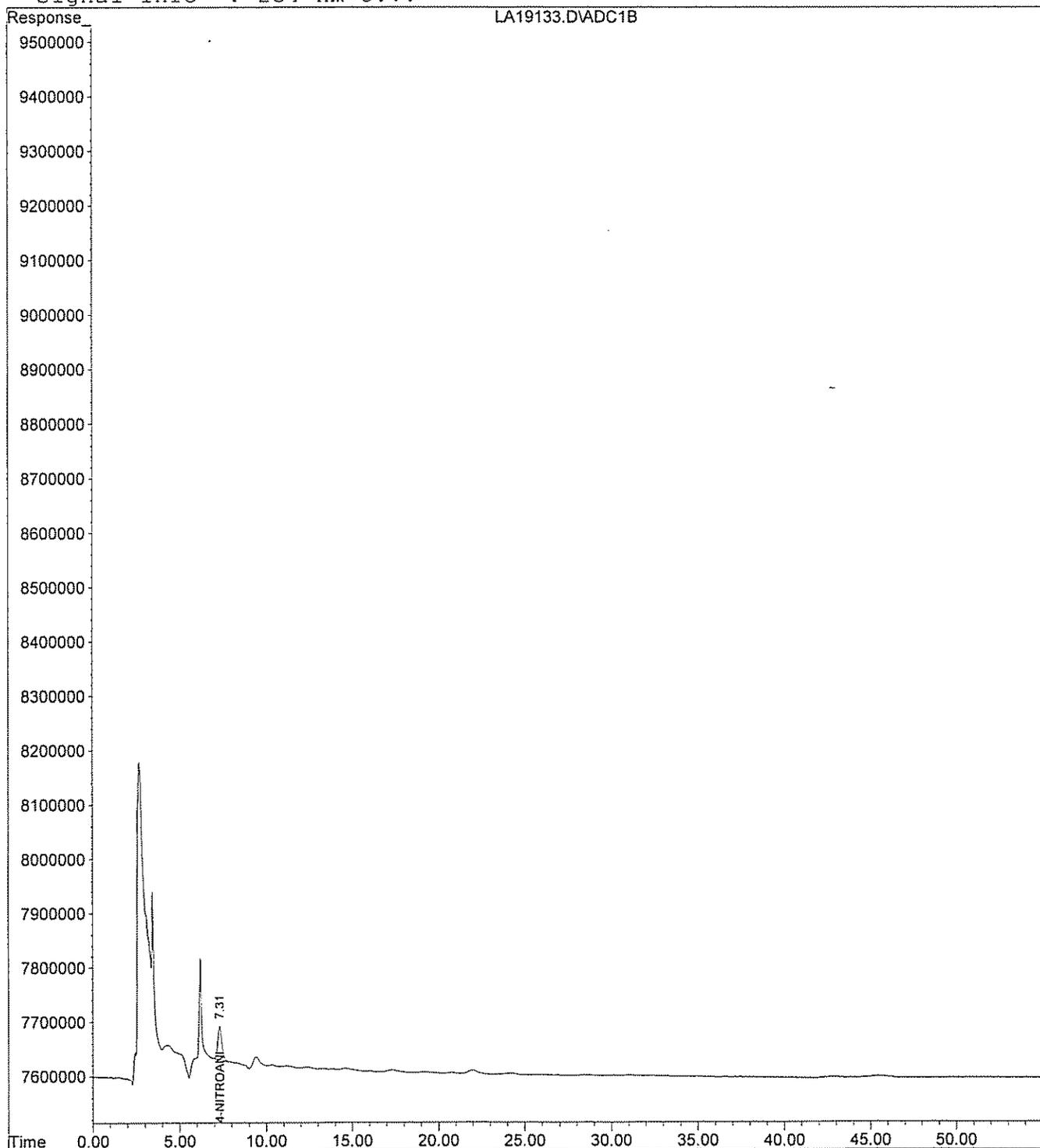
System Monitoring Compounds				
1) S 4-NITROANILINE	7.31	10580515	84.042	PPB m
Spiked Amount 150.000		Recovery =	56.03%	
Target Compounds				
2) M NITROGLYCERINE	0.00	0	N.D.	PPM d

Quantitation Report

Data File : H:\LCDATA\LCA\022307\0223NG\LA19133.D Vial: 22
Acq On : 24 Feb 2007 6:28 Operator: SS
Sample : 702081-004-013-1/2 Inst : LCA
Misc : SOIL.SHAW Multiplr: 1.00
IntFile : events.e
Quant Time: Feb 28 17:50 2007 Quant Results File: 61114NG.RES

Quant Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
Title : NITROGLYCERINE- 5 POINT IC PRIMARY
Last Update : Mon Feb 26 09:30:17 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



Data File : H:\LCDATA\LCA\022607\LA19195.D Vial: 24
 Acq On : 27 Feb 2007 11:37 Operator: SS
 Sample : 702081-004 Inst : LCA
 Misc : SOIL.SHAW Multiplr: 1.00
 IntFile : events.e
 Quant Time: Mar 1 12:03 2007 Quant Results File: 61011CON.RES

Quant Method : I:\LCDATA\LCA\METHODS\61011CON.M (Chemstation Integrator)
 Title : 8330 Explosives Confirmation
 Last Update : Mon Feb 05 11:40:12 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : POLAR RP
 Signal Info : 254 nm U.V.

Compound		R.T.	Response	Conc Units

System Monitoring Compounds				
2) S	4-Nitroaniline	8.54	7675372	64.082 ng/ml
Spiked Amount 150.000 Range 52 - 154			Recovery =	42.72%#
Target Compounds				
1) T	HMX	0.00	0	N.D. ng/ml
3) T	1,3,5-Trinitrobenzene	0.00	0	N.D. ng/ml
4) T	Tetryl	0.00	0	N.D. ng/ml
5) T	2,4,6-Trinitrotoluene	0.00	0	N.D. ng/ml
6) T	4-Amino-2,6-Dinitrotoluene	0.00	0	N.D. ng/ml
7) T	2,6-Dinitrotoluene	0.00	0	N.D. ng/ml
8) T	4-Nitrotoluene	0.00	0	N.D. ng/ml
9) M	RDX	0.00	0	N.D. ng/ml
10) M	1,3-Dinitrobenzene	0.00	0	N.D. ng/ml
11) M	Nitrobenzene	14.07	4163615	12.206 ng/ml
12) M	2-Amino-4,6-Dinitrotoluene	0.00	0	N.D. ng/ml
13) M	2,4-Dinitrotoluene	0.00	0	N.D. ng/ml
14) M	2-Nitrotoluene	0.00	0	N.D. ng/ml
15) M	3-Nitrotoluene	0.00	0	N.D. ng/ml

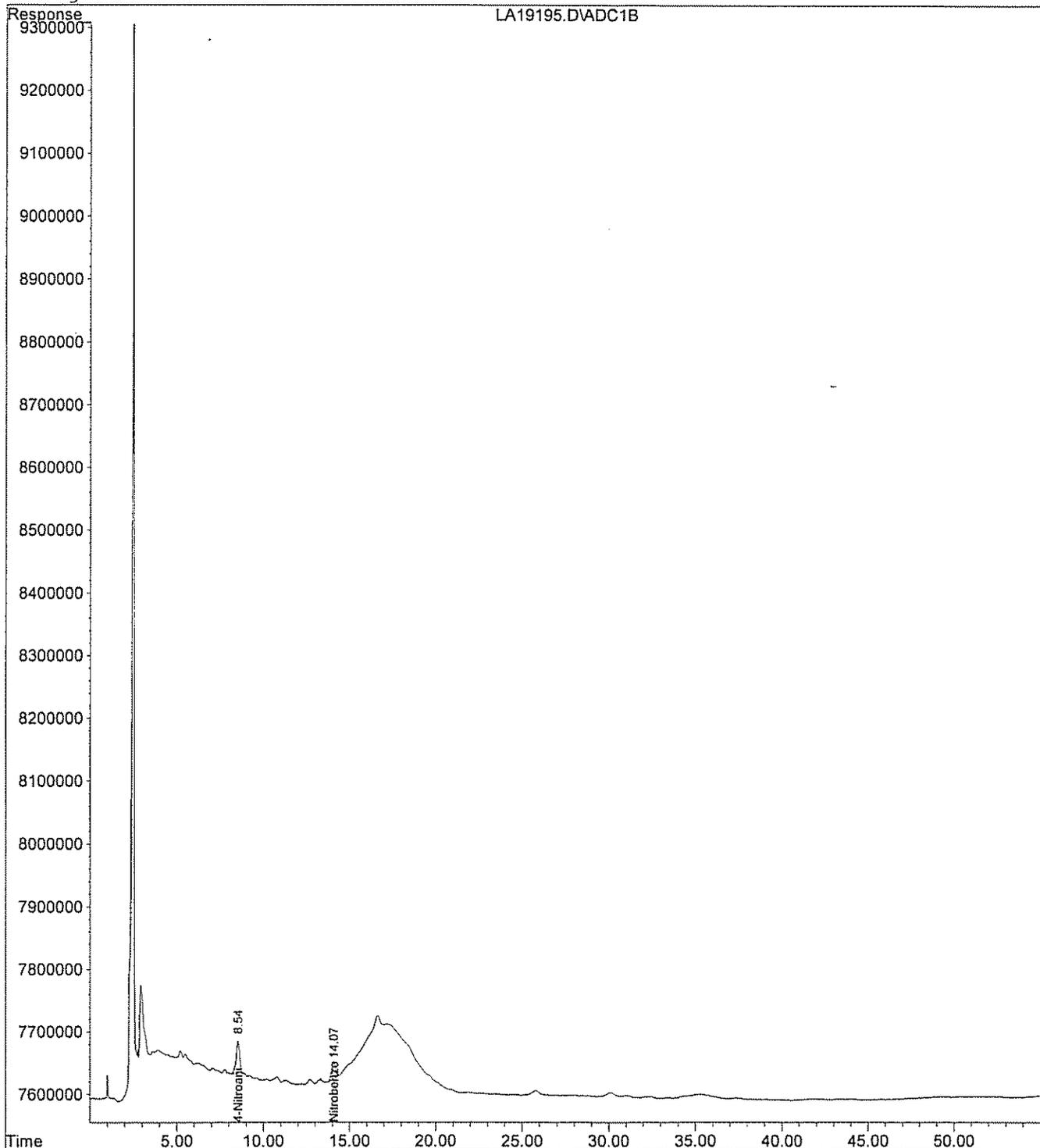
Quantitation Report

Data File : H:\LCDATA\LCA\022607\LA19195.D
Acq On : 27 Feb 2007 11:37
Sample : 702081-004
Misc : SOIL.SHAW
IntFile : events.e
Quant Time: Mar 1 12:03 2007 Quant Results File: 61011CON.RES

Vial: 24
Operator: SS
Inst : LCA
Multiplr: 1.00

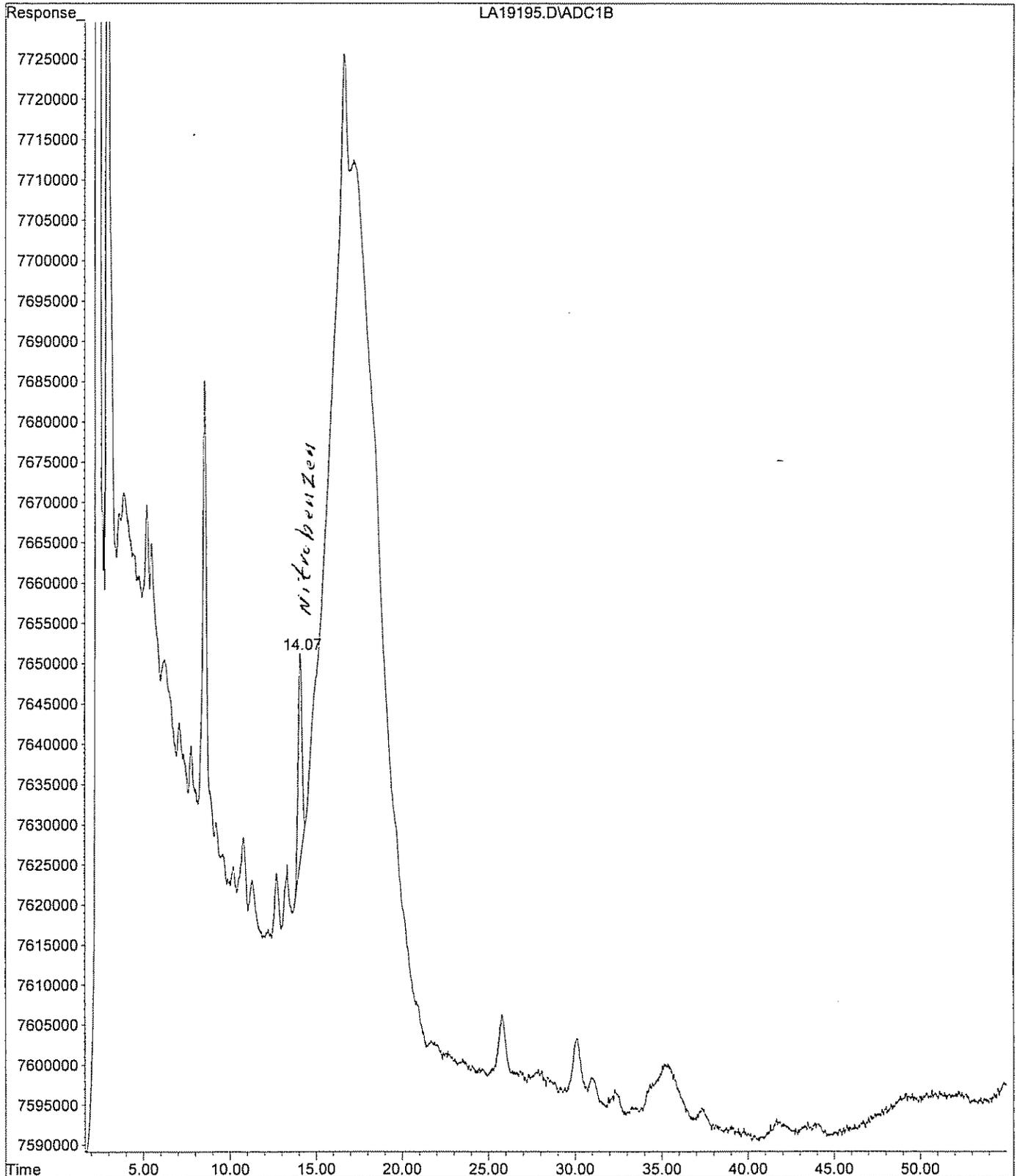
Quant Method : I:\LCDATA\LCA\METHODS\61011CON.M (Chemstation Integrator)
Title : 8330 Explosives Confirmation
Last Update : Mon Feb 05 11:40:12 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : POLAR RP
Signal Info : 254 nm U.V.



File : H:\LCDATA\LCA\022607\LA19195.D
Operator : SS
Acquired : 27 Feb 2007 11:37 using AcqMethod 8330MIX.M
Instrument : LCA
Sample Name: 702081-004
Misc Info : SOIL.SHAW
Vial Number: 24

Confirmation



Data File : H:\LCDATA\LCA\022607\0226NG\LA19195.D Vial: 24
 Acq On : 27 Feb 2007 11:37 Operator: SS
 Sample : 702081-004 Inst : LCA
 Misc : SOIL.SHAW Multiplr: 1.00
 IntFile : events.e
 Quant Time: Feb 28 17:46 2007 Quant Results File: 7122NGCO.RES

Quant Method : H:\LCDATA\LCA\METHODS\7122NGCO.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT 8330 confirmation
 Last Update : Wed Jan 03 13:44:41 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : Polar RP
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

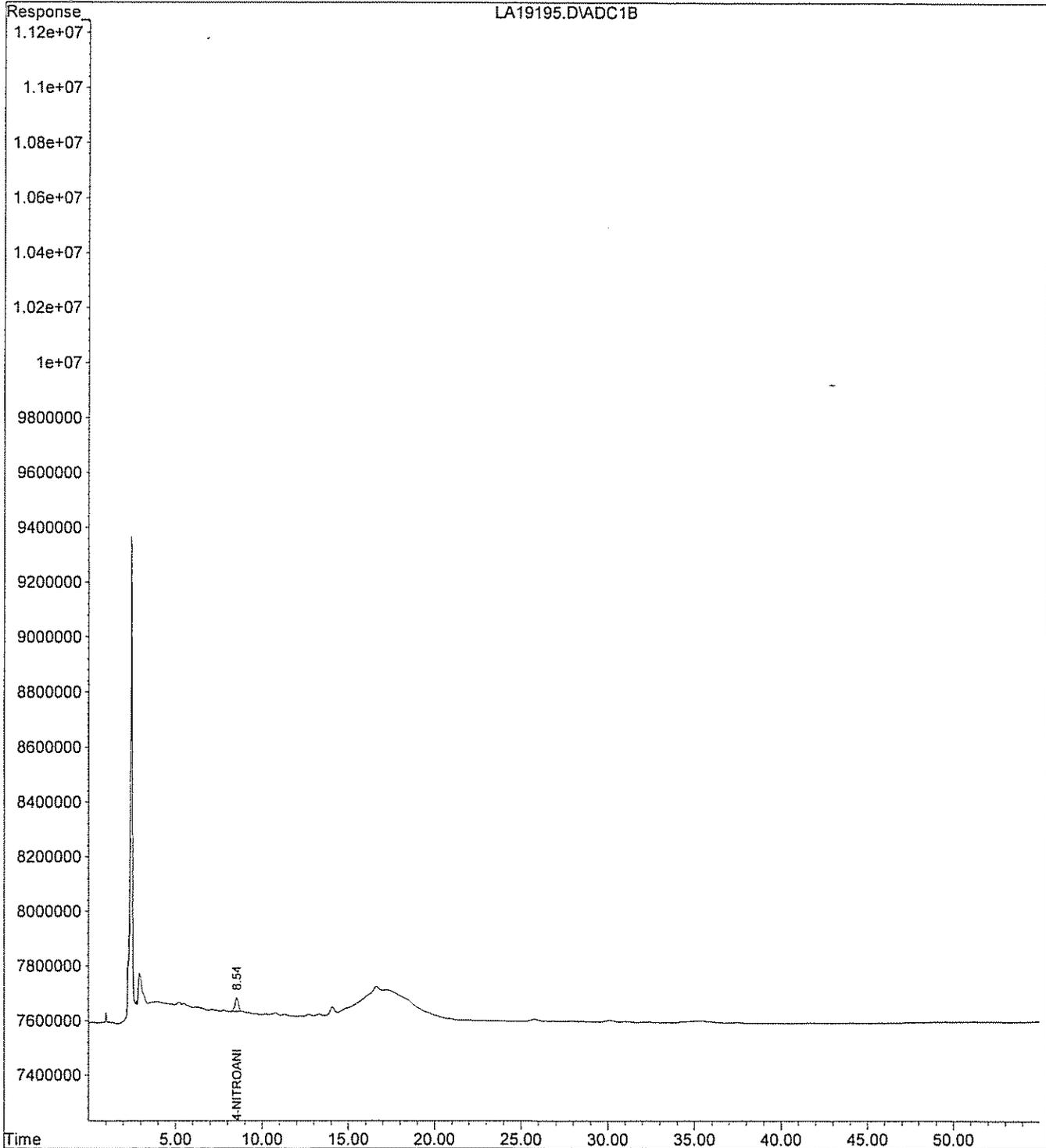
System Monitoring Compounds			
1) S 4-NITROANILINE	8.54	7357663	64.855 PPB
Spiked Amount 150.000		Recovery =	43.24%
Target Compounds			
2) M NITROGLYCERINE	0.00	0	N.D. PPM

Quantitation Report

Data File : H:\LCDATA\LCA\022607\0226NG\LA19195.D Vial: 24
Acq On : 27 Feb 2007 11:37 Operator: SS
Sample : 702081-004 Inst : LCA
Misc : SOIL.SHAW Multiplr: 1.00
IntFile : events.e
Quant Time: Feb 28 17:46 2007 Quant Results File: 7122NGCO.RES

Quant Method : H:\LCDATA\LCA\METHODS\7122NGCO.M (Chemstation Integrator)
Title : NITROGLYCERINE- 5 POINT 8330 confirmation
Last Update : Wed Jan 03 13:44:41 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : Polar RP
Signal Info : 254 nm U.V.



10A
EXPLOSIVES IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

EPA SAMPLE NO.

NWO-033-0004

Lab Name: GPL LABORATORIES Contract: SHAW

Lab Code: GPL LAB Case No.: N/A SAS No.: N/A SDG No.: N/A

Lab Sample ID: 702081-005 Date(s) Analyzed: 02/24/07 02/27/07

Instrument ID (1): HPLC-A Instrument ID (2): HPLC-A

GC Column(1): C8 ID: _____ (mm) GC Column(2): CN ID: _____ (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Nitrobenzene	1	21.92	21.31	22.41	0.049	51.0
	2	14.05	13.61	14.71	0.083	

Data File : H:\LCDATA\LCA\022307\LA19134.D Vial: 23
 Acq On : 24 Feb 2007 7:27 Operator: SS
 Sample : 702081-005-015-1/2 Inst : LCA
 Misc : SOIL.SHAW Multiplr: 1.00
 IntFile : events.e
 Quant Time: Feb 28 17:40 2007 Quant Results File: 61110833.RES

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
 Title : 8330 Explosives
 Last Update : Mon Feb 26 09:04:57 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
2) S 4-Nitroaniline	7.32	8953321	66.337 ng/mlm
Spiked Amount 150.000	Range 52 - 154	Recovery =	44.22%#
Target Compounds			
11) M Nitrobenzene	21.92	4534716	12.369 ng/mlm

Quantitation Report

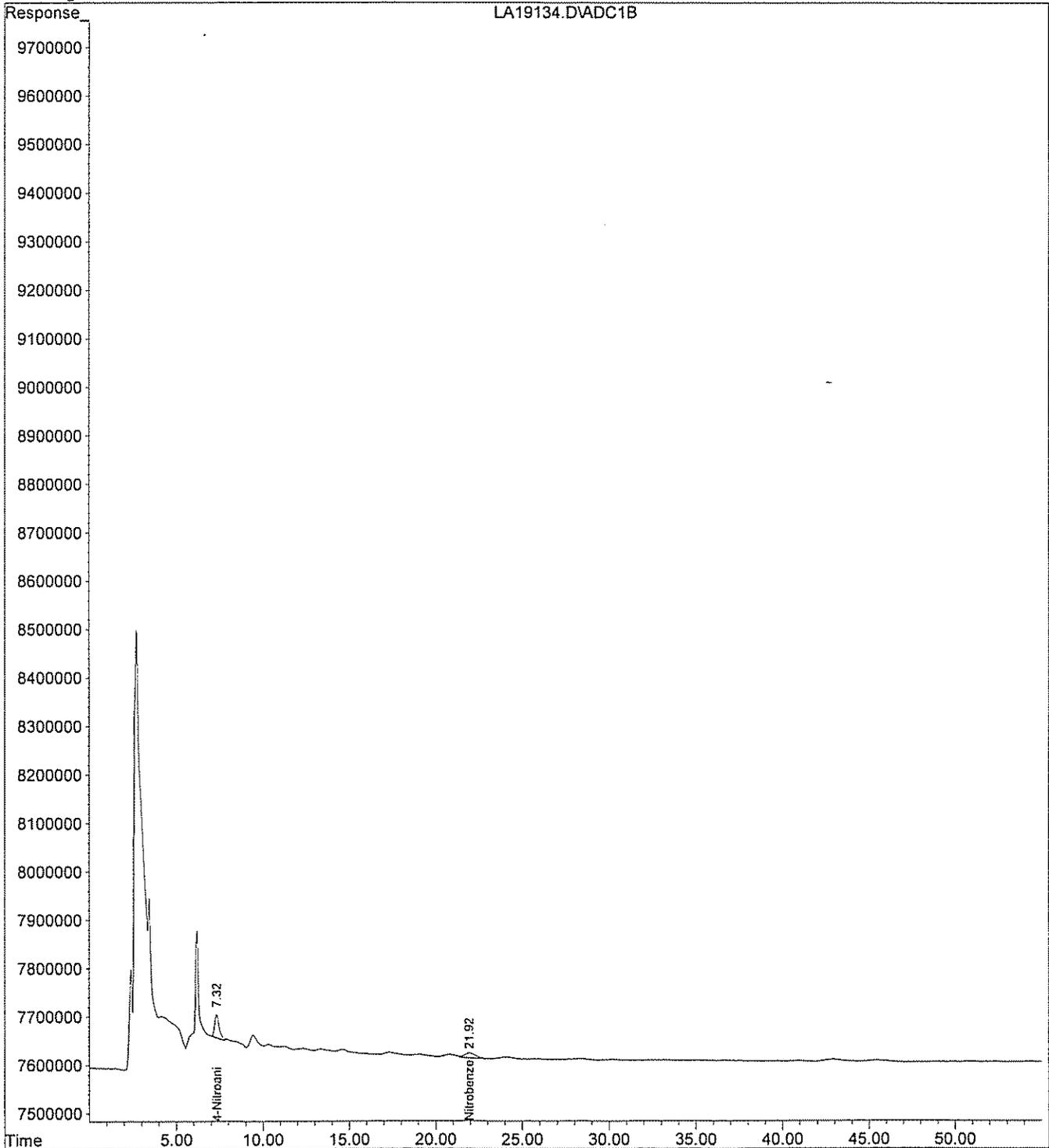
Data File : H:\LCDATA\LCA\022307\LA19134.D
Acq On : 24 Feb 2007 7:27
Sample : 702081-005-015-1/2
Misc : SOIL.SHAW
IntFile : events.e

Vial: 23
Operator: SS
Inst : LCA
Multiplr: 1.00

Quant Time: Feb 28 17:40 2007 Quant Results File: 61110833.RES

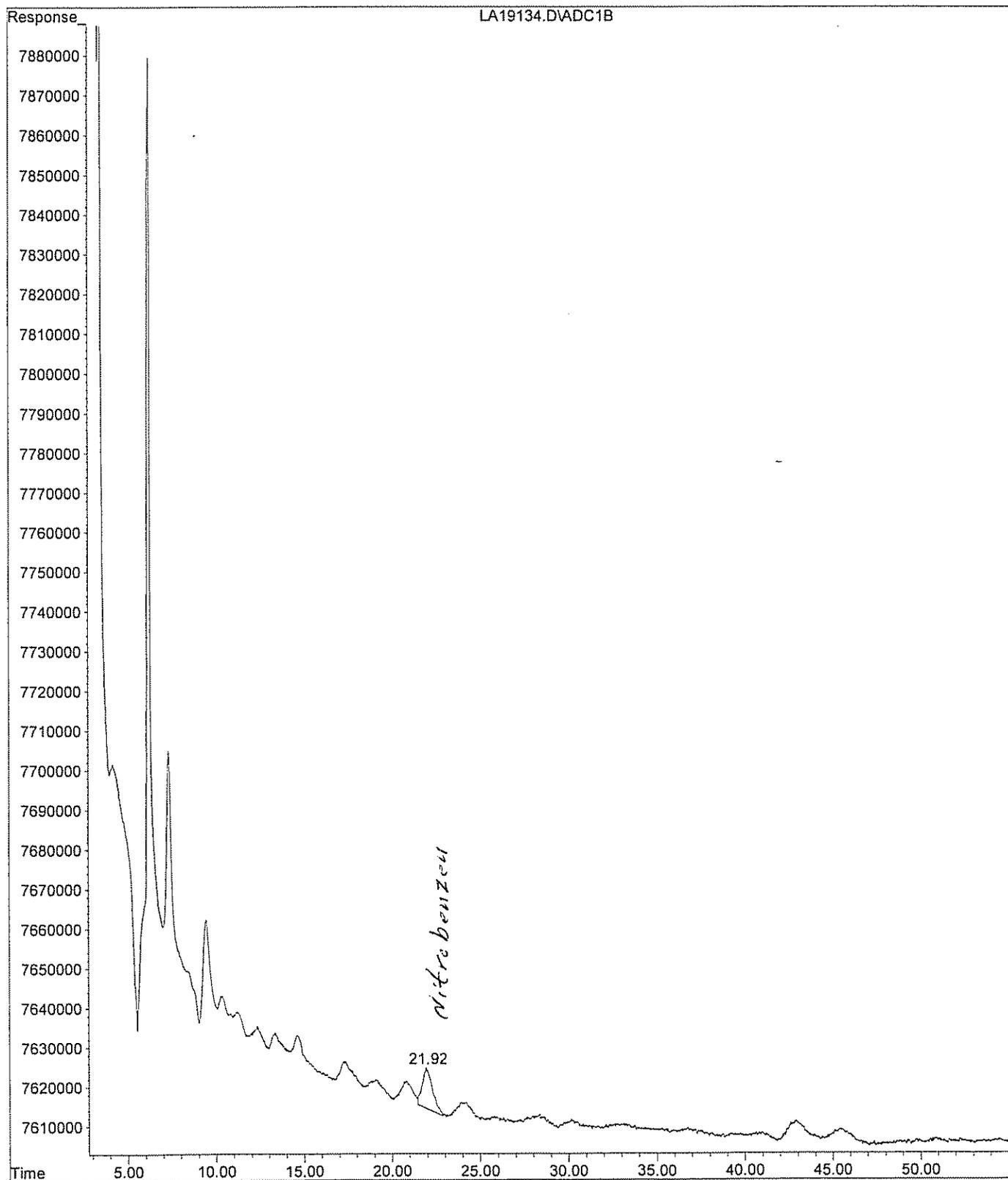
Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
Title : 8330 Explosives
Last Update : Mon Feb 26 09:04:57 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



File : H:\LCDATA\LCA\022307\LA19134.D
Operator : SS
Acquired : 24 Feb 2007 7:27 using AcqMethod 8330MIX.M
Instrument : LCA
Sample Name: 702081-005-015-1/2
Misc Info : SOIL.SHAW
Vial Number: 23

primary



Data File : H:\LCDATA\LCA\022307\0223NG\LA19134.D Vial: 23
 Acq On : 24 Feb 2007 7:27 Operator: SS
 Sample : 702081-005-015-1/2 Inst : LCA
 Misc : SOIL.SHAW Multiplr: 1.00
 IntFile : events.e
 Quant Time: Feb 28 17:50 2007 Quant Results File: 61114NG.RES

Quant Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT IC PRIMARY
 Last Update : Mon Feb 26 09:30:17 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

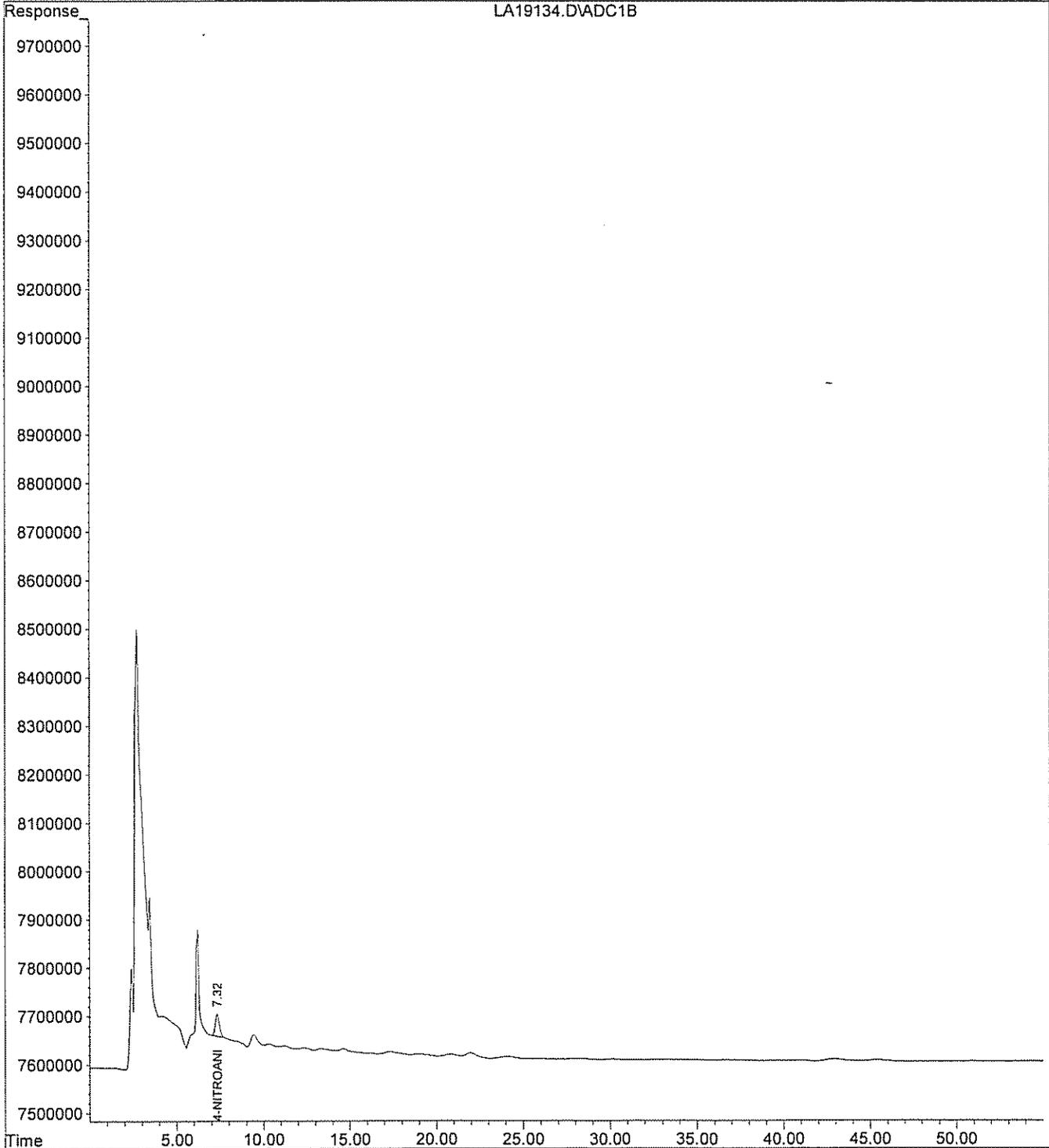
System Monitoring Compounds			
1) S 4-NITROANILINE	7.32	7591830	60.303 PPB
Spiked Amount 150.000		Recovery =	40.20%
Target Compounds			
2) M NITROGLYCERINE	0.00	0	N.D. PPM d

Quantitation Report

Data File : H:\LCDATA\LCA\022307\0223NG\LA19134.D Vial: 23
Acq On : 24 Feb 2007 7:27 Operator: SS
Sample : 702081-005-015-1/2 Inst : LCA
Misc : SOIL.SHAW Multiplr: 1.00
IntFile : events.e
Quant Time: Feb 28 17:50 2007 Quant Results File: 61114NG.RES

Quant Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
Title : NITROGLYCERINE- 5 POINT IC PRIMARY
Last Update : Mon Feb 26 09:30:17 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



```

Data File : H:\LCDATA\LCA\022607\LA19196.D          Vial: 25
Acq On    : 27 Feb 2007 12:36                    Operator: SS
Sample    : 702081-005                          Inst  : LCA
Misc      : SOIL.SHAW                           Multiplr: 1.00
IntFile   : events.e
Quant Time: Feb 28 17:36 2007  Quant Results File: 61011CON.RES
    
```

```

Quant Method : I:\LCDATA\LCA\METHODS\61011CON.M (Chemstation Integrator)
Title        : 8330 Explosives Confirmation
Last Update  : Mon Feb 05 11:40:12 2007
Response via : Initial Calibration
DataAcq Meth : 8330MIX.M
    
```

```

Volume Inj. : 100 uL
Signal Phase : POLAR RP
Signal Info  : 254 nm U.V.
    
```

Compound		R.T.	Response	Conc Units

System Monitoring Compounds				
2) S	4-Nitroaniline	8.54	7320755	61.122 ng/mlm
Spiked Amount 150.000		Range 52 - 154	Recovery =	40.75%#
Target Compounds				
1) T	HMX	0.00	0	N.D. ng/ml
3) T	1,3,5-Trinitrobenzene	0.00	0	N.D. ng/ml
4) T	Tetryl	0.00	0	N.D. ng/ml
5) T	2,4,6-Trinitrotoluene	0.00	0	N.D. ng/ml
6) T	4-Amino-2,6-Dinitrotoluene	0.00	0	N.D. ng/ml
7) T	2,6-Dinitrotoluene	0.00	0	N.D. ng/ml
8) T	4-Nitrotoluene	0.00	0	N.D. ng/ml
9) M	RDX	0.00	0	N.D. ng/ml
10) M	1,3-Dinitrobenzene	0.00	0	N.D. ng/ml
11) M	Nitrobenzene	14.05	7109464	20.842 ng/ml
12) M	2-Amino-4,6-Dinitrotoluene	0.00	0	N.D. ng/ml
13) M	2,4-Dinitrotoluene	0.00	0	N.D. ng/ml
14) M	2-Nitrotoluene	0.00	0	N.D. ng/ml
15) M	3-Nitrotoluene	0.00	0	N.D. ng/ml

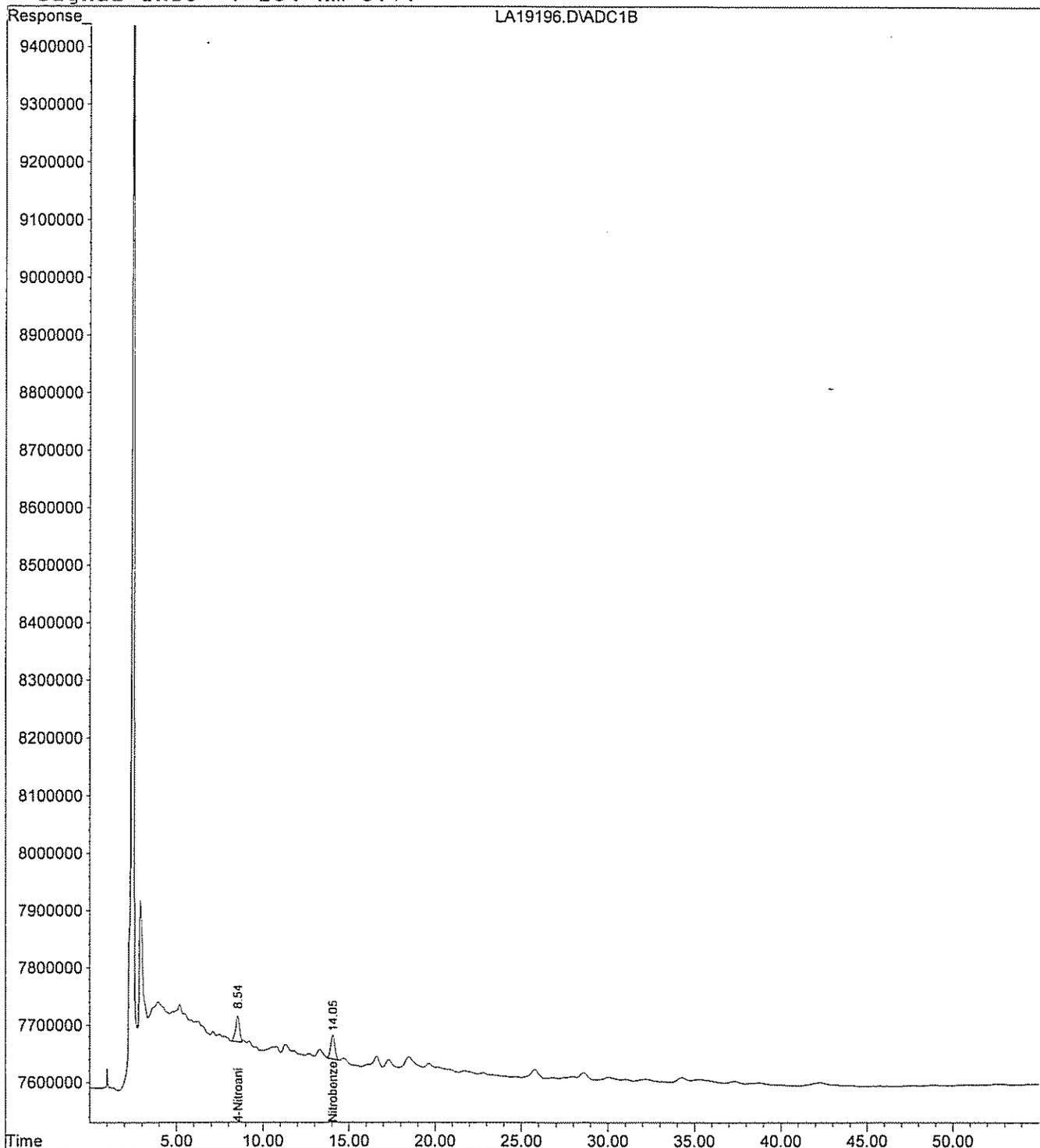
Quantitation Report

Data File : H:\LCDATA\LCA\022607\LA19196.D
Acq On : 27 Feb 2007 12:36
Sample : 702081-005
Misc : SOIL.SHAW
IntFile : events.e
Quant Time: Feb 28 17:36 2007

Vial: 25
Operator: SS
Inst : LCA
Multiplr: 1.00

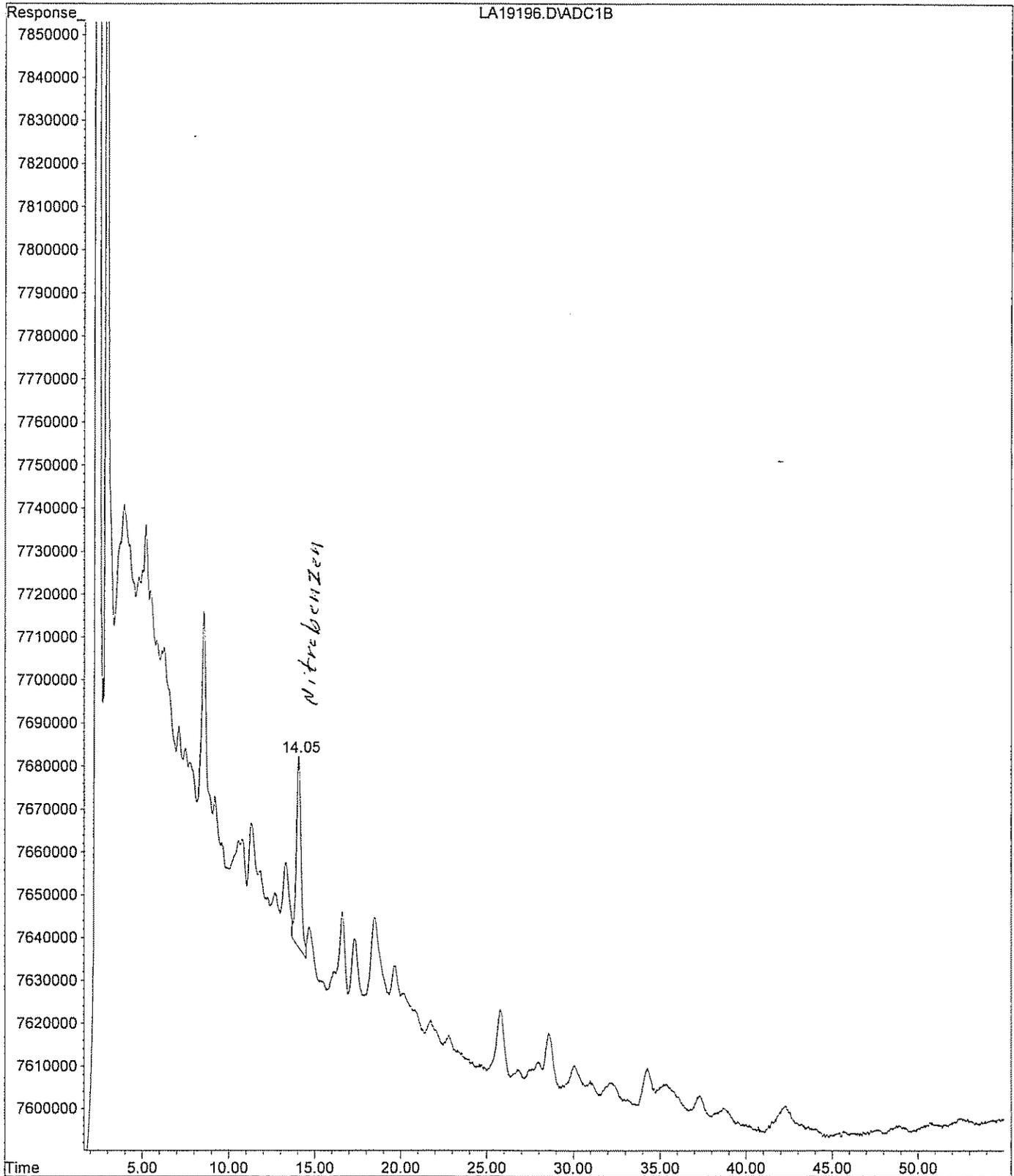
Quant Method : I:\LCDATA\LCA\METHODS\61011CON.M (Chemstation Integrator)
Title : 8330 Explosives Confirmation
Last Update : Mon Feb 05 11:40:12 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : POLAR RP
Signal Info : 254 nm U.V.



File : H:\LCDATA\LCA\022607\LA19196.D
Operator : SS
Acquired : 27 Feb 2007 12:36 using AcqMethod 8330MIX.M
Instrument : LCA
Sample Name: 702081-005
Misc Info : SOIL.SHAW
Vial Number: 25

Confirmation



Data File : H:\LCDATA\LCA\022607\0226NG\LA19196.D Vial: 25
 Acq On : 27 Feb 2007 12:36 Operator: SS
 Sample : 702081-005 Inst : LCA
 Misc : SOIL.SHAW Multiplr: 1.00
 IntFile : events.e
 Quant Time: Feb 28 17:47 2007 Quant Results File: 7122NGCO.RES

Quant Method : H:\LCDATA\LCA\METHODS\7122NGCO.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT 8330 confirmation
 Last Update : Wed Jan 03 13:44:41 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : Polar RP
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

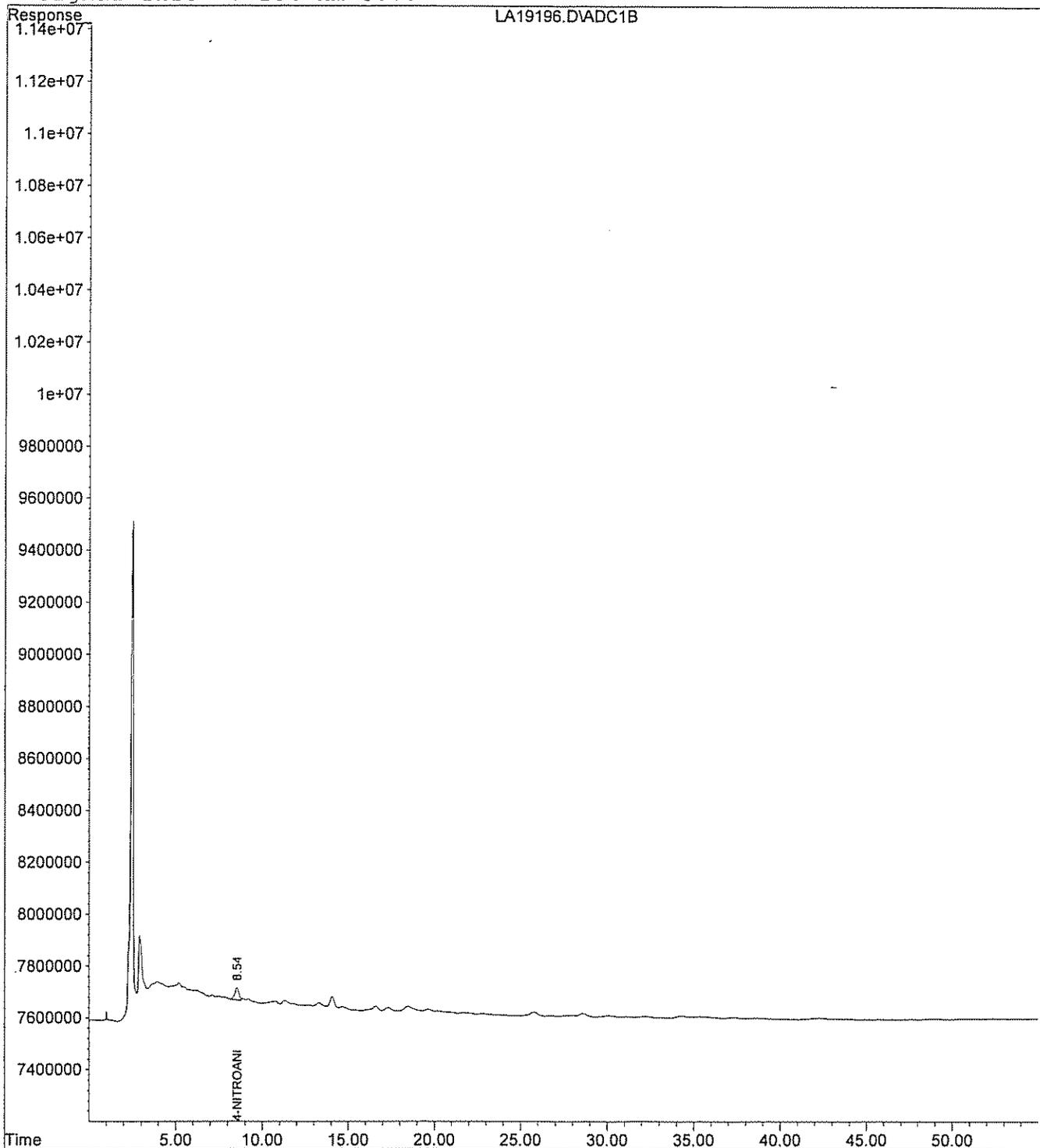
System Monitoring Compounds			
1) S 4-NITROANILINE	8.54	7902419	69.657 PPB m
Spiked Amount 150.000		Recovery =	46.44%
Target Compounds			
2) M NITROGLYCERINE	0.00	0	N.D. PPM

Quantitation Report

Data File : H:\LCDATA\LCA\022607\0226NG\LA19196.D Vial: 25
Acq On : 27 Feb 2007 12:36 Operator: SS
Sample : 702081-005 Inst : LCA
Misc : SOIL.SHAW Multiplr: 1.00
IntFile : events.e
Quant Time: Feb 28 17:47 2007 Quant Results File: 7122NGCO.RES

Quant Method : H:\LCDATA\LCA\METHODS\7122NGCO.M (Chemstation Integrator)
Title : NITROGLYCERINE- 5 POINT 8330 confirmation
Last Update : Wed Jan 03 13:44:41 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : Polar RP
Signal Info : 254 nm U.V.



Data File : H:\LCDATA\LCA\030707\LA19346.D Vial: 4
 Acq On : 7 Mar 2007 19:17 Operator: SS
 Sample : 702081-005-015-1/2 Inst : LCA
 Misc : SOIL.SHAW.REEX Multiplr: 1.00
 IntFile : events.e
 Quant Time: Mar 14 13:19 2007 Quant Results File: 61110833.RES

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
 Title : 8330 Explosives
 Last Update : Mon Feb 26 09:49:31 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
2) S 4-Nitroaniline	7.54	3424632	25.374 ng/mlm
Spiked Amount 300.000	Range 52 - 154	Recovery =	8.46%#
Target Compounds			
11) M Nitrobenzene	22.62	5598305	15.270 ng/mlm

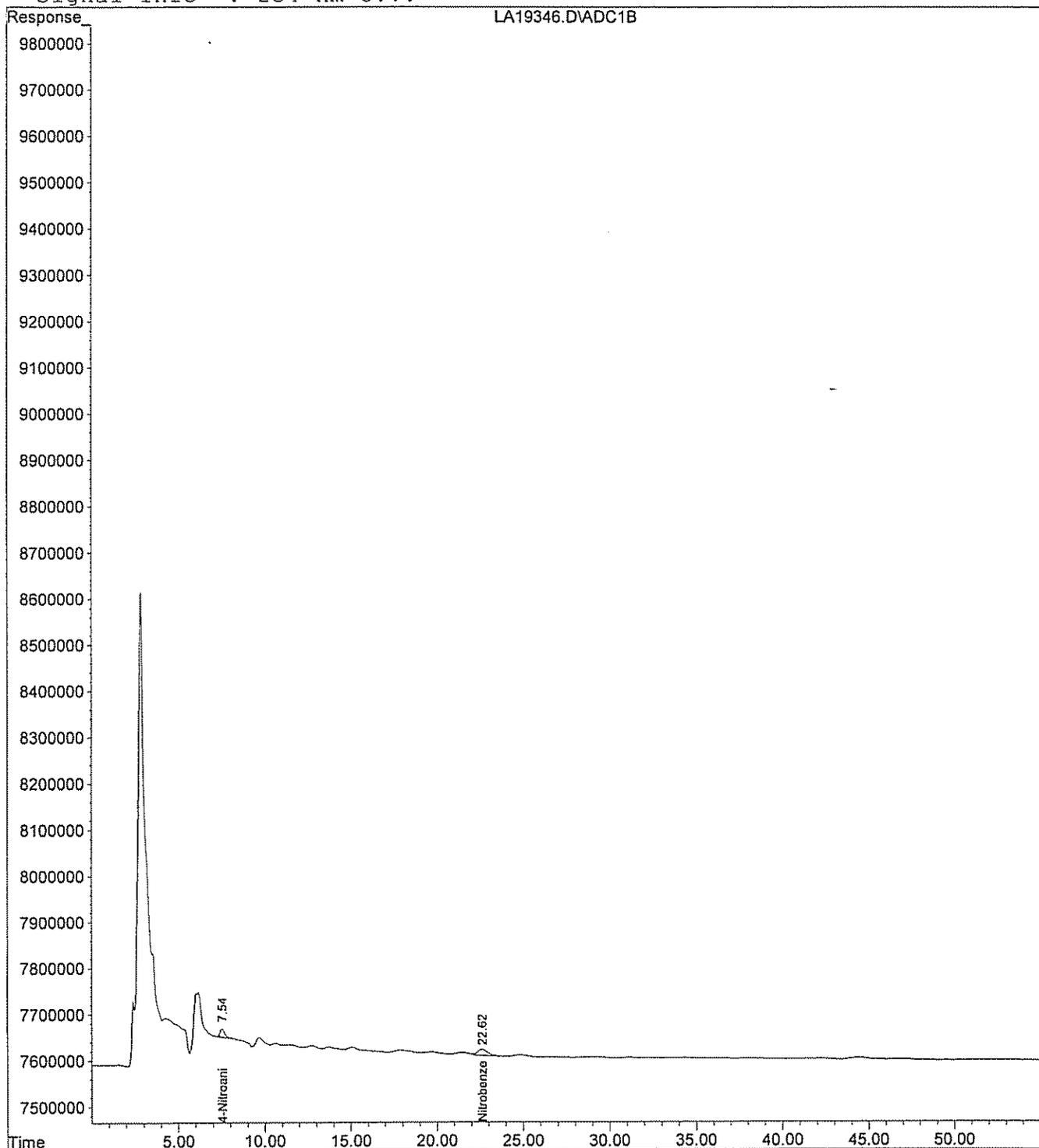
Quantitation Report

Data File : H:\LCDATA\LCA\030707\LA19346.D
Acq On : 7 Mar 2007 19:17
Sample : 702081-005-015-1/2
Misc : SOIL.SHAW.REEX
IntFile : events.e
Quant Time: Mar 14 13:19 2007

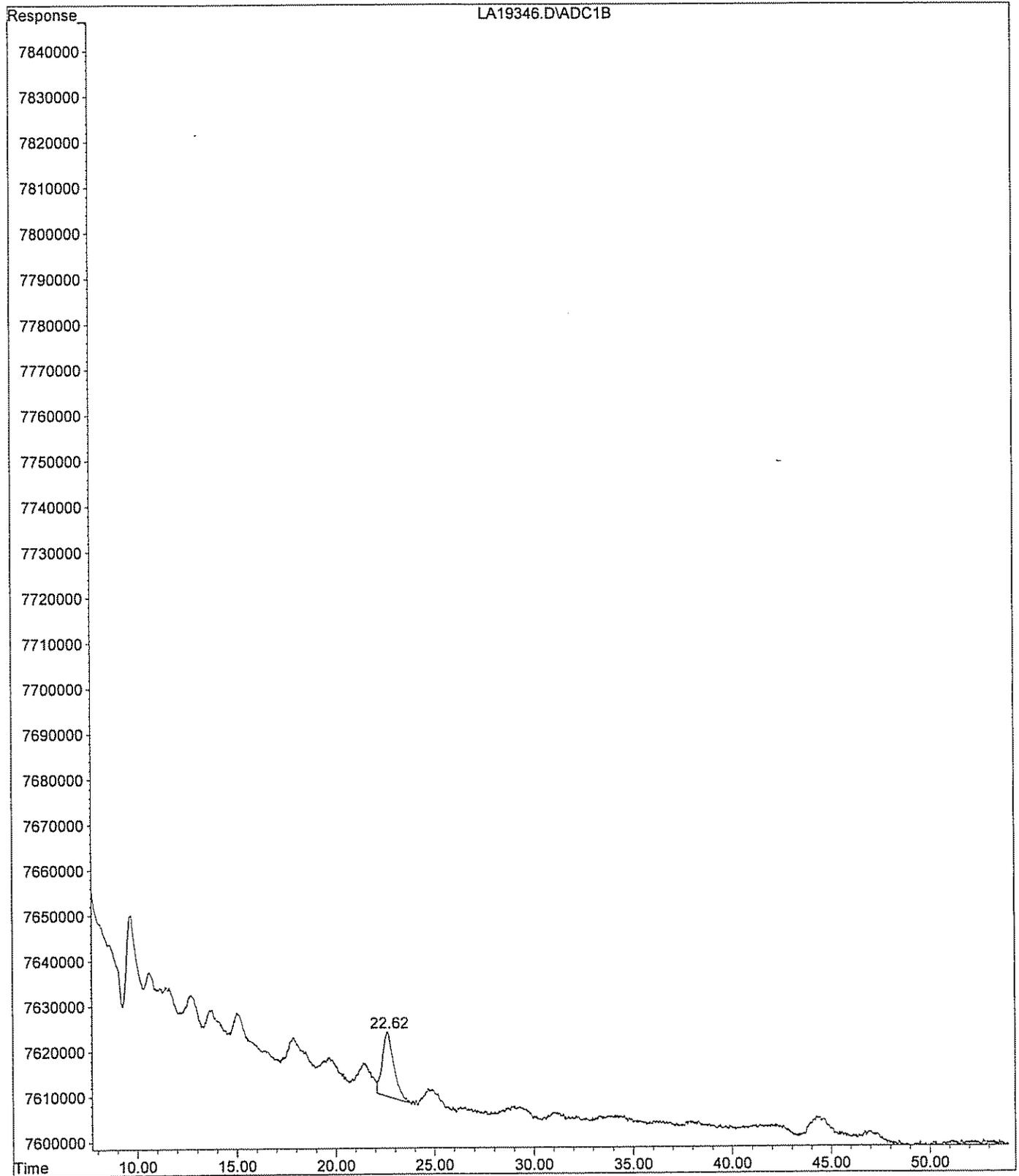
Vial: 4
Operator: SS
Inst : LCA
Multiplr: 1.00

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
Title : 8330 Explosives
Last Update : Mon Feb 26 09:49:31 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



File : H:\LCDATA\LCA\030707\LA19346.D
Operator : SS
Acquired : 7 Mar 2007 19:17 using AcqMethod 8330MIX.M
Instrument : LCA
Sample Name: 702081-005-015-1/2
Misc Info : SOIL.SHAW.REEX
Vial Number: 4



SAMPLE NO
NWO-033-0007

Lab Name :	GPL Laboratories	Client :	Shaw E&I, Inc
Lab Code :	GPL	SAS NO. :	
Case No. :		SDG NO :	702081
Matrix : (Soil / Water)	SOIL	Lab Sample ID :	702081-008-017-1/2
Sample Volume :	10.01	Lab File ID :	LA19138.D
% Moisture:		Date Received	02/16/2007
Extraction:	EXT_SW8330	Date Extracted:	02/21/2007
Extract Volume:	40 mL	Date Analyzed	02/24/2007
Injection Volume :	μ L	Dilution Factor :	1
GPC Clean up (Y/N):	pH: _____		

Concentration Units (ug/L or ug/kg dry weight) : mg/kg

CAS NO	COMPOUND		Q
99-35-4	1,3,5-Trinitrobenzene	0.040	U
99-65-0	1,3-Dinitrobenzene	0.040	U
118-96-7	2,4,6-Trinitrotoluene	0.040	U
121-14-2	2,4-Dinitrotoluene	0.040	U
606-20-2	2,6-Dinitrotoluene	0.040	U
35572-78-2	2-Amino-4,6-Dinitrotoluene	0.040	U
19406-51-0	4-Amino-2,6-Dinitrotoluene	0.040	U
2691-41-0	HMX	0.080	U
98-95-3	Nitrobenzene	0.043	J
121-82-4	RDX	0.080	U
479-45-8	Tetryl	0.080	U
99-08-1	m-Nitrotoluene	0.080	U
88-72-2	o-Nitrotoluene	0.080	U
99-99-0	p-Nitrotoluene	0.080	U

10A
EXPLOSIVES IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

EPA SAMPLE NO.

NWO-033-0007

Lab Name: GPL LABORATORIES Contract: SHAW

Lab Code: GPL LAB Case No.: N/A SAS No.: N/A SDG No.: N/A

Lab Sample ID: 702081-008 Date(s) Analyzed: 02/24/07 02/27/07

Instrument ID (1): HPLC-A Instrument ID (2): HPLC-A

GC Column(1): C8 ID: _____ (mm) GC Column(2): CN ID: _____ (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Nitrobenzene	1	21.21	20.66	21.76	0.043	
	2	14.08	13.52	14.62	0.056	27.0

Data File : H:\LCDATA\LCA\022307\LA19138.D Vial: 27
 Acq On : 24 Feb 2007 12:58 Operator: SS
 Sample : 702081-008-017-1/2 Inst : LCA
 Misc : SOIL.SHAW Multiplr: 1.00
 IntFile : events.e
 Quant Time: Feb 28 17:40 2007 Quant Results File: 61110833.RES

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
 Title : 8330 Explosives
 Last Update : Mon Feb 26 09:04:57 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
2) S 4-Nitroaniline	7.13	8886886	65.845 ng/mlm
Spiked Amount 150.000	Range 52 - 154	Recovery =	43.90%#
Target Compounds			
11) M Nitrobenzene	21.21	3932736	10.727 ng/mlm *

Quantitation Report

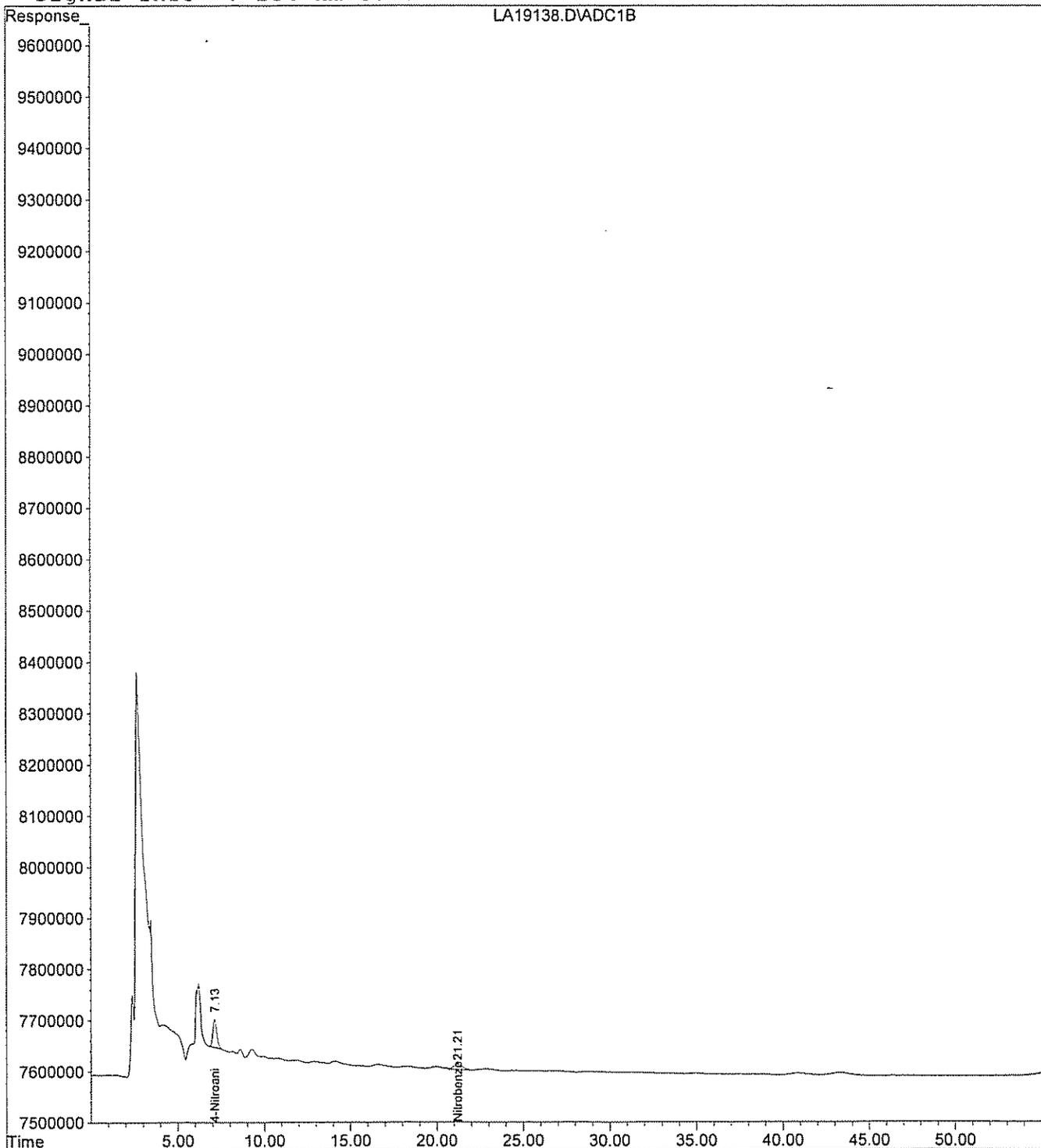
Data File : H:\LCDATA\LCA\022307\LA19138.D
Acq On : 24 Feb 2007 12:58
Sample : 702081-008-017-1/2
Misc : SOIL.SHAW
IntFile : events.e
Quant Time: Feb 28 17:40 2007

Vial: 27
Operator: SS
Inst : LCA
Multiplr: 1.00

Quant Results File: 61110833.RES

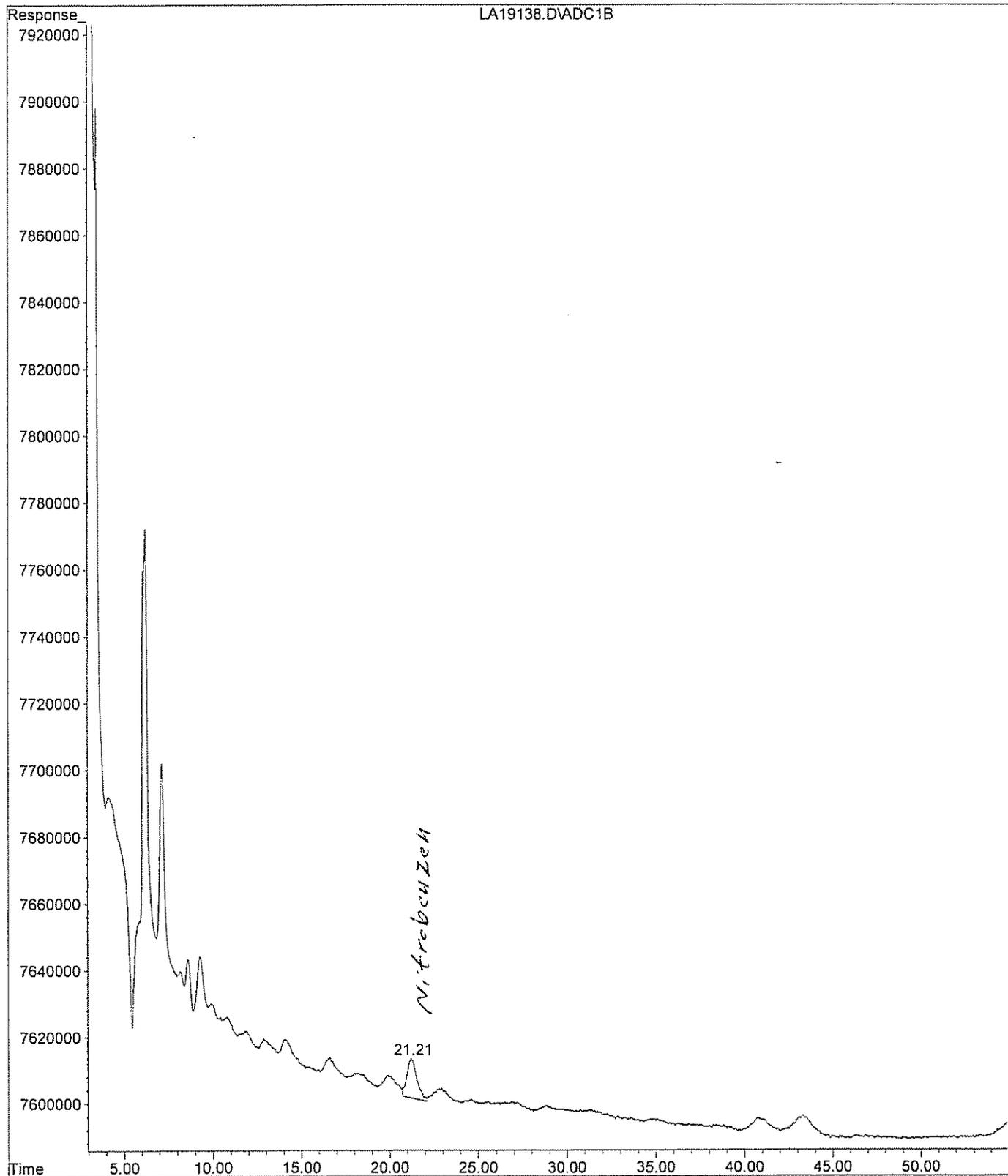
Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
Title : 8330 Explosives
Last Update : Mon Feb 26 09:04:57 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



File : H:\LCDATA\LCA\022307\LA19138.D
Operator : SS
Acquired : 24 Feb 2007 12:58 using AcqMethod 8330MIX.M
Instrument : LCA
Sample Name: 702081-008-017-1/2
Misc Info : SOIL.SHAW
Vial Number: 27

Primary



Data File : H:\LCDATA\LCA\022307\0223NG\LA19138.D Vial: 27
 Acq On : 24 Feb 2007 12:58 Operator: SS
 Sample : 702081-008-017-1/2 Inst : LCA
 Misc : SOIL.SHAW Multiplr: 1.00
 IntFile : events.e
 Quant Time: Feb 28 17:50 2007 Quant Results File: 61114NG.RES

Quant Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT IC PRIMARY
 Last Update : Mon Feb 26 09:30:17 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

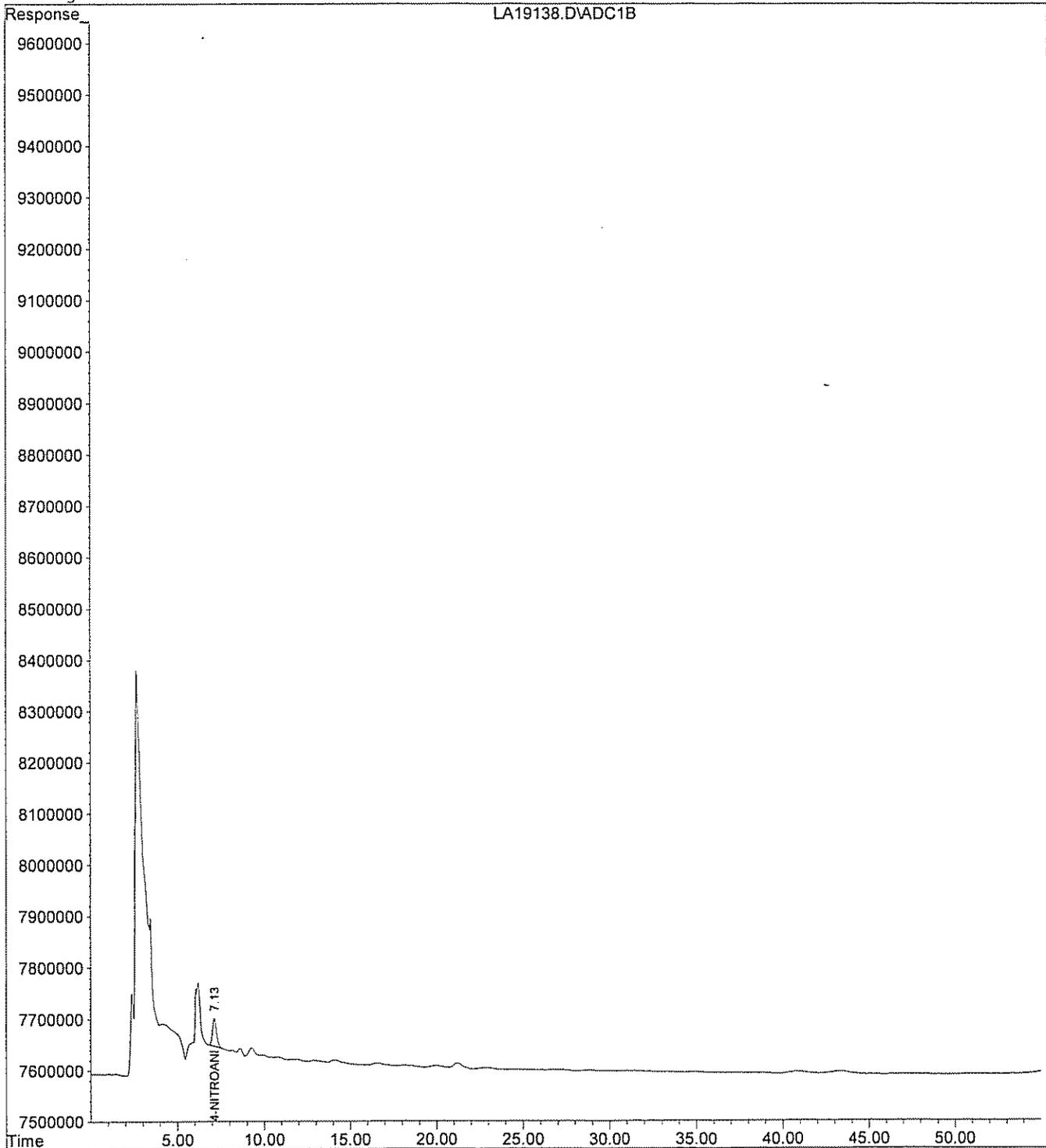
System Monitoring Compounds			
1) S 4-NITROANILINE	7.13	8837608	70.198 PPB
Spiked Amount 150.000		Recovery =	46.80%
Target Compounds			
2) M NITROGLYCERINE	0.00	0	N.D. PPM d

Quantitation Report

Data File : H:\LCDATA\LCA\022307\0223NG\LA19138.D Vial: 27
Acq On : 24 Feb 2007 12:58 Operator: SS
Sample : 702081-008-017-1/2 Inst : LCA
Misc : SOIL.SHAW Multiplr: 1.00
IntFile : events.e
Quant Time: Feb 28 17:50 2007 Quant Results File: 61114NG.RES

Quant Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
Title : NITROGLYCERINE- 5 POINT IC PRIMARY
Last Update : Mon Feb 26 09:30:17 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



Data File : H:\LCDATA\LCA\022607\LA19201.D Vial: 30
 Acq On : 27 Feb 2007 17:34 Operator: SS
 Sample : 702081-008 Inst : LCA
 Misc : SOIL.SHAW Multiplr: 1.00
 IntFile : events.e
 Quant Time: Feb 28 17:37 2007 Quant Results File: 61011CON.RES

Quant Method : I:\LCDATA\LCA\METHODS\61011CON.M (Chemstation Integrator)
 Title : 8330 Explosives Confirmation
 Last Update : Mon Feb 05 11:40:12 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : POLAR RP
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
2) S 4-Nitroaniline	8.55	6390665	53.356 ng/mlm
Spiked Amount 150.000	Range 52 - 154	Recovery =	35.57%#
Target Compounds			
1) T HMX	0.00	0	N.D. ng/ml
3) T 1,3,5-Trinitrobenzene	0.00	0	N.D. ng/ml
4) T Tetryl	0.00	0	N.D. ng/ml
5) T 2,4,6-Trinitrotoluene	0.00	0	N.D. ng/ml
6) T 4-Amino-2,6-Dinitrotoluene	0.00	0	N.D. ng/ml
7) T 2,6-Dinitrotoluene	0.00	0	N.D. ng/ml
8) T 4-Nitrotoluene	0.00	0	N.D. ng/ml
9) M RDX	0.00	0	N.D. ng/ml
10) M 1,3-Dinitrobenzene	0.00	0	N.D. ng/ml
11) M Nitrobenzene	14.08	7208583	21.133 ng/ml
12) M 2-Amino-4,6-Dinitrotoluene	0.00	0	N.D. ng/ml
13) M 2,4-Dinitrotoluene	0.00	0	N.D. ng/ml
14) M 2-Nitrotoluene	0.00	0	N.D. ng/ml
15) M 3-Nitrotoluene	0.00	0	N.D. ng/ml

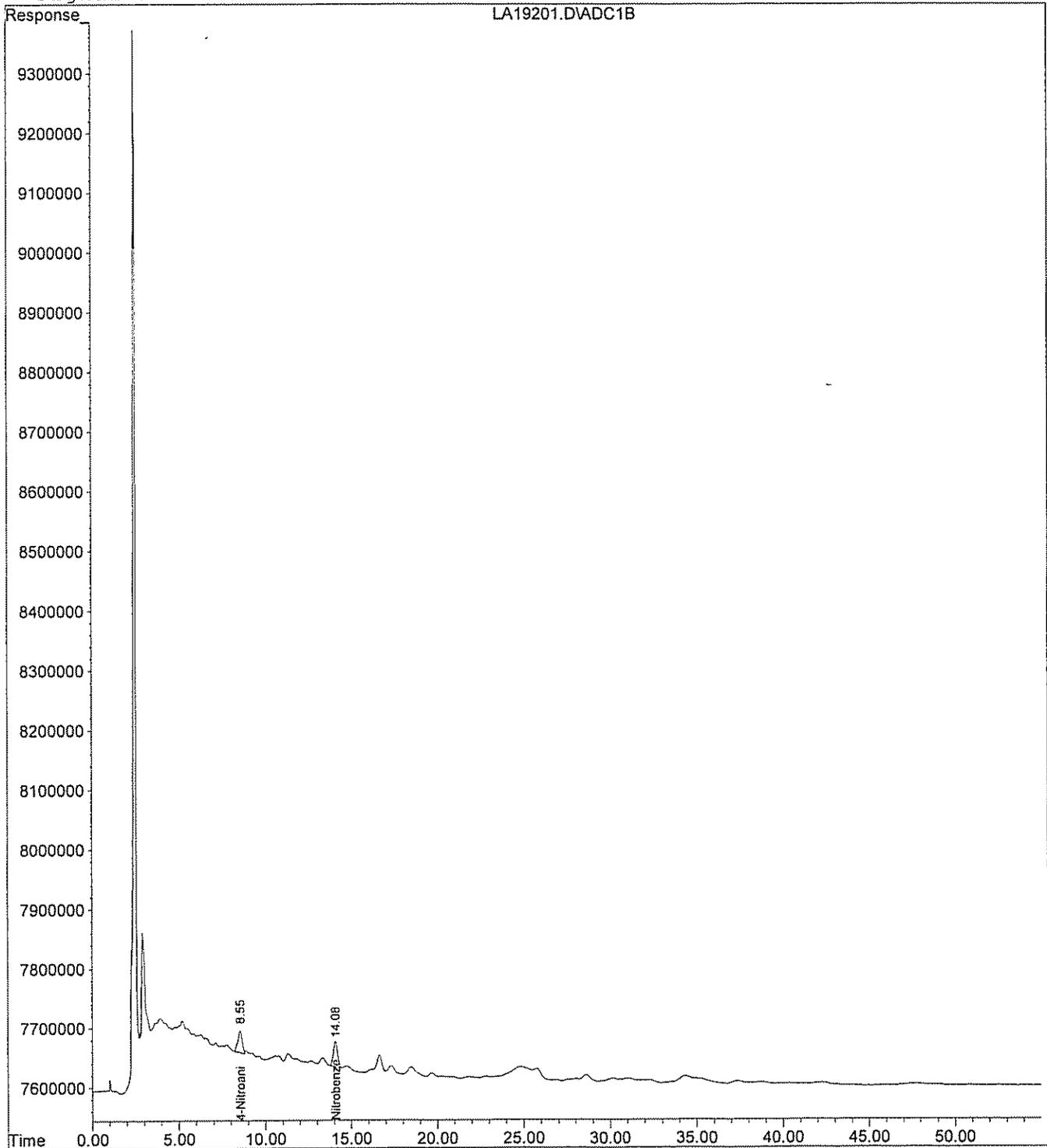
Quantitation Report

Data File : H:\LCDATA\LCA\022607\LA19201.D
Acq On : 27 Feb 2007 17:34
Sample : 702081-008
Misc : SOIL.SHAW
IntFile : events.e
Quant Time: Feb 28 17:37 2007 Quant Results File: 61011CON.RES

Vial: 30
Operator: SS
Inst : LCA
Multiplr: 1.00

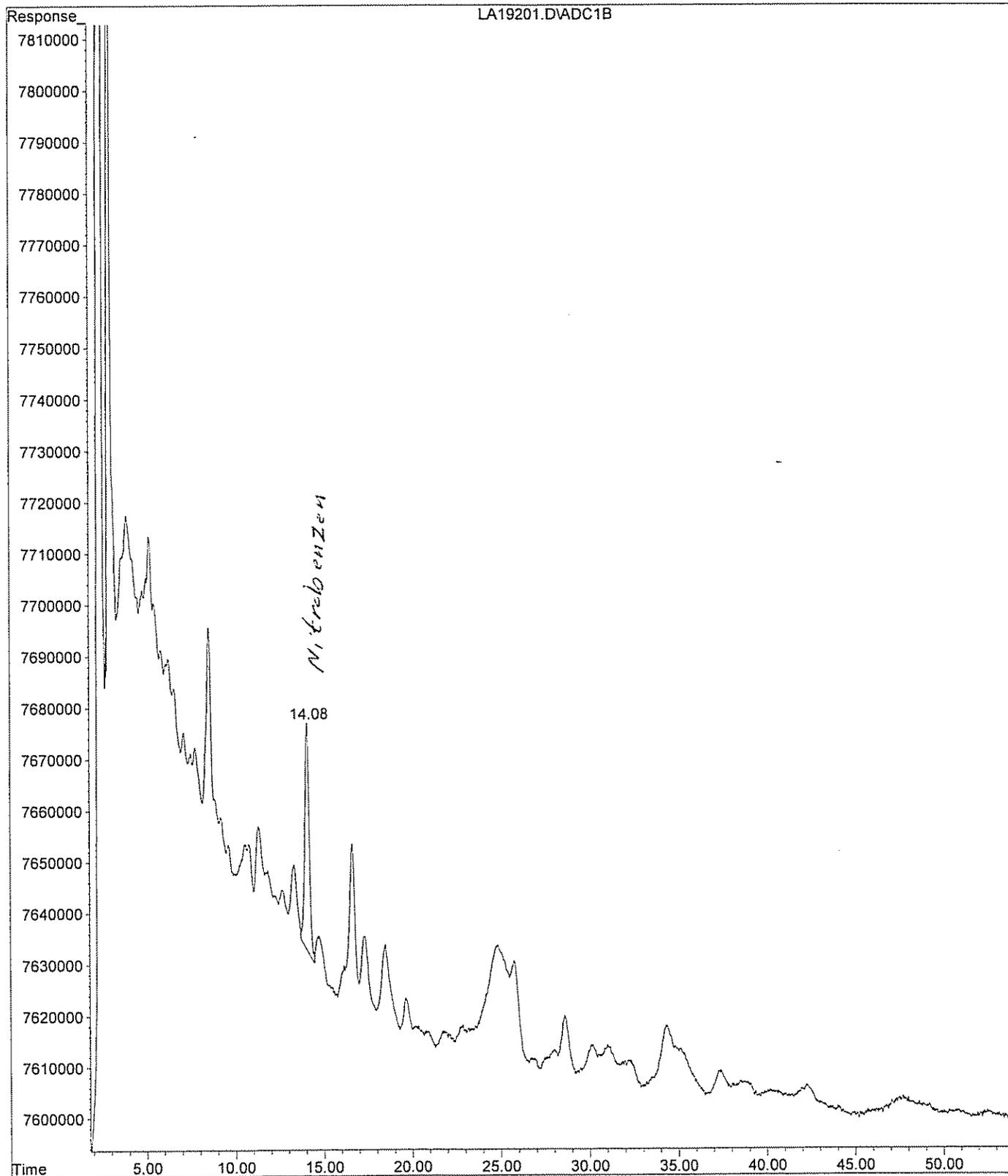
Quant Method : I:\LCDATA\LCA\METHODS\61011CON.M (Chemstation Integrator)
Title : 8330 Explosives Confirmation
Last Update : Mon Feb 05 11:40:12 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : POLAR RP
Signal Info : 254 nm U.V.



File : H:\LCDATA\LCA\022607\LA19201.D
Operator : SS
Acquired : 27 Feb 2007 17:34 using AcqMethod 8330MIX.M
Instrument : LCA
Sample Name: 702081-008
Misc Info : SOIL.SHAW
Vial Number: 30

Confirmation



```

Data File : H:\LCDATA\LCA\022607\0226NG\LA19201.D          Vial: 30
Acq On    : 27 Feb 2007 17:34                          Operator: SS
Sample    : 702081-008                                  Inst   : LCA
Misc      : SOIL.SHAW                                   Multiplr: 1.00
IntFile   : events.e
Quant Time: Feb 28 17:47 2007  Quant Results File: 7122NGCO.RES
    
```

```

Quant Method : H:\LCDATA\LCA\METHODS\7122NGCO.M (Chemstation Integrator)
Title        : NITROGLYCERINE- 5 POINT 8330 confirmation
Last Update  : Wed Jan 03 13:44:41 2007
Response via : Initial Calibration
DataAcq Meth: 8330MIX.M
    
```

```

Volume Inj. : 100 uL
Signal Phase : Polar RP
Signal Info  : 254 nm U.V.
    
```

Compound	R.T.	Response	Conc Units

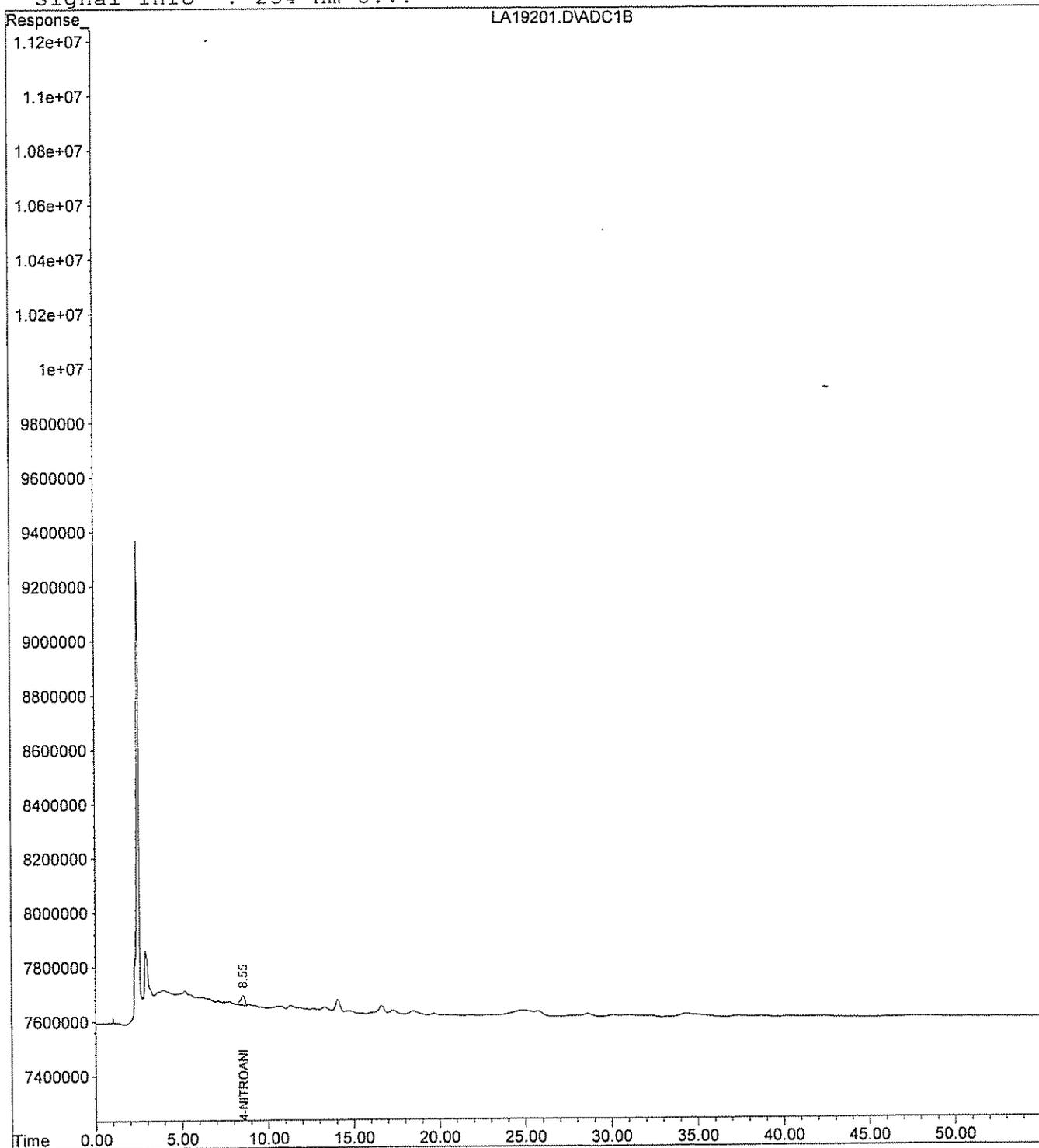
System Monitoring Compounds			
1) S 4-NITROANILINE	8.55	6340740	55.891 PPB m
Spiked Amount 150.000		Recovery =	37.26%
Target Compounds			
2) M NITROGLYCERINE	0.00	0	N.D. PPM

Quantitation Report

Data File : H:\LCDATA\LCA\022607\0226NG\LA19201.D Vial: 30
Acq On : 27 Feb 2007 17:34 Operator: SS
Sample : 702081-008 Inst : LCA
Misc : SOIL.SHAW Multiplr: 1.00
IntFile : events.e
Quant Time: Feb 28 17:47 2007 Quant Results File: 7122NGCO.RES

Quant Method : H:\LCDATA\LCA\METHODS\7122NGCO.M (Chemstation Integrator)
Title : NITROGLYCERINE- 5 POINT 8330 confirmation
Last Update : Wed Jan 03 13:44:41 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : Polar RP
Signal Info : 254 nm U.V.



Data File : H:\LCDATA\LCA\030707\LA19347.D Vial: 5
 Acq On : 7 Mar 2007 20:16 Operator: SS
 Sample : 702081-008-017-1/2 Inst : LCA
 Misc : SOIL.SHAW.REEX Multiplr: 1.00
 IntFile : events.e
 Quant Time: Mar 14 13:19 2007 Quant Results File: 61110833.RES

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
 Title : 8330 Explosives
 Last Update : Mon Feb 26 09:49:31 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
2) S 4-Nitroaniline	7.50	4859459	36.005 ng/mlm
Spiked Amount 300.000	Range 52 - 154	Recovery =	12.00%#
Target Compounds			
11) M Nitrobenzene	22.68	5171182	14.105 ng/mlm

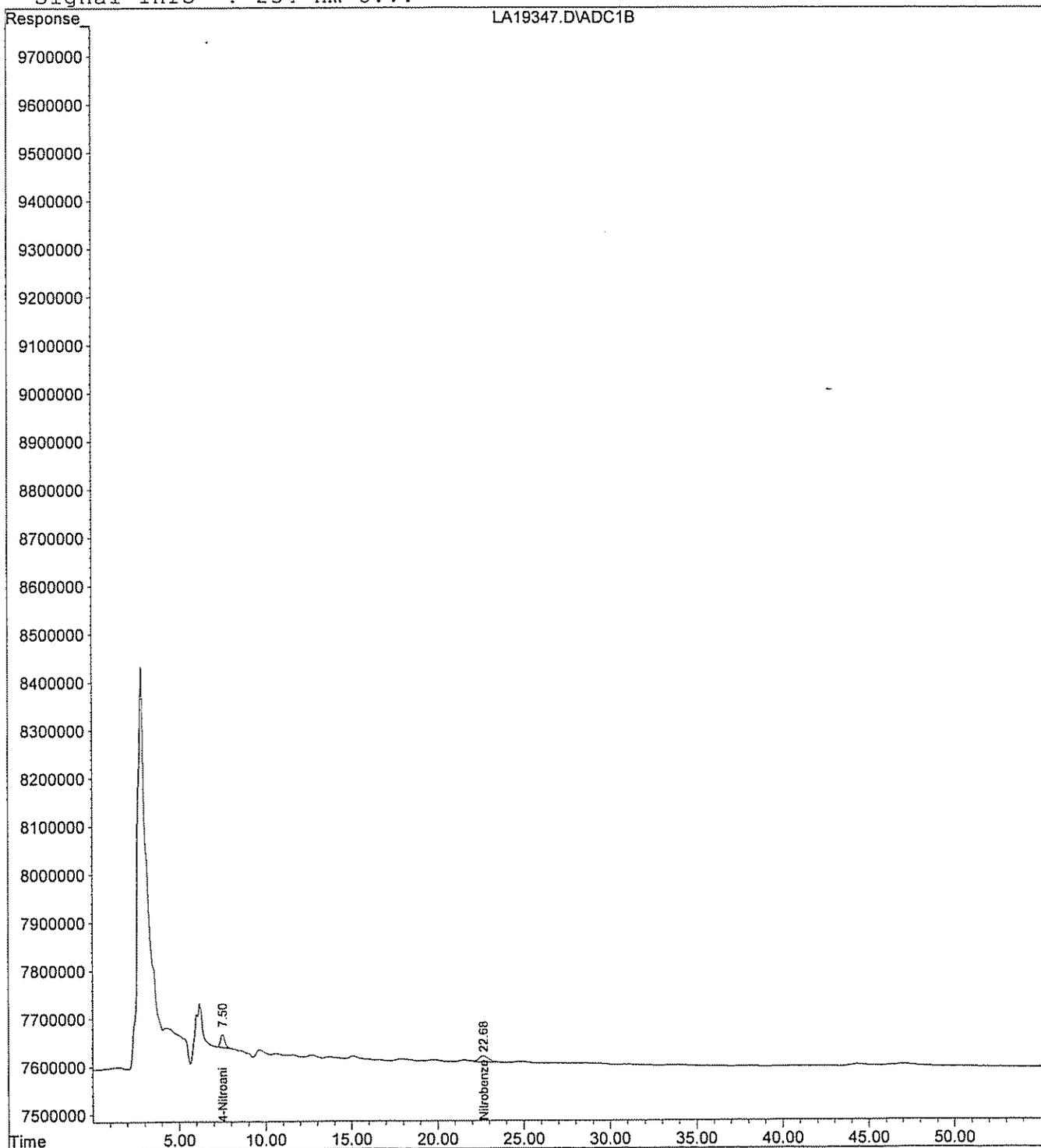
Quantitation Report

Data File : H:\LCDATA\LCA\030707\LA19347.D
Acq On : 7 Mar 2007 20:16
Sample : 702081-008-017-1/2
Misc : SOIL.SHAW.REEX
IntFile : events.e
Quant Time: Mar 14 13:19 2007

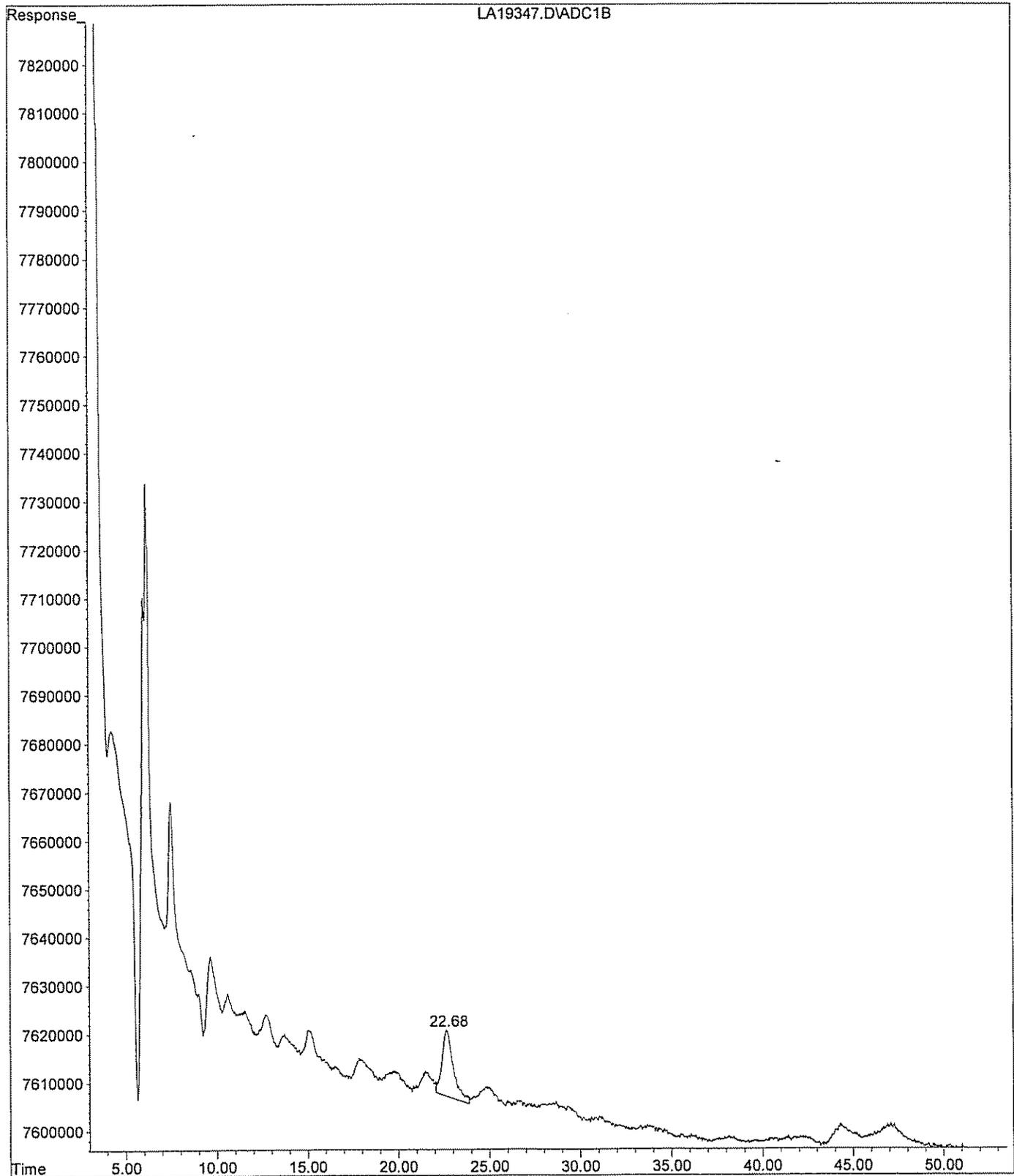
Vial: 5
Operator: SS
Inst : LCA
Multiplr: 1.00

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
Title : 8330 Explosives
Last Update : Mon Feb 26 09:49:31 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



File : H:\LCDATA\LCA\030707\LA19347.D
Operator : SS
Acquired : 7 Mar 2007 20:16 using AcqMethod 8330MIX.M
Instrument : LCA
Sample Name: 702081-008-017-1/2
Misc Info : SOIL.SHAW.REEX
Vial Number: 5



10A
EXPLOSIVES IDENTIFICATION SUMMARY
FOR SINGLE COMPONENT ANALYTES

EPA SAMPLE NO.

NWO-033-1002

Lab Name: GPL LABORATORIES Contract: SHAW

Lab Code: GPL LAB Case No.: N/A SAS No.: N/A SDG No.: N/A

Lab Sample ID: 702081-009 Date(s) Analyzed: 02/24/07 02/27/07

Instrument ID (1): HPLC-A Instrument ID (2): HPLC-A

GC Column(1): C8 ID: _____ (mm) GC Column(2): CN ID: _____ (mm)

ANALYTE	COL	RT	RT WINDOW		CONCENTRATION	%RPD
			FROM	TO		
Nitrobenzene	1	21.24	20.66	21.76	0.041	
	2	14.07	13.52	14.62	0.084	69.3

Data File : H:\LCDATA\LCA\022307\LA19139.D Vial: 28
 Acq On : 24 Feb 2007 13:57 Operator: SS
 Sample : 702081-009-019-1/2 Inst : LCA
 Misc : SOIL.SHAW Multiplr: 1.00
 IntFile : events.e
 Quant Time: Feb 28 17:41 2007 Quant Results File: 61110833.RES

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
 Title : 8330 Explosives
 Last Update : Mon Feb 26 09:04:57 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
2) S 4-Nitroaniline	7.14	7557213	55.993 ng/mlm
Spiked Amount 150.000	Range 52 - 154	Recovery =	37.33%#
Target Compounds			
11) M Nitrobenzene	21.24	3751939	10.234 ng/mlm

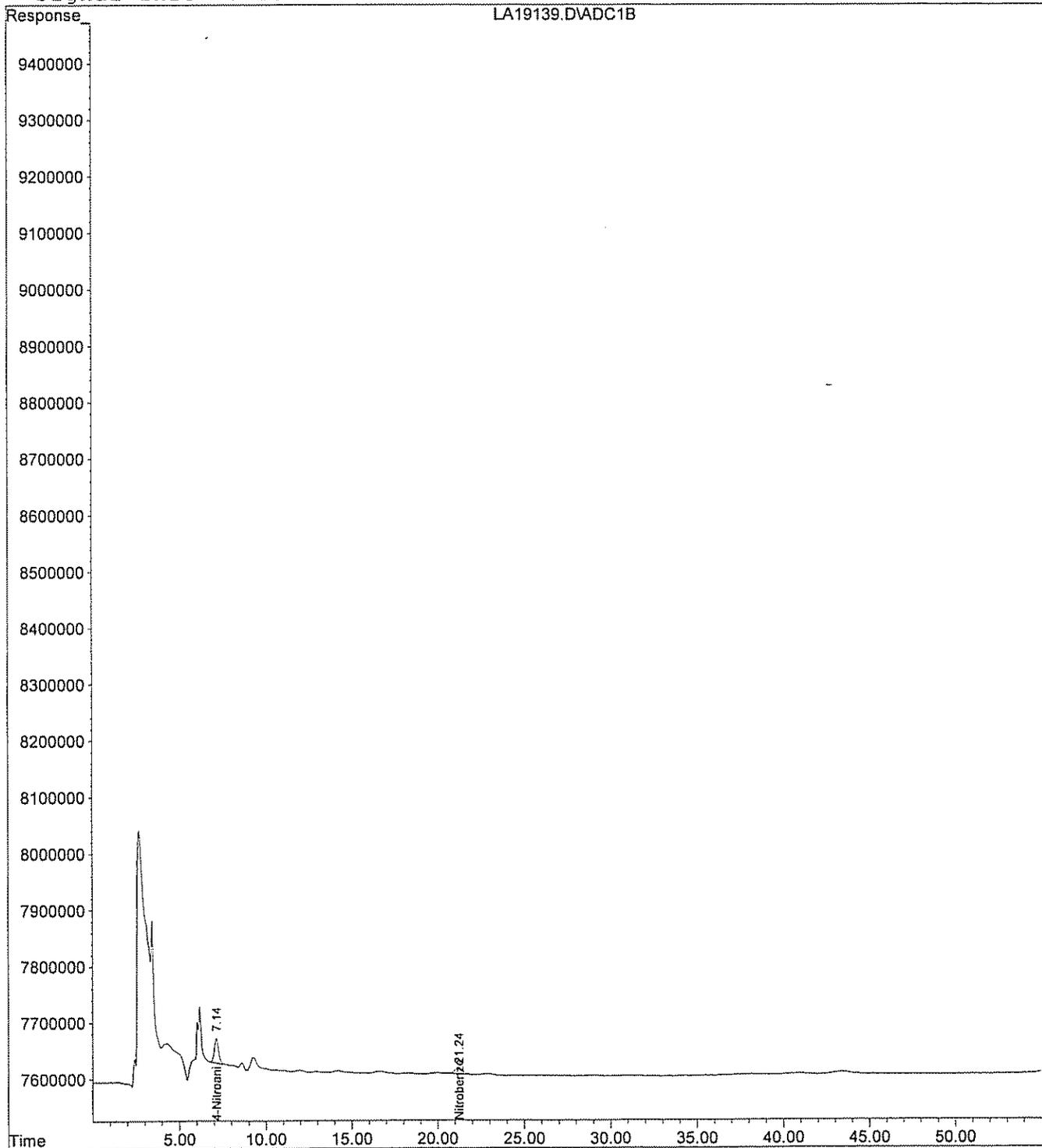
Quantitation Report

Data File : H:\LCDATA\LCA\022307\LA19139.D
Acq On : 24 Feb 2007 13:57
Sample : 702081-009-019-1/2
Misc : SOIL.SHAW
IntFile : events.e
Quant Time: Feb 28 17:41 2007

Vial: 28
Operator: SS
Inst : LCA
Multiplr: 1.00

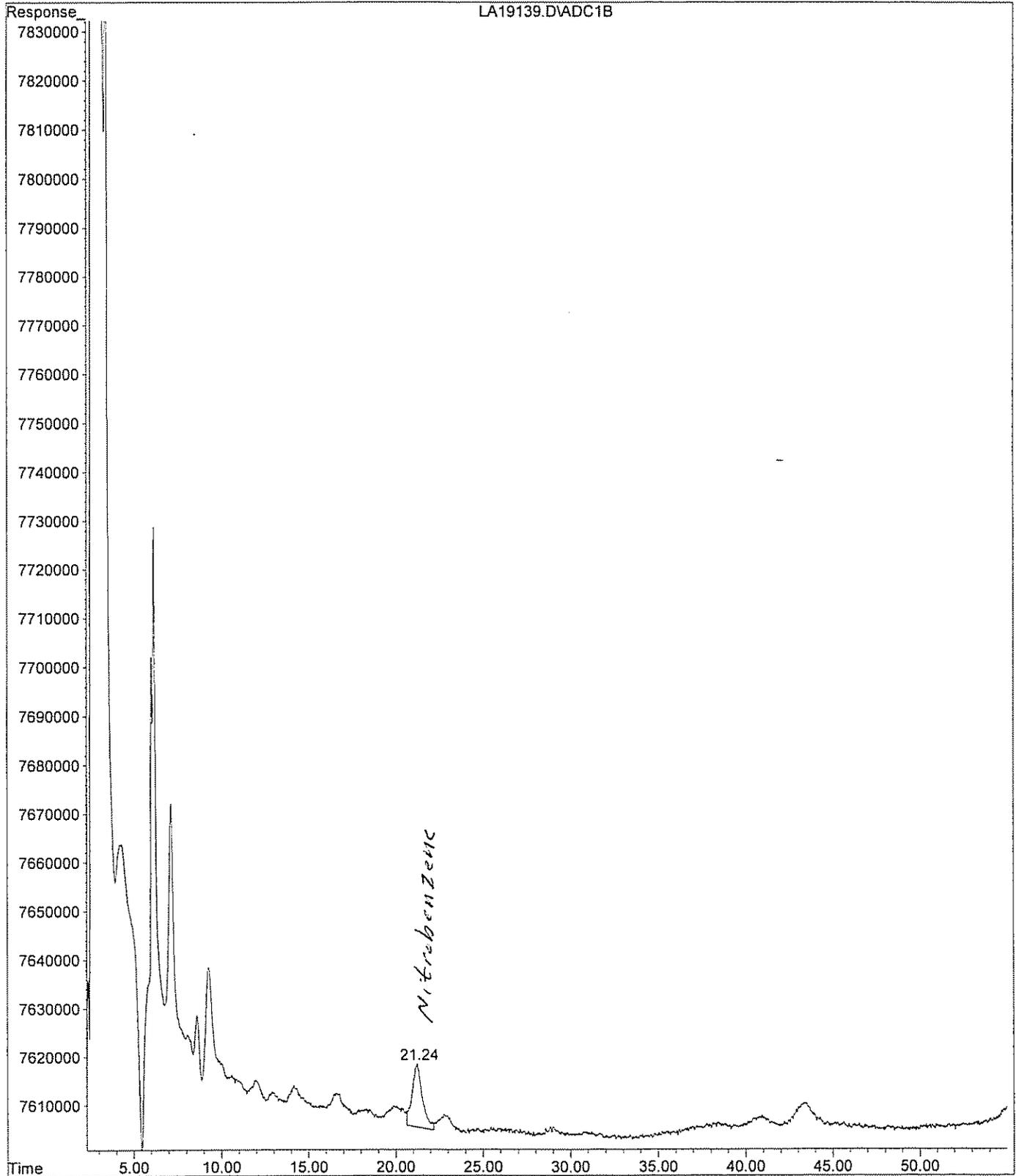
Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
Title : 8330 Explosives
Last Update : Mon Feb 26 09:04:57 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



File : H:\LCDATA\LCA\022307\LA19139.D
Operator : SS
Acquired : 24 Feb 2007 13:57 using AcqMethod 8330MIX.M
Instrument : LCA
Sample Name: 702081-009-019-1/2
Misc Info : SOIL.SHAW
Vial Number: 28

primary



Data File : H:\LCDATA\LCA\022307\0223NG\LA19139.D Vial: 28
 Acq On : 24 Feb 2007 13:57 Operator: SS
 Sample : 702081-009-019-1/2 Inst : LCA
 Misc : SOIL.SHAW Multiplr: 1.00
 IntFile : events.e
 Quant Time: Feb 28 17:51 2007 Quant Results File: 61114NG.RES

Quant Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT IC PRIMARY
 Last Update : Mon Feb 26 09:30:17 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

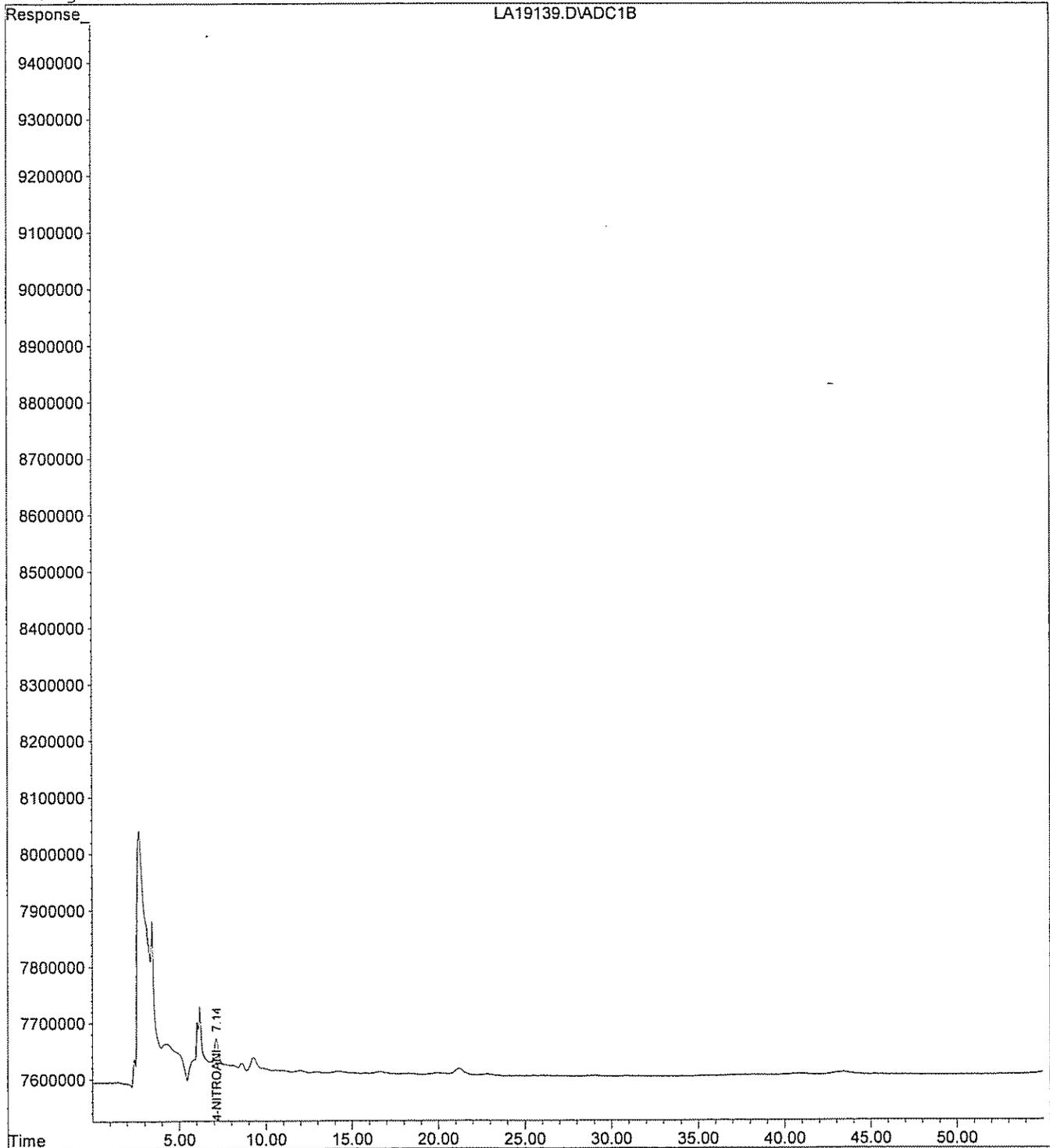
System Monitoring Compounds			
1) S 4-NITROANILINE	7.14	7373678	58.570 PPB
Spiked Amount 150.000		Recovery =	39.05%
Target Compounds			
2) M NITROGLYCERINE	0.00	0	N.D. PPM d

Quantitation Report

Data File : H:\LCDATA\LCA\022307\0223NG\LA19139.D Vial: 28
Acq On : 24 Feb 2007 13:57 Operator: SS
Sample : 702081-009-019-1/2 Inst : LCA
Misc : SOIL.SHAW Multiplr: 1.00
IntFile : events.e
Quant Time: Feb 28 17:51 2007 Quant Results File: 61114NG.RES

Quant Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
Title : NITROGLYCERINE- 5 POINT IC PRIMARY
Last Update : Mon Feb 26 09:30:17 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



Data File : H:\LCDATA\LCA\022607\LA19202.D Vial: 31
 Acq On : 27 Feb 2007 18:33 Operator: SS
 Sample : 702081-009 Inst : LCA
 Misc : SOIL.SHAW Multiplr: 1.00
 IntFile : events.e
 Quant Time: Feb 28 17:38 2007 Quant Results File: 61011CON.RES

Quant Method : I:\LCDATA\LCA\METHODS\61011CON.M (Chemstation Integrator)
 Title : 8330 Explosives Confirmation
 Last Update : Mon Feb 05 11:40:12 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : POLAR RP
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
2) S 4-Nitroaniline	8.51	4381386	36.581 ng/mlm
Spiked Amount 150.000	Range 52 - 154	Recovery =	24.39%#
Target Compounds			
1) T HMX	0.00	0	N.D. ng/ml
3) T 1,3,5-Trinitrobenzene	0.00	0	N.D. ng/ml
4) T Tetryl	0.00	0	N.D. ng/ml
5) T 2,4,6-Trinitrotoluene	0.00	0	N.D. ng/ml
6) T 4-Amino-2,6-Dinitrotoluene	0.00	0	N.D. ng/ml
7) T 2,6-Dinitrotoluene	0.00	0	N.D. ng/ml
8) T 4-Nitrotoluene	0.00	0	N.D. ng/ml
9) M RDX	0.00	0	N.D. ng/ml
10) M 1,3-Dinitrobenzene	0.00	0	N.D. ng/ml
11) M Nitrobenzene	14.07	7190262	21.079 ng/ml
12) M 2-Amino-4,6-Dinitrotoluene	0.00	0	N.D. ng/ml
13) M 2,4-Dinitrotoluene	0.00	0	N.D. ng/ml
14) M 2-Nitrotoluene	0.00	0	N.D. ng/ml
15) M 3-Nitrotoluene	0.00	0	N.D. ng/ml

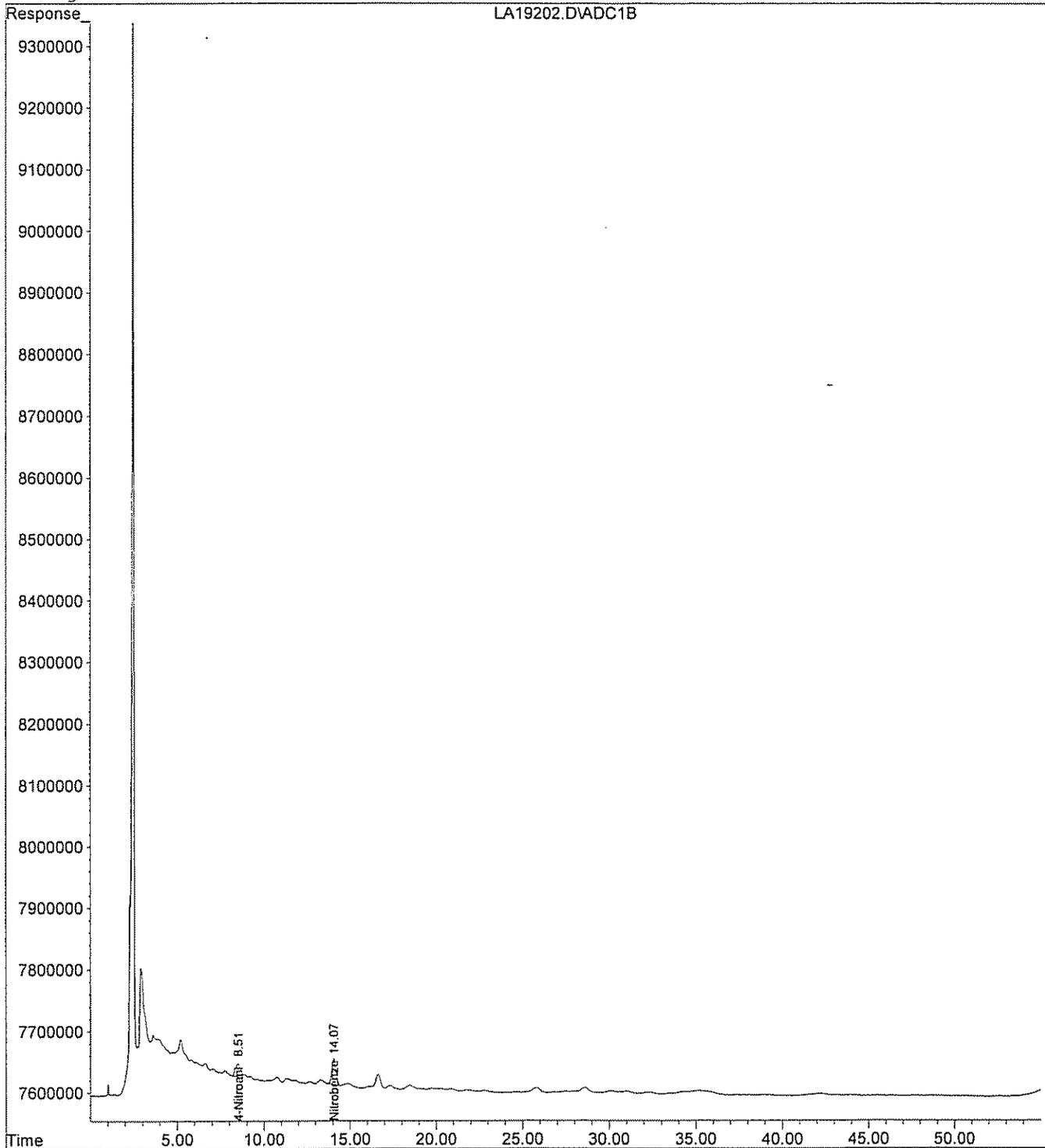
Quantitation Report

Data File : H:\LCDATA\LCA\022607\LA19202.D
Acq On : 27 Feb 2007 18:33
Sample : 702081-009
Misc : SOIL.SHAW
IntFile : events.e
Quant Time: Feb 28 17:38 2007

Vial: 31
Operator: SS
Inst : LCA
Multiplr: 1.00

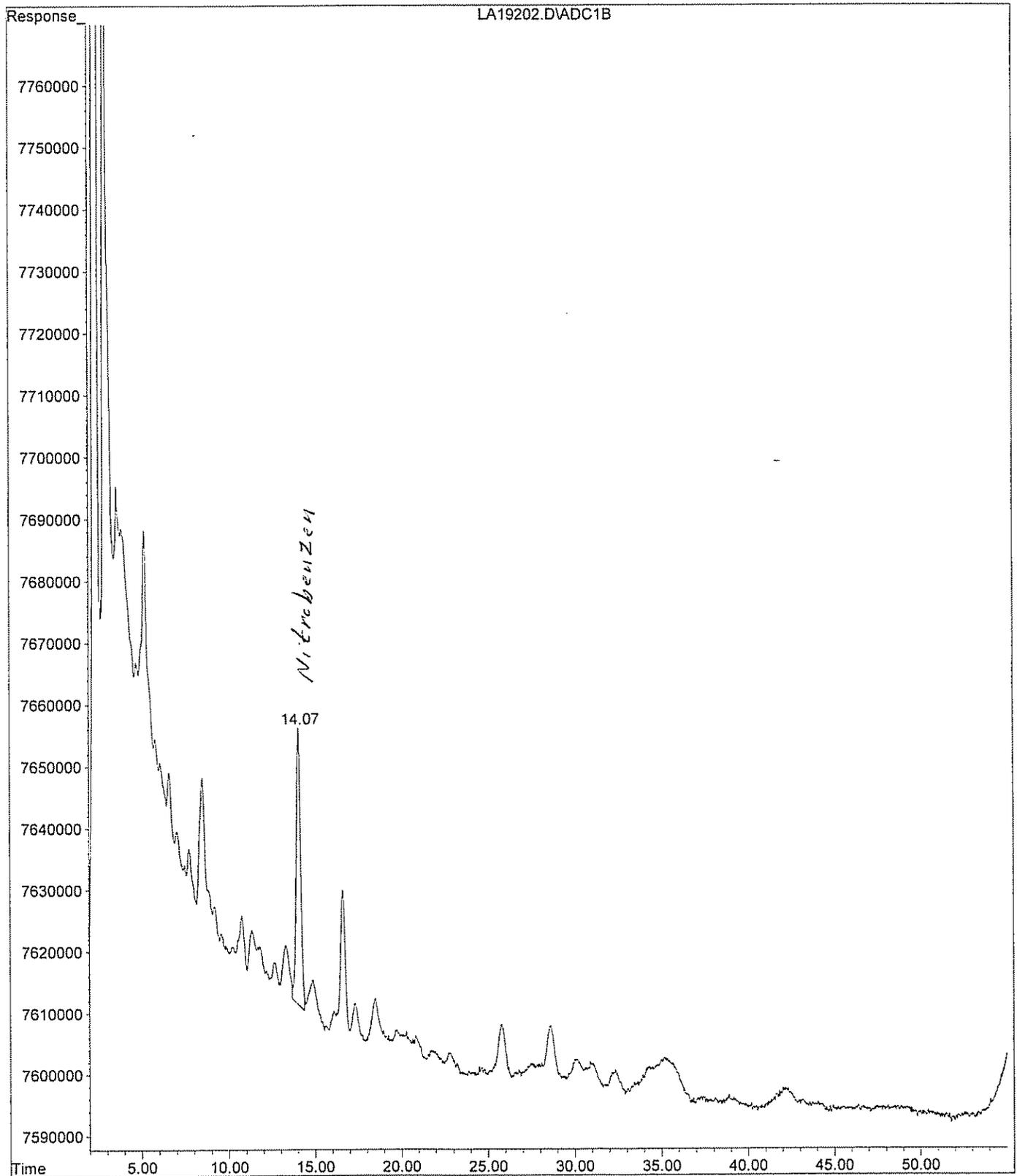
Quant Method : I:\LCDATA\LCA\METHODS\61011CON.M (Chemstation Integrator)
Title : 8330 Explosives Confirmation
Last Update : Mon Feb 05 11:40:12 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : POLAR RP
Signal Info : 254 nm U.V.



File : H:\LCDATA\LCA\022607\LA19202.D
Operator : SS
Acquired : 27 Feb 2007 18:33 using AcqMethod 8330MIX.M
Instrument : LCA
Sample Name: 702081-009
Misc Info : SOIL.SHAW
Vial Number: 31

Confirmation



Data File : H:\LCDATA\LCA\022607\0226NG\LA19202.D Vial: 31
 Acq On : 27 Feb 2007 18:33 Operator: SS
 Sample : 702081-009 Inst : LCA
 Misc : SOIL.SHAW Multiplr: 1.00
 IntFile : events.e
 Quant Time: Feb 28 17:48 2007 Quant Results File: 7122NGCO.RES

Quant Method : H:\LCDATA\LCA\METHODS\7122NGCO.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT 8330 confirmation
 Last Update : Wed Jan 03 13:44:41 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : Polar RP
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

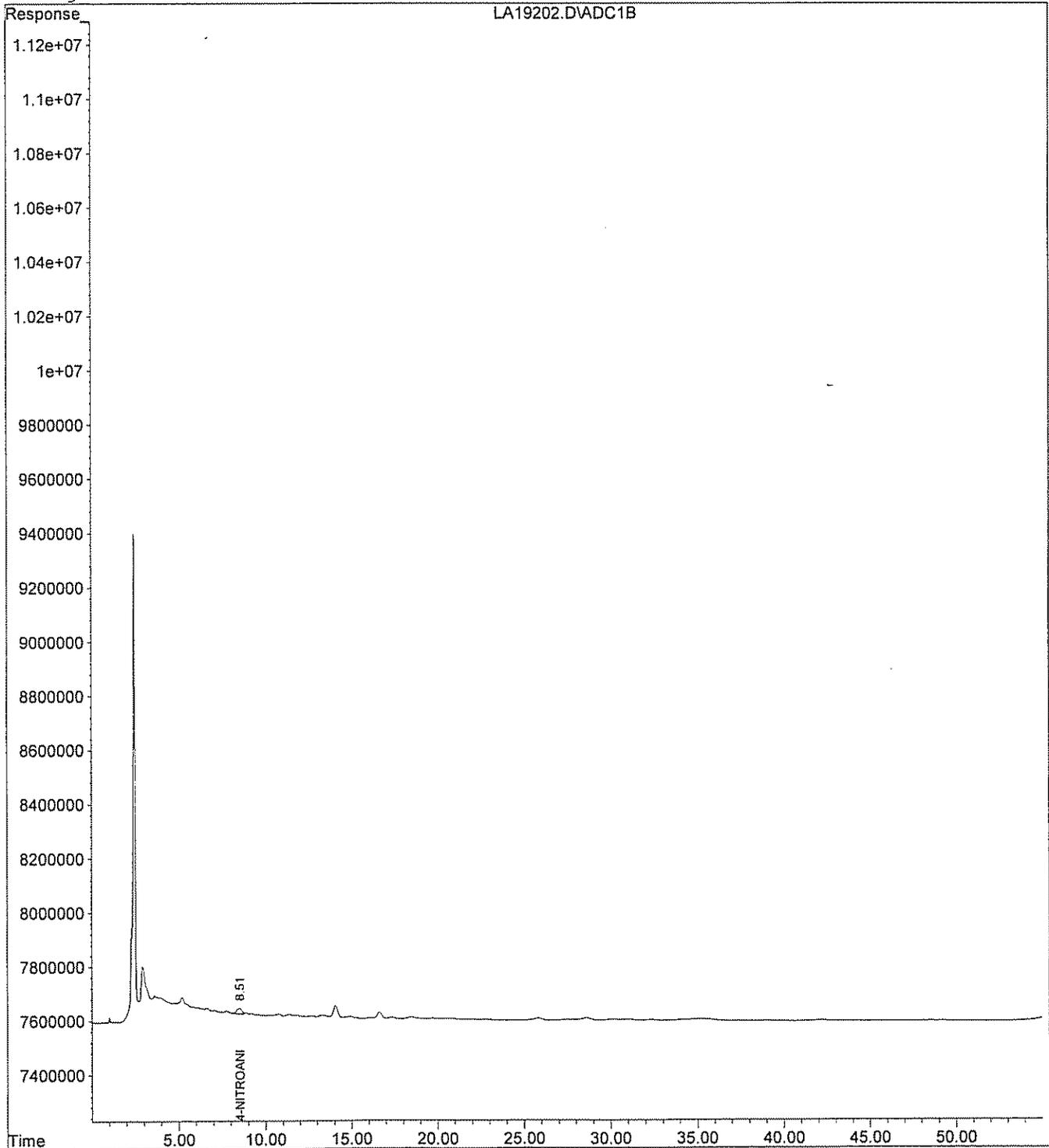
System Monitoring Compounds			
1) S 4-NITROANILINE	8.51	4303416	37.933 PPB m
Spiked Amount 150.000		Recovery =	25.29%
Target Compounds			
2) M NITROGLYCERINE	0.00	0	N.D. PPM

Quantitation Report

Data File : H:\LCDATA\LCA\022607\0226NG\LA19202.D Vial: 31
Acq On : 27 Feb 2007 18:33 Operator: SS
Sample : 702081-009 Inst : LCA
Misc : SOIL.SHAW Multiplr: 1.00
IntFile : events.e
Quant Time: Feb 28 17:48 2007 Quant Results File: 7122NGCO.RES

Quant Method : H:\LCDATA\LCA\METHODS\7122NGCO.M (Chemstation Integrator)
Title : NITROGLYCERINE- 5 POINT 8330 confirmation
Last Update : Wed Jan 03 13:44:41 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : Polar RP
Signal Info : 254 nm U.V.



