

GW - 199

WORK PLANS

2003



NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

ILL RICHARDSON

Governor

Joanna Prukop
Cabinet Secretary

May 08, 2003

Lori Wrotenbery

Director

Oil Conservation Division

CERTIFIED MAIL

RETURN RECEIPT NO: 3929 9826

Mr. Ralph Corry
Champion Technologies, Inc.
P.O. Box 450499
Houston, Texas 77245

Re: Abatement Plan (AP-14)
Stage 2 Abatement Plan Proposal
Comprehensive Status Report
Champion's Hobbs, NM Facility GW-199

Dear Mr. Corry:

The New Mexico Oil Conservation Division (OCD) has completed a review of Champion Technologies, Inc.'s (Champion) March 31, 2003 Stage 2 Abatement Plan Comprehensive Status Report and addendum received on May 06, 2003 with conclusions and recommendations. This document describes the procedures that Champion proposes to be used to remediate and monitor the existing soil and groundwater impacts at the site. In order for OCD to continue the review process please provide following information as listed under Required Information items # 1-12 below.

Please note OCD has approved parts of the plan as listed under OCD Approval of Section 10 Recommendations of this document. In addition, OCD encourages Champion to consider other options as listed under OCD Comments found below.

Please be advised that NMOCD approval of this plan does not relieve Champion of liability should their operations fail to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD approval does not relieve Champion of responsibility for compliance with any OCD, federal, state, or local laws and/or regulations.

Required Information:

1. OCD requires a copy of the Hydrus model with instructions, input parameters, weather input data and a copy of the excel spreadsheet that contains the groundwater mixing model. Due to the complex nature of this model, OCD request a technical meeting with the consultant concerning the model and submitted report.

Mr. Ralph Corry

May 08, 2002

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2. Modeling Comments and Questions:

- A. OCD is having a difficult time understanding how calibration of the model can be made using a hypothetical one-time release at this particular site. Please explain.
 - B. OCD does not agree using 80 or 100 feet of aquifer thickness in the mixing model. OCD will require 10 feet. Please recalculate using 10 feet.
 - C. Explanation of Fig #1 and #4: In Fig #1 (Simulated Chloride distribution in the Vadose zone) the units of the measured concentrations do not match the actual soil conditions. For example one point is labeled approximately 1.5 E+05. Is this ppm in soil or soil water and what are the units? Please explain and provide example calculations on how these numbers were obtained and which sample data was used.
 - D. Engineering controls to reduce precipitation by 70 %. Please demonstrate that reducing precipitation is the same as reducing the infiltration.
 - E. Champion will have to demonstrate that a calichie pad will provide a proper barrier and demonstrate how this barrier will be maintained. OCD's experience is that calichie pads become very plastic during rainstorm events and notwithstanding the fact that heavy truck traffic used during these times may deteriorate the integrity of the barrier and thus may not provide the protection as suggested.
 - F. The area size used in the calculations do not take into account chlorides found outside of Area #3. and the rest of the yard. This would increase the overall chloride load and physical geometry of the model. Please delineate Area #3 and adjust the model input parameters to correct for this deficiency and resubmit the new results.
3. Section 1.2: The old water well found abandoned under the chemical storage pad shall be sampled and analyzed for BTEX, TPH, and Chemicals of Concern using EPA approved methods. A plugging and abandonment plan shall be submitted for OCD approval.
 4. Appendix G Photographs (Drain system from warehouse) Please describe the past history concerning this system. Is any drain system currently in use? If so please explain.
 5. Section 4.2: Please provide the total feet of screen placed in monitor wells and the amount placed above and below groundwater.
 6. Section 4.5.6: (Background Data). OCD is reluctant to consider on-site monitor wells MW-1 and MW-7 as being background wells because of the fact that contamination has been found through out Champion's yard i.e. chlorides. MW-7 is located near Area 3 where the delineation of chlorides has not been completed and may have impacted the groundwater in this area, in addition MW-1 and MW-9 lie in proximity to the northwest part of the yard area

where natural drainage from Champions yard has occurred for many years. Therefore, please revise the background Chloride data utilizing off-site up-gradient monitor well MW-15 (chlorides noted at 156, 200, 221 mg/l) and any other off-site up-gradient well such as those sampled by OCD i.e. Harmon and Morrow residences wells (chlorides in these wells were 137 mg/l and 241 mg/l. respectively). OCD calculates the average to be $(221+137+241)/3 = 199$ mg/l. Please provide the recalculated results from the model using this background input data.

7. Section 9.1: Soil Remediation and Assessment: Page 27 bullet point 7. OCD assumes Soil Borings SB-9, 10,13,14,15 are located in Area 3. This section of the report indicated benzene concentrations in subsurface soils that have a potential to leach into groundwater and a clay cap over these locations will assist in stopping further migration. However, there is no mention of a clay cap in the final recommendations for this area. Please explain.
8. Section 7.1: Historical and Current Land Use: Please provide the aerial photos mentioned in this section.
9. The plan did not address Area 5: SB-3, 37,38,39 and 40 for chlorides. Please address.
10. Section 7.2 page 23 of 31 Scenario 3: Which area is this for?
11. Section 7.2 page 23 of 31 hydraulic saturated conductivity of .7 cm/day: Is this for the vadose zone or groundwater? Please explain and supply laboratory analysis mentioned in the report.
12. Section 7.2 page 23 of 31 "Compaction of either sandy (caliche) soils or clayey soils generally results in a decrease of permeability by approximately 70 percent": OCD's question here is 70 % of what permeability number? Other words will the caliche soils meet the specifications listed in Item #2B below.

OCD Approval of Section 10 Recommendations:

1. OCD hereby approves bullet points #1 through #5 and #9 and considers these as commitments.
2. Bullet point #6 (Area 2): OCD approves the backfilling and proper compaction of Area 2 and installation of a barrier that meets the following specifications:
 - A. The excavation shall be backfilled and properly compacted to the 5-feet-below-grade level with clean fill or with blended soils remaining on site. If blended soils

are used then a composite sample shall be collected every three feet and analyzed for TPH, BTEX, Chlorides and any on-site Chemical-of-Concern (COC) already identified.

- B. The excavation will be then lined with an impermeable barrier that is with a hydraulic conductivity of not more than 1×10^{-7} cm/sec. If a clay barrier is to be used, it shall be either two feet thick, after compaction, or compacted so as to meet or exceed 95% of a Proctor Test ASTM-D-698, as shown by three tests on the site, and have the following physical characteristics:
 - a. Plasticity index greater than 10%;
 - b. Liquid limit between 25% and 50%;
 - c. More than 40% by weight of the material passing a No. 200 sieve;
 - d. Clay content greater than 18% by weight; and
 - e. Be free of particles greater than one inch in any dimension.
 - C. If a clay barrier is to be used, it will be built in a series of 6-inch lifts so that compaction requirements can be met, and the clay layers should be moisture conditioned, as well as covered with the at least 1 foot of cover soils within 24-48 hours so that the clay layer does not desiccate.
 - D. Impermeable barriers should be domed to promote lateral movement of percolation water.
 - E. The impermeable barrier must be covered with a protective soil layer at least three feet thick composed of clean porous soil and contoured to be compatible with the adjacent elevations.
3. Bullet point #7 (Area 3): OCD will forgo any approval until clarification is provided as requested in the above Required Information:
4. Bullet point #8 (Bulk Tank and Drum Storage Area): If this area is going to be rebuilt as previously constructed then OCD hereby approves of this new construction. If not, then any remaining area that was previously part of the storage area shall be included as part of area 2 and shall conform to the requirements of Item #2 above.

Mr. Ralph Corry
May 08, 2002
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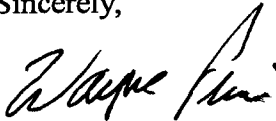
OCD Comments: After reviewing the submitted comprehensive report and model results all scenarios presented indicated that groundwater would be impacted at some time in the future. Champion may continue the modeling approach to demonstrate no chloride migration by modifying their plan that incorporates other remedial activities, acceptable model input parameters or engineering controls that demonstrate groundwater will not be impacted.

OCD feels and recommends that it might be more cost effective for Champion to propose installing a more permanent barrier over the entire yard such as asphalt or concrete. If proposed, then OCD would be willing to forego any further soil investigation (except bullet point 4 of Section 10 Recommendations "Chrome investigation) and allow back filling with proper compaction of area #2 and #3 without any clay cap barriers.

Please provide a response to this letter by June 6, 2003. If Champion wishes to continue with the modeling efforts please propose a meeting date to discuss the model and alternate barrier methods.

If you have any questions, please contact Wayne Price at (505) 476-3487 or E-Mail WPRICE@state.nm.us.

Sincerely,



Wayne Price
Environmental Engineer

xc: Chris Williams, OCD Hobbs District Supervisor

Price, Wayne

To: Price, Wayne
Subject: RE: Notice of Significant Activity

-----Original Message-----

From: Price, Wayne
Sent: Friday, February 07, 2003 4:00 PM
To: 'Todd Choban'
Cc: Ralph Corry (E-mail); Sheeley, Paul; Johnson, Larry
Subject: RE: Notice of Significant Activity

Dear Mr. Choban:

OCD is in receipt of Champion's Area 3 "Request for Backfill of Area 3" dated November 12, 2002 with attachments, and the below request. Please note as discussed during my site visit on February 5, 2003 the OCD approves of Champion performing additional excavation, delineation, sampling and disposal in order to provide the OCD with a final report. However, OCD is reluctant to approve the backfilling and installation of any liner until OCD has had an opportunity to review the final data. Therefore, please submit a final comprehensive status report with all of the information previously requested by this March 30, 2003.

OCD encourages Champion to have the current contractor to review the previously submitted information and OCD's request's. OCD feels this will improve communication and assist Champion in providing the correct technical information required to be submitted. In addition, Champion shall demonstrate that any contaminant left remaining on site will not contaminate groundwater in the foreseeable future.

-----Original Message-----

From: Todd Choban [mailto:tchoban@etgi.cc]
Sent: Wednesday, January 15, 2003 3:08 PM
To: WPrice@state.nm.us
Cc: RAnderson@state.nm.us; lwjohnson@state.nm.us; ralph.corry@champ-tech.com; jnickell@etgi.cc; cpatel@etgi.cc
Subject: Notice of Significant Activity

Dear Wayne,

On behalf of Champion Technologies, Inc. (Champion), ETGI would like to provide notification for the resumption of activities at the Hobbs, NM facility on Thursday, January 16, 2003 (excavation activities to begin the following Monday, January 20). Activities will include removing a portion of the existing concrete bulk storage area and excavating heavily impacted soil underneath to a maximum depth of approximately 18 feet. Upon completion of the excavation, sidewall confirmation samples will be collected and analyzed to confirm horizontal extent. A clay liner will be installed over the bottom of the excavation from sidewall to sidewall before backfilling. The clay liner will prevent infiltration of precipitation and will not allow migration of contaminants from soil to groundwater.

Prior to clay liner installation and backfilling the Area 2 excavation, nutrients, surfactants and microorganisms (in solution) will be introduced into the soil between the current excavation floor and the vadose zone by way of soil borings. The nutrients and microorganisms will work to enhance the natural remediation on the in-situ hydrocarbon impacted soil from the bottom of the excavation to near the vadose zone.

Backfill and closure of Area 2 excavation at this time is critical for several reasons. The open excavation of this magnitude and depth pose a substantial OSHA safety risk for an operating facility. Continued exposure of Area 2 to the environment allows for precipitation to collect and possibly transport remaining contaminants toward groundwater. A review of precipitation records for this part of Lea County, New Mexico indicates the average peak precipitation occurs in the upcoming spring and early summer months. Therefore, it is essential to backfill Area 2 under the conditions specified above, before spring of 2003.

Operations for Champion's Hobbs facility have been seriously affected due to the removal from service of a large portion of their working yard area. Champion, in resuming normal business activities of supplying their customers with chemicals for the oil field treatment industry, is planning on the construction of a new concrete bermed bulk and drum storage containment area on the spot that is currently Area 3 excavation. Once OCD has approved backfilling of Area 3, construction at this location will provide for a necessary working chemical storage and distribution station. Constructing at this location will also provide a surface cover over Area 3 that prevents future exposure to precipitation runoff/runoff surface flow.

Upon submittal of sidewall sample results to the OCD, placement of clay liner and in-situ treatment delivery, Area 2 will be backfilled and restored.

If you have any questions please contact me at (915) 522-1139.

Thank you,

Todd Choban
Geologist/Sr Project Manager

TRACE ANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9
155 McCutcheon, Suite H

Lubbock, Texas 79424
El Paso, Texas 79932

800•378•1296
888•588•3443
E-Mail: lab@traceanalysis.com

806•794•1296
915•585•3443

FAX 806•794•1298
FAX 915•585•4944

Bill To: **OCD**
1220 S. Saint Francis Dr.
Santa Fe, NM 87505

Invoice # **57018**

Invoice Date: **Jan 14, 2003**

Order ID: **A02121918**

Attn: **Wayne Price**

Project #: **Champion**

P.A.# 20-521-07-02497

Project Name: **Pit**

DFA Vendor #: 752439743

Project Location: **Champion Hobbs Yard**

Test	Quantity	Matrix	Description	Price	SubTotal
K, Total	4	Soil	216777 - 216780	\$10.00	\$40.00
Al, Total	4	Soil	216777 - 216780	\$10.00	\$40.00
As, Total	4	Soil	216777 - 216780	\$10.00	\$40.00
B, Total	4	Soil	216777 - 216780	\$10.00	\$40.00
Ba, Total	4	Soil	216777 - 216780	\$10.00	\$40.00
Ca, Total	4	Soil	216777 - 216780	\$10.00	\$40.00
Cd, Total	4	Soil	216777 - 216780	\$10.00	\$40.00
Co, Total	4	Soil	216777 - 216780	\$10.00	\$40.00
Cr, Total	4	Soil	216777 - 216780	\$10.00	\$40.00
Cu, Total	4	Soil	216777 - 216780	\$10.00	\$40.00
Ag, Total	4	Soil	216777 - 216780	\$10.00	\$40.00
Hg, Total	4	Soil	216777 - 216780	\$12.00	\$48.00
Zn, Total	4	Soil	216777 - 216780	\$10.00	\$40.00
Metals Prep	1	Soil	216780 - 216780	\$10.00	\$10.00
Mg, Total	4	Soil	216777 - 216780	\$10.00	\$40.00
Mn, Total	4	Soil	216777 - 216780	\$10.00	\$40.00
Mo, Total	4	Soil	216777 - 216780	\$10.00	\$40.00
Na, Total	4	Soil	216777 - 216780	\$10.00	\$40.00
Ni, Total	4	Soil	216777 - 216780	\$10.00	\$40.00
Pb, Total	4	Soil	216777 - 216780	\$10.00	\$40.00
Se, Total	4	Soil	216777 - 216780	\$10.00	\$40.00
Si, Total	4	Soil	216777 - 216780	\$10.00	\$40.00
Fe, Total	4	Soil	216777 - 216780	\$10.00	\$40.00
Payment Terms: Net 30 Days				Total	\$898.00

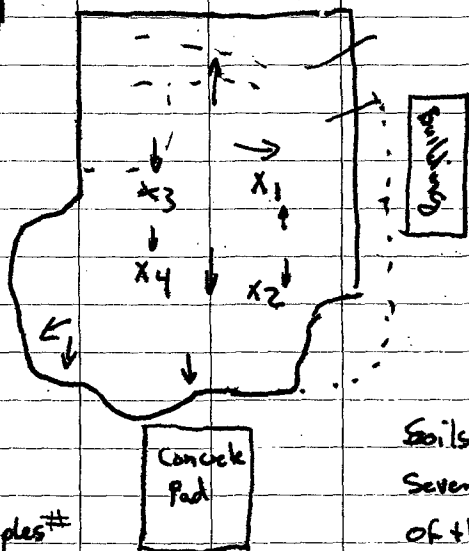
*Approved
Wayne Price
2/7/03*



Director, Dr. Blair Leftwich

3:00 pm December 18, 2002
Champion Pit Sampling

North
Todd Choban, ETGI
Martyne Kiching, OGD
Ed Martin, OGD



Hydrocarbon Contaminated

Soils were noted in
Several spots in the bottom
of the pit.

Samples#

1218021520

#1

10 Photos were taken

1218021525

#2

Directions Noted by

1218021530

#3

Arrows on map.

1218021535

#4

Samples From pit Bottom all locations Sampled
had Soils/Rock that were orange in color.

End 4:50

December 19, 2002

Hobbs Rental

8:15 am

Follow up Response to a Complaint
Received

Larry Johnson,
Ed Martin
Martyne Kiching

Lloyd Wayne Chenault

Motor oil used

Pipe Dept. Thread Cleaning Not Part of
Hobbs Rental

Used to Rent Pipe. They are Selling them
Now

Check Relief valves Testing

Most Cleaning And Part testing done
in Mobile lab at the Field Plants.
Can do Some at the yard in Hobbs.

Site Inspection

Drums: Sucked out

~~Wagner~~ Wagner.
For your file

Morphy

TraceAnalysis, Inc.

6701 Aberdeen Ave., Suite 9

Lubbock, TX 79424-1515

(806) 794-1296

Report Date: January 14, 2003
Champion PitPage Number: 1 of 3
Champion Hobbs Yard

Summary Report

Wayne Price
OCD
1220 S. Saint Francis Dr.
Santa Fe, NM 87505

Report Date: January 14, 2003

Order ID Number: A02121918

Project Number: Champion
Project Name: Pit
Project Location: Champion Hobbs Yard

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
216777	1218021520	Soil	12/18/02	15:20	12/19/02
216778	1218021525	Soil	12/18/02	15:25	12/19/02
216779	1218021530	Soil	12/18/02	15:30	12/19/02
216780	1218021535	Soil	12/18/02	15:35	12/19/02

0 This report consists of a total of 3 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample: 216777 - 1218021520

Param	Flag	Result	Units
Total Mercury		<0.19	mg/Kg
Total Aluminum		6560	mg/Kg
Total Arsenic		3.58	mg/Kg
Total Barium		162	mg/Kg
Total Boron		10.5	mg/Kg
Total Cadmium		<0.500	mg/Kg
Total Calcium		72300	mg/Kg
Total Chromium		8.75	mg/Kg
Total Cobalt		<2.50	mg/Kg
Total Copper		4.69	mg/Kg
Total Iron		6230	mg/Kg
Total Lead		5.04	mg/Kg
Total Magnesium		23500	mg/Kg
Total Manganese		66.9	mg/Kg
Total Molybdenum		<5.00	mg/Kg
Total Nickel		5.47	mg/Kg
Total Potassium		1620	mg/Kg
Total Selenium		<1.00	mg/Kg
Total Silica		115	mg/Kg
Total Silver		<0.200	mg/Kg
Total Sodium		577	mg/Kg
Total Zinc		13.9	mg/Kg

This is only a summary. Please, refer to the complete report package for quality control data.

Report Date: January 14, 2003 Order Number: A02121918
Champion Pit

Page Number: 2 of 3
Champion Hobbs Yard

Sample: 216778 - 1218021525

Param	Flag	Result	Units
Total Mercury		<0.19	mg/Kg
Total Aluminum		5180	mg/Kg
Total Arsenic		3.36	mg/Kg
Total Barium		232	mg/Kg
Total Boron		9.80	mg/Kg
Total Cadmium		<0.500	mg/Kg
Total Calcium		119000	mg/Kg
Total Chromium		5.00	mg/Kg
Total Cobalt		<2.50	mg/Kg
Total Copper		5.54	mg/Kg
Total Iron		6780	mg/Kg
Total Lead		3.50	mg/Kg
Total Magnesium		29100	mg/Kg
Total Manganese		53.1	mg/Kg
Total Molybdenum		<5.00	mg/Kg
Total Nickel		4.50	mg/Kg
Total Potassium		1270	mg/Kg
Total Selenium		<1.00	mg/Kg
Total Silica		150	mg/Kg
Total Silver		<0.200	mg/Kg
Total Sodium		2070	mg/Kg
Total Zinc		11.1	mg/Kg

Sample: 216779 - 1218021530

Param	Flag	Result	Units
Total Mercury		<0.19	mg/Kg
Total Aluminum		5750	mg/Kg
Total Arsenic		2.17	mg/Kg
Total Barium		393	mg/Kg
Total Boron		11.4	mg/Kg
Total Cadmium		<0.500	mg/Kg
Total Calcium		82500	mg/Kg
Total Chromium		29.9	mg/Kg
Total Cobalt		<2.50	mg/Kg
Total Copper		4.57	mg/Kg
Total Iron		4760	mg/Kg
Total Lead		6.16	mg/Kg
Total Magnesium		29600	mg/Kg
Total Manganese		57.3	mg/Kg
Total Molybdenum		<5.00	mg/Kg
Total Nickel		5.33	mg/Kg
Total Potassium		1530	mg/Kg
Total Selenium		<1.00	mg/Kg
Total Silica		130	mg/Kg
Total Silver		<0.200	mg/Kg
Total Sodium		928	mg/Kg
Total Zinc		45.0	mg/Kg

This is only a summary. Please, refer to the complete report package for quality control data.

TraceAnalysis, Inc.

6701 Aberdeen Ave., Suite 9

Lubbock, TX 79424-1515

(806) 794-1296

Report Date: January 14, 2003 Order Number: A02121918
Champion PitPage Number: 3 of 3
Champion Hobbs Yard**Sample: 216780 - 1218021535**

Param	Flag	Result	Units
Total Mercury		<0.19	mg/Kg
Total Aluminum		6130	mg/Kg
Total Arsenic		2.75	mg/Kg
Total Barium		198	mg/Kg
Total Boron		10.2	mg/Kg
Total Cadmium		<0.500	mg/Kg
Total Calcium		102000	mg/Kg
Total Chromium		6.58	mg/Kg
Total Cobalt		<2.50	mg/Kg
Total Copper		3.47	mg/Kg
Total Iron		4730	mg/Kg
Total Lead		3.98	mg/Kg
Total Magnesium		25400	mg/Kg
Total Manganese		59.4	mg/Kg
Total Molybdenum		<5.00	mg/Kg
Total Nickel		4.54	mg/Kg
Total Potassium		1500	mg/Kg
Total Selenium		<1.00	mg/Kg
Total Silica		119	mg/Kg
Total Silver		<0.200	mg/Kg
Total Sodium		762	mg/Kg
Total Zinc		10.2	mg/Kg

This is only a summary. Please, refer to the complete report package for quality control data.



6701 Aberdeen Avenue, Suite 9
155 McCutcheon, Suite H

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El Paso, Texas 79932

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915•585•3443

FAX 806•794•1298
FAX 915•585•4944

E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Wayne Price
OCD
1220 S. Saint Francis Dr.
Santa Fe, NM 87505

Report Date: January 14, 2003

Order ID Number: A02121918

Project Number: Champion
Project Name: Pit
Project Location: Champion Hobbs Yard

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
216777	1218021520	Soil	12/18/02	15:20	12/19/02
216778	1218021525	Soil	12/18/02	15:25	12/19/02
216779	1218021530	Soil	12/18/02	15:30	12/19/02
216780	1218021535	Soil	12/18/02	15:35	12/19/02

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed. Note: the RDL is equal to MQL for all organic analytes including TPH.

The test results contained within this report meet all requirements of LAC 33:I unless otherwise noted.

This report consists of a total of 9 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of TraceAnalysis, Inc.

Note: Samples will be disposed of 30 days from the report date unless the lab is contacted before the 30 days has past.

Dr. Blair Leftwich, Director

Report Date: January 14, 2003
Champion

Order Number: A02121918
Pit

Page Number: 2 of 9
Champion Hobbs Yard

Analytical Report

Sample: 216777 - 1218021520

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC25879 Date Analyzed: 12/27/02
Analyst: BC Preparation Method: N/A Prep Batch: PB23968 Date Prepared: 12/26/02

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 216777 - 1218021520

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC25873 Date Analyzed: 12/29/02
Analyst: RR Preparation Method: S 3050B Prep Batch: PB23925 Date Prepared: 12/26/02

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		6560	mg/Kg	100	0.05
Total Arsenic		3.58	mg/Kg	100	0.01
Total Barium		162	mg/Kg	100	0.01
Total Boron		10.5	mg/Kg	100	0.005
Total Cadmium		<0.500	mg/Kg	100	0.005
Total Calcium		72300	mg/Kg	1	0.50
Total Chromium		8.75	mg/Kg	100	0.01
Total Cobalt		<2.50	mg/Kg	100	0.02
Total Copper		4.69	mg/Kg	100	0.01
Total Iron		6230	mg/Kg	100	0.05
Total Lead		5.04	mg/Kg	100	0.01
Total Magnesium		23500	mg/Kg	1	0.50
Total Manganese		66.9	mg/Kg	100	0.02
Total Molybdenum		<5.00	mg/Kg	100	0.05
Total Nickel		5.47	mg/Kg	100	0.02
Total Potassium		1620	mg/Kg	1	0.50
Total Selenium		<1.00	mg/Kg	100	0.01
Total Silica		115	mg/Kg	100	0.05
Total Silver		<0.200	mg/Kg	100	0.002
Total Sodium		577	mg/Kg	1	0.50
Total Zinc		13.9	mg/Kg	100	0.02

Sample: 216778 - 1218021525

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC25879 Date Analyzed: 12/27/02
Analyst: BC Preparation Method: N/A Prep Batch: PB23968 Date Prepared: 12/26/02

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 216778 - 1218021525

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC25873 Date Analyzed: 12/29/02
Analyst: RR Preparation Method: S 3050B Prep Batch: PB23925 Date Prepared: 12/26/02

Report Date: January 14, 2003
Champion

Order Number: A02121918
Pit

Page Number: 3 of 9
Champion Hobbs Yard

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		5180	mg/Kg	100	0.05
Total Arsenic		3.36	mg/Kg	100	0.01
Total Barium		232	mg/Kg	100	0.01
Total Boron		9.80	mg/Kg	100	0.005
Total Cadmium		<0.500	mg/Kg	100	0.005
Total Calcium		119000	mg/Kg	1	0.50
Total Chromium		5.00	mg/Kg	100	0.01
Total Cobalt		<2.50	mg/Kg	100	0.02
Total Copper		5.54	mg/Kg	100	0.01
Total Iron		6780	mg/Kg	100	0.05
Total Lead		3.50	mg/Kg	100	0.01
Total Magnesium		29100	mg/Kg	1	0.50
Total Manganese		53.1	mg/Kg	100	0.02
Total Molybdenum		<5.00	mg/Kg	100	0.05
Total Nickel		4.50	mg/Kg	100	0.02
Total Potassium		1270	mg/Kg	1	0.50
Total Selenium		<1.00	mg/Kg	100	0.01
Total Silica		150	mg/Kg	100	0.05
Total Silver		<0.200	mg/Kg	100	0.002
Total Sodium		2070	mg/Kg	1	0.50
Total Zinc		11.1	mg/Kg	100	0.02

Sample: 216779 - 1218021530

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC25879 Date Analyzed: 12/27/02
Analyst: BC Preparation Method: N/A Prep Batch: PB23968 Date Prepared: 12/26/02

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 216779 - 1218021530

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC25873 Date Analyzed: 12/29/02
Analyst: RR Preparation Method: S 3050B Prep Batch: PB23925 Date Prepared: 12/26/02

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		5750	mg/Kg	100	0.05
Total Arsenic		2.17	mg/Kg	100	0.01
Total Barium		393	mg/Kg	100	0.01
Total Boron		11.4	mg/Kg	100	0.005
Total Cadmium		<0.500	mg/Kg	100	0.005
Total Calcium		82500	mg/Kg	1	0.50
Total Chromium		29.9	mg/Kg	100	0.01
Total Cobalt		<2.50	mg/Kg	100	0.02
Total Copper		4.57	mg/Kg	100	0.01
Total Iron		4760	mg/Kg	100	0.05
Total Lead		6.16	mg/Kg	100	0.01
Total Magnesium		29600	mg/Kg	1	0.50
Total Manganese		57.3	mg/Kg	100	0.02
Total Molybdenum		<5.00	mg/Kg	100	0.05
Total Nickel		5.33	mg/Kg	100	0.02
Total Potassium		1530	mg/Kg	1	0.50

Continued ...

Report Date: January 14, 2003
Champion

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Pit

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Champion Hobbs Yard

... Continued Sample: 216779 Analysis: Total Metals

Param	Flag	Result	Units	Dilution	RDL
Total Selenium		<1.00	mg/Kg	100	0.01
Total Silica		130	mg/Kg	100	0.05
Total Silver		<0.200	mg/Kg	100	0.002
Total Sodium		928	mg/Kg	1	0.50
Total Zinc		45.0	mg/Kg	100	0.02

Sample: 216780 - 1218021535

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC25879 Date Analyzed: 12/27/02
Analyst: BC Preparation Method: N/A Prep Batch: PB23968 Date Prepared: 12/26/02

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 216780 - 1218021535

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC25873 Date Analyzed: 12/29/02
Analyst: RR Preparation Method: S 3050B Prep Batch: PB23925 Date Prepared: 12/26/02

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		6130	mg/Kg	100	0.05
Total Arsenic		2.75	mg/Kg	100	0.01
Total Barium		198	mg/Kg	100	0.01
Total Boron		10.2	mg/Kg	100	0.005
Total Cadmium		<0.500	mg/Kg	100	0.005
Total Calcium		102000	mg/Kg	1	0.50
Total Chromium		6.58	mg/Kg	100	0.01
Total Cobalt		<2.50	mg/Kg	100	0.02
Total Copper		3.47	mg/Kg	100	0.01
Total Iron		4730	mg/Kg	100	0.05
Total Lead		3.98	mg/Kg	100	0.01
Total Magnesium		25400	mg/Kg	1	0.50
Total Manganese		59.4	mg/Kg	100	0.02
Total Molybdenum		<5.00	mg/Kg	100	0.05
Total Nickel		4.54	mg/Kg	100	0.02
Total Potassium		1500	mg/Kg	1	0.50
Total Selenium		<1.00	mg/Kg	100	0.01
Total Silica		119	mg/Kg	100	0.05
Total Silver		<0.200	mg/Kg	100	0.002
Total Sodium		762	mg/Kg	1	0.50
Total Zinc		10.2	mg/Kg	100	0.02

Quality Control Report Method Blank

Method Blank QCBatch: QC25873

Param	Flag	Results	Units	Reporting Limit
Total Aluminum		<5.00	mg/Kg	0.05
Total Arsenic		<1.00	mg/Kg	0.01
Total Barium		<1.00	mg/Kg	0.01
Total Boron		<0.500	mg/Kg	0.005
Total Cadmium		<0.500	mg/Kg	0.005
Total Calcium		85.4	mg/Kg	0.50
Total Chromium		<1.00	mg/Kg	0.01
Total Cobalt		<2.50	mg/Kg	0.02
Total Copper		<1.25	mg/Kg	0.01
Total Iron		<5.00	mg/Kg	0.05
Total Lead		<1.00	mg/Kg	0.01
Total Magnesium		<50	mg/Kg	0.50
Total Manganese		<2.50	mg/Kg	0.02
Total Molybdenum		<5.00	mg/Kg	0.05
Total Nickel		<2.50	mg/Kg	0.02
Total Potassium		<50	mg/Kg	0.50
Total Selenium		<1.00	mg/Kg	0.01
Total Silica		<5.00	mg/Kg	0.05
Total Silver		<0.200	mg/Kg	0.002
Total Sodium		94.8	mg/Kg	0.50
Total Zinc		<2.50	mg/Kg	0.02

Method Blank QCBatch: QC25879

Param	Flag	Results	Units	Reporting Limit
Total Mercury		<0.19	mg/Kg	0.19

Quality Control Report Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes QCBatch: QC25873

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Aluminum	102	102	mg/Kg	100	100	<5.00	102	0	75 - 125	20
Total Arsenic	45.9	45.3	mg/Kg	100	50	<1.00	91	1	75 - 125	20
Total Barium	95.3	93.6	mg/Kg	100	100	<1.00	95	1	75 - 125	20
Total Boron	4.66	4.71	mg/Kg	100	5	<0.500	93	1	75 - 125	20
Total Cadmium	22.8	22.4	mg/Kg	100	25	<0.500	91	1	75 - 125	20
Total Calcium	9140	8970	mg/Kg	1	10000	85.4	91	1	75 - 125	20

Continued ...

... Continued

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Chromium	9.28	9.04	mg/Kg	100	10	<1.00	92	2	75 - 125	20
Total Cobalt	23.2	22.9	mg/Kg	100	25	<2.50	92	1	75 - 125	20
Total Copper	12.4	12.8	mg/Kg	100	12.50	<1.25	99	3	75 - 125	20
Total Iron	49.1	48.7	mg/Kg	100	50	<5.00	98	0	75 - 125	20
Total Lead	49.8	49.1	mg/Kg	100	50	<1.00	99	1	75 - 125	20
Total Magnesium	8770	8630	mg/Kg	1	10000	<50	87	1	75 - 125	20
Total Manganese	25.2	25.3	mg/Kg	100	25	<2.50	100	0	75 - 125	20
Total Molybdenum	49.5	48.8	mg/Kg	100	50	<5.00	99	1	75 - 125	20
Total Nickel	24.1	24.2	mg/Kg	100	25	<2.50	96	0	75 - 125	20
Total Potassium	9790	9500	mg/Kg	1	10000	<50	97	3	75 - 125	20
Total Selenium	42.1	40.7	mg/Kg	100	50	<1.00	84	3	75 - 125	20
Total Silica	50.0	49.6	mg/Kg	100	50	<5.00	100	0	75 - 125	20
Total Silver	11.6	11.5	mg/Kg	100	12.50	<0.200	92	0	75 - 125	20
Total Sodium	9390	9020	mg/Kg	1	10000	94.8	93	4	75 - 125	20
Total Zinc	24.2	24.5	mg/Kg	100	25	<2.50	96	1	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC25879

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Mercury	2.45	2.53	mg/Kg	1	2.50	<0.19	98	3	88 - 123	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Matrix Spikes and Duplicate Spikes

Matrix Spikes

QCBatch: QC25873

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Aluminum	¹ 6980	8860	mg/Kg	100	100	6560	420	138	75 - 125	20
Total Arsenic	49.0	49.7	mg/Kg	100	50	3.58	90	1	75 - 125	20
Total Barium	272	298	mg/Kg	100	100	162	110	21	75 - 125	20
Total Boron	15.2	15.8	mg/Kg	100	5	10.5	93	12	75 - 125	20
Total Cadmium	21.2	21.2	mg/Kg	100	25	<0.500	84	0	75 - 125	20
Total Calcium	² 85500	84200	mg/Kg	1	10000	72300	132	10	75 - 125	20
Total Chromium	18.6	18.4	mg/Kg	100	10	8.75	98	2	75 - 125	20
Total Cobalt	22.7	22.9	mg/Kg	100	25	<2.50	90	0	75 - 125	20
Total Copper	17.2	17.7	mg/Kg	100	12.50	4.69	100	3	75 - 125	20
Total Iron	³ 6620	7080	mg/Kg	100	50	6230	780	74	75 - 125	20
Total Lead	49.4	49.8	mg/Kg	100	50	5.04	88	0	75 - 125	20

Continued ...

¹Matrix spike recovery invalid due to matrix effects. LCS demonstrates process under control.

²MS RECOVERY INVALID DUE TO MATRIX EFFECT/DILUTION FACTOR

³Matrix spike recovery invalid due to matrix effects. LCS demonstrates process under control.

... Continued

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Magnesium	33300	32100	mg/Kg	1	10000	23500	98	13	75 - 125	20
Total Manganese	94.1	99.3	mg/Kg	100	25	66.9	108	17	75 - 125	20
Total Molybdenum	45.4	45.4	mg/Kg	100	50	<5.00	90	0	75 - 125	20
Total Nickel	26.8	27.2	mg/Kg	100	25	5.47	85	1	75 - 125	20
Total Potassium	11700	11800	mg/Kg	1	10000	1620	100	0	75 - 125	20
Total Selenium	40.8	40.6	mg/Kg	100	50	<1.00	81	0	75 - 125	20
Total Silica	⁴ 213	204	mg/Kg	100	50	115	196	9	75 - 125	20
Total Silver	12.0	11.9	mg/Kg	100	12.50	<0.200	96	0	75 - 125	20
Total Sodium	9720	9410	mg/Kg	1	10000	577	91	3	75 - 125	20
Total Zinc	37.2	38.1	mg/Kg	100	25	13.9	93	3	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC25879

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Mercury	2.68	2.71	mg/Kg	1	2.50	<0.19	107	1	45 - 157	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Continuing Calibration Verification Standards

CCV (1) QCBatch: QC25873

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Aluminum		mg/Kg	2	2.06	103	90 - 110	12/29/02
Total Arsenic		mg/Kg	1	1.03	103	90 - 110	12/29/02
Total Barium		mg/Kg	2	2.06	103	90 - 110	12/29/02
Total Boron		mg/Kg	0.10	0.101	101	90 - 110	12/29/02
Total Cadmium		mg/Kg	0.50	0.512	102	90 - 110	12/29/02
Total Calcium		mg/Kg	25	24.5	98	90 - 110	12/29/02
Total Chromium		mg/Kg	0.20	0.200	100	90 - 110	12/29/02
Total Cobalt		mg/Kg	0.50	0.502	100	90 - 110	12/29/02
Total Copper		mg/Kg	0.25	0.255	102	90 - 110	12/29/02
Total Iron		mg/Kg	1	1.05	105	90 - 110	12/29/02
Total Lead		mg/Kg	1	1.04	104	90 - 110	12/29/02
Total Magnesium		mg/Kg	25	25.5	102	90 - 110	12/29/02
Total Manganese		mg/Kg	0.50	0.510	102	90 - 110	12/29/02
Total Molybdenum		mg/Kg	1	0.980	98	90 - 110	12/29/02
Total Nickel		mg/Kg	0.50	0.500	100	90 - 110	12/29/02
Total Potassium		mg/Kg	25	25.6	102	90 - 110	12/29/02

Continued ...

⁴Matrix spike recovery invalid due to matrix effects. LCS demonstrates process under control.

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Champion

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... Continued

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Selenium		mg/Kg	1	1.02	102	90 - 110	12/29/02
Total Silica		mg/Kg	1	0.960	96	90 - 110	12/29/02
Total Silver		mg/Kg	0.25	0.254	102	90 - 110	12/29/02
Total Sodium		mg/Kg	25	24.9	99	90 - 110	12/29/02
Total Zinc		mg/Kg	0.50	0.511	102	90 - 110	12/29/02

ICV (1)

QCBatch: QC25873

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Aluminum		mg/Kg	2	2.04	102	95 - 105	12/29/02
Total Arsenic		mg/Kg	1	1.02	102	95 - 105	12/29/02
Total Barium		mg/Kg	2	2.05	102	95 - 105	12/29/02
Total Boron		mg/Kg	0.10	0.100	100	95 - 105	12/29/02
Total Cadmium		mg/Kg	0.50	0.508	102	95 - 105	12/29/02
Total Calcium		mg/Kg	25	24.5	98	95 - 105	12/29/02
Total Chromium		mg/Kg	0.20	0.200	100	95 - 105	12/29/02
Total Cobalt		mg/Kg	0.50	0.500	100	95 - 105	12/29/02
Total Copper		mg/Kg	0.25	0.252	101	95 - 105	12/29/02
Total Iron		mg/Kg	1	1.03	103	95 - 105	12/29/02
Total Lead		mg/Kg	1	1.03	103	95 - 105	12/29/02
Total Magnesium		mg/Kg	25	24.9	99	95 - 105	12/29/02
Total Manganese		mg/Kg	0.50	0.507	101	95 - 105	12/29/02
Total Molybdenum		mg/Kg	1	0.985	98	95 - 105	12/29/02
Total Nickel		mg/Kg	0.50	0.498	100	95 - 105	12/29/02
Total Potassium		mg/Kg	25	24.5	98	95 - 105	12/29/02
Total Selenium		mg/Kg	1	1.01	101	95 - 105	12/29/02
Total Silica		mg/Kg	1	0.960	96	95 - 105	12/29/02
Total Silver		mg/Kg	0.25	0.253	101	95 - 105	12/29/02
Total Sodium		mg/Kg	25	24.8	99	95 - 105	12/29/02
Total Zinc		mg/Kg	0.50	0.497	99	95 - 105	12/29/02

CCV (1)

QCBatch: QC25879

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Mercury		mg/Kg	0.005	0.00507	101	80 - 120	12/27/02

ICV (1)

QCBatch: QC25879

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Champion

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Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Mercury		mg/Kg	0.005	0.00528	105	80 - 120	12/27/02

6701 Aberdeen Avenue, Ste. 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

TraceAnalysis, Inc.

4725 Ripley Dr., Ste A
El Paso, Texas 79922-1028
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # A02020918

Company Name: New Mexico Oil Conservation Division Phone #: 505-476-3452 ⁸⁷

Address: (Street, City, Zip) 1220 South Saint Frances Dr, Santa Fe, NM 87505 Fax #:

Contact Person: Wayne Price

Invoice to: (If different from above)

Project #: Champion Project Name: Pit

Project Location: Champion Hobbs yard Sample Signature: [Signature]

ANALYSIS REQUEST

(Circle or Specify Method No.)

LAB # (LAB USE ONLY)		FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX				PRESERVATIVE METHOD							SAMPLING		MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba	TCLP Metals Ag As Ba	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC-MS Vol. 8260B/62	GC/MS Semi. Vol. 8272/608	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	old waste	Turn Around Time if diff	Hold
				WATER	SOIL	AIR	SLUDGE	HCL	HNO3	NaHSO4	H2SO4	NaOH	ICE	NONE	DATE	TIME																			
216777		1218021520	1	4oz	X								X			12/18/02	1520															X			
78		1218021525	1	4oz	X								X			12/18/02	1525														X				
79		1218021530	1	4oz	X								X			12/18/02	1530														X				
80		1218021535	1	4oz	X								X			12/18/02	1535														X				

Relinquished by: [Signature] Date: 12/18/02 Time: 1600 Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____ Received at Laboratory by: [Signature] Date: 12-19-02 Time: 10:00

LAB USE ONLY

Intact Y / N

Headspace Y / N

Temp 5 °

Log-in Review [Signature]

REMARKS:

114FIP

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

Carrier # INMND 902 928 514-4

TraceAnalysis, Inc.
General Terms and Conditions

Article 1: General

1.1 The words "we", "us", and "our" refer to TraceAnalysis. You will deliver samples to us for analysis, accompanied, or preceded by, a signed Chain of Custody/Analysis Request defining the scope and timing of our work and stating either the testing criteria you require or identifying the agency to which the results will be submitted.

Article 2: Our General Responsibilities

2.1 We agree to provide the professional services described in this agreement. We will provide you with written reports containing analytical results. In performing our service, we will use that degree of care and skill ordinarily exercised under similar circumstances by reputable members of our profession practicing in the same locality.

2.2 Test and observations will be conducted using test procedures and laboratory protocols as specified in accepted Chain of Custody/Analysis Request. If you direct a manner of making tests that varies from our standard or recommended procedures, you agree to hold us harmless from all claims, damages, and expenses arising out of your direction.

2.3 We will not release information regarding our services for you or any information that we receive from you, except for information that is in the public domain and except as we are required by law.

Article 3: Your General Responsibilities

3.1 On each Chain of Custody/Analysis Request you will designate a representative who has authority to transmit instructions, receive information, and make decisions relative to our work.

3.2 You will respond in a reasonable time to our request for decisions, authorization for changes, additional compensation, or schedule extensions.

3.3 For each Chain of Custody/Analysis Request you will either provide us with the exact methods for analysis of each fraction or you will identify the regulations and agency under which or for which the analysis is to be prepared. If permits, consent orders, work plans, quality assurance plans, or correspondence with regulatory agencies address laboratory requirements, you will provide us with copies of the relevant provisions prior to our initiation of the analyses.

Article 4: Reports and Records

4.1 We will furnish copies of each report to you as specified in the Chain of Custody and Analysis Request. We will retain analytical data for seven years and financial data for three years relating to the services performed following transmittal of our final report.

4.2 If you do not pay for our services as agreed, you agree that we may retain all reports and work not yet delivered to you. You also agree that our work will not be used by you for any purpose unless paid for.

Article 5: Delivery and Acceptance of Samples

5.1 Until we accept delivery of samples by notation on chain of custody documents or otherwise in writing accept the samples, you are responsible for loss of or damage to samples. Until so accepted, we have no responsibility as to samples.

5.2 As to any samples that are suspected of containing hazardous substances or radioactive material, such that would make special handling required, you will specify the suspected or known substances and level and type of radioactive activity. This information will be given to us in writing as a part of the Chain of Custody/Analysis Request and will precede or accompany samples suspected of containing hazardous substances.

5.3 Samples accepted by us remain your property while in our custody. We will retain samples for a period of 14 days following the date of submission or our report. We will extend the retention period if you so direct. Following the retention period we will dispose of non-hazardous samples. We may return highly hazardous, acutely toxic, or radioactive samples and samples containers and residues to you. You agree to accept them.

5.4 Regardless of a prior acceptance, we may refuse acceptance or revoke acceptance of samples if we determine that the samples present a risk to health, safety, or the environment, or that we are not authorized to accept them. If we revoke acceptance of any sample, you will have it removed from our facilities promptly.

Article 6: Changes to Task Orders

6.1 No persons other than the designated representatives for each Chain of Custody/Analysis Request are authorized to act regarding changes to a Chain of Custody/Analysis Request. We will notify you promptly if we identify any activity that we regard as a change to the terms and conditions of a Chain of Custody/Analysis Request. Our notice will include the date, nature, circumstance, and cause of the activity regarded as a change. We will specify the particular elements of project performance for which we may seek an equitable adjustment.

6.2 You will respond to the notice provided for in paragraph 6.1 promptly. Changes may be made to a Chain of Custody/Analysis Request through issuance of an amendment. The amendment will specify the reason for the change and, as appropriate, include any modified budgets, schedules, scope of work, and other necessary provisions.

6.3 Until agreement is reached concerning the proposed change, we may regard the situation as a suspension directed by you.

Article 7: Compensation

7.1 Our pricing for the work is predicated upon your acceptance of the conditions and allocations of risks and responsibilities described in this agreement. You agree to pay for services as stated in our proposal and accepted by you or according to our then current standard pricing documents if there is no other written agreement as to price. An estimate or statement of probable cost is not a firm figure unless stated as such.

7.2 Unless otherwise agreed to elsewhere, you agree to pay invoices within 30 days of receipt unless, within 15 days from receipt of the invoice, you notify us in writing of a particular item that is alleged to be incorrect. You agree to pay the uncontested portions of the invoices within 30 days of receipt. You agree to pay interest on unpaid balances beginning 60 days after receipt of invoice at the rate of 1.5% per month, but not to exceed the maximum rate allowed by law.

7.3 If you direct us to invoice another, we will do so, but you agree to be ultimately responsible for our compensation until you provide us with that third party's written acceptance of all terms of our agreement and until we agree to the substitution.

7.4 You agree to compensate us for our services and expenses if we are required to respond to legal process related to our services for you. Compensable services include hourly charges for all personnel involved in the response and attorney fees reasonably incurred in obtaining advice concerning the response, the preparation of the testifier, and appearances related to the legal process.

7.5 If we are delayed by, or the period of performance is materially extended because of, factors beyond our control, or if project condition or the scope or amount of work change, or if the standards or methods of testing change, we will give you timely notice of the change and we will receive an equitable adjustment of our compensation.

Article 8: Risk Allocation, Disputes, and Damages

8.1 Neither we nor you will be liable to the other for special, incidental, consequential or punitive losses or damages, including but not limited to those arising from delay, loss of use, loss of profits or revenue, or the cost of capital.

8.2 We will not be liable to you for damages unless suit is commenced within two years of injury or loss or within two years of the date of the completion of our services, whichever is earlier. In no event will we be liable to you unless you have notified us of the discovery of the negligent act, error, omission or breach within 30 days of the date of its discovery and unless you have given us an opportunity to investigate and to recommend ways of mitigating your damages.

8.3 In the event you fail to pay us within 90 days following the invoice date, we may consider the default a total breach of our agreement and we may, at our option, terminate all of our duties without liability to you or to others.

8.4 If it is claimed by a third party that we did not complete an acceptable analysis, at your request will seek further review and acceptance of the completed work by the third party and use your best efforts to obtain that acceptance. We will assist you as directed.

8.5 You and we agree that disputes will be submitted to "Alternative Dispute Resolution" (ADR) as a condition precedent to litigation and other remedies provided by law. Each of us agrees to exercise good faith efforts to resolve disputes through mediation unless we both agree upon another ADR procedure. All disputes will be governed by the law of the place where our services are rendered, or if our services are rendered in more than one state, you and we agree that the law of the place that services were first rendered will govern.

8.6 If either of us makes a claim against the other as to issues out of the performance of this agreement, the prevailing party will be entitled to recover its reasonable expenses of litigation, including reasonable attorney's fees. If we bring lawsuit against you to collect our invoiced fees and expenses, you agree to pay our reasonable collection expenses including attorney fees.

Article 9: Indemnities

9.1 We will indemnify and hold you harmless from and against demands, damages, and expenses caused by our negligent acts and omissions and breach of contract and by the negligent acts and omissions and breach of contract of persons for whom we are legally responsible. You will indemnify and hold us harmless from and against demands, damages, and expenses caused by your negligent act and omissions and breach of contract and by the negligent acts and omissions and breach of contract of persons for whom you are legally responsible. These indemnities are subject to specific limitations provided for in this agreement.

Article 10: Miscellaneous Provisions

10.1 This agreement constitutes the entire agreement between you and us, and it supersedes all prior agreements. Any term, condition, prior course of dealing, course of performance, usage of trade, understanding, purchase order conditions, or other agreement purporting to modify, vary, supplement, or explain any provision of this agreement is of no effect until placed in writing and signed by both parties subsequent to the date of this agreement. In no event will the printed terms or conditions stated in a purchase or work order, other than an agreed upon Chain of Custody/Analysis Request, be considered a part of this agreement, even if the document is signed by both of us.

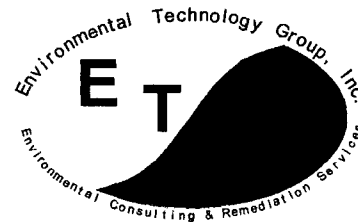
10.2 Neither party will assign this agreement without the express written approval of the other, but we may subcontract laboratory procedures with your approval as we deem necessary to meet our obligations to you.

10.3 If any of the provisions of this agreement are held to be invalid or unenforceable in any respect, the remaining terms will be in full effect and the agreement will be construed as if the invalid or unenforceable matters were never included in it. No waiver of any default will be waiver of any future default.

10.4 Neither you or we will have any liability for nonperformance caused in whole or in part by causes beyond our reasonable control. Such causes include but are not limited to Acts of God, civil unrest and war, labor unrest and strikes, equipment failures, matrix interference, acts of authorities, and failures of subcontractors that could not be reasonably anticipated.

10.5 You may stop our work by giving a written suspension or termination directive, but once work has been suspended, we need not resume work until we agree to change in scope, schedule, and compensation. Upon suspension or termination, we will use reasonable care to preserve samples provided that you agree to compensate us for any additional effort, but we will have no responsibility for meeting holding time limitations after the effective time of a suspension or termination directive. We will be compensated for service rendered and expenses incurred prior to termination that cannot reasonably be avoided.

November 12, 2002



Mr. Wayne Price
Energy, Minerals and Natural Resources Department
Oil Conservation Division (OCD)
2040 South Pacheco
P.O. Box 6429
Santa Fe, New Mexico 87505-5472

RECEIVED
NOV 21 2002
Environmental Bureau
Oil Conservation Division

RE: Request for Backfill of Area 3
Champion Technologies, Inc., Hobbs, New Mexico Facility

Dear Mr. Price:

Environmental Technology Group, Inc. (ETGI) on behalf of Champion Technologies, Inc. (Champion) has completed excavation activities in Area 3 at Champions facility in Hobbs (Lea County), New Mexico. ETGI requests permission (on behalf of Champion) to backfill Area 3 excavations located southwest of the bulk tank and drum storage area (please refer to Figure 1). The excavated materials have been sent to a New Mexico Oil Conservation Division (NMOCD) approved facility (J & L Landfarm, Inc., Hobbs, New Mexico). Upon completion of backfill activities in Area 3, Champion Technologies will begin construction of a new concrete bulk and drum storage containment area on this location (due to site layout and existing infrastructure, Champion has identified this area as the optimal location for the new chemical containment pad). The construction of a new bulk and drum storage area will allow Champion to relocate the existing chemical storage tanks, allowing continuation of remedial activities associated with Area 2.

ETGI collected bottom and sidewall confirmation samples to illustrate the removal of the contaminated material (Figure. 2). These samples were analyzed for Water Quality Control Commission (WQCC) Metals, Total Petroleum Hydrocarbons (TPH), Benzene, Toluene, Ethyl benzene, Xylenes (BTEX) and General Chemistry parameters. Table 1 lists confirmation samples that were analyzed for WQCC Metals. Table 2 lists confirmation samples that were analyzed for TPH and BTEX constituents and Table 3 lists samples that were analyzed for General Chemistry parameters. Laboratory analytical reports and chain-of-custody documentation is enclosed as Attachment A.

CHROMIUM

To demonstrate that impacted materials have been removed, analytical data collected from Area 3 was compared to background sample data and risk based cleanup action levels. Background soil concentrations for chromium were researched by reviewing existing publications. Published data indicates background chromium concentrations in soil can range from 5-150 milligrams per kilograms (mg/kg), with an average reported at 50 mg/kg. (Risk Assessment Information

Systems from work sponsored by US Department of Energy (DOE) Office of Environmental Management, Attachment B).

Site-specific background soil samples were collected and analyzed for chromium. These samples showed chromium concentrations ranging from 2.1 mg/kg to 20.1 mg/kg (Table 4 – Attachment C).

A search for information on background concentrations, action levels and cleanup goals at chromium contaminated sites listed in the US Environmental Protection Agency (US EPA) Records of Decision Systems (RODS) (<http://cfpub.epa.gov/superrods/srchrods.cfm>) was as well performed. The search yielded 1,085 relevant records. ETGI screened 150 of these 1,085 records and found 21 records containing data on chromium concentrations in soils for background levels, action levels, screening levels or cleanup levels. These cleanup levels and action levels are based on risk to human health and the environment and undergo extensive regulatory and public screening and review. Chromium background concentrations reported in the reviewed RODS sites illustrated chromium background concentrations ranging from 26.1 mg/kg to 200 mg/kg. Risk based action levels and cleanup goals for chromium concentrations protective of human health and groundwater protection ranged from 92.7 mg/kg to 463 mg/kg. Risk based chromium concentrations protective of human health via dermal contact ranged from 1350 mg/kg to 5,300 mg/kg. A summary of the RODS sites reviewed is enclosed as Attachment D.

This data is similar to the data presented in Table A-1 in Appendix A of the document titled, *New Technical Background Document for Development of Soil Screening Levels prepared by the New Mexico Environmental Department, Hazardous Waste Bureau and Groundwater Quality Bureau, Voluntary Cleanup Program*. Specifically the residential soil screening levels for chromium III is 100,000 mg/kg and for chromium VI is 230 mg/kg.

Based on the data above, ETGI proposes establishing background chromium concentrations as <50 mg/kg chromium at the Champion Hobbs Facility. Utilizing this site specific background concentration, Champion requests approval to backfill Area 3 where the maximum chromium concentrations detected for all sidewall and bottom samples was 12.9 mg/kg.

Additional support for this request is seen in the Synthetic Precipitation Leaching Procedure (SPLP) analytical data that illustrates soil concentrations of Chromium at 3.56 mg/kg do not leach chromium at concentrations above the method detection limit of 0.005 mg/kg (Table 5). The complete analytical report is enclosed in Attachment E.

CHLORIDES

Chloride concentrations in soil samples collected from sidewall and bottom samples ranged from 103 mg/kg to 7620 mg/kg. Total chloride analysis of Soil Sample #4, #8, #11 and #27 showed chloride concentrations at 6990 mg/kg, 738 mg/kg, 145 mg/kg and 837 mg/kg respectively (Table 5, Attachment E). SPLP chloride analysis of these same samples showed 520 mg/l, 128 mg/l, 33.6 mg/l and 240 mg/l respectively (Table 5, Attachment E). This data indicates the potential of chlorides to leach out from the soil based on the SPLP analysis. However, a review

of the SPLP analytical method states that the solid phase is extracted with an amount of extraction fluid equal to 20 times the weight of the solid phase. This type of condition is not representative of the subsurface conditions where the volume of water below 5 feet is less than 10% of the volume of soil (moisture content is 8.9%, Attachment F).

This moisture content of the soil clearly illustrates the lack of fluid in the subsurface soil to cause leaching. This is further evident when reviewing background chloride concentrations in soil and groundwater. Background soil chloride concentrations range from 92 mg/kg to 3388 mg/kg (SB-55 40', and SB-35 1315-A, Attachment C, Table 4) and background chloride concentrations in groundwater range from 239 mg/l to 408 mg/l (MW-7 and MW-1, Attachment C, Table 4). Samples collected from soil boring SB-35 contained the highest chloride concentrations in soil. This boring was converted into Monitor Well MW-7. The groundwater was then sampled for chlorides, which contained 239 mg/l, the lowest concentration of chlorides among the background monitor wells sampled (Table 4). This data illustrates the chloride concentrations in the soil do not relate to chloride concentrations in the groundwater. Subsequently, chloride concentrations in soil are not considered as a contaminant of concern at this site, as the mechanism for leaching chlorides over fifty feet to groundwater does not exist.

Further review of site-specific conditions demonstrates that topography is nearly flat with a 0-3% slope toward the northwest side of the facility. There are no natural or man-made depressions on the Champion yard that would impound surface water and allow for significant infiltration. The site-specific geology as evidenced by numerous soil borings and monitor well installations is that a hard dry compacted caliche gravel and asphalt surface exists to a depth of approximately 18 inches. The surface yard cover is underlain by a hard, indurated dry caliche and sand to a depth of approximately 8 feet. Below 8 feet are several layers of hard to extremely hard calcic and silicic layers alternating with thin cemented sand zones that do not show significant evidence of fluid transport. This lithology extends to the static water table (approximately 57 feet). The annual rainfall in this area of Lea County, New Mexico averages 12-16 inches with evaporation rates of 45 to 49 inches, yielding compelling evidence that the primary transportation mechanism for moving a constituent through the soil profile is absent.

HYDROCARBONS

TPH detected in the sidewalls and bottom samples of excavated Area 3 ranged from less than the detection limit of 10 mg/kg to 496 mg/kg (Table 2). Review of draft New Mexico Environmental Department (NMED) TPH Cleanup Guidelines (Attachment G) specifies residential direct exposure concentration of 800 mg/kg to 2500 mg/kg for petroleum products ranging from Diesel #2 to waste oil. These TPH cleanup guidelines must be used in conjunction with cleanup levels for target analytes referenced in Table 3 of this NMED guidance document.

Although confirmation samples collected from the sidewalls and bottom of the Area 3 excavation were not analyzed for the analytes listed in Table 3 of the above referenced document, sample SB-41 at 25', collected in Area 2 represents one of the highest concentrations of TPH detected in any Area of concern. Thus, this "worst-case" scenario of hydrocarbon impacted material was analyzed for Semi Volatile Organic Compound (SVOC) and Volatile Organic Compounds (VOC) (Attachment H). Concentrations reported from the SB-41 25'

for the specific compounds referenced in Table 3 (of the guideline document) were all below the NMOCD Residential Soil Screening Level. Based on these NMED cleanup standards, the residual TPH concentration in the sidewalls and bottoms of the Area 3 excavation are below NMED cleanup levels.

Based on the data presented above and attached analytical data and researched materials, ETGI requests NMOCD's approval to back fill the excavations associated with Area 3, in order to continue with remedial activities associated with Area 2. Upon receipt of NMOCD's approval, ETGI will backfill the excavation and proceed with construction of the new bulk and drum storage area on this location.

Upon your review of this letter and data enclosed should you have any questions or concerns please feel free to contact us.

Sincerely

 for

Chan Patel
Senior Project Manager
(281) 484-3595



Todd Choban
Geologist/Senior Project Manager
(915) 522-1139

Cc: Ralph Corry, Champion Technologies, Inc.-Fresno, Texas
Melvin Davis, Champion Technologies, Inc.- Fresno, Texas
Larry Johnson, Oil Conservation Division- Hobbs, New Mexico

Price, Wayne

From: Price, Wayne
Sent: Monday, August 26, 2002 1:15 PM
To: 'Todd Choban'; Price, Wayne
Cc: RANDERSON@state.nm.us; cpatel@etgi.cc; Ralph.Corry@champ-tech.com
Subject: RE: Change to Discharge Plan



12636_A02042410.12637_A02042410.
pdf



pdf

OCD hereby approves of Champion's request to add Sundance Services to the Discharge Plan. Also please find enclosed two of the analysis we sampled in the area.

-----Original Message-----

From: Todd Choban [mailto:tchoban@etgi.cc]
Sent: Wednesday, August 21, 2002 4:42 PM
To: WPRICE@state.nm.us
Cc: RANDERSON@state.nm.us; cpatel@etgi.cc; Ralph.Corry@champ-tech.com
Subject: Change to Discharge Plan

Hello Wayne,

Per our conversation during Monday's meeting, I have faxed you the request to add Sundance Services, Inc to Champion's Facility Discharge Plan. If the request needs to be sent elsewhere, please route or notify me to resend.

My contact information as requested is as follows;

Todd Choban
Geologist/Sr. Project Manager
Environmental Technology Group, Inc.
4600 West Wall
Midland, Texas 79703
Office 915 522 1139
Cell 915 238 0061
Fax 915 520 4310

I would also like to request the groundwater data collected by your office from the local wells to the Champion facility as we discussed in the meeting. Any and all information would be greatly appreciated.

Thank you for your time and a prompt response to this letter.

Sincerely,

Todd Choban
Geologist/Sr Project Manager

Tracking:

Recipient

'Todd Choban'
Price, Wayne
RANDERSON@state.nm.us
cpatel@etgi.cc

Read

Read: 8/26/2002 1:15 PM



Recipient

Ralph.Corry@champ-tech.com



Read



ENVIRONMENTAL TECHNOLOGY GROUP, INC.

P.O. BOX 4845

MIDLAND, TX 79704

OFFICE 915/522-1139

FAX 915/520-4310

FACSIMILE TRANSMITTAL

DATE: 8/21/02

TO: Wayne Price

FROM: Todd CHORAN

RE: Discharge Plan

FAX NO.: 505 476 3462

NUMBER OF PAGES: 10 (INCLUDING THIS COVERSHEET)

COMMENTS:

The information in this Facsimile message is privileged and confidential information intended only for the use of the addressee. If the reader of this message is not the intended recipient or the employee or agent responsible for delivering it to the intended recipient, you are hereby notified that any dissemination, distribution, or copying to this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone and please return the original message to us at the above address via U. S. Postal Service. Thank you.

August 21, 2002

Mr. Wayne Price
Environmental Bureau
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, NM 87505
VIA FACSIMILE TO 505-476-3462

RE: Notification of Change to the
Facility Discharge Plan
Discharge Plan GW-199
Champion's Hobbs, NM Facility

Dear Mr. Price:

Environmental Technology Group, Inc. (ETGI) on behalf of Champion Technologies, Inc. (Champion) request the addition of a disposal facility to this discharge plan.

ETGI is completing a soil excavation to remove contaminated soil from the Champion Hobbs, New Mexico, facility. This removal is completed as part of a Stage 2 Abatement Plan approved by the New Mexico Oil Conservation Division. ETGI has submitted the analytical data of the contaminated soil to Sundance Services, Inc. for approval.

Sundance Services operates the Parabo Disposal Facility and is located near the Texas, New Mexico state line. The entrance to the facility is one-eighth of a mile north of the intersection of New Mexico Highways 18 and 176. The Parabo facility operated by Sundance is permitted by the NMOCD to build and operate a surface waste disposal facility and oil treatment plant under the permit number R-5516 and Rule 711 number NM-01-0003. Sundance Services, Inc. has reviewed the analytical data and has approved this soil from Champion's facility for treatment at their facility. Attachment A contains the analytical data illustrating that the material is non-hazardous and Attachment B contains the letter of approval from Sundance Services, Inc.

ETGI appreciated your prompt response for the initial direction to complete this modification to the discharge permit and look forward to a prompt receipt of approval (by facsimile) for the addition of Sundance Services, Inc. to Champion's Discharge Plan. Upon review of this letter, should you have any questions or concerns, please feel free to contact me at 915-522-1139. Please fax the approval letter to 915-520-4310.

Sincerely,

Todd Choban
Sr. Project Manager

Enclosures

ENVIRONMENTAL LAB OF I, LTD.

"Don't Treat Your Soil Like Dirt!"

E.T.G.I.
ATTN: TODD CHOBAN
P.O. BOX 4845
MIDLAND, TEXAS 79704
FAX: 520-4310

Sample Type: Soil
Sample Condition: Intact/ Iced/ -1.5 deg C
Project Name: Champion Technology Inc.
Project #: CH 2100
Project Location: Hobbs, NM

Sampling Date: 08/02/02
Receiving Date: 08/02/02
TCLP Extraction: 08/05/02
Analysis Date: 08/13/02
Field Code: Area 2 Stockpile #1 N. Side

TCLP Volatile Compounds	REPORT LIMIT	ELT# 0204107-01 mg/L	%EA	CCC %IA	RPD
Benzene	0.001	ND	105		5
Carbon tetrachloride	0.001	ND	99		18
Chlorobenzene	0.001	ND	99		7
Chloroform	0.001	ND	107	102	5
1,4-Dichlorobenzene	0.001	ND	89		2
1,2-Dichloroethane	0.001	ND	90		1
1,1-Dichloroethylene	0.001	ND	94	99	5
Methyl ethyl ketone	0.001	ND	79		8
Tetrachloroethylene	0.001	ND	63		21#
Trichloroethylene	0.001	ND	67		16
Vinyl chloride	0.001	ND	78	89	19

<u>System Monitoring Compounds</u>	% RECOVERY
Dibromofluoromethane	110
1,2-dichloroethane-d4	80.5
Toluene-d8	101
4-Bromofluorobenzene	97.9

ND= Not Detected at report limit

Method: EPA SW 846 8260B, 1311


Celey D. Keene
Raland K. Tuttle

8-16-02
Date

ENVIRONMENTAL LAB OF I, LTD.

"Don't Treat Your Soil Like Dirt!"

E.T.G.I.
ATTN: TODD CHOBAN
P.O. BOX 4845
MIDLAND, TEXAS 79704
FAX: 520-4310

Sample Type: Soil
Sample Condition: Intact/ Iced/ -1.5 deg C
Project Name: Champion Technology Inc.
Project #: CH 2100
Project Location: Hobbs, NM

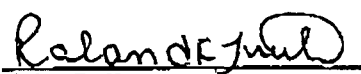
Sampling Date: 08/02/02
Receiving Date: 08/02/02
TCLP Extraction: 08/05/02
Analysis Date: 08/13/02
Field Code: Area 2 Stockpile #1 S. Side

TCLP	REPORT	ELT#		CCC	
Volatile Compounds	LIMIT	0204107-02	%EA	%IA	RPD
		mg/L			
Benzene	0.001	ND	105		5
Carbon tetrachloride	0.001	ND	99		18
Chlorobenzene	0.001	ND	99		7
Chloroform	0.001	ND	107	102	5
1,4-Dichlorobenzene	0.001	ND	89		2
1,2-Dichloroethane	0.001	ND	90		1
1,1-Dichloroethylene	0.001	ND	94	99	5
Methyl ethyl ketone	0.001	ND	79		8
Tetrachloroethylene	0.001	ND	63		21#
Trichloroethylene	0.001	ND	67		16
Vinyl chloride	0.001	ND	78	89	19

<u>System Monitoring Compounds</u>	% RECOVERY
Dibromofluoromethane	109
1,2-dichloroethane-d4	81.2
Toluene-d8	101
4-Bromofluorobenzene	96.4

ND= Not Detected at report limit

Method: EPA SW 846 8260B, 1311


Celey D. Keene
Raland K. Tuttle

8-16-02
Date

ENVIRONMENTAL LAB OF I, LTD.

"Don't Treat Your Soil Like Dirt!"

E.T.G.I.
ATTN: TODD CHOBAN
P.O. BOX 4845
MIDLAND, TEXAS 79704
FAX: 520-4310

Sample Type: Soil
Sample Condition: Intact/ Iced/ -1.5 deg C
Project Name: Champion Technology Inc.
Project #: CH 2100
Project Location: Hobbs, NM

Sampling Date: 08/02/02
Receiving Date: 08/02/02
TCLP Extraction: 08/05/02
Analysis Date: 08/08/02
Field Code: Area 2 Stockpile #1 N. Side

TCLP SEMIVOLATILE ORGANICS (mg/L)	REG. LIMIT	REPORT LIMIT	ELT# 0204107-01	CCC % DEV	%EA	RPD
2-Methylphenol	200	0.007	ND			
4-Methylphenol	200	0.007	ND			
1,4-Dichlorobenzene	7.5	0.007	ND	-11.1	52	13
2, 4-Dinitrotoluene	0.13	0.007	ND		50	3
Hexachlorobenzene	0.13	0.007	ND			
Hexachlor-1, 3-butadien	0.5	0.007	ND	7.0		
Hexachloroethane	3	0.007	ND			
Nitrobenzene	2	0.007	ND			
Pentachlorophenol	100	0.007	ND	31.7#	55	3
Pyridine	5	0.007	ND			
2,4,5-Trichlorophenol	400	0.007	ND			
2,4,6-Trichlorophenol	2	0.007	ND	10.4		

ND= NOT DETECTED, < REPORTING LIMIT
SYSTEM MONITORING COMPOUNDS

	% Recovery
2-Fluorophenol	38.6
Phenol-d5	29.5
Nitrobenzene-d5	95.2
2-Fluorobiphenyl	81.6
2,4,6-Tribromophenol	53.1
p-Terphenyl-d14	110

ND = Not detected at report limit

Out of historical ranges

Method: SW 846-8270C,1311


Celey D. Keene
Raland K. Tuttle

8-16-02
Date

ENVIRONMENTAL LAB OF I, LTD.

"Don't Treat Your Soil Like Dirt!"

E.T.G.I.
ATTN: TODD CHOBAN
P.O. BOX 4845
MIDLAND, TEXAS 79704
FAX: 520-4310

Sample Type: Soil
Sample Condition: Intact/ Iced/ -1.5 deg C
Project Name: Champlon Technology Inc.
Project #: CH 2100
Project Location: Hobbs, NM

Sampling Date: 08/02/02
Receiving Date: 08/02/02
TCLP Extraction: 08/05/02
Analysis Date: 08/08/02
Field Code: Area 2 Stockpile #1 S. Side

TCLP SEMIVOLATILE ORGANICS (mg/L)	REG. LIMIT	REPORT LIMIT	ELT# 0204107-02	CCC % DEV	%EA	RPD
2-Methylphenol	200	0.007	ND			
4-Methylphenol	200	0.007	ND			
1,4-Dichlorobenzene	7.5	0.007	ND	-11.1	52	13
2, 4-Dinitrotoluene	0.13	0.007	ND		50	3
Hexachlorobenzene	0.13	0.007	ND			
Hexachlor-1, 3-butadien	0.5	0.007	ND	7.0		
Hexachloroethane	3	0.007	ND			
Nitrobenzene	2	0.007	ND			
Pentachlorophenol	100	0.007	ND	31.7#	55	3
Pyridine	5	0.007	ND			
2,4,5-Trichlorophenol	400	0.007	ND			
2,4,6-Trichlorophenol	2	0.007	ND	10.4		

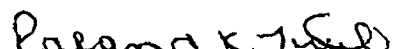
ND= NOT DETECTED, < REPORTING LIMIT
SYSTEM MONITORING COMPOUNDS

	% Recovery
2-Fluorophenol	31.3
Phenol-d5	24.9
Nitrobenzene-d5	82.8
2-Fluorobiphenyl	73.7
2,4,6-Tribromophenol	48.8
p-Terphenyl-d14	90.8

ND = Not detected at report limit

Out of historical ranges

Method: SW 846-8270C,1311


Caley D. Keene
Ralanda K. Tuttle

8-16-02
Date

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

Todd Choban
Environmental Technology Group, Inc.
P.O. Box 4845
Midland, TX 79704

Order#: G0204107
Project: CH 2100
Project Name: Champion Technologies, Inc.
Location: Hobbs, NM

Lab ID: 0204107-01
Sample ID: Area 2 Stockpile #1 N. Side

METALS RCRA 7 TCLP

Parameter	Result	Units	Dilution Factor	RL	Method	Date Prepared	Date Analyzed	Analyst
Arsenic	<0.008	mg/L	1	0.008	1311/6010B	08/08/2002	8/9/02	SM
Barium	0.333	mg/L	1	0.001	1311/6010B	08/08/2002	8/9/02	SM
Cadmium	<0.001	mg/L	1	0.001	1311/6010B	08/08/2002	8/9/02	SM
Chromium	0.003	mg/L	1	0.002	1311/6010B	08/08/2002	8/9/02	SM
Lead	<0.011	mg/L	1	0.011	1311/6010B	08/08/2002	8/9/02	SM
Selenium	<0.004	mg/L	1	0.004	1311/6010B	08/08/2002	8/9/02	SM
Silver	<0.002	mg/L	1	0.002	1311/6010B	08/08/2002	8/9/02	SM

Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Prepared	Date Analyzed	Analyst
Mercury, TCLP	<0.002	mg/L	1	0.002	1311/7470	08/06/2002	8/7/02	MB

Lab ID: 0204107-02
Sample ID: Area 2 Stockpile #1 S. Side

METALS RCRA 7 TCLP

Parameter	Result	Units	Dilution Factor	RL	Method	Date Prepared	Date Analyzed	Analyst
Arsenic	<0.008	mg/L	1	0.008	1311/6010B	08/08/2002	8/9/02	SM
Barium	0.393	mg/L	1	0.001	1311/6010B	08/08/2002	8/9/02	SM
Cadmium	<0.001	mg/L	1	0.001	1311/6010B	08/08/2002	8/9/02	SM
Chromium	<0.002	mg/L	1	0.002	1311/6010B	08/08/2002	8/9/02	SM
Lead	<0.011	mg/L	1	0.011	1311/6010B	08/08/2002	8/9/02	SM
Selenium	<0.004	mg/L	1	0.004	1311/6010B	08/08/2002	8/9/02	SM
Silver	<0.002	mg/L	1	0.002	1311/6010B	08/08/2002	8/9/02	SM

Test Parameters

Parameter	Result	Units	Dilution Factor	RL	Method	Date Prepared	Date Analyzed	Analyst
Mercury, TCLP	<0.002	mg/L	1	0.002	1311/7470	08/06/2002	8/7/02	MB

Lab ID: 0204107-04
Sample ID: S.S. 1 East Wall/ South 6'

Cations

Parameter	Result	Units	Dilution Factor	RL	Method	Date Prepared	Date Analyzed	Analyst
Calcium	107000	mg/kg	50000	500	6010B	08/10/2002	8/13/02	SM
Magnesium	2350	mg/kg	1000	1.0	6010B	08/10/2002	8/13/02	SM
Potassium	399	mg/kg	100	5.0	6010B	08/10/2002	8/13/02	SM
Sodium	1520	mg/kg	100	1.0	6010B	08/10/2002	8/13/02	SM

N/A = Not Applicable RL = Reporting Limit

Page 1 of 3

ENVIRONMENTAL LAB OF TEXAS

ANALYTICAL REPORT

Todd Choban
Environmental Technology Group, Inc.
P.O. Box 4845
Midland, TX 79704

Order#: G0204107
Project: CH 2100
Project Name: Champion Technologies, Inc.
Location: Hobbs, NM

Lab ID: 0204107-01
Sample ID: Area 2 Stockpile #1 N. Side

<i>RCI</i>							
<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Ignitability	>100	C	1	NA	1010	8/5/02	SB
pH	7.61	pH Units	1	N/A	9045C	8/3/02	SB
Reactive Cyanide	<0.09	mg/kg	1	0.09	SW846 CH.7	8/3/02	SB
Reactive Sulfide	<5.00	mg/kg	1	5.00	SW846 CH.7	8/3/02	SB

Lab ID: 0204107-02
Sample ID: Area 2 Stockpile #1 S. Side

<i>RCI</i>							
<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Ignitability	>100	C	1	NA	1010	8/5/02	SB
pH	7.74	pH Units	1	N/A	9045C	8/3/02	SB
Reactive Cyanide	<0.09	mg/kg	1	0.09	SW846 CH.7	8/3/02	SB
Reactive Sulfide	<5.00	mg/kg	1	5.00	SW846 CH.7	8/3/02	SB

<i>Test Parameters</i>							
<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
TPH 418.1 FTIR	11400	mg/kg	1	10.0	418.1	8/5/02	SB

Lab ID: 0204107-04
Sample ID: S.S. 1 East Wall/ South 6'

<i>Anions</i>							
<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Bicarbonate Alkalinity	105	mg/kg	1	2.00	310.1	8/6/02	SB
Carbonate Alkalinity	<0.10	mg/kg	1	0.10	310.1	8/6/02	SB
Chloride	702	mg/kg	5	50.0	9253	8/13/02	CK
Hydroxide Alkalinity	<0.10	mg/kg	1	0.10	310.1	8/6/02	SB
SULFATE, 375.4	224	mg/kg	5	2.5	375.4	8/12/02	MB

<i>Test Parameters</i>							
<u>Parameter</u>	<u>Result</u>	<u>Units</u>	<u>Dilution Factor</u>	<u>RL</u>	<u>Method</u>	<u>Date Analyzed</u>	<u>Analyst</u>
Fluoride	3.40	mg/kg	5	0.10	340.1	8/13/02	MB
Nitrogen, Nitrate	18.0	mg/kg	1	0.5	353.3	8/6/02	SB
Nitrogen, Nitrite	1.50	mg/kg	1	0.100	354.1	8/6/02	SB
TPH 418.1 FTIR	27.6	mg/kg	1	10.0	418.1	8/5/02	SB

RL = Reporting Limit N/A = Not Applicable

Page 1 of 2

ENVIRONMENTAL LAB OF TEXAS I, LTD.

12600 West I-20 East, Odessa, TX 79765 Ph: 915-563-1800

Phone: 915-563-1800
Fax: 915-563-1713

Company Name E.T.G.I.

Company Address: 4600 W. Wall

City/State/Zip: Midland, Tx 79703

Telephone No: 915-522-1139

Fax No: 915-520-4310

Sampler Signature: Marcus Campos

Project Name: Champion Technologies Inc

Project #: CH 2100

Project Loc: Habb. N.M.

PO #:

Special Instructions: Hold on = J & L Land Farm - Backfill until notified by Todd

Sample Containers Intact?	(Y)	N
---------------------------	-----	---

Temperature Upon Receipt: _____

Laboratory Comments: Rec -15%

Stop all analysis except 418.1
on samples 04 thru 05. as per Tued
08-05-02 IF 418.1 is < 100 ppm
continue analysis. Continue analysis as per T
08-05-02 @ 1300 on 04 05 06

Relinquished by: Manolo Campos

Date	Time
8-2-02	1215

Received by: [Signature]

Date	Time
8-2-02	12:15

Relinquished by: 

Date	Time
8-2-02	4:35

Received by ELO
James McNamee

Date	Time
8-2-02	1625

Todd Choban

From: SSIDonna@aol.com
Sent: Wednesday, August 21, 2002 2:53 PM
To: tchoban@etgi.cc
Subject: Fwd: c-138

Dear Todd;

Sundance has reviewed the analytical results for the Champion Technologies yard located in Hobbs New Mexico. After reviewing the results we find that we are able to accept this material into our disposal facility. We submitted this analytical results to the NMOCD for final approval and the approved c-138 is attached. Please let us know if you are in need of any further information.

Thank You

Donna L. Roach
Donna Roach
President

8/21/2002

Price, Wayne

From: Todd Choban [tchoban@etgi.cc]
Sent: Friday, August 16, 2002 3:42 PM
To: Price, Wayne
Subject: RE: August 19th meeting

Hello Wayne,

The agenda for the meeting on Monday consists of two general items.

- Update OCD on project and,
- Request for higher clean-up goals. The original clean-up goals can not be achieved by the present approach.

Looking forward to meeting everyone.

Thanks,

Todd Choban

-----Original Message-----

From: Price, Wayne [mailto:WPrice@state.nm.us]
Sent: Thursday, August 15, 2002 11:39 AM
To: 'Todd Choban'
Subject: RE: August 19th meeting

Todd: What is the agenda of this meeting!

-----Original Message-----

From: Todd Choban [mailto:tchoban@etgi.cc]
Sent: Wednesday, August 14, 2002 7:15 PM
To: WPRICE@state.nm.us; RANDERSON@state.nm.us
Subject: August 19th meeting

Gentlemen,

Just wanted to confirm that our meeting of OCD, Champion and ETGI for Monday, August 19 at 10:00AM. Let me know if you have questions, comments, etc.

Thank you for your time.

Todd Choban
Sr Proj Mgr
Environmental Technology Group, Inc.

Price, Wayne

From: Johnson, Larry
Sent: Friday, July 26, 2002 3:40 PM
To: Price, Wayne
Subject: Champion



DCP02206.JPG



N Fenceline
Main.JPG



NE Bldg
concrete.JPG



NWSaturated.JPG



S Fenceline.JPG



S Line-top
intact.JPG



S Pit.JPG



SWcorner.JPG



SWtoE.JPG



SWtoN.JPG



SWtoNE.JPG



W-Center.JPG



W-N Fenceline.JPG



W-NW
Fenceline.JPG



Wto NE view.JPG

Price, Wayne

From: Johnson, Larry
Sent: Wednesday, August 14, 2002 9:42 AM
To: Price, Wayne
Subject: Champion Pix

What a mess! Look @ the stain area that extends under the cement bulk loading dock (N fence to S Dock, & S stain) pix.



DirtfromSW
hole.JPG



N FencetoS
dock.JPG



NWpile.JPG



S stain.JPG



SWcorner.JPG



SWtoNE.JPG



SWview.JPG



Tires.JPG



Wto E View.JPG

Price, Wayne

From: Sheeley, Paul
Sent: Friday, April 19, 2002 1:47 PM
To: Price, Wayne
Subject: RE: Champion Chemical-Hobbs

Hi Wayne,

Ms. Estelle Lee
3621 Eunice Hwy
393-8633

Please add to the list of Champion Chemical AP. She called today. She lives north of Llano Grande on the Highway.

Thank You.

-----Original Message-----

From: Price, Wayne
Sent: Tuesday, April 09, 2002 10:39 AM
To: Sheeley, Paul; Johnson, Larry
Cc: Williams, Chris
Subject: Champion Chemical-Hobbs

Please add to this list as you receive inquiries. Send me an E-mail occasionally up-dating list.

Wendy Harmon
503 E. Llano Grande street
505-393-8622

Miguel Quiroz
528 E. Llano Grande
505-393-1461

Dena & Terry Morrow
521 E. Llano Grande
393-8318

Vola Keith
526 E. Llano Grande
397-2237

Ms. Estelle Lee
3621 Eunice Hwy
393-8633

Terry & Judy Morrow
521 E. LLano Grande
Hobbs, NM
505-393-8318

Also, Could you survey the area north and west of Champion. Find the closest up-gradient house on a water well and make arrangements to sample their water. Please run a full suite, 8260, 8270, General Chemistry, & Metals. The groundwater gradient at the Champion site appears to have more of a Easterly component, see attached diagram, so probably a house located to the west of the site would be best. A lot of the calls we are getting appears to be residents located on Llano Grande drive or street. A good up gradient water sample would be very beneficial for us.

<< File: Champion GW Flow.tif >>



NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON

Governor

Betty Rivera

Cabinet Secretary

Lori Wrotenbery

Director

Oil Conservation Division

June 25, 2002

Morrow Residence
521 E. Llano Grande Street
Hobbs, NM 88240

Dear Mr. & Mrs. Morrow:

Enclosed is a copy of the analytical results for the groundwater samples collected from your water well by OCD personnel on May 22, 2002. Please note the results indicate your water quality meets the groundwater standards as defined in the New Mexico Water Quality Control Commission Regulations 20.6.2.3103., with the exception of Fluoride, which was noted at 2.24 mg/l. The standard for fluoride in New Mexico is 1.6 mg/l.

If you have any questions please do not hesitate to contact me at 505-476-3487 or E-mail WPRICE@state.nm.us.

Sincerely,

A handwritten signature in black ink, appearing to read "Wayne Price", with a long horizontal stroke extending to the right.

Wayne Price- Engineer

cc: OCD Hobbs Office-Larry Jonhson

Attachments-1

TRACE ANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9
155 McCutcheon, Suite H

Lubbock, Texas 79424
El Paso, Texas 79932

800•378•1296
888•588•3443

806•794•1296
915•585•3443

FAX 806•794•1298
FAX 915•585•4944

E-Mail: lab@traceanalysis.com

Bill To: **OCD Hobbs Office**
1625 N. French Drive
Hobbs, NM 88240

Invoice # **53059**

Invoice Date: **Jun 6, 2002**

Order ID: **A02052325**

Attn: **Paul Sheeley**

Project #: **N/A**

Project Name: **Morrow**

P.A.# 20-521-07-02497

Project Location: **Champion Chemical**

Test	Quantity	Matrix	Description	Price	SubTotal
Hg, Total	1	Water	197789 - 197789	\$12.00	\$12.00
Ag, Total	1	Water	197789 - 197789	\$10.00	\$10.00
Al, Total	1	Water	197789 - 197789	\$10.00	\$10.00
As, Total	1	Water	197789 - 197789	\$10.00	\$10.00
B, Total	1	Water	197789 - 197789	\$10.00	\$10.00
Ba, Total	1	Water	197789 - 197789	\$10.00	\$10.00
Ca, Total	1	Water	197789 - 197789	\$10.00	\$10.00
Cations/Anions/Chemistry	1	Water	197788 - 197788	\$120.00	\$120.00
Cd, Total	1	Water	197789 - 197789	\$10.00	\$10.00
Co, Total	1	Water	197789 - 197789	\$10.00	\$10.00
Cr, Total	1	Water	197789 - 197789	\$10.00	\$10.00
-Semivolatiles	1	Water	197790 - 197790	\$250.00	\$250.00
Fe, Total	1	Water	197789 - 197789	\$10.00	\$10.00
Zn, Total	1	Water	197789 - 197789	\$10.00	\$10.00
K, Total	1	Water	197789 - 197789	\$10.00	\$10.00
Mg, Total	1	Water	197789 - 197789	\$10.00	\$10.00
Mn, Total	1	Water	197789 - 197789	\$10.00	\$10.00
Mo, Total	1	Water	197789 - 197789	\$10.00	\$10.00
Na, Total	1	Water	197789 - 197789	\$10.00	\$10.00
Ni, Total	1	Water	197789 - 197789	\$10.00	\$10.00
Pb, Total	1	Water	197789 - 197789	\$10.00	\$10.00
Se, Total	1	Water	197789 - 197789	\$10.00	\$10.00
Si, Total	1	Water	197789 - 197789	\$10.00	\$10.00
Volatiles	1	Water	197791 - 197791	\$120.00	\$120.00
Cu, Total	1	Water	197789 - 197789	\$10.00	\$10.00
Payment Terms: Net 30 Days				Total	\$712.00

Director, Dr. Blair Leftwich

APPROVED
2 June 6/25/02

Report Date: June 14, 2002 Order Number: A02052325
 N/A Morrow

Page Number: 1 of 5
 Champion Chemical

Summary Report

Paul Sheeley
 OCD Hobbs Office
 1625 N. French Drive
 Hobbs, NM 88240

Report Date: June 14, 2002

Order ID Number: A02052325

Project Number: N/A
 Project Name: Morrow
 Project Location: Champion Chemical

521 E. LIANO GRANDE, HOBBS, NM 88240

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
197788	0205221107	Water	5/22/02	11:07	5/23/02
197789	0205221108	Water	5/22/02	11:08	5/23/02
197790	0205221109	Water	5/23/02	11:09	5/23/02
197791	0205221110A	Water	5/23/02	11:10	5/23/02

0 This report consists of a total of 5 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample: 197788 - 0205221107

Param	Flag	Result	Units
Hydroxide Alkalinity		<1.0	mg/L as CaCo3
Carbonate Alkalinity		<1.0	mg/L as CaCo3
Bicarbonate Alkalinity		194	mg/L as CaCo3
Total Alkalinity		194	mg/L as CaCo3
Specific Conductance		1340	µMHOS/cm
Chloride		137.26	mg/L
Fluoride		2.89	mg/L
Nitrate-N		8.63	mg/L
Sulfate		203	mg/L
Dissolved Calcium		139	mg/L
Dissolved Magnesium		29.2	mg/L
Dissolved Potassium		5.54	mg/L
Dissolved Sodium		92.2	mg/L
Total Dissolved Solids		840	mg/L
pH	1	7.4	s.u.

Sample: 197789 - 0205221108

Param	Flag	Result	Units
Total Mercury		<0.0002	mg/L
Total Calcium		148	mg/L
Total Magnesium		28.7	mg/L

Continued on next page ...

¹ Sample was received out of holding time

Report Date: June 14, 2002 Order Number: A02052325
 N/A Morrow

Page Number: 2 of 5
 Champion Chemical

Sample 197789 continued ...

Param	Flag	Result	Units
Total Potassium		5.15	mg/L
Total Sodium		86.5	mg/L
Total Aluminum		0.128	mg/L
Total Arsenic		<0.050	mg/L
Total Barium		<0.100	mg/L
Total Boron		0.75	mg/L
Total Cadmium		<0.005	mg/L
Total Chromium		<0.010	mg/L
Total Cobalt		<0.025	mg/L
Total Copper		<0.0125	mg/L
Total Iron		<0.050	mg/L
Total Lead		<0.010	mg/L
Total Manganese		<0.025	mg/L
Total Molybdenum		<0.050	mg/L
Total Nickel		<0.025	mg/L
Total Selenium		<0.050	mg/L
Total Silica		30.4	mg/L
Total Silver		<0.0125	mg/L
Total Zinc		<0.025	mg/L

Sample: 197790 - 0205221109

Param	Flag	Result	Units
Pyridine		<0.005	mg/L
n-Nitrosodimethylamine		<0.005	mg/L
2-Picoline		<0.005	mg/L
Methyl methanesulfonate		<0.005	mg/L
Ethyl methanesulfonate		<0.005	mg/L
Phenol		<0.005	mg/L
Aniline		<0.005	mg/L
bis (2-chloroethyl) ether		<0.005	mg/L
2-Chlorophenol		<0.005	mg/L
1,3-Dichlorobenzene (meta)		<0.005	mg/L
1,4-Dichlorobenzene		<0.005	mg/L
Benzyl alcohol		<0.005	mg/L
1,2-Dichlorobenzene		<0.005	mg/L
2-Methylphenol		<0.005	mg/L
bis (2-chloroisopropyl) ether		<0.005	mg/L
4-Methylphenol/3-Methylphenol		<0.005	mg/L
Acetophenone		<0.005	mg/L
n-Nitrosodi-n-propylamine		<0.005	mg/L
Hexachloroethane		<0.005	mg/L
Nitrobenzene		<0.005	mg/L
n-Nitrosopiperidine		<0.005	mg/L
Isophorone		<0.005	mg/L
2-Nitrophenol		<0.005	mg/L
2,4-Dimethylphenol		<0.005	mg/L
bis (2-chloroethoxy) methane		<0.005	mg/L
Benzoic acid		<0.005	mg/L

Continued on next page ...

This is only a summary. Please, refer to the complete report package for quality control data.

Report Date: June 14, 2002 Order Number: A02052325
N/A MorrowPage Number: 3 of 5
Champion Chemical

Sample 197790 continued ...

Param	Flag	Result	Units
2,4-Dichlorophenol		<0.005	mg/L
1,2,4-Trichlorobenzene		<0.005	mg/L
a,a-Dimethylphenethylamine		<0.005	mg/L
Naphthalene		<0.005	mg/L
4-Chloroaniline		<0.005	mg/L
2,6-Dichlorophenol		<0.005	mg/L
Hexachlorobutadiene		<0.005	mg/L
n-Nitroso-di-n-butylamine		<0.005	mg/L
4-Chloro-3-methylphenol		<0.005	mg/L
1-Methylnaphthalene		<0.005	mg/L
2-Methylnaphthalene		<0.005	mg/L
1,2,4,5-Tetrachlorobenzene		<0.005	mg/L
Hexachlorocyclopentadiene		<0.005	mg/L
2,4,6-Trichlorophenol		<0.005	mg/L
2,4,5-Trichlorophenol		<0.005	mg/L
2-Chloronaphthalene		<0.005	mg/L
1-Chloronaphthalene		<0.005	mg/L
2-Nitroaniline		<0.005	mg/L
Dimethylphthalate		<0.005	mg/L
Acenaphthylene		<0.005	mg/L
2,6-Dinitrotoluene		<0.005	mg/L
3-Nitroaniline		<0.005	mg/L
Acenaphthene		<0.005	mg/L
2,4-Dinitrophenol		<0.005	mg/L
Dibenzofuran		<0.005	mg/L
Pentachlorobenzene		<0.005	mg/L
4-Nitrophenol		<0.005	mg/L
1-Naphthylamine		<0.005	mg/L
2,4-Dinitrotoluene		<0.005	mg/L
2-Naphthylamine		<0.005	mg/L
2,3,4,6-Tetrachlorophenol		<0.005	mg/L
Fluorene		<0.005	mg/L
Diethylphthalate		<0.005	mg/L
4-Chlorophenyl-phenylether		<0.005	mg/L
4-Nitroaniline		<0.005	mg/L
4,6-Dinitro-2-methylphenol		<0.005	mg/L
Diphenylamine		<0.005	mg/L
Diphenylhydrazine		<0.005	mg/L
4-Bromophenyl-phenylether		<0.005	mg/L
Phenacetin		<0.005	mg/L
Hexachlorobenzene		<0.005	mg/L
4-Aminobiphenyl		<0.005	mg/L
Pentachlorophenol		<0.005	mg/L
Pentachloronitrobenzene		<0.005	mg/L
Pronamide		<0.005	mg/L
Phenanthrene		<0.005	mg/L
Anthracene		<0.005	mg/L
Di-n-butylphthalate		<0.005	mg/L
Fluoranthene		<0.005	mg/L
Benzidine		<0.005	mg/L

Continued on next page ...

This is only a summary. Please, refer to the complete report package for quality control data.

Report Date: June 14, 2002 Order Number: A02052325
N/A Morrow

Page Number: 4 of 5
Champion Chemical

Sample 197790 continued ...

Param	Flag	Result	Units
Pyrene		<0.005	mg/L
p-Dimethylaminoazobenzene		<0.005	mg/L
Butylbenzylphthalate		<0.005	mg/L
Benzo(a)anthracene		<0.005	mg/L
3,3-Dichlorobenzidine		<0.005	mg/L
Chrysene		<0.005	mg/L
Bis (2-ethylhexyl) phthalate		<0.005	mg/L
Di-n-octylphthalate		<0.005	mg/L
Benzo(b)fluoranthene		<0.005	mg/L
7,12-Dimethylbenz(a)anthracene		<0.005	mg/L
Benzo(k)fluoranthene		<0.005	mg/L
Benzo(a)pyrene		<0.005	mg/L
3-Methylcholanthrene		<0.005	mg/L
Dibenzo(a,j)acridine		<0.005	mg/L
Indeno(1,2,3-cd)pyrene		<0.005	mg/L
Dibenzo(a,h)anthracene		<0.005	mg/L
Benzo(g,h,i)perylene		<0.005	mg/L

Sample: 197791 - 0205221110A

Param	Flag	Result	Units
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		<1.00	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L

Continued on next page ...

This is only a summary. Please, refer to the complete report package for quality control data.

Report Date: June 14, 2002 Order Number: A02052325
N/A MorrowPage Number: 5 of 5
Champion Chemical

Sample 197791 continued ...

Param	Flag	Result	Units
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

This is only a summary. Please, refer to the complete report package for quality control data.

Cation-Anion Balance Sheet

Sample #

197788

Date:

6/12/02

Cations

	ppm	meq/L
Calcium	139	6.9361
Magnesium	29.2	2.402868
Sodium	92.2	4.0107
Potassium	5.54	0.1417132

Total Cations

13.4914 in meq/L

Anions

	ppm	meq/L
Alkalinity	194	3.88
Sulfate	203	4.22646
Chloride	137	3.86477
Nitrate as N	8.63	0.6160957
Fluoride	2.93	0.1542352

Total Anions

12.7416 in meq/L

Percentage Error

5.71663 %

(needs to be <10%)

OTHER INFORMATION

TDS

840

EC

1340

Measure EC and Cation Sums	1349.1381	Range should be:	1206	to	1474
Measure EC and Anion Sums	1274.1561	Range should be:	1206	to	1474
Calculated TDS/Conductivity	0.6268657	Range should be:	0.55	to	0.77
Measure TDS and Cation Sums	0.6226197	Range should be:	0.55	to	0.77
Measure TDS and Anion Sums	0.6592599	Range should be:	0.55	to	0.77

Page 1 of 1

TraceAnalysis, Inc.

**155 McCutcheon, Suite H
El Paso, Texas 79932
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443**

LAB Order ID # HU2US2B2S

Company Name:	Oil Conservation Division	Phone #:	(505) 393-6161
Address:	(Street, City, Zip) 1625 N. French Dr	Fax #:	(505) 393-0720
Contact Person:	Paul Sheeley - Larry Johnson		
Voice to:	Ed Martin - OCP Santa Fe (see contract)		
Project #:	Project Name: Morrow		
Project Location:	Sampler Signature: <i>Paul Sheeley</i>		

(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX				PRESERVATIVE METHOD					SAMPLING		MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/7X1005	PAH 8270C	Total Metals Ag As Ba	TCPLP Metals Ag As Ba	TCPLP Volatiles	TCPLP Semi Volatiles	TCPLP Pesticides	RCI	GC/MS Vol. 8260B/62	GC/MS Semi. Vol. 827	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	General	Back-up	Turn Around Time if diff	Hold
				WATER	SOIL	AIR	SLUDGE	HCl	HNO ₃	H ₂ SO ₄	NaOH	ICE	NONE	DATE																			
197788	0205221107	1	1-L	X						X			5/22	1107					X	5-22-02										X			
197789	0205221108	1	500 mL	X						X			11	1108					X														
90	0205221109	1	1-L	X						X			11	1109												X							
91	0205221110 A	1	40 mL	X					X	X			11	1110											X								
92	0205221110 B	1	40 mL	X					X	X			11	1110											X						X		
5-27-02																																	

Relinquished by: <i>[Signature]</i>	Date: 5-22-02	Time: 15:00	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received at Laboratory by: <i>[Signature]</i>	Date: 5-23-02	Time: 10:00

LAB USE ONLY

Intact Y N
Headspace Y / N
Temp /
Log-in Review NT

REMARKS:

☐ Check If Special Reporting Limits Are Needed

Carrier # UPS 1Z7112 40E 0341148108

Submission of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

ORIGINAL COPY



NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON

Governor
Betty Rivera
Cabinet Secretary

Lori Wrotenbery

Director
Oil Conservation Division

June 21, 2002

Castillo Residence
4027 S. Eunice Highway
Hobbs, NM 88240

Dear Mr/Ms. Castillo:

Enclosed is a copy of the analytical results for the groundwater samples collected from your water well by OCD personnel on April 23, 2002. Please note the results indicate your water quality meets the groundwater standards as defined in the New Mexico Water Quality Control Commission Regulations 20.6.2.3103., with the exception of Fluoride, Chloride and Total Dissolved Solids (TDS) which were noted at 2.24 mg/l, 380 mg/l and TDS 1150 mg/l respectively. The standards in New Mexico for Fluoride is 1.6 mg/l, Chloride is 250 mg/l, and TDS is 1000 mg/l.

If you have any questions please do not hesitate to contact me at 505-476-3487 or E-mail WPRICE@state.nm.us.

Sincerely,

A handwritten signature in black ink, appearing to read "Wayne Price".

Wayne Price- Engineer

cc: OCD Hobbs Office-Larry Jonhson

Attachments-1



NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON

Governor
Betty Rivera
Cabinet Secretary

Lori Wrotenbery

Director
Oil Conservation Division

June 21, 2002

Harmon Residence
503 E. Llano Grande Street
Hobbs, NM 88240

Dear Ms. Harmon:

Enclosed is a copy of the analytical results for the groundwater samples collected from your water well by OCD personnel on April 23, 2002. Please note the results indicate your water quality meets the groundwater standards as defined in the New Mexico Water Quality Control Commission Regulations 20.6.2.3103., with the exception of Fluoride, which was noted at 2.24 mg/l. The standard for fluoride in New Mexico is 1.6 mg/l.

If you have any questions please do not hesitate to contact me at 505-476-3487 or E-mail WPRICE@state.nm.us.

Sincerely,

Wayne Price- Engineer

cc: OCD Hobbs Office-Larry Jonhson

Attachments-1



6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
4725 Ripley Avenue, Suite A El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Paul Sheeley
OCD Hobbs Office
1625 N. French Drive
Hobbs, NM 88240

Report Date: May 7, 2002

Order ID Number: A02042410

Project Number: Champion Technologies
Project Name: Harmon-Castillo
Project Location: 503 E. Llano Grande-4027 S Eunice Highway

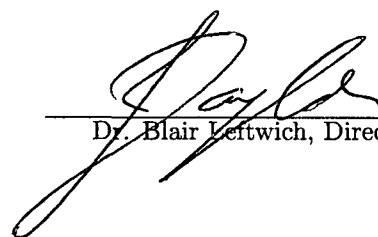
Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
195496	0204230946-49	Water	4/23/02	:	4/24/02
195497	0204231022-25	Water	4/23/02	:	4/24/02

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed. Note: the RDL is equal to MQL for all organic analytes including TPH.

The test results contained within this report meet all requirements of LAC 33:I unless otherwise noted.

This report consists of a total of 29 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of TraceAnalysis, Inc.


Dr. Blair Leftwich, Director

Report Date: May 7, 2002 Order Number: A02042410

Page Number: 1 of 9

Champion Technologies

Harmon-Castillo

503 E. Llano Grande-4027 S Eunice Highway

Summary Report

Paul Sheeley
OCD Hobbs Office
1625 N. French Drive
Hobbs, NM 88240

Report Date: May 7, 2002

Order ID Number: A02042410

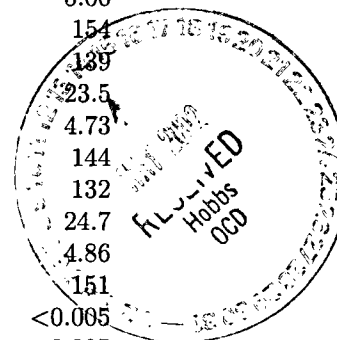
Project Number: Champion Technologies
Project Name: Harmon-Castillo
Project Location: 503 E. Llano Grande-4027 S Eunice Highway

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
195496	0204230946-49	Water	4/23/02	:	4/24/02
195497	0204231022-25	Water	4/23/02	:	4/24/02

0 This report consists of a total of 9 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample: 195496 - 0204230946-49

Param	Flag	Result	Units
Hydroxide Alkalinity		<1.0	mg/L as CaCo3
Carbonate Alkalinity		<1.0	mg/L as CaCo3
Bicarbonate Alkalinity		238	mg/L as CaCo3
Total Alkalinity		238	mg/L as CaCo3
Specific Conductance		1570	μMHOS/cm
Total Mercury		<0.0002	mg/L
Chloride		241	mg/L
Fluoride		2.24	mg/L
Nitrate-N		5.00	mg/L
Sulfate		154	mg/L
Dissolved Calcium		139	mg/L
Dissolved Magnesium		23.5	mg/L
Dissolved Potassium		4.73	mg/L
Dissolved Sodium		144	mg/L
Total Calcium		132	mg/L
Total Magnesium		24.7	mg/L
Total Potassium		4.86	mg/L
Total Sodium		151	mg/L
Pyridine		<0.005	mg/L
n-Nitrosodimethylamine		<0.005	mg/L
2-Picoline		<0.005	mg/L
Methyl methanesulfonate		<0.005	mg/L
Ethyl methanesulfonate		<0.005	mg/L
Phenol		<0.005	mg/L
Aniline		<0.005	mg/L
bis (2-chloroethyl) ether		<0.005	mg/L
2-Chlorophenol		<0.005	mg/L
1,3-Dichlorobenzene (meta)		<0.005	mg/L



Continued on next page ...

This is only a summary. Please, refer to the complete report package for quality control data.

Report Date: May 7, 2002 Order Number: A02042410

Page Number: 2 of 9

Champion Technologies

Harmon-Castillo

503 E. Llano Grande-4027 S Eunice Highway

Sample 195496 continued ...

Param	Flag	Result	Units
1,4-Dichlorobenzene		<0.005	mg/L
Benzyl alcohol		<0.005	mg/L
1,2-Dichlorobenzene		<0.005	mg/L
2-Methylphenol		<0.005	mg/L
bis (2-chloroisopropyl) ether		<0.005	mg/L
4-Methylphenol/3-Methylphenol		<0.005	mg/L
Acetophenone		<0.005	mg/L
n-Nitrosodi-n-propylamine		<0.005	mg/L
Hexachloroethane		<0.005	mg/L
Nitrobenzene		<0.005	mg/L
n-Nitrosopiperidine		<0.005	mg/L
Isophorone		<0.005	mg/L
2-Nitrophenol		<0.005	mg/L
2,4-Dimethylphenol		<0.005	mg/L
bis (2-chloroethoxy) methane		<0.005	mg/L
Benzoic acid		<0.005	mg/L
2,4-Dichlorophenol		<0.005	mg/L
1,2,4-Trichlorobenzene		<0.005	mg/L
a,a-Dimethylphenethylamine		<0.005	mg/L
Naphthalene		<0.005	mg/L
4-Chloroaniline		<0.005	mg/L
2,6-Dichlorophenol		<0.005	mg/L
Hexachlorobutadiene		<0.005	mg/L
n-Nitroso-di-n-butylamine		<0.005	mg/L
4-Chloro-3-methylphenol		<0.005	mg/L
1-Methylnaphthalene		<0.005	mg/L
2-Methylnaphthalene		<0.005	mg/L
1,2,4,5-Tetrachlorobenzene		<0.005	mg/L
Hexachlorocyclopentadiene		<0.005	mg/L
2,4,6-Trichlorophenol		<0.005	mg/L
2,4,5-Trichlorophenol		<0.005	mg/L
2-Chloronaphthalene		<0.005	mg/L
1-Chloronaphthalene		<0.005	mg/L
2-Nitroaniline		<0.005	mg/L
Dimethylphthalate		<0.005	mg/L
Acenaphthylene		<0.005	mg/L
2,6-Dinitrotoluene		<0.005	mg/L
3-Nitroaniline		<0.005	mg/L
Acenaphthene		<0.005	mg/L
2,4-Dinitrophenol		<0.005	mg/L
Dibenzofuran		<0.005	mg/L
Pentachlorobenzene		<0.005	mg/L
4-Nitrophenol		<0.005	mg/L
1-Naphthylamine		<0.005	mg/L
2,4-Dinitrotoluene		<0.005	mg/L
2-Naphthylamine		<0.005	mg/L
2,3,4,6-Tetrachlorophenol		<0.005	mg/L
Fluorene		<0.005	mg/L
Diethylphthalate		<0.005	mg/L
4-Chlorophenyl-phenylether		<0.005	mg/L

*Continued on next page ...**This is only a summary. Please, refer to the complete report package for quality control data.*

Report Date: May 7, 2002 Order Number: A02042410

Page Number: 3 of 9

Champion Technologies

Harmon-Castillo

503 E. Llano Grande-4027 S Eunice Highway

Sample 195496 continued ...

Param	Flag	Result	Units
4-Nitroaniline		<0.005	mg/L
4,6-Dinitro-2-methylphenol		<0.005	mg/L
Diphenylamine		<0.005	mg/L
Diphenylhydrazine		<0.005	mg/L
4-Bromophenyl-phenylether		<0.005	mg/L
Phenacetin		<0.005	mg/L
Hexachlorobenzene		<0.005	mg/L
4-Aminobiphenyl		<0.005	mg/L
Pentachlorophenol		<0.005	mg/L
Pentachloronitrobenzene		<0.005	mg/L
Pronamide		<0.005	mg/L
Phenanthrene		<0.005	mg/L
Anthracene		<0.005	mg/L
Di-n-butylphthalate		<0.005	mg/L
Fluoranthene		<0.005	mg/L
Benzidine		<0.005	mg/L
Pyrene		<0.005	mg/L
p-Dimethylaminoazobenzene		<0.005	mg/L
Butylbenzylphthalate		<0.005	mg/L
Benzo(a)anthracene		<0.005	mg/L
3,3-Dichlorobenzidine		<0.005	mg/L
Chrysene		<0.005	mg/L
Bis (2-ethylhexyl) phthalate		<0.005	mg/L
Di-n-octylphthalate		<0.005	mg/L
Benzo(b)fluoranthene		<0.005	mg/L
7,12-Dimethylbenz(a)anthracene		<0.005	mg/L
Benzo(k)fluoranthene		<0.005	mg/L
Benzo(a)pyrene		<0.005	mg/L
3-Methylcholanthrene		<0.005	mg/L
Dibenzo(a,j)acridine		<0.005	mg/L
Indeno(1,2,3-cd)pyrene		<0.005	mg/L
Dibenzo(a,h)anthracene		<0.005	mg/L
Benzo(g,h,i)perylene		<0.005	mg/L
Total Dissolved Solids		942	mg/L
Total Aluminum		0.157	mg/L
Total Arsenic		<0.050	mg/L
Total Barium		<0.100	mg/L
Total Boron		0.832	mg/L
Total Cadmium		<0.005	mg/L
Total Chromium		<0.010	mg/L
Total Cobalt		<0.025	mg/L
Total Copper		<0.0125	mg/L
Total Iron		0.0803	mg/L
Total Lead		<0.010	mg/L
Total Manganese		<0.025	mg/L
Total Molybdenum		<0.050	mg/L
Total Nickel		<0.025	mg/L
Total Selenium		<0.050	mg/L
Total Silica		59.7	mg/L
Total Silver		<0.0125	mg/L

*Continued on next page ...**This is only a summary. Please, refer to the complete report package for quality control data.*

Report Date: May 7, 2002 Order Number: A02042410
 Champion Technologies Harmon-Castillo

Page Number: 4 of 9
 503 E. Llano Grande-4027 S Eunice Highway

Sample 195496 continued ...

Param	Flag	Result	Units
Total Zinc		<0.025	mg/L
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		<1.00	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L

Continued on next page ...

This is only a summary. Please, refer to the complete report package for quality control data.

Report Date: May 7, 2002 Order Number: A02042410

Page Number: 5 of 9

Champion Technologies

Harmon-Castillo

503 E. Llano Grande-4027 S Eunice Highway

Sample 195496 continued ...

Param	Flag	Result	Units
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L
pH	1	7.4	s.u.

Sample: 195497 - 0204231022-25

Param	Flag	Result	Units
Hydroxide Alkalinity		<1.0	mg/L as CaCo3
Carbonate Alkalinity		<1.0	mg/L as CaCo3
Bicarbonate Alkalinity		176	mg/L as CaCo3
Total Alkalinity		176	mg/L as CaCo3
Specific Conductance		1890	µMHOS/cm
Total Mercury		<0.0002	mg/L
Chloride		380	mg/L
Fluoride		2.39	mg/L
Nitrate-N		2.93	mg/L
Sulfate		222	mg/L
Dissolved Calcium		151	mg/L
Dissolved Magnesium		30.4	mg/L
Dissolved Potassium		5.91	mg/L
Dissolved Sodium		171	mg/L
Total Calcium		148	mg/L
Total Magnesium		30.9	mg/L
Total Potassium		6.04	mg/L
Total Sodium		180	mg/L
Pyridine		<0.005	mg/L
n-Nitrosodimethylamine		<0.005	mg/L
2-Picoline		<0.005	mg/L
Methyl methanesulfonate		<0.005	mg/L

*Continued on next page ...*¹Sample was received out of holding time.*This is only a summary. Please, refer to the complete report package for quality control data.*

Report Date: May 7, 2002 Order Number: A02042410

Page Number: 6 of 9

Champion Technologies

Harmon-Castillo

503 E. Llano Grande-4027 S Eunice Highway

Sample 195497 continued ...

Param	Flag	Result	Units
Ethyl methanesulfonate		<0.005	mg/L
Phenol		<0.005	mg/L
Aniline		<0.005	mg/L
bis (2-chloroethyl) ether		<0.005	mg/L
2-Chlorophenol		<0.005	mg/L
1,3-Dichlorobenzene (meta)		<0.005	mg/L
1,4-Dichlorobenzene		<0.005	mg/L
Benzyl alcohol		<0.005	mg/L
1,2-Dichlorobenzene		<0.005	mg/L
2-Methylphenol		<0.005	mg/L
bis (2-chloroisopropyl) ether		<0.005	mg/L
4-Methylphenol/3-Methylphenol		<0.005	mg/L
Acetophenone		<0.005	mg/L
n-Nitrosodi-n-propylamine		<0.005	mg/L
Hexachloroethane		<0.005	mg/L
Nitrobenzene		<0.005	mg/L
n-Nitrosopiperidine		<0.005	mg/L
Isophorone		<0.005	mg/L
2-Nitrophenol		<0.005	mg/L
2,4-Dimethylphenol		<0.005	mg/L
bis (2-chloroethoxy) methane		<0.005	mg/L
Benzoic acid		<0.005	mg/L
2,4-Dichlorophenol		<0.005	mg/L
1,2,4-Trichlorobenzene		<0.005	mg/L
a,a-Dimethylphenethylamine		<0.005	mg/L
Naphthalene		<0.005	mg/L
4-Chloroaniline		<0.005	mg/L
2,6-Dichlorophenol		<0.005	mg/L
Hexachlorobutadiene		<0.005	mg/L
n-Nitroso-di-n-butylamine		<0.005	mg/L
4-Chloro-3-methylphenol		<0.005	mg/L
1-Methylnaphthalene		<0.005	mg/L
2-Methylnaphthalene		<0.005	mg/L
1,2,4,5-Tetrachlorobenzene		<0.005	mg/L
Hexachlorocyclopentadiene		<0.005	mg/L
2,4,6-Trichlorophenol		<0.005	mg/L
2,4,5-Trichlorophenol		<0.005	mg/L
2-Chloronaphthalene		<0.005	mg/L
1-Chloronaphthalene		<0.005	mg/L
2-Nitroaniline		<0.005	mg/L
Dimethylphthalate		<0.005	mg/L
Acenaphthylene		<0.005	mg/L
2,6-Dinitrotoluene		<0.005	mg/L
3-Nitroaniline		<0.005	mg/L
Acenaphthene		<0.005	mg/L
2,4-Dinitrophenol		<0.005	mg/L
Dibenzofuran		<0.005	mg/L
Pentachlorobenzene		<0.005	mg/L
4-Nitrophenol		<0.005	mg/L
1-Naphthylamine		<0.005	mg/L

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Sample 195497 continued ...

Param	Flag	Result	Units
2,4-Dinitrotoluene		<0.005	mg/L
2-Naphthylamine		<0.005	mg/L
2,3,4,6-Tetrachlorophenol		<0.005	mg/L
Fluorene		<0.005	mg/L
Diethylphthalate		<0.005	mg/L
4-Chlorophenyl-phenylether		<0.005	mg/L
4-Nitroaniline		<0.005	mg/L
4,6-Dinitro-2-methylphenol		<0.005	mg/L
Diphenylamine		<0.005	mg/L
Diphenylhydrazine		<0.005	mg/L
4-Bromophenyl-phenylether		<0.005	mg/L
Phenacetin		<0.005	mg/L
Hexachlorobenzene		<0.005	mg/L
4-Aminobiphenyl		<0.005	mg/L
Pentachlorophenol		<0.005	mg/L
Pentachloronitrobenzene		<0.005	mg/L
Pronamide		<0.005	mg/L
Phenanthrene		<0.005	mg/L
Anthracene		<0.005	mg/L
Di-n-butylphthalate		<0.005	mg/L
Fluoranthene		<0.005	mg/L
Benzidine		<0.005	mg/L
Pyrene		<0.005	mg/L
p-Dimethylaminoazobenzene		<0.005	mg/L
Butylbenzylphthalate		<0.005	mg/L
Benzo(a)anthracene		<0.005	mg/L
3,3-Dichlorobenzidine		<0.005	mg/L
Chrysene		<0.005	mg/L
Bis (2-ethylhexyl) phthalate		<0.005	mg/L
Di-n-octylphthalate		<0.005	mg/L
Benzo(b)fluoranthene		<0.005	mg/L
7,12-Dimethylbenz(a)anthracene		<0.005	mg/L
Benzo(k)fluoranthene		<0.005	mg/L
Benzo(a)pyrene		<0.005	mg/L
3-Methylcholanthrene		<0.005	mg/L
Dibenzo(a,j)acridine		<0.005	mg/L
Indeno(1,2,3-cd)pyrene		<0.005	mg/L
Dibenzo(a,h)anthracene		<0.005	mg/L
Benzo(g,h,i)perylene		<0.005	mg/L
Total Dissolved Solids		1150	mg/L
Total Aluminum		0.167	mg/L
Total Arsenic		<0.050	mg/L
Total Barium		<0.100	mg/L
Total Boron		0.598	mg/L
Total Cadmium		<0.005	mg/L
Total Chromium		<0.010	mg/L
Total Cobalt		<0.025	mg/L
Total Copper		<0.0125	mg/L
Total Iron		0.0936	mg/L
Total Lead		<0.010	mg/L

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Sample 195497 continued ...

Param	Flag	Result	Units
Total Manganese		<0.025	mg/L
Total Molybdenum		<0.050	mg/L
Total Nickel		<0.025	mg/L
Total Selenium		<0.050	mg/L
Total Silica		58.2	mg/L
Total Silver		<0.0125	mg/L
Total Zinc		0.0364	mg/L
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		<1.00	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L

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Sample 195497 continued ...

Param	Flag	Result	Units
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L
pH	2	7.5	s.u.

²Sample was received out of holding time.

Analytical Report

Sample: 195496 - 0204230946-49

Analysis: Alkalinity Analytical Method: E 310.1 QC Batch: QC19986 Date Analyzed: 4/30/02
Analyst: RS Preparation Method: N/A Prep Batch: PB19158 Date Prepared: 4/30/02

Param	Flag	Result	Units	Dilution	RDL
Hydroxide Alkalinity		<1.0	mg/L as CaCo3	1	1
Carbonate Alkalinity		<1.0	mg/L as CaCo3	1	1
Bicarbonate Alkalinity		238	mg/L as CaCo3	1	1
Total Alkalinity		238	mg/L as CaCo3	1	1

Sample: 195496 - 0204230946-49

Analysis: Conductivity Analytical Method: SM 2510B QC Batch: QC19885 Date Analyzed: 4/26/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB19083 Date Prepared: 4/26/02

Param	Flag	Result	Units	Dilution	RDL
Specific Conductance		1570	µMHOS/cm	1	

Sample: 195496 - 0204230946-49

Analysis: Hg, Total Analytical Method: S 7470A QC Batch: QC20126 Date Analyzed: 5/6/02
Analyst: BC Preparation Method: N/A Prep Batch: PB19289 Date Prepared: 5/1/02

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.0002	mg/L	1	0.0002

Sample: 195496 - 0204230946-49

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC19960 Date Analyzed: 4/24/02
Analyst: JS Preparation Method: N/A Prep Batch: PB19144 Date Prepared: 4/24/02

Param	Flag	Result	Units	Dilution	RDL
Chloride		241	mg/L	10	0.50
Fluoride		2.24	mg/L	5	0.20
Nitrate-N		5.00	mg/L	5	0.20
Sulfate		154	mg/L	5	0.50

Sample: 195496 - 0204230946-49

Analysis: Salts Analytical Method: E 200.7 QC Batch: QC20060 Date Analyzed: 4/29/02
Analyst: BC Preparation Method: S 3005A Prep Batch: PB19092 Date Prepared: 4/26/02

Param	Flag	Result	Units	Dilution	RDL
Dissolved Calcium		139	mg/L	1	0.50
Dissolved Magnesium		23.5	mg/L	1	0.50
Dissolved Potassium		4.73	mg/L	1	0.50
Dissolved Sodium		144	mg/L	1	0.50

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Sample: 195496 - 0204230946-49

Analysis: Salts, Total Analytical Method: S 6010B QC Batch: QC20029 Date Analyzed: 5/1/02
Analyst: BC Preparation Method: N/A Prep Batch: PB19194 Date Prepared: 5/2/02

Param	Flag	Result	Units	Dilution	RDL
Total Calcium		132	mg/L	1	0.50
Total Magnesium		24.7	mg/L	1	0.50
Total Potassium		4.86	mg/L	1	0.50
Total Sodium		151	mg/L	1	0.50

Sample: 195496 - 0204230946-49

Analysis: Semivolatiles Analytical Method: S 8270C QC Batch: QC19955 Date Analyzed: 4/27/02
Analyst: RC Preparation Method: E 3510C Prep Batch: PB19093 Date Prepared: 4/24/02

Param	Flag	Result	Units	Dilution	RDL
Pyridine		<0.005	mg/L	1	0.005
n-Nitrosodimethylamine		<0.005	mg/L	1	0.005
2-Picoline		<0.005	mg/L	1	0.005
Methyl methanesulfonate		<0.005	mg/L	1	0.005
Ethyl methanesulfonate		<0.005	mg/L	1	0.005
Phenol		<0.005	mg/L	1	0.005
Aniline		<0.005	mg/L	1	0.005
bis (2-chloroethyl) ether		<0.005	mg/L	1	0.005
2-Chlorophenol		<0.005	mg/L	1	0.005
1,3-Dichlorobenzene (meta)		<0.005	mg/L	1	0.005
1,4-Dichlorobenzene		<0.005	mg/L	1	0.005
Benzyl alcohol		<0.005	mg/L	1	0.005
1,2-Dichlorobenzene		<0.005	mg/L	1	0.005
2-Methylphenol		<0.005	mg/L	1	0.005
bis (2-chloroisopropyl) ether		<0.005	mg/L	1	0.005
4-Methylphenol/3-Methylphenol		<0.005	mg/L	1	0.005
Acetophenone		<0.005	mg/L	1	0.005
n-Nitrosodi-n-propylamine		<0.005	mg/L	1	0.005
Hexachloroethane		<0.005	mg/L	1	0.005
Nitrobenzene		<0.005	mg/L	1	0.005
n-Nitrosopiperidine		<0.005	mg/L	1	0.005
Isophorone		<0.005	mg/L	1	0.005
2-Nitrophenol		<0.005	mg/L	1	0.005
2,4-Dimethylphenol		<0.005	mg/L	1	0.005
bis (2-chloroethoxy) methane		<0.005	mg/L	1	0.005
Benzoic acid		<0.005	mg/L	1	0.005
2,4-Dichlorophenol		<0.005	mg/L	1	0.005
1,2,4-Trichlorobenzene		<0.005	mg/L	1	0.005
a,a-Dimethylphenethylamine		<0.005	mg/L	1	0.005
Naphthalene		<0.005	mg/L	1	0.005
4-Chloroaniline		<0.005	mg/L	1	0.005
2,6-Dichlorophenol		<0.005	mg/L	1	0.005
Hexachlorobutadiene		<0.005	mg/L	1	0.005
n-Nitroso-di-n-butylamine		<0.005	mg/L	1	0.005
4-Chloro-3-methylphenol		<0.005	mg/L	1	0.005
1-Methylnaphthalene		<0.005	mg/L	1	0.005
2-Methylnaphthalene		<0.005	mg/L	1	0.005
1,2,4,5-Tetrachlorobenzene		<0.005	mg/L	1	0.005

Continued ...

... Continued Sample: 195496 Analysis: Semivolatiles

Param	Flag	Result	Units	Dilution	RDL
Hexachlorocyclopentadiene		<0.005	mg/L	1	0.005
2,4,6-Trichlorophenol		<0.005	mg/L	1	0.005
2,4,5-Trichlorophenol		<0.005	mg/L	1	0.005
2-Chloronaphthalene		<0.005	mg/L	1	0.005
1-Chloronaphthalene		<0.005	mg/L	1	0.005
2-Nitroaniline		<0.005	mg/L	1	0.005
Dimethylphthalate		<0.005	mg/L	1	0.005
Acenaphthylene		<0.005	mg/L	1	0.005
2,6-Dinitrotoluene		<0.005	mg/L	1	0.005
3-Nitroaniline		<0.005	mg/L	1	0.005
Acenaphthene		<0.005	mg/L	1	0.005
2,4-Dinitrophenol		<0.005	mg/L	1	0.005
Dibenzofuran		<0.005	mg/L	1	0.005
Pentachlorobenzene		<0.005	mg/L	1	0.005
4-Nitrophenol		<0.005	mg/L	1	0.005
1-Naphthylamine		<0.005	mg/L	1	0.005
2,4-Dinitrotoluene		<0.005	mg/L	1	0.005
2-Naphthylamine		<0.005	mg/L	1	0.005
2,3,4,6-Tetrachlorophenol		<0.005	mg/L	1	0.005
Fluorene		<0.005	mg/L	1	0.005
Diethylphthalate		<0.005	mg/L	1	0.005
4-Chlorophenyl-phenylether		<0.005	mg/L	1	0.005
4-Nitroaniline		<0.005	mg/L	1	0.005
4,6-Dinitro-2-methylphenol		<0.005	mg/L	1	0.005
Diphenylamine		<0.005	mg/L	1	0.005
Diphenylhydrazine		<0.005	mg/L	1	0.005
4-Bromophenyl-phenylether		<0.005	mg/L	1	0.005
Phenacetin		<0.005	mg/L	1	0.005
Hexachlorobenzene		<0.005	mg/L	1	0.005
4-Aminobiphenyl		<0.005	mg/L	1	0.005
Pentachlorophenol		<0.005	mg/L	1	0.005
Pentachloronitrobenzene		<0.005	mg/L	1	0.005
Pronamide		<0.005	mg/L	1	0.005
Phenanthrene		<0.005	mg/L	1	0.005
Anthracene		<0.005	mg/L	1	0.005
Di-n-butylphthalate		<0.005	mg/L	1	0.005
Fluoranthene		<0.005	mg/L	1	0.005
Benzidine		<0.005	mg/L	1	0.005
Pyrene		<0.005	mg/L	1	0.005
p-Dimethylaminoazobenzene		<0.005	mg/L	1	0.005
Butylbenzylphthalate		<0.005	mg/L	1	0.005
Benzo(a)anthracene		<0.005	mg/L	1	0.005
3,3-Dichlorobenzidine		<0.005	mg/L	1	0.005
Chrysene		<0.005	mg/L	1	0.005
Bis (2-ethylhexyl) phthalate		<0.005	mg/L	1	0.005
Di-n-octylphthalate		<0.005	mg/L	1	0.005
Benzo(b)fluoranthene		<0.005	mg/L	1	0.005
7,12-Dimethylbenz(a)anthracene		<0.005	mg/L	1	0.005
Benzo(k)fluoranthene		<0.005	mg/L	1	0.005
Benzo(a)pyrene		<0.005	mg/L	1	0.005
3-Methylcholanthrene		<0.005	mg/L	1	0.005
Dibenzo(a,j)acridine		<0.005	mg/L	1	0.005
Indeno(1,2,3-cd)pyrene		<0.005	mg/L	1	0.005

Continued ...

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... Continued Sample: 195496 Analysis: Semivolatiles

Param	Flag	Result	Units	Dilution	RDL
Dibenzo(a,h)anthracene		<0.005	mg/L	1	0.005
Benzo(g,h,i)perylene		<0.005	mg/L	1	0.005

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		22.07	mg/L	1	80	27	21 - 100
Phenol-d5		13.41	mg/L	1	80	16	11 - 94
Nitrobenzene-d5		53.34	mg/L	1	80	66	35 - 114
2-Fluorobiphenyl		57.24	mg/L	1	80	71	43 - 116
2,4,6-Tribromophenol		46.33	mg/L	1	80	57	10 - 123
Terphenyl-d14		53.13	mg/L	1	80	66	33 - 141

Sample: 195496 - 0204230946-49

Analysis: TDS Analytical Method: E 160.1 QC Batch: QC20034 Date Analyzed: 4/30/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB19212 Date Prepared: 4/29/02

Param	Flag	Result	Units	Dilution	RDL
Total Dissolved Solids		942	mg/L	1	10

Sample: 195496 - 0204230946-49

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC19902 Date Analyzed: 4/26/02
Analyst: RR Preparation Method: S 3010A Prep Batch: PB19044 Date Prepared: 4/25/02

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		0.157	mg/L	1	0.10
Total Arsenic		<0.050	mg/L	1	0.05
Total Barium		<0.100	mg/L	1	0.10
Total Boron		0.832	mg/L	1	0.005
Total Cadmium		<0.005	mg/L	1	0.005
Total Chromium		<0.010	mg/L	1	0.01
Total Cobalt		<0.025	mg/L	1	0.02
Total Copper		<0.0125	mg/L	1	0.01
Total Iron		0.0803	mg/L	1	0.05
Total Lead		<0.010	mg/L	1	0.01
Total Manganese		<0.025	mg/L	1	0.02
Total Molybdenum		<0.050	mg/L	1	0.05
Total Nickel		<0.025	mg/L	1	0.02
Total Selenium		<0.050	mg/L	1	0.05
Total Silica		59.7	mg/L	1	0.05
Total Silver		<0.0125	mg/L	1	0.01
Total Zinc		<0.025	mg/L	1	0.02

Sample: 195496 - 0204230946-49

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC19868 Date Analyzed: 4/25/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB19076 Date Prepared: 4/25/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		<1.00	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1

Continued ...

... Continued Sample: 195496 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		54.3	µg/L	1	50	109	82 - 114
Toluene-d8		53.1	µg/L	1	50	106	86 - 113
4-Bromofluorobenzene		49.5	µg/L	1	50	99	90 - 105

Sample: 195496 - 0204230946-49

Analysis: pH Analytical Method: E 150.1 QC Batch: QC19850 Date Analyzed: 4/24/02
Analyst: RS Preparation Method: N/A Prep Batch: PB19059 Date Prepared: 4/24/02

Param	Flag	Result	Units	Dilution	RDL
pH	1	7.4	s.u.	1	1

Sample: 195497 - 0204231022-25

Analysis: Alkalinity Analytical Method: E 310.1 QC Batch: QC19986 Date Analyzed: 4/30/02
Analyst: RS Preparation Method: N/A Prep Batch: PB19158 Date Prepared: 4/30/02

Param	Flag	Result	Units	Dilution	RDL
Hydroxide Alkalinity		<1.0	mg/L as CaCo3	1	1
Carbonate Alkalinity		<1.0	mg/L as CaCo3	1	1
Bicarbonate Alkalinity		176	mg/L as CaCo3	1	1
Total Alkalinity		176	mg/L as CaCo3	1	1

Sample: 195497 - 0204231022-25

Analysis: Conductivity Analytical Method: SM 2510B QC Batch: QC19885 Date Analyzed: 4/26/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB19083 Date Prepared: 4/26/02

¹Sample was received out of holding time.

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Param	Flag	Result	Units	Dilution	RDL
Specific Conductance		1890	μ MHOS/cm	1	

Sample: 195497 - 0204231022-25

Analysis: Hg, Total Analytical Method: S 7470A QC Batch: QC20126 Date Analyzed: 5/6/02
Analyst: BC Preparation Method: N/A Prep Batch: PB19289 Date Prepared: 5/1/02

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.0002	mg/L	1	0.0002

Sample: 195497 - 0204231022-25

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC19960 Date Analyzed: 4/24/02
Analyst: JS Preparation Method: N/A Prep Batch: PB19144 Date Prepared: 4/24/02

Param	Flag	Result	Units	Dilution	RDL
Chloride		380	mg/L	10	0.50
Fluoride		2.39	mg/L	5	0.20
Nitrate-N		2.93	mg/L	5	0.20
Sulfate		222	mg/L	5	0.50

Sample: 195497 - 0204231022-25

Analysis: Salts Analytical Method: E 200.7 QC Batch: QC20061 Date Analyzed: 4/29/02
Analyst: BC Preparation Method: S 3005A Prep Batch: PB19092 Date Prepared: 4/26/02

Param	Flag	Result	Units	Dilution	RDL
Dissolved Calcium		151	mg/L	1	0.50
Dissolved Magnesium		30.4	mg/L	1	0.50
Dissolved Potassium		5.91	mg/L	1	0.50
Dissolved Sodium		171	mg/L	1	0.50

Sample: 195497 - 0204231022-25

Analysis: Salts, Total Analytical Method: S 6010B QC Batch: QC20029 Date Analyzed: 5/1/02
Analyst: BC Preparation Method: N/A Prep Batch: PB19194 Date Prepared: 5/2/02

Param	Flag	Result	Units	Dilution	RDL
Total Calcium		148	mg/L	1	0.50
Total Magnesium		30.9	mg/L	1	0.50
Total Potassium		6.04	mg/L	1	0.50
Total Sodium		180	mg/L	1	0.50

Sample: 195497 - 0204231022-25

Analysis: Semivolatiles Analytical Method: S 8270C QC Batch: QC19955 Date Analyzed: 4/27/02
Analyst: RC Preparation Method: E 3510C Prep Batch: PB19093 Date Prepared: 4/24/02

Param	Flag	Result	Units	Dilution	RDL
Pyridine		<0.005	mg/L	1	0.005
n-Nitrosodimethylamine		<0.005	mg/L	1	0.005
2-Picoline		<0.005	mg/L	1	0.005
Methyl methanesulfonate		<0.005	mg/L	1	0.005
Ethyl methanesulfonate		<0.005	mg/L	1	0.005
Phenol		<0.005	mg/L	1	0.005
Aniline		<0.005	mg/L	1	0.005
bis (2-chloroethyl) ether		<0.005	mg/L	1	0.005
2-Chlorophenol		<0.005	mg/L	1	0.005
1,3-Dichlorobenzene (meta)		<0.005	mg/L	1	0.005
1,4-Dichlorobenzene		<0.005	mg/L	1	0.005
Benzyl alcohol		<0.005	mg/L	1	0.005
1,2-Dichlorobenzene		<0.005	mg/L	1	0.005
2-Methylphenol		<0.005	mg/L	1	0.005
bis (2-chloroisopropyl) ether		<0.005	mg/L	1	0.005
4-Methylphenol/3-Methylphenol		<0.005	mg/L	1	0.005
Acetophenone		<0.005	mg/L	1	0.005
n-Nitrosodi-n-propylamine		<0.005	mg/L	1	0.005
Hexachloroethane		<0.005	mg/L	1	0.005
Nitrobenzene		<0.005	mg/L	1	0.005
n-Nitrosopiperidine		<0.005	mg/L	1	0.005
Isophorone		<0.005	mg/L	1	0.005
2-Nitrophenol		<0.005	mg/L	1	0.005
2,4-Dimethylphenol		<0.005	mg/L	1	0.005
bis (2-chloroethoxy) methane		<0.005	mg/L	1	0.005
Benzoic acid		<0.005	mg/L	1	0.005
2,4-Dichlorophenol		<0.005	mg/L	1	0.005
1,2,4-Trichlorobenzene		<0.005	mg/L	1	0.005
a,a-Dimethylphenethylamine		<0.005	mg/L	1	0.005
Naphthalene		<0.005	mg/L	1	0.005
4-Chloroaniline		<0.005	mg/L	1	0.005
2,6-Dichlorophenol		<0.005	mg/L	1	0.005
Hexachlorobutadiene		<0.005	mg/L	1	0.005
n-Nitroso-di-n-butylamine		<0.005	mg/L	1	0.005
4-Chloro-3-methylphenol		<0.005	mg/L	1	0.005
1-Methylnaphthalene		<0.005	mg/L	1	0.005
2-Methylnaphthalene		<0.005	mg/L	1	0.005
1,2,4,5-Tetrachlorobenzene		<0.005	mg/L	1	0.005
Hexachlorocyclopentadiene		<0.005	mg/L	1	0.005
2,4,6-Trichlorophenol		<0.005	mg/L	1	0.005
2,4,5-Trichlorophenol		<0.005	mg/L	1	0.005
2-Chloronaphthalene		<0.005	mg/L	1	0.005
1-Chloronaphthalene		<0.005	mg/L	1	0.005
2-Nitroaniline		<0.005	mg/L	1	0.005
Dimethylphthalate		<0.005	mg/L	1	0.005
Acenaphthylene		<0.005	mg/L	1	0.005
2,6-Dinitrotoluene		<0.005	mg/L	1	0.005
3-Nitroaniline		<0.005	mg/L	1	0.005
Acenaphthene		<0.005	mg/L	1	0.005
2,4-Dinitrophenol		<0.005	mg/L	1	0.005
Dibenzofuran		<0.005	mg/L	1	0.005
Pentachlorobenzene		<0.005	mg/L	1	0.005
4-Nitrophenol		<0.005	mg/L	1	0.005

Continued ...