SAMPLE NO
NWO-033-1002RE

Lab Name : GPL Laboratories Client : Shaw E&I, Inc
 Lab Code : GPL SAS NO. : _____
 Case No. : _____ SDG NO : 702081
 Matrix : (Soil / Water) SOIL Lab Sample ID : 702081-009-019-1/2
 Sample Volume : 10 Lab File ID : LA19348.D
 % Moisture: _____ Date Received 02/16/2007
 Extraction: EXT_SW8330 Date Extracted: 03/07/2007
 Extract Volume: 40 mL Date Analyzed 03/07/2007
 Injection Volume : _____ μ L Dilution Factor : 1
 GPC Clean up (Y/N): N pH: _____

Concentration Units (ug/L or ug/kg dry weight) : mg/kg

CAS NO	COMPOUND		Q
99-35-4	1,3,5-Trinitrobenzene	0.040	U
99-65-0	1,3-Dinitrobenzene	0.040	U
118-96-7	2,4,6-Trinitrotoluene	0.040	U
121-14-2	2,4-Dinitrotoluene	0.040	U
606-20-2	2,6-Dinitrotoluene	0.040	U
35572-78-2	2-Amino-4,6-Dinitrotoluene	0.040	U
19406-51-0	4-Amino-2,6-Dinitrotoluene	0.040	U
2691-41-0	HMX	0.080	U
98-95-3	Nitrobenzene	0.054	
121-82-4	RDX	0.080	U
479-45-8	Tetryl	0.080	U
99-08-1	m-Nitrotoluene	0.080	U
88-72-2	o-Nitrotoluene	0.080	U
99-99-0	p-Nitrotoluene	0.080	U

Data File : H:\LCDATA\LCA\030707\LA19348.D Vial: 6
 Acq On : 7 Mar 2007 21:16 Operator: SS
 Sample : 702081-009-019-1/2 Inst : LCA
 Misc : SOIL.SHAW.REEX Multiplr: 1.00
 IntFile : events.e
 Quant Time: Mar 14 13:20 2007 Quant Results File: 61110833.RES

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
 Title : 8330 Explosives
 Last Update : Mon Feb 26 09:49:31 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
2) S 4-Nitroaniline	7.52	3916732	29.020 ng/mlm
Spiked Amount 300.000	Range 52 - 154	Recovery =	9.67%#
Target Compounds			
11) M Nitrobenzene	22.70	4962514	13.536 ng/mlm

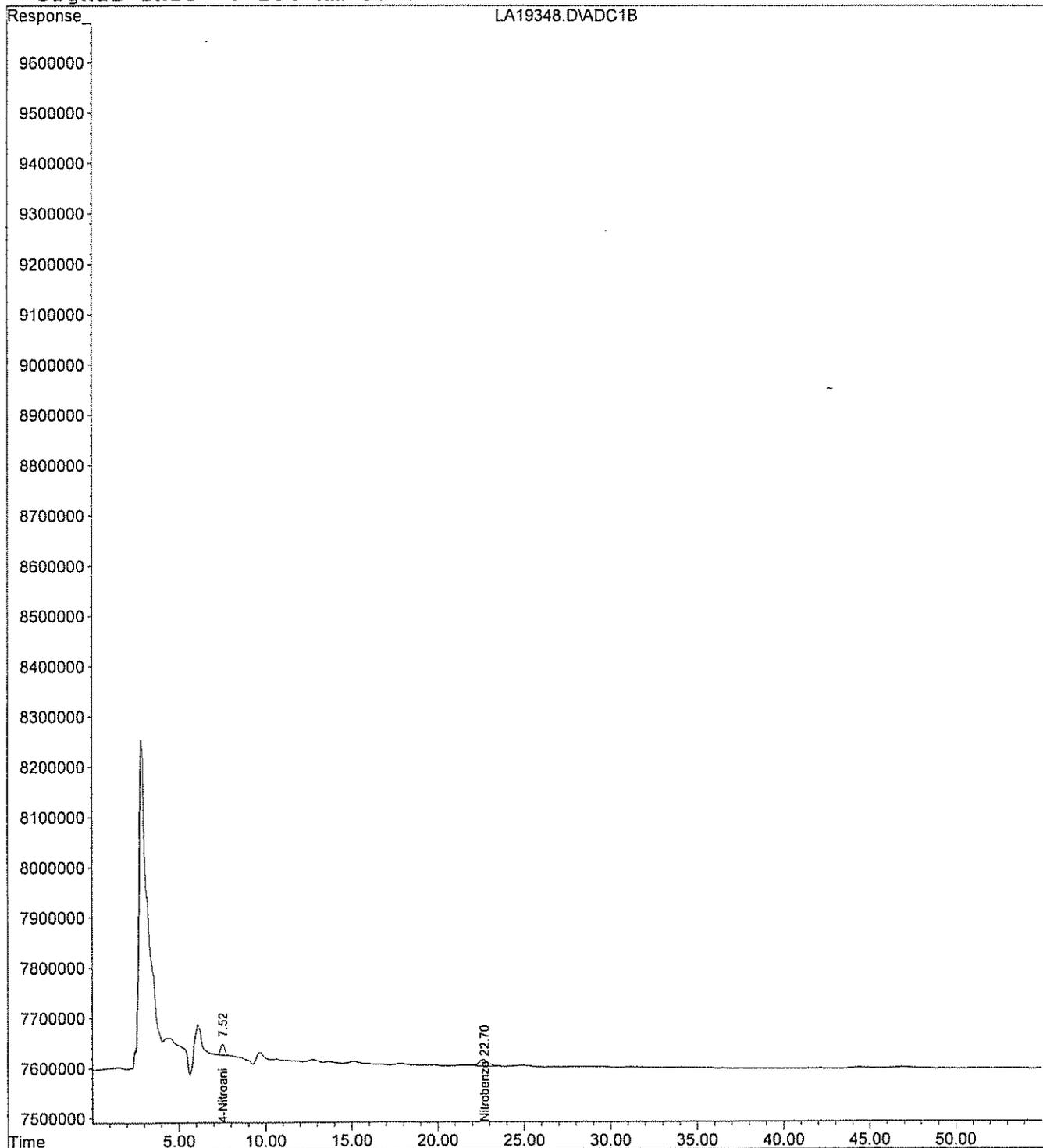
Quantitation Report

Data File : H:\LCDATA\LCA\030707\LA19348.D
Acq On : 7 Mar 2007 21:16
Sample : 702081-009-019-1/2
Misc : SOIL.SHAW.REEX
IntFile : events.e
Quant Time: Mar 14 13:20 2007 Quant Results File: 61110833.RES

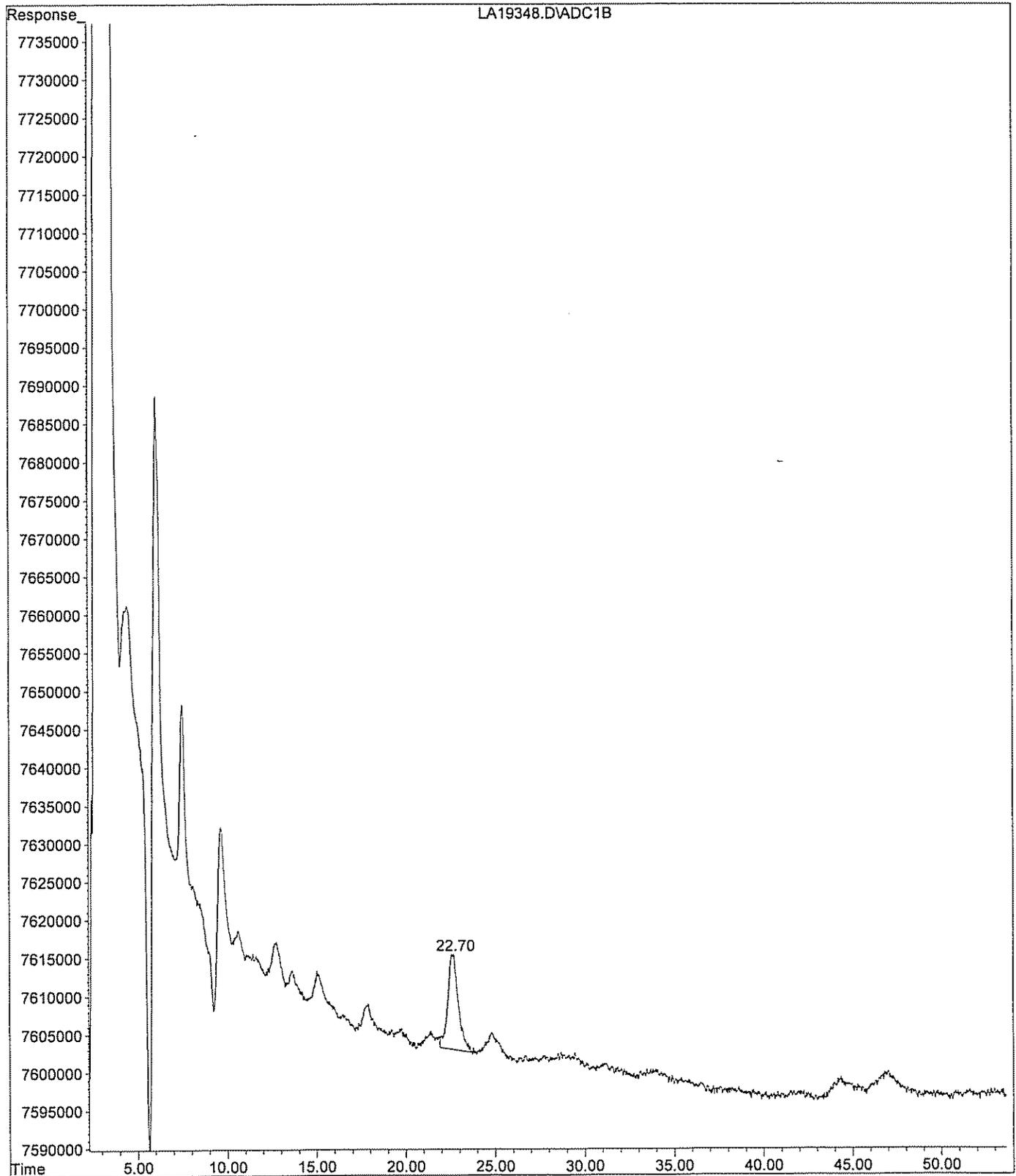
Vial: 6
Operator: SS
Inst : LCA
Multiplr: 1.00

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
Title : 8330 Explosives
Last Update : Mon Feb 26 09:49:31 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



File : H:\LCDATA\LCA\030707\LA19348.D
Operator : SS
Acquired : 7 Mar 2007 21:16 using AcqMethod 8330MIX.M
Instrument : LCA
Sample Name: 702081-009-019-1/2
Misc Info : SOIL.SHAW.REEX
Vial Number: 6



C. Standards Data

1. Initial Calibration Data
2. Continuing Calibration Data

GPL Laboratories

Response Factor Report LCA

Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
 Title : 8330 Explosives
 Last Update : Mon Nov 13 08:35:33 2006

Calibration Files

LEV1 =LA17193.D LEV2 =LA17194.D LEV3 =LA17195.D
 LEV4 =LA17196.D LEV5 =LA17197.D LEV6 =LA17198.D

Compound		LEV1	LEV2	LEV3	LEV4	LEV5	LEV6	Avg	%RSD
1)	T HMX	1.025	1.255	1.197	1.235	1.226	1.223	1.193	E5 7.09
2)	S 4-Nitroaniline	1.157	1.560	1.401	1.342	1.317	1.320	1.350	E5 9.72
3)	T 1,3,5-Trinitrobenze	3.470	3.402	3.417	3.556	3.551	3.532	3.488	E5 1.95
4)	T Tetryl	2.609	2.580	2.616	2.707	2.702	2.696	2.652	E5 2.12
5)	T 2,4,6-Trinitrotolue	3.270	3.843	3.309	3.423	3.419	3.453	3.453	E5 5.91
6)	T 4-Amino-2,6-Dinitro	2.315	2.547	2.287	2.362	2.359	2.391	2.377	E5 3.83
7)	T 2,6-Dinitrotoluene	2.414	2.308	2.197	2.269	2.270	2.267	2.287	E5 3.13
8)	T 4-Nitrotoluene	1.976	2.155	1.867	1.951	1.982	1.966	1.983	E5 4.76
9)	M RDX	1.100	1.443	1.517	1.573	1.580	1.572	1.464	E5 12.70
10)	M 1,3-Dinitrobenzene	4.891	5.225	4.911	5.095	5.094	5.076	5.049	E5 2.51
11)	M Nitrobenzene	3.774	4.056	3.398	3.567	3.586	3.616	3.666	E5 6.15
12)	M 2-Amino-4,6-Dinitro	3.841	3.579	3.425	3.548	3.553	3.584	3.589	E5 3.81
13)	M 2,4-Dinitrotoluene	4.940	5.047	4.888	5.071	5.087	5.085	5.020	E5 1.69
14)	M 2-Nitrotoluene	2.270	2.356	2.181	2.268	2.274	2.259	2.268	E5 2.46
15)	M 3-Nitrotoluene	2.343	2.433	2.367	2.449	2.480	2.462	2.422	E5 2.27

Data File : H:\LCDATA\LCA\111006\LA17192.D Vial: 2
 Acq On : 10 Nov 2006 16:20 Operator: SS
 Sample : 8330MIX-BLK Inst : LCA
 Misc : C CAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Nov 13 7:24 2006 Quant Results File: 61110833.RES

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
 Title : 8330 Explosives
 Last Update : Tue Jul 25 09:45:54 2006
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
Target Compounds			

Quantitation Report

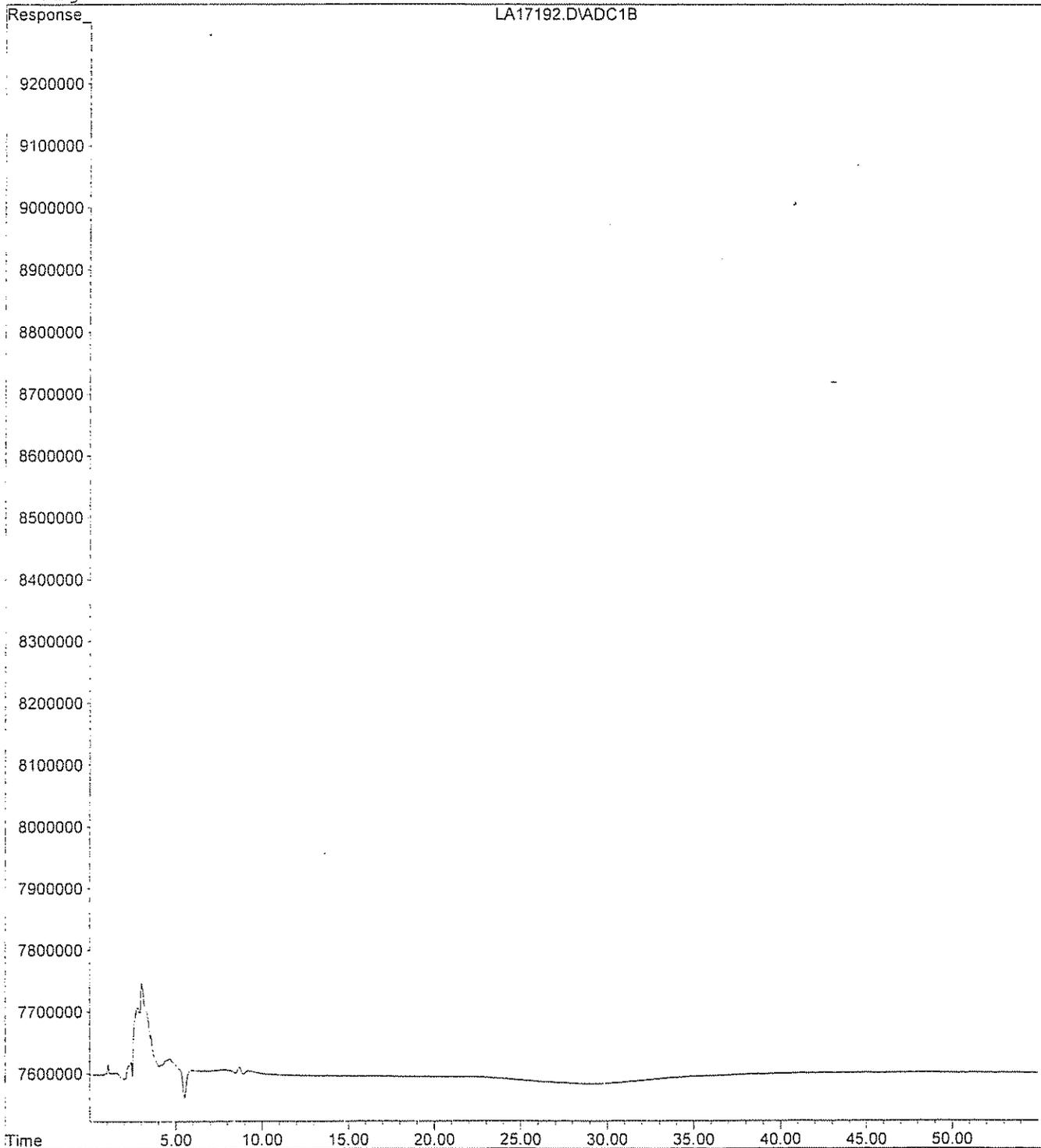
Data File : H:\LCDATA\LCA\111006\LA17192.D
Acq On : 10 Nov 2006 16:20
Sample : 8330MIX-BLK
Misc : C CAL
IntFile : events.e
Quant Time: Nov 13 7:24 2006

Vial: 2
Operator: SS
Inst : LCA
Multiplr: 1.00

Quant Results File: 61110833.RES

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
Title : 8330 Explosives
Last Update : Tue Jul 25 09:45:54 2006
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



Data File : H:\LCDATA\LCA\111006\LA17193.D Vial: 3
 Acq On : 10 Nov 2006 17:20 Operator: SS
 Sample : 8330MIX-LEV1 Inst : LCA
 Misc : C CAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Nov 13 8:26 2006 Quant Results File: 61110833.RES

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
 Title : 8330 Explosives
 Last Update : Tue Jul 25 09:45:54 2006
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
2) S 4-Nitroaniline	7.14	2314053	16.484 ng/mlm
Spiked Amount 300.000	Range 49 - 133	Recovery =	5.49%#
Target Compounds			
1) T HMX	4.71	2050194	17.153 ng/mlm
3) T 1,3,5-Trinitrobenzene	13.26	3470221	9.982 ng/mlm
4) T Tetryl	19.27	5217626	19.252 ng/mlm
5) T 2,4,6-Trinitrotoluene	23.57	3270408	9.653 ng/mlm
6) T 4-Amino-2,6-Dinitrotoluene	25.40	2315160	9.859 ng/mlm
7) T 2,6-Dinitrotoluene	29.46	2413987	10.546 ng/mlm
8) T 4-Nitrotoluene	41.11	3951165	20.066 ng/mlm
9) M RDX	9.05	2199201	14.991 ng/mlm
10) M 1,3-Dinitrobenzene	17.58	4890641	9.788 ng/mlm
11) M Nitrobenzene	21.15	3773699	10.521 ng/mlm
12) M 2-Amino-4,6-Dinitrotoluene	26.95	3840833	10.857 ng/mlm
13) M 2,4-Dinitrotoluene	30.67	4939972	9.885 ng/mlm
14) M 2-Nitrotoluene	38.08	4540437	20.074 ng/mlm
15) M 3-Nitrotoluene	44.59	4685102	19.090 ng/mlm

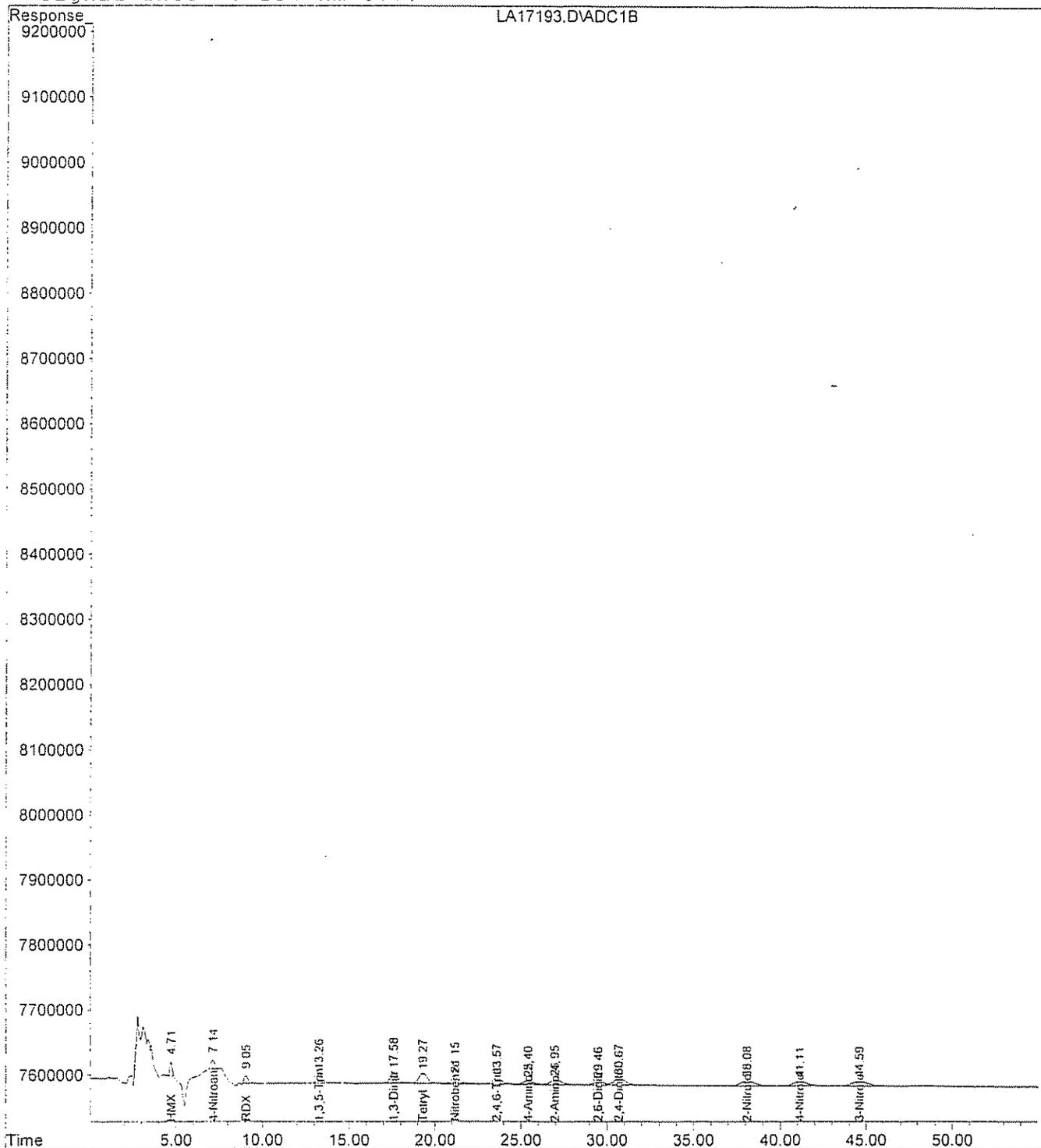
Quantitation Report

Data File : H:\LCDATA\LCA\111006\LA17193.D
Acq On : 10 Nov 2006 17:20
Sample : 8330MIX-LEV1
Misc : C CAL
IntFile : events.e
Quant Time: Nov 13 8:26 2006 Quant Results File: 61110833.RES

Vial: 3
Operator: SS
Inst : LCA
Multiplr: 1.00

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
Title : 8330 Explosives
Last Update : Tue Jul 25 09:45:54 2006
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



Data File : H:\LCDATA\LCA\111006\LA17194.D Vial: 4
 Acq On : 10 Nov 2006 18:19 Operator: SS
 Sample : 8330MIX-LEV2 Inst : LCA
 Misc : C CAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Nov 13 8:13 2006 Quant Results File: 61110833.RES

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
 Title : 8330 Explosives
 Last Update : Tue Jul 25 09:45:54 2006
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
2) S 4-Nitroaniline	7.16	15600069	116.169 ng/ml
Spiked Amount 300.000	Range 49 - 133	Recovery =	38.72%#
Target Compounds			
1) T HMX	4.71	12546761	105.167 ng/ml
3) T 1,3,5-Trinitrobenzene	13.27	17012207	48.950 ng/mlm
4) T Tetryl	19.26	25803839	96.645 ng/mlm
5) T 2,4,6-Trinitrotoluene	23.59	19213743	56.813 ng/mlm
6) T 4-Amino-2,6-Dinitrotoluene	25.42	12734686	53.993 ng/mlm
7) T 2,6-Dinitrotoluene	29.51	11537882	50.490 ng/mlm
8) T 4-Nitrotoluene	41.09	21550017	109.419 ng/mlm
9) M RDX	9.00	14433568	98.337 ng/mlm
10) M 1,3-Dinitrobenzene	17.58	26125978	51.848 ng/mlm
11) M Nitrobenzene	21.15	20280952	56.037 ng/mlm
12) M 2-Amino-4,6-Dinitrotoluene	27.01	17897255	49.998 ng/mlm
13) M 2,4-Dinitrotoluene	30.70	25236261	50.456 ng/mlm
14) M 2-Nitrotoluene	38.09	23564262	104.105 ng/mlm
15) M 3-Nitrotoluene	44.57	24328960	100.308 ng/mlm

Quantitation Report

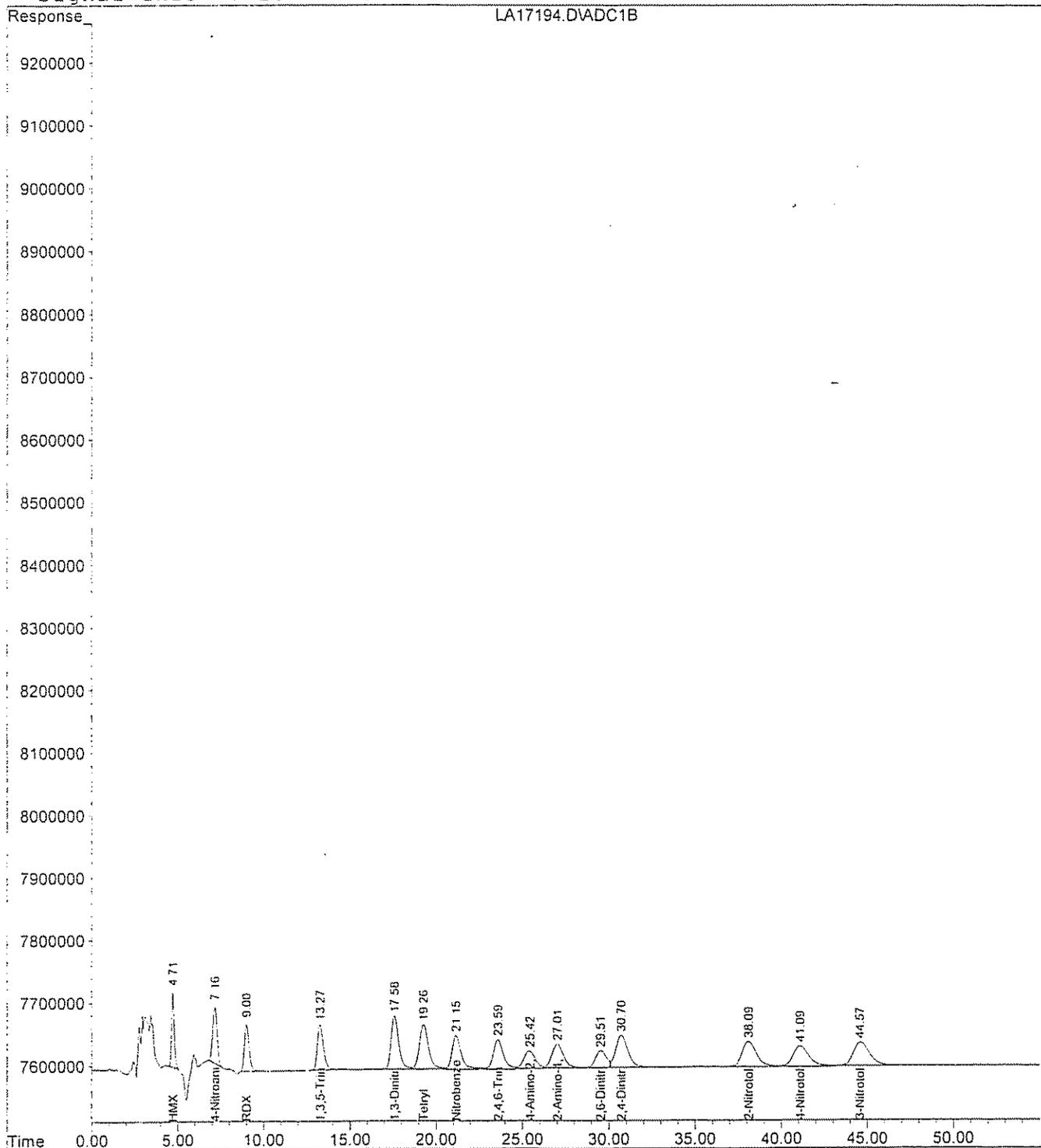
Data File : H:\LCDATA\LCA\111006\LA17194.D
Acq On : 10 Nov 2006 18:19
Sample : 8330MIX-LEV2
Misc : C CAL
IntFile : events.e
Quant Time: Nov 13 8:13 2006

Vial: 4
Operator: SS
Inst : LCA
Multiplr: 1.00

Quant Results File: 61110833.RES

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
Title : 8330 Explosives
Last Update : Tue Jul 25 09:45:54 2006
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



Data File : H:\LCDATA\LCA\111006\LA17195.D Vial: 5
 Acq On : 10 Nov 2006 19:19 Operator: SS
 Sample : 8330MIX-LEV3 Inst : LCA
 Misc : C CAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Nov 13 8:33 2006 Quant Results File: 61110833.RES

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
 Title : 8330 Explosives
 Last Update : Tue Jul 25 09:45:54 2006
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
2) S 4-Nitroaniline	7.15	70073161	523.762 ng/mlm
Spiked Amount 300.000	Range 49 - 133	Recovery	= 174.59%#
Target Compounds			
1) T HMX	4.71	59835030	501.537 ng/ml
3) T 1,3,5-Trinitrobenzene	13.30	85435556	244.931 ng/ml
4) T Tetryl	19.32	130802572	491.360 ng/mlm
5) T 2,4,6-Trinitrotoluene	23.64	82734473	239.609 ng/ml
6) T 4-Amino-2,6-Dinitrotoluene	25.47	57178581	240.573 ng/ml
7) T 2,6-Dinitrotoluene	29.60	54930040	240.150 ng/ml
8) T 4-Nitrotoluene	41.19	93328897	470.734 ng/ml
9) M RDX	9.01	75853321	518.013 ng/mlm
10) M 1,3-Dinitrobenzene	17.62	122774979	243.185 ng/ml
11) M Nitrobenzene	21.19	84940223	231.689 ng/ml
12) M 2-Amino-4,6-Dinitrotoluene	27.09	85635097	238.637 ng/ml
13) M 2,4-Dinitrotoluene	30.78	122202611	243.445 ng/ml
14) M 2-Nitrotoluene	38.18	109054020	480.809 ng/ml
15) M 3-Nitrotoluene	44.71	118362895	488.628 ng/ml

Quantitation Report

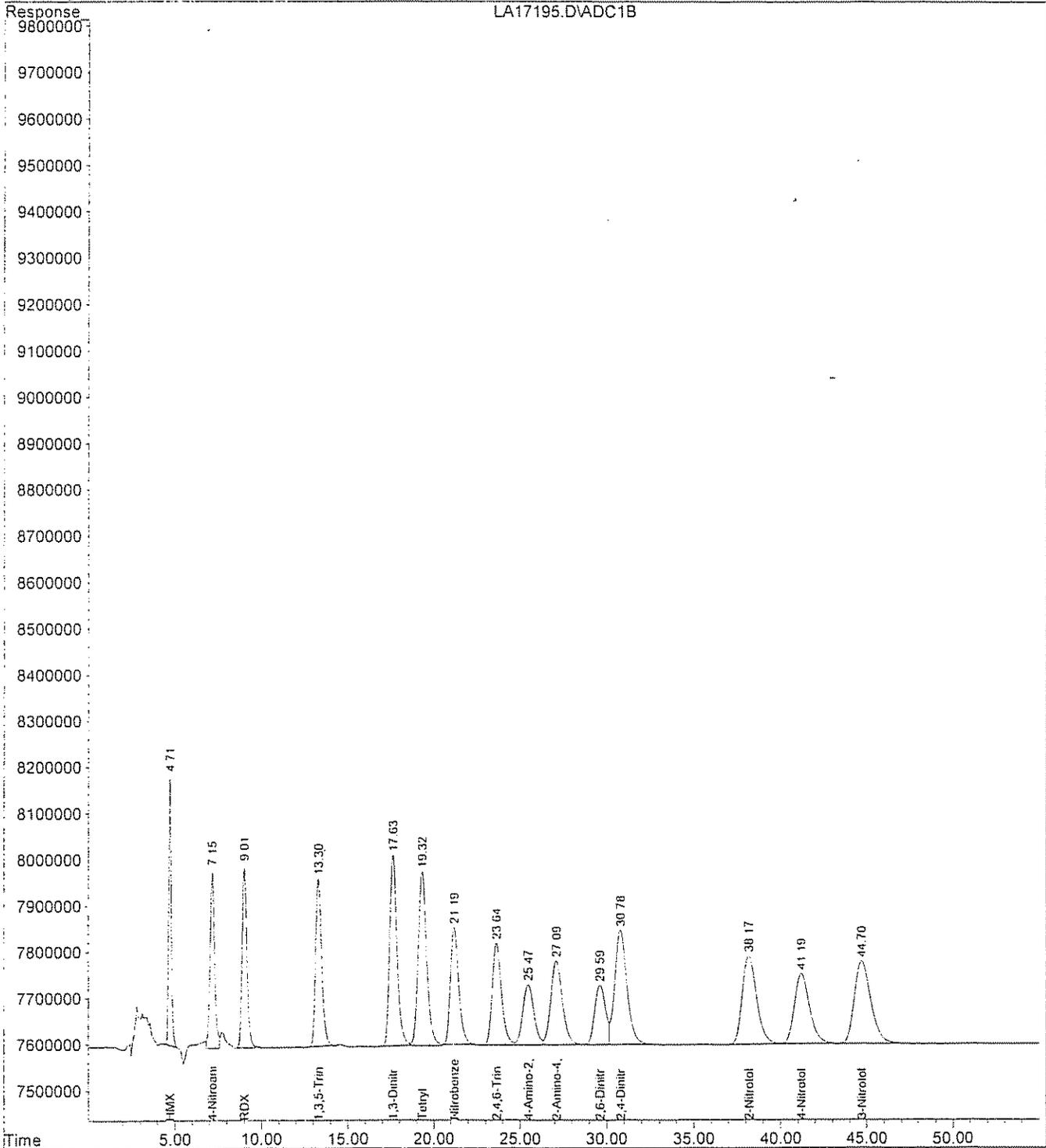
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Acq On : 10 Nov 2006 19:19
Sample : 8330MIX-LEV3
Misc : C CAL
IntFile : events.e
Quant Time: Nov 13 8:33 2006

Vial: 5
Operator: SS
Inst : LCA
Multiplr: 1.00

Quant Results File: 61110833.RES

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
Title : 8330 Explosives
Last Update : Tue Jul 25 09:45:54 2006
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



Data File : H:\LCDATA\LCA\111006\LA17196.D Vial: 6
 Acq On : 10 Nov 2006 20:18 Operator: SS
 Sample : 8330MIX-LEV4 Inst : LCA
 Misc : C CAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Nov 13 8:15 2006 Quant Results File: 61110833.RES

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
 Title : 8330 Explosives
 Last Update : Tue Jul 25 09:45:54 2006
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
2) S 4-Nitroaniline	7.16	134215616	1001.613 ng/mlm
Spiked Amount 300.000	Range 49 - 133	Recovery =	333.87%#
Target Compounds			
1) T HMX	4.71	123515535	1035.308 ng/ml
3) T 1,3,5-Trinitrobenzene	13.30	177795736	509.714 ng/ml
4) T Tetryl	19.33	270726930	1010.395 ng/ml
5) T 2,4,6-Trinitrotoluene	23.64	171145893	495.660 ng/ml
6) T 4-Amino-2,6-Dinitrotoluene	25.48	118080679	496.812 ng/ml
7) T 2,6-Dinitrotoluene	29.61	113439935	495.951 ng/ml
8) T 4-Nitrotoluene	41.20	195085083	983.974 ng/ml
9) M RDX	9.02	157264663	1073.983 ng/ml
10) M 1,3-Dinitrobenzene	17.63	254753307	504.599 ng/ml
11) M Nitrobenzene	21.19	178368151	486.531 ng/ml
12) M 2-Amino-4,6-Dinitrotoluene	27.10	177410919	494.386 ng/ml
13) M 2,4-Dinitrotoluene	30.79	253546433	505.100 ng/ml
14) M 2-Nitrotoluene	38.19	226829639	1000.070 ng/ml
15) M 3-Nitrotoluene	44.72	244902883	1011.012 ng/ml

Quantitation Report

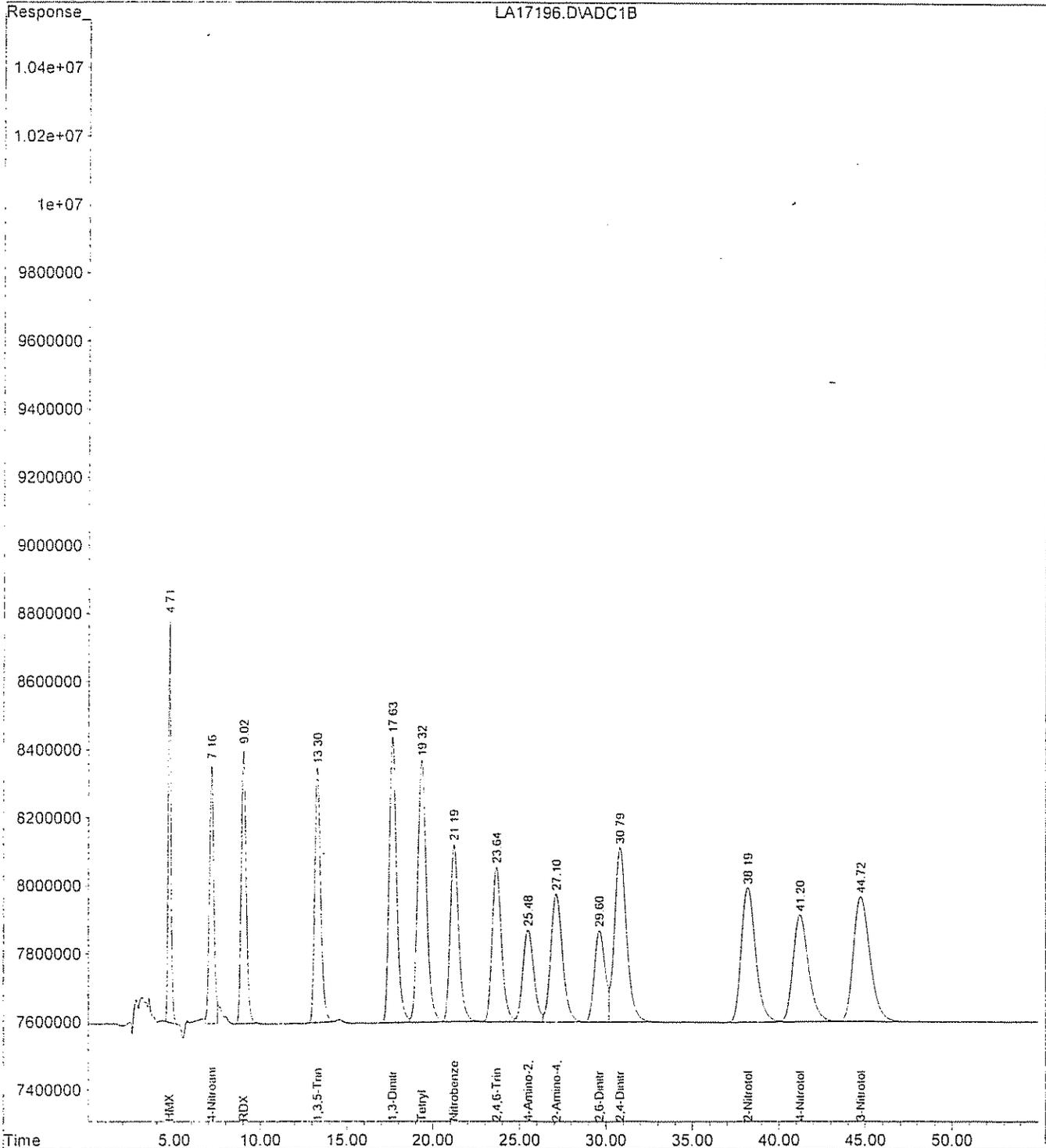
Data File : H:\LCDATA\LCA\111006\LA17196.D
Acq On : 10 Nov 2006 20:18
Sample : 8330MIX-LEV4
Misc : C CAL
IntFile : events.e

Vial: 6
Operator: SS
Inst : LCA
Multiplr: 1.00

Quant Time: Nov 13 8:15 2006 Quant Results File: 61110833.RES

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
Title : 8330 Explosives
Last Update : Tue Jul 25 09:45:54 2006
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



Data File : H:\LCDATA\LCA\111006\LA17197.D Vial: 7
 Acq On : 10 Nov 2006 21:18 Operator: SS
 Sample : 8330MIX-LEV5 Inst : LCA
 Misc : C CAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Nov 13 8:15 2006 Quant Results File: 61110833.RES

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
 Title : 8330 Explosives
 Last Update : Tue Jul 25 09:45:54 2006
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
2) S 4-Nitroaniline	7.16	263380362	1964.787 ng/mlm
Spiked Amount 300.000	Range 49 - 133	Recovery	= 654.93%#
Target Compounds			
1) T HMX	4.72	245276922	2055.912 ng/ml
3) T 1,3,5-Trinitrobenzene	13.31	355124804	1018.089 ng/ml
4) T Tetryl	19.34	540468242	2020.908 ng/ml
5) T 2,4,6-Trinitrotoluene	23.66	341854423	990.053 ng/ml
6) T 4-Amino-2,6-Dinitrotoluene	25.52	235909731	992.566 ng/ml
7) T 2,6-Dinitrotoluene	29.63	226975670	992.320 ng/ml
8) T 4-Nitrotoluene	41.23	396387500	1999.308 ng/ml
9) M RDX	9.02	315991539	2157.952 ng/ml
10) M 1,3-Dinitrobenzene	17.64	509416488	1009.020 ng/ml
11) M Nitrobenzene	21.21	358552304	978.015 ng/ml
12) M 2-Amino-4,6-Dinitrotoluene	27.15	355347549	990.237 ng/ml
13) M 2,4-Dinitrotoluene	30.82	508725245	1013.452 ng/ml
14) M 2-Nitrotoluene	38.22	454859876	2005.434 ng/ml
15) M 3-Nitrotoluene	44.76	496001996	2047.604 ng/ml

Quantitation Report

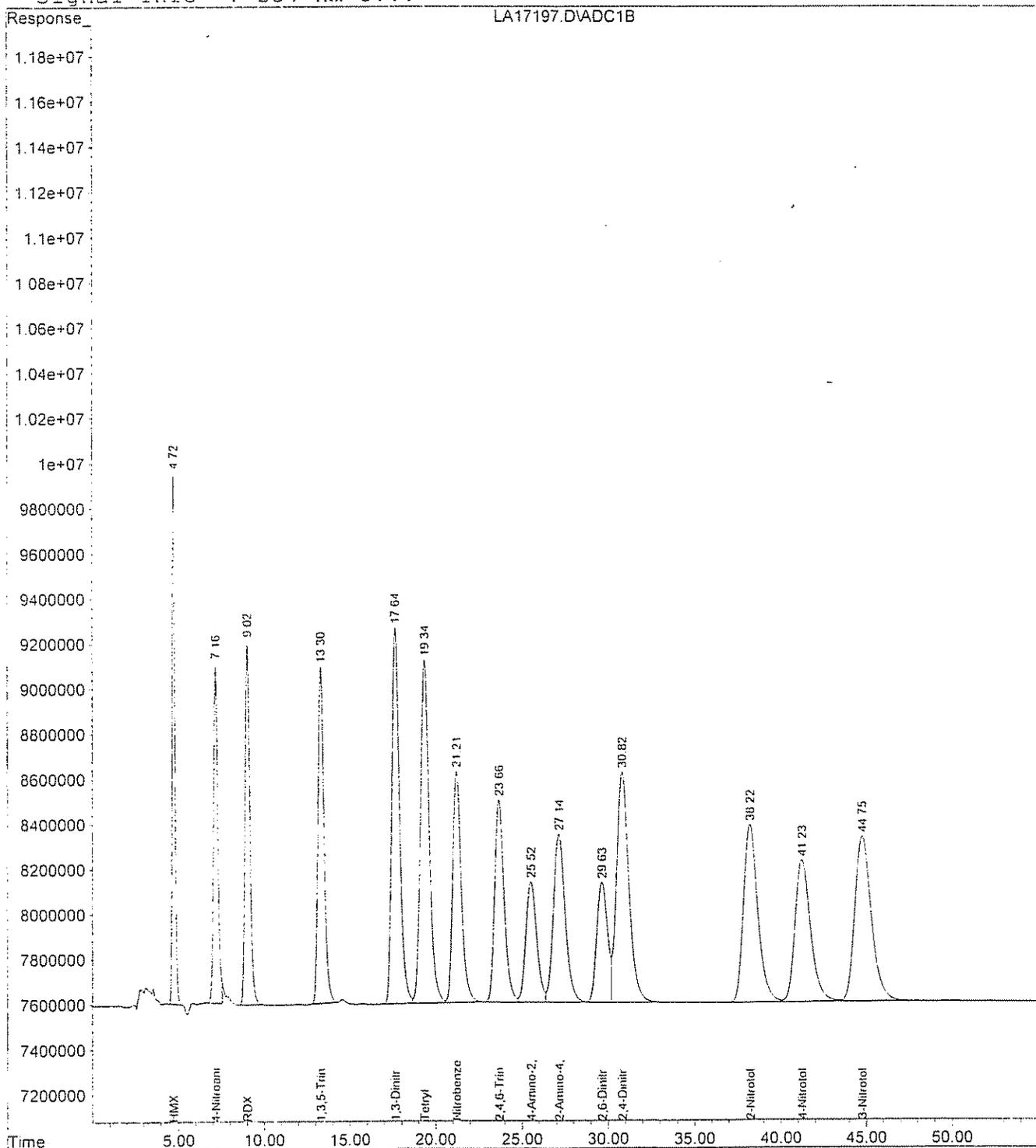
Data File : H:\LCDATA\LCA\111006\LA17197.D
Acq On : 10 Nov 2006 21:18
Sample : 8330MIX-LEV5
Misc : C CAL
IntFile : events.e
Quant Time: Nov 13 8:15 2006

Vial: 7
Operator: SS
Inst : LCA
Multiplr: 1.00

Quant Results File: 61110833.RES

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
Title : 8330 Explosives
Last Update : Tue Jul 25 09:45:54 2006
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



Data File : H:\LCDATA\LCA\111006\LA17198.D Vial: 8
 Acq On : 10 Nov 2006 22:17 Operator: SS
 Sample : 8330MIX-LEV6 Inst : LCA
 Misc : C CAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Nov 13 8:16 2006 Quant Results File: 61110833.RES

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
 Title : 8330 Explosives
 Last Update : Tue Jul 25 09:45:54 2006
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
2) S 4-Nitroaniline	7.16	660213287	4959.911 ng/ml
Spiked Amount 300.000	Range 49 - 133	Recovery	= 1653.30%#
Target Compounds			
1) T HMX	4.71	611295355	5123.880 ng/mlm
3) T 1,3,5-Trinitrobenzene	13.30	882911913	2531.176 ng/ml
4) T Tetryl	19.35	1347789043	5046.017 ng/ml
5) T 2,4,6-Trinitrotoluene	23.66	863335980	2500.328 ng/ml
6) T 4-Amino-2,6-Dinitrotoluene	25.53	597661103	2514.598 ng/ml
7) T 2,6-Dinitrotoluene	29.64	566654126	2477.368 ng/ml
8) T 4-Nitrotoluene	41.23	982895665	4957.550 ng/ml
9) M RDX	9.02	785992241	5367.655 ng/ml
10) M 1,3-Dinitrobenzene	17.63	1268924641	2513.405 ng/ml
11) M Nitrobenzene	21.20	904088913	2466.062 ng/ml
12) M 2-Amino-4,6-Dinitrotoluene	27.16	895919010	2496.633 ng/ml
13) M 2,4-Dinitrotoluene	30.83	1271210626	2532.431 ng/ml
14) M 2-Nitrotoluene	38.23	1129251328	4978.761 ng/ml
15) M 3-Nitrotoluene	44.77	1231186391	5082.606 ng/ml

Quantitation Report

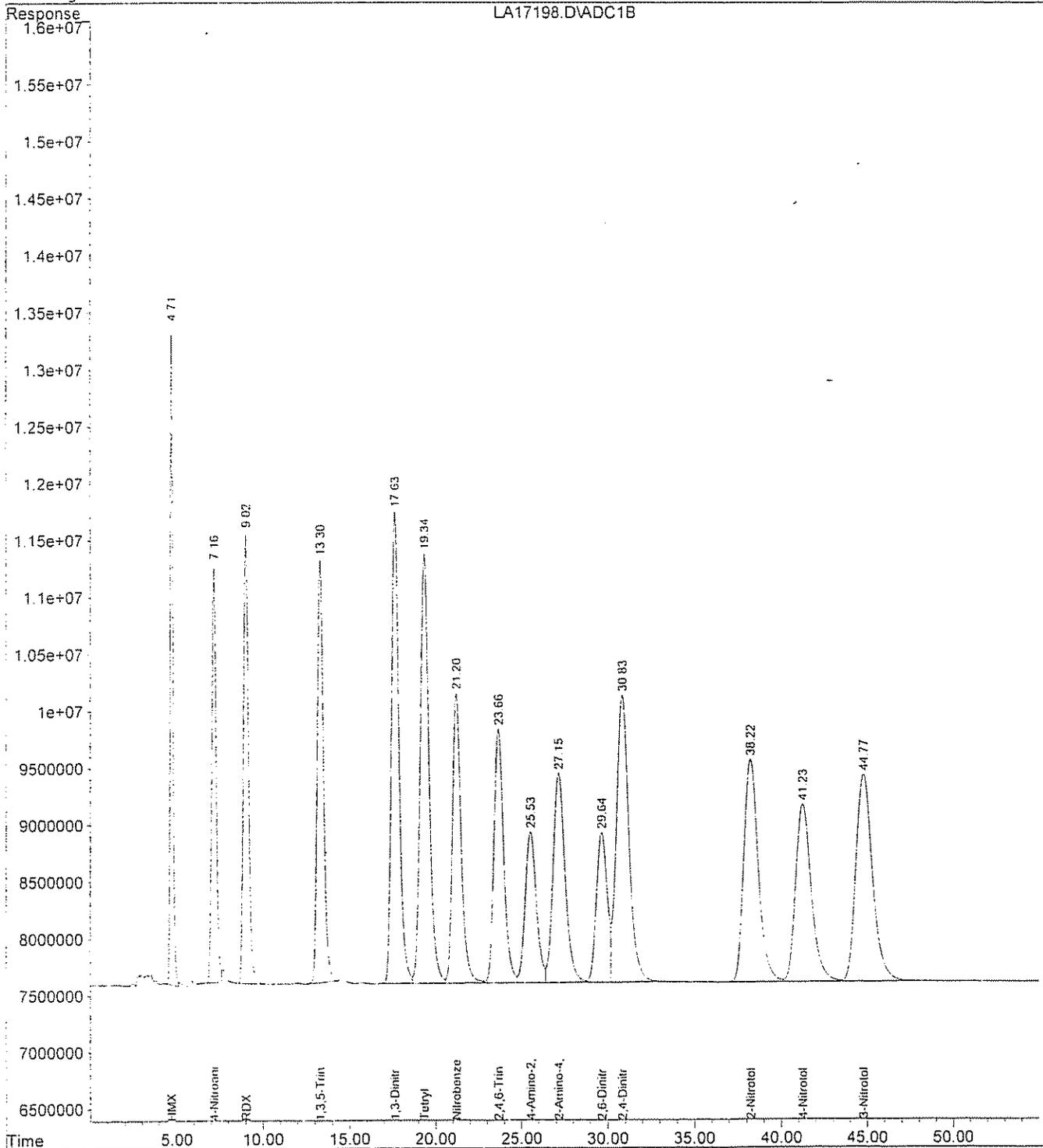
Data File : H:\LCDATA\LCA\111006\LA17198.D
Acq On : 10 Nov 2006 22:17
Sample : 8330MIX-LEV6
Misc : C CAL
IntFile : events.e

Vial: 8
Operator: SS
Inst : LCA
Multiplr: 1.00

Quant Time: Nov 13 8:16 2006 Quant Results File: 61110833.RES

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
Title : 8330 Explosives
Last Update : Tue Jul 25 09:45:54 2006
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



8330 RETENTION TIME WINDOW ESTABLISHMENT

INTRUMENT TYPE: LCA
 COLUMN: C8 ANALYST: SS
 DATE: 11/14/06-11/16/06 DATE: 11/16/06

COMPOUND	Retent Time 1	Retent Time 2	Retent Time 3	AVG	Stand Dev	3X Stnd Dev	Average Peak Width	R.T. Window
4-Nitroaniline(Surr.)	7.330	7.330	7.310	7.323	0.012	0.035	0.200	0.100
HMX	4.790	4.790	4.780	4.787	0.006	0.017	0.150	0.096
1,3,5-Trinitrobenzene	13.700	13.690	13.660	13.683	0.021	0.062	0.250	0.125
Tetryl	20.220	20.230	20.180	20.210	0.026	0.079	0.350	0.267
2,4,6-Trinitrotoluene	24.620	24.610	24.560	24.597	0.032	0.096	0.300	0.267
4-ADNT	26.680	26.710	26.650	26.680	0.030	0.090	0.400	0.537
2,6-Dinitrotoluene	30.980	30.980	30.910	30.957	0.040	0.121	0.450	0.416
4-Nitrotoluene	43.220	43.230	43.120	43.190	0.061	0.182	0.600	0.488
RDX	9.270	9.260	9.240	9.257	0.015	0.046	0.250	0.125
1,3-Dinitrobenzene	18.220	18.220	18.170	18.203	0.029	0.087	0.400	0.200
Nitrobenzene	21.990	21.980	21.930	21.967	0.032	0.096	0.300	0.167
2-ADNT	28.330	28.370	28.300	28.333	0.035	0.105	0.400	0.513
2,4-Dinitrotoluene	32.160	32.160	32.090	32.137	0.040	0.121	0.550	0.362
2-Nitrotoluene	40.050	40.050	39.960	40.020	0.052	0.156	0.450	0.458
3-Nitrotoluene	46.930	46.940	46.820	46.897	0.067	0.200	0.500	0.469

Advisory Retention Time Windows are based on three daily calibration check standards

Windows are the greater of 1/2 the average peak width,
 or +/- 3 times the retention time standard deviation

Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
 Title : 8330 Explosives
 Last Update : Thu Dec 21 15:13:07 2006
 Response via : Initial Calibration

Continuing Calibration File: LA17199.D

Min. RRF : 0.000 Min. Rel. Area : 50%
 Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF		%Dev	Area%
1 T	HMX	119.343	124.858	E3	-4.6	104
2 S	4-Nitroaniline	134.966	144.620	E3	-7.2	103
3 T	1,3,5-Trinitrobenzene	348.815	352.243	E3	-1.0	103
4 T	Tetryl	265.174	270.833	E3	-2.1	104
5 T	2,4,6-Trinitrotoluene	345.289	373.985	E3	-8.3	113
6 T	4-Amino-2,6-Dinitrotoluene	237.577	236.318	E3	0.6	103
7 T	2,6-Dinitrotoluene	228.732	223.218	E3	2.4	102
8 T	4-Nitrotoluene	198.262	192.233	E3	3.0	103
9 M	RDX	146.410	155.709	E3	-6.4	103
10 M	1,3-Dinitrobenzene	504.863	509.562	E3	-0.9	104
11 M	Nitrobenzene	366.612	405.808	E3	-10.7	119
12 M	2-Amino-4,6-Dinitrotoluene	358.851	350.777	E3	2.2	102
13 M	2,4-Dinitrotoluene	501.973	504.267	E3	-0.5	103
14 M	2-Nitrotoluene	225.814	223.564	E3	1.4	103
15 M	3-Nitrotoluene	242.235	241.294	E3	0.4	102

Data File : H:\LCDATA\LCA\111006\LA17199.D Vial: 9
 Acq On : 10 Nov 2006 23:17 Operator: SS
 Sample : 8330MIX-ICV Inst : LCA
 Misc : C CAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Nov 13 8:52 2006 Quant Results File: 61110833.RES

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
 Title : 8330 Explosives
 Last Update : Tue Jul 25 09:45:54 2006
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
2) S 4-Nitroaniline	7.17	72309966	543.235 ng/mlm
Spiked Amount 300.000	Range 49 - 133	Recovery	= 181.08%#
Target Compounds			
1) T HMX	4.72	62429130	523.105 ng/ml
3) T 1,3,5-Trinitrobenzene	13.31	88060718	252.457 ng/ml
4) T Tatryl	19.36	135416449	508.198 ng/mlm
5) T 2,4,6-Trinitrotoluene	23.67	93496135	270.776 ng/mlm
6) T 4-Amino-2,6-Dinitrotoluene	25.56	59079601	248.571 ng/mlm
7) T 2,6-Dinitrotoluene	29.67	55804557	243.973 ng/ml
8) T 4-Nitrotoluene	41.30	96116507	484.795 ng/ml
9) M RDX	9.03	77854270	531.678 ng/ml
10) M 1,3-Dinitrobenzene	17.65	127390559	252.327 ng/mlm
11) M Nitrobenzene	21.23	101452052	276.728 ng/mlm
12) M 2-Amino-4,6-Dinitrotoluene	27.19	87694320	244.375 ng/mlm
13) M 2,4-Dinitrotoluene	30.86	126066770	251.143 ng/ml
14) M 2-Nitrotoluene	38.27	111781901	492.836 ng/ml
15) M 3-Nitrotoluene	44.82	120646886	498.057 ng/ml

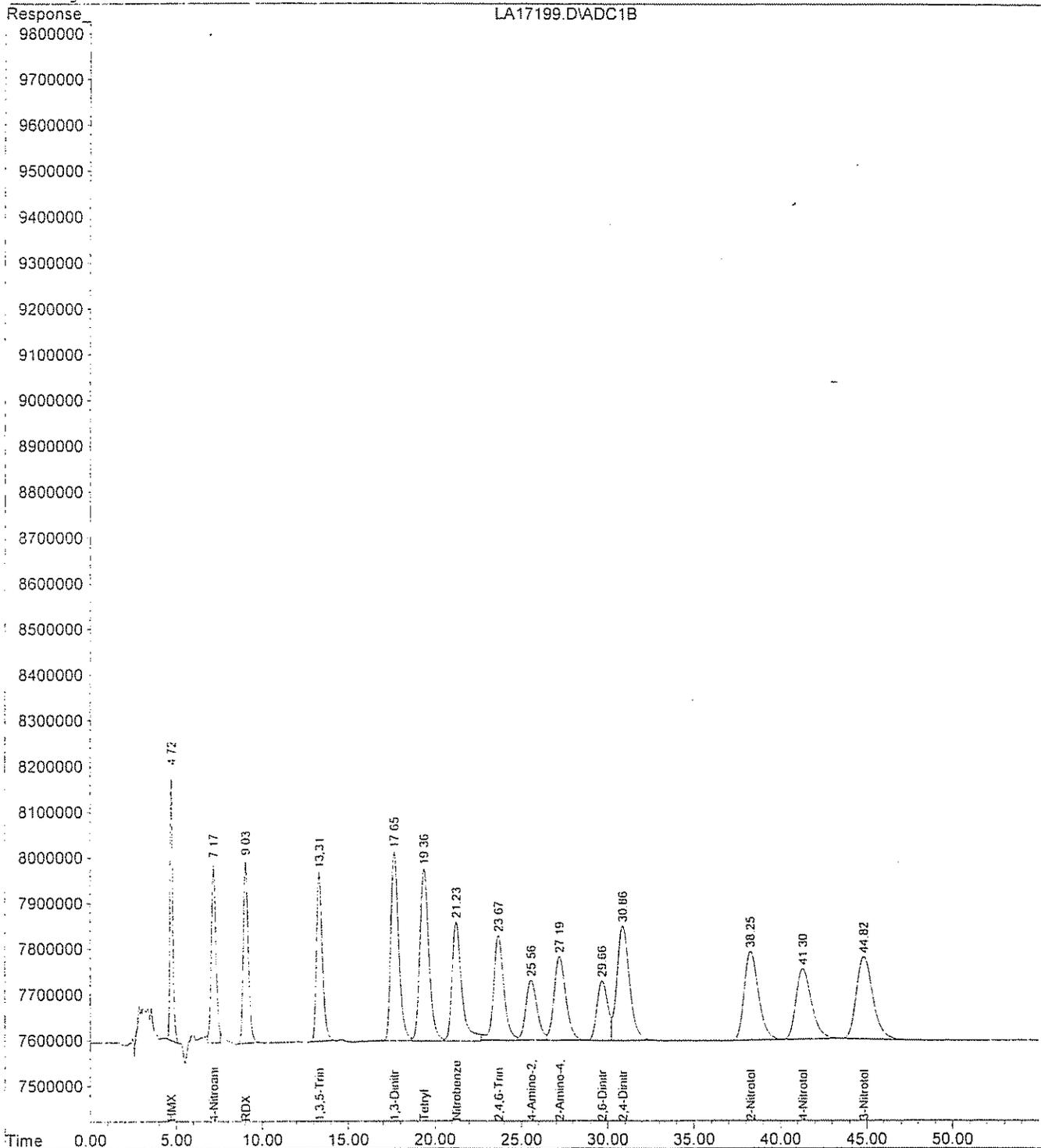
Quantitation Report

Data File : H:\LCDATA\LCA\111006\LA17199.D
Acq On : 10 Nov 2006 23:17
Sample : 8330MIX-ICV
Misc : C CAL
IntFile : events.e
Quant Time: Nov 13 8:52 2006

Vial: 9
Operator: SS
Inst : LCA
Multiplr: 1.00

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
Title : 8330 Explosives
Last Update : Tue Jul 25 09:45:54 2006
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
 Title : 8330 Explosives
 Last Update : Thu Mar 01 13:08:23 2007
 Response via : Initial Calibration

Continuing Calibration File: LA19123.D

Min. RRF : 0.000 Min. Rel. Area : 50%
 Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF		%Dev	Area%
1 T	HMX	119.343	136.717	E3	-14.6	114
2 S	4-Nitroaniline	134.966	128.130	E3	5.1	91
3 T	1,3,5-Trinitrobenzene	348.815	368.297	E3	-5.6	108
4 T	Tetryl	265.174	261.074	E3	1.5	100
5 T	2,4,6-Trinitrotoluene	345.289	357.365	E3	-3.5	108
6 T	4-Amino-2,6-Dinitrotoluene	237.677	238.639	E3	-0.4	104
7 T	2,6-Dinitrotoluene	228.732	230.429	E3	-0.7	105
8 T	4-Nitrotoluene	198.262	195.557	E3	1.4	105
9 M	RDX	146.410	167.673	E3	-14.5	111
10 M	1,3-Dinitrobenzene	504.863	531.319	E3	-5.2	108
11 M	Nitrobenzene	366.612	374.099	E3	-2.0	110
12 M	2-Amino-4,6-Dinitrotoluene	358.851	368.340	E3	-2.6	108
13 M	2,4-Dinitrotoluene	501.973	534.266	E3	-6.4	109
14 M	2-Nitrotoluene	226.814	233.700	E3	-3.0	107
15 M	3-Nitrotoluene	242.235	247.229	E3	-2.1	104

Data File : H:\LCDATA\LCA\022307\LA19123.D Vial: 12
 Acq On : 23 Feb 2007 20:33 Operator: SS
 Sample : 8330MIX Inst : LCA
 Misc : C CAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Feb 24 12:37 2007 Quant Results File: 61110833.RES

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
 Title : 8330 Explosives
 Last Update : Wed Feb 21 09:06:01 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
2) S 4-Nitroaniline	7.31	64064836	474.673 ng/ml
Spiked Amount 300.000	Range 49 - 133	Recovery	= 158.22%#
Target Compounds			
1) T HMX	4.78	68358675	572.790 ng/mlm
3) T 1,3,5-Trinitrobenzene	13.64	92074217	263.963 ng/ml
4) T Tetryl	20.19	130537015	492.269 ng/ml
5) T 2,4,6-Trinitrotoluene	24.53	89341369	258.744 ng/ml
6) T 4-Amino-2,6-Dinitrotoluene	26.65	59659771	251.012 ng/ml
7) T 2,6-Dinitrotoluene	30.88	57607127	251.854 ng/ml
8) T 4-Nitrotoluene	43.03	97778615	493.178 ng/ml
9) M RDX	9.24	83836583	572.614 ng/ml
10) M 1,3-Dinitrobenzene	18.11	132829736	263.101 ng/ml
11) M Nitrobenzene	21.86	93524822	255.105 ng/ml
12) M 2-Amino-4,6-Dinitrotoluene	28.28	92085010	256.611 ng/ml
13) M 2,4-Dinitrotoluene	32.04	133566599	266.083 ng/ml
14) M 2-Nitrotoluene	39.89	116849956	515.180 ng/ml
15) M 3-Nitrotoluene	46.74	123614548	510.308 ng/ml

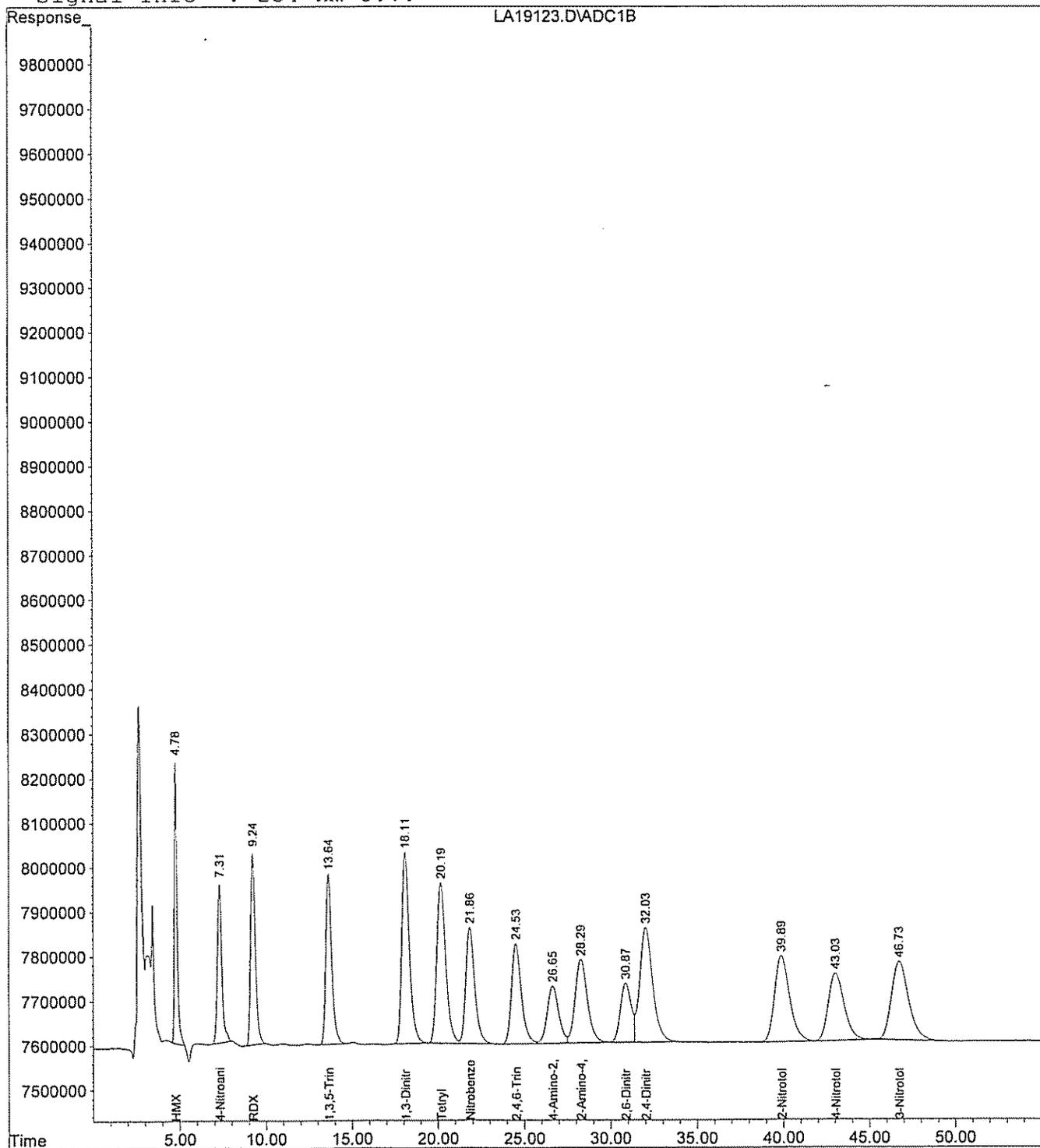
Quantitation Report

Data File : H:\LCDATA\LCA\022307\LA19123.D
Acq On : 23 Feb 2007 20:33
Sample : 8330MIX
Misc : C CAL
IntFile : events.e
Quant Time: Feb 24 12:37 2007

Vial: 12
Operator: SS
Inst : LCA
Multiplr: 1.00

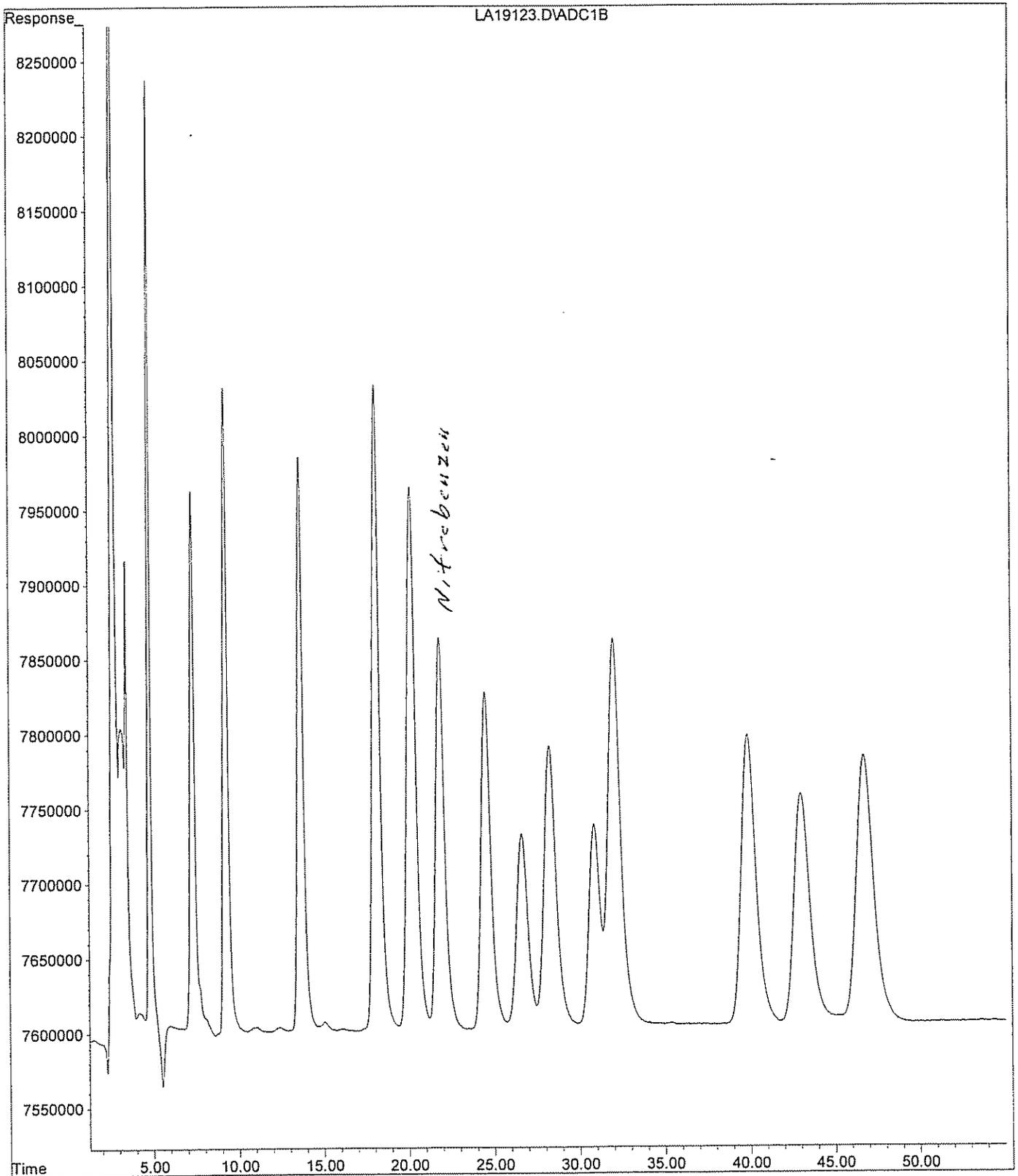
Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
Title : 8330 Explosives
Last Update : Wed Feb 21 09:06:01 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



File : H:\LCDATA\LCA\022307\LA19123.D
Operator : SS
Acquired : 23 Feb 2007 20:33 using AcqMethod 8330MIX.M
Instrument : LCA
Sample Name: 8330MIX
Misc Info : C CAL
Vial Number: 12

Primary



Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
 Title : 8330 Explosives
 Last Update : Thu Mar 01 13:08:40 2007
 Response via : Initial Calibration

Continuing Calibration File: LA19136.D

Min. RRF : 0.000 Min. Rel. Area : 50%
 Max. RRF Dev : 15% Max. Rel. Area : 150%

Compound		AvgRF	CCRF		%Dev	Area%
1 T	HMX	119.343	130.698	E3	-9.5	109
2 S	4-Nitroaniline	134.966	129.598	E3	4.0	92
3 T	1,3,5-Trinitrobenzene	348.815	368.712	E3	-5.7	108
4 T	Tetryl	265.174	260.681	E3	1.7	100
5 T	2,4,6-Trinitrotoluene	345.289	354.368	E3	-2.6	107
6 T	4-Amino-2,6-Dinitrotoluene	237.677	235.105	E3	1.1	103
7 T	2,6-Dinitrotoluene	228.732	225.623	E3	1.4	103
8 T	4-Nitrotoluene	198.262	191.248	E3	3.5	102
9 M	RDX	146.410	163.657	E3	-11.8	108
10 M	1,3-Dinitrobenzene	504.863	532.184	E3	-5.4	108
11 M	Nitrobenzene	366.612	367.443	E3	-0.2	108
12 M	2-Amino-4,6-Dinitrotoluene	358.851	364.183	E3	-1.5	106
13 M	2,4-Dinitrotoluene	501.973	529.901	E3	-5.6	108
14 M	2-Nitrotoluene	226.814	226.480	E3	0.1	104
15 M	3-Nitrotoluene	242.235	244.129	E3	-0.8	103

Data File : H:\LCDATA\LCA\022307\LA19136.D Vial: 25
 Acq On : 24 Feb 2007 9:26 Operator: SS
 Sample : 8330MIX Inst : LCA
 Misc : CCAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Feb 26 7:46 2007 Quant Results File: 61110833.RES

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
 Title : 8330 Explosives
 Last Update : Wed Feb 21 09:06:01 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
2) S 4-Nitroaniline	7.31	64799162	480.113 ng/ml
Spiked Amount 300.000	Range 49 - 133	Recovery	= 160.04%#
Target Compounds			
1) T HMX	4.79	65349113	547.572 ng/mlm
3) T 1,3,5-Trinitrobenzene	13.66	92177956	264.260 ng/ml
4) T Tetryl	20.28	130340551	491.528 ng/ml
5) T 2,4,6-Trinitrotoluene	24.61	88591899	256.573 ng/ml
6) T 4-Amino-2,6-Dinitrotoluene	26.77	58776181	247.295 ng/ml
7) T 2,6-Dinitrotoluene	30.95	56405832	246.602 ng/ml
8) T 4-Nitrotoluene	43.13	95623865	482.310 ng/ml
9) M RDX	9.25	81828455	558.899 ng/ml
10) M 1,3-Dinitrobenzene	18.16	133045946	263.529 ng/ml
11) M Nitrobenzene	21.93	91860799	250.567 ng/ml
12) M 2-Amino-4,6-Dinitrotoluene	28.40	91045659	253.714 ng/ml
13) M 2,4-Dinitrotoluene	32.11	132475322	263.909 ng/ml
14) M 2-Nitrotoluene	39.98	113240149	499.265 ng/ml
15) M 3-Nitrotoluene	46.85	122064557	503.909 ng/ml

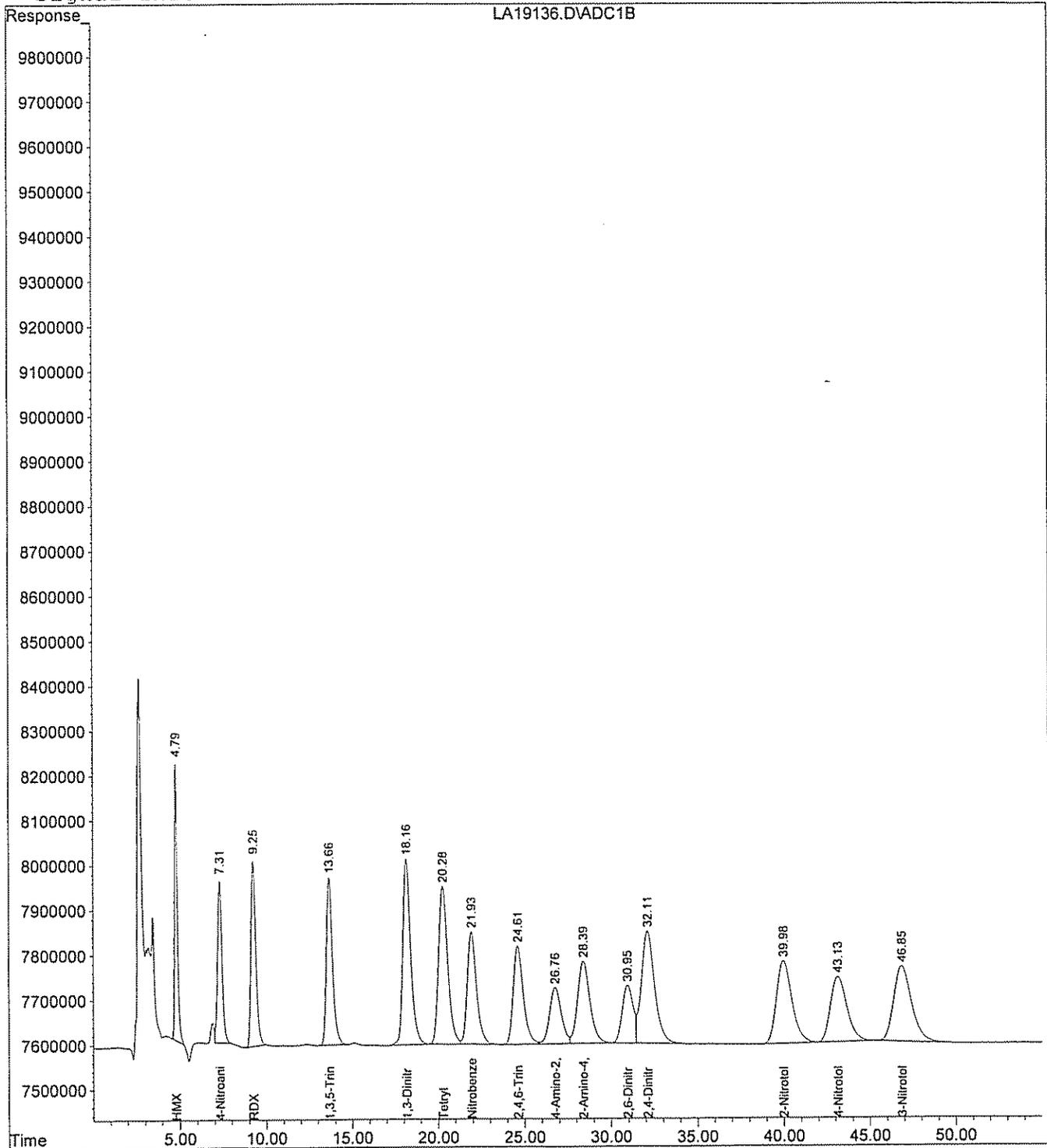
Quantitation Report

Data File : H:\LCDATA\LCA\022307\LA19136.D
Acq On : 24 Feb 2007 9:26
Sample : 8330MIX
Misc : CCAL
IntFile : events.e
Quant Time: Feb 26 7:46 2007

Vial: 25
Operator: SS
Inst : LCA
Multiplr: 1.00

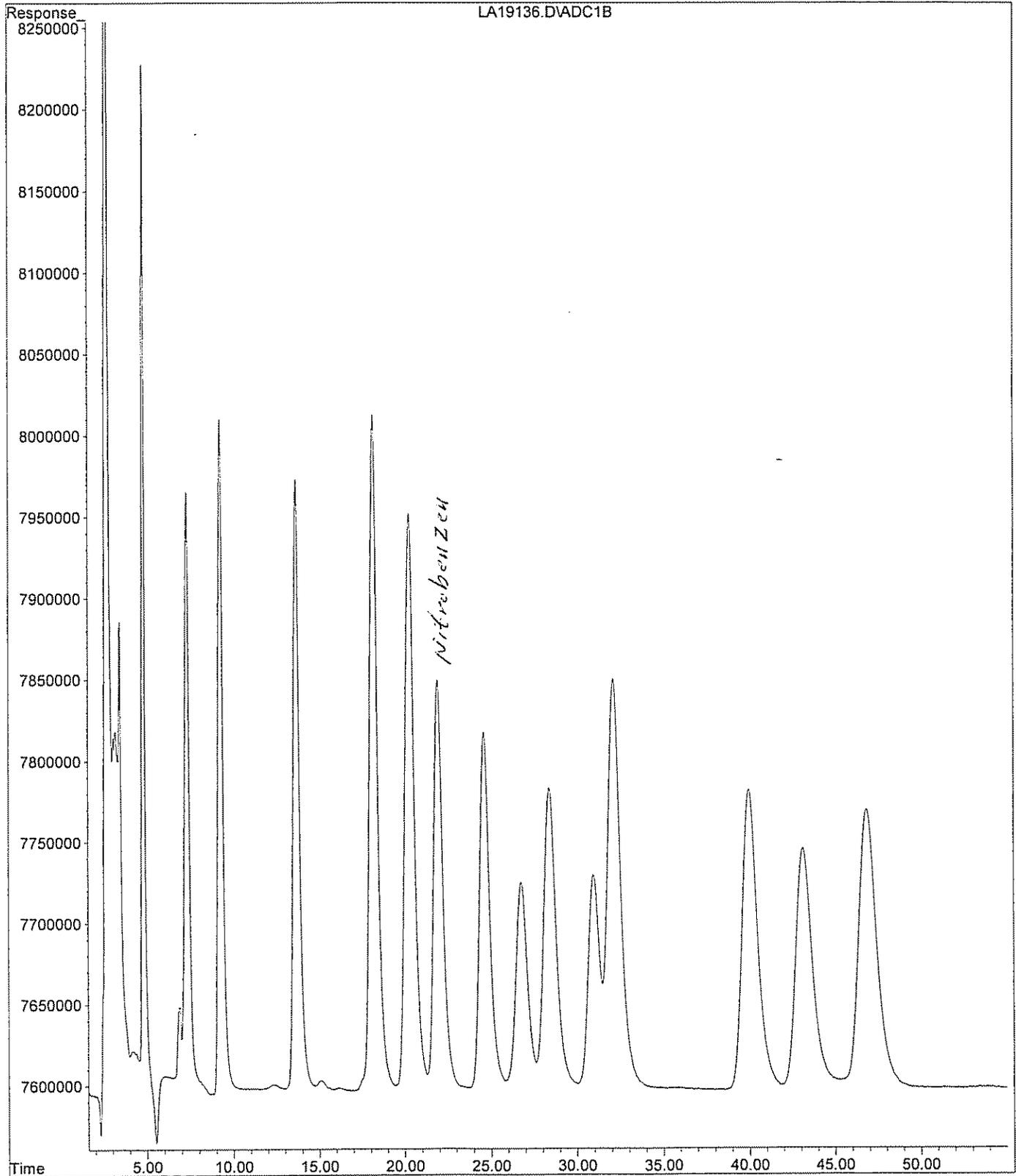
Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
Title : 8330 Explosives
Last Update : Wed Feb 21 09:06:01 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



File : H:\LCDATA\LCA\022307\LA19136.D
Operator : SS
Acquired : 24 Feb 2007 9:26 using AcqMethod 8330MIX.M
Instrument : LCA
Sample Name: 8330MIX
Misc Info : CCAL
Vial Number: 25

primary



Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
 Title : 8330 Explosives
 Last Update : Thu Mar 01 13:08:58 2007
 Response via : Initial Calibration

Continuing Calibration File: LA19149.D

Min. RRF : 0.000 Min. Rel. Area : 50%
 Max. RRF Dev : 15% Max. Rel. Area : 150%

Compound		AvgRF	CCRF		%Dev	Area%
1	T HMX	119.343	134.586	E3	-12.8	112
2	S 4-Nitroaniline	134.966	140.841	E3	-4.4	100
3	T 1,3,5-Trinitrobenzene	348.815	379.709	E3	-8.9	111
4	T Tetryl	265.174	272.950	E3	-2.9	104
5	T 2,4,6-Trinitrotoluene	345.289	367.711	E3	-6.5	111
6	T 4-Amino-2,6-Dinitrotoluene	237.677	248.199	E3	-4.4	109
7	T 2,6-Dinitrotoluene	228.732	238.209	E3	-4.1	108
8	T 4-Nitrotoluene	198.262	190.859	E3	3.7	102
9	M RDX	146.410	167.381	E3	-14.3	110
10	M 1,3-Dinitrobenzene	504.863	547.645	E3	-8.5	112
11	M Nitrobenzene	366.612	369.862	E3	-0.9	109
12	M 2-Amino-4,6-Dinitrotoluene	358.851	386.053	E3	-7.6	113
13	M 2,4-Dinitrotoluene	501.973	550.246	E3	-9.6	113
14	M 2-Nitrotoluene	226.814	230.373	E3	-1.6	106
15	M 3-Nitrotoluene	242.235	240.254	E3	0.8	101

Data File : H:\LCDATA\LCA\022307\LA19149.D Vial: 38
 Acq On : 24 Feb 2007 23:52 Operator: SS
 Sample : 8330MIX Inst : LCA
 Misc : CCAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Feb 26 7:49 2007 Quant Results File: 61110833.RES

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
 Title : 8330 Explosives
 Last Update : Wed Feb 21 09:06:01 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
2) S 4-Nitroaniline	7.13	70420289	521.762 ng/ml
Spiked Amount 300.000	Range 49 - 133	Recovery	= 173.92%#
Target Compounds			
1) T HMX	4.70	67293165	563.862 ng/mlm
3) T 1,3,5-Trinitrobenzene	13.30	94927311	272.142 ng/ml
4) T Tetryl	19.47	136474954	514.662 ng/ml
5) T 2,4,6-Trinitrotoluene	23.71	91927647	266.234 ng/ml
6) T 4-Amino-2,6-Dinitrotoluene	25.62	62049706	261.068 ng/ml
7) T 2,6-Dinitrotoluene	29.69	59552129	260.357 ng/ml
8) T 4-Nitrotoluene	41.33	95429289	481.328 ng/ml
9) M RDX	9.00	83690642	571.618 ng/ml
10) M 1,3-Dinitrobenzene	17.63	136911313	271.185 ng/ml
11) M Nitrobenzene	21.21	92465543	252.216 ng/ml
12) M 2-Amino-4,6-Dinitrotoluene	27.22	96513178	268.951 ng/ml
13) M 2,4-Dinitrotoluene	30.85	137561600	274.042 ng/ml
14) M 2-Nitrotoluene	38.31	115186346	507.846 ng/ml
15) M 3-Nitrotoluene	44.88	120127037	495.911 ng/ml

Quantitation Report

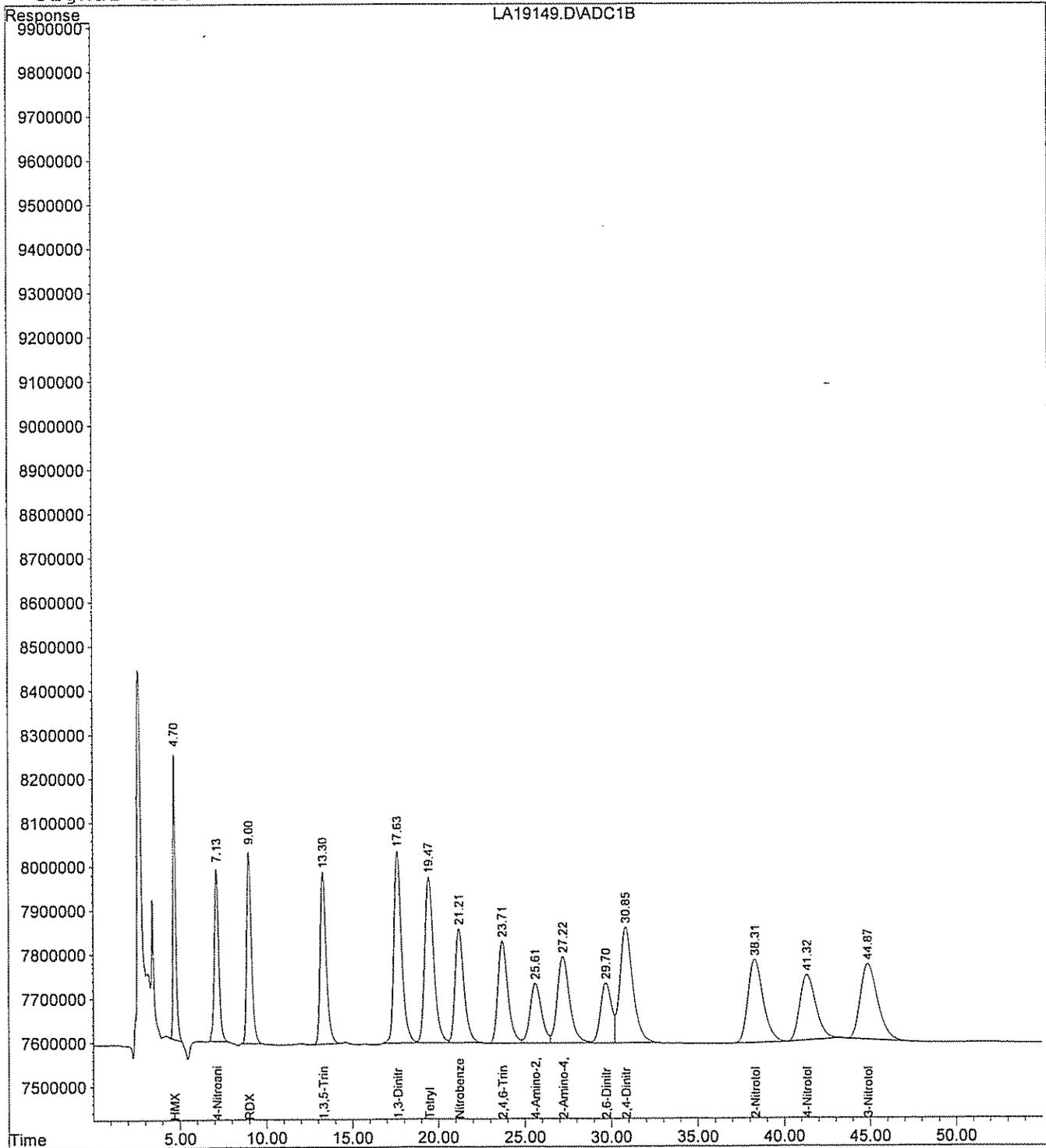
Data File : H:\LCDATA\LCA\022307\LA19149.D
Acq On : 24 Feb 2007 23:52
Sample : 8330MIX
Misc : CCAL
IntFile : events.e

Vial: 38
Operator: SS
Inst : LCA
Multiplr: 1.00

Quant Time: Feb 26 7:49 2007 Quant Results File: 61110833.RES

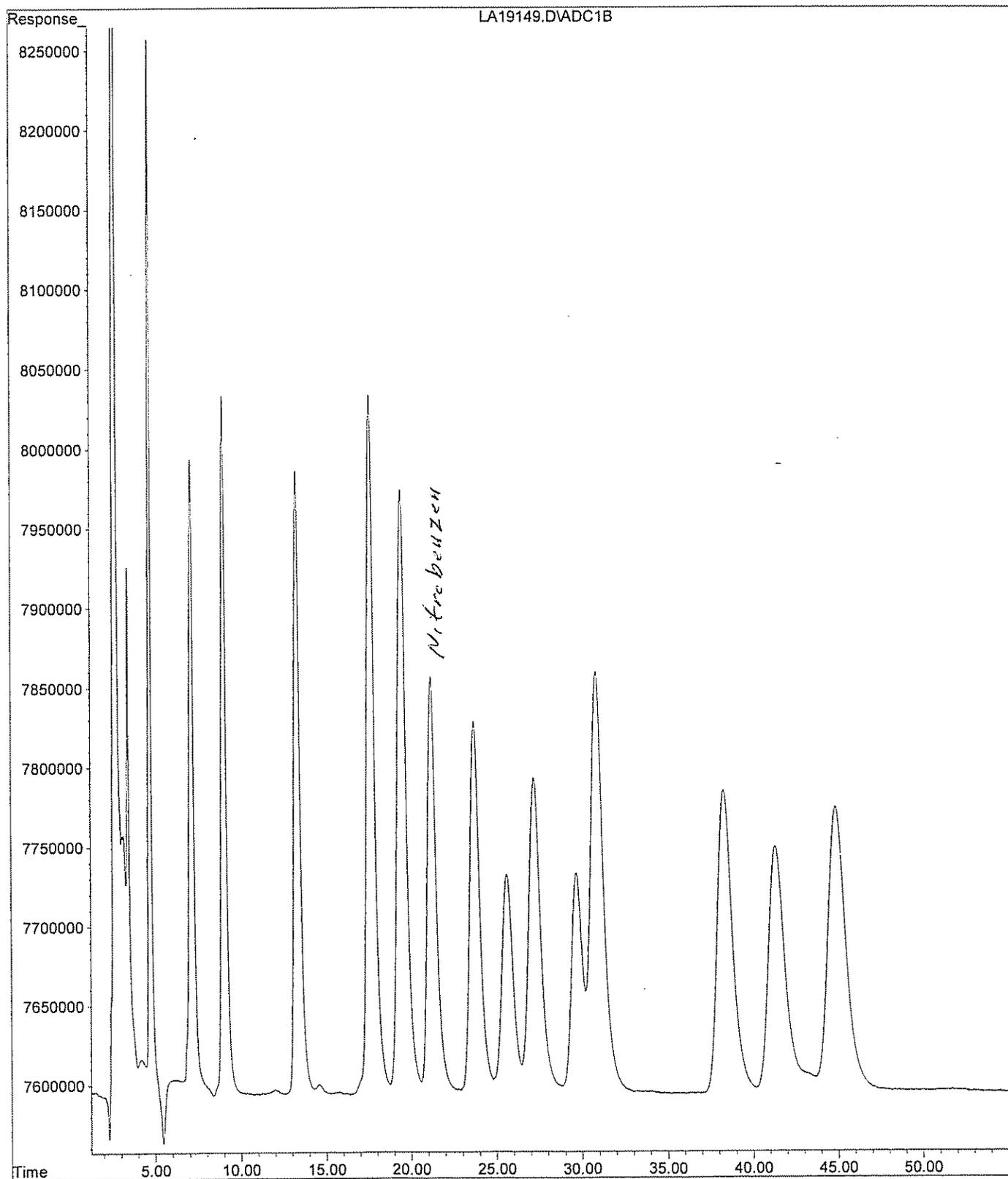
Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
Title : 8330 Explosives
Last Update : Wed Feb 21 09:06:01 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



File : H:\LCDATA\LCA\022307\LA19149.D
Operator : SS
Acquired : 24 Feb 2007 23:52 using AcqMethod 8330MIX.M
Instrument : LCA
Sample Name: 8330MIX
Misc Info : CCAL
Vial Number: 38

primary



Response Factor Report LCA

Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT IC PRIMARY
 Last Update : Tue Nov 14 14:37:38 2006

Calibration Files

LEV1 =LA17208.D LEV2 =LA17209.D LEV3 =LA17210.D
 LEV4 =LA17211.D LEV5 =LA17212.D

Compound		LEV1	LEV2	LEV3	LEV4	LEV5	Avg		%RSD
1) S	4-NITROANILINE	1.263	1.104	1.263	1.363	1.302	1.259	E5	7.60
2) M	NITROGLYCERINE	1.944	2.046	1.996	1.986	2.135	2.022	E6	3.62

Data File : H:\LCDATA\LCA\111406\LA17207.D Vial: 1
 Acq On : 14 Nov 2006 8:27 Operator: SS
 Sample : 8330NG-BLK Inst : LCA
 Misc : C CAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Nov 14 14:33 2006 Quant Results File: 61114NG.RES

Quant Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT IC PRIMARY
 Last Update : Mon Aug 08 15:59:05 2005
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
1) S 4-NITROANILINE	0.00	0	N.D. PPS
Spiked Amount 300.000		Recovery =	0.00%
Target Compounds			
2) M NITROGLYCERINE	0.00	0	N.D. PPM

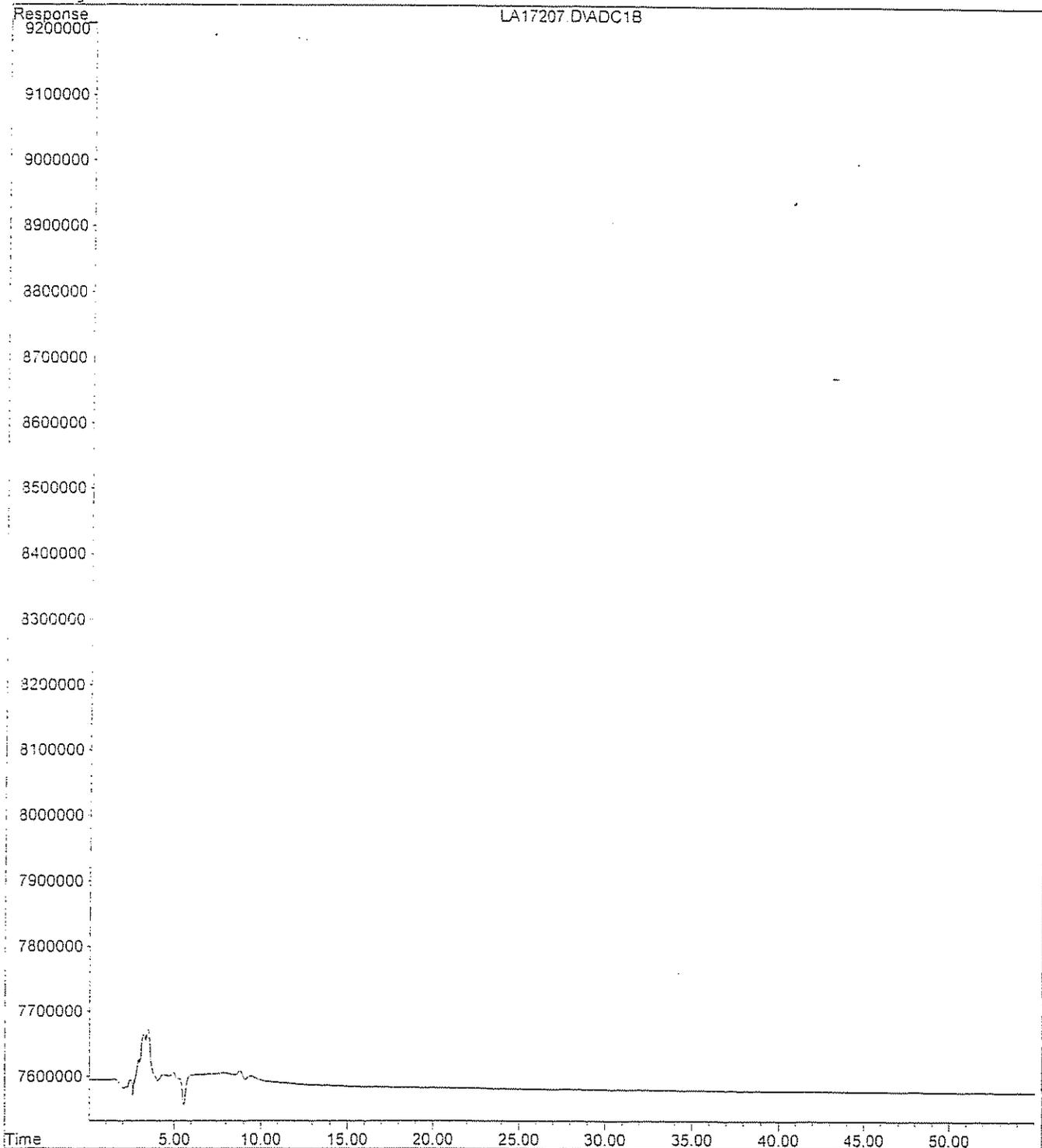
Quantitation Report

Data File : H:\LCDATA\LCA\111406\LA17207.D
Acq On : 14 Nov 2006 8:27
Sample : 8330NG-BLK
Misc : C CAL
IntFile : events.e
Quant Time: Nov 14 14:33 2006 Quant Results File: 61114NG.RES

Vial: 1
Operator: SS
Inst : LCA
Multiplr: 1.00

Quant Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
Title : NITROGLYCERINE- 5 POINT IC PRIMARY
Last Update : Mon Aug 08 15:58:05 2005
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C9
Signal Info : 254 nm U.V.



Data File : H:\LCDATA\LCA\111406\LA17208.D Vial: 2
 Acq On : 14 Nov 2006 9:26 Operator: SS
 Sample : 8330NG-LEV1 Inst : LCA
 Misc : C CAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Nov 14 14:34 2006 Quant Results File: 61114NG.RES

Quant Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT IC PRIMARY
 Last Update : Mon Aug 08 15:58:05 2005
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

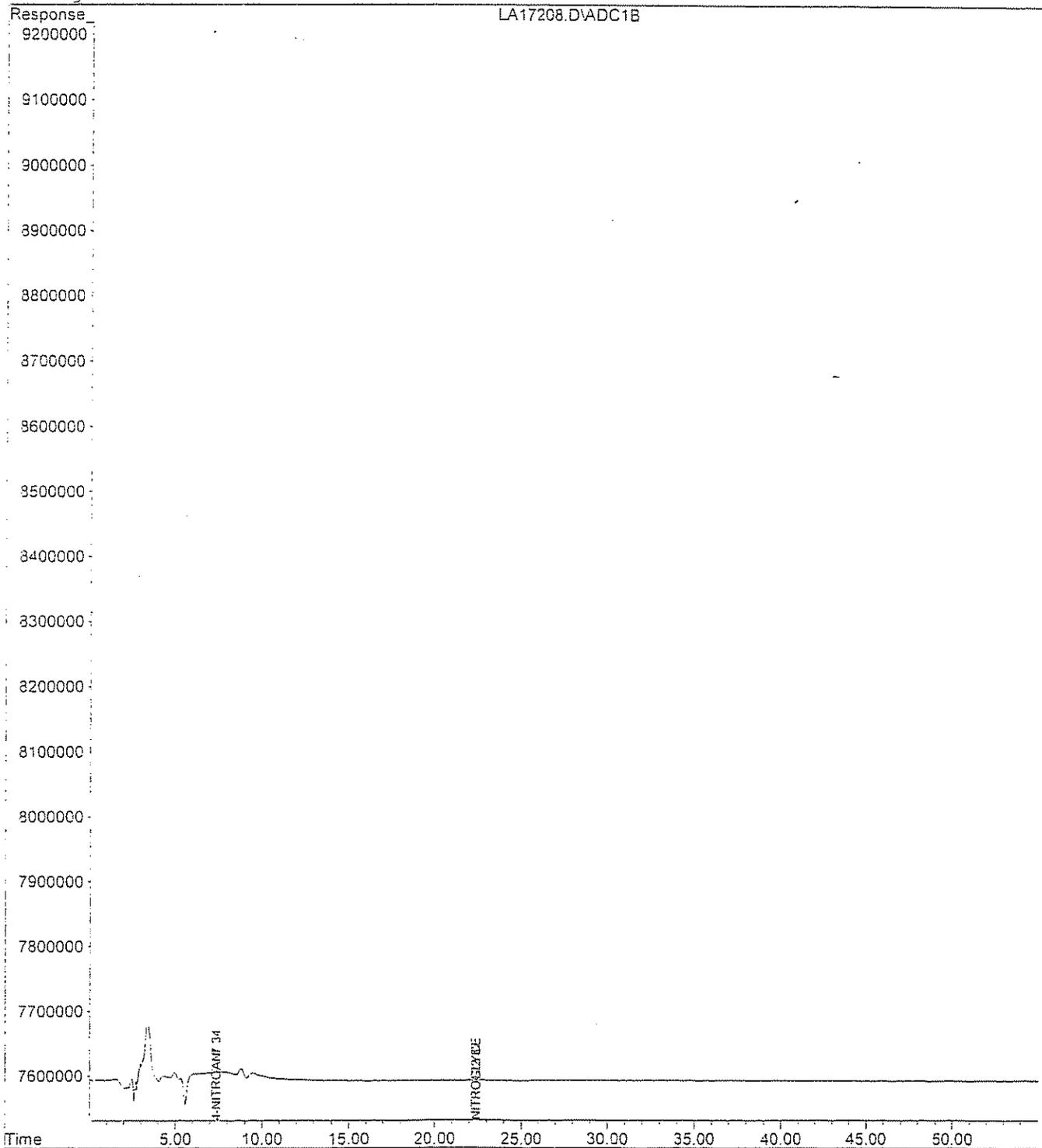
Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
1) S 4-NITROANILINE	7.34	3157625	25.376	PPB m
Spiked Amount 300.000		Recovery =	8.463	
Target Compounds				
2) M NITROGLYCERINE	22.37	1944114	1.084	PPM m

Quantitation Report

Data File : H:\LCDATA\LCA\111406\LA17208.D Vial: 2
Acq On : 14 Nov 2006 9:26 Operator: SS
Sample : 8330NG-LEV1 Inst : LCA
Misc : C CAL Multipir: 1.00
IntFile : events.e
Quant Time: Nov 14 14:34 2006 Quant Results File: 61114NG.RES

Quant Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
Title : NITROGLYCERINE- 5 POINT IC PRIMARY
Last Update : Mon Aug 08 15:58:05 2005
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



Data File : H:\LCDATA\LCA\111406\LA17209.D Vial: 3
 Acq On : 14 Nov 2006 10:26 Operator: SS
 Sample : 8330NG-LEV2 Inst : LCA
 Misc : C CAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Nov 14 14:34 2006 Quant Results File: 61114NG.RES

Quant Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT IC PRIMARY
 Last Update : Mon Aug 08 15:58:05 2005
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
1) S 4-NITROANILINE	7.35	13802355	114.337 PPB
Spiked Amount 300.000		Recovery =	38.11%
Target Compounds			
2) M NITROGLYCERINE	22.32	10232336	5.490 PPM m

Quantitation Report

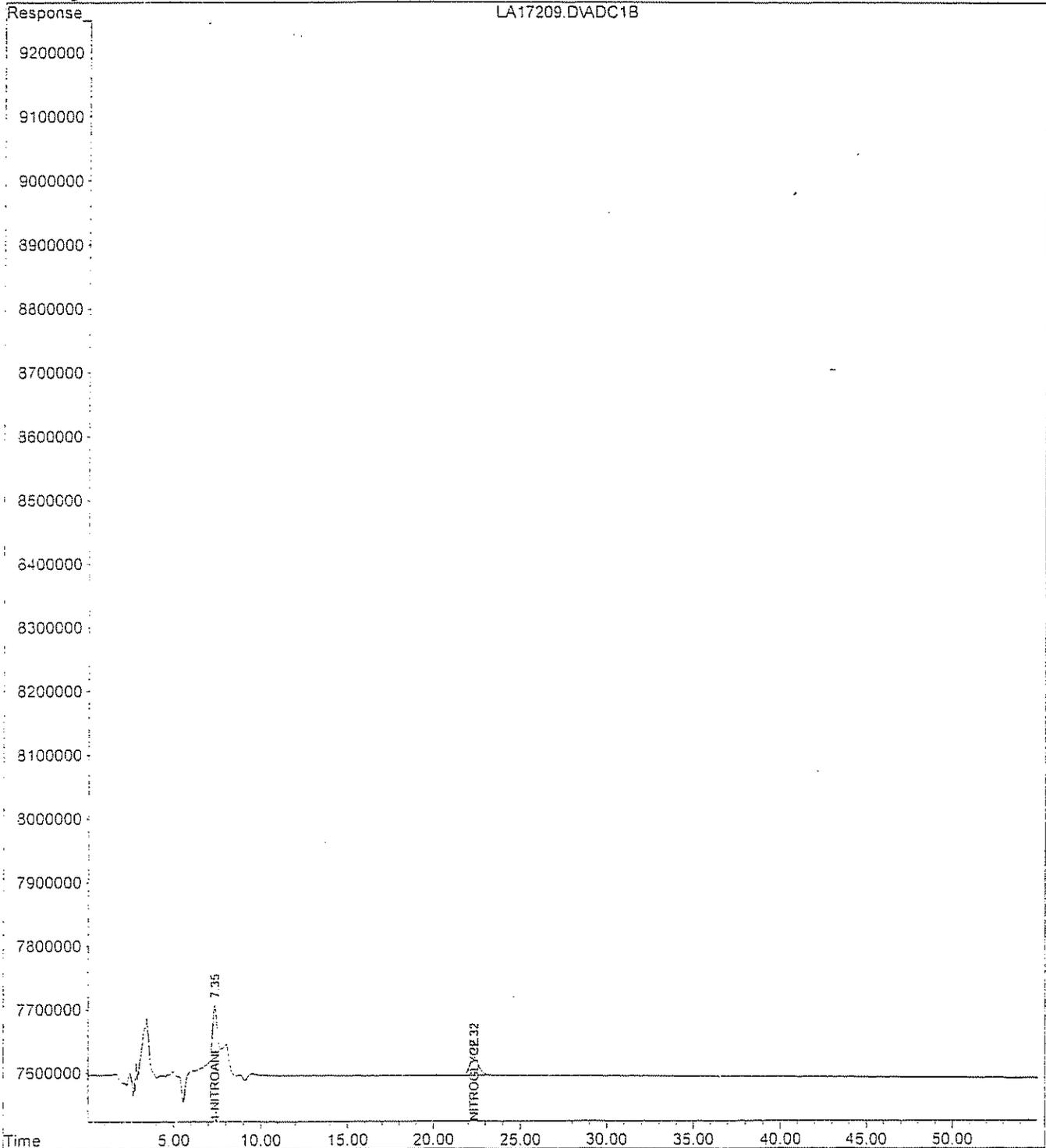
Data File : H:\LCDATA\LCA\111406\LA17209.D
Acq On : 14 Nov 2006 10:25
Sample : 8330NG-LEV2
Misc : C CAL
IntFile : events.e
Quant Time: Nov 14 14:34 2006

Vial: 3
Operator: SS
Inst : LCA
Multiplr: 1.00

Quant Results File: 61114NG.RES

Quant Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
Title : NITROGLYCERINE- 5 POINT IC PRIMARY
Last Update : Mon Aug 08 15:58:05 2005
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



Data File : H:\LCDATA\LCA\111406\LA17210.D Vial: 4
 Acq On : 14 Nov 2006 11:25 Operator: SS
 Sample : 8330NG-LEV3 Inst : LCA
 Misc : C CAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Nov 14 14:33 2006 Quant Results File: 61114NG.RES

Quant Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT IC PRIMARY
 Last Update : Mon Aug 08 15:58:05 2005
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
1) S 4-NITROANILINE	7.34	31565118	257.490	PPB m
Spiked Amount 300.000		Recovery =	85.83%	
Target Compounds				
2) M NITROGLYCERINE	22.35	19964608	11.342	PPM m

Quantitation Report

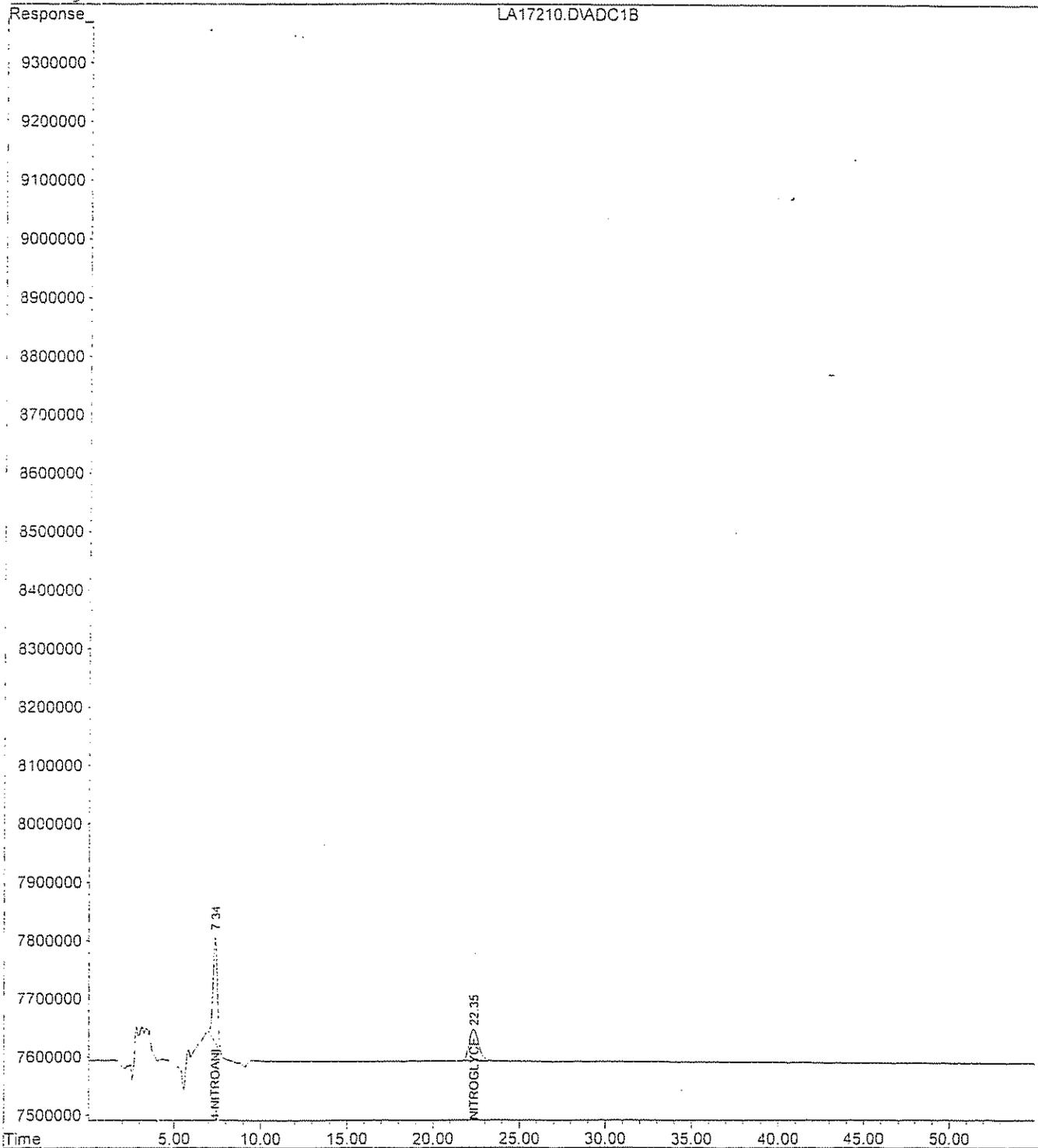
Data File : H:\LCDATA\LCA\111406\LA17210.D
Acq On : 14 Nov 2006 11:25
Sample : 3330NG-LEV3
Misc : C CAL
IntFile : events.e
Quant Time: Nov 14 14:33 2006

Vial: 4
Operator: SS
Inst : LCA
Multiplr: 1.00

Quant Results File: 61114NG.RES

Quant Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
Title : NITROGLYCERINE- 5 POINT IC PRIMARY
Last Update : Mon Aug 08 15:58:05 2005
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



Data File : H:\LCDATA\LCA\111406\LA17211.D Vial: 5
 Acq On : 14 Nov 2006 12:25 Operator: SS
 Sample : 8330NG-LEV4 Inst : LCA
 Misc : C CAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Nov 14 14:35 2006 Quant Results File: 61114NG.RES

Quant Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT IC PRIMARY
 Last Update : Mon Aug 08 15:58:05 2005
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
1) S 4-NITROANILINE	7.35	68138207	579.017 PPB m
Spiked Amount 300.000		Recovery =	193.01%
Target Compounds			
2) M NITROGLYCERINE	22.30	39713999	20.703 PPM

Quantitation Report

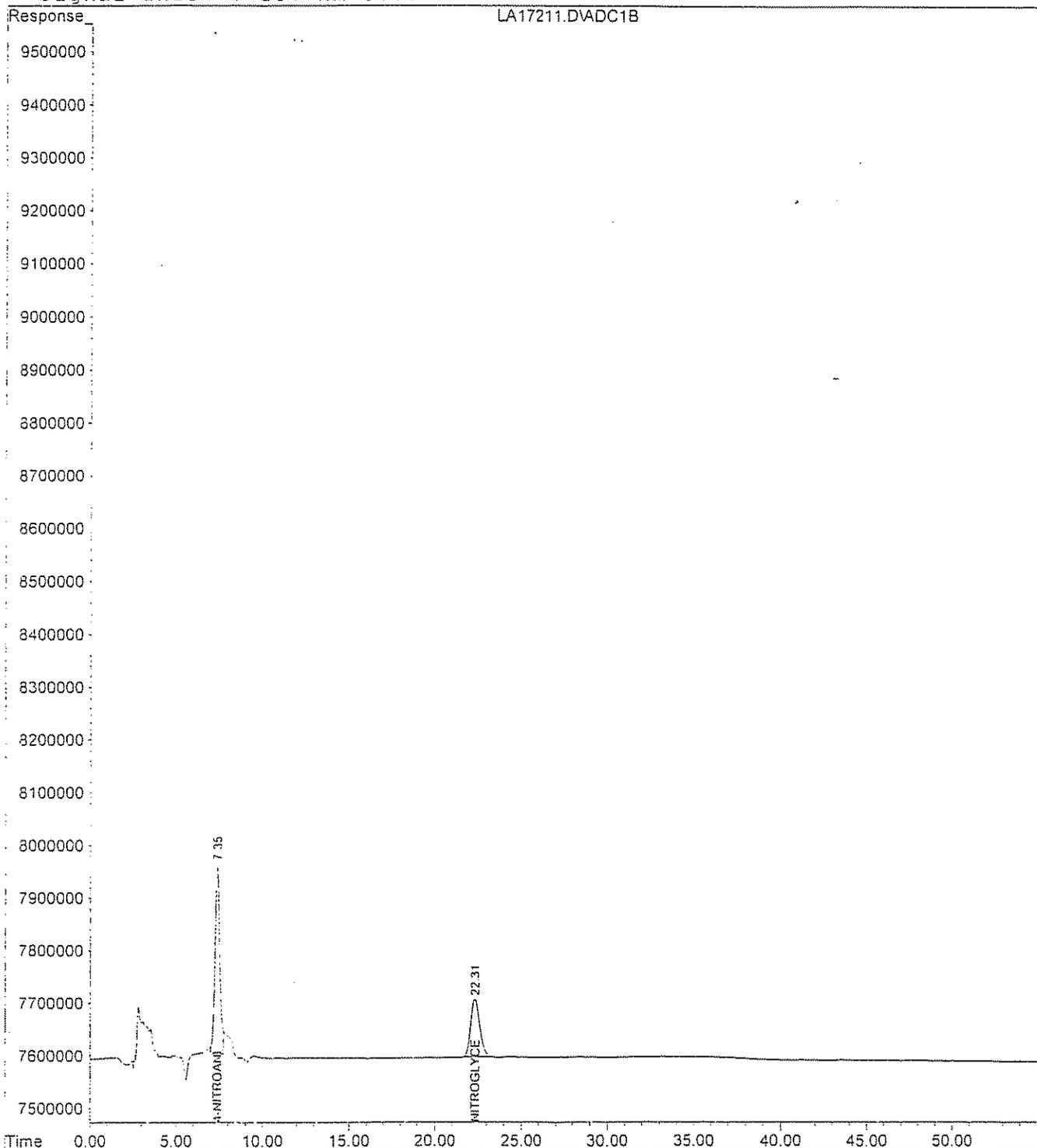
Data File : H:\LCDATA\LCA\111406\LA17211.D
Acq On : 14 Nov 2006 12:25
Sample : 8330NG-LEV4
Misc : C CAL
IntFile : events.e
Quant Time: Nov 14 14:35 2006

Vial: 5
Operator: SS
Inst : LCA
Multiplr: 1.00

Quant Results File: 61114NG.RES

Quant Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
Title : NITROGLYCERINE- 5 POINT IC PRIMARY
Last Update : Mon Aug 08 15:58:05 2005
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



Data File : H:\LCDATA\LCA\111406\LA17212.D Vial: 6
 Acq On : 14 Nov 2006 13:24 Operator: SS
 Sample : 8330NG-LEV5 Inst : LCA
 Misc : C CAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Nov 14 14:36 2006 Quant Results File: 61114NG.RES

Quant Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT IC PRIMARY
 Last Update : Mon Aug 08 15:58:05 2005
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

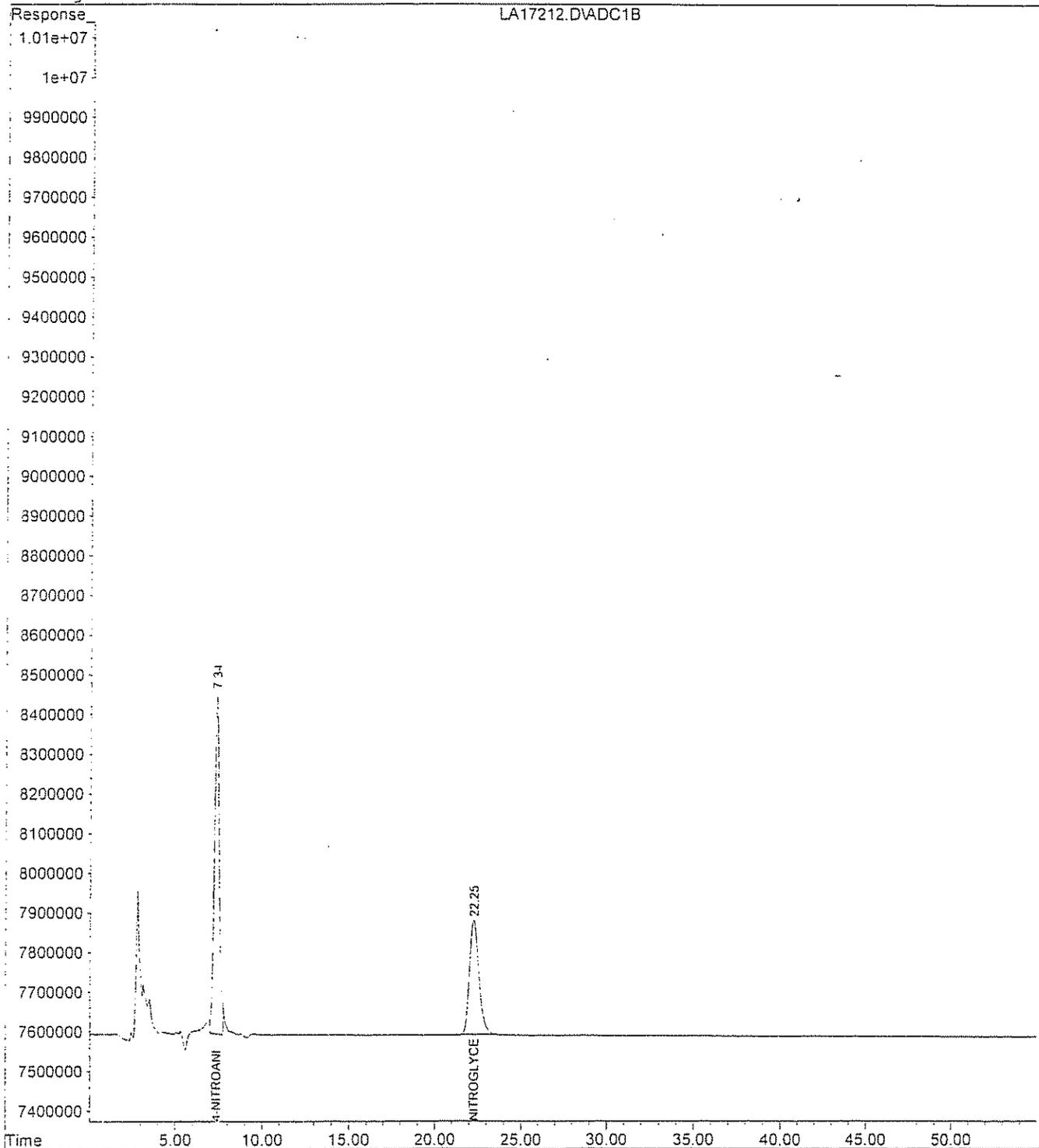
System Monitoring Compounds			
1) S 4-NITROANILINE	7.34	162772160	1328.043 PPB m
Spiked Amount 300.000		Recovery =	442.68%
Target Compounds			
2) M NITROGLYCERINE	22.25	106754197	54.018 PPM

Quantitation Report

Data File : H:\LCDATA\LCA\111406\LA17212.D Vial: 6
Acq On : 14 Nov 2006 13:24 Operator: SS
Sample : 8330NG-LEV5 Inst : LCA
Misc : C CAL Multiplr: 1.00
IntFile : events.e
Quant Time: Nov 14 14:36 2006 Quant Results File: 61114NG.RES

Quant Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
Title : NITROGLYCERINE- 5 POINT IC PRIMARY
Last Update : Mon Aug 08 15:58:05 2005
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



NITROGLYCERINE RETENTION TIME WINDOW ESTABLISHMENT

INTRUMENT TYPE: LCA
 COLUMN: C-8 ANALYST SS
 DATE: 11/14/06-11/16/06 DATE 11/16/06

COMPOUND	Retent Time 1	Retent Time 2	Retent Time 3	AVG	Stand Dev	3X Stnd Dev	Average Peak Width	R.T. Window
Nitroglycerine	22.240	22.310	22.190	22.247	0.060	0.181	0.310	0.346
4-Nitroaniline	7.320	7.310	7.300	7.310	0.010	0.030	0.233	0.137

Retention windows are the greater of 1/2 the average peak width,
 or +/- three times the retention time standard deviation.

Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT IC PRIMARY
 Last Update : Sun Mar 11 06:45:36 2007
 Response via : Initial Calibration

Continuing Calibration File: LA19423.D

Min. RRF : 0.000 Min. Rel. Area : 50%
 Max. RRF Dev : 15% Max. Rel. Area : 150%

Compound		AvgRF	CCRF	%Dev Area%	
1	S 4-NITROANILINE	125.896	107.298 E3	14.8	85
2	M NITROGLYCERINE	2.022	2.129 E6	-5.3	107

Data File : H:\LCDATA\LCA\111406\LA17213.D Vial: 7
 Acq On : 14 Nov 2006 14:24 Operator: SS
 Sample : 8330NG-ICV Inst : LCA
 Misc : C CAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Nov 14 15:16 2006 Quant Results File: 61114NG.RES

Quant Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT IC PRIMARY
 Last Update : Mon Aug 08 15:58:05 2005
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
1) S 4-NITROANILINE	7.34	35724303	283.761	PPB m
Spiked Amount 300.000		Recovery =	94.59%	
Target Compounds				
2) M NITROGLYCERINE	22.27	17701981	8.757	PPM m

Quantitation Report

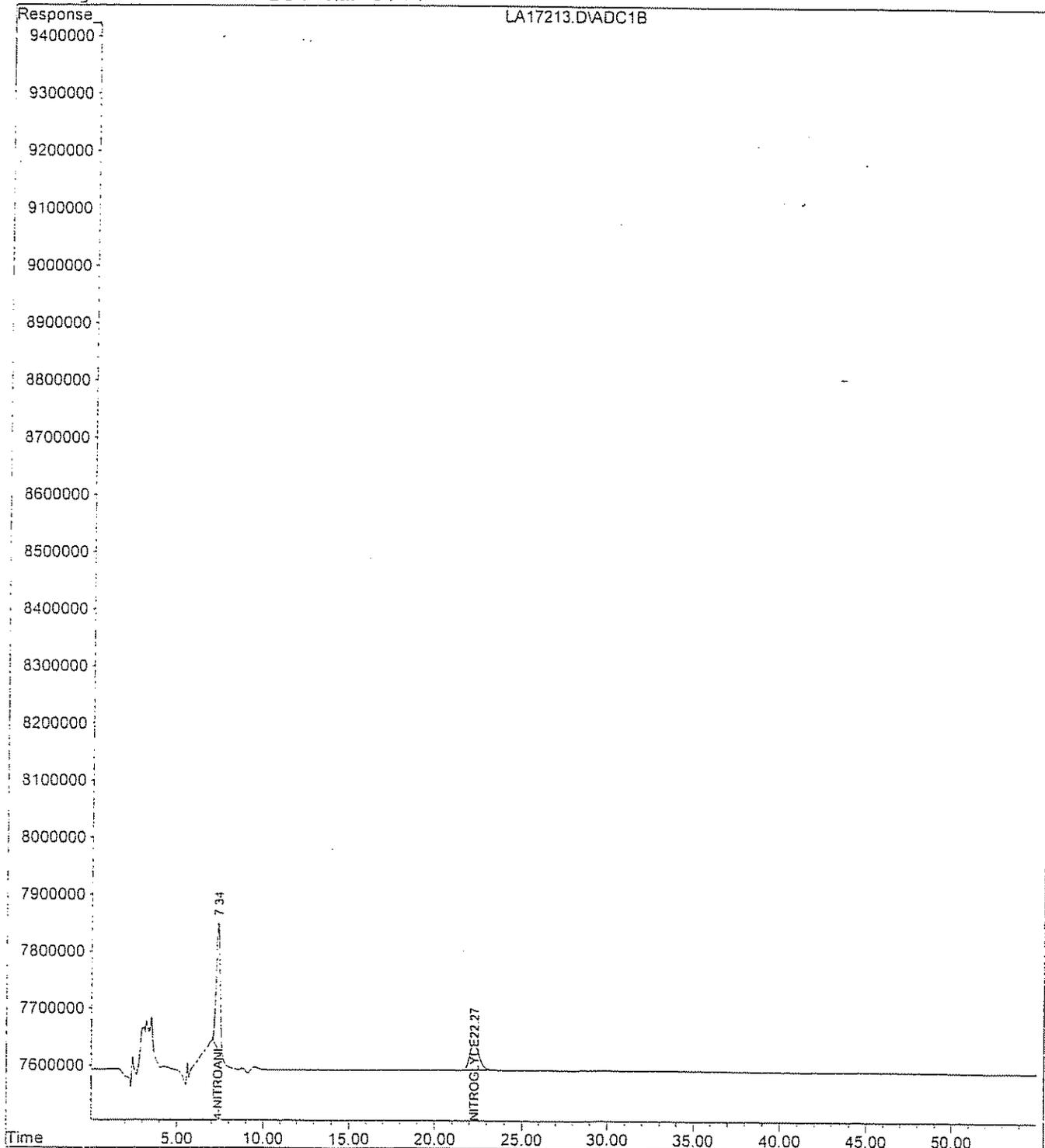
Data File : H:\LCDATA\LCA\111406\LA17213.D
Acq On : 14 Nov 2006 14:24
Sample : 8330NG-ICV
Misc : C CAL
IntFile : events.e
Quant Time: Nov 14 13:16 2006

Vial: 7
Operator: SS
Inst : LCA
Multiplr: 1.00

Quant Results File: 61114NG.RES

Quant Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
Title : NITROGLYCERINE- 5 POINT IC PRIMARY
Last Update : Mon Aug 08 15:58:05 2005
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



Continuing Calibration Report LCA

Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT IC PRIMARY
 Last Update : Thu Mar 01 13:09:25 2007
 Response via : Initial Calibration

Continuing Calibration File: LA19124.D

Min. RRF : 0.000 Min. Rel. Area : 50%
 Max. RRF Dev : 15% Max. Rel. Area : 150%

Compound		AvgRF	CCRF	%Dev Area%	
1	S 4-NITROANILINE	125.896	109.672 E3	12.9	87
2	M NITROGLYCERINE	2.022	1.943 E6	3.9	97

Data File : H:\LCDATA\LCA\022307\0223NG\LA19124.D Vial: 13
 Acq On : 23 Feb 2007 21:33 Operator: SS
 Sample : 8330NG Inst : LCA
 Misc : C CAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Feb 24 12:40 2007 Quant Results File: 61114NG.RES

Quant Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT IC PRIMARY
 Last Update : Mon Aug 08 15:58:05 2005
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

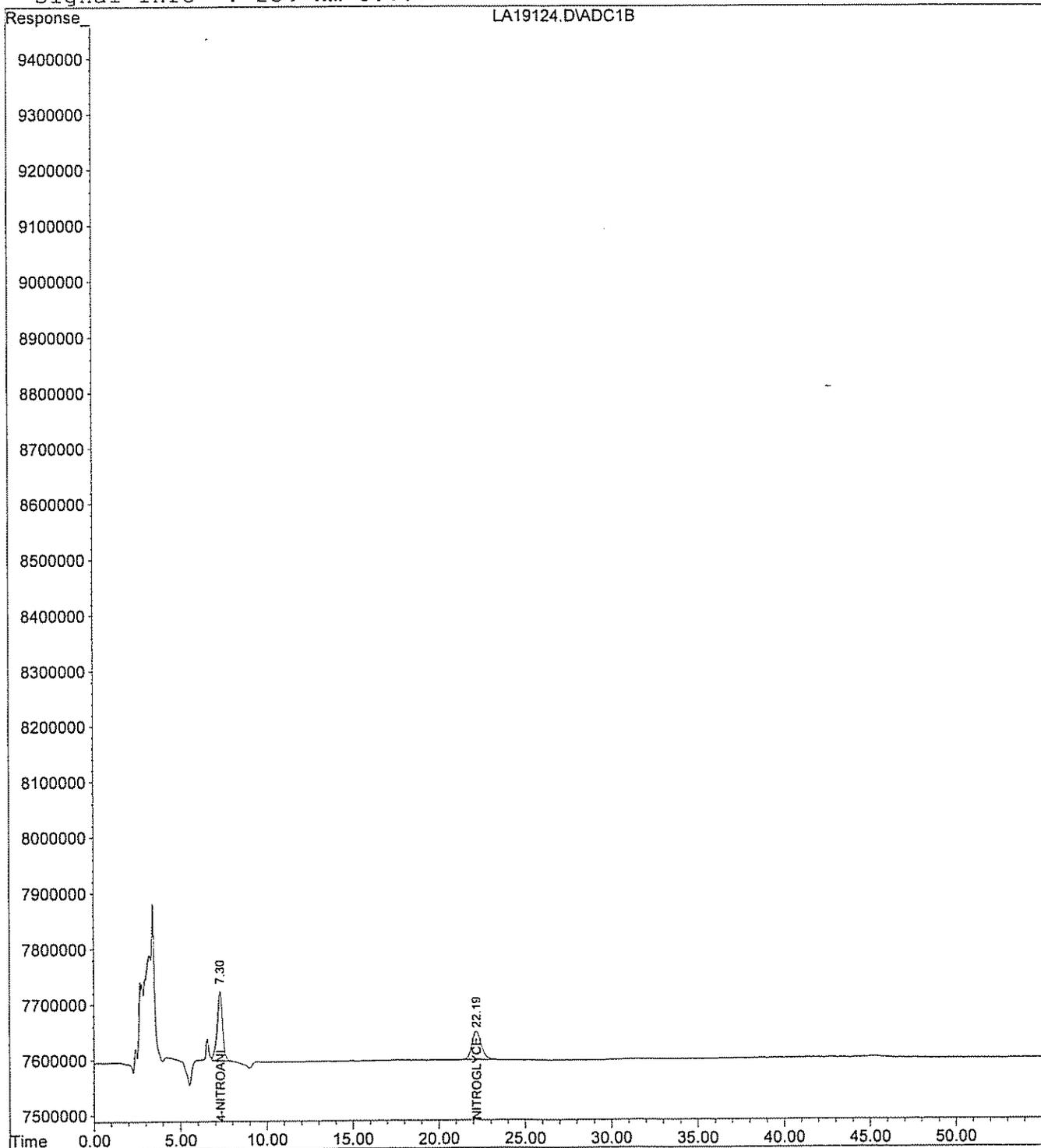
System Monitoring Compounds			
1) S 4-NITROANILINE	7.30	27418104	217.784 PPB m
Spiked Amount 300.000		Recovery =	72.59%
Target Compounds			
2) M NITROGLYCERINE	22.19	19432731	9.613 PPM m

Quantitation Report

Data File : H:\LCDATA\LCA\022307\0223NG\LA19124.D Vial: 13
Acq On : 23 Feb 2007 21:33 Operator: SS
Sample : 8330NG Inst : LCA
Misc : C CAL Multiplr: 1.00
IntFile : events.e
Quant Time: Feb 24 12:40 2007 Quant Results File: 61114NG.RES

Quant Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
Title : NITROGLYCERINE- 5 POINT IC PRIMARY
Last Update : Mon Aug 08 15:58:05 2005
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT IC PRIMARY
 Last Update : Thu Mar 01 13:09:39 2007
 Response via : Initial Calibration

Continuing Calibration File: LA19137.D

Min. RRF : 0.000 Min. Rel. Area : 50%
 Max. RRF Dev : 15% Max. Rel. Area : 150%

Compound		AvgRF	CCRF	%Dev Area%	
1 S	4-NITROANILINE	125.896	107.912 E3	14.3	85
2 M	NITROGLYCERINE	2.022	1.930 E6	4.5	97

Data File : H:\LCDATA\LCA\022307\0223NG\LA19137.D Vial: 26
 Acq On : 24 Feb 2007 10:26 Operator: SS
 Sample : 8330NG Inst : LCA
 Misc : CCAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Feb 24 12:48 2007 Quant Results File: 61114NG.RES

Quant Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT IC PRIMARY
 Last Update : Mon Aug 08 15:58:05 2005
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
1) S 4-NITROANILINE	7.31	26978010	214.289 PPB m
Spiked Amount 300.000		Recovery =	71.43%
Target Compounds			
2) M NITROGLYCERINE	22.21	19300959	9.548 PPM m

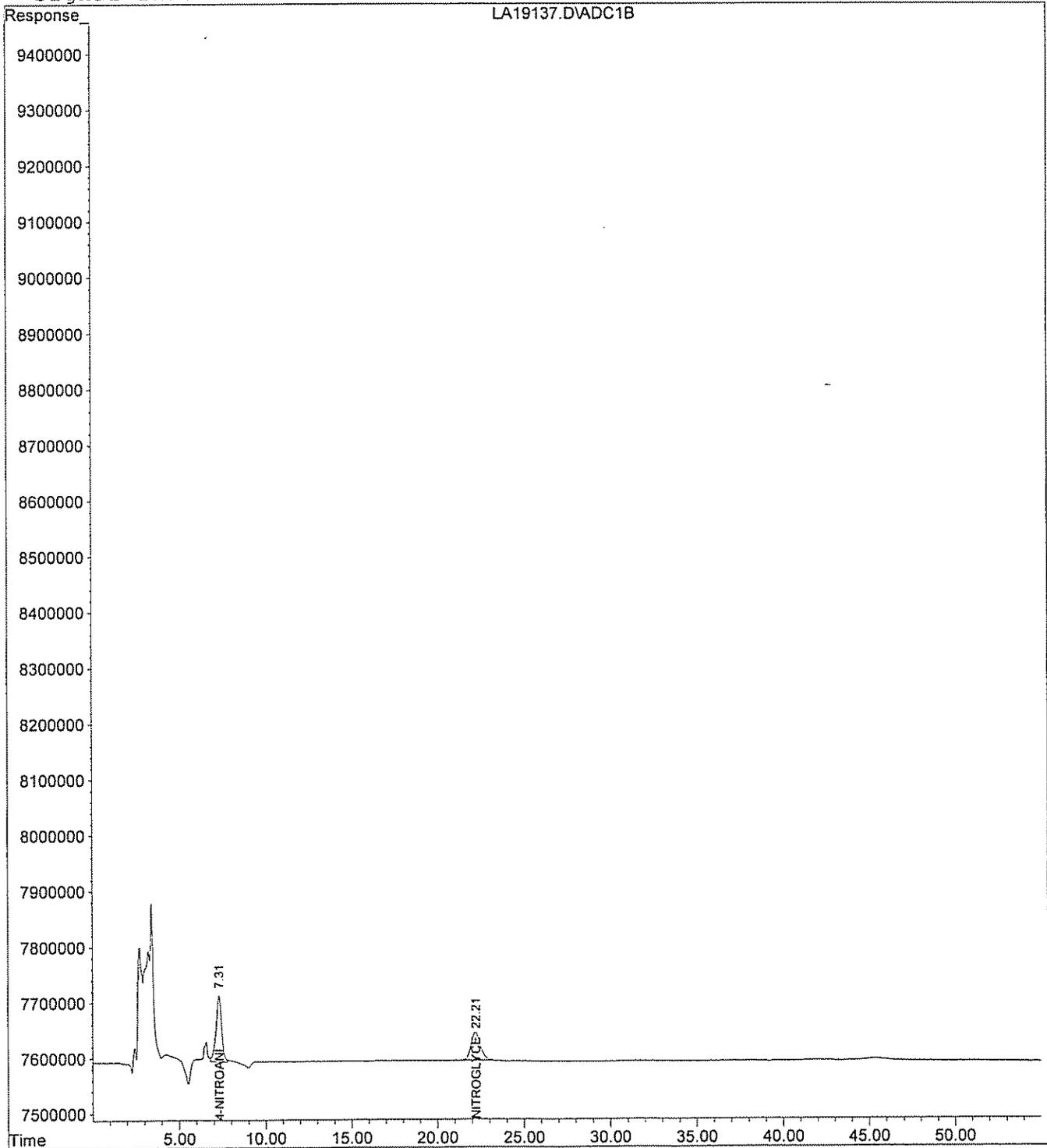
Quantitation Report

Data File : H:\LCDATA\LCA\022307\0223NG\LA19137.D
Acq On : 24 Feb 2007 10:26
Sample : 8330NG
Misc : CCAL
IntFile : events.e
Quant Time: Feb 24 12:48 2007 Quant Results File: 61114NG.RES

Vial: 26
Operator: SS
Inst : LCA
Multiplr: 1.00

Quant Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
Title : NITROGLYCERINE- 5 POINT IC PRIMARY
Last Update : Mon Aug 08 15:58:05 2005
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



Continuing Calibration Report LCA

Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT IC PRIMARY
 Last Update : Thu Mar 01 13:09:54 2007
 Response via : Initial Calibration

Continuing Calibration File: LA19150.D

Min. RRF : 0.000 Min. Rel. Area : 50%
 Max. RRF Dev : 15% Max. Rel. Area : 150%

Compound		AvgRF	CCRF	%Dev Area%	
1	S 4-NITROANILINE	125.896	86.151 E3	31.6#	68
2	M NITROGLYCERINE	2.022	1.920 E6	5.0	96

Data File : H:\LCDATA\LCA\022307\0223NG\LA19150.D Vial: 39
 Acq On : 25 Feb 2007 00:52 Operator: SS
 Sample : 8330NG Inst : LCA
 Misc : CCAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Feb 26 9:38 2007 Quant Results File: 61114NG.RES

Quant Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT IC PRIMARY
 Last Update : Mon Feb 26 09:30:17 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

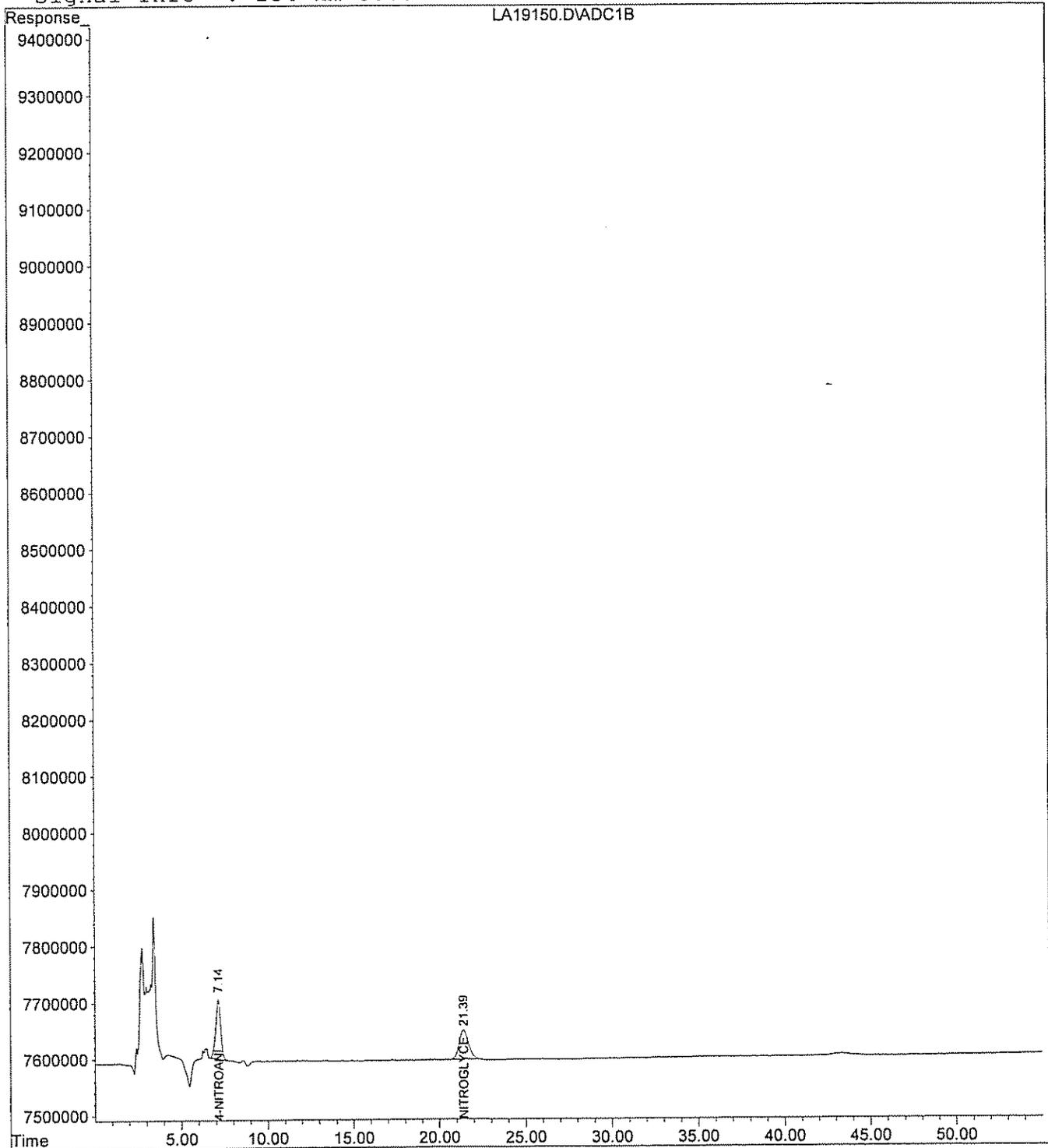
System Monitoring Compounds			
1) S 4-NITROANILINE	7.14	21537854	171.077 PPB
Spiked Amount 300.000		Recovery =	57.03%
Target Compounds			
2) M NITROGLYCERINE	21.39	19197468	9.496 PPM

Quantitation Report

Data File : H:\LCDATA\LCA\022307\0223NG\LA19150.D Vial: 39
Acq On : 25 Feb 2007 00:52 Operator: SS
Sample : 8330NG Inst : LCA
Misc : CCAL Multiplr: 1.00
IntFile : events.e
Quant Time: Feb 26 9:38 2007 Quant Results File: 61114NG.RES

Quant Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
Title : NITROGLYCERINE- 5 POINT IC PRIMARY
Last Update : Mon Feb 26 09:30:17 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



Response Factor Report LCA

Method : I:\LCDATA\LCA\METHODS\61011CON.M (Chemstation Integrator)
 Title : 8330 Explosives Confirmation
 Last Update : Tue Nov 14 09:31:04 2006

Calibration Files

LEV1 =LA16700.D LEV2 =LA16701.D LEV3 =LA16702.D
 LEV4 =LA16703.D LEV5 =LA16704.D LEV6 =LA16705.D

Compound		LEV1	LEV2	LEV3	LEV4	LEV5	LEV6	Avg		%RSD
1)	T HMX	1.262	1.202	1.155	1.184	1.165	1.160	1.188	E5	3.39
2)	S 4-Nitroaniline	1.260	1.198	1.189	1.183	1.174	1.182	1.198	E5	2.62
3)	T 1,3,5-Trinitrobenze	3.360	3.194	3.394	3.363	3.314	3.335	3.326	E5	2.11
4)	T Tetryl	1.925	1.946	2.569	2.523	2.503	2.534	2.333	E5	13.23
5)	T 2,4,6-Trinitrotolue	3.742	3.365	3.246	3.253	3.236	3.265	3.353	E5	5.85
6)	T 4-Amino-2,6-Dinitro	6.214	5.915	5.606	5.561	5.503	5.507	5.717	E5	5.02
7)	T 2,6-Dinitrotoluene	2.530	2.349	2.358	2.330	2.334	2.326	2.371	E5	3.33
8)	T 4-Nitrotoluene	2.706	2.474	2.344	2.325	2.309	2.316	2.412	E5	6.48
9)	M RDX	1.615	1.550	1.530	1.543	1.527	1.532	1.553	E5	2.06
10)	M 1,3-Dinitrobenzene	5.434	5.145	4.934	4.877	4.873	4.871	5.022	E5	4.52
11)	M Nitrobenzene	3.485	3.520	3.395	3.371	3.345	3.351	3.411	E5	2.16
12)	M 2-Amino-4,6-Dinitro	6.214	5.915	5.606	5.561	5.503	5.507	5.717	E5	5.02
13)	M 2,4-Dinitrotoluene	5.121	4.931	4.674	4.606	4.616	4.617	4.761	E5	4.52
14)	M 2-Nitrotoluene	2.374	2.222	2.156	2.145	2.130	2.130	2.203	E5	4.62
15)	M 3-Nitrotoluene	2.061	1.999	1.875	1.864	1.851	1.852	1.917	E5	4.70

Data File : H:\LCDATA\LCA\101106\LA16699.D Vial: 1
 Acq On : 11 Oct 2006 12:53 Operator: AG
 Sample : BLK Inst : LCA
 Misc : ICAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Oct 12 7:32 2006 Quant Results File: 61011CON.RES

Quant Method : I:\LCDATA\LCA\METHODS\61011CON.M (Chemstation Integrator)
 Title : 8330 Explosives Confirmation
 Last Update : Thu Oct 12 07:32:53 2006
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : POLAR RP
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
2) S 4-Nitroaniline	0.00	0	N.D.	ng/ml
Spiked Amount 300.000	Range 49 - 133	Recovery	=	0.00%#
Target Compounds				
1) T HMX	0.00	0	N.D.	ng/ml
3) T 1,3,5-Trinitrobenzene	0.00	0	N.D.	ng/ml
4) T Tetryl	0.00	0	N.D.	ng/ml
5) T 2,4,6-Trinitrotoluene	0.00	0	N.D.	ng/ml
6) T 4-Amino-2,6-Dinitrotoluene	0.00	0	N.D.	ng/ml
7) T 2,6-Dinitrotoluene	0.00	0	N.D.	ng/ml
8) T 4-Nitrotoluene	0.00	0	N.D.	ng/ml
9) M RDX	0.00	0	N.D.	ng/ml
10) M 1,3-Dinitrobenzene	0.00	0	N.D.	ng/ml
11) M Nitrobenzene	0.00	0	N.D.	ng/ml
12) M 2-Amino-4,6-Dinitrotoluene	0.00	0	N.D.	ng/ml
13) M 2,4-Dinitrotoluene	0.00	0	N.D.	ng/ml
14) M 2-Nitrotoluene	0.00	0	N.D.	ng/ml
15) M 3-Nitrotoluene	0.00	0	N.D.	ng/ml

Quantitation Report

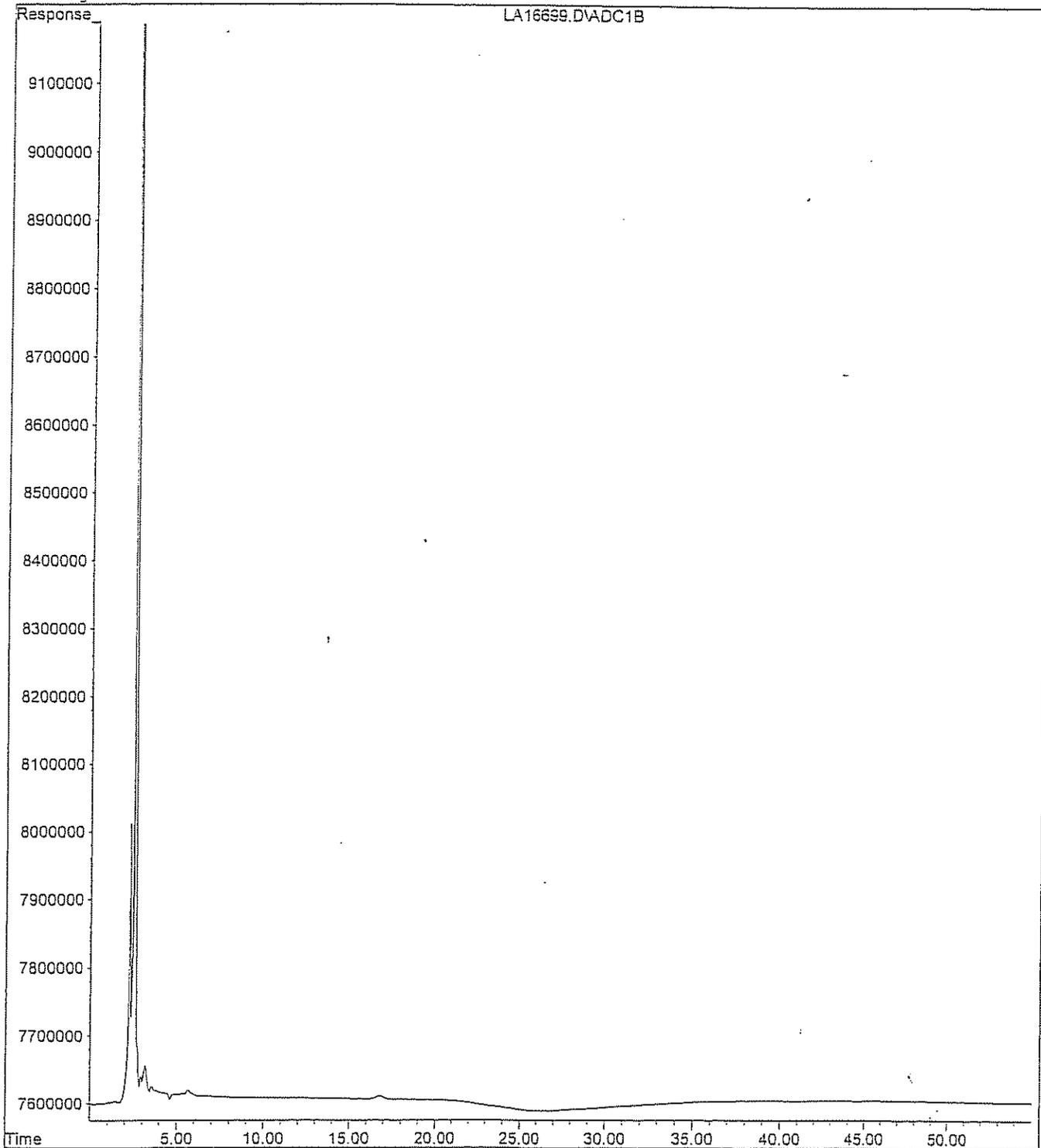
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Acq On : 11 Oct 2006 12:53
Sample : BLK
Misc : ICAL
IntFile : events.e
Quant Time: Oct 12 7:32 2006

Vial: 1
Operator: AG
Inst : LCA
Multiplr: 1.00

Quant Results File: 61011CON.RES

Quant Method : I:\LCDATA\LCA\METHODS\61011CON.M (Chemstation Integrator)
Title : 8330 Explosives Confirmation
Last Update : Thu Oct 12 07:32:53 2006
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : POLAR RP
Signal Info : 254 nm U.V.



Data File : H:\LCDATA\LCA\101106\LA16700.D Vial: 2
 Acq On : 11 Oct 2006 13:52 Operator: AG
 Sample : 8330MIX-LEV-1 Inst : LCA
 Misc : ICAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Oct 12 7:27 2006 Quant Results File: 61011CON.RES

Quant Method : I:\LCDATA\LCA\METHODS\61011CON.M (Chemstation Integrator)
 Title : 8330 Explosives Confirmation
 Last Update : Thu Oct 12 07:20:47 2006
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : POLAR RP
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
2) S 4-Nitroaniline	8.50	2519566	20.978 ng/ml
Spiked Amount 300.000	Range 49 - 133	Recovery =	6.99%#
Target Compounds			
1) T HMX	15.18	2524016	21.261 ng/mlm
3) T 1,3,5-Trinitrobenzene	28.63	3359504	10.209 ng/mlm
4) T Tetryl	42.90	3850213	16.608 ng/mlm
5) T 2,4,6-Trinitrotoluene	39.59	3741524	11.575 ng/mlm
6) T 4-Amino-2,6-Dinitrotoluene	19.11	6213678	10.868 ng/ml
7) T 2,6-Dinitrotoluene	23.93	2530135	10.710 ng/mlm
8) T 4-Nitrotoluene	21.04	5411377	22.676 ng/mlm
9) M RDX	12.39	3230911	20.899 ng/mlm
10) M 1,3-Dinitrobenzene	18.07	5433703	10.819 ng/ml
11) M Nitrobenzene	14.02	3484747	10.238 ng/ml
12) M 2-Amino-4,6-Dinitrotoluene	19.11	6213678	10.868 ng/ml
13) M 2,4-Dinitrotoluene	25.45	5120976	10.750 ng/mlm
14) M 2-Nitrotoluene	19.57	4747905	21.555 ng/ml
15) M 3-Nitrotoluene	20.16	4121848	21.503 ng/ml

Quantitation Report

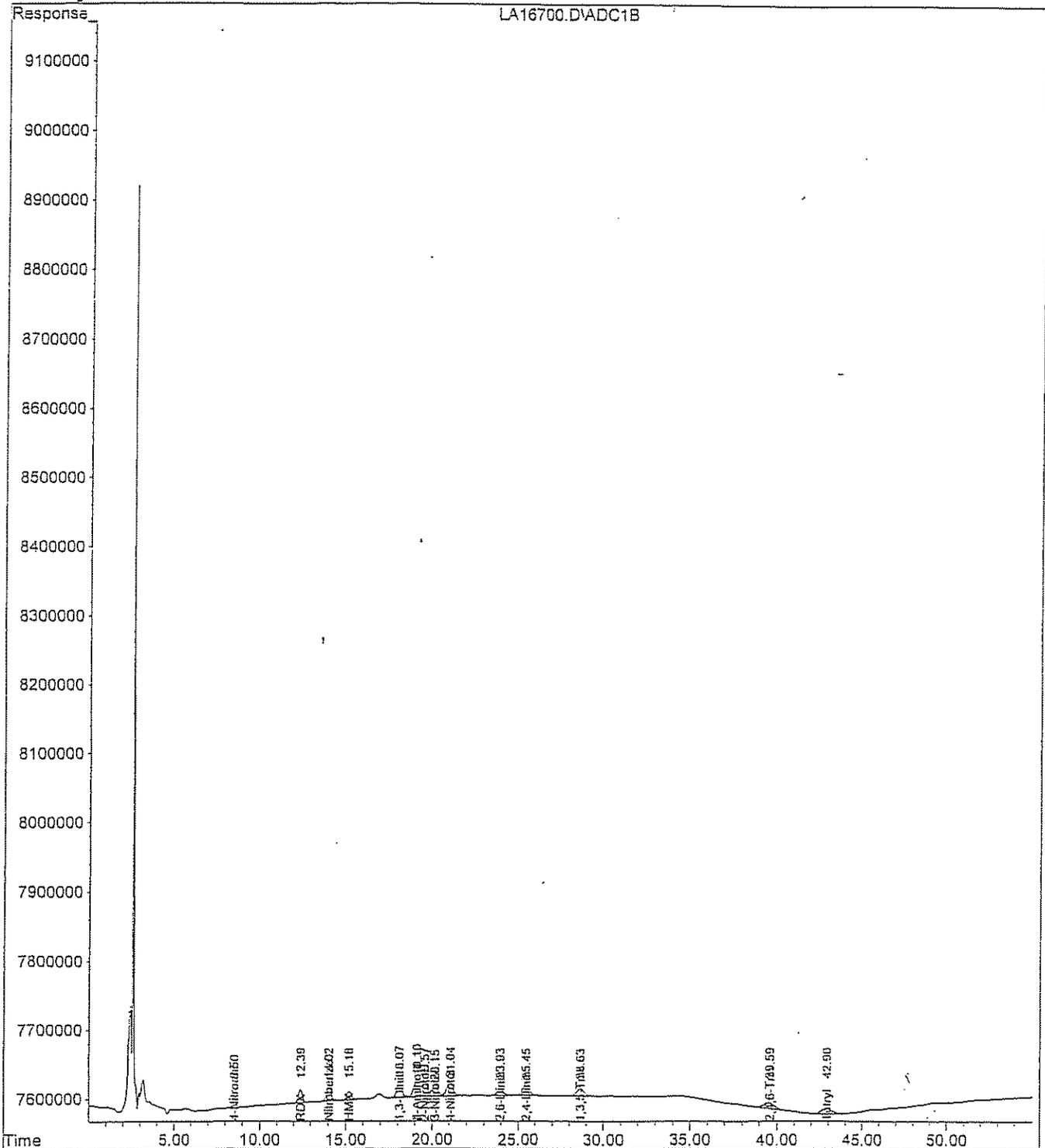
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Acq On : 11 Oct 2006 13:52
Sample : 8330MIX-LEV-1
Misc : ICAL
IntFile : events.e

Vial: 2
Operator: AG
Inst : LCA
Multiplr: 1.00

Quant Time: Oct 12 7:27 2006 Quant Results File: 61011CON.RES

Quant Method : I:\LCDATA\LCA\METHODS\61011CON.M (Chemstation Integrator)
Title : 8330 Explosives Confirmation
Last Update : Thu Oct 12 07:20:47 2006
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : POLAR RP
Signal Info : 254 nm U.V.



Data File : H:\LCDATA\LCA\101106\LA16701.D Vial: 3
 Acq On : 11 Oct 2006 14:52 Operator: AG
 Sample : 8330MIX-LEV-2 Inst : LCA
 Misc : ICAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Oct 12 7:24 2006 Quant Results File: 61011CON.RES

Quant Method : I:\LCDATA\LCA\METHODS\61011CON.M (Chemstation Integrator)
 Title : 8330 Explosives Confirmation
 Last Update : Thu Oct 12 07:20:47 2006
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : POLAR RP
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
2) S 4-Nitroaniline	8.52	11981477	99.760 ng/ml
Spiked Amount 300.000	Range 49 - 133	Recovery =	33.25%#
Target Compounds			
1) T HMX	15.23	12022820	101.274 ng/ml
3) T 1,3,5-Trinitrobenzene	28.69	15968551	48.525 ng/ml
4) T Tetryl	42.94	19464816	83.963 ng/ml
5) T 2,4,6-Trinitrotoluene	39.64	16832078	52.074 ng/ml
6) T 4-Amino-2,6-Dinitrotoluene	19.15	29572638	51.723 ng/ml
7) T 2,6-Dinitrotoluene	24.00	11745349	49.717 ng/ml
8) T 4-Nitrotoluene	21.07	24735524	103.653 ng/ml
9) M RDX	12.42	15502759	100.278 ng/ml
10) M 1,3-Dinitrobenzene	18.11	25723848	51.218 ng/ml
11) M Nitrobenzene	14.06	17600820	51.712 ng/ml
12) M 2-Amino-4,6-Dinitrotoluene	19.15	29572638	51.723 ng/ml
13) M 2,4-Dinitrotoluene	25.51	24657098	51.758 ng/ml
14) M 2-Nitrotoluene	19.60	22819764	103.600 ng/ml
15) M 3-Nitrotoluene	20.20	19985220	104.261 ng/ml

Quantitation Report

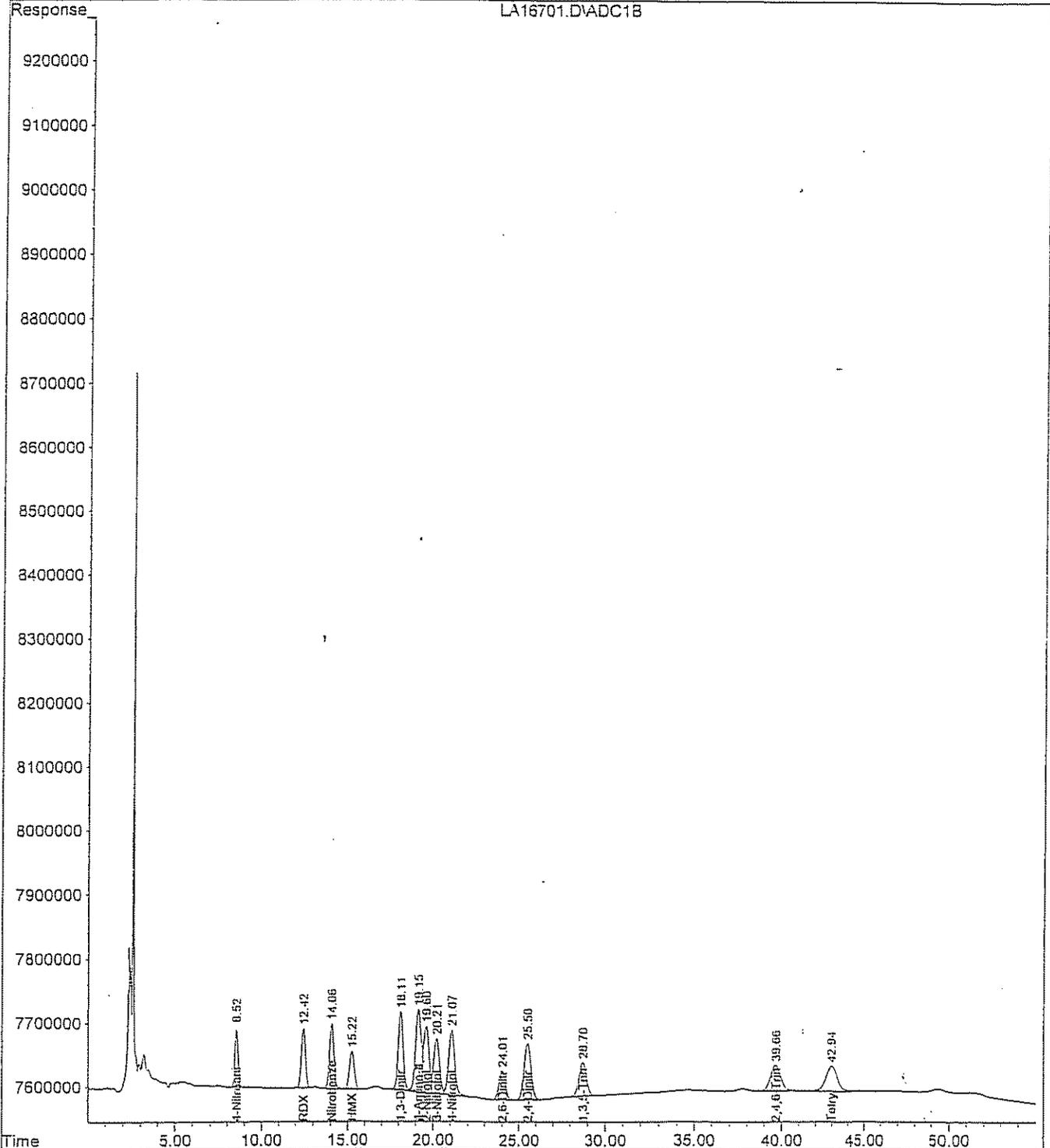
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Acq On : 11 Oct 2006 14:52
Sample : 8330MIX-LEV-2
Misc : ICAL
IntFile : events.e
Quant Time: Oct 12 7:24 2006

Vial: 3
Operator: AG
Inst : LCA
Multiplr: 1.00

Quant Results File: 61011CON.RES

Quant Method : I:\LCDATA\LCA\METHODS\61011CON.M (Chemstation Integrator)
Title : 8330 Explosives Confirmation
Last Update : Thu Oct 12 07:20:47 2006
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : POLAR RP
Signal Info : 254 nm U.V.



Data File : H:\LCDATA\LCA\101106\LA16702.D Vial: 4
 Acq On : 11 Oct 2006 15:51 Operator: AG
 Sample : 8330MIX-LEV-3 Inst : LCA
 Misc : ICAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Oct 12 7:25 2006 Quant Results File: 61011CON.RES

Quant Method : I:\LCDATA\LCA\METHODS\61011CON.M (Chemstation Integrator)
 Title : 8330 Explosives Confirmation
 Last Update : Thu Oct 12 07:20:47 2006
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : POLAR RP
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
2) S 4-Nitroaniline	8.52	59443332	494.936 ng/ml
Spiked Amount 300.000	Range 49 - 133	Recovery	= 164.93%#
Target Compounds			
1) T HMX	15.22	57741211	486.384 ng/ml
3) T 1,3,5-Trinitrobenzene	28.71	84838003	257.804 ng/ml
4) T Tetryl	42.97	128440392	554.038 ng/ml
5) T 2,4,6-Trinitrotoluene	39.65	81139088	251.022 ng/ml
6) T 4-Amino-2,6-Dinitrotoluene	19.15	140160300	245.143 ng/ml
7) T 2,6-Dinitrotoluene	24.01	58960152	249.575 ng/ml
8) T 4-Nitrotoluene	21.07	117195800	491.103 ng/ml
9) M RDX	12.42	77508769	501.357 ng/ml
10) M 1,3-Dinitrobenzene	18.11	123361269	245.622 ng/ml
11) M Nitrobenzene	14.05	84868378	249.345 ng/ml
12) M 2-Amino-4,6-Dinitrotoluene	19.15	140160300	245.143 ng/ml
13) M 2,4-Dinitrotoluene	25.52	116861920	245.308 ng/ml
14) M 2-Nitrotoluene	19.60	107790700	489.360 ng/ml
15) M 3-Nitrotoluene	20.21	93756260	489.115 ng/ml

Quantitation Report

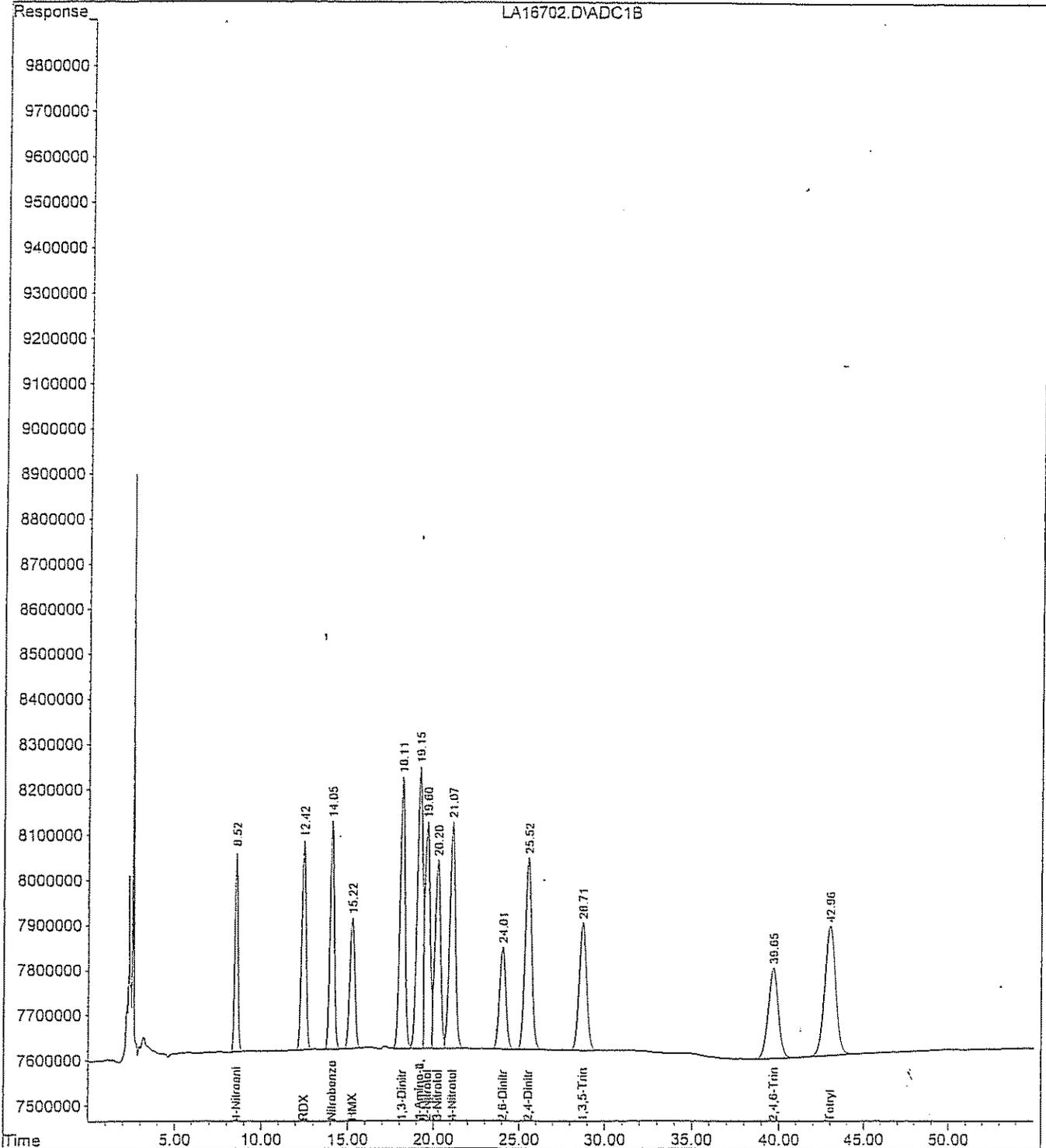
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Acq On : 11 Oct 2006 15:51
Sample : 8330MIX-LEV-3
Misc : ICAL
IntFile : events.e
Quant Time: Oct 12 7:25 2006

Vial: 4
Operator: AG
Inst : LCA
Multiplier: 1.00

Quant Results File: 61011CON.RES

Quant Method : I:\LCDATA\LCA\METHODS\61011CON.M (Chemstation Integrator)
Title : 8330 Explosives Confirmation
Last Update : Thu Oct 12 07:20:47 2006
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : POLAR RP
Signal Info : 254 nm U.V.



Data File : H:\LCDATA\LCA\101106\LA16703.D Vial: 5
 Acq On : 11 Oct 2006 16:51 Operator: AG
 Sample : 8330MIX-LEV-4 Inst : LCA
 Misc : ICAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Oct 12 7:25 2006 Quant Results File: 61011CON.RES

Quant Method : I:\LCDATA\LCA\METHODS\61011CON.M (Chemstation Integrator)
 Title : 8330 Explosives Confirmation
 Last Update : Thu Oct 12 07:20:47 2006
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : POLAR RP
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
2) S 4-Nitroaniline	8.51	118330679	985.242 ng/ml
Spiked Amount 300.000	Range 49 - 133	Recovery	= 328.413#
Target Compounds			
1) T HMX	15.19	118406894	997.402 ng/ml
3) T 1,3,5-Trinitrobenzene	28.62	168129546	310.909 ng/ml
4) T Tetryl	42.89	252271286	1088.193 ng/ml
5) T 2,4,6-Trinitrotoluene	39.56	163145896	504.728 ng/ml
6) T 4-Amino-2,6-Dinitrotoluene	19.10	278031638	486.282 ng/ml
7) T 2,6-Dinitrotoluene	23.94	116492778	493.108 ng/ml
8) T 4-Nitrotoluene	21.02	232473486	974.168 ng/ml
9) M RDX	12.40	154328897	998.259 ng/ml
10) M 1,3-Dinitrobenzene	18.07	243859661	485.543 ng/ml
11) M Nitrobenzene	14.03	168551787	495.209 ng/ml
12) M 2-Amino-4,6-Dinitrotoluene	19.10	278031638	486.282 ng/ml
13) M 2,4-Dinitrotoluene	25.44	230290166	483.408 ng/ml
14) M 2-Nitrotoluene	19.56	214451696	973.592 ng/ml
15) M 3-Nitrotoluene	20.16	186368366	972.262 ng/ml

Quantitation Report

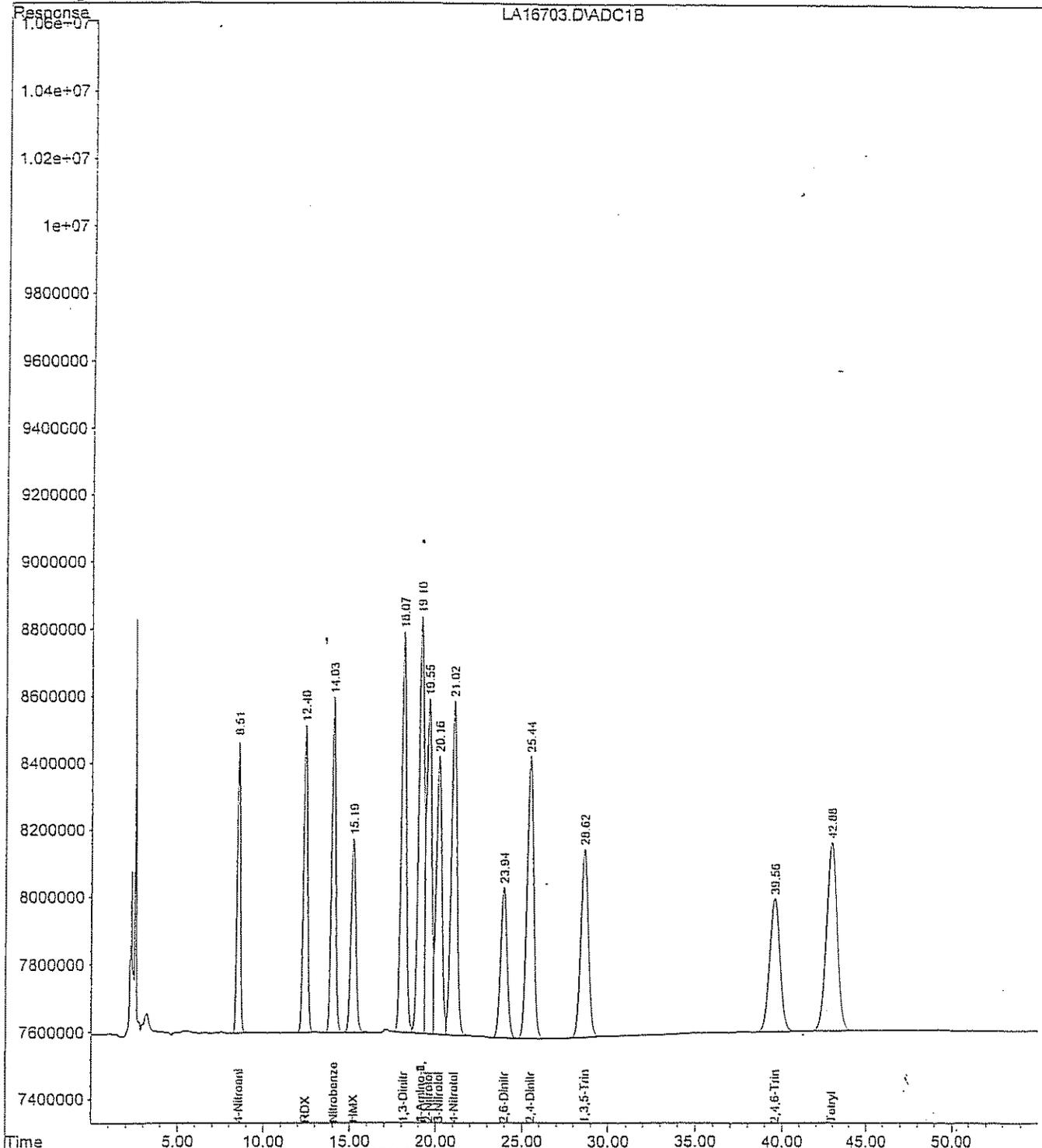
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Acq On : 11 Oct 2006 16:51
Sample : 8330MIX-LEV-4
Misc : ICAL
IntFile : events.e
Quant Time: Oct 12 7:25 2006

Vial: 5
Operator: AG
Inst : LCA
Multiplr: 1.00

Quant Results File: 61011CON.RES

Quant Method : I:\LCDATA\LCA\METHODS\61011CON.M (Chemstation Integrator)
Title : 8330 Explosives Confirmation
Last Update : Thu Oct 12 07:20:47 2006
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : POLAR RP
Signal Info : 254 nm U.V.



Data File : H:\LCDATA\LCA\101106\LA16704.D Vial: 6
 Acq On : 11 Oct 2006 17:50 Operator: AG
 Sample : 8330MIX-LEV-5 Inst : LCA
 Misc : ICAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Oct 12 7:25 2006 Quant Results File: 61011CON.RES

Quant Method : I:\LCDATA\LCA\METHODS\61011CON.M (Chemstation Integrator)
 Title : 8330 Explosives Confirmation
 Last Update : Thu Oct 12 07:20:47 2006
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : POLAR RP
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
2) S 4-Nitroaniline	8.51	234775868	1954.785 ng/ml
Spiked Amount 300.000	Range 49 - 133	Recovery	= 651.60%#
Target Compounds			
1) T HMX	15.21	232964405	1962.379 ng/ml
3) T 1,3,5-Trinitrobenzene	28.67	331416534	1007.102 ng/ml
4) T Tetryl	42.97	500539336	2159.118 ng/ml
5) T 2,4,6-Trinitrotoluene	39.63	323619391	1001.189 ng/ml
6) T 4-Amino-2,6-Dinitrotoluene	19.13	550321255	962.522 ng/ml
7) T 2,6-Dinitrotoluene	23.98	233367036	987.830 ng/ml
8) T 4-Nitrotoluene	21.06	461823270	1935.246 ng/ml
9) M RDX	12.41	305348522	1975.113 ng/ml
10) M 1,3-Dinitrobenzene	18.10	487294082	970.240 ng/ml
11) M Nitrobenzene	14.04	334484363	982.722 ng/ml
12) M 2-Amino-4,6-Dinitrotoluene	19.13	550321255	962.522 ng/ml
13) M 2,4-Dinitrotoluene	25.49	461759375	969.291 ng/ml
14) M 2-Nitrotoluene	19.59	425956473	1933.805 ng/ml
15) M 3-Nitrotoluene	20.19	370265777	1931.633 ng/ml

Quantitation Report

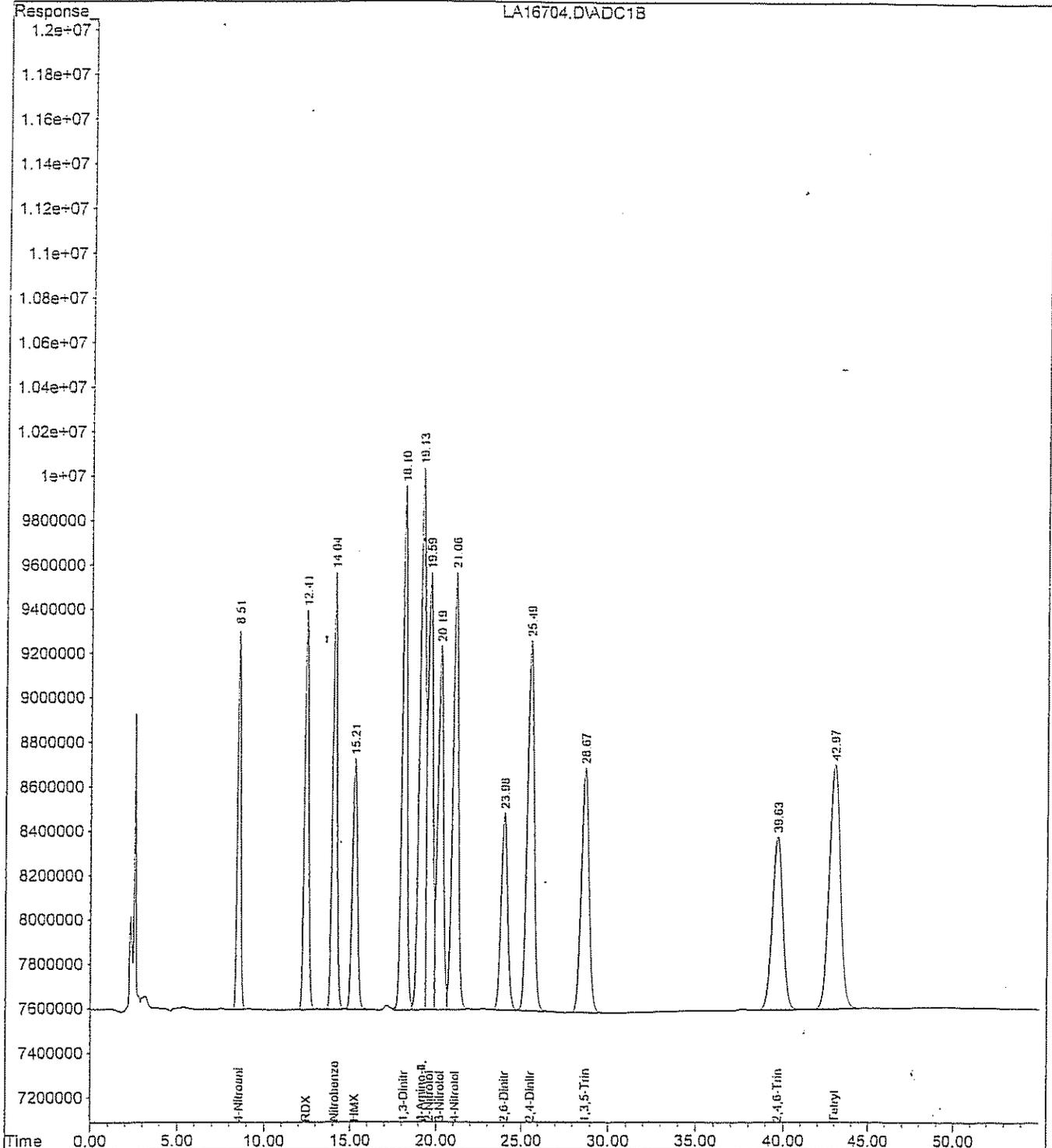
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Acq On : 11 Oct 2006 17:50
Sample : 8330MIX-LEV-5
Misc : ICAL
IntFile : events.e
Quant Time: Oct 12 7:25 2006

Vial: 6
Operator: AG
Inst : LCA
Multiplr: 1.00

Quant Results File: 61011CON.RES

Quant Method : I:\LCDATA\LCA\METHODS\61011CON.M (Chemstation Integrator)
Title : 8330 Explosives Confirmation
Last Update : Thu Oct 12 07:20:47 2006
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume, Inj. : 100 uL
Signal Phase : POLAR RP
Signal Info : 254 nm U.V.



Data File : H:\LCDATA\LCA\101106\LA16705.D Vial: 7
 Acq On : 11 Oct 2006 18:50 Operator: AG
 Sample : 8330MIX-LEV-6 Inst : LCA
 Misc : ICAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Oct 12 7:26 2006 Quant Results File: 61011CON.RES

Quant Method : I:\LCDATA\LCA\METHODS\61011CON.M (Chemstation Integrator)
 Title : 8330 Explosives Confirmation
 Last Update : Thu Oct 12 07:20:47 2006
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : POLAR RP
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
2) S 4-Nitroaniline	8.52	591215754	4922.567 ng/ml
Spiked Amount 300.000	Range 49 - 133	Recovery	= 1640.86%#
Target Compounds			
1) T HMX	15.23	590153481	4886.932 ng/ml
3) T 1,3,5-Trinitrobenzene	28.70	833711119	2533.464 ng/ml
4) T Tetryl	42.97	1266768692	5464.312 ng/ml
5) T 2,4,6-Trinitrotoluene	39.63	816127438	2524.872 ng/ml
6) T 4-Amino-2,6-Dinitrotoluene	19.15	1376626207	2407.744 ng/ml
7) T 2,6-Dinitrotoluene	24.00	581472719	2461.342 ng/ml
8) T 4-Nitrotoluene	21.07	1157832944	4851.839 ng/ml
9) M RDX	12.42	766087459	4955.352 ng/ml
10) M 1,3-Dinitrobenzene	18.11	1217850791	2424.833 ng/ml
11) M Nitrobenzene	14.05	837747802	2461.322 ng/ml
12) M 2-Amino-4,6-Dinitrotoluene	19.15	1376626207	2407.744 ng/ml
13) M 2,4-Dinitrotoluene	25.51	1154180389	2422.770 ng/ml
14) M 2-Nitrotoluene	19.60	1065035619	4835.169 ng/ml
15) M 3-Nitrotoluene	20.21	925769447	4829.630 ng/ml

Quantitation Report

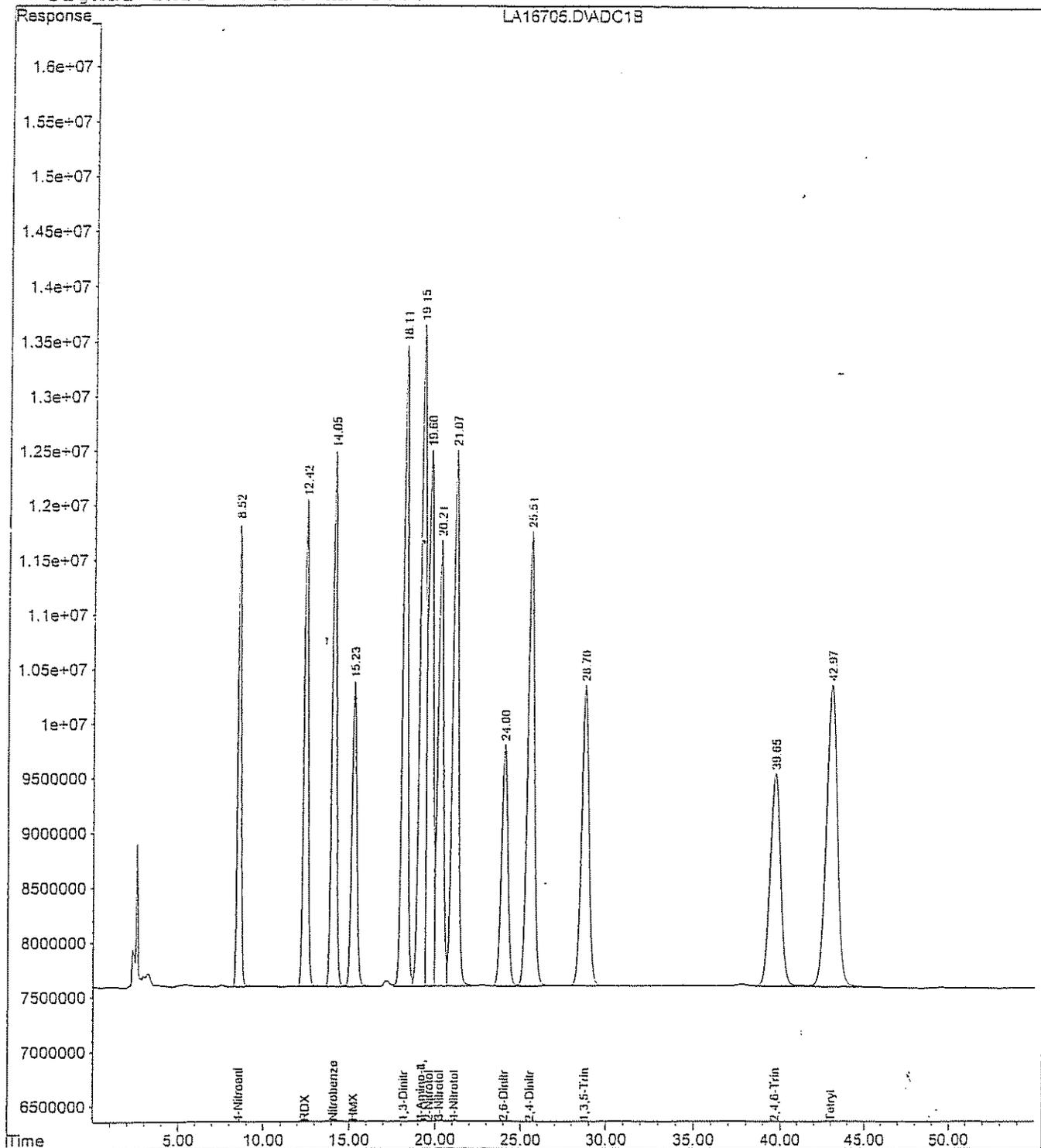
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Acq On : 11 Oct 2006 18:50
Sample : 8330MIX-LEV-6
Misc : ICAL
IntFile : events.e
Quant Time: Oct 12 7:26 2006

Vial: 7
Operator: AG
Inst : LCA
Multiplr: 1.00

Quant Results File: 61011CON.RES

Quant Method : I:\LCDATA\LCA\METHODS\61011CON.M (Chemstation Integrator)
Title : 8330 Explosives Confirmation
Last Update : Thu Oct 12 07:20:47 2006
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : POLAR RP
Signal Info : 254 nm U.V.



8330 RETENTION TIME WINDOW ESTABLISHMENT

INSTRUMENT TYPE: ICA
 COLUMN: POLAR ANALYST AG
 DATE: 11/1/2006-11/2/2006 DATE 11/02/06

COMPOUND	LA17111	LA17125	LA17133	AVG	Stand Dev	3X Std Dev
	Retent Time 1	Retent Time 2	Retent Time 3			
4-Nitroaniline(S	8.570	8.600	8.590	8.587	0.015	0.046
HMX	15.370	15.440	15.450	15.420	0.044	0.131
1,3,5-Trinitrober	29.020	29.160	29.120	29.100	0.072	0.216
Tetryl	43.630	43.840	43.810	43.760	0.114	0.341
2,4,6-Trinitrotol	40.200	40.360	40.340	40.300	0.087	0.262
4-ADNT	19.360	19.440	19.430	19.410	0.044	0.131
2,6-Dinitrotoluer	24.280	24.370	24.360	24.337	0.049	0.148
4-Nitrotoluene	21.290	21.360	21.350	21.333	0.038	0.114
RDY	12.520	12.570	12.560	12.550	0.026	0.079
1,3-Dinitrobenzer	18.280	18.340	18.340	18.320	0.035	0.104
Nitrobenzene	14.170	14.210	14.200	14.193	0.021	0.062
2-ADNT	19.360	19.440	19.430	19.410	0.044	0.131
2,4-Dinitrotoluer	25.810	25.910	25.890	25.870	0.053	0.159
2-Nitrotoluene	19.800	19.860	19.850	19.837	0.032	0.096
3-Nitrotoluene	20.410	20.480	20.470	20.453	0.038	0.114

Retention windows equal to retention times extracted from daily calibration +/- three times of the Standard Deviation.

Evaluate Continuing Calibration Report

Data File : H:\LCDATA\LCA\101106\LA16706.D
 Acq On : 11 Oct 2006 19:49
 Sample : 8330MIX-LEV-3ICV
 Misc : ICAL
 IntFile : events.e

Vial: 8
 Operator: AG
 Inst : LCA
 Multiplr: 1.00

Method : I:\LCDATA\LCA\METHODS\61011CON.M (Chemstation Integrator)
 Title : 8330 Explosives Confirmation
 Last Update : Wed Mar 14 16:10:29 2007
 Response via : Multiple Level Calibration

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.50min
 Max. RRF Dev : 15% Max. Rel. Area : 150%

Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 T HMX	118.805	123.626 E3	-4.1	100	0.00
3 T 1,3,5-Trinitrobenzene	332.639	302.214 E3	9.1	100	0.00
4 T Tetryl	233.322	267.347 E3	-14.6	100	0.00
5 T 2,4,6-Trinitrotoluene	335.285	324.977 E3	3.1	100	0.00
6 T 4-Amino-2,6-Dinitrotoluene	571.749	567.474 E3	0.7	100	0.00
7 T 2,6-Dinitrotoluene	237.117	227.978 E3	3.9	100	0.00
8 T 4-Nitrotoluene	241.211	226.210 E3	6.2	100	0.00
9 M RDX	155.302	153.790 E3	1.0	100	0.00
10 M 1,3-Dinitrobenzene	502.241	485.903 E3	3.3	100	0.00
11 M Nitrobenzene	341.109	324.202 E3	5.0	100	0.00
12 M 2-Amino-4,6-Dinitrotoluene	571.749	567.474 E3	0.7	100	0.00
13 M 2,4-Dinitrotoluene	476.117	442.972 E3	7.0	100	0.00
14 M 2-Nitrotoluene	220.269	193.222 E3	12.3	100	0.00
15 M 3-Nitrotoluene	191.685	179.625 E3	6.3	100	0.00

Data File : H:\LCDATA\LCA\101106\LA16706.D Vial: 8
 Acq On : 11 Oct 2006 19:49 Operator: AG
 Sample : 8330MIX-LEV-3ICV Inst : LCA
 Misc : ICAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Oct 12 7:29 2006 Quant Results File: 61011CON.RES

Quant Method : I:\LCDATA\LCA\METHODS\61011CON.M (Chemstation Integrator)
 Title : 8330 Explosives Confirmation
 Last Update : Thu Oct 12 07:20:47 2006
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : POLAR RP
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc	Units
System Monitoring Compounds				
2) S 4-Nitroaniline	0.00	0	N.D.	ng/ml
Spiked Amount 300.000	Range 49 - 133	Recovery	=	0.00%#
Target Compounds				
1) T HMX	15.27	30906484	250.144	ng/ml
3) T 1,3,5-Trinitrobenzene	28.76	75553453	227.134	ng/ml
4) T Tetryl	43.08	66836710	286.456	ng/ml
5) T 2,4,6-Trinitrotoluene	39.74	81244281	242.314	ng/ml
6) T 4-Amino-2,6-Dinitrotoluene	19.19	141868488	248.131	ng/ml
7) T 2,6-Dinitrotoluene	24.03	56994439	240.364	ng/ml
8) T 4-Nitrotoluene	21.11	56552373	234.452	ng/ml
9) M RDX	12.44	38447574	247.567	ng/ml
10) M 1,3-Dinitrobenzene	18.15	121475862	241.868	ng/ml
11) M Nitrobenzene	14.07	81050312	237.609	ng/ml
12) M 2-Amino-4,6-Dinitrotoluene	19.19	141868488	248.131	ng/ml
13) M 2,4-Dinitrotoluene	25.57	110742971	232.596	ng/ml
14) M 2-Nitrotoluene	19.62	48305414	219.302	ng/ml
15) M 3-Nitrotoluene	20.24	44906158	234.270	ng/ml

Quantitation Report

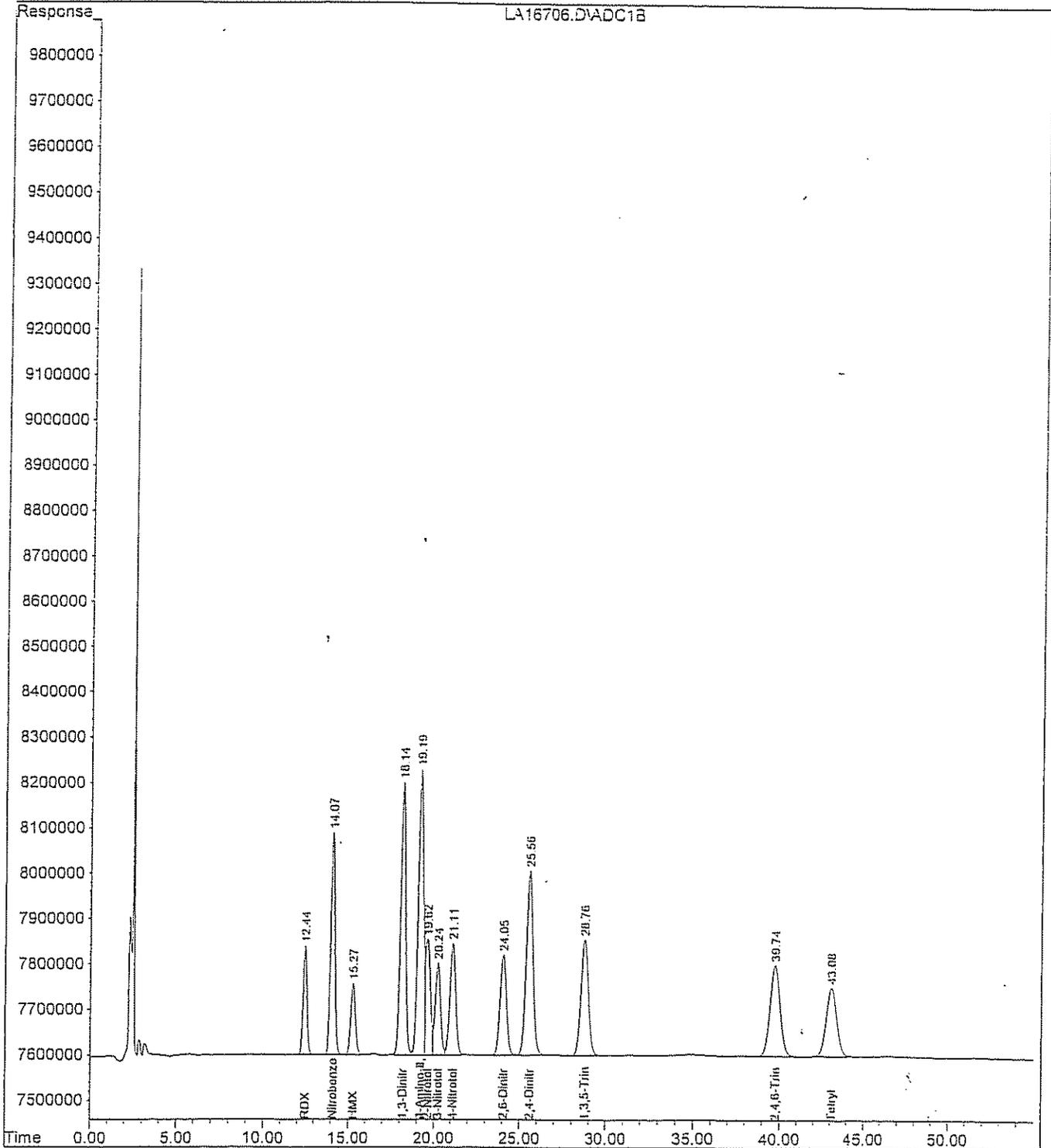
Data File : H:\LCDATA\LCA\101106\LA16706.D
Acq On : 11 Oct 2006 19:49
Sample : 8330MIX-LEV-3ICV
Misc : ICAL
IntFile : events.e

Vial: 8
Operator: AG
Inst : LCA
Multiplier: 1.00

Quant Time: Oct 12 7:29 2006 Quant Results File: 61011CON.RES

Quant Method : I:\LCDATA\LCA\METHODS\61011CON.M (Chemstation Integrator)
Title : 8330 Explosives Confirmation
Last Update : Thu Oct 12 07:20:47 2006
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : POLAR RP
Signal Info : 254 nm U.V.



Method : I:\LCDATA\LCA\METHODS\61011CON.M (Chemstation Integrator)
 Title : 8330 Explosives Confirmation
 Last Update : Thu Mar 01 13:27:13 2007
 Response via : Initial Calibration

Continuing Calibration File: LA19185.D

Min. RRF : 0.000 Min. Rel. Area : 50%
 Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF		%Dev	Area%
1 T	HMX	118.805	117.321	E3	1.2	102
2 S	4-Nitroaniline	119.774	110.331	E3	7.9	93
3 T	1,3,5-Trinitrobenzene	332.639	333.479	E3	-0.3	98
4 T	Tetryl	233.322	227.992	E3	2.3	89
5 T	2,4,6-Trinitrotoluene	335.285	329.344	E3	1.8	101
6 T	4-Amino-2,6-Dinitrotoluene	571.749	544.346	E3	4.8	97
7 T	2,6-Dinitrotoluene	237.117	236.086	E3	0.4	100
8 T	4-Nitrotoluene	241.211	234.384	E3	2.8	100
9 M	RDX	155.302	154.991	E3	0.2	100
10 M	1,3-Dinitrobenzene	502.241	491.290	E3	2.2	100
11 M	Nitrobenzene	341.109	346.659	E3	-1.6	102
12 M	2-Amino-4,6-Dinitrotoluene	571.749	544.346	E3	4.8	97
13 M	2,4-Dinitrotoluene	476.117	465.138	E3	2.3	100
14 M	2-Nitrotoluene	220.269	213.597	E3	3.0	99
15 M	3-Nitrotoluene	191.685	188.219	E3	1.8	100

Data File : H:\LCDATA\LCA\022607\LA19185.D Vial: 14
 Acq On : 27 Feb 2007 1:38 am Operator: SS
 Sample : 8330MIX Inst : LCA
 Misc : CCAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Feb 27 8:02 2007 Quant Results File: 61011CON.RES

Quant Method : I:\LCDATA\LCA\METHODS\61011CON.M (Chemstation Integrator)
 Title : 8330 Explosives Confirmation
 Last Update : Mon Feb 05 11:40:12 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : POLAR RP
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
2) S 4-Nitroaniline	8.58	55165362	460.580 ng/ml
Spiked Amount 300.000	Range 49 - 133	Recovery	= 153.53%#
Target Compounds			
1) T HMX	15.39	58660673	493.755 ng/ml
3) T 1,3,5-Trinitrobenzene	28.98	83369692	250.631 ng/ml
4) T Tetryl	43.53f	113995790	488.576 ng/ml
5) T 2,4,6-Trinitrotoluene	40.10	82335902	245.570 ng/ml
6) T 4-Amino-2,6-Dinitrotoluene	19.36	136086604	238.018 ng/ml
7) T 2,6-Dinitrotoluene	24.25	59021404	248.912 ng/ml
8) T 4-Nitrotoluene	21.26	117191762	485.847 ng/ml
9) M RDX	12.53	77495463	498.999 ng/ml
10) M 1,3-Dinitrobenzene	18.28	122822576	244.549 ng/ml
11) M Nitrobenzene	14.16	86664654	254.068 ng/ml
12) M 2-Amino-4,6-Dinitrotoluene	19.36	136086604	238.018 ng/ml
13) M 2,4-Dinitrotoluene	25.77	116284456	244.235 ng/ml
14) M 2-Nitrotoluene	19.78	106798622	484.856 ng/ml
15) M 3-Nitrotoluene	20.39	94109715	490.959 ng/ml

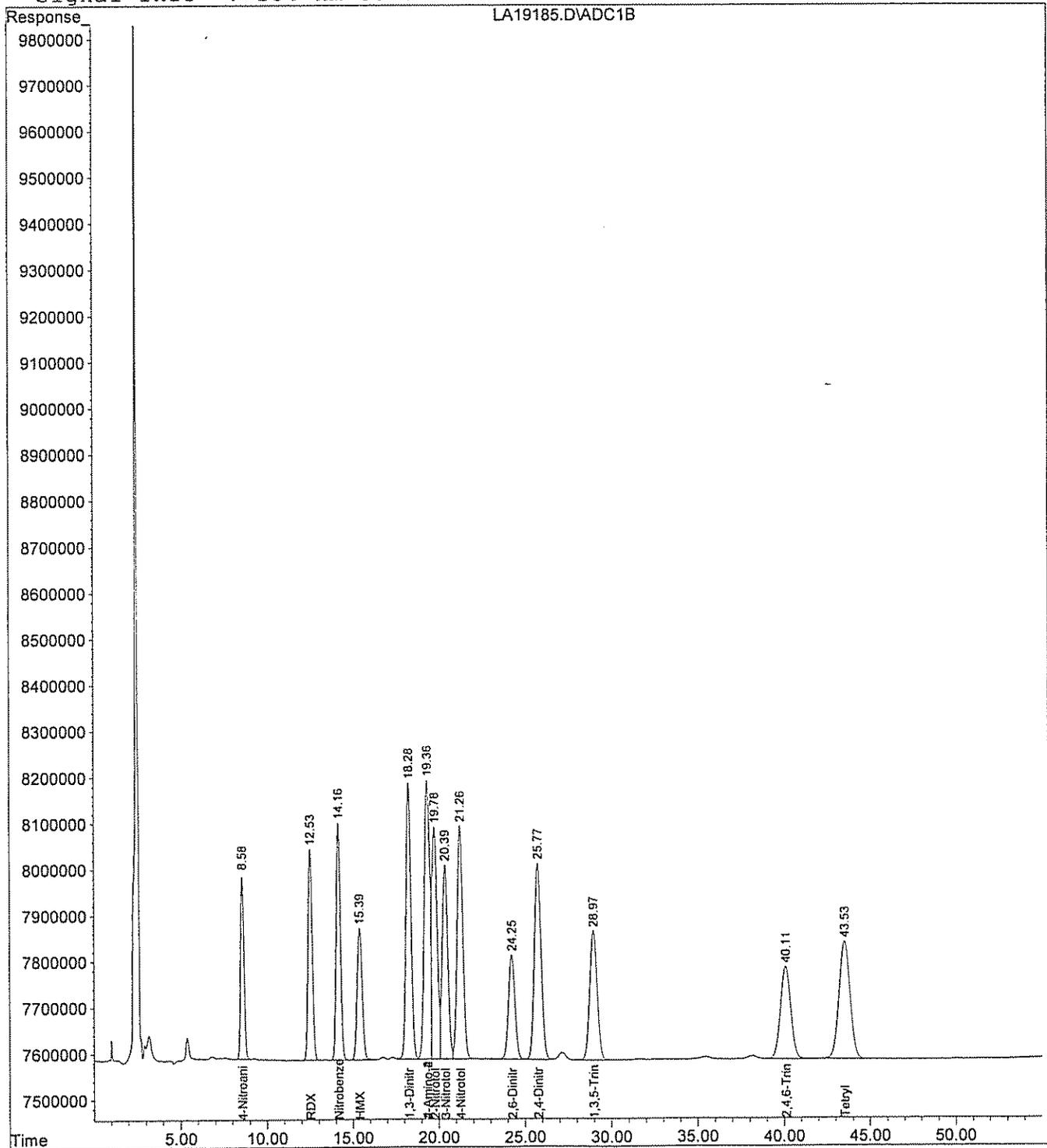
Quantitation Report

Data File : H:\LCDATA\LCA\022607\LA19185.D
Acq On : 27 Feb 2007 1:38 am
Sample : 8330MIX
Misc : CCAL
IntFile : events.e
Quant Time: Feb 27 8:02 2007

Vial: 14
Operator: SS
Inst : LCA
Multiplr: 1.00

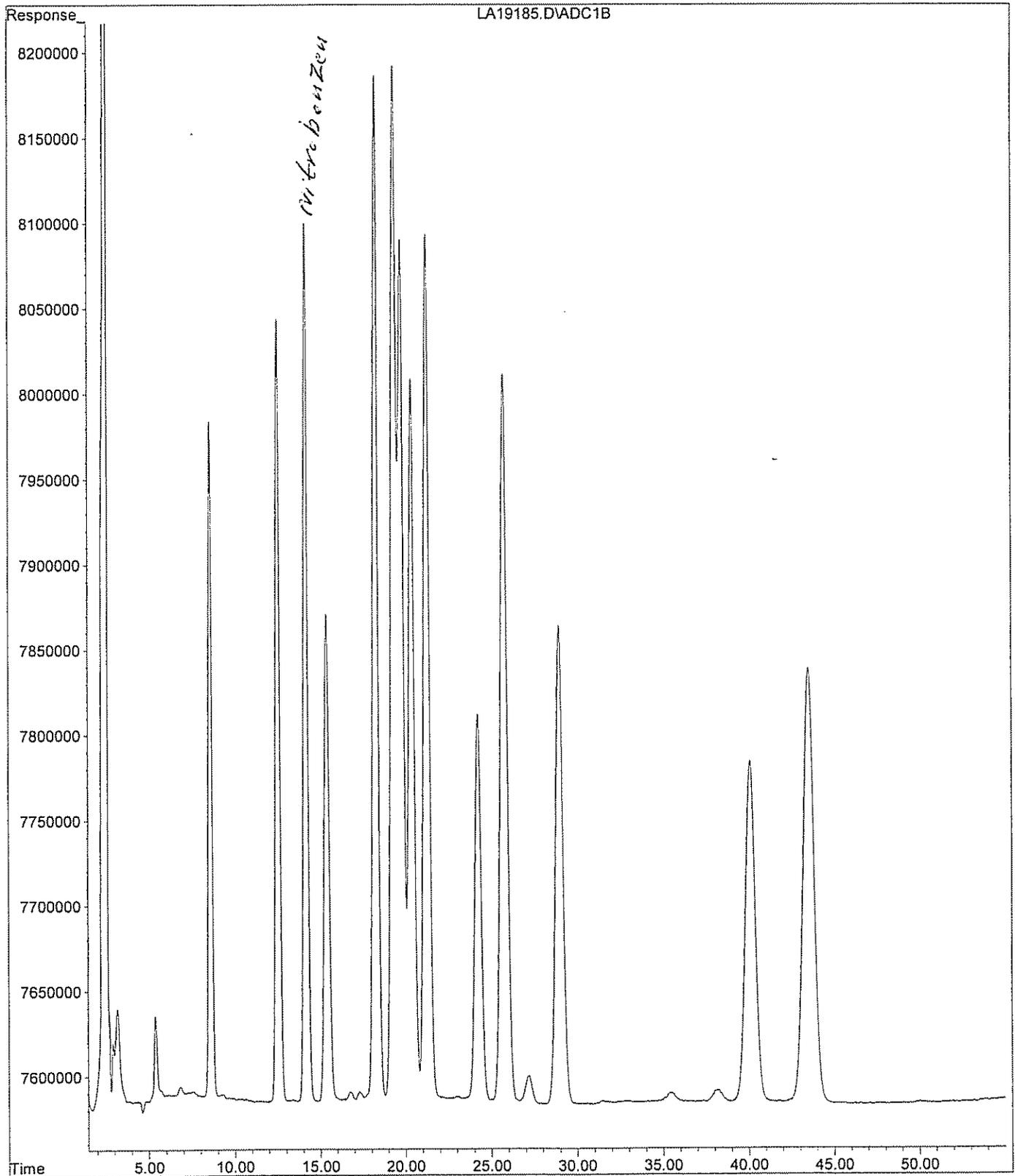
Quant Method : I:\LCDATA\LCA\METHODS\61011CON.M (Chemstation Integrator)
Title : 8330 Explosives Confirmation
Last Update : Mon Feb 05 11:40:12 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : POLAR RP
Signal Info : 254 nm U.V.



File : H:\LCDATA\LCA\022607\LA19185.D
Operator : SS
Acquired : 27 Feb 2007 1:38 using AcqMethod 8330MIX.M
Instrument : LCA
Sample Name: 8330MIX
Misc Info : CCAL
Vial Number: 14

Confirmation



Continuing Calibration Report LCA

Method : I:\LCDATA\LCA\METHODS\61011CON.M (Chemstation Integrator)
 Title : 8330 Explosives Confirmation
 Last Update : Thu Mar 01 13:27:40 2007
 Response via : Initial Calibration

Continuing Calibration File: LA19198.D

Min. RRF : 0.000 Min. Rel. Area : 50%
 Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF		%Dev	Area%
1 T	HMX	118.805	118.780	E3	0.0	103
2 S	4-Nitroaniline	119.774	109.995	E3	8.2	93
3 T	1,3,5-Trinitrobenzene	332.639	333.332	E3	-0.2	98
4 T	Tetryl	233.322	227.785	E3	2.4	89
5 T	2,4,6-Trinitrotoluene	335.285	328.888	E3	1.9	101
6 T	4-Amino-2,6-Dinitrotoluene	571.749	538.566	E3	5.8	96
7 T	2,6-Dinitrotoluene	237.117	233.164	E3	1.7	99
8 T	4-Nitrotoluene	241.211	233.386	E3	3.2	100
9 M	RDX	155.302	156.361	E3	-0.7	101
10 M	1,3-Dinitrobenzene	502.241	486.786	E3	3.1	99
11 M	Nitrobenzene	341.109	345.710	E3	-1.3	102
12 M	2-Amino-4,6-Dinitrotoluene	571.749	538.566	E3	5.8	96
13 M	2,4-Dinitrotoluene	476.117	466.785	E3	2.0	100
14 M	2-Nitrotoluene	220.269	213.876	E3	2.9	99
15 M	3-Nitrotoluene	191.685	187.885	E3	2.0	100

Data File : H:\LCDATA\LCA\022607\LA19198.D Vial: 27
 Acq On : 27 Feb 2007 2:35 pm Operator: SS
 Sample : 8330MIX Inst : LCA
 Misc : CCAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Feb 28 7:56 2007 Quant Results File: 61011CON.RES

Quant Method : I:\LCDATA\LCA\METHODS\61011CON.M (Chemstation Integrator)
 Title : 8330 Explosives Confirmation
 Last Update : Mon Feb 05 11:40:12 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : POLAR RP
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
2) S 4-Nitroaniline	8.54	54997328	459.177 ng/ml
Spiked Amount 300.000	Range 49 - 133	Recovery	= 153.06%#
Target Compounds			
1) T HMX	15.26	59389940	499.893 ng/ml
3) T 1,3,5-Trinitrobenzene	28.67	83332915	250.521 ng/ml
4) T Tetryl	42.91	113892630	488.134 ng/ml
5) T 2,4,6-Trinitrotoluene	39.59	82221983	245.230 ng/ml
6) T 4-Amino-2,6-Dinitrotoluene	19.14	134641527	235.490 ng/ml
7) T 2,6-Dinitrotoluene	23.98	58290955	245.832 ng/ml
8) T 4-Nitrotoluene	21.06	116692932	483.779 ng/ml
9) M RDX	12.44	78180313	503.409 ng/ml
10) M 1,3-Dinitrobenzene	18.12	121696549	242.307 ng/ml
11) M Nitrobenzene	14.07	86427546	253.373 ng/ml
12) M 2-Amino-4,6-Dinitrotoluene	19.14	134641527	235.490 ng/ml
13) M 2,4-Dinitrotoluene	25.48	116696220	245.100 ng/ml
14) M 2-Nitrotoluene	19.60	106938031	485.489 ng/ml
15) M 3-Nitrotoluene	20.20	93942316	490.086 ng/ml

Quantitation Report

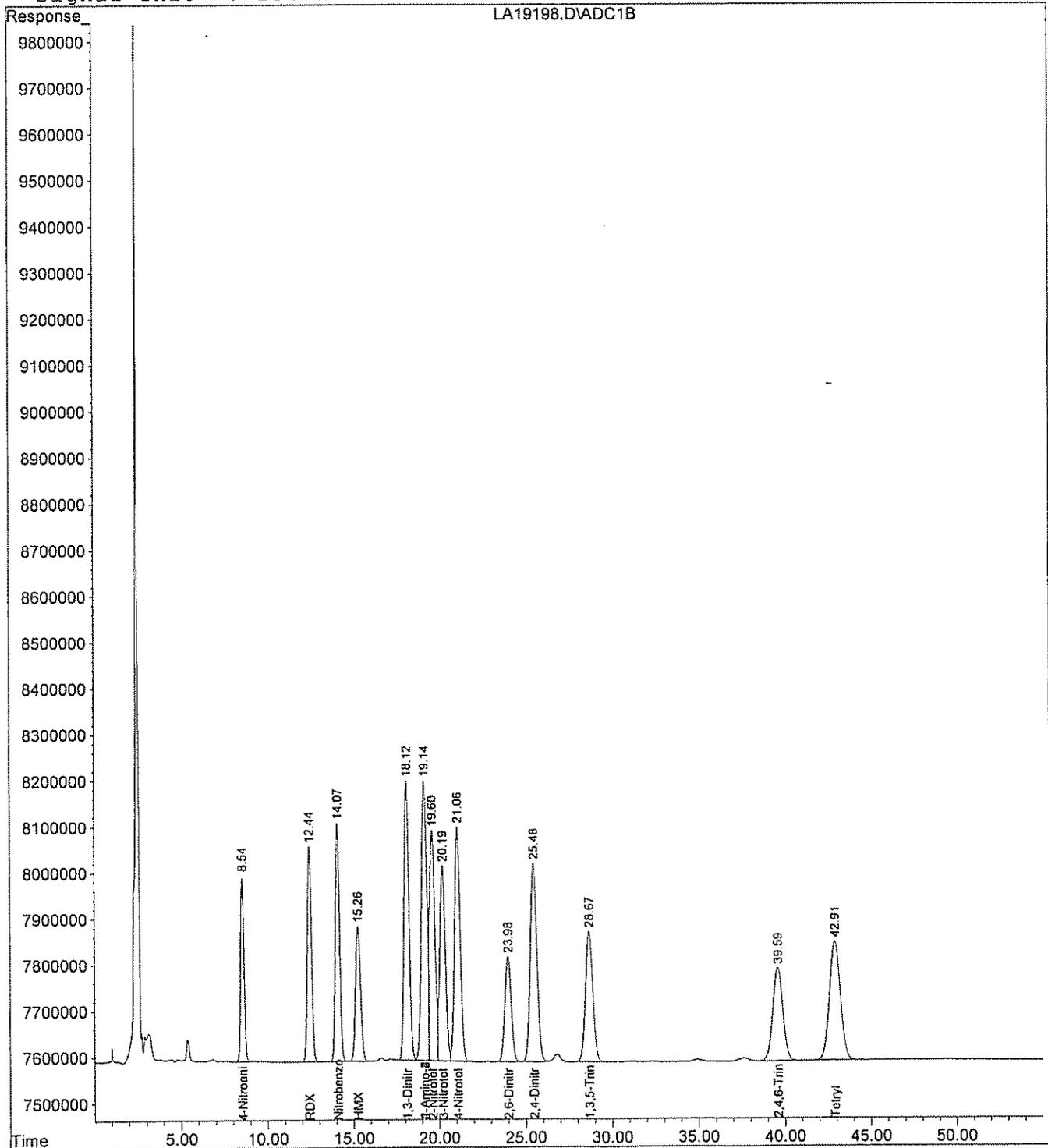
Data File : H:\LCDATA\LCA\022607\LA19198.D
Acq On : 27 Feb 2007 2:35 pm
Sample : 8330MIX
Misc : CCAL
IntFile : events.e
Quant Time: Feb 28 7:56 2007

Vial: 27
Operator: SS
Inst : LCA
Multiplr: 1.00

Quant Results File: 61011CON.RES

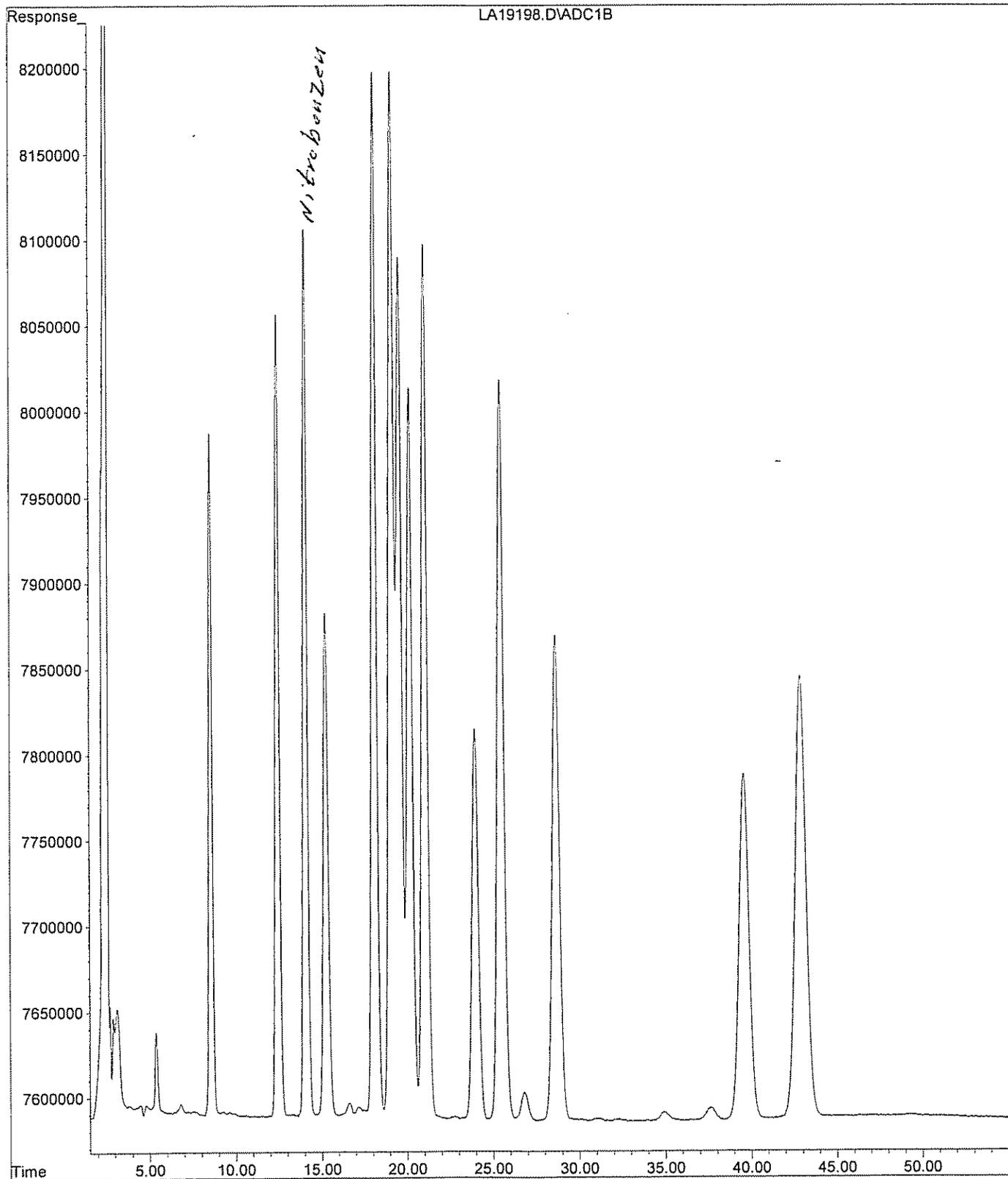
Quant Method : I:\LCDATA\LCA\METHODS\61011CON.M (Chemstation Integrator)
Title : 8330 Explosives Confirmation
Last Update : Mon Feb 05 11:40:12 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : POLAR RP
Signal Info : 254 nm U.V.



File : H:\LCDATA\LCA\022607\LA19198.D
Operator : SS
Acquired : 27 Feb 2007 14:35 using AcqMethod 8330MIX.M
Instrument : LCA
Sample Name: 8330MIX
Misc Info : CCAL
Vial Number: 27

Confirmation
LA19198.D\ADC1B



Method : I:\LCDATA\LCA\METHODS\61011CON.M (Chemstation Integrator)
 Title : 8330 Explosives Confirmation
 Last Update : Thu Mar 01 13:28:44 2007
 Response via : Initial Calibration

Continuing Calibration File: LA19212.D

Min. RRF : 0.000 Min. Rel. Area : 50%
 Max. RRF Dev : 15% Max. Rel. Area : 150%

Compound		AvgRF	CCRF		%Dev	Area%
1	T HMX	118.805	127.075	E3	-7.0	110
2	S 4-Nitroaniline	119.774	114.587	E3	4.3	96
3	T 1,3,5-Trinitrobenzene	332.639	339.056	E3	-1.9	100
4	T Tetryl	233.322	243.420	E3	-4.3	95
5	T 2,4,6-Trinitrotoluene	335.285	337.426	E3	-0.6	104
6	T 4-Amino-2,6-Dinitrotoluene	571.749	587.550	E3	-2.8	105
7	T 2,6-Dinitrotoluene	237.117	239.619	E3	-1.1	102
8	T 4-Nitrotoluene	241.211	245.222	E3	-1.7	105
9	M RDX	155.302	157.549	E3	-1.4	102
10	M 1,3-Dinitrobenzene	502.241	545.265	E3	-8.6	111
11	M Nitrobenzene	341.109	351.952	E3	-3.2	104
12	M 2-Amino-4,6-Dinitrotoluene	571.749	587.550	E3	-2.8	105
13	M 2,4-Dinitrotoluene	476.117	479.554	E3	-0.7	103
14	M 2-Nitrotoluene	220.269	228.460	E3	-3.7	106
15	M 3-Nitrotoluene	191.685	201.255	E3	-5.0	107

Data File : H:\LCDATA\LCA\022607\LA19212.D Vial: 41
 Acq On : 28 Feb 2007 4:28 am Operator: SS
 Sample : 8330MIX Inst : LCA
 Misc : CCAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Feb 28 7:57 2007 Quant Results File: 61011CON.RES

Quant Method : I:\LCDATA\LCA\METHODS\61011CON.M (Chemstation Integrator)
 Title : 8330 Explosives Confirmation
 Last Update : Mon Feb 05 11:40:12 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : POLAR RP
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
2) S 4-Nitroaniline	8.56	57293616	478.349 ng/ml
Spiked Amount 300.000	Range 49 - 133	Recovery	= 159.45%#
Target Compounds			
1) T HMX	15.30	63537653	534.805 ng/ml
3) T 1,3,5-Trinitrobenzene	28.73	84764034	254.823 ng/ml
4) T Tetryl	43.02	121709907	521.638 ng/ml
5) T 2,4,6-Trinitrotoluene	39.68	84356616	251.596 ng/ml
6) T 4-Amino-2,6-Dinitrotoluene	19.19	146887610	256.909 ng/ml
7) T 2,6-Dinitrotoluene	24.04	59904790	252.638 ng/ml
8) T 4-Nitrotoluene	21.11	122610934	508.314 ng/ml
9) M RDX	12.47	78774458	507.234 ng/ml
10) M 1,3-Dinitrobenzene	18.16	136316352	271.416 ng/mlm
11) M Nitrobenzene	14.10	87987900	257.947 ng/ml
12) M 2-Amino-4,6-Dinitrotoluene	19.19	146887610	256.909 ng/ml
13) M 2,4-Dinitrotoluene	25.55	119888445	251.805 ng/ml
14) M 2-Nitrotoluene	19.65	114229787	518.593 ng/ml
15) M 3-Nitrotoluene	20.25	100627503	524.962 ng/ml

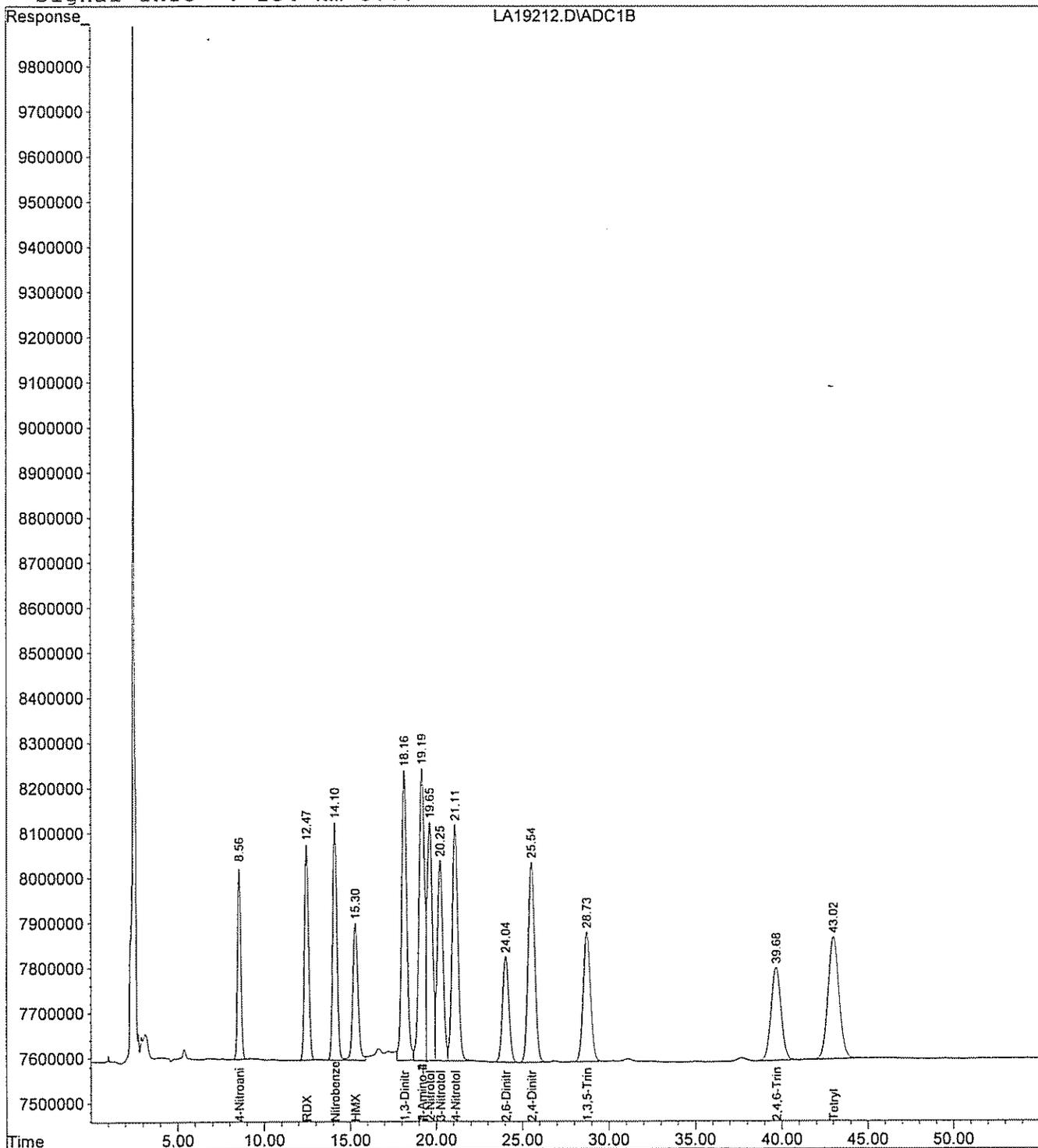
Quantitation Report

Data File : H:\LCDATA\LCA\022607\LA19212.D
Acq On : 28 Feb 2007 4:28 am
Sample : 8330MIX
Misc : CCAL
IntFile : events.e
Quant Time: Feb 28 7:57 2007

Vial: 41
Operator: SS
Inst : LCA
Multiplr: 1.00

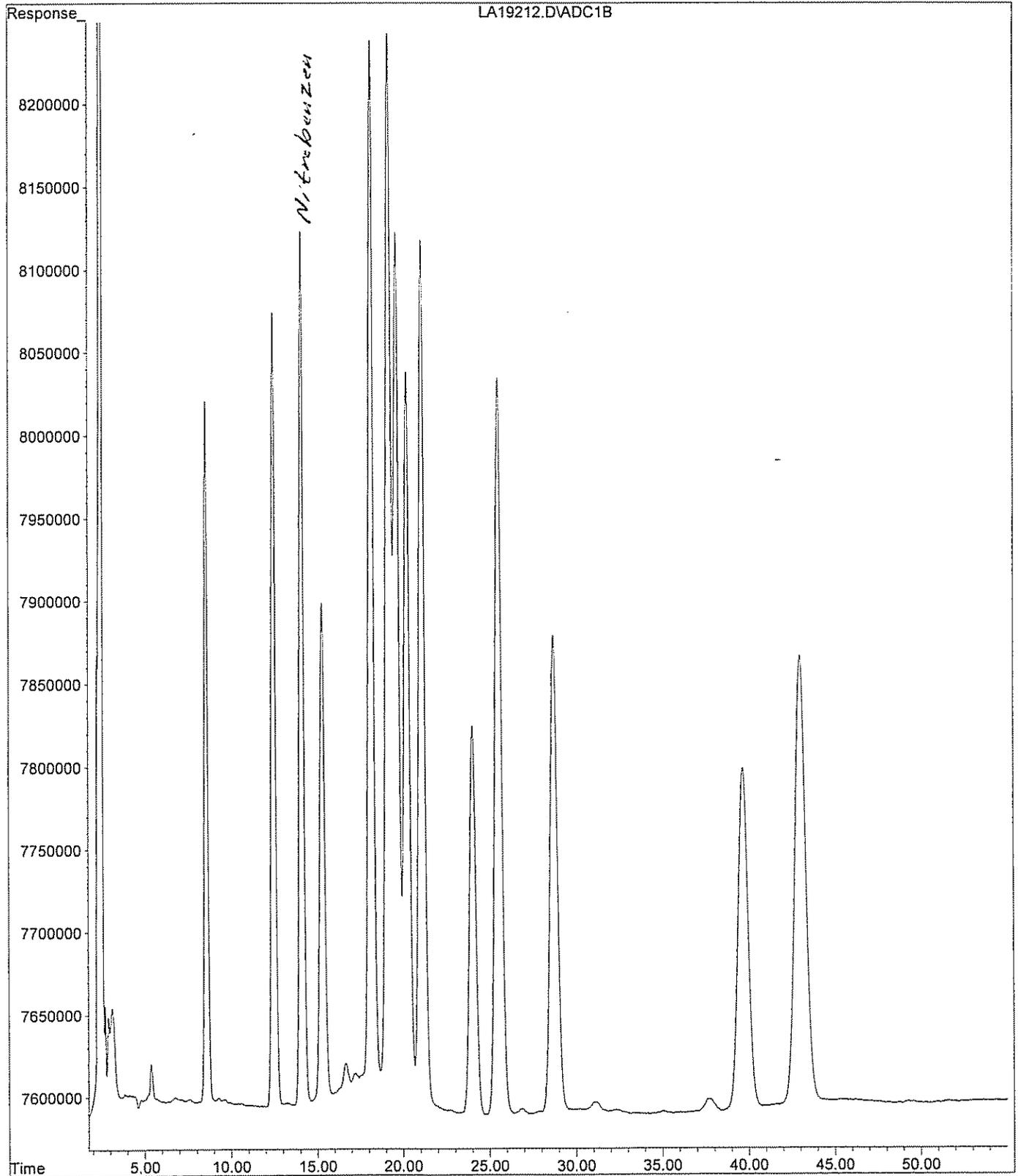
Quant Method : I:\LCDATA\LCA\METHODS\61011CON.M (Chemstation Integrator)
Title : 8330 Explosives Confirmation
Last Update : Mon Feb 05 11:40:12 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : POLAR RP
Signal Info : 254 nm U.V.



File : H:\LCDATA\LCA\022607\LA19212.D
Operator : SS
Acquired : 28 Feb 2007 4:28 using AcqMethod 8330MIX.M
Instrument : LCA
Sample Name: 8330MIX
Misc Info : CCAL
Vial Number: 41

Confirmation



Response Factor Report LCA

Method : H:\LCDATA\LCA\METHODS\7122NGCO.M (Chemstation Integrator)
Title : NITROGLYCERINE- 5 POINT 8330 confirmation
Last Update : Wed Jan 03 13:44:41 2007

Calibration Files

LEV1 =LA18496.D LEV2 =LA18497.D LEV3 =LA18498.D
LEV4 =LA18499.D LEV5 =LA18500.D

Compound		LEV1	LEV2	LEV3	LEV4	LEV5	Avg		%RSD
1) S	4-NITROANILINE	1.176	1.172	1.161	1.134	1.029	1.134	E5	5.38
2) M	NITROGLYCERINE	1.469	1.703	1.633	1.634	1.608	1.609	E6	5.35

Data File : H:\LCDATA\LCA\012207\LA18495.D Vial: 1
 Acq On : 22 Jan 2007 16:43 Operator: SS
 Sample : 8330NG-BLK Inst : LCA
 Misc : CCAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Jan 23 8:14 2007 Quant Results File: 7122NGCO.RES

Quant Method : H:\LCDATA\LCA\METHODS\7122NGCO.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT 8330 confirmation
 Last Update : Wed Jan 03 13:44:41 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : Polar RP
 Signal Info : 254 nm U.V.

Compound.	R.T.	Response	Conc	Units

System Monitoring Compounds				
1) S 4-NITROANILINE	0.00	0	N.D.	PPB
Spiked Amount 300.000		Recovery =	0.00%	
Target Compounds				
2) M NITROGLYCERINE	0.00	0	N.D.	PPM

Quantitation Report

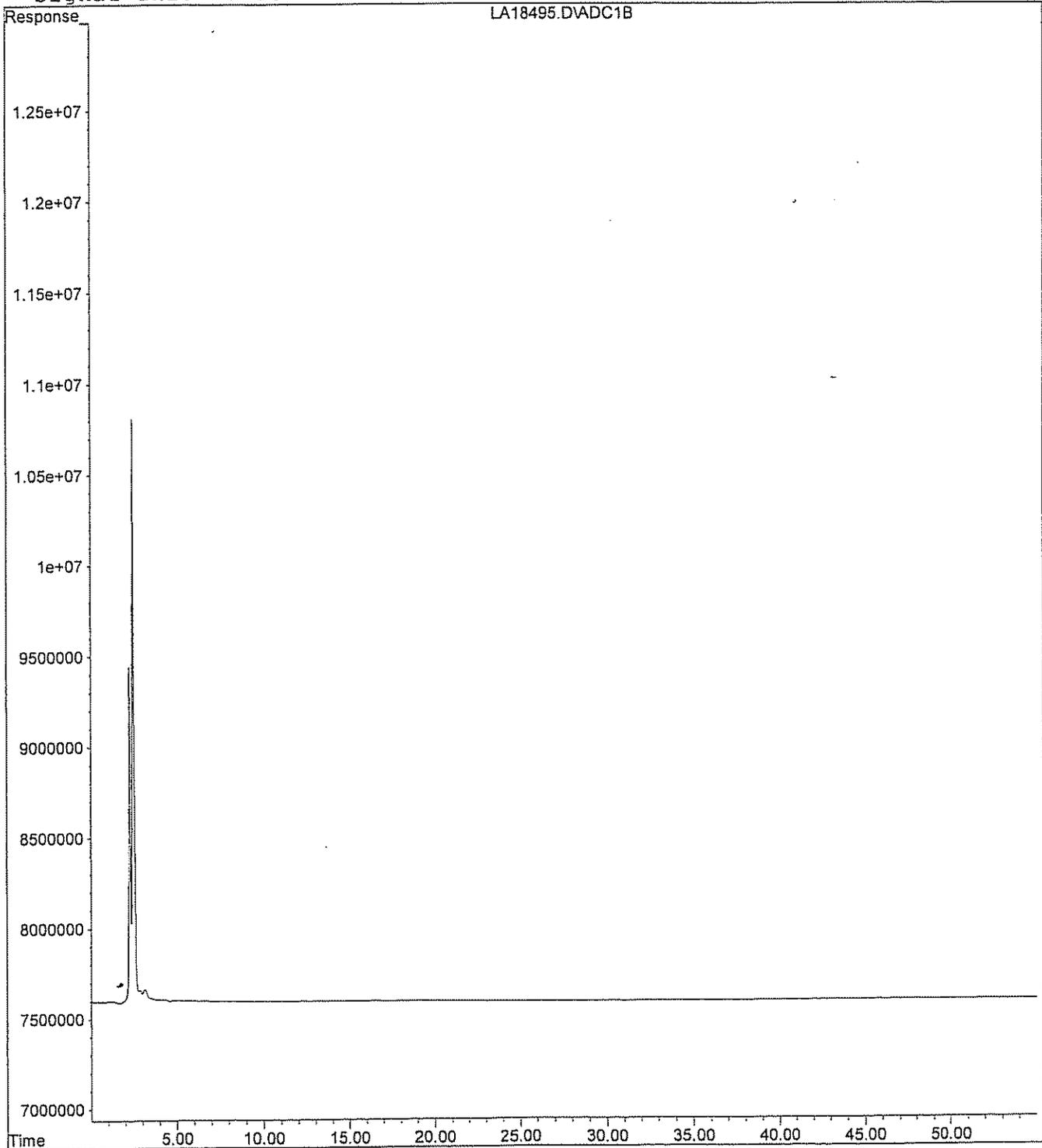
Data File : H:\LCDATA\LCA\012207\LA18495.D
Acq On : 22 Jan 2007 16:43
Sample : 8330NG-BLK
Misc : CCAL
IntFile : events.e
Quant Time: Jan 23 8:14 2007

Vial: 1
Operator: SS
Inst : LCA
Multiplr: 1.00

Quant Results File: 7122NGCO.RES

Quant Method : H:\LCDATA\LCA\METHODS\7122NGCO.M (Chemstation Integrator)
Title : NITROGLYCERINE- 5 POINT 8330 confirmation
Last Update : Wed Jan 03 13:44:41 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : Polar RP
Signal Info : 254 nm U.V.



Data File : H:\LCDATA\LCA\012207\LA18496.D Vial: 2
 Acq On : 22 Jan 2007 17:42 Operator: SS
 Sample : 8330NG-LEV1 Inst : LCA
 Misc : CCAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Jan 23 8:14 2007 Quant Results File: 7122NGCO.RES

Quant Method : H:\LCDATA\LCA\METHODS\7122NGCO.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT 8330 confirmation
 Last Update : Wed Jan 03 13:44:41 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : Polar RP
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
1) S 4-NITROANILINE	8.48	2940190	26.675 PPB m
Spiked Amount 300.000		Recovery =	8.89%
Target Compounds			
2) M NITROGLYCERINE	27.75	1468670.	0.853 PPM m

Quantitation Report

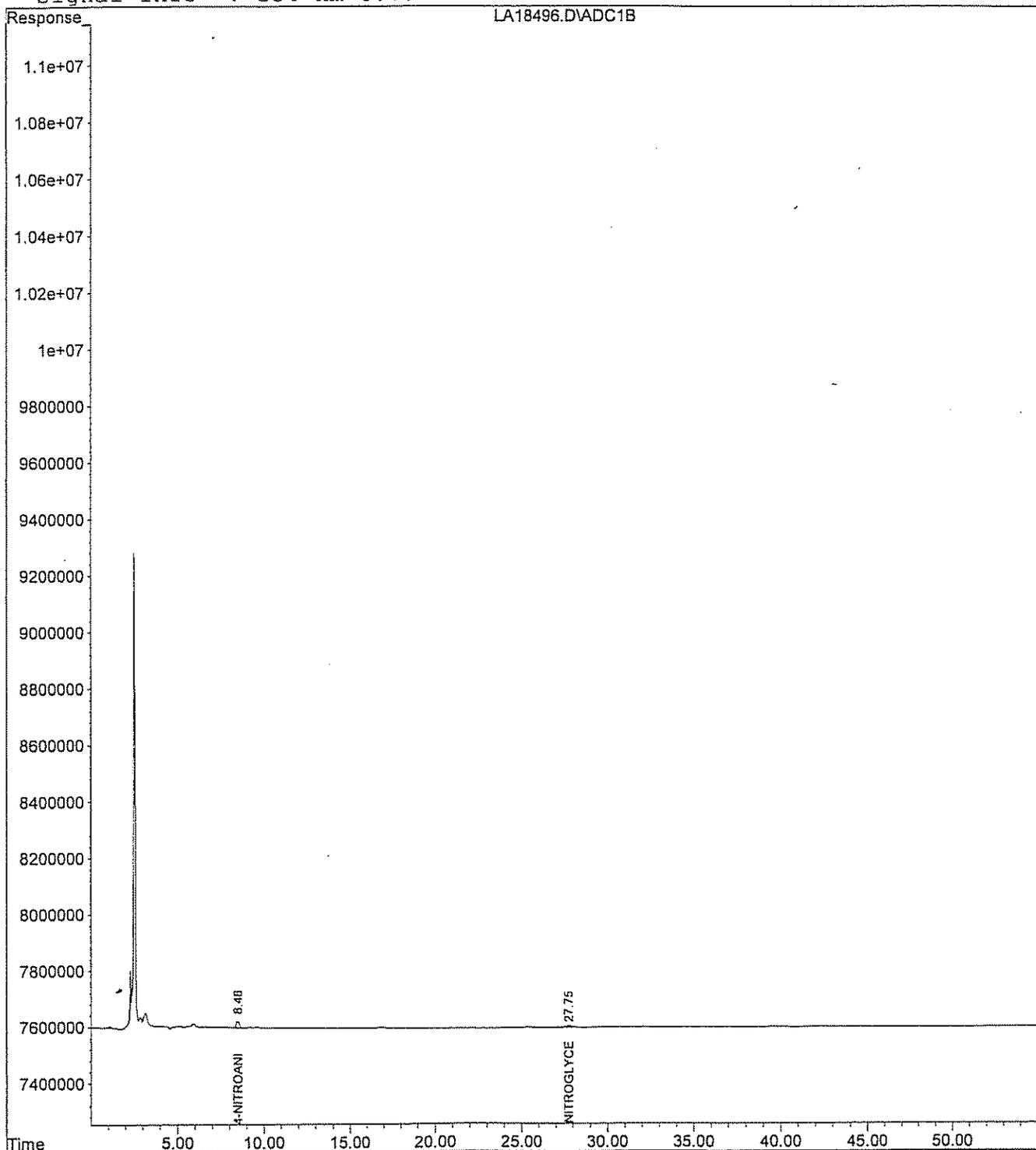
Data File : H:\LCDATA\LCA\012207\LA18496.D
Acq On : 22 Jan 2007 17:42
Sample : 8330NG-LEV1
Misc : CCAL
IntFile : events.e
Quant Time: Jan 23 8:14 2007

Vial: 2
Operator: SS
Inst : LCA
Multiplr: 1.00

Quant Results File: 7122NGCO.RES

Quant Method : H:\LCDATA\LCA\METHODS\7122NGCO.M (Chemstation Integrator)
Title : NITROGLYCERINE- 5 POINT 8330 confirmation
Last Update : Wed Jan 03 13:44:41 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : Polar RP
Signal Info : 254 nm U.V.



Data File : H:\LCDATA\LCA\012207\LA18497.D Vial: 3
 Acq On : 22 Jan 2007 18:42 Operator: SS
 Sample : 8330NG-LEV2 Inst : LCA
 Misc : CCAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Jan 23 8:15 2007 Quant Results File: 7122NGCO.RES

Quant Method : H:\LCDATA\LCA\METHODS\7122NGCO.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT 8330 confirmation
 Last Update : Wed Jan 03 13:44:41 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : Polar RP
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units
System Monitoring Compounds			
1) S 4-NITROANILINE	8.47	14650309	133.895 PPB
Spiked Amount 300.000		Recovery =	44.63%
Target Compounds			
2) M NITROGLYCERINE	27.79	8513540	5.221 PPM m

Quantitation Report

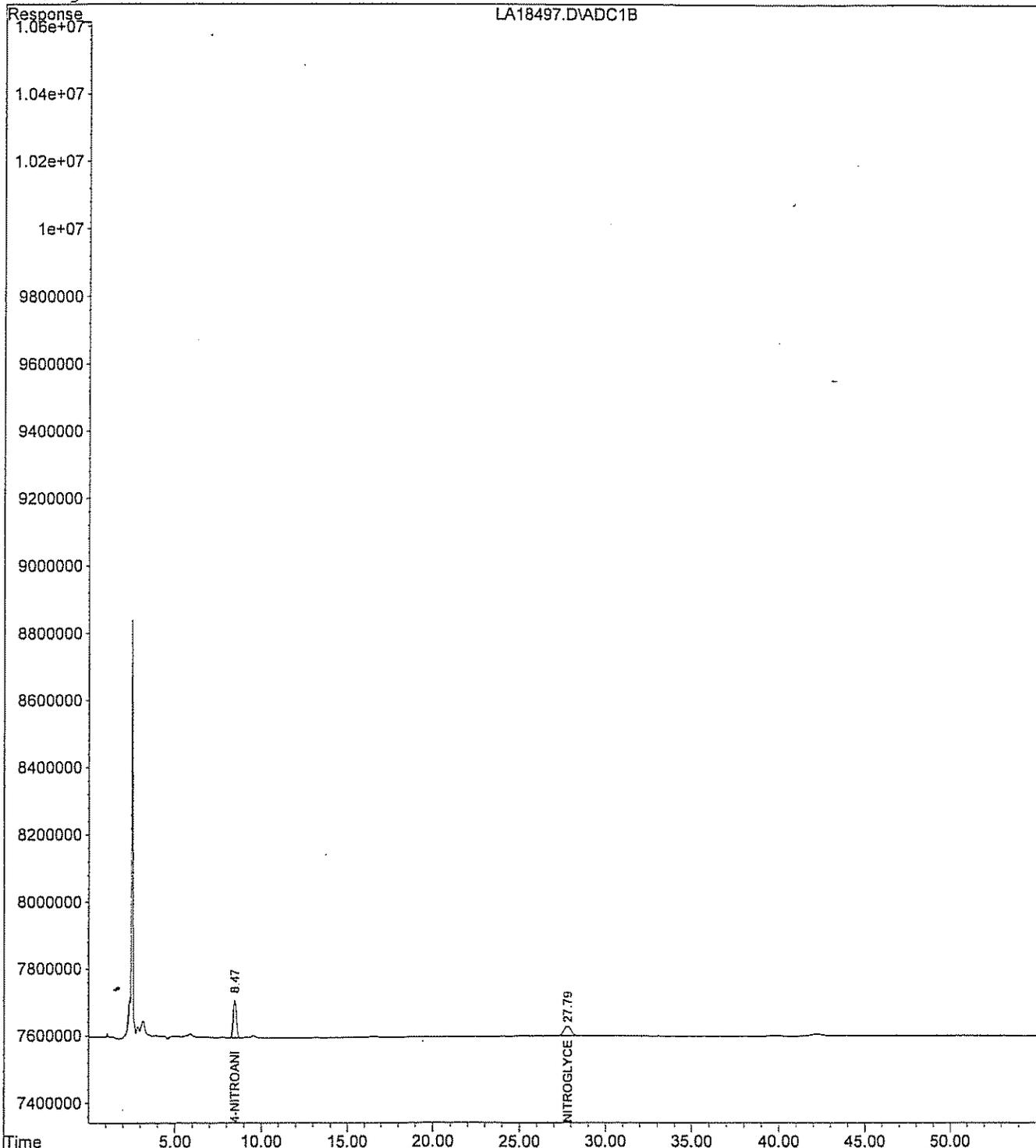
Data File : H:\LCDATA\LCA\012207\LA18497.D
Acq On : 22 Jan 2007 18:42
Sample : 8330NG-LEV2
Misc : CCAL
IntFile : events.e
Quant Time: Jan 23 8:15 2007

Vial: 3
Operator: SS
Inst : LCA
Multiplr: 1.00

Quant Results File: 7122NGCO.RES

Quant Method : H:\LCDATA\LCA\METHODS\7122NGCO.M (Chemstation Integrator)
Title : NITROGLYCERINE- 5 POINT 8330 confirmation
Last Update : Wed Jan 03 13:44:41 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : Polar RP
Signal Info : 254 nm U.V.



Data File : H:\LCDATA\LCA\012207\LA18498.D Vial: 4
Acq On : 22 Jan 2007 19:42 Operator: SS
Sample : 8330NG-LEV3 Inst : LCA
Misc : CCAL Multiplr: 1.00
IntFile : events.e
Quant Time: Jan 23 8:14 2007 Quant Results File: 7122NGCO.RES

Quant Method : H:\LCDATA\LCA\METHODS\7122NGCO.M (Chemstation Integrator)
Title : NITROGLYCERINE- 5 POINT 8330 confirmation
Last Update : Wed Jan 03 13:44:41 2007
Response via : Initial Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : Polar RP
Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
1) S 4-NITROANILINE	8.46	29026913	270.143 PPB
Spiked Amount 300.000		Recovery =	90.05%
Target Compounds			
2) M NITROGLYCERINE	27.76	16332021	9.477 PPM

Quantitation Report

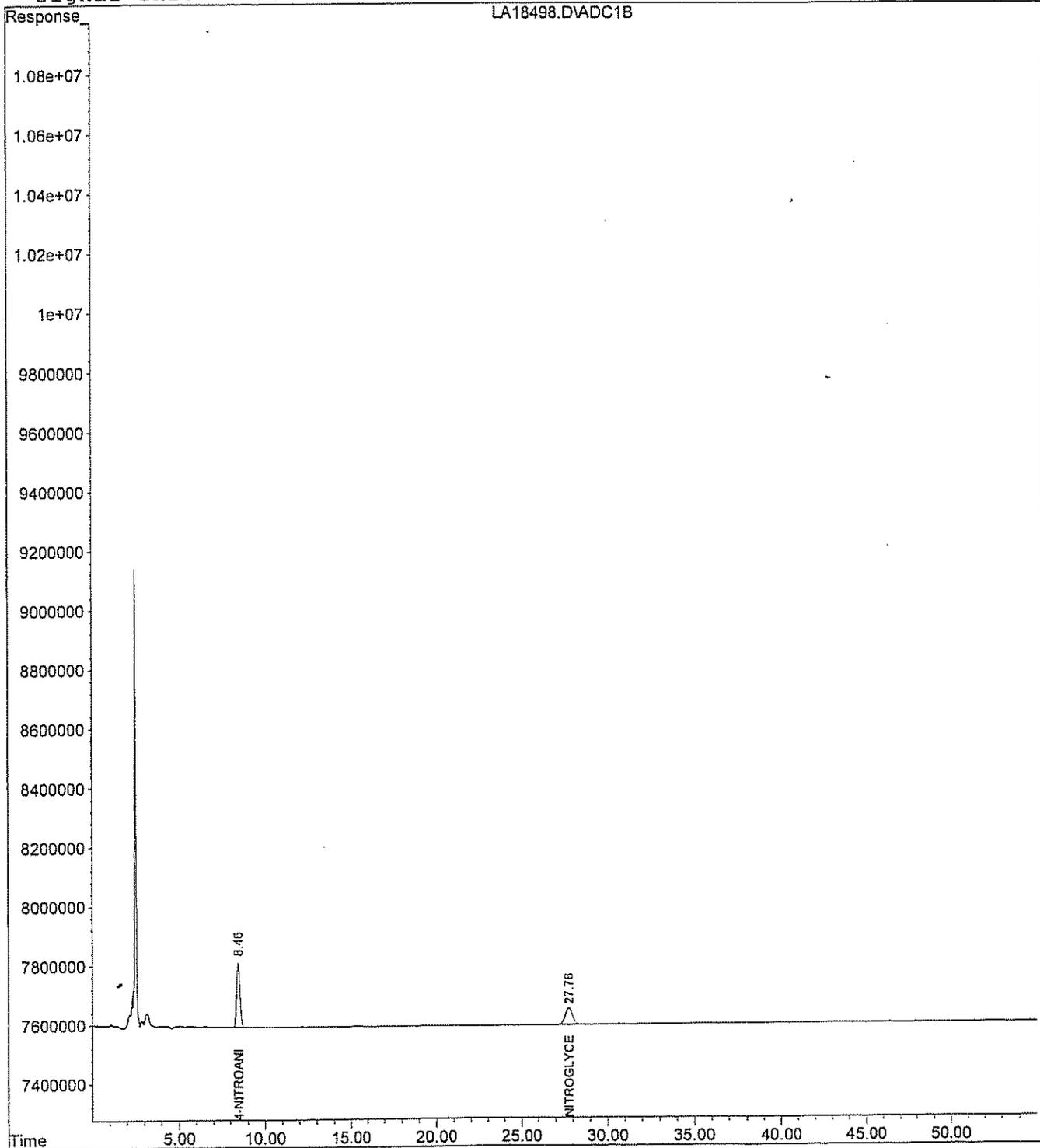
Data File : H:\LCDATA\LCA\012207\LA18498.D
Acq On : 22 Jan 2007 19:42
Sample : 8330NG-LEV3
Misc : CCAL
IntFile : events.e
Quant Time: Jan 23 8:14 2007

Vial: 4
Operator: SS
Inst : LCA
Multiplr: 1.00

Quant Results File: 7122NGCO.RES

Quant Method : H:\LCDATA\LCA\METHODS\7122NGCO.M (Chemstation Integrator)
Title : NITROGLYCERINE- 5 POINT 8330 confirmation
Last Update : Wed Jan 03 13:44:41 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : Polar RP
Signal Info : 254 nm U.V.



Data File : H:\LCDATA\LCA\012207\LA18499.D Vial: 5
 Acq On : 22 Jan 2007 20:41 Operator: SS
 Sample : 8330NG-LEV4 Inst : LCA
 Misc : CCAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Jan 23 8:15 2007 Quant Results File: 7122NGCO.RES

Quant Method : H:\LCDATA\LCA\METHODS\7122NGCO.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT 8330 confirmation
 Last Update : Wed Jan 03 13:44:41 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : Polar RP
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
1) S 4-NITROANILINE	8.47	56696901	510.518 PPB
Spiked Amount 300.000		Recovery =	170.17%
Target Compounds			
2) M NITROGLYCERINE	27.81	32671795.	20.092 PPM

Quantitation Report

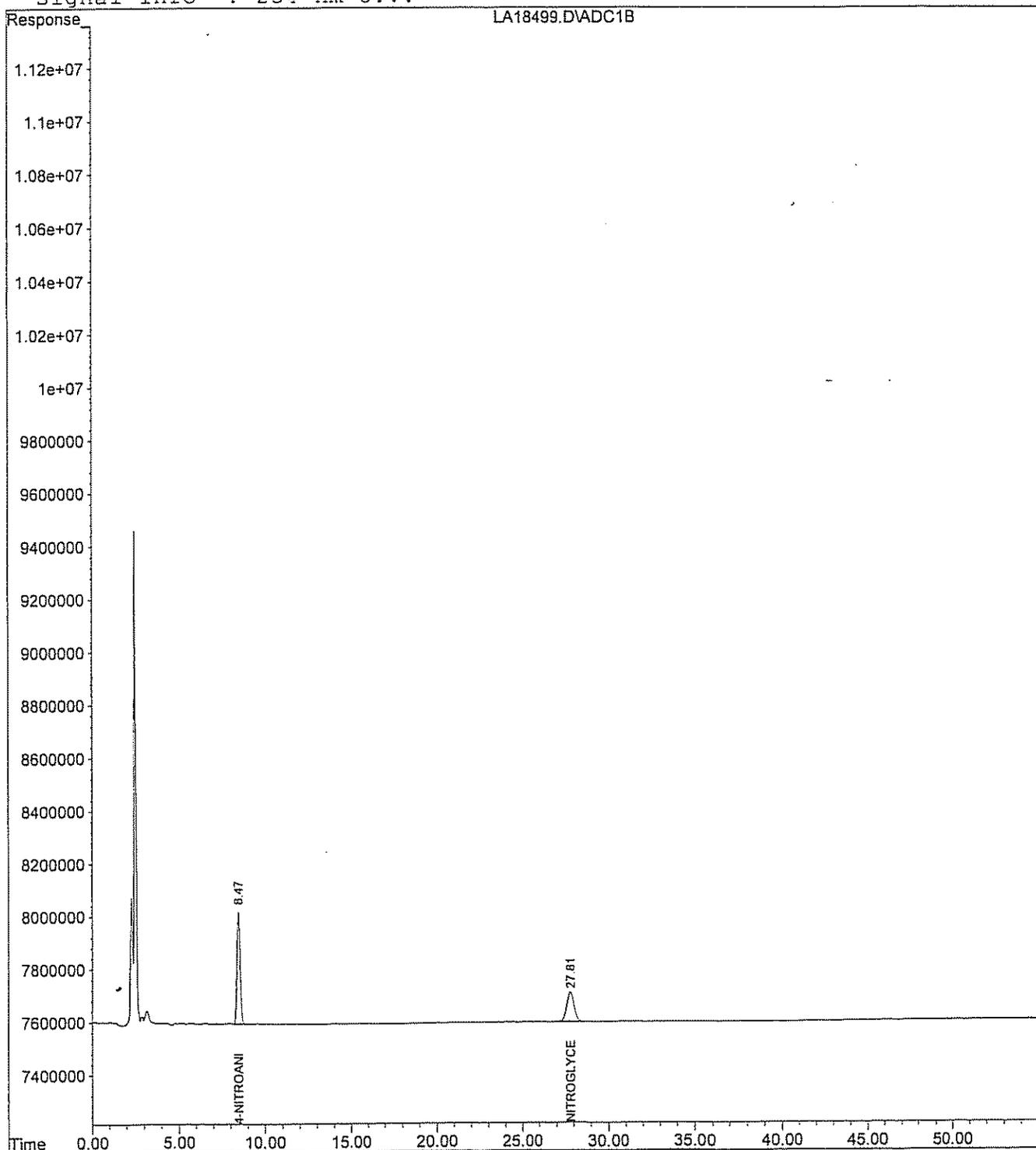
Data File : H:\LCDATA\LCA\012207\LA18499.D
Acq On : 22 Jan 2007 20:41
Sample : 8330NG-LEV4
Misc : CCAL
IntFile : events.e
Quant Time: Jan 23 8:15 2007

Vial: 5
Operator: SS
Inst : LCA
Multiplr: 1.00

Quant Results File: 7122NGCO.RES

Quant Method : H:\LCDATA\LCA\METHODS\7122NGCO.M (Chemstation Integrator)
Title : NITROGLYCERINE- 5 POINT 8330 confirmation
Last Update : Wed Jan 03 13:44:41 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : Polar RP
Signal Info : 254 nm U.V.



Data File : H:\LCDATA\LCA\012207\LA18500.D Vial: 6
 Acq On : 22 Jan 2007 21:40 Operator: SS
 Sample : 8330NG-LEV5 Inst : LCA
 Misc : CCAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Jan 23 8:16 2007 Quant Results File: 7122NGCO.RES

Quant Method : H:\LCDATA\LCA\METHODS\7122NGCO.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT 8330 confirmation
 Last Update : Wed Jan 03 13:44:41 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : Polar RP
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
1) S 4-NITROANILINE	8.46	128657247	1133.176 PPB
Spiked Amount 300.000		Recovery =	377.73%
Target Compounds			
2) M NITROGLYCERINE	27.79	80421983	49.506 PPM

Quantitation Report

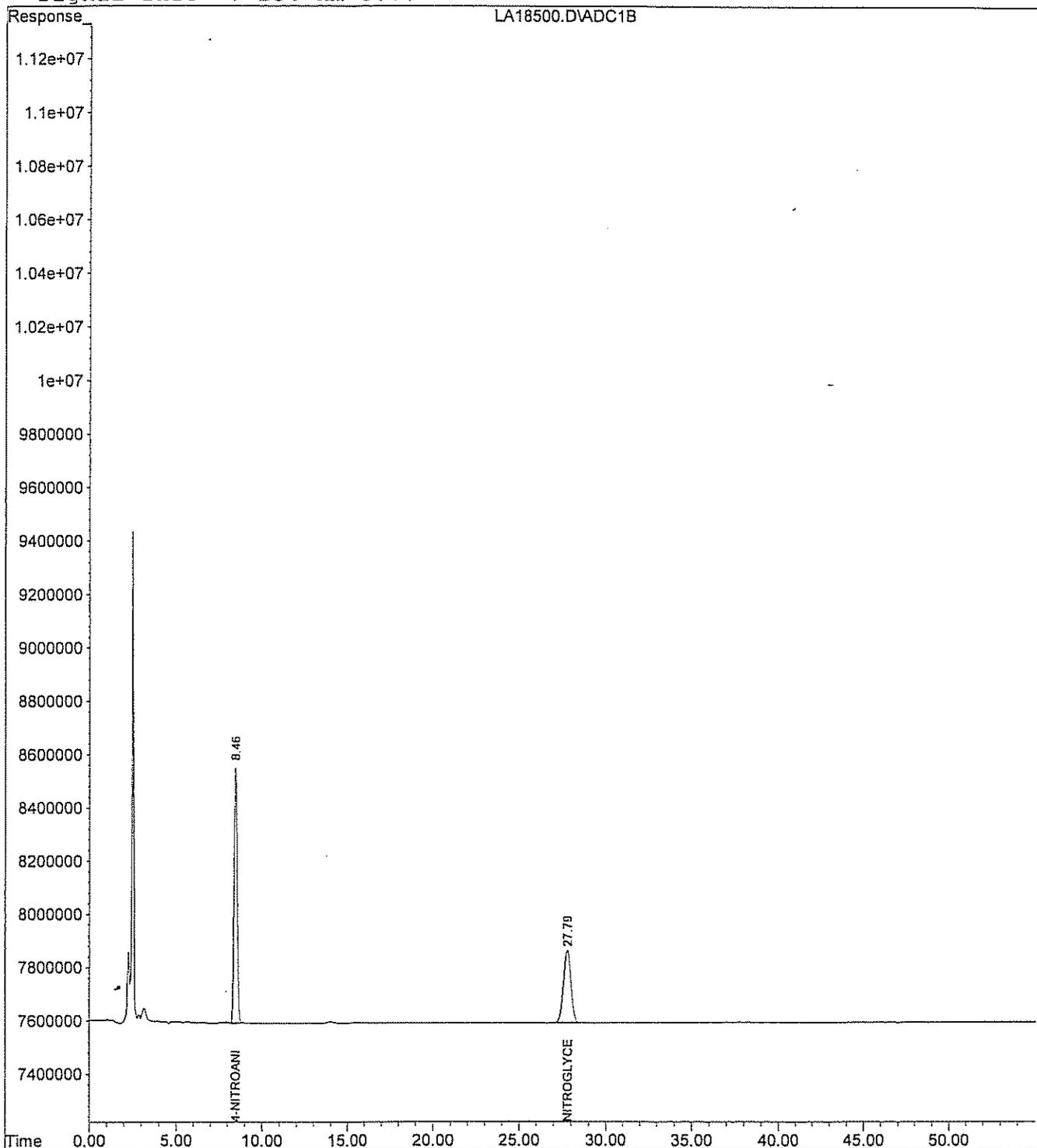
Data File : H:\LCDATA\LCA\012207\LA18500.D
Acq On : 22 Jan 2007 21:40
Sample : 8330NG-LEV5
Misc : CCAL
IntFile : events.e
Quant Time: Jan 23 8:16 2007

Vial: 6
Operator: SS
Inst : LCA
Multiplr: 1.00

Quant Results File: 7122NGCO.RES

Quant Method : H:\LCDATA\LCA\METHODS\7122NGCO.M (Chemstation Integrator)
Title : NITROGLYCERINE- 5 POINT 8330 confirmation
Last Update : Wed Jan 03 13:44:41 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : Polar RP
Signal Info : 254 nm U.V.



****8330 RETENTION TIME WINDOW ESTABLISHMENT****

INSTRUMENT: LCA
COLUMN: Polar ANALYST JCSA
DATE: 2/3/07-2/4/07

COMPOUND	RT1	PW1	RT2	PW2	RT3	PW3	Avg RT	3x RT Std Dev	Avg PW	RT Window
4-Nitroaniline(Surr.)	8.34	0.23	8.35	0.23	8.38	0.23	8.357	0.062	0.23	0.12
Nitroglycerine	27.25	0.44	27.34	0.47	27.46	0.44	27.350	0.316	0.45	0.63

Advisory Retention Time Windows are based on three daily calibration check standards
Run within a 72 hour window

Windows are the greater of 1/2 the average peak width,
or +/- 3 times the retention time standard deviation

Continuing Calibration Report LCA

Method : H:\LCDATA\LCA\METHODS\7122NGCO.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT 8330 confirmation
 Last Update : Wed Jan 03 13:44:41 2007
 Response via : Initial Calibration

Continuing Calibration File: LA19199.D

Min. RRF : 0.000 Min. Rel. Area : 50%
 Max. RRF Dev : 15% Max. Rel. Area : 150%

Compound		AvgRF	CCRF	%Dev Area%	
1 S	4-NITROANILINE	113.447	87.964 E3	22.5#	76
2 M	NITROGLYCERINE	1.609	1.821 E6	-13.2	112

Data File : H:\LCDATA\LCA\012207\LA18501.D Vial: 7
 Acq On : 22 Jan 2007 22:40 Operator: SS
 Sample : 8330NG-ICV Inst : LCA
 Misc : CCAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Jan 23 8:16 2007 Quant Results File: 7122NGCO.RES

Quant Method : H:\LCDATA\LCA\METHODS\7122NGCO.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT 8330 confirmation
 Last Update : Wed Jan 03 13:44:41 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : Polar RP
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
1) S 4-NITROANILINE	8.48	29674023	261.566 PPB
Spiked Amount 300.000		Recovery =	87.19%
Target Compounds			
2) M NITROGLYCERINE	27.80	15970869	9.924 PPM

Quantitation Report

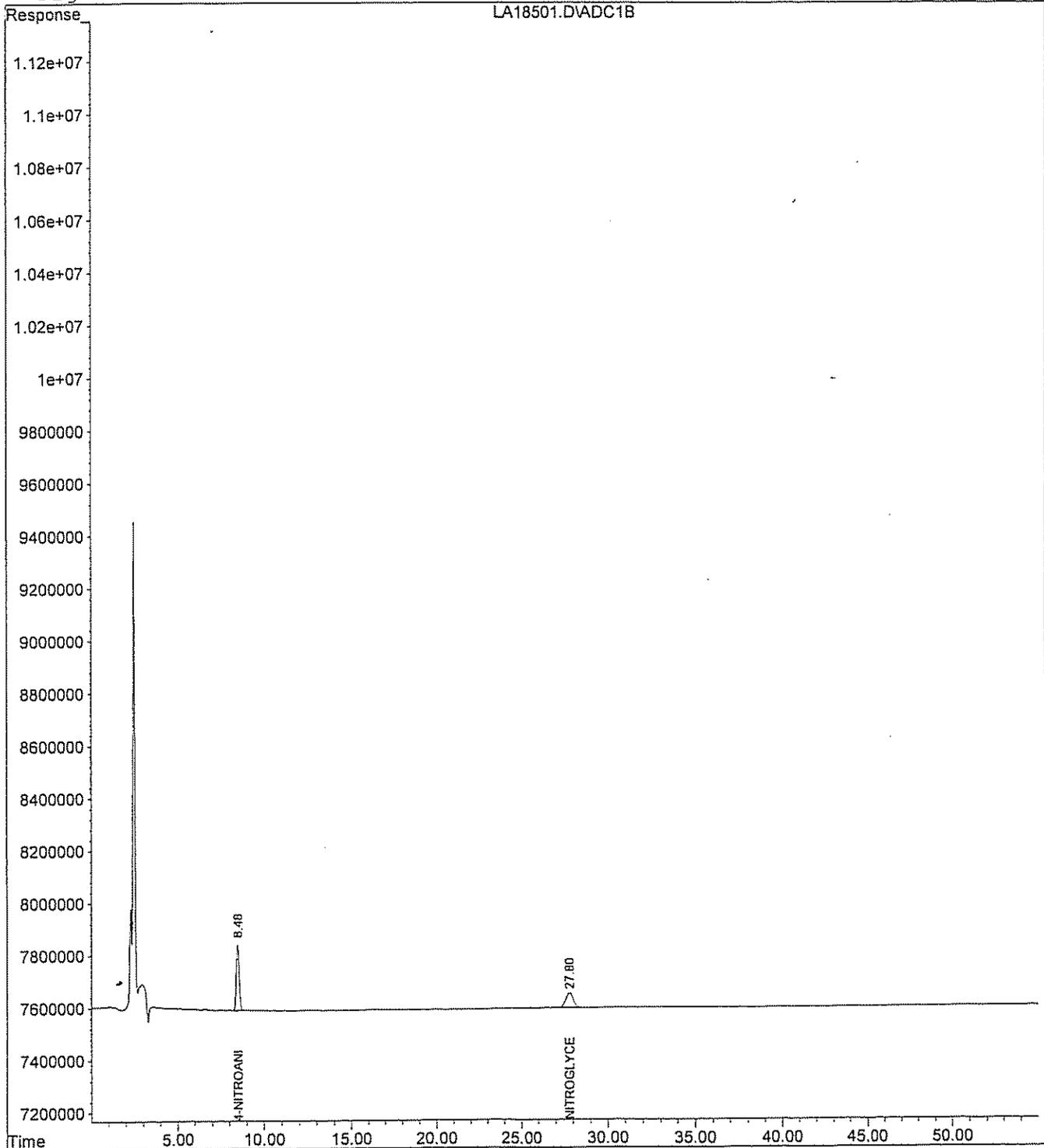
Data File : H:\LCDATA\LCA\012207\LA18501.D
Acq On : 22 Jan 2007 22:40
Sample : 8330NG-ICV
Misc : CCAL
IntFile : events.e
Quant Time: Jan 23 8:16 2007

Vial: 7
Operator: SS
Inst : LCA
Multiplr: 1.00

Quant Results File: 7122NGCO.RES

Quant Method : H:\LCDATA\LCA\METHODS\7122NGCO.M (Chemstation Integrator)
Title : NITROGLYCERINE- 5 POINT 8330 confirmation
Last Update : Wed Jan 03 13:44:41 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : Polar RP
Signal Info : 254 nm U.V.



Method : H:\LCDATA\LCA\METHODS\7122NGCO.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT 8330 confirmation
 Last Update : Thu Mar 01 13:29:18 2007
 Response via : Initial Calibration

Continuing Calibration File: LA19186.D

Min. RRF : 0.000 Min. Rel. Area : 50%
 Max. RRF Dev : 15% Max. Rel. Area : 150%

Compound		AvgRF	CCRF	%Dev Area%	
1 S	4-NITROANILINE	113.447	79.107 E3	30.3#	68
2 M	NITROGLYCERINE	1.609	1.747 E6	-8.6	107

Data File : H:\LCDATA\LCA\022607\0226NG\LA19186.D Vial: 15
 Acq On : 27 Feb 2007 2:38 am Operator: SS
 Sample : 8330NG Inst : LCA
 Misc : CCAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Feb 28 9:15 2007 Quant Results File: 7122NGCO.RES

Quant Method : H:\LCDATA\LCA\METHODS\7122NGCO.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT 8330 confirmation
 Last Update : Wed Jan 03 13:44:41 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : Polar RP
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

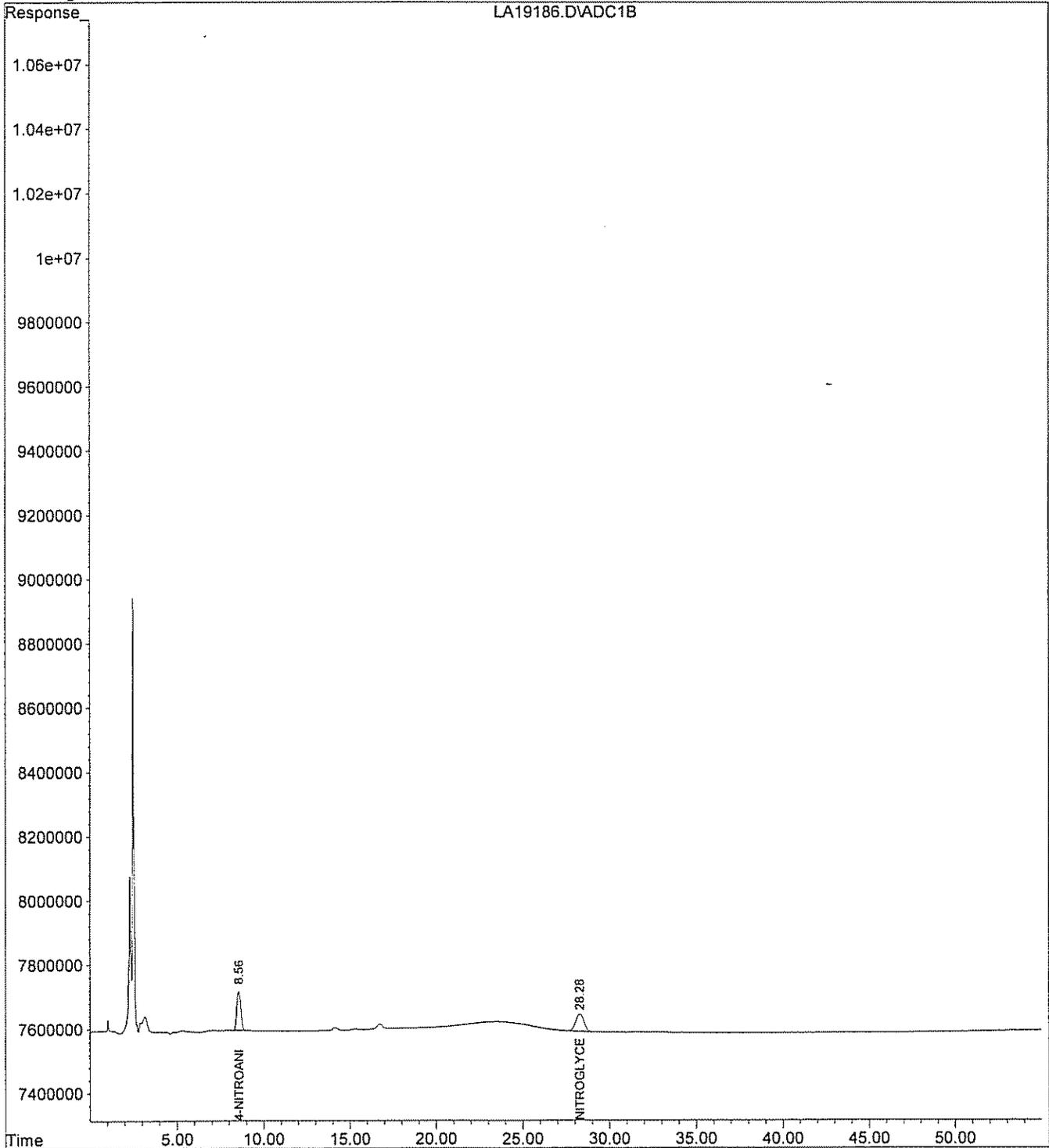
System Monitoring Compounds			
1) S 4-NITROANILINE	8.56	19776758	174.325 PPB
Spiked Amount 300.000		Recovery =	58.11%
Target Compounds			
2) M NITROGLYCERINE	28.28	17471442	10.856 PPM

Quantitation Report

Data File : H:\LCDATA\LCA\022607\0226NG\LA19186.D Vial: 15
Acq On : 27 Feb 2007 2:38 am Operator: SS
Sample : 8330NG Inst : LCA
Misc : CCAL Multiplr: 1.00
IntFile : events.e
Quant Time: Feb 28 9:15 2007 Quant Results File: 7122NGCO.RES

Quant Method : H:\LCDATA\LCA\METHODS\7122NGCO.M (Chemstation Integrator)
Title : NITROGLYCERINE- 5 POINT 8330 confirmation
Last Update : Wed Jan 03 13:44:41 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : Polar RP
Signal Info : 254 nm U.V.