... Continued Sample: 195497 Analysis: Semivolatiles

Param	Flag	Result	Units	Dilution	RDL
1-Naphthylamine		<0.005	mg/L	1	0.005
2,4-Dinitrotoluene		<0.005	mg/L	1	0.005
2-Naphthylamine		<0.005	mg/L	1	0.005
2,3,4,6-Tetrachlorophenol		<0.005	mg/L	1	0.005
Fluorene		<0.005	mg/L	1	0.005
Diethylphthalate		<0.005	mg/L	1	0.005
4-Chlorophenyl-phenylether		<0.005	mg/L	1	0.005
4-Nitroaniline		<0.005	mg/L	1	0.005
4,6-Dinitro-2-methylphenol		<0.005	mg/L	1	0.005
Diphenylamine		<0.005	mg/L	1	0.005
Diphenylhydrazine		<0.005	mg/L	1	0.005
4-Bromophenyl-phenylether		<0.005	mg/L	1	0.005
Phenacetin		<0.005	mg/L	1	0.005
Hexachlorobenzene		<0.005	mg/L	1	0.005
4-Aminobiphenyl		<0.005	mg/L	1	0.005
Pentachlorophenol		<0.005	mg/L	1	0.005
Pentachloronitrobenzene		<0.005	mg/L	1	0.005
Pronamide		<0.005	mg/L	1	0.005
Phenanthrene		<0.005	mg/L	1	0.005
Anthracene		<0.005	mg/L	1	0.005
Di-n-butylphthalate		<0.005	mg/L	1	0.005
Fluoranthene		<0.005	mg/L	1	0.005
Benzidine		<0.005	mg/L	1	0.005
Pyrene		<0.005	mg/L	1	0.005
p-Dimethylaminoazobenzene		<0.005	mg/L	1	0.005
Butylbenzylphthalate		<0.005	mg/L	1	0.005
Benzo(a)anthracene		<0.005	mg/L	1	0.005
3,3-Dichlorobenzidine		<0.005	mg/L	1	0.005
Chrysene		<0.005	mg/L	1	0.005
Bis (2-ethylhexyl) phthalate		<0.005	mg/L	1	0.005
Di-n-octylphthalate		<0.005	mg/L	1	0.005
Benzo(b)fluoranthene		<0.005	mg/L	1	0.005
7,12-Dimethylbenz(a)anthracene		<0.005	mg/L	1	0.005
Benzo(k)fluoranthene		<0.005	mg/L	1	0.005
Benzo(a)pyrene		<0.005	mg/L	1	0.005
3-Methylcholanthrene		<0.005	mg/L	1	0.005
Dibenzo(a,j)acridine		<0.005	mg/L	1	0.005
Indeno(1,2,3-cd)pyrene		<0.005	mg/L	1	0.005
Dibenzo(a,h)anthracene		<0.005	mg/L	1	0.005
Benzo(g,h,i)perylene		<0.005	mg/L	1	0.005

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		21.37	mg/L	1	80	26	21 - 100
Phenol-d5		12.35	mg/L	1	80	15	11 - 94
Nitrobenzene-d5		51.63	mg/L	1	80	64	35 - 114
2-Fluorobiphenyl		55.05	mg/L	1	80	68	43 - 116
2,4,6-Tribromophenol		41.07	mg/L	1	80	51	10 - 123
Terphenyl-d14		46.48	mg/L	1	80	58	33 - 141

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Sample: 195497 - 0204231022-25

Analysis: TDS Analytical Method: E 160.1 QC Batch: QC20034 Date Analyzed: 4/30/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB19212 Date Prepared: 4/29/02

Param	Flag	Result	Units	Dilution	RDL
Total Dissolved Solids		1150	mg/L	1	10

Sample: 195497 - 0204231022-25

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC19902 Date Analyzed: 4/26/02
Analyst: RR Preparation Method: S 3010A Prep Batch: PB19044 Date Prepared: 4/25/02

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		0.167	mg/L	1	0.10
Total Arsenic		<0.050	mg/L	1	0.05
Total Barium		<0.100	mg/L	1	0.10
Total Boron		0.598	mg/L	1	0.005
Total Cadmium		<0.005	mg/L	1	0.005
Total Chromium		<0.010	mg/L	1	0.01
Total Cobalt		<0.025	mg/L	1	0.02
Total Copper		<0.0125	mg/L	1	0.01
Total Iron		0.0936	mg/L	1	0.05
Total Lead		<0.010	mg/L	1	0.01
Total Manganese		<0.025	mg/L	1	0.02
Total Molybdenum		<0.050	mg/L	1	0.05
Total Nickel		<0.025	mg/L	1	0.02
Total Selenium		<0.050	mg/L	1	0.05
Total Silica		58.2	mg/L	1	0.05
Total Silver		<0.0125	mg/L	1	0.01
Total Zinc		0.0364	mg/L	1	0.02

Sample: 195497 - 0204231022-25

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC19868 Date Analyzed: 4/25/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB19076 Date Prepared: 4/25/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1

Continued ...

... Continued Sample: 195497 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
Methylene chloride		<5.00	µg/L	1	5
MTBE		<1.00	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5
Hexachlorobutadiene		<5.00	µg/L	1	5

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Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		55.0	µg/L	1	50	110	82 - 114
Toluene-d8		53.7	µg/L	1	50	107	86 - 113
4-Bromofluorobenzene		47.8	µg/L	1	50	96	90 - 105

Sample: 195497 - 0204231022-25

Analysis: pH Analytical Method: E 150.1 QC Batch: QC19850 Date Analyzed: 4/24/02
Analyst: RS Preparation Method: N/A Prep Batch: PB19059 Date Prepared: 4/24/02

Param	Flag	Result	Units	Dilution	RDL
pH	2	7.5	s.u.	1	1

²Sample was received out of holding time.

Quality Control Report Method Blank

Method Blank

QCBatch: QC19868

Param	Flag	Results	Units	Reporting Limit
Bromochloromethane		<1.00	µg/L	1
Dichlorodifluoromethane		<1.00	µg/L	1
Chloromethane (methyl chloride)		<1.00	µg/L	1
Vinyl Chloride		<1.00	µg/L	1
Bromomethane (methyl bromide)		<5.00	µg/L	5
Chloroethane		<1.00	µg/L	1
Trichlorofluoromethane		<1.00	µg/L	1
Acetone		<10.0	µg/L	10
Iodomethane (methyl iodide)		<5.00	µg/L	5
Carbon Disulfide		<1.00	µg/L	1
Acrylonitrile		<1.00	µg/L	1
2-Butanone (MEK)		<5.00	µg/L	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	5
2-hexanone		<5.00	µg/L	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	10
1,1-Dichloroethene		<1.00	µg/L	1
Methylene chloride		<5.00	µg/L	5
MTBE		<1.00	µg/L	1
trans-1,2-Dichloroethene		<1.00	µg/L	1
1,1-Dichloroethane		<1.00	µg/L	1
cis-1,2-Dichloroethene		<1.00	µg/L	1
2,2-Dichloropropane		<1.00	µg/L	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1
Chloroform		<1.00	µg/L	1
1,1,1-Trichloroethane		<1.00	µg/L	1
1,1-Dichloropropene		<1.00	µg/L	1
Benzene		<1.00	µg/L	1
Carbon Tetrachloride		<1.00	µg/L	1
1,2-Dichloropropane		<1.00	µg/L	1
Trichloroethene (TCE)		<1.00	µg/L	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1
Bromodichloromethane		<1.00	µg/L	1
2-Chloroethyl vinyl ether		<5.00	µg/L	5
cis-1,3-Dichloropropene		<1.00	µg/L	1
trans-1,3-Dichloropropene		<1.00	µg/L	1
Toluene		<1.00	µg/L	1
1,1,2-Trichloroethane		<1.00	µg/L	1
1,3-Dichloropropane		<1.00	µg/L	1
Dibromochloromethane		<1.00	µg/L	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1
Tetrachloroethene (PCE)		<1.00	µg/L	1
Chlorobenzene		<1.00	µg/L	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1
Ethylbenzene		<1.00	µg/L	1
m,p-Xylene		<1.00	µg/L	1
Bromoform		<1.00	µg/L	1

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Param	Flag	Results	Units	Reporting Limit
Styrene		<1.00	µg/L	1
o-Xylene		<1.00	µg/L	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1
2-Chlorotoluene		<1.00	µg/L	1
1,2,3-Trichloropropane		<1.00	µg/L	1
Isopropylbenzene		<1.00	µg/L	1
Bromobenzene		<1.00	µg/L	1
n-Propylbenzene		<1.00	µg/L	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1
tert-Butylbenzene		<1.00	µg/L	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1
sec-Butylbenzene		<1.00	µg/L	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1
p-Isopropyltoluene		<1.00	µg/L	1
4-Chlorotoluene		<1.00	µg/L	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1
n-Butylbenzene		<1.00	µg/L	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	5
1,2,3-Trichlorobenzene		<5.00	µg/L	5
1,2,4-Trichlorobenzene		<5.00	µg/L	5
Naphthalene		<5.00	µg/L	5
Hexachlorobutadiene		<5.00	µg/L	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		54.8	µg/L	1	50	110	82 - 114
Toluene-d8		55.4	µg/L	1	50	111	86 - 113
4-Bromofluorobenzene		49.4	µg/L	1	50	99	90 - 105

Method Blank

QCBatch: QC19885

Param	Flag	Results	Units	Reporting Limit
Specific Conductance		2.33	µMHOS/cm	

Method Blank

QCBatch: QC19902

Param	Flag	Results	Units	Reporting Limit
Total Aluminum		<0.100	mg/L	0.10
Total Arsenic		<0.050	mg/L	0.05
Total Barium		<0.100	mg/L	0.10
Total Boron		<0.005	mg/L	0.005
Total Cadmium		<0.005	mg/L	0.005
Total Chromium		<0.010	mg/L	0.01
Total Cobalt		<0.025	mg/L	0.02

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Param	Flag	Results	Units	Reporting Limit
Total Copper		<0.0125	mg/L	0.01
Total Iron		<0.050	mg/L	0.05
Total Lead		<0.010	mg/L	0.01
Total Manganese		<0.025	mg/L	0.02
Total Molybdenum		<0.050	mg/L	0.05
Total Nickel		<0.025	mg/L	0.02
Total Selenium		<0.050	mg/L	0.05
Total Silica		<0.050	mg/L	0.05
Total Silver		<0.0125	mg/L	0.01
Total Zinc		<0.025	mg/L	0.02

Method Blank

QCBatch: QC19955

Param	Flag	Results	Units	Reporting Limit
Pyridine		<0.005	mg/L	0.005
n-Nitrosodimethylamine		<0.005	mg/L	0.005
2-Picoline		<0.005	mg/L	0.005
Methyl methanesulfonate		<0.005	mg/L	0.005
Ethyl methanesulfonate		<0.005	mg/L	0.005
Phenol		<0.005	mg/L	0.005
Aniline		<0.005	mg/L	0.005
bis (2-chloroethyl) ether		<0.005	mg/L	0.005
2-Chlorophenol		<0.005	mg/L	0.005
1,3-Dichlorobenzene (meta)		<0.005	mg/L	0.005
1,4-Dichlorobenzene		<0.005	mg/L	0.005
Benzyl alcohol		<0.005	mg/L	0.005
1,2-Dichlorobenzene		<0.005	mg/L	0.005
2-Methylphenol		<0.005	mg/L	0.005
bis (2-chloroisopropyl) ether		<0.005	mg/L	0.005
4-Methylphenol/3-Methylphenol		<0.005	mg/L	0.005
Acetophenone		<0.005	mg/L	0.005
n-Nitrosodi-n-propylamine		<0.005	mg/L	0.005
Hexachloroethane		<0.005	mg/L	0.005
Nitrobenzene		<0.005	mg/L	0.005
n-Nitrosopiperidine		<0.005	mg/L	0.005
Isophorone		<0.005	mg/L	0.005
2-Nitrophenol		<0.005	mg/L	0.005
2,4-Dimethylphenol		<0.005	mg/L	0.005
bis (2-chloroethoxy) methane		<0.005	mg/L	0.005
Benzoic acid		<0.005	mg/L	0.005
2,4-Dichlorophenol		<0.005	mg/L	0.005
1,2,4-Trichlorobenzene		<0.005	mg/L	0.005
a,a-Dimethylphenethylamine		<0.005	mg/L	0.005
Naphthalene		<0.005	mg/L	0.005
4-Chloroaniline		<0.005	mg/L	0.005
2,6-Dichlorophenol		<0.005	mg/L	0.005
Hexachlorobutadiene		<0.005	mg/L	0.005
n-Nitroso-di-n-butylamine		<0.005	mg/L	0.005
4-Chloro-3-methylphenol		<0.005	mg/L	0.005

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Param	Flag	Results	Units	Reporting Limit
1-Methylnaphthalene		<0.005	mg/L	0.005
2-Methylnaphthalene		<0.005	mg/L	0.005
1,2,4,5-Tetrachlorobenzene		<0.005	mg/L	0.005
Hexachlorocyclopentadiene		<0.005	mg/L	0.005
2,4,6-Trichlorophenol		<0.005	mg/L	0.005
2,4,5-Trichlorophenol		<0.005	mg/L	0.005
2-Chloronaphthalene		<0.005	mg/L	0.005
1-Chloronaphthalene		<0.005	mg/L	0.005
2-Nitroaniline		<0.005	mg/L	0.005
Dimethylphthalate		<0.005	mg/L	0.005
Acenaphthylene		<0.005	mg/L	0.005
2,6-Dinitrotoluene		<0.005	mg/L	0.005
3-Nitroaniline		<0.005	mg/L	0.005
Acenaphthene		<0.005	mg/L	0.005
2,4-Dinitrophenol		<0.005	mg/L	0.005
Dibenzofuran		<0.005	mg/L	0.005
Pentachlorobenzene		<0.005	mg/L	0.005
4-Nitrophenol		<0.005	mg/L	0.005
1-Naphthylamine		<0.005	mg/L	0.005
2,4-Dinitrotoluene		<0.005	mg/L	0.005
2-Naphthylamine		<0.005	mg/L	0.005
2,3,4,6-Tetrachlorophenol		<0.005	mg/L	0.005
Fluorene		<0.005	mg/L	0.005
Diethylphthalate		<0.005	mg/L	0.005
4-Chlorophenyl-phenylether		<0.005	mg/L	0.005
4-Nitroaniline		<0.005	mg/L	0.005
4,6-Dinitro-2-methylphenol		<0.005	mg/L	0.005
Diphenylamine		<0.005	mg/L	0.005
Diphenylhydrazine		<0.005	mg/L	0.005
4-Bromophenyl-phenylether		<0.005	mg/L	0.005
Phenacetin		<0.005	mg/L	0.005
Hexachlorobenzene		<0.005	mg/L	0.005
4-Aminobiphenyl		<0.005	mg/L	0.005
Pentachlorophenol		<0.005	mg/L	0.005
Pentachloronitrobenzene		<0.005	mg/L	0.005
Pronamide		<0.005	mg/L	0.005
Phenanthrene		<0.005	mg/L	0.005
Anthracene		<0.005	mg/L	0.005
Di-n-butylphthalate		<0.005	mg/L	0.005
Fluoranthene		<0.005	mg/L	0.005
Benzidine		<0.005	mg/L	0.005
Pyrene		<0.005	mg/L	0.005
p-Dimethylaminoazobenzene		<0.005	mg/L	0.005
Butylbenzylphthalate		<0.005	mg/L	0.005
Benzo(a)anthracene		<0.005	mg/L	0.005
3,3-Dichlorobenzidine		<0.005	mg/L	0.005
Chrysene		<0.005	mg/L	0.005
Bis (2-ethylhexyl) phthalate		<0.005	mg/L	0.005
Di-n-octylphthalate		<0.005	mg/L	0.005
Benzo(b)fluoranthene		<0.005	mg/L	0.005
7,12-Dimethylbenz(a)anthracene		<0.005	mg/L	0.005
Benzo(k)fluoranthene		<0.005	mg/L	0.005

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Param	Flag	Results	Units	Reporting Limit
Benzo(a)pyrene		<0.005	mg/L	0.005
3-Methylcholanthrene		<0.005	mg/L	0.005
Dibenzo(a,j)acridine		<0.005	mg/L	0.005
Indeno(1,2,3-cd)pyrene		<0.005	mg/L	0.005
Dibenzo(a,h)anthracene		<0.005	mg/L	0.005
Benzo(g,h,i)perylene		<0.005	mg/L	0.005

Method Blank

QCBatch: QC19960

Param	Flag	Results	Units	Reporting Limit
Chloride		<2.0	mg/L	0.50
Fluoride		<0.2	mg/L	0.20
Nitrate-N		<0.2	mg/L	0.20
Sulfate		<2.0	mg/L	0.50

Method Blank

QCBatch: QC19986

Param	Flag	Results	Units	Reporting Limit
Hydroxide Alkalinity		<1.0	mg/L as CaCo3	1
Carbonate Alkalinity		<1.0	mg/L as CaCo3	1
Bicarbonate Alkalinity		<4.0	mg/L as CaCo3	1
Total Alkalinity		<4.0	mg/L as CaCo3	1

Method Blank

QCBatch: QC20029

Param	Flag	Results	Units	Reporting Limit
Total Calcium		<0.5	mg/L	0.50
Total Magnesium		<0.5	mg/L	0.50
Total Potassium		<0.7	mg/L	0.50
Total Sodium		<0.5	mg/L	0.50

Method Blank

QCBatch: QC20034

Param	Flag	Results	Units	Reporting Limit
Total Dissolved Solids		<10	mg/L	10

Method Blank

QCBatch: QC20060

Param	Flag	Results	Units	Reporting Limit
Dissolved Calcium		<0.5	mg/L	0.50
Dissolved Magnesium		<0.5	mg/L	0.50
Dissolved Potassium		<0.5	mg/L	0.50
Dissolved Sodium		<0.5	mg/L	0.50

Method Blank QCBatch: QC20061

Param	Flag	Results	Units	Reporting Limit
Dissolved Calcium		<0.5	mg/L	0.50
Dissolved Magnesium		<0.5	mg/L	0.50
Dissolved Potassium		<0.5	mg/L	0.50
Dissolved Sodium		<0.5	mg/L	0.50

Method Blank QCBatch: QC20126

Param	Flag	Results	Units	Reporting Limit
Total Mercury		<0.0002	mg/L	0.0002

Quality Control Report Duplicate Samples

Duplicate QCBatch: QC19850

Param	Flag	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
pH		8.6	8.6	s.u.	1	0	0

Duplicate QCBatch: QC19885

Param	Flag	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Specific Conductance		11742	11699	µMHOS/cm	1	0	3.5

Duplicate QCBatch: QC19986

Param	Flag	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Hydroxide Alkalinity		<1.0	<1.0	mg/L as CaCo3	1	0	6.6
Carbonate Alkalinity		<1.0	<1.0	mg/L as CaCo3	1	0	6.6
Bicarbonate Alkalinity		198	196	mg/L as CaCo3	1	1	6.6

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Param	Flag	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Alkalinity		198	196	mg/L as CaCo3	1	1	6.6

Duplicate

QCBatch: QC20034

Param	Flag	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids		6110	5960	mg/L	1	2	9.7

Quality Control Report Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes

QCBatch: QC19868

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
1,1-Dichloroethene	99.9	102	µg/L	1	100	<1.00	100	2	85 - 122	20
Benzene	97.6	104	µg/L	1	100	<1.00	98	6	89 - 111	20
Trichloroethene (TCE)	91.2	96.4	µg/L	1	100	<1.00	91	6	82 - 104	20
Toluene	95.7	103	µg/L	1	100	<1.00	96	7	89 - 109	20
Chlorobenzene	94.3	100	µg/L	1	100	<1.00	94	6	94 - 111	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Dibromofluoromethane	53.8	53.6	µg/L	1	50	108	107	82 - 114
Toluene-d8	52.7	53.0	µg/L	1	50	105	106	86 - 113
4-Bromofluorobenzene	48.3	50.2	µg/L	1	50	97	100	90 - 105

Laboratory Control Spikes

QCBatch: QC19902

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Lead	0.507	0.507	mg/L	1	0.50	<0.010	101	0	85 - 115	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC19955

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Phenol	17.23	20.68	mg/L	1	80	<0.005	21	18	5 - 112	20
2-Chlorophenol	43.79	50.32	mg/L	1	80	<0.005	54	13	23 - 134	20

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Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
1,4-Dichlorobenzene	45.76	50.84	mg/L	1	80	<0.005	57	10	20 - 124	20
n-Nitrosodi-n-propylamine	52.77	59.76	mg/L	1	80	<0.005	65	12	0 - 230	20
1,2,4-Trichlorobenzene	43.77	48.63	mg/L	1	80	<0.005	54	10	44 - 142	20
4-Chloro-3-methylphenol	49.18	51.06	mg/L	1	80	<0.005	61	3	22 - 147	20
Acenaphthene	60.7	65.73	mg/L	1	80	<0.005	75	7	47 - 145	20
4-Nitrophenol	11.93	14.01	mg/L	1	80	<0.005	14	16	0 - 132	20
2,4-Dinitrotoluene	62.94	61.47	mg/L	1	80	<0.005	78	2	39 - 139	20
Pentachlorophenol	24.91	28.36	mg/L	1	80	<0.005	31	12	14 - 176	20
Pyrene	59.34	54.64	mg/L	1	80	<0.005	74	8	52 - 115	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
2-Fluorophenol	23.62	28.3	mg/L	1	80	29	35	21 - 100
Phenol-d5	17.06	19.9	mg/L	1	80	21	24	11 - 94
Nitrobenzene-d5	50.77	56.1	mg/L	1	80	63	70	35 - 114
2-Fluorobiphenyl	53.56	60.58	mg/L	1	80	66	75	43 - 116
2,4,6-Tribromophenol	50.42	50.88	mg/L	1	80	63	63	10 - 123
Terphenyl-d14	58.33	55.04	mg/L	1	80	72	68	33 - 141

Laboratory Control Spikes

QCBatch: QC19960

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	12.15	12.14	mg/L	1	12.50	<2.0	97	0	90 - 110	20
Fluoride	2.33	2.50	mg/L	1	2.50	<0.2	93	7	90 - 110	20
Nitrate-N	2.54	2.60	mg/L	1	2.50	<0.2	101	2	90 - 110	20
Sulfate	12.17	12.79	mg/L	1	12.50	<2.0	97	4	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC20029

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Calcium	97.4	99.2	mg/L	1	100	<0.5	97	1	85 - 115	20
Total Magnesium	96.9	98.7	mg/L	1	100	<0.5	96	1	85 - 115	20
Total Potassium	93.6	96.3	mg/L	1	100	<0.7	93	2	85 - 115	20
Total Sodium	101	103	mg/L	1	100	<0.5	101	1	85 - 115	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC20060

Continued ...

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Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Dissolved Calcium	102	102	mg/L	1	100	<0.5	102	0	75 - 125	20
Dissolved Magnesium	99.3	99.2	mg/L	1	100	<0.5	99	0	75 - 125	20
Dissolved Potassium	102	102	mg/L	1	100	<0.5	102	0	75 - 125	20
Dissolved Sodium	102	101	mg/L	1	100	<0.5	102	0	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC20061

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Dissolved Calcium	102	102	mg/L	1	100	<0.5	102	0	75 - 125	20
Dissolved Magnesium	99.3	99.2	mg/L	1	100	<0.5	99	0	75 - 125	20
Dissolved Potassium	102	102	mg/L	1	100	<0.5	102	0	75 - 125	20
Dissolved Sodium	102	101	mg/L	1	100	<0.5	102	0	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC20126

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Mercury	0.00102	0.00099	mg/L	1	0.001	<0.0002	102	2	87 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Matrix Spikes and Duplicate Spikes

Matrix Spikes

QCBatch: QC19902

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Aluminum	1.31	1.27	mg/L	1	1	0.157	115	3	75 - 125	20
Total Arsenic	0.506	0.504	mg/L	1	0.50	<0.050	101	0	75 - 125	20
Total Barium	1.04	1.02	mg/L	1	1	<0.100	104	1	75 - 125	20
Total Boron	³ 0.822	⁴ 0.758	mg/L	1	0.05	0.832	-20	-152	75 - 125	20
Total Cadmium	0.230	0.227	mg/L	1	0.25	<0.005	92	1	75 - 125	20
Total Chromium	0.0996	0.100	mg/L	1	0.10	<0.010	99	0	75 - 125	20

Continued ...

³Matrix spike recovery invalid due to matrix difficulties. LCS demonstrates process under control.

⁴Matrix spike recovery invalid due to matrix difficulties. LCS demonstrates process under control.

... Continued

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Cobalt	0.236	0.237	mg/L	1	0.25	<0.025	94	0	75 - 125	20
Total Copper	0.137	0.133	mg/L	1	0.12	<0.0125	109	2	75 - 125	20
Total Iron	0.574	0.565	mg/L	1	0.50	0.0803	98	1	75 - 125	20
Total Lead	0.472	0.474	mg/L	1	0.50	<0.010	94	0	75 - 125	20
Total Manganese	0.243	0.239	mg/L	1	0.25	<0.025	97	1	75 - 125	20
Total Molybdenum	0.501	0.507	mg/L	1	0.50	<0.050	100	1	75 - 125	20
Total Nickel	0.231	0.232	mg/L	1	0.25	<0.025	92	0	75 - 125	20
Total Selenium	0.437	0.446	mg/L	1	0.50	<0.050	87	2	75 - 125	20
Total Silica	60.8	60.8	mg/L	1	1	59.7	109	0	75 - 125	20
Total Silver	0.124	0.122	mg/L	1	0.12	<0.0125	99	1	75 - 125	20
Total Zinc	0.234	0.234	mg/L	1	0.25	<0.025	93	0	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC19960

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	1330.52	1328.96	mg/L	1	625	724	97	0	48 - 127	20
Fluoride	⁵ 111.48	⁶ 116.30	mg/L	1	125	2.24	87	4	82 - 101	20
Nitrate-N	⁷ 140.71	⁸ 144.86	mg/L	1	125	11.3	103	3	87 - 100	20
Sulfate	1076.98	1074.15	mg/L	1	625	542	85	0	59 - 121	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC20029

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Calcium	237	233	mg/L	1	100	132	105	3	75 - 125	20
Total Magnesium	128	126	mg/L	1	100	24.7	103	1	75 - 125	20
Total Potassium	107	109	mg/L	1	100	4.86	102	1	75 - 125	20
Total Sodium	263	265	mg/L	1	100	151	112	1	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC20060

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Dissolved Calcium	154	157	mg/L	1	100	58.1	95	3	75 - 125	20

Continued ...

⁵19555 *50 dilution was used for the spikes, but the *5 dilution was reported. The correct %Rec = 83.

⁶19555 *50 dilution was used for the spikes, but the *5 dilution was reported. The correct %Rec = 87.

⁷19555 *50 dilution was used for the spikes, but the *5 dilution was reported. The correct %Rec = 89.

⁸19555 *50 dilution was used for the spikes, but the *5 dilution was reported. The correct %Rec = 103.

... Continued

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Dissolved Magnesium	192	189	mg/L	1	100	93.6	98	3	75 - 125	20
Dissolved Potassium	128	129	mg/L	1	100	29.5	98	1	75 - 125	20
Dissolved Sodium	276	276	mg/L	1	100	172	104	0	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC20061

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Dissolved Calcium	276	281	mg/L	1	100	151	125	3	75 - 125	20
Dissolved Magnesium	140	143	mg/L	1	100	30.4	109	2	75 - 125	20
Dissolved Potassium	118	120	mg/L	1	100	5.91	112	1	75 - 125	20
Dissolved Sodium	294	306	mg/L	1	100	171	123	9	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC20126

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Mercury	0.00101	0.00099	mg/L	1	0.001	<0.0002	101	2	40 - 177	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Continuing Calibration Verification Standards

CCV (1) QCBatch: QC19850

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		s.u.	7	7.0	100	-0.1 s.u. - +0.1 s.u.	4/24/02

ICV (1) QCBatch: QC19850

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		s.u.	7	7.0	100	-0.1 s.u. - +0.1 s.u.	4/24/02

CCV (1) QCBatch: QC19868

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/L	50	51.0	102	80 - 120	4/25/02
1,1-Dichloroethene		µg/L	50	50.0	100	80 - 120	4/25/02
Chloroform		µg/L	50	49.0	98	80 - 120	4/25/02
1,2-Dichloropropane		µg/L	50	49.0	98	80 - 120	4/25/02
Toluene		µg/L	50	50.0	100	80 - 120	4/25/02
Chlorobenzene		µg/L	50	46.0	92	80 - 120	4/25/02
Ethylbenzene		µg/L	50	47.0	94	80 - 120	4/25/02
Dibromofluoromethane		µg/L	50	53.7	107	80 - 120	4/25/02
Toluene-d8		µg/L	50	53.0	106	80 - 120	4/25/02
4-Bromofluorobenzene		µg/L	50	54.1	108	80 - 120	4/25/02

CCV (1) QCBatch: QC19885

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Specific Conductance		µMHOS/cm	1412	1405	99	90 - 110	4/26/02

ICV (1) QCBatch: QC19885

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Specific Conductance		µMHOS/cm	1409	1408	99	90 - 110	4/26/02

CCV (1) QCBatch: QC19902

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Lead		mg/L	1	1.01	101	90 - 110	4/26/02

ICV (1) QCBatch: QC19902

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Lead		mg/L	1	1.01	101	95 - 105	4/26/02

CCV (1) QCBatch: QC19955

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Phenol		mg/L	60	63.03	105	80 - 120	4/27/02
1,4-Dichlorobenzene		mg/L	60	55.53	92	80 - 120	4/27/02
2-Nitrophenol		mg/L	60	60.01	100	80 - 120	4/27/02
2,4-Dichlorophenol		mg/L	60	55.58	92	80 - 120	4/27/02
Hexachlorobutadiene		mg/L	60	58.96	98	80 - 120	4/27/02
4-Chloro-3-methylphenol		mg/L	60	60.49	100	80 - 120	4/27/02
2,4,6-Trichlorophenol		mg/L	60	58.66	97	80 - 120	4/27/02
Acenaphthene		mg/L	60	62.35	103	80 - 120	4/27/02
Diphenylamine		mg/L	60	58.19	96	80 - 120	4/27/02
Pentachlorophenol		mg/L	60	49.3	82	80 - 120	4/27/02
Fluoranthene		mg/L	60	56.5	94	80 - 120	4/27/02
Di-n-octylphthalate		mg/L	60	67.27	112	80 - 120	4/27/02
Benzo(a)pyrene		mg/L	60	61.11	101	80 - 120	4/27/02
2-Fluorophenol		mg/L	60	65.46	109	80 - 120	4/27/02
Phenol-d5		mg/L	60	64.85	108	80 - 120	4/27/02
Nitrobenzene-d5		mg/L	60	59.79	99	80 - 120	4/27/02
2-Fluorobiphenyl		mg/L	60	62.19	103	80 - 120	4/27/02
2,4,6-Tribromophenol		mg/L	60	54.36	90	80 - 120	4/27/02
Terphenyl-d14		mg/L	60	55.19	91	80 - 120	4/27/02

CCV (1)

QCBatch: QC19960

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	12.19	97	90 - 110	4/24/02
Fluoride		mg/L	2.50	2.60	104	90 - 110	4/24/02
Nitrate-N		mg/L	2.50	2.58	103	90 - 110	4/24/02
Sulfate		mg/L	12.50	13.26	106	90 - 110	4/24/02

ICV (1)

QCBatch: QC19960

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	11.97	95	90 - 110	4/24/02
Fluoride		mg/L	2.50	2.57	102	90 - 110	4/24/02
Nitrate-N		mg/L	2.50	2.55	102	90 - 110	4/24/02
Sulfate		mg/L	12.50	12.75	102	90 - 110	4/24/02

CCV (1)

QCBatch: QC19986

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity		mg/L as CaCo3	0	<1.0	0	90 - 110	4/30/02

Continued ...

... Continued

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Carbonate Alkalinity		mg/L as CaCo3	0	228	0	90 - 110	4/30/02
Bicarbonate Alkalinity		mg/L as CaCo3	0	16	0	90 - 110	4/30/02
Total Alkalinity		mg/L as CaCo3	250	244	97	90 - 110	4/30/02

ICV (1) QCBatch: QC19986

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity		mg/L as CaCo3	0	<1.0	0	90 - 110	4/30/02
Carbonate Alkalinity		mg/L as CaCo3	0	224	0	90 - 110	4/30/02
Bicarbonate Alkalinity		mg/L as CaCo3	0	18	0	90 - 110	4/30/02
Total Alkalinity		mg/L as CaCo3	250	242	96	90 - 110	4/30/02

CCV (1) QCBatch: QC20029

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Calcium		mg/L	25	24.2	96	90 - 110	5/1/02
Total Magnesium		mg/L	25	23.8	95	90 - 110	5/1/02
Total Potassium		mg/L	25	24.7	98	90 - 110	5/1/02
Total Sodium		mg/L	25	26.1	104	90 - 110	5/1/02

ICV (1) QCBatch: QC20029

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Calcium		mg/L	25	24.9	99	95 - 105	5/1/02
Total Magnesium		mg/L	25	24.8	99	95 - 105	5/1/02
Total Potassium		mg/L	25	24.6	98	95 - 105	5/1/02
Total Sodium		mg/L	25	25.8	103	95 - 105	5/1/02

CCV (1) QCBatch: QC20034

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Dissolved Solids		mg/L	1000	987	98	90 - 110	4/30/02

ICV (1) QCBatch: QC20034

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Dissolved Solids		mg/L	1000	975	97	90 - 110	4/30/02

CCV (1) QCBatch: QC20060

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Calcium		mg/L	25	24.2	96	90 - 110	4/29/02
Dissolved Magnesium		mg/L	25	23.9	95	90 - 110	4/29/02
Dissolved Potassium		mg/L	25	24.4	97	90 - 110	4/29/02
Dissolved Sodium		mg/L	25	24.4	97	90 - 110	4/29/02

ICV (1) QCBatch: QC20060

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Calcium		mg/L	25	24.7	98	95 - 105	4/29/02
Dissolved Magnesium		mg/L	25	24.6	98	95 - 105	4/29/02
Dissolved Potassium		mg/L	25	24.8	99	95 - 105	4/29/02
Dissolved Sodium		mg/L	25	24.9	99	95 - 105	4/29/02

CCV (1) QCBatch: QC20061

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Calcium		mg/L	25	24.2	96	90 - 110	4/29/02
Dissolved Magnesium		mg/L	25	23.9	95	90 - 110	4/29/02
Dissolved Potassium		mg/L	25	24.4	97	90 - 110	4/29/02
Dissolved Sodium		mg/L	25	24.4	97	90 - 110	4/29/02

ICV (1) QCBatch: QC20061

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Calcium		mg/L	25	24.7	98	95 - 105	4/29/02
Dissolved Magnesium		mg/L	25	24.6	98	95 - 105	4/29/02
Dissolved Potassium		mg/L	25	24.8	99	95 - 105	4/29/02
Dissolved Sodium		mg/L	25	24.9	99	95 - 105	4/29/02

Report Date: May 7, 2002
Champion Technologies

Order Number: A02042410
Harmon-Castillo

Page Number: 29 of 29
503 E. Llano Grande-4027 S Eunice Highway

CCV (1) QCBatch: QC20126

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Mercury		mg/L	0.001	0.00099	99	80 - 120	5/6/02

ICV (1) QCBatch: QC20126

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Mercury		mg/L	0.001	0.00093	93	80 - 120	5/6/02



NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON
Governor
Betty Rivera
Cabinet Secretary

Lori Wrotenberg
Director
Oil Conservation Division

FAX

TO: WAYNE PRICE

FROM: LARRY JOHNSON

Energy Minerals and Natural Resources Department,
Oil Conservation Division

RE: CHAMPION SAMPLING

DATE: 6/20/02

WAYNE,

HERE ARE MINE & PAUL'S NOTES ON TESTING.
THIS ARE DETAILED. HOPE THIS WILL CLARIFY YOUR NEEDS.

LARRY

3

Pages (Including Transmittal)

LARRY JOHNSON LOG



*This is an age in which one cannot find
common sense without a search warrant.*
— *George F. Will*

23

**Tuesday
April 2002**

Daily Record of Events

113th Day 252 Lof Week 17

9:00 SAMPLE WATSEWELL ② CHAMPION CHEM
- 1st WELL 2 HOUSE TO WEST
- 2nd WELL 1st HOUSE TO SOUTH
11:00 PACK SAMPLES ON ICE
PREP FOR SHIP IN BUS
11:30 CALL WPRICE ON SUMP TEST PROCEDURE
2:00 PUT SAMPLES ON BUS
2:30 LOAD ① NAVAJO SITE 5 MARLAND
READY TO START BACKFILL.
3:00 LOAD ② BRINE STATION ON BORDWY
PLACE FORCE CROOKS PREP TO TEST TUBES
4:00 - CALL MARTINE ON MESSAGE TO INSPECT
EQUILON LAND FARMS ① COOPER / JTL
CONVEYER RD SITE
4:30 LEAVE OFFICE
5:00 FINISH LOG SHOW

1480

PAUL SHEILEN
LOG

KG 100Z

4-19-02

DCR 1880 - 1886

1886 Lens Cap On
Del 1886
Exxon Mobil Kelly Pierce

PC

Named Tai Thanh Lam (915) 886-0086
Craig BNC Environmental
→ Ashburger X22

4-19-02

E! Lee (Champion Industries)
3021 Evale Hwy
393 8633

4-22

Larry Shelton 1st + Meant
806 2296014 mob. 790-6162

Ref to Exxon Mobil state "J" Com
AP 1887-1897 22-17-34

"needs more work"

⊕ state "II" ne 1-1-19
22-17-34

PC 4-22-02

Champion Chem
Apolinar Castillo
393-8032

4027 S. Eunice Hwy

OK to sample 4-23-02

PC

Pat McCann 6011 NE 401

Enterprise Laney #4

Jerry Guy

369-7407

where to set plug

Called Johnny Robinson

4-22-02

Company to be permitted to take
Waste Manifest. Called back @ 3:00

Ed Minton Email w/ cost estimate.

4-23-02 Champion Sampling

Arrived 0930 @ 503 E Harmon
Sampled wellhead Hans Grande
contacted Wendy Harmon to get
access to water well south of lot 10 in

Sample I.D. Parameter Note

Water Clear 110 Small

0204230946

Gen Chem 12.00 ICE

0204230947

Tot. Metals 500.00 ICE

0204230948 A

VOA 8260 400.00 HCL-ICE

0204230948 B

" " 400.00 " "

0204230949

SVOA 8270 1.0 ICE

0204230950

WMS

Arrived 10:09 @ 4027 S. Eunice Hwy
contacted resident began to pump
back yard hose & spigot @ 10:10

→ over

PAUL
SHELEY
LOG

PAGE 2 of 2

Water Clear No sample
bedrock Sample I.D. Parameter notes
0204231022 Gen Chem I.C.E.
0204231023 SODA test L.P. " "
0204231024 Tot Metals SODA test L.P. " "
0204231025A VOA 260 I.C.E. 48
0204231025B VOA dup. " "

Returned to v of file samples on ICE

4-23-02
15:20 EOTT Leak - Frank Hernandez
~20 bbls 33-18-35
(915) 638 3799

4-24-02 Dave Perman
State L Lake Loughton
0-18-17-36

Called Greka Energy 1911-1916
(713) 266-7493 6742

DCP 1914-1916 → 505 392 7462
→ Tracy Headstream
117 269 5155

DCP 1898-1919 Read & Steps

4-24-02 Stephen & Johnson 1919-1919

4-26-02 Greka Energy: Panels
#s for Tracy Headstream:
(505) 392 7462
(917) 769-5154

IC Tracy Headstream Line Energy
390-7462

4-24-02 DCP 1913 Mark & Gordon
DCP 1912 - 1898

4-29-02 DCP 1920-21 ECHO PROTECT

Ameraden 4-20-36 Leak Summary
5-20-37

4-30-02 DeWitt Owens K&H Engr
(281) 446-4427 DeWitt Owens

Pat Anderson 7/1/04 96 C.I. final

4-30-02 Met Ruddy (Ameraden) 20 July 2004
DCP 1922-1929 C-5-20-37
Nagel 12/20

6-1-02 Melissa 392-4498
Rhonda Engr. - C1- 250 ppm

T-600 P.04/04 Job-207

15053939758

JUN-20-02 15:17 From: 8152219

TRANSACTION REPORT

P.01

JUN-20-2002 THU 04:09 PM

FOR:

RECEIVE

DATE	START	SENDER	RX TIME	PAGES	TYPE	NOTE	M#	DP
JUN-20	04:07 PM	15053939758	1'38"	4	RECEIVE	OK		

195496-97

Page 1 of 1

6701 Aberdeen Avenue, Ste. 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

TraceAnalysis, Inc.

155 McCutcheon, Suite H
El Paso, Texas 79932
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # A02042410

Company Name: New Mexico Oil Conservation Div. Phone #: (505) 393-6161 X113

Address: (Street, City, Zip) 1625 N. French Dr., Hobbs, NM 88240 Fax #: (505) 393-0720

Contact Person: Paul Shreeley - Larry Johnson OCD Hobbs Wayne Price
476-3482 Santa Fe

Invoice to: (If different from above) Ed Martin - 1220 S. St. Francis Dr., Santa Fe

Project #: Champion Technologies Project Name: (Domestic Well) Harmon-Castillo

Project Location: 5 E. Llano Grande - 4027 S. Eunice Highway Sampler Signature: [Signature]

ANALYSIS REQUEST

(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX				PRESERVATIVE METHOD						SAMPLING		MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba	TCLP Metals Ag As Ba	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B/6242	GC/MS Semi. Vol. 8270	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	General	Turn Around Time if different	Hold			
				WATER	SOIL	AIR	SLUDGE	HCl	HNO ₃	H ₂ SO ₄	NaOH	ICE	NONE	DATE	TIME																					
195496	0204230946	1	1-L	X								X			4-23	0946																				
	0204230947	1	500 mL	X							X		X			11	0947			X																
	0204230948A	1	40 mL	X					X				X			11	948								X											
	0204230948B	1	40 mL	X					X				X			11	948								X										Back-up sample	
	0204230949	1	1-L	X									X			11	949									X										
195497	0204231022	1	1-L	X									X			11	1022																		X	
	0204231023	1	1-L	X									X			11	1023										X									
	0204231024	1	500 mL	X							X		X			11	1024			X																
	0204231025A	1	40 mL	X					X				X			11	1025									X										
	0204231025B	1	40 mL	X					X				X			11	1025									X									Back-up sample	

Relinquished by: [Signature] Date: 4-23-02 Time:

Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____

Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____

Received at Laboratory by: [Signature] Date: 4-24-02 Time: 10:00

LAB USE ONLY

Intact Y / N

Headspace Y / N

Temp -1 °

Log-in Review [Signature]

REMARKS:

5/8 FIP

☐ Check If Special Reporting Limits Are Needed

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

ORIGINAL COPY

Carrier # TNM80 902-877-875-9



NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON

Governor
Betty Rivera
Cabinet Secretary

Lori Wrotenbery
Director

Oil Conservation Division

FAX**TO:**Wayne Price**FROM:**Paul Sheeley

Energy Minerals and Natural Resources Department,
Oil Conservation Division

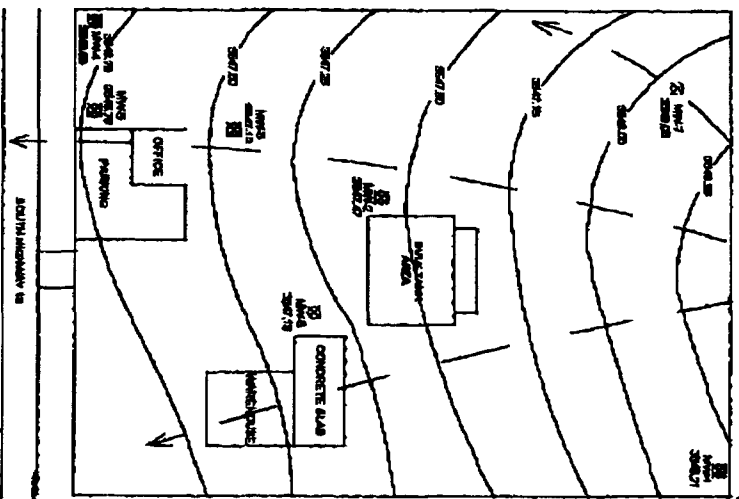
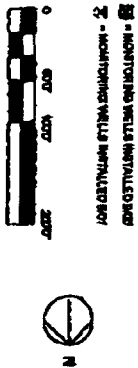
RE:Champion Sketch**DATE:**4-17-02

Let me know if this transmits OK.

2

Pages (Including Transmittal)

ENERGON SERVICES, INC.
 70401
 GEOTECHNICAL INVESTIGATING
 SERVICE AND RESEARCH
 CHANDLER TECHNOLOGICAL, INC.
 1001 N. HANCOCK AVE. SUITE 200
 CHANDLER, AZ 85226



Rough Sketch
 Not to scale



Pipe Yard

House
 Morrow

Blue Mtg. Home
 Wendy Harrison

521 E. Llano G. | 503 E. Llano G.

E. Llano Grade

??528?
 ? Home
 Quirez?

526 E. Llano G.
 Mrs. Keith
 My Home

42-3

TraceAnalysis, Inc.

6701 Aberdeen Ave., Suite 9

Lubbock, TX 79424-1515

(806) 794-1296

Report Date: October 14, 2002
CH2100Order Number: A02100711
Champion TechPage Number: 1 of 1
Hobbs, NM

Summary Report

Todd Choban
E.T.G.I.
PO Box 4845
Midland, Tx. 79704

Report Date: October 14, 2002

Order ID Number: A02100711

Project Number: CH2100
Project Name: Champion Tech
Project Location: Hobbs, NMRECEIVED
A02100711
Environmental Bureau
Oil Contamination Laboratory

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
209737	SB-53 40'	Soil	10/3/02	10:53	10/5/02
209738	SB-53-49'	Soil	10/3/02	13:40	10/5/02

0 This report consists of a total of 1 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample - Field Code	BTEX					TPH TRPHC
	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	M,P,O-Xylene (ppm)	Total BTEX (ppm)	
209737 - SB-53 40'	<0.010	<0.010	<0.010	<0.010	<0.010	116
209738 - SB-53-49'	<0.010	<0.010	<0.010	<0.010	<0.010	<10.0

Sample: 209737 - SB-53 40'

Param	Flag	Result	Units
Chloride		462	mg/Kg
Total Arsenic		<5.00	mg/Kg
Total Chromium		3.36	mg/Kg
Total Lead		1.30	mg/Kg

Sample: 209738 - SB-53-49'

Param	Flag	Result	Units
Chloride		89.5	mg/Kg
Total Arsenic		<5.00	mg/Kg
Total Chromium		6.32	mg/Kg
Total Lead		<1.00	mg/Kg

This is only a summary. Please, refer to the complete report package for quality control data.

Analytical and Quality Control Report

Todd Choban
E.T.G.I.
PO Box 4845
Midland, Tx. 79704

Report Date: October 14, 2002

Order ID Number: A02100711

Project Number: CH2100
Project Name: Champion Tech
Project Location: Hobbs, NM

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
9737	SB-53 40'	Soil	10/3/02	10:53	10/5/02
9738	SB-53-49'	Soil	10/3/02	13:40	10/5/02

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed. Note: the RDL is equal to MQL for all organic analytes including TPH.

The test results contained within this report meet all requirements of LAC 33:I unless otherwise noted.

~~This report consists of a total of 8 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of TraceAnalysis, Inc.~~

Note: Samples will be disposed of 30 days from the report date unless the lab is contacted before the 30 days has past.

Michael Abel

for
Dr. Blair Leftwich, Director

Analytical Report

Sample: 209737 - SB-53 40'

Analysis: BTEX Analytical Method: S 8021B QC Batch: QC23988 Date Analyzed: 10/7/02
Analyst: CG Preparation Method: S 5035 Prep Batch: PB22416 Date Prepared: 10/7/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<0.010	mg/Kg	10	0.001
Toluene		<0.010	mg/Kg	10	0.001
Ethylbenzene		<0.010	mg/Kg	10	0.001
M,P,O-Xylene		<0.010	mg/Kg	10	0.001
Total BTEX		<0.010	mg/Kg	10	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.776	mg/Kg	10	1	77	70 - 130
4-BFB		0.814	mg/Kg	10	1	81	70 - 130

Sample: 209737 - SB-53 40'

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC24018 Date Analyzed: 10/8/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22437 Date Prepared: 10/8/02

Param	Flag	Result	Units	Dilution	RDL
Chloride		462	mg/Kg	50	1

Sample: 209737 - SB-53 40'

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC24014 Date Analyzed: 10/9/02
Analyst: WG Preparation Method: N/A Prep Batch: PB22430 Date Prepared: 10/9/02

Param	Flag	Result	Units	Dilution	RDL
TRPHC		116	mg/Kg	1	10

Sample: 209737 - SB-53 40'

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC24072 Date Analyzed: 10/10/02
Analyst: RR Preparation Method: S 3050B Prep Batch: PB22421 Date Prepared: 10/8/02

Param	Flag	Result	Units	Dilution	RDL
Total Arsenic		<5.00	mg/Kg	100	0.01
Total Chromium		3.36	mg/Kg	100	0.01
Total Lead		1.30	mg/Kg	100	0.01

Sample: 209738 - SB-53-49'

Analysis: BTEX Analytical Method: S 8021B QC Batch: QC23988 Date Analyzed: 10/7/02
Analyst: CG Preparation Method: S 5035 Prep Batch: PB22416 Date Prepared: 10/7/02

Report Date: October 14, 2002
CH2100

Order Number: A02100711
Champion Tech

Page Number: 3 of 8
Hobbs, NM

Param	Flag	Result	Units	Dilution	RDL
Benzene		<0.010	mg/Kg	10	0.001
Toluene		<0.010	mg/Kg	10	0.001
Ethylbenzene		<0.010	mg/Kg	10	0.001
M,P,O-Xylene		<0.010	mg/Kg	10	0.001
Total BTEX		<0.010	mg/Kg	10	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.814	mg/Kg	10	1	81	70 - 130
4-BFB		0.867	mg/Kg	10	1	86	70 - 130

Sample: 209738 - SB-53-49'

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC24018 Date Analyzed: 10/8/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22437 Date Prepared: 10/8/02

Param	Flag	Result	Units	Dilution	RDL
Chloride		89.5	mg/Kg	5	1

Sample: 209738 - SB-53-49'

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC24014 Date Analyzed: 10/9/02
Analyst: WG Preparation Method: N/A Prep Batch: PB22430 Date Prepared: 10/9/02

Param	Flag	Result	Units	Dilution	RDL
TRPHC		<10.0	mg/Kg	1	10

Sample: 209738 - SB-53-49'

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC24072 Date Analyzed: 10/10/02
Analyst: RR Preparation Method: S 3050B Prep Batch: PB22421 Date Prepared: 10/8/02

Param	Flag	Result	Units	Dilution	RDL
Total Arsenic		<5.00	mg/Kg	100	0.01
Total Chromium		6.32	mg/Kg	100	0.01
Total Lead		<1.00	mg/Kg	100	0.01

Quality Control Report Method Blank

Method Blank QCBatch: QC23988

Param	Flag	Results	Units	Reporting Limit
Benzene		<0.010	mg/Kg	0.001
Toluene		<0.010	mg/Kg	0.001
Ethylbenzene		<0.010	mg/Kg	0.001
M,P,O-Xylene		<0.010	mg/Kg	0.001
Total BTEX		<0.010	mg/Kg	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		1.03	mg/Kg	10	1	103	70 - 130
4-BFB		0.746	mg/Kg	10	1	75	70 - 130

Method Blank QCBatch: QC24014

Param	Flag	Results	Units	Reporting Limit
TRPHC		<10.0	mg/Kg	10

Method Blank QCBatch: QC24018

Param	Flag	Results	Units	Reporting Limit
Chloride		22.74	mg/Kg	1

Method Blank QCBatch: QC24072

Param	Flag	Results	Units	Reporting Limit
Total Arsenic		<0.050	mg/Kg	0.01
Total Chromium		<0.010	mg/Kg	0.01
Total Lead		<0.010	mg/Kg	0.01

Quality Control Report Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes QCBatch: QC23988

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
MTBE	0.940	0.914	mg/Kg	10	1	<0.010	94	2	70 - 130	20
Benzene	0.917	0.845	mg/Kg	10	1	<0.010	91	8	70 - 130	20
Toluene	0.833	0.764	mg/Kg	10	1	<0.010	83	8	70 - 130	20
Ethylbenzene	0.864	0.801	mg/Kg	10	1	<0.010	86	7	70 - 130	20
M,P,O-Xylene	2.75	2.54	mg/Kg	10	3	<0.010	91	7	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
TFT	0.971	0.892	mg/Kg	10	1	97	89	70 - 130
4-BFB	0.86	0.785	mg/Kg	10	1	86	78	70 - 130

Laboratory Control Spikes

QCBatch: QC24014

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
TRPHC	240	242	mg/Kg	1	250	<10.0	96	0	74 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC24018

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	¹ 34.61	² 34.68	mg/Kg	1	12.50	22.74	95	0	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC24072

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Arsenic	44.4	43.5	mg/Kg	100	50	<0.050	88	2	75 - 125	20
Total Barium	102	102	mg/Kg	100	100	<0.100	102	0	75 - 125	20
Total Cadmium	25.2	25.1	mg/Kg	100	25	<0.005	100	0	75 - 125	20
Total Chromium	10.4	10.3	mg/Kg	100	10	<0.010	104	0	75 - 125	20
Total Lead	49.3	49.6	mg/Kg	100	50	<0.010	98	0	75 - 125	20
Total Selenium	42.0	40.8	mg/Kg	100	50	0.0201	84	2	75 - 125	20
Total Silver	12.4	12.4	mg/Kg	100	12.50	<0.002	99	0	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Matrix Spikes and Duplicate Spikes

¹Blank soil should be subtracted from the sample. %EA = 95 and RPD = 0.

²Blank soil should be subtracted from the sample. %EA = 95 and RPD = 0.

Matrix Spikes QCBatch: QC23988

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Benzene	0.818	0.85	mg/Kg	10	1	<0.010	81	3	70 - 130	20
Toluene	0.973	1.08	mg/Kg	10	1	<0.010	97	10	70 - 130	20
Ethylbenzene	0.825	0.93	mg/Kg	10	1	<0.010	82	11	70 - 130	20
M,P,O-Xylene	2.42	2.74	mg/Kg	10	3	<0.010	80	12	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dilution	Spike Amount	MS % Rec	MSD % Rec	Recovery Limits
TFT	0.83	0.884	mg/Kg	10	1	83	88	70 - 130
4-BFB	0.919	1	mg/Kg	10	1	91	100	70 - 130

Matrix Spikes QCBatch: QC24014

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
TRPHC	240	223	mg/Kg	1	250	<10.0	96	7	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC24018

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	25000	25000	mg/Kg	1	12500	13100	95	0	35 - 144	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC24072

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Arsenic	56.2	54.3	mg/Kg	100	50	9.45	93	4	75 - 125	20
Total Chromium	19.7	19.9	mg/Kg	100	10	8.71	109	1	75 - 125	20
Total Lead	58.9	60.4	mg/Kg	100	50	8.95	99	2	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report

Continuing Calibration Verification Standards

CCV (1)

QCBatch: QC23988

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/L	0.10	0.111	111	85 - 115	10/7/02
Benzene		mg/L	0.10	0.101	101	85 - 115	10/7/02
Toluene		mg/L	0.10	0.098	98	85 - 115	10/7/02
Ethylbenzene		mg/L	0.10	0.099	99	85 - 115	10/7/02
M,P,O-Xylene		mg/L	0.30	0.305	101	85 - 115	10/7/02

ICV (1)

QCBatch: QC23988

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/L	0.10	0.106	106	85 - 115	10/7/02
Benzene		mg/L	0.10	0.099	99	85 - 115	10/7/02
Toluene		mg/L	0.10	0.096	96	85 - 115	10/7/02
Ethylbenzene		mg/L	0.10	0.098	98	85 - 115	10/7/02
M,P,O-Xylene		mg/L	0.30	0.307	102	85 - 115	10/7/02

CCV (1)

QCBatch: QC24014

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TRPHC		mg/Kg	100	94.6	94	80 - 120	10/9/02

ICV (1)

QCBatch: QC24014

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TRPHC		mg/Kg	100	94.0	94	80 - 120	10/9/02

CCV (1)

QCBatch: QC24018

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	11.84	94	90 - 110	10/8/02

ICV (1)

QCBatch: QC24018

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	11.76	94	90 - 110	10/8/02

CCV (1) QCBatch: QC24072

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Arsenic		mg/Kg	1	0.986	99	90 - 110	10/10/02
Total Barium		mg/Kg	2	2.01	100	90 - 110	10/10/02
Total Cadmium		mg/Kg	0.50	0.502	100	90 - 110	10/10/02
Total Chromium		mg/Kg	0.20	0.200	100	90 - 110	10/10/02
Total Lead		mg/Kg	1	0.983	98	90 - 110	10/10/02
Total Selenium		mg/Kg	1	0.954	93	90 - 110	10/10/02
Total Silver		mg/Kg	0.25	0.250	100	90 - 110	10/10/02

ICV (1) QCBatch: QC24072

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Arsenic		mg/Kg	1	1.01	101	95 - 105	10/10/02
Total Barium		mg/Kg	2	1.98	99	95 - 105	10/10/02
Total Cadmium		mg/Kg	0.50	0.498	100	95 - 105	10/10/02
Total Chromium		mg/Kg	0.20	0.201	100	95 - 105	10/10/02
Total Lead		mg/Kg	1	0.988	99	95 - 105	10/10/02
Total Selenium		mg/Kg	1	0.978	96	95 - 105	10/10/02
Total Silver		mg/Kg	0.25	0.247	99	95 - 105	10/10/02

TraceAnalysis, Inc.

555 McCutcheon, Suite H
El Paso, Texas 79932
Tel (915) 585-3443
Fax (915) 585-4944
1 (800) 588-3443

LAB Order ID # AD2100711

Company Name:

Phone #: (915) 522-1139

Address: (Street, City, Zip)

Fax #: (915) 520-4310

Contact Person:

Todd Chohan cell 238-0061

Invoice to:
(If different from above)

Project #:

Project Name:

Project Location:

Sampler Signature

Hobbs / Champion

Sampler Signature: Jason Lee

ANALYSIS REQUEST

(Circle or Specify Method No.)

[illegible]

Relinquished by: [Signature] Date: 10-07-02 Time: 1702

Received by: *[Signature]* Date: 10-03-00 Time:

Relinquished by: [Signature] Date: 1/11/81 Time: 1:00

Received by: Glenn Helton Date: 10/04/02 Time: 1330

Completed by: _____ Date: _____ Time: _____

Received at Laboratory by: V. B. Bell Date: 10/25/02 Time: 10:00 AM

LAB USE ONLY

Intact Y. / N

Headspace Y. / N

7 Tema 2

Log-in Review

REMARKS:

☐ Check If Special Reporting Limits Are Needed

Submission of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

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PAGE 02

TRACE ANALYSIS

3067941298

10/14/2002 10:37

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TRACE ANALYSIS, INC.

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915•585•3443

FAX 806•794•1298
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CORRECTED CERTIFICATE

Analytical and Quality Control Report

Todd Choban
E.T.G.I.
PO Box 4845
Midland, Tx. 79704

Report Date: November 11, 2002

Order ID Number: A02101418

Project Number: CH2100
Project Name: Champion Tech
Project Location: Hobbs, NM

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace Analysis, Inc.

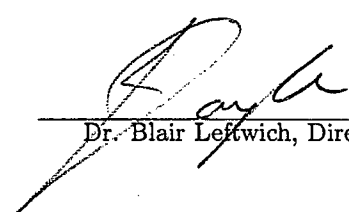
Sample	Description	Matrix	Date Taken	Time Taken	Date Received
210417	West Trench N @ 2.5'	Soil	10/8/02	9:10	10/12/02
210418	West Trench Pipe @ 2.5'	Soil	10/8/02	9:12	10/12/02
210419	West Trench S @ 2.5'	Soil	10/8/02	9:14	10/12/02

Comment: LCS had the wrong % recovery needed to be corrected. Matrix Blank was added for chloride.

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed. Note: the RDL is equal to MQL for all organic analytes including TPH. The test results contained within this report meet all requirements of LAC 33:I unless otherwise noted.

This report consists of a total of 5 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of Trace Analysis, Inc.

Note: Samples will be disposed of 30 days from the report date unless the lab is contacted before the 30 days has past.


Dr. Blair Leftwich, Director

Analytical Report

Sample: 210417 - West Trench N @ 2.5'

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC24159 Date Analyzed: 10/14/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22542 Date Prepared: 10/14/02

Param	Flag	Result	Units	Dilution	RDL
Chloride		708	mg/Kg	50	1

Sample: 210417 - West Trench N @ 2.5'

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC24185 Date Analyzed: 10/15/02
Analyst: RR Preparation Method: S 3050B Prep Batch: PB22545 Date Prepared: 10/15/02

Param	Flag	Result	Units	Dilution	RDL
Total Chromium		2.52	mg/Kg	100	0.01

Sample: 210418 - West Trench Pipe @ 2.5'

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC24159 Date Analyzed: 10/14/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22542 Date Prepared: 10/14/02

Param	Flag	Result	Units	Dilution	RDL
Chloride		180	mg/Kg	5	1

Sample: 210418 - West Trench Pipe @ 2.5'

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC24185 Date Analyzed: 10/15/02
Analyst: RR Preparation Method: S 3050B Prep Batch: PB22545 Date Prepared: 10/15/02

Param	Flag	Result	Units	Dilution	RDL
Total Chromium		5.03	mg/Kg	100	0.01

Sample: 210419 - West Trench S @ 2.5'

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC24159 Date Analyzed: 10/14/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22542 Date Prepared: 10/14/02

Param	Flag	Result	Units	Dilution	RDL
Chloride		4130	mg/Kg	500	1

Sample: 210419 - West Trench S @ 2.5'

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC24185 Date Analyzed: 10/15/02
Analyst: RR Preparation Method: S 3050B Prep Batch: PB22545 Date Prepared: 10/15/02

Param	Flag	Result	Units	Dilution	RDL
Total Chromium		3.42	mg/Kg	100	0.01

Quality Control Report Method Blank

Method Blank QCBatch: QC24159

Param	Flag	Results	Units	Reporting Limit
Chloride	1	<1.0	mg/L	1

Method Blank QCBatch: QC24185

Param	Flag	Results	Units	Reporting Limit
Total Chromium		<0.010	mg/Kg	0.01

Quality Control Report Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes QCBatch: QC24159

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	² 30.25	³ 30.34	mg/Kg	1	12.50	<1.0	98	0	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes QCBatch: QC24185

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Chromium	10.7	10.8	mg/Kg	100	10	<0.010	107	0	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Matrix Spikes and Duplicate Spikes

Matrix Spikes QCBatch: QC24159

¹Method blank (matrix) QC Batch 24159 in soil 18.03 mg/Kg the other in water.

²Blank spikes should be subtracted from this sample. %EA = 98 and RPD = 0.

³Blank spikes should be subtracted from this sample. %EA = 98 and RPD = 0.

Report Date: November 11, 2002
CH2100

Order Number: A02101418
Champion Tech

Page Number: 4 of 5
Hobbs,NM

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	10100	10120	mg/Kg	1	6250	4130	95	0	35 - 144	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC24185

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Chromium	21.5	20.6	mg/Kg	100	10	9.90	116	8	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Continuing Calibration Verification Standards

CCV (1) QCBatch: QC24159

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	12.30	98	90 - 110	10/14/02

ICV (1) QCBatch: QC24159

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	12.24	97	90 - 110	10/14/02

CCV (1) QCBatch: QC24185

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Chromium		mg/L	0.20	0.203	102	90 - 110	10/15/02

ICV (1) QCBatch: QC24185

Report Date: November 11, 2002
CH2100

Order Number: A02101418
Champion Tech

Page Number: 5 of 5
Hobbs,NM

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Chromium		mg/L	0.20	0.203	102	95 - 105	10/15/02

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El Paso, Texas 79932
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

Company Name: **ETGI** Phone #: **915 522 1139**

Address: (Street, City, Zip) **4600 W Wall** Fax #: **915 530 4310**

Contact Person: **TODD CHOBAN**

Voice to: (different from above) **Patti Seale**

Object #: **CH2100** Project Name: **Champion Technologies - Hobbs**

Object Location: **Hobbs, New Mexico** Sampler Signature: *Todd Choban*

LAB #	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX				PRESERVATIVE METHOD						SAMPLING	
				WATER	SOIL	AIR	SLUDGE	HCl	HNO ₃	H ₂ SO ₄	NaOH	ICE	NONE	DATE	TIME
10417	West Trench N @ 2.5'	2			X							X		10/10/02	9:10
18	West Trench Pipe @ 2.5'	2			X							X		9/12	
19	West Trench S @ 2.5'	2			X							X		9/14	

Relinquished by: *Todd Choban* Date: **10/11/02** Time: **11:45** Received by: *Allen Shelton* Date: **10/11/02** Time: **11:45**

Relinquished by: *Allen Shelton* Date: **10/11/02** Time: **18:30** Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____ Received at Laboratory by: *Brian* Date: **10/12/02** Time: **7:30**

Submission of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C. **ORIGINAL COPY**

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # **AD2101418**

ANALYSIS REQUEST
(Circle or Specify Method No.)

MTBE 8021B/602	BTX 8021B/602	TPH 418:1/TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCBs 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Chromium	Chlorides	Turn Around Time if different from standard	Hold
															X	X		
															X	X		
															X	X		

LAB USE ONLY
Intact **D/N**
Headspace **Y/N**
Temp **6**
Log-In Review *[Signature]*
Carrier # *Haymond*

REMARKS:
Standard 5 day TAT
11/11 FIP PTF 10/10/02
☐ Check If Special Reporting Limits Are Needed

6 samples - HS
GLT 163 566 7539

Report Date: October 21, 2002 Order Number: A02101422
CH2100 Champion Tech

Page Number: 1 of 1
Hobbs,NM

Summary Report

Todd Choban
E.T.G.I.
PO Box 4845
Midland, Tx. 79704

Report Date: October 21, 2002

Order ID Number: A02101422

Project Number: CH2100
Project Name: Champion Tech
Project Location: Hobbs,NM

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
210432	MW-16 @ 5'	Soil	10/9/02	9:28	10/12/02
210441	MW-13 @ 5'	Soil	10/9/02	15:49	10/12/02
210442	MW-13 @ 10'	Soil	10/9/02	15:57	10/12/02

0 This report consists of a total of 1 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample: 210432 - MW-16 @ 5'

Param	Flag	Result	Units
Chloride		2820	mg/Kg
Total Chromium		2.07	mg/Kg

Sample: 210441 - MW-13 @ 5'

Param	Flag	Result	Units
Chloride		2280	mg/Kg
Total Chromium		5.64	mg/Kg

Sample: 210442 - MW-13 @ 10'

Param	Flag	Result	Units
Chloride		501	mg/Kg

This is only a summary. Please, refer to the complete report package for quality control data.

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E-Mail: lab@traceanalysis.com

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915•585•3443

FAX 806•794•1298
FAX 915•585•4944

Analytical and Quality Control Report

Todd Choban
E.T.G.I.
PO Box 4845
Midland, Tx. 79704

Report Date: October 21, 2002

Order ID Number: A02101422

Project Number: CH2100
Project Name: Champion Tech
Project Location: Hobbs, NM

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
210432	MW-16 @ 5'	Soil	10/9/02	9:28	10/12/02
10441	MW-13 @ 5'	Soil	10/9/02	15:49	10/12/02
210442	MW-13 @ 10'	Soil	10/9/02	15:57	10/12/02

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Note: the RDL is equal to MQL for all organic analytes including TPH.

The test results contained within this report meet all requirements of LAC 33:I unless otherwise noted.

This report consists of a total of 5 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of Trace Analysis, Inc.

Note: Samples will be disposed of 30 days from the report date unless the lab is contacted before the 30 days has past.



Dr. Blair Leftwich, Director

Report Date: October 21, 2002
CH2100

Order Number: A02101422
Champion Tech

Page Number: 2 of 5
Hobbs,NM

Analytical Report

Sample: 210432 - MW-16 @ 5'

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC24159 Date Analyzed: 10/14/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22542 Date Prepared: 10/14/02

Param	Flag	Result	Units	Dilution	RDL
Chloride		2820	mg/Kg	100	1

Sample: 210432 - MW-16 @ 5'

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC24185 Date Analyzed: 10/15/02
Analyst: RR Preparation Method: S 3050B Prep Batch: PB22545 Date Prepared: 10/15/02

Param	Flag	Result	Units	Dilution	RDL
Total Chromium		2.07	mg/Kg	100	0.01

Sample: 210441 - MW-13 @ 5'

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC24213 Date Analyzed: 10/16/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22582 Date Prepared: 10/16/02

Param	Flag	Result	Units	Dilution	RDL
Chloride		2280	mg/Kg	100	1

Sample: 210441 - MW-13 @ 5'

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC24185 Date Analyzed: 10/15/02
Analyst: RR Preparation Method: S 3050B Prep Batch: PB22545 Date Prepared: 10/15/02

Param	Flag	Result	Units	Dilution	RDL
Total Chromium		5.64	mg/Kg	100	0.01

Sample: 210442 - MW-13 @ 10'

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC24213 Date Analyzed: 10/16/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22582 Date Prepared: 10/16/02

Param	Flag	Result	Units	Dilution	RDL
Chloride		501	mg/Kg	50	1

Quality Control Report Method Blank

Method Blank QCBatch: QC24159

Param	Flag	Results	Units	Reporting Limit
Chloride		18.03	mg/Kg	1

Method Blank QCBatch: QC24185

Param	Flag	Results	Units	Reporting Limit
Total Chromium		<0.010	mg/Kg	0.01

Method Blank QCBatch: QC24213

Param	Flag	Results	Units	Reporting Limit
Chloride		<1.0	mg/Kg	1

Quality Control Report Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes QCBatch: QC24159

Param	Spike		Units	Dil.	Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
	LCS Result	LCSD Result								
Chloride	¹ 30.25	² 30.34	mg/Kg	1	12.50	18.03	242	0	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes QCBatch: QC24185

Param	Spike		Units	Dil.	Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
	LCS Result	LCSD Result								
Total Chromium	10.7	10.8	mg/Kg	100	10	<0.010	107	0	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes QCBatch: QC24213

¹Blank spikes should be subtracted from this sample. %EA = 98 and RPD = 0.