Continuing Calibration Report LCA

Method : H:\LCDATA\LCA\METHODS\7122NGCO.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT 8330 confirmation
 Last Update : Thu Mar 01 13:29:42 2007
 Response via : Initial Calibration

Continuing Calibration File: LA19199.D

Min. RRF : 0.000 Min. Rel. Area : 50%
 Max. RRF Dev : 15% Max. Rel. Area : 150%

Compound		AvgRF	CCRF	%Dev Area%	
1 S	4-NITROANILINE	113.447	87.964 E3	22.5#	76
2 M	NITROGLYCERINE	1.609	1.821 E6	-13.2	112

Data File : H:\LCDATA\LCA\022607\0226NG\LA19199.D Vial: 28
 Acq On : 27 Feb 2007 3:35 pm Operator: SS
 Sample : 8330NG Inst : LCA
 Misc : CCAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Feb 28 7:58 2007 Quant Results File: 7122NGCO.RES

Quant Method : H:\LCDATA\LCA\METHODS\7122NGCO.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT 8330 confirmation
 Last Update : Wed Jan 03 13:44:41 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : Polar RP
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

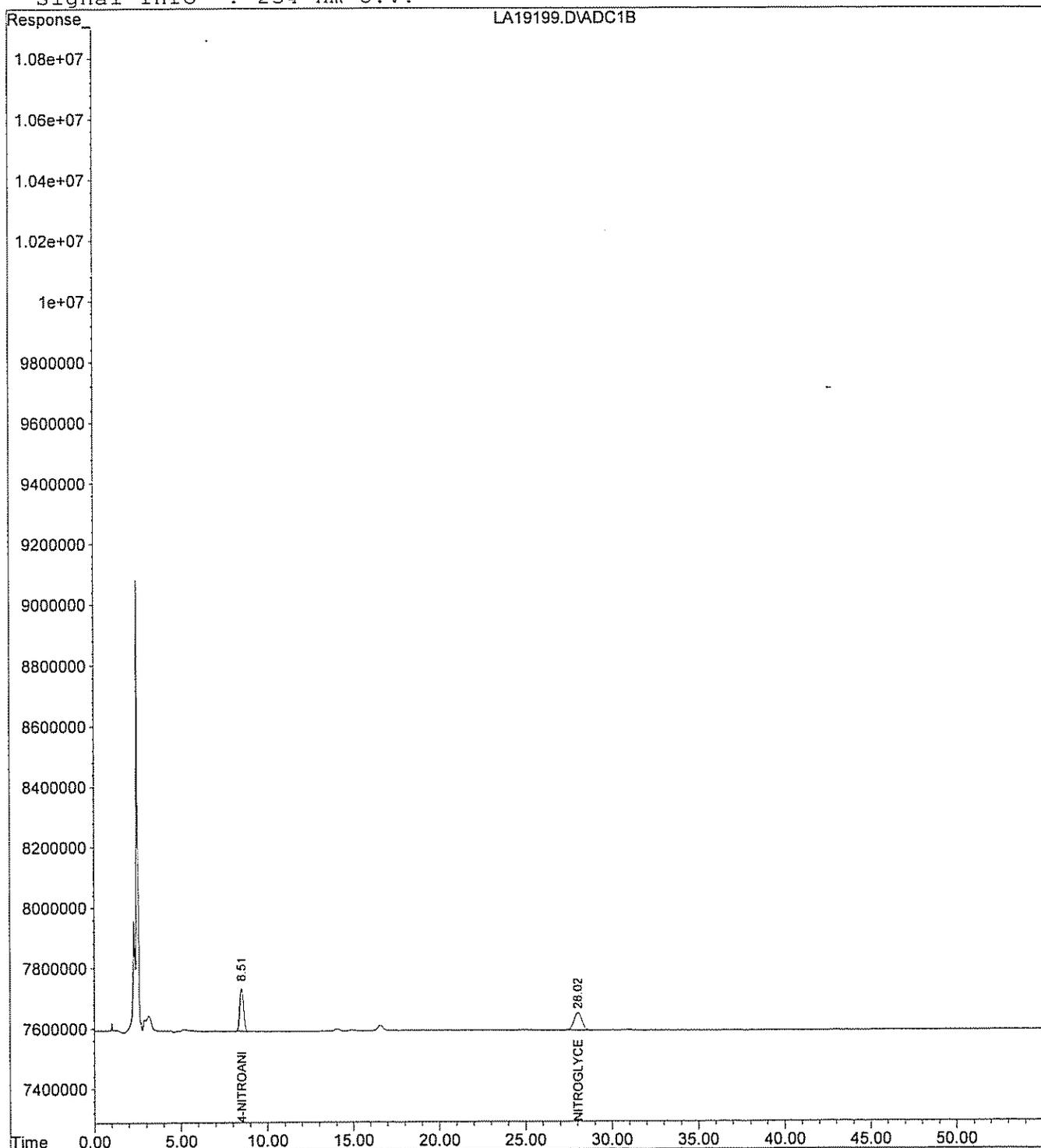
System Monitoring Compounds			
1) S 4-NITROANILINE	8.51	21991073	193.844 PPB
Spiked Amount 300.000		Recovery =	64.61%
Target Compounds			
2) M NITROGLYCERINE	28.02f	18211737	11.316 PPM

Quantitation Report

Data File : H:\LCDATA\LCA\022607\0226NG\LA19199.D Vial: 28
Acq On : 27 Feb 2007 3:35 pm Operator: SS
Sample : 8330NG Inst : LCA
Misc : CCAL Multiplr: 1.00
IntFile : events.e
Quant Time: Feb 28 7:58 2007 Quant Results File: 7122NGCO.RES

Quant Method : H:\LCDATA\LCA\METHODS\7122NGCO.M (Chemstation Integrator)
Title : NITROGLYCERINE- 5 POINT 8330 confirmation
Last Update : Wed Jan 03 13:44:41 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : Polar RP
Signal Info : 254 nm U.V.



Method : H:\LCDATA\LCA\METHODS\7122NGCO.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT 8330 confirmation
 Last Update : Thu Mar 01 13:30:06 2007
 Response via : Initial Calibration

Continuing Calibration File: LA19213.D

Min. RRF : 0.000 Min. Rel. Area : 50%
 Max. RRF Dev : 15% Max. Rel. Area : 150%

Compound		AvgRF	CCRF	%Dev Area%	
1 S	4-NITROANILINE	113.447	88.405 E3	22.1#	76
2 M	NITROGLYCERINE	1.609	1.794 E6	-11.5	110

Data File : H:\LCDATA\LCA\022607\0226NG\LA19213.D Vial: 42
 Acq On : 28 Feb 2007 5:27 am Operator: SS
 Sample : 8330NG Inst : LCA
 Misc : CCAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Feb 28 7:59 2007 Quant Results File: 7122NGCO.RES

Quant Method : H:\LCDATA\LCA\METHODS\7122NGCO.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT 8330 confirmation
 Last Update : Wed Jan 03 13:44:41 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : Polar RP
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

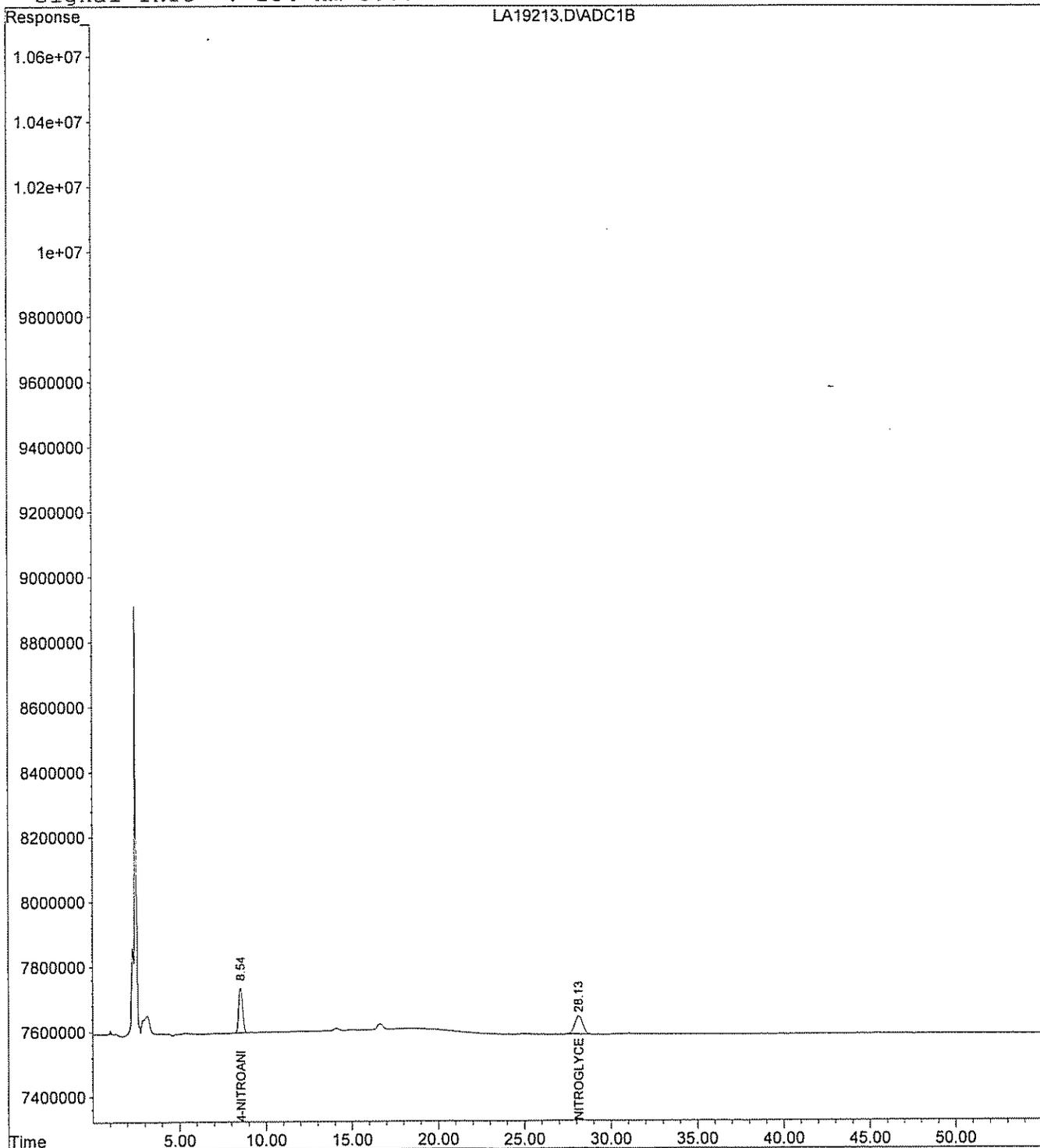
System Monitoring Compounds			
1) S 4-NITROANILINE	8.54	22101303	194.815 PPB
Spiked Amount 300.000		Recovery =	64.94%
Target Compounds			
2) M NITROGLYCERINE	28.13	17942757	11.149 PPM

Quantitation Report

Data File : H:\LCDATA\LCA\022607\0226NG\LA19213.D Vial: 42
Acq On : 28 Feb 2007 5:27 am Operator: SS
Sample : 8330NG Inst : LCA
Misc : CCAL Multiplr: 1.00
IntFile : events.e
Quant Time: Feb 28 7:59 2007 Quant Results File: 7122NGCO.RES

Quant Method : H:\LCDATA\LCA\METHODS\7122NGCO.M (Chemstation Integrator)
Title : NITROGLYCERINE- 5 POINT 8330 confirmation
Last Update : Wed Jan 03 13:44:41 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : Polar RP
Signal Info : 254 nm U.V.



Continuing Calibration Report LCA

Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
 Title : 8330 Explosives
 Last Update : Thu Mar 15 11:02:22 2007
 Response via : Initial Calibration

Continuing Calibration File: LA19343.D

Min. RRF : 0.000 Min. Rel. Area : 50%
 Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF		%Dev	Area%
1 T	HMX	119.343	125.410	E3	-5.1	105
2 S	4-Nitroaniline	134.966	123.580	E3	8.4	88
3 T	1,3,5-Trinitrobenzene	348.815	361.551	E3	-3.7	106
4 T	Tetryl	265.174	254.119	E3	4.2	97
5 T	2,4,6-Trinitrotoluene	345.289	346.462	E3	-0.3	105
6 T	4-Amino-2,6-Dinitrotoluene	237.677	233.550	E3	1.7	102
7 T	2,6-Dinitrotoluene	228.732	218.095	E3	4.7	99
8 T	4-Nitrotoluene	198.262	192.197	E3	3.1	103
9 M	RDX	146.410	157.084	E3	-7.3	104
10 M	1,3-Dinitrobenzene	504.863	510.536	E3	-1.1	104
11 M	Nitrobenzene	366.612	366.419	E3	0.1	108
12 M	2-Amino-4,6-Dinitrotoluene	358.851	354.080	E3	1.3	103
13 M	2,4-Dinitrotoluene	501.973	515.580	E3	-2.7	105
14 M	2-Nitrotoluene	226.814	226.071	E3	0.3	104
15 M	3-Nitrotoluene	242.235	246.590	E3	-1.8	104

Data File : H:\LCDATA\LCA\030707\LA19343.D Vial: 1
 Acq On : 7 Mar 2007 10:57 Operator: SS
 Sample : 8330MIX Inst : LCA
 Misc : CCAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Mar 7 12:41 2007 Quant Results File: 61110833.RES

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
 Title : 8330 Explosives
 Last Update : Mon Feb 26 09:49:31 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
2) S 4-Nitroaniline	7.52	61789930	457.817 ng/ml
Spiked Amount 300.000	Range 49 - 133	Recovery	= 152.61%#
Target Compounds			
1) T HMX	4.90	62704839	525.415 ng/mlm
3) T 1,3,5-Trinitrobenzene	14.10	90387780	259.128 ng/ml
4) T Tetryl	21.02	127059270	479.154 ng/ml
5) T 2,4,6-Trinitrotoluene	25.44	86615509	250.849 ng/ml
6) T 4-Amino-2,6-Dinitrotoluene	27.72	58387390	245.659 ng/ml
7) T 2,6-Dinitrotoluene	32.03	54523839	238.374 ng/ml
8) T 4-Nitrotoluene	44.71	96098279	484.703 ng/ml
9) M RDX	9.54	78541830	536.450 ng/ml
10) M 1,3-Dinitrobenzene	18.79	127634087	252.809 ng/ml
11) M Nitrobenzene	22.68	91604669	249.868 ng/ml
12) M 2-Amino-4,6-Dinitrotoluene	29.39	88520070	246.676 ng/ml
13) M 2,4-Dinitrotoluene	33.22	128894945	256.777 ng/ml
14) M 2-Nitrotoluene	41.43	113035615	498.363 ng/ml
15) M 3-Nitrotoluene	48.57	123295206	508.989 ng/ml

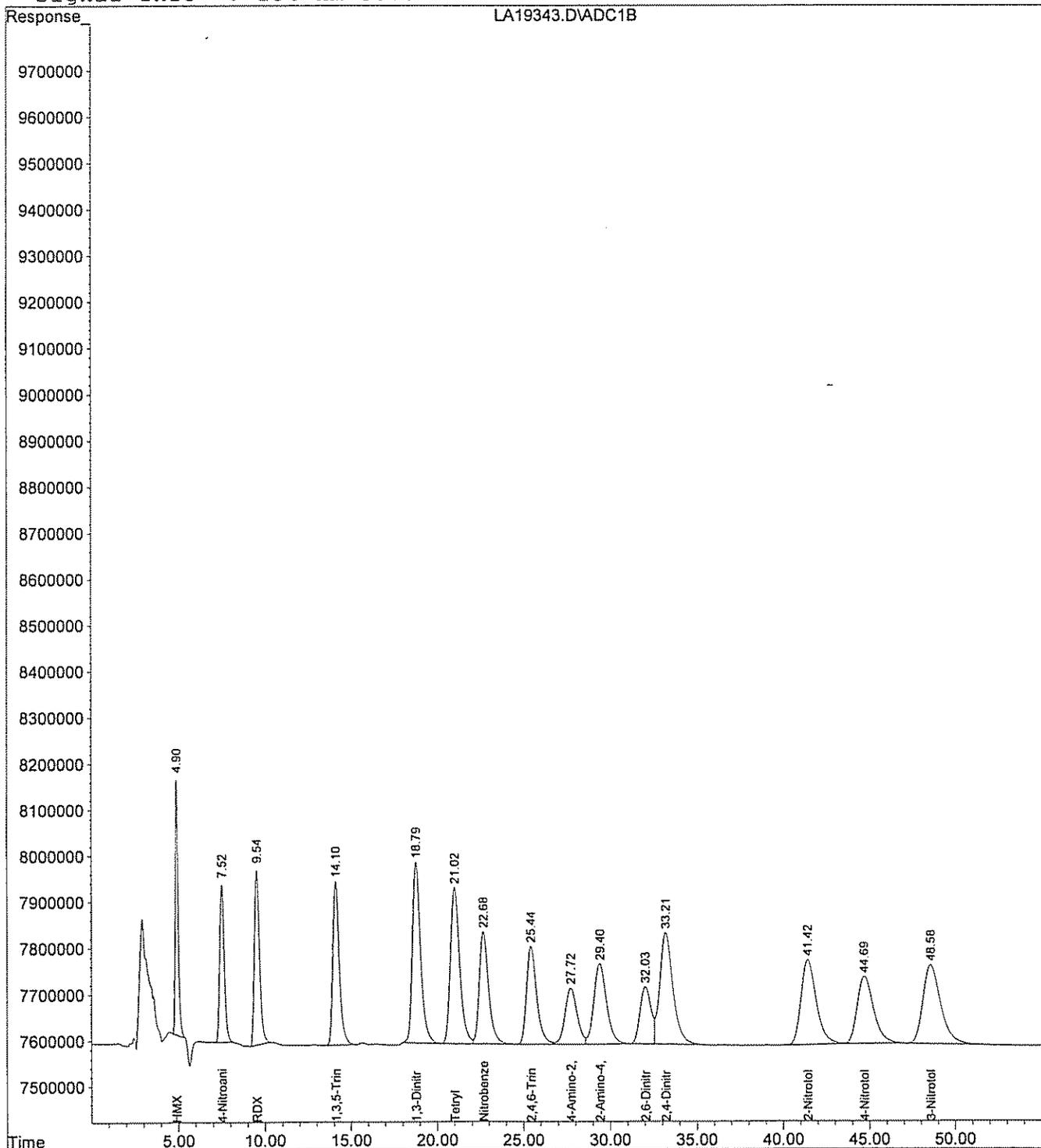
Quantitation Report

Data File : H:\LCDATA\LCA\030707\LA19343.D
Acq On : 7 Mar 2007 10:57
Sample : 8330MIX
Misc : CCAL
IntFile : events.e
Quant Time: Mar 7 12:41 2007

Vial: 1
Operator: SS
Inst : LCA
Multiplr: 1.00

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
Title : 8330 Explosives
Last Update : Mon Feb 26 09:49:31 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
 Title : 8330 Explosives
 Last Update : Thu Mar 15 11:02:40 2007
 Response via : Initial Calibration

Continuing Calibration File: LA19353.D

Min. RRF : 0.000 Min. Rel. Area : 50%
 Max. RRF Dev : 15% Max. Rel. Area : 150%

	Compound	AvgRF	CCRF		%Dev	Area%
1 T	HMX	119.343	129.439	E3	-8.5	108
2 S	4-Nitroaniline	134.966	121.831	E3	9.7	87
3 T	1,3,5-Trinitrobenzene	348.815	367.814	E3	-5.4	108
4 T	Tetryl	265.174	258.183	E3	2.6	99
5 T	2,4,6-Trinitrotoluene	345.289	351.811	E3	-1.9	106
6 T	4-Amino-2,6-Dinitrotoluene	237.677	236.138	E3	0.6	103
7 T	2,6-Dinitrotoluene	228.732	229.245	E3	-0.2	104
8 T	4-Nitrotoluene	198.262	195.228	E3	1.5	105
9 M	RDX	146.410	163.565	E3	-11.7	108
10 M	1,3-Dinitrobenzene	504.863	534.349	E3	-5.8	109
11 M	Nitrobenzene	366.612	364.921	E3	0.5	107
12 M	2-Amino-4,6-Dinitrotoluene	358.851	361.214	E3	-0.7	105
13 M	2,4-Dinitrotoluene	501.973	520.803	E3	-3.8	107
14 M	2-Nitrotoluene	226.814	229.735	E3	-1.3	105
15 M	3-Nitrotoluene	242.235	249.732	E3	-3.1	105

Data File : H:\LCDATA\LCA\030707\LA19353.D Vial: 11
 Acq On : 8 Mar 2007 2:14 Operator: SS
 Sample : 8330MIX Inst : LCA
 Misc : CCAL Multiplr: 1.00
 IntFile : events.e
 Quant Time: Mar 8 16:07 2007 Quant Results File: 61110833.RES

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
 Title : 8330 Explosives
 Last Update : Mon Feb 26 09:49:31 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
2) S 4-Nitroaniline	7.51	60915560	451.339 ng/ml
Spiked Amount 300.000	Range 49 - 133	Recovery	= 150.45%#
Target Compounds			
1) T HMX	4.90	64719670	542.298 ng/mlm
3) T 1,3,5-Trinitrobenzene	14.06	91953401	263.617 ng/ml
4) T Tetryl	20.93	129091618	486.819 ng/ml
5) T 2,4,6-Trinitrotoluene	25.33	87952790	254.722 ng/ml
6) T 4-Amino-2,6-Dinitrotoluene	27.63	59034578	248.382 ng/ml
7) T 2,6-Dinitrotoluene	31.96	57311354	250.561 ng/ml
8) T 4-Nitrotoluene	44.61	97614033	492.348 ng/ml
9) M RDX	9.53	81782584	558.585 ng/ml
10) M 1,3-Dinitrobenzene	18.71	133587257	264.601 ng/ml
11) M Nitrobenzene	22.58	91230165	248.846 ng/ml
12) M 2-Amino-4,6-Dinitrotoluene	29.32	90303521	251.646 ng/ml
13) M 2,4-Dinitrotoluene	33.16	130200702	259.378 ng/ml
14) M 2-Nitrotoluene	41.35	114867315	506.439 ng/ml
15) M 3-Nitrotoluene	48.48	124865869	515.474 ng/ml

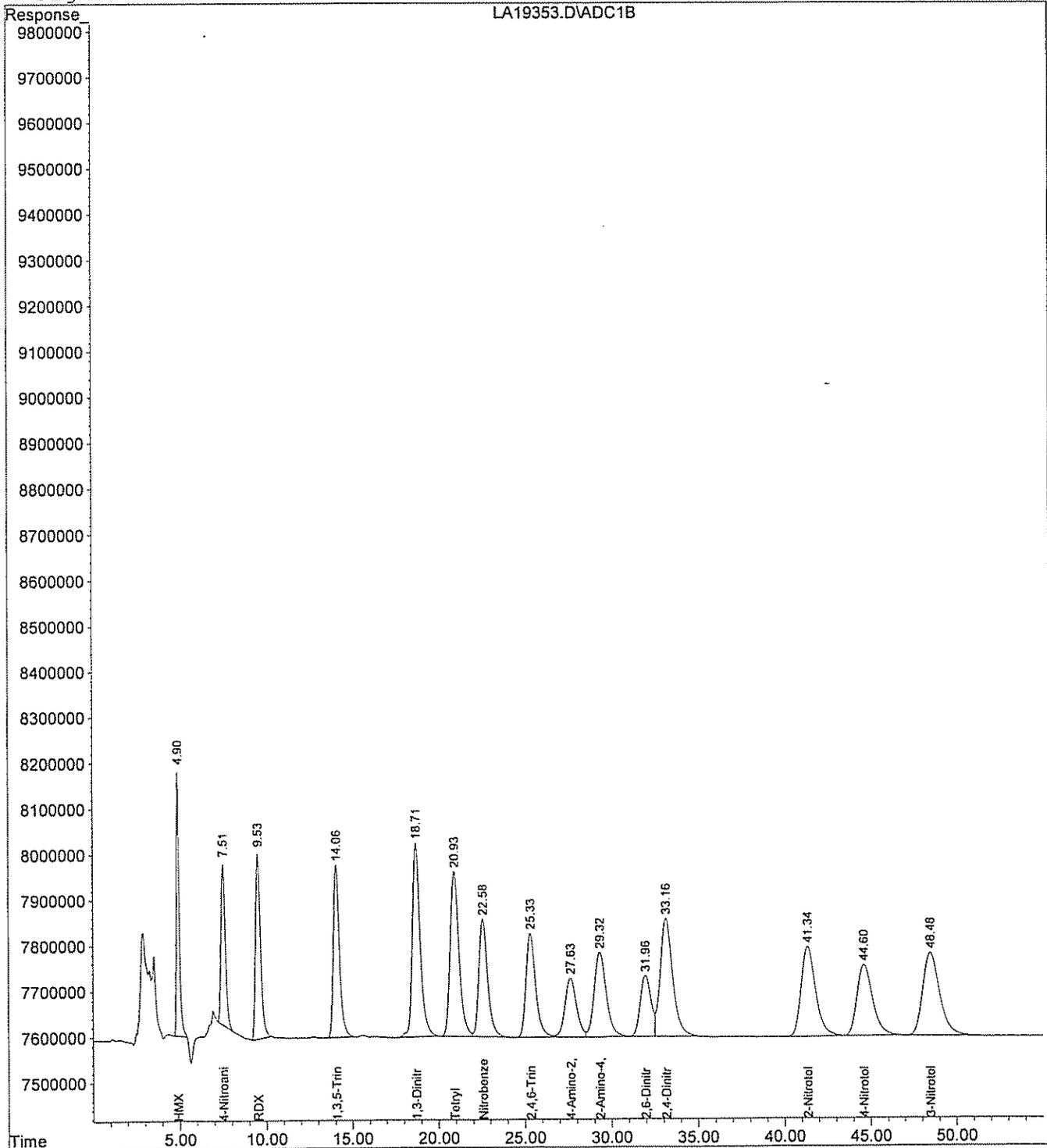
Quantitation Report

Data File : H:\LCDATA\LCA\030707\LA19353.D
Acq On : 8 Mar 2007 2:14
Sample : 8330MIX
Misc : CCAL
IntFile : events.e
Quant Time: Mar 8 16:07 2007

Vial: 11
Operator: SS
Inst : LCA
Multiplr: 1.00

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
Title : 8330 Explosives
Last Update : Mon Feb 26 09:49:31 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



D. Raw QC Data

1. Blank Data
2. Matrix Spike Data
3. Matrix Spike Duplicate Data
4. Laboratory Control Standard Data (where applicable)
5. Extraction Logsheet
6. Injection Logsheet

GPL Laboratories

Data File : H:\LCDATA\LCA\022307\LA19125.D Vial: 14
 Acq On : 23 Feb 2007 10:32 pm Operator: SS
 Sample : BLK96595 Inst : LCA
 Misc : SOIL.SHAW Multiplr: 1.00
 IntFile : events.e
 Quant Time: Feb 26 9:06 2007 Quant Results File: 61110833.RES

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
 Title : 8330 Explosives
 Last Update : Mon Feb 26 09:04:57 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
2) S 4-Nitroaniline	7.29	24140883	178.866 ng/mlm
Spiked Amount 150.000	Range 52 - 154	Recovery =	119.24%
Target Compounds			

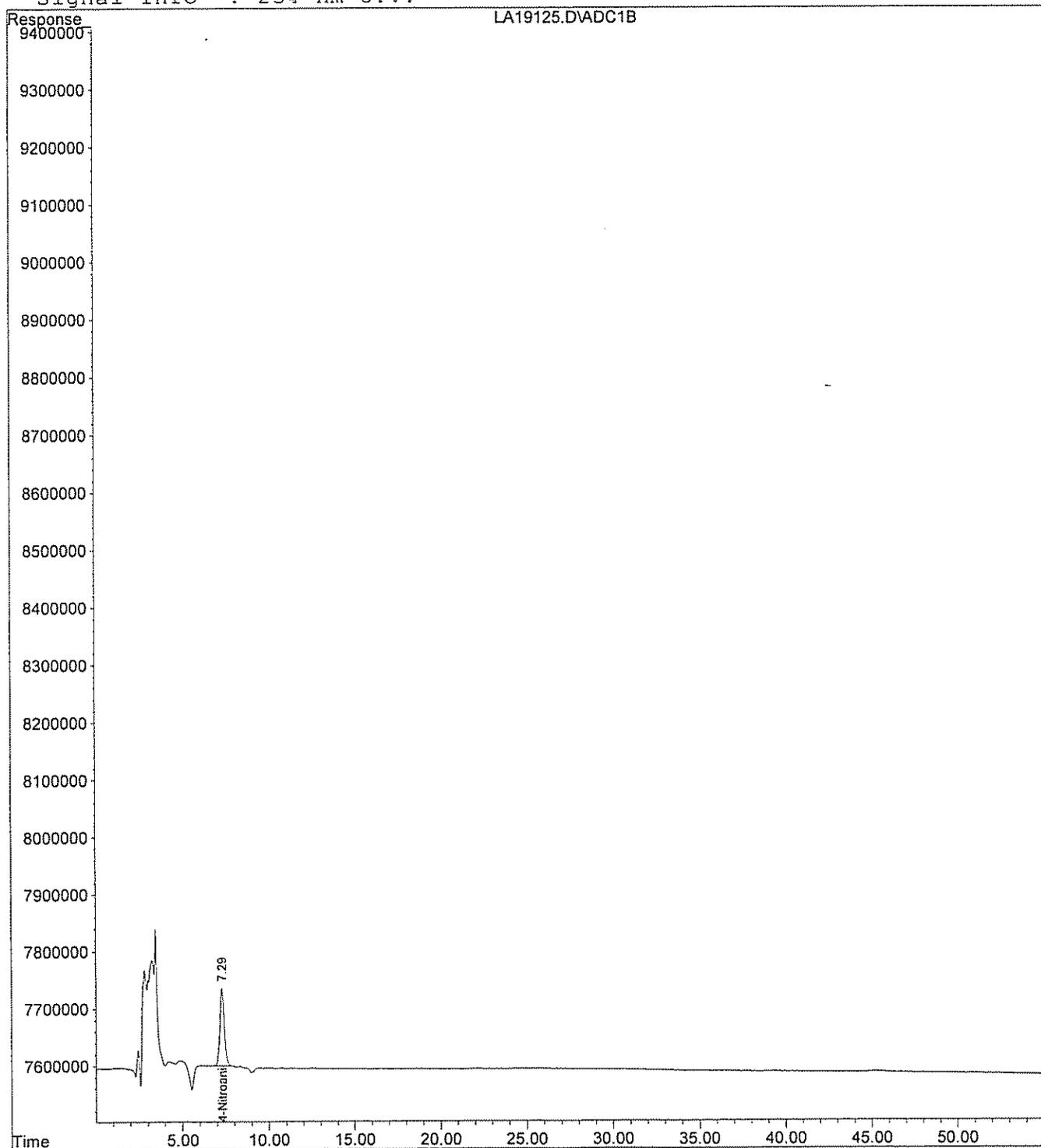
Quantitation Report

Data File : H:\LCDATA\LCA\022307\LA19125.D
Acq On : 23 Feb 2007 10:32 pm
Sample : BLK96595
Misc : SOIL.SHAW
IntFile : events.e
Quant Time: Feb 26 9:06 2007

Vial: 14
Operator: SS
Inst : LCA
Multiplr: 1.00

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
Title : 8330 Explosives
Last Update : Mon Feb 26 09:04:57 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



Data File : H:\LCDATA\LCA\022307\0223NG\LA19125.D Vial: 14
 Acq On : 23 Feb 2007 10:32 pm Operator: SS
 Sample : BLK96596 Inst : LCA
 Misc : SOIL.SHAW Multiplr: 1.00
 IntFile : events.e
 Quant Time: Feb 26 9:29 2007 Quant Results File: 61114NG.RES

Quant Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT IC PRIMARY
 Last Update : Mon Feb 26 09:30:17 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

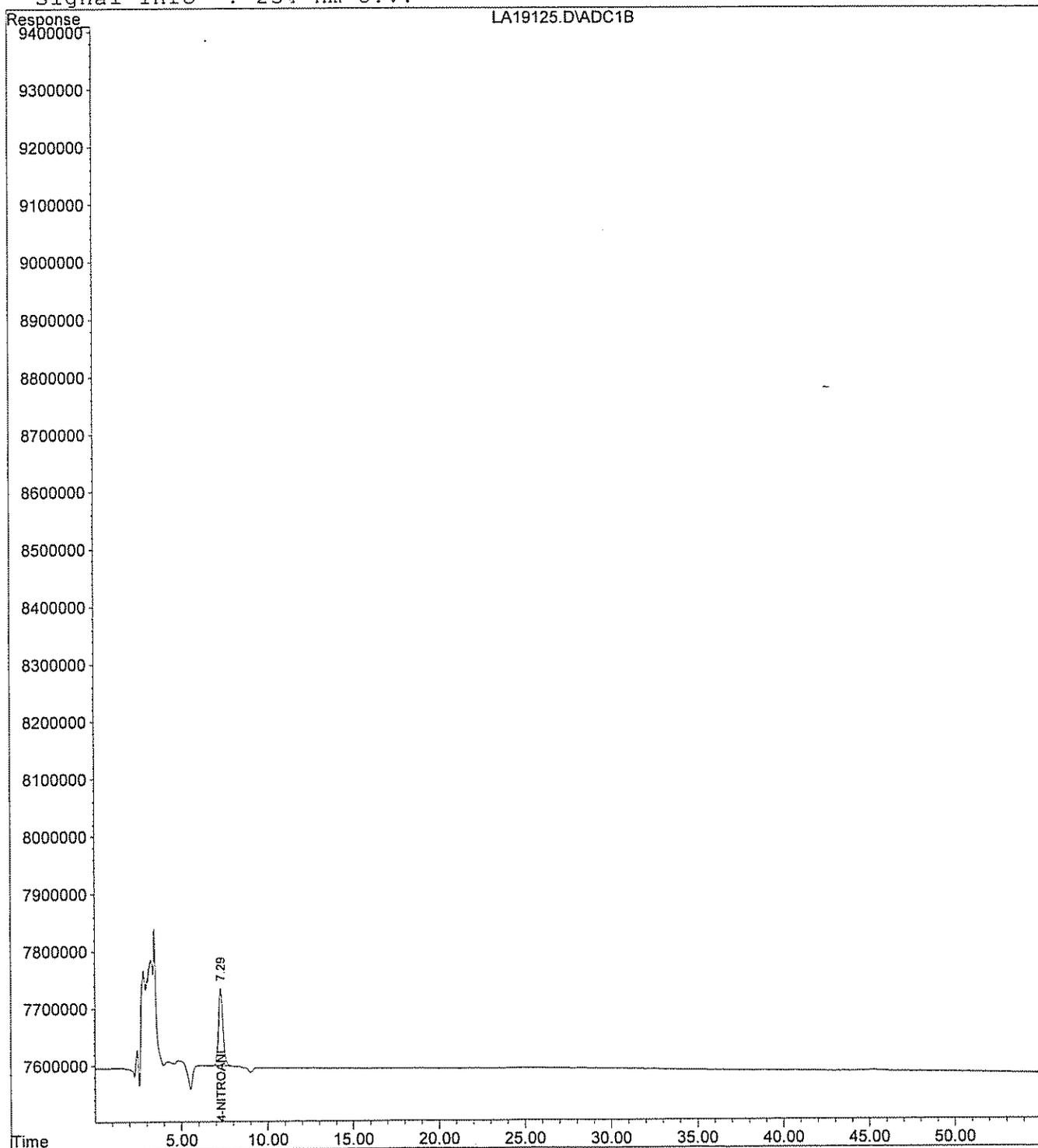
System Monitoring Compounds			
1) S 4-NITROANILINE	7.29	24267514	192.759 PPB
Spiked Amount 150.000		Recovery =	128.51%
Target Compounds			
2) M NITROGLYCERINE	0.00	0	N.D. PPM

Quantitation Report

Data File : H:\LCDATA\LCA\022307\0223NG\LA19125.D Vial: 14
Acq On : 23 Feb 2007 10:32 pm Operator: SS
Sample : BLK96596 Inst : LCA
Misc : SOIL.SHAW Multiplr: 1.00
IntFile : events.e
Quant Time: Feb 26 9:29 2007 Quant Results File: 61114NG.RES

Quant Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
Title : NITROGLYCERINE- 5 POINT IC PRIMARY
Last Update : Mon Feb 26 09:30:17 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



Data File : H:\LCDATA\LCA\030707\LA19344.D Vial: 2
 Acq On : 7 Mar 2007 17:18 Operator: SS
 Sample : BLK96779 Inst : LCA
 Misc : SOIL.SHAW.REEX Multiplr: 1.00
 IntFile : events.e
 Quant Time: Mar 8 13:42 2007 Quant Results File: 61110833.RES

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
 Title : 8330 Explosives
 Last Update : Mon Feb 26 09:49:31 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units
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System Monitoring Compounds

2) S 4-Nitroaniline	7.51	20481297	151.751 ng/ml
Spiked Amount 300.000	Range 52 - 154	Recovery =	50.58%#

Target Compounds

Quantitation Report

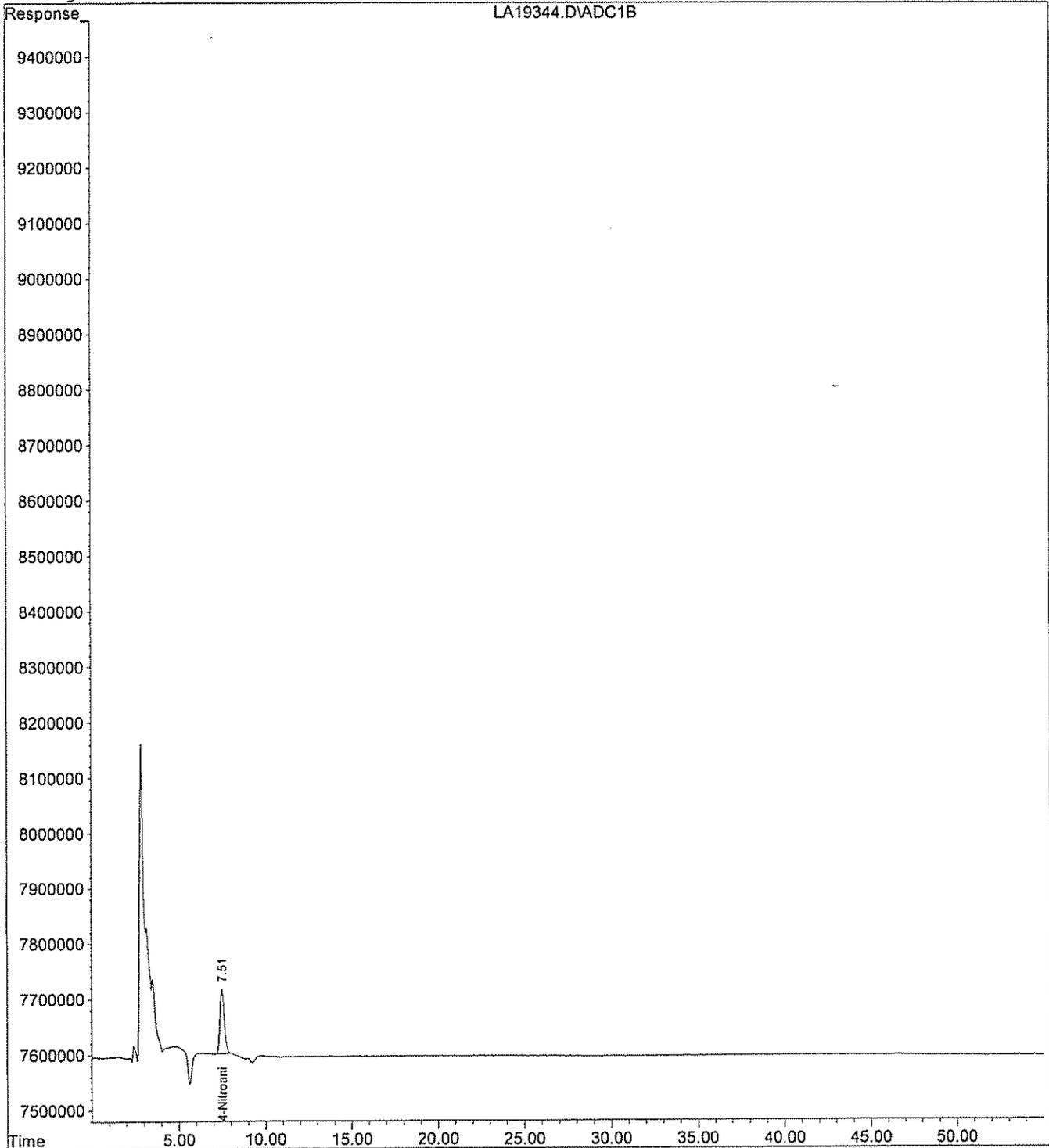
Data File : H:\LCDATA\LCA\030707\LA19344.D
Acq On : 7 Mar 2007 17:18
Sample : BLK96779
Misc : SOIL.SHAW.REEX
IntFile : events.e
Quant Time: Mar 8 13:42 2007

Vial: 2
Operator: SS
Inst : LCA
Multiplr: 1.00

Quant Results File: 61110833.RES

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
Title : 8330 Explosives
Last Update : Mon Feb 26 09:49:31 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



SAMPLE NO
NWO-033-0001MS

Lab Name :	GPL Laboratories	Client. :	Shaw E&I, Inc
Lab Code :	GPL	SAS NO. :	
Case No. :		SDG NO :	702081
Matrix : (Soil / Water)	SOIL	Lab Sample ID :	702081-001-001-1/3MS
Sample Volume :	10.01	Lab File ID :	LA19127.D
% Moisture:	.	Date Received	02/16/2007
Extraction:	EXT_SW8330	Date Extracted:	02/21/2007
Extract Volume:	40 mL	Date Analyzed	02/24/2007
Injection Volume :	μ L	Dilution Factor :	1
GPC Clean up (Y/N):	pH: _____		

Concentration Units (ug/L or ug/kg dry weight) : mg/kg

CAS NO	COMPOUND	Q
99-35-4	1,3,5-Trinitrobenzene	0.51
99-65-0	1,3-Dinitrobenzene	0.58
118-96-7	2,4,6-Trinitrotoluene	0.60
121-14-2	2,4-Dinitrotoluene	0.56
606-20-2	2,6-Dinitrotoluene	0.57
35572-78-2	2-Amino-4,6-Dinitrotoluene	0.51
19406-51-0	4-Amino-2,6-Dinitrotoluene	0.44
2691-41-0	HMX	0.59
98-95-3	Nitrobenzene	0.57
121-82-4	RDX	0.77
479-45-8	Tetryl	0.43
99-08-1	m-Nitrotoluene	0.56
88-72-2	o-Nitrotoluene	0.55
99-99-0	p-Nitrotoluene	0.54

Data File : H:\LCDATA\LCA\022307\LA19127.D Vial: 16
 Acq On : 24 Feb 2007 12:31 am Operator: SS
 Sample : 702081-001-001-1/3MS Inst : LCA
 Misc : SOIL.SHAW Multiplr: 1.00
 IntFile : events.e
 Quant Time: Feb 26 9:10 2007 Quant Results File: 61110833.RES

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
 Title : 8330 Explosives
 Last Update : Mon Feb 26 09:04:57 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
2) S 4-Nitroaniline	7.32	13525755	100.216 ng/mlm
Spiked Amount 150.000	Range 52 - 154	Recovery =	66.81%
Target Compounds			
1) T HMX	4.79	17552691	147.077 ng/mlm
3) T 1,3,5-Trinitrobenzene	13.69	44618391	127.914 ng/ml
4) T Tetryl	20.27	28689802	108.192 ng/ml
5) T 2,4,6-Trinitrotoluene	24.57	51734878	149.831 ng/ml
6) T 4-Amino-2,6-Dinitrotoluene	26.70	25925624	109.079 ng/ml
7) T 2,6-Dinitrotoluene	30.92	32755644	143.205 ng/ml
8) T 4-Nitrotoluene	43.13	26746464	134.904 ng/mlm
9) M RDX	9.29	28361963	193.716 ng/mlm
10) M 1,3-Dinitrobenzene	18.18	72663074	143.926 ng/ml
11) M Nitrobenzene	21.93	52076740	142.049 ng/ml
12) M 2-Amino-4,6-Dinitrotoluene	28.34	45836233	127.731 ng/ml
13) M 2,4-Dinitrotoluene	32.10	70285710	140.019 ng/ml
14) M 2-Nitrotoluene	40.00	31408513	138.477 ng/ml
15) M 3-Nitrotoluene	46.83	33745709	139.310 ng/mlm

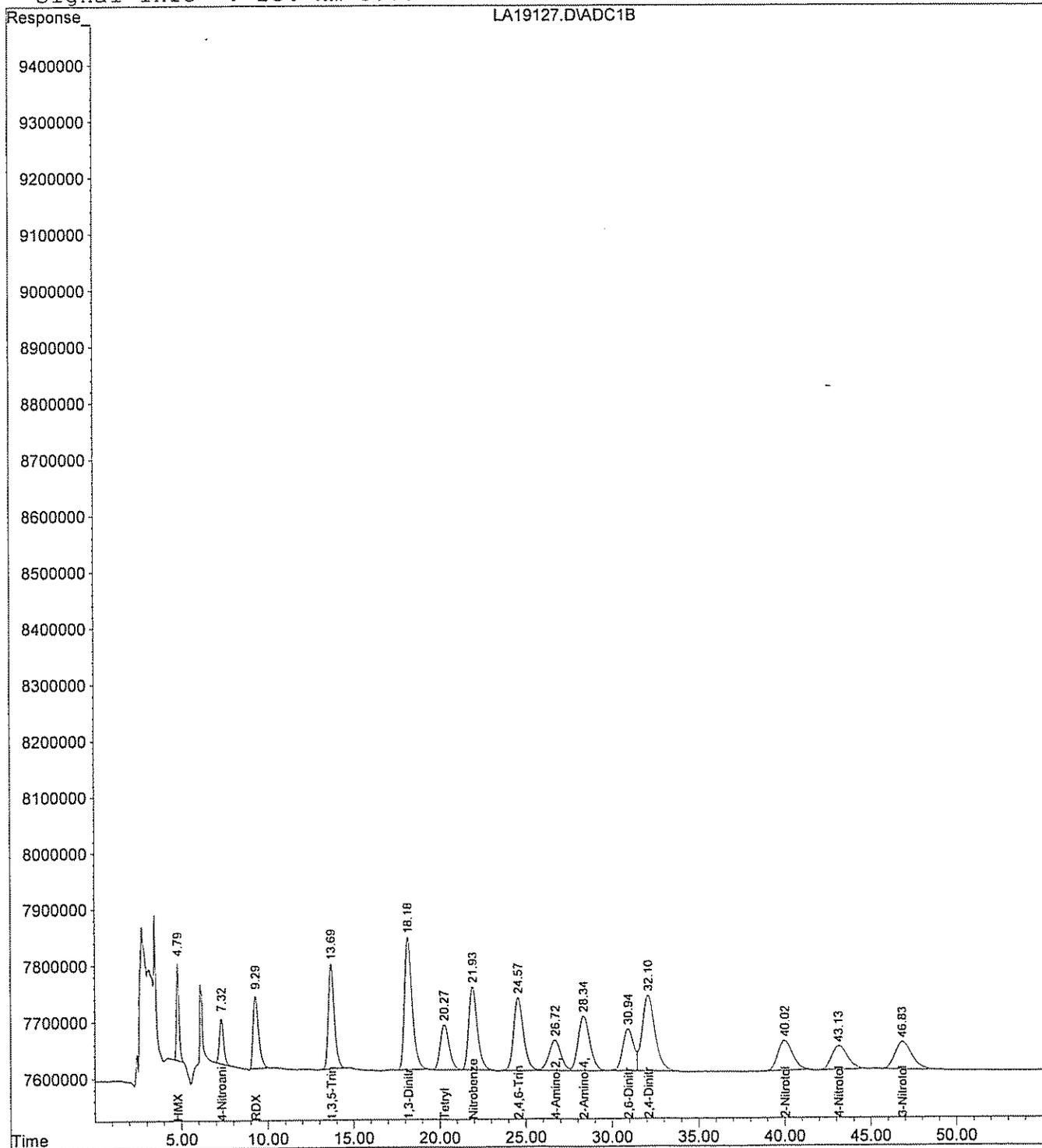
Quantitation Report

Data File : H:\LCDATA\LCA\022307\LA19127.D
Acq On : 24 Feb 2007 12:31 am
Sample : 702081-001-001-1/3MS
Misc : SOIL.SHAW
IntFile : events.e
Quant Time: Feb 26 9:10 2007

Vial: 16
Operator: SS
Inst : LCA
Multiplr: 1.00

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
Title : 8330 Explosives
Last Update : Mon Feb 26 09:04:57 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



SAMPLE NO
NWO-033-0001MSD

Lab Name :	GPL Laboratories	Client. :	Shaw E&I, Inc
Lab Code :	GPL	SAS NO. :	
Case No. :		SDG NO :	702081
Matrix : (Soil / Water)	SOIL	Lab Sample ID :	702081-001-001-1/3MSD
Sample Volume :	10	Lab File ID :	LA19128.D
% Moisture:		Date Received	02/16/2007
Extraction:	EXT_SW8330	Date Extracted:	02/21/2007
Extract Volume:	40 mL	Date Analyzed	02/24/2007
Injection Volume :	μ L	Dilution Factor :	1
GPC Clean up (Y/N):	pH: _____		

Concentration Units (ug/L or ug/kg dry weight) : mg/kg

CAS NO	COMPOUND	Q
99-35-4	1,3,5-Trinitrobenzene	0.52
99-65-0	1,3-Dinitrobenzene	0.58
118-96-7	2,4,6-Trinitrotoluene	0.61
121-14-2	2,4-Dinitrotoluene	0.56
606-20-2	2,6-Dinitrotoluene	0.58
35572-78-2	2-Amino-4,6-Dinitrotoluene	0.51
19406-51-0	4-Amino-2,6-Dinitrotoluene	0.40
2691-41-0	HMX	0.60
98-95-3	Nitrobenzene	0.58
121-82-4	RDX	0.85
479-45-8	Tetryl	0.46
99-08-1	m-Nitrotoluene	0.55
88-72-2	o-Nitrotoluene	0.56
99-99-0	p-Nitrotoluene	0.55

Data File : H:\LCDATA\LCA\022307\LA19128.D Vial: 17
 Acq On : 24 Feb 2007 1:31 am Operator: SS
 Sample : 702081-001-001-1/3MSD Inst : LCA
 Misc : SOIL.SHAW Multiplr: 1.00
 IntFile : events.e
 Quant Time: Feb 26 9:12 2007 Quant Results File: 61110833.RES

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
 Title : 8330 Explosives
 Last Update : Mon Feb 26 09:04:57 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
2) S 4-Nitroaniline	7.31	10432531	77.297 ng/mlm
Spiked Amount 150.000	Range 52 - 154	Recovery =	51.53%#
Target Compounds			
1) T HMX	4.79	17846472	149.539 ng/mlm
3) T 1,3,5-Trinitrobenzene	13.68	45683657	130.968 ng/ml
4) T Tetryl	20.31	30211182	113.930 ng/ml
5) T 2,4,6-Trinitrotoluene	24.62	52968928	153.405 ng/ml
6) T 4-Amino-2,6-Dinitrotoluene	26.73	23792605	100.105 ng/mlm
7) T 2,6-Dinitrotoluene	30.96	32912132	143.889 ng/ml
8) T 4-Nitrotoluene	43.17	27333706	137.866 ng/mlm
9) M RDX	9.28	30985412	211.634 ng/mlm
10) M 1,3-Dinitrobenzene	18.20	73173469	144.937 ng/ml
11) M Nitrobenzene	21.96	53657283	146.360 ng/ml
12) M 2-Amino-4,6-Dinitrotoluene	28.40	45684325	127.307 ng/ml
13) M 2,4-Dinitrotoluene	32.12	70795045	141.034 ng/ml
14) M 2-Nitrotoluene	40.03	32075155	141.416 ng/ml
15) M 3-Nitrotoluene	46.91	33303816	137.485 ng/mlm

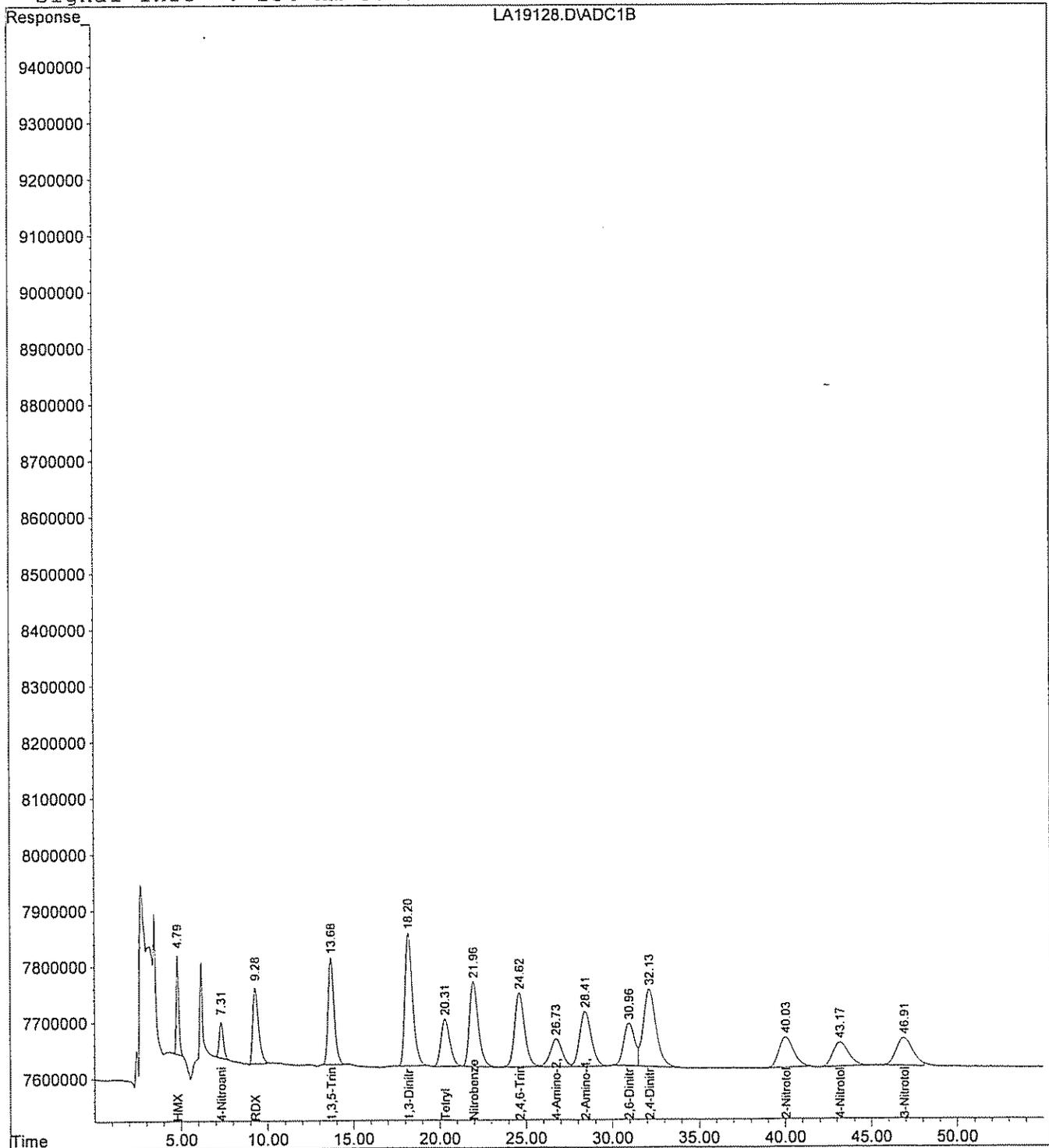
Quantitation Report

Data File : H:\LCDATA\LCA\022307\LA19128.D
Acq On : 24 Feb 2007 1:31 am
Sample : 702081-001-001-1/3MSD
Misc : SOIL.SHAW
IntFile : events.e
Quant Time: Feb 26 9:12 2007

Vial: 17
Operator: SS
Inst : LCA
Multiplr: 1.00

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
Title : 8330 Explosives
Last Update : Mon Feb 26 09:04:57 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



Data File : H:\LCDATA\LCA\022307\0223NG\LA19130.D Vial: 19
 Acq On : 24 Feb 2007 3:30 am Operator: SS
 Sample : 702081-001-001-1/3MS Inst : LCA
 Misc : SOIL.SHAW Multiplr: 1.00
 IntFile : events.e
 Quant Time: Feb 26 9:31 2007 Quant Results File: 61114NG.RES

Quant Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT IC PRIMARY
 Last Update : Mon Feb 26 09:30:17 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

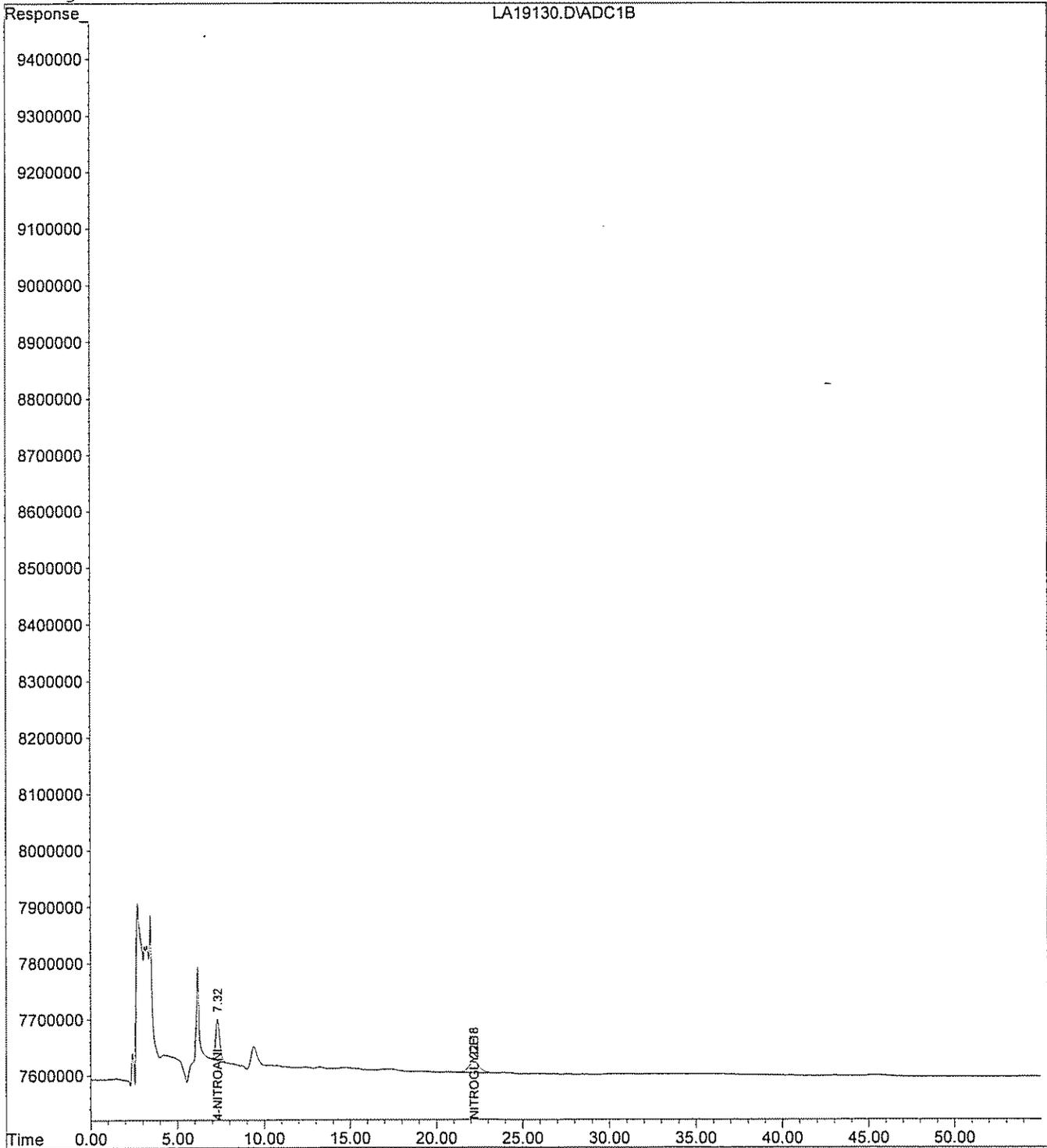
System Monitoring Compounds			
1) S 4-NITROANILINE	7.32	12364070	98.209 PPB m
Spiked Amount 150.000		Recovery =	65.47%
Target Compounds			
2) M NITROGLYCERINE	22.18	8788299	4.347 PPM m

Quantitation Report

Data File : H:\LCDATA\LCA\022307\0223NG\LA19130.D Vial: 19
Acq On : 24 Feb 2007 3:30 am Operator: SS
Sample : 702081-001-001-1/3MS Inst : LCA
Misc : SOIL.SHAW Multiplr: 1.00
IntFile : events.e
Quant Time: Feb 26 9:31 2007 Quant Results File: 61114NG.RES

Quant Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
Title : NITROGLYCERINE- 5 POINT IC PRIMARY
Last Update : Mon Feb 26 09:30:17 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



Data File : H:\LCDATA\LCA\022307\0223NG\LA19131.D Vial: 20
 Acq On : 24 Feb 2007 4:29 am Operator: SS
 Sample : 702081-001-001-1/3MSD Inst : LCA
 Misc : SOIL.SHAW Multiplr: 1.00
 IntFile : events.e
 Quant Time: Feb 26 9:34 2007 Quant Results File: 61114NG.RES

Quant Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT IC PRIMARY
 Last Update : Mon Feb 26 09:30:17 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

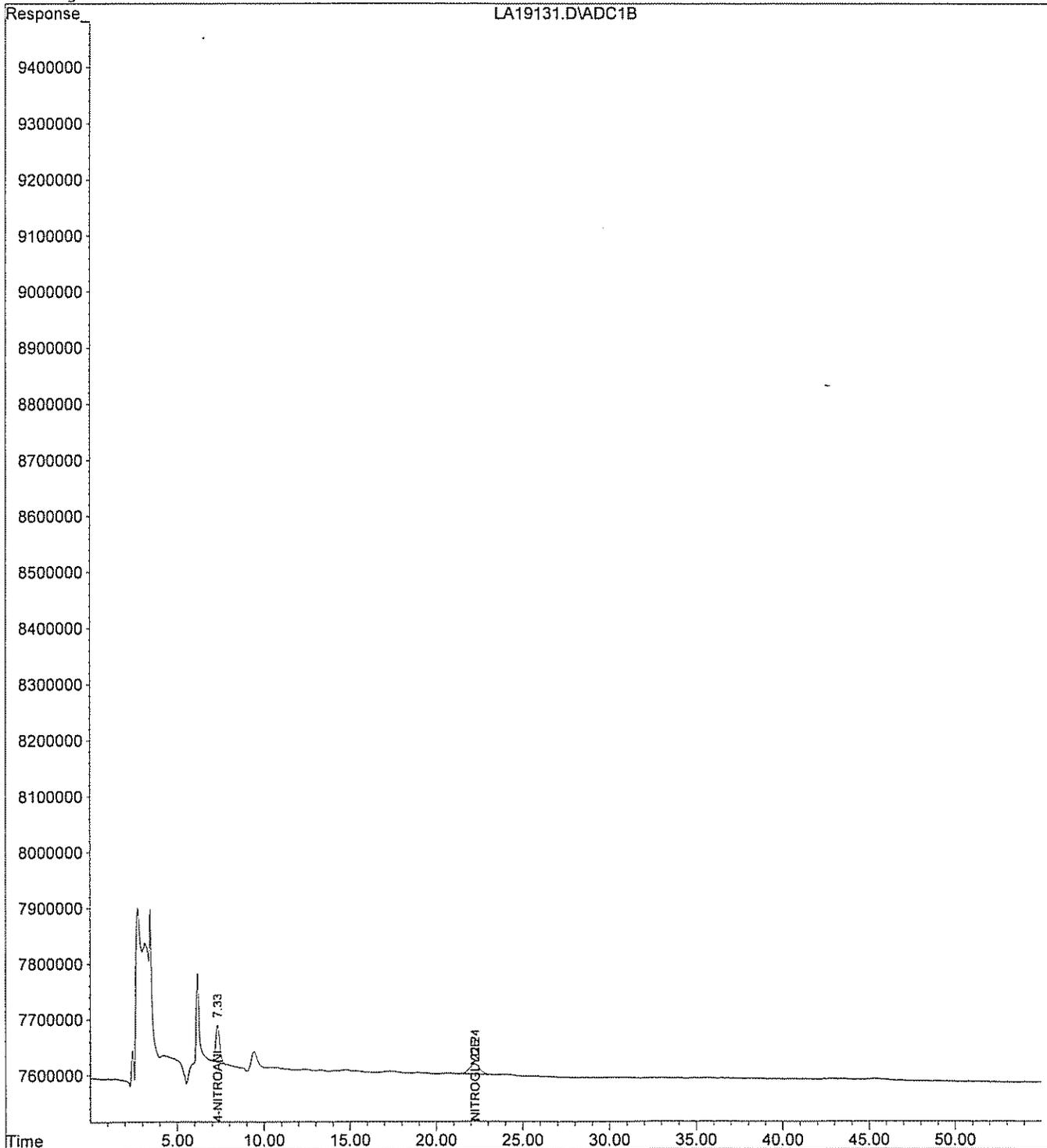
System Monitoring Compounds			
1) S 4-NITROANILINE	7.33	10928952	86.810 PPB
Spiked Amount 150.000		Recovery =	57.87%
Target Compounds			
2) M NITROGLYCERINE	22.24	7791309	3.854 PPM m

Quantitation Report

Data File : H:\LCDATA\LCA\022307\0223NG\LA19131.D Vial: 20
Acq On : 24 Feb 2007 4:29 am Operator: SS
Sample : 702081-001-001-1/3MSD Inst : LCA
Misc : SOIL.SHAW Multiplr: 1.00
IntFile : events.e
Quant Time: Feb 26 9:34 2007 Quant Results File: 61114NG.RES

Quant Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
Title : NITROGLYCERINE- 5 POINT IC PRIMARY
Last Update : Mon Feb 26 09:30:17 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



SAMPLE NO

BKS96595

Lab Name :	GPL Laboratories	Client :	Shaw E&I, Inc
Lab Code :	GPL	SAS NO. :	
Case No. :		SDG NO :	702081
Matrix : (Soil / Water)	SOIL	Lab Sample ID :	BKS96595
Sample Volume :	10	Lab File ID :	LA19126.D
% Moisture:		Date Received	
Extraction:	EXT_SW8330	Date Extracted:	02/21/2007
Extract Volume:	40 mL	Date Analyzed	02/23/2007
Injection Volume :	μ L	Dilution Factor :	1
GPC Clean up (Y/N):	pH: _____		

Concentration Units (ug/L or ug/kg dry weight) : mg/kg

CAS NO	COMPOUND	Q
99-35-4	1,3,5-Trinitrobenzene	0.48
99-65-0	1,3-Dinitrobenzene	0.52
118-96-7	2,4,6-Trinitrotoluene	0.53
121-14-2	2,4-Dinitrotoluene	0.50
606-20-2	2,6-Dinitrotoluene	0.50
35572-78-2	2-Amino-4,6-Dinitrotoluene	0.50
19406-51-0	4-Amino-2,6-Dinitrotoluene	0.48
2691-41-0	HMX	0.56
98-95-3	Nitrobenzene	0.48
121-82-4	RDX	0.56
479-45-8	Tetryl	0.42
99-08-1	m-Nitrotoluene	0.51
88-72-2	o-Nitrotoluene	0.52
99-99-0	p-Nitrotoluene	0.48

SAMPLE NO
BKS96596

Lab Name :	GPL Laboratories	Client. :	Shaw E&I, Inc
Lab Code :	GPL	SAS NO. :	
Case No. :		SDG NO :	702081
Matrix : (Soil / Water)	SOIL	Lab Sample ID :	BKS96596
Sample Volume :	10	Lab File ID :	LA19129.D
% Moisture:		Date Received	
Extraction:	EXT_SW8330	Date Extracted:	02/21/2007
Extract Volume:	40 mL	Date Analyzed	02/24/2007
Injection Volume :	100 μ L	Dilution Factor :	1
GPC Clean up (Y/N):		pH:	

Concentration Units (ug/L or ug/kg dry weight) : mg/kg

CAS NO	COMPOUND		Q
55-63-0	Nitroglycerine	9.5	

Data File : H:\LCDATA\LCA\022307\LA19126.D Vial: 15
 Acq On : 23 Feb 2007 11:32 pm Operator: SS
 Sample : BKS96595 Inst : LCA
 Misc : SOIL.SHAW Multiplr: 1.00
 IntFile : events.e
 Quant Time: Feb 26 9:08 2007 Quant Results File: 61110833.RES

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
 Title : 8330 Explosives
 Last Update : Mon Feb 26 09:04:57 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
2) S 4-Nitroaniline	7.32	23884820	176.969 ng/ml
Spiked Amount 150.000	Range 52 - 154	Recovery	= 117.98%
Target Compounds			
1) T HMX	4.78	16858565	141.261 ng/mlm
3) T 1,3,5-Trinitrobenzene	13.66	42024758	120.479 ng/ml
4) T Tetryl	20.25	27966977	105.467 ng/ml
5) T 2,4,6-Trinitrotoluene	24.60	45549716	131.918 ng/ml
6) T 4-Amino-2,6-Dinitrotoluene	26.77	28817386	121.246 ng/ml
7) T 2,6-Dinitrotoluene	30.99	28343538	123.916 ng/ml
8) T 4-Nitrotoluene	43.16	23919249	120.644 ng/mlm
9) M RDX	9.25	20385436	139.235 ng/ml
10) M 1,3-Dinitrobenzene	18.16	65552974	129.843 ng/ml
11) M Nitrobenzene	21.93	43742155	119.314 ng/ml
12) M 2-Amino-4,6-Dinitrotoluene	28.40	44804074	124.854 ng/mlm
13) M 2,4-Dinitrotoluene	32.15	63226965	125.957 ng/ml
14) M 2-Nitrotoluene	40.01	29310263	129.226 ng/mlm
15) M 3-Nitrotoluene	46.91	30722897	126.831 ng/mlm

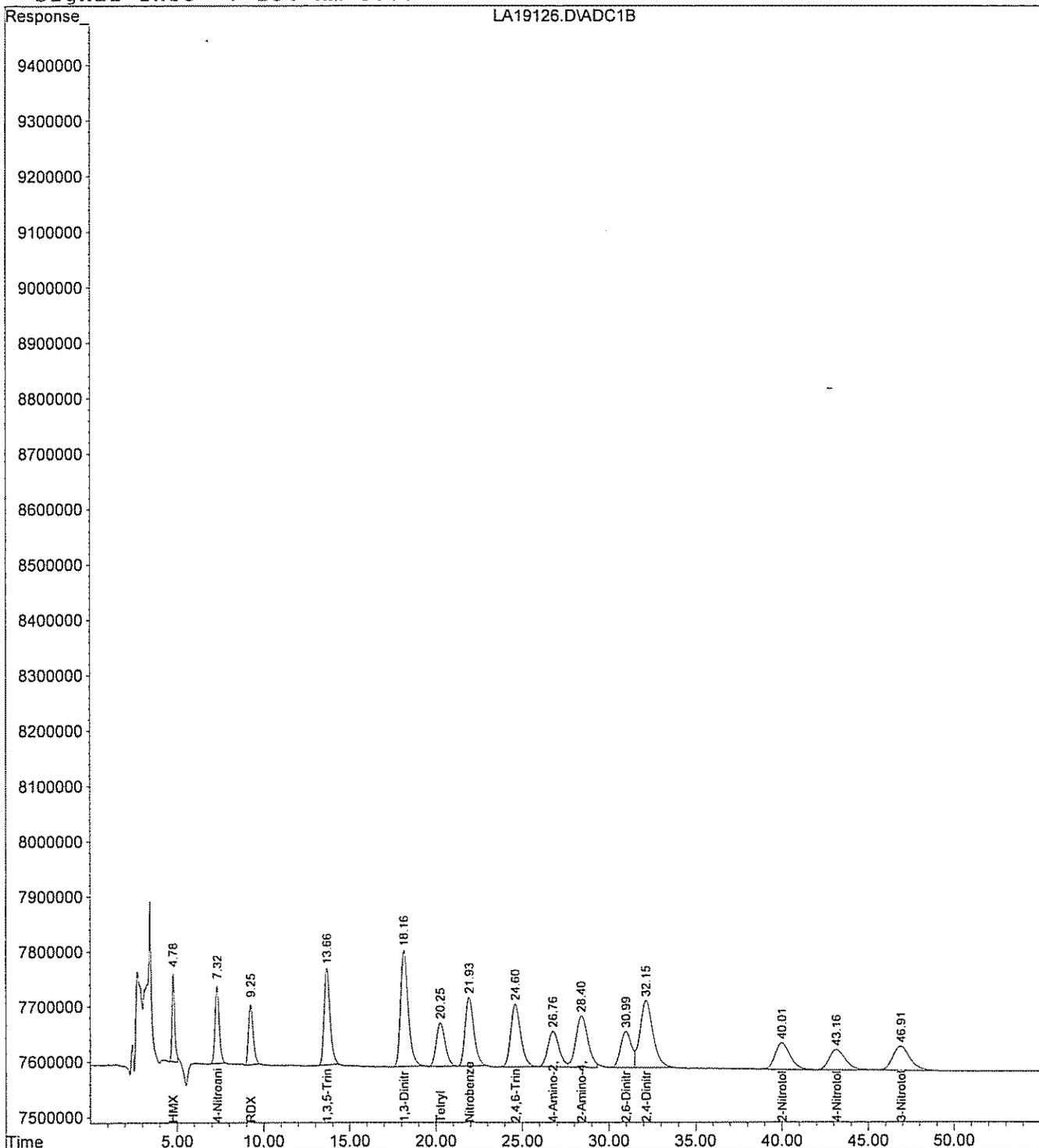
Quantitation Report

Data File : H:\LCDATA\LCA\022307\LA19126.D
Acq On : 23 Feb 2007 11:32 pm
Sample : BKS96595
Misc : SOIL.SHAW
IntFile : events.e
Quant Time: Feb 26 9:08 2007

Vial: 15
Operator: SS
Inst : LCA
Multiplr: 1.00

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
Title : 8330 Explosives
Last Update : Mon Feb 26 09:04:57 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



Data File : H:\LCDATA\LCA\022307\0223NG\LA19129.D Vial: 18
 Acq On : 24 Feb 2007 2:30 am Operator: SS
 Sample : BKS96596 Inst : LCA
 Misc : SOIL.SHAW Multiplr: 1.00
 IntFile : events.e
 Quant Time: Feb 26 9:30 2007 Quant Results File: 61114NG.RES

Quant Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
 Title : NITROGLYCERINE- 5 POINT IC PRIMARY
 Last Update : Mon Feb 26 09:30:17 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

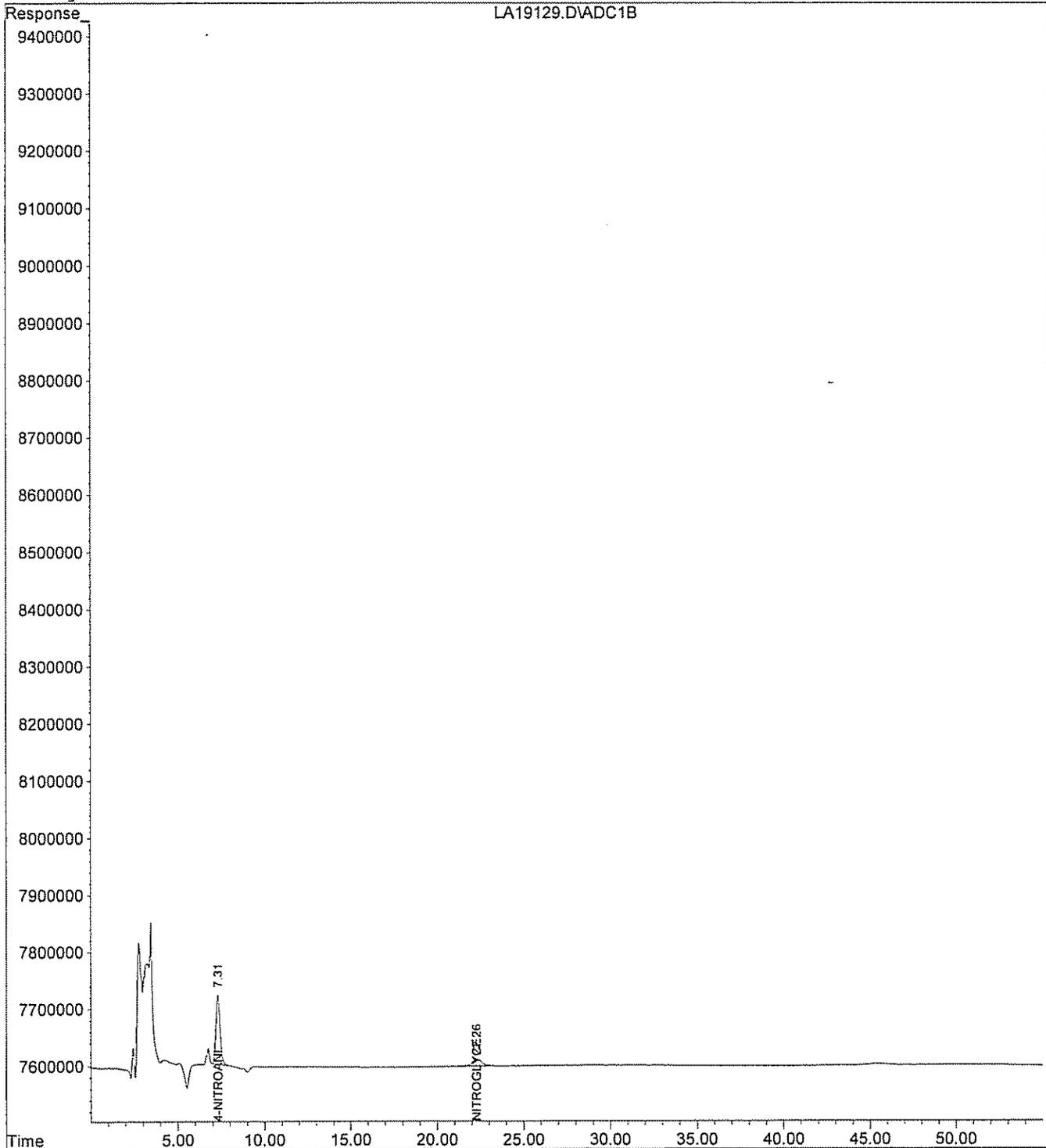
System Monitoring Compounds			
1) S 4-NITROANILINE	7.31	20698579	164.411 PPB
Spiked Amount 150.000		Recovery =	109.61%
Target Compounds			
2) M NITROGLYCERINE	22.26	4804851	2.377 PPM m

Quantitation Report

Data File : H:\LCDATA\LCA\022307\0223NG\LA19129.D Vial: 18
Acq On : 24 Feb 2007 2:30 am Operator: SS
Sample : BKS96596 Inst : LCA
Misc : SOIL.SHAW Multiplr: 1.00
IntFile : events.e
Quant Time: Feb 26 9:30 2007 Quant Results File: 61114NG.RES

Quant Method : H:\LCDATA\LCA\METHODS\61114NG.M (Chemstation Integrator)
Title : NITROGLYCERINE- 5 POINT IC PRIMARY
Last Update : Mon Feb 26 09:30:17 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



SAMPLE NO
BKS96779RE

Lab Name :	GPL Laboratories	Client :	Shaw E&I, Inc
Lab Code :	GPL	SAS NO. :	
Case No. :		SDG NO :	702081
Matrix : (Soil / Water)	SOIL	Lab Sample ID :	BKS96779
Sample Volume :	10	Lab File ID :	LA19345.D
% Moisture:		Date Received	
Extraction:	EXT_SW8330	Date Extracted:	03/07/2007
Extract Volume:	40 mL	Date Analyzed	03/07/2007
Injection Volume :	μ L	Dilution Factor :	1
GPC Clean up (Y/N):	N pH: _____		

Concentration Units (ug/L or ug/kg dry weight) : mg/kg

CAS NO	COMPOUND	Q
99-35-4	1,3,5-Trinitrobenzene	0.48
99-65-0	1,3-Dinitrobenzene	0.52
118-96-7	2,4,6-Trinitrotoluene	0.54
121-14-2	2,4-Dinitrotoluene	0.50
606-20-2	2,6-Dinitrotoluene	0.50
35572-78-2	2-Amino-4,6-Dinitrotoluene	0.51
19406-51-0	4-Amino-2,6-Dinitrotoluene	0.50
2691-41-0	HMX	0.53
98-95-3	Nitrobenzene	0.48
121-82-4	RDX	0.58
479-45-8	Tetryl	0.42
99-08-1	m-Nitrotoluene	0.51
88-72-2	o-Nitrotoluene	0.52
99-99-0	p-Nitrotoluene	0.50

Data File : H:\LCDATA\LCA\030707\LA19345.D Vial: 3
 Acq On : 7 Mar 2007 18:17 Operator: SS
 Sample : BKS96779 Inst : LCA
 Misc : SOIL.SHAW.REEX Multiplr: 1.00
 IntFile : events.e
 Quant Time: Mar 8 13:44 2007 Quant Results File: 61110833.RES

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
 Title : 8330 Explosives
 Last Update : Mon Feb 26 09:49:31 2007
 Response via : Initial Calibration
 DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
 Signal Phase : C8
 Signal Info : 254 nm U.V.

Compound	R.T.	Response	Conc Units

System Monitoring Compounds			
2) S 4-Nitroaniline	7.52	21772033	161.315 ng/ml
Spiked Amount 300.000	Range 52 - 154	Recovery =	53.77%
Target Compounds			
1) T HMX	4.90	15942539	133.585 ng/ml
3) T 1,3,5-Trinitrobenzene	14.07	42066421	120.598 ng/ml
4) T Tetryl	20.98	28219121	106.417 ng/ml
5) T 2,4,6-Trinitrotoluene	25.43	46556297	134.833 ng/ml
6) T 4-Amino-2,6-Dinitrotoluene	27.76	29566899	124.400 ng/ml
7) T 2,6-Dinitrotoluene	32.05	28838662	126.080 ng/ml
8) T 4-Nitrotoluene	44.69	24653880	124.350 ng/mlm
9) M RDX	9.53	21419675	146.299 ng/ml
10) M 1,3-Dinitrobenzene	18.74	65900027	130.531 ng/ml
11) M Nitrobenzene	22.66	43868764	119.660 ng/ml
12) M 2-Amino-4,6-Dinitrotoluene	29.44	45931736	127.997 ng/ml
13) M 2,4-Dinitrotoluene	33.24	63474660	126.450 ng/ml
14) M 2-Nitrotoluene	41.39	29532246	130.205 ng/mlm
15) M 3-Nitrotoluene	48.55	31177644	128.708 ng/mlm

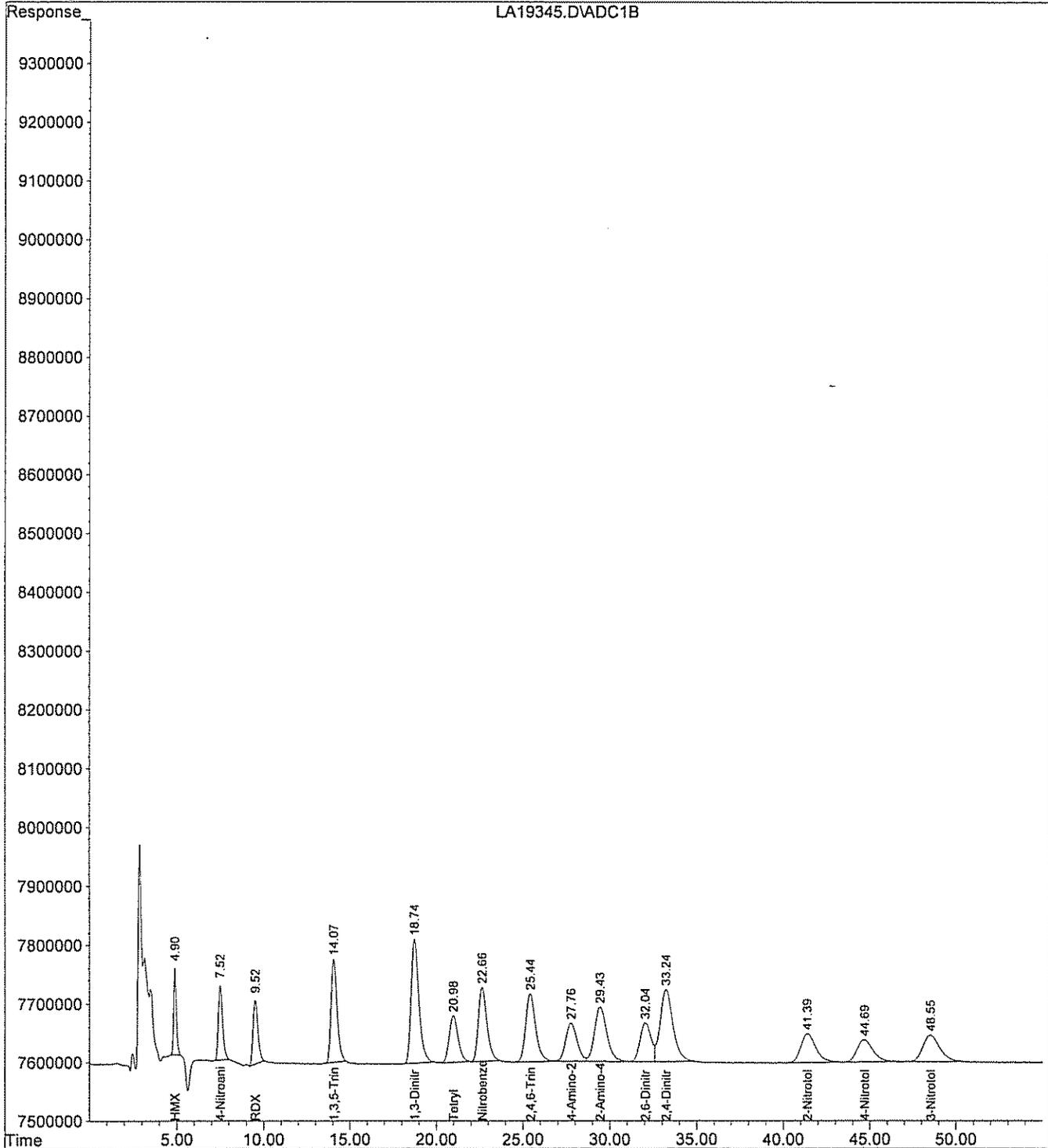
Quantitation Report

Data File : H:\LCDATA\LCA\030707\LA19345.D
Acq On : 7 Mar 2007 18:17
Sample : BKS96779
Misc : SOIL.SHAW.REEX
IntFile : events.e
Quant Time: Mar 8 13:44 2007 Quant Results File: 61110833.RES

Vial: 3
Operator: SS
Inst : LCA
Multiplr: 1.00

Quant Method : H:\LCDATA\LCA\METHODS\61110833.M (Chemstation Integrator)
Title : 8330 Explosives
Last Update : Mon Feb 26 09:49:31 2007
Response via : Multiple Level Calibration
DataAcq Meth : 8330MIX.M

Volume Inj. : 100 uL
Signal Phase : C8
Signal Info : 254 nm U.V.



EXPLOSIVES / NITROGUANIDINE / NITROGLYCERINE / PICRIC ACID / PETN EXTRACTION LOG

Approval / Date: DS 02/22/07
 Analysis Method: 8330 + NGR G1
 Extraction Chemist: N.P. Date: 02-21-07

Client: shaw E & A, Inc.
 Spike Witness: VT

Work Order	Fraction	Sample Amount gram/mL	Surrogate Added, mL	Spike Added, mL	Final Volume, mL
702081	Blk ⁹⁶⁵⁹⁵ 96596	10.00	1.0	—	40.0
	Bics1	10.00		1.0	
	001ms1	10.01		↓	
	001msD1	10.00		↓	
	Bics2	10.00		1.0 (NG)	
	001ms2	10.03		↓	
	001msD2	10.02		↓	
	001	10.02		—	
	004	10.00		↓	
	005	10.00		↓	
	008	10.01		↓	
	009	10.00		↓	
<u>DS 02/22/07</u>					

Solvent: Acetonitrile / DI Water
 Solvent Lot #: 065280 Matrix Spike #: 38712 Matrix Spike Conc.: 5.0 ppm
 Surrogate Solution #: 39153 Matrix Spike #: 38451 (NG) Matrix Spike Conc.: 100 ppm
 Surrogate Conc.(s): 6.0 ppm Matrix Spike #: — Matrix Spike Conc.: —
 Calcium Chloride#: 040676 Sodium Sulfate#: — Sand#: 43007309
 Sodium Chloride#: —

Comments & Observations: Xello # 96595 for 8330 (S)
Xello # 96596 for 8330 NG (S)

EXPLOSIVES /NITROGUANIDINE /NITROGLYCERINE /PICRIC ACID /PETN EXTRACTION LOG

SOIL / WATER / WIPES

Approval / Date: DS / 3/7/07

Client: Shaw & S, Inc.

Analysis Method: 8330

Extraction Chemist: VP Date: 3-7-07 Spike Witness: DS

Work Order	Fraction	Sample Amount gram/mL	Surrogate Added, mL	Spike Added, mL	Final Volume, mL
702081	BLK 46779	10.00	1.0	—	40.0
	BKS	10.00		1.0	
	005	10.00		—	
	008	10.01			
	009	10.00			
DS 03/7/07					

Solvent: Acetonitrile / DI Water

Solvent Lot #: 065280 Matrix Spike #: 38712

Matrix Spike Conc.: 5.0 ppm

Surrogate Solution #: 39183 Matrix Spike #: —

Matrix Spike Conc.: —

Surrogate Conc.(s): 6.0 ppm Matrix Spike #: —

Matrix Spike Conc.: —

Calcium Chloride#: 060676 Sodium Sulfate#: —

Sand#: 43007309

Sodium Chloride#: —

Comments & Observations: _____

Lca P

HPLC ANALYSIS LOGBOOK

Instrument ID: LC # A (HP1100)

6110833

Method File:	<i>h:\data\lca\methods</i>	
Detector/ Wavelength:	UV	<i>254 nm</i>
Injection Volume:	<i>100</i>	<i>ul</i>

Data File Path:	<i>h:\data\lca\111006</i>
Mobile Phase:	<i>8330-L49-66-01</i>
Flow Rate:	<i>0.9 ml/min</i>

ICAL: *6110833 P* Analyst: *S.S.* Reviewed by: _____ Date: _____

Injection Log

Directory: *h:\data\lca\111006*

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	1	la17191.d	1.	BLK	ACN	10 Nov
2	2	la17192.d	1.	8330MIX-BLK	C CAL	10 Nov
3	3	la17193.d	1.	8330MIX-LEV1	C CAL	10 Nov
4	4	la17194.d	1.	8330MIX-LEV2	C CAL	10 Nov
5	5	la17195.d	1.	8330MIX-LEV3	C CAL	10 Nov
6	6	la17196.d	1.	8330MIX-LEV4	C CAL	10 Nov
7	7	la17197.d	1.	8330MIX-LEV5	C CAL	10 Nov
8	8	la17198.d	1.	8330MIX-LEV6	C CAL	10 Nov
9	9	la17199.d	1.	8330MIX-ICV	C CAL	10 Nov

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Remarks	Standard	Solution ID	Conc.	Date Prep.		
<i>940889 A(5) w</i>	<i>8330 mix</i>	<i>38500</i>	<i>10/20/06</i>	<i>10/31/06</i>		
<i>94090</i>						

Lca P

HPLC ANALYSIS LOGBOOK

Instrument ID: LC # A (HP1100)

8114NG

Method File:	h:\data\lca\methods	
Detector/ Wavelength:	UV	254 nm
Injection Volume:	100	ul

Data File Path:	h:\data\lca\111406
Mobile Phase:	833-L49-66-13
Flow Rate:	0.7 ml/min

ICAL: 8114NG Analyst: J.S. Reviewed by: JCSA Date: 11/14/06

Injection Log

Directory: .h:\data\lca\111406

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injected
1	1	la17207.d	1.	8330NG-BLK	C CAL	14 Nov
2	2	la17208.d	1.	8330NG-LEV1	C CAL	14 Nov
3	3	la17209.d	1.	8330NG-LEV2	C CAL	14 Nov
4	4	la17210.d	1.	8330NG-LEV3	C CAL	14 Nov
5	5	la17211.d	1.	8330NG-LEV4	C CAL	14 Nov
6	6	la17212.d	1.	8330NG-LEV5	C CAL	14 Nov
7	7	la17213.d	1.	8330NG-ICV	C CAL	14 Nov

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Remarks	Standard	Solution ID	Conc.	Date Prep.		
94091 NG S.P.W	NG	38641	100ppm	11/14/06		
	4-nitroaniline	78556	100ppm	11/03/06		

LCA
Conf.

Curve
(101106)

HPLC ANALYSIS LOGBOOK

LCA
Conf. 6/10/06

Instrument ID: LC # A (HP1100)

Method File: H:\Lcdata\Lca\Methods
Detector/ Wavelength: UV 254
Injection Volume: 100 uL

Data File Path: h:\Lcdata\Lca\101106
Mobile Phase: 8330-LA9-64-a1
Flow Rate: 1.00 mL/min.

ICAL:101106 Analyst: AG Reviewed by: S.S. Date: 10/16/06

Injection Log

Directory: h:\Lcdata\Lca\101106

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injecte
1	1	la16699.d	1.	BLK	ICAL	11 Oct
2	2	la16700.d	1.	8330MIX-LEV-1	ICAL	11 Oct
3	3	la16701.d	1.	8330MIX-LEV-2	ICAL	11 Oct
4	4	la16702.d	1.	8330MIX-LEV-3	ICAL	11 Oct
5	5	la16703.d	1.	8330MIX-LEV-4	ICAL	11 Oct
6	6	la16704.d	1.	8330MIX-LEV-5	ICAL	11 Oct
7	7	la16705.d	1.	8330MIX-LEV-6	ICAL	11 Oct
8	8	la16706.d	1.	8330MIX-LEV-3ICV	ICAL	11 Oct
9	9	la16707.d	1.	8330MIX	CCAL	11 Oct
10	10	la16708.d	1.	8330MIX	CCAL	12 Oct

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Remarks	Standard	Solution ID	Conc.	Date Prep.		
	8330 MIX	38307	10/20/06	10/20/06		
	8330 ICV	37629	5 PPM	07/31/2006		

HPLC ANALYSIS LOGBOOK

Instrument ID: LC # A (HP1100)

Method File:	k:\data\lca\methods
Detector/ Wavelength:	UV 254 nm
Injection Volume:	100 µL

Data File Path:	k:\data\lca\022607
Mobile Phase:	9330-49-73-12
Flow Rate:	1.0 mL/min

ICAL: 61011CON/TD2N⁶CD Analyst: JCSA Reviewed by: S.S Date: 02/28/07

Injection Log

Directory: h:\data\lca\022607

Comments

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injecte
1	1	la19172.d	1.	8330 MIX		
2	2	la19173.d	1.	8330NG	CCAL	26 Feb
3	3	la19174.d	1.	702075-002	SOIL ALION	26 Feb
4	4	la19175.d	1.	702075-003	SOIL ALION	26 Feb
5	5	la19176.d	1.	702075-004	SOIL ALION	26 Feb
6	6	la19177.d	1.	702075-005	SOIL ALION	26 Feb
7	7	la19178.d	1.	702075-006	SOIL ALION	26 Feb
8	8	la19179.d	1.	702075-007	SOIL ALION	26 Feb
9	9	la19180.d	1.	702075-011	SOIL ALION	26 Feb
10	10	la19181.d	1.	702075-012	SOIL ALION	26 Feb
11	11	la19182.d	1.	702075-013	SOIL ALION	26 Feb
12	12	la19183.d	1.	702078-001	SOIL ALION	26 Feb
13	13	la19184.d	1.	RINSE	ACN	27 Feb
14	14	la19185.d	1.	8330MIX	CCAL	27 Feb
15	15	la19186.d	1.	8330NG	CCAL	27 Feb
16	16	la19187.d	1.	702078-002	SOIL ALION	27 Feb
17	17	la19188.d	1.	702078-003	SOIL ALION	27 Feb
18	18	la19189.d	1.	702078-004	SOIL ALION	27 Feb
19	19	la19190.d	1.	702078-005	SOIL ALION	27 Feb
20	20	la19191.d	1.	702078-006	SOIL ALION	27 Feb
21	21	la19192.d	1.	702078-007	SOIL ALION	27 Feb
22	22	la19193.d	1.	702078-009	SOIL ALION	27 Feb
23	23	la19194.d	1.	702081-001	SOIL SHAW	27 Feb
24	24	la19195.d	1.	702081-004	SOIL SHAW	27 Feb
25	25	la19196.d	1.	702081-005	SOIL SHAW	27 Feb
26	26	la19197.d	1.	RINSE	ACN	27 Feb
27	27	la19198.d	1.	8330MIX	CCAL	27 Feb
28	28	la19199.d	1.	8330NG	CCAL	27 Feb
29	29	la19200.d	1.	702078-003	SOIL ALION RERUN	27 Feb
30	30	la19201.d	1.	702081-008	SOIL SHAW	27 Feb
31	31	la19202.d	1.	702081-009	SOIL SHAW	27 Feb
32	32	la19203.d	1.	702077-001	SOIL ALION	27 Feb
33	33	la19204.d	1.	702077-002	SOIL ALION	27 Feb
34	34	la19205.d	1.	702077-003	SOIL ALION	27 Feb
35	35	la19206.d	1.	702077-004	SOIL ALION	27 Feb
36	36	la19207.d	1.	702077-005	SOIL ALION	27 Feb
37	37	la19208.d	1.	702077-006	SOIL ALION	28 Feb
38	38	la19209.d	1.	702077-007	SOIL ALION	28 Feb
39	39	la19210.d	1.	702077-008	SOIL ALION	28 Feb
40	40	la19211.d	1.	RINSE	ACN	28 Feb
41	41	la19212.d	1.	8330MIX	CCAL	28 Feb
42	42	la19213.d	1.	8330NG	CCAL	28 Feb
43	43	la19214.d	1.	702077-009	SOIL ALION	28 Feb
44	44	la19215.d	1.	702077-010	SOIL ALION	28 Feb
45	45	la19216.d	1.	702077-011	SOIL ALION	28 Feb
46	46	la19217.d	1.	702077-012	SOIL ALION	28 Feb
47	47	la19218.d	1.	RINSE	ACN	28 Feb
48	48	la19219.d	1.	8330MIX	CCAL	28 Feb

Remarks	Standard	Solution ID	Conc.	Date Prep.
	8330 MIX	39648	10/20 ppm	2/12/07
	4-Nitroaniline	39206	10 ppm	1/9/07
	N6	39366	100 ppm	1/18/07

HPLC ANALYSIS LOGBOOK

Instrument ID: LC # A (HP1100)

Method File:	K:\data\lca\methods
Detector/ Wavelength:	UV 254 nm
Injection Volume:	100 µL

Data File Path:	K:\data\lca\030707
Mobile Phase:	8330-L49-73-34
Flow Rate:	1.2 mL/min JCSA 5/12/07 0.7 mL/min

ICAL: 6110833 / 61114NG Analyst: JCSA Reviewed by: S.S Date: 2/12/07

Injection Log

Directory: h:\data\lca\030707

Comments

Line	Vial	FileName	Multiplier	SampleName	Misc Info	Injector
1		la19343.d	1.	8330 mix		
2	2	la19344.d	1.	BLK96779	SOIL,SHAW,REEX	7 Mar
3	3	la19345.d	1.	BKS96779	SOIL,SHAW,REEX	7 Mar
4	4	la19346.d	1.	702081-005-015-1/2	SOIL,SHAW,REEX	7 Mar
5	5	la19347.d	1.	702081-008-017-1/2	SOIL,SHAW,REEX	7 Mar
6	6	la19348.d	1.	702081-009-019-1/2	SOIL,SHAW,REEX	7 Mar
7	7	la19349.d	1.	BKS96750	WATER,ALION	7 Mar
8	8	la19350.d	1.	703007-002-013-1/2MS	WATER,ALION	7 Mar
9	9	la19351.d	1.	703007-002-013-1/2MSD	WATER,ALION	8 Mar
10	10	la19352.d	1.	RINSE	ACN	8 Mar
11	11	la19353.d	1.	8330MIX	CCAL	8 Mar
12	12	la19354.d	1.	8330NG	CCAL	8 Mar
13	13	la19355.d	1.	BLK96750/96752	WATER,ALION	8 Mar
14	14	la19356.d	1.	BKS96752	WATER,ALION	8 Mar
15	15	la19357.d	1.	703007-002-013-1/2MS	WATER,ALION	8 Mar
16	16	la19358.d	1.	703007-002-013-1/2MSD	WATER,ALION	8 Mar
17	17	la19359.d	1.	703007-001-009-1/1	WATER,ALION	8 Mar
18	18	la19360.d	1.	703007-002-013-1/2	WATER,ALION	8 Mar
19	19	la19361.d	1.	703007-003-006-1/1	WATER,ALION	8 Mar
20	20	la19362.d	1.	703007-004-007-1/1	WATER,ALION	8 Mar
21	21	la19363.d	1.	703007-012-010-1/1	WATER,ALION	8 Mar
22	22	la19364.d	1.	RINSE	ACN	8 Mar
23	23	la19365.d	1.	8330MIX	CCAL	8 Mar
24	24	la19366.d	1.	8330NG	CCAL	8 Mar
25	25	la19367.d	1.	BLK96779	SOIL,SHAW,REEX	8 Mar
26	26	la19368.d	1.	8330MIX	CCAL	8 Mar
27	27	la19369.d	1.	BKS96779	SOIL,SHAW,REEX	8 Mar
28	28	la19370.d	1.	702081-005-015-1/2	SOIL,SHAW,REEX	8 Mar
29	29	la19371.d	1.	702081-008-017-1/2	SOIL,SHAW,REEX	8 Mar
30	30	la19372.d	1.	702081-009-019-1/2	SOIL,SHAW,REEX	8 Mar
31	31	la19373.d	1.	RINSE	ACN	8 Mar
32	32	la19374.d	1.	8330MIX	CCAL	8 Mar
33	33	la19375.d	1.	BLK96814	SOIL,TECHLAW	9 Mar
34	34	la19376.d	1.	BKS96814	SOIL,TECHLAW	9 Mar
35	35	la19377.d	1.	703036-002-007-1/2	SOIL,TECHLAW	9 Mar
36	36	la19378.d	1.	BLK96813	WATER,TECHLAW	9 Mar
37	37	la19379.d	1.	BKS96813	WATER,TECHLAW	9 Mar
38	38	la19380.d	1.	BKSD96813	WATER,TECHLAW	9 Mar
39	39	la19381.d	1.	703036-001-005-1/2	WATER,TECHLAW	9 Mar
40	40	la19382.d	1.	RINSE	ACN	9 Mar
41	41	la19383.d	1.	8330MIX	CCAL	9 Mar

Remarks	Standard	Solution ID	Conc.	Date Prep.
	8330 mix	39648	100 ppm	2/12/07
	4-Nitroaniline	39206	10 ppm	1/9/07
	NG	39366	100 ppm	1/18/07

TRACE METALS

GPL Laboratories

USEPA - CLP

COVER PAGE

Lab Name: GPL LABORATORIES, LLLP Contract: _____

Lab Code: _____ Case No.: _____ NRAS No.: _____ SDG No.: 702081

SOW No.: SW846

EPA Sample No.	Lab Sample ID
NWO-033-0001	S 702081-001-004-1/3
NWO-033-0001 MS	SP702081-001-004-1/3
NWO-033-0001 MSD	SD702081-001-004-1/3
NWO-033-0002	S 702081-002-007-1/1
NWO-033-0003	S 702081-003-008-1/1
NWO-033-0004	S 702081-005-015-1/2
NWO-033-0005	S 702081-006-009-1/1
NWO-033-0006	S 702081-007-010-1/1
NWO-033-0007	S 702081-008-017-1/2
NWO-033-1001	S 702081-004-013-1/2
NWO-033-1002	S 702081-009-019-1/2
NWO-033-5001	S 702081-010-011-1/1

Were ICP-AES and ICP-MS interelement corrections applied?	(Yes/No) <u>YES</u>	ICP-AES <u>YES</u>	ICP-MS <u>YES</u>
Were ICP-AES and ICP-MS background corrections applied?	(Yes/No) <u>YES</u>	<u>YES</u>	<u>YES</u>
if yes, were raw data generated before application of background corrections?	(Yes/No) <u>NO</u>	<u>NO</u>	<u>YES</u>

Comments:

I certify that this Sample Data Package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy Sample Data Package and in the computer-readable data submitted on diskette (or via an alternate means of electronic transmission, if approved in advance by USEPA) has been authorized by the Laboratory Manager or the Manager's designee, as referred by the following signature.

Signature: Rita Amin Name: RITA AMIN
Date: 2/28/2007 Title: Metals Reporting

GPL Laboratories, LLLP
Sample Results

Project:	702081	Matrix:	Soil
Lab Sample ID:	S 702081-001-004-1/3	Percent Moisture:	0.0
Client Sample ID:	NWO-033-0001	Prep Batch:	96615
Analysis Method:	6020 ICPMS Analysis	Reporting Units:	mg/kg

Analyte	WL/ Mass	Method Detection Limit	Reporting Limit	Reported Result	Q	Dilution Factor	Analysis Date/Time
Aluminum	27	2.0	75.2	14900	D	10	02/27/07 22:08
Chromium	52	0.21	1.5	34.4	DB	10	02/27/07 22:08
Copper	65	0.15	1.5	18.9	D	10	02/27/07 22:08
Iron	56	2.4	37.6	15400	D	10	02/27/07 22:08
Lead	208	0.059	1.5	3.3	D	10	02/27/07 22:08
Manganese	55	0.043	1.5	335	D	10	02/27/07 22:08
Molybdenum	95	0.22	3.8	0.51	JD	10	02/27/07 22:08
Nickel	60	0.066	0.75	17.0	DB	10	02/27/07 22:08

U = The analyte concentration was less than the MDL

J = Reported value was less than the CRQL but greater than or equal to the MDL

GPL Laboratories, LLLP

Sample Results

Project:	702081	Matrix:	Soil
Lab Sample ID:	S 702081-002-007-1/1	Percent Moisture:	0.0
Client Sample ID:	NWO-033-0002	Prep Batch:	96615
Analysis Method:	6020 ICPMS Analysis	Reporting Units:	mg/kg

Analyte	WL/ Mass	Method Detection Limit	Reporting Limit	Reported Result	Q	Dilution Factor	Analysis Date/Time
Aluminum	27	2.0	73.0	15300	D	10	02/27/07 22:39
Chromium	52	0.20	1.5	18.7	DB	10	02/27/07 22:39
Copper	65	0.15	1.5	19.9	D	10	02/27/07 22:39
Iron	56	2.3	36.5	14800	D	10	02/27/07 22:39
Lead	208	0.058	1.5	3.3	D	10	02/27/07 22:39
Manganese	55	0.042	1.5	311	D	10	02/27/07 22:39
Molybdenum	95	0.21	3.6	149	D	10	02/27/07 22:39
Nickel	60	0.064	0.73	16.6	DB	10	02/27/07 22:39

U = The analyte concentration was less than the MDL

J = Reported value was less than the CRQL but greater than or equal to the MDL

GPL Laboratories, LLLP

Sample Results

Project:	702081	Matrix:	Soil
Lab Sample ID:	S 702081-003-008-1/1	Percent Moisture:	0.0
Client Sample ID:	NWO-033-0003	Prep Batch:	96615
Analysis Method:	6020 ICPMS Analysis	Reporting Units:	mg/kg

Analyte	WL/ Mass	Method Detection Limit	Reporting Limit	Reported Result	Q	Dilution Factor	Analysis Date/Time
Aluminum	27	2.1	76.9	13900	D	10	02/27/07 22:45
Chromium	52	0.22	1.5	27.7	DB	10	02/27/07 22:45
Copper	65	0.15	1.5	17.4	D	10	02/27/07 22:45
Iron	56	2.5	38.5	14100	D	10	02/27/07 22:45
Lead	208	0.061	1.5	3.3	D	10	02/27/07 22:45
Manganese	55	0.044	1.5	304	D	10	02/27/07 22:45
Molybdenum	95	0.22	3.8	0.54	JD	10	02/27/07 22:45
Nickel	60	0.068	0.77	15.6	DB	10	02/27/07 22:45

U = The analyte concentration was less than the MDL

J = Reported value was less than the CRQL but greater than or equal to the MDL

GPL Laboratories, LLLP

Sample Results

Project:	702081	Matrix:	Soil
Lab Sample ID:	S 702081-004-013-1/2	Percent Moisture:	0.0
Client Sample ID:	NWO-033-1001	Prep Batch:	96615
Analysis Method:	6020 ICPMS Analysis	Reporting Units:	mg/kg

Analyte	WL/ Mass	Method Detection Limit	Reporting Limit	Reported Result	Q	Dilution Factor	Analysis Date/Time
Aluminum	27	2.0	73.0	10800	D	10	02/27/07 22:51
Chromium	52	0.20	1.5	18.0	DB	10	02/27/07 22:51
Copper	65	0.15	1.5	12.4	D	10	02/27/07 22:51
Iron	56	2.3	36.5	10300	D	10	02/27/07 22:51
Lead	208	0.058	1.5	2.6	D	10	02/27/07 22:51
Manganese	55	0.042	1.5	214	D	10	02/27/07 22:51
Molybdenum	95	0.21	3.6	2.5	JD	10	02/27/07 22:51
Nickel	60	0.064	0.73	10.3	DB	10	02/27/07 22:51

U = The analyte concentration was less than the MDL

J = Reported value was less than the CRQL but greater than or equal to the MDL

GPL Laboratories, LLLP

Sample Results

Project:	702081	Matrix:	Soil
Lab Sample ID:	S 702081-005-015-1/2	Percent Moisture:	0.0
Client Sample ID:	NWO-033-0004	Prep Batch:	96615
Analysis Method:	6020 ICPMS Analysis	Reporting Units:	mg/kg

Analyte	WL/ Mass	Method Detection Limit	Reporting Limit	Reported Result	Q	Dilution Factor	Analysis Date/Time
Aluminum	27	1.9	70.4	14500	D	10	02/27/07 22:57
Chromium	52	0.20	1.4	24.0	DB	10	02/27/07 22:57
Copper	65	0.14	1.4	20.0	D	10	02/27/07 22:57
Iron	56	2.3	35.2	14800	D	10	02/27/07 22:57
Lead	208	0.056	1.4	3.7	D	10	02/27/07 22:57
Manganese	55	0.040	1.4	300	D	10	02/27/07 22:57
Molybdenum	95	0.20	3.5	32.4	D	10	02/27/07 22:57
Nickel	60	0.062	0.70	16.4	DB	10	02/27/07 22:57

U = The analyte concentration was less than the MDL

J = Reported value was less than the CRQL but greater than or equal to the MDL

GPL Laboratories, LLLP

Sample Results

Project:	702081	Matrix:	Soil
Lab Sample ID:	S 702081-006-009-1/1	Percent Moisture:	0.0
Client Sample ID:	NWO-033-0005	Prep Batch:	96615
Analysis Method:	6020 ICPMS Analysis	Reporting Units:	mg/kg

Analyte	WL/ Mass	Method Detection Limit	Reporting Limit	Reported Result	Q	Dilution Factor	Analysis Date/Time
Aluminum	27	2.0	73.0	11600	D	10	02/27/07 23:03
Chromium	52	0.20	1.5	16.0	DB	10	02/27/07 23:03
Copper	65	0.15	1.5	14.6	D	10	02/27/07 23:03
Iron	56	2.3	36.5	12400	D	10	02/27/07 23:03
Lead	208	0.058	1.5	2.7	D	10	02/27/07 23:03
Manganese	55	0.042	1.5	241	D	10	02/27/07 23:03
Molybdenum	95	0.21	3.6	2.1	JD	10	02/27/07 23:03
Nickel	60	0.064	0.73	12.4	DB	10	02/27/07 23:03

U = The analyte concentration was less than the MDL

J = Reported value was less than the CRQL but greater than or equal to the MDL

GPL Laboratories, LLLP

Sample Results

Project:	702081	Matrix:	Soil
Lab Sample ID:	S 702081-007-010-1/1	Percent Moisture:	0.0
Client Sample ID:	NWO-033-0006	Prep Batch:	96615
Analysis Method:	6020 ICPMS Analysis	Reporting Units:	mg/kg

Analyte	WL/ Mass	Method Detection Limit	Reporting Limit	Reported Result	Q	Dilution Factor	Analysis Date/Time
Aluminum	27	2.1	77.5	18900	D	10	02/27/07 23:22
Chromium	52	0.22	1.6	23.9	DB	10	02/27/07 23:22
Copper	65	0.16	1.6	26.2	D	10	02/27/07 23:22
Iron	56	2.5	38.8	19300	D	10	02/27/07 23:22
Lead	208	0.061	1.6	4.3	D	10	02/27/07 23:22
Manganese	55	0.044	1.6	391	D	10	02/27/07 23:22
Molybdenum	95	0.22	3.9	20.9	D	10	02/27/07 23:22
Nickel	60	0.068	0.78	22.1	DB	10	02/27/07 23:22

U = The analyte concentration was less than the MDL

J = Reported value was less than the CRQL but greater than or equal to the MDL

GPL Laboratories, LLLP

Sample Results

Project:	702081	Matrix:	Soil
Lab Sample ID:	S 702081-008-017-1/2	Percent Moisture:	0.0
Client Sample ID:	NWO-033-0007	Prep Batch:	96615
Analysis Method:	6020 ICPMS Analysis	Reporting Units:	mg/kg

Analyte	WL/ Mass	Method Detection Limit	Reporting Limit	Reported Result	Q	Dilution Factor	Analysis Date/Time
Aluminum	27	2.0	74.1	15100	D	10	02/27/07 23:28
Chromium	52	0.21	1.5	24.0	DB	10	02/27/07 23:28
Copper	65	0.15	1.5	19.8	D	10	02/27/07 23:28
Iron	56	2.4	37.0	14900	D	10	02/27/07 23:28
Lead	208	0.059	1.5	3.7	D	10	02/27/07 23:28
Manganese	55	0.042	1.5	297	D	10	02/27/07 23:28
Molybdenum	95	0.21	3.7	29.1	D	10	02/27/07 23:28
Nickel	60	0.065	0.74	16.5	DB	10	02/27/07 23:28

U = The analyte concentration was less than the MDL

J = Reported value was less than the CRQL but greater than or equal to the MDL

GPL Laboratories, LLLP

Sample Results

Project:	702081	Matrix:	Soil
Lab Sample ID:	S 702081-009-019-1/2	Percent Moisture:	0.0
Client Sample ID:	NWO-033-1002	Prep Batch:	96615
Analysis Method:	6020 ICPMS Analysis	Reporting Units:	mg/kg

Analyte	WL/ Mass	Method Detection Limit	Reporting Limit	Reported Result	Q	Dilution Factor	Analysis Date/Time
Aluminum	27	2.0	73.5	10800	D	10	02/27/07 23:34
Chromium	52	0.21	1.5	11.1	DB	10	02/27/07 23:34
Copper	65	0.15	1.5	10.7	D	10	02/27/07 23:34
Iron	56	2.4	36.8	9400	D	10	02/27/07 23:34
Lead	208	0.058	1.5	2.7	D	10	02/27/07 23:34
Manganese	55	0.042	1.5	206	D	10	02/27/07 23:34
Molybdenum	95	0.21	3.7	10.9	D	10	02/27/07 23:34
Nickel	60	0.065	0.74	8.9	DB	10	02/27/07 23:34

U = The analyte concentration was less than the MDL

J = Reported value was less than the CRQL but greater than or equal to the MDL

GPL Laboratories, LLLP

Sample Results

Project:	702081	Matrix:	Soil
Lab Sample ID:	S 702081-010-011-1/1	Percent Moisture:	0.0
Client Sample ID:	NWO-033-5001	Prep Batch:	96615
Analysis Method:	6020 ICPMS Analysis	Reporting Units:	mg/kg

Analyte	WL/ Mass	Method Detection Limit	Reporting Limit	Reported Result	Q	Dilution Factor	Analysis Date/Time
Aluminum	27	2.1	76.3	8680	D	10	02/27/07 23:41
Chromium	52	0.21	1.5	11.4	DB	10	02/27/07 23:41
Copper	65	0.15	1.5	9.9	D	10	02/27/07 23:41
Iron	56	2.4	38.2	8060	D	10	02/27/07 23:41
Lead	208	0.060	1.5	2.0	D	10	02/27/07 23:41
Manganese	55	0.044	1.5	152	D	10	02/27/07 23:41
Molybdenum	95	0.22	3.8	30.9	D	10	02/27/07 23:41
Nickel	60	0.067	0.76	8.1	DB	10	02/27/07 23:41

U = The analyte concentration was less than the MDL

J = Reported value was less than the CRQL but greater than or equal to the MDL

GPL Laboratories, LLLP
Preparation Blank Results

Project:	702081	Matrix:	Soil
Lab Sample ID:	BLK96615	Percent Moisture:	0.0
Client Sample ID:	NA	Prep Batch:	96615
Analysis Method:	6020 ICPMS Analysis	Reporting Units:	mg/kg

Analyte	WL/ Mass	Method Detection Limit	Reporting Limit	Reported Result	Q	Dilution Factor	Analysis Date/Time
Aluminum	27	2.7	100	4.3	JD	10	02/27/07 21:43
Chromium	52	0.28	2.0	0.33	JD	10	02/27/07 21:43
Copper	65	0.20	2.0	0.20	UD	10	02/27/07 21:43
Iron	56	3.2	50.0	3.2	UD	10	02/27/07 21:43
Lead	208	0.079	2.0	0.079	UD	10	02/27/07 21:43
Manganese	55	0.057	2.0	0.096	JD	10	02/27/07 21:43
Molybdenum	95	0.29	5.0	0.29	UD	10	02/27/07 21:43
Nickel	60	0.088	1.0	0.088	UD	10	02/27/07 21:43

U = The analyte concentration was less than the MDL

J = Reported value was less than the CRQL but greater than or equal to the MDL

GPL Laboratories, LLLP
Initial Calibration Verification

Project:	702081	Instrument:	3050X
Units:	ug/L	Data File Name:	070227MS.csv
Standard Source:	AB.ST.	Standard ID:	

Analyte	True	ICV 2/27/2007 4:53:23 PM							
		Found	%R	Found	%R	Found	%R	Found	%R
Aluminum	500.0	488.23	98						
Chromium	40.0	41.88	105						
Copper	40.0	41.60	104						
Iron	500.0	527.77	106						
Lead	40.0	44.00	110						
Manganese	40.0	43.17	108						
Molybdenum	40.0	41.88	105						
Nickel	40.0	42.25	106						

GPL Laboratories, LLLP
Continuing Calibration Verification

Project:	702081	Instrument:	3050X
Units:	ug/L	Data File Name:	070227MS.csv
Standard Source:	H.P.	Standard ID:	

Analyte	True	CCV1 2/27/2007 5:08:53 PM		CCV2 2/27/2007 6:13:19 PM		CCV3 2/27/2007 7:27:31 PM		CCV4 2/27/2007 8:41:46 PM	
		Found	%R	Found	%R	Found	%R	Found	%R
		Aluminum	5000.0	4949.00	99	5270.33	105	5166.67	103
Chromium	50.0	51.55	103	49.23	98	50.25	101	50.39	101
Copper	50.0	49.92	100	47.04	94	47.23	94	48.13	96
Iron	5000.0	5044.67	101	5145.00	103	5152.67	103	5118.67	102
Lead	50.0	52.40	105	52.48	105	51.65	103	51.84	104
Manganese	50.0	51.25	103	50.45	101	50.46	101	50.87	102
Molybdenum	50.0	50.96	102	49.91	100	49.07	98	49.89	100
Nickel	50.0	50.70	101	52.58	105	51.78	104	51.51	103

GPL Laboratories, LLLP
Continuing Calibration Verification

Project:	702081	Instrument:	3050X
Units:	ug/L	Data File Name:	070227MS.csv
Standard Source:	H.P.	Standard ID:	

Analyte	True	CCV5 2/27/2007 9:55:51 PM		CCV6 2/27/2007 11:10:07 PM		CCV7 2/28/2007 12:36:45 AM			
		Found	%R	Found	%R	Found	%R	Found	%R
		Aluminum	5000.0	5090.33	102	5033.33	101	5104.33	102
Chromium	50.0	50.06	100	49.68	99	49.28	99		
Copper	50.0	47.60	95	47.22	94	46.35	93		
Iron	5000.0	5014.00	100	5006.33	100	4990.33	100		
Lead	50.0	50.96	102	50.77	102	49.84	100		
Manganese	50.0	49.89	100	49.89	100	49.33	99		
Molybdenum	50.0	49.37	99	48.76	98	48.61	97		
Nickel	50.0	52.20	104	52.29	105	52.44	105		

GPL Laboratories, LLLP
Low Level Check Standard

Project:	702081	Instrument:	3050X
Units:	ug/L	Data File Name:	070227MS.csv
Standard Source:	H.P.	Standard ID:	

Analyte	True	PQL 2/27/2007 5:19:13 PM							
		Found	%R	Found	%R	Found	%R	Found	%R
Aluminum	100.0	94.44	94						
Chromium	2.0	1.93	96						
Copper	2.0	2.13	107						
Iron	50.0	49.08	98						
Lead	2.0	2.06	103						
Manganese	2.0	1.98	99						
Molybdenum	5.0	5.16	103						
Nickel	1.0	0.96	96						

GPL Laboratories, LLLP
Initial Calibration Blanks

Project:	702081	Instrument:	3050X
Units:	ug/L	Data File Name:	070227MS.csv
Standard Source:		Standard ID:	

Analyte	RL	ICB 2/27/2007 5:03:42 PM							
		Found	Flag	Found	Flag	Found	Flag	Found	Flag
Aluminum	100.00	2.70	U						
Chromium	2.00	0.28	U						
Copper	2.00	0.20	U						
Iron	50.00	3.20	U						
Lead	2.00	0.08	U						
Manganese	2.00	0.06	U						
Molybdenum	5.00	0.29	U						
Nickel	1.00	0.09	U						

GPL Laboratories, LLLP
Continuing Calibration Blanks

Project:	702081	Instrument:	3050X
Units:	ug/L	Data File Name:	070227MS.csv
Standard Source:		Standard ID:	

Analyte	RL	CCB1 2/27/2007 5:14:02 PM		CCB2 2/27/2007 6:19:30 PM		CCB3 2/27/2007 7:33:42 PM		CCB4 2/27/2007 8:47:58 PM	
		Found	Flag	Found	Flag	Found	Flag	Found	Flag
		Aluminum	100.00	2.70	U	2.70	U	2.70	U
Chromium	2.00	0.28	U	0.28	U	0.28	U	0.28	U
Copper	2.00	0.20	U	0.20	U	0.20	U	0.20	U
Iron	50.00	3.20	U	3.20	U	3.20	U	3.20	U
Lead	2.00	0.08	U	0.08	U	0.08	U	0.08	U
Manganese	2.00	0.06	U	0.06	U	0.06	U	0.06	U
Molybdenum	5.00	0.29	U	0.29	U	0.29	U	0.29	U
Nickel	1.00	0.09	U	0.09	U	0.09	U	0.09	U

GPL Laboratories, LLLP
Continuing Calibration Blanks

Project:	702081	Instrument:	3050X
Units:	ug/L	Data File Name:	070227MS.csv
Standard Source:		Standard ID:	

Analyte	RL	CCB5 2/27/2007 10:02:02 PM		CCB6 2/27/2007 11:16:18 PM		CCB7 2/28/2007 12:42:54 AM			
		Found	Flag	Found	Flag	Found	Flag	Found	Flag
Aluminum	100.00	2.70	U	2.70	U	2.70	U		
Chromium	2.00	0.28	U	0.28	U	0.28	U		
Copper	2.00	0.20	U	0.20	U	0.20	U		
Iron	50.00	3.20	U	3.20	U	3.20	U		
Lead	2.00	0.08	U	0.08	U	0.08	U		
Manganese	2.00	0.06	U	0.06	U	0.06	U		
Molybdenum	5.00	0.29	U	0.29	U	0.29	U		
Nickel	1.00	0.09	U	0.09	U	0.09	U		

GPL Laboratories, LLLP
Interference Check Standards

Project:	702081	Instrument:	3050X
Units:	ug/L	Data File Name:	070227MS.csv
Standard Source:	H.P. / AB.ST.	Standard ID:	

Analyte	RL	True		Initial Found				Final Found			
		Sol. A	Sol. B	ICSA		ICSAB			%R		%R
				02/27/07 17:30	%R	02/27/07 17:48	%R				
Aluminum	100		100000	99200	99	100000	100				
Chromium	2		20	0.75		21.8	109				
Copper	2		20	0.39		17.6	88				
Iron	50		250000	245000	98	241000	96				
Lead	2		20	0.14		23.6	118				
Manganese	2		20	-0.079		21.4	107				
Molybdenum	5		2000	2080	104	1950	97				
Nickel	1		20	0.19		21.4	107				

GPL Laboratories, LLLP
Matrix Spike Recovery

Client ID:	NWO-033-0001 MS	Lab Sample ID:	SP702081-001-004-1/3
Project:	702081	Instrument:	3050X
Units:	mg/kg	Data File Name:	070227MS.csv
Standard Source:	H.P.	Standard ID:	

Analyte	Spiked Sample Result 02/27/07 22:14	Sample Result 02/27/07 22:08	Spike Added	%R
Aluminum	15870.10	14917.29	735.29	130
Chromium	67.14	34.35	36.76	89
Copper	49.50	18.89	36.76	83
Iron	15904.41	15398.50	735.29	69
Lead	77.77	3.33	73.53	101
Manganese	388.50	334.61	73.53	73
Molybdenum	31.93	0.51 J	36.76	85
Nickel	53.56	17.03	36.76	99

GPL Laboratories, LLLP
Matrix Spike Duplicate Recovery

Client ID:	NWO-033-0001 MSD	Lab Sample ID:	SD702081-001-004-1/3
Project:	702081	Instrument:	3050X
Units:	mg/kg	Data File Name:	070227MS.csv
Standard Source:	H.P.	Standard ID:	

Analyte	Spiked Sample Result 02/27/07 22:20	Sample Result 02/27/07 22:08	Spike Added	%R
Aluminum	15848.92	14917.29	719.42	129
Chromium	66.94	34.35	35.97	91
Copper	48.58	18.89	35.97	83
Iron	15803.36	15398.50	719.42	56
Lead	76.69	3.33	71.94	102
Manganese	388.23	334.61	71.94	75
Molybdenum	30.25	0.51	J 35.97	83
Nickel	52.88	17.03	35.97	100

GPL Laboratories, LLLP

Duplicates (RPD)

Client ID:	NWO-033-0001 MSD	Lab Sample ID:	SD702081-001-004-1/3
Project:	702081	Instrument:	3050X
Units:	mg/kg	Data File Name:	070227MS.csv

2/28/07 AJ

Analyte	MATRIX SPIKE Original Sample Results	MATRIX SPIKE Duplicate Sample Results	RPD	Control Limit	Q
Aluminum	15870.10	15848.92	0	20	D
Chromium	67.14	66.94	0	20	D
Copper	49.50	48.58	2	20	D
Iron	15904.41	15803.36	1	20	D
Lead	77.77	76.69	1	20	D
Manganese	388.50	388.23	0	20	D
Molybdenum	31.93	30.25	5	20	D
Nickel	53.56	52.88	1	20	D

GPL Laboratories, LLLP
Laboratory Control Sample

Project:	702081	Lab Sample ID:	BKS96615
Units:	mg/kg	Instrument:	3050X
		Data File Name:	070227MS.csv
Standard Source:	H.P.	Standard ID:	

Analyte	Spiked Sample Result 02/27/07 21:49	Spike Added	%R
Aluminum	927.63	1000.00	93
Chromium	50.31	50.00	101
Copper	48.10	50.00	96
Iron	989.97	1000.00	99
Lead	99.59	100.00	100
Manganese	99.57	100.00	100
Molybdenum	47.69	50.00	95
Nickel	53.09	50.00	106

GPL Laboratories, LLLP

Serial Dilutions

Client ID:	NWO-033-0001	Lab Sample ID:	SE702081-001-004-1/3
Project:	702081	Instrument:	3050X
Units:	ug/L	Data File Name:	070227MS.csv

Analyte	Sample Result	Serial Dilution Result	Percent Difference	Flag
	02/27/07 22:08	02/27/07 22:33		
Aluminum	19840.00	19623.33	1	
Chromium	45.69	44.97	2	
Copper	25.12	26.26	5	
Iron	20480.00	20958.33	2	
Lead	4.43	4.43	0	J
Manganese	445.03	466.82	5	
Molybdenum	0.68	1.45	100	J U
Nickel	22.65	23.35	3	

GPL Laboratories, LLLP

Detection Limits

Project: 702081 Instrument: 3050X
 Units: ug/L

Analyte	Wavelength/Mass	Reporting Limit	Method Detection Limit	Date of MDL
Aluminum	27	100	2.7	04/14/06
Chromium	52	2.0	0.28	04/14/06
Copper	65	2.0	0.20	04/14/06
Iron	56	50.0	3.2	04/14/06
Lead	208	2.0	0.079	04/14/06
Manganese	55	2.0	0.057	04/14/06
Molybdenum	95	5.0	0.29	04/14/06
Nickel	60	1.0	0.088	04/14/06

GPL Laboratories, LLLP
 Linear Dynamic Ranges

Project: 702081 Instrument: 3050X
 Units: ug/L

2/28/07 dg

Analyte	Wavelength/Mass	Linear Dynamic Range	Date of LDR
Aluminum	27	110000	04/14/06
Chromium	52	5500	04/14/06
Copper	65	5500	04/14/06
Iron	56	275000	04/14/06
Lead	208	11000	04/14/06
Manganese	55	5500	04/14/06
Molybdenum	95	5500	04/14/06
Nickel	60	4125	04/14/06

2/27/07



GPL Laboratories, LLLP

Preparation Log

Project:	702081	Instrument:	3050X
Prep Method:	Preparation for the Manual Cold	Batch Number:	96615

Lab Sample ID	Client ID	Preparation Date	Initial Weight (grams)	Final Volume (ml)
BLK96615	BLK96615	02/22/2007	1.00	100
BKS96615	BKS96615	02/22/2007	1.00	100
S 702081-001-004-1/3	NWO-033-0001	02/22/2007	1.33	100
SP702081-001-004-1/3	NWO-033-0001 MS	02/22/2007	1.36	100
S 702081-002-007-1/1	NWO-033-0002	02/22/2007	1.37	100
S 702081-003-008-1/1	NWO-033-0003	02/22/2007	1.30	100
S 702081-005-015-1/2	NWO-033-0004	02/22/2007	1.42	100
S 702081-006-009-1/1	NWO-033-0005	02/22/2007	1.37	100
S 702081-007-010-1/1	NWO-033-0006	02/22/2007	1.29	100
S 702081-008-017-1/2	NWO-033-0007	02/22/2007	1.35	100
S 702081-004-013-1/2	NWO-033-1001	02/22/2007	1.37	100
S 702081-009-019-1/2	NWO-033-1002	02/22/2007	1.36	100
S 702081-010-011-1/1	NWO-033-5001	02/22/2007	1.31	100
SD702081-001-004-1/3	NWO-033-0001 MSD	02/22/2007	1.39	100

GPL Laboratories, LLLP

Analysis Run Log

Project: 702081 Instrument: 3050X
 Data File Name: 070227MS.csv

Sample Name	Client ID	Analysis Date	Analysis Time
BLANK		02/27/07	4:17 PM
STD1		02/27/07	4:22 PM
STD2		02/27/07	4:27 PM
STD3		02/27/07	4:32 PM
STD4		02/27/07	4:37 PM
STD5		02/27/07	4:43 PM
STD6		02/27/07	4:48 PM
ICV		02/27/07	4:53 PM
ICB		02/27/07	5:03 PM
CCV1		02/27/07	5:08 PM
CCB1		02/27/07	5:14 PM
PQL		02/27/07	5:19 PM
ICSA		02/27/07	5:30 PM
ICSAB		02/27/07	5:48 PM
CCV2		02/27/07	6:13 PM
CCB2		02/27/07	6:19 PM
CCV3		02/27/07	7:27 PM
CCB3		02/27/07	7:33 PM
CCV4		02/27/07	8:41 PM
CCB4		02/27/07	8:47 PM
BLK96615	BLK96615	02/27/07	9:43 PM
BKS96615	BKS96615	02/27/07	9:49 PM
CCV5		02/27/07	9:55 PM
CCB5		02/27/07	10:02 PM
S 702081-001-004-1/3	NWO-033-0001	02/27/07	10:08 PM
SP702081-001-004-1/3	NWO-033-0001 MS	02/27/07	10:14 PM
SD702081-001-004-1/3	NWO-033-0001 MSD	02/27/07	10:20 PM
SE702081-001-004-1/3	NWO-033-0001	02/27/07	10:33 PM
S 702081-002-007-1/1	NWO-033-0002	02/27/07	10:39 PM
S 702081-003-008-1/1	NWO-033-0003	02/27/07	10:45 PM
S 702081-004-013-1/2	NWO-033-1001	02/27/07	10:51 PM
S 702081-005-015-1/2	NWO-033-0004	02/27/07	10:57 PM
S 702081-006-009-1/1	NWO-033-0005	02/27/07	11:03 PM
CCV6		02/27/07	11:10 PM
CCB6		02/27/07	11:16 PM
S 702081-007-010-1/1	NWO-033-0006	02/27/07	11:22 PM
S 702081-008-017-1/2	NWO-033-0007	02/27/07	11:28 PM
S 702081-009-019-1/2	NWO-033-1002	02/27/07	11:34 PM
S 702081-010-011-1/1	NWO-033-5001	02/27/07	11:41 PM

GPL Laboratories, LLLP

Analysis Run Log

Project: 702081 Instrument: 3050X
Data File Name: 070227MS.csv

Sample Name	Client ID	Analysis Date	Analysis Time
CCV7		02/28/07	12:36 AM
CCB7		02/28/07	12:42 AM

ICPMS ANALYSIS LOG

Instrument ID: ICPMS (X0206)	Inst. Method: 6020A Nebulizer: CONIKAL	Analytical Batch No: 070227MS
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Workorder	Project/SDG #	Prep. Seq.	Batch #	Matrix s/w/e	Prep. Date	Method	Comments / Dilution
702123	BOGGS		142	FILTER	2.27.07	6020A	10x ON ALL OK
702075	ALION		132	W	2.22.07		BLK(132): Ni, Zn, FAILED → RERUN.
702081	SHAW	96615	131	S	↓	↓	10x ON ALL OK
702094	PROXTRONICS		140	W	2.27.07	200.8	OK
702118	↓	↓	↓	↓	↓	↓	OK
702075	ALION		134	S	2.22.07	6020A	10x ON ALL OK

Source Solution Numbers				Post Digestion Spikes	
Stds.	Number	Stds.	Number	Spike	
S0	129-134-02	ICV	39297	9.9	mls of sample with 0.1 mls of 38352
S1	39279	CCV	39532	Samples:	
S2	39280	ICSA	39300	702123-001-001-1 / 1	
S3	39281	ICSAB	39303	702075-001-004-1 / 2	
S4	39282	Low Ck	39305	702081-001-004-1 / 3	
S5	39283	LR	39306	702094-001-001-1 / 1	
S6	39284	IS	39533	702075-002-016-2 / 2	