²Blank spikes should be subtracted from this sample. %EA = 98 and RPD = 0.

Report Date: October 21, 2002
CH2100

Order Number: A02101422
Champion Tech

Page Number: 4 of 5
Hobbs, NM

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	³ 24.59	⁴ 24.97	mg/Kg	1	12.50	<1.0	196	1	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Matrix Spikes and Duplicate Spikes

Matrix Spikes QCBatch: QC24159

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	10100	10120	mg/Kg	1	6250	4130	95	0	35 - 144	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC24185

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Chromium	21.5	20.6	mg/Kg	100	10	9.90	116	8	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC24213

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	3400	3370	mg/Kg	1	1250	2280	89	2	35 - 144	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Continuing Calibration Verification Standards

CCV (1) QCBatch: QC24159

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	12.30	98	90 - 110	10/14/02

³Blank soil should be subtracted from the blank spikes. %EA = 100 and RPD = 2.

⁴Blank soil should be subtracted from the blank spikes. %EA = 100 and RPD = 2.

ICV (1) QCBatch: QC24159

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	12.24	97	90 - 110	10/14/02

CCV (1) QCBatch: QC24185

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Chromium		mg/L	0.20	0.203	102	90 - 110	10/15/02

ICV (1) QCBatch: QC24185

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Chromium		mg/L	0.20	0.203	102	95 - 105	10/15/02

CCV (1) QCBatch: QC24213

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	12.38	99	90 - 110	10/16/02

ICV (1) QCBatch: QC24213

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	12.30	98	90 - 110	10/16/02

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # AD2101422

ANALYSIS REQUEST

(Circle or Specify Method No.)

Company Name: ETGT Phone #: 915 522 1139
Address: (Street, City, Zip) _____ Fax #: _____
Contact Person: TODD CHOBAN
Invoice to: _____
(If different from above)
Project #: CH2100 Project Name: Champion Tech-Hobbs
Project Location: Hobbs, New Mexico Sampler Signature: Todd Choban

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX				PRESERVATIVE METHOD						SAMPLING		MTBE 8021B/602	BTX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	PCI	GC/MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	X-CHLORIDES	X-CHLORINE	Turn Around Time if different from standard	Hold
				WATER	SOIL	AIR	SLUDGE	HCl	HNO ₃	H ₂ SO ₄	NaOH	ICE	NONE	DATE	TIME																			
210432	MW-16 @ 5'	2			X							X		10/11	9:28																			
33	MW-16 @ 10'	4													9:42																			
34	MW-16 @ 20'	4													10:04																			
35	MW-16 @ 25'	4													10:20																			
36	MW-16 @ 30'	4													10:35																			
37	MW-16 @ 35'	4													10:49																			
38	MW-16 @ 40'	2													11:03																			
39	MW-16 @ 45'	4													11:30																			
40	MW-16 @ 50'	4													11:52																			
41	MW-13 @ 5'	4													11:54																			
42	MW-13 @ 10'	1													11:57																			

HOLD

Relinquished by: Todd Choban Date: 10/11/02 Time: 11:45
Received by: Helen Shelton Date: 10/11/02 Time: 11:45
Relinquished by: Helen Shelton Date: 10/11/02 Time: 1830
Received by: B. B. Date: 10/12/02 Time: 930

LAB USE ONLY

Intact Y/N
Headspace Y/N
Temp 4 °
Log-in Review M

REMARKS:

FVP
10/21/02

☐ Check If Special Reporting Limits Are Needed

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Carrier # Hayhound GLT 163 566 7539

37 samples HS

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Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID #: A02101422

Company Name: _____ Phone #: _____

Address: (Street, City, Zip) Fax #:

Contact Person: TODD CHOBAN

Invoice to:
(If different from above)

Project #:	CH 2100	Project Name:	Champion Teh - Hobbs
------------	---------	---------------	----------------------

Project Location: Hobbs, NM Sampler Signature: Todd Chole

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX				PRESERVATIVE METHOD						SAMPLING			
				WATER	SOIL	AIR	SLUDGE	HCl	HNO ₃	H ₂ SO ₄	NaOH	ICE	NONE	DATE	TIME		
210443	MW-13 @ 15'	2			X					X		10/9	1605				
44	MW-13 @ 20'	1											1614				
45	MW-13 @ 35'	2											1651				
46	MW-13 @ 40'	2											1703				
47	KW-13 @ 45'	2											1723				
210455	MW-16 @ 15'	4			✓					✓		10/9	9:53			hold. per Todd 10-14-05	

LAB USE ONLY

REMARKS:

PAF 10/21/02

Intact Y / NHeadspace Y / N

Temp 4

Log-in Review

☐ Check If Special Reporting Limits Are Needed

Carrier # Waybound GLI 163 566 753

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FAX 806•794•1298

FAX 915•585•4944

E-Mail: lab@traceanalysis.com

CORRECTED CERTIFICATE

Analytical and Quality Control Report

Todd Choban
E.T.G.I.
PO Box 4845
Midland, Tx. 79704

Report Date: November 11, 2002

Order ID Number: A02101419

Project Number: CH2100
Project Name: Champion Tech
Project Location: Hobbs, NM

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace-Analysis, Inc.

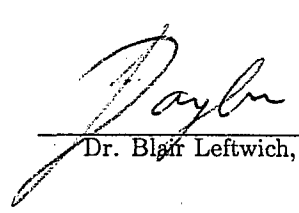
Sample	Description	Matrix	Date Taken	Time Taken	Date Received
210420	MW-10 5'	Soil	10/10/02	9:00	10/12/02
210421	MW-10 10'	Soil	10/10/02	9:05	10/12/02
210422	MW-10 20'	Soil	10/10/02	9:15	10/12/02
210423	MW-10 40'	Soil	10/10/02	9:35	10/12/02

Comment: LCS had the wrong % recovery needed to be corrected. Matrix Blank was added for chloride.

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed. Note: the RDL is equal to MQL for all organic analytes including TPH. The test results contained within this report meet all requirements of LAC 33:I unless otherwise noted.

This report consists of a total of 4 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of TraceAnalysis, Inc.

Note: Samples will be disposed of 30 days from the report date unless the lab is contacted before the 30 days has past.


Dr. Blair Leftwich, Director

Report Date: November 11, 2002
CH2100

Order Number: A02101419
Champion Tech

Page Number: 2 of 4
Hobbs, NM

Analytical Report

Sample: 210420 - MW-10 5'

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC24159 Date Analyzed: 10/14/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22542 Date Prepared: 10/14/02

Param	Flag	Result	Units	Dilution	RDL
Chloride		240	mg/Kg	10	1

Sample: 210421 - MW-10 10'

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC24159 Date Analyzed: 10/14/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22542 Date Prepared: 10/14/02

Param	Flag	Result	Units	Dilution	RDL
Chloride		153	mg/Kg	10	1

Sample: 210422 - MW-10 20'

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC24159 Date Analyzed: 10/14/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22542 Date Prepared: 10/14/02

Param	Flag	Result	Units	Dilution	RDL
Chloride		243	mg/Kg	10	1

Sample: 210423 - MW-10 40'

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC24159 Date Analyzed: 10/14/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22542 Date Prepared: 10/14/02

Param	Flag	Result	Units	Dilution	RDL
Chloride		7.80	mg/Kg	5	1

Quality Control Report Method Blank

Method Blank QCBatch: QC24159

Param	Flag	Results	Units	Reporting Limit
Chloride	1	<1.0	mg/L	1

Quality Control Report Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes QCBatch: QC24159

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	² 30.25	³ 30.34	mg/Kg	1	12.50	<1.0	98	0	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Matrix Spikes and Duplicate Spikes

Matrix Spikes QCBatch: QC24159

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	10100	10120	mg/Kg	1	6250	4130	95	0	35 - 144	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Continuing Calibration Verification Standards

CCV (1) QCBatch: QC24159

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	12.30	98	90 - 110	10/14/02

¹Method blank (matrix) QC Batch 24159 in soil 18.03 mg/Kg the other in water.

²Blank spikes should be subtracted from this sample. %EA = 98 and RPD = 0.

³Blank spikes should be subtracted from this sample. %EA = 98 and RPD = 0.

Report Date: November 11, 2002
CH2100

Order Number: A02101419
Champion Tech

Page Number: 4 of 4
Hobbs,NM

ICV (1)

QCBatch: QC24159

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	12.24	97	90 - 110	10/14/02

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Fax (915) 585-4944
1 (888) 588-3443**

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # AD2101419

Company Name:

ETGI

Phone #:

915-522-1139

Address: (Street, City, Zip)

4600 W. Wall St.

Fax #:

915-520-4310

Contact Person:

Todd Choban

voice to:

f different from above)

'roject #:

CH2100

Project Name:

Project Name: Champion - Hobbs

Project Location:

1: Hobbs, NM

Sampler Signature:

Sampler Signature: Jason Hem

[illegible]

Relinquished by: 10/11/02 Date: 0900 Time:

Received by: Helen Chelton Date: 10/11 Time: 02 0900

Relinquished by:	Date:	Time:
Wileen Shelton	10/11/02	1830

Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____

Received at Laboratory by: _____ Date: _____ Time: _____

Barber 10/12/02 9:30

LAB USE ONLY

Intact Y / N

Headspace Y / N

Temp = 2

Log-in Review

REMARKS:

1015F IIIIFIF

☐ Check If Special Reporting Limits Are Needed

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

ORIGINAL COPY

8 Sample HS

Carrier # GLT 163 566 7539

Report Date: October 28, 2002 Order Number: A02102326
CH2100 Champion Tech

Page Number: 1 of 1
Hobbs, NM

Summary Report

Todd Choban
E.T.G.I.
PO Box 4845
Midland, Tx. 79704

Report Date: October 28, 2002

Order ID Number: A02102326

Project Number: CH2100
Project Name: Champion Tech
Project Location: Hobbs, NM

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
211476	Off Site D.W.	Water	10/21/02	16:15	10/23/02
211477	On Site D.W.	Water	10/21/02	16:18	10/23/02

0 This report consists of a total of 1 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample: 211476 - Off Site D.W.

Param	Flag	Result	Units
Chloride		386	mg/L
Total Arsenic		<0.050	mg/L
Total Chromium		<0.010	mg/L
Total Lead		<0.010	mg/L

Sample: 211477 - On Site D.W.

Param	Flag	Result	Units
Chloride		290	mg/L
Total Arsenic		<0.050	mg/L
Total Chromium		<0.010	mg/L
Total Lead		<0.010	mg/L

Analytical and Quality Control Report

Todd Choban
E.T.G.I.
PO Box 4845
Midland, Tx. 79704

Report Date: October 30, 2002

Order ID Number: A02102326

Project Number: CH2100
Project Name: Champion Tech
Project Location: Hobbs, NM

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
1476	Off Site D.W.	Water	10/21/02	16:15	10/23/02
1477	On Site D.W.	Water	10/21/02	16:18	10/23/02

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Note: the RDL is equal to MQL for all organic analytes including TPH.

The test results contained within this report meet all requirements of LAC 33:I unless otherwise noted.

This report consists of a total of 5 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of TraceAnalysis, Inc.

Note: Samples will be disposed of 30 days from the report date unless the lab is contacted before the 30 days has past.



Dr. Blair Leftwich, Director

Analytical Report

Sample: 211476 - Off Site D.W.

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC24482 Date Analyzed: 10/25/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22828 Date Prepared: 10/25/02

Param	Flag	Result	Units	Dilution	RDL
Chloride		386	mg/L	10	1

Sample: 211476 - Off Site D.W.

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC24464 Date Analyzed: 10/27/02
Analyst: RR Preparation Method: S 3010A Prep Batch: PB22771 Date Prepared: 10/24/02

Param	Flag	Result	Units	Dilution	RDL
Total Arsenic		<0.050	mg/L	1	0.05
Total Chromium		<0.010	mg/L	1	0.01
Total Lead		<0.010	mg/L	1	0.01

Sample: 211477 - On Site D.W.

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC24482 Date Analyzed: 10/25/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22828 Date Prepared: 10/25/02

Param	Flag	Result	Units	Dilution	RDL
Chloride		290	mg/L	10	1

Sample: 211477 - On Site D.W.

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC24464 Date Analyzed: 10/27/02
Analyst: RR Preparation Method: S 3010A Prep Batch: PB22771 Date Prepared: 10/24/02

Param	Flag	Result	Units	Dilution	RDL
Total Arsenic		<0.050	mg/L	1	0.05
Total Chromium		<0.010	mg/L	1	0.01
Total Lead		<0.010	mg/L	1	0.01

Quality Control Report Method Blank

Method Blank QCBatch: QC24464

Param	Flag	Results	Units	Reporting Limit
Total Arsenic		<0.050	mg/L	0.05
Total Chromium		<0.010	mg/L	0.01
Total Lead		<0.010	mg/L	0.01

Method Blank QCBatch: QC24482

Param	Flag	Results	Units	Reporting Limit
Chloride		<1.0	mg/L	1

Quality Control Report Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes QCBatch: QC24464

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Arsenic	0.511	0.504	mg/L	1	0.50	<0.050	102	1	75 - 125	20
Total Barium	1.01	1	mg/L	1	1	<0.100	101	1	75 - 125	20
Total Cadmium	0.258	0.256	mg/L	1	0.25	<0.005	103	1	75 - 125	20
Total Chromium	0.102	0.101	mg/L	1	0.10	<0.010	102	1	75 - 125	20
Total Copper	0.126	0.127	mg/L	1	0.12	<0.0125	101	1	75 - 125	20
Total Lead	0.514	0.507	mg/L	1	0.50	<0.010	103	1	75 - 125	20
Total Selenium	0.472	0.463	mg/L	1	0.50	<0.050	94	2	75 - 125	20
Total Silver	0.123	0.122	mg/L	1	0.12	<0.0125	98	1	75 - 125	20
Total Zinc	0.256	0.254	mg/L	1	0.25	<0.025	102	1	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes QCBatch: QC24482

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	11.95	11.95	mg/L	1	12.50	<1.0	95	0	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Matrix Spikes and Duplicate Spikes

Matrix Spikes

QCBatch: QC24464

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Arsenic	0.528	0.561	mg/L	1	0.50	0.0733	106	6	75 - 125	20
Total Chromium	0.193	0.203	mg/L	1	0.10	0.101	193	5	75 - 125	20
Total Lead	2.66	2.77	mg/L	1	0.50	2.14	104	4	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes

QCBatch: QC24482

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	417	418	mg/L	1	125	304	90	0	48 - 127	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Continuing Calibration Verification Standards

CCV (1)

QCBatch: QC24464

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Arsenic		mg/L	1	0.997	100	90 - 110	10/27/02
Total Barium		mg/L	2	1.97	98	90 - 110	10/27/02
Total Cadmium		mg/L	0.50	0.493	99	90 - 110	10/27/02
Total Chromium		mg/L	0.20	0.199	100	90 - 110	10/27/02
Total Copper		mg/L	0.25	0.253	101	90 - 110	10/27/02
Total Lead		mg/L	1	0.994	99	90 - 110	10/27/02
Total Selenium		mg/L	1	0.983	98	90 - 110	10/27/02
Total Silver		mg/L	0.25	0.249	100	90 - 110	10/27/02
Total Zinc		mg/L	0.50	0.490	98	90 - 110	10/27/02

ICV (1)

QCBatch: QC24464

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Arsenic		mg/L	1	0.91	99	95 - 105	10/27/02
Total Barium		mg/L	2	1.96	98	95 - 105	10/27/02
Total Cadmium		mg/L	0.50	0.492	98	95 - 105	10/27/02
Total Chromium		mg/L	0.20	0.198	99	95 - 105	10/27/02
Total Copper		mg/L	0.25	0.243	97	95 - 105	10/27/02
Total Lead		mg/L	1	0.968	97	95 - 105	10/27/02

Continued ...

Continued

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Selenium		mg/L	1	0.978	98	95 - 105	10/27/02
Total Silver		mg/L	0.25	0.244	98	95 - 105	10/27/02
Total Zinc		mg/L	0.50	0.492	98	95 - 105	10/27/02

CCV (1)

QCBatch: QC24482

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	11.94	95	90 - 110	10/25/02

ICV (1)

QCBatch: QC24482

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	12.03	96	90 - 110	10/25/02

**6701 Aberdeen Avenue, Ste. 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296**

TraceAnalysis, Inc.

155 McCutcheon, Suite H
El Paso, Texas 79932
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # A021023026

Company Name: _____ Phone #: _____

Address: (Street, City, Zip) Fax #:

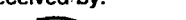
Contact Person:

Invoice to:
(If different from above)

Project #:	Project Name:
------------	---------------

Project Location: _____ Sampler Signature: _____

[illegible]

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
	10/21	11:30		10/21	11:30
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
	10/22	9:15			
Relinquished by:	Date:	Time:	Received at Laboratory by:	Date:	Time:

Relinquished by:	Date:	Time:	Received at Laboratory by:	Date:	Time:
			<i>V. C. C. C. C.</i>	<i>10-23-02</i>	<i>10:00</i>

ANALYSIS REQUEST

(Circle or Specify Method No.)

[illegible]

LAB USE ONLY

REMARKS:

Intact Y / N

Headspace: Y / N

Temp

Log-in Review

10/29 F/H

☐ Check If Special Reporting Limits Are Needed

Carrier # TNKHU 9029280414

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

ORIGINAL COPY

Summary Report

CORRECTED CERTIFICATE

Todd Choban
E.T.G.I.
PO Box 4845
Midland, Tx. 79704

Report Date: November 14, 2002

Order ID Number: A02102327

Project Number: CH2100
Project Name: Champion Tech
Project Location: Hobbs,NM

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
211478	MW-1	Water	10/21/02	8:45	10/23/02
211479	MW-2	Water	10/21/02	9:25	10/23/02
211480	MW-3	Water	10/21/02	9:55	10/23/02
211481	MW-4	Water	10/21/02	10:15	10/23/02
211482	MW-5	Water	10/21/02	10:35	10/23/02
211483	MW-6	Water	10/21/02	:	10/23/02
211484	MW-7	Water	10/21/02	:	10/23/02
211485	MW-8	Water	10/21/02	13:15	10/23/02
211486	MW-9	Water	10/21/02	14:00	10/23/02
211487	MW-10	Water	10/21/02	14:40	10/23/02
211488	MW-11	Water	10/21/02	15:20	10/23/02
211489	MW-12	Water	10/21/02	15:50	10/23/02
211490	MW-13	Water	10/21/02	16:10	10/23/02
211491	MW-14	Water	10/21/02	16:55	10/23/02
211492	MW-15	Water	10/21/02	8:05	10/23/02
211493	MW-16	Water	10/21/02	8:45	10/23/02

Comment: CORRECTION: Chloride result added for sample 211485 and matrix spike corrected for chromium.

This report consists of a total of 34 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample - Field Code	TPH TRPHC (ppm)
211483 - MW-6	2.35
211485 - MW-8	<0.500
211487 - MW-10	<0.500
211488 - MW-11	<0.500
211489 - MW-12	<0.500
211490 - MW-13	<0.500
211491 - MW-14	<0.500
211492 - MW-15	<0.500
211493 - MW-16	<0.500

This is only a summary. Please, refer to the complete report package for quality control data.

Report Date: November 14, 2002 Order Number: A02102327
CH2100 Champion TechPage Number: 2 of 34
Hobbs, NM**Sample: 211478 - MW-1**

Param	Flag	Result	Units
Chloride		356	mg/L
Total Arsenic		<0.050	mg/L
Total Chromium		<0.010	mg/L
Total Lead		<0.010	mg/L

Sample: 211479 - MW-2

Param	Flag	Result	Units
Chloride		397	mg/L
Total Arsenic		<0.050	mg/L
Total Chromium		0.0144	mg/L
Total Lead		<0.010	mg/L

Sample: 211480 - MW-3

Param	Flag	Result	Units
Chloride		464	mg/L
Total Arsenic		<0.050	mg/L
Total Chromium		0.0207	mg/L
Total Lead		<0.010	mg/L

Sample: 211481 - MW-4

Param	Flag	Result	Units
Chloride		377	mg/L
Total Arsenic		<0.050	mg/L
Total Chromium		0.333	mg/L
Total Lead		<0.010	mg/L

Sample: 211482 - MW-5

Param	Flag	Result	Units
Chloride		508	mg/L
Total Arsenic		<0.050	mg/L
Total Chromium		0.0839	mg/L
Total Lead		<0.010	mg/L

Sample: 211483 - MW-6

Param	Flag	Result	Units
Chloride		469	mg/L
Total Arsenic		0.0559	mg/L

*Continued on next page ...**This is only a summary. Please, refer to the complete report package for quality control data.*

Report Date: November 14, 2002 Order Number: A02102327
CH2100 Champion TechPage Number: 3 of 34
Hobbs, NM

Sample 211483 continued ...

Param	Flag	Result	Units
Total Chromium		0.254	mg/L
Total Lead		<0.010	mg/L
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		<1.00	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		45.3	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		1.33	µg/L
1,1,1-Trichloroethane		2.10	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		4.85	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		19.9	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L

Continued on next page ...

This is only a summary. Please, refer to the complete report package for quality control data.

Report Date: November 14, 2002 Order Number: A02102327
CH2100 Champion TechPage Number: 4 of 34
Hobbs,NM

Sample 211483 continued ...

Param	Flag	Result	Units
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

Sample: 211484 - MW-7

Param	Flag	Result	Units
Chloride		235	mg/L
Total Arsenic		<0.050	mg/L
Total Chromium		<0.010	mg/L
Total Lead		<0.010	mg/L

Sample: 211485 - MW-8

Param	Flag	Result	Units
Chloride		304	mg/L
Total Arsenic		<0.050	mg/L
Total Chromium		0.0225	mg/L
Total Lead		<0.010	mg/L
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L

Continued on next page ...

This is only a summary. Please, refer to the complete report package for quality control data.

Report Date: November 14, 2002 Order Number: A02102327
CH2100 Champion Tech

Page Number: 5 of 34
Hobbs,NM

Sample 211485 continued ...

Param	Flag	Result	Units
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		<1.00	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		3.29	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L

Continued on next page ...

This is only a summary. Please, refer to the complete report package for quality control data.

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Sample 211485 continued ...

Param	Flag	Result	Units
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

Sample: 211486 - MW-9

Param	Flag	Result	Units
Chloride		305	mg/L
Total Arsenic		<0.050	mg/L
Total Chromium		0.0859	mg/L
Total Lead		<0.010	mg/L

Sample: 211487 - MW-10

Param	Flag	Result	Units
Hydroxide Alkalinity		<1.0	mg/L as CaCo3
Carbonate Alkalinity		<1.0	mg/L as CaCo3
Bicarbonate Alkalinity		212	mg/L as CaCo3
Total Alkalinity		212	mg/L as CaCo3
Specific Conductance		1704	µMHOS/cm
Total Mercury		<0.0002	mg/L
Chloride		260	mg/L
Fluoride		2.82	mg/L
Nitrate-N		4.30	mg/L
Sulfate		163	mg/L
Dissolved Calcium		110	mg/L
Dissolved Magnesium		17.0	mg/L
Dissolved Potassium		7.14	mg/L
Dissolved Sodium		226	mg/L
Pyridine		<0.005	mg/L
n-Nitrosodimethylamine		<0.005	mg/L
2-Picoline		<0.005	mg/L
Methyl methanesulfonate		<0.005	mg/L
Ethyl methanesulfonate		<0.005	mg/L
Phenol		<0.005	mg/L
Aniline		<0.005	mg/L
bis (2-chloroethyl) ether		<0.005	mg/L
2-Chlorophenol		<0.005	mg/L
1,3-Dichlorobenzene (meta)		<0.005	mg/L
1,4-Dichlorobenzene		<0.005	mg/L
Benzyl alcohol		<0.005	mg/L

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Sample 211487 continued ...

Param	Flag	Result	Units
1,2-Dichlorobenzene		<0.005	mg/L
2-Methylphenol		<0.005	mg/L
bis (2-chloroisopropyl) ether		<0.005	mg/L
4-Methylphenol/3-Methylphenol		<0.005	mg/L
Acetophenone		<0.005	mg/L
n-Nitrosodi-n-propylamine		<0.005	mg/L
Hexachloroethane		<0.005	mg/L
Nitrobenzene		<0.005	mg/L
n-Nitrosopiperidine		<0.005	mg/L
Isophorone		<0.005	mg/L
2-Nitrophenol		<0.005	mg/L
2,4-Dimethylphenol		<0.005	mg/L
bis (2-chloroethoxy) methane		<0.005	mg/L
Benzoic acid		<0.005	mg/L
2,4-Dichlorophenol		<0.005	mg/L
1,2,4-Trichlorobenzene		<0.005	mg/L
a,a-Dimethylphenethylamine		<0.005	mg/L
Naphthalene		<0.005	mg/L
4-Chloroaniline		<0.005	mg/L
2,6-Dichlorophenol		<0.005	mg/L
Hexachlorobutadiene		<0.005	mg/L
n-Nitroso-di-n-butylamine		<0.005	mg/L
4-Chloro-3-methylphenol		<0.005	mg/L
1-Methylnaphthalene		<0.005	mg/L
2-Methylnaphthalene		<0.005	mg/L
1,2,4,5-Tetrachlorobenzene		<0.005	mg/L
Hexachlorocyclopentadiene		<0.005	mg/L
2,4,6-Trichlorophenol		<0.005	mg/L
2,4,5-Trichlorophenol		<0.005	mg/L
2-Chloronaphthalene		<0.005	mg/L
1-Chloronaphthalene		<0.005	mg/L
2-Nitroaniline		<0.005	mg/L
Dimethylphthalate		<0.005	mg/L
Acenaphthylene		<0.005	mg/L
2,6-Dinitrotoluene		<0.005	mg/L
3-Nitroaniline		<0.005	mg/L
Acenaphthene		<0.005	mg/L
2,4-Dinitrophenol		<0.005	mg/L
Dibenzofuran		<0.005	mg/L
Pentachlorobenzene		<0.005	mg/L
4-Nitrophenol		<0.005	mg/L
1-Naphthylamine		<0.005	mg/L
2,4-Dinitrotoluene		<0.005	mg/L
2-Naphthylamine		<0.005	mg/L
2,3,4,6-Tetrachlorophenol		<0.005	mg/L
Fluorene		<0.005	mg/L
Diethylphthalate		<0.005	mg/L
4-Chlorophenyl-phenylether		<0.005	mg/L
4-Nitroaniline		<0.005	mg/L
4,6-Dinitro-2-methylphenol		<0.005	mg/L

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Sample 211487 continued ...

Param	Flag	Result	Units
Diphenylamine		<0.005	mg/L
Diphenylhydrazine		<0.005	mg/L
4-Bromophenyl-phenylether		<0.005	mg/L
Phenacetin		<0.005	mg/L
Hexachlorobenzene		<0.005	mg/L
4-Aminobiphenyl		<0.005	mg/L
Pentachlorophenol		<0.005	mg/L
Pentachloronitrobenzene		<0.005	mg/L
Pronamide		<0.005	mg/L
Phenanthrene		<0.005	mg/L
Anthracene		<0.005	mg/L
Di-n-butylphthalate		<0.005	mg/L
Fluoranthene		<0.005	mg/L
Benzidine		<0.005	mg/L
Pyrene		<0.005	mg/L
p-Dimethylaminoazobenzene		<0.005	mg/L
Butylbenzylphthalate		<0.005	mg/L
Benzo(a)anthracene		<0.005	mg/L
3,3-Dichlorobenzidine		<0.005	mg/L
Chrysene		<0.005	mg/L
Bis (2-ethylhexyl) phthalate		<0.005	mg/L
Di-n-octylphthalate		<0.005	mg/L
Benzo(b)fluoranthene		<0.005	mg/L
7,12-Dimethylbenz(a)anthracene		<0.005	mg/L
Benzo(k)fluoranthene		<0.005	mg/L
Benzo(a)pyrene		<0.005	mg/L
3-Methylcholanthrene		<0.005	mg/L
Dibenzo(a,j)acridine		<0.005	mg/L
Indeno(1,2,3-cd)pyrene		<0.005	mg/L
Dibenzo(a,h)anthracene		<0.005	mg/L
Benzo(g,h,i)perylene		<0.005	mg/L
Total Dissolved Solids		1004	mg/L
Total Aluminum		6.42	mg/L
Total Arsenic		<0.050	mg/L
Total Barium		<0.100	mg/L
Total Boron		0.405	mg/L
Total Cadmium		<0.005	mg/L
Total Calcium		115	mg/L
Total Chromium		0.0292	mg/L
Total Cobalt		<0.025	mg/L
Total Copper		<0.0125	mg/L
Total Iron		4.61	mg/L
Total Lead		<0.010	mg/L
Total Magnesium		19.0	mg/L
Total Manganese		0.0498	mg/L
Total Molybdenum		<0.050	mg/L
Total Nickel		<0.025	mg/L
Total Potassium		8.49	mg/L
Total Selenium		<0.050	mg/L
Total Silica		37.7	mg/L

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Sample 211487 continued ...

Param	Flag	Result	Units
Total Silver		<0.0125	mg/L
Total Sodium		197	mg/L
Total Zinc		<0.025	mg/L
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		<1.00	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L

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Sample 211487 continued ...

Param	Flag	Result	Units
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L
pH	1	7.5	s.u.

Sample: 211488 - MW-11

Param	Flag	Result	Units
Hydroxide Alkalinity		<1.0	mg/L as CaCo3
Carbonate Alkalinity		<1.0	mg/L as CaCo3
Bicarbonate Alkalinity		222	mg/L as CaCo3
Total Alkalinity		222	mg/L as CaCo3
Specific Conductance		1890	µMHOS/cm
Total Mercury		<0.0002	mg/L
Chloride		298	mg/L
Fluoride		2.31	mg/L
Nitrate-N		1.12	mg/L
Sulfate		205	mg/L
Dissolved Calcium		96.8	mg/L
Dissolved Magnesium		45.0	mg/L
Dissolved Potassium		38.6	mg/L
Dissolved Sodium		161	mg/L
Pyridine		<0.005	mg/L
n-Nitrosodimethylamine		<0.005	mg/L
2-Picoline		<0.005	mg/L
Methyl methanesulfonate		<0.005	mg/L
Ethyl methanesulfonate		<0.005	mg/L
Phenol		<0.005	mg/L

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¹Sample received out of holding time.

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Sample 211488 continued ...

Param	Flag	Result	Units
Aniline		<0.005	mg/L
bis (2-chloroethyl) ether		<0.005	mg/L
2-Chlorophenol		<0.005	mg/L
1,3-Dichlorobenzene (meta)		<0.005	mg/L
1,4-Dichlorobenzene		<0.005	mg/L
Benzyl alcohol		<0.005	mg/L
1,2-Dichlorobenzene		<0.005	mg/L
2-Methylphenol		<0.005	mg/L
bis (2-chloroisopropyl) ether		<0.005	mg/L
4-Methylphenol/3-Methylphenol		<0.005	mg/L
Acetophenone		<0.005	mg/L
n-Nitrosodi-n-propylamine		<0.005	mg/L
Hexachloroethane		<0.005	mg/L
Nitrobenzene		<0.005	mg/L
n-Nitrosopiperidine		<0.005	mg/L
Isophorone		<0.005	mg/L
2-Nitrophenol		<0.005	mg/L
2,4-Dimethylphenol		<0.005	mg/L
bis (2-chloroethoxy) methane		<0.005	mg/L
Benzoic acid		<0.005	mg/L
2,4-Dichlorophenol		<0.005	mg/L
1,2,4-Trichlorobenzene		<0.005	mg/L
a,a-Dimethylphenethylamine		<0.005	mg/L
Naphthalene		<0.005	mg/L
4-Chloroaniline		<0.005	mg/L
2,6-Dichlorophenol		<0.005	mg/L
Hexachlorobutadiene		<0.005	mg/L
n-Nitroso-di-n-butylamine		<0.005	mg/L
4-Chloro-3-methylphenol		<0.005	mg/L
1-Methylnaphthalene		<0.005	mg/L
2-Methylnaphthalene		<0.005	mg/L
1,2,4,5-Tetrachlorobenzene		<0.005	mg/L
Hexachlorocyclopentadiene		<0.005	mg/L
2,4,6-Trichlorophenol		<0.005	mg/L
2,4,5-Trichlorophenol		<0.005	mg/L
2-Chloronaphthalene		<0.005	mg/L
1-Chloronaphthalene		<0.005	mg/L
2-Nitroaniline		<0.005	mg/L
Dimethylphthalate		0.01	mg/L
Acenaphthylene		<0.005	mg/L
2,6-Dinitrotoluene		<0.005	mg/L
3-Nitroaniline		<0.005	mg/L
Acenaphthene		<0.005	mg/L
2,4-Dinitrophenol		<0.005	mg/L
Dibenzofuran		<0.005	mg/L
Pentachlorobenzene		<0.005	mg/L
4-Nitrophenol		<0.005	mg/L
1-Naphthylamine		<0.005	mg/L
2,4-Dinitrotoluene		<0.005	mg/L
2-Naphthylamine		<0.005	mg/L

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Sample 211488 continued ...

Param	Flag	Result	Units
2,3,4,6-Tetrachlorophenol		<0.005	mg/L
Fluorene		<0.005	mg/L
Diethylphthalate		<0.005	mg/L
4-Chlorophenyl-phenylether		<0.005	mg/L
4-Nitroaniline		<0.005	mg/L
4,6-Dinitro-2-methylphenol		<0.005	mg/L
Diphenylamine		<0.005	mg/L
Diphenylhydrazine		<0.005	mg/L
4-Bromophenyl-phenylether		<0.005	mg/L
Phenacetin		<0.005	mg/L
Hexachlorobenzene		<0.005	mg/L
4-Aminobiphenyl		<0.005	mg/L
Pentachlorophenol		<0.005	mg/L
Pentachloronitrobenzene		<0.005	mg/L
Pronamide		<0.005	mg/L
Phenanthrene		<0.005	mg/L
Anthracene		<0.005	mg/L
Di-n-butylphthalate		<0.005	mg/L
Fluoranthene		<0.005	mg/L
Benzidine		<0.005	mg/L
Pyrene		<0.005	mg/L
p-Dimethylaminoazobenzene		<0.005	mg/L
Butylbenzylphthalate		<0.005	mg/L
Benzo(a)anthracene		<0.005	mg/L
3,3-Dichlorobenzidine		<0.005	mg/L
Chrysene		<0.005	mg/L
Bis (2-ethylhexyl) phthalate		<0.005	mg/L
Di-n-octylphthalate		<0.005	mg/L
Benzo(b)fluoranthene		<0.005	mg/L
7,12-Dimethylbenz(a)anthracene		<0.005	mg/L
Benzo(k)fluoranthene		<0.005	mg/L
Benzo(a)pyrene		<0.005	mg/L
3-Methylcholanthrene		<0.005	mg/L
Dibenzo(a,j)acridine		<0.005	mg/L
Indeno(1,2,3-cd)pyrene		<0.005	mg/L
Dibenzo(a,h)anthracene		<0.005	mg/L
Benzo(g,h,i)perylene		<0.005	mg/L
Total Dissolved Solids		1048	mg/L
Total Aluminum		14.0	mg/L
Total Arsenic		<0.050	mg/L
Total Barium		0.626	mg/L
Total Boron		0.431	mg/L
Total Cadmium		<0.005	mg/L
Total Calcium		329	mg/L
Total Chromium		0.0171	mg/L
Total Cobalt		<0.025	mg/L
Total Copper		<0.0125	mg/L
Total Iron		13.7	mg/L
Total Lead		<0.010	mg/L
Total Magnesium		51.5	mg/L

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Sample 211488 continued ...

Param	Flag	Result	Units
Total Manganese		0.194	mg/L
Total Molybdenum		<0.050	mg/L
Total Nickel		<0.025	mg/L
Total Potassium		43.0	mg/L
Total Selenium		<0.050	mg/L
Total Silica		35.0	mg/L
Total Silver		<0.0125	mg/L
Total Sodium		164	mg/L
Total Zinc		0.0518	mg/L
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		<1.00	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		1.53	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L

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Sample 211488 continued ...

Param	Flag	Result	Units
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L
pH	2	7.5	s.u.

Sample: 211489 - MW-12

Param	Flag	Result	Units
Hydroxide Alkalinity		<1.0	mg/L as CaCo3
Carbonate Alkalinity		<1.0	mg/L as CaCo3
Bicarbonate Alkalinity		308	mg/L as CaCo3
Total Alkalinity		308	mg/L as CaCo3
Specific Conductance		2250	µMHOS/cm
Total Mercury		<0.0002	mg/L
Chloride		357	mg/L
Fluoride		2.63	mg/L
Nitrate-N		5.91	mg/L
Sulfate		198	mg/L
Dissolved Calcium		141	mg/L
Dissolved Magnesium		42.8	mg/L
Dissolved Potassium		10.7	mg/L
Dissolved Sodium		218	mg/L

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²Sample received out of holding time.

This is only a summary. Please, refer to the complete report package for quality control data.

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Param	Flag	Result	Units
Pyridine		<0.005	mg/L
n-Nitrosodimethylamine		<0.005	mg/L
2-Picoline		<0.005	mg/L
Methyl methanesulfonate		<0.005	mg/L
Ethyl methanesulfonate		<0.005	mg/L
Phenol		<0.005	mg/L
Aniline		<0.005	mg/L
bis (2-chloroethyl) ether		<0.005	mg/L
2-Chlorophenol		<0.005	mg/L
1,3-Dichlorobenzene (meta)		<0.005	mg/L
1,4-Dichlorobenzene		<0.005	mg/L
Benzyl alcohol		<0.005	mg/L
1,2-Dichlorobenzene		<0.005	mg/L
2-Methylphenol		<0.005	mg/L
bis (2-chloroisopropyl) ether		<0.005	mg/L
4-Methylphenol/3-Methylphenol		<0.005	mg/L
Acetophenone		<0.005	mg/L
n-Nitrosodi-n-propylamine		<0.005	mg/L
Hexachloroethane		<0.005	mg/L
Nitrobenzene		<0.005	mg/L
n-Nitrosopiperidine		<0.005	mg/L
Isophorone		<0.005	mg/L
2-Nitrophenol		<0.005	mg/L
2,4-Dimethylphenol		<0.005	mg/L
bis (2-chloroethoxy) methane		<0.005	mg/L
Benzoic acid		<0.005	mg/L
2,4-Dichlorophenol		<0.005	mg/L
1,2,4-Trichlorobenzene		<0.005	mg/L
a,a-Dimethylphenethylamine		<0.005	mg/L
Naphthalene		<0.005	mg/L
4-Chloroaniline		<0.005	mg/L
2,6-Dichlorophenol		<0.005	mg/L
Hexachlorobutadiene		<0.005	mg/L
n-Nitroso-di-n-butylamine		<0.005	mg/L
4-Chloro-3-methylphenol		<0.005	mg/L
1-Methylnaphthalene		<0.005	mg/L
2-Methylnaphthalene		<0.005	mg/L
1,2,4,5-Tetrachlorobenzene		<0.005	mg/L
Hexachlorocyclopentadiene		<0.005	mg/L
2,4,6-Trichlorophenol		<0.005	mg/L
2,4,5-Trichlorophenol		<0.005	mg/L
2-Chloronaphthalene		<0.005	mg/L
1-Chloronaphthalene		<0.005	mg/L
2-Nitroaniline		<0.005	mg/L
Dimethylphthalate		0.015	mg/L
Acenaphthylene		<0.005	mg/L
2,6-Dinitrotoluene		<0.005	mg/L
3-Nitroaniline		<0.005	mg/L
Acenaphthene		<0.005	mg/L
2,4-Dinitrophenol		<0.005	mg/L

*Continued on next page ...**This is only a summary. Please, refer to the complete report package for quality control data.*

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Sample 211489 continued ...

Param	Flag	Result	Units
Dibenzofuran		<0.005	mg/L
Pentachlorobenzene		<0.005	mg/L
4-Nitrophenol		<0.005	mg/L
1-Naphthylamine		<0.005	mg/L
2,4-Dinitrotoluene		<0.005	mg/L
2-Naphthylamine		<0.005	mg/L
2,3,4,6-Tetrachlorophenol		<0.005	mg/L
Fluorene		<0.005	mg/L
Diethylphthalate		<0.005	mg/L
4-Chlorophenyl-phenylether		<0.005	mg/L
4-Nitroaniline		<0.005	mg/L
4,6-Dinitro-2-methylphenol		<0.005	mg/L
Diphenylamine		<0.005	mg/L
Diphenylhydrazine		<0.005	mg/L
4-Bromophenyl-phenylether		<0.005	mg/L
Phenacetin		<0.005	mg/L
Hexachlorobenzene		<0.005	mg/L
4-Aminobiphenyl		<0.005	mg/L
Pentachlorophenol		<0.005	mg/L
Pentachloronitrobenzene		<0.005	mg/L
Pronamide		<0.005	mg/L
Phenanthrene		<0.005	mg/L
Anthracene		<0.005	mg/L
Di-n-butylphthalate		<0.005	mg/L
Fluoranthene		<0.005	mg/L
Benzidine		<0.005	mg/L
Pyrene		<0.005	mg/L
p-Dimethylaminoazobenzene		<0.005	mg/L
Butylbenzylphthalate		<0.005	mg/L
Benzo(a)anthracene		<0.005	mg/L
3,3-Dichlorobenzidine		<0.005	mg/L
Chrysene		<0.005	mg/L
Bis (2-ethylhexyl) phthalate		<0.005	mg/L
Di-n-octylphthalate		<0.005	mg/L
Benzo(b)fluoranthene		<0.005	mg/L
7,12-Dimethylbenz(a)anthracene		<0.005	mg/L
Benzo(k)fluoranthene		<0.005	mg/L
Benzo(a)pyrene		<0.005	mg/L
3-Methylcholanthrene		<0.005	mg/L
Dibenzo(a,j)acridine		<0.005	mg/L
Indeno(1,2,3-cd)pyrene		<0.005	mg/L
Dibenzo(a,h)anthracene		<0.005	mg/L
Benzo(g,h,i)perylene		<0.005	mg/L
Total Dissolved Solids		1322	mg/L
Total Aluminum		8.87	mg/L
Total Arsenic		<0.050	mg/L
Total Barium		0.241	mg/L
Total Boron		0.536	mg/L
Total Cadmium		<0.005	mg/L
Total Calcium		254	mg/L

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This is only a summary. Please, refer to the complete report package for quality control data.

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Sample 211489 continued ...

Param	Flag	Result	Units
Total Chromium		0.0539	mg/L
Total Cobalt		<0.025	mg/L
Total Copper		<0.0125	mg/L
Total Iron		7.94	mg/L
Total Lead		<0.010	mg/L
Total Magnesium		41.9	mg/L
Total Manganese		0.090	mg/L
Total Molybdenum		<0.050	mg/L
Total Nickel		<0.025	mg/L
Total Potassium		13.1	mg/L
Total Selenium		<0.050	mg/L
Total Silica		35.6	mg/L
Total Silver		<0.0125	mg/L
Total Sodium		216	mg/L
Total Zinc		0.0894	mg/L
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		<1.00	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		10.1	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		1.85	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L

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Sample 211489 continued ...

Param	Flag	Result	Units
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		5.92	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L
pH	3	7.2	s.u.

Sample: 211490 - MW-13

Param	Flag	Result	Units
Hydroxide Alkalinity		<1.0	mg/L as CaCo3
Carbonate Alkalinity		<1.0	mg/L as CaCo3
Bicarbonate Alkalinity		202	mg/L as CaCo3
Total Alkalinity		202	mg/L as CaCo3
Specific Conductance		1700	µMHOS/cm
Total Mercury		<0.0002	mg/L
Chloride		244	mg/L
Fluoride		2.61	mg/L

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³Sample received out of holding time.

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Sample 211490 continued ...

Param	Flag	Result	Units
Nitrate-N		4.63	mg/L
Sulfate		186	mg/L
Dissolved Calcium		79.6	mg/L
Dissolved Magnesium		16.6	mg/L
Dissolved Potassium		6.34	mg/L
Dissolved Sodium		238	mg/L
Pyridine		<0.005	mg/L
n-Nitrosodimethylamine		<0.005	mg/L
2-Picoline		<0.005	mg/L
Methyl methanesulfonate		<0.005	mg/L
Ethyl methanesulfonate		<0.005	mg/L
Phenol		<0.005	mg/L
Aniline		<0.005	mg/L
bis (2-chloroethyl) ether		<0.005	mg/L
2-Chlorophenol		<0.005	mg/L
1,3-Dichlorobenzene (meta)		<0.005	mg/L
1,4-Dichlorobenzene		<0.005	mg/L
Benzyl alcohol		<0.005	mg/L
1,2-Dichlorobenzene		<0.005	mg/L
2-Methylphenol		<0.005	mg/L
bis (2-chloroisopropyl) ether		<0.005	mg/L
4-Methylphenol/3-Methylphenol		<0.005	mg/L
Acetophenone		<0.005	mg/L
n-Nitrosodi-n-propylamine		<0.005	mg/L
Hexachloroethane		<0.005	mg/L
Nitrobenzene		<0.005	mg/L
n-Nitrosopiperidine		<0.005	mg/L
Isophorone		<0.005	mg/L
2-Nitrophenol		<0.005	mg/L
2,4-Dimethylphenol		<0.005	mg/L
bis (2-chloroethoxy) methane		<0.005	mg/L
Benzoic acid		<0.005	mg/L
2,4-Dichlorophenol		<0.005	mg/L
1,2,4-Trichlorobenzene		<0.005	mg/L
a,a-Dimethylphenethylamine		<0.005	mg/L
Naphthalene		<0.005	mg/L
4-Chloroaniline		<0.005	mg/L
2,6-Dichlorophenol		<0.005	mg/L
Hexachlorobutadiene		<0.005	mg/L
n-Nitroso-di-n-butylamine		<0.005	mg/L
4-Chloro-3-methylphenol		<0.005	mg/L
1-Methylnaphthalene		<0.005	mg/L
2-Methylnaphthalene		<0.005	mg/L
1,2,4,5-Tetrachlorobenzene		<0.005	mg/L
Hexachlorocyclopentadiene		<0.005	mg/L
2,4,6-Trichlorophenol		<0.005	mg/L
2,4,5-Trichlorophenol		<0.005	mg/L
2-Chloronaphthalene		<0.005	mg/L
1-Chloronaphthalene		<0.005	mg/L
2-Nitroaniline		<0.005	mg/L

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This is only a summary. Please, refer to the complete report package for quality control data.

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Sample 211490 continued ...

Param	Flag	Result	Units
Dimethylphthalate		0.024	mg/L
Acenaphthylene		<0.005	mg/L
2,6-Dinitrotoluene		<0.005	mg/L
3-Nitroaniline		<0.005	mg/L
Acenaphthene		<0.005	mg/L
2,4-Dinitrophenol		<0.005	mg/L
Dibenzofuran		<0.005	mg/L
Pentachlorobenzene		<0.005	mg/L
4-Nitrophenol		<0.005	mg/L
1-Naphthylamine		<0.005	mg/L
2,4-Dinitrotoluene		<0.005	mg/L
2-Naphthylamine		<0.005	mg/L
2,3,4,6-Tetrachlorophenol		<0.005	mg/L
Fluorene		<0.005	mg/L
Diethylphthalate		<0.005	mg/L
4-Chlorophenyl-phenylether		<0.005	mg/L
4-Nitroaniline		<0.005	mg/L
4,6-Dinitro-2-methylphenol		<0.005	mg/L
Diphenylamine		<0.005	mg/L
Diphenylhydrazine		<0.005	mg/L
4-Bromophenyl-phenylether		<0.005	mg/L
Phenacetin		<0.005	mg/L
Hexachlorobenzene		<0.005	mg/L
4-Aminobiphenyl		<0.005	mg/L
Pentachlorophenol		<0.005	mg/L
Pentachloronitrobenzene		<0.005	mg/L
Pronamide		<0.005	mg/L
Phenanthrene		<0.005	mg/L
Anthracene		<0.005	mg/L
Di-n-butylphthalate		<0.005	mg/L
Fluoranthene		<0.005	mg/L
Benzidine		<0.005	mg/L
Pyrene		<0.005	mg/L
p-Dimethylaminoazobenzene		<0.005	mg/L
Butylbenzylphthalate		<0.005	mg/L
Benzo(a)anthracene		<0.005	mg/L
3,3-Dichlorobenzidine		<0.005	mg/L
Chrysene		<0.005	mg/L
Bis (2-ethylhexyl) phthalate		<0.005	mg/L
Di-n-octylphthalate		<0.005	mg/L
Benzo(b)fluoranthene		<0.005	mg/L
7,12-Dimethylbenz(a)anthracene		<0.005	mg/L
Benzo(k)fluoranthene		<0.005	mg/L
Benzo(a)pyrene		<0.005	mg/L
3-Methylcholanthrene		<0.005	mg/L
Dibenzo(a,j)acridine		<0.005	mg/L
Indeno(1,2,3-cd)pyrene		<0.005	mg/L
Dibenzo(a,h)anthracene		<0.005	mg/L
Benzo(g,h,i)perylene		<0.005	mg/L
Total Dissolved Solids		1004	mg/L

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Sample 211490 continued ...

Param	Flag	Result	Units
Total Aluminum		7.02	mg/L
Total Arsenic		<0.050	mg/L
Total Barium		0.239	mg/L
Total Boron		0.539	mg/L
Total Cadmium		<0.005	mg/L
Total Calcium		153	mg/L
Total Chromium		0.0939	mg/L
Total Cobalt		<0.025	mg/L
Total Copper		<0.0125	mg/L
Total Iron		6.08	mg/L
Total Lead		<0.010	mg/L
Total Magnesium		20.3	mg/L
Total Manganese		0.0668	mg/L
Total Molybdenum		<0.050	mg/L
Total Nickel		<0.025	mg/L
Total Potassium		7.25	mg/L
Total Selenium		<0.050	mg/L
Total Silica		38.8	mg/L
Total Silver		<0.0125	mg/L
Total Sodium		214	mg/L
Total Zinc		<0.025	mg/L
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		<1.00	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L

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Sample 211490 continued ...

Param	Flag	Result	Units
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L
pH	4	7.7	s.u.

Sample: 211491 - MW-14

Param	Flag	Result	Units
Hydroxide Alkalinity		<1.0	mg/L as CaCo3
Carbonate Alkalinity		<1.0	mg/L as CaCo3

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⁴Sample received out of holding time.

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Sample 211491 continued ...

Param	Flag	Result	Units
Bicarbonate Alkalinity		230	mg/L as CaCo3
Total Alkalinity		230	mg/L as CaCo3
Specific Conductance		1820	μMHOS/cm
Total Mercury		0.00091	mg/L
Chloride		272	mg/L
Fluoride		2.70	mg/L
Nitrate-N		5.21	mg/L
Sulfate		176	mg/L
Dissolved Calcium		117	mg/L
Dissolved Magnesium		21.0	mg/L
Dissolved Potassium		8.14	mg/L
Dissolved Sodium		184	mg/L
Pyridine		<0.005	mg/L
n-Nitrosodimethylamine		<0.005	mg/L
2-Picoline		<0.005	mg/L
Methyl methanesulfonate		<0.005	mg/L
Ethyl methanesulfonate		<0.005	mg/L
Phenol		<0.005	mg/L
Aniline		<0.005	mg/L
bis (2-chloroethyl) ether		<0.005	mg/L
2-Chlorophenol		<0.005	mg/L
1,3-Dichlorobenzene (meta)		<0.005	mg/L
1,4-Dichlorobenzene		<0.005	mg/L
Benzyl alcohol		<0.005	mg/L
1,2-Dichlorobenzene		<0.005	mg/L
2-Methylphenol		<0.005	mg/L
bis (2-chloroisopropyl) ether		<0.005	mg/L
4-Methylphenol/3-Methylphenol		<0.005	mg/L
Acetophenone		<0.005	mg/L
n-Nitrosodi-n-propylamine		<0.005	mg/L
Hexachloroethane		<0.005	mg/L
Nitrobenzene		<0.005	mg/L
n-Nitrosopiperidine		<0.005	mg/L
Isophorone		<0.005	mg/L
2-Nitrophenol		<0.005	mg/L
2,4-Dimethylphenol		<0.005	mg/L
bis (2-chloroethoxy) methane		<0.005	mg/L
Benzoic acid		<0.005	mg/L
2,4-Dichlorophenol		<0.005	mg/L
1,2,4-Trichlorobenzene		<0.005	mg/L
a,a-Dimethylphenethylamine		<0.005	mg/L
Naphthalene		<0.005	mg/L
4-Chloroaniline		<0.005	mg/L
2,6-Dichlorophenol		<0.005	mg/L
Hexachlorobutadiene		<0.005	mg/L
n-Nitroso-di-n-butylamine		<0.005	mg/L
4-Chloro-3-methylphenol		<0.005	mg/L
1-Methylnaphthalene		<0.005	mg/L
2-Methylnaphthalene		<0.005	mg/L
1,2,4,5-Tetrachlorobenzene		<0.005	mg/L

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Sample 211491 continued ...

Param	Flag	Result	Units
Hexachlorocyclopentadiene		<0.005	mg/L
2,4,6-Trichlorophenol		<0.005	mg/L
2,4,5-Trichlorophenol		<0.005	mg/L
2-Chloronaphthalene		<0.005	mg/L
1-Chloronaphthalene		<0.005	mg/L
2-Nitroaniline		<0.005	mg/L
Dimethylphthalate		0.011	mg/L
Acenaphthylene		<0.005	mg/L
2,6-Dinitrotoluene		<0.005	mg/L
3-Nitroaniline		<0.005	mg/L
Acenaphthene		<0.005	mg/L
2,4-Dinitrophenol		<0.005	mg/L
Dibenzofuran		<0.005	mg/L
Pentachlorobenzene		<0.005	mg/L
4-Nitrophenol		<0.005	mg/L
1-Naphthylamine		<0.005	mg/L
2,4-Dinitrotoluene		<0.005	mg/L
2-Naphthylamine		<0.005	mg/L
2,3,4,6-Tetrachlorophenol		<0.005	mg/L
Fluorene		<0.005	mg/L
Diethylphthalate		<0.005	mg/L
4-Chlorophenyl-phenylether		<0.005	mg/L
4-Nitroaniline		<0.005	mg/L
4,6-Dinitro-2-methylphenol		<0.005	mg/L
Diphenylamine		<0.005	mg/L
Diphenylhydrazine		<0.005	mg/L
4-Bromophenyl-phenylether		<0.005	mg/L
Phenacetin		<0.005	mg/L
Hexachlorobenzene		<0.005	mg/L
4-Aminobiphenyl		<0.005	mg/L
Pentachlorophenol		<0.005	mg/L
Pentachloronitrobenzene		<0.005	mg/L
Pronamide		<0.005	mg/L
Phenanthrene		<0.005	mg/L
Anthracene		<0.005	mg/L
Di-n-butylphthalate		<0.005	mg/L
Fluoranthene		<0.005	mg/L
Benzidine		<0.005	mg/L
Pyrene		<0.005	mg/L
p-Dimethylaminoazobenzene		<0.005	mg/L
Butylbenzylphthalate		<0.005	mg/L
Benzo(a)anthracene		<0.005	mg/L
3,3-Dichlorobenzidine		<0.005	mg/L
Chrysene		<0.005	mg/L
Bis (2-ethylhexyl) phthalate		<0.005	mg/L
Di-n-octylphthalate		<0.005	mg/L
Benzo(b)fluoranthene		<0.005	mg/L
7,12-Dimethylbenz(a)anthracene		<0.005	mg/L
Benzo(k)fluoranthene		<0.005	mg/L
Benzo(a)pyrene		<0.005	mg/L

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Sample 211491 continued ...

Param	Flag	Result	Units
3-Methylcholanthrene		<0.005	mg/L
Dibenzo(a,j)acridine		<0.005	mg/L
Indeno(1,2,3-cd)pyrene		<0.005	mg/L
Dibenzo(a,h)anthracene		<0.005	mg/L
Benzo(g,h,i)perylene		<0.005	mg/L
Total Dissolved Solids		1086	mg/L
Total Aluminum		13.9	mg/L
Total Arsenic		0.0731	mg/L
Total Barium		0.496	mg/L
Total Boron		0.395	mg/L
Total Cadmium		<0.005	mg/L
Total Calcium		218	mg/L
Total Chromium		0.0459	mg/L
Total Cobalt		<0.025	mg/L
Total Copper		<0.0125	mg/L
Total Iron		11.1	mg/L
Total Lead		<0.010	mg/L
Total Magnesium		28.9	mg/L
Total Manganese		0.146	mg/L
Total Molybdenum		<0.050	mg/L
Total Nickel		<0.025	mg/L
Total Potassium		12.9	mg/L
Total Selenium		<0.050	mg/L
Total Silica		37.1	mg/L
Total Silver		<0.0125	mg/L
Total Sodium		177	mg/L
Total Zinc		<0.025	mg/L
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		<1.00	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		<1.00	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L

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Sample 211491 continued ...

Param	Flag	Result	Units
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L
pH	5	7.5	s.u.

⁵Sample received out of holding time.

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Sample: 211492 - MW-15

Param	Flag	Result	Units
Hydroxide Alkalinity		<1.0	mg/L as CaCo3
Carbonate Alkalinity		<1.0	mg/L as CaCo3
Bicarbonate Alkalinity		220	mg/L as CaCo3
Total Alkalinity		220	mg/L as CaCo3
Specific Conductance		1400	µMHOS/cm
Total Mercury		<0.0002	mg/L
Chloride		156	mg/L
Fluoride		2.61	mg/L
Nitrate-N		5.33	mg/L
Sulfate		172	mg/L
Dissolved Calcium		110	mg/L
Dissolved Magnesium		22.7	mg/L
Dissolved Potassium		5.53	mg/L
Dissolved Sodium		103	mg/L
Pyridine		<0.005	mg/L
n-Nitrosodimethylamine		<0.005	mg/L
2-Picoline		<0.005	mg/L
Methyl methanesulfonate		<0.005	mg/L
Ethyl methanesulfonate		<0.005	mg/L
Phenol		<0.005	mg/L
Aniline		<0.005	mg/L
bis (2-chloroethyl) ether		<0.005	mg/L
2-Chlorophenol		<0.005	mg/L
1,3-Dichlorobenzene (meta)		<0.005	mg/L
1,4-Dichlorobenzene		<0.005	mg/L
Benzyl alcohol		<0.005	mg/L
1,2-Dichlorobenzene		<0.005	mg/L
2-Methylphenol		<0.005	mg/L
bis (2-chloroisopropyl) ether		<0.005	mg/L
4-Methylphenol/3-Methylphenol		<0.005	mg/L
Acetophenone		<0.005	mg/L
n-Nitrosodi-n-propylamine		<0.005	mg/L
Hexachloroethane		<0.005	mg/L
Nitrobenzene		<0.005	mg/L
n-Nitrosopiperidine		<0.005	mg/L
Isophorone		<0.005	mg/L
2-Nitrophenol		<0.005	mg/L
2,4-Dimethylphenol		<0.005	mg/L
bis (2-chloroethoxy) methane		<0.005	mg/L
Benzoic acid		<0.005	mg/L
2,4-Dichlorophenol		<0.005	mg/L
1,2,4-Trichlorobenzene		<0.005	mg/L
a,a-Dimethylphenethylamine		<0.005	mg/L
Naphthalene		<0.005	mg/L
4-Chloroaniline		<0.005	mg/L
2,6-Dichlorophenol		<0.005	mg/L
Hexachlorobutadiene		<0.005	mg/L
n-Nitroso-di-n-butylamine		<0.005	mg/L
4-Chloro-3-methylphenol		<0.005	mg/L
1-Methylnaphthalene		<0.005	mg/L
2-Methylnaphthalene		<0.005	mg/L

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Sample 211492 continued ...

Param	Flag	Result	Units
1,2,4,5-Tetrachlorobenzene		<0.005	mg/L
Hexachlorocyclopentadiene		<0.005	mg/L
2,4,6-Trichlorophenol		<0.005	mg/L
2,4,5-Trichlorophenol		<0.005	mg/L
2-Chloronaphthalene		<0.005	mg/L
1-Chloronaphthalene		<0.005	mg/L
2-Nitroaniline		<0.005	mg/L
Dimethylphthalate		0.029	mg/L
Acenaphthylene		<0.005	mg/L
2,6-Dinitrotoluene		<0.005	mg/L
3-Nitroaniline		<0.005	mg/L
Acenaphthene		<0.005	mg/L
2,4-Dinitrophenol		<0.005	mg/L
Dibenzofuran		<0.005	mg/L
Pentachlorobenzene		<0.005	mg/L
4-Nitrophenol		<0.005	mg/L
1-Naphthylamine		<0.005	mg/L
2,4-Dinitrotoluene		<0.005	mg/L
2-Naphthylamine		<0.005	mg/L
2,3,4,6-Tetrachlorophenol		<0.005	mg/L
Fluorene		<0.005	mg/L
Diethylphthalate		<0.005	mg/L
4-Chlorophenyl-phenylether		<0.005	mg/L
4-Nitroaniline		<0.005	mg/L
4,6-Dinitro-2-methylphenol		<0.005	mg/L
Diphenylamine		<0.005	mg/L
Diphenylhydrazine		<0.005	mg/L
4-Bromophenyl-phenylether		<0.005	mg/L
Phenacetin		<0.005	mg/L
Hexachlorobenzene		<0.005	mg/L
4-Aminobiphenyl		<0.005	mg/L
Pentachlorophenol		<0.005	mg/L
Pentachloronitrobenzene		<0.005	mg/L
Pronamide		<0.005	mg/L
Phenanthrene		<0.005	mg/L
Anthracene		<0.005	mg/L
Di-n-butylphthalate		<0.005	mg/L
Fluoranthene		<0.005	mg/L
Benzidine		<0.005	mg/L
Pyrene		<0.005	mg/L
p-Dimethylaminoazobenzene		<0.005	mg/L
Butylbenzylphthalate		<0.005	mg/L
Benzo(a)anthracene		<0.005	mg/L
3,3-Dichlorobenzidine		<0.005	mg/L
Chrysene		<0.005	mg/L
Bis (2-ethylhexyl) phthalate		<0.005	mg/L
Di-n-octylphthalate		<0.005	mg/L
Benzo(b)fluoranthene		<0.005	mg/L
7,12-Dimethylbenz(a)anthracene		<0.005	mg/L
Benzo(k)fluoranthene		<0.005	mg/L

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Sample 211492 continued ...

Param	Flag	Result	Units
Benzo(a)pyrene		<0.005	mg/L
3-Methylcholanthrene		<0.005	mg/L
Dibenzo(a,j)acridine		<0.005	mg/L
Indeno(1,2,3-cd)pyrene		<0.005	mg/L
Dibenzo(a,h)anthracene		<0.005	mg/L
α ³ Benzo(g,h,i)perylene		<0.005	mg/L
Total Dissolved Solids		882	mg/L
Total Aluminum		6.11	mg/L
Total Arsenic		<0.050	mg/L
Total Barium		0.356	mg/L
Total Boron		0.465	mg/L
Total Cadmium		<0.005	mg/L
Total Calcium		165	mg/L
Total Chromium		0.0107	mg/L
Total Cobalt		<0.025	mg/L
Total Copper		<0.0125	mg/L
Total Iron		7.13	mg/L
Total Lead		<0.010	mg/L
Total Magnesium		25.3	mg/L
Total Manganese		0.0856	mg/L
Total Molybdenum		<0.050	mg/L
Total Nickel		<0.025	mg/L
Total Potassium		8.81	mg/L
Total Selenium		<0.050	mg/L
Total Silica		36.9	mg/L
Total Silver		<0.0125	mg/L
Total Sodium		103	mg/L
Total Zinc		<0.025	mg/L
Bromochloromethane		<1.00	μg/L
Dichlorodifluoromethane		<1.00	μg/L
Chloromethane (methyl chloride)		<1.00	μg/L
Vinyl Chloride		<1.00	μg/L
Bromomethane (methyl bromide)		<5.00	μg/L
Chloroethane		<1.00	μg/L
Trichlorofluoromethane		<1.00	μg/L
Acetone		<10.0	μg/L
Iodomethane (methyl iodide)		<5.00	μg/L
Carbon Disulfide		<1.00	μg/L
Acrylonitrile		<1.00	μg/L
2-Butanone (MEK)		<5.00	μg/L
4-methyl-2-pentanone (MIBK)		<5.00	μg/L
2-hexanone		<5.00	μg/L
trans 1,4-Dichloro-2-butene		<10.0	μg/L
1,1-Dichloroethene		<1.00	μg/L
Methylene chloride		<5.00	μg/L
MTBE		<1.00	μg/L
trans-1,2-Dichloroethene		<1.00	μg/L
1,1-Dichloroethane		<1.00	μg/L
cis-1,2-Dichloroethene		<1.00	μg/L
2,2-Dichloropropane		<1.00	μg/L

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Sample 211492 continued ...

Param	Flag	Result	Units
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L
pH	6	7.4	s.u.

⁶Sample received out of holding time.

This is only a summary. Please, refer to the complete report package for quality control data.

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Sample: 211493 - MW-16

Param	Flag	Result	Units
Hydroxide Alkalinity		<1.0	mg/L as CaCo3
Carbonate Alkalinity		<1.0	mg/L as CaCo3
Bicarbonate Alkalinity		242	mg/L as CaCo3
Total Alkalinity		242	mg/L as CaCo3
Specific Conductance		2210	μMHOS/cm
Total Mercury		<0.0002	mg/L
Chloride	7	416	mg/L
Fluoride		2.10	mg/L
Nitrate-N		5.82	mg/L
Sulfate		171	mg/L
Dissolved Calcium		126	mg/L
Dissolved Magnesium		29.3	mg/L
Dissolved Potassium		7.32	mg/L
Dissolved Sodium		218	mg/L
Pyridine		<0.005	mg/L
n-Nitrosodimethylamine		<0.005	mg/L
2-Picoline		<0.005	mg/L
Methyl methanesulfonate		<0.005	mg/L
Ethyl methanesulfonate		<0.005	mg/L
Phenol		<0.005	mg/L
Aniline		<0.005	mg/L
bis (2-chloroethyl) ether		<0.005	mg/L
2-Chlorophenol		<0.005	mg/L
1,3-Dichlorobenzene (meta)		<0.005	mg/L
1,4-Dichlorobenzene		<0.005	mg/L
Benzyl alcohol		<0.005	mg/L
1,2-Dichlorobenzene		<0.005	mg/L
2-Methylphenol		<0.005	mg/L
bis (2-chloroisopropyl) ether		<0.005	mg/L
4-Methylphenol/3-Methylphenol		<0.005	mg/L
Acetophenone		<0.005	mg/L
n-Nitrosodi-n-propylamine		<0.005	mg/L
Hexachloroethane		<0.005	mg/L
Nitrobenzene		<0.005	mg/L
n-Nitrosopiperidine		<0.005	mg/L
Isophorone		<0.005	mg/L
2-Nitrophenol		<0.005	mg/L
2,4-Dimethylphenol		<0.005	mg/L
bis (2-chloroethoxy) methane		<0.005	mg/L
Benzoic acid		<0.005	mg/L
2,4-Dichlorophenol		<0.005	mg/L
1,2,4-Trichlorobenzene		<0.005	mg/L
a,a-Dimethylphenethylamine		<0.005	mg/L
Naphthalene		<0.005	mg/L
4-Chloroaniline		<0.005	mg/L
2,6-Dichlorophenol		<0.005	mg/L
Hexachlorobutadiene		<0.005	mg/L
n-Nitroso-di-n-butylamine		<0.005	mg/L
4-Chloro-3-methylphenol		<0.005	mg/L
1-Methylnaphthalene		<0.005	mg/L

Continued on next page ...

⁷This sample was reran on IC102502.sch. ICV = 103%; CCV = 96%; LCS%IA = 96 and RPD = 0; MS%EA = 88 and RPD = 0.

This is only a summary. Please, refer to the complete report package for quality control data.

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Hobbs,NM

Sample 211493 continued ...