Analyst:  Date: 2.28.07 Reviewed: RA Date: 2.28-07

ICP ANALYSIS LOG

GPL - Maryland Laboratory

ICPMS Analysis Log

Data File: 070227MS.csv

Seq	Sample Name	DI	Date	Time	Seq	Sample Name	DI	Date	Time	Seq	Sample Name	DI	Date	Time	Seq	Sample Name	DI	Date	Time
1	BLANK		11/27/2007	16:17	31	CCV		11/27/2007	19:27	01	SE702001-001-004-1/		50/27/2007	22:33	02	CCV Se		11/28/2007	1:57
2	STD1		11/27/2007	16:22	32	CCB		11/27/2007	19:33	02	S 702001-002-007-1/1		10/27/2007	22:39	02	CCB		11/28/2007	2:03
3	STD2		11/27/2007	16:27	33	S 702123-007-007-1/1		10/27/2007	19:39	03	S 702001-003-000-1/1		10/27/2007	22:45	03	S 702075-003-017-1/2		10/28/2007	2:09
4	STD3		11/27/2007	16:32	34	S 702123-000-000-1/1		10/27/2007	19:46	04	S 702001-004-013-1/2		10/27/2007	22:51	04	S 702075-004-010-1/2		10/28/2007	2:15
5	STD4		11/27/2007	16:37	35	S 702123-009-009-1/1		10/27/2007	19:52	05	S 702001-005-015-1/2		10/27/2007	22:57	05	S 702075-005-021-1/2		10/28/2007	2:21
6	STD5		11/27/2007	16:43	36	S 702123-010-010-1/1		10/27/2007	19:58	06	S 702001-006-000-1/1		10/27/2007	23:03	06	S 702075-006-023-1/2		10/28/2007	2:29
7	STD6		11/27/2007	16:48	37	S 702123-011-011-1/1		10/27/2007	20:04	07	CCV		11/27/2007	23:10	07	S 702075-007-025-1/2		10/28/2007	2:34
8	CV Se		11/27/2007	16:53	38	S 702123-012-012-1/1		10/27/2007	20:10	08	CCB		11/27/2007	23:16	08	S 702075-011-027-1/2		10/28/2007	2:40
9	CV(Cd)		11/27/2007	16:58	39	S 702123-013-013-1/1		10/27/2007	20:17	09	S 702001-007-010-1/1		10/27/2007	23:22	09	S 702075-012-020-1/2		10/28/2007	2:46
10	CB		11/27/2007	17:03	40	S 702123-014-014-1/1		10/27/2007	20:23	10	S 702001-008-017-1/2		10/27/2007	23:28	10	S 702075-013-031-1/2		10/28/2007	2:52
11	CCV		11/27/2007	17:08	41	S 702123-015-015-1/1		10/27/2007	20:29	11	S 702001-009-010-1/2		10/27/2007	23:34	11	CSA		11/28/2007	3:00
12	CCB		11/27/2007	17:14	42	S 702123-016-016-1/1		10/27/2007	20:35	12	S 702001-010-011-1/1		10/27/2007	23:41	12	CSAB		11/28/2007	3:11
13	CV Se		11/27/2007	17:19	43	CCV		11/27/2007	20:41	13	BLK(140)		11/27/2007	23:53	13	CCV		11/28/2007	3:17
14	PQL(CoSi)		11/27/2007	17:24	44	CCB		11/27/2007	20:47	14	BKS(140)		11/27/2007	23:59	14	CCB		11/28/2007	3:20
15	CSA		11/27/2007	17:30	45	BLK(132)		11/27/2007	20:54	15	S 702004-001-001-1/1		11/28/2007	0:05					
16	CSAB		11/27/2007	17:41	46	BKS(132)		11/27/2007	21:00	16	S 702004-001-001-1/1		11/28/2007	0:12					
17	CSAB		11/27/2007	17:46	47	S 702075-001-004-1/2		11/27/2007	21:06	17	SP702004-001-001-1/		11/28/2007	0:18					
18	LR		11/27/2007	17:54	48	SP702075-001-004-1/		11/27/2007	21:12	18	PS702004-001-001-1/		11/28/2007	0:24					
19	CCV		11/27/2007	18:13	49	SD702075-001-004-1/		11/27/2007	21:18	19	CV Se		11/28/2007	0:30					
20	CCB		11/27/2007	18:19	50	PS702075-001-004-1/		11/27/2007	21:26	20	CCB		11/28/2007	0:42					
21	BLK(142)		10/27/2007	18:25	51	SE702075-001-004-1/		5/27/2007	21:31	21	SE702004-001-001-1/		5/28/2007	0:48					
22	BKS(142)		10/27/2007	18:31	52	S 702075-014-037-1/2		11/27/2007	21:37	22	S 702004-002-002-1/1		11/28/2007	0:55					
23	S 702123-001-001-1/1		10/27/2007	18:36	53	BLK06015		10/27/2007	21:43	23	S 702110-002-002-1/1		11/28/2007	1:01					
24	PS702123-001-001-1/		10/27/2007	18:44	54	BKS08015		10/27/2007	21:49	24	BLK(134)		10/27/2007	1:13					
25	SE702123-001-001-1/		50/27/2007	18:50	55	CCV		11/27/2007	21:55	25	BKS(134)		10/27/2007	1:10					
26	S 702123-002-002-1/1		10/27/2007	18:56	56	CCB		11/27/2007	22:02	26	S 702075-002-010-2/2		10/28/2007	1:20					
27	S 702123-003-003-1/1		10/27/2007	19:02	57	S 702001-001-004-1/3		10/27/2007	22:08	27	SP702075-002-010-2/		10/28/2007	1:32					
28	S 702123-004-004-1/1		10/27/2007	19:08	58	SP702001-001-004-1/		10/27/2007	22:14	28	SD702075-002-010-2/		10/28/2007	1:38					
29	S 702123-005-005-1/1		10/27/2007	19:15	59	SD702001-001-004-1/		10/27/2007	22:20	29	PS702075-002-010-2/		10/28/2007	1:44					
30	S 702123-006-000-1/1		10/27/2007	19:21	60	PS702001-001-004-1/		10/27/2007	22:26	30	SE702075-002-010-2/		50/28/2007	1:50					

2-28-07

Analyst Signature: *[Signature]*

Date: 2-26-07

Analyst Signature:

Date:

Sample Dilutions:

TS okay
LR okay

USEPA - CLP

15 - IN

ICP-MS Internal Standards Relative Intensity Summary

Lab Name: GPL LABORATORIES, LLLP

Contract: _____

Lab Code: _____

Case No.: _____

NRAS No.: _____

SDG No.: DHJKICP-MS Instrument ID: SEDIStart Date: 02/27/2007End Date: 02/28/2007

EPA Sample No.	Time	Internal Standards %RI For:									
		Bi (209)	Q	In (115)	Q	Li (6)	Q	Sc (45)	Q	Tb (159)	Q
BLANK	16:17	100		100		100		100		100	
STD1	16:22	104		103		105		106		102	
STD2	16:27	103		102		105		105		102	
STD3	16:32	98		95		101		98		96	
STD4	16:37	98		96		101		99		96	
STD5	16:43	98		98		103		102		99	
STD6	16:48	95		96		101		99		98	
ICV	16:53	98		94		99		96		97	
ICV(Cd)	16:58	97		93		98		95		96	
ICB	17:03	97		94		100		95		96	
CCV	17:08	93		89		93		91		93	
CCB	17:14	96		92		96		93		94	
PQL	17:19	97		92		96		93		94	
PQL(CoSr)	17:24	96		92		97		94		94	
ICSA	17:30	73		75		70		73		80	
ICSAB	17:41	77		76		62		69		82	
ICSAB	17:48	78		75		60	R	67		83	
LR	17:54	94		84		69		79		93	
CCV	18:13	97		88		77		82		95	
CCB	18:19	101		92		81		86		98	
BLK(142)	18:25	102		94		82		88		100	
BKS(142)	18:31	102		93		81		87		99	
S 702123-001-001-1/1	18:38	102		95		83		90		100	
PS702123-001-001-1/1	18:44	101		92		81		87		98	
SE702123-001-001-1/1	18:50	104		96		86		90		101	
S 702123-002-002-1/1	18:56	104		97		86		92		102	
S 702123-003-003-1/1	19:02	104		97		88		93		102	
S 702123-004-004-1/1	19:08	104		97		88		93		102	
S 702123-005-005-1/1	19:15	104		97		89		93		102	
S 702123-006-006-1/1	19:21	104		98		89		94		102	
CCV	19:27	97		89		82		85		95	
CCB	19:33	102		94		86		89		99	
S 702123-007-007-1/1	19:39	101		95		87		91		99	
S 702123-008-008-1/1	19:46	102		95		89		92		100	
S 702123-009-009-1/1	19:52	102		95		87		92		99	
S 702123-010-010-1/1	19:58	102		96		89		93		100	
S 702123-011-011-1/1	20:04	102		96		90		92		100	
S 702123-012-012-1/1	20:10	102		95		91		93		100	

FORM XV - IN

SW846

USEPA - CLP

15 - IN

ICP-MS Internal Standards Relative Intensity Summary

Lab Name: GPL LABORATORIES, LLLP

Contract: _____

Lab Code: _____

Case No.: _____

NRAS No.: _____

SDG No.: DHJKICP-MS Instrument ID: SEDIStart Date: 02/27/2007End Date: 02/28/2007

EPA Sample No.	Time	Internal Standards %RI For:									
		Bi (209)	Q	In (115)	Q	Li (6)	Q	Sc (45)	Q	Tb (159)	Q
S 702123-013-013-1/1	20:17	102		96		88		92		100	
S 702123-014-014-1/1	20:23	103		96		88		92		100	
S 702123-015-015-1/1	20:29	103		96		90		93		100	
S 702123-016-016-1/1	20:35	103		96		90		93		100	
CCV	20:41	96		88		83		85		94	
CCB	20:47	101		94		87		90		98	
BLK(132)	20:54	102		95		88		92		100	
BKS(132)	21:00	99		92		85		90		98	
S 702075-001-004-1/2	21:06	105		98		89		94		102	
SP702075-001-004-1/2	21:12	99		92		83		89		98	
SD702075-001-004-1/2	21:18	99		92		84		90		98	
PS702075-001-004-1/2	21:25	100		92		83		89		98	
SE702075-001-004-1/2	21:31	104		93		82		89		98	
S 702075-014-037-1/2	21:37	103		95		84		91		99	
BLK96615	21:43	103		94		84		89		98	
BKS96615	21:49	102		92		84		88		97	
CCV	21:55	97		88		81		85		94	
CCB	22:02	100		91		82		87		96	
S 702081-001-004-1/3	22:08	91		86		79		85		92	
SP702081-001-004-1/3	22:14	91		85		78		85		92	
SD702081-001-004-1/3	22:20	91		85		78		85		92	
PS702081-001-004-1/3	22:26	90		84		76		83		91	
SE702081-001-004-1/3	22:33	98		89		80		84		94	
S 702081-002-007-1/1	22:39	91		84		75		84		92	
S 702081-003-008-1/1	22:45	92		85		77		84		92	
S 702081-004-013-1/2	22:51	92		86		78		84		93	
S 702081-005-015-1/2	22:57	91		84		78		84		91	
S 702081-006-009-1/1	23:03	67		61		56	R	60	R	67	
CCV	23:10	96		87		78		83		93	
CCB	23:16	100		91		81		86		95	
S 702081-007-010-1/1	23:22	91		84		77		85		92	
S 702081-008-017-1/2	23:28	91		84		77		84		91	
S 702081-009-019-1/2	23:34	92		86		78		84		93	
S 702081-010-011-1/1	23:41	90		84		76		83		91	
BLK(140)	23:53	101		90		79		85		95	
BKS(140)	23:59	99		89		78		85		95	
S 702094-001-001-1/1	0:05	93		88		77		84		95	
D 702094-001-001-1/1	0:12	93		88		76		85		94	

FORM XV - IN

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ICP-MS Internal Standards Relative Intensity Summary

Lab Name: GPL LABORATORIES, LLLP

Contract: _____

Lab Code: _____

Case No.: _____

NRAS No.: _____

SDG No.: DHJK

ICP-MS Instrument ID: _____

SEDIStart Date: 02/27/2007End Date: 02/28/2007

EPA Sample No.	Time	Internal Standards %RI For:									
		Bi (209)	Q	In (115)	Q	Li (6)	Q	Sc (45)	Q	Tb (159)	Q
SP702094-001-001-1/1	0:18	92		87		74		84		93	
PS702094-001-001-1/1	0:24	94		88		77		86		95	
CCV	0:36	98		90		80		86		95	
CCB	0:42	101		92		80		87		96	
SE702094-001-001-1/1	0:49	102		92		81		89		98	
S 702094-002-002-1/1	0:55	95		90		77		86		97	
S 702118-002-002-1/1	1:01	87		85		73		85		93	
BLK(134)	1:13	103		93		84		89		97	
BKS(134)	1:19	102		92		85		89		96	
S 702075-002-016-2/2	1:26	108		97		88		96		101	
SP702075-002-016-2/2	1:32	105		94		87		91		98	
SD702075-002-016-2/2	1:38	104		94		88		91		98	
PS702075-002-016-2/2	1:44	100		91		84		89		96	
SE702075-002-016-2/2	1:50	105		94		86		90		98	
CCV	1:57	98		90		84		88		96	
CCB	2:03	100		92		85		88		96	
S 702075-003-017-1/2	2:09	103		92		89		90		97	
S 702075-004-019-1/2	2:15	102		92		89		91		97	
S 702075-005-021-1/2	2:21	102		93		88		90		97	
S 702075-006-023-1/2	2:28	104		94		87		92		99	
S 702075-007-025-1/2	2:34	104		96		88		94		102	
S 702075-011-027-1/2	2:40	104		94		89		91		98	
S 702075-012-029-1/2	2:46	101		92		87		91		97	
S 702075-013-031-1/2	2:52	101		91		87		90		96	
ICSA	3:05	76		76		69		72		81	
ICSAB	3:11	77		75		65		70		81	
CCV	3:17	97		87		75		81		94	
CCB	3:29	99		90		79		85		95	

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ICP-MS Internal Standards Relative Intensity Summary

Lab Name: GPL LABORATORIES, LLLP

Contract: _____

Lab Code: _____

Case No.: _____

NRAS No.: _____

SDG No.: DHJKICP-MS Instrument ID: SEDIStart Date: 02/27/2007End Date: 02/28/2007

EPA Sample No.	Time	Internal Standards %RI For:									
		Y (89)	Q								
BLANK	16:17	100									
STD1	16:22	103									
STD2	16:27	103									
STD3	16:32	96									
STD4	16:37	97									
STD5	16:43	100									
STD6	16:48	98									
ICV	16:53	95									
ICV(Cd)	16:58	93									
ICB	17:03	94									
CCV	17:08	90									
CCB	17:14	92									
PQL	17:19	91									
PQL(CoSr)	17:24	93									
ICSA	17:30	73									
ICSAB	17:41	72									
ICSAB	17:48	71						R			
LR	17:54	84									
CCV	18:13	86									
CCB	18:19	91									
BLK(142)	18:25	92									
BKS(142)	18:31	92									
S 702123-001-001-1/1	18:38	93									
PS702123-001-001-1/1	18:44	91									
SE702123-001-001-1/1	18:50	94									
S 702123-002-002-1/1	18:56	96									
S 702123-003-003-1/1	19:02	96									
S 702123-004-004-1/1	19:08	97									
S 702123-005-005-1/1	19:15	97									
S 702123-006-006-1/1	19:21	97									
CCV	19:27	89									
CCB	19:33	92									
S 702123-007-007-1/1	19:39	93									
S 702123-008-008-1/1	19:46	95									
S 702123-009-009-1/1	19:52	94									
S 702123-010-010-1/1	19:58	95									
S 702123-011-011-1/1	20:04	96									
S 702123-012-012-1/1	20:10	95									

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ICP-MS Internal Standards Relative Intensity Summary

Lab Name: GPL LABORATORIES, LLLP

Contract: _____

Lab Code: _____

Case No.: _____

NRAS No.: _____

SDG No.: _____

DHJK

ICP-MS Instrument ID: _____

SEDIStart Date: 02/27/2007End Date: 02/28/2007

EPA Sample No.	Time	Internal Standards %RI For:									
		Y (89)	Q								
S 702123-013-013-1/1	20:17	95									
S 702123-014-014-1/1	20:23	95									
S 702123-015-015-1/1	20:29	96									
S 702123-016-016-1/1	20:35	96									
CCV	20:41	88									
CCB	20:47	93									
BLK(132)	20:54	94									
BKS(132)	21:00	92									
S 702075-001-004-1/2	21:06	97									
SP702075-001-004-1/2	21:12	92									
SD702075-001-004-1/2	21:18	92									
PS702075-001-004-1/2	21:25	92									
SE702075-001-004-1/2	21:31	92									
S 702075-014-037-1/2	21:37	94									
BLK96615	21:43	93									
BKS96615	21:49	91									
CCV	21:55	88									
CCB	22:02	90									
S 702081-001-004-1/3	22:08	94									
SP702081-001-004-1/3	22:14	93									
SD702081-001-004-1/3	22:20	94									
PS702081-001-004-1/3	22:26	92									
SE702081-001-004-1/3	22:33	89									
S 702081-002-007-1/1	22:39	92									
S 702081-003-008-1/1	22:45	94									
S 702081-004-013-1/2	22:51	97									
S 702081-005-015-1/2	22:57	93									
S 702081-006-009-1/1	23:03	68						R		R	
CCV	23:10	87									
CCB	23:16	89									
S 702081-007-010-1/1	23:22	95									
S 702081-008-017-1/2	23:28	92									
S 702081-009-019-1/2	23:34	108									
S 702081-010-011-1/1	23:41	91									
BLK(140)	23:53	88									
BKS(140)	23:59	89									
S 702094-001-001-1/1	0:05	90									
D 702094-001-001-1/1	0:12	89									

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USEPA - CLP

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ICP-MS Internal Standards Relative Intensity Summary

Lab Name: GPL LABORATORIES, LLLP

Contract: _____

Lab Code: _____

Case No.: _____

NRAS No.: _____

SDG No.: DHJKICP-MS Instrument ID: SEDIStart Date: 02/27/2007End Date: 02/28/2007

EPA Sample No.	Time	Internal Standards %RI For:									
		Y (89)	Q								
SP702094-001-001-1/1	0:18	89									
PS702094-001-001-1/1	0:24	91									
CCV	0:36	89									
CCB	0:42	91									
SE702094-001-001-1/1	0:49	93									
S 702094-002-002-1/1	0:55	92									
S 702118-002-002-1/1	1:01	89									
BLK(134)	1:13	93									
BKS(134)	1:19	92									
S 702075-002-016-2/2	1:26	99									
SP702075-002-016-2/2	1:32	95									
SD702075-002-016-2/2	1:38	95									
PS702075-002-016-2/2	1:44	92									
SE702075-002-016-2/2	1:50	93									
CCV	1:57	90									
CCB	2:03	91									
S 702075-003-017-1/2	2:09	95									
S 702075-004-019-1/2	2:15	95									
S 702075-005-021-1/2	2:21	96									
S 702075-006-023-1/2	2:28	99									
S 702075-007-025-1/2	2:34	122									
S 702075-011-027-1/2	2:40	94									
S 702075-012-029-1/2	2:46	99									
S 702075-013-031-1/2	2:52	94									
ICSA	3:05	74									
ICSAB	3:11	73									
CCV	3:17	86									
CCB	3:29	89									

Performance Report

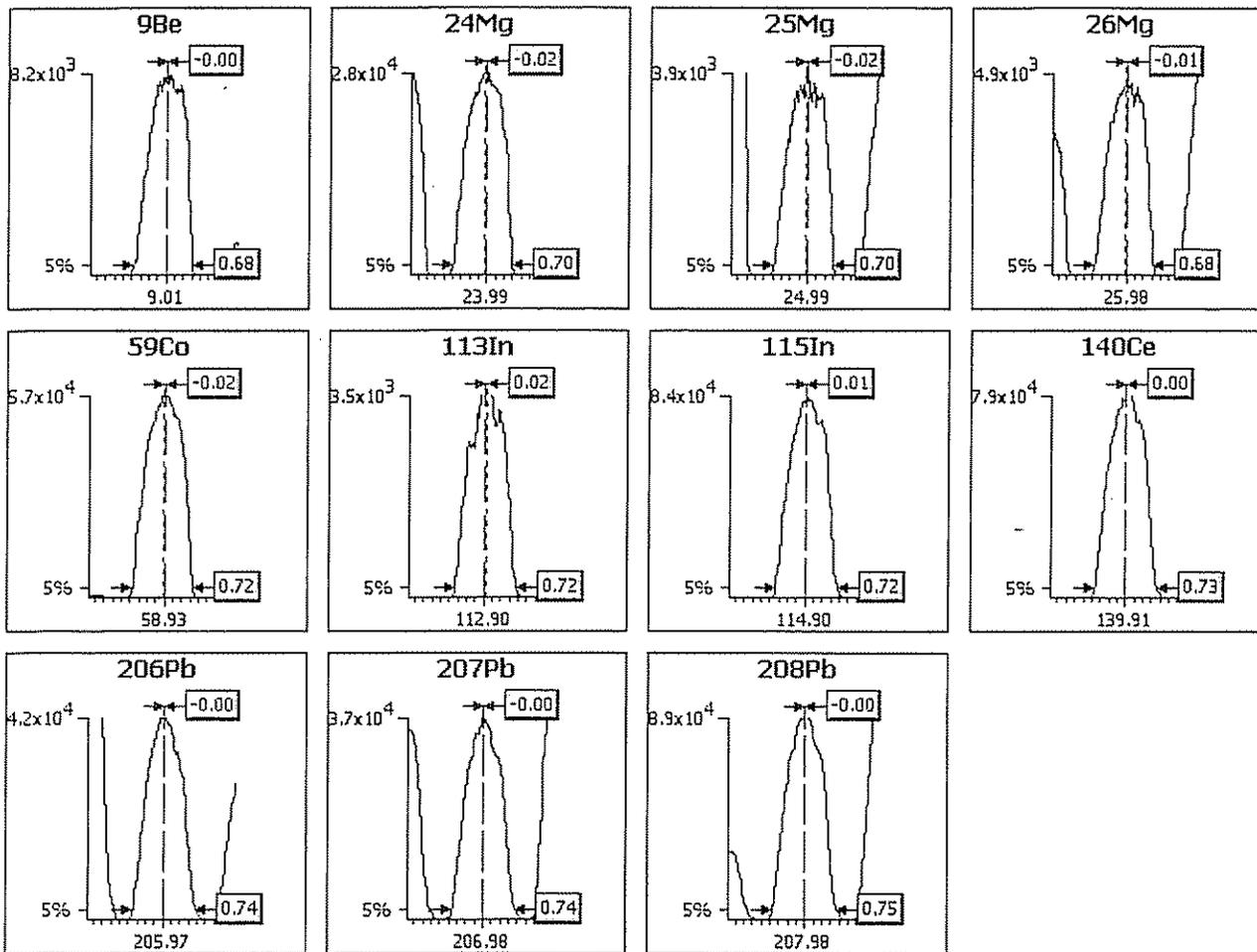
Sample details

Acquired at : 02/27/2007 12:57:01 PM
 Report name : EPA 6020A 2.1A [05/30/2006 01:04:54 PM]

Mass Calibration verification

Acquisition parameters

Sweeps : 25
 Dwell : 2.0 mSecs
 Point spacing : 0.01 amu
 Peak width measured at 5% of the peak maximum



Analyte	Limits			Results	
	Max. width	Min. width	Max. error	Peak width	Peak error

9Be	0.90	0.45	0.10	0.68	-0.00
24Mg	0.90	0.45	0.10	0.70	-0.02
25Mg	0.90	0.45	0.10	0.70	-0.02
26Mg	0.90	0.45	0.10	0.68	-0.01
59Co	0.90	0.45	0.10	0.72	-0.02
113In	0.90	0.45	0.10	0.72	0.02
115In	0.90	0.45	0.10	0.72	0.01
140Ce	0.90	0.45	0.10	0.73	0.00
206Pb	0.90	0.45	0.10	0.74	-0.00
207Pb	0.90	0.45	0.10	0.74	-0.00
208Pb	0.90	0.45	0.10	0.75	-0.00

Sample details

Acquired at : 02/27/2007 12:57:01 PM

Report name : EPA 6020A 2.1A [05/30/2006 01:04:54 PM]

Tune conditions

Major		Minor		Global		Add. Gases
Extraction	-137	Lens 2	-30.6	Standard resolution	125	
Lens 1	2.9	Lens 3	-184.3	High resolution	105	
Focus	23.3	Forward power	1404	Analogue Detector	2098	
D1	-47.8	Horizontal	85	PC Detector	3451	
Pole Bias	4.0	Vertical	480			
Hexapole Bias	-3.0	D2	-160			
Nebuliser	0.89	DA	-40.0			
Sampling Depth	130	Cool	13.0			
		Auxiliary	0.90			

Sensitivity and stability results

Acquisition parameters

Sweeps : 180

Run	Time	5Bkg	9Be	24Mg	25Mg	26Mg	59Co	113In	115In	140Ce
Dwell (mSecs)		100.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Limits	%RSD	-	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
	Countrate	-	>4000	>5000	>1000	>1000	>10000	>1000	>50000	>50000
1	12:58:32 PM	0.222	8464.247	28846.938	3787.294	4689.554	57575.459	3522.840	82867.654	80657.515
2	12:59:43 PM	0.278	8582.035	29210.377	3900.076	4605.662	57602.697	3639.511	82922.144	80638.055
3	01:00:54 PM	0.500	8449.246	29594.378	3918.410	4738.446	58516.560	3595.065	83564.345	80656.403
4	01:02:05 PM	0.167	8634.262	29935.591	3921.744	4769.558	58204.712	3568.953	83259.090	80552.430
5	01:03:16 PM	0.333	8825.389	29517.689	3933.966	4689.554	58115.771	3661.178	83942.995	80987.782
x		0.300	8591.036	29420.995	3892.298	4698.555	58003.040	3597.509	83311.246	80698.437
σ		0.13	152.52	411.74	59.94	62.10	406.26	55.26	451.13	167.43
%RSD		42.633	1.775	1.399	1.540	1.322	0.700	1.536	0.541	0.207

Run	Time	156Ce O	206Pb	207Pb	208Pb	220Bkg
Dwell (mSecs)		30.0	10.0	10.0	10.0	100.0
Limits	%RSD	-	2.0%	2.0%	2.0%	-
	Countrate	-	>10000	>10000	>25000	<2
1	12:58:32 PM	940.930	42367.862	35942.014	90104.465	0.111
2	12:59:43 PM	990.560	42033.832	36335.489	90171.748	0.278
3	01:00:54 PM	937.227	42212.241	36247.124	89766.383	0.222
4	01:02:05 PM	968.153	42255.037	36219.336	90331.336	0.222
5	01:03:16 PM	1000.561	42410.658	36158.758	90107.801	0.111
x		967.486	42255.926	36180.544	90096.346	0.189
σ		28.49	148.08	147.75	206.14	0.07
%RSD		2.945	0.350	0.408	0.229	39.460

Ratio results

Run	Time	156Ce O/140Ce
Ratio limits		
		<0.0200
1	12:58:32 PM	0.012

2	12:59:43 PM	0.012
3	01:00:54 PM	0.012
4	01:02:05 PM	0.012
5	01:03:16 PM	0.012
x		0.0120
σ		0.00
%RSD		2.8353

Result : The performance report passed.

Dilution Corrected Concentrations

BLANK 02/27/2007 04:17:23 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		100.000%	0.000	-0.000	0.000	0.000	0.000	-0.000	-0.000	100.000%
Run	Time	47Ti	51V	52Cr	53Cr O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		-0.000	0.000	-0.000	-0.000	-0.000	-0.000	0.000	0.000	-0.000
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		-0.000	0.846	-0.000	5.686	0.000	100.000%	-0.000	-0.000	0.000
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.000	-0.000	100.000%	0.000	0.000	0.000	0.000	-0.000	100.000%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		-0.000	-0.000	0.000	100.000%					

STD1 02/27/2007 04:22:31 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		104.713%	5.097	0.170	0.045	0.012	1.4971.000	0.374	23.650	106.323%
Run	Time	47Ti	51V	52Cr	53Cr O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		50.220	50.560	52.730	-14730.000	50.420	1.5039.000	50.500	53.410	51.460
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		50.550	50.650	0.119	51.360	50.640	103.455%	50.560	50.420	-1.561
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		50.400	49.840	102.870%	51.990	50.770	51.010	51.280	0.045	102.363%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		50.430	50.540	51.420	104.382%					

STD2 02/27/2007 04:27:39 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		105.452%	10.340	-0.411	0.041	0.026	TM 10010.000	0.328	45.100	104.780%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		101.700	M 99.720	104.700	-27690.000	M 99.790	TM 9981.000	M 99.750	103.900	102.500
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		101.000	101.200	0.233	97.540	100.900	102.737%	100.300	M 99.790	-3.472
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		M 99.800	99.750	101.809%	103.200	100.600	101.100	100.800	0.070	101.824%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		101.100	101.300	102.700	102.863%					

STD3 02/27/2007 04:32:47 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		101.195%	M 49.920	2.058	0.440	0.426	3.027	2.938	94.160	98.072%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		M 999.800	TM 933.900	TM 999.400	-47050.000	TM 971.300	TM 49660.000	TM 958.900	M 749.300	M 999.700
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		M 499.700	M 199.300	0.216	M 200.900	199.400	95.987%	M 999.900	M 101.100	-9.405
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		M 100.800	M 200.200	94.898%	M 999.600	M 499.800	M 499.700	M 999.900	0.794	95.950%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		199.300	199.200	TM 2000.000	97.713%					

STD4 02/27/2007 04:37:55 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		101.094%	-0.004	↑977.100	↑953.200	1022.000	0.642	924.300	998.800	98.781%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.134	1.836	0.997	-33460.000	0.041	0.979	0.017	0.018	0.055
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.383	0.734	0.037	3.935	0.035	96.895%	0.334	0.004	-0.113
Run	Time	109Ag	110Cd	115In	118Sn	121Sb12	3Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.008	0.040	95.930%	0.528	0.050	0.044	-0.116	0.001	96.356%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.721	0.718	0.087	97.523%					

STD5 02/27/2007 04:43:05 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		103.182%	-0.005	↑10220.000	↑10120.000	↑10070.000	0.252	↑10150.000	10220.000	101.645%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.072	1.594	0.152	-57710.000	0.272	4.079	0.011	0.079	0.058
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.540	0.157	0.060	4.759	0.150	99.897%	0.174	0.008	-0.020
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.009	0.014	98.048%	0.353	-0.045	-0.068	-0.130	0.003	99.152%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.279	0.280	0.149	98.406%					

STD6 02/27/2007 04:48:14 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		101.438%	-0.002	TM 19890.000	TM 19940.000	TM 19960.000	0.248	TM 19930.000	19890.000	99.316%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.148	1.639	0.153	-61270.000	0.503	4.600	0.006	0.153	0.080
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.980	0.717	0.222	4.344	0.276	98.155%	0.122	0.012	0.005
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.016	-0.004	95.910%	0.353	-0.041	-0.086	-0.116	0.005	98.496%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.160	0.168	0.246	95.003%					

ICV 02/27/2007 04:53:23 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		99.446%	4.310	T 4962.000	T 4961.000	5082.000	488.200	T 4954.000	5078.000	96.013%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		43.680	42.660	41.880	-16190.000	43.170	527.800	42.220	42.250	41.600
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		42.180	41.990	0.152	44.650	42.160	95.155%	41.880	41.520	-0.386
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		41.130	4.518	94.374%	43.730	42.900	43.060	43.210	0.023	96.754%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		43.660	43.920	43.990	97.656%					

ICV(Cd) 02/27/2007 04:58:32 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		98.077%	0.008	-0.215	-0.022	0.001	0.200	0.016	1.047	95.142%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.198	-1.093	0.242	791.800	0.066	7.261	0.078	0.066	0.087
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.336	0.293	0.109	3.299	0.077	93.477%	0.268	0.029	-0.095
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.021	4.300	93.439%	0.386	-0.086	-0.106	0.022	0.001	95.694%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.218	0.205	0.476	96.533%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		100.041%	0.004	-0.410	-0.039	-0.045	-0.054	-0.195	0.697	95.354%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		-0.072	1.221	0.083	-9373.000	-0.003	-2.214	0.000	-0.002	0.071
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		-0.396	-0.091	0.155	3.601	-0.009	93.682%	0.021	-0.000	0.033
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.001	-0.006	93.697%	0.135	-0.131	-0.164	-0.114	-0.001	95.649%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.088	0.076	0.000	96.737%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		92.640%	5.056	10050.000	10050.000	10040.000	4949.000	9927.000	10150.000	90.840%
Run	Time	47Ti	51V	52Cr	53Cr O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		51.290	50.370	51.550	-49080.000	51.260	5045.000	50.020	50.700	49.920
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		50.070	50.220	0.069	52.070	51.020	89.865%	50.960	49.880	-1.762
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		49.930	49.450	88.891%	51.680	51.040	51.310	49.840	0.031	92.658%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		51.310	51.930	52.400	92.791%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		95.677%	-0.001	-0.260	-0.023	-0.060	-0.031	-0.401	-0.081	93.326%
Run	Time	47Ti	51V	52Cr	53Cr O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		-0.049	0.049	-0.091	-30540.000	-0.009	-2.534	-0.000	-0.002	-0.007
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		-0.355	0.578	-0.051	3.312	-0.000	91.741%	-0.002	0.001	-0.024
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.000	0.010	91.932%	0.111	-0.166	-0.176	-0.113	0.000	94.000%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.139	0.144	0.002	95.629%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		95.603%	0.202	±954.000	94.170	101.400	94.440	915.400	996.500	92.723%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		2.213	11.790	1.927	-49390.000	1.975	49.080	0.983	0.960	2.132
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		9.144	5.026	-0.018	9.036	2.016	91.498%	5.155	0.304	-0.007
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.316	0.514	91.795%	5.251	0.935	0.912	5.165	0.002	94.001%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		2.060	2.073	2.059	97.243%					

PQL(CoSr) 02/27/2007 05:24:47 PM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		97.368%	0.001	-0.306	-0.048	0.012	-0.018	-0.364	0.534	93.799%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.022	1.095	-0.131	-37110.000	-0.015	-2.533	0.540	-0.012	0.002
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		-1.144	0.177	-0.024	3.360	0.546	92.533%	-0.006	-0.001	0.006
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.002	0.001	92.163%	0.083	-0.187	-0.248	-0.172	0.000	94.487%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.047	0.047	0.003	95.716%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		69.681%	0.002	TM 251000.000	TM 99550.000	TM 100200.000	TM 99230.000	TM 101700.000	TM 306000.000	72.616%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		M 2189.000	1.392	0.751	-108200.000	-0.079	TM 245400.000	0.018	0.190	0.390
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		1.206	0.610	0.429	3.548	4.455	72.845%	M 2079.000	0.095	1.420
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.097	-0.082	75.147%	0.241	0.159	0.124	0.503	0.030	79.820%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.116	0.111	0.137	73.323%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		61.787%	16.580	TM 257600.000	TM 103000.000	TM 103000.000	TM 101000.000	TM 102200.000	TM 307600.000	69.071%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		M 2109.000	20.740	20.170	-120300.000	19.340	TM 244200.000	17.760	19.210	16.090
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		17.380	16.780	0.304	17.930	25.240	72.392%	M 1999.000	16.150	0.778
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		16.160	17.080	75.700%	20.670	18.950	19.420	20.110	0.070	82.287%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		21.060	21.350	21.280	76.801%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		59.736%	17.820	TM 252300.000	TM 102100.000	TM 102500.000	TM 100500.000	TM 101600.000	TM 305500.000	66.862%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		M 2059.000	23.190	21.810	-124500.000	21.380	TM 241200.000	19.700	21.440	17.560
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		19.350	18.740	0.222	18.610	27.510	71.319%	M 1946.000	17.950	0.560
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		17.880	19.160	74.939%	22.670	21.250	21.550	21.850	0.051	82.704%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		23.530	23.870	23.570	77.748%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		69.007%	M 225.200	10.450	2.434	2.523	3.800	2.891	1814.000	78.568%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		M 4710.000	TM 4662.000	TM 4935.000	-77780.000	TM 5055.000	TM 253500.000	TM 4661.000	M 3951.000	TM 4644.000
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		M 2378.000	M 922.300	-0.482	M 902.100	TM 6124.000	83.956%	TM 4676.000	M 465.400	-29.940
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		M 466.100	M 967.600	83.653%	TM 5044.000	M 503.400	M 504.300	TM 5177.000	3.337	92.844%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		TM 1035.000	TM 1056.000	TM 10610.000	94.005%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		76.982%	4.775	10360.000	10690.000	10760.000	5271.000	10280.000	10250.000	81.776%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		49.020	49.170	49.230	-96110.000	50.460	5145.000	47.920	52.590	47.040
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		49.800	47.320	-0.040	48.520	51.170	86.462%	49.920	48.420	-1.430
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		48.510	50.110	87.512%	52.630	50.990	51.720	49.840	0.038	95.447%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		51.920	52.230	52.470	96.817%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		80.846%	0.001	4.595	0.142	0.267	0.086	0.531	2.992	85.660%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.038	2.588	-0.277	-85640.000	-0.033	-2.299	0.003	-0.005	0.022
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		-0.309	0.036	-0.093	3.030	0.002	90.523%	0.079	0.000	0.056
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.003	-0.014	92.381%	0.471	-0.288	-0.317	-0.111	0.000	98.105%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.277	0.272	0.010	100.941%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		81.829%	-0.005	27.100	1.687	1.857	3.479	3.698	17.470	88.224%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.010	1.468	-0.112	-81870.000	0.033	-1.039	0.002	0.105	0.268
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		1.088	-0.791	-0.017	0.369	0.069	92.072%	0.055	0.003	0.016
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.006	0.001	93.573%	3.421	-0.314	-0.338	0.061	0.000	99.645%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.150	0.154	0.072	102.267%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		81.424%	5.148	1085.000	1024.000	1122.000	1051.000	980.900	1125.000	87.068%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		211.900	54.400	55.510	-59690.000	111.400	1088.000	53.180	60.880	53.510
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		110.200	9.653	0.042	10.630	110.500	91.618%	52.290	10.700	-0.664
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		10.790	11.060	92.608%	58.620	10.520	10.600	110.100	0.075	99.040%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		11.330	11.380	114.000	102.256%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		83.212%	0.002	24.590	3.223	3.170	20.370	9.471	26.610	89.613%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		1.002	1.191	1.585	-58830.000	1.793	139.200	0.051	2.262	1.680
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		2.841	-0.352	0.039	-0.175	0.200	93.388%	0.721	0.010	0.013
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.010	0.006	94.706%	3.009	-0.250	-0.285	0.297	0.002	100.161%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.099	0.101	0.120	102.332%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		81.051%	9.476	τ 5041.000	τ 5193.000	5207.000	1003.000	τ 5091.000	5104.000	87.126%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		22.120	20.470	22.070	-20970.000	82.960	τ 2245.000	29.130	45.840	30.240
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		81.600	74.700	0.174	63.540	20.830	90.669%	30.970	40.140	-5.330
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		39.430	22.670	91.768%	109.300	76.410	80.980	20.760	0.022	98.096%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		102.300	102.400	82.380	101.480%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		85.576%	-0.002	6.257	0.637	0.709	4.102	1.570	6.810	90.239%
Run	Time	47Ti	51V	52Cr	53Cr O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.227	0.336	0.379	-17370.000	0.373	27.340	0.012	0.453	0.313
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		1.281	-0.621	0.143	-0.575	0.042	94.405%	0.136	0.002	0.039
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.003	-0.012	96.119%	0.800	-0.208	-0.200	0.034	0.001	101.295%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.057	0.062	0.024	104.099%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		85.676%	-0.005	19.790	1.565	1.759	1.914	4.806	21.020	91.713%
Run	Time	47Ti	51V	52Cr	53Cr O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.111	1.710	0.580	-28380.000	0.168	6.643	0.006	0.199	0.242
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		1.914	-0.606	0.102	-0.942	0.053	96.136%	0.063	0.002	0.089
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.002	-0.025	96.768%	2.821	-0.237	-0.265	0.135	-0.000	102.310%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.028	0.041	0.043	104.159%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		87.615%	-0.001	24.080	1.688	1.804	2.394	4.773	24.930	93.145%
Run	Time	47Ti	51V	52Cr	53Cr O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.175	0.498	0.754	-32180.000	0.188	9.895	0.004	0.402	0.234
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		2.962	-1.182	0.171	-1.131	0.064	96.443%	0.094	0.002	0.043
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.001	-0.011	97.230%	3.075	-0.285	-0.334	0.149	0.003	102.047%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.025	0.028	0.091	103.780%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		88.451%	-0.004	20.660	1.237	1.307	2.495	5.953	16.440	92.807%
Run	Time	47Ti	51V	52Cr	53Cr O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.208	1.004	0.613	-34980.000	0.066	2.610	0.004	0.223	0.239
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		1.764	-0.476	0.100	-0.439	0.048	96.824%	-0.011	0.004	-0.007
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.002	0.006	97.414%	3.035	-0.272	-0.299	0.131	0.002	101.801%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.028	0.103	0.033	104.429%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		88.695%	-0.001	35.210	2.827	3.109	19.690	9.297	30.980	93.447%
Run	Time	47Ti	51V	52Cr	53Cr O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		1.010	1.277	2.647	-37970.000	2.131	189.600	0.039	3.134	2.239
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		2.964	-0.283	0.141	-0.399	0.231	96.593%	1.121	0.004	-0.003
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.004	0.013	97.199%	3.280	-0.254	-0.277	0.347	0.004	101.561%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.107	0.101	0.117	104.186%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		88.941%	0.010	29.480	8.842	9.614	98.940	27.680	60.570	93.985%
Run	Time	47Ti	51V	52Cr	53Cr O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		6.500	1.958	3.198	-43780.000	3.435	440.800	0.107	3.107	3.617
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		5.805	2.245	0.072	-0.497	1.369	97.075%	5.180	0.013	0.030
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.013	0.004	97.537%	3.246	-0.215	-0.235	1.073	0.026	102.094%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.365	0.379	0.363	104.173%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		82.360%	4.691	10240.000	10440.000	10330.000	5167.000	10190.000	10110.000	85.134%
Run	Time	47Ti	51V	52Cr	53Cr O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		49.620	49.720	50.250	-81120.000	50.460	5152.000	47.930	51.780	47.230
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		49.280	49.370	-0.144	49.140	50.750	88.684%	49.070	48.410	-1.536
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		48.430	48.740	89.126%	51.560	50.920	51.050	50.870	0.038	95.459%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		50.700	50.970	51.650	97.370%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		85.933%	-0.001	3.756	0.905	0.879	0.566	2.025	3.120	89.236%
Run	Time	47Ti	51V	52Cr	53Cr O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		-0.016	1.200	-0.206	-58930.000	0.000	-0.962	0.018	0.007	0.042
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		-0.092	-0.230	0.001	1.307	0.023	92.472%	0.021	0.005	0.038
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.007	-0.006	93.864%	0.199	-0.334	-0.360	-0.070	0.003	98.728%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.122	0.123	0.037	101.664%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		87.413%	-0.003	17.480	1.135	1.418	2.774	4.605	14.460	91.041%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.176	2.262	0.647	-56730.000	0.052	5.427	0.003	0.150	0.141
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		1.797	-0.403	0.012	0.260	0.062	93.480%	0.011	0.000	-0.043
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.004	0.014	94.732%	3.108	-0.344	-0.342	0.102	0.002	99.054%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.068	0.056	0.031	101.292%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		89.347%	0.004	24.390	5.051	5.412	63.940	17.840	48.800	91.753%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		3.786	-0.104	76.870	-53260.000	45.230	τ 889.100	0.332	106.500	12.080
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		4.782	2.772	0.047	-0.294	0.827	94.758%	5.246	0.011	-0.036
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.017	0.033	95.458%	3.291	-0.167	-0.234	0.850	0.021	99.695%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.775	0.766	0.371	102.327%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		87.072%	0.000	35.480	3.566	3.870	20.430	19.710	75.500	91.992%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		1.690	1.357	0.881	-54110.000	3.975	123.700	0.031	0.854	1.287
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		8.339	-0.252	-0.019	-0.195	0.259	94.263%	1.503	0.012	0.056
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.011	-0.011	95.121%	3.232	-0.334	-0.285	0.212	0.008	99.383%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.042	0.037	0.333	102.243%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		88.717%	-0.008	28.900	1.658	1.815	4.129	7.332	20.030	92.620%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.676	1.868	0.403	-50690.000	0.393	44.110	0.008	0.356	1.172
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		1.725	-0.971	0.068	-0.920	0.074	94.758%	0.391	0.010	-0.013
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.010	0.006	95.711%	2.947	-0.327	-0.373	0.165	0.004	99.973%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.022	0.021	0.056	102.279%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		89.808%	-0.002	20.930	2.712	2.656	17.220	10.700	29.490	92.432%
Run	Time	47Ti	51V	52Cr	53Cr O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		1.245	1.203	1.086	-48950.000	1.021	94.220	0.031	1.185	1.687
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		3.718	-0.158	0.024	-0.747	0.232	95.707%	0.986	0.009	0.070
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.010	-0.018	96.059%	2.895	-0.298	-0.300	0.310	0.004	100.007%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.032	0.031	0.224	102.302%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		90.722%	-0.007	23.960	1.956	2.055	6.273	7.491	19.480	93.141%
Run	Time	47Ti	51V	52Cr	53Cr O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.487	1.497	0.419	-46220.000	0.237	16.710	0.008	0.224	0.367
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		3.018	-0.747	0.067	-0.454	0.098	95.231%	0.171	0.002	0.015
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.003	-0.003	95.414%	3.002	-0.349	-0.396	0.114	0.002	99.714%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.016	0.017	0.063	101.684%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		87.737%	-0.008	27.690	2.173	2.118	2.998	5.087	21.680	91.725%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.917	0.719	0.381	-42110.000	0.155	8.749	0.001	0.205	0.123
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		2.674	-0.633	0.112	-0.715	0.091	95.248%	0.008	0.002	0.030
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.006	-0.008	95.560%	2.893	-0.343	-0.378	0.044	0.002	99.870%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.015	0.015	0.044	102.302%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		88.439%	-0.003	142.300	1.672	1.733	0.872	4.643	19.560	92.095%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.133	1.532	0.357	-49340.000	0.070	0.748	0.001	0.100	0.182
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		2.069	-0.187	0.019	-0.067	0.063	95.187%	-0.016	0.004	0.071
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.005	-0.015	95.801%	2.955	-0.368	-0.426	0.106	0.003	99.551%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.016	0.023	0.031	102.655%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		90.442%	-0.002	21.410	1.471	1.558	2.266	6.474	21.520	93.113%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.313	0.891	0.460	-49070.000	0.093	7.289	0.002	0.161	0.147
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		2.165	-0.638	0.025	-0.258	0.068	96.340%	-0.023	0.002	-0.019
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.003	0.003	96.478%	2.794	-0.371	-0.384	0.051	0.001	100.354%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.008	0.009	0.038	103.075%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		90.166%	-0.008	26.950	2.373	2.581	1.505	6.723	32.360	93.133%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.088	1.588	0.427	-48840.000	0.081	2.329	0.003	0.233	0.227
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		2.784	-0.817	0.050	-0.623	0.059	95.650%	-0.030	0.001	0.010
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.002	-0.004	96.485%	2.929	-0.382	-0.419	-0.009	0.001	100.081%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.007	0.008	0.033	102.701%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		82.814%	4.796	10330.000	10400.000	10480.000	5155.000	10250.000	10160.000	84.706%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		50.340	50.890	50.390	-79560.000	50.870	5119.000	48.870	51.510	48.130
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		49.890	49.020	-0.056	47.870	50.950	87.897%	49.890	48.760	-1.513
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		48.750	49.210	88.385%	51.860	50.880	51.500	50.370	0.045	94.191%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		50.590	50.970	51.840	96.123%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		86.957%	-0.004	3.494	1.235	1.393	0.777	2.461	4.374	89.966%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		-0.014	1.954	-0.175	-53200.000	-0.000	-0.566	0.018	0.026	0.023
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.027	-0.529	0.001	0.360	0.009	92.887%	-0.002	0.004	0.046
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.005	-0.009	94.036%	0.108	-0.358	-0.388	-0.116	-0.001	98.070%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.112	0.128	0.039	101.275%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		88.286%	-0.006	211.400	57.590	61.790	15.930	10.960	348.700	91.852%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.316	2.416	0.005	-65990.000	0.312	18.030	0.013	1.061	1.093
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		15.720	-0.731	-0.193	-0.532	1.364	94.487%	-0.021	0.012	0.056
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.012	-0.005	95.422%	0.147	-0.449	-0.497	0.927	0.001	100.123%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.051	0.052	0.363	102.273%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		84.721%	23.290	5232.000	5222.000	5235.000	5207.000	5031.000	5552.000	89.624%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		1001.000	239.200	253.500	-40500.000	493.800	5167.000	242.000	269.600	242.900
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		478.900	45.570	-0.006	42.560	496.600	92.068%	251.500	48.060	-3.037
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		47.930	48.230	92.255%	262.900	49.710	50.810	497.900	0.346	97.913%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		51.430	51.800	506.500	98.837%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		88.928%	0.064	±2760.000	738.600	803.700	19.800	±1204.000	3921.000	94.349%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.835	2.078	0.569	-6809.000	69.670	557.400	4.137	2.096	1.600
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		16.190	-0.835	0.066	-2.198	26.810	97.088%	0.256	0.008	0.023
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.008	-0.000	97.550%	0.354	-0.378	-0.412	42.650	0.105	101.668%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.156	0.145	0.258	104.752%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		83.211%	23.190	±7741.000	±5955.000	5952.000	±5205.000	±6317.000	9116.000	89.064%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		996.200	±241.300	252.400	-33730.000	±560.000	±5601.000	±245.000	273.300	241.000
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		476.300	45.160	0.098	41.100	±523.800	92.119%	249.700	48.110	-3.050
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		48.040	48.760	91.879%	263.400	48.880	50.210	550.400	0.512	97.664%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		51.860	52.130	511.200	98.743%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		84.269%	23.420	7902.000	5929.000	5927.000	5119.000	6260.000	9244.000	90.049%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		992.800	238.800	252.000	-18570.000	556.500	5649.000	245.100	272.400	238.800
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		486.200	43.820	0.299	40.760	522.200	92.222%	248.800	47.860	-2.940
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		47.680	48.120	92.096%	263.200	49.040	50.410	544.300	0.442	97.893%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		51.530	51.640	506.400	98.660%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		82.838%	9.526	7728.000	5822.000	5866.000	988.200	6213.000	8870.000	88.724%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		21.360	19.960	21.270	7170.000	148.500	2610.000	32.740	45.170	30.070
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		90.300	70.100	0.179	56.270	46.940	91.650%	30.270	39.220	-5.349
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		38.730	21.770	92.064%	106.400	73.350	76.650	62.720	0.139	97.567%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		101.600	102.300	81.860	99.900%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		81.576%	0.009	±532.000	153.200	164.500	4.121	243.100	788.000	88.638%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.052	-1.337	0.246	62820.000	14.230	115.200	0.854	0.440	0.324
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		4.677	-1.307	0.320	-3.112	5.439	92.383%	0.038	0.000	0.100
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.002	-0.018	93.243%	0.186	-0.292	-0.330	8.489	0.021	97.767%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.077	0.077	0.054	103.561%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		83.687%	0.070	±2861.000	752.000	824.600	25.710	±1247.000	4214.000	90.774%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.935	0.166	0.313	-6152.000	71.400	566.200	4.139	1.783	0.936
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		47.580	-0.608	-0.118	-2.193	28.300	93.797%	0.225	0.009	0.070
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.012	0.006	94.728%	0.321	-0.377	-0.422	43.490	0.098	99.180%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.108	0.099	0.313	103.141%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		84.196%	-0.008	21.990	2.255	2.378	4.270	1.869	19.030	89.093%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		-0.035	-0.492	0.326	75290.000	0.096	1.944	0.003	0.044	0.105
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		1.898	-1.873	0.406	-3.303	0.080	92.932%	0.010	-0.000	0.063
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.001	-0.012	93.614%	2.879	-0.499	-0.550	0.150	0.000	98.259%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.030	0.028	0.077	103.459%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		84.058%	4.687	961.400	922.200	1016.000	927.600	896.700	1030.000	87.715%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		193.700	46.210	50.310	62180.000	99.580	990.000	47.670	53.090	48.090
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		96.790	8.083	0.386	5.575	99.450	91.004%	47.690	9.555	-0.507
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		9.550	9.637	91.893%	52.740	9.224	9.686	98.340	0.068	97.036%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		9.830	9.890	99.590	102.205%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		80.787%	4.811	10160.000	10300.000	10390.000	5091.000	10090.000	10110.000	84.890%
Run	Time	47Ti	51V	52Cr	53Cr O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		50.420	49.730	50.060	-39050.000	49.890	5014.000	47.920	52.200	47.600
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		49.400	48.670	0.155	45.560	50.530	87.813%	49.370	48.000	-1.474
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		47.840	48.870	87.906%	51.620	51.350	51.040	50.380	0.041	94.026%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		49.610	49.890	50.960	96.835%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		82.430%	-0.005	4.618	2.111	2.380	1.247	3.385	4.643	86.741%	
Run	Time	47Ti	51V	52Cr	53Cr O	55Mn	56Fe	59Co	60Ni	65Cu	
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	
x		-0.034	0.143	-0.025	-8492.000	0.019	-0.143	0.027	0.014	0.013	
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O	
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	
x		-0.019	-1.052	0.158	-0.781	0.023	89.959%	0.016	0.006	0.067	
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb	
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	
x		0.012	-0.009	90.917%	0.161	-0.408	-0.436	-0.095	0.000	95.725%	
Run	Time	203Tl	205Tl	208Pb	209Bi						
		ppb	ppb	ppb	ppb						
x		0.146	0.169	0.046	99.749%						

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		79.308%	0.477	10630.000	59980.000	60100.000	19840.000	17310.000	54810.000	85.147%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		1000.000	209.700	45.690	-73400.000	445.100	20480.000	8.750	22.650	25.120
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		36.400	6.974	0.291	0.741	488.400	94.135%	0.677	0.053	-0.391
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.025	0.294	85.613%	2.986	-0.252	-0.276	89.910	2.682	91.723%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.172	0.183	4.427	91.356%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		78.343%	5.043	11390.000	59730.000	60190.000	21580.000	18130.000	53790.000	85.299%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		1290.000	249.500	91.320	-70000.000	528.400	21630.000	53.650	72.840	67.330
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		122.500	15.240	0.312	7.903	561.400	93.478%	43.430	8.862	-0.882
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		8.852	9.523	85.355%	52.210	2.137	2.432	187.100	2.676	91.742%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		10.190	10.340	105.800	91.439%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		78.281%	5.179	11780.000	61380.000	61740.000	22030.000	18460.000	55630.000	84.793%
Run	Time	47Ti	51V	52Cr	53Cr O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		1292.000	255.600	93.050	-71470.000	539.600	21970.000	53.240	73.490	67.520
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		123.000	16.500	0.246	8.160	577.500	93.551%	42.050	8.927	-0.831
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		8.993	9.795	84.909%	52.090	2.005	2.218	187.900	2.725	91.998%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		10.320	10.410	106.600	91.100%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		76.023%	10.750	15930.000	64100.000	64440.000	20430.000	22090.000	58350.000	83.388%
Run	Time	47Ti	51V	52Cr	53Cr O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		995.500	221.800	65.500	-68830.000	511.100	21990.000	38.230	68.590	53.000
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		112.500	84.450	0.173	65.570	497.000	92.159%	31.810	40.580	-5.989
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		40.350	23.930	84.165%	117.600	88.440	92.040	109.800	2.603	90.717%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		112.400	113.200	94.790	90.071%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		79.956%	0.098	±2097.000	±12000.000	±12050.000	±3925.000	±3444.000	10910.000	84.461%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		201.000	43.990	8.994	-59280.000	93.360	±4192.000	1.806	4.670	5.252
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		9.734	1.222	0.100	-0.114	105.500	89.372%	0.137	0.014	-0.012
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.011	0.041	88.683%	0.681	-0.376	-0.394	17.450	0.526	94.456%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.269	0.277	0.886	98.009%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		75.158%	0.559	±48740.000	±30780.000	±31100.000	±21020.000	±35160.000	16760.000	83.743%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		±1014.000	±165.500	25.680	-41650.000	±426.100	±20250.000	8.521	22.690	27.290
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		38.850	98.470	0.182	-0.235	170.600	91.599%	204.200	0.055	-0.169
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.036	0.283	84.059%	2.862	-0.350	-0.391	83.950	2.063	91.557%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.231	0.225	4.468	91.185%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		77.173%	0.411	T 9077.000	TM 48600.000	TM 48660.000	TM 18040.000	T 15350.000	TM 53340.000	83.910%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		907.800	M 167.800	36.070	-69170.000	M 395.100	TM 18320.000	7.642	20.300	22.640
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		33.620	5.711	0.232	1.093	M 441.600	94.440%	0.696	0.041	-0.368
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.031	0.311	84.965%	2.974	-0.375	-0.376	91.500	2.788	92.126%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.168	0.163	4.308	91.927%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		78.092%	0.297	TM 23960.000	TM 34490.000	TM 34510.000	TM 14780.000	T 13670.000	TM 56980.000	84.131%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		769.900	M 128.100	24.670	-79680.000	M 293.600	TM 14050.000	5.666	14.150	17.040
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		26.360	11.070	0.196	0.261	M 456.700	97.393%	3.407	0.036	-0.207
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.024	0.203	86.270%	2.678	-0.421	-0.401	103.700	3.387	93.208%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.133	0.126	3.559	92.334%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		77.564%	0.519	17880.000	45540.000	45990.000	20540.000	21580.000	32040.000	83.560%
Run	Time	47Ti	51V	52Cr	53Cr O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		1019.000	167.500	34.030	-55070.000	425.900	20990.000	8.870	23.270	28.330
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		38.510	52.100	0.195	0.046	329.100	92.591%	46.030	0.060	-0.386
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.032	0.346	84.448%	2.810	-0.266	-0.269	104.600	2.881	91.143%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.162	0.159	5.193	90.922%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		55.536%	0.880	8723.000	25480.000	25570.000	15920.000	14610.000	42500.000	59.529%
Run	Time	47Ti	51V	52Cr	53Cr O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		939.400	109.900	21.900	-74750.000	329.800	16940.000	6.946	16.940	20.030
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		31.260	8.894	0.174	0.490	361.800	68.356%	2.916	0.044	-0.226
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.023	0.183	60.712%	2.696	-0.382	-0.433	92.950	3.435	66.587%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.153	0.134	3.712	67.228%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		78.227%	4.986	10240.000	10290.000	10220.000	5033.000	10050.000	10030.000	82.615%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		48.850	48.730	49.680	-61790.000	49.890	5006.000	47.560	52.290	47.220
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		49.330	47.800	0.027	46.950	50.110	86.711%	48.760	47.430	-1.367
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		47.580	47.750	87.189%	51.070	50.210	51.450	49.120	0.030	93.316%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		49.260	49.520	50.770	96.002%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		81.338%	-0.006	1.367	-0.010	0.134	-0.012	1.496	0.911	85.811%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		-0.012	1.427	-0.213	-45240.000	-0.024	-3.437	0.001	-0.012	-0.028
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		-0.247	-0.599	0.094	-0.488	-0.007	89.419%	-0.026	0.001	0.099
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.001	-0.028	90.813%	0.108	-0.456	-0.466	-0.129	0.001	95.486%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.169	0.173	0.006	100.046%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		77.406%	0.653	TM 22110.000	TM 36330.000	TM 36490.000	TM 24330.000	TM 29790.000	M 24860.000	85.095%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		M 1108.000	M 179.500	30.830	-43530.000	M 504.000	TM 24880.000	10.540	28.470	33.760
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		44.870	28.410	0.164	-0.364	M 235.300	94.711%	26.960	0.055	-0.371
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.039	0.326	84.275%	2.905	-0.374	-0.395	106.100	3.013	91.608%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.199	0.203	5.493	91.205%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		77.222%	0.442	r 16450.000	TM 43210.000	TM 43670.000	TM 20380.000	TM 20180.000	M 30220.000	84.125%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		M 1091.000	M 158.200	32.360	-45280.000	M 401.000	TM 20150.000	8.473	22.300	26.760
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		37.570	46.450	0.210	-0.534	M 311.400	92.190%	39.280	0.052	-0.294
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.030	0.323	84.086%	2.948	-0.382	-0.381	100.400	2.635	91.433%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.159	0.162	5.023	90.967%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		78.468%	0.323	10610.000	16750.000	16790.000	14750.000	16600.000	111500.000	83.759%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		772.000	87.230	15.040	-86210.000	279.900	12780.000	4.914	12.100	14.590
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		23.610	18.110	0.329	0.797	739.500	107.989%	14.830	0.032	-0.221
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.018	0.248	85.733%	2.640	-0.442	-0.422	175.600	6.451	93.069%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.109	0.117	3.610	92.060%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		75.586%	0.229	91070.000	19960.000	20130.000	11370.000	15240.000	34280.000	82.952%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		677.000	131.900	14.880	-77230.000	198.800	10560.000	4.221	10.550	13.010
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		20.140	36.780	0.240	0.281	339.800	91.446%	40.470	0.028	-0.182
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.015	0.193	84.250%	2.701	-0.408	-0.423	49.990	2.013	91.323%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.088	0.090	2.668	89.885%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		78.899%	-0.006	229.100	23.680	24.750	19.720	22.740	274.400	84.722%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.268	1.050	0.107	-71530.000	1.129	5.609	0.011	0.428	1.737
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		8.995	-0.953	-0.087	-0.831	0.866	88.419%	0.078	0.052	0.053
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.057	0.008	90.431%	0.629	-0.510	-0.507	0.243	0.000	95.041%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.015	0.018	0.905	100.707%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		78.402%	23.340	5127.000	4876.000	4886.000	4884.000	4754.000	5069.000	84.995%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		916.800	224.700	233.000	-57430.000	461.000	4798.000	222.500	258.700	226.400
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		483.200	45.490	-0.057	44.540	461.400	88.774%	229.600	45.060	-2.864
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		45.240	47.520	89.406%	241.600	48.120	49.380	467.500	0.313	94.763%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		47.020	47.270	467.300	98.794%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		77.079%	0.046	TM 126500.000	77781.000	7658.000	96.580	75584.000	M 25940.000	83.985%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		2.164	3.898	0.148	-103900.000	68.600	7998.300	7.335	15.360	39.270
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		73.630	1.513	-0.153	1.244	94.250	89.846%	25.140	0.019	0.062
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.016	0.182	87.614%	0.182	0.476	0.415	30.340	0.272	94.692%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.173	0.170	3.621	93.209%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		75.827%	0.061	TM 124000.000	77698.000	7575.000	132.400	75484.000	M 25780.000	84.713%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		4.105	3.574	0.746	-98580.000	68.130	71023.000	7.253	15.690	39.290
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		80.560	1.628	-0.161	1.352	93.910	89.471%	25.370	0.017	0.030
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.023	0.261	87.558%	0.264	0.393	0.379	30.070	0.256	94.406%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.078	0.067	3.865	93.039%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		74.071%	23.070	TM 128700.000	T 12590.000	T 12600.000	T 5125.000	T 10310.000	M 30230.000	84.118%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		944.000	M 231.500	235.500	-91180.000	M 524.200	T 5769.000	M 226.400	276.600	252.900
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		M 528.700	48.440	-0.118	45.860	M 556.500	88.663%	258.000	43.430	-2.929
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		43.420	47.380	86.532%	249.900	49.680	51.060	514.200	0.627	93.142%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		49.420	49.390	491.500	91.865%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		76.638%	9.654	TM 130300.000	T 12720.000	T 12730.000	T 1135.000	T 10480.000	M 30250.000	85.828%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		22.990	22.460	20.100	-97650.000	M 144.300	T 3003.000	34.570	57.410	64.500
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		148.900	76.510	-0.113	64.460	113.400	90.614%	55.450	36.810	-5.521
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		36.360	22.100	88.131%	106.000	74.370	78.170	51.080	0.284	94.970%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		101.900	102.500	85.410	93.570%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		79.741%	4.839	10250.000	10310.000	10190.000	5104.000	10110.000	9952.000	86.029%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		49.010	47.000	49.280	-47510.000	49.330	4991.000	47.000	52.440	46.350
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		48.470	46.570	0.253	44.540	49.460	89.254%	48.610	47.250	-1.515
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		46.890	47.620	89.640%	51.010	50.400	50.240	49.070	0.033	94.853%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		48.510	48.850	49.850	98.410%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		79.838%	-0.009	4.467	1.571	1.773	0.776	2.123	3.720	86.991%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.038	0.456	-0.076	-35870.000	-0.003	-2.619	0.004	0.014	-0.004
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.119	-0.246	0.127	-0.936	0.016	90.964%	-0.026	0.001	-0.003
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.003	0.004	91.582%	0.094	-0.392	-0.450	-0.114	0.000	96.086%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.177	0.187	0.010	101.338%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		81.484%	0.010	TH 25190.000	T 1565.000	1585.000	19.990	1018.000	5271.000	88.691%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.984	1.856	-0.010	-57890.000	13.890	T 199.800	1.520	3.227	7.981
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		16.320	-0.469	0.141	-0.296	19.020	92.702%	5.232	0.006	0.073
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.005	0.035	92.198%	0.105	-0.239	-0.287	5.732	0.053	97.864%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.075	0.082	0.714	101.710%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		77.315%	0.065	TH 128600.000	T 7859.000	7670.000	84.130	T 5608.000	M 25890.000	86.284%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		3.254	3.436	0.549	-96470.000	42.560	T 927.600	7.246	17.070	39.900
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		76.200	1.647	-0.169	0.968	93.900	92.392%	25.570	0.016	0.006
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.022	0.209	90.160%	0.376	0.476	0.496	29.520	0.246	96.618%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.054	0.059	3.628	94.834%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		73.217%	0.232	TM 514600.000	TM 31960.000	TM 31840.000	187.600	TM 38750.000	TM 53680.000	85.159%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		17.220	2.773	-0.104	-116200.000	M 124.200	T 1015.000	7.792	25.540	197.400
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		148.000	2.907	-0.254	4.580	M 214.900	89.295%	13.840	0.328	0.001
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.320	0.409	85.365%	2.564	0.206	0.139	53.210	0.124	93.267%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.059	0.070	4.068	87.497%					

BLK(134) 02/28/2007 01:13:47 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		84.276%	-0.007	8.655	0.358	0.299	0.303	2.567	4.289	88.768%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		-0.025	-0.051	0.309	-16010.000	0.004	-2.627	0.001	0.016	0.016
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		-0.039	-0.660	0.439	-1.475	0.002	92.565%	0.230	-0.001	0.032
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.001	-0.009	92.777%	2.775	-0.525	-0.575	0.031	-0.001	97.065%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.028	0.035	0.010	103.066%					

BKS(134) 02/28/2007 01:19:57 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		85.182%	4.889	1023.000	946.000	1034.000	958.200	933.400	1056.000	89.075%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		198.800	50.910	52.600	-4547.000	103.300	1032.000	49.590	54.230	49.750
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		99.720	8.325	0.470	7.345	102.300	91.873%	49.250	9.860	-0.692
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		9.795	10.210	92.475%	54.530	9.464	9.833	102.900	0.079	96.265%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		9.906	10.000	101.600	102.322%					

S 702075-002-016-2/2 02/28/2007 01:26:08 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		88.426%	0.138	28.740	182.900	195.200	5149.000	123.900	62.120	95.502%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		65.220	10.350	4.247	-7688.000	35.960	3623.000	0.953	2.305	1.614
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		9.460	-0.095	0.418	-1.316	1.474	99.117%	0.256	0.022	-0.070
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.016	0.050	97.265%	2.513	-0.389	-0.429	23.410	0.913	101.286%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.158	0.140	9.087	108.103%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		86.746%	5.161	1065.000	1377.000	1388.000	10020.000	1306.000	1138.000	90.885%
Run	Time	47Ti	51V	52Cr	53Cr O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		313.000	62.170	58.100	-3799.000	140.700	5341.000	50.460	58.530	50.760
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		108.700	9.120	0.496	7.651	103.400	94.921%	49.280	9.679	-0.478
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		9.679	9.794	93.777%	55.360	7.115	7.302	131.900	1.167	98.300%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		9.918	9.988	110.000	104.554%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		88.234%	5.162	1041.000	1372.000	1375.000	10010.000	1235.000	1125.000	91.162%
Run	Time	47Ti	51V	52Cr	53Cr O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		306.000	62.100	59.380	-4853.000	167.500	6232.000	50.350	57.430	50.320
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		108.900	9.459	0.475	8.290	103.700	94.744%	48.570	9.665	-0.637
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		9.586	10.110	93.762%	54.710	7.017	7.162	132.400	1.147	97.836%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		9.988	10.050	112.300	103.687%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		84.413%	9.961	5085.000	5286.000	5235.000	6106.000	5151.000	5032.000	88.964%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		86.050	27.120	25.120	17540.000	118.000	6273.000	30.010	45.090	30.190
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		84.550	74.370	0.366	60.460	21.620	92.381%	29.840	39.550	-5.639
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		39.170	22.100	91.110%	107.600	78.430	81.300	43.330	0.973	96.008%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		98.740	98.470	89.010	100.387%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		85.665%	0.022	7.293	36.470	39.060	997.500	24.720	12.790	90.467%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		12.170	3.184	1.251	24480.000	7.358	706.600	0.197	0.420	0.309
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		2.943	-0.892	0.355	-2.602	0.298	93.334%	0.021	0.004	-0.037
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.007	0.016	93.784%	0.572	-0.383	-0.425	4.515	0.179	97.994%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.117	0.108	1.846	105.083%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		83.805%	4.889	±10230.000	±10320.000	±10300.000	±5072.000	±10100.000	9913.000	88.094%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		49.840	47.390	49.230	-36790.000	49.330	±5019.000	47.460	51.850	47.220
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		48.900	46.790	0.253	44.370	49.560	90.154%	48.540	47.440	-1.599
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		47.520	48.320	90.265%	50.380	49.740	50.460	48.950	0.043	95.664%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		48.300	48.540	49.840	98.150%					

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User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		84.630%	-0.004	5.798	2.247	2.479	1.086	1.451	4.366	87.636%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.012	1.704	0.077	-11900.000	0.017	-1.969	0.006	0.008	0.002
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.093	-0.963	0.211	-1.609	0.026	90.805%	-0.021	0.002	0.054
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.008	-0.008	91.647%	0.074	-0.461	-0.445	-0.076	0.002	95.523%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.224	0.225	0.016	100.355%					

S 702075-003-017-1/2 02/28/2007 02:09:28 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		88.795%	0.190	32.270	493.000	534.300	16497.000	1333.800	1235.000	90.227%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		59.830	14.760	7.900	13900.000	84.710	15353.000	1.258	2.561	2.122
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		14.210	-0.075	0.400	-1.688	2.592	95.267%	0.320	0.020	-0.036
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.016	0.074	92.475%	2.737	-0.426	-0.484	37.440	1.485	97.435%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.199	0.214	13.790	102.898%					

S 702075-004-019-1/2 02/28/2007 02:15:40 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		89.210%	0.194	35.600	508.900	550.500	17924.000	399.400	1241.000	91.246%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		53.730	19.740	11.170	9675.000	37.420	18701.000	0.895	2.394	2.263
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		9.570	-0.217	0.442	-1.361	2.432	95.213%	0.312	0.014	-0.035
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.012	0.114	92.440%	2.544	-0.401	-0.429	26.740	1.400	97.147%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.207	0.202	12.900	102.401%					

S 702075-005-021-1/2 02/28/2007 02:21:52 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		87.695%	0.192	35.780	396.800	427.200	±6131.000	427.200	1337.000	90.334%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		51.400	11.810	7.992	25180.000	51.840	±4203.000	0.807	2.202	2.491
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		16.280	-0.941	0.477	-2.312	3.365	95.731%	0.159	0.026	-0.012
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.028	0.118	92.566%	2.505	-0.436	-0.476	39.360	1.842	96.832%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.160	0.160	16.670	102.407%					

S 702075-006-023-1/2 02/28/2007 02:28:03 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		86.528%	0.162	32.110	304.600	327.700	±4245.000	226.300	678.200	91.585%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		55.570	9.877	5.245	26120.000	85.660	±2903.000	0.749	2.053	3.536
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		21.220	0.022	0.384	-2.087	2.542	99.340%	0.258	0.018	-0.003
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.021	0.101	93.639%	2.365	-0.446	-0.488	30.940	2.252	98.622%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.106	0.105	16.660	103.545%					

S 702075-007-025-1/2 02/28/2007 02:34:13 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		87.780%	0.627	42.960	521.000	566.200	TM 11980.000	TM 679.500	1878.000	94.233%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		131.700	26.980	14.690	239.200	TM 924.700	TM 10810.000	6.226	7.373	7.413
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		32.100	1.260	0.327	-0.426	11.500	121.725%	0.553	0.049	-0.080
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.064	0.152	95.501%	4.371	-0.264	-0.257	154.300	12.240	101.655%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.214	0.228	57.380	104.458%					

S 702075-011-027-1/2 02/28/2007 02:40:25 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		88.809%	0.174	26.960	188.400	201.300	TM 5187.000	134.400	67.820	91.474%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		63.160	10.280	4.408	26240.000	37.230	TM 3482.000	0.943	2.138	1.478
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		9.527	-0.322	0.448	-2.359	1.633	94.291%	0.224	0.014	0.022
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.016	0.013	93.932%	2.313	-0.464	-0.483	27.850	0.993	98.172%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.092	0.095	9.688	103.555%					

S 702075-012-029-1/2 02/28/2007 02:46:38 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		87.355%	0.512	44.130	622.700	682.100	16920.000	383.400	2287.000	90.824%
Run	Time	47Ti	51V	52Cr	53Cr O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		96.590	21.880	11.710	21220.000	1355.900	18003.000	6.292	5.843	11.440
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		65.940	-0.175	0.430	-1.722	14.730	99.096%	0.407	0.187	0.013
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.188	0.540	91.767%	6.260	-0.346	-0.334	94.950	3.468	96.536%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.133	0.147	68.320	101.114%					

S 702075-013-031-1/2 02/28/2007 02:52:49 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		87.212%	0.098	25.880	140.900	151.200	13830.000	137.200	112.000	89.510%
Run	Time	47Ti	51V	52Cr	53Cr O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		70.040	14.840	5.606	31360.000	18.030	13515.000	0.769	1.797	2.812
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		8.393	0.096	0.402	-1.990	1.554	93.528%	0.346	0.020	0.025
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.018	0.035	91.332%	2.982	-0.354	-0.392	15.530	1.265	96.239%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.089	0.091	25.550	101.132%					

ICSA 02/28/2007 03:05:09 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		68.945%	-0.007	TM 242600.000	TM 96760.000	TM 97240.000	TM 96770.000	TM 99140.000	TM 296500.000	72.290%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		M 2077.000	1.445	0.773	-94680.000	-0.073	TM 237700.000	0.013	0.295	0.299
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		1.854	0.423	0.531	0.345	4.227	73.850%	M 1961.000	0.077	1.424
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.092	-0.126	75.875%	0.191	-0.210	-0.219	0.486	0.043	80.690%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.072	0.085	0.131	75.938%					

ICSAB 02/28/2007 03:11:18 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		65.207%	18.180	TM 239300.000	TM 96000.000	TM 96560.000	TM 95820.000	TM 97710.000	TM 292400.000	70.022%
Run	Time	47Ti	51V	52Cr	53Cl O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		M 2038.000	22.390	21.720	-107600.000	20.640	TM 235200.000	19.340	20.960	17.830
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		19.700	19.970	0.227	17.960	26.490	73.267%	M 1924.000	17.920	0.705
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		18.120	18.650	75.259%	22.200	20.750	20.780	22.140	0.063	81.182%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		22.320	22.700	22.800	76.758%					

CCV 02/28/2007 03:17:28 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		74.785%	4.786	10150.000	10350.000	10160.000	5075.000	10070.000	9954.000	80.562%
Run	Time	47Ti	51V	52Cr	53Cr O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		48.050	48.640	48.450	-85130.000	49.230	5011.000	46.720	52.910	46.200
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		49.180	47.180	-0.082	46.670	49.380	86.008%	48.160	46.460	-1.368
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		46.570	47.440	87.024%	50.640	50.300	50.290	49.170	0.030	94.404%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		48.090	48.340	50.050	97.353%					

CCB 02/28/2007 03:29:50 AM

User Pre-dilution: 1.000

Run	Time	6Li	9Be	23Na	24Mg	25Mg	27Al	39K	44Ca	45Sc
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		79.241%	-0.007	8.936	3.095	3.469	1.502	3.355	6.481	85.008%
Run	Time	47Ti	51V	52Cr	53Cr O	55Mn	56Fe	59Co	60Ni	65Cu
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.111	0.968	-0.207	-65990.000	0.006	-1.910	0.007	0.010	-0.001
Run	Time	66Zn	75As	77Ar Cl	82Se	88Sr	89Y	95Mo	107Ag	108Mo O
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.196	-0.394	0.022	-0.154	0.019	88.900%	0.023	0.007	0.048
Run	Time	109Ag	110Cd	115In	118Sn	121Sb	123Sb	137Ba	153Ba O	159Tb
		ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb	ppb
x		0.008	-0.003	90.089%	0.058	-0.469	-0.522	-0.095	-0.001	94.939%
Run	Time	203Tl	205Tl	208Pb	209Bi					
		ppb	ppb	ppb	ppb					
x		0.101	0.097	0.019	99.451%					

Metals Preparation & Sample Description Log

Date: 2-22-07 Prep: 200.7 / 3005A / 3020A (3050B) / 3010A / ILC03.1 / ILM04.1 / ILM05.3 Batch No: 187- 131
 Analyst: D.S.S. Comments: MOD BLOCK DIGESTION (SOIL)

Reviewed by: *dy* Date: 2/28/07 Spike Witness: *KL* Pep. Seq: 96615

GPL Work Order No.	Sample	Frac	Size mL (g)	Final Vol. (mL)	Matrix S, W Other	Color Before	Color After	Clarity Before or Soil Texture	Clarity After Clear, Cloudy, Opaque	Soil Artifacts or Water pH
						R, BI, Y, G, O, V, W, Colorless, Br, Grey, Bk.				
1	BLK	131	1.0	1.00	S				Clear	-
2	BKS	131	1.0							-
3	702081	001	004- $\frac{1}{2}$	1.33	Soil	Brown	Yellow	Medium		
4		001MS		1.36						
5		001-MS		1.39						
6		002	007- $\frac{1}{2}$	1.37						
7		003	008- $\frac{1}{2}$	1.30						
8		004	013- $\frac{1}{2}$	1.37						
9		005	015- $\frac{1}{2}$	1.42						
10		006	009- $\frac{1}{2}$	1.37						
11		007	010- $\frac{1}{2}$	1.29						
12		008	017- $\frac{1}{2}$	1.35						
13		009	019- $\frac{1}{2}$	1.36						
14		010	011- $\frac{1}{2}$	1.31						
15	702096	001	001- $\frac{1}{2}$	1.33						
16		002	002- $\frac{1}{2}$	1.34						
17		003	003- $\frac{1}{2}$	1.38						
18		004	004- $\frac{1}{2}$	1.39						
19										
20										
21										
22										
23										
24										

DSS - 2-22-07

LCS ID/ Amt. Added (ml, g): 0.2 ml (38355, 38356, 38357) HNO3(1+1) ID: GP-057-142-07
 Spiking ID/ Amt. Added (ml): 0.2 ml (38355, 38356, 38357) HNO3(conc) ID: GP-129-09-16
 10 ml 1:1 HNO₃, 10 ml HNO₃(conc), 7 ml H₂O, 10 ml HCl(conc) HCl(conc) ID: GP-129-09-06
 Temperature C: 94°C HCl(1+1) ID: -
 Peroxide ID: GP-129-09-10

SHAW SOIL DRYING LOGBOOK

BALANCE ID: SARTORIUS-BL-610

REVIEWED BY: Rita Ann 2-28-07

Work Order	Fraction	Starting Date	Initials	Wet Weight(g)	2nd Weighing(g)	Confirming Weighing(g)	After 10 mesh seive Weighing(g)	Date	Initials
702039	003	2-7-07	D.S.S.	350.73	340.97	340.97	337.29	2-8-07	D.S.S.
	004			368.25	353.27	353.27	350.41		
	005			334.76	316.20	316.19	314.49		
	006			275.54	263.22	263.22	241.82		
	007			208.20	192.20	192.20	175.93		
	008			218.92	207.93	207.92	204.45		
	009			256.89	239.90	236.89	236.36		
	010			268.30	258.85	258.85	254.35		
	011			260.32	240.14	240.13	236.41		
	012			272.66	251.25	251.25	245.30		
	013			329.23	310.41	310.40	308.53		
	014			359.66	336.71	336.71	331.31		
	015			219.12	209.50	209.50	204.91		
	016			167.78	151.89	158.89	145.78		
	017			114.90	103.47	103.46	101.17		
	018			235.79	221.25	221.25	203.26		
	019			143.50	133.55	133.55	124.32		
	020			346.53	325.47	325.46	313.50		
	021			274.32	262.20	262.20	236.41		
	022			258.48	254.48	254.48	247.50		
	023			148.10	130.12	130.11	117.50		
	024			257.07	231.79	231.77	224.47		
702054	001	2-15-07	D.S.S.	364.04	345.87	345.87	344.91	2-15-07	D.S.S.
	002			331.46	315.92	315.92	314.26		
	003			412.90	396.04	396.04	395.78		
	004			323.92	315.47	315.47	314.57		
702081	001	2-19-07	D.S.S.	206.11	161.49	161.49	154.92	2-21-07	D.S.S.

For Metal only

COMMENTS: _____

Analytical Report For 702089

for

Shaw E&I, Inc

Project Manager: Tim Roth

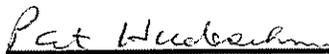
Project Name : Central Oregon Gunnery Range Site - 033

March 9, 2007

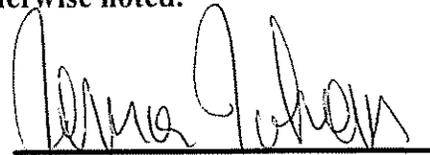
GPL

Laboratories

**GPL Laboratories, LLLP Certifies that the test results meet all requirements of the
NELAC Standards unless otherwise noted.**



Reviewed by,
Project Manager



Approved by,
Laboratory Director

7210A Corporate CT Frederick, MD 21703 Phone (301) 694-5310 Fax: (301) 620-0731
www.gplab.com



Case Narrative

Shaw E&I, Inc

Central Oregon Gunnery Range Site - 033

Work Order: 702089

Reviewed By

The Case Narrative, Chain of Custody, Sample Receipt Checklist, and the cover page of the Sample Analysis Report, are integral parts of GPL Laboratories' report package. If you did not receive all of these documents, please contact GPL immediately.

Sample Receipt

Two water samples were received on 02/19/2007. The samples were delivered by Federal Express. Sample receipt conditions and temperatures are documented on the Sample Receipt checklist.

Sample Analysis

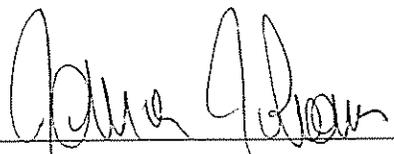
Samples were prepared and analyzed by GPL using the analytical methodologies indicated on the Sample Analysis Summary Report. In some chromatographic analyses, manual integration is used instead of automated integration because it produces more accurate results. All manual integrations are denoted on the sample quantitation report. Analysis results and limits for soil are reported on a dry weight basis unless otherwise specified on the report.

Subcontract Analysis

Samples were sent to an approved GPL subcontract laboratory for perchlorate by SW8321 analyses. The complete package has been included for your review.



Reviewed By,
Project Manager



Approved By,
Laboratory Director

SUBCONTRACTED ANALYSES

GPL Laboratories



COVER PAGE

ANALYTICAL REPORT FOR
GPL Laboratories

Phone(801) 525-0456 Fax(801) 525-0457
E-mail: mikesellts@earthlink.net

MAR 06 2007

Form COVER-V1.4
03020715312373
Page 1



G071N01H

GPL Laboratories
Attention: Tim Mikesell
7210A Corporate CT.
Frederick, MD 21703

DCL Report Group.: 07E-0118-01

Date Printed.....: 02-MAR-07 15:31

Project Protocol #: P04BG001
Client Ref Number.: 02212007/702089
Release Number....: 02212007/702089

Analysis Method(s): LC/MS-CLO4

<u>Client Sample Name</u>	<u>Laboratory Sample Name</u>	<u>Date Sampled</u>	<u>Date Received</u>
Method Blank	BL-255498-1	NA	NA
LCS	QC-255498-1	NA	NA
702089001 NWO-033-3001	07E01191	14-FEB-07	21-FEB-07
702089001 NWO-033-3001	07E01191MS	14-FEB-07	21-FEB-07
702089001 NWO-033-3001	07E01191MSD	14-FEB-07	21-FEB-07
702089002 NWO-033-6002	07E01192	13-FEB-07	21-FEB-07

Thomas T McKay 03/05/07
Analyst: Thomas T McKay Date

Penny A. Foote 5-Mar-2007
Reviewer: Penny A. Foote Date

Richard W. Wade 3-5-07
Lab Supervisor: Richard W. Wade Date

960 West LeVoy Drive / Salt Lake City, Utah 84123-2547
Phone (801) 266-7700 Web Page: www.datachem.com
FAX (801) 268-9992 E-mail: lab@datachem.com

Case Narrative

Method(s): LC/MS-CLO4
Analysis: Perchlorate
Analysis SOP: LC-MS-CL04
DCL Set ID(s): 07E-0118-01

Client: GPL Laboratories
Account: 08001
Matrix: Water
Group: G072000W

General Set Information: There were two field samples in this set. The samples were analyzed for perchlorate.

Method Summary: Each sample was prepared as noted below and analyzed using an Agilent 1100 LC/MSD system in select ion monitoring (SIM) mode at m/z 83 and 85, which corresponds to the loss of one oxygen atom from the perchlorate molecule. ChemStation software was used for instrument control and data analysis. The ion ratio of m/z 83 to 85 was used to positively identify the response peak as perchlorate. Quantitation was performed using the m/z 83 peak area. An internal standard of ^{18}O labeled perchlorate was added to each sample to establish the perchlorate peak retention time and used in quantitation.

Sample Preparation: A 9.95mL aliquot of each sample, including standards, was transferred into a 15-mL centrifuge tube. 50 μL of an ^{18}O labeled perchlorate solution was added to each sample as an internal standard. The samples were then capped, vortexed, and filtered into autosampler vial using Pall 0.45 μm Ion Chromatography Acrodiscs.

Holding Times: Holding times were met for all samples.

Dilutions: Samples were diluted in order to remove interferences. Instrument detection and reporting limits were raised accordingly.

Method QC data: The method blank (BL-255498-1) was less than 1/2 the CRDL. The recovery for QC-255498-1 was within method parameters.

MS/MSD Analysis: The matrix spike and matrix spike duplicate were performed on sample 07E01191. The recovery and RPD were within acceptable parameters.

This report contains

10 pages

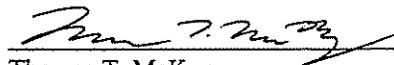
Instrument QC: Instrument initial and continuing calibrations were performed in accordance with published procedures.

NC/CAR(s): None were required for this set.

Sample Calculation: Samples were reported in $\mu\text{g/L}$. Results were calculated in $\mu\text{g/L}$ by the equation $(A) \times (B)$,

where: A = Analyte concentration from the standard curve ($\mu\text{g/L}$)
B = Dilution performed at time of analysis

Miscellaneous Comments: None.


Thomas T. McKay March 05, 2007
Date



Analytical Results

Data Package Table of Contents

Information pertaining to this data package is divided into the four categories listed below. If applicable, a Case Narrative immediately precedes this Table of Contents and contains pertinent information about this data package.

Analytical Results.....	Yellow
Sample Tracking Documentation	Pink
Analytical Documentation	Blue
Raw Data	Green



FORM H (TYPE I)
SINGLE METHOD ANALYSES

Form RLIMS63H-V1.4
03020715312373
Page 2

SAMPLE GROUP COMMENTS



Client Name...: GPL Laboratories

DCL Report Group...: 07E-0118-01
Date Printed.....: 02-MAR-07 15:31

Release Number....: 02212007/702089

General Information

The DCL QC Database maintains all numerical figures which are input from the pertinent data source. These data have not been rounded to significant figures nor have they been moisture corrected. Reports generated from the system, however, list data which have been rounded to the number of significant figures requested by the client or deemed appropriate for the method. This may create minor discrepancies between data which appear on the QC Summary Forms (Forms B-G) and those that would be calculated from rounded analytical results. Additionally, if a moisture correction is performed, differences will be observed between the QC data and the surrogate data reported on Form A (or other report forms) and corresponding data reported on QC Summary Forms. In these cases, the Form A will indicate the "Report Basis" as well as the moisture value used for making the correction.

DataChem Laboratories, Inc. is accredited by the State of Utah, Bureau of Laboratory Improvement under NELAP for specific fields of testing as documented in its current scope of accreditation (ID# DATA1) which is available by request or on the internet at <http://hlunix.hl.state.ut.us/els/labimp/labcertification/labsutahcert.mdb>. The quality systems implemented in the laboratory apply to all methods performed by DataChem regardless of this current scope of accreditation which does not include performance based methods, modified methods and methods applied to matrices not listed in the methods.

Report generation options: BX

Result Symbol Definitions

- ND - Not Detected above the MDL (LLD or MDC for radiochemistry).
- ** - No result could be reported, see sample comments for details.

Qualifier Symbol Definitions

- U - Not Detected above the MDL (LLD or MDC for radiochemistry).
- B - For organic analyses the qualifier indicates that this analyte was found in the method blank. For inorganic analyses the qualifier signifies the value is between the MDL and PQL.
- J - For organic analyses the qualifier indicates that the value is between the MDL and the PQL. It is also used for indicating an estimated value for tentatively identified compounds in mass spectrometry where a 1:1 response is assumed.

QC Flag Symbol Definitions

- * - Parameter outside of specified QC limits.

960 West LeVoy Drive / Salt Lake City, Utah 84123-2547
Phone (801) 266-7700 Web Page: www.datachem.com
FAX (801) 268-9992 E-mail: lab@datachem.com



FORM A (TYPE I)
SINGLE METHOD ANALYSES

Form RLIMS63A-V1.4
03020715312373
Page 3

SAMPLE ANALYSIS DATA SHEET



Date Printed.....: 02-MAR-07 15:31

Client Sample Name: 702089001|NWO-033-3001

Client Name.....: GPL Laboratories

DCL Sample Name...: 07E01191

Client Ref Number....: 02212007/702089

DCL Report Group..: 07E-0118-01

Sampling Site.....: Central Oregon Gunner

Matrix.....: WATER

Release Number.....: 02212007/702089

Date Sampled.....: 14-FEB-07 12:07

Date Received.....: 21-FEB-07 00:00

Reporting Units...: ug/L

Report Basis.....: As Received Dried

DCL Preparation Group: Not Applicable

DCL Analysis Group: G072000W

Date Prepared.....: 01-MAR-07 00:00

Analysis Method...: LC/MS-CLO4

Preparation Method...: LC/MS-CLO4

Instrument Type...: LC/MS

Aliquot Weight/Volume: Not Applicable

Instrument ID.....: LCMS02

Net Weight/Volume....: Not Required

Column Type.....: KP-RFPX250

Primary

Confirmation

Analytical Results

Analyte	Date Analyzed	MDL	Result	Comment	Qual.	Dilution	PQL
Perchlorate	02-MAR-07 12:22	0.122	ND		U	2	0.400

960 West LeVoy Drive / Salt Lake City, Utah 84123-2547
Phone (801) 266-7700 Web Page: www.datachem.com
FAX (801) 268-9992 E-mail: lab@datachem.com



FORM A (TYPE I)
SINGLE METHOD ANALYSES

Form RLIMS63A-V1.4
03020715312373
Page 4

SAMPLE ANALYSIS DATA SHEET



S071N03D

Date Printed.....: 02-MAR-07 15:31
Client Name.....: GPL Laboratories
Client Ref Number....: 02212007/702089
Sampling Site.....: Central Oregon Gunner
Release Number.....: 02212007/702089
Date Received.....: 21-FEB-07 00:00

Client Sample Name: 702089002|NWO-033-6002
DCL Sample Name....: 07E01192
DCL Report Group...: 07E-0118-01
Matrix.....: WATER
Date Sampled.....: 13-FEB-07 10:00
Reporting Units...: ug/L
Report Basis.....: As Received Dried

DCL Preparation Group: Not Applicable
Date Prepared.....: 01-MAR-07 00:00
Preparation Method...: LC/MS-CLO4
Aliquot Weight/Volume: Not Applicable
Net Weight/Volume....: Not Required

DCL Analysis Group: G072000W
Analysis Method....: LC/MS-CLO4
Instrument Type...: LC/MS
Instrument ID.....: LCMS02
Column Type.....: KP-RPPX250
 Primary
 Confirmation

Analytical Results

Analyte	Date Analyzed	MDL	Result	Comment	Qual.	Dilution	PQL
Perchlorate	02-MAR-07 13:18	0.122	0.229		J	2	0.400

960 West LeVoy Drive / Salt Lake City, Utah 84123-2547
Phone (801) 266-7700 Web Page: www.datachem.com
FAX (801) 268-9992 E-mail: lab@datachem.com



FORM B (TYPE I)
SINGLE METHOD ANALYSES

Form RLIMS63B-V1.4
03020715312373
Page 5

QUALITY CONTROL DATA SHEET
LABORATORY CONTROL SAMPLE (LCS)



Client Name.....: GPL Laboratories
Release Number.....: 02212007/702089

Matrix.....: WATER
Reporting Units.....: ug/L

DCL Preparation Group: Not Applicable
Date Prepared.....: 01-MAR-07 00:00
Preparation Method...: LC/MS-CLO4

DCL Sample Name....: QC-255498-1
Date Printed.....: 02-MAR-07 15:31

DCL Analysis Group: G072000W
Analysis Method...: CLO4-LC/MS
Instrument Type...: LC/MS
Instrument ID.....: LCMS02
Column Type.....: KP-RPPX250
 Primary
 Confirmation

QC Limit Type.....: Method

Analytical Results

Analyte	Date Analyzed	Target	Result	Percent Recovery	QC Limits	QC Flag
Perchlorate	01-MAR-07 18:15	1.00	0.983	98.3	85.0/115.	

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Phone (801) 266-7700 Web Page: www.datachem.com
FAX (801) 268-9992 E-mail: lab@datachem.com



FORM C (TYPE I)
SINGLE METHOD ANALYSES

Form RLIMS63C-V1.4
03020715312373
Page 6

QUALITY CONTROL DATA SHEET
BLANK SAMPLE



Client Name.....: GPL Laboratories
Release Number.....: 02212007/702089

Matrix.....: WATER
Reporting Units.....: ug/L

DCL Preparation Group: Not Applicable
Date Prepared.....: 01-MAR-07 00:00
Preparation Method...: LC/MS-CLO4

DCL Sample Name....: BL-255498-1
Date Printed.....: 02-MAR-07 15:31

DCL Analysis Group: G072000W
Analysis Method...: LC/MS-CLO4
Instrument Type...: LC/MS
Instrument ID.....: LCMS02
Column Type.....: KP-RPPX250
 Primary
 Confirmation

QC Limit Type.....: Method

Analytical Results

Analyte	Date Analyzed	Result	MDL	CRDL
Perchlorate	01-MAR-07 17:57	ND	0.0612	0.200

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Phone (801) 266-7700 Web Page: www.datachem.com
FAX (801) 268-9992 E-mail: lab@datachem.com



FORM F (TYPE I)
SINGLE METHOD ANALYSES

Form RLIMS63F-V1.4
03020715312373
Page 7

QUALITY CONTROL DATA SHEET
MATRIX SPIKE SAMPLE
MATRIX SPIKE DUPLICATE SAMPLE



Client Name.....: GPL Laboratories
Release Number.....: 02212007/702089

Matrix.....: WATER
Reporting Units.....: ug/L

DCL Preparation Group: Not Applicable
Date Prepared.....: 01-MAR-07 00:00
Preparation Method....: LC/MS-C104

DCL Sample Name...: 07E01191MS
Date Printed.....: 02-MAR-07 15:31

DCL Analysis Group: G072000W
Analysis Method...: C104-LC/MS
Instrument Type...: LC/MS
Instrument ID.....: LCMS02
Column Type.....: KP-RPPX250
 Primary
 Confirmation

QC Limit Type.....: Method

Analytical Results

Analyte	Date Analyzed	Sample Result	Spiked Result	Spike Added	Percent Recovery	QC Limits	QC Flag
Perchlorate	02-MAR-07 12:40	ND	8.39	10.0	83.9	80.0/120.	

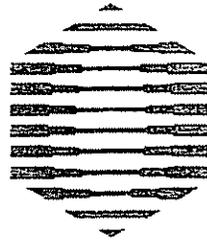


DCL Sample Name...: 07E01191MSD

Analytical Results

Analyte	Date Analyzed	Duplicate Result	Percent Recovery	Mean	Range	RPD	QC Limits	QC Flag
Perchlorate	02-MAR-07 12:59	7.51	75.1	7.95	0.886	11.	0.00/15.0	

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Phone (801) 266-7700 Web Page: www.datachem.com
FAX (801) 268-9992 E-mail: lab@datachem.com



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LABORATORIES, INC.

Sample Tracking Documentation

DataChem Laboratories
LIMS - Sample Master System
Analysis Group Report

Date: 1-MAR-2007 17:06
User: MCKAY

Page: 1
RLIMS15-V1.2

Analysis Run Name: G072000W

Group ID: G072000W

Samples: 12

Pos	Laboratory Sample Name	Field Sample Name 1	Field Sample Name 2	Laboratory Sample ID	Laboratory Group Name	Acct. Number
1	BL-255498-1	BL-255498-1		S072002F	07E-0118-01	08001
2	QC-255498-1	QC-255498-1		S072002G	07E-0118-01	08001
3	07E01191	702089001	NWO-033-3001	S071N03C	07E-0118-01	08001
4	07E01191MS	702089001	NWO-033-3001	S072002H	07E-0118-01	08001
5	07E01191MSD	702089001	NWO-033-3001	S072002J	07E-0118-01	08001
6	07E01192	702089002	NWO-033-6002	S071N03D	07E-0118-01	08001
7	07C00025	07-000424	24252003	S071P052	07C-0006-01	08001
8	07C00026	07-000429	24252004	S071P053	07C-0006-01	08001
9	07C00027	07-000439	24252005	S071P054	07C-0006-01	08001
10	07C00037	07-000614	24299001	S072005Y	07C-0009-01	08001
11	07C00038	07-000623	24299002	S072005Z	07C-0009-01	08001
12	07C00039	07-000632	24299003	S0720060	07C-0009-01	08001

----- END OF LISTING -----

07E-0118

Chain of Custody Form for Subcontracted Analyses

GPL Laboratories
7210A Corporate CT, Frederick, MD 21703
Phone: 301 694-5310
Fnx: 301 620-0731

W.O. No.: 702089
P.O. No.: SDG 702089
Project Name: Central Oregon Gunnery Range Site - (SDG 702089)
Project Number: Shaw MMRP FUDS Site - 033

Samples Transferred To:
Data Chem Laboratories
960 W. LeVoy Drive,
Salt Lake City, UT 84123
Attn: Kevin Griffiths
Phone: (801) 904-4302
(801) 266-7700 ext. 202

07E01191
1/22

Lab Sample ID	Field Sample ID	Date Sampled	Time Sampled	Matrix	Analyses Required	Method	Type of Container	Preservative
702089-001-001-1/3	NWO-033-3001	14-FEB-07	12:07	WATER	Perchlorate By SW8321 <i>2/19/07</i>	<i>DCL SOP/LCMS-CLO4</i> SW8321_PERC	VOA CLEAR	COOL
702089-001-002-2/3	NWO-033-3001	14-FEB-07	12:07	WATER	Perchlorate By SW8321	SW8321_PERC	VOA CLEAR	COOL
702089-001-003-3/3	NWO-033-3001	14-FEB-07	12:07	WATER	Perchlorate By SW8321	SW8321_PERC	VOA CLEAR	COOL
702089-002-004-1/3	NWO-033-6002	13-FEB-07	10:00	WATER	Perchlorate By SW8321	SW8321_PERC	VOA CLEAR	COOL
702089-002-005-2/3	NWO-033-6002	13-FEB-07	10:00	WATER	Perchlorate By SW8321	SW8321_PERC	VOA CLEAR	COOL
702089-002-006-3/3	NWO-033-6002	13-FEB-07	10:00	WATER	Perchlorate By SW8321	SW8321_PERC	VOA CLEAR	COOL

Carrier: FedEx overnight

Airbill No.: 790675658221

Report Due On: 3/2/2007

Send Report Attn: Tim Mikesell @ above Address Perform Q.C. on Sample: _____

Condition Upon Receipt: _____

Comments: There are (2) two samples in this SDG. Analyze samples according to QSM V3 & Appendix "G" of DoD. Analyze by DCL SOP(LCMS-CLO4) and Reference perchlorate by LCMS on all Reports & Logbook write-ups. Include SDG 702089 on the invoice.

Samples Relinquished By: _____ Date: _____ Time: _____ Samples Received By: [Signature] Date: 2/19/07 Time: 9:55

Sample Work Order

QC Clearance: _____

Project Manager: Kevin W. Griffiths

Client: GPL Laboratories

Account: 08001

SDG:

Project/Task: P04BG001

Date Received: 21-Feb-2007

Date for Mailing Report: 3-Mar-2007

DCL Root Set ID: 07E-0118

DCL Lab. Name: 07E01191-07E01192

Total # Samples: 2

Sample Entry: Meredith D. Edwards

Section: EO

Earliest Sampling Date: 13-Feb-2007

Preparation Type:

Rep. Group	Environmental Organic Analytes Requested	Latest Prep. Date	Latest Anal. Date	No. of Samp.	Storage Location	Analysis/Prep. Method	Inst.	Matrix
01	Perchlorate by LC/MS		13-Mar-2007 ^c	2		6850/Perchlorate	LC/MS	WATER

^cBased on date of collection

Special Instructions: _____

Section Manager: Richard W. Wade

Other Sections Receiving Sample Portions: None

DataChem Laboratories/ 960 West LeVoy Drive / Salt Lake City, Utah 84123

Form: W01.04-SWV2.12

PRINTED 2/22/2007 10:51

From: Origin ID: FDKA (301)694-5310
 Paul Ioannides
 GPL LABORATORIES LLLP
 7210A CORPORATE COURT
 FREDERICK, MD 21703



Ship Date: 20FEB07
 ActWgt: 10 LB
 System#: 5939673/INET2600
 Account#: S *****

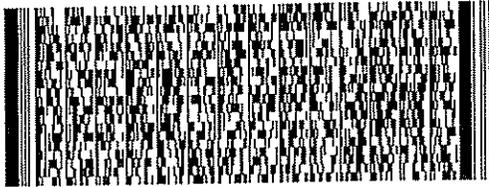
Delivery Address Bar Code



SHIP TO: (801)904-4302 **BILL SENDER**
KEVIN GRIFFITHS
DATA CHEM LABS
960 LEVOY DRIVE

SALT LAKE CITY, UT 84123

Ref #
 Invoice #
 PO #
 Dept #



PRIORITY OVERNIGHT

WED

TRK# 7906 7565 8221

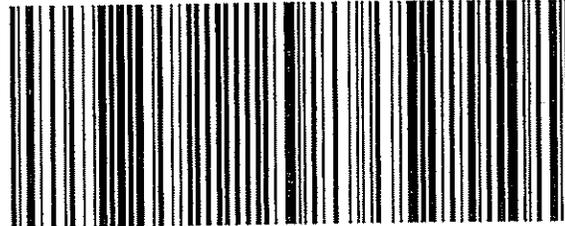
FORM 0201

Deliver By:
 21FEB07

SLC A1

84123 -UT-US

XH BTFA



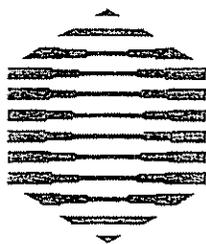
Shipping Label: Your shipment is complete

1. Use the 'Print' feature from your browser to send this page to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

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https://www.fedex.com/cgi-bin/ship_it/unity/1EjQz2EgRx4DgRs9HaZy0DiRt8BbQz0GfXq9DdYq4FjSs... 2/20/2007



***DATA
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LABORATORIES, INC.

Analytical Documentation

From Page No.

TTM 03/05/07

DCL Set ID #(S): 07E-0118-01; 07C-0006-01; 07C-0009-01
DCL Sample #(S): 07E01191 - 92; 07C00025 - 27; 07C00037 - 39
DCL Account #(S): 08001 Group/Lot ID: G072000W
Prep Date: 03/01/2007 Analysis Date: 03/01/2007 & 03/02/2007
Analyte: Perchlorate Matrix: Water Instrument LOD: 0.200µg/L
Sequence: \\CLO4\MAR07\01MARCAL.S, 01MAR.S, & 01MAR-A.S Method: 6850
Reported MDL: See RLIMS report Reported LOD: See RLIMS report

SAMPLE PREPARATION/ANALYSIS:

Water: All calibration standards were prepared by diluting working standard solution 260WS174. The calibration levels used were: \$0.2, \$0.5, \$1, \$5, \$10, & \$50 (µg/L). All DCL sample #'s agreed with field ID #'s. Samples were prepared by TTM. 9.95mL of each sample, including standards, was pipetted (IC-10) into a 15-mL centrifuge tube, and 50µL of an oxygen-18 labeled perchlorate solution was added (using IC-1) as an internal standard. The samples were capped, vortexed, and filtered with Pall 0.45µm Ion Chromatography Acrodiscs prior to analysis. Dilutions, if necessary, were done at the bench using pipettes.

REAGENTS: Eluent: -20% ACN (B&J lot CR732)/-80% ASTM Type II water(DCL)/0.1% glacial acetic acid (Baker lot B14804).

STANDARDS: Internal Standard Spiking Solution 276WS5 (See book WS 276, pg 5)
Dilutions of Working Standard Solution ID 260WS174 used for CCVs (See book WS 260, pg 174).

INSTRUMENT CONDITIONS: Samples were analyzed with an Agilent 1100 LC/MSD system, in negative SIM mode, monitoring m/z 83, 85, and 89. Tuned: 01/12/2007 Tune Checked: 02/15/2007
Instrument ID: LCMS02 Run Time : 15.00 min. with 2 min. post time
Flow Rate Gradient: 0.5mL/min to 5 min., to 0.3ml/min at 6 min., hold to 14 min.
Output Gain: 15 Injection Volume: 20µL Column: KP-RPPX C8 separator, 250mm

QC DATA: A 100X dilution of QC Solution ID 260WS175 (See book WS 260, pg 175) was used for QC-255498-1; target = 1.00µg/L. ASTM type II water was used for BL-255498-1.

MS/MSD: MS/MSD was performed on sample 07E01150. 5.0µl of Intermediate Standard Solution 87IS17262 (See book IS 87, pg 062) was added (using IC-6) to 10.0mL of sample preparation. Spike target = 5.00µg/L. *2x spike target = 10.0 µg/L*

COMMENTS: 1) Reported in µg/L.
2) All QC, Blank, CCV, and MS/MSD results were within method parameters, except LODV1 failed due to positive interference. Data was reported as is.
3) Samples 07E01191 (including MS/MSD) and 07E01192 were reported from 2X dilution data due to interferences. Instrument detection and reporting limits were raised accordingly.

TTM 03/05/07

To Page No.

Witnessed & Understood by me, <i>Penny A. Joth</i>	Date <i>5 Mar-2007</i>	Invented by: <i>N/A</i>	Date <i>03/05/07</i>
		Recorded by: <i>Sam 2 m 73</i>	

TITLE Calibration (03/01/07) Project No.
Book No. 4554

From Page No. /

TRC 03/05/07



Injection Log

Instrument ID: LCMS02 DCL Set ID(s): 07E-0118-01; 07C-0006-01; 07C-0009-01
Sequence ID: 01MARCALS DCL Group ID: G072000W

Client Sample ID	DCL Sample ID	Date of Injection	Time of Injection	File Name
N/A	MCS	03/01/07	12:12	01MAR001
N/A	\$50	03/01/07	12:25	01MAR002
N/A	\$10	03/01/07	12:44	01MAR003
N/A	\$5	03/01/07	13:03	01MAR004
N/A	\$1	03/01/07	13:21	01MAR005
N/A	\$5	03/01/07	13:40	01MAR006
N/A	\$2	03/01/07	13:59	01MAR007
N/A	ICV	03/01/07	14:17	01MAR008

Maintenance Notes: None.

TRC 03/05/07

To Page No. /

Witnessed & Understood by me, <i>Penny J. Booth</i>	Date <i>5-Mar-2007</i>	Invented by: <i>N/A</i>	Date <i>03/05/07</i>
		Recorded by: <i>Tracy M. M...</i>	

Project No.
Book No. 4554

TITLE 07E-0118-01; 07C-0006-01; 07C-0009-01

From Page No. /



Injection Log

Instrument ID: LCMS02

DCL Set ID(s): 07E-0118-01; 07C-0006-01;
07C-0009-01

Sequence ID: 01MAR.S & 01MAR-A.S

DCL Group ID: G072000W

Client Sample ID	DCL Sample ID	Date of Injection	Time of Injection	File Name
N/A	CCV1	03/01/07	17:01	01MAR001
N/A	LODV1	03/01/07	17:19	01MAR002
N/A	ICS	03/01/07	17:38	01MAR003
N/A	BL-255498-1	03/01/07	17:57	01MAR004
N/A	QC-255498-1	03/01/07	18:15	01MAR005
702089001	07E01191	03/01/07	18:34	01MAR006
702089001	07E01191MS	03/01/07	18:53	01MAR007
702089001	07E01191MSD	03/01/07	19:11	01MAR008
702089002	07E01192	03/01/07	19:30	01MAR009
07-000424	07C00025	03/01/07	19:49	01MAR010
07-000429	07C00026	03/01/07	20:08	01MAR011
07-000439	07C00027	03/01/07	20:26	01MAR012
07-000614	07C00037	03/01/07	20:45	01MAR013
07-000623	07C00038	03/01/07	21:04	01MAR014
07-000632	07C00039	03/01/07	21:22	01MAR015
N/A	CCV2	03/01/07	21:41	01MAR016
N/A	LODV2	03/01/07	22:00	01MAR017
N/A	CCV1	03/02/07	12:03	01MAR018
702089001	07E01191(2X)	03/02/07	12:22	01MAR019
702089001	07E01191MS(2X)	03/02/07	12:40	01MAR020
702089001	07E01191MSD(2X)	03/02/07	12:59	01MAR021
702089002	07E01192(2X)	03/02/07	13:18	01MAR022
N/A	CCV2	03/02/07	13:37	01MAR023

Maintenance Notes: None.

TR 03/05/07

To Page No. /

Witnessed & Understood by me,

Penny A. Judd

Date

5-Mar-2007

Invented by:

N/A

Recorded by:

Sam J. M...

Date

03/05/07

WORKING STANDARDS

STANDARD PREPARATION LOGBOOK

BOOK 276 WS

Page 5

276 WS 5 DCL WORKING STANDARD SOLUTION IDENTIFICATION NUMBER

DESCRIPTIVE IDENTIFICATION Perchlorate Internal Standard Spiking Sol.

Solvent DI H₂O Vendor DCL Grade ASTM Type II Lot —

#	Compound	Intermediate Standard or Parent Solution	Concentration of Parent Solution $\mu\text{g/mL}$	Volume of Aliquot mL	Final Total Volume mL	FINAL CONCENTRATION $\mu\text{g/mL}$
1.	Perchlorate (18O_4)	Cambridge Labr OLM-7510-5	100	1.00	100	1.00
2.		Lot: SCBC-017				
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						
11.						
12.						
13.						
14.						
15.						
16.						
17.						
18.						
19.						
20.						

EXPIRATION DATE 01/05/08 (Refer to applicable contract or method for allowable time period before expiration.)

Solution Prepared by Tom D. Maly Date of Preparation 01/05/07

Checked by Tom Borch

Comments _____



CERTIFICATE OF ANALYSIS

Product Name: PERCHLORIC ACID, SODIUM SALT
(Isotopic Label & Enrichment Specification) (18O4, 90%+) 100 UG/ML IN WATER

Lot Number: SCEC-017

Catalog Number: OLM-7310-S

Product Information

Chemical Purity Specification: $\geq 98\%$

Labeled CAS Number: NA

Unlabeled CAS Number: 7601-89-0

Molecular Weight: 130.4

Chemical Formula: NaClO₄

Storage: Store at room temperature away from light and moisture.

Stability: Stable if stored under recommended conditions.

Certification

Cambridge Isotope Laboratories, Inc. guarantees that this material meets or exceeds the specifications stated. Absolute identity as well as chemical and isotopic purities are assured by the use of unambiguous synthetic routes and multiple chemical analyses whenever possible.

Approved by: Lynne S. Batchelder

Lynne S. Batchelder, Ph.D., Quality Assurance

Quality Control Tests and Results

QC Release Date	6/22/04
Expiration Date	6/22/14
Concentration Based on Gravimetry	100.0 $\mu\text{g/ml}$
HPLC for Concentration	102 $\mu\text{g/ml}$

WORKING STANDARDS

STANDARD PREPARATION LOGBOOK	BOOK 260 WS Page 174
-------------------------------------	---------------------------------------

260 WS 174 DCL WORKING STANDARD SOLUTION IDENTIFICATION NUMBER

DESCRIPTIVE IDENTIFICATION Perchlorate

Solvent DI water Vendor DCL Grade ASTM Type III Lot —

No.	Compound	Intermediate Standard or Parent Solution	Concentration of Parent Solution $\mu\text{g/mL}$	Volume of Aliquot mL	Final Total Volume mL	FINAL CONCENTRATION $\mu\text{g/mL}$
1.	Perchlorate	87IS17262	10.0	1.00	100	100 $\mu\text{g/L}$
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						
11.						
12.						
13.						
14.						
15.						
16.						
17.						
18.						
19.						
20.						

EXPIRATION DATE 09/13/07 (Refer to applicable contract or method for allowable time period before expiration.)

Solution Prepared by [Signature] Date of Preparation 09/13/06

Checked by [Signature]

Comments _____

STANDARD SOLUTIONS OF INTERMEDIATE CONCENTRATION

STANDARD PREPARATION LOGBOOK NO.87 IS

Page No. 062

87 IS 17262 DCL INTERMEDIATE STANDARD SOLUTION IDENTIFICATION NUMBER

DESCRIPTIVE IDENTIFICATION: Perchlorate Int. Stock Standard Solution

Solvent DI water Vendor DCL Grade ASTM Type II Lot

	Compound	Stock Std or Parent Solution ID No.	Concentration of Parent Solution µg/mL	Volume of Aliquot mL	Final Total Volume mL	FINAL CONCENTRATION µg/mL
1.	Perchlorate (KClO ₄)	AccuStandard WC-PER-102-1 Lot: B5125022	1000	1.00	100	10.0
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						
11.						
12.						
13.						
14.						
15.						
16.						
17.						
18.						
19.						
20.						

EXPIRATION DATE 09/13/07

Refer to applicable contract or method for allowable time period before expiration.

Solution Prepared By: [Signature] Date of Preparation: 09/13/06

Checked By: [Signature] Supervisor: NA

Comments: _____

125 Market Street
New Haven, CT 06513 USA
Tel (203)786-5290 Fax (203)786-5287
Web AccuStandard.com



AccuStandard, Inc.



CERTIFICATE OF ANALYSIS

Wet Chemistry Reference Standard

Item Number: WC-PER-10X-1

Element: Perchlorate Standard

Lot Number: B5125022

Matrix: Water

Expiration Date: Dec / 2007

Actual Lot Analysis

Perchlorate Standard 1000 $\mu\text{g/mL}$

The total maximum uncertainty on the certified value(s) is $\pm 2\%$. See reverse side of certificate for details.

RESULTS: This solution standard was certified for accuracy of the listed components via methodology traceable to primary or well characterized secondary standards.

This standard was prepared gravimetrically to contain the concentrations shown above. Balances, used in the preparation, are calibrated regularly using NIST-traceable weights. All glassware used in preparation is Class A.

We use the highest purity raw materials and solvents available. Typically starting materials are 99.999% to minimize impurity levels in the final solution.

Use good laboratory procedure when diluting this product. Shake bottle prior to use and do not pipette directly out of the bottle. Use only cleaned Class A volumetric glassware.

We certify the accuracy of this standard to be $\pm 0.5\%$ of the stated value until the expiration date listed above, provided it is kept tightly capped and stored under normal laboratory conditions.


Lydia Snyder
Inorganic QC Supervisor

This product was manufactured to meet the quality system requirements of ISO 9001:2000 and ISO 17025

QA-ORG/NO-001
Rev. 6/05

WORKING STANDARDS

STANDARD PREPARATION LOGBOOK

BOOK 260 WS
Page 175

260 WS 175 DCL WORKING STANDARD SOLUTION IDENTIFICATION NUMBER

DESCRIPTIVE IDENTIFICATION Perchlorate (QC)

Solvent DZ water Vendor DCL Grade ASTM Type II Lot —

#	Compound	Intermediate Standard or Parent Solution	Concentration of Parent Solution $\mu\text{g/mL}$	Volume of Aliquot mL	Final Total Volume mL	FINAL CONCENTRATION $\mu\text{g/mL}$
1.	<u>Perchlorate</u>	<u>87ES17263</u>	<u>10.0</u>	<u>1.00</u>	<u>100</u>	<u>100 $\mu\text{g/L}$</u>
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						
11.						
12.						
13.						
14.						
15.						
16.						
17.						
18.						
19.						
20.						

EXPIRATION DATE 09/13/07 (Refer to applicable contract or method for allowable time period before expiration.)

Solution Prepared by [Signature] Date of Preparation 09/13/06

Checked by [Signature]

Comments _____

STANDARD SOLUTIONS OF INTERMEDIATE CONCENTRATION

STANDARD PREPARATION LOGBOOK NO.87 IS

Page No. 063

87 IS 17263 DCL INTERMEDIATE STANDARD SOLUTION IDENTIFICATION NUMBER

DESCRIPTIVE IDENTIFICATION: Perchlorate Int. QC Solution

Solvent DI Water Vendor DCL Grade ASTM Type II Lot —

Compound	Stock Std or Parent Solution ID No.	Concentration of Parent Solution µg/mL	Volume of Aliquot mL	Final Total Volume mL	FINAL CONCENTRATION µg/mL
1. Perchlorate (KClO ₄)	Ultra Scientific IGC-013	1000.	1.00	100	10.0
2.	Lot F00729				
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					

EXPIRATION DATE 09/13/07

Refer to applicable contract or method for allowable time period before expiration.

Solution Prepared By: [Signature] Date of Preparation: 09/13/06

Checked By: [Signature] Supervisor: NA

Comments: _____

Certificate of Analysis

CERTIFICATE OF ANALYSIS

ULTRAGrade™ Ion Chromatography Solution: 1000 µg/mL Perchlorate
Catalog Number: ICC-013
Lot Number: F00729
Job Number: J00005193
Expiration Date: 01/2009

Starting Material:	potassium perchlorate
Starting Material Purity:	99.8%
Starting Material Lot No.:	NT00430
Matrix:	water

Certified Value: 1000 µg/mL

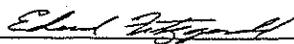
The certified value is the concentration calculated from gravimetric and volumetric measurements performed during the preparation of the standard unless otherwise specified. All standards are accurate to within ± 0.2% relative unless otherwise specified.

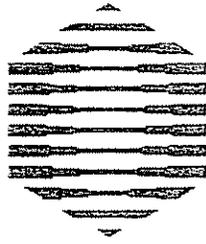
Confirmation by Inductively Coupled Plasma Spectroscopy (ICP) vs. NIST SRM 3141a

ULTRA uses purified acids, 18 megohm double deionized water, calibrated Class A glassware & meticulously cleaned bottles in the manufacturing of ULTRAGrade standards. Balances are calibrated with weights traceable to NIST.



250 Smith Street, North Kingstown, RI 02852 USA
401-294-9400 Fax: 401-295-2330
www.ultrasci.com


Dr. Edward Fitzgerald,
Senior Scientist



**DATA
CHEM**
LABORATORIES, INC.

Raw Data

Batch Review Method:
C:\HPCHEM\1\METHODS\CLO4-DOD.M

['#' ==> Run has not been reprocessed with Batch Review Method
['*' ==> Run has been saved with batch file]

#*	Sample	Location	Run	Dilution	Perchlorate RT	Perchlorate Area	Perchlorate Amount
*	CCV1	Vial 1	1	1	10.923	5354.89209	1.88652e-1
*	LODV1	Vial 2	2	1	10.950	5678.97070	2.17907e-1
*	ICS	Vial 3	3	1	10.328	4656.88623	2.20634e-1
*	BL-255498-1	Vial 4	4	1	0.000	0.00000	0.00000
*	QC-255498-1	Vial 5	5	1	10.928	3.13648e4	9.82757e-1
*	07E01191	Vial 7	6	1	0.000	0.00000	0.00000
*	07E01191MS	Vial 8	7	1	9.716	4.36904e4	1.69567
*	07E01191MSD	Vial 9	8	1	9.688	2.30027e4	1.43550
*	07E01192	Vial 10	9	1	9.255	2470.12744	1.11270e-1
*	07C00025	Vial 11	10	1	0.000	0.00000	0.00000
*	07C00026	Vial 12	11	1	10.578	1.21223e4	4.10816e-1
*	07C00027	Vial 13	12	1	0.000	0.00000	0.00000
*	07C00037	Vial 14	13	1	0.000	0.00000	0.00000
*	07C00038	Vial 15	14	1	10.728	6.34036e4	1.88345
*	07C00039	Vial 16	15	1	0.000	0.00000	0.00000
*	CCV2	Vial 6	16	1	10.857	3.36438e5	9.95015
*	LODV2	Vial 2	17	1	10.899	2980.41553	1.29474e-1

see dilutions

#*	Sample	Location	Run	Dilution	CLO4-85 RT	CLO4-85 Area	CLO4-85 Amount
*	CCV1	Vial 1	1	1	10.983	2592.15405	1.29503e-1
*	LODV1	Vial 2	2	1	10.878	1906.17371	9.18617e-2
*	ICS	Vial 3	3	1	10.179	2270.19238	1.79215e-1
*	BL-255498-1	Vial 4	4	1	11.103	2759.38013	1.56491e-1
*	QC-255498-1	Vial 5	5	1	10.944	1.05416e4	8.86896e-1
*	07E01191	Vial 7	6	1	9.858	2144.32251	1.38977e-1
*	07E01191MS	Vial 8	7	1	9.705	2.16196e4	2.44258
*	07E01191MSD	Vial 9	8	1	9.703	1.52313e4	2.76547
*	07E01192	Vial 10	9	1	0.000	0.00000	0.00000
*	07C00025	Vial 11	10	1	0.000	0.00000	0.00000
*	07C00026	Vial 12	11	1	10.539	4906.20459	3.70914e-1
*	07C00027	Vial 13	12	1	10.541	1795.72339	7.90276e-2
*	07C00037	Vial 14	13	1	10.628	3389.80688	2.25916e-1
*	07C00038	Vial 15	14	1	10.725	2.01280e4	1.71890
*	07C00039	Vial 16	15	1	0.000	0.00000	0.00000
*	CCV2	Vial 6	16	1	10.881	1.06469e5	9.73511
*	LODV2	Vial 2	17	1	10.928	1033.51782	3.26851e-3

#*	Sample	Location	Run	Dilution	CLO4-89 RT	CLO4-89 Area	CLO4-89 Amount
*	CCV1	Vial 1	1	1	10.934	1.30871e5	5.00000
*	LODV1	Vial 2	2	1	10.953	1.15922e5	5.00000
*	ICS	Vial 3	3	1	10.296	9.36206e4	5.00000
*	BL-255498-1	Vial 4	4	1	10.948	1.24194e5	5.00000
*	QC-255498-1	Vial 5	5	1	10.943	1.20503e5	5.00000
*	07E01191	Vial 7	6	1	9.826	1.03824e5	5.00000
*	07E01191MS	Vial 8	7	1	9.686	9.54642e4	5.00000
*	07E01191MSD	Vial 9	8	1	9.686	5.96570e4	5.00000
*	07E01192	Vial 10	9	1	9.413	1.26227e5	5.00000
*	07C00025	Vial 11	10	1	10.624	1.23407e5	5.00000
*	07C00026	Vial 12	11	1	10.602	1.18572e5	5.00000
*	07C00027	Vial 13	12	1	10.632	1.17392e5	5.00000
*	07C00037	Vial 14	13	1	10.698	1.19268e5	5.00000
*	07C00038	Vial 15	14	1	10.747	1.24389e5	5.00000
*	07C00039	Vial 16	15	1	10.759	1.13380e5	5.00000

#*	Sample	Location	Run	Dilution	CLO4-89 RT	CLO4-89 Area	CLO4-89 Amount
*	CCV2	Vial 6	16	1	10.883	1.21297e5	5.00000
*	LODV2	Vial 2	17	1	10.887	1.21200e5	5.00000
*** End of Report ***							



Perchlorate Calibration Verifications

Initial Calibration Date: 03/01/07

Instrument ID: LCMS02

Sequence ID: 01MARCAL.S, 01MAR.S, & 01MAR-A.S

Calibration Standard	Calculated Amount	Target Amount	Percent Difference	Control Limit	Pass/Fail
ICV	10.51	10.00	5.1%	±10%	Pass
CCV1	0.189	0.200	5.7%	±30%	Pass
LODV1	0.218	0.100	117.9%	±30%	Fail
ICS	0.221	0.200	10.3%	±30%	Pass
CCV2	9.95	10.00	0.5%	±10%	Pass
LODV2	0.129	0.100	29.5%	±30%	Pass
CCV1	0.175	0.200	12.5%	±30%	Pass
CCV2	10.16	10.00	1.5%	±10%	Pass

*Comment: LODV1 failure due to interference at m/z 83.



Perchlorate Confirmation by 83:85 Ratio

Instrument ID: LCMS02

DCL Set ID(s): 07E-0118-01; 07C-0006-01;
07C-0009-01

Sequence ID: 01MAR.S & 01MAR-A.S

DCL Group ID: G072000W

Client Sample ID	DCL Sample ID	Mass 83 Peak Area	Mass 85 Peak Area	Target Ratio Range	Mass 83/85 Ratio	Confirm Yes/No
N/A	CCV1	5,355	2,592	2.2 - 3.3	2.07	No
N/A	LODV1	5,679	1,906	2.2 - 3.3	2.98	Yes
N/A	ICS	4,657	2,270	2.2 - 3.3	2.05	No
N/A	BL-255498-1	ND	2,759	2.2 - 3.3	ND	NA
N/A	QC-255498-1	31,365	10,542	2.2 - 3.3	2.98	Yes
702089001	07E01191	ND	2,144	2.2 - 3.3	ND	NA
702089001	07E01191MS	43,690	21,620	2.2 - 3.3	2.02	No
702089001	07E01191MSD	23,003	15,231	2.2 - 3.3	1.51	No
702089002	07E01192	2,470	ND	2.2 - 3.3	ND	NA
07-000424	07C00025	ND	ND	2.2 - 3.3	ND	NA
07-000429	07C00026	12,122	4,906	2.2 - 3.3	2.47	Yes
07-000439	07C00027	ND	1,796	2.2 - 3.3	ND	NA
07-000614	07C00037	ND	3,390	2.2 - 3.3	ND	NA
07-000623	07C00038	63,404	20,128	2.2 - 3.3	3.15	Yes
07-000632	07C00039	ND	ND	2.2 - 3.3	ND	NA
N/A	CCV2	336,438	106,469	2.2 - 3.3	3.16	Yes
N/A	LODV2	2,980	1,034	2.2 - 3.3	2.88	Yes
N/A	CCV1	4,480	2,130	2.2 - 3.3	2.10	No
702089001	07E01191(2X)	ND	ND	2.2 - 3.3	ND	NA
702089001	07E01191MS(2X)	159,725	51,834	2.2 - 3.3	3.08	Yes
702089001	07E01191MSD(2X)	116,268	43,512	2.2 - 3.3	2.67	Yes
702089002	*07E01192(2X)	2,277	1,553	2.2 - 3.3	1.47	No
N/A	CCV2	350,196	109,192	2.2 - 3.3	3.21	Yes

*Comments: 83/85 ratio is often not accurate at lower levels (See low CCV and LODV results).



Internal Standard Peak Area Responses

Instrument ID: LCMS02

DCL Set ID(s): 07E-0118-01; 07C-0006-01;
07C-0009-01

Sequence ID: 01MAR.S & 01MAR-A.S

DCL Group ID: G072000W

Client Sample ID	DCL Sample ID	ISTD Peak Area	Target Peak Area	Percent Recovery	Pass/Fail
N/A	CCV1	130,871	130,871	100.0%	Pass
N/A	LODV1	115,922	130,871	88.6%	Pass
N/A	ICS	93,621	130,871	71.5%	Pass
N/A	BL-255498-1	124,194	130,871	94.9%	Pass
N/A	QC-255498-1	120,503	130,871	92.1%	Pass
702089001	07E01191	103,824	130,871	79.3%	Pass
702089001	07E01191MS	95,464	130,871	72.9%	Pass
702089001	07E01191MSD	59,657	130,871	45.6%	Fail
702089002	07E01192	126,227	130,871	96.5%	Pass
07-000424	07C00025	123,407	130,871	94.3%	Pass
07-000429	07C00026	118,572	130,871	90.6%	Pass
07-000439	07C00027	117,392	130,871	89.7%	Pass
07-000614	07C00037	119,268	130,871	91.1%	Pass
07-000623	07C00038	124,389	130,871	95.0%	Pass
07-000632	07C00039	113,380	130,871	86.6%	Pass
N/A	CCV2	121,297	130,871	92.7%	Pass
N/A	LODV2	121,200	130,871	92.6%	Pass
N/A	*CCV1	120,664	120,664	100.0%	Pass
702089001	07E01191(2X)	141,484	120,664	117.3%	Pass
702089001	07E01191MS(2X)	138,518	120,664	114.8%	Pass
702089001	07E01191MSD(2X)	112,934	120,664	93.6%	Pass
702089002	07E01192(2X)	111,024	120,664	92.0%	Pass
N/A	CCV2	123,662	120,664	102.5%	Pass

Control limit = $\pm 50\%$

*Comments: New target for second day.

Sequence Table:

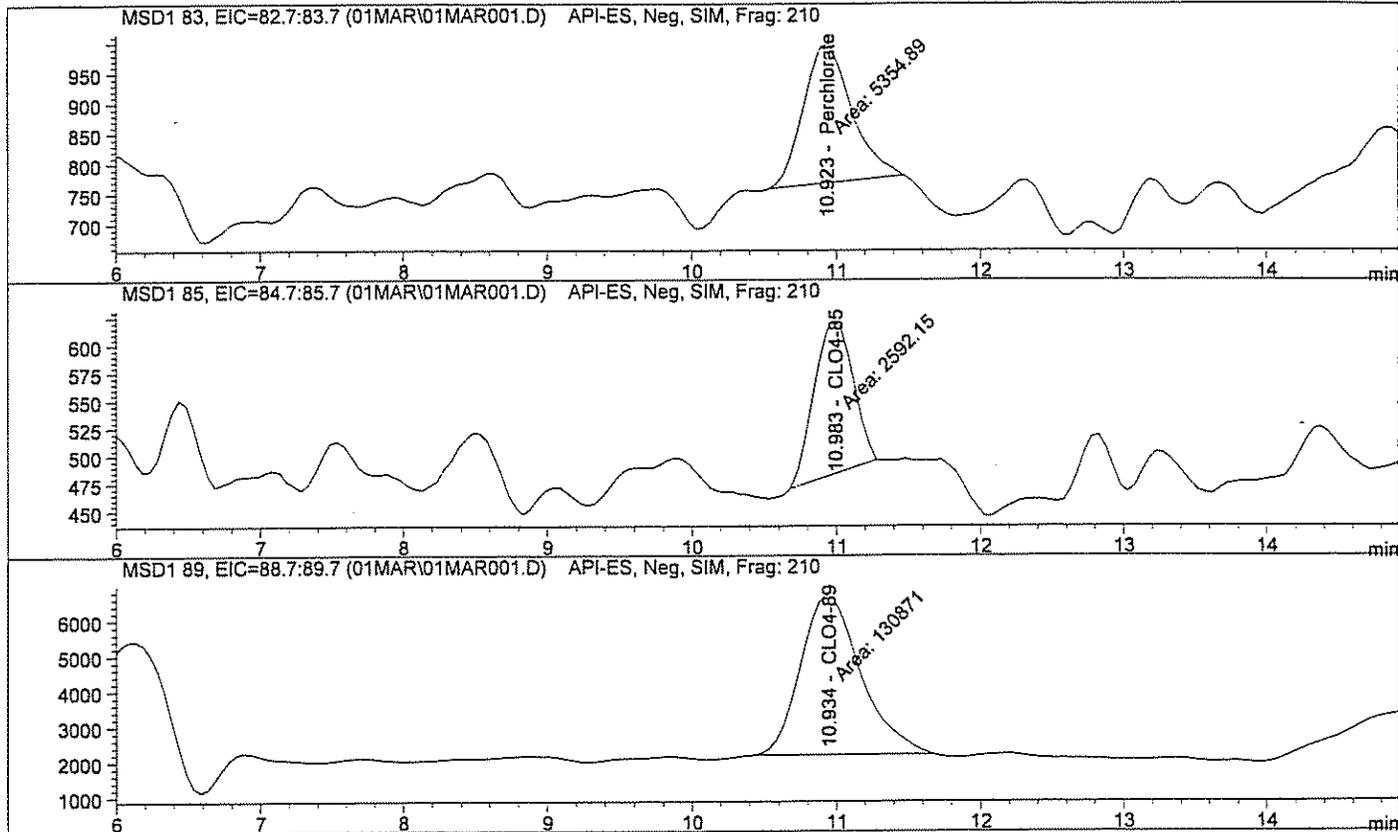
Method and Injection Info Part:

Line	Location	SampleName	Method	Inj	SampleType	InjVolume	DataFile
1	Vial 1	CCV1	CLO4-ON	1	Ctrl Samp		01MAR001
2	Vial 2	LODV1	CLO4-ON	1	Ctrl Samp		01MAR002
3	Vial 3	ICS	CLO4-ON	1	Ctrl Samp		01MAR003
4	Vial 4	BL-255498-1	CLO4-ON	1	Ctrl Samp		01MAR004
5	Vial 5	QC-255498-1	CLO4-ON	1	Ctrl Samp		01MAR005
6	Vial 7	07E01191	CLO4-ON	1	Sample		01MAR006
7	Vial 8	07E01191MS	CLO4-ON	1	Ctrl Samp		01MAR007
8	Vial 9	07E01191MSD	CLO4-ON	1	Ctrl Samp		01MAR008
9	Vial 10	07E01192	CLO4-ON	1	Sample		01MAR009
10	Vial 11	07C00025	CLO4-ON	1	Sample		01MAR010
11	Vial 12	07C00026	CLO4-ON	1	Sample		01MAR011
12	Vial 13	07C00027	CLO4-ON	1	Sample		01MAR012
13	Vial 14	07C00037	CLO4-ON	1	Sample		01MAR013
14	Vial 15	07C00038	CLO4-ON	1	Sample		01MAR014
15	Vial 16	07C00039	CLO4-ON	1	Sample		01MAR015
16	Vial 6	CCV2	CLO4-ON	1	Ctrl Samp		01MAR016
17	Vial 2	LODV2	CLO4-ON	1	Ctrl Samp		01MAR017

```

=====
Injection Date   : 3/1/2007 5:01:03 PM           Seq. Line :    1
Sample Name     : CCV1                           Location  : Vial 1
Acq. Operator   : TTM                             Inj       :    1
Acq. Instrument : LCMS02                          Inj Volume: 20 µl
Acq. Method     : C:\HPCHEM\1\METHODS\CLO4-ON.M
Last changed    : 3/1/2007 12:10:44 PM by TTM
Analysis Method : C:\HPCHEM\1\METHODS\CLO4-DOD.M
Last changed    : 3/1/2007 4:18:04 PM by TTM
                (Results are from a previously saved Batch)
  
```

Perchlorate analysis



Internal Standard Report

```

=====
Sorted By      : Signal
Calib. Data Modified : 3/1/2007 4:18:00 PM
Multiplier     : 1.0000
Dilution       : 1.0000
Sample Amount   : 2.00000e-1 [ug/L] (not used in calc.)
Use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:
ISTD ISTD Amount Name
# [ug/L]
-----|-----|-----
1 5.00000 CLO4-89
  
```

=====
Injection Date : 3/1/2007 5:01:03 PM Seq. Line : 1
Sample Name : CCV1 Location : Vial 1
Acq. Operator : TTM Inj : 1
Acq. Instrument : LCMS02 Inj Volume : 20 µl
Acq. Method : C:\HPCHEM\1\METHODS\CLO4-ON.M
Last changed : 3/1/2007 12:10:44 PM by TTM
Analysis Method : C:\HPCHEM\1\METHODS\CLO4-DOD.M
Last changed : 3/1/2007 4:18:04 PM by TTM
 (Results are from a previously saved Batch)
Perchlorate analysis
=====

Signal 1: MSD1 83, EIC=82.7:83.7

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
10.923	MM	5354.89209	9.22113e-1	1.88652e-1		Perchlorate
Totals without ISTD(s) :				1.88652e-1		

Signal 2: MSD1 85, EIC=84.7:85.7

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
10.983	MM	2592.15405	1.30765	1.29503e-1		CLO4-85
Totals without ISTD(s) :				1.29503e-1		

Signal 3: MSD1 89, EIC=88.7:89.7

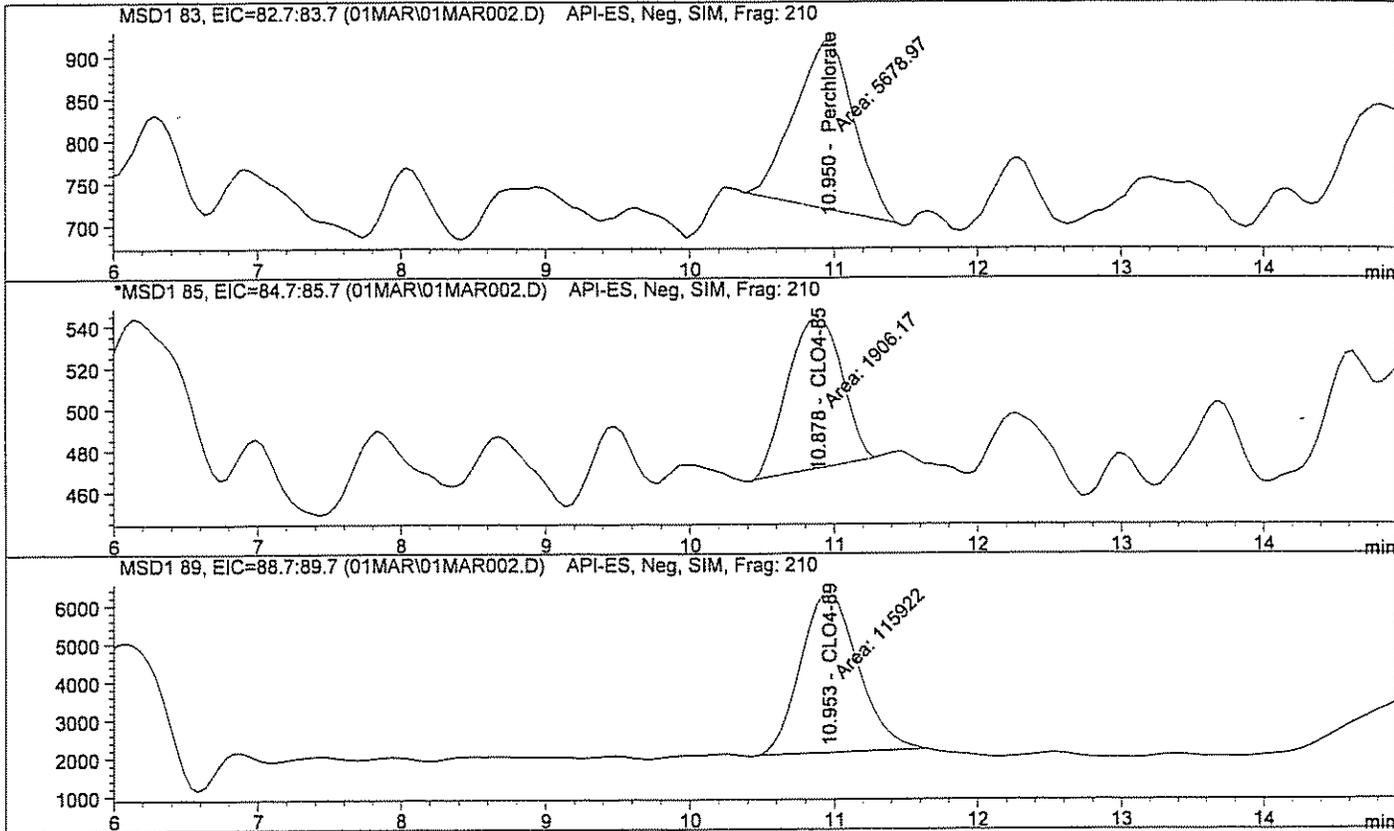
RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
10.934	MM +I	1.30871e5	1.00000	5.00000		CLO4-89
Totals without ISTD(s) :				0.00000		

1 Warnings or Errors :

Warning : Elution order of calibrated compounds may have changed

=====
*** End of Report ***

=====
Injection Date : 3/1/2007 5:19:45 PM Seq. Line : 2
Sample Name : LODV1 Location : Vial 2
Acq. Operator : TTM Inj : 1
Acq. Instrument : LCMS02 Inj Volume : 20 µl
Acq. Method : C:\HPCHEM\1\METHODS\CLO4-ON.M
Last changed : 3/1/2007 12:10:44 PM by TTM
Analysis Method : C:\HPCHEM\1\METHODS\CLO4-DOD.M
Last changed : 3/1/2007 4:18:04 PM by TTM
(Results are from a previously saved Batch)
=====
Perchlorate analysis
=====



=====
Internal Standard Report
=====

Sorted By : Signal
Calib. Data Modified : 3/1/2007 4:18:00 PM
Multiplier : 1.0000
Dilution : 1.0000
Sample Amount : 1.00000e-1 [ug/L] (not used in calc.)
Use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:
ISTD ISTD Amount Name
[ug/L]
-----|-----|-----
1 5.00000 CLO4-89

=====
Injection Date : 3/1/2007 5:19:45 PM Seq. Line : 2
Sample Name : LODV1 Location : Vial 2
Acq. Operator : TTM Inj : 1
Acq. Instrument : LCMS02 Inj Volume : 20 µl
Acq. Method : C:\HPCHEM\1\METHODS\CLO4-ON.M
Last changed : 3/1/2007 12:10:44 PM by TTM
Analysis Method : C:\HPCHEM\1\METHODS\CLO4-DOD.M
Last changed : 3/1/2007 4:18:04 PM by TTM
 (Results are from a previously saved Batch)
Perchlorate analysis
=====

Signal 1: MSD1 83, EIC=82.7:83.7

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
10.950	MM	5678.97070	8.89607e-1	2.17907e-1		Perchlorate
Totals without ISTD(s) :				2.17907e-1		

Signal 2: MSD1 85, EIC=84.7:85.7

Signal has been modified after loading from rawdata file!

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
10.878	MM	1906.17371	1.11730	9.18617e-2		CLO4-85
Totals without ISTD(s) :				9.18617e-2		

Signal 3: MSD1 89, EIC=88.7:89.7

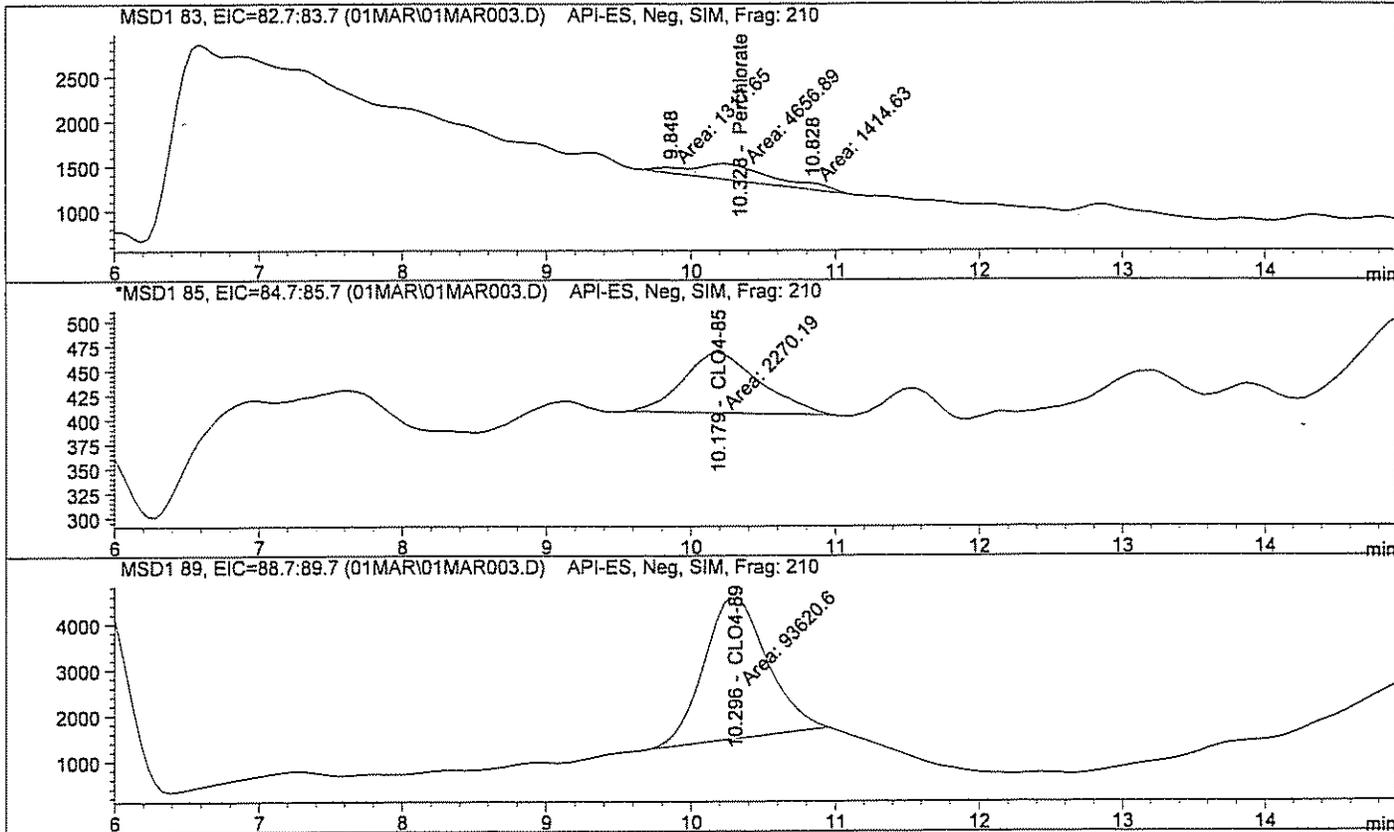
RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
10.953	MM +I	1.15922e5	1.00000	5.00000		CLO4-89
Totals without ISTD(s) :				0.00000		

1 Warnings or Errors :

Warning : Elution order of calibrated compounds may have changed

=====
*** End of Report ***

=====
Injection Date : 3/1/2007 5:38:27 PM Seq. Line : 3
Sample Name : ICS Location : Vial 3
Acq. Operator : TTM Inj : 1
Acq. Instrument: LCMS02 Inj Volume : 20 µl
Acq. Method : C:\HPCHEM\1\METHODS\CLO4-ON.M
Last changed : 3/1/2007 12:10:44 PM by TTM
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DOD.M
Last changed : 3/1/2007 4:18:04 PM by TTM
 (Results are from a previously saved Batch)
=====
Perchlorate analysis
=====



=====
Internal Standard Report
=====

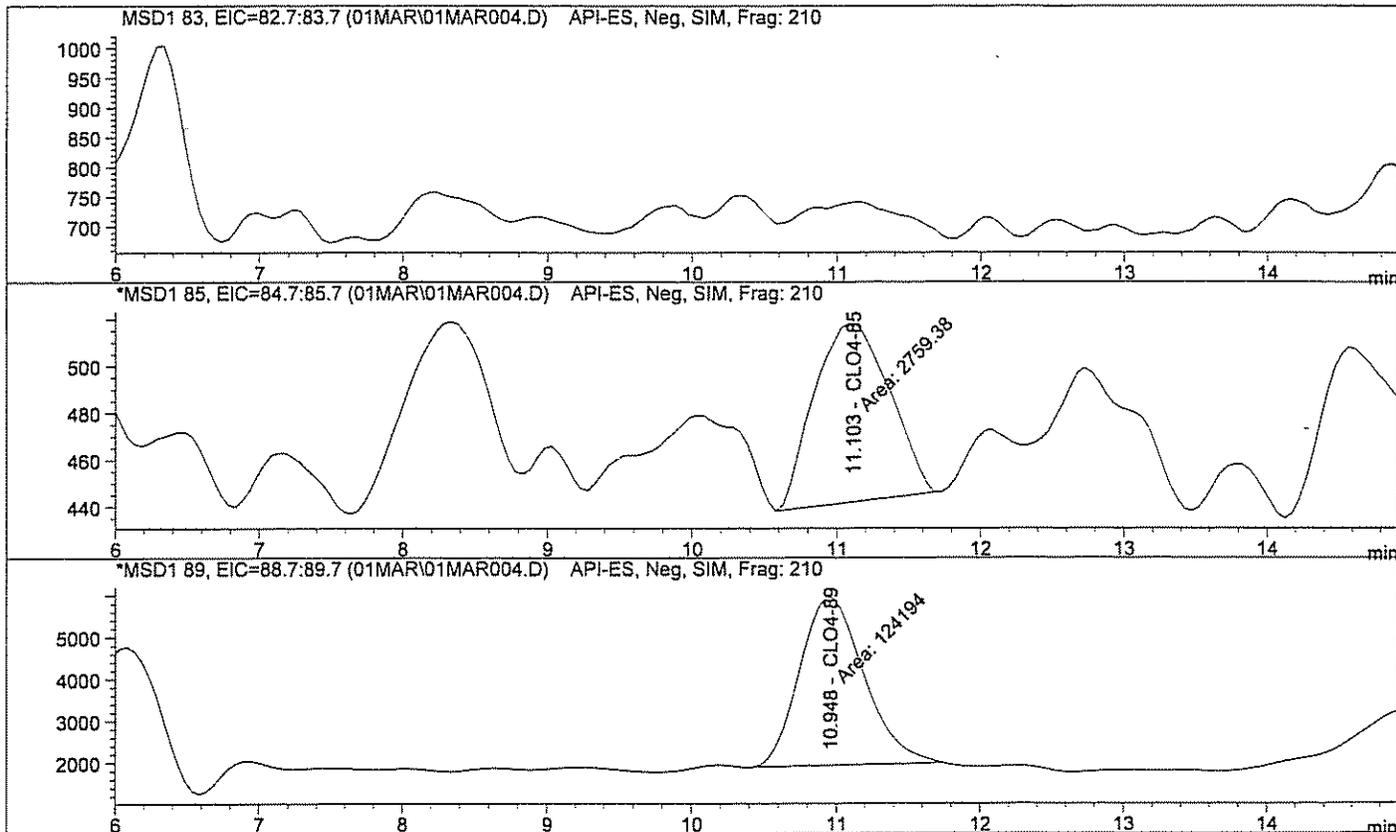
Sorted By : Signal
Calib. Data Modified : 3/1/2007 4:18:00 PM
Multiplier : 1.0000
Dilution : 1.0000
Sample Amount : 2.00000e-1 [ug/L] (not used in calc.)
Use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:
ISTD ISTD Amount Name
[ug/L]

1 | 5.00000 | CLO4-89

=====
Injection Date : 3/1/2007 5:57:09 PM Seq. Line : 4
Sample Name : BL-255498-1 Location : Vial 4
Acq. Operator : TTM Inj : 1
Acq. Instrument : LCMS02 Inj Volume : 20 µl
Acq. Method : C:\HPCHEM\1\METHODS\CLO4-ON.M
Last changed : 3/1/2007 12:10:44 PM by TTM
Analysis Method : C:\HPCHEM\1\METHODS\CLO4-DOD.M
Last changed : 3/1/2007 4:18:04 PM by TTM

(Results are from a previously saved Batch)

Perchlorate analysis



=====
Internal Standard Report
=====

Sorted By : Signal
Calib. Data Modified : 3/1/2007 4:18:00 PM
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:
ISTD ISTD Amount Name
[ug/L]
-----|-----
1 5.00000 CLO4-89

Signal 1: MSD1 83, EIC=82.7:83.7

```

=====
Injection Date : 3/1/2007 5:57:09 PM      Seq. Line : 4
Sample Name    : BL-255498-1              Location  : Vial 4
Acq. Operator  : TTM                      Inj       : 1
Acq. Instrument: LCMS02                   Inj Volume: 20 µl
Acq. Method    : C:\HPCHEM\1\METHODS\CLO4-ON.M
Last changed   : 3/1/2007 12:10:44 PM by TTM
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DOD.M
Last changed   : 3/1/2007 4:18:04 PM by TTM
(Results are from a previously saved Batch)
=====

```

Perchlorate analysis

```

=====
RetTime  Type      Area      Amt/Area  Amount  Grp  Name
 [min]   |-----|-----|-----|-----|-----|-----|
-----|-----|-----|-----|-----|-----|-----
10.921  -          -          -          -        -    Perchlorate
=====

```

Totals without ISTD(s) : 0.00000

Signal 2: MSD1 85, EIC=84.7:85.7
Signal has been modified after loading from rawdata file!

```

RetTime  Type      Area      Amt/Area  Amount  Grp  Name
 [min]   |-----|-----|-----|-----|-----|-----|
-----|-----|-----|-----|-----|-----|-----
11.103  MM      2759.38013  1.40866  1.56491e-1  CLO4-85
=====

```

Totals without ISTD(s) : 1.56491e-1

Signal 3: MSD1 89, EIC=88.7:89.7
Signal has been modified after loading from rawdata file!

```

RetTime  Type      Area      Amt/Area  Amount  Grp  Name
 [min]   |-----|-----|-----|-----|-----|-----|
-----|-----|-----|-----|-----|-----|-----
10.948  MM  +I  1.24194e5  1.00000  5.00000  CLO4-89
=====

```

Totals without ISTD(s) : 0.00000

3 Warnings or Errors :

- Warning : Calibrated compound(s) not found
- Warning : Elution order of calibrated compounds may have changed
- Warning : Amount limits exceeded

```

=====
*** End of Report ***
=====

```


=====
Injection Date : 3/1/2007 6:15:49 PM Seq. Line : 5
Sample Name : QC-255498-1 Location : Vial 5
Acq. Operator : TTM Inj : 1
Acq. Instrument : LCMS02 Inj Volume : 20 µl
Acq. Method : C:\HPCHEM\1\METHODS\CLO4-ON.M
Last changed : 3/1/2007 12:10:44 PM by TTM
Analysis Method : C:\HPCHEM\1\METHODS\CLO4-DOD.M
Last changed : 3/1/2007 4:18:04 PM by TTM
 (Results are from a previously saved Batch)
Perchlorate analysis
=====

Signal 1: MSD1 83, EIC=82.7:83.7

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
10.928	MM	3.13648e4	7.55147e-1	9.82757e-1		Perchlorate
Totals without ISTD(s) :				9.82757e-1		

Signal 2: MSD1 85, EIC=84.7:85.7
Signal has been modified after loading from rawdata file!

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
10.944	MM	1.05416e4	2.02765	8.86896e-1		CLO4-85
Totals without ISTD(s) :				8.86896e-1		

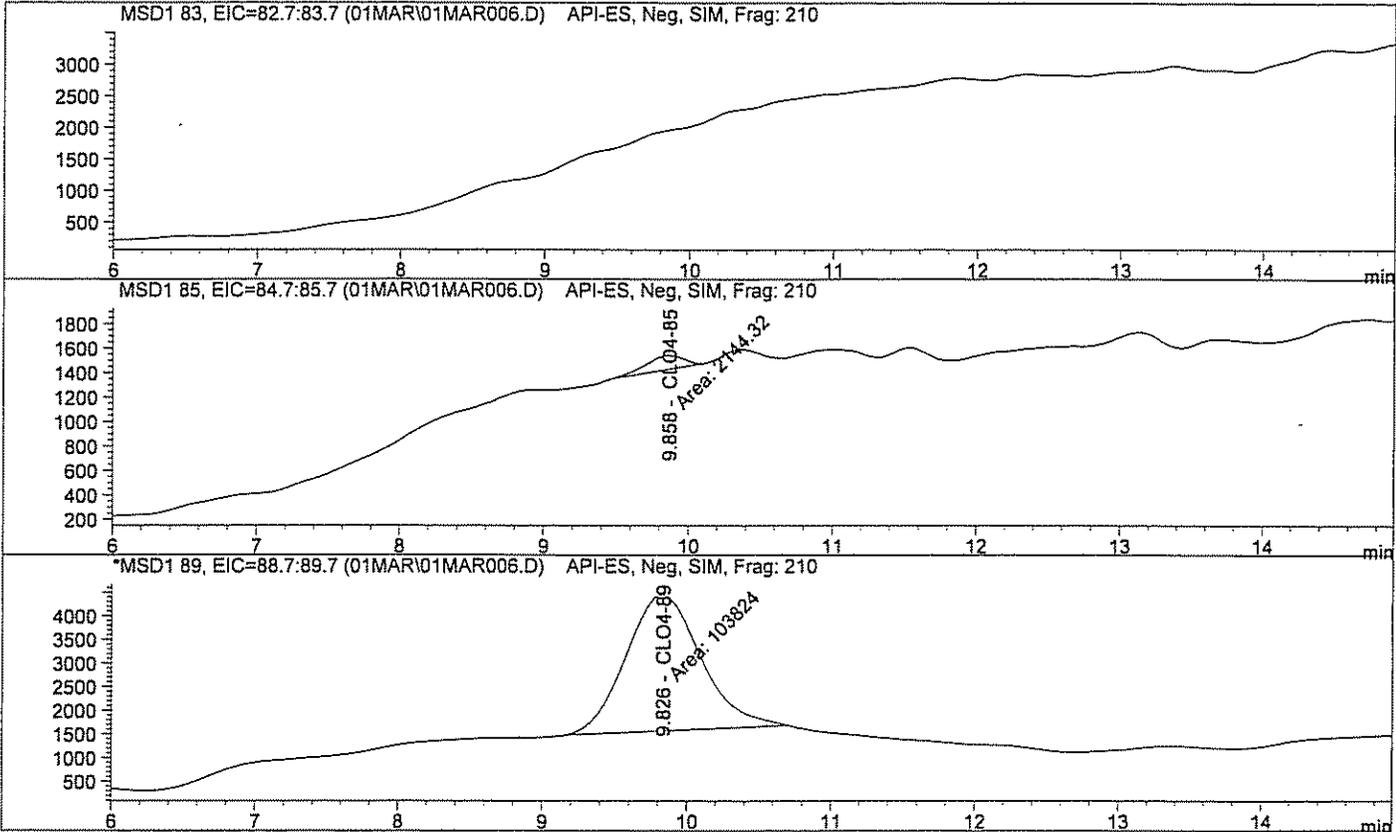
Signal 3: MSD1 89, EIC=88.7:89.7

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
10.943	MM +I	1.20503e5	1.00000	5.00000		CLO4-89
Totals without ISTD(s) :				0.00000		

1 Warnings or Errors :
Warning : Elution order of calibrated compounds may have changed

=====
*** End of Report ***

=====
Injection Date : 3/1/2007 6:34:31 PM Seq. Line : 6
Sample Name : 07E01191 Location : Vial 7
Acq. Operator : TTM Inj : 1
Acq. Instrument : LCMS02 Inj Volume : 20 µl
Acq. Method : C:\HPCHEM\1\METHODS\CLO4-ON.M
Last changed : 3/1/2007 12:10:44 PM by TTM
Analysis Method : C:\HPCHEM\1\METHODS\CLO4-DOD.M
Last changed : 3/1/2007 4:18:04 PM by TTM
(Results are from a previously saved Batch)
Perchlorate analysis
=====



=====
Internal Standard Report
=====

Sorted By : Signal
Calib. Data Modified : 3/1/2007 4:18:00 PM
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:
ISTD ISTD Amount Name
[ug/L]

1 5.00000 CLO4-89

Signal 1: MSD1 83, EIC=82.7:83.7

=====
Injection Date : 3/1/2007 6:34:31 PM Seq. Line : 6
Sample Name : 07E01191 Location : Vial 7
Acq. Operator : TTM Inj : 1
Acq. Instrument : LCMS02 Inj Volume : 20 µl
Acq. Method : C:\HPCHEM\1\METHODS\CLO4-ON.M
Last changed : 3/1/2007 12:10:44 PM by TTM
Analysis Method : C:\HPCHEM\1\METHODS\CLO4-DOD.M
Last changed : 3/1/2007 4:18:04 PM by TTM
 (Results are from a previously saved Batch)
=====
Perchlorate analysis
=====

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
9.802		-	-	-	-	Perchlorate
Totals without ISTD(s) :				0.00000		

Signal 2: MSD1 85, EIC=84.7:85.7

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
9.858	MM	2144.32251	1.34580	1.38977e-1		CLO4-85
Totals without ISTD(s) :				1.38977e-1		

Signal 3: MSD1 89, EIC=88.7:89.7

Signal has been modified after loading from rawdata file!

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
9.826	MM +I	1.03824e5	1.00000	5.00000		CLO4-89
Totals without ISTD(s) :				0.00000		

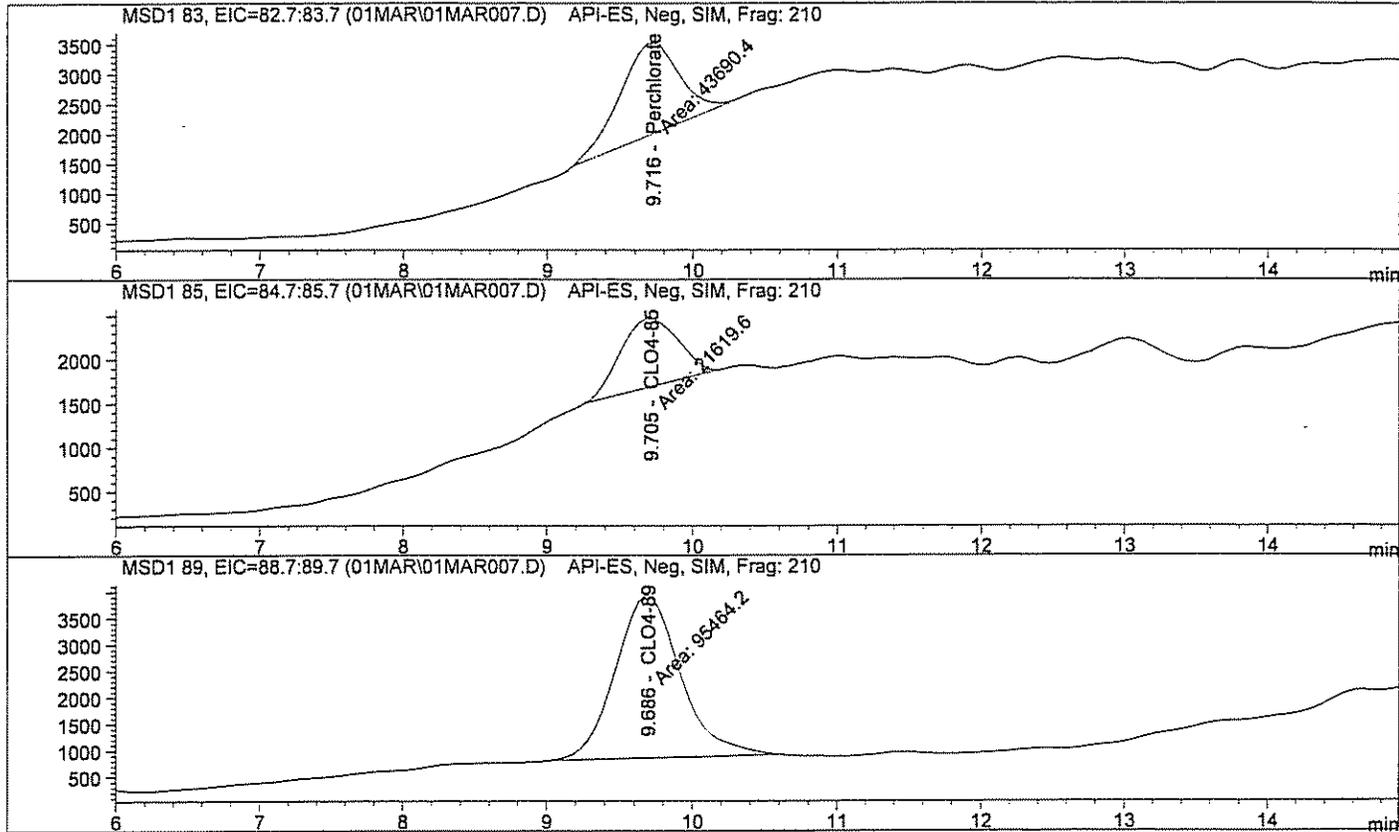
3 Warnings or Errors :

Warning : Calibrated compound(s) not found
Warning : Elution order of calibrated compounds may have changed
Warning : Amount limits exceeded

=====
*** End of Report ***
=====

=====
Injection Date : 3/1/2007 6:53:12 PM Seq. Line : 7
Sample Name : 07E01191MS Location : Vial 8
Acq. Operator : TTM Inj : 1
Acq. Instrument : LCMS02 Inj Volume : 20 µl
Acq. Method : C:\HPCHEM\1\METHODS\CLO4-ON.M
Last changed : 3/1/2007 12:10:44 PM by TTM
Analysis Method : C:\HPCHEM\1\METHODS\CLO4-DOD.M
Last changed : 3/1/2007 4:18:04 PM by TTM
(Results are from a previously saved Batch)

Perchlorate analysis
=====



=====
Internal Standard Report
=====

Sorted By : Signal
Calib. Data Modified : 3/1/2007 4:18:00 PM
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:
ISTD ISTD Amount Name
[ug/L]

1 5.00000 CLO4-89

Signal 1: MSD1 83, EIC=82.7:83.7

=====
Injection Date : 3/1/2007 6:53:12 PM Seq. Line : 7
Sample Name : 07E01191MS Location : Vial 8
Acq. Operator : TTM Inj : 1
Acq. Instrument : LCMS02 Inj Volume : 20 µl
Acq. Method : C:\HPCHEM\1\METHODS\CLO4-ON.M
Last changed : 3/1/2007 12:10:44 PM by TTM
Analysis Method : C:\HPCHEM\1\METHODS\CLO4-DOD.M
Last changed : 3/1/2007 4:18:04 PM by TTM
 (Results are from a previously saved Batch)
Perchlorate analysis
=====

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
9.716	MM	4.36904e4	7.41012e-1	1.69567		Perchlorate
Totals without ISTD(s) :				1.69567		

Signal 2: MSD1 85, EIC=84.7:85.7

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
9.705	MM	2.16196e4	2.15711	2.44258		CLO4-85
Totals without ISTD(s) :				2.44258		

Signal 3: MSD1 89, EIC=88.7:89.7

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
9.686	MM +I	9.54642e4	1.00000	5.00000		CLO4-89
Totals without ISTD(s) :				0.00000		

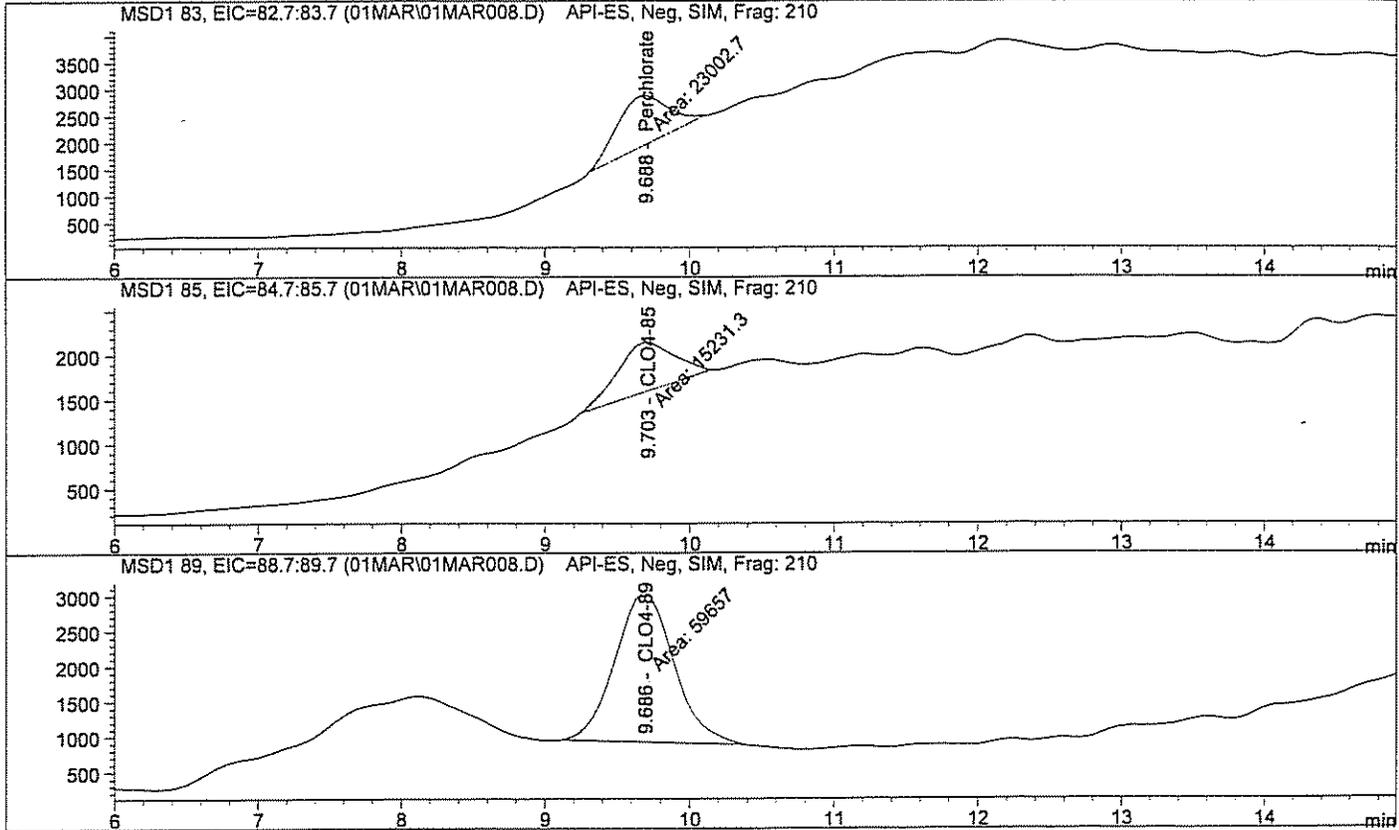
1 Warnings or Errors :

Warning : Elution order of calibrated compounds may have changed

=====
*** End of Report ***

=====
 Injection Date : 3/1/2007 7:11:55 PM Seq. Line : 8
 Sample Name : 07E01191MSD Location : Vial 9
 Acq. Operator : TTM Inj : 1
 Acq. Instrument : LCMS02 Inj Volume : 20 µl
 Acq. Method : C:\HPCHEM\1\METHODS\CLO4-ON.M
 Last changed : 3/1/2007 12:10:44 PM by TTM
 Analysis Method : C:\HPCHEM\1\METHODS\CLO4-DOD.M
 Last changed : 3/1/2007 4:18:04 PM by TTM
 (Results are from a previously saved Batch)
 =====

Perchlorate analysis



=====
 Internal Standard Report
 =====

Sorted By : Signal
 Calib. Data Modified : 3/1/2007 4:18:00 PM
 Multiplier : 1.0000
 Dilution : 1.0000
 Use Multiplier & Dilution Factor with ISTDs
 Sample ISTD Information:
 ISTD ISTD Amount Name
 # [ug/L]

 1 5.00000 CLO4-89

Signal 1: MSD1 83, EIC=82.7:83.7

```

=====
Injection Date : 3/1/2007 7:11:55 PM      Seq. Line : 8
Sample Name    : 07E01191MSD              Location  : Vial 9
Acq. Operator  : TTM                      Inj       : 1
Acq. Instrument: LCMS02                   Inj Volume: 20 µl
Acq. Method    : C:\HPCHEM\1\METHODS\CLO4-ON.M
Last changed   : 3/1/2007 12:10:44 PM by TTM
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DOD.M
Last changed   : 3/1/2007 4:18:04 PM by TTM
              (Results are from a previously saved Batch)
Perchlorate analysis
=====

```

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
9.688	MM	2.30027e4	7.44587e-1	1.43550		Perchlorate
Totals without ISTD(s) :				1.43550		

Signal 2: MSD1 85, EIC=84.7:85.7

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
9.703	MM	1.52313e4	2.16633	2.76547		CLO4-85
Totals without ISTD(s) :				2.76547		

Signal 3: MSD1 89, EIC=88.7:89.7

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
9.686	MM +I	5.96570e4	1.00000	5.00000		CLO4-89
Totals without ISTD(s) :				0.00000		

1 Warnings or Errors :

Warning : Elution order of calibrated compounds may have changed

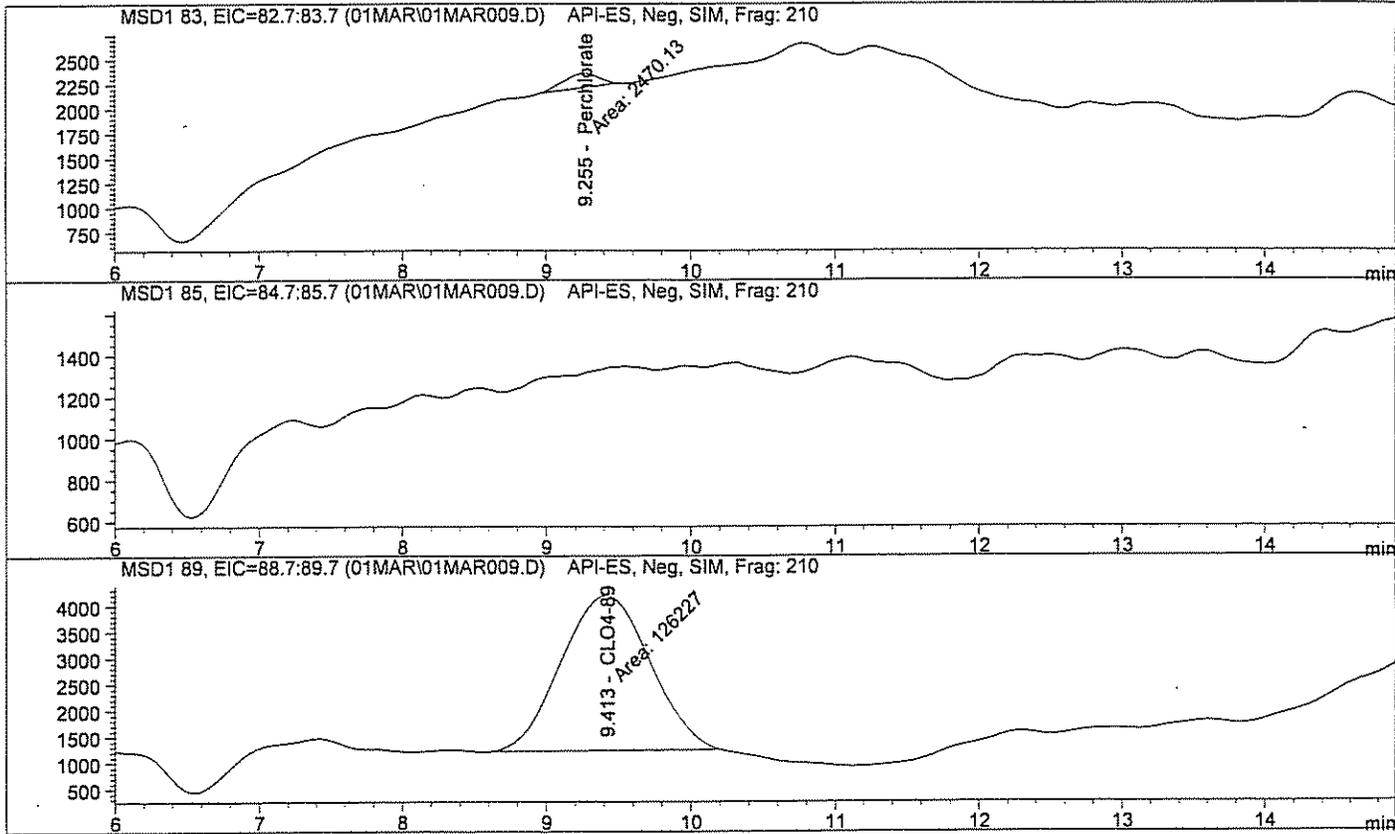
```

=====
*** End of Report ***
=====

```

=====
Injection Date : 3/1/2007 7:30:39 PM Seq. Line : 9
Sample Name : 07E01192 Location : Vial 10
Acq. Operator : TTM Inj : 1
Acq. Instrument : LCMS02 Inj Volume : 20 µl
Acq. Method : C:\HPCHEM\1\METHODS\CLO4-ON.M
Last changed : 3/1/2007 12:10:44 PM by TTM
Analysis Method : C:\HPCHEM\1\METHODS\CLO4-DOD.M
Last changed : 3/1/2007 4:18:04 PM by TTM
(Results are from a previously saved Batch)

Perchlorate analysis
=====



=====
Internal Standard Report
=====

Sorted By : Signal
Calib. Data Modified : 3/1/2007 4:18:00 PM
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:
ISTD ISTD Amount Name
[ug/L]
-----|-----
1 5.00000 CLO4-89

Signal 1: MSD1 83, EIC=82.7:83.7

=====
Injection Date : 3/1/2007 7:30:39 PM Seq. Line : 9
Sample Name : 07E01192 Location : Vial 10
Acq. Operator : TTM Inj : 1
Acq. Instrument : LCMS02 Inj Volume : 20 µl
Acq. Method : C:\HPCHEM\1\METHODS\CLO4-ON.M
Last changed : 3/1/2007 12:10:44 PM by TTM
Analysis Method : C:\HPCHEM\1\METHODS\CLO4-DOD.M
Last changed : 3/1/2007 4:18:04 PM by TTM
 (Results are from a previously saved Batch)
Perchlorate analysis
=====

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
9.255	MM	2470.12744	1.13720	1.11270e-1		Perchlorate
Totals without ISTD(s) :				1.11270e-1		

Signal 2: MSD1 85, EIC=84.7:85.7

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
9.401		-	-	-		CLO4-85
Totals without ISTD(s) :				0.00000		

Signal 3: MSD1 89, EIC=88.7:89.7

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
9.413	MM +I	1.26227e5	1.00000	5.00000		CLO4-89
Totals without ISTD(s) :				0.00000		

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

=====
*** End of Report ***

=====
Injection Date : 3/1/2007 9:41:30 PM Seq. Line : 16
Sample Name : CCV2 Location : Vial 6
Acq. Operator : TTM Inj : 1
Acq. Instrument: LCMS02 Inj Volume : 20 µl
Acq. Method : C:\HPCHEM\1\METHODS\CLO4-ON.M
Last changed : 3/1/2007 12:10:44 PM by TTM
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DOD.M
Last changed : 3/1/2007 4:18:04 PM by TTM
 (Results are from a previously saved Batch)
Perchlorate analysis
=====

Signal 1: MSD1 83, EIC=82.7:83.7

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
10.857	MM	3.36438e5	7.17469e-1	9.95015		Perchlorate
Totals without ISTD(s) :				9.95015		

Signal 2: MSD1 85, EIC=84.7:85.7

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
10.881	MM	1.06469e5	2.21817	9.73511		CLO4-85
Totals without ISTD(s) :				9.73511		

Signal 3: MSD1 89, EIC=88.7:89.7

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
10.883	MM +I	1.21297e5	1.00000	5.00000		CLO4-89
Totals without ISTD(s) :				0.00000		

=====
*** End of Report ***

=====
Injection Date : 3/1/2007 10:00:13 PM Seq. Line : 17
Sample Name : LODV2 Location : Vial 2
Acq. Operator : TTM Inj : 1
Acq. Instrument : LCMS02 Inj Volume : 20 µl
Acq. Method : C:\HPCHEM\1\METHODS\CLO4-ON.M
Last changed : 3/1/2007 12:10:44 PM by TTM
Analysis Method : C:\HPCHEM\1\METHODS\CLO4-DOD.M
Last changed : 3/1/2007 4:18:04 PM by TTM
 (Results are from a previously saved Batch)

Perchlorate analysis
=====

Signal 1: MSD1 83, EIC=82.7:83.7

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
10.899	MM	2980.41553	1.05303	1.29474e-1		Perchlorate

Totals without ISTD(s) : 1.29474e-1

Signal 2: MSD1 85, EIC=84.7:85.7
Signal has been modified after loading from rawdata file!

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
10.928	MM	1033.51782	7.66591e-2	3.26851e-3		CLO4-85

Totals without ISTD(s) : 3.26851e-3

Signal 3: MSD1 89, EIC=88.7:89.7
Signal has been modified after loading from rawdata file!

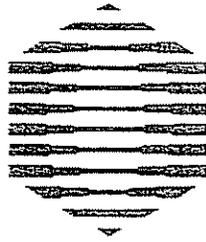
RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
10.887	MM +I	1.21200e5	1.00000	5.00000		CLO4-89

Totals without ISTD(s) : 0.00000

1 Warnings or Errors :

Warning : Elution order of calibrated compounds may have changed

=====
*** End of Report ***



**DATA
CHEM**
LABORATORIES, INC.

Dilutions

Raw Data

Batch Review Method:
 C:\HPCHEM\1\METHODS\CLO4-DOD.M

['#' ==> Run has not been reprocessed with Batch Review Method
 '*' ==> Run has been saved with batch file]

#*	Sample	Location	Run	Dilution	Perchlorate RT	Perchlorate Area	Perchlorate Amount
*	CCV1	Vial 1	1	1	10.812	4480.49072	1.74932e-1
*	07E01191(2X)	Vial 21	2	1	0.000	0.00000	0.00000
*	07E01191MS(2X)	Vial 22	3	1	10.006	1.59725e5	8.39096
*	07E01191MSD(2X)	Vial 23	4	1	9.995	1.16268e5	7.50521
*	07E01192(2X)	Vial 24	5	1	10.029	2276.61475	2.29331e-1
*	CCV2	Vial 6	6	1	10.794	3.50196e5	10.15500

#*	Sample	Location	Run	Dilution	CLO4-85 RT	CLO4-85 Area	CLO4-85 Amount
*	CCV1	Vial 1	1	1	10.928	2129.57666	1.05350e-1
*	07E01191(2X)	Vial 21	2	1	0.000	0.00000	0.00000
*	07E01191MS(2X)	Vial 22	3	1	10.029	5.18343e4	8.19286
*	07E01191MSD(2X)	Vial 23	4	1	10.022	4.35119e4	8.44091
*	07E01192(2X)	Vial 24	5	1	10.179	1552.81409	1.28724e-1
*	CCV2	Vial 6	6	1	10.823	1.09192e5	9.79362

#*	Sample	Location	Run	Dilution	CLO4-89 RT	CLO4-89 Area	CLO4-89 Amount
*	CCV1	Vial 1	1	1	10.812	1.20664e5	5.00000
*	07E01191(2X)	Vial 21	2	1	10.041	1.41484e5	10.00000
*	07E01191MS(2X)	Vial 22	3	1	10.028	1.38518e5	10.00000
*	07E01191MSD(2X)	Vial 23	4	1	10.009	1.12934e5	10.00000
*	07E01192(2X)	Vial 24	5	1	10.023	1.11024e5	10.00000
*	CCV2	Vial 6	6	1	10.825	1.23662e5	5.00000

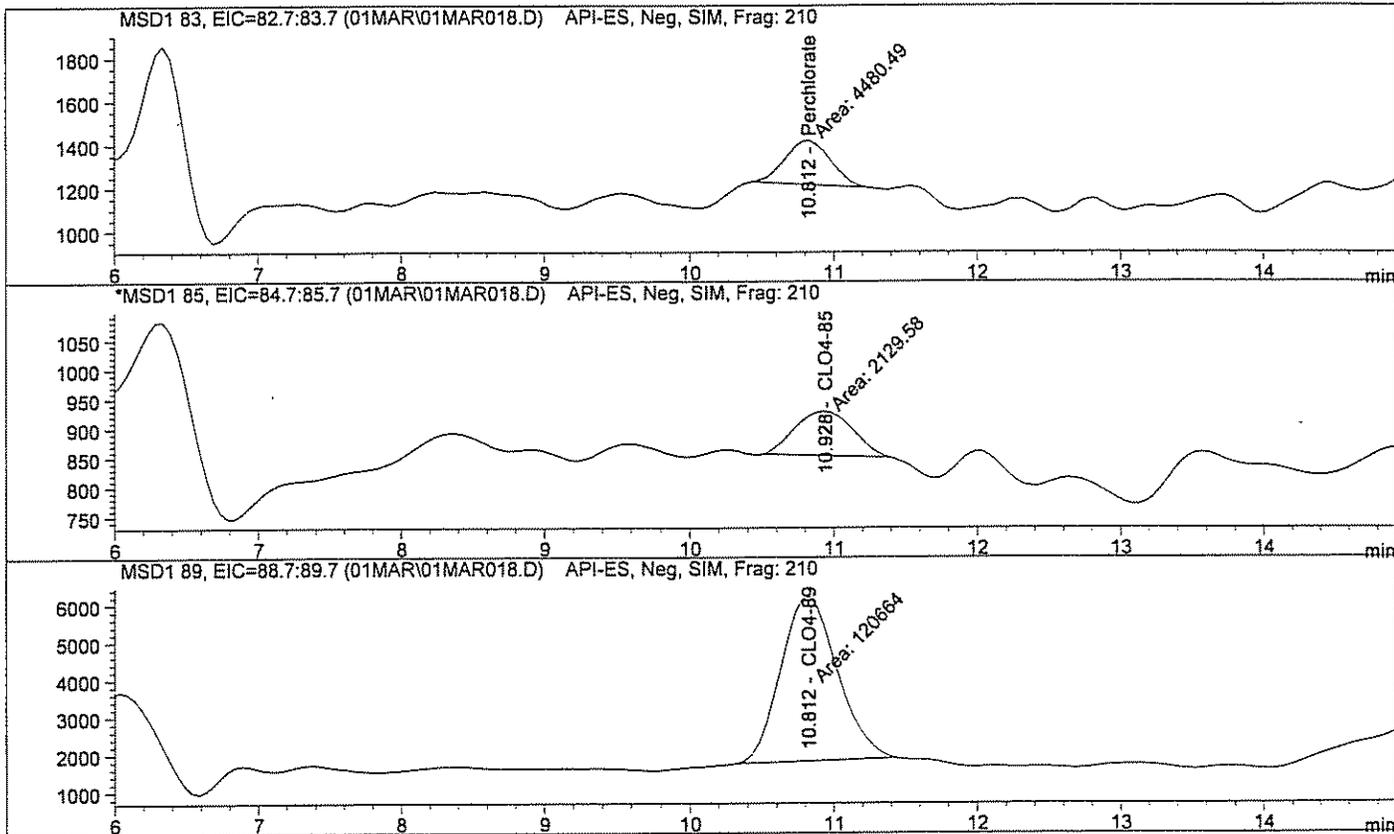
*** End of Report ***

Sequence Table:

Method and Injection Info Part:

Line	Location	SampleName	Method	Inj	SampleType	InjVolume	DataFile
1	Vial 1	CCV1	CLO4-ON	1	Ctrl Samp		01MAR018
2	Vial 21	07E01191(2X)	CLO4-ON	1	Sample		01MAR019
3	Vial 22	07E01191MS(2X)	CLO4-ON	1	Ctrl Samp		01MAR020
4	Vial 23	07E01191MSD(2X)	CLO4-ON	1	Ctrl Samp		01MAR021
5	Vial 24	07E01192(2X)	CLO4-ON	1	Sample		01MAR022
6	Vial 6	CCV2	CLO4-ON	1	Ctrl Samp		01MAR023

=====
Injection Date : 3/2/2007 12:03:32 PM Seq. Line : 1
Sample Name : CCV1 Location : Vial 1
Acq. Operator : TTM Inj : 1
Acq. Instrument : LCMS02 Inj Volume : 20 µl
Acq. Method : C:\HPCHEM\1\METHODS\CLO4-ON.M
Last changed : 3/1/2007 12:10:44 PM by TTM
Analysis Method : C:\HPCHEM\1\METHODS\CLO4-DOD.M
Last changed : 3/1/2007 4:18:04 PM by TTM
 (Results are from a previously saved Batch)
=====
Perchlorate analysis
=====



=====
Internal Standard Report
=====

Sorted By : Signal
Calib. Data Modified : 3/1/2007 4:18:00 PM
Multiplier : 1.0000
Dilution : 1.0000
Sample Amount : 2.00000e-1 [ug/L] (not used in calc.)
Use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:
ISTD ISTD Amount Name
[ug/L]

1 5.00000 CLO4-89

=====
Injection Date : 3/2/2007 12:03:32 PM Seq. Line : 1
Sample Name : CCV1 Location : Vial 1
Acq. Operator : TTM Inj : 1
Acq. Instrument : LCMS02 Inj Volume : 20 µl
Acq. Method : C:\HPCHEM\1\METHODS\CLO4-ON.M
Last changed : 3/1/2007 12:10:44 PM by TTM
Analysis Method : C:\HPCHEM\1\METHODS\CLO4-DOD.M
Last changed : 3/1/2007 4:18:04 PM by TTM
 (Results are from a previously saved Batch)
Perchlorate analysis
=====

Signal 1: MSD1 83, EIC=82.7:83.7

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
10.812	MM	4480.49072	9.42220e-1	1.74932e-1		Perchlorate
Totals without ISTD(s) :				1.74932e-1		

Signal 2: MSD1 85, EIC=84.7:85.7
Signal has been modified after loading from rawdata file!

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
10.928	MM	2129.57666	1.19385	1.05350e-1		CLO4-85
Totals without ISTD(s) :				1.05350e-1		

Signal 3: MSD1 89, EIC=88.7:89.7

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
10.812	MM +I	1.20664e5	1.00000	5.00000		CLO4-89
Totals without ISTD(s) :				0.00000		

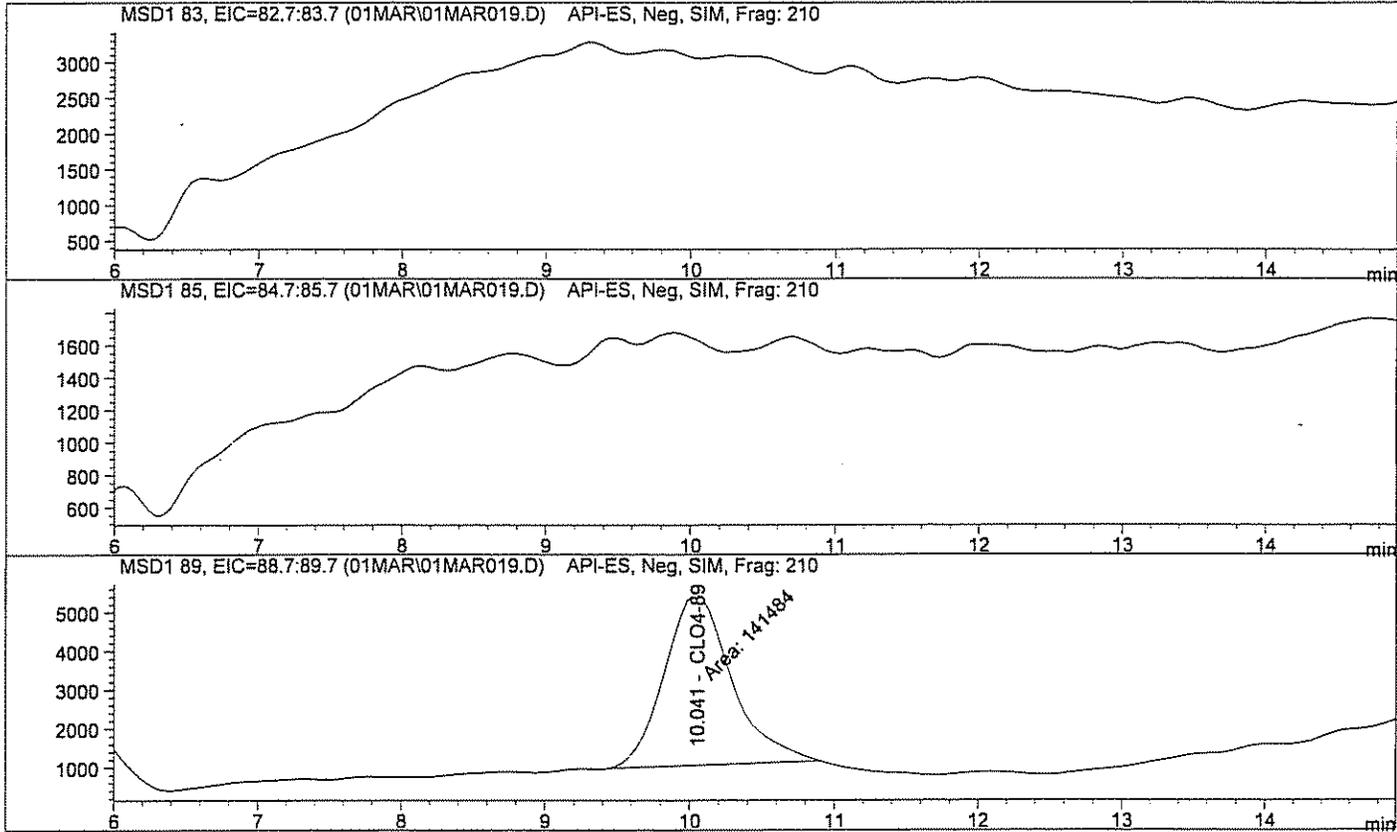
1 Warnings or Errors :

Warning : Elution order of calibrated compounds may have changed

=====
*** End of Report ***

=====
Injection Date : 3/2/2007 12:22:13 PM Seq. Line : 2
Sample Name : 07E01191(2X) Location : Vial 21
Acq. Operator : TTM Inj : 1
Acq. Instrument : LCMS02 Inj Volume : 20 µl
Acq. Method : C:\HPCHEM\1\METHODS\CLO4-ON.M
Last changed : 3/1/2007 12:10:44 PM by TTM
Analysis Method : C:\HPCHEM\1\METHODS\CLO4-DOD.M
Last changed : 3/1/2007 4:18:04 PM by TTM
(Results are from a previously saved Batch)

Perchlorate analysis
=====



=====
Internal Standard Report
=====

Sorted By : Signal
Calib. Data Modified : 3/1/2007 4:18:00 PM
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:
ISTD ISTD Amount Name
[ug/L]
-----|-----|-----
1 10.00000 CLO4-89

Signal 1: MSD1 83, EIC=82.7:83.7

```

=====
Injection Date   : 3/2/2007 12:22:13 PM      Seq. Line   :    2
Sample Name     : 07E01191(2X)              Location    : Vial 21
Acq. Operator   : TTM                       Inj         :    1
Acq. Instrument : LCMS02                     Inj Volume  : 20 µl
Acq. Method     : C:\HPCHEM\1\METHODS\CLO4-ON.M
Last changed    : 3/1/2007 12:10:44 PM by TTM
Analysis Method : C:\HPCHEM\1\METHODS\CLO4-DOD.M
Last changed    : 3/1/2007 4:18:04 PM by TTM
                (Results are from a previously saved Batch)
=====

```

Perchlorate analysis

```

=====
RetTime  Type      Area      Amt/Area  Amount  Grp  Name
 [min]   |-----|-----|-----|-----|-----|
10.016   |-----|-----|-----|-----|-----|
          |-----|-----|-----|-----|-----|
Totals without ISTD(s) :                      0.00000
=====

```

Signal 2: MSD1 85, EIC=84.7:85.7

```

RetTime  Type      Area      Amt/Area  Amount  Grp  Name
 [min]   |-----|-----|-----|-----|-----|
10.029   |-----|-----|-----|-----|-----|
          |-----|-----|-----|-----|-----|
Totals without ISTD(s) :                      0.00000
=====

```

Signal 3: MSD1 89, EIC=88.7:89.7

```

RetTime  Type      Area      Amt/Area  Amount  Grp  Name
 [min]   |-----|-----|-----|-----|-----|
10.041 MM +I 1.41484e5  1.00000  10.00000  CLO4-89
          |-----|-----|-----|-----|-----|
Totals without ISTD(s) :                      0.00000
=====

```

2 Warnings or Errors :

```

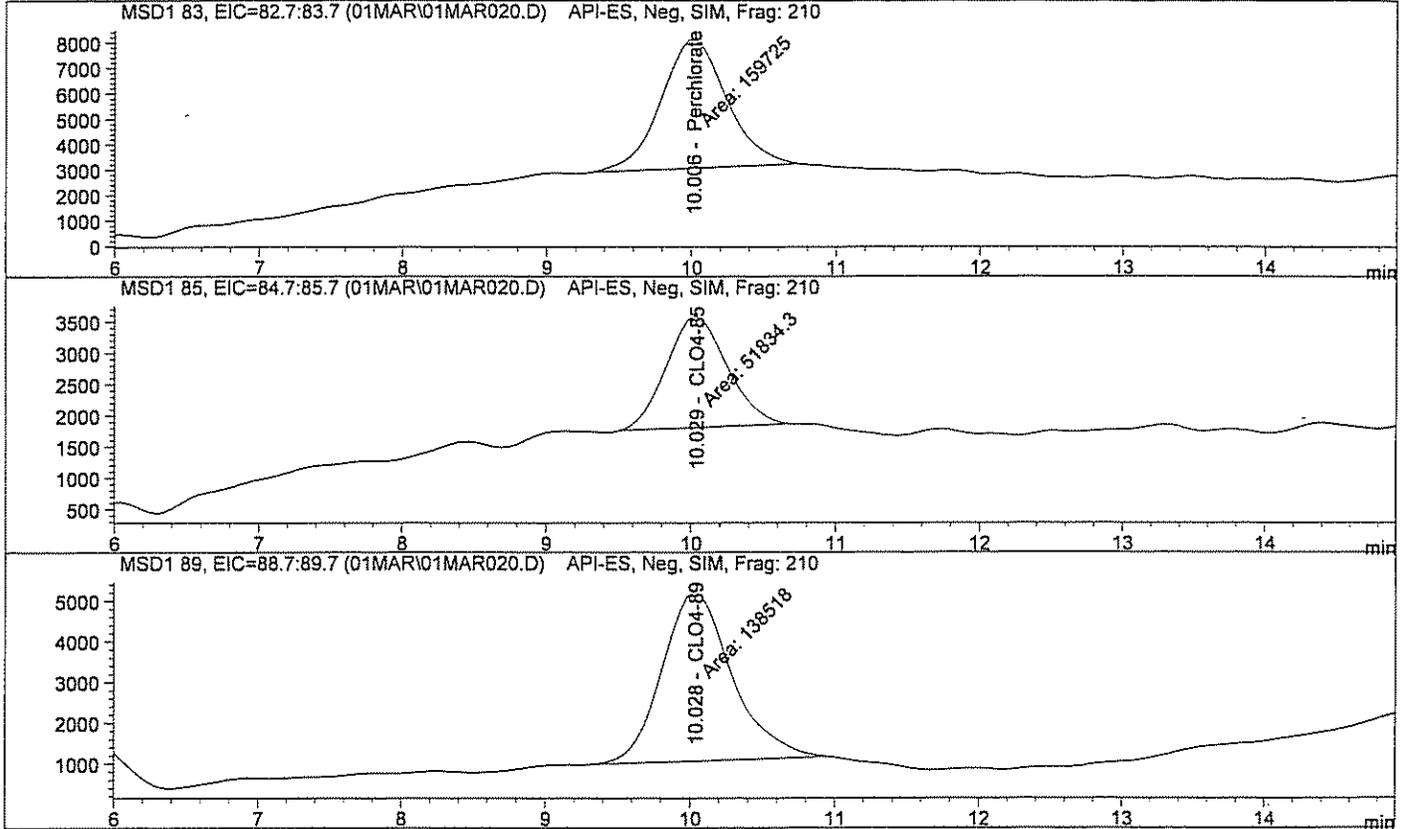
Warning : Calibrated compound(s) not found
Warning : Amount limits exceeded
=====

```

*** End of Report ***

Injection Date : 3/2/2007 12:40:55 PM Seq. Line : 3
Sample Name : 07E01191MS(2X) Location : Vial 22
Acq. Operator : TTM Inj : 1
Acq. Instrument : LCMS02 Inj Volume : 20 µl
Acq. Method : C:\HPCHEM\1\METHODS\CLO4-ON.M
Last changed : 3/1/2007 12:10:44 PM by TTM
Analysis Method : C:\HPCHEM\1\METHODS\CLO4-DOD.M
Last changed : 3/1/2007 4:18:04 PM by TTM
(Results are from a previously saved Batch)

Perchlorate analysis



Internal Standard Report

Sorted By : Signal
Calib. Data Modified : 3/1/2007 4:18:00 PM
Multiplier : 1.0000
Dilution : 1.0000

Use Multiplier & Dilution Factor with ISTDs

Sample ISTD Information:

ISTD ISTD Amount Name
[ug/L]

#	ISTD Amount [ug/L]	Name
1	10.00000	CLO4-89

Signal 1: MSD1 83, EIC=82.7:83.7

```

=====
Injection Date : 3/2/2007 12:40:55 PM      Seq. Line : 3
Sample Name    : 07E01191MS(2X)          Location  : Vial 22
Acq. Operator  : TTM                      Inj       : 1
Acq. Instrument: LCMS02                   Inj Volume: 20 µl
Acq. Method    : C:\HPCHEM\1\METHODS\CLO4-ON.M
Last changed   : 3/1/2007 12:10:44 PM by TTM
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DOD.M
Last changed   : 3/1/2007 4:18:04 PM by TTM
                (Results are from a previously saved Batch)
Perchlorate analysis
=====
    
```

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
10.006	MM	1.59725e5	7.27688e-1	8.39096		Perchlorate
Totals without ISTD(s) :				8.39096		

Signal 2: MSD1 85, EIC=84.7:85.7

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
10.029	MM	5.18343e4	2.18939	8.19286		CLO4-85
Totals without ISTD(s) :				8.19286		

Signal 3: MSD1 89, EIC=88.7:89.7

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
10.028	MM +I	1.38518e5	1.00000	10.00000		CLO4-89
Totals without ISTD(s) :				0.00000		

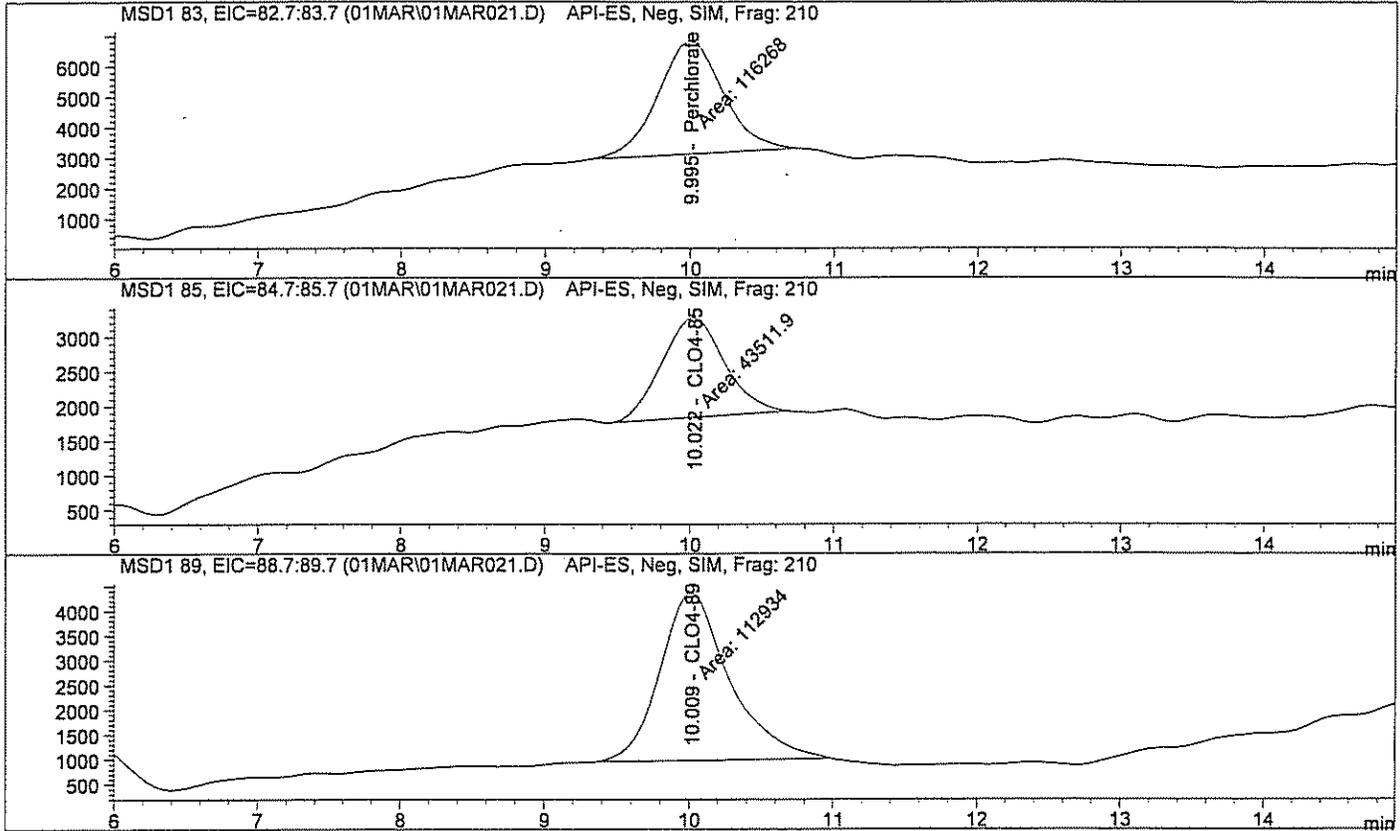
1 Warnings or Errors :

Warning : Elution order of calibrated compounds may have changed

*** End of Report ***

=====
Injection Date : 3/2/2007 12:59:39 PM Seq. Line : 4
Sample Name : 07E01191MSD(2X)_ Location : Vial 23
Acq. Operator : TTM Inj : 1
Acq. Instrument : LCMS02 Inj Volume : 20 µl
Acq. Method : C:\HPCHEM\1\METHODS\CLO4-ON.M
Last changed : 3/1/2007 12:10:44 PM by TTM
Analysis Method : C:\HPCHEM\1\METHODS\CLO4-DOD.M
Last changed : 3/1/2007 4:18:04 PM by TTM
(Results are from a previously saved Batch)

Perchlorate analysis



=====
Internal Standard Report
=====

Sorted By : Signal
Calib. Data Modified : 3/1/2007 4:18:00 PM
Multiplier : 1.0000
Dilution : 1.0000

Use Multiplier & Dilution Factor with ISTDs

Sample ISTD Information:

ISTD ISTD Amount Name
[ug/L]

#	ISTD Amount [ug/L]	Name
1	10.00000	CLO4-89

Signal 1: MSD1 83, EIC=82.7:83.7

=====
Injection Date : 3/2/2007 12:59:39 PM Seq. Line : 4
Sample Name : 07E01191MSD(2X)_ Location : Vial 23
Acq. Operator : TTM Inj : 1
Acq. Instrument : LCMS02 Inj Volume : 20 µl
Acq. Method : C:\HPCHEM\1\METHODS\CLO4-ON.M
Last changed : 3/1/2007 12:10:44 PM by TTM
Analysis Method : C:\HPCHEM\1\METHODS\CLO4-DOD.M
Last changed : 3/1/2007 4:18:04 PM by TTM
(Results are from a previously saved Batch)
=====
Perchlorate analysis
=====

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
9.995	MM	1.16268e5	7.29004e-1	7.50521		Perchlorate
Totals without ISTD(s) :				7.50521		

Signal 2: MSD1 85, EIC=84.7:85.7

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
10.022	MM	4.35119e4	2.19082	8.44091		CLO4-85
Totals without ISTD(s) :				8.44091		

Signal 3: MSD1 89, EIC=88.7:89.7

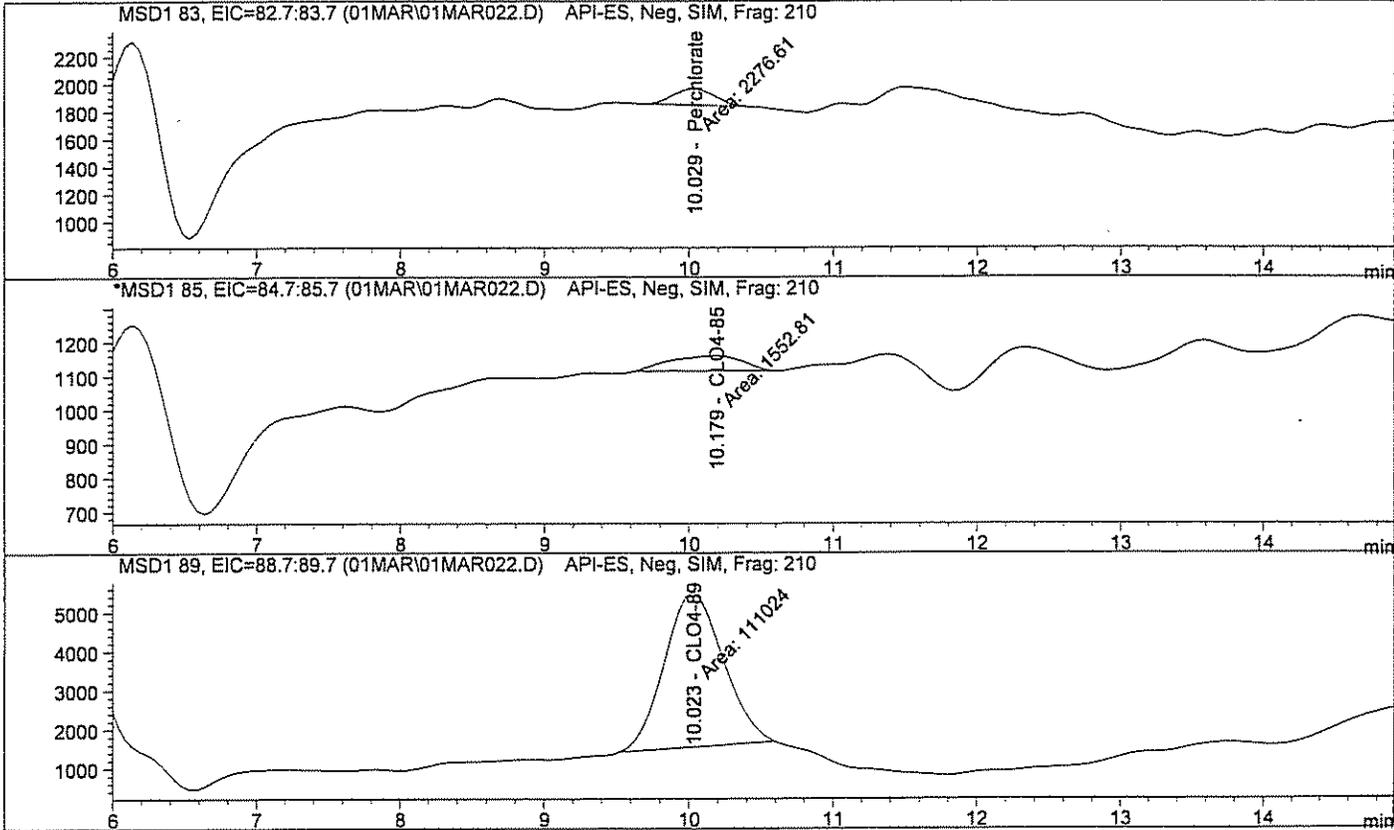
RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
10.009	MM +I	1.12934e5	1.00000	10.00000		CLO4-89
Totals without ISTD(s) :				0.00000		

1 Warnings or Errors :

Warning : Elution order of calibrated compounds may have changed

=====
*** End of Report ***

=====
Injection Date : 3/2/2007 1:18:19 PM Seq. Line : 5
Sample Name : 07E01192(2X) Location : Vial 24
Acq. Operator : TTM Inj : 1
Acq. Instrument : LCMS02 Inj Volume : 20 µl
Acq. Method : C:\HPCHEM\1\METHODS\CLO4-ON.M
Last changed : 3/1/2007 12:10:44 PM by TTM
Analysis Method : C:\HPCHEM\1\METHODS\CLO4-DOD.M
Last changed : 3/1/2007 4:18:04 PM by TTM
 (Results are from a previously saved Batch)
=====
Perchlorate analysis
=====



=====
Internal Standard Report
=====

Sorted By : Signal
Calib. Data Modified : 3/1/2007 4:18:00 PM
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:
ISTD ISTD Amount Name
[ug/L]
-----|-----|-----
1 10.00000 CLO4-89

Signal 1: MSD1 83, EIC=82.7:83.7

=====
Injection Date : 3/2/2007 1:18:19 PM Seq. Line : 5
Sample Name : 07E01192(2X) Location : Vial 24
Acq. Operator : TTM Inj : 1
Acq. Instrument : LCMS02 Inj Volume : 20 µl
Acq. Method : C:\HPCHEM\1\METHODS\CLO4-ON.M
Last changed : 3/1/2007 12:10:44 PM by TTM
Analysis Method : C:\HPCHEM\1\METHODS\CLO4-DOD.M
Last changed : 3/1/2007 4:18:04 PM by TTM
 (Results are from a previously saved Batch)
Perchlorate analysis
=====

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
10.029	MM	2276.61475	1.11838	2.29331e-1		Perchlorate
Totals without ISTD(s) :				2.29331e-1		

Signal 2: MSD1 85, EIC=84.7:85.7
Signal has been modified after loading from rawdata file!

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
10.179	MM	1552.81409	9.20356e-1	1.28724e-1		CLO4-85
Totals without ISTD(s) :				1.28724e-1		

Signal 3: MSD1 89, EIC=88.7:89.7

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
10.023	MM +I	1.11024e5	1.00000	10.00000		CLO4-89
Totals without ISTD(s) :				0.00000		

1 Warnings or Errors :

Warning : Elution order of calibrated compounds may have changed

=====
*** End of Report ***

=====
Injection Date : 3/2/2007 1:37:01 PM Seq. Line : 6
Sample Name : CCV2 Location : Vial 6
Acq. Operator : TTM Inj : 1
Acq. Instrument: LCMS02 Inj Volume : 20 µl
Acq. Method : C:\HPCHEM\1\METHODS\CLO4-ON.M
Last changed : 3/1/2007 12:10:44 PM by TTM
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DOD.M
Last changed : 3/1/2007 4:18:04 PM by TTM
 (Results are from a previously saved Batch)
Perchlorate analysis
=====

Signal 1: MSD1 83, EIC=82.7:83.7

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp Name
10.794	MM	3.50196e5	7.17193e-1	10.15500	Perchlorate
Totals without ISTD(s) :				10.15500	

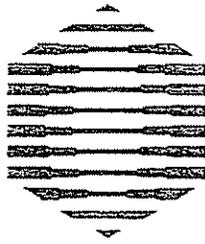
Signal 2: MSD1 85, EIC=84.7:85.7
Signal has been modified after loading from rawdata file!

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp Name
10.823	MM	1.09192e5	2.21830	9.79362	CLO4-85
Totals without ISTD(s) :				9.79362	

Signal 3: MSD1 89, EIC=88.7:89.7

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp Name
10.825	MM +I	1.23662e5	1.00000	5.00000	CLO4-89
Totals without ISTD(s) :				0.00000	

=====
*** End of Report ***



**DATA
CHEM**
LABORATORIES, INC.

Calibration

Raw Data

=====
 Calibration Table
 =====

Perchlorate

Calib. Data Modified : 3/1/2007 4:18:00 PM
 Calculate : Internal Standard
 Based on : Peak Area
 Rel. Reference Window : 5.000 %
 Abs. Reference Window : 0.000 min
 Rel. Non-ref. Window : 5.000 %
 Abs. Non-ref. Window : 0.000 min
 Use Multiplier & Dilution Factor with ISTDs
 Uncalibrated Peaks : not reported
 Partial Calibration : No recalibration if peaks missing
 Curve Type : Linear (some peaks differ, see below)
 Origin : Ignored (some peaks differ, see below)
 Weight : Linear (Amnt) (some peaks differ, see below)
 Recalibration Settings:
 Average Response : Average all calibrations
 Average Retention Time: Floating Average New 75%

Calibration Report Options :
 Printout of recalibrations within a sequence:
 Calibration Table after Recalibration
 Normal Report after Recalibration
 If the sequence is done with bracketing:
 Results of first cycle (ending previous bracket)

Default Sample ISTD Information (if not set in sample table):

ISTD #	ISTD Amount [ug/L]	Name
1	5.00000	CLO4-89

Signal 1: MSD1 83, EIC=82.7:83.7
 Signal 2: MSD1 85, EIC=84.7:85.7
 Signal 3: MSD1 89, EIC=88.7:89.7

RetTime [min]	Lvl Sig	Amount [ug/L]	Area	Amt/Area	Ref Grp	Name
10.916	1 1	2.00000e-1	5538.91455	3.61082e-5	1	Perchlorate
	2	5.00000e-1	1.45438e4	3.43789e-5		
	3	1.00000	3.11307e4	3.21226e-5		
	4	5.00000	1.56506e5	3.19477e-5		
	5	10.00000	3.11715e5	3.20805e-5		
	6	50.00000	1.54047e6	3.24577e-5		
10.930	2 1	2.00000e-1	3004.22778	6.65728e-5	1	CLO4-85
	2	5.00000e-1	6597.77295	7.57831e-5		
	3	1.00000	1.12280e4	8.90629e-5		
	4	5.00000	5.40824e4	9.24515e-5		
	5	10.00000	9.82389e4	1.01793e-4		
	6	50.00000	4.64822e5	1.07568e-4		
10.943	3 1	5.00000	1.19859e5	4.17157e-5	+I1	CLO4-89
	2	5.00000	1.15020e5	4.34705e-5		
	3	5.00000	1.19878e5	4.17091e-5		
	4	5.00000	1.18387e5	4.22343e-5		
	5	5.00000	1.09172e5	4.57992e-5		
	6	5.00000	1.04060e5	4.80492e-5		

More compound-specific settings:

Compound: Perchlorate
 Amount Limits : Low 8.00000e-2 High 60.00000
 Time Window : From 1.916 min To 17.916 min
 Curve Type : Quadratic
 Origin : Ignored
 Calibration Level Weights:/
 Level 1 : 1
 Level 2 : 0.4
 Level 3 : 0.2
 Level 4 : 0.04
 Level 5 : 0.02
 Level 6 : 0.004

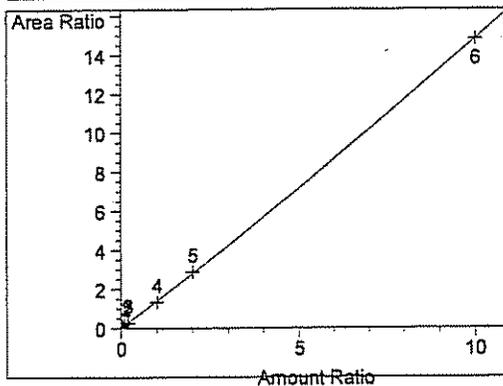
Compound: CLO4-85
 Time Window : From 1.930 min To 17.930 min
 Curve Type : Quadratic
 Origin : Ignored
 Calibration Level Weights:/
 Level 1 : 1
 Level 2 : 0.4
 Level 3 : 0.2
 Level 4 : 0.04
 Level 5 : 0.02
 Level 6 : 0.004

Compound: CLO4-89
 Time Window : From 1.943 min To 17.943 min
 Curve Type : Linear
 Origin : Included
 Calibration Level Weights:/
 Level 1 : 1
 Level 2 : 1
 Level 3 : 1
 Level 4 : 1
 Level 5 : 1
 Level 6 : 1

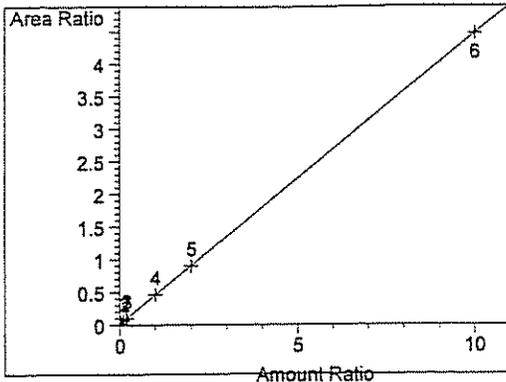
=====
 Peak Sum Table
 =====

No Entries in table
 =====

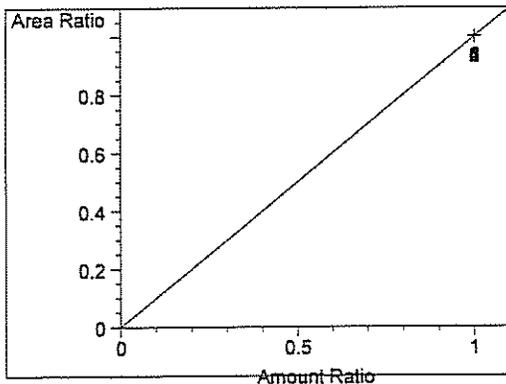
=====
 Calibration Curves
 =====



Perchlorate at exp. RT: 10.916
 MSD1 83, EIC=82.7:83.7
 Correlation: 0.99989
 Residual Std. Dev.: 0.04410
 Formula: $y = ax^2 + bx + c$
 a: 1.03466e-2
 b: 1.37879
 c: -1.11195e-2
 x: Amount Ratio
 y: Area Ratio
 Calibration Level Weights:
 Level 1 : 1
 Level 2 : 0.4
 Level 3 : 0.2
 Level 4 : 0.04
 Level 5 : 0.02
 Level 6 : 0.004



CLO4-85 at exp. RT: 10.930
MSD1 85, EIC=84.7:85.7
Correlation: 0.99994
Residual Std. Dev.: 0.00326
Formula: $y = ax^2 + bx + c$
a: -9.24660e-5
b: 4.46772e-1
c: 8.23533e-3
x: Amount Ratio
y: Area Ratio
Calibration Level Weights:
Level 1 : 1
Level 2 : 0.4
Level 3 : 0.2
Level 4 : 0.04
Level 5 : 0.02
Level 6 : 0.004



CLO4-89 at exp. RT: 10.943
MSD1 89, EIC=88.7:89.7
Correlation: 1.00000
Residual Std. Dev.: 0.00000
Formula: $y = mx + b$
m: 1.00000
b: 0.00000
x: Amount Ratio
y: Area Ratio
Calibration Level Weights:
Level 1 : 1
Level 2 : 1
Level 3 : 1
Level 4 : 1
Level 5 : 1
Level 6 : 1

Batch Review Method:
 C:\HPCHEM\1\METHODS\CLO4-DOD.M

['#' ==> Run has not been reprocessed with Batch Review Method
 '*' ==> Run has been saved with batch file]

#*	Sample	Location	Run	Dilution	Perchlorate RT	Perchlorate Area	Perchlorate Amount
*	\$50	Vial 92	2	1	10.394	1.54047e6	49.97547
*	\$10	Vial 91	3	1	10.631	3.11715e5	10.23731
*	\$5	Vial 93	4	1	10.942	1.56506e5	4.79976
*	\$1	Vial 94	5	1	10.852	3.11307e4	9.80604e-1
*	\$0.5	Vial 95	6	1	10.910	1.45438e4	4.98489e-1
*	\$0.2	Vial 96	7	1	10.916	5538.91455	2.07841e-1
*	ICV	Vial 97	8	1	10.933	3.50586e5	10.51191

#*	Sample	Location	Run	Dilution	CLO4-85 RT	CLO4-85 Area	CLO4-85 Amount
*	\$50	Vial 92	2	1	10.410	4.64822e5	50.00178
*	\$10	Vial 91	3	1	10.644	9.82389e4	9.98258
*	\$5	Vial 93	4	1	10.958	5.40824e4	5.02141
*	\$1	Vial 94	5	1	10.873	1.12280e4	9.56084e-1
*	\$0.5	Vial 95	6	1	10.904	6597.77295	5.49806e-1
*	\$0.2	Vial 96	7	1	10.947	3004.22778	1.88346e-1
*	ICV	Vial 97	8	1	10.951	1.10713e5	10.27920

#*	Sample	Location	Run	Dilution	CLO4-89 RT	CLO4-89 Area	CLO4-89 Amount
*	\$50	Vial 92	2	1	10.407	1.04060e5	5.00000
*	\$10	Vial 91	3	1	10.653	1.09172e5	5.00000
*	\$5	Vial 93	4	1	10.970	1.18387e5	5.00000
*	\$1	Vial 94	5	1	10.882	1.19878e5	5.00000
*	\$0.5	Vial 95	6	1	10.958	1.15020e5	5.00000
*	\$0.2	Vial 96	7	1	10.943	1.19859e5	5.00000
*	ICV	Vial 97	8	1	10.961	1.19518e5	5.00000

*** End of Report ***



Mass Calibration Verification Form

Initial Calibration Date: 03/01/07

Sample Name: MCS

Instrument ID: LCMS02

Date and Time Analyzed: 03/01/2007 12:12

Target Compound	Target m/z	Observed m/z	Difference	Pass/Fail
$^{35}\text{Cl}^{16}\text{O}_3$	83.0	83.1	0.1	Pass
$^{37}\text{Cl}^{16}\text{O}_3$	85.0	84.9	0.1	Pass
$^{35}\text{Cl}^{18}\text{O}_3$	89.0	89.0	0.0	Pass

Control limit = ± 0.3

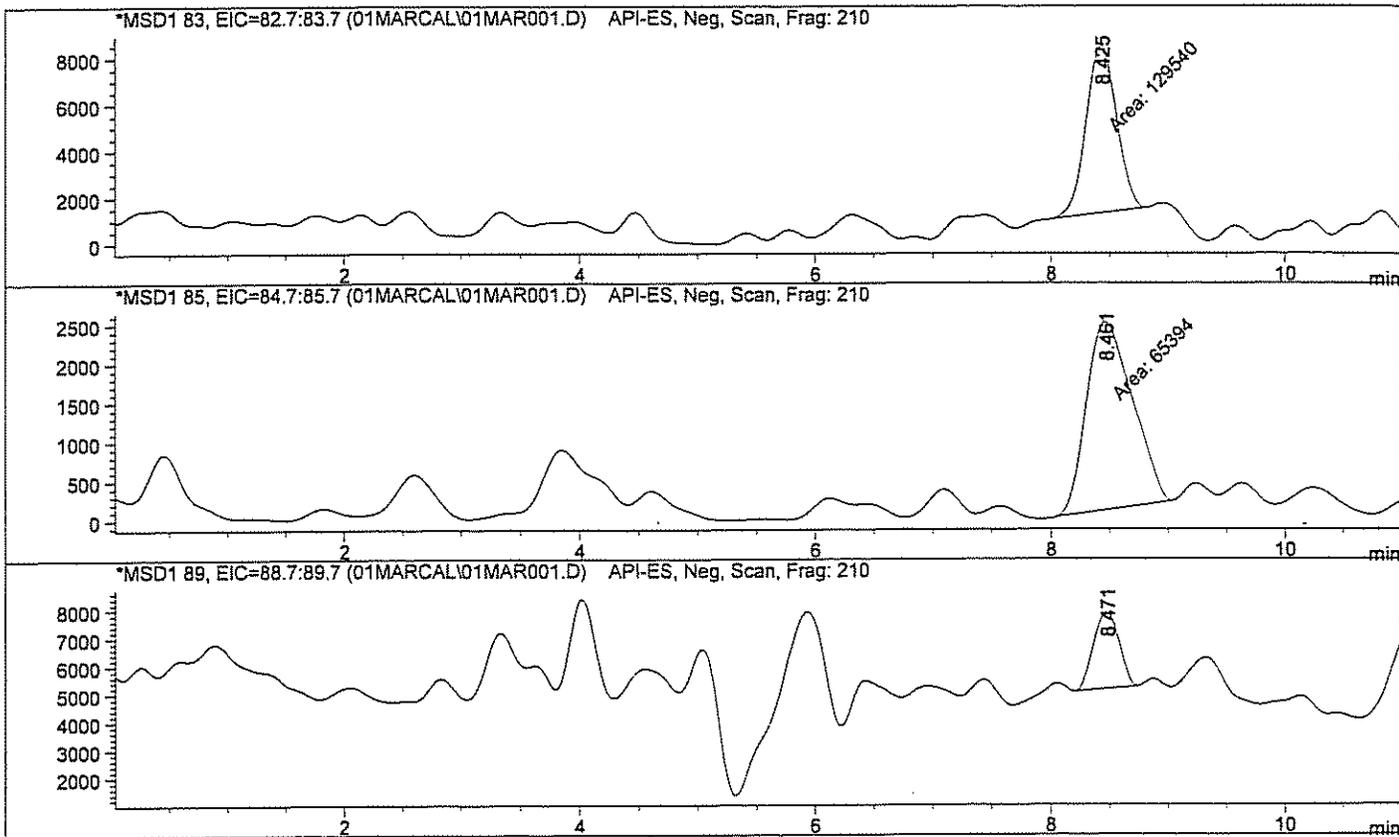
Comment: None.

Sequence Table:

Method and Injection Info Part:

Line	Location	SampleName	Method	Inj	SampleType	InjVolume	DataFile
1	Vial 91	MCS	CLO4SCAN	1	Ctrl Samp		01MAR001
2	Vial 92	\$50	CLO4-ON	1	Ctrl Samp		01MAR002
3	Vial 91	\$10	CLO4-ON	1	Ctrl Samp		01MAR003
4	Vial 93	\$5	CLO4-ON	1	Ctrl Samp		01MAR004
5	Vial 94	\$1	CLO4-ON	1	Ctrl Samp		01MAR005
6	Vial 95	\$0.5	CLO4-ON	1	Ctrl Samp		01MAR006
7	Vial 96	\$0.2	CLO4-ON	1	Ctrl Samp		01MAR007
8	Vial 97	ICV	CLO4-ON	1	Ctrl Samp		01MAR008

=====
Injection Date : 3/1/2007 12:12:43 PM Seq. Line : 1
Sample Name : MCS Location : Vial 91
Acq. Operator : TTM Inj : 1
Acq. Instrument : LCMS02 Inj Volume : 10 µl
Method : C:\HPCHEM\1\METHODS\CLO4SCAN.M
Last changed : 2/12/2007 10:11:52 PM by TTM
Test for perchlorate.
=====

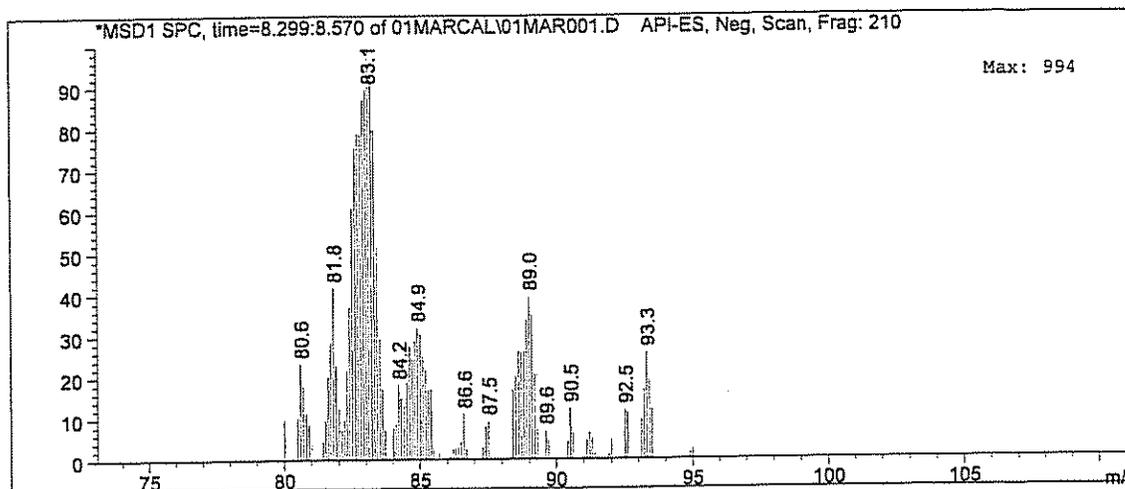


```

=====
Injection Date : 3/1/2007 12:12:43 PM      Seq. Line : 1
Sample Name    : MCS                        Location  : Vial 91
Acq. Operator  : TTM                       Inj       : 1
Acq. Instrument: LCMS02                     Inj Volume: 10 µl
Method         : C:\HPCHEM\1\METHODS\CLO4SCAN.M
Last changed   : 2/12/2007 10:11:52 PM by TTM
Test for perchlorate.
=====
    
```

MS Signal: MSD1 83, EIC=82.7:83.7, API-ES, Neg, Scan, Frag: 210
 Spectra averaged over upper half of peaks.
 Noise Cutoff: 1000 counts.
 Reportable Ion Abundance: > 10%.

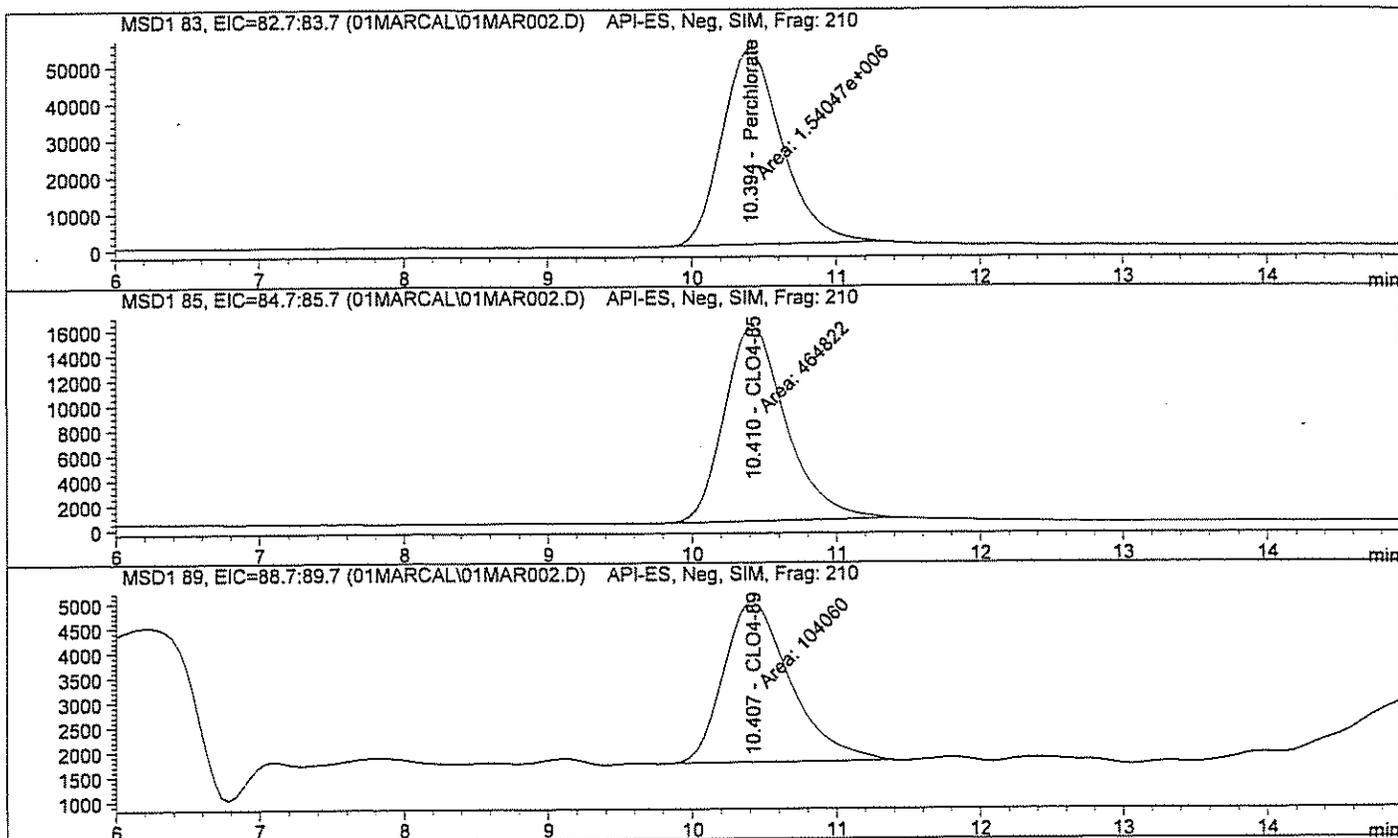
Retention Time (MS)	MS Area	Mol. Weight or Ion
8.425	129540	



*** End of Report ***

Injection Date : 3/1/2007 12:25:40 PM Seq. Line : 2
Sample Name : S50 Location : Vial 92
Acq. Operator : TTM Inj : 1
Acq. Instrument : LCMS02 Inj Volume : 20 µl
Acq. Method : C:\HPCHEM\1\METHODS\CLO4-ON.M
Last changed : 3/1/2007 12:10:44 PM by TTM
Analysis Method : C:\HPCHEM\1\METHODS\CLO4-DOD.M
Last changed : 3/1/2007 4:18:04 PM by TTM
(Results are from a previously saved Batch)

Perchlorate analysis



Internal Standard Report

Sorted By : Signal
Calib. Data Modified : 3/1/2007 4:18:00 PM
Multiplier : 1.0000
Dilution : 1.0000
Sample Amount : 50.00000 [ug/L] (not used in calc.)
Use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:
ISTD ISTD Amount Name
[ug/L]
-----|-----
1 5.00000 CLO4-89

=====
Injection Date : 3/1/2007 12:25:40 PM Seq. Line : 2
Sample Name : \$50 Location : Vial 92
Acq. Operator : TTM Inj : 1
Acq. Instrument : LCMS02 Inj Volume : 20 µl
Acq. Method : C:\HPCHEM\1\METHODS\CLO4-ON.M
Last changed : 3/1/2007 12:10:44 PM by TTM
Analysis Method : C:\HPCHEM\1\METHODS\CLO4-DOD.M
Last changed : 3/1/2007 4:18:04 PM by TTM
 (Results are from a previously saved Batch)
Perchlorate analysis
=====

Signal 1: MSD1 83, EIC=82.7:83.7

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
10.394	MM	1.54047e6	6.75179e-1	49.97547		Perchlorate

Totals without ISTD(s) : 49.97547

Signal 2: MSD1 85, EIC=84.7:85.7

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
10.410	MM	4.64822e5	2.23879	50.00178		CLO4-85

Totals without ISTD(s) : 50.00178

Signal 3: MSD1 89, EIC=88.7:89.7

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
10.407	MM +I	1.04060e5	1.00000	5.00000		CLO4-89

Totals without ISTD(s) : 0.00000

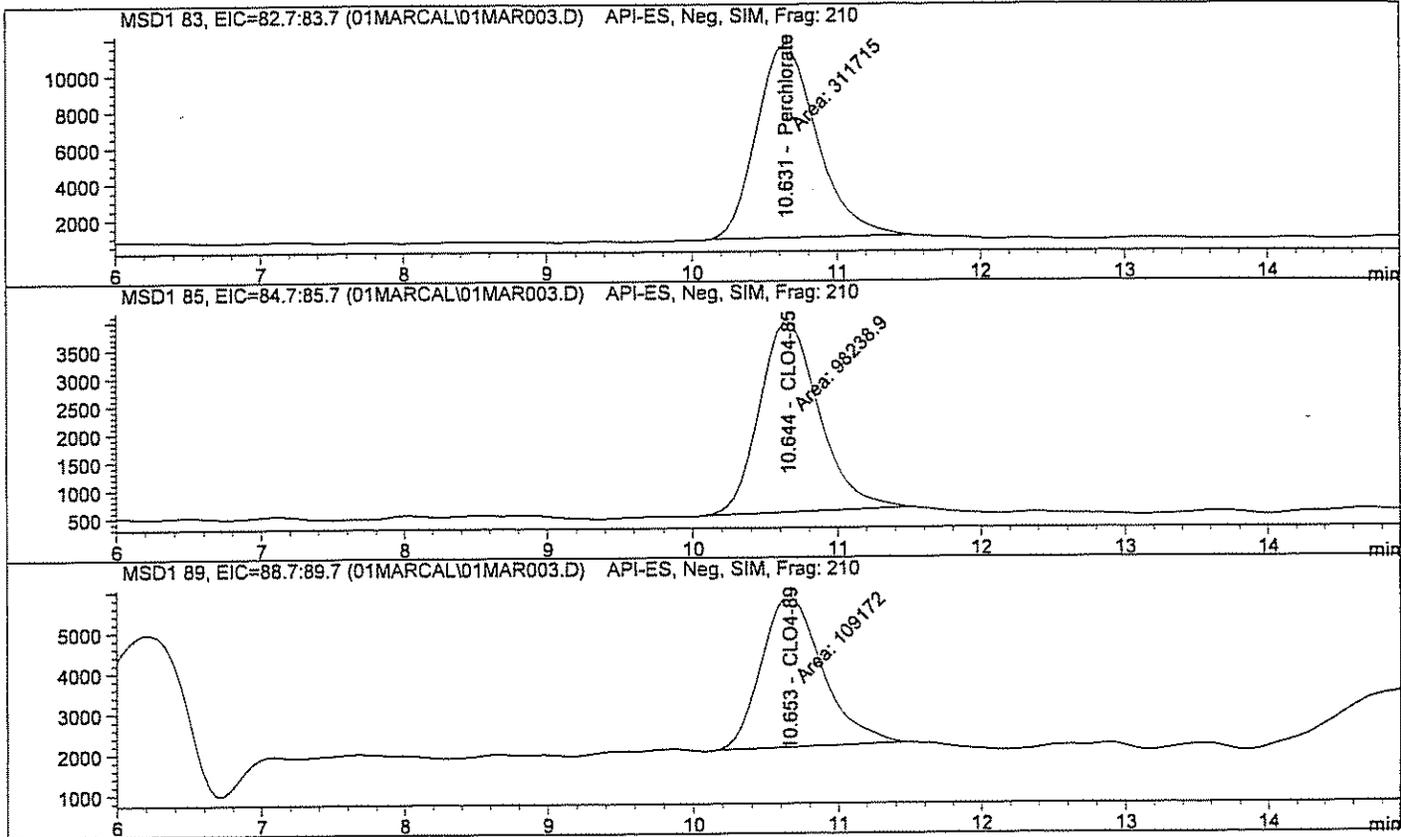
1 Warnings or Errors :

Warning : Elution order of calibrated compounds may have changed

=====
*** End of Report ***

Injection Date : 3/1/2007 12:44:19 PM Seq. Line : 3
Sample Name : \$10 Location : Vial 91
Acq. Operator : TTM Inj : 1
Acq. Instrument : LCMS02 Inj Volume : 20 µl
Acq. Method : C:\HPCHEM\1\METHODS\CLO4-ON.M
Last changed : 3/1/2007 12:10:44 PM by TTM
Analysis Method : C:\HPCHEM\1\METHODS\CLO4-DOD.M
Last changed : 3/1/2007 4:18:04 PM by TTM
(Results are from a previously saved Batch)

Perchlorate analysis



Internal Standard Report

Sorted By : Signal
Calib. Data Modified : 3/1/2007 4:18:00 PM
Multiplier : 1.0000
Dilution : 1.0000
Sample Amount : 10.00000 [ug/L] (not used in calc.)
Use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:
ISTD ISTD Amount Name
[ug/L]
-----|-----
1 5.00000 CLO4-89

=====
Injection Date : 3/1/2007 12:44:19 PM Seq. Line : 3
Sample Name : S10 Location : Vial 91
Acq. Operator : TTM Inj : 1
Acq. Instrument : LCMS02 Inj Volume : 20 µl
Acq. Method : C:\HPCHEM\1\METHODS\CLO4-ON.M
Last changed : 3/1/2007 12:10:44 PM by TTM
Analysis Method : C:\HPCHEM\1\METHODS\CLO4-DOD.M
Last changed : 3/1/2007 4:18:04 PM by TTM
(Results are from a previously saved Batch)
=====
Perchlorate analysis
=====

Signal 1: MSD1 83, EIC=82.7:83.7

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
10.631	MM	3.11715e5	7.17083e-1	10.23731		Perchlorate
Totals without ISTD(s) :				10.23731		

Signal 2: MSD1 85, EIC=84.7:85.7

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
10.644	MM	9.82389e4	2.21871	9.98258		CLO4-85
Totals without ISTD(s) :				9.98258		

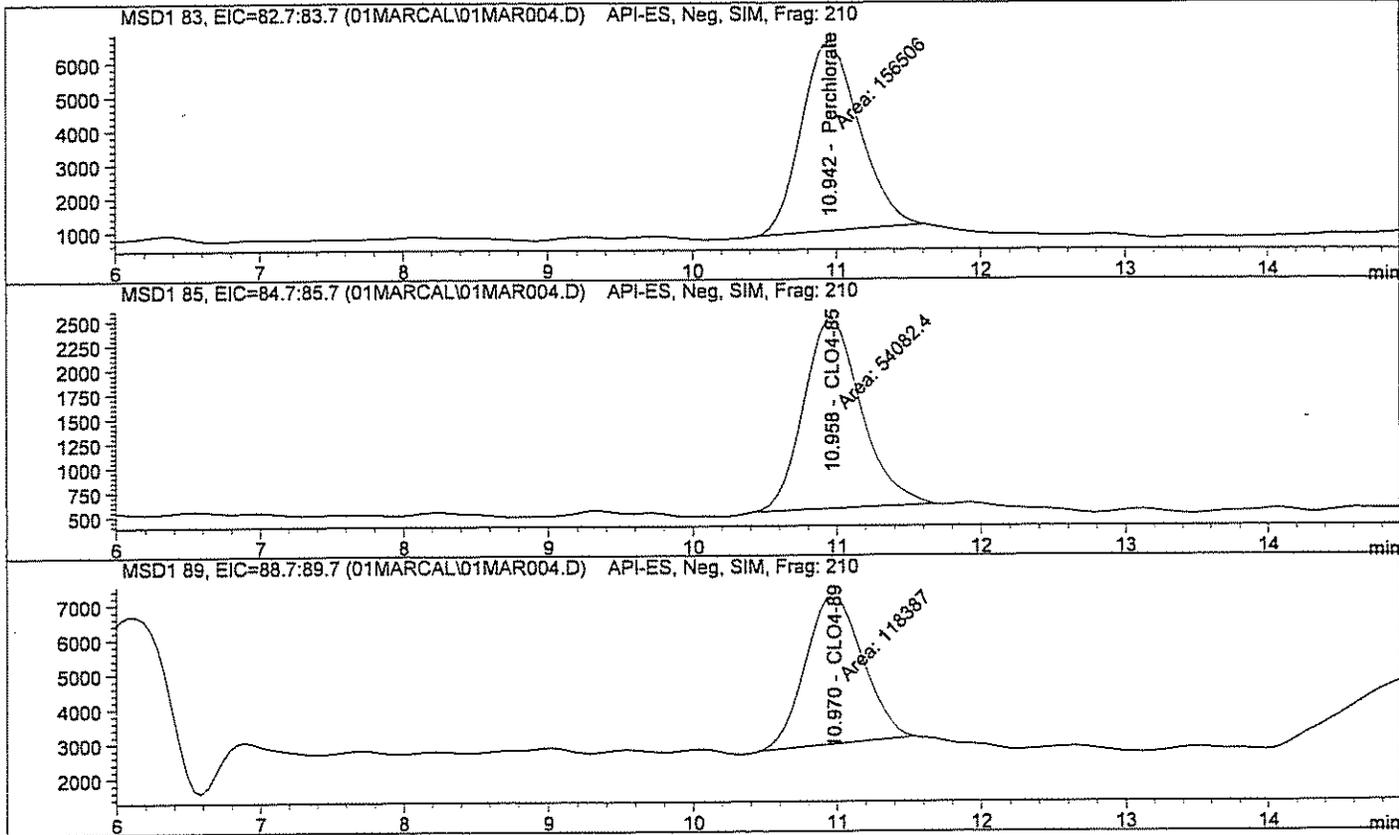
Signal 3: MSD1 89, EIC=88.7:89.7

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
10.653	MM +I	1.09172e5	1.00000	5.00000		CLO4-89
Totals without ISTD(s) :				0.00000		

=====
*** End of Report ***
=====

Injection Date : 3/1/2007 1:03:01 PM Seq. Line : 4
Sample Name : \$5 Location : Vial 93
Acq. Operator : TTM Inj : 1
Acq. Instrument : LCMS02 Inj Volume : 20 µl
Acq. Method : C:\HPCHEM\1\METHODS\CLO4-ON.M
Last changed : 3/1/2007 12:10:44 PM by TTM
Analysis Method : C:\HPCHEM\1\METHODS\CLO4-DOD.M
Last changed : 3/1/2007 4:18:04 PM by TTM
(Results are from a previously saved Batch)

Perchlorate analysis



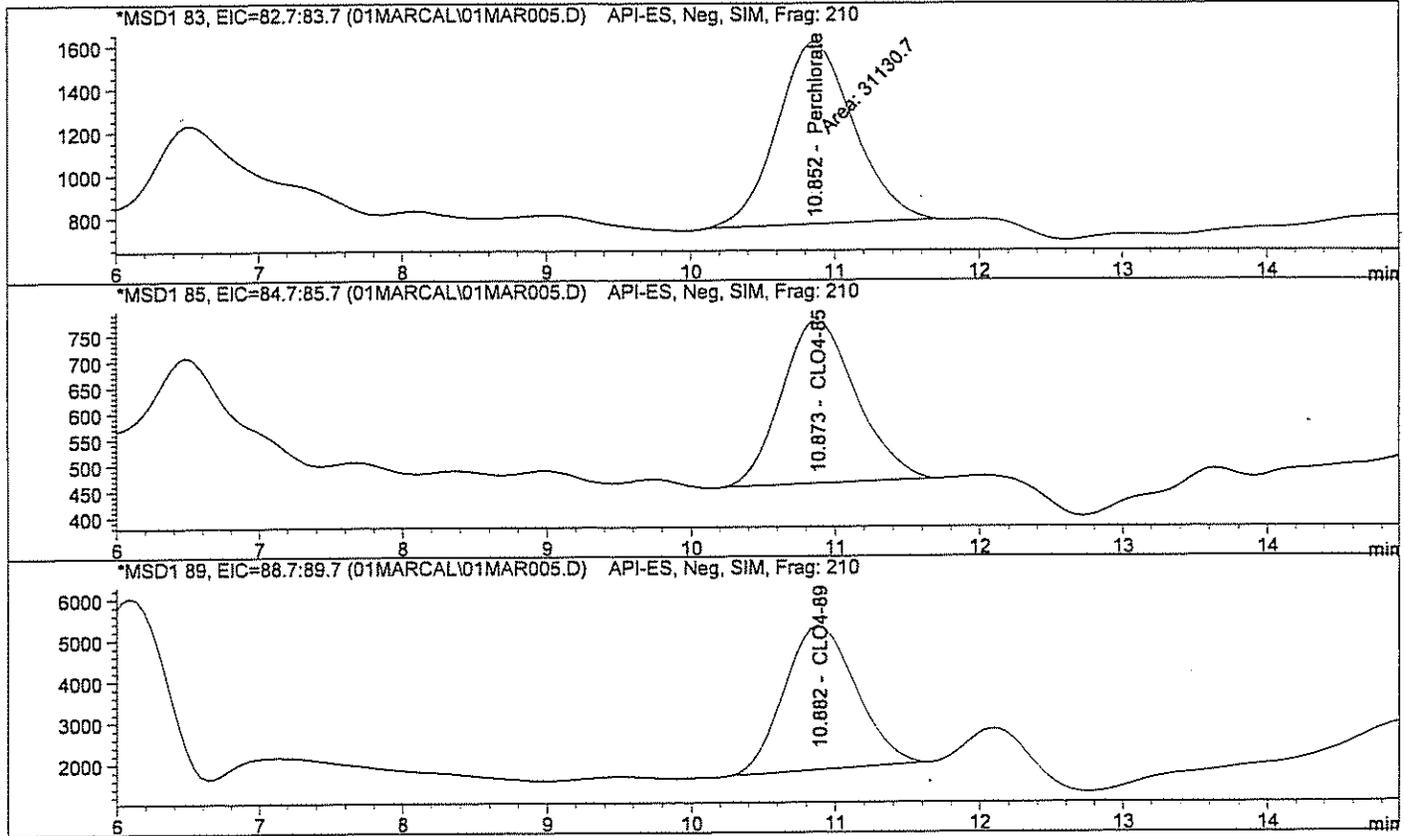
Internal Standard Report

Sorted By : Signal
Calib. Data Modified : 3/1/2007 4:18:00 PM
Multiplier : 1.0000
Dilution : 1.0000
Sample Amount : 5.00000 [ug/L] (not used in calc.)
Use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:
ISTD ISTD Amount Name
[ug/L]
-----|-----|-----
1 5.00000 CLO4-89


```

=====
Injection Date : 3/1/2007 1:21:44 PM      Seq. Line : 5
Sample Name    : $1                        Location  : Vial 94
Acq. Operator  : TTM                       Inj      : 1
Acq. Instrument: LCMS02                     Inj Volume: 20 µl
Acq. Method    : C:\HPCHEM\1\METHODS\CLO4-ON.M
Last changed   : 3/1/2007 12:10:44 PM by TTM
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DOD.M
Last changed   : 3/1/2007 4:18:04 PM by TTM
                (Results are from a previously saved Batch)
=====
  
```

Perchlorate analysis



Internal Standard Report

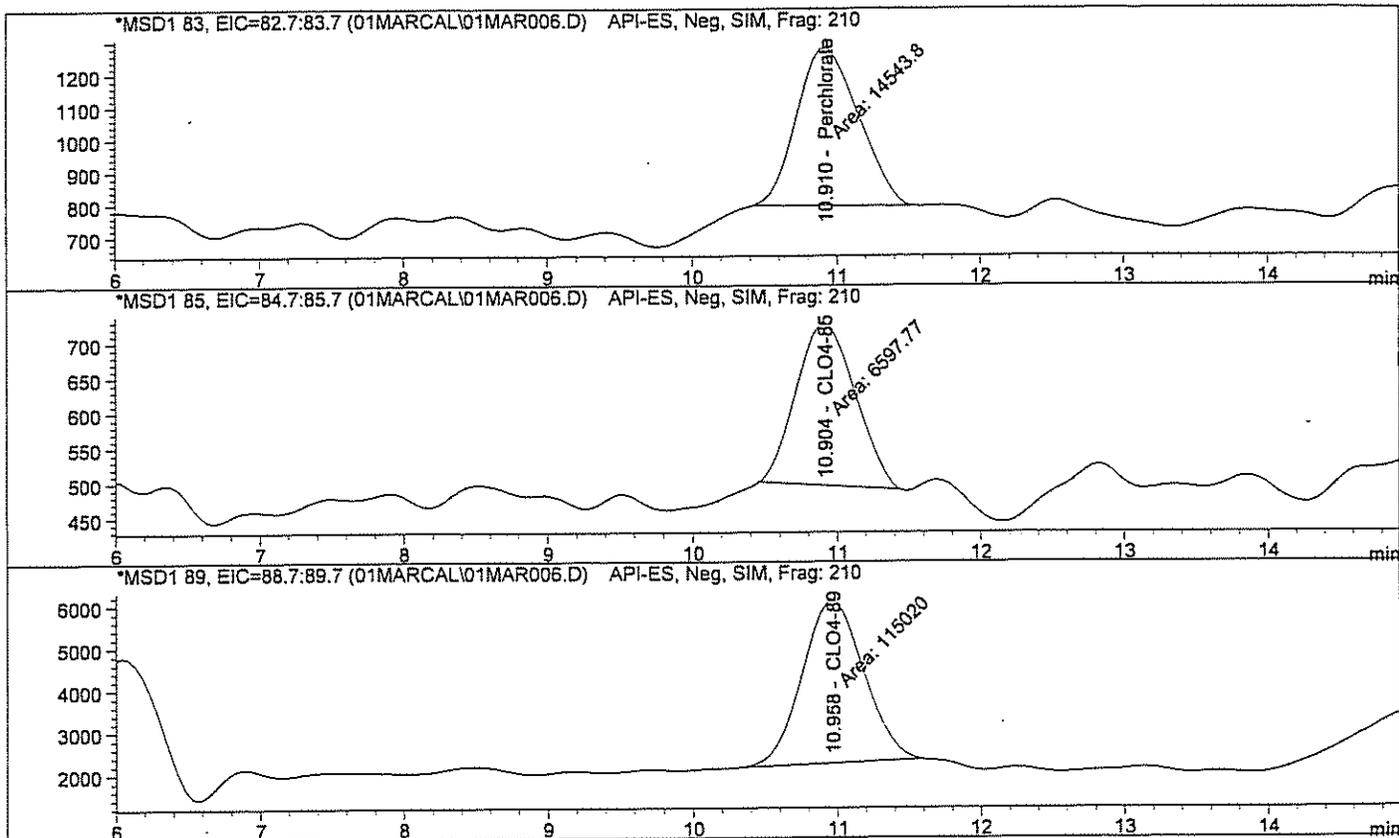
```

=====
Sorted By      : Signal
Calib. Data Modified : 3/1/2007 4:18:00 PM
Multiplier     : 1.0000
Dilution       : 1.0000
Sample Amount   : 1.00000 [ug/L] (not used in calc.)
Use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:
ISTD ISTD Amount Name
# [ug/L]
-----|-----|-----
1      5.00000 CLO4-89
  
```


Injection Date : 3/1/2007 1:40:25 PM Seq. Line : 6
 Sample Name : \$0.5 Location : Vial 95
 Acq. Operator : TTM Inj : 1
 Acq. Instrument : LCMS02 Inj Volume : 20 µl
 Acq. Method : C:\HPCHEM\1\METHODS\CLO4-ON.M
 Last changed : 3/1/2007 12:10:44 PM by TTM
 Analysis Method : C:\HPCHEM\1\METHODS\CLO4-DOD.M
 Last changed : 3/1/2007 4:18:04 PM by TTM

(Results are from a previously saved Batch)

Perchlorate analysis



Internal Standard Report

Sorted By : Signal
 Calib. Data Modified : 3/1/2007 4:18:00 PM
 Multiplier : 1.0000
 Dilution : 1.0000
 Sample Amount : 5.00000e-1 [ug/L] (not used in calc.)
 Use Multiplier & Dilution Factor with ISTDs
 Sample ISTD Information:
 ISTD ISTD Amount Name
 # [ug/L]
 -----|-----|-----
 1 5.00000 CLO4-89

=====
Injection Date : 3/1/2007 1:40:25 PM Seq. Line : 6
Sample Name : \$0.5 Location : Vial 95
Acq. Operator : TTM Inj : 1
Acq. Instrument: LCMS02 Inj Volume : 20 µl
Acq. Method : C:\HPCHEM\1\METHODS\CLO4-ON.M
Last changed : 3/1/2007 12:10:44 PM by TTM
Analysis Method: C:\HPCHEM\1\METHODS\CLO4-DOD.M
Last changed : 3/1/2007 4:18:04 PM by TTM
 (Results are from a previously saved Batch)
Perchlorate analysis
=====

Signal 1: MSD1 83, EIC=82.7:83.7
Signal has been modified after loading from rawdata file!

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
10.910	MM	1.45438e4	7.88466e-1	4.98489e-1		Perchlorate
Totals without ISTD(s) :				4.98489e-1		

Signal 2: MSD1 85, EIC=84.7:85.7
Signal has been modified after loading from rawdata file!

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
10.904	MM	6597.77295	1.91698	5.49806e-1		CLO4-85
Totals without ISTD(s) :				5.49806e-1		

Signal 3: MSD1 89, EIC=88.7:89.7
Signal has been modified after loading from rawdata file!

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
10.958	MM +I	1.15020e5	1.00000	5.00000		CLO4-89
Totals without ISTD(s) :				0.00000		

1 Warnings or Errors :

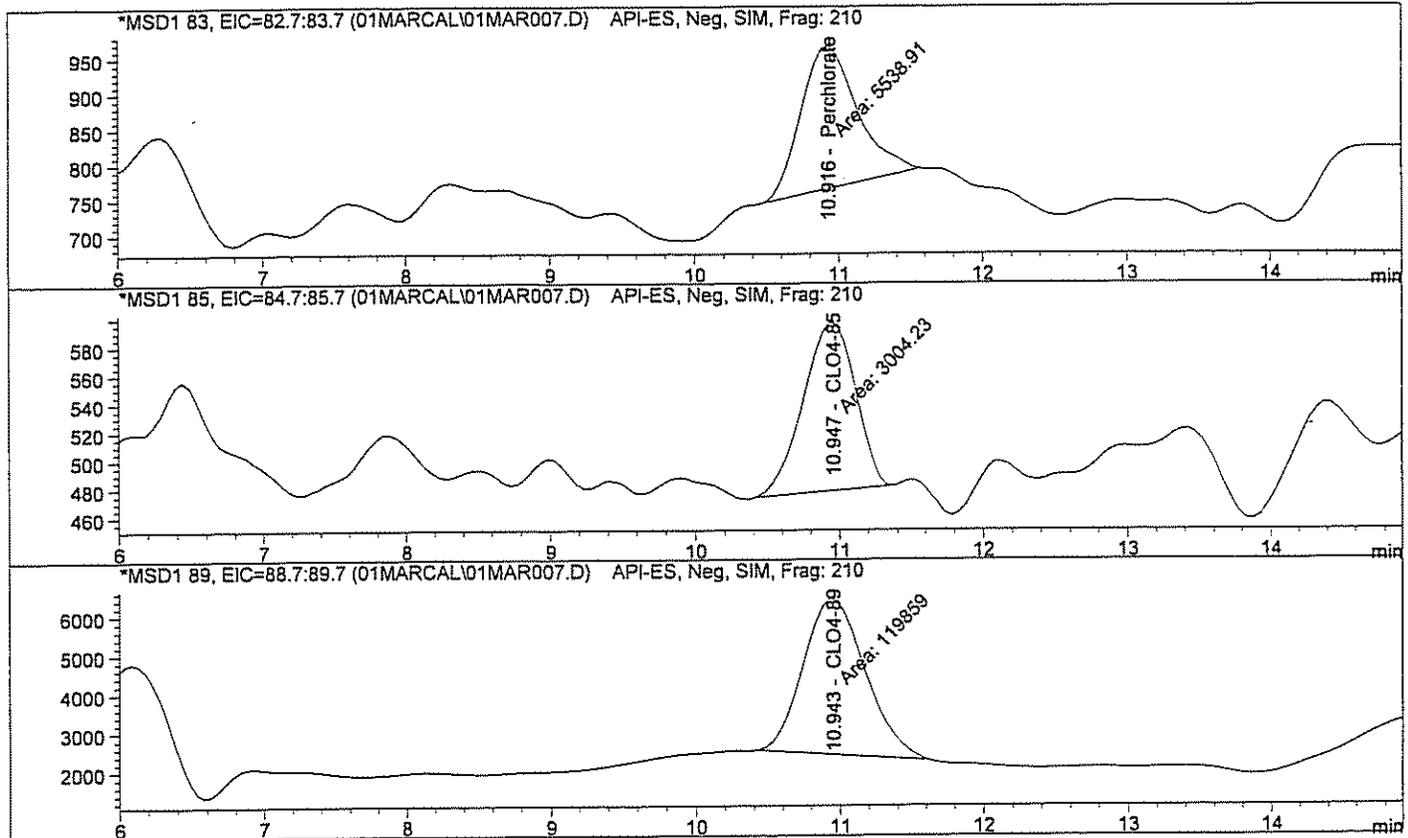
Warning : Elution order of calibrated compounds may have changed

=====
*** End of Report ***

Injection Date : 3/1/2007 1:59:06 PM Seq. Line : 7
Sample Name : \$0.2 Location : Vial 96
Acq. Operator : TTM Inj : 1
Acq. Instrument : LCMS02 Inj Volume : 20 µl
Acq. Method : C:\HPCHEM\1\METHODS\CLO4-ON.M
Last changed : 3/1/2007 12:10:44 PM by TTM
Analysis Method : C:\HPCHEM\1\METHODS\CLO4-DOD.M
Last changed : 3/1/2007 4:18:04 PM by TTM

(Results are from a previously saved Batch)

Perchlorate analysis



Internal Standard Report

Sorted By : Signal
Calib. Data Modified : 3/1/2007 4:18:00 PM
Multiplier : 1.0000
Dilution : 1.0000
Sample Amount : 2.00000e-1 [ug/L] (not used in calc.)
Use Multiplier & Dilution Factor with ISTDs

Sample ISTD Information:
ISTD ISTD Amount Name
[ug/L]

#	ISTD Amount [ug/L]	Name
1	5.00000	CLO4-89

=====
Injection Date : 3/1/2007 1:59:06 PM Seq. Line : 7
Sample Name : \$0.2 Location : Vial 96
Acq. Operator : TTM Inj : 1
Acq. Instrument : LCMS02 Inj Volume : 20 µl
Acq. Method : C:\HPCHEM\1\METHODS\CLO4-ON.M
Last changed : 3/1/2007 12:10:44 PM by TTM
Analysis Method : C:\HPCHEM\1\METHODS\CLO4-DOD.M
Last changed : 3/1/2007 4:18:04 PM by TTM
 (Results are from a previously saved Batch)
Perchlorate analysis
=====

Signal 1: MSD1 83, EIC=82.7:83.7
Signal has been modified after loading from rawdata file!

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
10.916	MM	5538.91455	8.99511e-1	2.07841e-1		Perchlorate
Totals without ISTD(s) :				2.07841e-1		

Signal 2: MSD1 85, EIC=84.7:85.7
Signal has been modified after loading from rawdata file!

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
10.947	MM	3004.22778	1.50288	1.88346e-1		CLO4-85
Totals without ISTD(s) :				1.88346e-1		

Signal 3: MSD1 89, EIC=88.7:89.7
Signal has been modified after loading from rawdata file!

RetTime [min]	Type	Area	Amt/Area ratio	Amount [ug/L]	Grp	Name
10.943	MM +I	1.19859e5	1.00000	5.00000		CLO4-89
Totals without ISTD(s) :				0.00000		

1 Warnings or Errors :

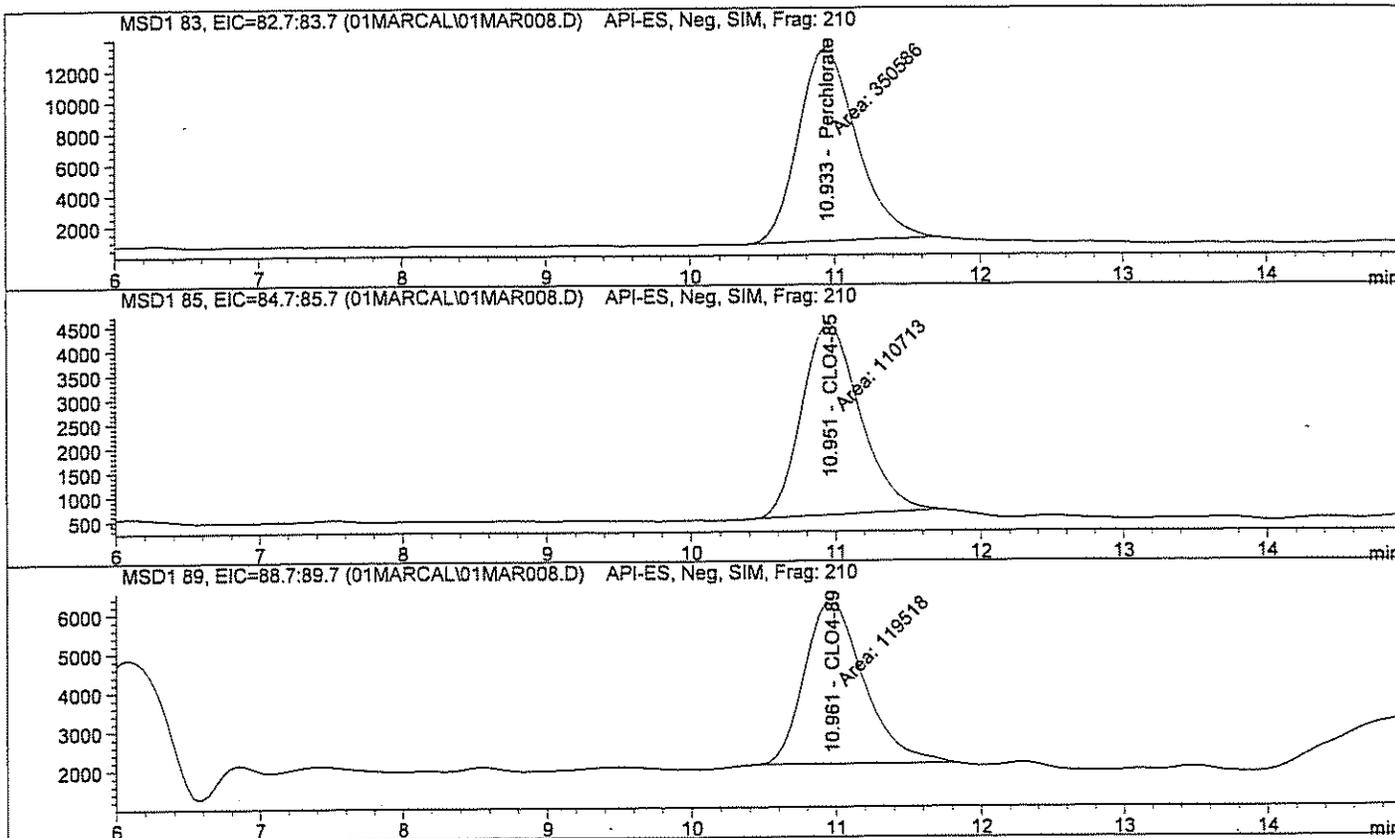
Warning : Elution order of calibrated compounds may have changed

=====
*** End of Report ***

```

=====
Injection Date   : 3/1/2007 2:17:46 PM           Seq. Line :    8
Sample Name     : ICV                           Location  : Vial 97
Acq. Operator   : TTM                           Inj       :    1
Acq. Instrument : LCMS02                        Inj Volume: 20 µl
Acq. Method     : C:\HPCHEM\1\METHODS\CLO4-ON.M
Last changed    : 3/1/2007 12:10:44 PM by TTM
Analysis Method : C:\HPCHEM\1\METHODS\CLO4-DOD.M
Last changed    : 3/1/2007 4:18:04 PM by TTM
                (Results are from a previously saved Batch)
=====
  
```

Perchlorate analysis



Internal Standard Report

```

=====
Sorted By      : Signal
Calib. Data Modified : 3/1/2007 4:18:00 PM
Multiplier     : 1.0000
Dilution       : 1.0000
Sample Amount   : 10.00000 [ug/L] (not used in calc.)
Use Multiplier & Dilution Factor with ISTDs
Sample ISTD Information:
ISTD ISTD Amount Name
# [ug/L]
-----|-----|-----
1 5.00000 CLO4-89
  
```


GPL Laboratories, LLLP

Chain of Custody

Unknown Client

Unknown SDG

GPL Laboratories, LLLP

Form #
SAMPLE RECEIPT CHECKLIST

W.O. No: 702089
 Client Name: SHAW
 Date Received: 2/16/07
 Time Received: 12:30
 Received By: Chris

Carrier Name: FedEx
 Prepared (Logged In) By: WJD 02/16/07
Initial Date
 Project: _____
 Site: _____
 VQA Holding Blank ID: No: _____

Airbill/Manifest Present? YES NO
 No. _____
 Shipping Container in Good Condition? YES NO
 Quatary Seals Present on Shipping Container?
 Condition: Broken _____
 Intact-not dated or signed _____
 Intact-dated and signed _____
 Usage of Temper Evident Type YES NO
 Chain-of-Custody Present? YES NO
 Chain-of-Custody Agrees with Sample Labels? YES NO
 Chain-of-Custody Signed? YES NO
 Packing Present in Shipping Container?
 Type of Packing: Bubble wrap
 Custody seals on Sample Bottles?
 Condition: Good Broken _____
 Total Number of Sample Bottles: 6
 Total Number of Samples: 2
 Samples Intact? YES NO
 Sufficient Sample Volume for Indicated Test? YES NO

Trip Blanks: No. of Sets _____ YES NO
 Field Blanks: No. of Sets _____
 Extra. Blanks: No. of Sets _____
 Field Duplicate: No. of Sets _____
 MS/MSD: No. of Sets _____
 VQA Vials Have Zero Headspace? YES NO
 If no, smaller or greater than a Green Fed. (see comments)
 Preservatives Added to Sample?
 pH Check Required? YES NO
 Performed By? _____
 Ice Present in Shipping Container? YES NO

Container #	Temp.	Container #	Temp.
<u>1</u>	<u>2.5</u>		

 Project Manager Contacted? YES NO
 Name: Tina
 Date Contacted: 02/16/07

Any NO responses must be detailed in the comments section below. If items are not applicable to particular samples or contracts, they should be marked N/A

COMMENTS: _____

Checklist Completed By: WJD
 Date: 02/16/07

QP No: 5.2V18

Appendix G
Analytical Data QA/QC Report

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List of Attachments

Attachment	Title
1	Summary of Analytical Results
2	Summary of Analytical Results greater than the MDL
3	Approved Variances

List of Acronyms

ADR	automated data review
AR/COC	Analysis Request/Chain of Custody
bgs	below ground surface
CCB	continuing calibration blank
CCV	continuing calibration verification
CFR	Code of Federal Regulations
CLP	Contract Laboratory Program
COGR	Central Oregon Gunnery Range
DQO	data quality objectives
FUDS	Formerly Used Defense Sites
GPL	GPL Laboratories, LLLP
HMX	octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine
ICAL	initial calibration
ICB	initial calibration blank
ICV	initial calibration verification
ID	identification
LC/MS	liquid chromatography / mass spectroscopy
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
MC	munitions constituents
MDL	method detection limit
MEC	munitions and explosives of concern
MMRP	Military Munitions Response Program
MS	matrix spike
MSD	matrix spike duplicate
NWO	Omaha District Military Munitions Design Center
PQL	practical quantitation limits
PRG	preliminary remediation goal
PSAP	program sampling and analysis plan
QA/QC	quality assurance/quality control
RDX	hexahydro-1,3,5-trinitro-1,3,5-triazine
RL	reporting limit
RPD	relative percent difference

RRF	relative response factor
RSD	relative standard deviation
SEDD	staged electronic data deliverable
SDG	sample delivery group
Shaw	Shaw Environmental, Inc.
SI	site inspection
SOPs	standard operating procedures
SS-WP	site specific-work plan
Tetryl	methyl-2,4,6-trinitrophenylnitramine
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency

G.1.0 Introduction

This appendix presents the Analytical Data QA/QC Report for Central Oregon Gunnery Range (COGR) Site Inspection (SI). This report will discuss results of the quality assurance/quality control (QA/QC) measures implemented during the sampling and analysis portion of the SI at COGR, located in Lake County, in south central Oregon under the Formerly Used Defense Site (FUDS) Military Munitions Response Program (MMRP). The quality indicators from every aspect of the data collection have been reviewed, and an assessment of the data with regard to project-specific objectives is presented. Successful execution of project-specific objectives and procedures provides strong support for the acceptance of the data as adequate for the purpose of evaluating if the COGR Site requires further response action due to the presence of munitions and explosives of concern (MEC) / munitions constituents (MC).

The data review process presented in this report compares sample results to pre-established criteria referenced in Shaw's FUDS MMRP Sampling and Analysis Plan (SAP), (Shaw, 2006a) to confirm that the data are of acceptable technical quality. GPL Laboratories, LLLP (GPL) provided Shaw with a Level 4 data package including "CLP-Like" summary forms, Staged Electronic Data Deliverables (SEDD) Stage 2b (version Draft 5.0), and Automated Data Review (ADR) compatible A1, A2, & A3 files for all sample delivery groups (SDG). Shaw conducted a data assessment on all samples collected in support of this SI. One-hundred percent of the analytical data have been reviewed and validation qualifiers assigned based on U.S. Environmental Protection Agency (EPA) Contract Laboratory Program (CLP) *National Functional Guidelines for Organic Data Review*, October 1999 and EPA CLP *National Functional Guidelines for Inorganic Data Review*, October 2004. Automated Data Review (ADR) software (version 8.1) was used to assist in the data validation process for all areas with the exception of initial calibration blanks (ICB) / continuing calibration blanks (CCB), interference check standards, internal standards, serial dilutions, and second-column confirmation which were assessed manually.

Data were evaluated against specific criteria to verify the achievement of all precision, accuracy, representativeness, completeness, comparability, and sensitivity goals established to meet the project data quality objectives (DQO). To verify that these DQOs were met, field measurements, sampling and handling procedures, laboratory analysis and reporting, and all nonconformances and discrepancies in the data were examined to determine compliance with the appropriate and applicable procedures. The results of this review are presented in the following sections, with all outliers or nonconformances discussed where they occurred.