Param	Flag	Result	Units
2-Methylnaphthalene		<0.005	mg/L
1,2,4,5-Tetrachlorobenzene		<0.005	mg/L
Hexachlorocyclopentadiene		<0.005	mg/L
2,4,6-Trichlorophenol		<0.005	mg/L
2,4,5-Trichlorophenol		<0.005	mg/L
2-Chloronaphthalene		<0.005	mg/L
1-Chloronaphthalene		<0.005	mg/L
2-Nitroaniline		<0.005	mg/L
Dimethylphthalate		<0.005	mg/L
Acenaphthylene		<0.005	mg/L
2,6-Dinitrotoluene		<0.005	mg/L
3-Nitroaniline		<0.005	mg/L
Acenaphthene		<0.005	mg/L
2,4-Dinitrophenol		<0.005	mg/L
Dibenzofuran		<0.005	mg/L
Pentachlorobenzene		<0.005	mg/L
4-Nitrophenol		<0.005	mg/L
1-Naphthylamine		<0.005	mg/L
2,4-Dinitrotoluene		<0.005	mg/L
2-Naphthylamine		<0.005	mg/L
2,3,4,6-Tetrachlorophenol		<0.005	mg/L
Fluorene		<0.005	mg/L
Diethylphthalate		<0.005	mg/L
4-Chlorophenyl-phenylether		<0.005	mg/L
4-Nitroaniline		<0.005	mg/L
4,6-Dinitro-2-methylphenol		<0.005	mg/L
Diphenylamine		<0.005	mg/L
Diphenylhydrazine		<0.005	mg/L
4-Bromophenyl-phenylether		<0.005	mg/L
Phenacetin		<0.005	mg/L
Hexachlorobenzene		<0.005	mg/L
4-Aminobiphenyl		<0.005	mg/L
Pentachlorophenol		<0.005	mg/L
Pentachloronitrobenzene		<0.005	mg/L
Pronamide		<0.005	mg/L
Phenanthrene		<0.005	mg/L
Anthracene		<0.005	mg/L
Di-n-butylphthalate		<0.005	mg/L
Fluoranthene		<0.005	mg/L
Benzidine		<0.005	mg/L
Pyrene		<0.005	mg/L
p-Dimethylaminoazobenzene		<0.005	mg/L
Butylbenzylphthalate		<0.005	mg/L
Benzo(a)anthracene		<0.005	mg/L
3,3-Dichlorobenzidine		<0.005	mg/L
Chrysene		<0.005	mg/L
Bis (2-ethylhexyl) phthalate		<0.005	mg/L
Di-n-octylphthalate		<0.005	mg/L
Benzo(b)fluoranthene		<0.005	mg/L
7,12-Dimethylbenz(a)anthracene		<0.005	mg/L

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This is only a summary. Please, refer to the complete report package for quality control data.

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Sample 211493 continued ...

Param	Flag	Result	Units
Benzo(k)fluoranthene		<0.005	mg/L
Benzo(a)pyrene		<0.005	mg/L
3-Methylcholanthrene		<0.005	mg/L
Dibenzo(a,j)acridine		<0.005	mg/L
Indeno(1,2,3-cd)pyrene		<0.005	mg/L
Dibenzo(a,h)anthracene		<0.005	mg/L
Benzo(g,h,i)perylene		<0.005	mg/L
Total Dissolved Solids		1210	mg/L
Total Aluminum		10.6	mg/L
Total Arsenic		<0.050	mg/L
Total Barium		0.229	mg/L
Total Boron		0.504	mg/L
Total Cadmium		<0.005	mg/L
Total Calcium		297	mg/L
Total Chromium		0.0219	mg/L
Total Cobalt		<0.025	mg/L
Total Copper		<0.0125	mg/L
Total Iron		9.74	mg/L
Total Lead		<0.010	mg/L
Total Magnesium		36.2	mg/L
Total Manganese		0.0937	mg/L
Total Molybdenum		<0.050	mg/L
Total Nickel		<0.025	mg/L
Total Potassium		12.0	mg/L
Total Selenium		<0.050	mg/L
Total Silica		40.4	mg/L
Total Silver		<0.0125	mg/L
Total Sodium		234	mg/L
Total Zinc		<0.025	mg/L
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		<1.00	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		1.53	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L

Continued on next page ...

This is only a summary. Please, refer to the complete report package for quality control data.

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Sample 211493 continued ...

Param	Flag	Result	Units
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		1.13	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L
pH	8	7.3	s.u.

⁸Sample received out of holding time.

This is only a summary. Please, refer to the complete report package for quality control data.

TRACE ANALYSIS, INC.

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CORRECTED CERTIFICATE

Analytical and Quality Control Report

Todd Choban
E.T.G.I.
PO Box 4845
Midland, Tx. 79704

Report Date: November 14, 2002

Order ID Number: A02102327

Project Number: CH2100
Project Name: Champion Tech
Project Location: Hobbs, NM

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
211478	MW-1	Water	10/21/02	8:45	10/23/02
211479	MW-2	Water	10/21/02	9:25	10/23/02
211480	MW-3	Water	10/21/02	9:55	10/23/02
211481	MW-4	Water	10/21/02	10:15	10/23/02
211482	MW-5	Water	10/21/02	10:35	10/23/02
211483	MW-6	Water	10/21/02	:	10/23/02
211484	MW-7	Water	10/21/02	:	10/23/02
211485	MW-8	Water	10/21/02	13:15	10/23/02
211486	MW-9	Water	10/21/02	14:00	10/23/02
211487	MW-10	Water	10/21/02	14:40	10/23/02
211488	MW-11	Water	10/21/02	15:20	10/23/02
211489	MW-12	Water	10/21/02	15:50	10/23/02
211490	MW-13	Water	10/21/02	16:10	10/23/02
211491	MW-14	Water	10/21/02	16:55	10/23/02
211492	MW-15	Water	10/21/02	8:05	10/23/02
211493	MW-16	Water	10/21/02	8:45	10/23/02

Comment: CORRECTION: Chloride result added for sample 211485 and matrix spike corrected for chromium.

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed. Note: the RDL is equal to MQL for all organic analytes including TPH.

The test results contained within this report meet all requirements of LAC 33:I unless otherwise noted.

This report consists of a total of 76 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of TraceAnalysis, Inc.

Note: Samples will be disposed of 30 days from the report date unless the lab is contacted before the 30

days has past.

Dayton
Dr. Blair Leftwich, Director

Analytical Report

Sample: 211478 - MW-1

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC24482 Date Analyzed: 10/25/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22828 Date Prepared: 10/25/02

Param	Flag	Result	Units	Dilution	RDL
Chloride		356	mg/L	10	1

Sample: 211478 - MW-1

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC24464 Date Analyzed: 10/27/02
Analyst: RR Preparation Method: S 3010A Prep Batch: PB22771 Date Prepared: 10/24/02

Param	Flag	Result	Units	Dilution	RDL
Total Arsenic		<0.050	mg/L	1	0.05
Total Chromium		<0.010	mg/L	1	0.01
Total Lead		<0.010	mg/L	1	0.01

Sample: 211479 - MW-2

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC24482 Date Analyzed: 10/25/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22828 Date Prepared: 10/25/02

Param	Flag	Result	Units	Dilution	RDL
Chloride		397	mg/L	10	1

Sample: 211479 - MW-2

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC24464 Date Analyzed: 10/27/02
Analyst: RR Preparation Method: S 3010A Prep Batch: PB22771 Date Prepared: 10/24/02

Param	Flag	Result	Units	Dilution	RDL
Total Arsenic		<0.050	mg/L	1	0.05
Total Chromium		0.0144	mg/L	1	0.01
Total Lead		<0.010	mg/L	1	0.01

Sample: 211480 - MW-3

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC24563 Date Analyzed: 10/29/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22893 Date Prepared: 10/29/02

Param	Flag	Result	Units	Dilution	RDL
Chloride		464	mg/L	50	1

Sample: 211480 - MW-3

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC24464 Date Analyzed: 10/27/02
Analyst: RR Preparation Method: S 3010A Prep Batch: PB22771 Date Prepared: 10/24/02

Report Date: November 14, 2002
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Param	Flag	Result	Units	Dilution	RDL
Total Arsenic		<0.050	mg/L	1	0.05
Total Chromium		0.0207	mg/L	1	0.01
Total Lead		<0.010	mg/L	1	0.01

Sample: 211481 - MW-4

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC24482 Date Analyzed: 10/25/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22828 Date Prepared: 10/25/02

Param	Flag	Result	Units	Dilution	RDL
Chloride		377	mg/L	10	1

Sample: 211481 - MW-4

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC24675 Date Analyzed: 11/4/02
Analyst: RR Preparation Method: S 3010A Prep Batch: PB22795 Date Prepared: 10/25/02

Param	Flag	Result	Units	Dilution	RDL
Total Arsenic		<0.050	mg/L	1	0.05
Total Chromium		0.333	mg/L	1	0.01
Total Lead		<0.010	mg/L	1	0.01

Sample: 211482 - MW-5

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC24563 Date Analyzed: 10/29/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22828 Date Prepared: 10/25/02

Param	Flag	Result	Units	Dilution	RDL
Chloride		508	mg/L	50	1

Sample: 211482 - MW-5

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC24675 Date Analyzed: 11/4/02
Analyst: RR Preparation Method: S 3010A Prep Batch: PB22795 Date Prepared: 10/25/02

Param	Flag	Result	Units	Dilution	RDL
Total Arsenic		<0.050	mg/L	1	0.05
Total Chromium		0.0839	mg/L	1	0.01
Total Lead		<0.010	mg/L	1	0.01

Sample: 211483 - MW-6

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC24482 Date Analyzed: 10/25/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22828 Date Prepared: 10/25/02

Param	Flag	Result	Units	Dilution	RDL
Chloride		469	mg/L	10	1

Sample: 211483 - MW-6

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC24469 Date Analyzed: 10/28/02
Analyst: WG Preparation Method: N/A Prep Batch: PB22816 Date Prepared: 10/28/02

Param	Flag	Result	Units	Dilution	RDL
TRPHC		2.35	mg/L	1	0.50

Sample: 211483 - MW-6

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC24675 Date Analyzed: 11/4/02
Analyst: RR Preparation Method: S 3010A Prep Batch: PB22795 Date Prepared: 10/25/02

Param	Flag	Result	Units	Dilution	RDL
Total Arsenic		0.0559	mg/L	1	0.05
Total Chromium		0.254	mg/L	1	0.01
Total Lead		<0.010	mg/L	1	0.01

Sample: 211483 - MW-6

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC24581 Date Analyzed: 10/29/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB22911 Date Prepared: 10/29/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		<1.00	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		45.3	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		1.33	µg/L	1	1
1,1,1-Trichloroethane		2.10	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		4.85	µg/L	1	1

Continued ...

...Continued Sample: 211483 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		19.9	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		48.6	µg/L	1	50	97	77 - 122
Toluene-d8		49.8	µg/L	1	50	100	96 - 111
4-Bromofluorobenzene		46.7	µg/L	1	50	93	87 - 113

Sample: 211484 - MW-7

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC24482 Date Analyzed: 10/25/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22828 Date Prepared: 10/25/02

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Param	Flag	Result	Units	Dilution	RDL
Chloride		235	mg/L	10	1

Sample: 211484 - MW-7

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC24675 Date Analyzed: 11/4/02
Analyst: RR Preparation Method: S 3010A Prep Batch: PB22795 Date Prepared: 10/25/02

Param	Flag	Result	Units	Dilution	RDL
Total Arsenic		<0.050	mg/L	1	0.05
Total Chromium		<0.010	mg/L	1	0.01
Total Lead		<0.010	mg/L	1	0.01

Sample: 211485 - MW-8

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC24482 Date Analyzed: 10/25/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22828 Date Prepared: 10/25/02

Param	Flag	Result	Units	Dilution	RDL
Chloride		304	mg/L	10	1

Sample: 211485 - MW-8

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC24469 Date Analyzed: 10/28/02
Analyst: WG Preparation Method: N/A Prep Batch: PB22816 Date Prepared: 10/28/02

Param	Flag	Result	Units	Dilution	RDL
TRPHC		<0.500	mg/L	1	0.50

Sample: 211485 - MW-8

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC24675 Date Analyzed: 11/4/02
Analyst: RR Preparation Method: S 3010A Prep Batch: PB22795 Date Prepared: 10/25/02

Param	Flag	Result	Units	Dilution	RDL
Total Arsenic		<0.050	mg/L	1	0.05
Total Chromium		0.0225	mg/L	1	0.01
Total Lead		<0.010	mg/L	1	0.01

Sample: 211485 - MW-8

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC24581 Date Analyzed: 10/29/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB22911 Date Prepared: 10/29/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5

Continued ...

... Continued Sample: 211485 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		<1.00	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		3.29	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1

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... Continued Sample: 211485 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		47.4	µg/L	1	50	95	77 - 122
Toluene-d8		49.1	µg/L	1	50	98	96 - 111
4-Bromofluorobenzene		46.3	µg/L	1	50	93	87 - 113

Sample: 211486 - MW-9

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC24486 Date Analyzed: 10/25/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22827 Date Prepared: 10/25/02

Param	Flag	Result	Units	Dilution	RDL
Chloride		305	mg/L	10	1

Sample: 211486 - MW-9

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC24602 Date Analyzed: 10/31/02
Analyst: RR Preparation Method: S 3010A Prep Batch: PB22795 Date Prepared: 10/25/02

Param	Flag	Result	Units	Dilution	RDL
Total Arsenic		<0.050	mg/L	1	0.05
Total Chromium		0.0859	mg/L	1	0.01
Total Lead		<0.010	mg/L	1	0.01

Sample: 211487 - MW-10

Analysis: Alkalinity Analytical Method: E 310.1 QC Batch: QC24630 Date Analyzed: 10/31/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22953 Date Prepared: 10/31/02

Param	Flag	Result	Units	Dilution	RDL
Hydroxide Alkalinity		<1.0	mg/L as CaCo3	1	1
Carbonate Alkalinity		<1.0	mg/L as CaCo3	1	1
Bicarbonate Alkalinity		212	mg/L as CaCo3	1	4
Total Alkalinity		212	mg/L as CaCo3	1	4

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Sample: 211487 - MW-10

Analysis: Conductivity Analytical Method: SM 2510B QC Batch: QC24446 Date Analyzed: 10/25/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22796 Date Prepared: 10/25/02

Param	Flag	Result	Units	Dilution	RDL
Specific Conductance		1704	µMHOS/cm	1	

Sample: 211487 - MW-10

Analysis: Hg, Total Analytical Method: S 7470A QC Batch: QC24561 Date Analyzed: 10/29/02
Analyst: BC Preparation Method: N/A Prep Batch: PB22880 Date Prepared: 10/29/02

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.0002	mg/L	1	0.0002

Sample: 211487 - MW-10

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC24431 Date Analyzed: 10/23/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22782 Date Prepared: 10/23/02

Param	Flag	Result	Units	Dilution	RDL
Chloride		260	mg/L	10	1
Fluoride		2.82	mg/L	5	0.20
Nitrate-N		4.30	mg/L	5	0.20
Sulfate		163	mg/L	5	1

Sample: 211487 - MW-10

Analysis: Salts Analytical Method: S 6010B QC Batch: QC24683 Date Analyzed: 11/4/02
Analyst: BC Preparation Method: S 3005A Prep Batch: PB22897 Date Prepared: 10/30/02

Param	Flag	Result	Units	Dilution	RDL
Dissolved Calcium		110	mg/L	1	0.50
Dissolved Magnesium		17.0	mg/L	1	0.50
Dissolved Potassium		7.14	mg/L	1	0.50
Dissolved Sodium		226	mg/L	1	0.50

Sample: 211487 - MW-10

Analysis: Semivolatiles Analytical Method: S 8270C QC Batch: QC24662 Date Analyzed: 11/1/02
Analyst: RC Preparation Method: E 3510C Prep Batch: PB22940 Date Prepared: 10/28/02

Param	Flag	Result	Units	Dilution	RDL
Pyridine		<0.005	mg/L	1	0.005
n-Nitrosodimethylamine		<0.005	mg/L	1	0.005
2-Picoline		<0.005	mg/L	1	0.005
Methyl methanesulfonate		<0.005	mg/L	1	0.005
Ethyl methanesulfonate		<0.005	mg/L	1	0.005
Phenol		<0.005	mg/L	1	0.005
Aniline		<0.005	mg/L	1	0.005
bis (2-chloroethyl) ether		<0.005	mg/L	1	0.005

Continued ...

... Continued Sample: 211487 Analysis: Semivolatiles

Param	Flag	Result	Units	Dilution	RDL
2-Chlorophenol		<0.005	mg/L	1	0.005
1,3-Dichlorobenzene (meta)		<0.005	mg/L	1	0.005
1,4-Dichlorobenzene		<0.005	mg/L	1	0.005
Benzyl alcohol		<0.005	mg/L	1	0.005
1,2-Dichlorobenzene		<0.005	mg/L	1	0.005
2-Methylphenol		<0.005	mg/L	1	0.005
bis (2-chloroisopropyl) ether		<0.005	mg/L	1	0.005
4-Methylphenol/3-Methylphenol		<0.005	mg/L	1	0.005
Acetophenone		<0.005	mg/L	1	0.005
n-Nitrosodi-n-propylamine		<0.005	mg/L	1	0.005
Hexachloroethane		<0.005	mg/L	1	0.005
Nitrobenzene		<0.005	mg/L	1	0.005
n-Nitrosopiperidine		<0.005	mg/L	1	0.005
Isophorone		<0.005	mg/L	1	0.005
2-Nitrophenol		<0.005	mg/L	1	0.005
2,4-Dimethylphenol		<0.005	mg/L	1	0.005
bis (2-chloroethoxy) methane		<0.005	mg/L	1	0.005
Benzoic acid		<0.005	mg/L	1	0.005
2,4-Dichlorophenol		<0.005	mg/L	1	0.005
1,2,4-Trichlorobenzene		<0.005	mg/L	1	0.005
a,a-Dimethylphenethylamine		<0.005	mg/L	1	0.005
Naphthalene		<0.005	mg/L	1	0.005
4-Chloroaniline		<0.005	mg/L	1	0.005
2,6-Dichlorophenol		<0.005	mg/L	1	0.005
Hexachlorobutadiene		<0.005	mg/L	1	0.005
n-Nitroso-di-n-butylamine		<0.005	mg/L	1	0.005
4-Chloro-3-methylphenol		<0.005	mg/L	1	0.005
1-Methylnaphthalene		<0.005	mg/L	1	0.005
2-Methylnaphthalene		<0.005	mg/L	1	0.005
1,2,4,5-Tetrachlorobenzene		<0.005	mg/L	1	0.005
Hexachlorocyclopentadiene		<0.005	mg/L	1	0.005
2,4,6-Trichlorophenol		<0.005	mg/L	1	0.005
2,4,5-Trichlorophenol		<0.005	mg/L	1	0.005
2-Chloronaphthalene		<0.005	mg/L	1	0.005
1-Chloronaphthalene		<0.005	mg/L	1	0.005
2-Nitroaniline		<0.005	mg/L	1	0.005
Dimethylphthalate		<0.005	mg/L	1	0.005
Acenaphthylene		<0.005	mg/L	1	0.005
2,6-Dinitrotoluene		<0.005	mg/L	1	0.005
3-Nitroaniline		<0.005	mg/L	1	0.005
Acenaphthene		<0.005	mg/L	1	0.005
2,4-Dinitrophenol		<0.005	mg/L	1	0.005
Dibenzofuran		<0.005	mg/L	1	0.005
Pentachlorobenzene		<0.005	mg/L	1	0.005
4-Nitrophenol		<0.005	mg/L	1	0.005
1-Naphthylamine		<0.005	mg/L	1	0.005
2,4-Dinitrotoluene		<0.005	mg/L	1	0.005
2-Naphthylamine		<0.005	mg/L	1	0.005
2,3,4,6-Tetrachlorophenol		<0.005	mg/L	1	0.005
Fluorene		<0.005	mg/L	1	0.005
Dimethylphthalate		<0.005	mg/L	1	0.005
4-Chlorophenyl-phenylether		<0.005	mg/L	1	0.005
4-Nitroaniline		<0.005	mg/L	1	0.005

Continued ...

... Continued Sample: 211487 Analysis: Semivolatiles

Param	Flag	Result	Units	Dilution	RDL
4,6-Dinitro-2-methylphenol		<0.005	mg/L	1	0.005
Diphenylamine		<0.005	mg/L	1	0.005
Diphenylhydrazine		<0.005	mg/L	1	0.005
4-Bromophenyl-phenylether		<0.005	mg/L	1	0.005
Phenacetin		<0.005	mg/L	1	0.005
Hexachlorobenzene		<0.005	mg/L	1	0.005
4-Aminobiphenyl		<0.005	mg/L	1	0.005
Pentachlorophenol		<0.005	mg/L	1	0.005
Pentachloronitrobenzene		<0.005	mg/L	1	0.005
Pronamide		<0.005	mg/L	1	0.005
Phenanthrene		<0.005	mg/L	1	0.005
Anthracene		<0.005	mg/L	1	0.005
Di-n-butylphthalate		<0.005	mg/L	1	0.005
Fluoranthene		<0.005	mg/L	1	0.005
Benzidine		<0.005	mg/L	1	0.005
Pyrene		<0.005	mg/L	1	0.005
p-Dimethylaminoazobenzene		<0.005	mg/L	1	0.005
Butylbenzylphthalate		<0.005	mg/L	1	0.005
Benzo(a)anthracene		<0.005	mg/L	1	0.005
3,3-Dichlorobenzidine		<0.005	mg/L	1	0.005
Chrysene		<0.005	mg/L	1	0.005
Bis (2-ethylhexyl) phthalate		<0.005	mg/L	1	0.005
Di-n-octylphthalate		<0.005	mg/L	1	0.005
Benzo(b)fluoranthene		<0.005	mg/L	1	0.005
7,12-Dimethylbenz(a)anthracene		<0.005	mg/L	1	0.005
Benzo(k)fluoranthene		<0.005	mg/L	1	0.005
Benzo(a)pyrene		<0.005	mg/L	1	0.005
3-Methylcholanthrene		<0.005	mg/L	1	0.005
Dibenzo(a,j)acridine		<0.005	mg/L	1	0.005
Indeno(1,2,3-cd)pyrene		<0.005	mg/L	1	0.005
Dibenzo(a,h)anthracene		<0.005	mg/L	1	0.005
Benzo(g,h,i)perylene		<0.005	mg/L	1	0.005

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		19.55	mg/L	1	80	24	0 - 66
Phenol-d5		13.84	mg/L	1	80	17	0 - 70
Nitrobenzene-d5		61.72	mg/L	1	80	77	23 - 99
2-Fluorobiphenyl		54.64	mg/L	1	80	68	27 - 95
2,4,6-Tribromophenol		87.60	mg/L	1	80	109	0 - 199
Terphenyl-d14		56.52	mg/L	1	80	70	20 - 96

Sample: 211487 - MW-10

Analysis: TDS Analytical Method: E 160.1 QC Batch: QC24442 Date Analyzed: 10/25/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22792 Date Prepared: 10/24/02

Param	Flag	Result	Units	Dilution	RDL
Total Dissolved Solids		1004	mg/L	2	10

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Sample: 211487 - MW-10

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC24469 Date Analyzed: 10/28/02
Analyst: WG Preparation Method: N/A Prep Batch: PB22816 Date Prepared: 10/28/02

Param	Flag	Result	Units	Dilution	RDL
TRPHC		<0.500	mg/L	1	0.50

Sample: 211487 - MW-10

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC24675 Date Analyzed: 11/4/02
Analyst: RR Preparation Method: S 3010A Prep Batch: PB22795 Date Prepared: 10/25/02

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		6.42	mg/L	1	0.10
Total Arsenic		<0.050	mg/L	1	0.05
Total Barium		<0.100	mg/L	1	0.10
Total Boron		0.405	mg/L	1	0.005
Total Cadmium		<0.005	mg/L	1	0.005
Total Calcium		115	mg/L	1	0.50
Total Chromium		0.0292	mg/L	1	0.01
Total Cobalt		<0.025	mg/L	1	0.02
Total Copper		<0.0125	mg/L	1	0.01
Total Iron		4.61	mg/L	1	0.05
Total Lead		<0.010	mg/L	1	0.01
Total Magnesium		19.0	mg/L	1	0.50
Total Manganese		0.0498	mg/L	1	0.02
Total Molybdenum		<0.050	mg/L	1	0.05
Total Nickel		<0.025	mg/L	1	0.02
Total Potassium		8.49	mg/L	1	0.50
Total Selenium		<0.050	mg/L	1	0.05
Total Silica		37.7	mg/L	1	0.05
Total Silver		<0.0125	mg/L	1	0.01
Total Sodium		197	mg/L	1	0.50
Total Zinc		<0.025	mg/L	1	0.02

Sample: 211487 - MW-10

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC24581 Date Analyzed: 10/29/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB22911 Date Prepared: 10/29/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5

Continued ...

... Continued Sample: 211487 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		<1.00	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5

Continued ...

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...Continued Sample: 211487 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		47.3	µg/L	1	50	95	77 - 122
Toluene-d8		48.8	µg/L	1	50	98	96 - 111
4-Bromofluorobenzene		46.4	µg/L	1	50	93	87 - 113

Sample: 211487 - MW-10

Analysis: pH Analytical Method: E 150.1 QC Batch: QC24525 Date Analyzed: 10/23/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22864 Date Prepared: 10/23/02

Param	Flag	Result	Units	Dilution	RDL
pH	1	7.5	s.u.	1	1

Sample: 211488 - MW-11

Analysis: Alkalinity Analytical Method: E 310.1 QC Batch: QC24630 Date Analyzed: 10/31/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22953 Date Prepared: 10/31/02

Param	Flag	Result	Units	Dilution	RDL
Hydroxide Alkalinity		<1.0	mg/L as CaCo3	1	1
Carbonate Alkalinity		<1.0	mg/L as CaCo3	1	1
Bicarbonate Alkalinity		222	mg/L as CaCo3	1	4
Total Alkalinity		222	mg/L as CaCo3	1	4

Sample: 211488 - MW-11

Analysis: Conductivity Analytical Method: SM 2510B QC Batch: QC24446 Date Analyzed: 10/25/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22796 Date Prepared: 10/25/02

Param	Flag	Result	Units	Dilution	RDL
Specific Conductance		1890	µMHOS/cm	1	

Sample: 211488 - MW-11

Analysis: Hg, Total Analytical Method: S 7470A QC Batch: QC24561 Date Analyzed: 10/29/02
Analyst: BC Preparation Method: N/A Prep Batch: PB22880 Date Prepared: 10/29/02

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.0002	mg/L	1	0.0002

¹Sample received out of holding time.

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Sample: 211488 - MW-11

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC24431 Date Analyzed: 10/23/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22782 Date Prepared: 10/23/02

Param	Flag	Result	Units	Dilution	RDL
Chloride		298	mg/L	10	1
Fluoride		2.31	mg/L	5	0.20
Nitrate-N		1.12	mg/L	5	0.20
Sulfate		205	mg/L	5	1

Sample: 211488 - MW-11

Analysis: Salts Analytical Method: S 6010B QC Batch: QC24683 Date Analyzed: 11/4/02
Analyst: BC Preparation Method: S 3005A Prep Batch: PB22897 Date Prepared: 10/30/02

Param	Flag	Result	Units	Dilution	RDL
Dissolved Calcium		96.8	mg/L	1	0.50
Dissolved Magnesium		45.0	mg/L	1	0.50
Dissolved Potassium		38.6	mg/L	1	0.50
Dissolved Sodium		161	mg/L	1	0.50

Sample: 211488 - MW-11

Analysis: Semivolatiles Analytical Method: S 8270C QC Batch: QC24662 Date Analyzed: 11/1/02
Analyst: RC Preparation Method: E 3510C Prep Batch: PB22940 Date Prepared: 10/28/02

Param	Flag	Result	Units	Dilution	RDL
Pyridine		<0.005	mg/L	1	0.005
n-Nitrosodimethylamine		<0.005	mg/L	1	0.005
2-Picoline		<0.005	mg/L	1	0.005
Methyl methanesulfonate		<0.005	mg/L	1	0.005
Ethyl methanesulfonate		<0.005	mg/L	1	0.005
Phenol		<0.005	mg/L	1	0.005
Aniline		<0.005	mg/L	1	0.005
bis (2-chloroethyl) ether		<0.005	mg/L	1	0.005
2-Chlorophenol		<0.005	mg/L	1	0.005
1,3-Dichlorobenzene (meta)		<0.005	mg/L	1	0.005
1,4-Dichlorobenzene		<0.005	mg/L	1	0.005
Benzyl alcohol		<0.005	mg/L	1	0.005
1,2-Dichlorobenzene		<0.005	mg/L	1	0.005
2-Methylphenol		<0.005	mg/L	1	0.005
bis (2-chloroisopropyl) ether		<0.005	mg/L	1	0.005
4-Methylphenol/3-Methylphenol		<0.005	mg/L	1	0.005
Acetophenone		<0.005	mg/L	1	0.005
n-Nitrosodi-n-propylamine		<0.005	mg/L	1	0.005
Hexachloroethane		<0.005	mg/L	1	0.005
Nitrobenzene		<0.005	mg/L	1	0.005
n-Nitrosopiperidine		<0.005	mg/L	1	0.005
Isophorone		<0.005	mg/L	1	0.005
2-Nitrophenol		<0.005	mg/L	1	0.005
2,4-Dimethylphenol		<0.005	mg/L	1	0.005
bis (2-chloroethoxy) methane		<0.005	mg/L	1	0.005
Benzoic acid		<0.005	mg/L	1	0.005

Continued ...

... Continued Sample: 211488 Analysis: Semivolatiles

Param	Flag	Result	Units	Dilution	RDL
2,4-Dichlorophenol		<0.005	mg/L	1	0.005
1,2,4-Trichlorobenzene		<0.005	mg/L	1	0.005
a,a-Dimethylphenethylamine		<0.005	mg/L	1	0.005
Naphthalene		<0.005	mg/L	1	0.005
4-Chloroaniline		<0.005	mg/L	1	0.005
2,6-Dichlorophenol		<0.005	mg/L	1	0.005
Hexachlorobutadiene		<0.005	mg/L	1	0.005
n-Nitroso-di-n-butylamine		<0.005	mg/L	1	0.005
4-Chloro-3-methylphenol		<0.005	mg/L	1	0.005
1-Methylnaphthalene		<0.005	mg/L	1	0.005
2-Methylnaphthalene		<0.005	mg/L	1	0.005
1,2,4,5-Tetrachlorobenzene		<0.005	mg/L	1	0.005
Hexachlorocyclopentadiene		<0.005	mg/L	1	0.005
2,4,6-Trichlorophenol		<0.005	mg/L	1	0.005
2,4,5-Trichlorophenol		<0.005	mg/L	1	0.005
2-Chloronaphthalene		<0.005	mg/L	1	0.005
1-Chloronaphthalene		<0.005	mg/L	1	0.005
2-Nitroaniline		<0.005	mg/L	1	0.005
Dimethylphthalate		0.01	mg/L	1	0.005
Acenaphthylene		<0.005	mg/L	1	0.005
2,6-Dinitrotoluene		<0.005	mg/L	1	0.005
3-Nitroaniline		<0.005	mg/L	1	0.005
Acenaphthene		<0.005	mg/L	1	0.005
2,4-Dinitrophenol		<0.005	mg/L	1	0.005
Oibenzofuran		<0.005	mg/L	1	0.005
Pentachlorobenzene		<0.005	mg/L	1	0.005
4-Nitrophenol		<0.005	mg/L	1	0.005
1-Naphthylamine		<0.005	mg/L	1	0.005
2,4-Dinitrotoluene		<0.005	mg/L	1	0.005
2-Naphthylamine		<0.005	mg/L	1	0.005
2,3,4,6-Tetrachlorophenol		<0.005	mg/L	1	0.005
Fluorene		<0.005	mg/L	1	0.005
Diethylphthalate		<0.005	mg/L	1	0.005
4-Chlorophenyl-phenylether		<0.005	mg/L	1	0.005
4-Nitroaniline		<0.005	mg/L	1	0.005
4,6-Dinitro-2-methylphenol		<0.005	mg/L	1	0.005
Diphenylamine		<0.005	mg/L	1	0.005
Diphenylhydrazine		<0.005	mg/L	1	0.005
4-Bromophenyl-phenylether		<0.005	mg/L	1	0.005
Phenacetin		<0.005	mg/L	1	0.005
Hexachlorobenzene		<0.005	mg/L	1	0.005
4-Aminobiphenyl		<0.005	mg/L	1	0.005
Pentachlorophenol		<0.005	mg/L	1	0.005
Pentachloronitrobenzene		<0.005	mg/L	1	0.005
Pronamide		<0.005	mg/L	1	0.005
Phenanthrene		<0.005	mg/L	1	0.005
Anthracene		<0.005	mg/L	1	0.005
Di-n-butylphthalate		<0.005	mg/L	1	0.005
Fluoranthene		<0.005	mg/L	1	0.005
Benzidine		<0.005	mg/L	1	0.005
pyrene		<0.005	mg/L	1	0.005
p-Dimethylaminoazobenzene		<0.005	mg/L	1	0.005
Butylbenzylphthalate		<0.005	mg/L	1	0.005

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... Continued Sample: 211488 Analysis: Semivolatiles

Param	Flag	Result	Units	Dilution	RDL
Benzo(a)anthracene		<0.005	mg/L	1	0.005
3,3-Dichlorobenzidine		<0.005	mg/L	1	0.005
Chrysene		<0.005	mg/L	1	0.005
Bis (2-ethylhexyl) phthalate		<0.005	mg/L	1	0.005
Di-n-octylphthalate		<0.005	mg/L	1	0.005
Benzo(b)fluoranthene		<0.005	mg/L	1	0.005
7,12-Dimethylbenz(a)anthracene		<0.005	mg/L	1	0.005
Benzo(k)fluoranthene		<0.005	mg/L	1	0.005
Benzo(a)pyrene		<0.005	mg/L	1	0.005
3-Methylcholanthrene		<0.005	mg/L	1	0.005
Dibenzo(a,j)acridine		<0.005	mg/L	1	0.005
Indeno(1,2,3-cd)pyrene		<0.005	mg/L	1	0.005
Dibenzo(a,h)anthracene		<0.005	mg/L	1	0.005
Benzo(g,h,i)perylene		<0.005	mg/L	1	0.005

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		18.79	mg/L	1	80	23	0 - 66
Phenol-d5		10.16	mg/L	1	80	12	0 - 70
Nitrobenzene-d5		64.26	mg/L	1	80	80	23 - 99
2-Fluorobiphenyl		56.11	mg/L	1	80	70	27 - 95
2,4,6-Tribromophenol		75.06	mg/L	1	80	93	0 - 199
Terphenyl-d14		59.19	mg/L	1	80	73	20 - 96

Sample: 211488 - MW-11

Analysis: TDS Analytical Method: E 160.1 QC Batch: QC24442 Date Analyzed: 10/25/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22792 Date Prepared: 10/24/02

Param	Flag	Result	Units	Dilution	RDL
Total Dissolved Solids		1048	mg/L	2	10

Sample: 211488 - MW-11

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC24469 Date Analyzed: 10/28/02
Analyst: WG Preparation Method: N/A Prep Batch: PB22816 Date Prepared: 10/28/02

Param	Flag	Result	Units	Dilution	RDL
TRPHC		<0.500	mg/L	1	0.50

Sample: 211488 - MW-11

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC24675 Date Analyzed: 11/4/02
Analyst: RR Preparation Method: S 3010A Prep Batch: PB22795 Date Prepared: 10/25/02

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		14.0	mg/L	1	0.10
Total Arsenic		<0.050	mg/L	1	0.05
Total Barium		0.626	mg/L	1	0.10

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...Continued Sample: 211488 Analysis: Total Metals

Param	Flag	Result	Units	Dilution	RDL
Total Boron		0.431	mg/L	1	0.005
Total Cadmium		<0.005	mg/L	1	0.005
Total Calcium		329	mg/L	1	0.50
Total Chromium		0.0171	mg/L	1	0.01
Total Cobalt		<0.025	mg/L	1	0.02
Total Copper		<0.0125	mg/L	1	0.01
Total Iron		13.7	mg/L	1	0.05
Total Lead		<0.010	mg/L	1	0.01
Total Magnesium		51.5	mg/L	1	0.50
Total Manganese		0.194	mg/L	1	0.02
Total Molybdenum		<0.050	mg/L	1	0.05
Total Nickel		<0.025	mg/L	1	0.02
Total Potassium		43.0	mg/L	1	0.50
Total Selenium		<0.050	mg/L	1	0.05
Total Silica		35.0	mg/L	1	0.05
Total Silver		<0.0125	mg/L	1	0.01
Total Sodium		164	mg/L	1	0.50
Total Zinc		0.0518	mg/L	1	0.02

Sample: 211488 - MW-11

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC24581 Date Analyzed: 10/29/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB22911 Date Prepared: 10/29/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		<1.00	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		1.53	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1

Continued ...

... Continued Sample: 211488 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		47.8	µg/L	1	50	96	77 - 122
Toluene-d8		49.9	µg/L	1	50	100	96 - 111
4-Bromofluorobenzene		46.2	µg/L	1	50	92	87 - 113

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Sample: 211488 - MW-11

Analysis: pH Analytical Method: E 150.1 QC Batch: QC24525 Date Analyzed: 10/23/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22864 Date Prepared: 10/23/02

Param	Flag	Result	Units	Dilution	RDL
pH	2	7.5	s.u.	1	1

Sample: 211489 - MW-12

Analysis: Alkalinity Analytical Method: E 310.1 QC Batch: QC24630 Date Analyzed: 10/31/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22953 Date Prepared: 10/31/02

Param	Flag	Result	Units	Dilution	RDL
Hydroxide Alkalinity		<1.0	mg/L as CaCo3	1	1
Carbonate Alkalinity		<1.0	mg/L as CaCo3	1	1
Bicarbonate Alkalinity		308	mg/L as CaCo3	1	4
Total Alkalinity		308	mg/L as CaCo3	1	4

Sample: 211489 - MW-12

Analysis: Conductivity Analytical Method: SM 2510B QC Batch: QC24446 Date Analyzed: 10/25/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22796 Date Prepared: 10/25/02

Param	Flag	Result	Units	Dilution	RDL
Specific Conductance		2250	µMHOS/cm	1	

Sample: 211489 - MW-12

Analysis: Hg, Total Analytical Method: S 7470A QC Batch: QC24561 Date Analyzed: 10/29/02
Analyst: BC Preparation Method: N/A Prep Batch: PB22880 Date Prepared: 10/29/02

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.0002	mg/L	1	0.0002

Sample: 211489 - MW-12

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC24431 Date Analyzed: 10/23/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22782 Date Prepared: 10/23/02

Param	Flag	Result	Units	Dilution	RDL
Chloride		357	mg/L	10	1
Fluoride		2.63	mg/L	5	0.20
Nitrate-N		5.91	mg/L	5	0.20
Sulfate		198	mg/L	5	1

Sample: 211489 - MW-12

Analysis: Salts Analytical Method: S 6010B QC Batch: QC24683 Date Analyzed: 11/4/02
Analyst: BC Preparation Method: S 3005A Prep Batch: PB22897 Date Prepared: 10/30/02

²Sample received out of holding time.

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Param	Flag	Result	Units	Dilution	RDL
Dissolved Calcium		141	mg/L	1	0.50
Dissolved Magnesium		42.8	mg/L	1	0.50
Dissolved Potassium		10.7	mg/L	1	0.50
Dissolved Sodium		218	mg/L	1	0.50

Sample: 211489 - MW-12

Analysis: Semivolatiles Analytical Method: S 8270C QC Batch: QC24662 Date Analyzed: 11/1/02
Analyst: RC Preparation Method: E 3510C Prep Batch: PB22940 Date Prepared: 10/28/02

Param	Flag	Result	Units	Dilution	RDL
Pyridine		<0.005	mg/L	1	0.005
n-Nitrosodimethylamine		<0.005	mg/L	1	0.005
2-Picoline		<0.005	mg/L	1	0.005
Methyl methanesulfonate		<0.005	mg/L	1	0.005
Ethyl methanesulfonate		<0.005	mg/L	1	0.005
Phenol		<0.005	mg/L	1	0.005
Aniline		<0.005	mg/L	1	0.005
bis (2-chloroethyl) ether		<0.005	mg/L	1	0.005
2-Chlorophenol		<0.005	mg/L	1	0.005
1,3-Dichlorobenzene (meta)		<0.005	mg/L	1	0.005
1,4-Dichlorobenzene		<0.005	mg/L	1	0.005
Benzyl alcohol		<0.005	mg/L	1	0.005
2-Dichlorobenzene		<0.005	mg/L	1	0.005
4-Methylphenol		<0.005	mg/L	1	0.005
bis (2-chloroisopropyl) ether		<0.005	mg/L	1	0.005
4-Methylphenol/3-Methylphenol		<0.005	mg/L	1	0.005
Acetophenone		<0.005	mg/L	1	0.005
n-Nitrosodi-n-propylamine		<0.005	mg/L	1	0.005
Hexachloroethane		<0.005	mg/L	1	0.005
Nitrobenzene		<0.005	mg/L	1	0.005
n-Nitrosopiperidine		<0.005	mg/L	1	0.005
Isophorone		<0.005	mg/L	1	0.005
2-Nitrophenol		<0.005	mg/L	1	0.005
2,4-Dimethylphenol		<0.005	mg/L	1	0.005
bis (2-chloroethoxy) methane		<0.005	mg/L	1	0.005
Benzoic acid		<0.005	mg/L	1	0.005
2,4-Dichlorophenol		<0.005	mg/L	1	0.005
1,2,4-Trichlorobenzene		<0.005	mg/L	1	0.005
a,a-Dimethylphenethylamine		<0.005	mg/L	1	0.005
Naphthalene		<0.005	mg/L	1	0.005
4-Chloroaniline		<0.005	mg/L	1	0.005
2,6-Dichlorophenol		<0.005	mg/L	1	0.005
Hexachlorobutadiene		<0.005	mg/L	1	0.005
n-Nitroso-di-n-butylamine		<0.005	mg/L	1	0.005
4-Chloro-3-methylphenol		<0.005	mg/L	1	0.005
1-Methylnaphthalene		<0.005	mg/L	1	0.005
2-Methylnaphthalene		<0.005	mg/L	1	0.005
1,2,4,5-Tetrachlorobenzene		<0.005	mg/L	1	0.005
Hexachlorocyclopentadiene		<0.005	mg/L	1	0.005
4,6-Trichlorophenol		<0.005	mg/L	1	0.005
2,4,5-Trichlorophenol		<0.005	mg/L	1	0.005
2-Chloronaphthalene		<0.005	mg/L	1	0.005

Continued ...

... Continued Sample: 211489 Analysis: Semivolatiles

Param	Flag	Result	Units	Dilution	RDL
1-Chloronaphthalene		<0.005	mg/L	1	0.005
2-Nitroaniline		<0.005	mg/L	1	0.005
Dimethylphthalate		0.015	mg/L	1	0.005
Acenaphthylene		<0.005	mg/L	1	0.005
2,6-Dinitrotoluene		<0.005	mg/L	1	0.005
3-Nitroaniline		<0.005	mg/L	1	0.005
Acenaphthene		<0.005	mg/L	1	0.005
2,4-Dinitrophenol		<0.005	mg/L	1	0.005
Dibenzofuran		<0.005	mg/L	1	0.005
Pentachlorobenzene		<0.005	mg/L	1	0.005
4-Nitrophenol		<0.005	mg/L	1	0.005
1-Naphthylamine		<0.005	mg/L	1	0.005
2,4-Dinitrotoluene		<0.005	mg/L	1	0.005
2-Naphthylamine		<0.005	mg/L	1	0.005
2,3,4,6-Tetrachlorophenol		<0.005	mg/L	1	0.005
Fluorene		<0.005	mg/L	1	0.005
Diethylphthalate		<0.005	mg/L	1	0.005
4-Chlorophenyl-phenylether		<0.005	mg/L	1	0.005
4-Nitroaniline		<0.005	mg/L	1	0.005
4,6-Dinitro-2-methylphenol		<0.005	mg/L	1	0.005
Diphenylamine		<0.005	mg/L	1	0.005
Diphenylhydrazine		<0.005	mg/L	1	0.005
4-Bromophenyl-phenylether		<0.005	mg/L	1	0.005
Phenacetin		<0.005	mg/L	1	0.005
Hexachlorobenzene		<0.005	mg/L	1	0.005
4-Aminobiphenyl		<0.005	mg/L	1	0.005
Pentachlorophenol		<0.005	mg/L	1	0.005
Pentachloronitrobenzene		<0.005	mg/L	1	0.005
Pronamide		<0.005	mg/L	1	0.005
Phenanthrene		<0.005	mg/L	1	0.005
Anthracene		<0.005	mg/L	1	0.005
Di-n-butylphthalate		<0.005	mg/L	1	0.005
Fluoranthene		<0.005	mg/L	1	0.005
Benzidine		<0.005	mg/L	1	0.005
Pyrene		<0.005	mg/L	1	0.005
p-Dimethylaminoazobenzene		<0.005	mg/L	1	0.005
Butylbenzylphthalate		<0.005	mg/L	1	0.005
Benzo(a)anthracene		<0.005	mg/L	1	0.005
3,3-Dichlorobenzidine		<0.005	mg/L	1	0.005
Chrysene		<0.005	mg/L	1	0.005
Bis (2-ethylhexyl) phthalate		<0.005	mg/L	1	0.005
Di-n-octylphthalate		<0.005	mg/L	1	0.005
Benzo(b)fluoranthene		<0.005	mg/L	1	0.005
7,12-Dimethylbenz(a)anthracene		<0.005	mg/L	1	0.005
Benzo(k)fluoranthene		<0.005	mg/L	1	0.005
Benzo(a)pyrene		<0.005	mg/L	1	0.005
3-Methylcholanthrene		<0.005	mg/L	1	0.005
Dibenzo(a,j)acridine		<0.005	mg/L	1	0.005
Indeno(1,2,3-cd)pyrene		<0.005	mg/L	1	0.005
Dibenzo(a,h)anthracene		<0.005	mg/L	1	0.005
Benzo(g,h,i)perylene		<0.005	mg/L	1	0.005

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Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		20.70	mg/L	1	80	25	0 - 66
Phenol-d5		14.57	mg/L	1	80	18	0 - 70
Nitrobenzene-d5		68.45	mg/L	1	80	85	23 - 99
2-Fluorobiphenyl		69.25	mg/L	1	80	86	27 - 95
2,4,6-Tribromophenol		86.15	mg/L	1	80	107	0 - 199
Terphenyl-d14		61.25	mg/L	1	80	76	20 - 96

Sample: 211489 - MW-12

Analysis: TDS Analytical Method: E 160.1 QC Batch: QC24442 Date Analyzed: 10/25/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22792 Date Prepared: 10/24/02

Param	Flag	Result	Units	Dilution	RDL
Total Dissolved Solids		1322	mg/L	2	10

Sample: 211489 - MW-12

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC24469 Date Analyzed: 10/28/02
Analyst: WG Preparation Method: N/A Prep Batch: PB22816 Date Prepared: 10/28/02

Param	Flag	Result	Units	Dilution	RDL
TRPHC		<0.500	mg/L	1	0.50

Sample: 211489 - MW-12

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC24675 Date Analyzed: 11/4/02
Analyst: RR Preparation Method: S 3010A Prep Batch: PB22795 Date Prepared: 10/25/02

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		8.87	mg/L	1	0.10
Total Arsenic		<0.050	mg/L	1	0.05
Total Barium		0.241	mg/L	1	0.10
Total Boron		0.536	mg/L	1	0.005
Total Cadmium		<0.005	mg/L	1	0.005
Total Calcium		254	mg/L	1	0.50
Total Chromium		0.0539	mg/L	1	0.01
Total Cobalt		<0.025	mg/L	1	0.02
Total Copper		<0.0125	mg/L	1	0.01
Total Iron		7.94	mg/L	1	0.05
Total Lead		<0.010	mg/L	1	0.01
Total Magnesium		41.9	mg/L	1	0.50
Total Manganese		0.090	mg/L	1	0.02
Total Molybdenum		<0.050	mg/L	1	0.05
Total Nickel		<0.025	mg/L	1	0.02
Total Potassium		13.1	mg/L	1	0.50
Total Selenium		<0.050	mg/L	1	0.05
Total Silica		35.6	mg/L	1	0.05
Total Silver		<0.0125	mg/L	1	0.01
Total Sodium		216	mg/L	1	0.50
Total Zinc		0.0894	mg/L	1	0.02

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Sample: 211489 - MW-12

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC24581 Date Analyzed: 10/29/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB22911 Date Prepared: 10/29/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		<1.00	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		10.1	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		1.85	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		5.92	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1

Continued ...

... Continued Sample: 211489 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		47.3	µg/L	1	50	95	77 - 122
Toluene-d8		48.4	µg/L	1	50	97	96 - 111
4-Bromofluorobenzene		45.2	µg/L	1	50	90	87 - 113

Sample: 211489 - MW-12

Analysis: pH Analytical Method: E 150.1 QC Batch: QC24525 Date Analyzed: 10/23/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22864 Date Prepared: 10/23/02

Param	Flag	Result	Units	Dilution	RDL
pH	3	7.2	s.u.	1	1

Sample: 211490 - MW-13

Analysis: Alkalinity Analytical Method: E 310.1 QC Batch: QC24656 Date Analyzed: 11/4/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22977 Date Prepared: 11/4/02

Param	Flag	Result	Units	Dilution	RDL
Hydroxide Alkalinity		<1.0	mg/L as CaCo3	1	1
Carbonate Alkalinity		<1.0	mg/L as CaCo3	1	1
Bicarbonate Alkalinity		202	mg/L as CaCo3	1	4
Total Alkalinity		202	mg/L as CaCo3	1	4

³Sample received out of holding time.

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Sample: 211490 - MW-13

Analysis: Conductivity Analytical Method: SM 2510B QC Batch: QC24446 Date Analyzed: 10/25/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22796 Date Prepared: 10/25/02

Param	Flag	Result	Units	Dilution	RDL
Specific Conductance		1700	µMHOS/cm	1	

Sample: 211490 - MW-13

Analysis: Hg, Total Analytical Method: S 7470A QC Batch: QC24561 Date Analyzed: 10/29/02
Analyst: BC Preparation Method: N/A Prep Batch: PB22880 Date Prepared: 10/29/02

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.0002	mg/L	1	0.0002

Sample: 211490 - MW-13

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC24432 Date Analyzed: 10/23/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22783 Date Prepared: 10/23/02

Param	Flag	Result	Units	Dilution	RDL
Chloride		244	mg/L	5	1
Fluoride		2.61	mg/L	5	0.20
Nitrate-N		4.63	mg/L	5	0.20
Sulfate		186	mg/L	5	1

Sample: 211490 - MW-13

Analysis: Salts Analytical Method: S 6010B QC Batch: QC24683 Date Analyzed: 11/4/02
Analyst: BC Preparation Method: S 3005A Prep Batch: PB22897 Date Prepared: 10/30/02

Param	Flag	Result	Units	Dilution	RDL
Dissolved Calcium		79.6	mg/L	1	0.50
Dissolved Magnesium		16.6	mg/L	1	0.50
Dissolved Potassium		6.34	mg/L	1	0.50
Dissolved Sodium		238	mg/L	1	0.50

Sample: 211490 - MW-13

Analysis: Semivolatiles Analytical Method: S 8270C QC Batch: QC24662 Date Analyzed: 11/1/02
Analyst: RC Preparation Method: E 3510C Prep Batch: PB22940 Date Prepared: 10/28/02

Param	Flag	Result	Units	Dilution	RDL
Pyridine		<0.005	mg/L	1	0.005
n-Nitrosodimethylamine		<0.005	mg/L	1	0.005
2-Picoline		<0.005	mg/L	1	0.005
Methyl methanesulfonate		<0.005	mg/L	1	0.005
Ethyl methanesulfonate		<0.005	mg/L	1	0.005
phenol		<0.005	mg/L	1	0.005
Aniline		<0.005	mg/L	1	0.005
bis (2-chloroethyl) ether		<0.005	mg/L	1	0.005

Continued ...

... Continued Sample: 211490 Analysis: Semivolatiles

Param	Flag	Result	Units	Dilution	RDL
2-Chlorophenol		<0.005	mg/L	1	0.005
1,3-Dichlorobenzene (meta)		<0.005	mg/L	1	0.005
1,4-Dichlorobenzene		<0.005	mg/L	1	0.005
Benzyl alcohol		<0.005	mg/L	1	0.005
1,2-Dichlorobenzene		<0.005	mg/L	1	0.005
2-Methylphenol		<0.005	mg/L	1	0.005
bis (2-chloroisopropyl) ether		<0.005	mg/L	1	0.005
4-Methylphenol/3-Methylphenol		<0.005	mg/L	1	0.005
Acetophenone		<0.005	mg/L	1	0.005
n-Nitrosodi-n-propylamine		<0.005	mg/L	1	0.005
Hexachloroethane		<0.005	mg/L	1	0.005
Nitrobenzene		<0.005	mg/L	1	0.005
n-Nitrosopiperidine		<0.005	mg/L	1	0.005
Isophorone		<0.005	mg/L	1	0.005
2-Nitrophenol		<0.005	mg/L	1	0.005
2,4-Dimethylphenol		<0.005	mg/L	1	0.005
bis (2-chloroethoxy) methane		<0.005	mg/L	1	0.005
Benzoic acid		<0.005	mg/L	1	0.005
2,4-Dichlorophenol		<0.005	mg/L	1	0.005
1,2,4-Trichlorobenzene		<0.005	mg/L	1	0.005
a,a-Dimethylphenethylamine		<0.005	mg/L	1	0.005
Naphthalene		<0.005	mg/L	1	0.005
4-Chloroaniline		<0.005	mg/L	1	0.005
2,6-Dichlorophenol		<0.005	mg/L	1	0.005
Hexachlorobutadiene		<0.005	mg/L	1	0.005
n-Nitroso-di-n-butylamine		<0.005	mg/L	1	0.005
4-Chloro-3-methylphenol		<0.005	mg/L	1	0.005
1-Methylnaphthalene		<0.005	mg/L	1	0.005
2-Methylnaphthalene		<0.005	mg/L	1	0.005
1,2,4,5-Tetrachlorobenzene		<0.005	mg/L	1	0.005
Hexachlorocyclopentadiene		<0.005	mg/L	1	0.005
2,4,6-Trichlorophenol		<0.005	mg/L	1	0.005
2,4,5-Trichlorophenol		<0.005	mg/L	1	0.005
2-Chloronaphthalene		<0.005	mg/L	1	0.005
1-Chloronaphthalene		<0.005	mg/L	1	0.005
2-Nitroaniline		<0.005	mg/L	1	0.005
Dimethylphthalate		0.024	mg/L	1	0.005
Acenaphthylene		<0.005	mg/L	1	0.005
2,6-Dinitrotoluene		<0.005	mg/L	1	0.005
3-Nitroaniline		<0.005	mg/L	1	0.005
Acenaphthene		<0.005	mg/L	1	0.005
2,4-Dinitrophenol		<0.005	mg/L	1	0.005
Dibenzofuran		<0.005	mg/L	1	0.005
Pentachlorobenzene		<0.005	mg/L	1	0.005
4-Nitrophenol		<0.005	mg/L	1	0.005
1-Naphthylamine		<0.005	mg/L	1	0.005
2,4-Dinitrotoluene		<0.005	mg/L	1	0.005
2-Naphthylamine		<0.005	mg/L	1	0.005
2,3,4,6-Tetrachlorophenol		<0.005	mg/L	1	0.005
Fluorene		<0.005	mg/L	1	0.005
Diethylphthalate		<0.005	mg/L	1	0.005
4-Chlorophenyl-phenylether		<0.005	mg/L	1	0.005
4-Nitroaniline		<0.005	mg/L	1	0.005

Continued ...

... Continued Sample: 211490 Analysis: Semivolatiles

Param	Flag	Result	Units	Dilution	RDL
4,6-Dinitro-2-methylphenol		<0.005	mg/L	1	0.005
Diphenylamine		<0.005	mg/L	1	0.005
Diphenylhydrazine		<0.005	mg/L	1	0.005
4-Bromophenyl-phenylether		<0.005	mg/L	1	0.005
Phenacetin		<0.005	mg/L	1	0.005
Hexachlorobenzene		<0.005	mg/L	1	0.005
4-Aminobiphenyl		<0.005	mg/L	1	0.005
Pentachlorophenol		<0.005	mg/L	1	0.005
Pentachloronitrobenzene		<0.005	mg/L	1	0.005
Pronamide		<0.005	mg/L	1	0.005
Phenanthrene		<0.005	mg/L	1	0.005
Anthracene		<0.005	mg/L	1	0.005
Di-n-butylphthalate		<0.005	mg/L	1	0.005
Fluoranthene		<0.005	mg/L	1	0.005
Benzidine		<0.005	mg/L	1	0.005
Pyrene		<0.005	mg/L	1	0.005
p-Dimethylaminoazobenzene		<0.005	mg/L	1	0.005
Butylbenzylphthalate		<0.005	mg/L	1	0.005
Benzo(a)anthracene		<0.005	mg/L	1	0.005
3,3-Dichlorobenzidine		<0.005	mg/L	1	0.005
Chrysene		<0.005	mg/L	1	0.005
Bis (2-ethylhexyl) phthalate		<0.005	mg/L	1	0.005
Di-n-octylphthalate		<0.005	mg/L	1	0.005
Benzo(b)fluoranthene		<0.005	mg/L	1	0.005
1,12-Dimethylbenz(a)anthracene		<0.005	mg/L	1	0.005
Benzo(k)fluoranthene		<0.005	mg/L	1	0.005
Benzo(a)pyrene		<0.005	mg/L	1	0.005
3-Methylcholanthrene		<0.005	mg/L	1	0.005
Dibenzo(a,j)acridine		<0.005	mg/L	1	0.005
Indeno(1,2,3-cd)pyrene		<0.005	mg/L	1	0.005
Dibenzo(a,h)anthracene		<0.005	mg/L	1	0.005
Benzo(g,h,i)perylene		<0.005	mg/L	1	0.005

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		16.80	mg/L	1	80	23	0 - 66
Phenol-d5		11.69	mg/L	1	80	14	0 - 70
Nitrobenzene-d5		63.10	mg/L	1	80	78	23 - 99
2-Fluorobiphenyl		60.26	mg/L	1	80	75	27 - 95
2,4,6-Tribromophenol		97.16	mg/L	1	80	121	0 - 199
Terphenyl-d14		78.91	mg/L	1	80	98	20 - 96

Sample: 211490 - MW-13

Analysis: TDS Analytical Method: E 160.1 QC Batch: QC24442 Date Analyzed: 10/25/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22792 Date Prepared: 10/24/02

Param	Flag	Result	Units	Dilution	RDL
Total Dissolved Solids		1004	mg/L	2	10

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Sample: 211490 - MW-13

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC24469 Date Analyzed: 10/28/02
Analyst: WG Preparation Method: N/A Prep Batch: PB22816 Date Prepared: 10/28/02

Param	Flag	Result	Units	Dilution	RDL
TRPHC		<0.500	mg/L	1	0.50

Sample: 211490 - MW-13

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC24602 Date Analyzed: 10/31/02
Analyst: RR Preparation Method: S 3010A Prep Batch: PB22795 Date Prepared: 10/25/02

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		7.02	mg/L	1	0.10
Total Arsenic		<0.050	mg/L	1	0.05
Total Barium		0.239	mg/L	1	0.10
Total Boron		0.539	mg/L	1	0.005
Total Cadmium		<0.005	mg/L	1	0.005
Total Calcium		153	mg/L	1	0.50
Total Chromium		0.0939	mg/L	1	0.01
Total Cobalt		<0.025	mg/L	1	0.02
Total Copper		<0.0125	mg/L	1	0.01
Total Iron		6.08	mg/L	1	0.05
Total Lead		<0.010	mg/L	1	0.01
Total Magnesium		20.3	mg/L	1	0.50
Total Manganese		0.0668	mg/L	1	0.02
Total Molybdenum		<0.050	mg/L	1	0.05
Total Nickel		<0.025	mg/L	1	0.02
Total Potassium		7.25	mg/L	1	0.50
Total Selenium		<0.050	mg/L	1	0.05
Total Silica		38.8	mg/L	1	0.05
Total Silver		<0.0125	mg/L	1	0.01
Total Sodium		214	mg/L	1	0.50
Total Zinc		<0.025	mg/L	1	0.02

Sample: 211490 - MW-13

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC24581 Date Analyzed: 10/29/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB22911 Date Prepared: 10/29/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5

Continued ...

... Continued Sample: 211490 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		<1.00	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5

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... Continued Sample: 211490 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		46.9	µg/L	1	50	94	77 - 122
Toluene-d8		49.7	µg/L	1	50	99	96 - 111
4-Bromofluorobenzene		45.8	µg/L	1	50	92	87 - 113

Sample: 211490 - MW-13

Analysis: pH Analytical Method: E 150.1 QC Batch: QC24525 Date Analyzed: 10/23/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22864 Date Prepared: 10/23/02

Param	Flag	Result	Units	Dilution	RDL
pH	4	7.7	s.u.	1	1

Sample: 211491 - MW-14

Analysis: Alkalinity Analytical Method: E 310.1 QC Batch: QC24656 Date Analyzed: 11/4/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22977 Date Prepared: 11/4/02

Param	Flag	Result	Units	Dilution	RDL
Hydroxide Alkalinity		<1.0	mg/L as CaCo3	1	1
Carbonate Alkalinity		<1.0	mg/L as CaCo3	1	1
Bicarbonate Alkalinity		230	mg/L as CaCo3	1	4
Total Alkalinity		230	mg/L as CaCo3	1	4

Sample: 211491 - MW-14

Analysis: Conductivity Analytical Method: SM 2510B QC Batch: QC24447 Date Analyzed: 10/25/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22797 Date Prepared: 10/25/02

Param	Flag	Result	Units	Dilution	RDL
Specific Conductance		1820	µMHOS/cm	1	

Sample: 211491 - MW-14

Analysis: Hg, Total Analytical Method: S 7470A QC Batch: QC24561 Date Analyzed: 10/29/02
Analyst: BC Preparation Method: N/A Prep Batch: PB22880 Date Prepared: 10/29/02

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		0.00091	mg/L	1	0.0002

⁴Sample received out of holding time.

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Sample: 211491 - MW-14

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC24432 Date Analyzed: 10/23/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22783 Date Prepared: 10/23/02

Param	Flag	Result	Units	Dilution	RDL
Chloride		272	mg/L	10	1
Fluoride		2.70	mg/L	5	0.20
Nitrate-N		5.21	mg/L	5	0.20
Sulfate		176	mg/L	5	1

Sample: 211491 - MW-14

Analysis: Salts Analytical Method: S 6010B QC Batch: QC24683 Date Analyzed: 11/4/02
Analyst: BC Preparation Method: S 3005A Prep Batch: PB22897 Date Prepared: 10/30/02

Param	Flag	Result	Units	Dilution	RDL
Dissolved Calcium		117	mg/L	1	0.50
Dissolved Magnesium		21.0	mg/L	1	0.50
Dissolved Potassium		8.14	mg/L	1	0.50
Dissolved Sodium		184	mg/L	1	0.50

Sample: 211491 - MW-14

Analysis: Semivolatiles Analytical Method: S 8270C QC Batch: QC24662 Date Analyzed: 11/1/02
Analyst: RC Preparation Method: E 3510C Prep Batch: PB22940 Date Prepared: 10/28/02

Param	Flag	Result	Units	Dilution	RDL
Pyridine		<0.005	mg/L	1	0.005
n-Nitrosodimethylamine		<0.005	mg/L	1	0.005
2-Picoline		<0.005	mg/L	1	0.005
Methyl methanesulfonate		<0.005	mg/L	1	0.005
Ethyl methanesulfonate		<0.005	mg/L	1	0.005
Phenol		<0.005	mg/L	1	0.005
Aniline		<0.005	mg/L	1	0.005
bis (2-chloroethyl) ether		<0.005	mg/L	1	0.005
2-Chlorophenol		<0.005	mg/L	1	0.005
1,3-Dichlorobenzene (meta)		<0.005	mg/L	1	0.005
1,4-Dichlorobenzene		<0.005	mg/L	1	0.005
Benzyl alcohol		<0.005	mg/L	1	0.005
1,2-Dichlorobenzene		<0.005	mg/L	1	0.005
2-Methylphenol		<0.005	mg/L	1	0.005
bis (2-chloroisopropyl) ether		<0.005	mg/L	1	0.005
4-Methylphenol/3-Methylphenol		<0.005	mg/L	1	0.005
Acetophenone		<0.005	mg/L	1	0.005
n-Nitrosodi-n-propylamine		<0.005	mg/L	1	0.005
Hexachloroethane		<0.005	mg/L	1	0.005
Nitrobenzene		<0.005	mg/L	1	0.005
n-Nitrosopiperidine		<0.005	mg/L	1	0.005
Isophorone		<0.005	mg/L	1	0.005
2-Nitrophenol		<0.005	mg/L	1	0.005
4-Dimethylphenol		<0.005	mg/L	1	0.005
bis (2-chloroethoxy) methane		<0.005	mg/L	1	0.005
Benzoic acid		<0.005	mg/L	1	0.005

Continued ...

... Continued Sample: 211491 Analysis: Semivolatiles

Param	Flag	Result	Units	Dilution	RDL
2,4-Dichlorophenol		<0.005	mg/L	1	0.005
1,2,4-Trichlorobenzene		<0.005	mg/L	1	0.005
a,a-Dimethylphenethylamine		<0.005	mg/L	1	0.005
Naphthalene		<0.005	mg/L	1	0.005
4-Chloroaniline		<0.005	mg/L	1	0.005
2,6-Dichlorophenol		<0.005	mg/L	1	0.005
Hexachlorobutadiene		<0.005	mg/L	1	0.005
n-Nitroso-di-n-butylamine		<0.005	mg/L	1	0.005
4-Chloro-3-methylphenol		<0.005	mg/L	1	0.005
1-Methylnaphthalene		<0.005	mg/L	1	0.005
2-Methylnaphthalene		<0.005	mg/L	1	0.005
1,2,4,5-Tetrachlorobenzene		<0.005	mg/L	1	0.005
Hexachlorocyclopentadiene		<0.005	mg/L	1	0.005
2,4,6-Trichlorophenol		<0.005	mg/L	1	0.005
2,4,5-Trichlorophenol		<0.005	mg/L	1	0.005
2-Chloronaphthalene		<0.005	mg/L	1	0.005
1-Chloronaphthalene		<0.005	mg/L	1	0.005
2-Nitroaniline		<0.005	mg/L	1	0.005
Dimethylphthalate		0.011	mg/L	1	0.005
Acenaphthylene		<0.005	mg/L	1	0.005
2,6-Dinitrotoluene		<0.005	mg/L	1	0.005
3-Nitroaniline		<0.005	mg/L	1	0.005
Acenaphthene		<0.005	mg/L	1	0.005
2,4-Dinitrophenol		<0.005	mg/L	1	0.005
Dibenzofuran		<0.005	mg/L	1	0.005
Pentachlorobenzene		<0.005	mg/L	1	0.005
4-Nitrophenol		<0.005	mg/L	1	0.005
1-Naphthylamine		<0.005	mg/L	1	0.005
2,4-Dinitrotoluene		<0.005	mg/L	1	0.005
2-Naphthylamine		<0.005	mg/L	1	0.005
2,3,4,6-Tetrachlorophenol		<0.005	mg/L	1	0.005
Fluorene		<0.005	mg/L	1	0.005
Diethylphthalate		<0.005	mg/L	1	0.005
4-Chlorophenyl-phenylether		<0.005	mg/L	1	0.005
4-Nitroaniline		<0.005	mg/L	1	0.005
4,6-Dinitro-2-methylphenol		<0.005	mg/L	1	0.005
Diphenylamine		<0.005	mg/L	1	0.005
Diphenylhydrazine		<0.005	mg/L	1	0.005
4-Bromophenyl-phenylether		<0.005	mg/L	1	0.005
Phenacetin		<0.005	mg/L	1	0.005
Hexachlorobenzene		<0.005	mg/L	1	0.005
4-Aminobiphenyl		<0.005	mg/L	1	0.005
Pentachlorophenol		<0.005	mg/L	1	0.005
Pentachloronitrobenzene		<0.005	mg/L	1	0.005
Pronamide		<0.005	mg/L	1	0.005
Phenanthrene		<0.005	mg/L	1	0.005
Anthracene		<0.005	mg/L	1	0.005
Di-n-butylphthalate		<0.005	mg/L	1	0.005
Fluoranthene		<0.005	mg/L	1	0.005
Benzidine		<0.005	mg/L	1	0.005
Pyrene		<0.005	mg/L	1	0.005
p-Dimethylaminoazobenzene		<0.005	mg/L	1	0.005
Butylbenzylphthalate		<0.005	mg/L	1	0.005

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... Continued Sample: 211491 Analysis: Semivolatiles

Param	Flag	Result	Units	Dilution	RDL
Benzo(a)anthracene		<0.005	mg/L	1	0.005
3,3-Dichlorobenzidine		<0.005	mg/L	1	0.005
Chrysene		<0.005	mg/L	1	0.005
Bis (2-ethylhexyl) phthalate		<0.005	mg/L	1	0.005
Di-n-octylphthalate		<0.005	mg/L	1	0.005
Benzo(b)fluoranthene		<0.005	mg/L	1	0.005
7,12-Dimethylbenz(a)anthracene		<0.005	mg/L	1	0.005
Benzo(k)fluoranthene		<0.005	mg/L	1	0.005
Benzo(a)pyrene		<0.005	mg/L	1	0.005
3-Methylcholanthrene		<0.005	mg/L	1	0.005
Dibenzo(a,j)acridine		<0.005	mg/L	1	0.005
Indeno(1,2,3-cd)pyrene		<0.005	mg/L	1	0.005
Dibenzo(a,h)anthracene		<0.005	mg/L	1	0.005
Benzo(g,h,i)perylene		<0.005	mg/L	1	0.005

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		17.91	mg/L	1	80	22	0 - 66
Phenol-d5		12.55	mg/L	1	80	15	0 - 70
Nitrobenzene-d5		58.52	mg/L	1	80	73	23 - 99
2-Fluorobiphenyl		62.47	mg/L	1	80	78	27 - 95
2,4,6-Tribromophenol		89.55	mg/L	1	80	111	0 - 199
Terphenyl-d14		52.99	mg/L	1	80	66	20 - 96

Sample: 211491 - MW-14

Analysis: TDS Analytical Method: E 160.1 QC Batch: QC24442 Date Analyzed: 10/25/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22792 Date Prepared: 10/24/02

Param	Flag	Result	Units	Dilution	RDL
Total Dissolved Solids		1086	mg/L	2	10

Sample: 211491 - MW-14

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC24469 Date Analyzed: 10/28/02
Analyst: WG Preparation Method: N/A Prep Batch: PB22816 Date Prepared: 10/28/02

Param	Flag	Result	Units	Dilution	RDL
TRPHC		<0.500	mg/L	1	0.50

Sample: 211491 - MW-14

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC24602 Date Analyzed: 10/31/02
Analyst: RR Preparation Method: S 3010A Prep Batch: PB22795 Date Prepared: 10/25/02

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		13.9	mg/L	1	0.10
Total Arsenic		0.0731	mg/L	1	0.05
Total Barium		0.496	mg/L	1	0.10

Continued ...