This report is divided into three subsections. Section G.2.0 discusses the overall field investigation and QC procedures used by Shaw Environmental, Inc. (Shaw) during the sampling effort. Section G.3.0 outlines the analytical program and the associated QC activities as specified in Shaw's COGR Site-Specific Work Plan (SS-WP) and in Shaw's FUDS MMRP SAP. The final part of this document, Section G.4.0, summarizes the data findings and their overall impact on the usability of the analytical data.

G.2.0 Field Sampling and QC Activities

Shaw is responsible for conducting the SI at COGR, which is located in the northwest region, under the MMRP Contract No W912DY-04-D-0010, Delivery Order 003 managed by the Omaha District Military Munitions Design Center (NWO). Field activities at this site included the collection of soil and sediment samples (0 to 0.5 foot below ground surface [bgs]) from nine locations and groundwater samples collected from two locations. Soil and sediment samples were submitted to the laboratory with requested analyses of aluminum, chromium, copper, iron, lead, manganese, molybdenum, and nickel by SW-846 6020A (soil digestion method 3050B), and explosives by SW-846 8330A including nitroglycerine. Groundwater samples were submitted to the laboratory with requested analyses of perchlorate by liquid chromatography / mass spectroscopy (LC/MS). It should be noted Shaw was directed by USACE to remove all references to method SW-846 6850 for the analysis of perchlorate. Perchlorate was analyzed by DataChem Laboratories, Inc. employing their internal standard operating procedure (SOP) number LCMS-CLO4-Rev2, “*Determination of Perchlorate in Water, Soil, and Biota by LC/MS*”. This analytical method meets the requirements referenced in Appendix G of the Department of Defense Perchlorate Handbook (March 2006) and the sensitivity requirements required for this SI. Table G-1 summarizes the location identification (ID), the sample identity or number, sample purpose, sample matrix, date of collection, GPL’s SDG identity, and the analytical program for each sample collected for the COGR SI.

Sample shipments from the field were performed under custody and documented using standard GPL Analysis Request/Chain of Custody (AR/COC) forms. These forms provide project-specific analytical specifications and QC instructions to the laboratory. The following amendments were made to the original AR/COCs associated with the COGR SI:

SDG	Amendment	Affected Samples	Reason for Amendment
702089	“Filter” column on COC was amended to “Y” to indicate the collected sample volume for perchlorate analyses were filtered in the field.	NWO-033-3001 NWO-033-6002	“Filter” column on COC was marked incorrectly indicating that the sample collected for perchlorate analysis associated with groundwater samples NWO-033-3001 and NWO-033-6002 were not filtered.

G.2.1 Field Duplicates

Field duplicate samples are collected and submitted “blind” to the laboratory for analysis along with their corresponding original sample. The data generated from the analysis of field duplicate samples are used to evaluate the precision of the sample collection and analysis procedures. Field duplicate

samples are generally collected at a frequency of approximately one for every ten samples collected (10 percent) per matrix. A high relative percent difference (RPD) value between a parent sample's result and its corresponding field duplicate's result may be attributed to the difference in sample matrix or distribution of the constituent within the sample, rather than the lack of precision of the collection process. Also, when "estimated" results are reported, there is a potential for increased variability between the primary and duplicate sample results. At low concentrations the relative difference in results is magnified by the RPD calculation even though the results are comparable in absolute terms. There is also increased uncertainty in the results as the lower limit of detection is approached, due to decreasing analytical accuracy. RPD is calculated by using the following formula:

$$RPD = \frac{(V_1 - V_2)}{\frac{(V_1 + V_2)}{2}} \times 100$$

where:

RPD = relative percent difference

V1 = value 1; V2 = value 2

In cases where duplicates were performed and both results are less than the method detection limit (MDL) and cases where one result is greater than the MDL, and the second result is non-detect, the RPD is not calculated. In these cases where the RPD was not calculated, "NC" (not calculated) is denoted in the RPD column. Precision evaluation criteria for field duplicate comparison was established at RPD<50% for soils/sediments. Table G-2 summarizes the calculated RPD between the parent sample result and its corresponding field duplicate result for soil. No field duplicate samples were collected for aqueous samples due to the lack of surface water encountered at the site. The calculated RPD between the parent sample values and their corresponding field duplicates met the evaluation criteria.

G.2.2 USACE Split Samples

No U.S. Army Corps of Engineers (USACE) field split samples were collected during this COGR SI.

G.2.3 Equipment Rinsates

Equipment rinsates are used to assess the effectiveness of the decontamination procedures used by the sampling team on reusable sampling equipment. Disposable sampling equipment was used during the COGR SI, therefore no equipment rinsate samples were collected.

G.2.4 Field Blanks

Field blanks or material blanks are collected to assess potential contamination introduced to the sample matrix in the field through sample handling procedures. Field blanks are generally prepared from a clean source water (deionized water) used during decontamination procedures. No field blanks were collected during the COGR SI.

G.3.0 Analytical Program and QC Activities

The project QA/QC program described in the COGR SS-WP and the Shaw's FUDS MMRP SAP was followed for the collection and laboratory analysis of samples. Each of the analytical methods used require that method-specific QA/QC protocols be followed during sample analysis. These protocols are a critical part of the methods employed and were followed by the laboratory during sample analysis. Specific measures included detailed record keeping procedures, instrument calibrations, and analysis of method blanks, blank spikes, matrix spikes (MS), surrogates, second-column confirmation and serial dilutions. Attachment 1 and Attachment 2 to this appendix contains both a summary of analytical results and a summary of analytical results greater than the MDL, respectively. These data summaries also include the assigned data validation qualifiers. Definitions of laboratory and data validation qualifiers are found in Table G-3. Data validation qualifier reason code definitions are found in Table G-4. Approved variances to Shaw's FUDS MMRP SAP are included as Attachment 3.

G.3.1 Laboratory QA/QC Procedures

The following sections discuss a few of the QA/QC protocols required and performed by the laboratory during this SI.

G.3.1.1 Method Blanks

Method blanks were analyzed with each analytical "batch" processed on a per matrix (i.e., soil and water) basis. These blanks were carried step-wise through the same analytical procedure as the field samples including the addition of solvents, surrogate and standard spikes, and reagents as required in the analysis process. The purpose of the blank is to identify any possible contaminants that may be introduced to the sample as a result of the analytical process. During validation, the data validators evaluated all blank data associated with each sample. Data were evaluated based on USEPA CLP *National Functional Guidelines for Organic Data Review* and USEPA CLP *National Functional Guidelines for Inorganic Data Review* guidance documents and were qualified accordingly.

Target compounds detected in associated blanks increase the uncertainty regarding the presence of the same constituents in field samples. For a compound identified in both a blank and field sample, it must be present at a concentration of five times higher in the field sample to be considered a "hit". Common laboratory contaminants such as acetone, methylene chloride, and toluene are not assumed present until sample concentrations exceed ten times the associated blank value. GPL does not consider any explosives or metals as common laboratory contaminants. This is referred to as the

5X/10X rule.

Field sample concentrations were evaluated during data validation to determine if the sample results could have been biased by the presence of any contamination measured in method blanks, ICBs and/or CCBs. No sample results were impacted by blank contamination.

G.3.1.2 Surrogate Spikes

Spiked surrogate compounds were used in the analytical program to monitor the efficiency of the sample preparation and accuracy of analysis procedures on a sample-by-sample basis for all explosive compounds. The compounds used as surrogates, and the target acceptance limits for their recovery, were those specified in Shaw's FUDS MMRP SAP. The percent recoveries of the surrogate compounds were within the project-specified limits for all explosive analyses with the exception of samples NWO-033-0004 (low bias), NWO-033-0007 (low bias), and NWO-033-1002 (low bias). Samples NWO-033-0004, NWO-033-0007, and NWO-033-1002 were re-extracted and re-analyzed with similar surrogate recoveries reported as the original analyses indicating the possible presence of a matrix effect. The original explosive results reported for samples NWO-033-0004, NWO-033-0007, and NWO-033-1002 were used for site characterization. Explosive compounds detected above the MDL for samples NWO-033-0004, NWO-033-0007, and NWO-033-1002 were qualified "J"; while explosive compounds not detected above the MDL were qualified "UJ". The re-extracted results reported for samples NWO-033-0004, NWO-033-0007, and NWO-033-1002 are not used for site characterization.

It should be noted surrogate recovery evaluation is primarily evaluated from the standard SW-846 8330A analyses for nitroglycerine. This is due to nitroglycerine being analyzed from the same extract as the standard SW-846 8330A analytes.

G.3.1.3 Internal Standards

Internal standards are known amounts of standards added to an aliquot of sample or sample extract and carried through the entire analytical procedure. Internal standards are added to all field samples, laboratory controls, and blanks in accordance with the referenced method requirements. They are used as a basis for quantitation of target analytes. Internal standard retention times and recoveries are compared against acceptance limits presented in the Shaw's FUDS MMRP SAP. Acceptable internal standard performance criteria ensure that method sensitivity and instrument response are stable during every analytical run. All internal standard recoveries met the established acceptance criteria.

G.3.1.4 Matrix Spikes and Laboratory Control Spikes

Two types of spikes were generally performed for all analyses: those spikes applied to the sample matrix, identified as MS, and those applied to a “blank” matrix known as a laboratory control sample (LCS). The spiked compounds are target analytes that are quantified during performance of the method. Spikes are introduced during sample preparation on an aliquot of the sample, or a blank matrix. Results of these spiked aliquots are then compared to the native concentrations of the same analytes and a recovery calculated. Recovery of the spiked compound is used as an assessment of analytical accuracy on the sample matrix analyzed. These results are useful in distinguishing sample matrix interferences from analysis interferences through a comparison of MS and blank spike recovery data. Often, MSs are performed in duplicate (as a matrix spike duplicate [MSD] or LCS duplicate [LCSD]) on prepared sample aliquots. In this manner, an assessment of precision can be quantified as the RPD of the original and duplicate spike. The target acceptance limits are presented in Shaw’s FUDS MMRP SAP.

Matrix spikes are assigned at a frequency of approximately 5%, or 1 for every 20 field samples collected. One MS/MSD was collected in the field and was associated with sample NWO-033-0001. This sample corresponds to sample location 033A-001. If a sample is designated for analysis as an MS/MSD, additional sample volume is provided to the laboratory. This sampling meets the collection criteria as specified in Shaw’s COGR SS-WP and FUDS MMRP SAP. It should be noted the pre-planned aqueous MS/MSD samples for location 033A-004 were not collected due to the lack of surface water encountered at the site. The laboratory selected groundwater sample NWO-033-3001 for MS/MSD purposes. Sample NWO-033-3001 corresponds to sample location 033A-010.

The MS/MSD criteria were met, with the exception of the following, which exhibited percent recoveries and/or RPDs outside QC limits:

SDG	Analysis	Sample Number	Analyte(s)	Action
702081	SW6020A	NWO-033-0001 (MS/MSD)	Aluminum (HB) Iron (LB) Manganese (LB)	No action required, parent sample concentrations were 4x greater than the MS/MSD spike concentration.
	SW8330A (Modified)	NWO-033-0001 (MS/MSD)	RDX (HB) Nitroglycerine (HB)	No action required, RDX and nitroglycerine were not detected in sample NWO-033-0001.

LB – low bias
HB – high bias

No significant problems were identified with the MS recoveries that caused sample results to be qualified “R” as rejected. All other MS/MSD parameters met the target acceptance criteria required as established in Shaw’s FUDS MMRP SAP.

LCS results are used to evaluate laboratory method performance in the same manner as the MS/MSD results, except the LCS is not performed on an actual field sample matrix. An LCS is prepared for each analytical batch for each parameter and matrix analyzed. All LCS recoveries met the established acceptance criteria.

G.3.1.5 Calibrations

Initial calibration information is verified to demonstrate that reported results are comparable to known concentrations of target compounds. A series of standard reference solutions containing all target constituents are analyzed using the type of instrumentation specified by the method. The standards are used to determine the sensitivity of the analysis and the effective analytical (i.e., linear) range for which data can be accurately reported.

High initial calibration (ICAL) Percent Relative Standard Deviation (%RSD) indicates that a nonlinear response was obtained during the initial calibration. A low ICAL mean Relative Response Factor (RRF) indicates the compound exhibits poor response to the selected method (or detector). For all sample analyses, the ICAL correlation coefficient of > 0.995 (the industry standard) and relative standard deviation (%RSD) acceptance criteria of < 20% (the criteria for relative response factor [RRF] and %RSD are based on SW-846 Method 8000B) were met for all analyses. All CCVs were within QC criteria with the following exception:

SDG	Analysis	Calibration Standard	Analyte(s)	Action
702089	LC/MS	Low Level CCV	Perchlorate (HB)	Perchlorate result reported for sample NWO-033-6002 is qualified “J” due to low level CCV exceeding QC criteria. Reported perchlorate result may be biased high. No action required for sample NWO-033-3001; perchlorate was not detected above the MDL.

HB – high bias

G.3.1.6 Second Column Confirmation

Sample results reported from GC or HPLC methodologies (i.e., SW-846 8330A) are confirmed by using a dissimilar column or dissimilar detector. The analyte(s) must be detected by both the primary and confirmation columns or detectors in order for the analyte(s) to be confirmed as being present in the sample. Agreement or analytical precision between the two results is calculated as RPD. If the calculated RPD between the two differing columns or detectors exceeds 40%, then the result reported from the primary column is reported as estimated or "J" qualified. It should be noted at low concentrations the relative difference in results is magnified by the RPD calculation even though the results are comparable in absolute terms. There is also increased uncertainty in the results as the lower limit of detection is approached, due to decreasing analytical accuracy. Also, if analytes co-elute on the confirmation column; results reported from the primary column are qualified "J" as estimated. Calculated RPDs between the primary and secondary columns that exceed acceptance criteria are summarized below:

SDG	Samples Affected	Analyte(s)	Validation Qualifier Applied
702081	NWO-033-0004	Nitrobenzene	J
	NWO-033-1001	Nitrobenzene	J
	NWO-033-1002	Nitrobenzene	J

J = Qualifier applied to a result that is estimated.

G.3.1.7 Isotope Ratios

To confirm the presence of perchlorate for method SW-846 6850; the product ions at mass 83 and mass 85 are monitored and the 83/85 isotope ratio must fall between 2.2 to 3.3. The perchlorate ion is not confirmed as being present if the calculated 83/85 isotope ratio falls outside 2.2 to 3.3 criteria.

DataChem Laboratories, Inc., GPL's subcontractor for perchlorate analyses, employs a more sensitive instrument that has been used historically for perchlorate analysis. The resulting increase in sensitivity detects a residual peak at mass 85, which is a residual fragment from the spiked internal standard. Consequently, the 83/85 isotope ratio cannot be used for positive confirmation at low levels (<0.5ug/l). In these instances, the analyst and data validator must rely on retention time, peak area and professional judgment to determine the presence of perchlorate.

Calculated 83/85 isotope ratios that exceed acceptance criteria and/or are considered low-level detects are summarized below:

SDG	Samples Affected	Analyte(s)	Validation Qualifier Applied
702089	NWO-033-6002	Perchlorate	J

J = Qualifier applied to a result that is estimated.

G.3.1.8 Serial Dilutions

For metals analyses, a serial dilution is analyzed to verify that no matrix effects are present. A percent difference is calculated between the original result and a second result calculated from a 1:4 dilution of the original sample. Acceptance criteria of < 10% for original results greater than 100x their corresponding MDL (criteria for percent difference are based on SW-846 Method 6020) were met.

G.3.2 Reporting Limits

Practical quantitation limits (PQL) used for this project are those statistically determined by GPL. The analytical program executed required the use of SW-846 methods, which specify the procedure for calculating the PQLs presented. Each laboratory is required to demonstrate method performance through MDL studies for every method employed. These studies are required to be laboratory-specific so that individual laboratory variables such as equipment brands, reagent suppliers, and chemist technique are factored into the performance study. MDLs are established using controlled matrices (i.e., deionized water). The PQL calculation adjusts the limit by a predetermined mathematical factor for the analysis of actual environmental sample matrices (i.e. soil, groundwater, etc.). For purposes of clarity and consistency with respect to terminology, the term “reporting limit” (RL) has been substituted for PQL when referencing the limit of detection reported by the laboratory for each individual sample and parameter. The actual values reported have been corrected for all necessary dilutions, dryness, and interference factors as applicable based on the resulting analytical data for a sample.

MDLs, PQLs, and RLs are generally defined as follows:

- **MDL.** The minimum concentration of an analyte that can be determined with 99 percent confidence that the true value is greater than zero.
- **PQL.** The lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. The PQL is set at the lowest standard used in the ICAL or higher for each target analyte.
- **RL.** This number is equivalent to the PQL.

The MDL is the lower limit at which the laboratory can differentiate a measurement from background. The MDL is determined in accordance with the procedures in 40 Code of Federal Regulations (CFR) Part 136. A PQL, or RL, is the lower limit at which a measurement becomes meaningful. The RL is generally a multiple of three to five times the MDL.

Several samples had elevated reporting limits due to suspected matrix effects and complications encountered at the laboratory. The amount of solvent added during the SW8330A extraction process had to be altered in order to properly extract the explosive compounds from the soil matrix. GPLs PQLs are below the general RLs presented in the USACE MMRP Program Sampling and Analysis Plan (PSAP), however, in some cases, they are slightly higher than those listed in Shaw's FUDS MMRP SAP. Actual sample reporting limits can be reviewed on a sample by sample basis by reviewing the data summary presented in Attachment 1. Also, a general comparison of laboratory reported results, laboratory PQLs, and laboratory MDLs to SI screening levels are found in Tables 6, 7, and 8. Reported sample results provide sufficient sensitivity in regarding the presence of MC associated with past military activities at this site.

G.3.3 Holding Times

All laboratory results submitted for this SI have been reviewed with respect to laboratory adherence to extraction and analysis holding times. Maximum sample extraction and analysis hold times are presented in Tables 4-1 and 4-2 of Shaw's FUDS MMRP SAP. All holding time criteria for reported analytical results were met.

G.4.0 Data Evaluation and Usability

The analytical data review process identified a few analytical nonconformance issues that were noted during this analytical program. These QC exceedances have been discussed in the text of this Analytical Data QA/QC Report. Table G-5 summarizes impacted sample results associated with QC exceedances. Table G-3 defines laboratory and data validation qualifiers and Table G-4 defines data validation qualifier reason codes.

The following definitions are used for defining precision, accuracy, representativeness, completeness, comparability, and sensitivity as they have been applied to this evaluation:

Precision. Precision is a measurement of mutual agreement among individual measurements of the same property, usually under prescribed similar conditions. For this project, precision data were obtained through the analysis and evaluation of field duplicate samples as RPD. RPD is calculated as follows:

$$RPD = \frac{(V_1 - V_2)}{\frac{(V_1 + V_2)}{2}} \times 100$$

where:

RPD = relative percent difference

V1 = value 1; V2 = value 2

Parent sample and field duplicate comparisons show that the field team is consistent in their sample collection practices. Field duplicate results are summarized in Section G.2.1 and Table G-2. Precision was also evaluated through the comparison of MS and MSD or LCS and LCSD results. The spiked samples (MS, MSD, LCS, LCSD) RPDs are evaluated during data validation and data are qualified accordingly. RPD within the acceptance criteria indicates that the laboratory is performing adequately and that the results are reproducible for the analytes of interest at this site. Acceptance criteria are defined in Shaw's FUDS MMRP SAP for each analyte of concern. These data and all necessary qualifications are discussed in Section G.3.1.4. In respect to precision, the data are usable for their intended purpose, with the exception of the QC exceedances discussed in the above referenced sections.

Accuracy. Accuracy is a measurement of bias in a system and is expressed as a percent recovery. Accuracy is typically determined through the analysis and evaluation of blanks, LCSs, and MS/MSD samples. Percent recovery is calculated as follows:

$$\% \text{ Recovery} = 100 \times \frac{\text{measured value}}{\text{true value}}$$

MS/MSDs, LCS, and surrogates and all data qualifications are summarized in Sections G.3.1.2 and G.3.1.4. The noted QC exceedances discussed in these sections resulted in the qualification of the reported data as being estimated (“UJ”/”J”) but were not significant enough for rejection of the data. In respect to accuracy, the data are usable for their intended purpose.

Representativeness. Representativeness is a qualitative parameter that expresses the degree to which sample data actually represent the matrix and site conditions. General requirements and procedures referenced in Shaw’s FUDS MMRP SAP and corporate standard operating procedures (SOPs) for sample collection and handling are designed to maximize sample representativeness. Representativeness also can be monitored by reviewing field documentation and by performing field audits. Soil samples were collected at locations likely to be representative of MC contamination based on physical evidence of contamination or source areas (eg., staining, debris, sumps, or extent of magnetic anomalies). Sediment samples were collected based on field observations of surface topography and drainage near the target areas. The groundwater samples were collected at locations near the southern target area. All samples were collected using SOPs and were fully documented through the use of standard field forms.

Completeness. Completeness is a measure of the amount of valid data obtained during a sampling event as compared to the amount of data planned for collection and determined to be usable for the intended purpose. Typically, an overall completeness goal of 95 percent is set for projects of this type. Completeness is calculated as follows:

$$\%C = (U/T) \times 100$$

where:

%C = Percent completeness;

U = Number of measurements judged usable; and

T = Total number of measurements.

During this SI, 12 samples were collected resulting in a total of 157 records. No results were rejected during the data quality evaluation out of the total 157 records. A summary of data qualification and the reasons for qualifier assignments is presented in Attachment 1. Using the above calculation, 100 % completeness is achieved for this sample event.

Field completeness is estimated as the percentage of all planned samples that were actually collected and analyzed. The calculation is as follows:

$$\%FC = (A/P) \times 100$$

where:

%FC = Field Percent Completeness;
A = Actual number of samples collected, and
P = Number of planned samples to collect

Discussion of field completeness is provided in the main text of the SI report.

Comparability. Comparability is a qualitative parameter expressing the confidence with which one data set can be compared with another. Comparability ensures that results for the sampling event can be compared with data from past and future sampling programs. Comparability for this sampling event was achieved through the use of established and recognized techniques and through the laboratory's use of standard USEPA methodology. All samples collected for this task were subjected to the same sampling, handling, preparation, analysis, reporting, and validation criteria for the purpose of achieving comparability goals within the data set.

Sensitivity. Sensitivity is defined as the ability of the laboratory's established MDL/PQL to meet project-specific DQOs. MDL is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero. MDLs are determined from an analysis of a sample in a given matrix containing the target analyte of interest. The RL is a threshold value based upon the sensitivity capability of method and instrument. PQLs are normally set at a minimum of three times the MDL. MDLs/PQLs are adjusted based on the sample matrix, moisture (solids only), and any necessary sample dilutions. The laboratory cannot reliably quantitate values reported above the MDL but below the PQL. Therefore, these analyte values must be flagged as estimated quantities ("J" flagged).

To evaluate method sensitivity, a general comparison of the laboratory's MDLs and PQLs and the following regulatory values was performed. The Laboratory's aqueous PQLs/MDLs were compared

against the following screening levels:

- Media Background Perchlorate Sample Value (0.229 ug/l) (Groundwater)
- DoD Perchlorate Screening Level (24.0 ug/l)

The laboratory soil PQLs/MDLs were compared against the following screening levels:

- Calculated SI Background 95th Upper Tolerance Limit / 95th Percentile (Soil data provided by Oregon Department of Environmental Quality)
- Media Background Sample Values (Sediment)
- Ecological Screening Levels comprised from Oregon Department of Environmental Quality Screening Level Values (December 2001), USEPA Region 5 (August 2003), USEPA Region 7, USEPA Region 8, USEPA Region 10, and Lower of Talmage, et al, (1999) or Los Alamos National Laboratory (2005) values
- USEPA Region 9 Preliminary Remediation Goal (PRG) for Residential Soils

These comparisons are summarized in Table G-6 for groundwater, Tables G-7a and G-7b for sediment, and Tables G-8a, G-8b for soil. GPL’s water MDLs for all target analytes of interest met or are below SI screening levels. GPL’s soil MDLs for all target analytes of interest met or were below SI screening levels. It should be noted GPL reports analytical results as non-detect (“U” qualified) at their corresponding MDL. Results reported between the PQL and MDL are qualified “J” as estimated due to the increased uncertainty in the results as the lower limit of detection is approached. 1,3,5-Trinitrotoluene, 1,3-dinitrobenzene, HMX, aluminum, chromium, iron, and molybdenum SI screening values fall between GPL’s calculated PQL and MDL as summarized below:

Compound	Analysis	GPL PQL (mg/kg)	GPL MDL (mg/kg)	SI Ecological Screening Level – sediment (mg/kg)	SI Ecological Screening Level – soil (mg/kg)	USEPA Region 9 PRG – Residential Soil (mg/kg)
1,3,5-Trinitrotoluene	8330A	0.04	0.012	0.024	1.28	1800
1,3-Dinitrobenzene	8330A	0.04	0.002	0.067	0.0328	6.1
HMX	8330A	0.08	0.012	0.047	2.0	3100
Aluminum	6020A	100	2.7	280	50	76000
Chromium	6020A	2	0.28	37	0.4	210
Iron	6020A	50	3.2	20	10	23000
Molybdenum	6020A	5	0.29	No criteria	2	390

G.4.1 Statement of Data Usability

One-hundred percent of the analytical data have been reviewed and validation qualifiers assigned based on USEPA CLP *National Functional Guidelines for Organic Data Review*, October 1999 and USEPA CLP *National Functional Guidelines for Inorganic Data Review*, October 2004. ADR software (version 8.1) was used to assist in the data validation process for all areas with the exception of ICBs, CCBs, interference check standards, serial dilutions, internal standards, instrument tuning standards, and second-column confirmation which were assessed manually. Data were evaluated against specific criteria to verify the achievement of all precision, accuracy, representativeness, completeness, comparability, and sensitivity goals established to meet the project DQOs.

The overall quality of the data collected for the COGR SI has been discussed in this Analytical Data QA/QC Report. Results of the analyses as discussed in this evaluation are indicative of the media analyzed with the exception of QC exceedances listed below:

- Perchlorate result reported for groundwater sample NWO-033-6002 was qualified “J” due to the low level CCV exceeding QC criteria
- Perchlorate result reported for groundwater sample NWO-033-6002 was qualified “J” due to the calculated 83/85 isotope ratios exceeding acceptance criteria
- Nitrobenzene results reported for soil sample NWO-033-0004 and sediment samples NWO-033-1001 and NWO-033-1002 were “J” qualified due to the primary column / confirmation column RPD exceeding QC criteria (%RPD<40%)
- Explosive analytes detected above the MDL for samples NWO-033-0004, NWO-033-0007, and NWO-033-1002 were qualified “J”; while explosive compounds not detected above the MDL were qualified “UJ” due to surrogate spike recoveries reported outside QC criteria

No data was qualified “R” as unusable. Overall, these data do reflect expected site conditions and are fully usable for their intended purpose.

Table G-1

Summary of Samples Collected and Sample Tracking Information
Central Oregon Gunnery Range

Location ID	Sample Number	Sample Purpose	Sample Type	Date Collected	Sample Depth (ft)	Laboratory SDG Number	Select Metals* by SW-846 6020A	Explosives by SW-846 8330A	Nitroglycerine by SW-846 8330A (Modified)	Perchlorate by LC/MS**
Air-to-Air Gunnery Range - Southern Target Area										
033A001	NWO-033-0001	REG	SS	13-Feb-07	0 - 0.5	702081-001	X	X	X	
	NWO-033-0001-MS	MS	SS	13-Feb-07	0 - 0.5	702081-001MS	X	X	X	
	NWO-033-0001-MSD	MSD	SS	13-Feb-07	0 - 0.5	702081-001MSD	X	X	X	
033A002	NWO-033-0002	REG	SS	13-Feb-07	0 - 0.5	702081-002	X			
033A003	NWO-033-0003	REG	SS	13-Feb-07	0 - 0.5	702081-003	X			
033A004	NWO-033-1001	REG	SD	13-Feb-07	0 - 0.5	702081-004	X	X	X	
Air-to-Air Gunnery Range - Northern Target Area										
033A005	NWO-033-0004	REG	SS	13-Feb-07	0 - 0.5	702081-005	X	X	X	
	NWO-033-0007	FD	SS	13-Feb-07	0 - 0.5	702081-008	X	X	X	
033A006	NWO-033-0005	REG	SS	13-Feb-07	0 - 0.5	702081-006	X			
033A007	NWO-033-0006	REG	SS	13-Feb-07	0 - 0.5	702081-007	X			
033A008	NWO-033-1002	REG	SD	13-Feb-07	0 - 0.5	702081-009	X	X	X	
033A010	NWO-033-3001	REG	GW	14-Feb-07	---	702089-001				X
	NWO-033-3001MS	MS	GW	14-Feb-07	---	702089-001MS				X
	NWO-033-3001MSD	MSD	GW	14-Feb-07	---	702089-001MSD				X
Background										
033A011	NWO-033-5001	REG	SD	14-Feb-07	0 - 0.5	702081-010	X			
033A012	NWO-033-6002	REG	GW	13-Feb-07	---	702089-002				X

Notes:

X - Indicates a sample was collected and analyzed for the given parameter

* Select metals are aluminum, chromium, copper, iron, lead, manganese, molybdenum, and nickel.

** DataChem internal standard operating procedure "LC/MS-CLO4-Rev2"

ft - feet

SDG - sample delivery group

LC/MS - liquid chromatography/mass spectroscopy

REG - regular field sample

FD - field duplicate

MS - matrix spike

MSD - matrix spike duplicate

SS - surface soil (< 0.5 feet below ground surface)

SD - sediment

GW - groundwater

bgs - below ground surface

Table G-2

Summary of Soil Parent and Field Duplicate Results and RPD Calculations
Central Oregon Gunnery Range

Location			033A005				
Sample Date			13-Feb-07				
Sample Number			NWO-033-0004		NWO-033-0007		
Sample Depth (bgs) (ft)			0 to 0.5		0 to 0.5		
Sample Purpose			REG		FD		
Fraction	Parameter	Units	Result	VQ	Result	VQ	RPD
Explosives	1,3,5-Trinitrobenzene	mg/kg	< 0.012	UJ	< 0.012	UJ	NC
Explosives	1,3-Dinitrobenzene	mg/kg	< 0.002	UJ	< 0.002	UJ	NC
Explosives	2,4,6-Trinitrotoluene	mg/kg	< 0.008	UJ	< 0.008	UJ	NC
Explosives	2,4-Dinitrotoluene	mg/kg	< 0.014	UJ	< 0.014	UJ	NC
Explosives	2,6-Dinitrotoluene	mg/kg	< 0.007	UJ	< 0.007	UJ	NC
Explosives	2-Amino-4,6-dinitrotoluene	mg/kg	< 0.01	UJ	< 0.01	UJ	NC
Explosives	2-Nitrotoluene	mg/kg	< 0.009	UJ	< 0.009	UJ	NC
Explosives	3-Nitrotoluene	mg/kg	< 0.022	UJ	< 0.022	UJ	NC
Explosives	4-Amino-2,6-dinitrotoluene	mg/kg	< 0.006	UJ	< 0.006	UJ	NC
Explosives	4-Nitrotoluene	mg/kg	< 0.036	UJ	< 0.036	UJ	NC
Explosives	HMX	mg/kg	< 0.012	UJ	< 0.012	UJ	NC
Explosives	Nitrobenzene	mg/kg	0.049	J	0.043	J	13.0
Explosives	Nitroglycerine	mg/kg	< 0.04	UJ	< 0.04	UJ	NC
Explosives	RDX	mg/kg	< 0.071	UJ	< 0.071	UJ	NC
Explosives	Tetryl	mg/kg	< 0.004	UJ	< 0.004	UJ	NC
Metals	Aluminum	mg/kg	14500		15100		4.1
Metals	Chromium	mg/kg	24		24		0.0
Metals	Copper	mg/kg	20		19.8		1.0
Metals	Iron	mg/kg	14800		14900		0.7
Metals	Lead	mg/kg	3.7		3.7		0.0
Metals	Manganese	mg/kg	300		297		1.0
Metals	Molybdenum	mg/kg	32.4		29.1		10.7
Metals	Nickel	mg/kg	16.4		16.5		0.6

Notes:

bgs - below ground surface
ft - feet
mg/kg - milligram per kilogram
VQ - validation qualifier

Validation Qualifier Definitions

U - Not detected. The compound/analyte was analyzed for, but not detected above the associated reporting limit
J - The compound/analyte was positively identified; the reported value is the estimated concentration of the constituent detected in the sample analyzed
R - The reported sample results are rejected due to the following: 1. Severe deficiencies in the supporting quality control data, 2. Anomalies noted in the sampling and/or analysis process which could affect the validity of the reported data, 3. The presence or absence of the constituent cannot be verified based on the data provided, 4. To indicate not to use a particular result in the event of a reanalysis
UJ - The compound/analyte was analyzed for, but not detected above the established reporting limit. However, review and evaluation of supporting QC data and/or sampling and analysis process have indicated that the reporting limit may be inaccurate or imprecise. The nondetect result should be estimated

Table G-3

Laboratory Qualifier and Data Validation Qualifier Definitions

Laboratory Qualifier Definitions

All Departments	
U	Indicates that the compound was analyzed for but not detected
BQL	Below Quantitation Limit
D	Indicates that the analyte was reported from a diluted analysis
Organics	
B	Indicates that the analyte was found in the associated blank as well as in the sample
E	Indicates that the concentration detected exceeded the calibration range of the instrument
J	Value is less than the reporting limit by greater than the MDL
P	Indicates that there is greater than 40% difference for detected explosive results between two columns
Metals	
J	Indicates that the reported value was less than the reporting limit but greater than or equal to the IDL/MDL
E	Indicates that the reported value is estimated because of the possible presence of interferences (i.e., the serial dilution not within control limits)
B	Indicates that the element was found in an associated blank above 2x the MDL and/or ½ RL of a ICB / CCB / ICSEA
N	Spiked sample recovery not within control limits
*	Duplicate analysis not within control limits

Data Validation Qualifier Definitions

U	Not detected. The compound/analyte was analyzed for, but not detected above the associated reporting limit
J	The compound/analyte was positively identified; the reported value is the estimated concentration of the constituent detected in the sample analyzed
R	The reported sample results are rejected due to the following: <ol style="list-style-type: none"> 1. Severe deficiencies in the supporting quality control data 2. Anomalies noted in the sampling and/or analysis process which could affect the validity of the reported data 3. The presence or absence of the constituent cannot be verified based on the data provided 4. To indicate not to use a particular result in the event of a reanalysis
UJ	The compound/analyte was analyzed for, but not detected above the established reporting limit. However, review and evaluation of supporting QC data and/or sampling and analysis process have indicated that the reporting limit may be inaccurate or imprecise. The nondetect result should be estimated

Table G-4

Data Validation Qualifier Reason Code Definitions

Reason Code	Definition
01	Sample received outside of 4+/-2 degrees Celsius
01A	Improper sample preservation
02	Holding time exceeded
02A	Extraction
02B	Analysis
03	Instrument performance – outside criteria
03A	BFB
03B	DFTPP
03C	DDT and/or Endrin % breakdown exceeds criteria
03D	Retention time windows
03E	Resolution
04	Initial calibration results outside specified criteria
04A	Compound mean RRF QC criteria not met
04B	Individual % RSD criteria not met
04C	Correlation coefficient >0.995
05	Continuing calibration results outside specified criteria
05A	Compound mean RRF QC criteria not met
05B	Compound % D QC criteria not met
06	Result qualified as a result of the 5x/10x blank correction
06A	Method or preparation blank
06B	ICB or CCB
06C	ER
06D	TB
06E	FB
07	Surrogate recoveries outside control limits
07A	Sample
07B	Associated method blank or LCS
08	MS/MSD/Duplicate results outside criteria
08A	MS and/or MSD recovery not within control limits (accuracy)
08B	% RPD outside acceptance criteria (precision)
09	Post digestion spike outside criteria (GFAA)
10	Internal standards outside specified control limits
10A	Recovery
10B	Retention time
11	Laboratory control sample recoveries outside specified limits
11A	Recovery
11B	% RPD (if run in duplicate)
12	Interference check standard
13	Serial dilution
14	Tentatively identified compounds
15	Quantitation
16	Multiple results available; alternate analysis preferred
17	Field duplicate RPD criteria is exceeded
18	Percent difference between original and second column exceeds QC criteria
19	Professional judgement was used to qualify the data
20	Pesticide clean-up checks
21	Target compound identification
22	Radiological calibration
23	Radiological quantitation
24	Reported result and/or lab qualifier revised to reflect validation findings

Table G-5

Summary of Negatively Impacted Sample Results Associated with Adverse QC Criteria
Central Oregon Gunnery Range

SDG	Sample Number	Sample Type	Fraction	Parameter	Result	Units	LQ	VQ	R1	R2	R3	R4	Filtered
702081	NWO-033-0004	SS	Explosives	1,3,5-Trinitrobenzene	0.012	mg/kg	U	UJ	07A				N
702081	NWO-033-0004	SS	Explosives	1,3-Dinitrobenzene	0.002	mg/kg	U	UJ	07A				N
702081	NWO-033-0004	SS	Explosives	2,4,6-Trinitrotoluene	0.008	mg/kg	U	UJ	07A				N
702081	NWO-033-0004	SS	Explosives	2,4-Dinitrotoluene	0.014	mg/kg	U	UJ	07A				N
702081	NWO-033-0004	SS	Explosives	2,6-Dinitrotoluene	0.007	mg/kg	U	UJ	07A				N
702081	NWO-033-0004	SS	Explosives	2-Amino-4,6-dinitrotoluene	0.01	mg/kg	U	UJ	07A				N
702081	NWO-033-0004	SS	Explosives	2-Nitrotoluene	0.009	mg/kg	U	UJ	07A				N
702081	NWO-033-0004	SS	Explosives	3-Nitrotoluene	0.022	mg/kg	U	UJ	07A				N
702081	NWO-033-0004	SS	Explosives	4-Amino-2,6-dinitrotoluene	0.006	mg/kg	U	UJ	07A				N
702081	NWO-033-0004	SS	Explosives	4-Nitrotoluene	0.036	mg/kg	U	UJ	07A				N
702081	NWO-033-0004	SS	Explosives	HMX	0.012	mg/kg	U	UJ	07A				N
702081	NWO-033-0004	SS	Explosives	Nitrobenzene	0.049	mg/kg		J	19	18	07A		N
702081	NWO-033-0004	SS	Explosives	Nitroglycerine	0.04	mg/kg	U	UJ	07A				N
702081	NWO-033-0004	SS	Explosives	RDX	0.071	mg/kg	U	UJ	07A				N
702081	NWO-033-0004	SS	Explosives	Tetryl	0.004	mg/kg	U	UJ	07A				N
702081	NWO-033-0007	SS	Explosives	1,3,5-Trinitrobenzene	0.012	mg/kg	U	UJ	07A				N
702081	NWO-033-0007	SS	Explosives	1,3-Dinitrobenzene	0.002	mg/kg	U	UJ	07A				N
702081	NWO-033-0007	SS	Explosives	2,4,6-Trinitrotoluene	0.008	mg/kg	U	UJ	07A				N
702081	NWO-033-0007	SS	Explosives	2,4-Dinitrotoluene	0.014	mg/kg	U	UJ	07A				N
702081	NWO-033-0007	SS	Explosives	2,6-Dinitrotoluene	0.007	mg/kg	U	UJ	07A				N
702081	NWO-033-0007	SS	Explosives	2-Amino-4,6-dinitrotoluene	0.01	mg/kg	U	UJ	07A				N
702081	NWO-033-0007	SS	Explosives	2-Nitrotoluene	0.009	mg/kg	U	UJ	07A				N
702081	NWO-033-0007	SS	Explosives	3-Nitrotoluene	0.022	mg/kg	U	UJ	07A				N
702081	NWO-033-0007	SS	Explosives	4-Amino-2,6-dinitrotoluene	0.006	mg/kg	U	UJ	07A				N
702081	NWO-033-0007	SS	Explosives	4-Nitrotoluene	0.036	mg/kg	U	UJ	07A				N
702081	NWO-033-0007	SS	Explosives	HMX	0.012	mg/kg	U	UJ	07A				N
702081	NWO-033-0007	SS	Explosives	Nitrobenzene	0.043	mg/kg		J	07A				N
702081	NWO-033-0007	SS	Explosives	Nitroglycerine	0.04	mg/kg	U	UJ	07A				N
702081	NWO-033-0007	SS	Explosives	RDX	0.071	mg/kg	U	UJ	07A				N
702081	NWO-033-0007	SS	Explosives	Tetryl	0.004	mg/kg	U	UJ	07A				N
702081	NWO-033-1001	SD	Explosives	Nitrobenzene	0.029	mg/kg	J	J	19	18	15		N
702081	NWO-033-1002	SD	Explosives	1,3,5-Trinitrobenzene	0.012	mg/kg	U	UJ	07A				N
702081	NWO-033-1002	SD	Explosives	1,3-Dinitrobenzene	0.002	mg/kg	U	UJ	07A				N
702081	NWO-033-1002	SD	Explosives	2,4,6-Trinitrotoluene	0.008	mg/kg	U	UJ	07A				N
702081	NWO-033-1002	SD	Explosives	2,4-Dinitrotoluene	0.014	mg/kg	U	UJ	07A				N
702081	NWO-033-1002	SD	Explosives	2,6-Dinitrotoluene	0.007	mg/kg	U	UJ	07A				N
702081	NWO-033-1002	SD	Explosives	2-Amino-4,6-dinitrotoluene	0.01	mg/kg	U	UJ	07A				N
702081	NWO-033-1002	SD	Explosives	2-Nitrotoluene	0.009	mg/kg	U	UJ	07A				N
702081	NWO-033-1002	SD	Explosives	3-Nitrotoluene	0.022	mg/kg	U	UJ	07A				N
702081	NWO-033-1002	SD	Explosives	4-Amino-2,6-dinitrotoluene	0.006	mg/kg	U	UJ	07A				N

Table G-5

Summary of Negatively Impacted Sample Results Associated with Adverse QC Criteria
Central Oregon Gunnery Range

SDG	Sample Number	Sample Type	Fraction	Parameter	Result	Units	LQ	VQ	R1	R2	R3	R4	Filtered
702081	NWO-033-1002	SD	Explosives	4-Nitrotoluene	0.036	mg/kg	U	UJ	07A				N
702081	NWO-033-1002	SD	Explosives	HMX	0.012	mg/kg	U	UJ	07A				N
702081	NWO-033-1002	SD	Explosives	Nitrobenzene	0.041	mg/kg		J	19	18	07A		N
702081	NWO-033-1002	SD	Explosives	Nitroglycerine	0.04	mg/kg	U	UJ	07A				N
702081	NWO-033-1002	SD	Explosives	RDX	0.071	mg/kg	U	UJ	07A				N
702081	NWO-033-1002	SD	Explosives	Tetryl	0.004	mg/kg	U	UJ	07A				N
702089	NWO-033-6002	GW	Perchlorate	Perchlorate	0.229	ug/L	J	J	19	05B	18	15	Y

SDG - sample delivery group

SS - surface soil

SD - sediment

GW - groundwater

* LQ - laboratory qualifier

* VQ - validation qualifier

** R1 - reason code no. 1

** R2 - reason code no. 2

** R3 - reason code no. 3

** R4 - reason code no. 4

* See Table G-3 for laboratory and data validation qualifier definitions

** See Table G-4 for data validation reason code definitions

HMX - octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine

RDX - hexahydro-1,3,5-trinitro-1,3,5-triazine

Tetryl - methyl-2,4,6-trinitrophenylnitramine

Table G-6

Comparison of Air-to-Air Gunnery Range - Northern Target Area Groundwater Results to Site Inspection Screening Levels
Central Oregon Gunnery Range

Location								033A010			
Sample Date								14-Feb-07			
Sample Number								NWO-033-3001			
Sample Purpose								REG			
Fraction	Parameter	Filtered	Units	Maximum Concentration from Media Background Sample	"3x" Maximum Concentration from Media Background Sample	Federal Drinking Water Criteria MCLs	DoD Perchlorate Screening Level	Result	PQL	MDL	VQ
Perchlorate	Perchlorate	Y	ug/L	.229	.687	No criteria	24	< 0.122	0.4	0.122	U

Notes:

[**Bold**] - Result exceeds "3x" Maximum Concentration from Media Background Sample

[*Italicized*] - Result exceeds Federal Drinking Water Criteria MCLs

[Underline] - DoD Perchlorate Screening Level

DoD - Department of Defense

MCL - Maximum Contaminant Level

PRG - Preliminary Remediation Goal

PQL - practical quantitation limit

MDL - method detection limit

REG - regular sample

ug/L- microgram per liter

VQ - validation qualifier

Validation Qualifier Definitions

U - Not detected. The compound/analyte was analyzed for, but not detected above the associated reporting limit

J - The compound/analyte was positively identified; the reported value is the estimated concentration of the constituent detected in the sample analyzed

R - The reported sample results are rejected due to the following: 1. Severe deficiencies in the supporting quality control data, 2. Anomalies noted in the sampling and/or analysis process which could affect the validity of the reported data, 3. The presence or absence of the constituent cannot be verified based on the data provided, 4. To indicate not to use a particular result in the event of a reanalysis

UJ - The compound/analyte was analyzed for, but not detected above the established reporting limit. However, review and evaluation of supporting QC data and/or sampling and analysis process have indicated that the reporting limit may be inaccurate or imprecise. The nondetect result should be estimated

Table G-7a

Comparison of Air-to-Air Gunnery Range - Southern Target Area Sediment Results to Site Inspection Screening Levels
Central Oregon Gunnery Range

Location							033A004			
Sample Date							13-Feb-07			
Sample Number							NWO-033-1001			
Sample Depth (bgs) (ft)							0 to 0.5			
Sample Purpose							REG			
Fraction	Parameter	Units	Maximum Concentration from Media Background Sample	"3x" Maximum Concentration from Media Background Sample	Site Inspection Ecological Screening Level	USEPA Region 9 PRGs - Residential Soil	Result	PQL	MDL	VQ
Explosives	1,3,5-Trinitrobenzene	mg/kg	No criteria	No criteria	.024	1800	< 0.012	0.04	0.012	U
Explosives	1,3-Dinitrobenzene	mg/kg	No criteria	No criteria	.067	6.1	< 0.002	0.04	0.002	U
Explosives	2,4,6-Trinitrotoluene	mg/kg	No criteria	No criteria	.92	16	< 0.008	0.04	0.008	U
Explosives	2,4-Dinitrotoluene	mg/kg	No criteria	No criteria	.29	.72	< 0.014	0.04	0.014	U
Explosives	2,6-Dinitrotoluene	mg/kg	No criteria	No criteria	1.9	.72	< 0.007	0.04	0.007	U
Explosives	2-Amino-4,6-dinitrotoluene	mg/kg	No criteria	No criteria	7	12	< 0.01	0.04	0.01	U
Explosives	2-Nitrotoluene	mg/kg	No criteria	No criteria	5.6	.88	< 0.009	0.08	0.009	U
Explosives	3-Nitrotoluene	mg/kg	No criteria	No criteria	4.9	730	< 0.022	0.08	0.022	U
Explosives	4-Amino-2,6-dinitrotoluene	mg/kg	No criteria	No criteria	1.9	12	< 0.006	0.04	0.006	U
Explosives	4-Nitrotoluene	mg/kg	No criteria	No criteria	10	12	< 0.036	0.08	0.036	U
Explosives	HMX	mg/kg	No criteria	No criteria	.047	3100	< 0.012	0.08	0.012	U
Explosives	Nitrobenzene	mg/kg	No criteria	No criteria	32	20	0.029	0.04	0.006	J
Explosives	Nitroglycerine	mg/kg	No criteria	No criteria	1700	35	< 0.04	4	0.04	U
Explosives	RDX	mg/kg	No criteria	No criteria	.13	4.4	< 0.071	0.08	0.071	U
Explosives	Tetryl	mg/kg	No criteria	No criteria	100	610	< 0.004	0.08	0.004	U
Metals	Aluminum	mg/kg	8680	26040	280	76000	<i>10800</i>	73	2	
Metals	Chromium	mg/kg	11.4	34.2	37	210	18	1.5	0.2	
Metals	Copper	mg/kg	9.9	29.7	10	3100	<i>12.4</i>	1.5	0.15	
Metals	Iron	mg/kg	8060	24180	20	23000	<i>10300</i>	36.5	2.3	
Metals	Lead	mg/kg	2	6	35	400	2.6	1.5	0.058	
Metals	Manganese	mg/kg	152	456	1100	1800	214	1.5	0.042	
Metals	Molybdenum	mg/kg	30.9	92.7	No criteria	390	2.5	3.6	0.21	J
Metals	Nickel	mg/kg	8.1	24.3	18	1600	10.3	0.73	0.064	

Notes:

[**Bold Face**] - Result exceeds "3x" Maximum Concentration from Media Background Sample

[*Italicized*] - Result exceeds Site Inspection Ecological Screening Level

[UNDERLINED] - Result exceeds EPA Region 9 PRG - Residential Soil

bgs - below ground surface

ft - feet

USEPA - Environmental Protection Agency

PRG - Preliminary Remediation Goal

PQL - practical quantitation limit

MDL - method detection limit

mg/kg - milligram per kilogram

VQ - validation qualifier

REG - regular sample

FD - field duplicate

HMX - octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine

RDX - hexahydro-1,3,5-trinitro-1,3,5-triazine

Tetryl - methyl-2,4,6-trinitrophenylnitramine

Validation Qualifier Definitions

U - Not detected. The compound/analyte was analyzed for, but not detected above the associated reporting limit

J - The compound/analyte was positively identified; the reported value is the estimated concentration of the constituent detected in the sample analyzed

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UJ - The compound/analyte was analyzed for, but not detected above the established reporting limit. However, review and evaluation of supporting QC data and/or sampling and analysis process have indicated that the reporting limit may be inaccurate or imprecise. The nondetect result should be estimated

Table G-7b

Comparison of Air-to-Air Gunnery Range - Northern Target Area Sediment Results to Site Inspection Screening Levels
Central Oregon Gunnery Range

Location							033A008			
Sample Date							13-Feb-07			
Sample Number							NWO-033-1002			
Sample Depth (bgs) (ft)							0 to 0.5			
Sample Purpose							REG			
Fraction	Parameter	Units	Maximum Concentration from Media Background Sample	"3x" Maximum Concentration from Media Background Sample	Site Inspection Ecological Screening Level	USEPA Region 9 PRGs - Residential Soil	Result	PQL	MDL	VQ
Explosives	1,3,5-Trinitrobenzene	mg/kg	No criteria	No criteria	.024	1800	< 0.012	0.04	0.012	UJ
Explosives	1,3-Dinitrobenzene	mg/kg	No criteria	No criteria	.067	6.1	< 0.002	0.04	0.002	UJ
Explosives	2,4,6-Trinitrotoluene	mg/kg	No criteria	No criteria	.92	16	< 0.008	0.04	0.008	UJ
Explosives	2,4-Dinitrotoluene	mg/kg	No criteria	No criteria	.29	.72	< 0.014	0.04	0.014	UJ
Explosives	2,6-Dinitrotoluene	mg/kg	No criteria	No criteria	1.9	.72	< 0.007	0.04	0.007	UJ
Explosives	2-Amino-4,6-dinitrotoluene	mg/kg	No criteria	No criteria	7	12	< 0.01	0.04	0.01	UJ
Explosives	2-Nitrotoluene	mg/kg	No criteria	No criteria	5.6	.88	< 0.009	0.08	0.009	UJ
Explosives	3-Nitrotoluene	mg/kg	No criteria	No criteria	4.9	730	< 0.022	0.08	0.022	UJ
Explosives	4-Amino-2,6-dinitrotoluene	mg/kg	No criteria	No criteria	1.9	12	< 0.006	0.04	0.006	UJ
Explosives	4-Nitrotoluene	mg/kg	No criteria	No criteria	10	12	< 0.036	0.08	0.036	UJ
Explosives	HMX	mg/kg	No criteria	No criteria	.047	3100	< 0.012	0.08	0.012	UJ
Explosives	Nitrobenzene	mg/kg	No criteria	No criteria	32	20	0.041	0.04	0.006	J
Explosives	Nitroglycerine	mg/kg	No criteria	No criteria	1700	35	< 0.04	4	0.04	UJ
Explosives	RDX	mg/kg	No criteria	No criteria	.13	4.4	< 0.071	0.08	0.071	UJ
Explosives	Tetryl	mg/kg	No criteria	No criteria	100	610	< 0.004	0.08	0.004	UJ
Metals	Aluminum	mg/kg	8680	26040	280	76000	10800	73.5	2	
Metals	Chromium	mg/kg	11.4	34.2	37	210	11.1	1.5	0.21	
Metals	Copper	mg/kg	9.9	29.7	10	3100	10.7	1.5	0.15	
Metals	Iron	mg/kg	8060	24180	20	23000	9400	36.8	2.4	
Metals	Lead	mg/kg	2	6	35	400	2.7	1.5	0.058	
Metals	Manganese	mg/kg	152	456	1100	1800	206	1.5	0.042	
Metals	Molybdenum	mg/kg	30.9	92.7	No criteria	390	10.9	3.7	0.21	
Metals	Nickel	mg/kg	8.1	24.3	18	1600	8.9	0.74	0.065	

Notes:

[**Bold Face**] - Result exceeds "3x" Maximum Concentration from Media Background Sample

[*Italicized*] - Result exceeds Site Inspection Ecological Screening Level

[UNDERLINED] - Result exceeds EPA Region 9 PRG - Residential Soil

bgs - below ground surface

ft - feet

USEPA - Environmental Protection Agency

PRG - Preliminary Remediation Goal

PQL - practical quantitation limit

MDL - method detection limit

mg/kg - milligram per kilogram

VQ - validation qualifier

Validation Qualifier Definitions

U - Not detected. The compound/analyte was analyzed for, but not detected above the associated reporting limit

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UJ - The compound/analyte was analyzed for, but not detected above the established reporting limit. However, review and evaluation of supporting QC data and/or sampling and analysis process have indicated that the reporting limit may be inaccurate or imprecise. The nondetect result should be estimated

Table G-8a

Comparison of Air-to-Air Gunnery Range - Southern Target Area Soil Results to Site Inspection Screening Levels
Central Oregon Gunnery Range

Location		033A001								033A002				033A003			
Sample Date		13-Feb-07								13-Feb-07				13-Feb-07			
Sample Number		NWO-033-0001								NWO-033-0002				NWO-033-0003			
Sample Depth (bgs) (ft)		0 to 0.5								0 to 0.5				0 to 0.5			
Sample Purpose		REG								REG				REG			
Fraction	Parameter	Units	Site Inspection Background 95th UTL / 95th Percentile	Site Inspection Ecological Screening Level	USEPA Region 9 PRGs - Residential Soil	Result	PQL	MDL	VQ	Result	PQL	MDL	VQ	Result	PQL	MDL	VQ
Explosives	1,3,5-Trinitrobenzene	mg/kg	No criteria	1.28	1800	< 0.012	0.04	0.012	U								
Explosives	1,3-Dinitrobenzene	mg/kg	No criteria	.0328	6.1	< 0.002	0.04	0.002	U								
Explosives	2,4,6-Trinitrotoluene	mg/kg	No criteria	2.1	16	< 0.008	0.04	0.008	U								
Explosives	2,4-Dinitrotoluene	mg/kg	No criteria	.73	.72	< 0.014	0.04	0.014	U								
Explosives	2,6-Dinitrotoluene	mg/kg	No criteria	.655	.72	< 0.007	0.04	0.007	U								
Explosives	2-Amino-4,6-dinitrotoluene	mg/kg	No criteria	27	12	< 0.01	0.04	0.01	U								
Explosives	2-Nitrotoluene	mg/kg	No criteria	8	.88	< 0.009	0.08	0.009	U								
Explosives	3-Nitrotoluene	mg/kg	No criteria	7.5	730	< 0.022	0.08	0.022	U								
Explosives	4-Amino-2,6-dinitrotoluene	mg/kg	No criteria	.376	12	< 0.006	0.04	0.006	U								
Explosives	4-Nitrotoluene	mg/kg	No criteria	6.4	12	< 0.036	0.08	0.036	U								
Explosives	HMX	mg/kg	No criteria	2	3100	< 0.012	0.08	0.012	U								
Explosives	Nitrobenzene	mg/kg	No criteria	2.4	20	< 0.006	0.04	0.006	U								
Explosives	Nitroglycerine	mg/kg	No criteria	4.4	35	< 0.04	4	0.04	U								
Explosives	RDX	mg/kg	No criteria	71	4.4	< 0.071	0.08	0.071	U								
Explosives	Tetryl	mg/kg	No criteria	.99	610	< 0.004	0.08	0.004	U								
Metals	Aluminum	mg/kg	97700	50	76000	14900	75.2	2		15300	73	2		13900	76.9	2.1	
Metals	Chromium	mg/kg	81	.4	210	34.4	1.5	0.21		18.7	1.5	0.2		27.7	1.5	0.22	
Metals	Copper	mg/kg	54	50	3100	18.9	1.5	0.15		19.9	1.5	0.15		17.4	1.5	0.15	
Metals	Iron	mg/kg	65200	10	23000	15400	37.6	2.4		14800	36.5	2.3		14100	38.5	2.5	
Metals	Lead	mg/kg	29	16	400	3.3	1.5	0.059		3.3	1.5	0.058		3.3	1.5	0.061	
Metals	Manganese	mg/kg	1680	100	1800	335	1.5	0.043		311	1.5	0.042		304	1.5	0.044	
Metals	Molybdenum	mg/kg	6.9	2	390	0.51	3.8	0.22	J	149	3.6	0.21		0.54	3.8	0.22	J
Metals	Nickel	mg/kg	48	30	1600	17	0.75	0.066		16.6	0.73	0.064		15.6	0.77	0.068	

Notes:

- [**Bold**] - Result exceeds Site Inspection Background 95th UTL / 95th Percentile
- [*Italicized*] - Result exceeds Site Inspection Ecological Screening Level
- [Underline] - Result exceeds EPA Region 9 PRG - Residential Soil

- bgs - below ground surface
- ft - feet
- UTL - upper tolerance limit
- USEPA - United States Environmental Protection Agency
- PRG - Preliminary Remediation Goal
- PQL - practical quantitation limit
- MDL - method detection limit
- mg/kg - milligram per kilogram
- VQ - validation qualifier
- REG - regular sample
- FD - field duplicate
- HMX - octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine
- RDX - hexahydro-1,3,5-trinitro-1,3,5-triazine
- Tetryl - methyl-2,4,6-trinitrophenylnitramine

Validation Qualifier Definitions

- U - Not detected. The compound/analyte was analyzed for, but not detected above the associated reporting limit
- J - The compound/analyte was positively identified; the reported value is the estimated concentration of the constituent detected in the sample analyzed
- R - The reported sample results are rejected due to the following: 1. Severe deficiencies in the supporting quality control data, 2. Anomalies noted in the sampling and/or analysis process which could affect the validity of the reported data, 3. The presence or absence of the constituent cannot be verified based on the data provided, 4. To indicate not to use a particular result in the event of a reanalysis
- UJ - The compound/analyte was analyzed for, but not detected above the established reporting limit. However, review and evaluation of supporting QC data and/or sampling and analysis process have indicated that the reporting limit may be inaccurate or imprecise. The nondetect result should be estimated

Table G-8b

Comparison of Air-to-Air Gunnery Range - Northern Target Area Soil Results to Site Inspection Screening Levels
Central Oregon Gunnery Range

Location			033A005				033A005				033A006				033A007							
Sample Date			13-Feb-07				13-Feb-07				13-Feb-07				13-Feb-07							
Sample Number			NWO-033-0004				NWO-033-0007				NWO-033-0005				NWO-033-0006							
Sample Depth (bgs) (ft)			0 to 0.5				0 to 0.5				0 to 0.5				0 to 0.5							
Sample Purpose			REG				FD				REG				REG							
Fraction	Parameter	Units	Site Inspection Background 95th UTL / 95th Percentile	Site Inspection Ecological Screening Level	USEPA Region 9 PRGs - Residential Soil	Result	PQL	MDL	VQ	Result	PQL	MDL	VQ	Result	PQL	MDL	VQ	Result	PQL	MDL	VQ	
Explosives	1,3,5-Trinitrobenzene	mg/kg	No criteria	1.28	1800	< 0.012	0.04	0.012	UJ	< 0.012	0.04	0.012	UJ									
Explosives	1,3-Dinitrobenzene	mg/kg	No criteria	.0328	6.1	< 0.002	0.04	0.002	UJ	< 0.002	0.04	0.002	UJ									
Explosives	2,4,6-Trinitrotoluene	mg/kg	No criteria	2.1	16	< 0.008	0.04	0.008	UJ	< 0.008	0.04	0.008	UJ									
Explosives	2,4-Dinitrotoluene	mg/kg	No criteria	.73	.72	< 0.014	0.04	0.014	UJ	< 0.014	0.04	0.014	UJ									
Explosives	2,6-Dinitrotoluene	mg/kg	No criteria	.655	.72	< 0.007	0.04	0.007	UJ	< 0.007	0.04	0.007	UJ									
Explosives	2-Amino-4,6-dinitrotoluene	mg/kg	No criteria	27	12	< 0.01	0.04	0.01	UJ	< 0.01	0.04	0.01	UJ									
Explosives	2-Nitrotoluene	mg/kg	No criteria	8	.88	< 0.009	0.08	0.009	UJ	< 0.009	0.08	0.009	UJ									
Explosives	3-Nitrotoluene	mg/kg	No criteria	7.5	730	< 0.022	0.08	0.022	UJ	< 0.022	0.08	0.022	UJ									
Explosives	4-Amino-2,6-dinitrotoluene	mg/kg	No criteria	.376	12	< 0.006	0.04	0.006	UJ	< 0.006	0.04	0.006	UJ									
Explosives	4-Nitrotoluene	mg/kg	No criteria	6.4	12	< 0.036	0.08	0.036	UJ	< 0.036	0.08	0.036	UJ									
Explosives	HMX	mg/kg	No criteria	2	3100	< 0.012	0.08	0.012	UJ	< 0.012	0.08	0.012	UJ									
Explosives	Nitrobenzene	mg/kg	No criteria	2.4	20	0.049	0.04	0.006	J	0.043	0.04	0.006	J									
Explosives	Nitroglycerine	mg/kg	No criteria	4.4	35	< 0.04	4	0.04	UJ	< 0.04	4	0.04	UJ									
Explosives	RDX	mg/kg	No criteria	71	4.4	< 0.071	0.08	0.071	UJ	< 0.071	0.08	0.071	UJ									
Explosives	Tetryl	mg/kg	No criteria	.99	610	< 0.004	0.08	0.004	UJ	< 0.004	0.08	0.004	UJ									
Metals	Aluminum	mg/kg	97700	50	76000	14500	70.4	1.9		15100	74.1	2		11600	73	2		18900	77.5	2.1		
Metals	Chromium	mg/kg	81	4	210	24	1.4	0.2		24	1.5	0.2		16	1.5	0.2		23.9	1.6	0.22		
Metals	Copper	mg/kg	54	50	3100	20	1.4	0.14		19.8	1.5	0.15		14.6	1.5	0.15		26.2	1.6	0.16		
Metals	Iron	mg/kg	65200	10	23000	14800	35.2	2.3		14900	37	2.4		12400	36.5	2.3		19300	38.8	2.5		
Metals	Lead	mg/kg	29	16	400	3.7	1.4	0.056		3.7	1.5	0.059		2.7	1.5	0.058		4.3	1.6	0.061		
Metals	Manganese	mg/kg	1680	100	1800	300	1.4	0.04		297	1.5	0.042		241	1.5	0.042		391	1.6	0.044		
Metals	Molybdenum	mg/kg	6.9	2	390	32.4	3.5	0.2		29.1	3.7	0.21		2.1	3.6	0.21	J	20.9	3.9	0.22		
Metals	Nickel	mg/kg	48	30	1600	16.4	0.7	0.062		16.5	0.74	0.065		12.4	0.73	0.064		22.1	0.78	0.068		

Notes:
 [**Bold**] - Result exceeds Site Inspection Background 95th UTL / 95th Percentile
 [*Italicized*] - Result exceeds Site Inspection Ecological Screening Level
 [Underline] - Result exceeds EPA Region 9 PRG - Residential Soil

bgs - below ground surface
 ft - feet
 UTL - upper tolerance limit
 USEPA - United States Environmental Protection Agency
 PRG - Preliminary Remediation Goal
 PQL - practical quantitation limit
 MDL - method detection limit
 mg/kg - milligram per kilogram
 VQ - validation qualifier

REG - regular sample
 FD - field duplicate
 HMX - octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine
 RDX - hexahydro-1,3,5-trinitro-1,3,5-triazine
 Tetryl - methyl-2,4,6-trinitrophenylnitramine

Validation Qualifier Definitions

U - Not detected. The compound/analyte was analyzed for, but not detected above the associated reporting limit
 J - The compound/analyte was positively identified; the reported value is the estimated concentration of the constituent detected in the sample analyzed
 R - The reported sample results are rejected due to the following: 1. Severe deficiencies in the supporting quality control data, 2. Anomalies noted in the sampling and/or analysis process which could affect the validity of the reported data, 3. The presence or absence of the constituent cannot be verified based on the data provided, 4. To indicate not to use a particular result in the event of a reanalysis
 UJ - The compound/analyte was analyzed for, but not detected above the established reporting limit. However, review and evaluation of supporting QC data and/or sampling and analysis process have indicated that the reporting limit may be inaccurate or imprecise. The nondetect result should be estimated

Table G-9a

Background Groundwater Result
Central Oregon Gunnery Range

Location				033A012			
Sample Date				13-Feb-07			
Sample Number				NWO-033-6002			
Sample Purpose				REG			
Fraction	Parameter	Filtered	Units	Result	PQL	MDL	VQ
Perchlorate	Perchlorate	Y	ug/L	0.229	0.4	0.122	J

Notes:

PQL - practical quantitation limit

MDL - method detection limit

REG - regular sample

ug/L- microgram per liter

VQ - validation qualifier

Validation Qualifier Definitions

U - Not detected. The compound/analyte was analyzed for, but not detected above the associated reporting limit

J - The compound/analyte was positively identified; the reported value is the estimated concentration of the constituent detected in the sample analyzed

R - The reported sample results are rejected due to the following: 1. Severe deficiencies in the supporting quality control data, 2. Anomalies noted in the sampling and/or analysis process which could affect the validity of the reported data, 3. The presence or absence of the constituent cannot be verified based on the data provided, 4. To indicate not to use a particular result in the event of a reanalysis

UJ - The compound/analyte was analyzed for, but not detected above the established reporting limit. However, review and evaluation of supporting QC data and/or sampling and analysis process have indicated that the reporting limit may be inaccurate or imprecise. The nondetect result should be estimated

Table G-9b

Background Sediment Results
Central Oregon Gunnery Range

Location			033A011			
Sample Date			14-Feb-07			
Sample Number			NWO-033-5001			
Sample Depth (bgs) (ft)			0 to 0.5			
Sample Purpose			REG			
Fraction	Parameter	Units	Result	PQL	MDL	VQ
Metals	Aluminum	mg/kg	8680	76.3	2.1	
Metals	Chromium	mg/kg	11.4	1.5	0.21	
Metals	Copper	mg/kg	9.9	1.5	0.15	
Metals	Iron	mg/kg	8060	38.2	2.4	
Metals	Lead	mg/kg	2	1.5	0.06	
Metals	Manganese	mg/kg	152	1.5	0.044	
Metals	Molybdenum	mg/kg	30.9	3.8	0.22	
Metals	Nickel	mg/kg	8.1	0.76	0.067	

Notes:

bgs - below ground surface

ft - feet

PQL - practical quantitation limit

MDL - method detection limit

mg/kg - milligram per kilogram

VQ - validation qualifier

Validation Qualifier Definitions

U - Not detected. The compound/analyte was analyzed for, but not detected above the associated reporting limit

J - The compound/analyte was positively identified; the reported value is the estimated concentration of the constituent detected in the sample analyzed

R - The reported sample results are rejected due to the following: 1. Severe deficiencies in the supporting quality control data, 2. Anomalies noted in the sampling and/or analysis process which could affect the validity of the reported data, 3. The presence or absence of the constituent cannot be verified based on the data provided, 4. To indicate not to use a particular result in the event of a reanalysis

UJ - The compound/analyte was analyzed for, but not detected above the established reporting limit. However, review and evaluation of supporting QC data and/or sampling and analysis process have indicated that the reporting limit may be inaccurate or imprecise. The nondetect result should be estimated

ATTACHMENT 1

Summary of Analytical Results

Attachment 1

Summary of Analytical Results
Central Oregon Gunnery Range

Location	Sample Number	Sample Date	Sample Type	Start Depth (ft)	End Depth (ft)	Sample Purpose	Fraction	CAS No.	Parameter	Result	PQL	MDL	Units	LQ	VQ	R1	R2	R3	R4	Filtered	DF
033A001	NWO-033-0001	2/13/2007	SS	0	0.5	REG	Explosives	99-35-4	1,3,5-Trinitrobenzene	0.012	0.04	0.012	mg/kg	U	U					N	1
033A001	NWO-033-0001	2/13/2007	SS	0	0.5	REG	Explosives	99-65-0	1,3-Dinitrobenzene	0.002	0.04	0.002	mg/kg	U	U					N	1
033A001	NWO-033-0001	2/13/2007	SS	0	0.5	REG	Explosives	118-96-7	2,4,6-Trinitrotoluene	0.008	0.04	0.008	mg/kg	U	U					N	1
033A001	NWO-033-0001	2/13/2007	SS	0	0.5	REG	Explosives	121-14-2	2,4-Dinitrotoluene	0.014	0.04	0.014	mg/kg	U	U					N	1
033A001	NWO-033-0001	2/13/2007	SS	0	0.5	REG	Explosives	606-20-2	2,6-Dinitrotoluene	0.007	0.04	0.007	mg/kg	U	U					N	1
033A001	NWO-033-0001	2/13/2007	SS	0	0.5	REG	Explosives	35572-78-2	2-Amino-4,6-dinitrotoluene	0.01	0.04	0.01	mg/kg	U	U					N	1
033A001	NWO-033-0001	2/13/2007	SS	0	0.5	REG	Explosives	88-72-2	2-Nitrotoluene	0.009	0.08	0.009	mg/kg	U	U					N	1
033A001	NWO-033-0001	2/13/2007	SS	0	0.5	REG	Explosives	99-08-1	3-Nitrotoluene	0.022	0.08	0.022	mg/kg	U	U					N	1
033A001	NWO-033-0001	2/13/2007	SS	0	0.5	REG	Explosives	19406-51-0	4-Amino-2,6-dinitrotoluene	0.006	0.04	0.006	mg/kg	U	U					N	1
033A001	NWO-033-0001	2/13/2007	SS	0	0.5	REG	Explosives	99-99-0	4-Nitrotoluene	0.036	0.08	0.036	mg/kg	U	U					N	1
033A001	NWO-033-0001	2/13/2007	SS	0	0.5	REG	Explosives	2691-41-0	HMX	0.012	0.08	0.012	mg/kg	U	U					N	1
033A001	NWO-033-0001	2/13/2007	SS	0	0.5	REG	Explosives	98-95-3	Nitrobenzene	0.006	0.04	0.006	mg/kg	U	U					N	1
033A001	NWO-033-0001	2/13/2007	SS	0	0.5	REG	Explosives	55-63-0	Nitroglycerine	0.04	4	0.04	mg/kg	U	U					N	1
033A001	NWO-033-0001	2/13/2007	SS	0	0.5	REG	Explosives	121-82-4	RDX	0.071	0.08	0.071	mg/kg	U	U					N	1
033A001	NWO-033-0001	2/13/2007	SS	0	0.5	REG	Explosives	479-45-8	Tetryl	0.004	0.08	0.004	mg/kg	U	U					N	1
033A001	NWO-033-0001	2/13/2007	SS	0	0.5	REG	Metals	7429-90-5	Aluminum	14900	75.2	2	mg/kg	D						N	10
033A001	NWO-033-0001	2/13/2007	SS	0	0.5	REG	Metals	7440-47-3	Chromium	34.4	1.5	0.21	mg/kg	DB						N	10
033A001	NWO-033-0001	2/13/2007	SS	0	0.5	REG	Metals	7440-50-8	Copper	18.9	1.5	0.15	mg/kg	D						N	10
033A001	NWO-033-0001	2/13/2007	SS	0	0.5	REG	Metals	7439-89-6	Iron	15400	37.6	2.4	mg/kg	D						N	10
033A001	NWO-033-0001	2/13/2007	SS	0	0.5	REG	Metals	7439-92-1	Lead	3.3	1.5	0.059	mg/kg	D						N	10
033A001	NWO-033-0001	2/13/2007	SS	0	0.5	REG	Metals	7439-96-5	Manganese	335	1.5	0.043	mg/kg	D						N	10
033A001	NWO-033-0001	2/13/2007	SS	0	0.5	REG	Metals	7439-98-7	Molybdenum	0.51	3.8	0.22	mg/kg	JD	J	15				N	10
033A001	NWO-033-0001	2/13/2007	SS	0	0.5	REG	Metals	7440-02-0	Nickel	17	0.75	0.066	mg/kg	DB						N	10
033A002	NWO-033-0002	2/13/2007	SS	0	0.5	REG	Metals	7429-90-5	Aluminum	15300	73	2	mg/kg	D						N	10
033A002	NWO-033-0002	2/13/2007	SS	0	0.5	REG	Metals	7440-47-3	Chromium	18.7	1.5	0.2	mg/kg	DB						N	10
033A002	NWO-033-0002	2/13/2007	SS	0	0.5	REG	Metals	7440-50-8	Copper	19.9	1.5	0.15	mg/kg	D						N	10
033A002	NWO-033-0002	2/13/2007	SS	0	0.5	REG	Metals	7439-89-6	Iron	14800	36.5	2.3	mg/kg	D						N	10
033A002	NWO-033-0002	2/13/2007	SS	0	0.5	REG	Metals	7439-92-1	Lead	3.3	1.5	0.058	mg/kg	D						N	10
033A002	NWO-033-0002	2/13/2007	SS	0	0.5	REG	Metals	7439-96-5	Manganese	311	1.5	0.042	mg/kg	D						N	10
033A002	NWO-033-0002	2/13/2007	SS	0	0.5	REG	Metals	7439-98-7	Molybdenum	149	3.6	0.21	mg/kg	D						N	10
033A002	NWO-033-0002	2/13/2007	SS	0	0.5	REG	Metals	7440-02-0	Nickel	16.6	0.73	0.064	mg/kg	DB						N	10
033A003	NWO-033-0003	2/13/2007	SS	0	0.5	REG	Metals	7429-90-5	Aluminum	13900	76.9	2.1	mg/kg	D						N	10
033A003	NWO-033-0003	2/13/2007	SS	0	0.5	REG	Metals	7440-47-3	Chromium	27.7	1.5	0.22	mg/kg	DB						N	10
033A003	NWO-033-0003	2/13/2007	SS	0	0.5	REG	Metals	7440-50-8	Copper	17.4	1.5	0.15	mg/kg	D						N	10
033A003	NWO-033-0003	2/13/2007	SS	0	0.5	REG	Metals	7439-89-6	Iron	14100	38.5	2.5	mg/kg	D						N	10
033A003	NWO-033-0003	2/13/2007	SS	0	0.5	REG	Metals	7439-92-1	Lead	3.3	1.5	0.061	mg/kg	D						N	10
033A003	NWO-033-0003	2/13/2007	SS	0	0.5	REG	Metals	7439-96-5	Manganese	304	1.5	0.044	mg/kg	D						N	10
033A003	NWO-033-0003	2/13/2007	SS	0	0.5	REG	Metals	7439-98-7	Molybdenum	0.54	3.8	0.22	mg/kg	JD	J	15				N	10
033A003	NWO-033-0003	2/13/2007	SS	0	0.5	REG	Metals	7440-02-0	Nickel	15.6	0.77	0.068	mg/kg	DB						N	10
033A004	NWO-033-1001	2/13/2007	SD	0	0.5	REG	Explosives	99-35-4	1,3,5-Trinitrobenzene	0.012	0.04	0.012	mg/kg	U	U					N	1
033A004	NWO-033-1001	2/13/2007	SD	0	0.5	REG	Explosives	99-65-0	1,3-Dinitrobenzene	0.002	0.04	0.002	mg/kg	U	U					N	1
033A004	NWO-033-1001	2/13/2007	SD	0	0.5	REG	Explosives	118-96-7	2,4,6-Trinitrotoluene	0.008	0.04	0.008	mg/kg	U	U					N	1
033A004	NWO-033-1001	2/13/2007	SD	0	0.5	REG	Explosives	121-14-2	2,4-Dinitrotoluene	0.014	0.04	0.014	mg/kg	U	U					N	1
033A004	NWO-033-1001	2/13/2007	SD	0	0.5	REG	Explosives	606-20-2	2,6-Dinitrotoluene	0.007	0.04	0.007	mg/kg	U	U					N	1
033A004	NWO-033-1001	2/13/2007	SD	0	0.5	REG	Explosives	35572-78-2	2-Amino-4,6-dinitrotoluene	0.01	0.04	0.01	mg/kg	U	U					N	1
033A004	NWO-033-1001	2/13/2007	SD	0	0.5	REG	Explosives	88-72-2	2-Nitrotoluene	0.009	0.08	0.009	mg/kg	U	U					N	1
033A004	NWO-033-1001	2/13/2007	SD	0	0.5	REG	Explosives	99-08-1	3-Nitrotoluene	0.022	0.08	0.022	mg/kg	U	U					N	1
033A004	NWO-033-1001	2/13/2007	SD	0	0.5	REG	Explosives	19406-51-0	4-Amino-2,6-dinitrotoluene	0.006	0.04	0.006	mg/kg	U	U					N	1
033A004	NWO-033-1001	2/13/2007	SD	0	0.5	REG	Explosives	99-99-0	4-Nitrotoluene	0.036	0.08	0.036	mg/kg	U	U					N	1

Attachment 1

Summary of Analytical Results
Central Oregon Gunnery Range

Location	Sample Number	Sample Date	Sample Type	Start Depth (ft)	End Depth (ft)	Sample Purpose	Fraction	CAS No.	Parameter	Result	PQL	MDL	Units	LQ	VQ	R1	R2	R3	R4	Filtered	DF
033A004	NWO-033-1001	2/13/2007	SD	0	0.5	REG	Explosives	2691-41-0	HMX	0.012	0.08	0.012	mg/kg	U	U					N	1
033A004	NWO-033-1001	2/13/2007	SD	0	0.5	REG	Explosives	98-95-3	Nitrobenzene	0.029	0.04	0.006	mg/kg	J	U	19	18	15		N	1
033A004	NWO-033-1001	2/13/2007	SD	0	0.5	REG	Explosives	55-63-0	Nitroglycerine	0.04	4	0.04	mg/kg	U	U					N	1
033A004	NWO-033-1001	2/13/2007	SD	0	0.5	REG	Explosives	121-82-4	RDX	0.071	0.08	0.071	mg/kg	U	U					N	1
033A004	NWO-033-1001	2/13/2007	SD	0	0.5	REG	Explosives	479-45-8	Tetryl	0.004	0.08	0.004	mg/kg	U	U					N	1
033A004	NWO-033-1001	2/13/2007	SD	0	0.5	REG	Metals	7429-90-5	Aluminum	10800	73	2	mg/kg	D						N	10
033A004	NWO-033-1001	2/13/2007	SD	0	0.5	REG	Metals	7440-47-3	Chromium	18	1.5	0.2	mg/kg	DB						N	10
033A004	NWO-033-1001	2/13/2007	SD	0	0.5	REG	Metals	7440-50-8	Copper	12.4	1.5	0.15	mg/kg	D						N	10
033A004	NWO-033-1001	2/13/2007	SD	0	0.5	REG	Metals	7439-89-6	Iron	10300	36.5	2.3	mg/kg	D						N	10
033A004	NWO-033-1001	2/13/2007	SD	0	0.5	REG	Metals	7439-92-1	Lead	2.6	1.5	0.058	mg/kg	D						N	10
033A004	NWO-033-1001	2/13/2007	SD	0	0.5	REG	Metals	7439-96-5	Manganese	214	1.5	0.042	mg/kg	D						N	10
033A004	NWO-033-1001	2/13/2007	SD	0	0.5	REG	Metals	7439-98-7	Molybdenum	2.5	3.6	0.21	mg/kg	JD	J	15				N	10
033A004	NWO-033-1001	2/13/2007	SD	0	0.5	REG	Metals	7440-02-0	Nickel	10.3	0.73	0.064	mg/kg	DB						N	10
033A005	NWO-033-0004	2/13/2007	SS	0	0.5	REG	Explosives	99-35-4	1,3,5-Trinitrobenzene	0.012	0.04	0.012	mg/kg	U	UJ	07A				N	1
033A005	NWO-033-0004	2/13/2007	SS	0	0.5	REG	Explosives	99-65-0	1,3-Dinitrobenzene	0.002	0.04	0.002	mg/kg	U	UJ	07A				N	1
033A005	NWO-033-0004	2/13/2007	SS	0	0.5	REG	Explosives	118-96-7	2,4,6-Trinitrotoluene	0.008	0.04	0.008	mg/kg	U	UJ	07A				N	1
033A005	NWO-033-0004	2/13/2007	SS	0	0.5	REG	Explosives	121-14-2	2,4-Dinitrotoluene	0.014	0.04	0.014	mg/kg	U	UJ	07A				N	1
033A005	NWO-033-0004	2/13/2007	SS	0	0.5	REG	Explosives	606-20-2	2,6-Dinitrotoluene	0.007	0.04	0.007	mg/kg	U	UJ	07A				N	1
033A005	NWO-033-0004	2/13/2007	SS	0	0.5	REG	Explosives	35572-78-2	2-Amino-4,6-dinitrotoluene	0.01	0.04	0.01	mg/kg	U	UJ	07A				N	1
033A005	NWO-033-0004	2/13/2007	SS	0	0.5	REG	Explosives	88-72-2	2-Nitrotoluene	0.009	0.08	0.009	mg/kg	U	UJ	07A				N	1
033A005	NWO-033-0004	2/13/2007	SS	0	0.5	REG	Explosives	99-08-1	3-Nitrotoluene	0.022	0.08	0.022	mg/kg	U	UJ	07A				N	1
033A005	NWO-033-0004	2/13/2007	SS	0	0.5	REG	Explosives	19406-51-0	4-Amino-2,6-dinitrotoluene	0.006	0.04	0.006	mg/kg	U	UJ	07A				N	1
033A005	NWO-033-0004	2/13/2007	SS	0	0.5	REG	Explosives	99-99-0	4-Nitrotoluene	0.036	0.08	0.036	mg/kg	U	UJ	07A				N	1
033A005	NWO-033-0004	2/13/2007	SS	0	0.5	REG	Explosives	2691-41-0	HMX	0.012	0.08	0.012	mg/kg	U	UJ	07A				N	1
033A005	NWO-033-0004	2/13/2007	SS	0	0.5	REG	Explosives	98-95-3	Nitrobenzene	0.049	0.04	0.006	mg/kg		J	19	18	07A		N	1
033A005	NWO-033-0004	2/13/2007	SS	0	0.5	REG	Explosives	55-63-0	Nitroglycerine	0.04	4	0.04	mg/kg	U	UJ	07A				N	1
033A005	NWO-033-0004	2/13/2007	SS	0	0.5	REG	Explosives	121-82-4	RDX	0.071	0.08	0.071	mg/kg	U	UJ	07A				N	1
033A005	NWO-033-0004	2/13/2007	SS	0	0.5	REG	Explosives	479-45-8	Tetryl	0.004	0.08	0.004	mg/kg	U	UJ	07A				N	1
033A005	NWO-033-0004	2/13/2007	SS	0	0.5	REG	Metals	7429-90-5	Aluminum	14500	70.4	1.9	mg/kg	D						N	10
033A005	NWO-033-0004	2/13/2007	SS	0	0.5	REG	Metals	7440-47-3	Chromium	24	1.4	0.2	mg/kg	DB						N	10
033A005	NWO-033-0004	2/13/2007	SS	0	0.5	REG	Metals	7440-50-8	Copper	20	1.4	0.14	mg/kg	D						N	10
033A005	NWO-033-0004	2/13/2007	SS	0	0.5	REG	Metals	7439-89-6	Iron	14800	35.2	2.3	mg/kg	D						N	10
033A005	NWO-033-0004	2/13/2007	SS	0	0.5	REG	Metals	7439-92-1	Lead	3.7	1.4	0.056	mg/kg	D						N	10
033A005	NWO-033-0004	2/13/2007	SS	0	0.5	REG	Metals	7439-96-5	Manganese	300	1.4	0.04	mg/kg	D						N	10
033A005	NWO-033-0004	2/13/2007	SS	0	0.5	REG	Metals	7439-98-7	Molybdenum	32.4	3.5	0.2	mg/kg	D						N	10
033A005	NWO-033-0004	2/13/2007	SS	0	0.5	REG	Metals	7440-02-0	Nickel	16.4	0.7	0.062	mg/kg	DB						N	10
033A005	NWO-033-0007	2/13/2007	SS	0	0.5	FD	Explosives	99-35-4	1,3,5-Trinitrobenzene	0.012	0.04	0.012	mg/kg	U	UJ	07A				N	1
033A005	NWO-033-0007	2/13/2007	SS	0	0.5	FD	Explosives	99-65-0	1,3-Dinitrobenzene	0.002	0.04	0.002	mg/kg	U	UJ	07A				N	1
033A005	NWO-033-0007	2/13/2007	SS	0	0.5	FD	Explosives	118-96-7	2,4,6-Trinitrotoluene	0.008	0.04	0.008	mg/kg	U	UJ	07A				N	1
033A005	NWO-033-0007	2/13/2007	SS	0	0.5	FD	Explosives	121-14-2	2,4-Dinitrotoluene	0.014	0.04	0.014	mg/kg	U	UJ	07A				N	1
033A005	NWO-033-0007	2/13/2007	SS	0	0.5	FD	Explosives	606-20-2	2,6-Dinitrotoluene	0.007	0.04	0.007	mg/kg	U	UJ	07A				N	1
033A005	NWO-033-0007	2/13/2007	SS	0	0.5	FD	Explosives	35572-78-2	2-Amino-4,6-dinitrotoluene	0.01	0.04	0.01	mg/kg	U	UJ	07A				N	1
033A005	NWO-033-0007	2/13/2007	SS	0	0.5	FD	Explosives	88-72-2	2-Nitrotoluene	0.009	0.08	0.009	mg/kg	U	UJ	07A				N	1
033A005	NWO-033-0007	2/13/2007	SS	0	0.5	FD	Explosives	99-08-1	3-Nitrotoluene	0.022	0.08	0.022	mg/kg	U	UJ	07A				N	1
033A005	NWO-033-0007	2/13/2007	SS	0	0.5	FD	Explosives	19406-51-0	4-Amino-2,6-dinitrotoluene	0.006	0.04	0.006	mg/kg	U	UJ	07A				N	1
033A005	NWO-033-0007	2/13/2007	SS	0	0.5	FD	Explosives	99-99-0	4-Nitrotoluene	0.036	0.08	0.036	mg/kg	U	UJ	07A				N	1
033A005	NWO-033-0007	2/13/2007	SS	0	0.5	FD	Explosives	2691-41-0	HMX	0.012	0.08	0.012	mg/kg	U	UJ	07A				N	1
033A005	NWO-033-0007	2/13/2007	SS	0	0.5	FD	Explosives	98-95-3	Nitrobenzene	0.043	0.04	0.006	mg/kg		J	07A				N	1
033A005	NWO-033-0007	2/13/2007	SS	0	0.5	FD	Explosives	55-63-0	Nitroglycerine	0.04	4	0.04	mg/kg	U	UJ	07A				N	1

Attachment 1

Summary of Analytical Results
Central Oregon Gunnery Range

Location	Sample Number	Sample Date	Sample Type	Start Depth (ft)	End Depth (ft)	Sample Purpose	Fraction	CAS No.	Parameter	Result	PQL	MDL	Units	LQ	VQ	R1	R2	R3	R4	Filtered	DF
033A005	NWO-033-0007	2/13/2007	SS	0	0.5	FD	Explosives	121-82-4	RDX	0.071	0.08	0.071	mg/kg	U	UJ	07A				N	1
033A005	NWO-033-0007	2/13/2007	SS	0	0.5	FD	Explosives	479-45-8	Tetryl	0.004	0.08	0.004	mg/kg	U	UJ	07A				N	1
033A005	NWO-033-0007	2/13/2007	SS	0	0.5	FD	Metals	7429-90-5	Aluminum	15100	74.1	2	mg/kg	D						N	10
033A005	NWO-033-0007	2/13/2007	SS	0	0.5	FD	Metals	7440-47-3	Chromium	24	1.5	0.21	mg/kg	DB						N	10
033A005	NWO-033-0007	2/13/2007	SS	0	0.5	FD	Metals	7440-50-8	Copper	19.8	1.5	0.15	mg/kg	D						N	10
033A005	NWO-033-0007	2/13/2007	SS	0	0.5	FD	Metals	7439-89-6	Iron	14900	37	2.4	mg/kg	D						N	10
033A005	NWO-033-0007	2/13/2007	SS	0	0.5	FD	Metals	7439-92-1	Lead	3.7	1.5	0.059	mg/kg	D						N	10
033A005	NWO-033-0007	2/13/2007	SS	0	0.5	FD	Metals	7439-96-5	Manganese	297	1.5	0.042	mg/kg	D						N	10
033A005	NWO-033-0007	2/13/2007	SS	0	0.5	FD	Metals	7439-98-7	Molybdenum	29.1	3.7	0.21	mg/kg	D						N	10
033A005	NWO-033-0007	2/13/2007	SS	0	0.5	FD	Metals	7440-02-0	Nickel	16.5	0.74	0.065	mg/kg	DB						N	10
033A006	NWO-033-0005	2/13/2007	SS	0	0.5	REG	Metals	7429-90-5	Aluminum	11600	73	2	mg/kg	D						N	10
033A006	NWO-033-0005	2/13/2007	SS	0	0.5	REG	Metals	7440-47-3	Chromium	16	1.5	0.2	mg/kg	DB						N	10
033A006	NWO-033-0005	2/13/2007	SS	0	0.5	REG	Metals	7440-50-8	Copper	14.6	1.5	0.15	mg/kg	D						N	10
033A006	NWO-033-0005	2/13/2007	SS	0	0.5	REG	Metals	7439-89-6	Iron	12400	36.5	2.3	mg/kg	D						N	10
033A006	NWO-033-0005	2/13/2007	SS	0	0.5	REG	Metals	7439-92-1	Lead	2.7	1.5	0.058	mg/kg	D						N	10
033A006	NWO-033-0005	2/13/2007	SS	0	0.5	REG	Metals	7439-96-5	Manganese	241	1.5	0.042	mg/kg	D						N	10
033A006	NWO-033-0005	2/13/2007	SS	0	0.5	REG	Metals	7439-98-7	Molybdenum	2.1	3.6	0.21	mg/kg	JD	J	15				N	10
033A006	NWO-033-0005	2/13/2007	SS	0	0.5	REG	Metals	7440-02-0	Nickel	12.4	0.73	0.064	mg/kg	DB						N	10
033A007	NWO-033-0006	2/13/2007	SS	0	0.5	REG	Metals	7429-90-5	Aluminum	18900	77.5	2.1	mg/kg	D						N	10
033A007	NWO-033-0006	2/13/2007	SS	0	0.5	REG	Metals	7440-47-3	Chromium	23.9	1.6	0.22	mg/kg	DB						N	10
033A007	NWO-033-0006	2/13/2007	SS	0	0.5	REG	Metals	7440-50-8	Copper	26.2	1.6	0.16	mg/kg	D						N	10
033A007	NWO-033-0006	2/13/2007	SS	0	0.5	REG	Metals	7439-89-6	Iron	19300	38.8	2.5	mg/kg	D						N	10
033A007	NWO-033-0006	2/13/2007	SS	0	0.5	REG	Metals	7439-92-1	Lead	4.3	1.6	0.061	mg/kg	D						N	10
033A007	NWO-033-0006	2/13/2007	SS	0	0.5	REG	Metals	7439-96-5	Manganese	391	1.6	0.044	mg/kg	D						N	10
033A007	NWO-033-0006	2/13/2007	SS	0	0.5	REG	Metals	7439-98-7	Molybdenum	20.9	3.9	0.22	mg/kg	D						N	10
033A007	NWO-033-0006	2/13/2007	SS	0	0.5	REG	Metals	7440-02-0	Nickel	22.1	0.78	0.068	mg/kg	DB						N	10
033A008	NWO-033-1002	2/13/2007	SD	0	0.5	REG	Explosives	99-35-4	1,3,5-Trinitrobenzene	0.012	0.04	0.012	mg/kg	U	UJ	07A				N	1
033A008	NWO-033-1002	2/13/2007	SD	0	0.5	REG	Explosives	99-65-0	1,3-Dinitrobenzene	0.002	0.04	0.002	mg/kg	U	UJ	07A				N	1
033A008	NWO-033-1002	2/13/2007	SD	0	0.5	REG	Explosives	118-96-7	2,4,6-Trinitrotoluene	0.008	0.04	0.008	mg/kg	U	UJ	07A				N	1
033A008	NWO-033-1002	2/13/2007	SD	0	0.5	REG	Explosives	121-14-2	2,4-Dinitrotoluene	0.014	0.04	0.014	mg/kg	U	UJ	07A				N	1
033A008	NWO-033-1002	2/13/2007	SD	0	0.5	REG	Explosives	606-20-2	2,6-Dinitrotoluene	0.007	0.04	0.007	mg/kg	U	UJ	07A				N	1
033A008	NWO-033-1002	2/13/2007	SD	0	0.5	REG	Explosives	35572-78-2	2-Amino-4,6-dinitrotoluene	0.01	0.04	0.01	mg/kg	U	UJ	07A				N	1
033A008	NWO-033-1002	2/13/2007	SD	0	0.5	REG	Explosives	88-72-2	2-Nitrotoluene	0.009	0.08	0.009	mg/kg	U	UJ	07A				N	1
033A008	NWO-033-1002	2/13/2007	SD	0	0.5	REG	Explosives	99-08-1	3-Nitrotoluene	0.022	0.08	0.022	mg/kg	U	UJ	07A				N	1
033A008	NWO-033-1002	2/13/2007	SD	0	0.5	REG	Explosives	19406-51-0	4-Amino-2,6-dinitrotoluene	0.006	0.04	0.006	mg/kg	U	UJ	07A				N	1
033A008	NWO-033-1002	2/13/2007	SD	0	0.5	REG	Explosives	99-99-0	4-Nitrotoluene	0.036	0.08	0.036	mg/kg	U	UJ	07A				N	1
033A008	NWO-033-1002	2/13/2007	SD	0	0.5	REG	Explosives	2691-41-0	HMX	0.012	0.08	0.012	mg/kg	U	UJ	07A				N	1
033A008	NWO-033-1002	2/13/2007	SD	0	0.5	REG	Explosives	98-95-3	Nitrobenzene	0.041	0.04	0.006	mg/kg		J	19	18	07A		N	1
033A008	NWO-033-1002	2/13/2007	SD	0	0.5	REG	Explosives	55-63-0	Nitroglycerine	0.04	4	0.04	mg/kg	U	UJ	07A				N	1
033A008	NWO-033-1002	2/13/2007	SD	0	0.5	REG	Explosives	121-82-4	RDX	0.071	0.08	0.071	mg/kg	U	UJ	07A				N	1
033A008	NWO-033-1002	2/13/2007	SD	0	0.5	REG	Explosives	479-45-8	Tetryl	0.004	0.08	0.004	mg/kg	U	UJ	07A				N	1
033A008	NWO-033-1002	2/13/2007	SD	0	0.5	REG	Metals	7429-90-5	Aluminum	10800	73.5	2	mg/kg	D						N	10
033A008	NWO-033-1002	2/13/2007	SD	0	0.5	REG	Metals	7440-47-3	Chromium	11.1	1.5	0.21	mg/kg	DB						N	10
033A008	NWO-033-1002	2/13/2007	SD	0	0.5	REG	Metals	7440-50-8	Copper	10.7	1.5	0.15	mg/kg	D						N	10
033A008	NWO-033-1002	2/13/2007	SD	0	0.5	REG	Metals	7439-89-6	Iron	9400	36.8	2.4	mg/kg	D						N	10
033A008	NWO-033-1002	2/13/2007	SD	0	0.5	REG	Metals	7439-92-1	Lead	2.7	1.5	0.058	mg/kg	D						N	10
033A008	NWO-033-1002	2/13/2007	SD	0	0.5	REG	Metals	7439-96-5	Manganese	206	1.5	0.042	mg/kg	D						N	10
033A008	NWO-033-1002	2/13/2007	SD	0	0.5	REG	Metals	7439-98-7	Molybdenum	10.9	3.7	0.21	mg/kg	D						N	10
033A008	NWO-033-1002	2/13/2007	SD	0	0.5	REG	Metals	7440-02-0	Nickel	8.9	0.74	0.065	mg/kg	DB						N	10

Attachment 1

Summary of Analytical Results
Central Oregon Gunnery Range

Location	Sample Number	Sample Date	Sample Type	Start Depth (ft)	End Depth (ft)	Sample Purpose	Fraction	CAS No.	Parameter	Result	PQL	MDL	Units	LQ	VQ	R1	R2	R3	R4	Filtered	DF	
033A010	NWO-033-3001	2/14/2007	GW	0	0	REG	Perchlorate	14797-73-0	Perchlorate	0.122	0.4	0.122	ug/L	U	U						Y	2
033A011	NWO-033-5001	2/14/2007	SD	0	0.5	REG	Metals	7429-90-5	Aluminum	8680	76.3	2.1	mg/kg	D							N	10
033A011	NWO-033-5001	2/14/2007	SD	0	0.5	REG	Metals	7440-47-3	Chromium	11.4	1.5	0.21	mg/kg	DB							N	10
033A011	NWO-033-5001	2/14/2007	SD	0	0.5	REG	Metals	7440-50-8	Copper	9.9	1.5	0.15	mg/kg	D							N	10
033A011	NWO-033-5001	2/14/2007	SD	0	0.5	REG	Metals	7439-89-6	Iron	8060	38.2	2.4	mg/kg	D							N	10
033A011	NWO-033-5001	2/14/2007	SD	0	0.5	REG	Metals	7439-92-1	Lead	2	1.5	0.06	mg/kg	D							N	10
033A011	NWO-033-5001	2/14/2007	SD	0	0.5	REG	Metals	7439-96-5	Manganese	152	1.5	0.044	mg/kg	D							N	10
033A011	NWO-033-5001	2/14/2007	SD	0	0.5	REG	Metals	7439-98-7	Molybdenum	30.9	3.8	0.22	mg/kg	D							N	10
033A011	NWO-033-5001	2/14/2007	SD	0	0.5	REG	Metals	7440-02-0	Nickel	8.1	0.76	0.067	mg/kg	DB							N	10
033A012	NWO-033-6002	2/13/2007	GW	0	0	REG	Perchlorate	14797-73-0	Perchlorate	0.229	0.4	0.122	ug/L	J	J	19	05B	18	15	Y	2	

ft - feet
 REG - regular field sample
 FD - field duplicate
 SS - surface soil (0 - 0.5ft)
 SD - sediment
 GW - groundwater
 PQL - practical quantitation limit
 MDL - method detection limit
 LQ - laboratory qualifier
 VQ - validation qualifier
 mg/kg - milligram per kilogram
 ug/L - microgram per liter
 R1 - reason code no. 1
 R2 - reason code no. 2
 R3 - reason code no. 3
 R4 - reason code no. 4
 DF - dilution factor
 HMX - octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine
 RDX - hexahydro-1,3,5-trinitro-1,3,5-triazine
 Tetryl - methyl-2,4,6-trinitrophenylnitramine

ATTACHMENT 2

Summary of Analytical Results greater than the MDL

Attachment 2

Summary of Analytical Results greater than the MDL
Central Oregon Gunnery Range

Location	Sample Number	Sample Date	Sample Type	Start Depth (ft)	End Depth (ft)	Sample Purpose	Fraction	CAS No.	Parameter	Result	PQL	MDL	Units	LQ	VQ	R1	R2	R3	R4	Filtered	DF
033A001	NWO-033-0001	2/13/2007	SS	0	0.5	REG	Metals	7429-90-5	Aluminum	14900	75.2	2	mg/kg	D						N	10
033A001	NWO-033-0001	2/13/2007	SS	0	0.5	REG	Metals	7440-47-3	Chromium	34.4	1.5	0.21	mg/kg	DB						N	10
033A001	NWO-033-0001	2/13/2007	SS	0	0.5	REG	Metals	7440-50-8	Copper	18.9	1.5	0.15	mg/kg	D						N	10
033A001	NWO-033-0001	2/13/2007	SS	0	0.5	REG	Metals	7439-89-6	Iron	15400	37.6	2.4	mg/kg	D						N	10
033A001	NWO-033-0001	2/13/2007	SS	0	0.5	REG	Metals	7439-92-1	Lead	3.3	1.5	0.059	mg/kg	D						N	10
033A001	NWO-033-0001	2/13/2007	SS	0	0.5	REG	Metals	7439-96-5	Manganese	335	1.5	0.043	mg/kg	D						N	10
033A001	NWO-033-0001	2/13/2007	SS	0	0.5	REG	Metals	7439-98-7	Molybdenum	0.51	3.8	0.22	mg/kg	JD	J	15				N	10
033A001	NWO-033-0001	2/13/2007	SS	0	0.5	REG	Metals	7440-02-0	Nickel	17	0.75	0.066	mg/kg	DB						N	10
033A002	NWO-033-0002	2/13/2007	SS	0	0.5	REG	Metals	7429-90-5	Aluminum	15300	73	2	mg/kg	D						N	10
033A002	NWO-033-0002	2/13/2007	SS	0	0.5	REG	Metals	7440-47-3	Chromium	18.7	1.5	0.2	mg/kg	DB						N	10
033A002	NWO-033-0002	2/13/2007	SS	0	0.5	REG	Metals	7440-50-8	Copper	19.9	1.5	0.15	mg/kg	D						N	10
033A002	NWO-033-0002	2/13/2007	SS	0	0.5	REG	Metals	7439-89-6	Iron	14800	36.5	2.3	mg/kg	D						N	10
033A002	NWO-033-0002	2/13/2007	SS	0	0.5	REG	Metals	7439-92-1	Lead	3.3	1.5	0.058	mg/kg	D						N	10
033A002	NWO-033-0002	2/13/2007	SS	0	0.5	REG	Metals	7439-96-5	Manganese	311	1.5	0.042	mg/kg	D						N	10
033A002	NWO-033-0002	2/13/2007	SS	0	0.5	REG	Metals	7439-98-7	Molybdenum	149	3.6	0.21	mg/kg	D						N	10
033A002	NWO-033-0002	2/13/2007	SS	0	0.5	REG	Metals	7440-02-0	Nickel	16.6	0.73	0.064	mg/kg	DB						N	10
033A003	NWO-033-0003	2/13/2007	SS	0	0.5	REG	Metals	7429-90-5	Aluminum	13900	76.9	2.1	mg/kg	D						N	10
033A003	NWO-033-0003	2/13/2007	SS	0	0.5	REG	Metals	7440-47-3	Chromium	27.7	1.5	0.22	mg/kg	DB						N	10
033A003	NWO-033-0003	2/13/2007	SS	0	0.5	REG	Metals	7440-50-8	Copper	17.4	1.5	0.15	mg/kg	D						N	10
033A003	NWO-033-0003	2/13/2007	SS	0	0.5	REG	Metals	7439-89-6	Iron	14100	38.5	2.5	mg/kg	D						N	10
033A003	NWO-033-0003	2/13/2007	SS	0	0.5	REG	Metals	7439-92-1	Lead	3.3	1.5	0.061	mg/kg	D						N	10
033A003	NWO-033-0003	2/13/2007	SS	0	0.5	REG	Metals	7439-96-5	Manganese	304	1.5	0.044	mg/kg	D						N	10
033A003	NWO-033-0003	2/13/2007	SS	0	0.5	REG	Metals	7439-98-7	Molybdenum	0.54	3.8	0.22	mg/kg	JD	J	15				N	10
033A003	NWO-033-0003	2/13/2007	SS	0	0.5	REG	Metals	7440-02-0	Nickel	15.6	0.77	0.068	mg/kg	DB						N	10
033A004	NWO-033-1001	2/13/2007	SD	0	0.5	REG	Explosives	98-95-3	Nitrobenzene	0.029	0.04	0.006	mg/kg	J	J	19	18	15		N	1
033A004	NWO-033-1001	2/13/2007	SD	0	0.5	REG	Metals	7429-90-5	Aluminum	10800	73	2	mg/kg	D						N	10
033A004	NWO-033-1001	2/13/2007	SD	0	0.5	REG	Metals	7440-47-3	Chromium	18	1.5	0.2	mg/kg	DB						N	10
033A004	NWO-033-1001	2/13/2007	SD	0	0.5	REG	Metals	7440-50-8	Copper	12.4	1.5	0.15	mg/kg	D						N	10
033A004	NWO-033-1001	2/13/2007	SD	0	0.5	REG	Metals	7439-89-6	Iron	10300	36.5	2.3	mg/kg	D						N	10
033A004	NWO-033-1001	2/13/2007	SD	0	0.5	REG	Metals	7439-92-1	Lead	2.6	1.5	0.058	mg/kg	D						N	10
033A004	NWO-033-1001	2/13/2007	SD	0	0.5	REG	Metals	7439-96-5	Manganese	214	1.5	0.042	mg/kg	D						N	10
033A004	NWO-033-1001	2/13/2007	SD	0	0.5	REG	Metals	7439-98-7	Molybdenum	2.5	3.6	0.21	mg/kg	JD	J	15				N	10
033A004	NWO-033-1001	2/13/2007	SD	0	0.5	REG	Metals	7440-02-0	Nickel	10.3	0.73	0.064	mg/kg	DB						N	10
033A005	NWO-033-0004	2/13/2007	SS	0	0.5	REG	Explosives	98-95-3	Nitrobenzene	0.049	0.04	0.006	mg/kg		J	19	18	07A		N	1
033A005	NWO-033-0004	2/13/2007	SS	0	0.5	REG	Metals	7429-90-5	Aluminum	14500	70.4	1.9	mg/kg	D						N	10
033A005	NWO-033-0004	2/13/2007	SS	0	0.5	REG	Metals	7440-47-3	Chromium	24	1.4	0.2	mg/kg	DB						N	10
033A005	NWO-033-0004	2/13/2007	SS	0	0.5	REG	Metals	7440-50-8	Copper	20	1.4	0.14	mg/kg	D						N	10
033A005	NWO-033-0004	2/13/2007	SS	0	0.5	REG	Metals	7439-89-6	Iron	14800	35.2	2.3	mg/kg	D						N	10
033A005	NWO-033-0004	2/13/2007	SS	0	0.5	REG	Metals	7439-92-1	Lead	3.7	1.4	0.056	mg/kg	D						N	10
033A005	NWO-033-0004	2/13/2007	SS	0	0.5	REG	Metals	7439-96-5	Manganese	300	1.4	0.04	mg/kg	D						N	10
033A005	NWO-033-0004	2/13/2007	SS	0	0.5	REG	Metals	7439-98-7	Molybdenum	32.4	3.5	0.2	mg/kg	D						N	10
033A005	NWO-033-0004	2/13/2007	SS	0	0.5	REG	Metals	7440-02-0	Nickel	16.4	0.7	0.062	mg/kg	DB						N	10
033A005	NWO-033-0007	2/13/2007	SS	0	0.5	FD	Explosives	98-95-3	Nitrobenzene	0.043	0.04	0.006	mg/kg		J	07A				N	1
033A005	NWO-033-0007	2/13/2007	SS	0	0.5	FD	Metals	7429-90-5	Aluminum	15100	74.1	2	mg/kg	D						N	10
033A005	NWO-033-0007	2/13/2007	SS	0	0.5	FD	Metals	7440-47-3	Chromium	24	1.5	0.21	mg/kg	DB						N	10
033A005	NWO-033-0007	2/13/2007	SS	0	0.5	FD	Metals	7440-50-8	Copper	19.8	1.5	0.15	mg/kg	D						N	10
033A005	NWO-033-0007	2/13/2007	SS	0	0.5	FD	Metals	7439-89-6	Iron	14900	37	2.4	mg/kg	D						N	10
033A005	NWO-033-0007	2/13/2007	SS	0	0.5	FD	Metals	7439-92-1	Lead	3.7	1.5	0.059	mg/kg	D						N	10
033A005	NWO-033-0007	2/13/2007	SS	0	0.5	FD	Metals	7439-96-5	Manganese	297	1.5	0.042	mg/kg	D						N	10
033A005	NWO-033-0007	2/13/2007	SS	0	0.5	FD	Metals	7439-98-7	Molybdenum	29.1	3.7	0.21	mg/kg	D						N	10
033A005	NWO-033-0007	2/13/2007	SS	0	0.5	FD	Metals	7440-02-0	Nickel	16.5	0.74	0.065	mg/kg	DB						N	10
033A006	NWO-033-0005	2/13/2007	SS	0	0.5	REG	Metals	7429-90-5	Aluminum	11600	73	2	mg/kg	D						N	10
033A006	NWO-033-0005	2/13/2007	SS	0	0.5	REG	Metals	7440-47-3	Chromium	16	1.5	0.2	mg/kg	DB						N	10
033A006	NWO-033-0005	2/13/2007	SS	0	0.5	REG	Metals	7440-50-8	Copper	14.6	1.5	0.15	mg/kg	D						N	10

Attachment 2

Summary of Analytical Results greater than the MDL
Central Oregon Gunnery Range

Location	Sample Number	Sample Date	Sample Type	Start Depth (ft)	End Depth (ft)	Sample Purpose	Fraction	CAS No.	Parameter	Result	PQL	MDL	Units	LQ	VQ	R1	R2	R3	R4	Filtered	DF
033A006	NWO-033-0005	2/13/2007	SS	0	0.5	REG	Metals	7439-89-6	Iron	12400	36.5	2.3	mg/kg	D						N	10
033A006	NWO-033-0005	2/13/2007	SS	0	0.5	REG	Metals	7439-92-1	Lead	2.7	1.5	0.058	mg/kg	D						N	10
033A006	NWO-033-0005	2/13/2007	SS	0	0.5	REG	Metals	7439-96-5	Manganese	241	1.5	0.042	mg/kg	D						N	10
033A006	NWO-033-0005	2/13/2007	SS	0	0.5	REG	Metals	7439-98-7	Molybdenum	2.1	3.6	0.21	mg/kg	JD	J	15				N	10
033A006	NWO-033-0005	2/13/2007	SS	0	0.5	REG	Metals	7440-02-0	Nickel	12.4	0.73	0.064	mg/kg	DB						N	10
033A007	NWO-033-0006	2/13/2007	SS	0	0.5	REG	Metals	7429-90-5	Aluminum	18900	77.5	2.1	mg/kg	D						N	10
033A007	NWO-033-0006	2/13/2007	SS	0	0.5	REG	Metals	7440-47-3	Chromium	23.9	1.6	0.22	mg/kg	DB						N	10
033A007	NWO-033-0006	2/13/2007	SS	0	0.5	REG	Metals	7440-50-8	Copper	26.2	1.6	0.16	mg/kg	D						N	10
033A007	NWO-033-0006	2/13/2007	SS	0	0.5	REG	Metals	7439-89-6	Iron	19300	38.8	2.5	mg/kg	D						N	10
033A007	NWO-033-0006	2/13/2007	SS	0	0.5	REG	Metals	7439-92-1	Lead	4.3	1.6	0.061	mg/kg	D						N	10
033A007	NWO-033-0006	2/13/2007	SS	0	0.5	REG	Metals	7439-96-5	Manganese	391	1.6	0.044	mg/kg	D						N	10
033A007	NWO-033-0006	2/13/2007	SS	0	0.5	REG	Metals	7439-98-7	Molybdenum	20.9	3.9	0.22	mg/kg	D						N	10
033A007	NWO-033-0006	2/13/2007	SS	0	0.5	REG	Metals	7440-02-0	Nickel	22.1	0.78	0.068	mg/kg	DB						N	10
033A008	NWO-033-1002	2/13/2007	SD	0	0.5	REG	Explosives	98-95-3	Nitrobenzene	0.041	0.04	0.006	mg/kg		J	19	18	07A		N	1
033A008	NWO-033-1002	2/13/2007	SD	0	0.5	REG	Metals	7429-90-5	Aluminum	10800	73.5	2	mg/kg	D						N	10
033A008	NWO-033-1002	2/13/2007	SD	0	0.5	REG	Metals	7440-47-3	Chromium	11.1	1.5	0.21	mg/kg	DB						N	10
033A008	NWO-033-1002	2/13/2007	SD	0	0.5	REG	Metals	7440-50-8	Copper	10.7	1.5	0.15	mg/kg	D						N	10
033A008	NWO-033-1002	2/13/2007	SD	0	0.5	REG	Metals	7439-89-6	Iron	9400	36.8	2.4	mg/kg	D						N	10
033A008	NWO-033-1002	2/13/2007	SD	0	0.5	REG	Metals	7439-92-1	Lead	2.7	1.5	0.058	mg/kg	D						N	10
033A008	NWO-033-1002	2/13/2007	SD	0	0.5	REG	Metals	7439-96-5	Manganese	206	1.5	0.042	mg/kg	D						N	10
033A008	NWO-033-1002	2/13/2007	SD	0	0.5	REG	Metals	7439-98-7	Molybdenum	10.9	3.7	0.21	mg/kg	D						N	10
033A008	NWO-033-1002	2/13/2007	SD	0	0.5	REG	Metals	7440-02-0	Nickel	8.9	0.74	0.065	mg/kg	DB						N	10
033A011	NWO-033-5001	2/14/2007	SD	0	0.5	REG	Metals	7429-90-5	Aluminum	8680	76.3	2.1	mg/kg	D						N	10
033A011	NWO-033-5001	2/14/2007	SD	0	0.5	REG	Metals	7440-47-3	Chromium	11.4	1.5	0.21	mg/kg	DB						N	10
033A011	NWO-033-5001	2/14/2007	SD	0	0.5	REG	Metals	7440-50-8	Copper	9.9	1.5	0.15	mg/kg	D						N	10
033A011	NWO-033-5001	2/14/2007	SD	0	0.5	REG	Metals	7439-89-6	Iron	8060	38.2	2.4	mg/kg	D						N	10
033A011	NWO-033-5001	2/14/2007	SD	0	0.5	REG	Metals	7439-92-1	Lead	2	1.5	0.06	mg/kg	D						N	10
033A011	NWO-033-5001	2/14/2007	SD	0	0.5	REG	Metals	7439-96-5	Manganese	152	1.5	0.044	mg/kg	D						N	10
033A011	NWO-033-5001	2/14/2007	SD	0	0.5	REG	Metals	7439-98-7	Molybdenum	30.9	3.8	0.22	mg/kg	D						N	10
033A011	NWO-033-5001	2/14/2007	SD	0	0.5	REG	Metals	7440-02-0	Nickel	8.1	0.76	0.067	mg/kg	DB						N	10
033A012	NWO-033-6002	2/13/2007	GW	0	0	REG	Perchlorate	14797-73-0	Perchlorate	0.229	0.4	0.122	ug/L	J	J	19	05B	18	15	Y	2

ft - feet
 REG - regular field sample
 FD - field duplicate
 SS - surface soil (0 - 0.5ft)
 SD - sediment
 GW - groundwater
 PQL - practical quantitation limit
 MDL - method detection limit
 LQ - laboratory qualifier
 VQ - validation qualifier
 mg/kg - milligram per kilogram
 ug/L - microgram per liter
 R1 - reason code no. 1
 R2 - reason code no. 2
 R3 - reason code no. 3
 R4 - reason code no. 4
 DF - dilution factor
 HMX - octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine
 RDX - hexahydro-1,3,5-trinitro-1,3,5-triazine
 Tetryl - methyl-2,4,6-trinitrophenylamine

ATTACHMENT 3

Approved Variances



Project Name	FUDS SI NWO	Project Number:	116188
Date Of Issue	4/13/06	Linked w/NC No: (if applicable)	N/A

-- Variance Report --

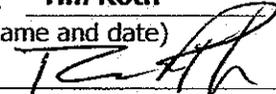
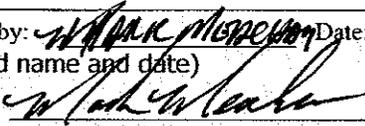
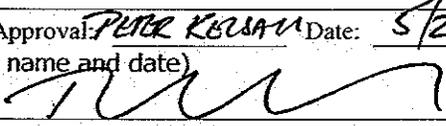
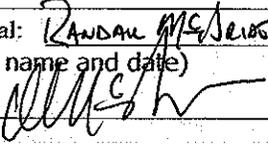
V. Summary of the Change: (by the person identifying the change)

Section of DoD QSM or MMRP SI PSAP	DoD QSM or MMRP SI PSAP Requirement	Variance Request	Justification for Variance Request
QSM Appendix DoD-B Table B-2 Page 134 (8330A) (RT window width)	The Retention Time width is +/- 3x Standard Deviation from 72-hour study	The Retention Time window is the greater of +/- 3x Standard Deviation or 1/2 average peak width	Small Retention Time Standard Deviation can produce unrealistic windows. Employing 1/2 average peak width does not allow overlap between target analytes per method SW8330A. A comparison between the calculated retention time window and 1/2 the peak width for method SW8330A is provided for USACE review.
QSM D.1.2.1 (LOD) Page 88 (Limit of Detection)	The ratio between the mean recovered concentration and the calculated MDL should be 1 to 5 for water and 1 to 10 for other matrices.	Under our current MDL study the following analytes did not meet the ratio: <u>SW8330A</u> (soil only) Nitrobenzene 1,3 - Dinitrobenzene 1,3,5 - Trinitrobenzene 2,4,6 - Trinitrotoluene <u>SW8330A</u> (water only) 2-Nitrotoluene	MDL verification check was analyzed and supported the calculated MDL study for 2005. GPL will change the spike concentration to meet the QSM criteria for the MDL study scheduled for 2006. The MDL verification check sample chromatograph demonstrates good signal-to-noise ratio (>3x the level of noise) and a table comparing the MDL, the RL and the MDL check standard reported in "ug/l" units for method SW8330A is provided for USACE review.
MMRP SI PSAP Table 4-D Page D-31 (method 6020) IDL study	IDL less than or equal to MDL	GPL's IDLs are not required to be less than or equal to MDL	An IDL determines the detection limit based on the differences produced when reading the base line. The MDL determines a detection limit based on analyte concentration and the variations in the readings, just above the base line. The standard deviation obtained from MDLs above, and IDLs at the base line are very similar therefore, it would not be possible to produce IDLs that are always lower than the MDLs. Comparisons of GPL's IDLs and MDLs for method SW6020 are provided for USACE review.



Project Name		FUDS SI NWO	Project Number:	116188
Date Of Issue		4/13/06	Linked w/NC No: (if applicable)	N/A
V. Summary of the Change: (by the person identifying the change)				
Section of DoD QSM or MMRP SI PSAP	DoD QSM or MMRP SI PSAP Requirement	Variance Request	Justification for Variance Request	
MMRP SI PSAP Table 4-C; Page D-28 (6010B) Table 4-D; page D-33 (6020) ICBs / CCBs Interference Check Solutions	No metals detected \geq 2X MDL	"B" flag data where the ICS-A, ICB and/or CCB: absolute value is \geq 2X MDL.	<p>To identify the possibility of error or bias in the reporting of data; GPL will "B" flag all metals whose ICS-A, ICB and/or CCB exceeds 2x MDL.</p> <p>GPL will conduct the following corrective action measures to reduce the possibility of carry-over contamination from biasing metal results:</p> <p>GPL will increase rinse time between analyses to 3 minutes (triple the method requirement).</p> <p>GPL will re-analyze all impacted metal results where contamination is detected in associated blanks at levels $>1/2$ RL.</p>	
Section of DoD QSM or MMRP SI PSAP	DoD QSM or MMRP SI PSAP Requirement	Point of Clarification		
MMRP SI PSAP Section 7.1.1 Laboratory Report Requirements Page QAPP-7-1	All soils reported on a dry weight basis	<p>Soil samples from MMRP FUDS firing ranges are required to pass through a No. 10 sieve before sample digestion and analysis. However, soils collected from these sites may exhibit characteristics (i.e., clayey) that prevent effective sieving. To standardize sample preparation for all samples collected at Shaw's MMRP FUDS firing ranges; GPL will follow homogenization procedures referenced in GPL's SOP H.36. GPL SOP H.36 involves air drying soil samples for a minimum of 24 hours before the sample is homogenized and passed through a No. 10 sieve. In addition to identifying all soil samples that require sieving on the CoC, Shaw will reference GPL's SOP H.36 "Homogenization Procedures for Firing Range Soil Samples".</p> <p>GPL's SOP H.36 is provided for USACE review.</p>		
Identified by: Tim Roth		Date: 4/13/06		



Project Name		FUDS SI NWO	Project Number:		116188
Date Of Issue		4/13/06	Linked w/NC No: (if applicable)		N/A
VI. Variance Requested: (by the person identifying the variance and the review committee) Tim Roth					
To Be Performed by:	GPL, LLLC	Date:			
To Be Verified by:	Elsa Tai	Date:			
VII. Justification of Variance: (by the review committee) See Section V. Justification of Variance					
VIII. Applicable Document/Work Plan: (by the person identifying the change) Shaw Environmental, Inc., 2006, Type I Work Plan, Site Inspections at Multiple Sites, NWO Region, Formerly Used Defense Sites, Military Munitions Response Program, February.					
Distribution List:			-- Signatures --		
Shaw Project Files Paul Ioannides, GPL, LLLP Sean Cupolo, GPL, LLLP Elsa, Tai, GPL, LLLP Mark Meacham, USACE-NWO Cheryl Groenjes, USACE-NWO			Requested by: <u>Tim Roth</u> Date: <u>5/10/06</u> (printed name and date) Signature: <u></u> 5/10/06		
<i>Cheryl Groenjes</i> <i>Cheryl Groenjes</i> 5/16/06			Approved by: <u>Mark Meacham</u> Date: <u>5/16/06</u> (printed name and date) Signature: <u></u>		
			Proj. Mgr Approval: <u>Peter Kusan</u> Date: <u>5/20/06</u> (printed name and date) Signature: <u></u>		
			QA Approval: <u>RANDAL McSEWIS</u> Date: <u>6-22-06</u> (printed name and date) Signature: <u></u>		

Appendix H
Geographical Information Systems Data

Appendix H
GIS Coordinates
Central Oregon Gunnery Range

Name	Description	X_UTM	Y_UTM	UTM_Zone
001	13-FEB-07 8:37:30; Start Point; 1 photo 033-COGR-1-13FEB07	744493	4758660	10N
009	13-FEB-07 14:00:38; Dry lake bed between location 033A008 and 033A007; 1 photo 033-COGR-13-13FEB07	740394	4763023	10N
013	14-FEB-07 8:49:34; Start Point, start of track log, no photo	743991	4758698	10N
033A001	13-FEB-07 12:04:40; sample location for ID# NWO-033-0001 (MS,MSD); 1 photo 033-COGR-6-13FEB07	740445	4761584	10N
033A002	13-FEB-07 11:46:42; sample location for ID# NWO-033-0002; 1 photo 033-COGR-5-13FEB07	740621	4761717	10N
033A003	13-FEB-07 12:42:27; sample location for ID# NWO-033-0003; 1 photo 033-COGR-11-13FEB07	740796	4761777	10N
033A004	13-FEB-07 12:33:39; sample location for ID# NWO-033-1001, no surface water sample for ID# NWO-033-2001; 4 photos 033-COGR-7-13FEB07, 033-COGR-8-13FEB07, 033-COGR-9-13FEB07, 033-COGR10-13FEB07	740679	4761913	10N
033A005	13-FEB-07 14:28:34; sample location ID# NWO-033-004, NWO-033-007 (field dup); 1 photo 033-COGR-16-13FEB07	740168	4762763	10N
033A006	13-FEB-07 14:14:48; sample location for ID# NWO-033-0005; 1 photo 033-COGR-15-13FEB07	740025	4763009	10N
033A007	13-FEB-07 14:03:20; sample location for ID# NWO-033-0006; 1 photo 033-COGR-14-13FEB07	740342	4763155	10N
033A008	13-FEB-07 13:30:12; sample location for ID# NWO-033-1002, no surface water sample for ID# NWO-033-2002, NWO-033-2004; 1 photo 033-COGR-12-13FEB07	740460	4762902	10N
033A010	14-FEB-07 11:41:07; Well# MW-60 Alternate sample location for ID# NWO-033-3001; 2 photos 033-COGR-21-14FEB07, 033-COGR-22-14FEB07	740308	4761967	10N
033A010a	13-FEB-07 11:14:25; proposed sample NWO-033-3001; no sample collected, well locked; 1 photo 033-COGR-4-13FEB07	740435	4761774	10N
033A011	14-FEB-07 10:10:39; sample location for ID# NWO-033-5001; 4 photos 033-COGR-17-14FEB07, 033-COGR-18-14FEB07, 033-COGR-19-14FEB07, 033-COGR-20-14FEB07	741438	4761223	10N
033A012	13-FEB-07 9:59:01; sample location for ID# NWO-033-6002; 2 .50cal rounds found; 2 photos 033-COGR-2-13FEB07, 033-COGR-3-13FEB07	740854	4761339	10N

Appendix I
Geophysical Data

This appendix is not used.

Appendix J
Conceptual Site Model

Overview

A site-specific CSM summarizes available site information and identifies relationships between exposure pathways and associated receptors. A CSM is used to determine the data types necessary to describe site conditions and quantify receptor exposure, and discusses the following information:

- Current site conditions and future land use;
- Potential contaminant sources (e.g., lead projectiles in an impact berm);
- Affected media;
- Governing fate and transport processes (e.g., surface water runoff and/or groundwater migration);
- Exposure media (i.e., media through which receptors could contact site-related contamination);
- Routes of exposure (e.g., inhalation, incidental ingestion, and dermal contact); and
- Potential human and/or representative ecological receptors at the exposure point. Receptors likely to be exposed to site contaminants are identified based on current and expected future land uses.

The CSM is evaluated for completeness and further developed as needed through TPP meetings. Based on a review of documents and the discussion during the TPP meeting, the following AOC was identified within the Central Oregon Gunnery Range (COGR) FUDS:

- Air to Air Gunnery Range.

The Air to Air Gunnery Range includes the air-to-ground target areas.

On agreement between stakeholders at the TPP meeting, locations within the COGR that likely were occupied solely during the 1943 Northwest Maneuvers are not included in the COGR FUDS, but will be included as part of the 1943 Northwest Maneuvers FUDS SI.

The following presents the CSM for the COGR FUDS.

Note: Because this text is taken from the *Final Technical Project Planning (TPP) Memorandum*, all figures and tables referenced in this appendix refer to figures and tables contained in that document. The *Final TPP Memorandum* is included in Appendix B of this SI Report.

Conceptual Site Model – Air to Air Gunnery Range AOC

The CSM evaluates potential exposure pathways related to range operation and configuration relative to physical features and land use. Historical photos of the ranges (if available) were carefully examined for possible disturbances or other site features of interest in order to focus the efforts on areas where MC contamination is most likely to occur.

While the AOC is termed the Air to Air Gunnery Range, there were two primary uses for the AOC. These were air-to-air gunnery training that occurred over much of the 795,057-acre site, and the air-to-ground gunnery training that was focused on two targets located on the eastern border of the AOC adjacent to Alkali Lake. Figure 2 of the *Final TPP Memorandum* (Shaw, 2006b; Appendix B) shows the location of the air-to-ground gunnery target areas. In addition, unregulated practice bombing occurred at the FUDS and practice bombs have been found at the FUDS.

There was also a reported use of the AOC for ground-to-air gunnery practice and machine gun and rocket firing in 1943, about the time of the Northwest Maneuvers. The location of the ground-to-air gunnery training and machine gun and rocket firing has been identified as Camp Alkali, a Civilian Conservation Corps camp located near Alkali Lake. The Civilian Conservation Corps occupied the camp in the late 1930's and early 1940's. These activities will be evaluated in the SI for the Northwest Maneuver Area FUDS.

Current and Future Land Use

- Currently, the site is used primarily for livestock grazing.
- Use of the range for agricultural purposes (i.e., grazing and farming) will likely continue into the foreseeable future.

Potential Contaminant Sources – Air to Air Gunnery Range AOC

- The ASR identified that the AOC was used for air-to-air and air-to-ground gunnery practice. The air-to-air portion would have used towed targets. No target remnants have been reported. The air-to-ground practice is supported by the wooden targets on the southern and northern target areas.
- DoD records indicate that small arms and medium caliber munitions were used at the FUDS. Predominantly, .50-caliber, and 20 mm ammunition were used.
- Reported MEC includes a belt of live .50-caliber ammunition found in the northern part of the FUDS (Figure 1) and elsewhere (based on reports from the BLM archeologist) and expended AN-MK 5, AN-MK 23, and AN-MK 43 practice bombs.
- The .50-caliber rounds had tracers may have contained perchlorate.

MEC Evaluation

Types of MEC

- Potential MEC within the Air to Air Gunnery Range AOC are .50-caliber and 20 mm ammunition and practice bombs. An explosive hazard from the .50-caliber and 20 mm ammunition is not expected. However, an explosive hazard does exist from the practice bombs, primarily from the 10 gauge shotgun shell and red or white phosphorous pyrotechnic.

Surface Exposure Pathway

- The potential route of human exposure to MEC or munitions debris includes direct contact by vehicles, foot traffic, or handling. This would include BLM and ranch workers, and recreationists.
- The potential route of wildlife exposure to MEC or munitions debris would be by directly walking on them.

Subsurface Exposure Pathway

- The potential routes of human exposure to MEC or munitions debris would be by intrusive drilling or digging activities. This includes BLM personnel, ranch workers, and recreationists.
- The potential route of wildlife exposure to MEC or munitions debris would be by burrowing activities.

An analysis of the exposure pathways and receptors for MEC is provided in Table 2 of the *Final TPP Memorandum* (Shaw, 2006b; Appendix B).

SI Results for MEC

- No visual reconnaissance surveys were completed within the Air to Air Gunnery Range because of the expansive area to be surveyed (1,242 square miles). MEC in the form of ammunition belts and expended practice bombs have been found on the FUDS.
- A visual (magnetometer assisted) reconnaissance survey was completed at two Air to Ground Gunnery Range target areas. This was completed to clear soil and sediment sampling sites.

MC Evaluation

Types of MC

- The anticipated MC at the COGR is lead and steel from projectiles, brass from spent cartridges, and cast iron or sheet metal from practice bombs.
- Metal contaminants of concern from these munitions include chromium, copper, iron, lead, molybdenum, and nickel.

- The propellants were either single base or double base type. However, the munitions were fired from aircraft and any residue from the firing would be distributed over a wide area because of dispersion in the air.
- Tracers were used in the .50-caliber rounds, potentially containing perchlorate.

Overview of Pathways

Affected media and potential pathways for MC include:

- **Soil:** At the COGR, soil is the primary medium of concern because of possible MC in the soil from training activities. The soil also serves as a secondary source of potential sediment/surface water, groundwater, or air contamination.
- **Sediment/Surface Water:** Surface water may act as a migration pathway to humans and ecological receptors from potential sources in soils and sediments. Accumulation of metals in the sediments in pond and lake bottoms may occur. There is no developed surface water drainage between the ponds and lakes and high evaporation rates in the summer reduce the size of the ponds and lakes in the summer.
- **Groundwater:** Groundwater is considered a potentially affected media because of the near surface upper water bearing zone.
- **Air:** Air is a potential media of concern because of the possibility of inhalation of contaminated soil particles. Air is an affected media because of the potential for dust entrainment during high winds.

Exposure media at the COGR include soil, sediment/surface water, groundwater, and air. A pathway evaluation for each media is discussed below and provided in Table 2 of the *Final TPP Memorandum* (Shaw, 2006b; Appendix B).

Figure 3 of the *Final TPP Memorandum* (Shaw, 2006b; Appendix B) illustrates the conceptual site model for the Air to Air Gunnery Range and potential pathways of MC contamination.

Soil Exposure Pathway

Exposure Routes

- The potential routes of human exposure to contaminated soils include incidental ingestion of and dermal contact with contaminated media, as well as inhalation of soil particulates during intrusive work.
- The potential routes of wildlife exposure to contaminated soils include ingestion of and direct contact with contaminated media. Plants may uptake MC and then subsequently be eaten by wildlife. Burrowing animals may ingest MC-contaminated soil and subsequently be eaten by predators.

Receptors

- Workers (BLM and ranch workers, and recreationists).
- Wildlife.

SI Results for MC in Soil

- No soil samples were planned or collected from the larger Air to Air Gunnery Range because of the size and the lack of one specific area to sample. Air-to-air gunnery training and unregulated practice bombing was conducted over the entire 795,056-acre FUDS and MC sampling over this larger area would not be productive. Sampling activities were focused on the two air-to-ground targets containing the highest density of activity. These two locations are where the highest level of training activity occurred.
- Six soil samples were collected from the target areas. All samples were analyzed for metals and two of the samples were also analyzed for explosives. Molybdenum was detected in excess of background and ecological screening values. Nitrobenzene was detected at low concentrations below human health and ecological screening values.

Sediment/Surface Water Exposure Pathway

Exposure Routes

- The potential routes of human exposure to contaminated sediment/surface water include incidental ingestion and dermal contact with surface water.
- The potential routes of wildlife (including aquatic organisms) exposure to contaminated sediment/surface water include ingestion of and direct contact with surface water present at or near the AOC.
- A potential exposure point is at Hutton Springs located north of the target areas. The springs are a critical habitat for the Hutton Tui Chub, a threatened species.

Receptors

- Workers (BLM and ranch workers).
- Wildlife.

SI Results for MC in Sediment/Surface Water

- One sediment sample was collected from low areas near each of the two target areas and analyzed for metals and explosives. Metals were not detected at concentrations that significantly exceeded background concentrations. Nitrobenzene was detected in both sediment samples at low concentrations that were below human health and ecological screening values.
- No surface water samples were collected due to absence of surface water at the site.

Groundwater Exposure Pathway

Exposure Routes

- The potential routes of human exposure to contaminated groundwater include ingestion of and dermal contact with groundwater.
- Wildlife exposure to groundwater is not anticipated.

- A potential exposure point for groundwater surfacing is at Hutton Springs located north of the target areas. The springs are a critical habitat for the Tui Chub, a threatened species. Access could not be obtained for sampling.

Receptors

- Workers (BLM and ranch workers).

SI Results for MC in Groundwater

- One groundwater sample was collected from a well located near the southern target. The well is part of the monitoring well network for the adjacent Alkali Lake Disposal Site. The groundwater sample was analyzed for perchlorate only. Perchlorate was not detected in the groundwater sample.
- Analysis for metals was not completed. Discussions at the TPP meeting indicated that metals in groundwater were not a concern due to the relatively low mobility of the metals in the semi-arid environment at the COGR. In addition, there is a contaminated groundwater plume (phenols, dioxins, and 2,4-toluenediamine) from a nearby chemical waste disposal site that runs under the two target areas. The plume has degraded the groundwater quality to above accepted regulatory standards.

Air Exposure Pathway

Exposure Routes

- The potential route of human exposure to contaminated air includes inhalation during times of blowing dust.
- The potential route of wildlife exposure to contaminated air includes inhalation of air during times of blowing dust.

Receptors

- Workers (BLM and ranch workers).
- Wildlife.

SI Results for MC in Air

- No air samples were collected from the COGR. Analytical results from soil samples were used in the evaluation of the air pathway. The U.S. Environmental Protection Agency (EPA) Region 9 Preliminary Remediation Goals (PRGs) (EPA, 2004) incorporate dust exposure into the values and additional exposure data beyond soil data is not required.

Data Gaps

- SI being performed for the COGR will identify MEC and MC impacts to soil and sediments/surface water at the former range.
- The presence of MEC has been established at the COGR by the discovery of scattered .50-caliber ammunition belts and practice bombs over the 1,242-square

mile COGR. The likely source was from being dropped from aircraft flying over the area.

- No other MEC has been reported.

Results of the current status of data requirements with respect to MEC and MC for the AOCs located at the former COGR are summarized below:

AOC	Presence of MEC	Presence of MC	Proposed Inspection Activities
Air to Air Gunnery Range (includes air-to-ground training)	Established, scattered finds of .50-caliber ammo belts and practice bombs	Molybdenum exceeds background in soil at target areas	none

Appendix K
Munitions Response Site Prioritization Protocol Evaluations

Table A

MRS Background Information

DIRECTIONS: Record the background information below for the MRS to be evaluated. Much of this information is available from DoD databases, such as RMIS. If the MRS is located on a FUDS property, the suitable FUDS property information should be substituted. In the MRS summary, briefly describe the UXO, DMM, or MC that are known or suspected to be present, the exposure setting (the MRS's physical environment), any other incidental non-munitions related contaminants found at the MRS (e.g., benzene, trichloroethylene), and any potentially exposed human and ecological receptors. Include a map of the MRS, if one is available.

Munitions Response Site (MRS) Name:	MRS No. 1 - Air to Air Gunnery Range					
Component:	US Army					
Installation/Property Name:	Central Oregon Gunnery Range					
Location (City, County, State):	Lake County, Oregon					
UTM Coordinates (NAD83):	N 4770451.8, E 720685.2, Zone 10					
Site Name (RMIS ID):	F10OR017001R01					
Project Name (Project No.):	Formerly Used Defense Sites, Military Munitions Response Program Site Inspections at Multiple Sites (116188)					
Date Information Entered/Updated:	16-May-2007					
Point of Contact (Name/Phone):	Mike Nelson (USACE Seattle District)/ 206-764-3706					
Project Phase ("X" only one):	PA	X	SI	RI	FS	RD
	RA-C		RIP	RA-O	RC	LTM
Media Evaluated ("X" all that apply):	X	Groundwater (human receptor)			X	Sediment (human receptor)
	X	Surface soil (human receptor)				Surface water (ecological receptor)
	X	Sediment (ecological receptor)				Surface water (human receptor)

MRS Summary

MRS Description: Describe the munitions-related activities that occurred at the installation, the dates of operation, and the UXO, DMM (by type of munition, if known) or munitions constituents (by type, if known) known or suspected to be present):

MRS No 1 Air to Air Gunnery Range encompasses the entire FUDS and is as described in the ASR Supplement and the ARC (DoD, 2006). The MRS was used between 1942 and 1947 as an air-to-air and air-to-ground gunnery range. The MRS was also apparently used for unregulated practice bombing. The area of the MRS is 795,057 acres. Scattered finds of AN-MK23 and AN-MK-43 practice bombs have been reported by a BLM archeologist (2007 SI, Section 4.3). Two air-to-ground gunnery targets are found on the eastern border of the MRS at Alkali Lake. Small arms .50-caliber and 20 mm rounds were the only munitions, other than practice bombs, used at the MRS. MC at the MRS are metals (chromium, copper, iron, lead, molybdenum, and nickel) and explosives - black powder, nitrocellulose and nitroglycerin, and perchlorate in tracers.

Description of Pathways for Human and Ecological Receptors:

Pathways evaluated include surface soil, sediment, and groundwater. Exposure would be through injection or inhalation

Description of Receptors (Human and Ecological):

Receptors in the area include agricultural workers and wildlife.

Table 1
EHE Module: Munitions Type Data Element Table

Directions: Below are eleven classifications of munitions and their descriptions. Annotate the score(s) that correspond with all munitions types known or suspected to be present at the MRS.

Note: The terms *practice munitions*, *small arms*, *physical evidence*, and *historical evidence* are defined in Appendix C of the MRSPP Primer (Draft, Dec 2005).

Classification	Description	Possible Score	Score
Sensitive	All UXO that are considered likely to function upon any interaction with exposed persons [e.g., submunitions, 40mm high-explosive (HE) grenades, white phosphorous (WP) munitions, high-explosive antitank (HEAT) munitions, and practice munitions with sensitive fuzes, but excluding all other practice munitions].	30	
	All hand grenades containing energetic filler.		
	Bulk primary explosives, or mixtures of these with environmental media, such that the mixture poses an explosive hazard.		
High explosive (used or damaged)	All UXO containing a high-explosive filler (e.g., RDX, Composition B), that are not considered "sensitive."	25	
	All DMM containing a high-explosive filler that have been damaged by burning or detonation, or deteriorated to the point of instability.		
Pyrotechnic (used or damaged)	All UXO containing pyrotechnic fillers other than white phosphorous (e.g., flares, signals, simulators, smoke grenades).	20	
	All DMM containing pyrotechnic fillers other than white phosphorous (e.g., flares, signals, simulators, smoke grenades) that have been damaged by burning or detonation, or deteriorated to the point of instability.		
High explosive (unused)	All DMM containing a high-explosive filler that have not been damaged by burning or detonation, or are not deteriorated to the point of instability.	15	
Propellant	All UXO containing mostly single-, double-, or triple-based propellant, or composite propellants (e.g., a rocket motor).	15	
	All DMM containing mostly single-, double-, or triple-based propellant, or composite propellants (e.g., a rocket motor) that are damaged by burning or detonation, or deteriorated to the point of instability.		
Bulk secondary high explosives, pyrotechnics, or propellant	All DMM containing mostly single-, double-, or triple-based propellant, or composite propellants (e.g., a rocket motor), that are deteriorated.	10	
	Bulk secondary high explosives, pyrotechnic compositions, or propellant (not contained in a munition), or mixtures of these with environmental media such that the mixture poses an explosive hazard.		
Pyrotechnic (not used or damaged)	All DMM containing a pyrotechnic filler (i.e. red phosphorous), other than white phosphorous filler, that have not been damaged by burning or detonation, or are not deteriorated to the point of instability.	10	
Practice	All UXO that are practice munitions that are not associated with a sensitive fuze.	5	5
	All DMM that are practice munitions that are not associated with a sensitive fuze and that have not been damaged by burning or detonation, or are not deteriorated to the point of instability.		
Riot control	All UXO or DMM containing a riot control agent filler (e.g., tear gas).	3	
Small arms	All used munitions or DMM that are categorized as small arms ammunition [Physical evidence or historical evidence that no other types of munitions (e.g., grenades, subcaliber training rockets, demolition charges) were used or are present on the MRS is required for selection of this category.].	2	2
Evidence of no munitions	Following investigation of the MRS, there is physical evidence that there are no UXO or DMM present, or there is historical evidence indicating that no UXO or DMM are present.	0	

MUNITIONS TYPE DIRECTIONS: Record the single highest score from above in the box to the right (maximum score = 30). **5**

DIRECTIONS: Document any MRS-specific data used in selecting the *Munitions Type* classifications in the space below.

All munitions debris found has been that of practice bombs AN-MK 23, AN-MK 43, and small arms (.50-caliber and 20 mm) (2007 SI, Section 4.3).

Table 2

EHE Module: Source of Hazard Data Element Table

Directions: Below are eleven classifications describing sources of explosive hazards. Annotate the score(s) that correspond with all sources of explosive hazards known or suspected to be present at the MRS.

Note: The terms *former range*, *practice munitions*, *small arms*, *physical evidence*, and *historical evidence* are defined in Appendix C of the MRSPP Primer (Draft, Dec 2005).

Classification	Description	Possible Score	Score
Former range	The MRS is a former military range where munitions (including practice munitions with sensitive fuzes) have been used. Such areas include: impact or target areas, associated buffer and safety zones, firing points, and live-fire maneuver areas.	10	
Former munitions treatment (i.e. OB/OD) unit	The MRS is a location where UXO or DMM (e.g., munitions, bulk explosives, bulk pyrotechnic, or bulk propellants) were burned or detonated for the purpose of treatment prior to disposal.	8	
Former practice munitions range	The MRS is a former military range on which only practice munitions without sensitive fuzes were used.	6	6
Former maneuver area	The MRS is a former maneuver area where no munitions other than flares, simulators, smokes, and blanks were used. There must be evidence that no other munitions were used at the location to place an MRS into this category.	5	
Former burial pit or other disposal area	The MRS is a location where DMM were buried or disposed of (e.g., disposed of into a water body) without prior thermal treatment.	5	
Former industrial operating facilities	The MRS is a location that is a former munitions maintenance, manufacturing, or demilitarization facility.	4	
Former firing points	The MRS is a firing point, where the firing point is delineated as an MRS separate from the rest of a former military range.	4	
Former missile or air defense artillery emplacements	The MRS is a former missile defense or air defense artillery (ADA) emplacement not associated with a military range.	2	
Former storage or transfer points	The MRS is a location where munitions were stored or handled for transfer between different modes of transportation (e.g., rail to truck, truck to weapon system).	2	
Former small arms range	The MRS is a former military range where only small arms ammunition was used [There must be evidence that no other types of munitions (e.g., grenades) were used or are present to place an MRS into this category.].	1	1
Evidence of no munitions	Following investigation of the MRS, there is physical evidence that no UXO or DMM are present, or there is historical evidence indicating that no UXO or DMM are present.	0	

SOURCE OF HAZARD	DIRECTIONS: Record <u>the single highest score</u> from above in the box to the right (maximum score = 10).	6
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DIRECTIONS: Document any MRS-specific data used in selecting the **Source of Hazard** classifications in the space below.

This MRS is a air-to-air and air-to-ground gunnery range using small arms (.50-caliber and 20 mm). Scattered reports of AN-MK 23 or AN-MK 43 practice bombs have been reported (2007 SI, Section 4.3).

Table 3
EHE Module: Location of Munitions Data Element Table

Directions: Below are eight classifications of munitions locations and their descriptions. Annotate the score(s) that correspond with all locations where munitions are located or suspected of being found at the MRS.

Note: The terms *surface*, *subsurface*, *physical evidence*, and *historical evidence* are defined in Appendix C of the MRSPP Primer (Draft, Dec 2005).

Classification	Description	Possible Score	Score
Confirmed surface	Physical evidence indicates that there are UXO or DMM on the surface of the MRS.	25	
	Historical evidence (e.g., a confirmed incident report or accident report) indicates there are UXO or DMM on the surface of the MRS.		
Confirmed subsurface, active	Physical evidence indicates the presence of UXO or DMM in the subsurface of the MRS, and the geological conditions at the MRS are likely to cause UXO or DMM to be exposed, in the future, by naturally occurring phenomena (e.g., drought, flooding, erosion, frost, heat heave, tidal action), or intrusive activities (e.g., plowing, construction, dredging) at the MRS are likely to expose UXO or DMM.	20	
	Historical evidence indicates that UXO or DMM are located in the subsurface of the MRS and the geological conditions at the MRS are likely to cause UXO or DMM to be exposed, in the future, by naturally occurring phenomena (e.g., drought, flooding, erosion, frost, heat heave, tidal action), or intrusive activities (e.g., plowing, construction, dredging) at the MRS are likely to expose UXO or DMM.		
Confirmed subsurface, stable	Physical evidence indicates the presence of UXO or DMM in the subsurface of the MRS, and the geological conditions at the MRS are not likely to cause UXO or DMM to be exposed, in the future, by naturally occurring phenomena, or intrusive activities at the MRS are not likely to cause UXO or DMM to be exposed.	15	
	Historical evidence indicates that UXO or DMM are located in the subsurface of the MRS, and the geological conditions at the MRS are not likely to cause UXO or DMM to be exposed, in the future, by naturally occurring phenomena, or intrusive activities at the MRS are not likely to cause UXO or DMM to be exposed.		
Suspected (physical evidence)	There is physical evidence (e.g., munitions debris, such fragments, penetrators, projectiles, shell casings, links, fins), other than the documented presence of UXO or DMM, indicating that UXO or DMM may be present at the MRS.	10	
Suspected (historical evidence)	There is historical evidence indicating that UXO or DMM may be present at the MRS.	5	5
Subsurface, physical constraint	There is physical or historical evidence indicating that UXO or DMM may be present in the subsurface, but there is a physical constraint (e.g., pavement, water depth over 120 feet) preventing direct access to the UXO or DMM.	2	
Small arms (regardless of location)	The presence of small arms ammunition is confirmed or suspected, regardless of other factors such as geological stability [There must be evidence that no other types of munitions (e.g., grenades) were used or are present at the MRS to place an MRS into this category.]	1	1
Evidence of no munitions	Following investigation of the MRS, there is physical evidence that there are no UXO or DMM present, or there is historical evidence indicating that no UXO or DMM are present.	0	
LOCATION OF MUNITIONS	DIRECTIONS: Record <u>the single highest score</u> from above in the box to the right (maximum score = 25).		5

DIRECTIONS: Document any MRS-specific data used in selecting the *Location of Munitions* classifications in the space below.

There have been no reported MEC at the MRS. However, reports of scattered occurrences of AN-MK 23 or AN-MK 43 practice bomb have been made. Spent small arms rounds have been found throughout the MRS (2007 SI, Section 4.3).

Table 4

EHE Module: Ease of Access Data Element Table

Directions: Below are four classifications of barrier types that can surround an MRS and their descriptions. The barrier type is directly related to the ease of public access to any explosive materiel. Annotate the score that corresponds with the ease of access to the MRS.

Note: The term *barrier* is defined in Appendix C of the MRSPP Primer (Draft, Dec 2005).

Classification	Description	Possible Score	Score
No barrier	There is no barrier preventing access to any part of the MRS (i.e. all parts of the MRS are accessible).	10	10
Barrier to MRS access is incomplete	There is a barrier preventing access to parts of the MRS, but not the entire MRS.	8	
Barrier to MRS access is complete but not monitored	There is a barrier preventing access to all parts of the MRS, but there is no surveillance (e.g., by a guard) to ensure that the barrier is effectively preventing access to all parts of the MRS.	5	
Barrier to MRS access is complete and monitored	There is a barrier preventing access to all parts of the MRS, and there is active, continual surveillance (e.g., by a guard, video monitoring) to ensure that the barrier is effectively preventing access to all parts of the MRS.	0	

EASE OF ACCESS **DIRECTIONS:** Record the single highest score from above in the box to the right (maximum score = 10). **10**

DIRECTIONS: Document any MRS-specific data used in selecting the *Ease of Access* classification in the space below.

There are no physical barriers restricting access to the MRS, except for a barbed wire fence near the air-to-ground gunnery targets (2007 SI, Section 4.3.2).

Table 5

EHE Module: Status of Property Data Element Table

Directions: Below are three classifications of the status of a property within the Department of Defense (DoD) and their descriptions. Annotate the score that corresponds with the status of property at the MRS.

Note: N/A

Classification	Description	Possible Score	Score
Non-DoD control	The MRS is at a location that is no longer owned by, leased to, or otherwise possessed or used by DoD. Examples are privately owned land or water bodies; land or water bodies owned or controlled by state, tribal, or local governments; and land or water bodies managed by other federal agencies.	5	5
Scheduled for transfer from DoD control	The MRS is on land or is a water body that is owned, leased, or otherwise possessed by DoD, and DoD plans to transfer that land or water body to the control of another entity (e.g., a state, tribal, or local government; a private party; another federal agency) within 3 years from the date the rule is applied.	3	
DoD control	The MRS is on land or is a water body that is owned, leased, or otherwise possessed by DoD. With respect to property that is leased or otherwise possessed, DoD must control access to the MRS 24 hours per day, every day of the calendar year.	0	

STATUS OF PROPERTY	DIRECTIONS: Record <u>the single highest score</u> from above in the box to the right (maximum score = 5).	5
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DIRECTIONS: Document any MRS-specific data used in selecting the *Status of Property* classification in the space below.

The MRA is located on public (BLM and State of Oregon) and privately owned land (2007 SI, Section 2.3).

Table 6

EHE Module: Population Density Data Element Table

Directions: Below are three classifications of population density and their descriptions. Determine the population density per square mile in the vicinity of the MRS and annotate the score that corresponds with the associated population density.

Note: If an MRS is located in more than one county, use the largest population density value among the counties. If the MRS is within or borders a city or town, use the population density for the city or town, rather than that of the county.

Classification	Description	Possible Score	Score
> 500 persons per square mile	There are more than 500 persons per square mile in the county in which the MRS is located, based on US Census Bureau data.	5	
100 - 500 persons per square mile	There are 100 to 500 persons per square mile in the county in which the MRS is located, based on US Census Bureau data.	3	
< 100 persons per square mile	There are fewer than 100 persons per square mile in the county in which the MRS is located, based on US Census Bureau data.	1	1
POPULATION DENSITY	DIRECTIONS: Record <u>the single highest score</u> from above in the box to the right (maximum score = 5).		1

DIRECTIONS: Document any MRS-specific data used in selecting the *Population Density* classification in the space below.

The 2000 Census data indicates that the population density for Lake County is 0.9 persons per square mile with a total county population of 2,474 (2007 SI, Section 2.4.3).

Table 7

EHE Module: Population Near Hazard Data Element Table

Directions: Below are six classifications describing the number of inhabited structures near the MRS. The number of inhabited buildings relates to the population near the hazard. Determine the number of inhabited structures within two miles of the MRS boundary and annotate the score that corresponds with the associated population near the known or suspected hazard.

Note: The term *inhabited structures* is defined in Appendix C of the MRSPF Primer (Draft, Dec 2005).

Classification	Description	Possible Score	Score
26 or more inhabited structures	There are 26 or more inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	5	5
16 to 25 inhabited structures	There are 16 to 25 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	4	
11 to 15 inhabited structures	There are 11 to 15 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	3	
6 to 10 inhabited structures	There are 6 to 10 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	2	
1 to 5 inhabited structures	There are 1 to 5 inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	1	
0 inhabited structures	There are no inhabited structures located up to 2 miles from the boundary of the MRS, within the boundary of the MRS, or both.	0	

POPULATION NEAR HAZARD DIRECTIONS: Record the single highest score from above in the box to the right (maximum score = 5). **5**

DIRECTIONS: Document any MRS-specific data used in selecting the *Population Near Hazard* classification in the space below.

The 2000 Census data indicate that there are 49 households within a 2-mile radius of the site and 28 housing units (2007 SI, Section Figure 2-4).

Table 8

EHE Module: Types of Activities/Structures Data Element Table

Directions: Below are five classifications of activities and/or inhabited structures near the hazard and their descriptions. Review the types of activities that occur and/or structures that are present within two miles of the MRS and annotate the score(s) that correspond with all the activities/structure classifications at the MRS.

Note: The term *inhabited structures* is defined in Appendix C of the MRSPF Primer (Draft, Dec 2005).

Classification	Description	Possible Score	Score
Residential, educational, commercial, or subsistence	Activities are conducted, or inhabited structures are located up to two miles from the MRS's boundary or within the MRS's boundary, that are associated with any of the following purposes: residential, educational, child care, critical assets (e.g., hospitals, fire and rescue, police stations, dams), hotels, commercial, shopping centers, playgrounds, community gathering areas, religious sites, or sites used for subsistence hunting, fishing, and gathering.	5	5
Parks and recreational areas	Activities are conducted, or inhabited structures are located up to two miles from the MRS's boundary or within the MRS's boundary, that are associated with parks, nature preserves, or other recreational uses.	4	4
Agricultural, forestry	Activities are conducted, or inhabited structures are located up to two miles from the MRS's boundary or within the MRS's boundary, that are associated with agriculture or forestry.	3	3
Industrial or warehousing	Activities are conducted, or inhabited structures are located up to two miles from the MRS's boundary or within the MRS's boundary, that are associated with industrial activities or warehousing.	2	
No known or recurring activities	There are no known or recurring activities occurring up to two miles from the MRS's boundary or within the MRS's boundary.	1	
TYPES OF ACTIVITIES/STRUCTURES	DIRECTIONS: Record <u>the single highest score</u> from above in the box to the right (maximum score = 5).		5

DIRECTIONS: Document any MRS-specific data used in selecting the *Types of Activities/Structures* classifications in the space below.

There are residences located within 2 miles of COGR. There are no known educational facilities, child care, critical assets, hotels, etc. within a 2-mile radius (2007 SI, Figure 2-5). Portions of the FUDS are used for recreational activities and leased livestock grazing (2007 SI, Section 4.1).

Table 9

EHE Module: Ecological and/or Cultural Resources Data Element Table

Directions: Below are four classifications of ecological and/or cultural resources and their descriptions. Review the types of resources present and annotate the score that corresponds with the ecological and/or cultural resource classifications at the MRS.

Note: The terms *ecological resources* and *cultural resources* are defined in Appendix C of the MRSPF Primer (Draft, Dec 2005).

Classification	Description	Possible Score	Score
Ecological and cultural resources present	There are both ecological and cultural resources present on the MRS.	5	
Ecological resources present	There are ecological resources present on the MRS.	3	3
Cultural resources present	There are cultural resources present on the MRS.	3	
No ecological or cultural resources present	There are no ecological resources or cultural resources present on the MRS.	0	

ECOLOGICAL AND/OR CULTURAL RESOURCES

DIRECTIONS: Record the single highest score from above in the box to the right (maximum score = 5).

3

DIRECTIONS: Document any MRS-specific data used in selecting the *Ecological and/or Cultural Resources* classification in the space below.

There are no known archeological sites located within the MRS (Section 3.2.1). Habitat for a threatened subspecies (Hutton Tui Chub) is on property that is within the MRS (Hutton Springs) near the air-to-ground target areas (2007 SI, Section 3.2.2 and Figure 3-2)

Table 10

Determining the EHE Module Rating

		Source	Score	Value	
<p>DIRECTIONS:</p> <p>1. From Tables 01 - 09, record the data element scores in the Score boxes to the right.</p> <p>2. Add the Score boxes for each of the three factors and record this number in the Value boxes to the right.</p> <p>3. Add the three Value boxes and record this number in the EHE Module Total box below.</p> <p>4. Identify the appropriate range for the EHE Module Total at right.</p> <p>5. Identify the EHE Module Rating that corresponds to the range selected and record this rating in the EHE Module Rating box at the lower right corner of this table.</p> <p>NOTE: An alternative module rating may be assigned when a module letter rating is inappropriate. An alternative module rating is used when more information is needed to score one or more data elements, contamination at an MRS was previously addressed, or there is no reason to suspect contamination was ever present at an MRS.</p>	Explosive Hazard Factor Data Elements				
	Munitions Type	Table 01	5	11	
	Source of Hazard	Table 02	6		
	Accessibility Factor Data Elements				
	Location of Munitions	Table 03	5	20	
	Ease of Access	Table 04	10		
	Status of Property	Table 05	5		
	Receptor Factor Data Elements				
	Population Density	Table 06	1	14	
	Population Near Hazard	Table 07	5		
	Types of Activities/Structures	Table 08	5		
	Ecological and/or Cultural Resources	Table 09	3		
	EHE MODULE TOTAL				45
			EHE Module Total		EHE Module Rating
			92 to 100		A
		82 to 91		B	
		71 to 81		C	
		60 to 70		D	
		48 to 59		E	
		38 to 47		F	
		less than 38		G	
Alternative Module Ratings		Evaluation Pending			
		No Longer Required			
		No Known or Suspected Explosive Hazard			
		EHE MODULE RATING		F	

Table 11

CHE Module: CWM Configuration Data Element Table

Directions: Below are seven classifications of CWM configuration and their descriptions. Annotate the score(s) that correspond to **all** CWM configurations known or suspected to be present at the MRS.

Note: The terms *CWM/UXO*, *CWM/DMM*, *physical evidence*, and *historical evidence* are defined in Appendix C of the MRSPP Primer (Draft, Dec 2005).

Classification	Description	Possible Score	Score
CWM, explosive configuration either UXO or damaged DMM	The CWM known or suspected of being present at the MRS is (a) explosively configured CWM that are UXO (i.e. CWM/UXO), or (b) explosively configured CWM that are DMM (i.e. CWM/DMM) that have been damaged.	30	
CWM mixed with UXO	The CWM known or suspected of being present at the MRS are explosively configured CWM/DMM that have not been damaged, or nonexplosively configured CWM/DMM, or CWM not configured as a munition, that are commingled with conventional munitions that are UXO.	25	
CWM, explosive configuration that are undamaged DMM	The CWM known or suspected of being present at the MRS are explosively configured CWM/DMM that have not been damaged.	20	
CWM, not explosively configured or CWM, bulk container	The CWM known or suspected of being present at the MRS is (a) nonexplosively configured CWM/DMM, or (b) bulk CWM/DMM (e.g., ton container).	15	
CAIS K941 and CAIS K942	The CWM/DMM known or suspected of being present at the MRS is CAIS K941(toxic gas set M-1) or CAIS K942 (toxic gas set M-2/E11).	12	
CAIS (chemical agent identification sets)	Only CAIS, other than CAIS K941 and K942, are known or suspected of being present at the MRS.	10	
Evidence of no CWM	Following investigation, the physical evidence indicates that CWM are not present at the MRS, or the historical evidence indicates that CWM are not present at the MRS.	0	0

CWM CONFIGURATION	DIRECTIONS: Record the single highest score from above in the box to the right (maximum score = 30).	0
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DIRECTIONS: Document any MRS-specific data used in selecting the *CWM Configuration* classifications in the space below.

There have been no reported used of CWM at the MRS.

Table 20

Determining the CHE Module Rating

		Source	Score	Value	
<p>DIRECTIONS:</p> <p>1. From Tables 11 - 19, record the data element scores in the Score boxes to the right.</p> <p>2. Add the Score boxes for each of the three factors and record this number in the Value boxes to the right.</p> <p>3. Add the three Value boxes and record this number in the CHE Module Total box below.</p>	CWM Hazard Factor Data Elements				
	CWM Configuration	Table 11	0	0	
	Sources of CWM	Table 12	0		
	Accessibility Factor Data Elements				
	Location of CWM	Table 13	0	0	
	Ease of Access	Table 14	0		
	Status of Property	Table 15	0		
	Receptor Factor Data Elements				
	Population Density	Table 16	0	0	
	Population Near Hazard	Table 17	0		
	Types of Activities/Structures	Table 18	0		
	Ecological and/or Cultural Resources	Table 19	0		
	CHE MODULE TOTAL				0

	CHE Module Total	CHE Module Rating
	<p>4. Identify the appropriate range for the CHE Module Total at right.</p> <p>5. Identify the CHE Module Rating that corresponds to the range selected and record this rating in the CHE Module Rating box at the lower right corner of this table.</p> <p>NOTE: An alternative module rating may be assigned when a module letter rating is inappropriate. An alternative module rating is used when more information is needed to score one or more data elements, contamination at an MRS was previously addressed, or there is no reason to suspect contamination was ever present at an MRS.</p>	92 to 100
82 to 91		B
71 to 81		C
60 to 70		D
48 to 59		E
38 to 47		F
less than 38		G
Alternative Module Ratings		Evaluation Pending
	No Longer Required	
	No Known or Suspected CWM Hazard	
CHE MODULE RATING	No Known or Suspected CWM Hazard	

Table 21

HHE Module: Groundwater Data Element Table

Contaminant Hazard Factor (CHF)

Directions: Record the **maximum concentrations** of all contaminants in the MRS's groundwater and their **comparison values** (from Appendix B, Relative Risk Site Evaluation (RRSE) Primer, Summer 1997 - Revised) in the table below. Additional contaminants can be recorded on Table 27. Calculate and record **theratios** for each contaminant by dividing the **maximum concentration** by the **comparison value**. Determine the **CHF** by adding the **ratios** for each medium together, including additional contaminants recorded on Table 27. Based on the **CHF**, use the **CHF Scale** to determine and record the **CHF Value**. If there is no known or suspected MC hazard present in the groundwater, select the box at the bottom of the table.

Note: Use dissolved, rather than total, metals analyses when both are available.

Contaminant [CAS No.]	Maximum Concentration (µg/L)	Comparison Value (µg/L)	Ratios
		Total from Table 27	
CHF Scale CHF > 100 100 > CHF > 2 2 > CHF		CHF Value H (High) M (Medium) L (Low)	Sum the Ratios $CHF = \sum \left(\frac{[\text{Max Conc of Contaminant}]}{[\text{Comparison Value for Contaminant}]}\right)$

CONTAMINANT HAZARD FACTOR Directions: Record **the CHF Value** from above in the box to the right (maximum value = H).

Migratory Pathway Factor

Directions: Annotate the value that corresponds most closely to the groundwater migratory pathway at the MRS.

<u>Classification</u>	<u>Description</u>	<u>Value</u>
Evident	Analytical data or observable evidence indicates that contamination in the groundwater is present at, moving toward, or has moved to a point of exposure.	H
Potential	Contamination in groundwater has moved only slightly beyond the source (i.e. tens of feet), could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined.	M
Confined	Information indicates a low potential for contaminant migration from the source via the groundwater to a potential point of exposure (possibly due to geological structures or physical controls).	L

MIGRATORY PATHWAY FACTOR Directions: Record **the single highest value** from above in the box to the right (maximum value = H).

Receptor Factor

Directions: Annotate the value that corresponds most closely to the groundwater receptors at the MRS.

<u>Classification</u>	<u>Description</u>	<u>Value</u>
Identified	There is a threatened water supply well downgradient of the source and the groundwater is a current source of drinking water or source of water for other beneficial uses such as irrigation/agriculture (equivalent to Class I or IIA aquifer).	H
Potential	There is no threatened water supply well downgradient of the source and the groundwater is currently or potentially usable for drinking water, irrigation, or agriculture (equivalent to Class I, IIA, or IIB aquifer).	M
Limited	There is no potentially threatened water supply well downgradient of the source and the groundwater is not considered a potential source of drinking water and is of limited beneficial use (equivalent to Class IIIA or IIIB aquifer, or where perched aquifer exists only).	L

RECEPTOR FACTOR Directions: Record **the single highest value** from above in the box to the right (maximum value = H).

Place an "X" in the box to the right if there is no known or suspected Groundwater MC Hazard **X**

Table 22

HHE Module: Surface Water - Human Endpoint Data Element Table

Contaminant Hazard Factor (CHF)

Directions: Record the **maximum concentrations** of all contaminants in the MRS's surface water and their **comparison values** (from Appendix B, Relative Risk Site Evaluation (RRSE) Primer, Summer 1997 - Revised) in the table below. Additional contaminants can be recorded on Table 27. Calculate and record the **ratios** for each contaminant by dividing the **maximum concentration** by the **comparison value**. Determine the **CHF** by adding the **ratios** for each medium together, including additional contaminants recorded on Table 27. Based on the **CHF**, use the **CHF Scale** to determine and record the **CHF Value**. If there is no known or suspected MC hazard present in the surface water, select the box at the bottom of the table.

Note: Use dissolved, rather than total, metals analyses when both are available.

Contaminant [CAS No.]	Maximum Concentration (µg/L)	Comparison Value (µg/L)	Ratios
		Total from Table 27	
CHF Scale	CHF Value	Sum the Ratios	
CHF > 100	H (High)	$CHF = \sum \left(\frac{[\text{Max Conc of Contaminant}]}{[\text{Comparison Value for Contaminant}]} \right)$	
100 > CHF > 2	M (Medium)		
2 > CHF	L (Low)		

CONTAMINANT HAZARD FACTOR Directions: Record **the CHF Value** from above in the box to the right (maximum value = H).

Migratory Pathway Factor

Directions: Annotate the value that corresponds most closely to the surface water migratory pathway at the MRS.

<u>Classification</u>	<u>Description</u>	<u>Value</u>
Evident	Analytical data or observable evidence indicates that contamination in the surface water is present at, moving toward, or has moved to a point of exposure.	H
Potential	Contamination in surface water has moved only slightly beyond the source (i.e. tens of feet), could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined.	M
Confined	Information indicates a low potential for contaminant migration from the source via the surface water to a potential point of exposure (possibly due to presence of geological structures or physical controls).	L

MIGRATORY PATHWAY FACTOR Directions: Record **the single highest value** from above in the box to the right (maximum value = H).

Receptor Factor

Directions: Annotate the value that corresponds most closely to the surface water receptors at the MRS.

<u>Classification</u>	<u>Description</u>	<u>Value</u>
Identified	Identified receptors have access to surface water to which contamination has moved or can move.	H
Potential	Potential for receptors to have access to surface water to which contamination has moved or can move.	M
Limited	Little or no potential for receptors to have access to surface water to which contamination has moved or can move.	L

RECEPTOR FACTOR Directions: Record **the single highest value** from above in the box to the right (maximum value = H).

Place an "X" in the box to the right if there is no known or suspected Surface Water (Human Endpoint) MC Hazard **X**

Table 23

HHE Module: Sediment - Human Endpoint Data Element Table

Contaminant Hazard Factor (CHF)

Directions: Record the **maximum concentrations** of all contaminants in the site's sediment and their **comparison values** (from Appendix B, Relative Risk Site Evaluation (RRSE) Primer, Summer 1997 - Revised) in the table below. Additional contaminants can be recorded on Table 27. Calculate and record **theratios** for each contaminant by dividing the **maximum concentration** by the **comparison value**. Determine the **CHF** by adding the **ratios** for each medium together, including additional contaminants recorded on Table 27. Based on the **CHF**, use the **CHF Scale** to determine and record the **CHF Value**. If there is no known or suspected MC hazard for human endpoints present in the sediment, select the box at the bottom of the table.

Note: N/A

Contaminant [CAS No.]	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
Nitrobenzene (98-95-3)	0.04	3,300.00	0
		Total from Table 27	
		Sum the Ratios	0
		CHF = \sum ([Max Conc of Contaminant] / [Comparison Value for Contaminant])	

CHF Scale
 CHF > 100
 100 > CHF > 2
 2 > CHF

CHF Value
 H (High)
 M (Medium)
 L (Low)

CONTAMINANT HAZARD FACTOR

Directions: Record **the CHF Value** from above in the box to the right (maximum value = H).

L

Migratory Pathway Factor

Directions: Annotate the value that corresponds most closely to the surface water migratory pathway at the MRS.

<u>Classification</u>	<u>Description</u>	<u>Value</u>
Evident	Analytical data or observable evidence indicates that contamination in the sediment is present at, moving toward, or has moved to a point of exposure.	H
Potential	Contamination in sediment has moved only slightly beyond the source (i.e. tens of feet), could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined.	M
Confined	Information indicates a low potential for contaminant migration from the source via the sediment to a potential point of exposure (possibly due to presence of geological structures or physical controls).	L

MIGRATORY PATHWAY FACTOR

Directions: Record **the single highest value** from above in the box to the right (maximum value = H).

L

Receptor Factor

Directions: Annotate the value that corresponds most closely to the surface water receptors at the MRS.

<u>Classification</u>	<u>Description</u>	<u>Value</u>
Identified	Identified receptors have access to sediment to which contamination has moved or can move.	H
Potential	Potential for receptors to have access to sediment to which contamination has moved or can move.	M
Limited	Little or no potential for receptors to have access to sediment to which contamination has moved or can move.	L

RECEPTOR FACTOR

Directions: Record **the single highest value** from above in the box to the right (maximum value = H).

L

Place an "X" in the box to the right if there is no known or suspected Sediment (Human Endpoint) MC Hazard

Table 24

HHE Module: Surface Water - Ecological Endpoint Data Element Table

Contaminant Hazard Factor (CHF)

Directions: Record the **maximum concentrations** of all contaminants in the MRS's surface water and their **comparison values** (from Appendix B, Relative Risk Site Evaluation (RRSE) Primer, Summer 1997 - Revised) in the table below. Additional contaminants can be recorded on Table 27. Calculate and record the **ratios** for each contaminant by dividing the **maximum concentration** by the **comparison value**. Determine the **CHF** by adding the **ratios** for each medium together, including additional contaminants recorded on Table 27. Based on the **CHF**, use the **CHF Scale** to determine and record the **CHF Value**. If there is no known or suspected MC hazard for ecological endpoints present in the surface water, select the box at the bottom of the table.

Note: Use either dissolved or total metals analyses.

Contaminant [CAS No.]	Maximum Concentration (µg/L)	Comparison Value (µg/L)	Ratios
		Total from Table 27	
<u>CHF Scale</u>	<u>CHF Value</u>	<u>Sum the Ratios</u>	
CHF > 100	H (High)	$CHF = \sum \left(\frac{[\text{Max Conc of Contaminant}]}{[\text{Comparison Value for Contaminant}]} \right)$	
100 > CHF > 2	M (Medium)		
2 > CHF	L (Low)		

CONTAMINANT HAZARD FACTOR Directions: Record **the CHF Value** from above in the box to the right (maximum value = H).

Migratory Pathway Factor

Directions: Annotate the value that corresponds most closely to the surface water migratory pathway at the MRS.

<u>Classification</u>	<u>Description</u>	<u>Value</u>
Evident	Analytical data or observable evidence indicates that contamination in the surface water is present at, moving toward, or has moved to a point of exposure.	H
Potential	Contamination in surface water has moved only slightly beyond the source (i.e. tens of feet), could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined.	M
Confined	Information indicates a low potential for contaminant migration from the source via the surface water to a potential point of exposure (possibly due to presence of geological structures or physical controls).	L

MIGRATORY PATHWAY FACTOR Directions: Record **the single highest value** from above in the box to the right (maximum value = H).

Receptor Factor

Directions: Annotate the value that corresponds most closely to the surface water receptors at the MRS.

<u>Classification</u>	<u>Description</u>	<u>Value</u>
Identified	Identified receptors have access to surface water to which contamination has moved or can move.	H
Potential	Potential for receptors to have access to surface water to which contamination has moved or can move.	M
Limited	Little or no potential for receptors to have access to surface water to which contamination has moved or can move.	L

RECEPTOR FACTOR Directions: Record **the single highest value** from above in the box to the right (maximum value = H).

Place an "X" in the box to the right if there is no known or suspected Surface Water (Ecological Endpoint) MC Hazard

Table 25

HHE Module: Sediment - Ecological Endpoint Data Element Table

Contaminant Hazard Factor (CHF)

Directions: Record the **maximum concentrations** of all contaminants in the MRS's sediment and their **comparison values** (from Appendix B, Relative Risk Site Evaluation (RRSE) Primer, Summer 1997 - Revised) in the table below. Additional contaminants can be recorded on Table 27. Calculate and record **theratios** for each contaminant by dividing the **maximum concentration** by the **comparison value**. Determine the **CHF** by adding the **ratios** for each medium together, including additional contaminants recorded on Table 27. Based on the **CHF**, use the **CHF Scale** to determine and record the **CHF Value**. If there is no known or suspected MC hazard for ecological endpoints present in the sediment, select the box at the bottom of the table.

Note: N/A

Contaminant [CAS No.]	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
Nitrobenzene (98-95-3) - no comparison factor available	0.04		

		Total from Table 27	
CHF Scale	CHF Value	Sum the Ratios	
CHF > 100	H (High)		
100 > CHF > 2	M (Medium)	CHF = $\sum \frac{(\text{Max Conc of Contaminant})}{(\text{Comparison Value for Contaminant})}$	
2 > CHF	L (Low)		

CONTAMINANT HAZARD FACTOR Directions: Record **the CHF Value** from above in the box to the right (maximum value = H).

Migratory Pathway Factor

Directions: Annotate the value that corresponds most closely to the surface water migratory pathway at the MRS.

<u>Classification</u>	<u>Description</u>	<u>Value</u>
Evident	Analytical data or observable evidence indicates that contamination in the sediment is present at, moving toward, or has moved to a point of exposure.	H
Potential	Contamination in sediment has moved only slightly beyond the source (i.e. tens of feet), could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined.	M
Confined	Information indicates a low potential for contaminant migration from the source via the sediment to a potential point of exposure (possibly due to presence of geological structures or physical controls).	L

MIGRATORY PATHWAY FACTOR Directions: Record **the single highest value** from above in the box to the right (maximum value = H).

Receptor Factor

Directions: Annotate the value that corresponds most closely to the surface water receptors at the MRS.

<u>Classification</u>	<u>Description</u>	<u>Value</u>
Identified	Identified receptors have access to sediment to which contamination has moved or can move.	H
Potential	Potential for receptors to have access to sediment to which contamination has moved or can move.	M
Limited	Little or no potential for receptors to have access to sediment to which contamination has moved or can move.	L

RECEPTOR FACTOR Directions: Record **the single highest value** from above in the box to the right (maximum value = H).

Place an "X" in the box to the right if there is no known or suspected Sediment (Ecological Endpoint) MC Hazard

X

Table 26

HHE Module: Surface Soil - Data Element Table

Contaminant Hazard Factor (CHF)

Directions: Record the **maximum concentrations** of all contaminants in the MRS's surface soil and their **comparison values** (from Appendix B, Relative Risk Site Evaluation (RRSE) Primer, Summer 1997 - Revised) in the table below. Additional contaminants can be recorded on Table 27. Calculate and record **theratios** for each contaminant by dividing the **maximum concentration** by the **comparison value**. Determine the **CHF** by adding the **ratios** for each medium together, including additional contaminants recorded on Table 27. Based on the **CHF**, use the **CHF Scale** to determine and record the **CHF Value**. If there is no known or suspected MC hazard present in the surface soil, select the box at the bottom of the table.

Note: N/A

Contaminant [CAS No.]	Maximum Concentration (mg/kg)	Comparison Value (mg/kg)	Ratios
Molybdenum (7439-98-7)	149.00	380.00	0
Nitrobenzene (98-95-3)	0.05	3,300.00	0
		Total from Table 27	
CHF Scale	CHF Value	Sum the Ratios	0
CHF > 100	H (High)		
100 > CHF > 2	M (Medium)	$CHF = \sum \{([Max\ Conc\ of\ Contaminant] / [Comparison\ Value\ for\ Contaminant])\}$	
2 > CHF	L (Low)		

CONTAMINANT HAZARD FACTOR Directions: Record **the CHF Value** from above in the box to the right (maximum value = H). **L**

Migratory Pathway Factor

Directions: Annotate the value that corresponds most closely to the surface soil migratory pathway at the MRS.

Classification	Description	Value
Evident	Analytical data or observable evidence indicates that contamination in the surface soil is present at, moving toward, or has moved to a point of exposure.	H
Potential	Contamination in surface soil has moved only slightly beyond the source (i.e. tens of feet), could move but is not moving appreciably, or information is not sufficient to make a determination of Evident or Confined.	M
Confined	Information indicates a low potential for contaminant migration from the source via the surface soil to a potential point of exposure (possibly due to presence of geological structures or physical controls).	L

MIGRATORY PATHWAY FACTOR Directions: Record **the single highest value** from above in the box to the right (maximum value = H). **L**

Receptor Factor

Directions: Annotate the value that corresponds most closely to the surface soil receptors at the MRS.

Classification	Description	Value
Identified	Identified receptors have access to surface soil to which contamination has moved or can move.	H
Potential	Potential for receptors to have access to surface soil to which contamination has moved or can move.	M
Limited	Little or no potential for receptors to have access to surface soil to which contamination has moved or can move.	L

RECEPTOR FACTOR Directions: Record **the single highest value** from above in the box to the right (maximum value = H). **L**

Place an "X" in the box to the right if there is no known or suspected Surface Soil MC Hazard

Table 28

Determining the HHE Module Rating

DIRECTIONS:

1. Record the letter values (H, M, L) for the **Contaminant Hazard**, **Migration Pathway**, and **Receptor Factors** for the media (from Tables 21 - 26) in the corresponding boxes below.
2. Record the media's three-letter combinations in the **Three-Letter-Combination** boxes below (three-letter combinations are arranged from Hs to Ms to Ls).
3. Using the reference provided below, determine each medium's rating (A - G) and record the letter in the corresponding **Media Rating** box below.

Medium (Source)	Contaminant Hazard Factor Value	Migratory Pathway Factor Value	Receptor Factor Value	Three-Letter Combination (Hs-Ms-Ls)	Media Rating (A - G)
Table 21 - Groundwater					
Table 22 - Surface Water (Human Endpoint)					
Table 23 - Sediment (Human Endpoint)	L	L	L	LLL	G
Table 24 - Surface Water (Ecological Endpoint)					
Table 25 - Sediment (Ecological Endpoint)					
Table 26 - Surface Soil	L	L	L	LLL	G
				HHE MODULE RATING	G

DIRECTIONS (Continued):

HHE Ratings (for reference only)

4. Select the single highest Media Rating (A is the highest; G is the lowest) and enter the letter in the HHE Module Rating box below.	HHH	A
	HHM	B
	HHL	C
	HMM	
	HML	D
	MMM	
	HLL	E
	MML	
	MLL	F
	LLL	G

NOTE: An alternative module rating may be assigned when a module letter rating is used when more information is needed to score one or more media, contamination at an MRS was previously addressed, or there is no reason to suspect contamination was ever present at an MRS.

Alternative Module Ratings	Evaluation Pending
	No Longer Required
	No Known or Suspected MC Hazard

Table 29

MRS Priority

DIRECTIONS: In the chart below, enter the letter **rating** for each module recorded in Table 10 (EHE), Table 20 (CHE), and Table 28 (HHE). Enter the corresponding numerical **priority** for each module. If information to determine the module rating is not available, choose the appropriate alternative module rating. The MRS priority is the single highest priority; record this number in the **MRS or Alternative Priority** box at the bottom of the table.

NOTE: An MRS assigned Priority 1 has the highest relative priority; an MRS assigned Priority 8 has the lowest relative priority. Only an MRS with CWM known or suspected to be present can be assigned Priority 1; an MRS that has CWM known or suspected to be present cannot be assigned Priority 8.

EHE Rating	Priority	CHE Rating	Priority	HHE Rating	Priority
		A	1		
A	2	B	2	A	2
B	3	C	3	B	3
C	4	D	4	C	4
D	5	E	5	D	5
E	6	F	6	E	6
F	7	G	7	F	7
G	8			G	8
Evaluation Pending		Evaluation Pending		Evaluation Pending	
No Longer Required		No Longer Required		No Longer Required	
No Known or Suspected Explosive Hazard		No Known or Suspected CWM Hazard		No Known or Suspected MC Hazard	

Reference Table 10:		Reference Table 20:		Reference Table 28:	
EHE Module Rating	Priority	CHE Module Rating	Priority	HHE Module Rating	Priority
F	7	No Known or Suspected CWM Hazard	No Known or Suspected CWM Hazard	G	8

MRS or Alternative Priority				7	
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Appendix L
Reference Copies



EDR® Environmental
Data Resources Inc

The EDR Radius Map with GeoCheck®

**Central Oregon
Gun Rng
SILVER LAKE, OR 97638**

Inquiry Number: 1692345.2s

June 08, 2006

The Standard in Environmental Risk Management Information

440 Wheelers Farms Road
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

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Thank you for your business.
 Please contact EDR at 1-800-352-0050
 with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-05) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

GUN RNG
SILVER LAKE, OR 97638

COORDINATES

Latitude (North): 42.975400 - 42° 58' 31.4"
Longitude (West): 120.051800 - 120° 3' 6.5"
Universal Transverse Mercator: Zone 10
UTM X (Meters): 740413.2
UTM Y (Meters): 4762086.5
Elevation: 4266 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map: 42120-H1 ALKALI LAKE, OR
Most Recent Revision: 1984

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

FEDERAL RECORDS

NPL..... National Priority List
Proposed NPL..... Proposed National Priority List Sites
Delisted NPL..... National Priority List Deletions
NPL RECOVERY..... Federal Superfund Liens
CERCLIS..... Comprehensive Environmental Response, Compensation, and Liability Information System
CERC-NFRAP..... CERCLIS No Further Remedial Action Planned
CORRACTS..... Corrective Action Report
RCRA-TSDF..... Resource Conservation and Recovery Act Information
RCRA-LQG..... Resource Conservation and Recovery Act Information

EXECUTIVE SUMMARY

RCRA-SQG	Resource Conservation and Recovery Act Information
ERNS	Emergency Response Notification System
HMIRS	Hazardous Materials Information Reporting System
US ENG CONTROLS	Engineering Controls Sites List
US INST CONTROL	Sites with Institutional Controls
DOD	Department of Defense Sites
FUDS	Formerly Used Defense Sites
US BROWNFIELDS	A Listing of Brownfields Sites
CONSENT	Superfund (CERCLA) Consent Decrees
ROD	Records Of Decision
UMTRA	Uranium Mill Tailings Sites
ODI	Open Dump Inventory
TRIS	Toxic Chemical Release Inventory System
TSCA	Toxic Substances Control Act
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
SSTS	Section 7 Tracking Systems
ICIS	Integrated Compliance Information System
PADS	PCB Activity Database System
MLTS	Material Licensing Tracking System
MINES	Mines Master Index File
FINDS	Facility Index System/Facility Registry System
RAATS	RCRA Administrative Action Tracking System

STATE AND LOCAL RECORDS

SHWS - ECSI	Environmental Cleanup Site Information System
OR CRL	Confirmed Release List and Inventory
SWF/LF	Solid Waste Facilities List
UIC	Underground Injection Control Program Database
HIST LF	Old Closed SW Disposal Sites
LUST	Leaking Underground Storage Tank Database
AOC COL	Columbia Slough
UST	Underground Storage Tank Database
AST	Aboveground Storage Tanks
OR MANIFEST	Manifest Information
OR SPILLS	Spill Data
OR HAZMAT	Hazmat/Incidents
ENG CONTROLS	Engineering Controls Recorded at ESCI Sites
INST CONTROL	Institutional Controls Recorded at ESCI Sites
VCS	Voluntary Cleanup Program Sites
DRYCLEANERS	Drycleaning Facilities
BROWNFIELDS	Brownfields Projects
CDL	Uninhabitable Drug Lab Properties
AIRS	Oregon Title V Facility Listing
HSIS	Hazardous Substance Information Survey

TRIBAL RECORDS

INDIAN RESERV	Indian Reservations
INDIAN LUST	Leaking Underground Storage Tanks on Indian Land
INDIAN UST	Underground Storage Tanks on Indian Land

EDR PROPRIETARY RECORDS

Manufactured Gas Plants	EDR Proprietary Manufactured Gas Plants
--------------------------------	---

EXECUTIVE SUMMARY

EDR Historical Auto Stations EDR Proprietary Historic Gas Stations
EDR Historical Cleaners..... EDR Proprietary Historic Dry Cleaners

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were not identified.

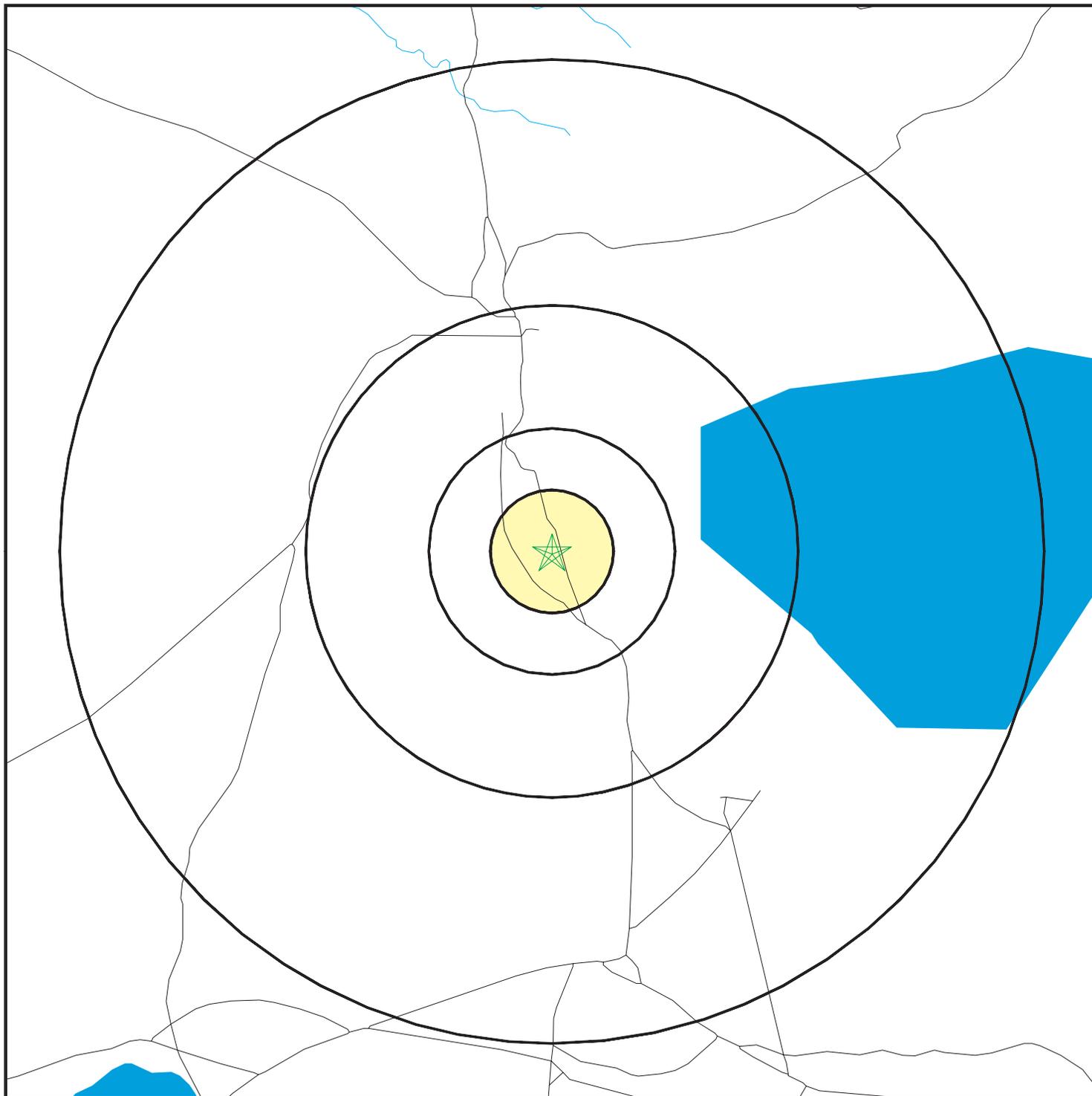
Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

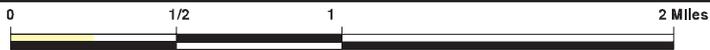
Due to poor or inadequate address information, the following sites were not mapped:

<u>Site Name</u>	<u>Database(s)</u>
NORTHLAKE SD 14 ODOT HWY DIV SILVER LAKE	FTTS RCRA-SQG, FINDS, OR MANIFEST
OLE TURNBOW SOIL PILE REMEDIATION CHRISTMAS VALLEY AIRPORT ENHANCEMENT PRO	SHWS - ECSI, FINDS, VCS SHWS - ECSI, OR CRL, BROWNFIELDS
OIL-DRI PRODUCTION CO. CHRISTMAS VALLEY RADAR BASE GLASS BUTTES MINE ANGEL PEAK MINE STAUB & SONS - SILVER LAKE CS ANDRUS LUMBER MILL (FORMER) USDA FS FREMONT NF:SILVER LAKE R.D. PENTA SITE ED STAUB & SONS ED STAUB & SONS PLUSH TRANSFER STATION PLUSH LANDFILL SILVER LAKE TRANSFER STATION SILVER LAKE LANDFILL NORTH LAKE UNION SILVER LAKE SHELL SILVER LAKE SHOP YARD OR STATE HWY, 4-11 SILVER LAKE OREGON STATE HIGHWAY, 4-11 SILVER LAKE SILVER LAKE SHOP YARD SILVERLAKE CHEVRON OR STATE HWY, 4-11 SILVER LAKE USDA FS FREMONT-WINEMA NF SILV SILVER LAKE ADMINISTRATION - USFS(OWNER: ODOT- SILVER LAKE MAINTENANCE STN.(OWNER SILVER LAKE DISPOSAL SITE	SHWS - ECSI SHWS - ECSI SHWS - ECSI, OR CRL SHWS - ECSI, OR CRL SHWS - ECSI, FINDS SHWS - ECSI CERC-NFRAP AST, HSIS AST, HSIS FINDS, SWF/LF FINDS, SWF/LF FINDS, SWF/LF FINDS, SWF/LF LUST LUST LUST LUST LUST LUST UST UST UST RCRA-SQG, FINDS UIC UIC ODI

OVERVIEW MAP - 1692345.2s



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ▲ Manufactured Gas Plants
- ▣ National Priority List Sites
- ▣ Landfill Sites
- ▣ Dept. Defense Sites



- ▣ Indian Reservations BIA
- ▣ Oil & Gas pipelines

- ▣ Areas of Concern

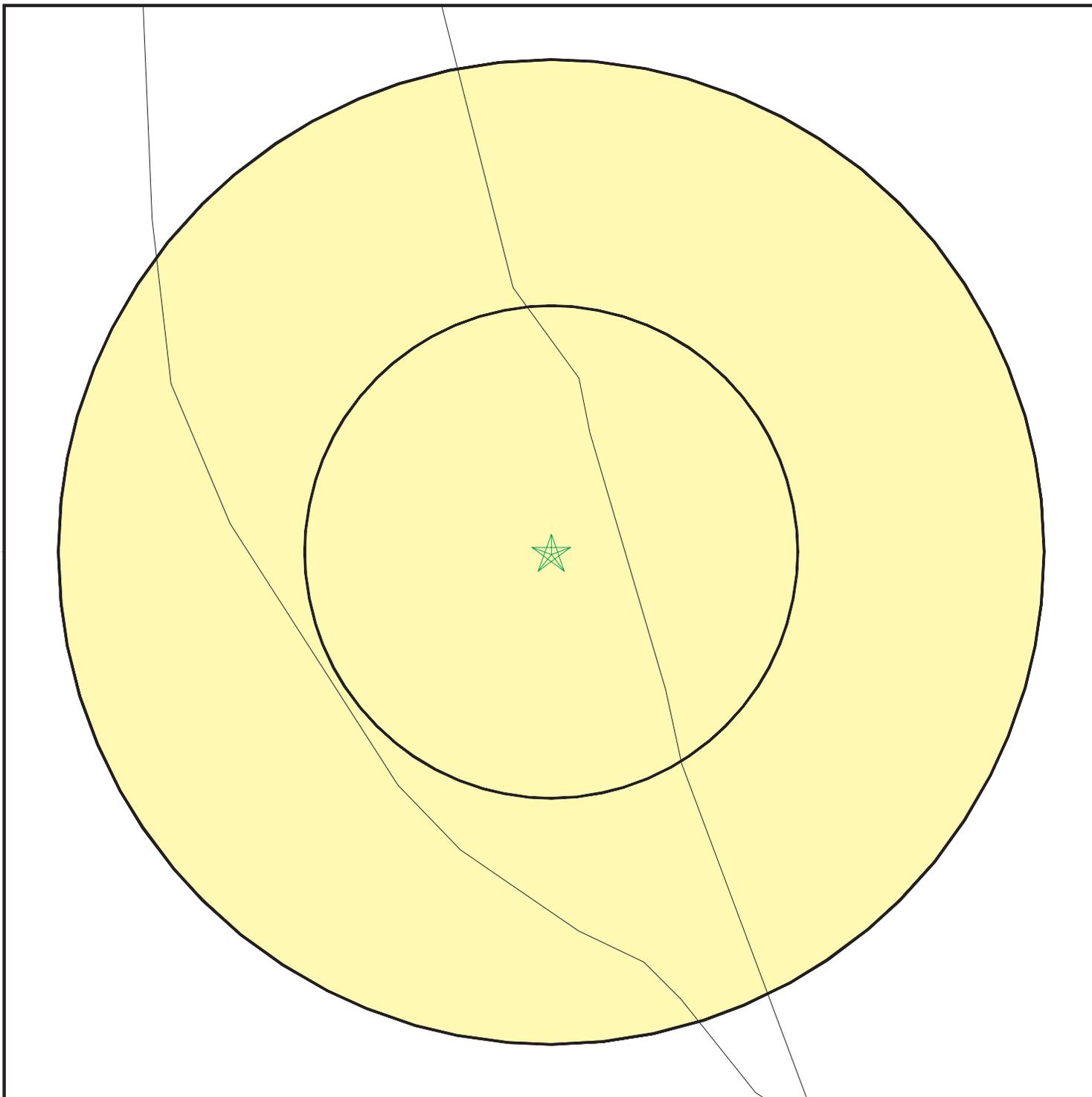


This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Central Oregon
 ADDRESS: Gun Rng
 SILVER LAKE OR 97638
 LAT/LONG: 42.9754 / 120.0518

CLIENT: Shaw Env. and Infrastructure
 CONTACT: Jennifer Lillis
 INQUIRY #: 1692345.2s
 DATE: June 08, 2006

DETAIL MAP - 1692345.2s



- ★ Target Property
- ▲ Sites at elevations higher than or equal to the target property
- ◆ Sites at elevations lower than the target property
- ▲ Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Landfill Sites
- Dept. Defense Sites



- Indian Reservations BIA
- Oil & Gas pipelines

- Areas of Concern



This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Central Oregon
 ADDRESS: Gun Rng
 SILVER LAKE OR 97638
 LAT/LONG: 42.9754 / 120.0518

CLIENT: Shaw Env. and Infrastructure
 CONTACT: Jennifer Lillis
 INQUIRY #: 1692345.2s
 DATE: June 08, 2006

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
<u>FEDERAL RECORDS</u>								
NPL		2.000	0	0	0	0	0	0
Proposed NPL		2.000	0	0	0	0	0	0
Delisted NPL		2.000	0	0	0	0	0	0
NPL RECOVERY		2.000	0	0	0	0	0	0
CERCLIS		2.000	0	0	0	0	0	0
CERC-NFRAP		2.000	0	0	0	0	0	0
CORRACTS		2.000	0	0	0	0	0	0
RCRA TSD		2.000	0	0	0	0	0	0
RCRA Lg. Quan. Gen.		2.000	0	0	0	0	0	0
RCRA Sm. Quan. Gen.		2.000	0	0	0	0	0	0
ERNS		2.000	0	0	0	0	0	0
HMIRS		2.000	0	0	0	0	0	0
US ENG CONTROLS		2.000	0	0	0	0	0	0
US INST CONTROL		2.000	0	0	0	0	0	0
DOD		2.000	0	0	0	0	0	0
FUDS		2.000	0	0	0	0	0	0
US BROWNFIELDS		2.000	0	0	0	0	0	0
CONSENT		2.000	0	0	0	0	0	0
ROD		2.000	0	0	0	0	0	0
UMTRA		2.000	0	0	0	0	0	0
ODI		2.000	0	0	0	0	0	0
TRIS		2.000	0	0	0	0	0	0
TSCA		2.000	0	0	0	0	0	0
FTTS		2.000	0	0	0	0	0	0
SSTS		2.000	0	0	0	0	0	0
ICIS		2.000	0	0	0	0	0	0
PADS		2.000	0	0	0	0	0	0
MLTS		2.000	0	0	0	0	0	0
MINES		2.000	0	0	0	0	0	0
FINDS		2.000	0	0	0	0	0	0
RAATS		2.000	0	0	0	0	0	0
<u>STATE AND LOCAL RECORDS</u>								
State Haz. Waste - ECSI		2.000	0	0	0	0	0	0
OR CRL		2.000	0	0	0	0	0	0
State Landfill		2.000	0	0	0	0	0	0
UIC		2.000	0	0	0	0	0	0
HIST LF		2.000	0	0	0	0	0	0
LUST		2.000	0	0	0	0	0	0
AOC COL		2.000	0	0	0	0	0	0
UST		2.000	0	0	0	0	0	0
AST		2.000	0	0	0	0	0	0
MANIFEST		2.000	0	0	0	0	0	0
OR SPILLS		2.000	0	0	0	0	0	0
OR HAZMAT		2.000	0	0	0	0	0	0
ENG CONTROLS		2.000	0	0	0	0	0	0
INST CONTROL		2.000	0	0	0	0	0	0

MAP FINDINGS SUMMARY

Database	Target Property	Search Distance (Miles)	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
VCS		2.000	0	0	0	0	0	0
DRYCLEANERS		2.000	0	0	0	0	0	0
BROWNFIELDS		2.000	0	0	0	0	0	0
CDL		2.000	0	0	0	0	0	0
AIRS		2.000	0	0	0	0	0	0
HSIS		2.000	0	0	0	0	0	0
<u>TRIBAL RECORDS</u>								
INDIAN RESERV		2.000	0	0	0	0	0	0
INDIAN LUST		2.000	0	0	0	0	0	0
INDIAN UST		2.000	0	0	0	0	0	0
<u>EDR PROPRIETARY RECORDS</u>								
Manufactured Gas Plants		2.000	0	0	0	0	0	0
EDR Historical Auto Stations		2.000	0	0	0	0	0	0
EDR Historical Cleaners		2.000	0	0	0	0	0	0

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

Map ID
Direction
Distance
Distance (ft.)
Elevation

MAP FINDINGS

Site

Database(s) EDR ID Number
EPA ID Number

NO SITES FOUND

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
CHRISTMAS VALLEY	1007693001	OLE TURNBOW SOIL PILE REMEDIATION	CHRISTMAS VALLEY HWY & JINGLE BELLS RD	97638	SHWS - ECSI, FINDS, VCS
CHRISTMAS VALLEY	S106236617	CHRISTMAS VALLEY AIRPORT ENHANCEMENT PRO	87634 CHRISTMAS VALLEY HWY	97638	SHWS - ECSI, OR CRL, BROWNFIELD
CHRISTMAS VALLEY	S106115400	OIL-DRI PRODUCTION CO.	56541 OIL-DRI RD	97638	SHWS - ECSI
CHRISTMAS VALLEY	S106880472	CHRISTMAS VALLEY RADAR BASE	WAGON TIRE RD / RADAR SITE RD (NE C	97638	SHWS - ECSI
LAKE COUNTY	S105680831	GLASS BUTTES MINE	23S/23E/S34,27,28 / 24S/23E/S3		SHWS - ECSI, OR CRL
LAKE COUNTY	S105614114	ANGEL PEAK MINE	FOREST SERVICE RD #3660-108		SHWS - ECSI, OR CRL
PLUSH	1006853426	PLUSH TRANSFER STATION	2 MILES WEST OF PLUSH ON COUNTY RD 3-10	97637	FINDS, SWF/LF
PLUSH	1006859152	PLUSH LANDFILL	SEC 20, T36S, R24E	97637	FINDS, SWF/LF
SILVER LAKE	1006867025	STAUB & SONS - SILVER LAKE	3RD ST & CENTER ST (NE CORNER)	97638	SHWS - ECSI, FINDS
SILVER LAKE	S106980777	CS ANDRUS LUMBER MILL (FORMER)	28S/14E/S22CB	97638	SHWS - ECSI
SILVER LAKE	1004654860	USDA FS FREMONT NF:SILVER LAKE R.D. PENTA SITE	HWY 31 MP 46, 1/4 MI S OF TOWN	97638	CERC-NFRAP
SILVER LAKE	1004771233	USDA FS FREMONT-WINEMA NF SILV	HWY 31 N MP 44 1 MI N/O CITY	97638	RCRA-SQG, FINDS
SILVER LAKE	S100499938	NORTH LAKE UNION	HIGHWAY 31	97638	LUST
SILVER LAKE	S100499939	SILVER LAKE SHELL	HWY. 31	97638	LUST
SILVER LAKE	S100499941	SILVER LAKE SHOP YARD	HIGHWAY 31	97638	LUST
SILVER LAKE	S104048887	ED STAUB & SONS	HWY 31	97638	AST, HSIS
SILVER LAKE	S106770558	SILVER LAKE ADMINISTRATION - USFS(OWNER:	HIGHWAY 31	97638	UIC
SILVER LAKE	U000437659	OR STATE HWY, 4-11 SILVER LAKE	HWY 31 - N END OF SILVER LAKE	97638	LUST
SILVER LAKE	U000437662	SILVER LAKE SHOP YARD	HWY 31	97638	UST
SILVER LAKE	U003580481	SILVERLAKE CHEVRON	HWY 31	97638	UST
SILVER LAKE	U004016253	OR STATE HWY, 4-11 SILVER LAKE	HWY 31 - N END OF SILVER LAKE	97638	UST
SILVER LAKE	S100499935	OREGON STATE HIGHWAY, 4-11 SILVER LAKE	HWY. 31, NORTH END OF SILVER LAKE	97638	LUST
SILVER LAKE	S106771543	ODOT- SILVER LAKE MAINTENANCE STN.(OWNER	HIGHWAY 395	97638	UIC
SILVER LAKE	1004770778	ODOT HWY DIV SILVER LAKE	MP 47 HWY 31 RT 19	97638	RCRA-SQG, FINDS, OR MANIFEST
SILVER LAKE	1006863008	SILVER LAKE TRANSFER STATION	3 MILES SOUTHEAST OF SILVER LAKE OFF HWY	97638	FINDS, SWF/LF
SILVER LAKE	1007445134	SILVER LAKE DISPOSAL SITE	OREGON HIGHWAY 31		ODI
SILVER LAKE	1006859081	SILVER LAKE LANDFILL	SEC 24, T28S, R14E	97638	FINDS, SWF/LF
SILVER LAKE	S106074433	ED STAUB & SONS	53327 SILVERLAKE HWY	97638	AST, HSIS
SILVERLAKE	1008186204	NORTHLAKE SD 14	FREMONT HWY 31	97638	FTTS

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

FEDERAL RECORDS

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 04/19/2006	Source: EPA
Date Data Arrived at EDR: 05/05/2006	Telephone: N/A
Date Made Active in Reports: 05/22/2006	Last EDR Contact: 05/05/2006
Number of Days to Update: 17	Next Scheduled EDR Contact: 07/31/2006
	Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 8
Telephone: 303-312-6774

EPA Region 4
Telephone 404-562-8033

Proposed NPL: Proposed National Priority List Sites

Date of Government Version: 04/19/2006	Source: EPA
Date Data Arrived at EDR: 05/05/2006	Telephone: N/A
Date Made Active in Reports: 05/22/2006	Last EDR Contact: 05/05/2006
Number of Days to Update: 17	Next Scheduled EDR Contact: 07/31/2006
	Data Release Frequency: Quarterly

DELISTED NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 04/19/2006	Source: EPA
Date Data Arrived at EDR: 05/05/2006	Telephone: N/A
Date Made Active in Reports: 05/22/2006	Last EDR Contact: 05/05/2006
Number of Days to Update: 17	Next Scheduled EDR Contact: 07/31/2006
	Data Release Frequency: Quarterly

NPL RECOVERY: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991	Source: EPA
Date Data Arrived at EDR: 02/02/1994	Telephone: 202-564-4267
Date Made Active in Reports: 03/30/1994	Last EDR Contact: 05/23/2006
Number of Days to Update: 56	Next Scheduled EDR Contact: 08/21/2006
	Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CERCLIS: Comprehensive Environmental Response, Compensation, and Liability Information System

CERCLIS contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). CERCLIS contains sites which are either proposed to or on the National Priorities List (NPL) and sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 02/01/2006	Source: EPA
Date Data Arrived at EDR: 03/21/2006	Telephone: 703-413-0223
Date Made Active in Reports: 04/13/2006	Last EDR Contact: 03/21/2006
Number of Days to Update: 23	Next Scheduled EDR Contact: 06/19/2006
	Data Release Frequency: Quarterly

CERCLIS-NFRAP: CERCLIS No Further Remedial Action Planned

Archived sites are sites that have been removed and archived from the inventory of CERCLIS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list this site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. This decision does not necessarily mean that there is no hazard associated with a given site; it only means that, based upon available information, the location is not judged to be a potential NPL site.

Date of Government Version: 02/01/2006	Source: EPA
Date Data Arrived at EDR: 03/21/2006	Telephone: 703-413-0223
Date Made Active in Reports: 04/13/2006	Last EDR Contact: 03/21/2006
Number of Days to Update: 23	Next Scheduled EDR Contact: 06/19/2006
	Data Release Frequency: Quarterly

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/15/2006	Source: EPA
Date Data Arrived at EDR: 03/17/2006	Telephone: 800-424-9346
Date Made Active in Reports: 04/13/2006	Last EDR Contact: 05/21/2006
Number of Days to Update: 27	Next Scheduled EDR Contact: 09/04/2006
	Data Release Frequency: Quarterly

RCRA: Resource Conservation and Recovery Act Information

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRAInfo replaces the data recording and reporting abilities of the Resource Conservation and Recovery Information System (RCRIS). The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month. Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month. Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month. Transporters are individuals or entities that move hazardous waste from the generator off-site to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/09/2006	Source: EPA
Date Data Arrived at EDR: 04/27/2006	Telephone: 800-424-9346
Date Made Active in Reports: 05/30/2006	Last EDR Contact: 04/27/2006
Number of Days to Update: 33	Next Scheduled EDR Contact: 06/26/2006
	Data Release Frequency: Quarterly

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/31/2005	Source: National Response Center, United States Coast Guard
Date Data Arrived at EDR: 01/12/2006	Telephone: 202-260-2342
Date Made Active in Reports: 02/21/2006	Last EDR Contact: 04/26/2006
Number of Days to Update: 40	Next Scheduled EDR Contact: 07/24/2006
	Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 12/31/2005	Source: U.S. Department of Transportation
Date Data Arrived at EDR: 04/14/2006	Telephone: 202-366-4555
Date Made Active in Reports: 05/30/2006	Last EDR Contact: 04/14/2006
Number of Days to Update: 46	Next Scheduled EDR Contact: 07/17/2006
	Data Release Frequency: Annually

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 03/21/2006	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/27/2006	Telephone: 703-603-8905
Date Made Active in Reports: 05/22/2006	Last EDR Contact: 03/03/2006
Number of Days to Update: 56	Next Scheduled EDR Contact: 07/03/2006
	Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 03/21/2006	Source: Environmental Protection Agency
Date Data Arrived at EDR: 03/27/2006	Telephone: 703-603-8905
Date Made Active in Reports: 05/22/2006	Last EDR Contact: 03/03/2006
Number of Days to Update: 56	Next Scheduled EDR Contact: 07/03/2006
	Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2004	Source: USGS
Date Data Arrived at EDR: 02/08/2005	Telephone: 703-692-8801
Date Made Active in Reports: 08/04/2005	Last EDR Contact: 05/12/2006
Number of Days to Update: 177	Next Scheduled EDR Contact: 08/07/2006
	Data Release Frequency: Semi-Annually

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 12/05/2005	Source: U.S. Army Corps of Engineers
Date Data Arrived at EDR: 01/19/2006	Telephone: 202-528-4285
Date Made Active in Reports: 02/21/2006	Last EDR Contact: 04/03/2006
Number of Days to Update: 33	Next Scheduled EDR Contact: 07/03/2006
	Data Release Frequency: Varies

US BROWNFIELDS: A Listing of Brownfields Sites

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Included in the listing are brownfields properties addresses by Cooperative Agreement Recipients and brownfields properties addressed by Targeted Brownfields Assessments. Targeted Brownfields Assessments-EPA's Targeted Brownfields Assessments (TBA) program is designed to help states, tribes, and municipalities--especially those without EPA Brownfields Assessment Demonstration Pilots--minimize the uncertainties of contamination often associated with brownfields. Under the TBA program, EPA provides funding and/or technical assistance for environmental assessments at brownfields sites throughout the country. Targeted Brownfields Assessments supplement and work with other efforts under EPA's Brownfields Initiative to promote cleanup and redevelopment of brownfields. Cooperative Agreement Recipients-States, political subdivisions, territories, and Indian tribes become Brownfields Cleanup Revolving Loan Fund (BCRLF) cooperative agreement recipients when they enter into BCRLF cooperative agreements with the U.S. EPA. EPA selects BCRLF cooperative agreement recipients based on a proposal and application process. BCRLF cooperative agreement recipients must use EPA funds provided through BCRLF cooperative agreement for specified brownfields-related cleanup activities.

Date of Government Version: 04/26/2006	Source: Environmental Protection Agency
Date Data Arrived at EDR: 04/27/2006	Telephone: 202-566-2777
Date Made Active in Reports: 05/30/2006	Last EDR Contact: 03/13/2006
Number of Days to Update: 33	Next Scheduled EDR Contact: 06/12/2006
	Data Release Frequency: Semi-Annually

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 12/14/2004	Source: Department of Justice, Consent Decree Library
Date Data Arrived at EDR: 02/15/2005	Telephone: Varies
Date Made Active in Reports: 04/25/2005	Last EDR Contact: 03/13/2006
Number of Days to Update: 69	Next Scheduled EDR Contact: 07/24/2006
	Data Release Frequency: Varies

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 04/13/2006	Source: EPA
Date Data Arrived at EDR: 04/28/2006	Telephone: 703-416-0223
Date Made Active in Reports: 05/30/2006	Last EDR Contact: 04/05/2006
Number of Days to Update: 32	Next Scheduled EDR Contact: 07/03/2006
	Data Release Frequency: Annually

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 11/04/2005	Source: Department of Energy
Date Data Arrived at EDR: 11/28/2005	Telephone: 505-845-0011
Date Made Active in Reports: 01/30/2006	Last EDR Contact: 03/20/2006
Number of Days to Update: 63	Next Scheduled EDR Contact: 06/19/2006
	Data Release Frequency: Varies

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985	Source: Environmental Protection Agency
Date Data Arrived at EDR: 08/09/2004	Telephone: 800-424-9346
Date Made Active in Reports: 09/17/2004	Last EDR Contact: 06/09/2004
Number of Days to Update: 39	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2003	Source: EPA
Date Data Arrived at EDR: 07/13/2005	Telephone: 202-566-0250
Date Made Active in Reports: 08/17/2005	Last EDR Contact: 03/21/2006
Number of Days to Update: 35	Next Scheduled EDR Contact: 06/19/2006
	Data Release Frequency: Annually

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2002	Source: EPA
Date Data Arrived at EDR: 04/14/2006	Telephone: 202-260-5521
Date Made Active in Reports: 05/30/2006	Last EDR Contact: 04/12/2006
Number of Days to Update: 46	Next Scheduled EDR Contact: 07/17/2006
	Data Release Frequency: Every 4 Years

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 03/29/2006	Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Date Data Arrived at EDR: 04/26/2006	Telephone: 202-566-1667
Date Made Active in Reports: 05/30/2006	Last EDR Contact: 03/20/2006
Number of Days to Update: 34	Next Scheduled EDR Contact: 06/19/2006
	Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

Date of Government Version: 03/31/2006	Source: EPA
Date Data Arrived at EDR: 04/26/2006	Telephone: 202-566-1667
Date Made Active in Reports: 05/30/2006	Last EDR Contact: 03/20/2006
Number of Days to Update: 34	Next Scheduled EDR Contact: 06/19/2006
	Data Release Frequency: Quarterly

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2004	Source: EPA
Date Data Arrived at EDR: 05/11/2006	Telephone: 202-564-4203
Date Made Active in Reports: 05/22/2006	Last EDR Contact: 03/06/2006
Number of Days to Update: 11	Next Scheduled EDR Contact: 07/17/2006
	Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 02/13/2006	Source: Environmental Protection Agency
Date Data Arrived at EDR: 04/21/2006	Telephone: 202-564-5088
Date Made Active in Reports: 05/11/2006	Last EDR Contact: 04/11/2006
Number of Days to Update: 20	Next Scheduled EDR Contact: 07/17/2006
	Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 12/27/2005	Source: EPA
Date Data Arrived at EDR: 02/08/2006	Telephone: 202-566-0500
Date Made Active in Reports: 02/27/2006	Last EDR Contact: 06/02/2006
Number of Days to Update: 19	Next Scheduled EDR Contact: 08/07/2006
	Data Release Frequency: Annually

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/12/2006	Source: Nuclear Regulatory Commission
Date Data Arrived at EDR: 04/26/2006	Telephone: 301-415-7169
Date Made Active in Reports: 05/30/2006	Last EDR Contact: 04/03/2006
Number of Days to Update: 34	Next Scheduled EDR Contact: 07/03/2006
	Data Release Frequency: Quarterly

MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 02/09/2006	Source: Department of Labor, Mine Safety and Health Administration
Date Data Arrived at EDR: 03/29/2006	Telephone: 303-231-5959
Date Made Active in Reports: 05/30/2006	Last EDR Contact: 03/29/2006
Number of Days to Update: 62	Next Scheduled EDR Contact: 06/26/2006
	Data Release Frequency: Semi-Annually

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 04/27/2006	Source: EPA
Date Data Arrived at EDR: 05/02/2006	Telephone: N/A
Date Made Active in Reports: 05/30/2006	Last EDR Contact: 04/03/2006
Number of Days to Update: 28	Next Scheduled EDR Contact: 07/03/2006
	Data Release Frequency: Quarterly

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995	Source: EPA
Date Data Arrived at EDR: 07/03/1995	Telephone: 202-564-4104
Date Made Active in Reports: 08/07/1995	Last EDR Contact: 06/05/2006
Number of Days to Update: 35	Next Scheduled EDR Contact: 09/04/2006
	Data Release Frequency: No Update Planned

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 12/31/2003
Date Data Arrived at EDR: 06/17/2005
Date Made Active in Reports: 08/04/2005
Number of Days to Update: 48

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 03/17/2006
Next Scheduled EDR Contact: 06/12/2006
Data Release Frequency: Biennially

STATE AND LOCAL RECORDS

SHWS - ECSI: Environmental Cleanup Site Information System

Sites that are or may be contaminated and may require cleanup.

Date of Government Version: 05/01/2006
Date Data Arrived at EDR: 05/16/2006
Date Made Active in Reports: 06/01/2006
Number of Days to Update: 16

Source: Department of Environmental Quality
Telephone: 503-229-6629
Last EDR Contact: 05/16/2006
Next Scheduled EDR Contact: 08/14/2006
Data Release Frequency: Quarterly

CRL: Confirmed Release List and Inventory

All facilities with a confirmed release.

Date of Government Version: 03/15/2006
Date Data Arrived at EDR: 03/15/2006
Date Made Active in Reports: 04/12/2006
Number of Days to Update: 28

Source: Department of Environmental Quality
Telephone: 503-229-6170
Last EDR Contact: 03/15/2006
Next Scheduled EDR Contact: 06/12/2006
Data Release Frequency: Quarterly

SWF/LF: Solid Waste Facilities List

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 04/11/2006
Date Data Arrived at EDR: 04/12/2006
Date Made Active in Reports: 04/21/2006
Number of Days to Update: 9

Source: Department of Environmental Quality
Telephone: 503-229-6299
Last EDR Contact: 04/10/2006
Next Scheduled EDR Contact: 06/19/2006
Data Release Frequency: Semi-Annually

UIC: Underground Injection Control Program Database

DEQ's Underground Injection Control Program is authorized by the Environmental Protection Agency (EPA) to regulate all underground injection in Oregon to protect groundwater resources.

Date of Government Version: 04/27/2006
Date Data Arrived at EDR: 04/27/2006
Date Made Active in Reports: 06/01/2006
Number of Days to Update: 35

Source: Department of Environmental Quality
Telephone: 503-229-5945
Last EDR Contact: 04/26/2006
Next Scheduled EDR Contact: 07/24/2006
Data Release Frequency: Varies

HIST LF: Old Closed SW Disposal Sites

A list of solid waste disposal sites that have been closed for a long while.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 07/08/2003
Date Made Active in Reports: 07/18/2003
Number of Days to Update: 10

Source: Department of Environmental Quality
Telephone: 503-229-5409
Last EDR Contact: 07/08/2003
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

LUST: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Date of Government Version: 01/12/2006
Date Data Arrived at EDR: 03/15/2006
Date Made Active in Reports: 04/12/2006
Number of Days to Update: 28

Source: Department of Environmental Quality
Telephone: 503-229-5790
Last EDR Contact: 03/15/2006
Next Scheduled EDR Contact: 06/12/2006
Data Release Frequency: Quarterly

AOC COL: Columbia Slough

Columbia Slough waterway boundaries.

Date of Government Version: N/A
Date Data Arrived at EDR: 10/03/2002
Date Made Active in Reports: 10/22/2002
Number of Days to Update: 19

Source: City of Portland Environmental Services
Telephone: 503-823-5310
Last EDR Contact: 08/05/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

AOC MU: East Multnomah County Area

Approximate extent of TSA VOC plume February , 2002

Date of Government Version: N/A
Date Data Arrived at EDR: 10/07/2002
Date Made Active in Reports: 10/22/2002
Number of Days to Update: 15

Source: City of Portland Environmental Services
Telephone: 503-823-5310
Last EDR Contact: 08/26/2002
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST: Underground Storage Tank Database

Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 01/03/2006
Date Data Arrived at EDR: 03/15/2006
Date Made Active in Reports: 04/03/2006
Number of Days to Update: 19

Source: Department of Environmental Quality
Telephone: 503-229-5815
Last EDR Contact: 03/15/2006
Next Scheduled EDR Contact: 06/12/2006
Data Release Frequency: Quarterly

AST: Aboveground Storage Tanks

Aboveground storage tank locations reported to the Office of State Fire Marshal.

Date of Government Version: 01/01/2006
Date Data Arrived at EDR: 03/16/2006
Date Made Active in Reports: 04/03/2006
Number of Days to Update: 18

Source: Office of State Fire Marshal
Telephone: 503-378-3473
Last EDR Contact: 05/30/2006
Next Scheduled EDR Contact: 08/28/2006
Data Release Frequency: Semi-Annually

MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2004
Date Data Arrived at EDR: 03/17/2006
Date Made Active in Reports: 04/21/2006
Number of Days to Update: 35

Source: Department of Environmental Quality
Telephone: N/A
Last EDR Contact: 05/23/2006
Next Scheduled EDR Contact: 08/21/2006
Data Release Frequency: Annually

SPILLS: Spill Data

Date of Government Version: 03/22/2006
Date Data Arrived at EDR: 03/23/2006
Date Made Active in Reports: 04/12/2006
Number of Days to Update: 20

Source: Department of Environmental Quality
Telephone: 503-229-5815
Last EDR Contact: 03/23/2006
Next Scheduled EDR Contact: 06/12/2006
Data Release Frequency: Semi-Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

HAZMAT: Hazmat/Incidents

Hazardous material incidents reported to the State Fire Marshal by emergency responders. The hazardous material may or may not have been released.

Date of Government Version: 08/31/2004	Source: State Fire Marshal's Office
Date Data Arrived at EDR: 10/12/2004	Telephone: 503-373-1540
Date Made Active in Reports: 11/05/2004	Last EDR Contact: 05/23/2006
Number of Days to Update: 24	Next Scheduled EDR Contact: 08/21/2006
	Data Release Frequency: Semi-Annually

ENG CONTROLS: Engineering Controls Recorded at ESCI Sites

Engineering controls are physical measures selected or approved by the Director for the purpose of preventing or minimizing exposure to hazardous substances. Engineering controls may include, but are not limited to, fencing, capping, horizontal or vertical barriers, hydraulic controls, and alternative water supplies.

Date of Government Version: 05/01/2006	Source: Department of Environmental Quality
Date Data Arrived at EDR: 05/16/2006	Telephone: 503-229-5193
Date Made Active in Reports: 06/01/2006	Last EDR Contact: 05/16/2006
Number of Days to Update: 16	Next Scheduled EDR Contact: 08/14/2006
	Data Release Frequency: Quarterly

INST CONTROL: Institutional Controls Recorded at ESCI Sites

An institutional control is a legal or administrative tool or action taken to reduce the potential for exposure to hazardous substances. Institutional controls may include, but are not limited to, use restrictions, environmental monitoring requirements, and site access and security measures.

Date of Government Version: 05/01/2006	Source: Department of Environmental Quality
Date Data Arrived at EDR: 05/16/2006	Telephone: 503-229-5193
Date Made Active in Reports: 06/01/2006	Last EDR Contact: 05/15/2006
Number of Days to Update: 16	Next Scheduled EDR Contact: 08/14/2006
	Data Release Frequency: Quarterly

VCS: Voluntary Cleanup Program Sites

Responsible parties have entered into an agreement with DEQ to voluntarily address contamination associated with their property.

Date of Government Version: 02/14/2006	Source: DEQ
Date Data Arrived at EDR: 02/15/2006	Telephone: 503-229-5256
Date Made Active in Reports: 03/15/2006	Last EDR Contact: 06/05/2006
Number of Days to Update: 28	Next Scheduled EDR Contact: 07/31/2006
	Data Release Frequency: Quarterly

DRYCLEANERS: Drycleaning Facilities

A listing of registered drycleaning facilities in Oregon.

Date of Government Version: 12/01/2005	Source: Department of Environmental Quality
Date Data Arrived at EDR: 12/13/2005	Telephone: 503-229-6783
Date Made Active in Reports: 01/05/2006	Last EDR Contact: 05/30/2006
Number of Days to Update: 23	Next Scheduled EDR Contact: 08/28/2006
	Data Release Frequency: Varies

BROWNFIELDS: Brownfields Projects

Brownfields investigations and/or cleanups that have been conducted in Oregon.

Date of Government Version: 03/01/2006	Source: Department of Environmental Quality
Date Data Arrived at EDR: 03/15/2006	Telephone: 503-229-6801
Date Made Active in Reports: 04/12/2006	Last EDR Contact: 03/15/2006
Number of Days to Update: 28	Next Scheduled EDR Contact: 06/12/2006
	Data Release Frequency: Semi-Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

CDL: Uninhabitable Drug Lab Properties

The properties listed on these county pages have been declared by a law enforcement agency to be unfit for use due to meth lab and/or storage activities. The properties are considered uninhabitable until cleaned up by a state certified decontamination contractor and a certificate of fitness is issued by the Oregon Health Division.

Date of Government Version: 03/15/2006	Source: Department of Consumer & Business Services
Date Data Arrived at EDR: 03/29/2006	Telephone: 503-378-4133
Date Made Active in Reports: 04/12/2006	Last EDR Contact: 03/15/2006
Number of Days to Update: 14	Next Scheduled EDR Contact: 06/12/2006
	Data Release Frequency: Varies

AIRS: Oregon Title V Facility Listing

A listing of Title V facility source and emissions information.

Date of Government Version: 12/31/2002	Source: Department of Environmental Quality
Date Data Arrived at EDR: 05/04/2006	Telephone: 503-229-6459
Date Made Active in Reports: 06/01/2006	Last EDR Contact: 05/03/2006
Number of Days to Update: 28	Next Scheduled EDR Contact: 07/24/2006
	Data Release Frequency: Varies

HSIS: Hazardous Substance Information Survey

Companies in Oregon submitting the Hazardous Substance Information Survey and either reporting or not reporting hazardous substances.

Date of Government Version: 01/01/2006	Source: State Fire Marshal's Office
Date Data Arrived at EDR: 03/16/2006	Telephone: 503-373-1540
Date Made Active in Reports: 04/12/2006	Last EDR Contact: 05/30/2006
Number of Days to Update: 27	Next Scheduled EDR Contact: 08/28/2006
	Data Release Frequency: Semi-Annually

TRIBAL RECORDS

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2004	Source: USGS
Date Data Arrived at EDR: 02/08/2005	Telephone: 202-208-3710
Date Made Active in Reports: 08/04/2005	Last EDR Contact: 05/12/2006
Number of Days to Update: 177	Next Scheduled EDR Contact: 08/07/2006
	Data Release Frequency: Semi-Annually

INDIAN LUST: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 03/14/2006	Source: EPA Region 10
Date Data Arrived at EDR: 03/21/2006	Telephone: 206-553-2857
Date Made Active in Reports: 04/12/2006	Last EDR Contact: 05/23/2006
Number of Days to Update: 22	Next Scheduled EDR Contact: 08/21/2006
	Data Release Frequency: Varies

INDIAN UST: Underground Storage Tanks on Indian Land

Date of Government Version: 04/05/2006	Source: EPA Region 10
Date Data Arrived at EDR: 04/05/2006	Telephone: 206-553-2857
Date Made Active in Reports: 04/12/2006	Last EDR Contact: 05/23/2006
Number of Days to Update: 7	Next Scheduled EDR Contact: 08/21/2006
	Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

EDR PROPRIETARY RECORDS

Manufactured Gas Plants: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A	Source: EDR, Inc.
Date Data Arrived at EDR: N/A	Telephone: N/A
Date Made Active in Reports: N/A	Last EDR Contact: N/A
Number of Days to Update: N/A	Next Scheduled EDR Contact: N/A
	Data Release Frequency: No Update Planned

EDR Historical Auto Stations: EDR Proprietary Historic Gas Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc.

Date of Government Version: N/A	Source: EDR, Inc.
Date Data Arrived at EDR: N/A	Telephone: N/A
Date Made Active in Reports: N/A	Last EDR Contact: N/A
Number of Days to Update: N/A	Next Scheduled EDR Contact: N/A
	Data Release Frequency: Varies

EDR Historical Cleaners: EDR Proprietary Historic Dry Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc.

Date of Government Version: N/A	Source: EDR, Inc.
Date Data Arrived at EDR: N/A	Telephone: N/A
Date Made Active in Reports: N/A	Last EDR Contact: N/A
Number of Days to Update: N/A	Next Scheduled EDR Contact: N/A
	Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 12/31/2005	Source: Department of Environmental Conservation
Date Data Arrived at EDR: 03/01/2006	Telephone: 518-402-8651
Date Made Active in Reports: 04/20/2006	Last EDR Contact: 05/31/2006
Number of Days to Update: 50	Next Scheduled EDR Contact: 08/28/2006
	Data Release Frequency: Annually

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

WI MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2005

Date Data Arrived at EDR: 03/17/2006

Date Made Active in Reports: 05/02/2006

Number of Days to Update: 46

Source: Department of Natural Resources

Telephone: N/A

Last EDR Contact: 03/17/2006

Next Scheduled EDR Contact: 07/10/2006

Data Release Frequency: Annually

Oil/Gas Pipelines: This data was obtained by EDR from the USGS in 1994. It is referred to by USGS as GeoData Digital Line Graphs from 1:100,000-Scale Maps. It was extracted from the transportation category including some oil, but primarily gas pipelines.

Electric Power Transmission Line Data

Source: PennWell Corporation

Telephone: (800) 823-6277

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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:

Source: American Hospital Association, Inc.

Telephone: 312-280-5991

The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing

Source: Centers for Medicare & Medicaid Services

Telephone: 410-786-3000

A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes

Source: National Institutes of Health

Telephone: 301-594-6248

Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools

Source: National Center for Education Statistics

Telephone: 202-502-7300

The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Child Care Listings

Source: Employment Department

Telephone: 503-947-1420

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetlands Inventory Data

Source: Oregon Geospatial Enterprise Office

Telephone: 503-378-2166

Scanned Digital USGS 7.5' Topographic Map (DRG)

Source: United States Geologic Survey

A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

STREET AND ADDRESS INFORMATION

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GEOCHECK[®] - PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

CENTRAL OREGON
GUN RNG
SILVER LAKE, OR 97638

TARGET PROPERTY COORDINATES

Latitude (North):	42.97540 - 42° 58' 31.4"
Longitude (West):	120.0518 - 120° 3' 6.5"
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	740413.2
UTM Y (Meters):	4762086.5
Elevation:	4266 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	42120-H1 ALKALI LAKE, OR
Most Recent Revision:	1984

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

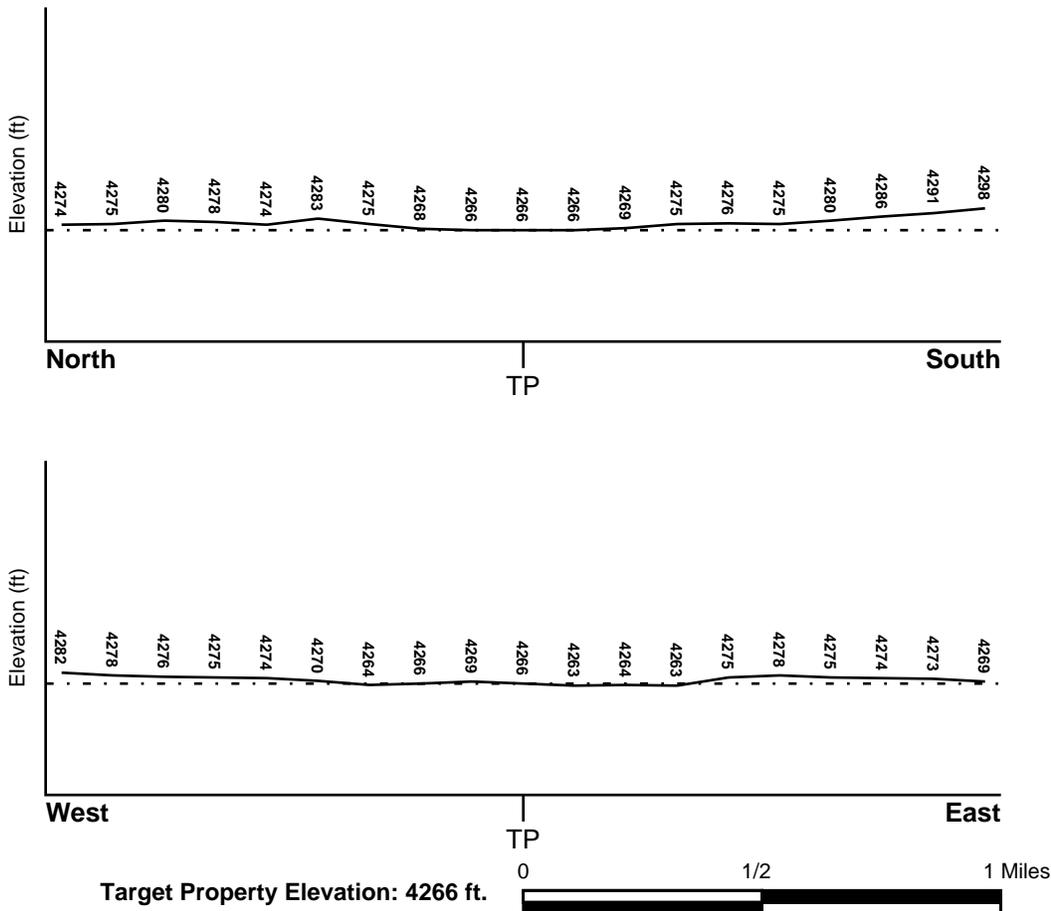
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General ENE

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

<u>Target Property County</u>	<u>FEMA Flood Electronic Data</u>
LAKE, OR	Not Available

Flood Plain Panel at Target Property: Not Reported

Additional Panels in search area: Not Reported

NATIONAL WETLAND INVENTORY

<u>NWI Quad at Target Property</u>	<u>NWI Electronic Data Coverage</u>
ALKALI LAKE	Not Available

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

<u>MAP ID</u>	<u>LOCATION FROM TP</u>	<u>GENERAL DIRECTION GROUNDWATER FLOW</u>
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

Era: Cenozoic
System: Quaternary
Series: Quaternary
Code: Q (*decoded above as Era, System & Series*)

GEOLOGIC AGE IDENTIFICATION

Category: Stratified Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name: FORT ROCK

Soil Surface Texture: sandy loam

Hydrologic Group: Class C - Slow infiltration rates. Soils with layers impeding downward movement of water, or soils with moderately fine or fine textures.

Soil Drainage Class: Well drained. Soils have intermediate water holding capacity. Depth to water table is more than 6 feet.

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: HIGH

Depth to Bedrock Min: > 60 inches

Depth to Bedrock Max: > 60 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
Layer	Boundary		Soil Texture Class	Classification		Permeability Rate (in/hr)	Soil Reaction (pH)
	Upper	Lower		AASHTO Group	Unified Soil		
1	0 inches	3 inches	sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 2.00 Min: 0.60	Max: 7.30 Min: 6.60
2	3 inches	17 inches	loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 2.00 Min: 0.60	Max: 9.00 Min: 7.90
3	17 inches	26 inches	sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 0.60 Min: 0.20	Max: 9.00 Min: 8.50
4	26 inches	65 inches	silt loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 2.00 Min: 0.60	Max: 9.00 Min: 7.40

OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: loamy sand
silt loam

Surficial Soil Types: loamy sand
silt loam

Shallow Soil Types: No Other Soil Types

Deeper Soil Types: sand
weathered bedrock
unweathered bedrock
cemented

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

<u>DATABASE</u>	<u>SEARCH DISTANCE (miles)</u>
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

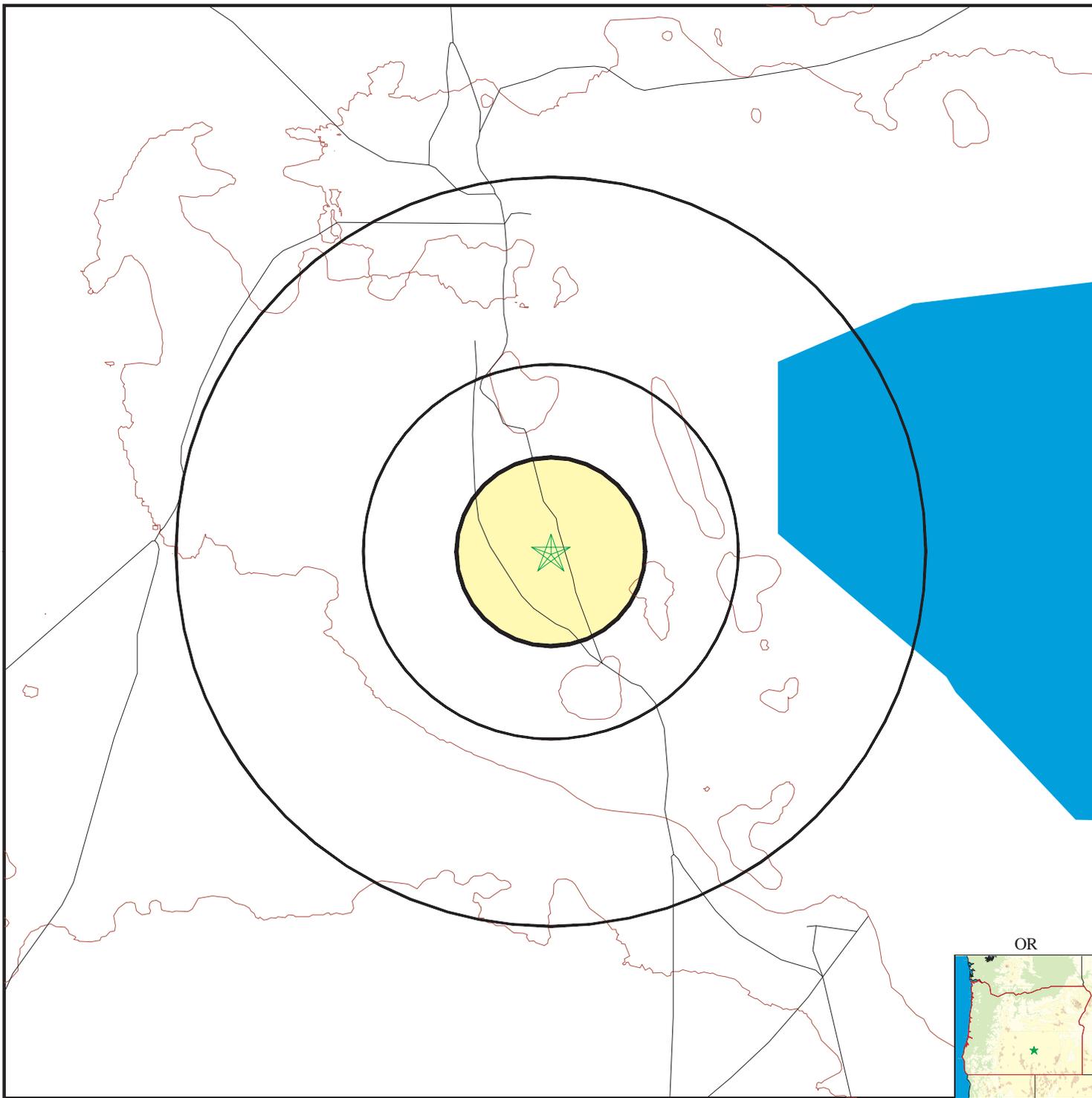
<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

<u>MAP ID</u>	<u>WELL ID</u>	<u>LOCATION FROM TP</u>
No Wells Found		

PHYSICAL SETTING SOURCE MAP - 1692345.2s



-  County Boundary
-  Major Roads
-  Contour Lines
-  Earthquake epicenter, Richter 5 or greater
-  Water Wells
-  Public Water Supply Wells
-  Cluster of Multiple Icons



-  Groundwater Flow Direction
-  Indeterminate Groundwater Flow at Location
-  Groundwater Flow Varies at Location



SITE NAME: Central Oregon
 ADDRESS: Gun Rng
 SILVER LAKE OR 97638
 LAT/LONG: 42.9754 / 120.0518

CLIENT: Shaw Env. and Infrastructure
 CONTACT: Jennifer Lillis
 INQUIRY #: 1692345.2s
 DATE: June 08, 2006

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS RADON

AREA RADON INFORMATION

Federal EPA Radon Zone for LAKE County: 2

Note: Zone 1 indoor average level > 4 pCi/L.

: Zone 2 indoor average level \geq 2 pCi/L and \leq 4 pCi/L.

: Zone 3 indoor average level < 2 pCi/L.

Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)

Source: United States Geologic Survey

EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Scanned Digital USGS 7.5' Topographic Map (DRG)

Source: United States Geologic Survey

A digital raster graphic (DRG) is a scanned image of a U.S. Geological Survey topographic map. The map images are made by scanning published paper maps on high-resolution scanners. The raster image is georeferenced and fit to the Universal Transverse Mercator (UTM) projection.

HYDROLOGIC INFORMATION

Flood Zone Data: This data, available in select counties across the country, was obtained by EDR in 1999 from the Federal Emergency Management Agency (FEMA). Data depicts 100-year and 500-year flood zones as defined by FEMA.

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002 and 2005 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetlands Inventory Data

Source: Oregon Geospatial Enterprise Office

Telephone: 503-378-2166

HYDROGEOLOGIC INFORMATION

AQUIFLOW^R Information System

Source: EDR proprietary database of groundwater flow information

EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit

Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Services

The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database

Source: Department of Agriculture, Natural Resources Conservation Services (NRCS)

Telephone: 800-672-5559

SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Services, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data

Source: EPA/Office of Drinking Water

Telephone: 202-564-3750

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)

This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Data

Source: Department of Water Resources

Telephone: 503-986-0843

OTHER STATE DATABASE INFORMATION

RADON

State Database: OR Radon

Source: Oregon Health Services

Telephone: 503-731-4272

Radon Levels in Oregon

Area Radon Information

Source: USGS

Telephone: 703-356-4020

The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones

Source: EPA

Telephone: 703-356-4020

Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities

Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater

Source: Department of Commerce, National Oceanic and Atmospheric Administration

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STREET AND ADDRESS INFORMATION

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EDR® Environmental
Data Resources Inc

The EDR Aerial Photo Decade Package

**Central Oregon
Gun Rng
SILVER LAKE, OR 97638**

Inquiry Number: 1692345.5

June 08, 2006

The Standard in Environmental Risk Management Information

440 Wheelers Farms Road
Milford, Connecticut 06461

Nationwide Customer Service

Telephone: 1-800-352-0050
Fax: 1-800-231-6802
Internet: www.edrnet.com

EDR Aerial Photo Decade Package

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDRs professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

This document reports that EDR searched its own collection or select outside repository collections of aerial photography, and based on client-supplied target property information, aerial photography, including the target property was not deemed reasonably ascertainable by Environmental Data Resources, Inc. (EDR). This no coverage determination reflects a search only of aerial photography repository collections that EDR accessed. It can not be concluded from this search that no coverage for the target property exists anywhere, in any collection.

NO COVERAGE

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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"Linking Technology with Tradition"®

Sanborn® Map Report

Ship To: Jennifer Lillis Shaw Env. and 9201 East Dry Creek Road Centennial, CO 80112	Order Date: 6/8/2006 Completion Date: 6/8/2006
Customer Project: NA 1182600MER 303-799-4241	Inquiry #: 1692345.3 P.O. #: NA Site Name: Central Oregon Address: Gun Rng City/State: SILVER LAKE, OR 97638 Cross Streets:

This document reports that the largest and most complete collection of Sanborn fire insurance maps has been reviewed based on client supplied information, and fire insurance maps depicting the target property at the specified address were not identified.

NO COVERAGE

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OF DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT. Purchaser accepts this Report AS IS. Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

Characterization of Background Distributions for Selected Elements in Soil Central Oregon Gunnery Range

1.0 Introduction

This appendix describes the methodology that was used to characterize background distributions of selected elements in soil for the former Central Oregon Gunnery Range (COGR), located in Lake County, Oregon. Analytical data for 24 soil samples were obtained from the National Geochemical Survey (NGS) database (U.S. Geological Survey, 2006). These samples were collected in Oregon and include aluminum, chromium, copper, iron, lead, manganese, molybdenum, and nickel analyses. Figure 3-3 of the SI report show the background sample locations.

U.S. Environmental Protection Agency (EPA) guidance was used to evaluate distributional assumptions and characterize the distributions. The completed background data set can be used in site-to-background comparisons to identify constituents of concern at COGR and to determine the nature and extent of site-related contamination. In addition, the background data may be used to support human health and ecological risk assessments and proposals for no further action, develop realistic remediation goals, and evaluate the success of remediation efforts.

2.0 Methodology for the Characterization of Background Distributions

Background concentrations of naturally occurring metals form a distribution of values over a given spatial area. The characterization of background can be defined as the process of describing the statistical distributions of concentration values from samples obtained at representative locations. The statistical methodology used to characterize background distributions for the 24 NGS soil samples is based on published EPA guidance (EPA, 1989, 1992, 1994, 1995, and 2006). Key issues in background characterization include:

- Handling of nondetects
- Evaluation of distributional assumptions
- Handling of outliers
- Calculation of summary statistics.

The following sections explain how these key issues were addressed.

Handling of Nondetects. A certain proportion of nondetect values are common in background data sets. A variety of methods to deal with nondetects have been proposed, each of which has advantages and disadvantages with respect to introducing unwanted bias into the description of background. In accordance with EPA guidance, nondetects were replaced with a value equal to one-half of the reporting limit for that analyte (EPA, 1989).

Evaluation of Distributional Assumptions. The shape of the distribution, considered to be either normal, lognormal, or nonparametric, is reported as part of the characterization (the term “nonparametric” is not a specific shape, but is used to describe distributions that are neither normal nor lognormal, as per EPA guidance). The selection of an appropriate type of statistical distribution is based on EPA guidance (EPA, 1989, 1992, and 2006).

The EPA recommends the Shapiro-Wilk test for determining whether the distribution of concentration data is normal, lognormal, or neither (EPA, 1992 and 2006). The test is performed on the untransformed data to test for normality. Lognormality is tested by taking the logarithm (log-transform) of the data and then testing for normality. The test returns a “p-level” value between zero and one, indicating the goodness of fit. A p-level of 0.05 or greater indicates an acceptable fit to a normal model at the 95 percent confidence level; in other words, there is only a one-in-twenty chance of falsely identifying the distribution as normal when it really is not. If the transformed and untransformed data both yield p-levels that are greater than 0.05, then the result with the highest p-level is used to determine if the distribution is normal or lognormal. If the Shapiro-Wilk test indicates that a data set is neither normal nor lognormal at this confidence level, then the data are assumed to have a nonparametric distribution. Data sets with greater than 15 percent nondetects are automatically treated as nonparametric distributions as per EPA guidance (EPA, 1989).

Handling of Outliers. Outliers are defined as data points whose values are anomalously high relative to the rest of the data set (EPA, 1989). Possible reasons for outliers are improper sampling, analytical error, or laboratory contamination; errors in transcription of data values, decimal points, or units; the presence of actual contamination in the sample; or a natural background concentration that is unusually high. For each

element, the concentration data were rank-ordered and the maximum value was flagged if it was greater than five times the second-highest value (EPA, 1989). Samples flagged as outliers were further examined via geochemical evaluation to determine whether there is a natural source for the elevated concentrations. Statistical or geochemical outliers were only eliminated from consideration if there were reasons to suspect errors in the data or anthropogenic contamination in the sample.

Calculation of Summary Statistics. A complete statistical description of each background distribution is provided in Section 3.0. These descriptions include the number of samples, percent nondetects, distribution type (normal, lognormal, or nonparametric), minimum, median, geometric mean, arithmetic mean, maximum, and a concentration that is representative of the upper range of the background distribution for use as a background screening value. The standard deviation and coefficient of variation (standard deviation divided by the mean) are also provided; they are both measures of the variance of the distributions.

It is important to select the background screening value carefully so that the probability of falsely identifying site samples as contaminated or uncontaminated is minimized. Ideally, a site sample with a concentration above the screening value would have a low probability of being a member of the background distribution, and may be an indicator of contamination. The 95th upper tolerance limit (UTL) is recommended as a screening value for normally or lognormally distributed analytes, and the 95th percentile is recommended as a screening value for nonparametrically distributed analytes (EPA, 1989, 1992, and 1994).

The UTL establishes a concentration range that is constructed to contain a specified proportion of the population with a specified confidence. The proportion of the population included is referred to as the “coverage,” and the probability with which the tolerance interval includes the proportion is referred to as the “tolerance coefficient.” The EPA-recommended coverage of 95 percent and tolerance coefficient of 95 percent (EPA, 1989) were used to calculate the UTLs. A coverage of 95 percent means that random uncontaminated site samples will exceed the screening value less than 5 percent of the time. A tolerance coefficient of 95 percent means that one has a 95 percent confidence that the 95th UTL will contain at least 95 percent of the background distribution. Site samples with concentrations above the background 95th UTL (or 95th percentile) are not necessarily contaminated, but they should be considered suspect.

The complete descriptions of background distributions that are provided in Section 3.0 are sufficient to allow the calculation of most statistical parameters (such as the standard error of the mean, two standard deviations above the mean, etc.). The descriptions can also be used to support site-to-background data set comparisons. There are two general types of statistical site-to-background comparisons. Parametric comparisons, such as the ANOVA (analysis of variance) and the two-sample *t* test, require the means and standard deviations of the distributions that are being compared. Nonparametric comparison tests, such as the Wilcoxon rank sum test and the Gehan test, require the actual data rather than summary statistics. For these purposes, the actual data are also provided on Table 1 of this summary.

3.0 Background Distributions of Selected Elements in Soil

As noted above, the background soil data were subjected to an outlier test to identify potentially anomalous concentrations. This test did not identify any potential outliers. However, the maximum detected concentration for copper (126 milligrams per kilogram [mg/kg] in sample ST010423) appeared elevated with respect to the other copper concentrations (which range from 10 to 47 mg/kg, with a median of 27 mg/kg). A geochemical evaluation was subsequently performed, which suggested that the sample contains excess copper beyond that which can be explained by its reference element content. Accordingly, it was concluded that the anomalously high copper concentration is not representative of the background distribution, and it was eliminated from the background data set.

Six of the eight elements were detected in all of the samples in the background data set (Table X-1). Lead and molybdenum were detected in some of the samples, with 13 percent nondetects and 50 percent nondetects, respectively. The distributions of copper, iron, and lead were determined to be normal, and the distributions of chromium, manganese, and nickel were determined to be lognormal. The aluminum distribution is treated as nonparametric due to failure of the normality/lognormality test, whereas the molybdenum distribution is treated as nonparametric due to a high percentage of nondetects.

Of the eight elements analyzed in the background samples, aluminum and iron have the highest median concentrations (Table 2). Iron in the samples is most likely present as iron oxides, which are common soil-forming minerals that occur as discrete mineral

grains or as coatings on silicate minerals (Cornell and Schwertmann, 2003). Aluminum is a primary component of common soil-forming minerals such as clays, feldspars, and micas. Aluminum also substitutes for ferric iron in iron oxide minerals, and it can adsorb on iron oxide surfaces (Cornell and Schwertmann, 2003). It is important to note that clays and iron oxides are fine-grained minerals that have strong affinities to adsorb specific trace elements. Finer-grained soil samples are therefore expected to contain naturally higher concentrations of aluminum, iron, and associated trace elements, relative to coarser-grained soil samples.

References

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U.S. Environmental Protection Agency (EPA), 1989, *Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Interim Final Guidance*, Office of Solid Waste, Waste Management Division, EPA/530/SW-89/026, July.

U.S. Geological Survey, 2006, *The National Geochemical Survey – Database and Documentation*, October (<http://www-tin.er.usgs.gov/geochem/doc/home.htm>).

Table 1 Central Oregon Gunnery Range Background Data Set

Sample Number	Collection Date	LATITUDE	LONGITUDE	DATUM	ALUMINUM ppm	CHROMIUM ppm	COPPER ppm	LEAD ppm	IRON ppm	MANGENESE ppm	MOLYBDENUM ppm	NICKEL ppm
5170971	7/2/1980	42.721	-119.5619	NAD27	79700	34	40	20	45100	1030	6	27
5170900	7/3/1980	42.5725	-119.8199	NAD27	82230	20	20	13	38700	626	7	21
5170940	7/4/1980	42.7196	-119.9779	NAD27	84640	30	27	15	40600	824	5	23
5170951	7/1/1980	42.5721	-119.5974	NAD27	79370	28	24	20	38100	1710	5	26
5170997	6/30/1980	42.7374	-119.3757	NAD27	80940	56	36	11	29000	599.6	-2	16
5165447	12/3/1979	42.7169	-120.5112	NAD27	90860	34	15	17	48000	1040	6	12
5165520	12/8/1979	42.5715	-120.2593	NAD27	98340	61	47	24	57400	1080	7	43
5165496	12/6/1979	42.7169	-120.4373	NAD27	98340	38	13	14	35600	625	4	25
5165581	12/10/1979	42.5728	-120.0947	NAD27	75550	40	39	21	39100	826	6	20
5165160	12/13/1979	42.861	-120.2737	NAD27	86520	36	16	19	52000	985	5	20
5165182	12/11/1979	42.8634	-120.0388	NAD27	81290	38	21	21	33000	561	5	20
5165557	12/3/1979	42.7155	-120.0153	NAD27	88670	56	37	22	44700	747	6	32
5165079	12/5/1979	42.8638	-120.8044	NAD27	93830	52	36	18	45300	765	5	27
ST010312	6/21/2004	43.21586	-120.07451	NAD83	88190	28	26	9	35300	675	-2	21
ST010279	6/21/2004	43.21506	-120.07474	NAD83	85310	35	29	7	36300	645	-2	23
ST010279	6/21/2004	43.21506	-120.07474	NAD83	87640	36	28	6	36800	661	-2	23
ST010312	6/21/2004	43.21586	-120.07451	NAD83	84700	40	25	8	37900	574	-2	22
ST010428	6/21/2004	43.19969	-120.5	NAD83	89060	55	40	-4	45400	602	-2	34
ST010423	6/21/2004	43.22562	-120.30755	NAD83	86190	52	41	-4	48800	739	-2	36
ST010423	6/21/2004	43.22562	-120.30755	NAD83	84470	65	126	5	61200	1090	-2	33
ST010428	6/21/2004	43.19969	-120.5	NAD83	36930	33	11	18	22000	591	-2	21
ST010462	6/24/2004	43.04827	-120.01299	NAD83	62040	34	44	6	28600	734	-2	27
ST010460	6/22/2004	43.19718	-120.03117	NAD83	29770	22	10	13	13600	349	-2	13
ST010462	6/24/2004	43.04827	-120.01299	NAD83	35630	20	23	-4	16900	295	2	13

All analyses are by inductively coupled plasma spectrometry after acid dissolution
ppm - parts per million

Data Source - National Geochemical Survey Database - <http://tin.er.usgs.gov/geochem/>

Table 2

Background Summary Statistics for Soil
(concentrations in mg/kg)
Central Oregon Gunnery Range

Element	No. of Samples	Percent Nondetects	Distribution Type	Geometric		Arithmetic		Maximum	Standard Deviation	Coefficient of Variation	95th UTL/ 95th Percentile
				Minimum	Median	Mean	Mean				
Aluminum	24	0	Nonparametric	29,800	84,700	75,600	78,800	98,300	18,800	0.24	97,700
Chromium	24	0	Lognormal	20	36	37	39	65	13	0.33	81
Copper	23	0	Normal	10	27	26	28	47	11	0.39	54
Iron	24	0	Normal	13,600	38,400	36,700	38,700	61,200	11,500	0.30	65,200
Lead	24	13	Normal	< 4	14	10	13	24	7.0	0.54	29
Manganese	24	0	Lognormal	295	705	718	766	1,710	290	0.38	1,680
Molybdenum	24	50	Nonparametric	< 2	3	2	3	7	2	0.74	6.9
Nickel	24	0	Lognormal	12	23	23	24	43	7.6	0.31	48

Notes:

1. 95th UTLs are provided for analytes with normal or lognormal distributions. 95th percentiles are provided for analytes with distributions that are neither normal nor lognormal, or that have greater than 15 percent nondetects (per EPA, 1989).
2. Background samples were collected in Oregon as part of the National Geochemical Survey (U.S. Geological Survey, 2006).

mg/kg - Milligrams per kilogram.

NA - Not applicable.

UTL - Upper tolerance limit.

Central Oregon Gunnery Range

Ecological Screening-Level Risk Assessment

The former COGR is located in the south central portion of the state. The former range is situated on 795,056 acres, and is currently used for agricultural purposes and grazing on open range land. The elevation of the area ranges from approximately 4,100 ft near Alkali Lake on the east boundary to nearly 6,000 ft at St. Patrick Mountain to the west. The area is a relatively flat region characterized by sand dunes and alkali lakes. Elevated features are predominantly volcanic in origin. The surface, in the area of the FUDS, consists primarily of various rock outcroppings, most of which are composed of basalt. Where present, the soils in the area are thin. The climate in the area of the FUDS area is semi-arid. The COGR is located within the Summer Lake and Lake Abert Watersheds. Because of the flat topography, there is little developed stream drainage and most precipitation collects in shallow ponds and lakes that evaporate in the summer. Much of the water in the area lakes is alkaline in chemistry, as a result of the high evaporative rates in the summer and low stream inflows/outflows.

The Oregon Department of Fish and Wildlife (DFW) was contacted to determine if there are threatened or endangered species in the area. According to the DFW, the Hutton Springs Tui Chub and Western Snowy Plover are state listed species that occur at Alkali Lake. However, based on Shaw's description of the work and time of year it will be conducted, the DFW did not anticipate any impact to these species (OR DFW, 2006).

A SLERA was performed for the former COGR located in Lake County. First, the current and reasonable future habitat at the site was evaluated to determine if any ecological receptors are likely to be present and if there are any complete exposure pathways. Based on the habitat descriptions provided in earlier sections of this report, the site consists of elevated terrain with a land use of grazing and agricultural use. Future land use is expected to remain the same. Based on this information, adequate habitat appears to be present at the site.

As chemicals of potential ecological concern (COPECs) were detected in soil and sediment, adequate habitat exists, and wildlife receptors are expected, complete exposure pathways are present. Therefore, as ecological receptors are likely present at the site and there are complete exposure pathways, further SLERA evaluation is necessary.

According to the Screening-Level Ecological Risk Assessment Guidance for FUDS MMRP Site Inspections (USACE, 2006), only sites that are considered to be Important Ecological Places or are to be managed for ecological purposes, actually require a SLERA. As shown in **Table 2-2**, the site does meet several of the 33 criteria for designation as an Important Ecological Place

For purposes of the SLERA, the site has been segregated into two AOCs:

1. North Target Area
2. South Target Area

5.2.1 North Target Area

Soil

Detected concentrations of chemicals in soil were compared with selected ecological screening values (ESV) and site-specific background concentrations (**Table 4-1**). Except for molybdenum, no detected constituents had soil concentrations that exceeded the ESVs and the background 95% UTLs.

Surface Water

No surface water samples were collected, as surface water was not present during the sample collection activities.

Sediment

Detected concentrations of chemicals in sediment (NWO-033-1002) were compared with selected ESVs and site-specific background concentrations (**Table 4-2**). No detected constituents had sediment concentrations that exceeded the ESVs and three times the maximum background concentration.

Air

No air samples were collected.

5.2.2 South Target Area

Soil

Detected concentrations of chemicals in soil were compared with selected ESVs and site-specific background concentrations (**Table 4-1**). Except for molybdenum, no detected constituents had soil concentrations that exceeded the ESVs and the background 95% UTLs.

Surface Water

No surface water samples were collected, as surface water was not present during the sample collection activities.

Sediment

Detected concentrations of chemicals in sediment (NWO-033-1001) were compared with selected ESVs and site-specific background concentrations (**Table 4-2**). No detected constituents had sediment concentrations that exceeded the ESVs and three times the maximum background concentration.

Air

No air samples were collected.

5.2.14 Additional Ecological Issues

There is a potential concern for large lead particles, or lead shot, to be present at either of the AOCs, and therefore adversely impact certain species of birds that intentionally ingest grit to add their digestion. As soil samples were sieved prior to chemical analysis, there is the possibility that lead shot was excluded from the analysis. To evaluate this avian concern for potential lead shot toxicity, the following two questions are posed for the site:

1. Are gallinaceous birds (grouse, pheasants, turkeys, partridges, domestic fowls, etc) present, or likely to be present on site?
2. Are lead particles likely to be present in preferred grit sizes for a range of representative gallinaceous birds at the site, for example, for quail with a preferred grit size of 0.8 – 2.2 mm diameter or turkey with a preferred grit size of 2.8 – 4.2 mm diameter (Gionfriddo and Best, 1991)?

For question No. 1, it is possible that gallinaceous birds might be present on the site, based on the presence of terrestrial habitat for some of these types of birds.

For question No. 2, close visual examination during soil collection did show evidence of .50 caliber lead bullets at the site (Landon, 2007).

5.2.15 SLERA Evaluation

One inorganic in soil (molybdenum) was found at both of the AOCs above the ESV, as well as above the site-specific background concentration. The ESV for molybdenum was from ODEQ (2001) and was based on the following receptor and exposure pathway:

Soil COPEC	ESV (mg/kg)	Receptor	Pathway of Concern/Comments
Molybdenum	2.0	Plants	Direct contact toxicity

As plant receptors are present at the site, and the MDCs of this inorganic in soil (e.g., 149 mg/kg in the South Target Area and 32.4 mg/kg in the North Target Area) exceed the ESV by a considerable amount, adverse ecological effects are possible. However, as the site-specific background molybdenum concentration was 6.9 mg/kg, this suggests that naturally-occurring background concentrations would also be toxic to plants. As plants were observed at the site, this supports the conclusion that the molybdenum plant toxicity screening value is not appropriate for this region of Oregon.

Other ESVs from Oregon DEQ (2001) are available for non-plant receptors, summarized as follows:

Soil COPEC	ESV (mg/kg)	Receptor	Pathway of Concern/Comments
Molybdenum	200	Terrestrial Invertebrates	Direct contact toxicity
	15	Birds (American Robin)	Bioaccumulation in the Food Chain
	14	Small Mammals	Bioaccumulation in the Food Chain

As bird and mammal receptors are likely present at the site, and the MDCs of molybdenum in soil (e.g., 149 mg/kg in the South Target Area, 32.4 mg/kg in the North Target Area) exceed these ESVs by a considerable amount, adverse ecological effects to birds and mammals are possible. Adverse impacts to terrestrial invertebrates are not expected.

5.2.16 SLERA Conclusions

Results of the site SLERA are as follows:

- The Inorganic of concern in soil is molybdenum.
- No constituents of concern were determined for surface water, sediment, or air, as no samples were collected from surface water or air, and sediment concentrations did not exceed available background concentrations and ESVs.

Therefore, further action for ecological concerns is recommended for both AOCs (North and South Target Areas) because (1) constituent concentrations of molybdenum were above relevant ecological screening values and site-specific background concentrations in soil, and (2) the site represents an Important Ecological Place, as defined by USACE (2006).

References:

Gionfriddo and Best, 1991, "Characterization of Grit Use by Cornfield Birds," *Wilson Bulletin*, 103(1) pp. 68-82.

Landon, D., 2007, personal communication between Mr. Dale Landon – Shaw E&I Team Leader and Mr. Mark Weisberg – Shaw E&I Risk Assessment Specialist, May 2007.

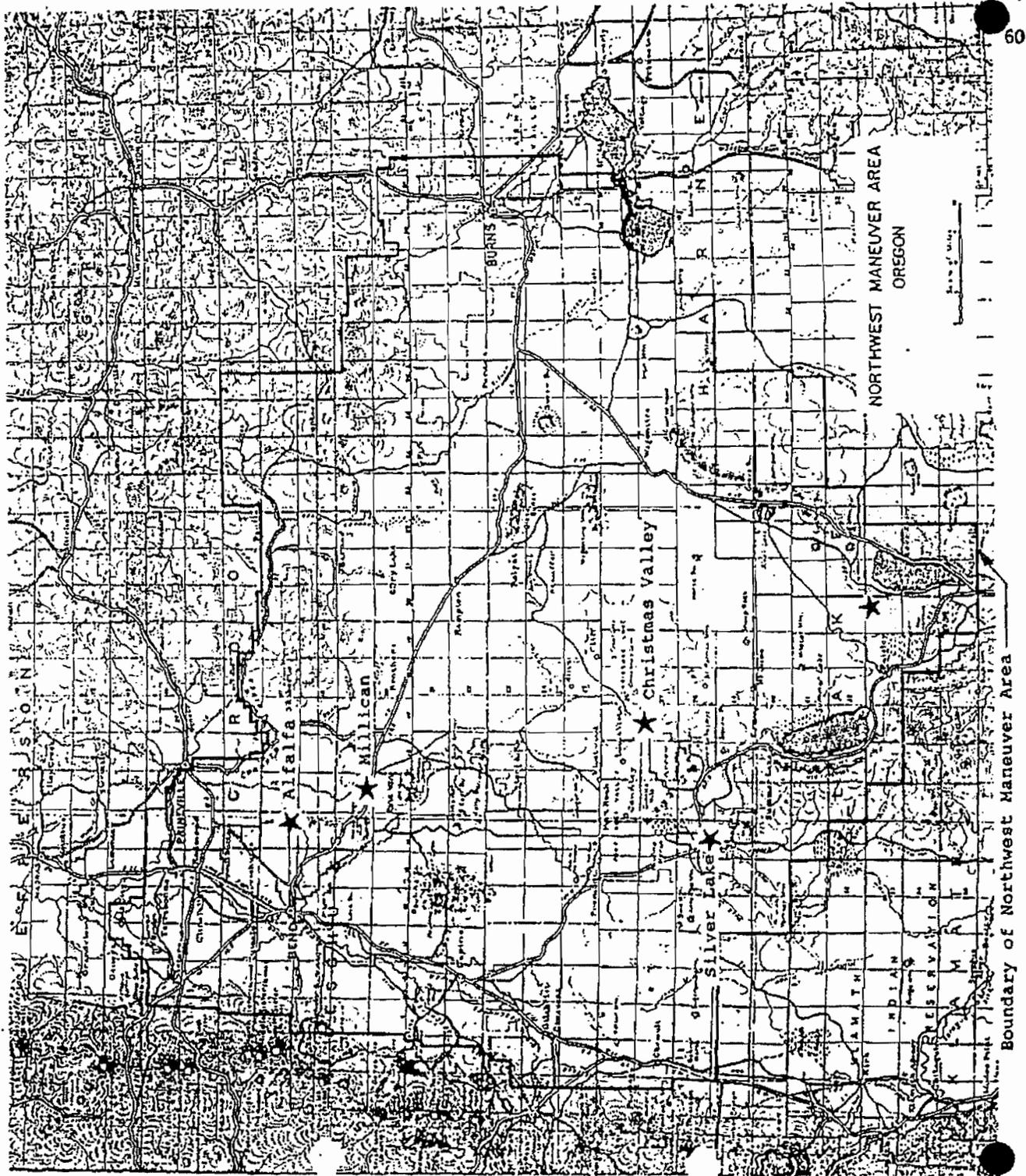
Oregon Department of Environmental Quality, 2001, *Guidance for Ecological Risk Assessment, Level II Screening Level Values*, December.

Oregon Department of Fish and Wildlife, 2006,

87

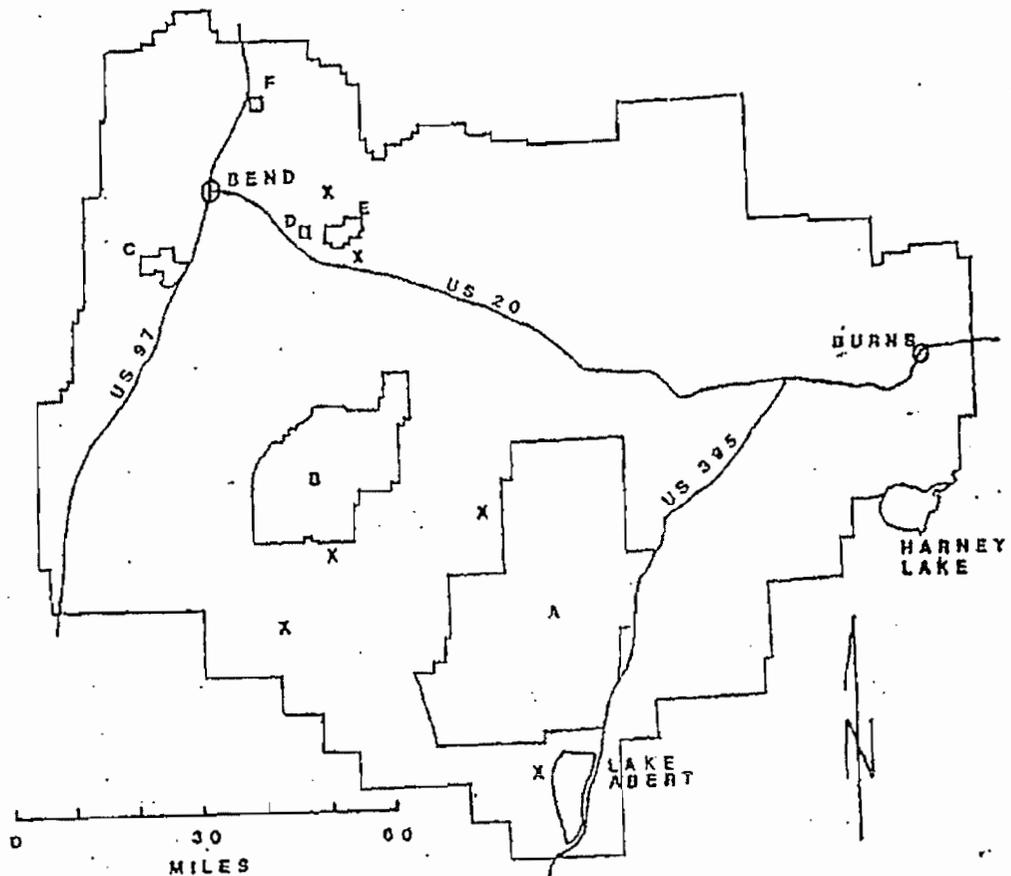
D-2

**Explosive Ordnance Incident Report
14-15 March 1988, 34th Ordnance Detachment
Sierra Army Depot, Herlong, CA.**



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NORTHWEST MANEUVER AREA
SITE NO. F100R020800

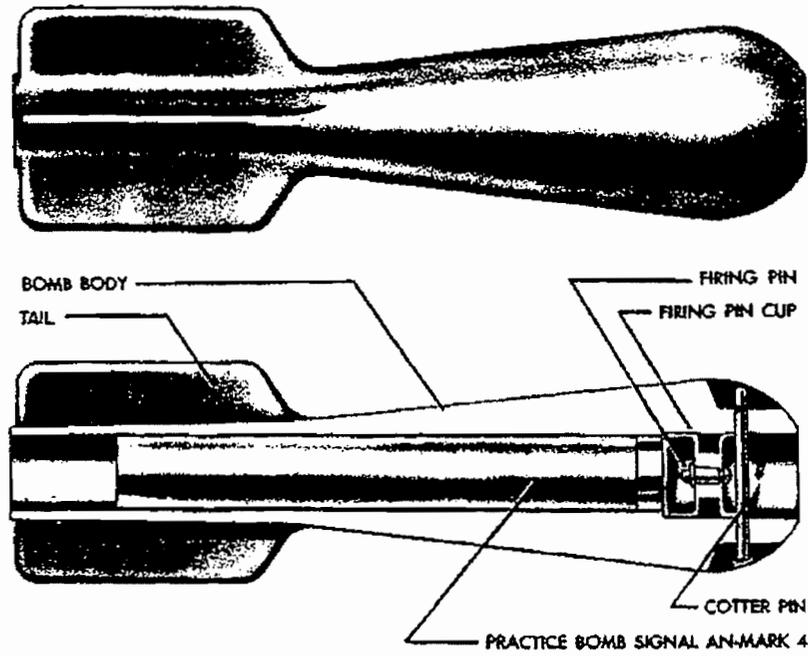


x Location of Reported Ordnance

A	Central Oregon Air to Air Gunnery Range	Site No. F10OR017000
B	Fort Rock Maneuver Area	Site No. F10OR018000
C	Camp Abbott	Site No. F10OR004100
D	Redmond Precision Bombing Range	Site No. F10OR021900
E	Redmond Air to Ground Gunnery Range	Site No. F10OR021700
F	Redmond Army Airfield	Site No. F10OR002800

NORTHWEST MANEUVER AREA
SITE NO. F10OR020800

PRACTICE BOMB, NAVY, AN-MK 43



Description: A small cast-iron bomb having a tube along its longitudinal axis which houses a AM-Mk 4 or Mk 5 signal cartridge which is a pyrotechnic charge used for spotting purposes.

Over-all length	8.25 inches
Diameter	2.18 inches
Weight	4.5 pounds
Color	Unpainted
Reference	OP 1664, May 47

NORTHWEST MANEUVER AREA, OREGON

SITE NO. F10OR020800

CONTACT LISTING

1. US Department of Interior, Bureau of Land Management,
Lakeview District Office, Lakeview, Oregon; Telephone
Number: (503) 947-2177

a. Contact Name: Alan Munhall

--Interview Information: Mr. Munhall was contacted in
March 1988 concerning the site. He said that a anti-
personnel fragmentation bomb had been found in the
* → Silver lake area (see map) about 1986. A report of
ordnance (type unknown) had also been noted in the Lake
* → Abert area (see map) about 1973.

2. US Department of Interior, Bureau of Land Management,
Prineville District Office, Prineville, Oregon; Telephone
Number: (503) 447-4115

a. Contact Name: Susan Crowley Thomas

--Interview Information: Ms. Thomas was contacted in
March 1988 concerning the site. She said that ordnance
(type unknown) had been reported in the Millican area ← *
(see map for location). She did not have a date on
when it was found.

3. Deschutes County Emergency Services (County Sheriff's
Office), Bend, Oregon; Telephone Number: (503) 388-6502

a. Contact Name: Sgt. Terry Silbaugh

--Interview Information: Mr. Silbaugh was contacted in
March 1988 concerning the site. He said that ordnance
(types unknown) had been found in the past (time frames
unknown) in the Millican area (approximately 4 miles
west and 1 mile north of Highway 20) and in the area
* → around Alfalfa (see map).

4. Lake County (County Sheriff's Office), Lakeview, Oregon;
Telephone Number: (503) 943-3144

a. Contact Name: Deputy Charlie Withers

--Interview Information: Mr. Withers was contacted in March 1988 concerning the site. He said that an air drop type practice bomb had been found (March 1988) by Alan Knight and his son as they drove their 4-wheel drive vehicle through the sand dunes near Fossil lake bed. The bomb was disposed of by a disposal group from Herlong California-Sierra Army Depot ([916] 827-4400). Deputy Withers assumed from what he heard that the bomb contained an explosive charge and was not just the marker type. The Disposal Unit reported to him that if there was one it is very probable there are more. The winds had shifted the sand and the bomb was found with the fins sticking out of the sand. This site is located in the Shifting Sand Dunes Area, approximately 14 miles northeast of Christmas Valley (see map). He also reported that 12 anti-tank mines had been located sometime during the summer of 1987. The property was owned by Terry Greataks. The mines were found when a wheel of a trailer drove over one which exploded blowing wheel and tire off. A disposal team from San Francisco uncovered and disposed of the remaining mines. This site is located approximately 6 miles west of Christmas Valley on Christmas Valley road and 5 ← * miles north on County road No. 514G. The site is situated above a cultivated field in a draw of a small rocky ridge (see map).



NOTES:
 1) Aerial photograph (clip_cogr_32, cogr_32m_e) were obtained from TerraServer at resolution of 32 meters. The imagery in data July 19, 1994.



REFERENCE/PROJECTION: NAD 83 UTM Zone 10N



U.S. ARMY CORPS OF ENGINEERS
 OMAHA DESIGN CENTER

FIGURE L-1

HISTORICAL AERIAL PHOTO
 CENTRAL OREGON GUNNERY RANGE