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... Continued Sample: 211491 Analysis: Total Metals

Param	Flag	Result	Units	Dilution	RDL
Total Boron		0.395	mg/L	1	0.005
Total Cadmium		<0.005	mg/L	1	0.005
Total Calcium		218	mg/L	1	0.50
Total Chromium		0.0459	mg/L	1	0.01
Total Cobalt		<0.025	mg/L	1	0.02
Total Copper		<0.0125	mg/L	1	0.01
Total Iron		11.1	mg/L	1	0.05
Total Lead		<0.010	mg/L	1	0.01
Total Magnesium		28.9	mg/L	1	0.50
Total Manganese		0.146	mg/L	1	0.02
Total Molybdenum		<0.050	mg/L	1	0.05
Total Nickel		<0.025	mg/L	1	0.02
Total Potassium		12.9	mg/L	1	0.50
Total Selenium		<0.050	mg/L	1	0.05
Total Silica		37.1	mg/L	1	0.05
Total Silver		<0.0125	mg/L	1	0.01
Total Sodium		177	mg/L	1	0.50
Total Zinc		<0.025	mg/L	1	0.02

Sample: 211491 - MW-14

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC24581 Date Analyzed: 10/29/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB22911 Date Prepared: 10/29/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		<1.00	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1

Continued ...

... Continued Sample: 211491 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		47.7	µg/L	1	50	95	77 - 122
Toluene-d8		49.9	µg/L	1	50	100	96 - 111
4-Bromofluorobenzene		45.8	µg/L	1	50	92	87 - 113

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Sample: 211491 - MW-14

Analysis: pH Analytical Method: E 150.1 QC Batch: QC24525 Date Analyzed: 10/23/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22864 Date Prepared: 10/23/02

Param	Flag	Result	Units	Dilution	RDL
pH	5	7.5	s.u.	1	1

Sample: 211492 - MW-15

Analysis: Alkalinity Analytical Method: E 310.1 QC Batch: QC24656 Date Analyzed: 11/4/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22977 Date Prepared: 11/4/02

Param	Flag	Result	Units	Dilution	RDL
Hydroxide Alkalinity		<1.0	mg/L as CaCo3	1	1
Carbonate Alkalinity		<1.0	mg/L as CaCo3	1	1
Bicarbonate Alkalinity		220	mg/L as CaCo3	1	4
Total Alkalinity		220	mg/L as CaCo3	1	4

Sample: 211492 - MW-15

Analysis: Conductivity Analytical Method: SM 2510B QC Batch: QC24447 Date Analyzed: 10/25/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22797 Date Prepared: 10/25/02

Param	Flag	Result	Units	Dilution	RDL
Specific Conductance		1400	µMHOS/cm	1	

Sample: 211492 - MW-15

Analysis: Hg, Total Analytical Method: S 7470A QC Batch: QC24561 Date Analyzed: 10/29/02
Analyst: BC Preparation Method: N/A Prep Batch: PB22880 Date Prepared: 10/29/02

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.0002	mg/L	1	0.0002

Sample: 211492 - MW-15

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC24432 Date Analyzed: 10/23/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22783 Date Prepared: 10/23/02

Param	Flag	Result	Units	Dilution	RDL
Chloride		156	mg/L	5	1
Fluoride		2.61	mg/L	5	0.20
Nitrate-N		5.33	mg/L	5	0.20
Sulfate		172	mg/L	5	1

Sample: 211492 - MW-15

Analysis: Salts Analytical Method: S 6010B QC Batch: QC24683 Date Analyzed: 11/4/02
Analyst: BC Preparation Method: S 3005A Prep Batch: PB22897 Date Prepared: 10/30/02

⁵Sample received out of holding time.

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Param	Flag	Result	Units	Dilution	RDL
Dissolved Calcium		110	mg/L	1	0.50
Dissolved Magnesium		22.7	mg/L	1	0.50
Dissolved Potassium		5.53	mg/L	1	0.50
Dissolved Sodium		103	mg/L	1	0.50

Sample: 211492 - MW-15

Analysis: Semivolatiles Analytical Method: S 8270C QC Batch: QC24662 Date Analyzed: 11/1/02
Analyst: RC Preparation Method: E 3510C Prep Batch: PB22940 Date Prepared: 10/28/02

Param	Flag	Result	Units	Dilution	RDL
Pyridine		<0.005	mg/L	1	0.005
n-Nitrosodimethylamine		<0.005	mg/L	1	0.005
2-Picoline		<0.005	mg/L	1	0.005
Methyl methanesulfonate		<0.005	mg/L	1	0.005
Ethyl methanesulfonate		<0.005	mg/L	1	0.005
Phenol		<0.005	mg/L	1	0.005
Aniline		<0.005	mg/L	1	0.005
bis (2-chloroethyl) ether		<0.005	mg/L	1	0.005
2-Chlorophenol		<0.005	mg/L	1	0.005
1,3-Dichlorobenzene (meta)		<0.005	mg/L	1	0.005
1,4-Dichlorobenzene		<0.005	mg/L	1	0.005
Benzyl alcohol		<0.005	mg/L	1	0.005
1,2-Dichlorobenzene		<0.005	mg/L	1	0.005
2-Methylphenol		<0.005	mg/L	1	0.005
bis (2-chloroisopropyl) ether		<0.005	mg/L	1	0.005
4-Methylphenol/3-Methylphenol		<0.005	mg/L	1	0.005
Acetophenone		<0.005	mg/L	1	0.005
n-Nitrosodi-n-propylamine		<0.005	mg/L	1	0.005
Hexachloroethane		<0.005	mg/L	1	0.005
Nitrobenzene		<0.005	mg/L	1	0.005
n-Nitrosopiperidine		<0.005	mg/L	1	0.005
Isophorone		<0.005	mg/L	1	0.005
2-Nitrophenol		<0.005	mg/L	1	0.005
2,4-Dimethylphenol		<0.005	mg/L	1	0.005
bis (2-chloroethoxy) methane		<0.005	mg/L	1	0.005
Benzoic acid		<0.005	mg/L	1	0.005
2,4-Dichlorophenol		<0.005	mg/L	1	0.005
1,2,4-Trichlorobenzene		<0.005	mg/L	1	0.005
a,a-Dimethylphenethylamine		<0.005	mg/L	1	0.005
Naphthalene		<0.005	mg/L	1	0.005
4-Chloroaniline		<0.005	mg/L	1	0.005
2,6-Dichlorophenol		<0.005	mg/L	1	0.005
Hexachlorobutadiene		<0.005	mg/L	1	0.005
n-Nitroso-di-n-butylamine		<0.005	mg/L	1	0.005
4-Chloro-3-methylphenol		<0.005	mg/L	1	0.005
1-Methylnaphthalene		<0.005	mg/L	1	0.005
2-Methylnaphthalene		<0.005	mg/L	1	0.005
1,2,4,5-Tetrachlorobenzene		<0.005	mg/L	1	0.005
Hexachlorocyclopentadiene		<0.005	mg/L	1	0.005
4,6-Trichlorophenol		<0.005	mg/L	1	0.005
2,4,5-Trichlorophenol		<0.005	mg/L	1	0.005
2-Chloronaphthalene		<0.005	mg/L	1	0.005

Continued ...

... Continued Sample: 211492 Analysis: Semivolatiles

Param	Flag	Result	Units	Dilution	RDL
1-Chloronaphthalene		<0.005	mg/L	1	0.005
2-Nitroaniline		<0.005	mg/L	1	0.005
Dimethylphthalate		0.029	mg/L	1	0.005
Acenaphthylene		<0.005	mg/L	1	0.005
2,6-Dinitrotoluene		<0.005	mg/L	1	0.005
3-Nitroaniline		<0.005	mg/L	1	0.005
Acenaphthene		<0.005	mg/L	1	0.005
2,4-Dinitrophenol		<0.005	mg/L	1	0.005
Dibenzofuran		<0.005	mg/L	1	0.005
Pentachlorobenzene		<0.005	mg/L	1	0.005
4-Nitrophenol		<0.005	mg/L	1	0.005
1-Naphthylamine		<0.005	mg/L	1	0.005
2,4-Dinitrotoluene		<0.005	mg/L	1	0.005
2-Naphthylamine		<0.005	mg/L	1	0.005
2,3,4,6-Tetrachlorophenol		<0.005	mg/L	1	0.005
Fluorene		<0.005	mg/L	1	0.005
Diethylphthalate		<0.005	mg/L	1	0.005
4-Chlorophenyl-phenylether		<0.005	mg/L	1	0.005
4-Nitroaniline		<0.005	mg/L	1	0.005
4,6-Dinitro-2-methylphenol		<0.005	mg/L	1	0.005
Diphenylamine		<0.005	mg/L	1	0.005
Diphenylhydrazine		<0.005	mg/L	1	0.005
4-Bromophenyl-phenylether		<0.005	mg/L	1	0.005
Phenacetin		<0.005	mg/L	1	0.005
Hexachlorobenzene		<0.005	mg/L	1	0.005
4-Aminobiphenyl		<0.005	mg/L	1	0.005
Pentachlorophenol		<0.005	mg/L	1	0.005
Pentachloronitrobenzene		<0.005	mg/L	1	0.005
Pronamide		<0.005	mg/L	1	0.005
Phenanthrene		<0.005	mg/L	1	0.005
Anthracene		<0.005	mg/L	1	0.005
Di-n-butylphthalate		<0.005	mg/L	1	0.005
Fluoranthene		<0.005	mg/L	1	0.005
Benzidine		<0.005	mg/L	1	0.005
Pyrene		<0.005	mg/L	1	0.005
p-Dimethylaminoazobenzene		<0.005	mg/L	1	0.005
Butylbenzylphthalate		<0.005	mg/L	1	0.005
Benzo(a)anthracene		<0.005	mg/L	1	0.005
3,3-Dichlorobenzidine		<0.005	mg/L	1	0.005
Chrysene		<0.005	mg/L	1	0.005
Bis (2-ethylhexyl) phthalate		<0.005	mg/L	1	0.005
Di-n-octylphthalate		<0.005	mg/L	1	0.005
Benzo(b)fluoranthene		<0.005	mg/L	1	0.005
7,12-Dimethylbenz(a)anthracene		<0.005	mg/L	1	0.005
Benzo(k)fluoranthene		<0.005	mg/L	1	0.005
Benzo(a)pyrene		<0.005	mg/L	1	0.005
3-Methylcholanthrene		<0.005	mg/L	1	0.005
Dibenzo(a,j)acridine		<0.005	mg/L	1	0.005
Indeno(1,2,3-cd)pyrene		<0.005	mg/L	1	0.005
Dibenzo(a,h)anthracene		<0.005	mg/L	1	0.005
Benzo(g,h,i)perylene		<0.005	mg/L	1	0.005

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Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		15.13	mg/L	1	80	18	0 - 66
Phenol-d5		9.11	mg/L	1	80	11	0 - 70
Nitrobenzene-d5		53.03	mg/L	1	80	66	23 - 99
2-Fluorobiphenyl		46.91	mg/L	1	80	58	27 - 95
2,4,6-Tribromophenol		65.96	mg/L	1	80	82	0 - 199
Terphenyl-d14		55.03	mg/L	1	80	68	20 - 96

Sample: 211492 - MW-15

Analysis: TDS Analytical Method: E 160.1 QC Batch: QC24442 Date Analyzed: 10/25/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22792 Date Prepared: 10/24/02

Param	Flag	Result	Units	Dilution	RDL
Total Dissolved Solids		882	mg/L	2	10

Sample: 211492 - MW-15

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC24469 Date Analyzed: 10/28/02
Analyst: WG Preparation Method: N/A Prep Batch: PB22816 Date Prepared: 10/28/02

Param	Flag	Result	Units	Dilution	RDL
TRPHC		<0.500	mg/L	1	0.50

Sample: 211492 - MW-15

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC24602 Date Analyzed: 10/31/02
Analyst: RR Preparation Method: S 3010A Prep Batch: PB22795 Date Prepared: 10/25/02

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		6.11	mg/L	1	0.10
Total Arsenic		<0.050	mg/L	1	0.05
Total Barium		0.356	mg/L	1	0.10
Total Boron		0.465	mg/L	1	0.005
Total Cadmium		<0.005	mg/L	1	0.005
Total Calcium		165	mg/L	1	0.50
Total Chromium		0.0107	mg/L	1	0.01
Total Cobalt		<0.025	mg/L	1	0.02
Total Copper		<0.0125	mg/L	1	0.01
Total Iron		7.13	mg/L	1	0.05
Total Lead		<0.010	mg/L	1	0.01
Total Magnesium		25.3	mg/L	1	0.50
Total Manganese		0.0856	mg/L	1	0.02
Total Molybdenum		<0.050	mg/L	1	0.05
Total Nickel		<0.025	mg/L	1	0.02
Total Potassium		8.81	mg/L	1	0.50
Total Selenium		<0.050	mg/L	1	0.05
Total Silica		36.9	mg/L	1	0.05
Total Silver		<0.0125	mg/L	1	0.01
Total Sodium		103	mg/L	1	0.50
Total Zinc		<0.025	mg/L	1	0.02

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Sample: 211492 - MW-15

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC24606 Date Analyzed: 10/30/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB22929 Date Prepared: 10/30/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		<1.00	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		<1.00	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
p-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1

Continued ...

... Continued Sample: 211492 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		46.6	µg/L	1	50	93	77 - 122
Toluene-d8		49.1	µg/L	1	50	98	96 - 111
4-Bromofluorobenzene		46.1	µg/L	1	50	92	87 - 113

Sample: 211492 - MW-15

Analysis: pH Analytical Method: E 150.1 QC Batch: QC24540 Date Analyzed: 10/23/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22871 Date Prepared: 10/23/02

Param	Flag	Result	Units	Dilution	RDL
pH	6	7.4	s.u.	1	1

Sample: 211493 - MW-16

Analysis: Alkalinity Analytical Method: E 310.1 QC Batch: QC24656 Date Analyzed: 11/4/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22977 Date Prepared: 11/4/02

Param	Flag	Result	Units	Dilution	RDL
Hydroxide Alkalinity		<1.0	mg/L as CaCo3	1	1
Carbonate Alkalinity		<1.0	mg/L as CaCo3	1	1
Bicarbonate Alkalinity		242	mg/L as CaCo3	1	4
Total Alkalinity		242	mg/L as CaCo3	1	4

⁶Sample received out of holding time.

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Sample: 211493 - MW-16

Analysis: Conductivity Analytical Method: SM 2510B QC Batch: QC24447 Date Analyzed: 10/25/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22797 Date Prepared: 10/25/02

Param	Flag	Result	Units	Dilution	RDL
Specific Conductance		2210	µMHOS/cm	1	

Sample: 211493 - MW-16

Analysis: Hg, Total Analytical Method: S 7470A QC Batch: QC24561 Date Analyzed: 10/29/02
Analyst: BC Preparation Method: N/A Prep Batch: PB22880 Date Prepared: 10/29/02

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.0002	mg/L	1	0.0002

Sample: 211493 - MW-16

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC24432 Date Analyzed: 10/23/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22783 Date Prepared: 10/23/02

Param	Flag	Result	Units	Dilution	RDL
Chloride	7	416	mg/L	10	1
Fluoride		2.10	mg/L	5	0.20
Nitrate-N		5.82	mg/L	5	0.20
Sulfate		171	mg/L	5	1

Sample: 211493 - MW-16

Analysis: Salts Analytical Method: S 6010B QC Batch: QC24683 Date Analyzed: 11/4/02
Analyst: BC Preparation Method: S 3005A Prep Batch: PB22897 Date Prepared: 10/30/02

Param	Flag	Result	Units	Dilution	RDL
Dissolved Calcium		126	mg/L	1	0.50
Dissolved Magnesium		29.3	mg/L	1	0.50
Dissolved Potassium		7.32	mg/L	1	0.50
Dissolved Sodium		218	mg/L	1	0.50

Sample: 211493 - MW-16

Analysis: Semivolatiles Analytical Method: S 8270C QC Batch: QC24662 Date Analyzed: 11/1/02
Analyst: RC Preparation Method: E 3510C Prep Batch: PB22940 Date Prepared: 10/28/02

Param	Flag	Result	Units	Dilution	RDL
Pyridine		<0.005	mg/L	1	0.005
n-Nitrosodimethylamine		<0.005	mg/L	1	0.005
2-Picoline		<0.005	mg/L	1	0.005
Methyl methanesulfonate		<0.005	mg/L	1	0.005
Ethyl methanesulfonate		<0.005	mg/L	1	0.005
phenol		<0.005	mg/L	1	0.005

Continued ...

⁷This sample was reran on IC102502.sch. ICV = 103%; CCV = 96%; LCS%IA = 96 and RPD = 0; MS%EA = 88 and RPD = 0.

... Continued Sample: 211493 Analysis: Semivolatiles

Param	Flag	Result	Units	Dilution	RDL
Aniline		<0.005	mg/L	1	0.005
bis (2-chloroethyl) ether		<0.005	mg/L	1	0.005
2-Chlorophenol		<0.005	mg/L	1	0.005
1,3-Dichlorobenzene (meta)		<0.005	mg/L	1	0.005
1,4-Dichlorobenzene		<0.005	mg/L	1	0.005
Benzyl alcohol		<0.005	mg/L	1	0.005
1,2-Dichlorobenzene		<0.005	mg/L	1	0.005
2-Methylphenol		<0.005	mg/L	1	0.005
bis (2-chloroisopropyl) ether		<0.005	mg/L	1	0.005
4-Methylphenol/3-Methylphenol		<0.005	mg/L	1	0.005
Acetophenone		<0.005	mg/L	1	0.005
n-Nitrosodi-n-propylamine		<0.005	mg/L	1	0.005
Hexachloroethane		<0.005	mg/L	1	0.005
Nitrobenzene		<0.005	mg/L	1	0.005
n-Nitrosopiperidine		<0.005	mg/L	1	0.005
Isophorone		<0.005	mg/L	1	0.005
2-Nitrophenol		<0.005	mg/L	1	0.005
2,4-Dimethylphenol		<0.005	mg/L	1	0.005
bis (2-chloroethoxy) methane		<0.005	mg/L	1	0.005
Benzoic acid		<0.005	mg/L	1	0.005
2,4-Dichlorophenol		<0.005	mg/L	1	0.005
1,2,4-Trichlorobenzene		<0.005	mg/L	1	0.005
a,a-Dimethylphenethylamine		<0.005	mg/L	1	0.005
Naphthalene		<0.005	mg/L	1	0.005
1-Chloroaniline		<0.005	mg/L	1	0.005
2,6-Dichlorophenol		<0.005	mg/L	1	0.005
Hexachlorobutadiene		<0.005	mg/L	1	0.005
n-Nitroso-di-n-butylamine		<0.005	mg/L	1	0.005
4-Chloro-3-methylphenol		<0.005	mg/L	1	0.005
1-Methylnaphthalene		<0.005	mg/L	1	0.005
2-Methylnaphthalene		<0.005	mg/L	1	0.005
1,2,4,5-Tetrachlorobenzene		<0.005	mg/L	1	0.005
Hexachlorocyclopentadiene		<0.005	mg/L	1	0.005
2,4,6-Trichlorophenol		<0.005	mg/L	1	0.005
2,4,5-Trichlorophenol		<0.005	mg/L	1	0.005
2-Chloronaphthalene		<0.005	mg/L	1	0.005
1-Chloronaphthalene		<0.005	mg/L	1	0.005
2-Nitroaniline		<0.005	mg/L	1	0.005
Dimethylphthalate		<0.005	mg/L	1	0.005
Acenaphthylene		<0.005	mg/L	1	0.005
2,6-Dinitrotoluene		<0.005	mg/L	1	0.005
3-Nitroaniline		<0.005	mg/L	1	0.005
Acenaphthene		<0.005	mg/L	1	0.005
2,4-Dinitrophenol		<0.005	mg/L	1	0.005
Dibenzofuran		<0.005	mg/L	1	0.005
Pentachlorobenzene		<0.005	mg/L	1	0.005
4-Nitrophenol		<0.005	mg/L	1	0.005
1-Naphthylamine		<0.005	mg/L	1	0.005
2,4-Dinitrotoluene		<0.005	mg/L	1	0.005
2-Naphthylamine		<0.005	mg/L	1	0.005
3,4,6-Tetrachlorophenol		<0.005	mg/L	1	0.005
Fluorene		<0.005	mg/L	1	0.005
Diethylphthalate		<0.005	mg/L	1	0.005

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... Continued Sample: 211493 Analysis: Semivolatiles

Param	Flag	Result	Units	Dilution	RDL
4-Chlorophenyl-phenylether		<0.005	mg/L	1	0.005
4-Nitroaniline		<0.005	mg/L	1	0.005
4,6-Dinitro-2-methylphenol		<0.005	mg/L	1	0.005
Diphenylamine		<0.005	mg/L	1	0.005
Diphenylhydrazine		<0.005	mg/L	1	0.005
4-Bromophenyl-phenylether		<0.005	mg/L	1	0.005
Phenacetin		<0.005	mg/L	1	0.005
Hexachlorobenzene		<0.005	mg/L	1	0.005
4-Aminobiphenyl		<0.005	mg/L	1	0.005
Pentachlorophenol		<0.005	mg/L	1	0.005
Pentachloronitrobenzene		<0.005	mg/L	1	0.005
Pronamide		<0.005	mg/L	1	0.005
Phenanthrene		<0.005	mg/L	1	0.005
Anthracene		<0.005	mg/L	1	0.005
Di-n-butylphthalate		<0.005	mg/L	1	0.005
Fluoranthene		<0.005	mg/L	1	0.005
Benzydine		<0.005	mg/L	1	0.005
Pyrene		<0.005	mg/L	1	0.005
p-Dimethylaminoazobenzene		<0.005	mg/L	1	0.005
Butylbenzylphthalate		<0.005	mg/L	1	0.005
Benzo(a)anthracene		<0.005	mg/L	1	0.005
3,3-Dichlorobenzidine		<0.005	mg/L	1	0.005
Chrysene		<0.005	mg/L	1	0.005
Bis (2-ethylhexyl) phthalate		<0.005	mg/L	1	0.005
Di-n-octylphthalate		<0.005	mg/L	1	0.005
Benzo(b)fluoranthene		<0.005	mg/L	1	0.005
7,12-Dimethylbenz(a)anthracene		<0.005	mg/L	1	0.005
Benzo(k)fluoranthene		<0.005	mg/L	1	0.005
Benzo(a)pyrene		<0.005	mg/L	1	0.005
3-Methylcholanthrene		<0.005	mg/L	1	0.005
Dibenzo(a,j)acridine		<0.005	mg/L	1	0.005
Indeno(1,2,3-cd)pyrene		<0.005	mg/L	1	0.005
Dibenzo(a,h)anthracene		<0.005	mg/L	1	0.005
Benzo(g,h,i)perylene		<0.005	mg/L	1	0.005

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		18.15	mg/L	1	80	22	0 - 66
Phenol-d5		11.46	mg/L	1	80	14	0 - 70
Nitrobenzene-d5		66.39	mg/L	1	80	82	23 - 99
2-Fluorobiphenyl		61.55	mg/L	1	80	76	27 - 95
2,4,6-Tribromophenol		95.15	mg/L	1	80	118	0 - 199
Terphenyl-d14		59.37	mg/L	1	80	74	20 - 96

Sample: 211493 - MW-16

Analysis: TDS Analytical Method: E 160.1 QC Batch: QC24442 Date Analyzed: 10/25/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22792 Date Prepared: 10/24/02

Param	Flag	Result	Units	Dilution	RDL
Total Dissolved Solids		1210	mg/L	2	10

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Sample: 211493 - MW-16

Analysis: TPH Analytical Method: E 418.1 QC Batch: QC24469 Date Analyzed: 10/28/02
Analyst: WG Preparation Method: N/A Prep Batch: PB22816 Date Prepared: 10/28/02

Param	Flag	Result	Units	Dilution	RDL
TRPHC		<0.500	mg/L	1	0.50

Sample: 211493 - MW-16

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC24602 Date Analyzed: 10/31/02
Analyst: RR Preparation Method: S 3010A Prep Batch: PB22795 Date Prepared: 10/25/02

Param	Flag	Result	Units	Dilution	RDL
Total Aluminum		10.6	mg/L	1	0.10
Total Arsenic		<0.050	mg/L	1	0.05
Total Barium		0.229	mg/L	1	0.10
Total Boron		0.504	mg/L	1	0.005
Total Cadmium		<0.005	mg/L	1	0.005
Total Calcium		297	mg/L	1	0.50
Total Chromium		0.0219	mg/L	1	0.01
Total Cobalt		<0.025	mg/L	1	0.02
Total Copper		<0.0125	mg/L	1	0.01
Total Iron		9.74	mg/L	1	0.05
Total Lead		<0.010	mg/L	1	0.01
Total Magnesium		36.2	mg/L	1	0.50
Total Manganese		0.0937	mg/L	1	0.02
Total Molybdenum		<0.050	mg/L	1	0.05
Total Nickel		<0.025	mg/L	1	0.02
Total Potassium		12.0	mg/L	1	0.50
Total Selenium		<0.050	mg/L	1	0.05
Total Silica		40.4	mg/L	1	0.05
Total Silver		<0.0125	mg/L	1	0.01
Total Sodium		234	mg/L	1	0.50
Total Zinc		<0.025	mg/L	1	0.02

Sample: 211493 - MW-16

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC24606 Date Analyzed: 10/30/02
Analyst: JG Preparation Method: E 5030B Prep Batch: PB22929 Date Prepared: 10/30/02

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5

Continued ...

... Continued Sample: 211493 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		<1.00	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		1.53	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		1.13	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5

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... Continued Sample: 211493 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		47.1	µg/L	1	50	94	77 - 122
Toluene-d8		49.1	µg/L	1	50	98	96 - 111
4-Bromofluorobenzene		45.9	µg/L	1	50	92	87 - 113

Sample: 211493 - MW-16

Analysis: pH Analytical Method: E 150.1 QC Batch: QC24540 Date Analyzed: 10/23/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB22871 Date Prepared: 10/23/02

Param	Flag	Result	Units	Dilution	RDL
pH	^s	7.3	s.u.	1	1

^sSample received out of holding time.

Quality Control Report Method Blank

Method Blank QCBatch: QC24431

Param	Flag	Results	Units	Reporting Limit
Chloride		<1.0	mg/L	1
Fluoride		<0.2	mg/L	0.20
Nitrate-N		<0.2	mg/L	0.20
Sulfate		<1.0	mg/L	1

Method Blank QCBatch: QC24432

Param	Flag	Results	Units	Reporting Limit
Chloride		<1.0	mg/L	1
Fluoride		<0.2	mg/L	0.20
Nitrate-N		<0.2	mg/L	0.20
Sulfate		<1.0	mg/L	1

Method Blank QCBatch: QC24442

Param	Flag	Results	Units	Reporting Limit
Total Dissolved Solids		<10	mg/L	10

Method Blank QCBatch: QC24446

Param	Flag	Results	Units	Reporting Limit
Specific Conductance		6.19	μ MHOS/cm	

Method Blank QCBatch: QC24447

Param	Flag	Results	Units	Reporting Limit
Specific Conductance		6.19	μ MHOS/cm	

Method Blank QCBatch: QC24464

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Param	Flag	Results	Units	Reporting Limit
Total Arsenic		<0.050	mg/L	0.05
Total Chromium		<0.010	mg/L	0.01
Total Lead		<0.010	mg/L	0.01

Method Blank QCBatch: QC24469

Param	Flag	Results	Units	Reporting Limit
TRPHC		<0.500	mg/L	0.50

Method Blank QCBatch: QC24482

Param	Flag	Results	Units	Reporting Limit
Chloride		<1.0	mg/L	1

Method Blank QCBatch: QC24486

Param	Flag	Results	Units	Reporting Limit
Chloride		<1.0	mg/L	1

Method Blank QCBatch: QC24561

Param	Flag	Results	Units	Reporting Limit
Total Mercury		<0.0002	mg/L	0.0002

Method Blank QCBatch: QC24563

Param	Flag	Results	Units	Reporting Limit
Chloride		<1.0	mg/L	1

Method Blank QCBatch: QC24581

Param	Flag	Results	Units	Reporting Limit
Bromochloromethane		<1.00	µg/L	1
Dichlorodifluoromethane		<1.00	µg/L	1

Continued ...

... Continued

Param	Flag	Results	Units	Reporting Limit
Chloromethane (methyl chloride)		<1.00	µg/L	1
Vinyl Chloride		<1.00	µg/L	1
Bromomethane (methyl bromide)		<5.00	µg/L	5
Chloroethane		<1.00	µg/L	1
Trichlorofluoromethane		<1.00	µg/L	1
Acetone		<10.0	µg/L	10
Iodomethane (methyl iodide)		<5.00	µg/L	5
Carbon Disulfide		<1.00	µg/L	1
Acrylonitrile		<1.00	µg/L	1
2-Butanone (MEK)		<5.00	µg/L	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	5
2-hexanone		<5.00	µg/L	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	10
1,1-Dichloroethene		<1.00	µg/L	1
Methylene chloride		<5.00	µg/L	5
MTBE		<1.00	µg/L	1
trans-1,2-Dichloroethene		<1.00	µg/L	1
1,1-Dichloroethane		<1.00	µg/L	1
cis-1,2-Dichloroethene		<1.00	µg/L	1
2,2-Dichloropropane		<1.00	µg/L	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1
Chloroform		<1.00	µg/L	1
1,1,1-Trichloroethane		<1.00	µg/L	1
1,1-Dichloropropene		<1.00	µg/L	1
Benzene		<1.00	µg/L	1
Carbon Tetrachloride		<1.00	µg/L	1
1,2-Dichloropropane		<1.00	µg/L	1
Trichloroethene (TCE)		<1.00	µg/L	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1
Bromodichloromethane		<1.00	µg/L	1
2-Chloroethyl vinyl ether		<5.00	µg/L	5
cis-1,3-Dichloropropene		<1.00	µg/L	1
trans-1,3-Dichloropropene		<1.00	µg/L	1
Toluene		<1.00	µg/L	1
1,1,2-Trichloroethane		<1.00	µg/L	1
1,3-Dichloropropane		<1.00	µg/L	1
Dibromochloromethane		<1.00	µg/L	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1
Tetrachloroethene (PCE)		<1.00	µg/L	1
Chlorobenzene		<1.00	µg/L	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1
Ethylbenzene		<1.00	µg/L	1
m,p-Xylene		<1.00	µg/L	1
Bromoform		<1.00	µg/L	1
Styrene		<1.00	µg/L	1
o-Xylene		<1.00	µg/L	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1
2-Chlorotoluene		<1.00	µg/L	1
1,2,3-Trichloropropane		<1.00	µg/L	1
Isopropylbenzene		<1.00	µg/L	1
Bromobenzene		<1.00	µg/L	1
n-Propylbenzene		<1.00	µg/L	1

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Param	Flag	Results	Units	Reporting Limit
1,3,5-Trimethylbenzene		<1.00	µg/L	1
tert-Butylbenzene		<1.00	µg/L	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1
sec-Butylbenzene		<1.00	µg/L	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1
p-Isopropyltoluene		<1.00	µg/L	1
4-Chlorotoluene		<1.00	µg/L	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1
n-Butylbenzene		<1.00	µg/L	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	5
1,2,3-Trichlorobenzene		<5.00	µg/L	5
1,2,4-Trichlorobenzene		<5.00	µg/L	5
Naphthalene		<5.00	µg/L	5
Hexachlorobutadiene		<5.00	µg/L	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		45.3	µg/L	1	50	91	77 - 122
Toluene-d8		48.3	µg/L	1	50	97	96 - 111
4-Bromofluorobenzene		47.2	µg/L	1	50	94	87 - 113

Method Blank

QCBatch: QC24602

Param	Flag	Results	Units	Reporting Limit
Total Aluminum		<0.100	mg/L	0.10
Total Arsenic		<0.050	mg/L	0.05
Total Barium		<0.100	mg/L	0.10
Total Boron		<0.005	mg/L	0.005
Total Cadmium		<0.005	mg/L	0.005
Total Calcium		<0.5	mg/L	0.50
Total Chromium		<0.010	mg/L	0.01
Total Cobalt		<0.025	mg/L	0.02
Total Copper		<0.0125	mg/L	0.01
Total Iron		<0.050	mg/L	0.05
Total Lead		<0.010	mg/L	0.01
Total Magnesium		<0.5	mg/L	0.50
Total Manganese		<0.025	mg/L	0.02
Total Molybdenum		<0.050	mg/L	0.05
Total Nickel		<0.025	mg/L	0.02
Total Potassium		0.818	mg/L	0.50
Total Selenium		<0.030	mg/L	0.05
Total Silica		<0.050	mg/L	0.05
Total Silver		<0.0125	mg/L	0.01
Total Sodium		<0.5	mg/L	0.50
Total Zinc		<0.025	mg/L	0.02

Method Blank

QCBatch: QC24606

Param	Flag	Results	Units	Reporting Limit
Bromochloromethane		<1.00	µg/L	1
Dichlorodifluoromethane		<1.00	µg/L	1
Chloromethane (methyl chloride)		<1.00	µg/L	1
Vinyl Chloride		<1.00	µg/L	1
Bromomethane (methyl bromide)		<5.00	µg/L	5
Chloroethane		<1.00	µg/L	1
Trichlorofluoromethane		<1.00	µg/L	1
Acetone		<10.0	µg/L	10
Iodomethane (methyl iodide)		<5.00	µg/L	5
Carbon Disulfide		<1.00	µg/L	1
Acrylonitrile		<1.00	µg/L	1
2-Butanone (MEK)		<5.00	µg/L	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	5
2-hexanone		<5.00	µg/L	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	10
1,1-Dichloroethene		<1.00	µg/L	1
Methylene chloride		<5.00	µg/L	5
MTBE		<1.00	µg/L	1
trans-1,2-Dichloroethene		<1.00	µg/L	1
1,1-Dichloroethane		<1.00	µg/L	1
cis-1,2-Dichloroethene		<1.00	µg/L	1
1,2-Dichloropropane		<1.00	µg/L	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1
Chloroform		<1.00	µg/L	1
1,1,1-Trichloroethane		<1.00	µg/L	1
1,1-Dichloropropene		<1.00	µg/L	1
Benzene		<1.00	µg/L	1
Carbon Tetrachloride		<1.00	µg/L	1
1,2-Dichloropropane		<1.00	µg/L	1
Trichloroethene (TCE)		<1.00	µg/L	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1
Bromodichloromethane		<1.00	µg/L	1
2-Chloroethyl vinyl ether		<5.00	µg/L	5
cis-1,3-Dichloropropene		<1.00	µg/L	1
trans-1,3-Dichloropropene		<1.00	µg/L	1
Toluene		<1.00	µg/L	1
1,1,2-Trichloroethane		<1.00	µg/L	1
1,3-Dichloropropane		<1.00	µg/L	1
Dibromochloromethane		<1.00	µg/L	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1
Tetrachloroethene (PCE)		<1.00	µg/L	1
Chlorobenzene		<1.00	µg/L	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1
Ethylbenzene		<1.00	µg/L	1
m,p-Xylene		<1.00	µg/L	1
Bromoform		<1.00	µg/L	1
Styrene		<1.00	µg/L	1
o-Xylene		<1.00	µg/L	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1
2-Chlorotoluene		<1.00	µg/L	1
1,2,3-Trichloropropane		<1.00	µg/L	1

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Param	Flag	Results	Units	Reporting Limit
Isopropylbenzene		<1.00	µg/L	1
Bromobenzene		<1.00	µg/L	1
n-Propylbenzene		<1.00	µg/L	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1
tert-Butylbenzene		<1.00	µg/L	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1
sec-Butylbenzene		<1.00	µg/L	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1
p-Isopropyltoluene		<1.00	µg/L	1
4-Chlorotoluene		<1.00	µg/L	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1
n-Butylbenzene		<1.00	µg/L	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	5
1,2,3-Trichlorobenzene		<5.00	µg/L	5
1,2,4-Trichlorobenzene		<5.00	µg/L	5
Naphthalene		<5.00	µg/L	5
Hexachlorobutadiene		<5.00	µg/L	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		46.7	µg/L	1	50	93	77 - 122
Toluene-d8		49.4	µg/L	1	50	99	96 - 111
4-Bromofluorobenzene		45.6	µg/L	1	50	91	87 - 113

Method Blank QCBatch: QC24630

Param	Flag	Results	Units	Reporting Limit
Hydroxide Alkalinity		<1.0	mg/L as CaCo3	1
Carbonate Alkalinity		<1.0	mg/L as CaCo3	1
Bicarbonate Alkalinity		<4.0	mg/L as CaCo3	4
Total Alkalinity		<4.0	mg/L as CaCo3	4

Method Blank QCBatch: QC24656

Param	Flag	Results	Units	Reporting Limit
Hydroxide Alkalinity		<1.0	mg/L as CaCo3	1
Carbonate Alkalinity		<1.0	mg/L as CaCo3	1
Bicarbonate Alkalinity		<4.0	mg/L as CaCo3	4
Total Alkalinity		<4.0	mg/L as CaCo3	4

Method Blank QCBatch: QC24662

Param	Flag	Results	Units	Reporting Limit
Pyridine		<0.005	mg/L	0.005
n-Nitrosodimethylamine		<0.005	mg/L	0.005
2-Picoline		<0.005	mg/L	0.005
Methyl methanesulfonate		<0.005	mg/L	0.005
Ethyl methanesulfonate		<0.005	mg/L	0.005
Phenol		<0.005	mg/L	0.005
Aniline		<0.005	mg/L	0.005
bis (2-chloroethyl) ether		<0.005	mg/L	0.005
2-Chlorophenol		<0.005	mg/L	0.005
1,3-Dichlorobenzene (meta)		<0.005	mg/L	0.005
1,4-Dichlorobenzene		<0.005	mg/L	0.005
Benzyl alcohol		<0.005	mg/L	0.005
1,2-Dichlorobenzene		<0.005	mg/L	0.005
2-Methylphenol		<0.005	mg/L	0.005
bis (2-chloroisopropyl) ether		<0.005	mg/L	0.005
4-Methylphenol/3-Methylphenol		<0.005	mg/L	0.005
Acetophenone		<0.005	mg/L	0.005
n-Nitrosodi-n-propylamine		<0.005	mg/L	0.005
Hexachloroethane		<0.005	mg/L	0.005
Nitrobenzene		<0.005	mg/L	0.005
n-Nitrosopiperidine		<0.005	mg/L	0.005
Isophorone		<0.005	mg/L	0.005
2-Nitrophenol		<0.005	mg/L	0.005
2,4-Dimethylphenol		<0.005	mg/L	0.005
bis (2-chloroethoxy) methane		<0.005	mg/L	0.005
Benzoic acid		<0.005	mg/L	0.005
2,4-Dichlorophenol		<0.005	mg/L	0.005
1,2,4-Trichlorobenzene		<0.005	mg/L	0.005
a,a-Dimethylphenethylamine		<0.005	mg/L	0.005
Naphthalene		<0.005	mg/L	0.005
4-Chloroaniline		<0.005	mg/L	0.005
2,6-Dichlorophenol		<0.005	mg/L	0.005
Hexachlorobutadiene		<0.005	mg/L	0.005
n-Nitroso-di-n-butylamine		<0.005	mg/L	0.005
4-Chloro-3-methylphenol		<0.005	mg/L	0.005
1-Methylnaphthalene		<0.005	mg/L	0.005
2-Methylnaphthalene		<0.005	mg/L	0.005
1,2,4,5-Tetrachlorobenzene		<0.005	mg/L	0.005
Hexachlorocyclopentadiene		<0.005	mg/L	0.005
2,4,6-Trichlorophenol		<0.005	mg/L	0.005
2,4,5-Trichlorophenol		<0.005	mg/L	0.005
2-Chloronaphthalene		<0.005	mg/L	0.005
1-Chloronaphthalene		<0.005	mg/L	0.005
2-Nitroaniline		<0.005	mg/L	0.005
Dimethylphthalate		<0.005	mg/L	0.005
Acenaphthylene		<0.005	mg/L	0.005
2,6-Dinitrotoluene		<0.005	mg/L	0.005
3-Nitroaniline		<0.005	mg/L	0.005
Acenaphthene		<0.005	mg/L	0.005
2,4-Dinitrophenol		<0.005	mg/L	0.005
isobenzofuran		<0.005	mg/L	0.005
Pentachlorobenzene		<0.005	mg/L	0.005

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Param	Flag	Results	Units	Reporting Limit
4-Nitrophenol		<0.005	mg/L	0.005
1-Naphthylamine		<0.005	mg/L	0.005
2,4-Dinitrotoluene		<0.005	mg/L	0.005
2-Naphthylamine		<0.005	mg/L	0.005
2,3,4,6-Tetrachlorophenol		<0.005	mg/L	0.005
Fluorene		<0.005	mg/L	0.005
Diethylphthalate		<0.005	mg/L	0.005
4-Chlorophenyl-phenylether		<0.005	mg/L	0.005
4-Nitroaniline		<0.005	mg/L	0.005
4,6-Dinitro-2-methylphenol		<0.005	mg/L	0.005
Diphenylamine		<0.005	mg/L	0.005
Diphenylhydrazine		<0.005	mg/L	0.005
4-Bromophenyl-phenylether		<0.005	mg/L	0.005
Phenacetin		<0.005	mg/L	0.005
Hexachlorobenzene		<0.005	mg/L	0.005
4-Aminobiphenyl		<0.005	mg/L	0.005
Pentachlorophenol		<0.005	mg/L	0.005
Pentachloronitrobenzene		<0.005	mg/L	0.005
Pronamide		<0.005	mg/L	0.005
Phenanthrene		<0.005	mg/L	0.005
Anthracene		<0.005	mg/L	0.005
Di-n-butylphthalate		<0.005	mg/L	0.005
Fluoranthene		<0.005	mg/L	0.005
Benzydine		<0.005	mg/L	0.005
Pyrene		<0.005	mg/L	0.005
p-Dimethylaminoazobenzene		<0.005	mg/L	0.005
Butylbenzylphthalate		<0.005	mg/L	0.005
Benzo(a)anthracene		<0.005	mg/L	0.005
3,3-Dichlorobenzidine		<0.005	mg/L	0.005
Chrysene		<0.005	mg/L	0.005
Bis (2-ethylhexyl) phthalate		<0.005	mg/L	0.005
Di-n-octylphthalate		<0.005	mg/L	0.005
Benzo(b)fluoranthene		<0.005	mg/L	0.005
7,12-Dimethylbenz(a)anthracene		<0.005	mg/L	0.005
Benzo(k)fluoranthene		<0.005	mg/L	0.005
Benzo(a)pyrene		<0.005	mg/L	0.005
3-Methylcholanthrene		<0.005	mg/L	0.005
Dibenzo(a,j)acridine		<0.005	mg/L	0.005
Indeno(1,2,3-cd)pyrene		<0.005	mg/L	0.005
Dibenzo(a,h)anthracene		<0.005	mg/L	0.005
Benzo(g,h,i)perylene		<0.005	mg/L	0.005

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		16.35	mg/L	1	80	20	0 - 66
Phenol-d5		27.07	mg/L	1	80	33	0 - 70
Nitrobenzene-d5		74.9	mg/L	1	80	93	23 - 99
2-Fluorobiphenyl		74	mg/L	1	80	92	27 - 95
4,6-Tribromophenol		29.64	mg/L	1	80	37	0 - 199
Terphenyl-d14		89.45	mg/L	1	80	111	20 - 96

Method Blank

QCBatch: QC24675

Param	Flag	Results	Units	Reporting Limit
Total Aluminum		<0.100	mg/L	0.10
Total Arsenic		<0.050	mg/L	0.05
Total Barium		<0.100	mg/L	0.10
Total Boron		<0.005	mg/L	0.005
Total Cadmium		<0.005	mg/L	0.005
Total Calcium		<0.5	mg/L	0.50
Total Chromium		<0.010	mg/L	0.01
Total Cobalt		<0.025	mg/L	0.02
Total Copper		<0.0125	mg/L	0.01
Total Iron		<0.050	mg/L	0.05
Total Lead		<0.010	mg/L	0.01
Total Magnesium		<0.5	mg/L	0.50
Total Manganese		<0.025	mg/L	0.02
Total Molybdenum		<0.050	mg/L	0.05
Total Nickel		<0.025	mg/L	0.02
Total Potassium		0.818	mg/L	0.50
Total Selenium		<0.050	mg/L	0.05
Total Silica		<0.050	mg/L	0.05
Total Silver		<0.0125	mg/L	0.01
Total Sodium		<0.5	mg/L	0.50
Total Zinc		<0.025	mg/L	0.02

Method Blank

QCBatch: QC24683

Param	Flag	Results	Units	Reporting Limit
Dissolved Calcium		<0.5	mg/L	0.50
Dissolved Magnesium		<0.5	mg/L	0.50
Dissolved Potassium		1.18	mg/L	0.50
Dissolved Sodium		<0.5	mg/L	0.50

**Quality Control Report
Duplicate Samples**

Duplicate

QCBatch: QC24442

Param	Flag	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Total Dissolved Solids		886	860	mg/L	1	2	9.7

Duplicate

QCBatch: QC24446

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Param	Flag	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Param	Flag	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Specific Conductance		1730	1700	μ MHOS/cm	1	1	20

Duplicate QCBatch: QC24447

Param	Flag	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Specific Conductance		2230	2210	μ MHOS/cm	1	0	20

Duplicate QCBatch: QC24525

Param	Flag	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
pH		8.7	8.7	s.u.	1	0	0

Duplicate QCBatch: QC24540

Param	Flag	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
pH		7.3	7.3	s.u.	1	0	0

Duplicate QCBatch: QC24630

Param	Flag	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Hydroxide Alkalinity		<1.0	<1.0	mg/L as CaCo3	1	0	9.2
Carbonate Alkalinity		<1.0	<1.0	mg/L as CaCo3	1	0	9.2
Bicarbonate Alkalinity		46	48	mg/L as CaCo3	1	4	9.2
Total Alkalinity		46	48	mg/L as CaCo3	1	4	9.2

Duplicate QCBatch: QC24656

Param	Flag	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Hydroxide Alkalinity		<1.0	<1.0	mg/L as CaCo3	1	0	9.2
Carbonate Alkalinity		<1.0	<1.0	mg/L as CaCo3	1	0	9.2
Bicarbonate Alkalinity		206	202	mg/L as CaCo3	1	1	9.2
Total Alkalinity		206	202	mg/L as CaCo3	1	1	9.2

Quality Control Report Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes

QCBatch: QC24431

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	12.49	12.51	mg/L	1	12.50	<1.0	99	0	90 - 110	20
Fluoride	2.40	2.38	mg/L	1	2.50	<0.2	96	0	90 - 110	20
Nitrate-N	2.47	2.47	mg/L	1	2.50	<0.2	98	0	90 - 110	20
Sulfate	12.75	12.74	mg/L	1	12.50	<1.0	102	0	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC24432

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	12.45	12.47	mg/L	1	12.50	<1.0	99	0	90 - 110	20
Fluoride	2.35	2.39	mg/L	1	2.50	<0.2	94	1	90 - 110	20
Nitrate-N	2.44	2.46	mg/L	1	2.50	<0.2	97	0	90 - 110	20
Sulfate	12.76	12.68	mg/L	1	12.50	<1.0	102	0	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC24464

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Arsenic	0.511	0.504	mg/L	1	0.50	<0.050	102	1	75 - 125	20
Total Barium	1.01	1	mg/L	1	1	<0.100	101	1	75 - 125	20
Total Cadmium	0.258	0.256	mg/L	1	0.25	<0.005	103	1	75 - 125	20
Total Chromium	0.102	0.101	mg/L	1	0.10	<0.010	102	1	75 - 125	20
Total Copper	0.126	0.127	mg/L	1	0.12	<0.0125	101	1	75 - 125	20
Total Lead	0.514	0.507	mg/L	1	0.50	<0.010	103	1	75 - 125	20
Total Selenium	0.472	0.463	mg/L	1	0.50	<0.050	94	2	75 - 125	20
Total Silver	0.123	0.122	mg/L	1	0.12	<0.0125	98	1	75 - 125	20
Total Zinc	0.256	0.254	mg/L	1	0.25	<0.025	102	1	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC24469

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
TRPHC	8.79	8.92	mg/L	1	8.50	<0.500	103	1	85 - 117	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC24482

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	11.95	11.95	mg/L	1	12.50	<1.0	95	0	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC24486

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	12.01	11.86	mg/L	1	12.50	<1.0	96	1	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC24561

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Mercury	⁹ 0.00114	0.00114	mg/L	1	0.001	<0.0002	114	0	87 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC24563

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Nitrate-N	¹⁰ 2.45	¹¹ 2.39	mg/L	1	2.50	<0.2	98	2	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC24581

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
1,1-Dichloroethene	88.2	89.3	µg/L	1	100	<1.00	88	1	84 - 124	20
Benzene	99.8	99.7	µg/L	1	100	<1.00	100	0	87 - 112	20
Trichloroethene (TCE)	94.9	95.5	µg/L	1	100	<1.00	95	1	81 - 105	20
Toluene	102	103	µg/L	1	100	<1.00	102	1	90 - 108	20
Chlorobenzene	101	101	µg/L	1	100	<1.00	101	0	84 - 115	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

⁹ms recovery invalid due to matrix effect

¹⁰The sample spiked was not reported. MS%EA = 95 and RPD = 1

¹¹The sample spiked was not reported. MS%EA = 95 and RPD = 1

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Dibromofluoromethane	44.4	44.4	µg/L	1	50	89	89	77 - 122
Toluene-d8	48.4	48.8	µg/L	1	50	97	98	96 - 111
4-Bromofluorobenzene	47.5	47.3	µg/L	1	50	95	95	87 - 113

Laboratory Control Spikes

QCBatch: QC24602

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Aluminum	1.03	1.05	mg/L	1	1	<0.100	103	2	75 - 125	20
Total Arsenic	0.538	0.545	mg/L	1	0.50	<0.050	108	1	75 - 125	20
Total Barium	1.03	1.04	mg/L	1	1	<0.100	103	1	75 - 125	20
Total Boron	0.0497	0.0496	mg/L	1	0.05	<0.005	99	0	75 - 125	20
Total Cadmium	0.256	0.258	mg/L	1	0.25	<0.005	102	1	75 - 125	20
Total Calcium	87.3	89.5	mg/L	1	100	<0.5	87	2	75 - 125	20
Total Chromium	0.104	0.106	mg/L	1	0.10	<0.010	104	2	75 - 125	20
Total Cobalt	0.257	0.259	mg/L	1	0.25	<0.025	103	1	75 - 125	20
Total Copper	0.128	0.128	mg/L	1	0.12	<0.0125	102	0	75 - 125	20
Total Iron	0.518	0.525	mg/L	1	0.50	<0.050	104	1	75 - 125	20
Total Lead	0.514	0.523	mg/L	1	0.50	<0.010	103	2	75 - 125	20
Total Magnesium	87.7	92.4	mg/L	1	100	<0.5	87	5	75 - 125	20
Total Manganese	0.264	0.266	mg/L	1	0.25	<0.025	106	1	75 - 125	20
Total Molybdenum	0.531	0.537	mg/L	1	0.50	<0.050	106	1	75 - 125	20
Total Nickel	0.257	0.260	mg/L	1	0.25	<0.025	103	1	75 - 125	20
Total Potassium	93.8	92.9	mg/L	1	100	0.818	93	0	75 - 125	20
Total Selenium	0.486	0.495	mg/L	1	0.50	<0.030	97	2	75 - 125	20
Total Silica	0.460	0.466	mg/L	1	0.50	<0.050	92	1	75 - 125	20
Total Silver	0.125	0.127	mg/L	1	0.12	<0.0125	100	2	75 - 125	20
Total Sodium	95.2	91.0	mg/L	1	100	<0.5	95	4	75 - 125	20
Total Zinc	0.238	0.242	mg/L	1	0.25	<0.025	95	2	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC24606

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
1,1-Dichloroethene	95.3	96.1	µg/L	1	100	<1.00	95	1	84 - 124	20
Benzene	105	105	µg/L	1	100	<1.00	105	0	87 - 112	20
Trichloroethene (TCE)	96.0	97.2	µg/L	1	100	<1.00	96	1	81 - 105	20
Toluene	108	109	µg/L	1	100	<1.00	108	1	90 - 108	20
Chlorobenzene	103	105	µg/L	1	100	<1.00	103	2	84 - 115	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Dibromofluoromethane	46.7	46.6	µg/L	1	50	93	93	77 - 122
Toluene-d8	48.7	48.9	µg/L	1	50	97	98	96 - 111
Bromofluorobenzene	45.8	45.6	µg/L	1	50	92	91	87 - 113

Laboratory Control Spikes

QCBatch: QC24662

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Phenol	26.62	24.28	mg/L	1	80	<0.005	33	4	0 - 81	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
2-Fluorophenol	38.08	27.86	mg/L	1	80	47	34	0 - 66
Phenol-d5	35.46	29.56	mg/L	1	80	44	36	0 - 70
Nitrobenzene-d5	76.3	68.02	mg/L	1	80	95	85	23 - 99
2-Fluorobiphenyl	71.79	64.05	mg/L	1	80	89	80	27 - 95
2,4,6-Tribromophenol	83.72	74.65	mg/L	1	80	104	93	0 - 199
Terphenyl-d14	81.76	72.59	mg/L	1	80	102	90	20 - 96

Laboratory Control Spikes

QCBatch: QC24675

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Aluminum	1.03	1.05	mg/L	1	1	<0.100	103	2	75 - 125	20
Total Arsenic	0.538	0.545	mg/L	1	0.50	<0.050	108	1	75 - 125	20
Total Barium	1.03	1.04	mg/L	1	1	<0.100	103	1	75 - 125	20
Total Boron	0.0497	0.0496	mg/L	1	0.05	<0.005	99	0	75 - 125	20
Total Cadmium	0.256	0.258	mg/L	1	0.25	<0.005	102	1	75 - 125	20
Total Calcium	87.3	89.5	mg/L	1	100	<0.5	87	2	75 - 125	20
Total Chromium	0.104	0.106	mg/L	1	0.10	<0.010	104	2	75 - 125	20
Total Cobalt	0.257	0.259	mg/L	1	0.25	<0.025	103	1	75 - 125	20
Total Copper	0.128	0.128	mg/L	1	0.12	<0.0125	102	0	75 - 125	20
Total Iron	0.518	0.525	mg/L	1	0.50	<0.050	104	1	75 - 125	20
Total Lead	0.514	0.523	mg/L	1	0.50	<0.010	103	2	75 - 125	20
Total Magnesium	87.7	92.4	mg/L	1	100	<0.5	87	5	75 - 125	20
Total Manganese	0.264	0.266	mg/L	1	0.25	<0.025	106	1	75 - 125	20
Total Molybdenum	0.531	0.537	mg/L	1	0.50	<0.050	106	1	75 - 125	20
Total Nickel	0.257	0.260	mg/L	1	0.25	<0.025	103	1	75 - 125	20
Total Potassium	93.8	92.9	mg/L	1	100	0.818	93	0	75 - 125	20
Total Selenium	0.486	0.495	mg/L	1	0.50	<0.050	97	2	75 - 125	20
Total Silica	0.460	0.466	mg/L	1	0.50	<0.050	92	1	75 - 125	20
Total Silver	0.125	0.127	mg/L	1	0.12	<0.0125	100	2	75 - 125	20
Total Sodium	95.2	91.0	mg/L	1	100	<0.5	95	4	75 - 125	20
Total Zinc	0.238	0.242	mg/L	1	0.25	<0.025	95	1	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC24683

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Dissolved Calcium	85.3	86.1	mg/L	1	100	<0.5	85	0	75 - 125	20
Dissolved Magnesium	83.6	86.0	mg/L	1	100	<0.5	83	2	75 - 125	20
Dissolved Potassium	93.6	89.5	mg/L	1	100	1.18	93	4	75 - 125	20
Dissolved Sodium	96.9	98.6	mg/L	1	100	<0.5	96	1	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Matrix Spikes and Duplicate Spikes

Matrix Spikes QCBatch: QC24431

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	8992	8976	mg/L	1	6250	3390	89	0	48 - 127	20
Fluoride	1204	1202	mg/L	1	1250	2.14	96	0	82 - 101	20
Nitrate-N	1168	1164	mg/L	1	1250	<1.0	93	0	87 - 100	20
Sulfate	6110	6162	mg/L	1	6250	1.03	96	0	59 - 121	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC24432

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	1200	1192	mg/L	1	1250	58.2	91	0	48 - 127	20
Fluoride	248	251	mg/L	1	250	1.60	98	1	82 - 101	20
Nitrate-N	238	239	mg/L	1	250	3.87	93	0	87 - 100	20
Sulfate	4275	4260	mg/L	1	1250	3120	92	1	59 - 121	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC24464

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Arsenic	0.528	0.561	mg/L	1	0.50	0.0733	106	6	75 - 125	20
Total Chromium	0.193	0.203	mg/L	1	0.10	0.101	92	5	75 - 125	20
Total Lead	2.66	2.77	mg/L	1	0.50	2.14	104	4	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC24482

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	417	418	mg/L	1	125	304	90	0	48 - 127	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC24486

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	24560	24550	mg/L	1	12500	12400	97	0	48 - 127	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC24561

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Mercury	¹² 0.00692	0.00669	mg/L	1	0.001	0.00545	147	16	40 - 177	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC24602

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Aluminum	¹³ 8.48	7.42	mg/L	1	1	7.02	145	11	75 - 125	20
Total Arsenic	0.583	0.574	mg/L	1	0.50	<0.050	116	1	75 - 125	20
Total Barium	1.30	1.21	mg/L	1	1	0.239	106	8	75 - 125	20
Total Boron	0.589	0.548	mg/L	1	0.05	0.539	99	2	75 - 125	20
Total Cadmium	0.264	0.245	mg/L	1	0.25	<0.005	105	7	75 - 125	20
Total Calcium	272	255	mg/L	1	100	153	119	15	75 - 125	20
Total Chromium	0.201	0.191	mg/L	1	0.10	0.0939	107	9	75 - 125	20
Total Cobalt	0.278	0.264	mg/L	1	0.25	<0.025	111	5	75 - 125	20
Total Copper	0.140	0.126	mg/L	1	0.12	<0.0125	112	10	75 - 125	20
Total Iron	¹⁴ 6.38	5.89	mg/L	1	0.50	6.08	60	8	75 - 125	20
Total Lead	0.582	0.550	mg/L	1	0.50	<0.010	116	5	75 - 125	20
Total Magnesium	¹⁵ 144	131	mg/L	1	100	20.3	123	11	75 - 125	20
Total Manganese	0.352	0.320	mg/L	1	0.25	0.0668	114	11	75 - 125	20
Total Molybdenum	0.539	0.505	mg/L	1	0.50	<0.050	107	6	75 - 125	20
Total Nickel	0.270	0.260	mg/L	1	0.25	<0.025	108	3	75 - 125	20
Total Potassium	¹⁶ 152	¹⁷ 140	mg/L	1	100	7.25	144	8	75 - 125	20
Total Selenium	0.481	0.480	mg/L	1	0.50	<0.050	96	0	75 - 125	20
Total Silica	¹⁸ 39.5	35.9	mg/L	1	0.50	38.8	135	3	75 - 125	20
Total Silver	0.146	0.136	mg/L	1	0.12	<0.0125	116	7	75 - 125	20
Total Sodium	326	297	mg/L	1	100	214	112	29	75 - 125	20
Total Zinc	¹⁹ 0.131	0.141	mg/L	1	0.25	<0.025	52	7	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

¹²ms recovery invalid due to matrix effect

¹³Matrix spike recovery invalid due to required dilution. LCS demonstrates process under control.

¹⁴Matrix spike recovery invalid due to required dilution. LCS demonstrates process under control.

¹⁵ms recovery invalid due to matrix effect/dilution factor

¹⁶ms recovery invalid due to matrix effect/dilution factor

¹⁷ms recovery invalid due to matrix effect/dilution factor

¹⁸Matrix spike recovery invalid due to required dilution. LCS demonstrates process under control.

¹⁹Matrix spike recovery invalid due to matrix effects. LCS demonstrates process under control.

Matrix Spikes

QCBatch: QC24675

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Aluminum	7.43	7.32	mg/L	1	1	6.42	101	11	75 - 125	20
Total Arsenic	0.573	0.552	mg/L	1	0.50	<0.050	114	3	75 - 125	20
Total Barium	1.14	1.12	mg/L	1	1	<0.100	114	1	75 - 125	20
Total Boron	²⁰ 0.427	0.423	mg/L	1	0.05	0.405	43	20	75 - 125	20
Total Cadmium	0.245	0.244	mg/L	1	0.25	<0.005	98	0	75 - 125	20
Total Calcium	220	208	mg/L	1	100	115	105	12	75 - 125	20
Total Chromium	0.131	0.129	mg/L	1	0.10	0.0292	101	1	75 - 125	20
Total Cobalt	0.272	0.266	mg/L	1	0.25	<0.025	108	2	75 - 125	20
Total Copper	0.124	0.124	mg/L	1	0.12	<0.0125	99	0	75 - 125	20
Total Iron	²¹ 4.93	4.82	mg/L	1	0.50	4.61	64	4	75 - 125	20
Total Lead	0.534	0.536	mg/L	1	0.50	<0.010	106	0	75 - 125	20
Total Magnesium	²² 152	130	mg/L	1	100	19.0	133	18	75 - 125	20
Total Manganese	0.310	0.307	mg/L	1	0.25	0.0498	104	1	75 - 125	20
Total Molybdenum	0.516	0.521	mg/L	1	0.50	<0.050	103	0	75 - 125	20
Total Nickel	0.270	0.264	mg/L	1	0.25	<0.025	108	2	75 - 125	20
Total Potassium	²³ 187	²⁴ 188	mg/L	1	100	8.49	178	0	75 - 125	20
Total Selenium	0.458	0.478	mg/L	1	0.50	<0.050	91	4	75 - 125	20
Total Silica	²⁵ 38.7	37.7	mg/L	1	0.50	37.7	196	2	75 - 125	20
Total Silver	0.130	0.125	mg/L	1	0.12	<0.0125	104	3	75 - 125	20
Total Sodium	302	282	mg/L	1	100	197	105	21	75 - 125	20
Total Zinc	0.228	0.197	mg/L	1	0.25	<0.025	91	14	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes

QCBatch: QC24683

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Dissolved Calcium	²⁶ 977	1050	mg/L	1	100	968	9	2	75 - 125	20
Dissolved Magnesium	²⁷ 432	²⁸ 497	mg/L	1	100	475	-43	6	75 - 125	20
Dissolved Potassium	²⁹ 248	³⁰ 195	mg/L	1	100	49.4	198	20	75 - 125	20
Dissolved Sodium	³¹ 7660	³² 7940	mg/L	1	100	6380	1280	19	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Continuing Calibration Verification Standards

²⁰Matrix spike recovery invalid due to required dilution. LCS demonstrates process under control.

²¹Matrix spike recovery invalid due to required dilution. LCS demonstrates process under control.

²²ms recovery invalid due to matrix effect/dilution factor

²³ms recovery invalid due to matrix effect/dilution factor

²⁴ms recovery invalid due to matrix effect/dilution factor

²⁵Matrix spike recovery invalid due to required dilution. LCS demonstrates process under control.

²⁶MS RECOVERY INVALID DUE TO MATRIX EFFECT/ DILUTION FACTOR.

²⁷MS RECOVERY INVALID DUE TO MATRIX EFFECT/ DILUTION FACTOR.

²⁸MS RECOVERY INVALID DUE TO MATRIX EFFECT/ DILUTION FACTOR.

²⁹MS RECOVERY INVALID DUE TO MATRIX EFFECT/ DILUTION FACTOR.

³⁰MS RECOVERY INVALID DUE TO MATRIX EFFECT/ DILUTION FACTOR.

³¹MS RECOVERY INVALID DUE TO MATRIX EFFECT/ DILUTION FACTOR.

³²MS RECOVERY INVALID DUE TO MATRIX EFFECT/ DILUTION FACTOR.

CCV (1) QCBatch: QC24431

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	12.46	99	90 - 110	10/23/02
Fluoride		mg/L	2.50	2.39	95	90 - 110	10/23/02
Nitrate-N		mg/L	2.50	2.48	99	90 - 110	10/23/02
Sulfate		mg/L	12.50	12.79	102	90 - 110	10/23/02

ICV (1) QCBatch: QC24431

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	12.46	99	90 - 110	10/23/02
Fluoride		mg/L	2.50	2.38	95	90 - 110	10/23/02
Nitrate-N		mg/L	2.50	2.47	98	90 - 110	10/23/02
Sulfate		mg/L	12.50	12.80	102	90 - 110	10/23/02

CCV (1) QCBatch: QC24432

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	12.43	99	90 - 110	10/23/02
Fluoride		mg/L	2.50	2.34	93	90 - 110	10/23/02
Nitrate-N		mg/L	2.50	2.46	98	90 - 110	10/23/02
Sulfate		mg/L	12.50	12.70	101	90 - 110	10/23/02

ICV (1) QCBatch: QC24432

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	12.46	99	90 - 110	10/23/02
Fluoride		mg/L	2.50	2.39	95	90 - 110	10/23/02
Nitrate-N		mg/L	2.50	2.48	99	90 - 110	10/23/02
Sulfate		mg/L	12.50	12.79	102	90 - 110	10/23/02

CCV (1) QCBatch: QC24442

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Dissolved Solids		mg/L	1000	1004	100	90 - 110	10/25/02

ICV (1) QCBatch: QC24442

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Dissolved Solids		mg/L	1000	1007	100	90 - 110	10/25/02

CCV (1) QCBatch: QC24446

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Specific Conductance		μ MHOS/cm	1412	1496	105	90 - 110	10/25/02

ICV (1) QCBatch: QC24446

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Specific Conductance		μ MHOS/cm	1409	1453	103	90 - 110	10/25/02

CCV (1) QCBatch: QC24447

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Specific Conductance		μ MHOS/cm	1409	1503	106	90 - 110	10/25/02

ICV (1) QCBatch: QC24447

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Specific Conductance		μ MHOS/cm	1412	1496	105	90 - 110	10/25/02

CCV (1) QCBatch: QC24464

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Arsenic		mg/L	1	0.997	100	90 - 110	10/27/02
Total Barium		mg/L	2	1.97	98	90 - 110	10/27/02
Total Cadmium		mg/L	0.50	0.493	99	90 - 110	10/27/02
Total Chromium		mg/L	0.20	0.199	100	90 - 110	10/27/02

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Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Copper		mg/L	0.25	0.253	101	90 - 110	10/27/02
Total Lead		mg/L	1	0.994	99	90 - 110	10/27/02
Total Selenium		mg/L	1	0.983	98	90 - 110	10/27/02
Total Silver		mg/L	0.25	0.249	100	90 - 110	10/27/02
Total Zinc		mg/L	0.50	0.490	98	90 - 110	10/27/02

ICV (1) QCBatch: QC24464

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Arsenic		mg/L	1	0.91	99	90 - 110	10/27/02
Total Barium		mg/L	2	1.96	98	90 - 110	10/27/02
Total Cadmium		mg/L	0.50	0.492	98	90 - 110	10/27/02
Total Chromium		mg/L	0.20	0.198	99	90 - 110	10/27/02
Total Copper		mg/L	0.25	0.243	97	90 - 110	10/27/02
Total Lead		mg/L	1	0.968	97	90 - 110	10/27/02
Total Selenium		mg/L	1	0.978	98	90 - 110	10/27/02
Total Silver		mg/L	0.25	0.244	98	90 - 110	10/27/02
Total Zinc		mg/L	0.50	0.492	98	90 - 110	10/27/02

CCV (1) QCBatch: QC24469

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TRPHC		mg/L	100	103	103	75 - 125	10/28/02

CCV (2) QCBatch: QC24469

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TRPHC		mg/L	100	105	105	75 - 125	10/28/02

ICV (1) QCBatch: QC24469

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TRPHC		mg/L	100	99.7	99	75 - 125	10/28/02

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CCV (1) QCBatch: QC24482

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	11.94	95	90 - 110	10/25/02

ICV (1) QCBatch: QC24482

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	12.03	96	90 - 110	10/25/02

CCV (1) QCBatch: QC24486

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	11.82	94	90 - 110	10/25/02

ICV (1) QCBatch: QC24486

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	11.94	95	90 - 110	10/25/02

CCV (1) QCBatch: QC24525

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		s.u.	7	7.0	100	-0.1 s.u. - +0.1 s.u.	10/23/02

ICV (1) QCBatch: QC24525

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		s.u.	7	7.0	100	-0.1 s.u. - +0.1 s.u.	10/23/02

CCV (1) QCBatch: QC24540

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		s.u.	7	7.0	100	-0.1 s.u. - +0.1 s.u.	10/23/02

ICV (1) QCBatch: QC24540

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		s.u.	7	7.0	100	-0.1 s.u. - +0.1 s.u.	10/23/02

CCV (1) QCBatch: QC24561

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Mercury		mg/L	0.001	0.00095	95	80 - 120	10/29/02

ICV (1) QCBatch: QC24561

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Mercury		mg/L	0.001	0.00097	97	80 - 120	10/29/02

CCV (1) QCBatch: QC24563

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Nitrate-N		mg/L	2.50	2.40	96	90 - 110	10/29/02

ICV (1) QCBatch: QC24563

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Nitrate-N		mg/L	2.50	2.44	97	90 - 110	10/29/02

CCV (1) QCBatch: QC24581

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/L	50	41.0	82	80 - 120	10/29/02
1,1-Dichloroethene		µg/L	50	44.0	88	80 - 120	10/29/02
Chloroform		µg/L	50	47.0	94	80 - 120	10/29/02
1,2-Dichloropropane		µg/L	50	52.0	104	80 - 120	10/29/02
Toluene		µg/L	50	51.0	102	80 - 120	10/29/02
Chlorobenzene		µg/L	50	52.0	104	80 - 120	10/29/02
Ethylbenzene		µg/L	50	52.0	104	80 - 120	10/29/02
Dibromofluoromethane		µg/L	50	43.7	87	80 - 120	10/29/02
Toluene-d8		µg/L	50	49.1	98	80 - 120	10/29/02
4-Bromofluorobenzene		µg/L	50	48.2	96	80 - 120	10/29/02

CCV (1) QCBatch: QC24602

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Aluminum		mg/L	2	1.88	94	90 - 110	10/31/02
Total Arsenic		mg/L	1	0.930	93	90 - 110	10/31/02
Total Barium		mg/L	2	1.87	94	90 - 110	10/31/02
Total Boron		mg/L	0.10	0.0972	97	90 - 110	10/31/02
Total Cadmium		mg/L	0.50	0.464	93	90 - 110	10/31/02
Total Calcium		mg/L	25	25.9	103	90 - 110	10/31/02
Total Chromium		mg/L	0.20	0.188	94	90 - 110	10/31/02
Total Cobalt		mg/L	0.50	0.463	93	90 - 110	10/31/02
Total Copper		mg/L	0.25	0.233	93	90 - 110	10/31/02
Total Iron		mg/L	1	0.936	94	90 - 110	10/31/02
Total Lead		mg/L	1	0.923	92	90 - 110	10/31/02
Total Magnesium		mg/L	25	26.2	104	90 - 110	10/31/02
Total Manganese		mg/L	0.50	0.468	94	90 - 110	10/31/02
Total Molybdenum		mg/L	1	0.930	93	90 - 110	10/31/02
Total Nickel		mg/L	0.50	0.462	92	90 - 110	10/31/02
Total Potassium		mg/L	25	27.3	109	90 - 110	10/31/02
Total Selenium		mg/L	1	0.941	94	90 - 110	10/31/02
Total Silica		mg/L	1	0.940	94	90 - 110	10/31/02
Total Silver		mg/L	0.25	0.234	94	90 - 110	10/31/02
Total Sodium		mg/L	25	27.3	109	90 - 110	10/31/02
Total Zinc		mg/L	0.50	0.454	91	90 - 110	10/31/02

ICV (1) QCBatch: QC24602

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Aluminum		mg/L	2	2.01	100	90 - 110	10/31/02
Total Arsenic		mg/L	1	1.02	102	90 - 110	10/31/02
Total Barium		mg/L	2	2.00	100	90 - 110	10/31/02

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Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Boron		mg/L	0.10	0.104	104	90 - 110	10/31/02
Total Cadmium		mg/L	0.50	0.500	100	90 - 110	10/31/02
Total Calcium		mg/L	25	24.6	98	90 - 110	10/31/02
Total Chromium		mg/L	0.20	0.199	100	90 - 110	10/31/02
Total Cobalt		mg/L	0.50	0.495	99	90 - 110	10/31/02
Total Copper		mg/L	0.25	0.247	99	90 - 110	10/31/02
Total Iron		mg/L	1	1.00	100	90 - 110	10/31/02
Total Lead		mg/L	1	0.990	99	90 - 110	10/31/02
Total Magnesium		mg/L	25	24.7	98	90 - 110	10/31/02
Total Manganese		mg/L	0.50	0.499	100	90 - 110	10/31/02
Total Molybdenum		mg/L	1	0.992	99	90 - 110	10/31/02
Total Nickel		mg/L	0.50	0.499	100	90 - 110	10/31/02
Total Potassium		mg/L	25	26.5	106	90 - 110	10/31/02
Total Selenium		mg/L	1	0.998	100	90 - 110	10/31/02
Total Silica		mg/L	1	0.991	99	90 - 110	10/31/02
Total Silver		mg/L	0.25	0.248	99	90 - 110	10/31/02
Total Sodium		mg/L	25	25.6	102	90 - 110	10/31/02
Total Zinc		mg/L	0.50	0.512	102	90 - 110	10/31/02

CCV (1)

QCBatch: QC24606

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/L	50	48.0	96	80 - 120	10/30/02
1,1-Dichloroethene		µg/L	50	45.0	90	80 - 120	10/30/02
Chloroform		µg/L	50	50.0	100	80 - 120	10/30/02
1,2-Dichloropropane		µg/L	50	53.0	106	80 - 120	10/30/02
Toluene		µg/L	50	53.0	106	80 - 120	10/30/02
Chlorobenzene		µg/L	50	51.0	102	80 - 120	10/30/02
Ethylbenzene		µg/L	50	53.0	106	80 - 120	10/30/02
Dibromofluoromethane		µg/L	50	46.3	93	80 - 120	10/30/02
Toluene-d8		µg/L	50	49.4	99	80 - 120	10/30/02
4-Bromofluorobenzene		µg/L	50	48.7	97	80 - 120	10/30/02

CCV (1)

QCBatch: QC24630

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity		mg/L as CaCo3	0	4	0	90 - 110	10/31/02
Carbonate Alkalinity		mg/L as CaCo3	0	236	0	90 - 110	10/31/02
Bicarbonate Alkalinity		mg/L as CaCo3	0	<1.0	0	90 - 110	10/31/02
Total Alkalinity		mg/L as CaCo3	250	240	96	90 - 110	10/31/02

ICV (1) QCBatch: QC24630

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity		mg/L as CaCo3	0	<1.0	0	90 - 110	10/31/02
Carbonate Alkalinity		mg/L as CaCo3	0	232	0	90 - 110	10/31/02
Bicarbonate Alkalinity		mg/L as CaCo3	0	14	0	90 - 110	10/31/02
Total Alkalinity		mg/L as CaCo3	250	246	98	90 - 110	10/31/02

CCV (1) QCBatch: QC24656

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity		mg/L as CaCo3	0	<1.0	0	90 - 110	11/4/02
Carbonate Alkalinity		mg/L as CaCo3	0	232	0	90 - 110	11/4/02
Bicarbonate Alkalinity		mg/L as CaCo3	0	2	0	90 - 110	11/4/02
Total Alkalinity		mg/L as CaCo3	250	234	93	90 - 110	11/4/02

ICV (1) QCBatch: QC24656

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity		mg/L as CaCo3	0	<1.0	0	90 - 110	11/4/02
Carbonate Alkalinity		mg/L as CaCo3	0	224	0	90 - 110	11/4/02
Bicarbonate Alkalinity		mg/L as CaCo3	0	18	0	90 - 110	11/4/02
Total Alkalinity		mg/L as CaCo3	250	242	96	90 - 110	11/4/02

CCV (1) QCBatch: QC24662

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Phenol		mg/L	60	51.334	85	80 - 120	11/1/02
1,4-Dichlorobenzene		mg/L	60	60.84	101	80 - 120	11/1/02
2-Nitrophenol		mg/L	60	62.22	103	80 - 120	11/1/02
2,4-Dichlorophenol		mg/L	60	70.64	117	80 - 120	11/1/02
Hexachlorobutadiene		mg/L	60	70.00	116	80 - 120	11/1/02
4-Chloro-3-methylphenol		mg/L	60	58.35	97	80 - 120	11/1/02
2,4,6-Trichlorophenol		mg/L	60	69.03	115	80 - 120	11/1/02
Acenaphthene		mg/L	60	54.71	91	80 - 120	11/1/02
Diphenylamine		mg/L	60	57.95	96	80 - 120	11/1/02
Pentachlorophenol		mg/L	60	69.81	116	80 - 120	11/1/02
Fluoranthene		mg/L	60	60.14	100	80 - 120	11/1/02
Di-n-octylphthalate		mg/L	60	53.92	89	80 - 120	11/1/02
Benzo(a)pyrene		mg/L	60	60.32	100	80 - 120	11/1/02

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Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
2-Fluorophenol		mg/L	60	50.98	84	80 - 120	11/1/02
Phenol-d5		mg/L	60	65.95	109	80 - 120	11/1/02
Nitrobenzene-d5		mg/L	60	65.26	108	80 - 120	11/1/02
2-Fluorobiphenyl		mg/L	60	65.5	109	80 - 120	11/1/02
2,4,6-Tribromophenol		mg/L	60	67.84	113	80 - 120	11/1/02
Terphenyl-d14		mg/L	60	64.08	106	80 - 120	11/1/02

CCV (1)

QCBatch: QC24675

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Aluminum		mg/L	2	1.96	98	90 - 110	11/4/02
Total Arsenic		mg/L	1	0.964	96	90 - 110	11/4/02
Total Barium		mg/L	2	1.94	97	90 - 110	11/4/02
Total Boron		mg/L	0.10	0.0973	97	90 - 110	11/4/02
Total Cadmium		mg/L	0.50	0.486	97	90 - 110	11/4/02
Total Calcium		mg/L	25	25.0	100	90 - 110	11/4/02
Total Chromium		mg/L	0.20	0.194	97	90 - 110	11/4/02
Total Cobalt		mg/L	0.50	0.482	96	90 - 110	11/4/02
Total Copper		mg/L	0.25	0.241	96	90 - 110	11/4/02
Total Iron		mg/L	1	0.971	97	90 - 110	11/4/02
Total Lead		mg/L	1	0.961	96	90 - 110	11/4/02
Total Magnesium		mg/L	25	24.4	97	90 - 110	11/4/02
Total Manganese		mg/L	0.50	0.485	97	90 - 110	11/4/02
Total Molybdenum		mg/L	1	0.969	97	90 - 110	11/4/02
Total Nickel		mg/L	0.50	0.484	97	90 - 110	11/4/02
Total Potassium		mg/L	25	25.8	103	90 - 110	11/4/02
Total Selenium		mg/L	1	0.977	98	90 - 110	11/4/02
Total Silica		mg/L	1	0.988	99	90 - 110	11/4/02
Total Silver		mg/L	0.25	0.241	96	90 - 110	11/4/02
Total Sodium		mg/L	25	26.4	105	90 - 110	11/4/02
Total Zinc		mg/L	0.50	0.477	95	90 - 110	11/4/02

ICV (1)

QCBatch: QC24675

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Aluminum		mg/L	2	2.01	100	90 - 110	11/4/02
Total Arsenic		mg/L	1	1.02	102	90 - 110	11/4/02
Total Barium		mg/L	2	2.00	100	90 - 110	11/4/02
Total Boron		mg/L	0.10	0.104	104	90 - 110	11/4/02
Total Cadmium		mg/L	0.50	0.500	100	90 - 110	11/4/02
Total Calcium		mg/L	25	24.6	98	90 - 110	11/4/02
Total Chromium		mg/L	0.20	0.199	100	90 - 110	11/4/02
Total Cobalt		mg/L	0.50	0.495	99	90 - 110	11/4/02

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Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Copper		mg/L	0.25	0.247	99	90 - 110	11/4/02
Total Iron		mg/L	1	1.00	100	90 - 110	11/4/02
Total Lead		mg/L	1	0.990	99	90 - 110	11/4/02
Total Magnesium		mg/L	25	24.9	99	90 - 110	11/4/02
Total Manganese		mg/L	0.50	0.499	100	90 - 110	11/4/02
Total Molybdenum		mg/L	1	0.992	99	90 - 110	11/4/02
Total Nickel		mg/L	0.50	0.499	100	90 - 110	11/4/02
Total Potassium		mg/L	25	26.5	106	90 - 110	11/4/02
Total Selenium		mg/L	1	0.998	100	90 - 110	11/4/02
Total Silica		mg/L	1	0.991	99	90 - 110	11/4/02
Total Silver		mg/L	0.25	0.248	99	90 - 110	11/4/02
Total Sodium		mg/L	25	25.6	102	90 - 110	11/4/02
Total Zinc		mg/L	0.50	0.512	102	90 - 110	11/4/02

CCV (1)

QCBatch: QC24683

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Calcium		mg/L	25	24.1	96	90 - 110	11/4/02
Dissolved Magnesium		mg/L	25	23.5	94	90 - 110	11/4/02
Dissolved Potassium		mg/L	25	24.8	99	90 - 110	11/4/02
Dissolved Sodium		mg/L	25	25.8	103	90 - 110	11/4/02

ICV (1)

QCBatch: QC24683

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Calcium		mg/L	25	25.8	103	95 - 105	11/4/02
Dissolved Magnesium		mg/L	25	24.5	98	95 - 105	11/4/02
Dissolved Potassium		mg/L	25	25.0	100	95 - 105	11/4/02
Dissolved Sodium		mg/L	25	26.0	104	95 - 105	11/4/02

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # A02102327

Company Name:

Phone #:

585 915 522-1139

Address: (Street, City, Zip)

Fax #:

4600 W. WALL MIDLAND, TX 79703

Contact Person:

Invoice to:
(If different from above)

Project #:

Project Name:

Project Location:

Sampler Signature:

ANALYSIS REQUEST

(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX				PRESERVATIVE METHOD						SAMPLING		MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba	TCLP Metals Ag As Ba	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B/6242	GC/MS Semi. Vol. 8271	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	CHLORIDES	CADMIUM			Turn Around Time if different	Hold
				WATER	SOIL	AIR	SLUDGE	HCl	HNO ₃	H ₂ SO ₄	NaOH	ICE	NONE	DATE	TIME																					
211478	MW-1	24		X						X		10/21	8:45																	X						
	MW-1	1		X					X		X	10/21	8:45																	X						
79	MW-2	1		X						X		10/21	9:35																	X						
	MW-2	1		X					X		X	10/21	9:35																	X						
80	MW-3	1		X						X		10/21	9:55																	X						
	MW-3	1		X					X		X	10/21	9:55																	X						
81	MW-4	1		X							X	10/21	10:15																	X						
	MW-4	1		X					X		X	10/21	10:15																	X						
	MW-5	1		X							X	10/21	10:35																	X			CT			
	MW-5	1		X					X		X	10/21	10:35																	X			CT			

Relinquished by: 802 Date: 10/22 Time: 9:15

Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____

Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____

Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____

Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____

Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____

Received by: _____ Date: _____ Time: _____

LAB USE ONLY

Intact Y/N

Headspace Y/N

Temp 3

Log-in Review 11/16/02

REMARKS:

11/16/02

☐ Check If Special Reporting Limits Are Needed

Carrier # TNMA-0 902 9280414

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1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # ADA102327

Company Name: ETGI Phone #: 915 522-1137
Address: (Street, City, Zip) 4600 W. WALL MIDLAND TX 79703 Fax #:
Contact Person: TODD CHORAN
Invoice to: (If different from above)
Project #: CH2100 Project Name: CHAMPION HORBS
Project Location: CHAMPION HORBS NM Sampler Signature: [Signature]

ANALYSIS REQUEST

(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX				PRESERVATIVE METHOD						SAMPLING		Turn Around Time if different from standard	Hold
				WATER	SOIL	AIR	SLUDGE	HCl	HNO ₃	H ₂ SO ₄	NaOH	ICE	NONE	DATE	TIME		
211482	mw-5	1		X								X		10/21	10:35		
	mw-5	1		X					X			X		10/21	10:35		
83	mw-6	1		X				X				X		10/21	10:35		
	mw-6	2		X				X				X					
	mw-6	1		X								X					
	mw-6	1		X					X			X					
84	mw-7	1		X								X					
	mw-7	1		X					X			X					

MTBE 8021B/602

BTEX 8021B/602

TPH (418) TX 1005

PAH 8270C

Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7

TCLP Metals Ag As Ba Cd Cr Pb Se Hg

TCLP Volatiles

TCLP Semi Volatiles

TCLP Pesticides

RCI

GC/MS Vol. 8260B/624

GC/MS Semi. Vol. 8270C/625

PCBs 8082/608

Pesticides 8081A/608

BOD, TSS, pH

CHLORIDES

CHROMIUM, ARSENIC, LEAD

Vol

Relinquished by: [Signature] Date: 10/22 Time: 9:15
Received by: _____ Date: _____ Time: _____
Relinquished by: _____ Date: _____ Time: _____
Received by: _____ Date: _____ Time: _____
Relinquished by: _____ Date: _____ Time: _____
Received at Laboratory by: [Signature] Date: 10-23-02 Time: 10:00

LAB USE ONLY

Intact Y / N

Headspace Y / N

Temp 3 °

Log-in Review ms

REMARKS:

☐ Check If Special Reporting Limits Are Needed

Carrier # TAM-0 9029280414

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Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

Company Name: ETGE Phone #: 915 522-1139
Address: (Street, City, Zip) 4600 W. WALL MIDLAND, TX 79703 Fax #:
Contact Person: TODD CHOBAN
Invoice to: (If different from above)
Project #: CH2100 Project Name: CHAMPION HOBBS
Project Location: HOBBS NM Sampler Signature: ED

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX				PRESERVATIVE METHOD						SAMPLING	
				WATER	SOIL	AIR	SLUDGE	HCl	HNO ₃	H ₂ SO ₄	NaOH	ICE	NONE	DATE	TIME
21/485	mw-8	1		X				X				X		10/21	13:15
	mw-8	1		X								X		10/21	
	mw-8	1		X					X			X		10/21	
	mw-8	2		X				X				X		10/21	
86	mw-9	1		X								X		10/21	14:20
	mw-9	1		X					X			X		10/21	
87	mw-10	2		X				X				X		10/21	14:40
	mw-10	1		X								X		10/21	
	mw-10	1		X					X			X		10/21	
	mw-10	1		X						X		X		10/21	
	mw-10	1		X				X				X		10/21	

Relinquished by: ED Date: 10/22 Time: 9:15 Received by: _____ Date: _____ Time: _____
Relinquished by: _____ Date: _____ Time: _____ Received by: _____ Date: _____ Time: _____
Relinquished by: _____ Date: _____ Time: _____ Received at Laboratory by: Vicki Duns Date: 10.23.02 Time: 10:00

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # A02102327

ANALYSIS REQUEST

(Circle or Specify Method No.)

MTBE 8021B/602	BTEX 8021B/602	TPH 418.1 TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCBs 8082/608	Pesticides 8081A/608	808-TSS-PH GEN CHEMISTRY, TDS, PH	CHLORIDES	CHROMIUM ARSENIC LEAD	VOC	SPEC METALS	Turn Around Time if different from standard	Hold
		X													X	X	X	X	X	

LAB USE ONLY

Intact (Y) N
Headspace Y / N
Temp 4.0 °C
Log-in Review [Signature]

REMARKS:

☐ Check If Special Reporting Limits Are Needed

Carrier # TNM 902928041 4

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Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # A02102327

Company Name:

Phone #:

ETG

915 522-1139

Address: (Street, City, Zip)

Fax #:

4600 W. WALL MIDLAND, TX

Contact Person:

TODD SO CHOBAN

Invoice to:
(If different from above)

Project #:

CH2100

Project Name:

CHAMPION HOBBS

Project Location:

HOBBS NM

Sampler Signature:

Elr 2

ANALYSIS REQUEST

(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX				PRESERVATIVE METHOD						SAMPLING		Turn Around Time if different from standard	Hold
				WATER	SOIL	AIR	SLUDGE	HCl	HNO ₃	H ₂ SO ₄	NaOH	ICE	NONE	DATE	TIME		
<u>211488</u>	<u>mw-11</u>	<u>2</u>		X				X				X		<u>10/21</u>	<u>15:20</u>		
	<u>mw-11</u>	<u>1</u>		X								X		<u>10/21</u>			
	<u>mw-11</u>	<u>1</u>		X					X			X		<u>10/21</u>			
	<u>mw-11</u>	<u>1</u>		X								X		<u>10/21</u>			
	<u>mw-11</u>	<u>1</u>		X				X				X		<u>10/21</u>			
<u>89</u>	<u>mw-12</u>	<u>2</u>						X				X			<u>15:50</u>		
	<u>mw-12</u>	<u>1</u>										X					
	<u>mw-12</u>	<u>1</u>							X			X					
	<u>mw-12</u>	<u>1</u>										X					
	<u>mw-12</u>	<u>1</u>						X				X					

MTBE 8021B/602

BTEX 8021B/602

TPH 418.1 TX1005

PAH 8270C

Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7

TCLP Metals Ag As Ba Cd Cr Pb Se Hg

TCLP Volatiles

TCLP Semi Volatiles

TCLP Pesticides

RCI

GC/MS Vol. 8260B/624

GC/MS Semi. Vol. 8270C/625

PCB's 8082/608

Pesticides 8081A/608

BOD, TSS, pH

VOC

SVOC

WQCC METALS

GEN. CHEM. TBS PH

Relinquished by:

Date:

Time:

Received by:

Date:

Time:

Elr 2 10/22 9:15

Relinquished by:

Date:

Time:

Received by:

Date:

Time:

10/23-02 10:10

Relinquished by:

Date:

Time:

Received at Laboratory by:

Date:

Time:

LAB USE ONLY

Intact Y / N

Headspace Y / N

Temp 4 °

Log-in Review IN

REMARKS:

☐ Check If Special Reporting Limits Are Needed

Carrier # TNM+0 902928041 4

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # A02102307

Company Name:

Phone #:

915 522-1139

Address: (Street, City, Zip)

Fax #:

4600 WATT MIDLAND TX

Contact Person:

Invoice to:
(If different from above)

Project #:

Project Name:

CH2100

CHAMPION HOBBS

Project Location:

Sampler Signature:

HOBBS NM

El 2

ANALYSIS REQUEST

(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX				PRESERVATIVE METHOD						SAMPLING		MTBE 8021B/602	BTEX 8021B/602	TPH 418 DTX1005	PAH 8270C	Total Metals Ag As Ba	TCLP Metals Ag As Ba	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B/6242	GC/MS Semi. Vol. 8270C/6252	PCBs 8082/608	Pesticides 8081A/608	BOD, TSS, pH	VOC	SVOC	WQCC metals	GEN. CHEM.	Turn Around Time if different from standard	Hold
				WATER	SOIL	AIR	SLUDGE	HCl	HNO ₃	H ₂ SO ₄	NaOH	ICE	NONE	DATE	TIME																					
211490	mw-13	2		X				X			X		10/21	16:10																X						
	mw-13	1																													X					
	mw-13	1							X																							X				
	mw-13	1																															X			
	mw-13	1						X																												
91	mw-14	2						X						10:53																X						
	mw-14	1																													X					
	mw-14	1							X																							X				
	mw-14	1																															X			
	mw-14	1						X																									X			

Relinquished by:

Date:

Time:

Received by:

Date:

Time:

El 2 10/22 9:15

Relinquished by:

Date:

Time:

Received by:

Date:

Time:

Relinquished by:

Date:

Time:

Received at Laboratory by:

Date:

Time:

Vict. Davis 10-23-02 10:00

LAB USE ONLY

Intact Y / N

Headspace Y / N

Temp 4 °C

Log-in Review M

REMARKS:

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Carrier # TNM+0 902928041 4

Carrier # TNMFO 90292 8041 4

Summary Report

Todd Choban
E.T.G.I.
PO Box 4845
Midland, Tx. 79704

Report Date: December 2, 2002

Order ID Number: A02102327

Project Number: CH2100
Project Name: Champion Tech
Project Location: Hobbs,NM

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
211483	MW-6	Water	10/21/02	:	10/23/02
211486	MW-9	Water	10/21/02	14:00	10/23/02

Comment: CORRECTION: Chloride result added for sample 211485 and matrix spike corrected for chromium.

This report consists of a total of 1 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample: 211483 - MW-6

Param	Flag	Result	Units
Dissolved Chromium		0.050	mg/L
Total Chromium		0.309	mg/L

Sample: 211486 - MW-9

Param	Flag	Result	Units
Dissolved Chromium		<0.011	mg/L
Total Chromium		0.109	mg/L

TRACE ANALYSIS, INC.

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888•588•3443

806•794•1296

915•585•3443

FAX 806•794•1298

FAX 915•585•4944

E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Todd Choban
E.T.G.I.
PO Box 4845
Midland, Tx. 79704

Report Date: December 2, 2002

Order ID Number: A02102327

Project Number: CH2100
Project Name: Champion Tech
Project Location: Hobbs, NM

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace-Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
211483	MW-6	Water	10/21/02	:	10/23/02
211486	MW-9	Water	10/21/02	14:00	10/23/02

Comment: CORRECTION: Chloride result added for sample 211485 and matrix spike corrected for chromium.

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed. Note: the RDL is equal to MQL for all organic analytes including TPH. The test results contained within this report meet all requirements of LAC 33:I unless otherwise noted.

This report consists of a total of 4 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of TraceAnalysis, Inc.

Note: Samples will be disposed of 30 days from the report date unless the lab is contacted before the 30 days has past.



Dr. Blair Leftwich, Director

Analytical Report

Sample: 211483 - MW-6

Analysis: Dissolved Metals Analytical Method: S 6010B QC Batch: QC25236 Date Analyzed: 11/27/02
Analyst: RR Preparation Method: E 3005A Prep Batch: PB23324 Date Prepared: 11/22/02

Param	Flag	Result	Units	Dilution	RDL
Dissolved Chromium		0.050	mg/L	1.10	0.01

Sample: 211483 - MW-6

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC25101 Date Analyzed: 11/25/02
Analyst: RR Preparation Method: S 3010A Prep Batch: PB23285 Date Prepared: 11/20/02

Param	Flag	Result	Units	Dilution	RDL
Total Chromium		0.309	mg/L	1	0.01

Sample: 211486 - MW-9

Analysis: Dissolved Metals Analytical Method: S 6010B QC Batch: QC25236 Date Analyzed: 11/27/02
Analyst: RR Preparation Method: E 3005A Prep Batch: PB23324 Date Prepared: 11/22/02

Param	Flag	Result	Units	Dilution	RDL
Dissolved Chromium		<0.011	mg/L	1.10	0.01

Sample: 211486 - MW-9

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC25101 Date Analyzed: 11/25/02
Analyst: RR Preparation Method: S 3010A Prep Batch: PB23285 Date Prepared: 11/20/02

Param	Flag	Result	Units	Dilution	RDL
Total Chromium		0.109	mg/L	1	0.01

Quality Control Report Method Blank

Method Blank QCBatch: QC25101

Param	Flag	Results	Units	Reporting Limit
Total Chromium		<0.010	mg/L	0.01

Method Blank QCBatch: QC25236

Param	Flag	Results	Units	Reporting Limit
Dissolved Chromium		<0.011	mg/L	0.01

Quality Control Report Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes QCBatch: QC25101

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Chromium	0.106	0.105	mg/L	1	0.10	<0.010	106	1	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes QCBatch: QC25236

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Dissolved Chromium	0.0975	0.0976	mg/L	1.20	0.10	<0.011	97	0	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Matrix Spikes and Duplicate Spikes

Matrix Spikes QCBatch: QC25101

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Chromium	0.0994	0.0991	mg/L	1	0.10	<0.010	99	0	75 - 125	20

Report Date: December 2, 2002
CH2100

Order Number: A02102327
Champion Tech

Page Number: 4 of 4
Hobbs, NM

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC25236

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Dissolved Chromium	0.0893	0.0877	mg/L	1.20	0.10	<0.011	89	1	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Continuing Calibration Verification Standards

CCV (1) QCBatch: QC25101

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Chromium		mg/L	0.20	0.204	102	90 - 110	11/25/02

ICV (1) QCBatch: QC25101

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Chromium		mg/L	0.20	0.202	101	90 - 110	11/25/02

CCV (1) QCBatch: QC25236

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Chromium		mg/L	0.20	0.197	98	90 - 110	11/27/02

ICV (1) QCBatch: QC25236

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Chromium		mg/L	0.20	0.197	98	90 - 110	11/27/02

11478-93

Page 1 of 6

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Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # A02102327

Company Name:

ETGI

Phone #:

585 915 522-1139

Address: (Street, City, Zip)

4600 W. WALL MIDLAND, TX 79703

Fax #:

Contact Person:

TODA CHOBAN

Voice to:

different from above)

Object #:

CH2100

Project Name:

CHAMPION HOBBS

Object Location:

HOBBS NM

Sampler Signature:

EL2

ANALYSIS REQUEST

(Circle or Specify Method No.)

LAB # LAB USE ONLY	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX				PRESERVATIVE METHOD						SAMPLING		Turn Around Time if different from standard	Hold
				WATER	SOIL	AIR	SLUDGE	HCl	HNO ₃	H ₂ SO ₄	NaOH	ICE	NONE	DATE	TIME		
211478	MW-1	24		X								X		10/21	8:45		
	MW-1	1		X					X			X		10/21	8:45		
79	MW-2	1		X								X		10/21	9:25		
	MW-2	1		X					X			X		10/21	9:25		
80	MW-3	1		X								X		10/21	9:55		
	MW-3	1		X					X			X		10/21	9:55		
81	MW-4	1		X								X		10/21	10:15		
	MW-4	1		X					X			X		10/21	10:15		
	MW-5	1		X								X		10/21	10:35		
	MW-5	1		X					X			X		10/21	10:35		

MTBE 8021B/602

BTX 8021B/602

TPH 418.1/TX1005

PAH 8270C

Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7

TCLP Metals Ag As Ba Cd Cr Pb Se Hg

TCLP Volatiles

TCLP Semi Volatiles

TCLP Pesticides

RCI

GC/MS Vol. 8260B/624

GC/MS Semi. Vol. 8270C/625

PCB's 8082/608

Pesticides 8081A/608

BOD, TSS, pH

CHLORIDES

CADMIUM, ARSENIC, LEAD

Turn Around Time if different from standard

Hold

Relinquished by: Date: Time: Received by: Date: Time:

Relinquished by: Date: Time: Received by: Date: Time:

Relinquished by: Date: Time: Received at Laboratory by: Date: Time:

LAB USE ONLY

Intact D/NHeadspace Y/NTemp 3Log-in Review W

REMARKS:

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID #

A02102327

ANALYSIS REQUEST

(Circle or Specify Method No.)

CHLORIDES
CHROMIUM ARSENIC LEAD
VOC
SVOC
WPC METALS
Turn Around Time if different from standard

MTBE 8021B/602
BTX 8021B/602
TPH 418 JTX1005
PAH 8270C
Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7
TCLP Metals Ag As Ba Cd Cr Pb Se Hg
TCLP Volatiles
TCLP Semi Volatiles
TCLP Pesticides
RCI
GC/MS Vol. 8260B/624
GC/MS Semi. Vol. 8270C/625
PCB's 8082/608
Pesticides 8081A/608
EOD, TSS, pH GEN CHEMISTRY, TDS, pH

Company Name: ETGE Phone #: 915 522-1139
Address: (Street, City, Zip) 4600 W. WALL MIDLAND, TX 79703 Fax #:
Contact Person: TODD CHOBAN
Invoice to:
If different from above)
Project #: CH2100 Project Name: CHAMPION HOBBS
Project Location: HOBBS NM Sampler Signature: [Signature]

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX				PRESERVATIVE METHOD						SAMPLING	
				WATER	SOIL	AIR	SLUDGE	HCl	HNO ₃	H ₂ SO ₄	NaOH	ICE	NONE	DATE	TIME
21/485	mw-8	1		X				X				X		10/21	13:15
	mw-8	1		X								X		10/21	
	mw-8	1		X					X			X		10/21	
	mw-8	2		X				X				X		10/21	
86	mw-9	1		X								X		10/21	14:00
	mw-9	1		X					X			X		10/21	
87	mw-10	2		X				X				X		10/21	14:40
	mw-10	1		X								X		10/21	
	mw-10	1		X					X			X		10/21	
	mw-10	1		X								X		10/21	
	mw-10	1		X				X				X		10/21	

Alot of Sediment

Relinquished by: [Signature] Date: 10/22 Time: 9:15
Received by: _____ Date: _____ Time: _____
Relinquished by: _____ Date: _____ Time: _____
Received by: _____ Date: _____ Time: _____
Relinquished by: _____ Date: _____ Time: _____
Received at Laboratory by: [Signature] Date: 10-23-02 Time: 10:00

LAB USE ONLY
Intact (Y) N
Headspace (Y) N
Temp 4.0
Log-in Review [Signature]
REMARKS:
☐ Check If Special Reporting Limits Are Needed

Carrier # TNM 902928041 4

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El Paso, Texas 79932
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # A02102327

ANALYSIS REQUEST

(Circle or Specify Method No.)

Company Name: ETG Phone #: 915 522-1139
Address: (Street, City, Zip) 4600 W. Wall Midland, TX Fax #:
Contact Person: TODD SO CHORAN
Invoice to:
If different from above)
Project #: CH2100 Project Name: CHAMPION HOBBS
Project Location: HOBBS NM Sampler Signature: [Signature]

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX				PRESERVATIVE METHOD						SAMPLING		DATE	TIME	MTBE 8021B/602	BTEX 8021B/602	TPH 418.1 TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCBs 8082/608	Pesticides 8081A/608	BOD, TSS, pH	VOC	SVOC	WQCC METALS	GEN. CHEM. TDS PH	Turn Around Time if different from standard	Hold
				WATER	SOIL	AIR	SLUDGE	HCl	HNO ₃	H ₂ SO ₄	NaOH	ICE	NONE																									
311488	mw-11	2		X				X				X		10/21	15:20																							
	mw-11	1		X								X		10/21																								
	mw-11	1		X					X			X		10/21																								
	mw-11	1		X								X		10/21																								
	mw-11	1		X				X				X		10/21			X																					
89	mw-12	2						X				X		15:50																								
	mw-12	1										X																										
	mw-12	1							X			X																										
	mw-12	1										X																										
	mw-12	1						X				X					X																					

Relinquished by: [Signature] Date: 10/22 Time: 9:15
Received by: _____ Date: _____ Time: _____
Relinquished by: _____ Date: _____ Time: _____
Received by: _____ Date: _____ Time: _____
Relinquished by: _____ Date: _____ Time: _____
Received at Laboratory by: [Signature] Date: 10-23-02 Time: 10:00

LAB USE ONLY
Intact Y / N
Headspace Y / N
Temp 4
Log-in Review [Signature]
REMARKS:
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155 McCutcheon, Suite H
El Paso, Texas 79932
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

Company Name: ETGA Phone #: 915 522-1159
Address: (Street, City, Zip) 1600 W. WALL MIDLAND, TX Fax #:
Contact Person: JEDD CHOBAN
Project #: CH2100 Project Name: CHAMPION HOBBS
Project Location: HOBBS NM Sampler Signature: [Signature]

AB # B USE ONLY	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX				PRESERVATIVE METHOD					SAMPLING		
				WATER	SOIL	AIR	SLUDGE	HCl	HNO ₃	H ₂ SO ₄	NaOH	ICE	NONE	DATE	TIME
1492	mw-15	2		X				X				X		10/22	8:05
	mw-15	1													
	mw-15	1							X						
	mw-15	1													
	mw-15	1						X							
93	mw-16	2						X							9:45
	mw-16	1													
	mw-16	1							X						
	mw-16	1													
	mw-16	1						X							

Delivered by: [Signature] Date: 10/22 Time: 9:15
Received by: _____ Date: _____ Time: _____
Delivered by: _____ Date: _____ Time: _____
Received by: _____ Date: _____ Time: _____
Delivered by: _____ Date: _____ Time: _____
Received at Laboratory by: [Signature] Date: 10-23-02 Time: 10:10

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # A02102327

ANALYSIS REQUEST (Circle or Specify Method No.)

MTBE 8021B/602	BTX 8021B/602	TPH 418.1/1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	VOC	SVOC	WQCC METALS	GEN CHEM. TDS, PH	Turn Around Time if different from standard	Hold
		X													X	X	X	X		

LAB USE ONLY
Intact Y / N
Headspace Y / N
Temp 4
Log-in Review [Signature]
REMARKS:
☐ Check If Special Reporting Limits Are Needed
Carrier # TNM-0 90292 8041 4

Report Date: November 19, 2002 Order Number: A02111327
CH2100 Champion Tech

Page Number: 1 of 3
Hobbs,NM

Summary Report

Todd Choban
E.T.G.I.
PO Box 4845
Midland, Tx. 79704

Report Date: November 19, 2002

Order ID Number: A02111327

Project Number: CH2100
Project Name: Champion Tech
Project Location: Hobbs,NM

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
213337	MW-1	Water	11/13/02	11:15	11/13/02
213338	MW-3	Water	11/13/02	11:26	11/13/02
213339	MW-4	Water	11/13/02	11:40	11/13/02
213340	MW-6	Water	11/13/02	11:52	11/13/02
213341	MW-7	Water	11/13/02	11:06	11/13/02
213342	MW-9	Water	11/13/02	11:20	11/13/02
213343	MW-13	Water	11/13/02	10:23	11/13/02
213344	MW-15	Water	11/13/02	10:58	11/13/02
213345	MW-16	Water	11/13/02	11:32	11/13/02
213346	S.E. Corner	Water	11/13/02	11:48	11/13/02
213347	Trip Blank	Water	11/13/02	12:00	11/13/02

0 This report consists of a total of 3 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample: 213337 - MW-1

Param	Flag	Result	Units
Total Chromium		<0.010	mg/L

Sample: 213338 - MW-3

Param	Flag	Result	Units
Hexavalent Chromium		<0.01	mg/L
Total Chromium		0.0159	mg/L

Sample: 213339 - MW-4

Param	Flag	Result	Units
Hexavalent Chromium		0.296	mg/L
Total Chromium		0.272	mg/L

This is only a summary. Please, refer to the complete report package for quality control data.

Report Date: November 19, 2002 Order Number: A02111327
CH2100 Champion TechPage Number: 2 of 3
Hobbs, NM**Sample: 213340 - MW-6**

Param	Flag	Result	Units
Hexavalent Chromium		0.047	mg/L
Chloride		390	mg/L
Total Chromium		0.138	mg/L

Sample: 213341 - MW-7

Param	Flag	Result	Units
Total Chromium		<0.010	mg/L

Sample: 213342 - MW-9

Param	Flag	Result	Units
Hexavalent Chromium		<0.01	mg/L
Total Chromium		<0.010	mg/L

Sample: 213343 - MW-13

Param	Flag	Result	Units
Hexavalent Chromium		0.059	mg/L
Total Chromium		0.0741	mg/L

Sample: 213344 - MW-15

Param	Flag	Result	Units
Chloride		200	mg/L

Sample: 213345 - MW-16

Param	Flag	Result	Units
Hexavalent Chromium		<0.01	mg/L
Total Chromium		<0.010	mg/L

Sample: 213346 - S.E. Corner

Param	Flag	Result	Units
Hexavalent Chromium		0.285	mg/L
Total Chromium		0.275	mg/L

This is only a summary. Please, refer to the complete report package for quality control data.

TraceAnalysis, Inc.

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Lubbock, TX 79424-1515

(806) 794-1296

Report Date: November 19, 2002 Order Number: A02111327
CH2100 Champion Tech

Page Number: 3 of 3
Hobbs, NM

Sample: 213347 - Trip Blank

Param	Flag	Result	Units
Total Chromium		<0.010	mg/L

This is only a summary. Please, refer to the complete report package for quality control data.

Report Date: November 19, 2002
CH2100

Order Number: A02111327
Champion Tech

Page Number: 3 of 10
Hobbs,NM

Analytical Report

Sample: 213337 - MW-1

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC24935 Date Analyzed: 11/14/02
Analyst: RR Preparation Method: S 3010A Prep Batch: PB23183 Date Prepared: 11/14/02

Param	Flag	Result	Units	Dilution	RDL
Total Chromium		<0.010	mg/L	1	0.01

Sample: 213338 - MW-3

Analysis: CR6 Analytical Method: SM 3500-Cr D QC Batch: QC24988 Date Analyzed: 11/14/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB23234 Date Prepared: 11/14/02

Param	Flag	Result	Units	Dilution	RDL
Hexavalent Chromium		<0.01	mg/L	1	0.01

Sample: 213338 - MW-3

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC24935 Date Analyzed: 11/14/02
Analyst: RR Preparation Method: S 3010A Prep Batch: PB23183 Date Prepared: 11/14/02

Param	Flag	Result	Units	Dilution	RDL
Total Chromium		0.0159	mg/L	1	0.01

Sample: 213339 - MW-4

Analysis: CR6 Analytical Method: SM 3500-Cr D QC Batch: QC24988 Date Analyzed: 11/14/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB23234 Date Prepared: 11/14/02

Param	Flag	Result	Units	Dilution	RDL
Hexavalent Chromium		0.296	mg/L	1	0.01

Sample: 213339 - MW-4

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC24935 Date Analyzed: 11/14/02
Analyst: RR Preparation Method: S 3010A Prep Batch: PB23183 Date Prepared: 11/14/02

Param	Flag	Result	Units	Dilution	RDL
Total Chromium		0.272	mg/L	1	0.01

Sample: 213340 - MW-6

Analysis: CR6 Analytical Method: SM 3500-Cr D QC Batch: QC24988 Date Analyzed: 11/14/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB23234 Date Prepared: 11/14/02

Param	Flag	Result	Units	Dilution	RDL
Hexavalent Chromium		0.047	mg/L	1	0.01

Report Date: November 19, 2002
CH2100

Order Number: A02111327
Champion Tech

Page Number: 4 of 10
Hobbs,NM

Sample: 213340 - MW-6

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC24915 Date Analyzed: 11/13/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB23173 Date Prepared: 11/13/02

Param	Flag	Result	Units	Dilution	RDL
Chloride		390	mg/L	1	1

Sample: 213340 - MW-6

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC24935 Date Analyzed: 11/14/02
Analyst: RR Preparation Method: S 3010A Prep Batch: PB23183 Date Prepared: 11/14/02

Param	Flag	Result	Units	Dilution	RDL
Total Chromium		0.138	mg/L	1	0.01

Sample: 213341 - MW-7

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC24935 Date Analyzed: 11/14/02
Analyst: RR Preparation Method: S 3010A Prep Batch: PB23183 Date Prepared: 11/14/02

Param	Flag	Result	Units	Dilution	RDL
Total Chromium		<0.010	mg/L	1	0.01

Sample: 213342 - MW-9

Analysis: CR6 Analytical Method: SM 3500-Cr D QC Batch: QC24988 Date Analyzed: 11/14/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB23234 Date Prepared: 11/14/02

Param	Flag	Result	Units	Dilution	RDL
Hexavalent Chromium		<0.01	mg/L	1	0.01

Sample: 213342 - MW-9

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC24935 Date Analyzed: 11/14/02
Analyst: RR Preparation Method: S 3010A Prep Batch: PB23183 Date Prepared: 11/14/02

Param	Flag	Result	Units	Dilution	RDL
Total Chromium		<0.010	mg/L	1	0.01

Sample: 213343 - MW-13

Analysis: CR6 Analytical Method: SM 3500-Cr D QC Batch: QC24988 Date Analyzed: 11/14/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB23234 Date Prepared: 11/14/02

Param	Flag	Result	Units	Dilution	RDL
Hexavalent Chromium		0.059	mg/L	1	0.01

Report Date: November 19, 2002
CH2100

Order Number: A02111327
Champion Tech

Page Number: 5 of 10
Hobbs,NM

Sample: 213343 - MW-13

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC24935 Date Analyzed: 11/14/02
Analyst: RR Preparation Method: S 3010A Prep Batch: PB23183 Date Prepared: 11/14/02

Param	Flag	Result	Units	Dilution	RDL
Total Chromium		0.0741	mg/L	1	0.01

Sample: 213344 - MW-15

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC24965 Date Analyzed: 11/14/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB23212 Date Prepared: 11/14/02

Param	Flag	Result	Units	Dilution	RDL
Chloride		200	mg/L	10	1

Sample: 213345 - MW-16

Analysis: CR6 Analytical Method: SM 3500-Cr D QC Batch: QC24988 Date Analyzed: 11/14/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB23234 Date Prepared: 11/14/02

Param	Flag	Result	Units	Dilution	RDL
Hexavalent Chromium		<0.01	mg/L	1	0.01

Sample: 213345 - MW-16

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC24935 Date Analyzed: 11/14/02
Analyst: RR Preparation Method: S 3010A Prep Batch: PB23183 Date Prepared: 11/14/02

Param	Flag	Result	Units	Dilution	RDL
Total Chromium		<0.010	mg/L	1	0.01

Sample: 213346 - S.E. Corner

Analysis: CR6 Analytical Method: SM 3500-Cr D QC Batch: QC24988 Date Analyzed: 11/14/02
Analyst: JSW Preparation Method: N/A Prep Batch: PB23234 Date Prepared: 11/14/02

Param	Flag	Result	Units	Dilution	RDL
Hexavalent Chromium		0.285	mg/L	1	0.01

Sample: 213346 - S.E. Corner

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC24935 Date Analyzed: 11/14/02
Analyst: RR Preparation Method: S 3010A Prep Batch: PB23183 Date Prepared: 11/14/02

Param	Flag	Result	Units	Dilution	RDL
Total Chromium		0.275	mg/L	1	0.01

Report Date: November 19, 2002
CH2100

Order Number: A02111327
Champion Tech

Page Number: 6 of 10
Hobbs,NM

Sample: 213347 - Trip Blank

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC24935 Date Analyzed: 11/14/02
Analyst: RR Preparation Method: N/A Prep Batch: PB23183 Date Prepared: 11/14/02

Param	Flag	Result	Units	Dilution	RDL
Total Chromium		<0.010	mg/L	1	0.01

Quality Control Report Method Blank

Method Blank QCBatch: QC24915

Param	Flag	Results	Units	Reporting Limit
Chloride		<1.0	mg/L	1

Method Blank QCBatch: QC24935

Param	Flag	Results	Units	Reporting Limit
Total Chromium		<0.010	mg/L	0.01

Method Blank QCBatch: QC24965

Param	Flag	Results	Units	Reporting Limit
Chloride		<1.0	mg/L	1

Method Blank QCBatch: QC24988

Param	Flag	Results	Units	Reporting Limit
Hexavalent Chromium		<0.01	mg/L	0.01

Quality Control Report Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes QCBatch: QC24915

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	11.78	11.84	mg/L	1	12.50	<1.0	94	0	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes QCBatch: QC24935

Continued ...

... Continued

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Chromium	0.101	0.106	mg/L	1	0.10	<0.010	101	5	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes QCBatch: QC24965

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	11.88	11.86	mg/L	1	12.50	<1.0	95	0	90 - 110	20
Sulfate	12.57	12.60	mg/L	1	12.50	<1.0	100	0	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes QCBatch: QC24988

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Hexavalent Chromium	0.521	0.511	mg/L	1	0.50	<0.01	104	1	83 - 116	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Matrix Spikes and Duplicate Spikes

Matrix Spikes QCBatch: QC24915

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	11080	11020	mg/L	1	6250	4940	98	0	48 - 127	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC24935

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Chromium	0.0974	0.0963	mg/L	1	0.10	<0.010	97	1	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC24965

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	2780	2760	mg/L	1	1250	1600	94	1	48 - 127	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC24988

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Hexavalent Chromium	0.754	0.771	mg/L	1	0.50	0.285	93	3	83 - 116	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Continuing Calibration Verification Standards

CCV (1) QCBatch: QC24915

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	11.93	95	90 - 110	11/13/02

ICV (1) QCBatch: QC24915

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	11.88	95	90 - 110	11/13/02

CCV (1) QCBatch: QC24935

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Chromium		mg/L	0.20	0.190	95	90 - 110	11/14/02

ICV (1) QCBatch: QC24935

Report Date: November 19, 2002
CH2100

Order Number: A02111327
Champion Tech

Page Number: 10 of 10
Hobbs,NM

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Chromium		mg/L	0.20	0.197	98	90 - 110	11/14/02

CCV (1) QCBatch: QC24965

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	11.83	94	90 - 110	11/14/02
Sulfate		mg/L	12.50	11.89	95	90 - 110	11/14/02

ICV (1) QCBatch: QC24965

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	11.89	95	90 - 110	11/14/02
Sulfate		mg/L	12.50	12.92	103	90 - 110	11/14/02

CCV (1) QCBatch: QC24988

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hexavalent Chromium		mg/L	0.50	0.512	102	85 - 115	11/14/02

ICV (1) QCBatch: QC24988

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hexavalent Chromium		mg/L	0.50	0.494	98	85 - 115	11/14/02

213337-117

Page 1 of 2

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # A02111327

ANALYSIS REQUEST

(Circle or Specify Method No.)

Company Name: <u>E761</u>	Phone #: <u>915-522-1139</u>
Address: (Street, City, Zip) <u>4600 W. Wall Midland, TX</u>	Fax #: <u>915-520-4310</u>
Contact Person: <u>Todd Choban</u>	
Invoice to: (If different from above)	
Project #: <u>CH2100</u>	Project Name: <u>Champion Technologies</u>
Project Location: <u>Hobbes, N. M.</u>	Sampler Signature: <u>[Signature]</u>

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX				PRESERVATIVE METHOD						SAMPLING		MTBE 8021B/602	BTX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba	TCLP Metals Ag As Ba	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	TOTAL CHROMIUM	CHLORIDES	Dissolved Cl	Turn Around Time if different	Hold	
				WATER	SOIL	AIR	SLUDGE	HCl	HNO ₃	H ₂ SO ₄	NaOH	ICE	NONE	DATE	TIME																					
213337	MW-1	1	120	X					X			X		11-13	1115																					
38	MW-3	1	120	X					X			X		11-13	1126																					
	MW-3	1	120	X								X	X	11-13	1126																					
39	MW-4	1	120	X					X			X		11-13	1140																					
	MW-4	1	120	X								X	X	11-13	1140																					
40	MW-6	1	120	X					X			X		11-13	1152																					
	MW-6	1	120	X								X	X	11-13	1152																					
41	MW-6 MW-7	1	120	X					X			X		11-13	1106																					
42	MW-9	1	120	X								X		11-13	1126																					
	MW-9	1	120	X								X	X	11-13	1126																					
43	MW-13	1	120	X					X			X		11-13	1025																					

Relinquished by: <u>[Signature]</u> Date: <u>11-13</u> Time: <u>1200</u>	Received by: <u>Todd Choban</u> Date: <u>11/13</u> Time: <u>1200</u>
Relinquished by: <u>Todd Choban</u> Date: <u>11/13</u> Time: <u>1507</u>	Received by: <u>[Signature]</u> Date: <u>11-13-02</u> Time: <u>3:07</u>
Relinquished by: <u>[Signature]</u> Date: <u>11-13-02</u> Time: <u>3:07</u>	Received at Laboratory by: <u>[Signature]</u> Date: <u>11-13-02</u> Time: <u>3:07</u>

LAB USE ONLY

Intact (Y) N
Headspace Y (N)
Temp 4°
Log-in Review [Signature]

REMARKS:

Need 11-18-02

☐ Check if Special Reporting Limits Are Needed

verbal 11/15
RIF

11/14/02

Carrier # Walker

RIP 12/02/02

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

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TraceAnalysis, Inc.

150 McCutcheon, Suite H
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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # A02111327

ANALYSIS REQUEST

(Circle or Specify Method No.)

Company Name: ETC/

Phone #: 915-522-1139

Address: (Street, City, Zip)
4600 W. Wall

Fax #: 915.520-4310

Contact Person: Todd Chohan

Invoice to:
(If different from above)

Project #: CH2100

Project Name: CHAMPION TECHNOLOGIES

Project Location: Hobbes, N.M.

Sampler Signature: 

[illegible]

Relinquished by: Shan A. D. Date: 11-13 Time: 1200

Received by: Todd Hask Date: 11/23 Time: 12:05

Relinquished by:	Date:	Time:
Todd P. Koh	11/13/02	1507

Received by: _____ Date: _____ Time: _____

Relinquished by: _____ Date: _____ Time: _____

Received at Laboratory by:	Date:	Time:
<i>Stella Medina</i>	11-13-02	

LAB USE ONLY

Intact Y N
Headspace Y / N
Temp 4°
Log-in Review MA

REMARKS:

THKS:
need 11-18-02
PJF
11/19/02

☐ Check If Special Reporting Limits Are NeededCarrier # Walk in

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

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TraceAnalysis, Inc.

6701 Aberdeen Ave., Suite 9

Lubbock, TX 79424-1515

(805) 794-1296

Report Date: December 2, 2002 Order Number: A02111327
CH2100 Champion TechPage Number: 1 of 1
Hobbs, NM

Summary Report

Todd Chohan
E.T.G.I.
PO Box 4845
Midland, Tx. 79704

Report Date: December 2, 2002

Order ID Number: A02111327

Project Number: CH2100
Project Name: Champion Tech
Project Location: Hobbs, NM

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
213339	MW-4	Water	11/13/02	11:40	11/13/02
213340	MW-6	Water	11/13/02	11:52	11/13/02
213342	MW-9	Water	11/13/02	11:20	11/13/02

0 This report consists of a total of 1 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample: 213339 - MW-4

Param	Flag	Result	Units
Dissolved Chromium		0.281	mg/L

Sample: 213340 - MW-6

Param	Flag	Result	Units
Dissolved Chromium		0.050	mg/L
Total Chromium		0.156	mg/L

Sample: 213342 - MW-9

Param	Flag	Result	Units
Dissolved Chromium		<0.011	mg/L
Total Chromium		<0.010	mg/L

This is only a summary. Please, refer to the complete report package for quality control data.

TraceAnalysis, Inc.

6701 Aberdeen Ave., Suite 9

Lubbock, TX 79424-1515

(806) 794-1296

Report Date: November 19, 2002
CH2100Order Number: A02111327
Champion TechPage Number: 1 of 3
Hobbs, NM

Summary Report

Todd Choban
E.T.G.I.
PO Box 4845
Midland, Tx. 79704

Report Date: November 19, 2002

Order ID Number: A02111327

Project Number: CH2100
Project Name: Champion Tech
Project Location: Hobbs, NM

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
213337	MW-1	Water	11/13/02	11:15	11/13/02
213338	MW-3	Water	11/13/02	11:26	11/13/02
213339	MW-4	Water	11/13/02	11:40	11/13/02
213340	MW-6	Water	11/13/02	11:52	11/13/02
213341	MW-7	Water	11/13/02	11:06	11/13/02
213342	MW-9	Water	11/13/02	11:20	11/13/02
213343	MW-13	Water	11/13/02	10:23	11/13/02
213344	MW-15	Water	11/13/02	10:58	11/13/02
213345	MW-16	Water	11/13/02	11:32	11/13/02
213346	S.E. Corner	Water	11/13/02	11:48	11/13/02
213347	Trip Blank	Water	11/13/02	12:00	11/13/02

0 This report consists of a total of 3 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample: 213337 - MW-1

Param	Flag	Result	Units
Total Chromium		<0.010	mg/L

Sample: 213338 - MW-3

Param	Flag	Result	Units
Hexavalent Chromium		<0.01	mg/L
Total Chromium		0.0159	mg/L

Sample: 213339 - MW-4

Param	Flag	Result	Units
Hexavalent Chromium		0.296	mg/L
Total Chromium		0.272	mg/L

This is only a summary. Please, refer to the complete report package for quality control data.

TraceAnalysis, Inc.

6701 Aberdeen Ave., Suite 9

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Report Date: November 19, 2002 Order Number: A0211327
CH2100 Champion TechPage Number: 2 of 3
Hobbs, NM**Sample: 213340 - MW-6**

Param	Flag	Result	Units
Hexavalent Chromium		0.047	mg/L
Chloride		390	mg/L
Total Chromium		0.138	mg/L

Sample: 213341 - MW-7

Param	Flag	Result	Units
Total Chromium		<0.010	mg/L

Sample: 213342 - MW-9

Param	Flag	Result	Units
Hexavalent Chromium		<0.01	mg/L
Total Chromium		<0.010	mg/L

Sample: 213343 - MW-13

Param	Flag	Result	Units
Hexavalent Chromium		0.059	mg/L
Total Chromium		0.0741	mg/L

Sample: 213344 - MW-15

Param	Flag	Result	Units
Chloride		200	mg/L

Sample: 213345 - MW-16

Param	Flag	Result	Units
Hexavalent Chromium		<0.01	mg/L
Total Chromium		<0.010	mg/L

Sample: 213346 - S.E. Corner

Param	Flag	Result	Units
Hexavalent Chromium		0.285	mg/L
Total Chromium		0.275	mg/L

This is only a summary. Please, refer to the complete report package for quality control data.

TraceAnalysis, Inc.

6701 Aberdeen Ave., Suite 9

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(806) 794-1296

Report Date: November 19, 2002 Order Number: A02111327
CH2100 Champion TechPage Number: 3 of 3
Hobbs, NM

Sample: 213347 - Trip Blank

Param	Flag	Result	Units
Total Chromium		<0.010	mg/L

This is only a summary. Please, refer to the complete report package for quality control data.

✓

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Analytical and Quality Control Report

Todd Choban
E.T.G.I.
PO Box 4845
Midland, Tx. 79704

Report Date: December 2, 2002

Order ID Number: A02111327

Project Number: CH2100
Project Name: Champion Tech
Project Location: Hobbs, NM

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace-Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
213339	MW-4	Water	11/13/02	11:40	11/13/02
213340	MW-6	Water	11/13/02	11:52	11/13/02
213342	MW-9	Water	11/13/02	11:20	11/13/02

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed. Note: the RDL is equal to MQL for all organic analytes including TPH.

The test results contained within this report meet all requirements of LAC 33:I unless otherwise noted.

This report consists of a total of 4 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of TraceAnalysis, Inc.

Note: Samples will be disposed of 30 days from the report date unless the lab is contacted before the 30 days has past.


Dr. Blair Leftwich, Director

Analytical Report

Sample: 213339 - MW-4

Analysis: Dissolved Metals Analytical Method: S 6010B QC Batch: QC25236 Date Analyzed: 11/27/02
Analyst: RR Preparation Method: E 3005A Prep Batch: PB23324 Date Prepared: 11/22/02

Param	Flag	Result	Units	Dilution	RDL
Dissolved Chromium		0.281	mg/L	1.10	0.01

Sample: 213340 - MW-6

Analysis: Dissolved Metals Analytical Method: S 6010B QC Batch: QC25236 Date Analyzed: 11/27/02
Analyst: RR Preparation Method: E 3005A Prep Batch: PB23324 Date Prepared: 11/22/02

Param	Flag	Result	Units	Dilution	RDL
Dissolved Chromium		0.050	mg/L	1.10	0.01

Sample: 213340 - MW-6

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC25101 Date Analyzed: 11/25/02
Analyst: RR Preparation Method: S 3010A Prep Batch: PB23285 Date Prepared: 11/20/02

Param	Flag	Result	Units	Dilution	RDL
Total Chromium		0.156	mg/L	1	0.01

Sample: 213342 - MW-9

Analysis: Dissolved Metals Analytical Method: S 6010B QC Batch: QC25236 Date Analyzed: 11/27/02
Analyst: RR Preparation Method: E 3005A Prep Batch: PB23324 Date Prepared: 11/22/02

Param	Flag	Result	Units	Dilution	RDL
Dissolved Chromium		<0.011	mg/L	1.10	0.01

Sample: 213342 - MW-9

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC25101 Date Analyzed: 11/25/02
Analyst: RR Preparation Method: S 3010A Prep Batch: PB23285 Date Prepared: 11/20/02

Param	Flag	Result	Units	Dilution	RDL
Total Chromium		<0.010	mg/L	1	0.01

Quality Control Report Method Blank

Method Blank QCBatch: QC25101

Param	Flag	Results	Units	Reporting Limit
Total Chromium		<0.010	mg/L	0.01

Method Blank QCBatch: QC25236

Param	Flag	Results	Units	Reporting Limit
Dissolved Chromium		<0.011	mg/L	0.01

Quality Control Report Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes QCBatch: QC25101

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Chromium	0.106	0.105	mg/L	1	0.10	<0.010	106	1	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes QCBatch: QC25236

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Dissolved Chromium	0.0975	0.0976	mg/L	1.20	0.10	<0.011	97	0	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Matrix Spikes and Duplicate Spikes

Matrix Spikes QCBatch: QC25101

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Chromium	0.0994	0.0991	mg/L	1	0.10	<0.010	99	0	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC25236

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Dissolved Chromium	0.0893	0.0877	mg/L	1.20	0.10	<0.011	89	1	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Continuing Calibration Verification Standards

CCV (1) QCBatch: QC25101

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Chromium		mg/L	0.20	0.204	102	90 - 110	11/25/02

ICV (1) QCBatch: QC25101

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Chromium		mg/L	0.20	0.202	101	90 - 110	11/25/02

CCV (1) QCBatch: QC25236

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Chromium		mg/L	0.20	0.197	98	90 - 110	11/27/02

ICV (1) QCBatch: QC25236

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Chromium		mg/L	0.20	0.197	98	90 - 110	11/27/02

TRACE ANALYSIS, INC.

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Analytical and Quality Control Report

Todd Choban
E.T.G.I.
PO Box 4845
Midland, Tx. 79704

Report Date: November 19, 2002

Order ID Number: A02111327

Project Number: CH2100
Project Name: Champion Tech
Project Location: Hobbs, NM

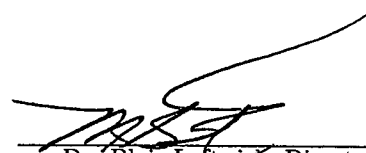
Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace-Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
213337	MW-1	Water	11/13/02	11:15	11/13/02
213338	MW-3	Water	11/13/02	11:26	11/13/02
213339	MW-4	Water	11/13/02	11:40	11/13/02
213340	MW-6	Water	11/13/02	11:52	11/13/02
213341	MW-7	Water	11/13/02	11:06	11/13/02
213342	MW-9	Water	11/13/02	11:20	11/13/02
213343	MW-13	Water	11/13/02	10:23	11/13/02
213344	MW-15	Water	11/13/02	10:58	11/13/02
213345	MW-16	Water	11/13/02	11:32	11/13/02
213346	S.E. Corner	Water	11/13/02	11:48	11/13/02
213347	Trip Blank	Water	11/13/02	12:00	11/13/02

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed. Note: the RDL is equal to MQL for all organic analytes including TPH. The test results contained within this report meet all requirements of LAC 33:I unless otherwise noted.

This report consists of a total of 10 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of TraceAnalysis, Inc.

Note: Samples will be disposed of 30 days from the report date unless the lab is contacted before the 30 days has past.



Dr. Blair Leftwich, Director

Carrier # Walk in

Summary Report

Todd Choban
E.T.G.I.
PO Box 4845
Midland, Tx. 79704

Report Date: January 13, 2003

Order ID Number: A02122009

Project Number: CH2100
Project Name: Champion Tech
Project Location: Hobbs,NM

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
216865	A-2 Bottom #1	Soil	12/18/02	15:20	12/20/02
216866	A2-Bottom #2	Soil	12/18/02	15:25	12/20/02
216867	A2-Bottom #3	Soil	12/18/02	15:35	12/20/02
216868	A2-Bottom #4	Soil	12/18/02	15:30	12/20/02

0 This report consists of a total of 2 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample: 216865 - A-2 Bottom #1

Param	Flag	Result	Units
Total Mercury		<0.19	mg/Kg
Total Arsenic		3.55	mg/Kg
Total Barium		238	mg/Kg
Total Cadmium		<0.500	mg/Kg
Total Chromium		8.29	mg/Kg
Total Copper		4.48	mg/Kg
Total Iron		6340	mg/Kg
Total Lead		4.71	mg/Kg
Total Manganese		66.4	mg/Kg
Total Selenium		<1.00	mg/Kg
Total Silver		<0.200	mg/Kg
Total Zinc		16.2	mg/Kg

Sample: 216866 - A2-Bottom #2

Param	Flag	Result	Units
Total Mercury		<0.19	mg/Kg
Total Arsenic		2.54	mg/Kg
Total Barium		446	mg/Kg
Total Cadmium		<0.500	mg/Kg
Total Chromium		5.81	mg/Kg
Total Copper		6.54	mg/Kg
Total Iron		7260	mg/Kg
Total Lead		3.59	mg/Kg

Continued on next page ...

This is only a summary. Please, refer to the complete report package for quality control data.

Report Date: January 13, 2003 Order Number: A02122009
CH2100 Champion Tech

Page Number: 2 of 2
Hobbs,NM

Sample 216866 continued ...

Param	Flag	Result	Units
Total Manganese		68.6	mg/Kg
Total Selenium		<1.00	mg/Kg
Total Silver		<0.200	mg/Kg
Total Zinc		11.2	mg/Kg

Sample: 216867 - A2-Bottom #3

Param	Flag	Result	Units
Total Mercury		<0.19	mg/Kg
Total Arsenic		2.56	mg/Kg
Total Barium		324	mg/Kg
Total Cadmium		<0.500	mg/Kg
Total Chromium		6.04	mg/Kg
Total Copper		3.04	mg/Kg
Total Iron		4370	mg/Kg
Total Lead		4.05	mg/Kg
Total Manganese		52.2	mg/Kg
Total Selenium		<1.00	mg/Kg
Total Silver		<0.200	mg/Kg
Total Zinc		11.2	mg/Kg

Sample: 216868 - A2-Bottom #4

Param	Flag	Result	Units
Total Mercury		<0.19	mg/Kg
Total Arsenic		2.20	mg/Kg
Total Barium		464	mg/Kg
Total Cadmium		<0.500	mg/Kg
Total Chromium		28.4	mg/Kg
Total Copper		3.81	mg/Kg
Total Iron		4350	mg/Kg
Total Lead		5.68	mg/Kg
Total Manganese		58.8	mg/Kg
Total Selenium		<1.00	mg/Kg
Total Silver		<0.200	mg/Kg
Total Zinc		37.2	mg/Kg

This is only a summary. Please, refer to the complete report package for quality control data.

TRACE ANALYSIS, INC.

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Analytical and Quality Control Report

Todd Choban
E.T.G.I.
PO Box 4845
Midland, Tx. 79704

Report Date: January 13, 2003

Order ID Number: A02122009

Project Number: CH2100
Project Name: Champion Tech
Project Location: Hobbs, NM

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace-Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
216865	A-2 Bottom #1	Soil	12/18/02	15:20	12/20/02
216866	A2-Bottom #2	Soil	12/18/02	15:25	12/20/02
216867	A2-Bottom #3	Soil	12/18/02	15:35	12/20/02
216868	A2-Bottom #4	Soil	12/18/02	15:30	12/20/02

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed. Note: the RDL is equal to MQL for all organic analytes including TPH. The test results contained within this report meet all requirements of LAC 33:I unless otherwise noted.

This report consists of a total of 7 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of TraceAnalysis, Inc.

Note: Samples will be disposed of 30 days from the report date unless the lab is contacted before the 30 days has past.


Dr. Blair Leftwich, Director

Analytical Report

Sample: 216865 - A-2 Bottom #1

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC25892 Date Analyzed: 12/30/02
Analyst: BC Preparation Method: N/A Prep Batch: PB23977 Date Prepared: 12/30/02

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 216865 - A-2 Bottom #1

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC25831 Date Analyzed: 12/27/02
Analyst: RR Preparation Method: S 3050B Prep Batch: PB23902 Date Prepared: 12/24/02

Param	Flag	Result	Units	Dilution	RDL
Total Arsenic		3.55	mg/Kg	100	0.01
Total Barium		238	mg/Kg	100	0.01
Total Cadmium		<0.500	mg/Kg	100	0.005
Total Chromium		8.29	mg/Kg	100	0.01
Total Copper		4.48	mg/Kg	100	0.01
Total Iron		6340	mg/Kg	100	0.05
Total Lead		4.71	mg/Kg	100	0.01
Total Manganese		66.4	mg/Kg	100	0.02
Total Selenium		<1.00	mg/Kg	100	0.01
Total Silver		<0.200	mg/Kg	100	0.002
Total Zinc		16.2	mg/Kg	100	0.02

Sample: 216866 - A2-Bottom #2

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC25892 Date Analyzed: 12/30/02
Analyst: BC Preparation Method: N/A Prep Batch: PB23977 Date Prepared: 12/30/02

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 216866 - A2-Bottom #2

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC25831 Date Analyzed: 12/27/02
Analyst: RR Preparation Method: S 3050B Prep Batch: PB23902 Date Prepared: 12/24/02

Param	Flag	Result	Units	Dilution	RDL
Total Arsenic		2.54	mg/Kg	100	0.01
Total Barium		446	mg/Kg	100	0.01
Total Cadmium		<0.500	mg/Kg	100	0.005
Total Chromium		5.81	mg/Kg	100	0.01
Total Copper		6.54	mg/Kg	100	0.01
Total Iron		7260	mg/Kg	100	0.05
Total Lead		3.59	mg/Kg	100	0.01
Total Manganese		68.6	mg/Kg	100	0.02
Total Selenium		<1.00	mg/Kg	100	0.01

Continued ...

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Champion Tech

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... Continued Sample: 216866 Analysis: Total Metals

Param	Flag	Result	Units	Dilution	RDL
Total Silver		<0.200	mg/Kg	100	0.002
Total Zinc		11.2	mg/Kg	100	0.02

Sample: 216867 - A2-Bottom #3

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC25892 Date Analyzed: 12/30/02
Analyst: BC Preparation Method: N/A Prep Batch: PB23977 Date Prepared: 12/30/02

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 216867 - A2-Bottom #3

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC25831 Date Analyzed: 12/27/02
Analyst: RR Preparation Method: S 3050B Prep Batch: PB23902 Date Prepared: 12/24/02

Param	Flag	Result	Units	Dilution	RDL
Total Arsenic		2.56	mg/Kg	100	0.01
Total Barium		324	mg/Kg	100	0.01
Total Cadmium		<0.500	mg/Kg	100	0.005
Total Chromium		6.04	mg/Kg	100	0.01
Total Copper		3.04	mg/Kg	100	0.01
Total Iron		4370	mg/Kg	100	0.05
Total Lead		4.05	mg/Kg	100	0.01
Total Manganese		52.2	mg/Kg	100	0.02
Total Selenium		<1.00	mg/Kg	100	0.01
Total Silver		<0.200	mg/Kg	100	0.002
Total Zinc		11.2	mg/Kg	100	0.02

Sample: 216868 - A2-Bottom #4

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC25892 Date Analyzed: 12/30/02
Analyst: BC Preparation Method: N/A Prep Batch: PB23977 Date Prepared: 12/30/02

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 216868 - A2-Bottom #4

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC25831 Date Analyzed: 12/27/02
Analyst: RR Preparation Method: S 3050B Prep Batch: PB23902 Date Prepared: 12/24/02

Param	Flag	Result	Units	Dilution	RDL
Total Arsenic		2.20	mg/Kg	100	0.01
Total Barium		464	mg/Kg	100	0.01
Total Cadmium		<0.500	mg/Kg	100	0.005
Total Chromium		28.4	mg/Kg	100	0.01
Total Copper		3.81	mg/Kg	100	0.01
Total Iron		4350	mg/Kg	100	0.05

Continued ...

Report Date: January 13, 2003
CH2100

Order Number: A02122009
Champion Tech

Page Number: 4 of 7
Hobbs,NM

...Continued Sample: 216868 Analysis: Total Metals

Param	Flag	Result	Units	Dilution	RDL
Total Lead		5.68	mg/Kg	100	0.01
Total Manganese		58.8	mg/Kg	100	0.02
Total Selenium		<1.00	mg/Kg	100	0.01
Total Silver		<0.200	mg/Kg	100	0.002
Total Zinc		37.2	mg/Kg	100	0.02

Quality Control Report Method Blank

Method Blank QCBatch: QC25831

Param	Flag	Results	Units	Reporting Limit
Total Arsenic		<1.00	mg/Kg	0.01
Total Barium		<1.00	mg/Kg	0.01
Total Cadmium		<0.500	mg/Kg	0.005
Total Chromium		<1.00	mg/Kg	0.01
Total Copper		<1.25	mg/Kg	0.01
Total Iron		<5.00	mg/Kg	0.05
Total Lead		<1.00	mg/Kg	0.01
Total Manganese		<2.50	mg/Kg	0.02
Total Selenium		<1.00	mg/Kg	0.01
Total Silver		<0.200	mg/Kg	0.002
Total Zinc		<2.50	mg/Kg	0.02

Method Blank QCBatch: QC25892

Param	Flag	Results	Units	Reporting Limit
Total Mercury		<0.19	mg/Kg	0.19

Quality Control Report Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes QCBatch: QC25831

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Arsenic	47.2	47.4	mg/Kg	100	50	<1.00	94	0	75 - 125	20
Total Barium	98.8	102	mg/Kg	100	100	<1.00	98	3	75 - 125	20
Total Cadmium	23.4	24.0	mg/Kg	100	25	<0.500	93	2	75 - 125	20
Total Chromium	9.58	9.90	mg/Kg	100	10	<1.00	95	3	75 - 125	20
Total Copper	13.0	13.2	mg/Kg	100	12.50	<1.25	104	1	75 - 125	20
Total Iron	49.1	48.7	mg/Kg	100	50	<5.00	98	0	75 - 125	20
Total Lead	51.3	52.5	mg/Kg	100	50	<1.00	102	2	75 - 125	20
Total Manganese	25.2	25.3	mg/Kg	100	25	<2.50	100	0	75 - 125	20
Total Selenium	42	43.2	mg/Kg	100	50	<1.00	84	2	75 - 125	20
Total Silver	12.0	12.3	mg/Kg	100	12.50	<0.200	96	2	75 - 125	20
Total Zinc	25.6	26.9	mg/Kg	100	25	<2.50	102	4	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes QCBatch: QC25892

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Mercury	2.22	2.32	mg/Kg	1	2.50	<0.19	88	4	88 - 123	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Matrix Spikes and Duplicate Spikes

Matrix Spikes QCBatch: QC25831

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Arsenic	49.4	49.5	mg/Kg	100	50	3.55	91	0	75 - 125	20
Total Barium	¹ 407	412	mg/Kg	100	100	238	169	2	75 - 125	20
Total Cadmium	21.2	21.1	mg/Kg	100	25	<0.500	84	0	75 - 125	20
Total Chromium	17.7	16.8	mg/Kg	100	10	8.29	94	10	75 - 125	20
Total Copper	17.4	16.9	mg/Kg	100	12.50	4.48	103	3	75 - 125	20
Total Iron	² 6530	5810	mg/Kg	100	50	6340	380	-423	75 - 125	20
Total Lead	49.8	49.4	mg/Kg	100	50	4.71	90	0	75 - 125	20
Total Manganese	91.3	84.3	mg/Kg	100	25	66.4	99	32	75 - 125	20
Total Selenium	40.8	40.8	mg/Kg	100	50	<1.00	81	0	75 - 125	20
Total Silver	12.0	12.1	mg/Kg	100	12.50	<0.200	96	0	75 - 125	20
Total Zinc	38.4	35.3	mg/Kg	100	25	16.2	88	15	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC25892

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Mercury	2.77	2.90	mg/Kg	1	2.50	<0.19	110	4	45 - 157	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Continuing Calibration Verification Standards

CCV (1) QCBatch: QC25831

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Arsenic		mg/L	1	1.00	100	90 - 110	12/27/02

Continued ...

¹Matrix spike recovery invalid due to matrix effects. LCS demonstrates process under control.

²Matrix spike recovery invalid due to matrix effects. LCS demonstrates process under control.

... Continued

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Barium		mg/L	2	2.04	102	90 - 110	12/27/02
Total Cadmium		mg/L	0.50	0.499	100	90 - 110	12/27/02
Total Chromium		mg/L	0.20	0.197	98	90 - 110	12/27/02
Total Copper		mg/L	0.25	0.248	99	90 - 110	12/27/02
Total Iron		mg/L	1	1.02	102	90 - 110	12/27/02
Total Lead		mg/L	1	1.02	102	90 - 110	12/27/02
Total Manganese		mg/L	0.50	0.505	101	90 - 110	12/27/02
Total Selenium		mg/L	1	0.988	99	90 - 110	12/27/02
Total Silver		mg/L	0.25	0.250	100	90 - 110	12/27/02
Total Zinc		mg/L	0.50	0.489	98	90 - 110	12/27/02

ICV (1)

QCBatch: QC25831

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Arsenic		mg/L	1	1.02	102	95 - 105	12/27/02
Total Barium		mg/L	2	2.05	102	95 - 105	12/27/02
Total Cadmium		mg/L	0.50	0.508	102	95 - 105	12/27/02
Total Chromium		mg/L	0.20	0.200	100	95 - 105	12/27/02
Total Copper		mg/L	0.25	0.252	101	95 - 105	12/27/02
Total Iron		mg/L	1	1.03	103	95 - 105	12/27/02
Total Lead		mg/L	1	1.03	103	95 - 105	12/27/02
Total Manganese		mg/L	0.50	0.507	101	95 - 105	12/27/02
Total Selenium		mg/L	1	1.01	101	95 - 105	12/27/02
Total Silver		mg/L	0.25	0.253	101	95 - 105	12/27/02
Total Zinc		mg/L	0.50	0.497	99	95 - 105	12/27/02

CCV (1)

QCBatch: QC25892

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Mercury		mg/L	0.005	0.00586	117	80 - 120	12/30/02

ICV (1)

QCBatch: QC25892

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Mercury		mg/L	0.005	0.00515	103	80 - 120	12/30/02

TraceAnalysis, Inc.

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LAB Order ID # A02122009

Phone #:

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Project #: CH2100

Project Name: Champion Technologies Inc

Project Location: Hobbs, NM

Sampler Signature: _____

Relinquished by: <u>Todd Chis</u> Date: <u>12/19/02</u> Time: <u>1700</u>	Received by: <u>Sellen Shelton</u> Date: <u>12/19/02</u> Time: <u>1700</u>	LAB USE ONLY Intact <u>Y/N</u> Headspace <u>Y/N</u> Temp <u>7</u> ° Log-in Review <u>MA</u>	REMARKS: <u>Rec'd by Yhurs.</u> <u>Jan 2, 2002</u> <u>PLF</u> <u>1/13/03</u>
Relinquished by: <u>Sellen Shelton</u> Date: <u>12/10/02</u> Time: <u>1845</u>	Received by: _____ Date: _____ Time: _____		
Relinquished by: _____ Date: _____ Time: _____	Received at Laboratory by: <u>Dicki Kinsler</u> Date: <u>122002</u> Time: <u>10:00</u>		

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C. 4 samples HS
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Carrier # Shyland GLI 106-130-340-2

Report Date: March 3, 2003
CH2100Order Number: A03022112
Champion TechPage Number: 1 of 1
Hobbs,NM

Summary Report

Todd Choban
E.T.G.I.
PO Box 4845
Midland, Tx. 79704

Report Date: March 3, 2003

Order ID Number: A03022112

Project Number: CH2100
Project Name: Champion Tech
Project Location: Hobbs,NM

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
221977	East 14.5'-15.5'	Soil	2/18/03	16:10	2/21/03
221980	Composite 4'	Soil	2/18/03	15:15	2/21/03

0 This report consists of a total of 1 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample - Field Code	BTEX					TPH DRO	TPH GRO
	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	M,P,O-Xylene (ppm)	Total BTEX (ppm)	DRO (ppm)	GRO (ppm)
221977 - East 14.5'-15.5'	<0.010	<0.010	<0.010	0.0496	0.0496	<50.0	<1.0

Sample: 221977 - East 14.5'-15.5'

Param	Flag	Result	Units
Chloride		793	mg/Kg
Total Arsenic		18.9	mg/Kg
Total Chromium		10.2	mg/Kg
Total Lead		23.3	mg/Kg

Sample: 221980 - Composite 4'

Param	Flag	Result	Units
Chloride		532	mg/Kg
Total Arsenic		17.7	mg/Kg
Total Chromium		10.9	mg/Kg
Total Lead		22.6	mg/Kg

This is only a summary. Please, refer to the complete report package for quality control data.

TRACE ANALYSIS, INC.

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Analytical and Quality Control Report

Todd Choban
E.T.G.I.
PO Box 4845
Midland, Tx. 79704

Report Date: March 3, 2003

Order ID Number: A03022112

Project Number: CH2100
Project Name: Champion Tech
Project Location: Hobbs, NM

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace-Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
221977	East 14.5'-15.5'	Soil	2/18/03	16:10	2/21/03
221980	Composite 4'	Soil	2/18/03	15:15	2/21/03

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed. Note: the RDL is equal to MQL for all organic analytes including TPH.

The test results contained within this report meet all requirements of LAC 33:I unless otherwise noted.

This report consists of a total of 11 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of TraceAnalysis, Inc.

Note: Samples will be disposed of 30 days from the report date unless the lab is contacted before the 30 days has past.



Dr. Blair Leftwich, Director

Analytical Report

Sample: 221977 - East 14.5'-15.5'

Analysis: BTEX Analytical Method: S 8021B QC Batch: QC27343 Date Analyzed: 2/21/03
Analyst: CG Preparation Method: S 5035 Prep Batch: PB25114 Date Prepared: 2/21/03

Param	Flag	Result	Units	Dilution	RDL
Benzene		<0.010	mg/Kg	10	0.001
Toluene		<0.010	mg/Kg	10	0.001
Ethylbenzene		<0.010	mg/Kg	10	0.001
M,P,O-Xylene		0.0496	mg/Kg	10	0.001
Total BTEX		0.0496	mg/Kg	10	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.870	mg/Kg	10	1	87	70 - 130
4-BFB		0.867	mg/Kg	10	1	87	70 - 130

Sample: 221977 - East 14.5'-15.5'

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC27398 Date Analyzed: 2/25/03
Analyst: JSW Preparation Method: N/A Prep Batch: PB25162 Date Prepared: 2/25/03

Param	Flag	Result	Units	Dilution	RDL
Chloride		793	mg/Kg	50	1

Sample: 221977 - East 14.5'-15.5'

Analysis: TPH DRO Analytical Method: Mod. 8015B QC Batch: QC27334 Date Analyzed: 2/23/03
Analyst: BP Preparation Method: 3510 B Prep Batch: PB25105 Date Prepared: 2/21/03

Param	Flag	Result	Units	Dilution	RDL
DRO		<50.0	mg/Kg	1	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane	1	95.5	mg/Kg	1	150	63	70 - 130

Sample: 221977 - East 14.5'-15.5'

Analysis: TPH GRO Analytical Method: 8015B QC Batch: QC27344 Date Analyzed: 2/21/03
Analyst: CG Preparation Method: 5035 Prep Batch: PB25114 Date Prepared: 2/21/03

Param	Flag	Result	Units	Dilution	RDL
GRO		<1.0	mg/Kg	10	0.10

¹Surrogate recovery out of range but within control charts for TPH1.

Report Date: March 3, 2003
CH2100

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Page Number: 3 of 11
Hobbs,NM

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.928	mg/Kg	10	0.10	93	70 - 130
4-BFB		1.01	mg/Kg	10	0.10	101	70 - 130

Sample: 221977 - East 14.5'-15.5'

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC27464 Date Analyzed: 2/27/03
Analyst: RR Preparation Method: S 3050B Prep Batch: PB25123 Date Prepared: 2/24/03

Param	Flag	Result	Units	Dilution	RDL
Total Arsenic		18.9	mg/Kg	1	0.01
Total Chromium		10.2	mg/Kg	1	0.01
Total Lead		23.3	mg/Kg	1	0.01

Sample: 221980 - Composite 4'

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC27407 Date Analyzed: 2/25/03
Analyst: JSW Preparation Method: N/A Prep Batch: PB25171 Date Prepared: 2/25/03

Param	Flag	Result	Units	Dilution	RDL
Chloride		532	mg/Kg	1	1

Sample: 221980 - Composite 4'

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC27464 Date Analyzed: 2/27/03
Analyst: RR Preparation Method: S 3050B Prep Batch: PB25123 Date Prepared: 2/24/03

Param	Flag	Result	Units	Dilution	RDL
Total Arsenic		17.7	mg/Kg	100	0.01
Total Chromium		10.9	mg/Kg	100	0.01
Total Lead		22.6	mg/Kg	100	0.01

Quality Control Report Method Blank

Method Blank QCBatch: QC27334

Param	Flag	Results	Units	Reporting Limit
DRO		<50.0	mg/Kg	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane	²	56.6	mg/Kg	1	150	48	70 - 130

Method Blank QCBatch: QC27343

Param	Flag	Results	Units	Reporting Limit
Benzene		<0.010	mg/Kg	0.001
Toluene		<0.010	mg/Kg	0.001
Ethylbenzene		<0.010	mg/Kg	0.001
M,P,O-Xylene		<0.010	mg/Kg	0.001
Total BTEX		<0.010	mg/Kg	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.822	mg/Kg	10	1	82	70 - 130
4-BFB		0.808	mg/Kg	10	1	81	70 - 130

Method Blank QCBatch: QC27344

Param	Flag	Results	Units	Reporting Limit
GRO		<1.0	mg/Kg	0.10

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.91	mg/Kg	10	0.10	91	70 - 130
4-BFB		0.88	mg/Kg	10	0.10	88	70 - 130

Method Blank QCBatch: QC27398

²Surrogate recovery out of range but within control charts for TPH1.

Param	Flag	Results	Units	Reporting Limit
Chloride		<1.0	mg/Kg	1

Method Blank QCBatch: QC27407

Param	Flag	Results	Units	Reporting Limit
Chloride		<1.0	mg/Kg	1

Method Blank QCBatch: QC27464

Param	Flag	Results	Units	Reporting Limit
Total Arsenic		<1.00	mg/Kg	0.01
Total Chromium		<1.00	mg/Kg	0.01
Total Lead		<1.00	mg/Kg	0.01

Quality Control Report Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes QCBatch: QC27334

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
DRO	204	200	mg/Kg	1	250	<50.0	81	1	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
n-Triacontane	³ 75.5	⁴ 76.7	mg/Kg	1	150	50	51	70 - 130

Laboratory Control Spikes QCBatch: QC27343

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
MTBE	0.814	0.794	mg/Kg	10	1	<0.010	81	2	70 - 130	20
Benzene	0.911	0.891	mg/Kg	10	1	<0.010	91	2	70 - 130	20
Toluene	0.914	0.897	mg/Kg	10	1	<0.010	91	1	70 - 130	20
Ethylbenzene	0.910	0.893	mg/Kg	10	1	<0.010	91	1	70 - 130	20
M,P,O-Xylene	2.76	2.71	mg/Kg	10	3	<0.010	92	1	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

³Surrogate recovery out of range but within control charts for TPH1.

⁴Surrogate recovery out of range but within control charts for TPH1.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
TFT	0.837	0.802	mg/Kg	10	1	83	80	70 - 130
4-BFB	0.831	0.805	mg/Kg	10	1	83	80	70 - 130

Laboratory Control Spikes

QCBatch: QC27344

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
GRO	8.66	< 1	mg/Kg	10	1	<1.0	87	163	80 - 120	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
TFT	0.9	0.935	mg/Kg	10	0.10	90	93	70 - 130
4-BFB	0.909	0.941	mg/Kg	10	0.10	91	94	70 - 130

Laboratory Control Spikes

QCBatch: QC27398

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	⁵ 32.4	⁶ 32.7	mg/Kg	1	12.50	<1.0	259	0	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC27407

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	⁷ 32.62	⁸ 32.72	mg/Kg	1	12.50	<1.0	260	0	90 - 110	20
Nitrate-N	⁹ 2.94	¹⁰ 2.92	mg/Kg	1	2.50	<0.2	117	0	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC27464

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Arsenic	41.3	42.6	mg/Kg	100	50	<1.00	82	3	75 - 125	20
Total Barium	86.0	91.0	mg/Kg	100	100	<1.00	86	5	75 - 125	20
Total Cadmium	22.2	23.0	mg/Kg	100	25	<0.500	88	3	75 - 125	20

Continued ...

⁵The soil blank should be subtracted from the blank spike. LCS%EA = 107 and RPD = 1.

⁶The soil blank should be subtracted from the blank spike. LCS%EA = 107 and RPD = 1.

⁷The soil blank should be subtracted from the blank spike. LCS%EA = 108 and RPD = 0.

⁸The soil blank should be subtracted from the blank spike. LCS%EA = 108 and RPD = 0.

⁹The soil blank should be subtracted from the blank spike. LCS%EA = 103 and RPD = 1.

¹⁰The soil blank should be subtracted from the blank spike. LCS%EA = 103 and RPD = 1.

... Continued

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Chromium	9.42	9.85	mg/Kg	100	10	<1.00	94	4	75 - 125	20
Total Lead	44.8	46.8	mg/Kg	100	50	<1.00	89	4	75 - 125	20
Total Selenium	38.5	42.1	mg/Kg	100	50	<1.00	77	8	75 - 125	20
Total Silver	11.2	11.5	mg/Kg	100	12.50	<0.200	89	2	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Matrix Spikes and Duplicate Spikes

Matrix Spikes QCBatch: QC27334

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
DRO	190	193	mg/Kg	1	250	<50.0	76	1	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dilution	Spike Amount	MS % Rec	MSD % Rec	Recovery Limits
n-Triacontane	¹¹ 90.4	¹² 91.1	mg/Kg	1	150	60	60	70 - 130

Matrix Spikes QCBatch: QC27343

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Benzene	0.774	0.814	mg/Kg	10	1	<0.010	77	5	70 - 130	20
Toluene	0.797	0.836	mg/Kg	10	1	<0.010	79	4	70 - 130	20
Ethylbenzene	0.805	0.844	mg/Kg	10	1	<0.010	80	4	70 - 130	20
M,P,O-Xylene	2.44	2.55	mg/Kg	10	3	0.0496	79	4	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dilution	Spike Amount	MS % Rec	MSD % Rec	Recovery Limits
TFT	0.87	0.745	mg/Kg	10	1	87	74	70 - 130
4-BFB	0.867	0.738	mg/Kg	10	1	86	73	70 - 130

Matrix Spikes QCBatch: QC27344

¹¹Surrogate recovery out of range but within control charts for TPH1.

¹²Surrogate recovery out of range but within control charts for TPH1.

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
GRO	9.8	9.24	mg/Kg	10	1	<1.0	98	5	80 - 120	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dilution	Spike Amount	MS % Rec	MSD % Rec	Recovery Limits
TFT	1.07	0.956	mg/Kg	10	0.10	107	96	70 - 130
4-BFB	0.863	0.87	mg/Kg	10	0.10	86	87	70 - 130

Matrix Spikes QCBatch: QC27464

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Arsenic	83.8	81.6	mg/Kg	100	50	32.9	101	4	75 - 125	20
Total Chromium	34.4	33.6	mg/Kg	100	10	23.2	112	7	75 - 125	20
Total Lead	103	98.8	mg/Kg	100	50	48.0	110	7	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Continuing Calibration Verification Standards

CCV (1) QCBatch: QC27334

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	200	80	75 - 125	2/23/03

ICV (1) QCBatch: QC27334

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	230	92	75 - 125	2/23/03

CCV (1) QCBatch: QC27343

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/L	0.10	0.088	88	85 - 115	2/21/03

Continued ...

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Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/L	0.10	0.092	92	85 - 115	2/21/03
Toluene		mg/L	0.10	0.092	92	85 - 115	2/21/03
Ethylbenzene		mg/L	0.10	0.091	91	85 - 115	2/21/03
M,P,O-Xylene		mg/L	0.30	0.270	90	85 - 115	2/21/03

CCV (2)

QCBatch: QC27343

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/L	0.10	0.088	88	85 - 115	2/21/03
Benzene		mg/L	0.10	0.089	89	85 - 115	2/21/03
Toluene		mg/L	0.10	0.092	92	85 - 115	2/21/03
Ethylbenzene		mg/L	0.10	0.090	90	85 - 115	2/21/03
M,P,O-Xylene		mg/L	0.30	0.274	91	85 - 115	2/21/03

ICV (1)

QCBatch: QC27343

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/L	0.10	0.089	89	85 - 115	2/21/03
Benzene		mg/L	0.10	0.097	97	85 - 115	2/21/03
Toluene		mg/L	0.10	0.101	101	85 - 115	2/21/03
Ethylbenzene		mg/L	0.10	0.092	92	85 - 115	2/21/03
M,P,O-Xylene		mg/L	0.30	0.276	92	85 - 115	2/21/03

CCV (1)

QCBatch: QC27344

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1	0.916	91	85 - 115	2/21/03

ICV (1)

QCBatch: QC27344

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1	0.859	85	85 - 115	2/21/03

CCV (1) QCBatch: QC27398

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	13.81	110	90 - 110	2/25/03

ICV (1) QCBatch: QC27398

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	13.71	109	90 - 110	2/25/03

CCV (1) QCBatch: QC27407

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	13.58	108	90 - 110	2/25/03
Nitrate-N		mg/L	2.50	2.64	105	90 - 110	2/25/03

ICV (1) QCBatch: QC27407

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	13.81	110	90 - 110	2/25/03
Nitrate-N		mg/L	2.50	2.70	108	90 - 110	2/25/03

CCV (1) QCBatch: QC27464

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Arsenic		mg/Kg	1	1.04	104	90 - 110	2/27/03
Total Barium		mg/Kg	2	2.08	104	90 - 110	2/27/03
Total Cadmium		mg/Kg	0.50	0.518	104	90 - 110	2/27/03
Total Chromium		mg/Kg	0.20	0.214	107	90 - 110	2/27/03
Total Lead		mg/Kg	1	1.04	104	90 - 110	2/27/03
Total Selenium		mg/Kg	1	0.985	98	90 - 110	2/27/03
Total Silver		mg/Kg	0.25	0.262	105	90 - 110	2/27/03

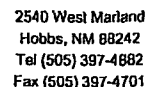
ICV (1) QCBatch: QC27464

Report Date: March 3, 2003
CH2100

Order Number: A03022112
Champion Tech

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Hobbs,NM

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Arsenic		mg/Kg	1	0.973	97	95 - 105	2/27/03
Total Barium		mg/Kg	2	1.95	98	95 - 105	2/27/03
Total Cadmium		mg/Kg	0.50	0.482	96	95 - 105	2/27/03
Total Chromium		mg/Kg	0.20	0.201	100	95 - 105	2/27/03
Total Lead		mg/Kg	1	0.977	98	95 - 105	2/27/03
Total Selenium		mg/Kg	1	0.990	99	95 - 105	2/27/03
Total Silver		mg/Kg	0.25	0.243	97	95 - 105	2/27/03

ANALYSIS REQUEST
(Circle or Specify Method No.)

Project Name:

Project Number:

CH 2100

Project Location:

Hobbs, NM

Sampler Signature:

ire: Todd Choh

Relinquished by: <u>Todd Pook</u>	Date: <u>2/19/03</u>	Time: <u>1730</u>	Received by: <u>Helena Shelton</u>	Date: <u>2/19/03</u>	Time: <u>1730</u>	REMARKS: <u>HOLD All Samples EXCEPT</u> <u>EAST 14.5'-15.5'</u> <u>MS 3/3 Flp</u>
Relinquished by: <u>Helena Shelton</u>	Date: <u>2/19/03</u>	Time: <u>1830</u>	Received at Lab by: <u>Vicki Jones</u>	Date: <u>2/21/03</u>	Time: <u>10:00</u>	

Shipped Greyhound 14 samples - 14 S.
GLZ 146 130 36 33

Report Date: March 3, 2003
CH2100Order Number: A03022119
Champion TechPage Number: 1 of 6
Hobbs,NM

Summary Report

Todd Choban
E.T.G.I.
PO Box 4845
Midland, Tx. 79704

Report Date: March 3, 2003

Order ID Number: A03022119

Project Number: CH2100
Project Name: Champion Tech
Project Location: Hobbs,NM

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
222056	WChamp 21903 MW-6	Water	2/19/03	10:07	2/21/03
222057	WChamp 21903 MW-11	Water	2/19/03	9:06	2/21/03
222058	WChamp 21903 MW-12	Water	2/19/03	8:59	2/21/03

0 This report consists of a total of 6 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample - Field Code	TPH DRO	TPH GRO
	DRO (ppm)	GRO (ppm)
222056 - WChamp 21903 MW-6	<5.00	<0.1
222057 - WChamp 21903 MW-11	<5.00	<0.1
222058 - WChamp 21903 MW-12	<5.00	<0.1

Sample: 222056 - WChamp 21903 MW-6

Param	Flag	Result	Units
Dissolved Arsenic		<0.011	mg/L
Dissolved Chromium		0.097	mg/L
Dissolved Lead		<0.011	mg/L
Chloride		533	mg/L
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L

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This is only a summary. Please, refer to the complete report package for quality control data.

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Sample 222056 continued ...

Param	Flag	Result	Units
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		<1.00	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		28.7	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		1.34	µg/L
1,1,1-Trichloroethane		1.21	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		3.64	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		14.9	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L

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Sample 222056 continued ...

Param	Flag	Result	Units
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

Sample: 222057 - WChamp 21903 MW-11

Param	Flag	Result	Units
Dissolved Arsenic		<0.011	mg/L
Dissolved Chromium		<0.011	mg/L
Dissolved Lead		<0.011	mg/L
Chloride		298	mg/L
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		<1.00	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		1.44	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L

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This is only a summary. Please, refer to the complete report package for quality control data.

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Sample 222057 continued ...

Param	Flag	Result	Units
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		<1.00	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

Sample: 222058 - WChamp 21903 MW-12

Param	Flag	Result	Units
Dissolved Arsenic		<0.011	mg/L
Dissolved Chromium		0.0201	mg/L
Dissolved Lead		<0.011	mg/L
Chloride		353	mg/L
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L

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Sample 222058 continued ...

Param	Flag	Result	Units
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		<1.00	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		3.35	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		1.16	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		1.90	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L

Continued on next page ...

This is only a summary. Please, refer to the complete report package for quality control data.

Report Date: March 3, 2003 Order Number: A03022119
CH2100 Champion Tech

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Hobbs,NM

Sample 222058 continued ...

Param	Flag	Result	Units
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

This is only a summary. Please, refer to the complete report package for quality control data.



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Analytical and Quality Control Report

Todd Choban
E.T.G.I.
PO Box 4845
Midland, Tx. 79704

Report Date: March 3, 2003

Order ID Number: A03022119

Project Number: CH2100
Project Name: Champion Tech
Project Location: Hobbs, NM

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace-Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
222056	WChamp 21903 MW-6	Water	2/19/03	10:07	2/21/03
222057	WChamp 21903 MW-11	Water	2/19/03	9:06	2/21/03
222058	WChamp 21903 MW-12	Water	2/19/03	8:59	2/21/03

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed. Note: the RDL is equal to MQL for all organic analytes including TPH.

The test results contained within this report meet all requirements of LAC 33:I unless otherwise noted.

This report consists of a total of 16 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of TraceAnalysis, Inc.

Note: Samples will be disposed of 30 days from the report date unless the lab is contacted before the 30 days has past.



Dr. Blair Leftwich, Director

Analytical Report

Sample: 222056 - WChamp 21903 MW-6

Analysis: Dissolved Metals Analytical Method: S 6010B QC Batch: QC27484 Date Analyzed: 2/28/03
Analyst: RR Preparation Method: E 3005A Prep Batch: PB25159 Date Prepared: 2/25/03

Param	Flag	Result	Units	Dilution	RDL
Dissolved Arsenic		<0.011	mg/L	1.10	0.01
Dissolved Chromium		0.097	mg/L	1.10	0.01
Dissolved Lead		<0.011	mg/L	1.10	0.01

Sample: 222056 - WChamp 21903 MW-6

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC27465 Date Analyzed: 2/26/03
Analyst: RS Preparation Method: N/A Prep Batch: PB25208 Date Prepared: 2/26/03

Param	Flag	Result	Units	Dilution	RDL
Chloride		533	mg/L	10	1

Sample: 222056 - WChamp 21903 MW-6

Analysis: TPH DRO Analytical Method: Mod. 8015B QC Batch: QC27423 Date Analyzed: 2/26/03
Analyst: BP Preparation Method: 3510C - Mod. Prep Batch: PB25182 Date Prepared: 2/22/03

Param	Flag	Result	Units	Dilution	RDL
DRO		<5.00	mg/L	0.10	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		10.7	mg/L	0.10	15	71	70 - 130

Sample: 222056 - WChamp 21903 MW-6

Analysis: TPH GRO Analytical Method: 8015B QC Batch: QC27348 Date Analyzed: 2/21/03
Analyst: CG Preparation Method: 5030 Prep Batch: PB25116 Date Prepared: 2/21/03

Param	Flag	Result	Units	Dilution	RDL
GRO		<0.1	mg/L	1	0.10

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.096	mg/L	1	0.10	96	70 - 130
4-BFB		0.095	mg/L	1	0.10	95	70 - 130

Sample: 222056 - WChamp 21903 MW-6

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC27374 Date Analyzed: 2/24/03
Analyst: JG Preparation Method: E 5030B Prep Batch: PB25145 Date Prepared: 2/24/03

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		<1.00	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		28.7	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		1.34	µg/L	1	1
1,1,1-Trichloroethane		1.21	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		3.64	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		14.9	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1

Continued ...

... Continued Sample: 222056 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		51.0	µg/L	1	50	102	70 - 130
Toluene-d8		49.8	µg/L	1	50	100	70 - 130
4-Bromofluorobenzene		44.2	µg/L	1	50	88	70 - 130

Sample: 222057 - WChamp 21903 MW-11

Analysis: Dissolved Metals Analytical Method: S 6010B QC Batch: QC27484 Date Analyzed: 2/28/03
Analyst: RR Preparation Method: E 3005A Prep Batch: PB25159 Date Prepared: 2/25/03

Param	Flag	Result	Units	Dilution	RDL
Dissolved Arsenic		<0.011	mg/L	1.10	0.01
Dissolved Chromium		<0.011	mg/L	1.10	0.01
Dissolved Lead		<0.011	mg/L	1.10	0.01

Sample: 222057 - WChamp 21903 MW-11

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC27465 Date Analyzed: 2/26/03
Analyst: RS Preparation Method: N/A Prep Batch: PB25208 Date Prepared: 2/26/03

Param	Flag	Result	Units	Dilution	RDL
Chloride		298	mg/L	10	1

Sample: 222057 - WChamp 21903 MW-11

Analysis: TPH DRO Analytical Method: Mod. 8015B QC Batch: QC27423 Date Analyzed: 2/26/03
Analyst: BP Preparation Method: 3510C - Mod. Prep Batch: PB25182 Date Prepared: 2/22/03

Param	Flag	Result	Units	Dilution	RDL
DRO		<5.00	mg/L	0.10	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		11.0	mg/L	0.10	15	73	70 - 130

Sample: 222057 - WChamp 21903 MW-11

Analysis: TPH GRO Analytical Method: 8015B QC Batch: QC27348 Date Analyzed: 2/21/03
Analyst: CG Preparation Method: 5030 Prep Batch: PB25116 Date Prepared: 2/21/03

Param	Flag	Result	Units	Dilution	RDL
GRO		<0.1	mg/L	1	0.10

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.094	mg/L	1	0.10	94	70 - 130
4-BFB		0.095	mg/L	1	0.10	95	70 - 130

Sample: 222057 - WChamp 21903 MW-11

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC27374 Date Analyzed: 2/24/03
Analyst: JG Preparation Method: E 5030B Prep Batch: PB25145 Date Prepared: 2/24/03

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		<1.00	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		1.44	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1

Continued ...

... Continued Sample: 222057 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		<1.00	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		50.8	µg/L	1	50	102	70 - 130
Toluene-d8		50.0	µg/L	1	50	100	70 - 130
4-Bromofluorobenzene		44.4	µg/L	1	50	89	70 - 130

Sample: 222058 - WChamp 21903 MW-12

Analysis: Dissolved Metals Analytical Method: S 6010B QC Batch: QC27484 Date Analyzed: 2/28/03
Analyst: RR Preparation Method: E 3005A Prep Batch: PB25159 Date Prepared: 2/25/03

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Param	Flag	Result	Units	Dilution	RDL
Dissolved Arsenic		<0.011	mg/L	1.10	0.01
Dissolved Chromium		0.0201	mg/L	1.10	0.01
Dissolved Lead		<0.011	mg/L	1.10	0.01

Sample: 222058 - WChamp 21903 MW-12

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC27465 Date Analyzed: 2/26/03
Analyst: RS Preparation Method: N/A Prep Batch: PB25208 Date Prepared: 2/26/03

Param	Flag	Result	Units	Dilution	RDL
Chloride		353	mg/L	10	1

Sample: 222058 - WChamp 21903 MW-12

Analysis: TPH DRO Analytical Method: Mod. 8015B QC Batch: QC27423 Date Analyzed: 2/26/03
Analyst: BP Preparation Method: 3510C - Mod. Prep Batch: PB25182 Date Prepared: 2/22/03

Param	Flag	Result	Units	Dilution	RDL
DRO		<5.00	mg/L	0.10	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		10.5	mg/L	0.10	15	70	70 - 130

Sample: 222058 - WChamp 21903 MW-12

Analysis: TPH GRO Analytical Method: 8015B QC Batch: QC27348 Date Analyzed: 2/21/03
Analyst: CG Preparation Method: 5030 Prep Batch: PB25116 Date Prepared: 2/21/03

Param	Flag	Result	Units	Dilution	RDL
GRO		<0.1	mg/L	1	0.10

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.093	mg/L	1	0.10	93	70 - 130
4-BFB		0.093	mg/L	1	0.10	93	70 - 130

Sample: 222058 - WChamp 21903 MW-12

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC27374 Date Analyzed: 2/24/03
Analyst: JG Preparation Method: E 5030B Prep Batch: PB25145 Date Prepared: 2/24/03

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5

Continued ...

... Continued Sample: 222058 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		<1.00	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		3.35	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		1.16	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		1.90	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1

Continued ...

Report Date: March 3, 2003
CH2100

Order Number: A03022119
Champion Tech

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Hobbs,NM

... Continued Sample: 222058 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		51.0	µg/L	1	50	102	70 - 130
Toluene-d8		50.3	µg/L	1	50	101	70 - 130
4-Bromofluorobenzene		45.1	µg/L	1	50	90	70 - 130

Quality Control Report Method Blank

Method Blank QCBatch: QC27348

Param	Flag	Results	Units	Reporting Limit
GRO		<0.1	mg/L	0.10

Method Blank QCBatch: QC27374

Param	Flag	Results	Units	Reporting Limit
Bromochloromethane		<1.00	µg/L	1
Dichlorodifluoromethane		<1.00	µg/L	1
Chloromethane (methyl chloride)		<1.00	µg/L	1
Vinyl Chloride		<1.00	µg/L	1
Bromomethane (methyl bromide)		<5.00	µg/L	5
Chloroethane		<1.00	µg/L	1
Trichlorofluoromethane		<1.00	µg/L	1
Acetone		<10.0	µg/L	10
Iodomethane (methyl iodide)		<5.00	µg/L	5
Carbon Disulfide		<1.00	µg/L	1
Acrylonitrile		<1.00	µg/L	1
2-Butanone (MEK)		<5.00	µg/L	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	5
2-hexanone		<5.00	µg/L	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	10
1,1-Dichloroethene		<1.00	µg/L	1
Methylene chloride		<5.00	µg/L	5
MTBE		<1.00	µg/L	1
trans-1,2-Dichloroethene		<1.00	µg/L	1
1,1-Dichloroethane		<1.00	µg/L	1
cis-1,2-Dichloroethene		<1.00	µg/L	1
2,2-Dichloropropane		<1.00	µg/L	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1
Chloroform		<1.00	µg/L	1
1,1,1-Trichloroethane		<1.00	µg/L	1
1,1-Dichloropropene		<1.00	µg/L	1
Benzene		<1.00	µg/L	1
Carbon Tetrachloride		<1.00	µg/L	1
1,2-Dichloropropane		<1.00	µg/L	1
Trichloroethene (TCE)		<1.00	µg/L	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1
Bromodichloromethane		<1.00	µg/L	1
2-Chloroethyl vinyl ether		<5.00	µg/L	5
cis-1,3-Dichloropropene		<1.00	µg/L	1
trans-1,3-Dichloropropene		<1.00	µg/L	1
Toluene		<1.00	µg/L	1
1,1,2-Trichloroethane		<1.00	µg/L	1
1,3-Dichloropropane		<1.00	µg/L	1

Continued ...

... Continued

Param	Flag	Results	Units	Reporting Limit
Dibromochloromethane		<1.00	µg/L	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1
Tetrachloroethene (PCE)		<1.00	µg/L	1
Chlorobenzene		<1.00	µg/L	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1
Ethylbenzene		<1.00	µg/L	1
m,p-Xylene		<1.00	µg/L	1
Bromoform		<1.00	µg/L	1
Styrene		<1.00	µg/L	1
o-Xylene		<1.00	µg/L	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1
2-Chlorotoluene		<1.00	µg/L	1
1,2,3-Trichloropropane		<1.00	µg/L	1
Isopropylbenzene		<1.00	µg/L	1
Bromobenzene		<1.00	µg/L	1
n-Propylbenzene		<1.00	µg/L	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1
tert-Butylbenzene		<1.00	µg/L	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1
sec-Butylbenzene		<1.00	µg/L	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1
p-Isopropyltoluene		<1.00	µg/L	1
4-Chlorotoluene		<1.00	µg/L	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1
n-Butylbenzene		<1.00	µg/L	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	5
1,2,3-Trichlorobenzene		<5.00	µg/L	5
1,2,4-Trichlorobenzene		<5.00	µg/L	5
Naphthalene		<5.00	µg/L	5
Hexachlorobutadiene		<5.00	µg/L	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		50.3	µg/L	1	50	101	70 - 130
Toluene-d8		50.3	µg/L	1	50	101	70 - 130
4-Bromofluorobenzene		45.0	µg/L	1	50	90	70 - 130

Method Blank

QCBatch: QC27423

Param	Flag	Results	Units	Reporting Limit
DRO		<5.00	mg/L	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		12.1	mg/L	0.10	15	81	70 - 130

Method Blank QCBatch: QC27465

Param	Flag	Results	Units	Reporting Limit
Chloride		<1.0	mg/L	1

Method Blank QCBatch: QC27484

Param	Flag	Results	Units	Reporting Limit
Dissolved Arsenic		<0.011	mg/L	0.01
Dissolved Chromium		<0.011	mg/L	0.01
Dissolved Lead		<0.011	mg/L	0.01

Quality Control Report

Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes QCBatch: QC27348

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
GRO	0.972	1	mg/L	1	1	<0.1	97	2	80 - 120	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
TFT	0.098	0.095	mg/L	1	0.10	98	95	70 - 130
4-BFB	0.098	0.098	mg/L	1	0.10	98	98	70 - 130

Laboratory Control Spikes QCBatch: QC27374

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
1,1-Dichloroethene	104	105	µg/L	1	100	<1.00	104	1	70 - 130	20
Benzene	102	100	µg/L	1	100	<1.00	102	2	70 - 130	20
Trichloroethene (TCE)	95.1	93.4	µg/L	1	100	<1.00	95	2	70 - 130	20
Toluene	103	102	µg/L	1	100	<1.00	103	1	70 - 130	20
Chlorobenzene	104	103	µg/L	1	100	<1.00	104	1	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Dibromofluoromethane	49.2	49.7	µg/L	1	50	98	99	70 - 130
Toluene-d8	49.9	50.6	µg/L	1	50	100	101	70 - 130
4-Bromofluorobenzene	46.4	45.3	µg/L	1	50	93	91	70 - 130

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Laboratory Control Spikes

QCBatch: QC27423

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
DRO	21.3	24.2	mg/L	0.10	25	<5.00	85	12	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
n-Triacontane	11.3	15.0	mg/L	0.10	15	75	100	70 - 130

Laboratory Control Spikes

QCBatch: QC27465

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	13.67	13.76	mg/L	1	12.50	<1.0	109	0	90 - 110	20
Nitrate-N	2.73	2.74	mg/L	1	2.50	<0.2	109	0	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC27484

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Dissolved Arsenic	0.438	0.440	mg/L	1.20	0.50	<0.011	87	0	75 - 125	20
Dissolved Chromium	0.106	0.106	mg/L	1.20	0.10	<0.011	106	0	75 - 125	20
Dissolved Lead	0.510	0.511	mg/L	1.20	0.50	<0.011	102	0	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Matrix Spikes and Duplicate Spikes

Matrix Spikes

QCBatch: QC27465

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	9480	9460	mg/L	1	6250	2720	108	0	48 - 127	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes

QCBatch: QC27484

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Dissolved Arsenic	0.498	0.494	mg/L	1.20	0.50	0.0231	94	0	75 - 125	20
Dissolved Chromium	0.197	0.196	mg/L	1.20	0.10	0.097	100	1	75 - 125	20
Dissolved Lead	0.465	0.466	mg/L	1.20	0.50	<0.011	93	0	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Continuing Calibration Verification Standards

CCV (1) QCBatch: QC27348

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/L	1	0.984	98	85 - 115	2/21/03

ICV (1) QCBatch: QC27348

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/L	1	0.992	99	85 - 115	2/21/03

CCV (1) QCBatch: QC27374

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/L	50	54.0	108	80 - 120	2/24/03
1,1-Dichloroethene		µg/L	50	47.0	94	80 - 120	2/24/03
Chloroform		µg/L	50	46.0	92	80 - 120	2/24/03
1,2-Dichloropropane		µg/L	50	49.0	98	80 - 120	2/24/03
Toluene		µg/L	50	48.0	96	80 - 120	2/24/03
Chlorobenzene		µg/L	50	49.0	98	80 - 120	2/24/03
Ethylbenzene		µg/L	50	50.0	100	80 - 120	2/24/03
Dibromofluoromethane		µg/L	50	48.2	96	80 - 120	2/24/03
Toluene-d8		µg/L	50	51.0	102	80 - 120	2/24/03
4-Bromofluorobenzene		µg/L	50	48.4	97	80 - 120	2/24/03

CCV (1) QCBatch: QC27423

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/L	250	190	76	75 - 125	2/26/03

ICV (1) QCBatch: QC27423

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/L	250	205	82	75 - 125	2/26/03

CCV (1) QCBatch: QC27465

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	13.66	109	90 - 110	2/26/03
Nitrate-N		mg/L	2.50	2.73	109	90 - 110	2/26/03

ICV (1) QCBatch: QC27465

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	13.73	109	90 - 110	2/26/03
Nitrate-N		mg/L	2.50	2.70	108	90 - 110	2/26/03

CCV (1) QCBatch: QC27484

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Arsenic		mg/L	1	0.970	97	90 - 110	2/28/03
Dissolved Chromium		mg/L	0.20	0.210	105	90 - 110	2/28/03
Dissolved Lead		mg/L	1	1.01	101	90 - 110	2/28/03

ICV (1) QCBatch: QC27484

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Arsenic		mg/L	1	0.980	98	90 - 110	2/28/03
Dissolved Chromium		mg/L	0.20	0.212	106	90 - 110	2/28/03

Continued ...

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Hobbs, NM

... Continued

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Lead		mg/L	1	1.03	103	90 - 110	2/28/03

222056-58

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6701 Aberdeen, Ste. 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

TraceAnalysis, Inc.

555 McCutcheon, Suite H
El Paso, Texas 79932
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # AD3022189

Company Name:

Phone #:

(505) 397-4882

Address: (Street, City, Zip)

Fax #:

(505) 397-4701

Contact Person:

Invoice to:

(If different from above) 4600 W. Wall, Midland, TX 79703

Project #:

Project Name:

Project Location:

Sampler Signature:

ANALYSIS REQUEST

(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX				PRESERVATIVE METHOD						SAMPLING		MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba	TCLP Metals Ag As Ba	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B/6242	GC/MS Semi. Vol. 8272/608	PCBs 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Chloride (Cl)	Chromium (Cr)	Arsenic (As)	Lead (Pb)	Volatiles	Turn Around Time if diff	Hold
				WATER	SOIL	AIR	SLUDGE	HCl	HNO ₃	H ₂ SO ₄	NaOH	ICE	NONE	DATE	TIME																						
22056	WChomp 21903 MW-6	357	1	X							X			2-19	10:07	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
57	WChomp 21903 MW-11	357	1	X							X			2-19	9:06	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
58	WChomp 21903 MW-12	357	?	X							X			2-19	8:59	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		

Relinquished by:

Date:

Time:

Received by:

Date:

Time:

Relinquished by:

Date:

Time:

Received by:

Date:

Time:

Relinquished by:

Date:

Time:

Received at Laboratory by:

Date:

Time:

LAB USE ONLY

Intact Y/NHeadspace Y/NTemp 4°Log-in Review MSCarrier # Greyhound

REMARKS:

metal
Filter all samples before
analysis

☐ Check If Special Reporting
Limits Are Needed

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C. 9 samples HS

ORIGINAL COPY

Summary Report

Todd Choban
E.T.G.I.
PO Box 4845
Midland, Tx. 79704

Report Date: March 3, 2003

Order ID Number: A03022118

Project Number: CH2100
Project Name: Champion Tech
Project Location: Hobbs,NM

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
222041	WChamp 21903 MW-1	Water	2/19/03	10:01	2/21/03
222042	WChamp 21903 MW-2	Water	2/19/03	8:46	2/21/03
222043	WChamp 21903 MW-3	Water	2/19/03	9:17	2/21/03
222044	WChamp 21903 MW-4	Water	2/19/03	9:40	2/21/03
222045	WChamp 21903 MW-5	Water	2/19/03	9:30	2/21/03
222046	WChamp 21903 MW-7	Water	2/19/03	8:20	2/21/03
222047	WChamp 21903 MW-8	Water	2/19/03	9:12	2/21/03
222048	WChamp 21903 MW-9	Water	2/19/03	8:27	2/21/03
222049	WChamp 21903 MW-10	Water	2/19/03	10:16	2/21/03
222050	WChamp 21903 MW-13	Water	2/19/03	9:22	2/21/03
222051	WChamp 21903 MW-14	Water	2/19/03	9:35	2/21/03
222052	WChamp 21903 MW-15	Water	2/19/03	8:13	2/21/03
222053	WChamp 21903 MW-16	Water	2/19/03	8:52	2/21/03
222054	WChamp Onsite 21903	Water	2/19/03	10:53	2/21/03
222055	WChamp Offsite 21903	Water	2/19/03	10:42	2/21/03

0 This report consists of a total of 5 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample: 222041 - WChamp 21903 MW-1

Param	Flag	Result	Units
Dissolved Chromium		<0.011	mg/L
Chloride		435	mg/L

Sample: 222042 - WChamp 21903 MW-2

Param	Flag	Result	Units
Dissolved Chromium		0.0134	mg/L
Chloride		384	mg/L

This is only a summary. Please, refer to the complete report package for quality control data.

Report Date: March 3, 2003 Order Number: A03022118
CH2100 Champion TechPage Number: 2 of 5
Hobbs,NM**Sample: 222043 - WChamp 21903 MW-3**

Param	Flag	Result	Units
Dissolved Chromium		0.0122	mg/L
Chloride		658	mg/L

Sample: 222044 - WChamp 21903 MW-4

Param	Flag	Result	Units
Dissolved Chromium		0.271	mg/L
Chloride		485	mg/L

Sample: 222045 - WChamp 21903 MW-5

Param	Flag	Result	Units
Dissolved Chromium		<0.011	mg/L
Chloride		476	mg/L

Sample: 222046 - WChamp 21903 MW-7

Param	Flag	Result	Units
Dissolved Chromium		<0.011	mg/L
Chloride		510	mg/L

Sample: 222047 - WChamp 21903 MW-8

Param	Flag	Result	Units
Dissolved Chromium		<0.011	mg/L
Chloride		397	mg/L

Sample: 222048 - WChamp 21903 MW-9

Param	Flag	Result	Units
Dissolved Chromium		<0.011	mg/L
Chloride		332	mg/L

Sample: 222049 - WChamp 21903 MW-10

Param	Flag	Result	Units
Dissolved Chromium		0.0163	mg/L
Chloride		355	mg/L

This is only a summary. Please, refer to the complete report package for quality control data.

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Report Date: March 3, 2003 Order Number: A03022118
CH2100 Champion TechPage Number: 3 of 5
Hobbs,NM**Sample: 222050 - WChamp 21903 MW-13**

Param	Flag	Result	Units
Dissolved Chromium		0.151	mg/L
Chloride		332	mg/L

Sample: 222051 - WChamp 21903 MW-14

Param	Flag	Result	Units
Dissolved Arsenic		<0.011	mg/L
Dissolved Chromium		<0.011	mg/L
Chloride		342	mg/L

Sample: 222052 - WChamp 21903 MW-15

Param	Flag	Result	Units
Dissolved Chromium		<0.011	mg/L
Chloride		221	mg/L

Sample: 222053 - WChamp 21903 MW-16

Param	Flag	Result	Units
Dissolved Chromium		<0.011	mg/L
Chloride		474	mg/L
Bromochloromethane		<1.00	µg/L
Dichlorodifluoromethane		<1.00	µg/L
Chloromethane (methyl chloride)		<1.00	µg/L
Vinyl Chloride		<1.00	µg/L
Bromomethane (methyl bromide)		<5.00	µg/L
Chloroethane		<1.00	µg/L
Trichlorofluoromethane		<1.00	µg/L
Acetone		<10.0	µg/L
Iodomethane (methyl iodide)		<5.00	µg/L
Carbon Disulfide		<1.00	µg/L
Acrylonitrile		<1.00	µg/L
2-Butanone (MEK)		<5.00	µg/L
4-methyl-2-pentanone (MIBK)		<5.00	µg/L
2-hexanone		<5.00	µg/L
trans 1,4-Dichloro-2-butene		<10.0	µg/L
1,1-Dichloroethene		<1.00	µg/L
Methylene chloride		<5.00	µg/L
MTBE		<1.00	µg/L
trans-1,2-Dichloroethene		<1.00	µg/L
1,1-Dichloroethane		1.64	µg/L
cis-1,2-Dichloroethene		<1.00	µg/L
2,2-Dichloropropane		<1.00	µg/L
1,2-Dichloroethane (EDC)		<1.00	µg/L
Chloroform		<1.00	µg/L
1,1,1-Trichloroethane		<1.00	µg/L

Continued on next page ...

This is only a summary. Please, refer to the complete report package for quality control data.

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Sample 222053 continued ...

Param	Flag	Result	Units
1,1-Dichloropropene		<1.00	µg/L
Benzene		<1.00	µg/L
Carbon Tetrachloride		<1.00	µg/L
1,2-Dichloropropane		<1.00	µg/L
Trichloroethene (TCE)		<1.00	µg/L
Dibromomethane (methylene bromide)		<1.00	µg/L
Bromodichloromethane		<1.00	µg/L
2-Chloroethyl vinyl ether		<5.00	µg/L
cis-1,3-Dichloropropene		<1.00	µg/L
trans-1,3-Dichloropropene		<1.00	µg/L
Toluene		<1.00	µg/L
1,1,2-Trichloroethane		<1.00	µg/L
1,3-Dichloropropane		<1.00	µg/L
Dibromochloromethane		<1.00	µg/L
1,2-Dibromoethane (EDB)		<1.00	µg/L
Tetrachloroethene (PCE)		1.62	µg/L
Chlorobenzene		<1.00	µg/L
1,1,1,2-Tetrachloroethane		<1.00	µg/L
Ethylbenzene		<1.00	µg/L
m,p-Xylene		<1.00	µg/L
Bromoform		<1.00	µg/L
Styrene		<1.00	µg/L
o-Xylene		<1.00	µg/L
1,1,2,2-Tetrachloroethane		<1.00	µg/L
2-Chlorotoluene		<1.00	µg/L
1,2,3-Trichloropropane		<1.00	µg/L
Isopropylbenzene		<1.00	µg/L
Bromobenzene		<1.00	µg/L
n-Propylbenzene		<1.00	µg/L
1,3,5-Trimethylbenzene		<1.00	µg/L
tert-Butylbenzene		<1.00	µg/L
1,2,4-Trimethylbenzene		<1.00	µg/L
1,4-Dichlorobenzene (para)		<1.00	µg/L
sec-Butylbenzene		<1.00	µg/L
1,3-Dichlorobenzene (meta)		<1.00	µg/L
p-Isopropyltoluene		<1.00	µg/L
4-Chlorotoluene		<1.00	µg/L
1,2-Dichlorobenzene (ortho)		<1.00	µg/L
n-Butylbenzene		<1.00	µg/L
1,2-Dibromo-3-chloropropane		<5.00	µg/L
1,2,3-Trichlorobenzene		<5.00	µg/L
1,2,4-Trichlorobenzene		<5.00	µg/L
Naphthalene		<5.00	µg/L
Hexachlorobutadiene		<5.00	µg/L

Sample: 222054 - WChamp Onsite 21903

Param	Flag	Result	Units
Dissolved Chromium		<0.011	mg/L

Continued on next page ...

This is only a summary. Please, refer to the complete report package for quality control data.

TraceAnalysis, Inc.

6701 Aberdeen Ave., Suite 9

Lubbock, TX 79424-1515

(806) 794-1296

Report Date: March 3, 2003 Order Number: A03022118
CH2100 Champion Tech

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Sample 222054 continued ...

Param	Flag	Result	Units
Chloride		347	mg/L

Sample: 222055 - WChamp Offsite 21903

Param	Flag	Result	Units
Dissolved Chromium		<0.011	mg/L
Chloride		479	mg/L

This is only a summary. Please, refer to the complete report package for quality control data.

TRACE ANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9
155 McCutcheon, Suite H

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Analytical and Quality Control Report

Todd Choban
E.T.G.I.
PO Box 4845
Midland, Tx. 79704

Report Date: March 3, 2003

Order ID Number: A03022118

Project Number: CH2100
Project Name: Champion Tech
Project Location: Hobbs, NM

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
222041	WChamp 21903 MW-1	Water	2/19/03	10:01	2/21/03
222042	WChamp 21903 MW-2	Water	2/19/03	8:46	2/21/03
222043	WChamp 21903 MW-3	Water	2/19/03	9:17	2/21/03
222044	WChamp 21903 MW-4	Water	2/19/03	9:40	2/21/03
222045	WChamp 21903 MW-5	Water	2/19/03	9:30	2/21/03
222046	WChamp 21903 MW-7	Water	2/19/03	8:20	2/21/03
222047	WChamp 21903 MW-8	Water	2/19/03	9:12	2/21/03
222048	WChamp 21903 MW-9	Water	2/19/03	8:27	2/21/03
222049	WChamp 21903 MW-10	Water	2/19/03	10:16	2/21/03
222050	WChamp 21903 MW-13	Water	2/19/03	9:22	2/21/03
222051	WChamp 21903 MW-14	Water	2/19/03	9:35	2/21/03
222052	WChamp 21903 MW-15	Water	2/19/03	8:13	2/21/03
222053	WChamp 21903 MW-16	Water	2/19/03	8:52	2/21/03
222054	WChamp Onsite 21903	Water	2/19/03	10:53	2/21/03
222055	WChamp Offsite 21903	Water	2/19/03	10:42	2/21/03

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed. Note: the RDL is equal to MQL for all organic analytes including TPH.

The test results contained within this report meet all requirements of LAC 33:I unless otherwise noted.

This report consists of a total of 16 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of Trace Analysis, Inc.

Note: Samples will be disposed of 30 days from the report date unless the lab is contacted before the 30 days has past.



Dr. Blair Leftwich, Director

Analytical Report

Sample: 222041 - WChamp 21903 MW-1

Analysis: Dissolved Metals Analytical Method: S 6010B QC Batch: QC27483 Date Analyzed: 2/28/03
Analyst: RR Preparation Method: E 3005A Prep Batch: PB25159 Date Prepared: 2/25/03

Param	Flag	Result	Units	Dilution	RDL
Dissolved Chromium		<0.011	mg/L	1.10	0.01

Sample: 222041 - WChamp 21903 MW-1

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC27363 Date Analyzed: 2/21/03
Analyst: JSW Preparation Method: N/A Prep Batch: PB25133 Date Prepared: 2/21/03

Param	Flag	Result	Units	Dilution	RDL
Chloride		435	mg/L	10	1

Sample: 222042 - WChamp 21903 MW-2

Analysis: Dissolved Metals Analytical Method: S 6010B QC Batch: QC27483 Date Analyzed: 2/28/03
Analyst: RR Preparation Method: E 3005A Prep Batch: PB25159 Date Prepared: 2/25/03

Param	Flag	Result	Units	Dilution	RDL
Dissolved Chromium		0.0134	mg/L	1.10	0.01

Sample: 222042 - WChamp 21903 MW-2

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC27363 Date Analyzed: 2/21/03
Analyst: JSW Preparation Method: N/A Prep Batch: PB25133 Date Prepared: 2/21/03

Param	Flag	Result	Units	Dilution	RDL
Chloride		384	mg/L	10	1

Sample: 222043 - WChamp 21903 MW-3

Analysis: Dissolved Metals Analytical Method: S 6010B QC Batch: QC27483 Date Analyzed: 2/28/03
Analyst: RR Preparation Method: E 3005A Prep Batch: PB25159 Date Prepared: 2/25/03

Param	Flag	Result	Units	Dilution	RDL
Dissolved Chromium		0.0122	mg/L	1.10	0.01

Sample: 222043 - WChamp 21903 MW-3

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC27363 Date Analyzed: 2/21/03
Analyst: JSW Preparation Method: N/A Prep Batch: PB25133 Date Prepared: 2/21/03

Param	Flag	Result	Units	Dilution	RDL
Chloride		658	mg/L	10	1

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Sample: 222044 - WChamp 21903 MW-4

Analysis: Dissolved Metals Analytical Method: S 6010B QC Batch: QC27483 Date Analyzed: 2/28/03
Analyst: RR Preparation Method: E 3005A Prep Batch: PB25159 Date Prepared: 2/25/03

Param	Flag	Result	Units	Dilution	RDL
Dissolved Chromium		0.271	mg/L	1.10	0.01

Sample: 222044 - WChamp 21903 MW-4

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC27363 Date Analyzed: 2/21/03
Analyst: JSW Preparation Method: N/A Prep Batch: PB25133 Date Prepared: 2/21/03

Param	Flag	Result	Units	Dilution	RDL
Chloride		485	mg/L	10	1

Sample: 222045 - WChamp 21903 MW-5

Analysis: Dissolved Metals Analytical Method: S 6010B QC Batch: QC27483 Date Analyzed: 2/28/03
Analyst: RR Preparation Method: E 3005A Prep Batch: PB25159 Date Prepared: 2/25/03

Param	Flag	Result	Units	Dilution	RDL
Dissolved Chromium		<0.011	mg/L	1.10	0.01

Sample: 222045 - WChamp 21903 MW-5

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC27397 Date Analyzed: 2/24/03
Analyst: JSW Preparation Method: N/A Prep Batch: PB25161 Date Prepared: 2/24/03

Param	Flag	Result	Units	Dilution	RDL
Chloride		476	mg/L	50	1

Sample: 222046 - WChamp 21903 MW-7

Analysis: Dissolved Metals Analytical Method: S 6010B QC Batch: QC27483 Date Analyzed: 2/28/03
Analyst: RR Preparation Method: E 3005A Prep Batch: PB25159 Date Prepared: 2/25/03

Param	Flag	Result	Units	Dilution	RDL
Dissolved Chromium		<0.011	mg/L	1.10	0.01

Sample: 222046 - WChamp 21903 MW-7

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC27363 Date Analyzed: 2/21/03
Analyst: JSW Preparation Method: N/A Prep Batch: PB25133 Date Prepared: 2/21/03

Param	Flag	Result	Units	Dilution	RDL
Chloride		510	mg/L	10	1

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Sample: 222047 - WChamp 21903 MW-8

Analysis: Dissolved Metals Analytical Method: S 6010B QC Batch: QC27483 Date Analyzed: 2/28/03
Analyst: RR Preparation Method: E 3005A Prep Batch: PB25159 Date Prepared: 2/25/03

Param	Flag	Result	Units	Dilution	RDL
Dissolved Chromium		<0.011	mg/L	1.10	0.01

Sample: 222047 - WChamp 21903 MW-8

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC27397 Date Analyzed: 2/24/03
Analyst: JSW Preparation Method: N/A Prep Batch: PB25161 Date Prepared: 2/24/03

Param	Flag	Result	Units	Dilution	RDL
Chloride		397	mg/L	10	1

Sample: 222048 - WChamp 21903 MW-9

Analysis: Dissolved Metals Analytical Method: S 6010B QC Batch: QC27483 Date Analyzed: 2/28/03
Analyst: RR Preparation Method: E 3005A Prep Batch: PB25159 Date Prepared: 2/25/03

Param	Flag	Result	Units	Dilution	RDL
Dissolved Chromium		<0.011	mg/L	1.10	0.01

Sample: 222048 - WChamp 21903 MW-9

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC27397 Date Analyzed: 2/24/03
Analyst: JSW Preparation Method: N/A Prep Batch: PB25161 Date Prepared: 2/24/03

Param	Flag	Result	Units	Dilution	RDL
Chloride		332	mg/L	10	1

Sample: 222049 - WChamp 21903 MW-10

Analysis: Dissolved Metals Analytical Method: S 6010B QC Batch: QC27484 Date Analyzed: 2/28/03
Analyst: RR Preparation Method: E 3005A Prep Batch: PB25159 Date Prepared: 2/25/03

Param	Flag	Result	Units	Dilution	RDL
Dissolved Chromium		0.0163	mg/L	1.10	0.01

Sample: 222049 - WChamp 21903 MW-10

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC27397 Date Analyzed: 2/24/03
Analyst: JSW Preparation Method: N/A Prep Batch: PB25161 Date Prepared: 2/24/03

Param	Flag	Result	Units	Dilution	RDL
Chloride		355	mg/L	10	1

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Sample: 222050 - WChamp 21903 MW-13

Analysis: Dissolved Metals Analytical Method: S 6010B QC Batch: QC27484 Date Analyzed: 2/28/03
Analyst: RR Preparation Method: E 3005A Prep Batch: PB25159 Date Prepared: 2/25/03

Param	Flag	Result	Units	Dilution	RDL
Dissolved Chromium		0.151	mg/L	1.10	0.01

Sample: 222050 - WChamp 21903 MW-13

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC27397 Date Analyzed: 2/24/03
Analyst: JSW Preparation Method: N/A Prep Batch: PB25161 Date Prepared: 2/24/03

Param	Flag	Result	Units	Dilution	RDL
Chloride		332	mg/L	10	1

Sample: 222051 - WChamp 21903 MW-14

Analysis: Dissolved Metals Analytical Method: S 6010B QC Batch: QC27484 Date Analyzed: 2/28/03
Analyst: RR Preparation Method: E 3005A Prep Batch: PB25159 Date Prepared: 2/25/03

Param	Flag	Result	Units	Dilution	RDL
Dissolved Arsenic		<0.011	mg/L	1.10	0.01
Dissolved Chromium		<0.011	mg/L	1.10	0.01

Sample: 222051 - WChamp 21903 MW-14

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC27397 Date Analyzed: 2/24/03
Analyst: JSW Preparation Method: N/A Prep Batch: PB25161 Date Prepared: 2/24/03

Param	Flag	Result	Units	Dilution	RDL
Chloride		342	mg/L	10	1

Sample: 222052 - WChamp 21903 MW-15

Analysis: Dissolved Metals Analytical Method: S 6010B QC Batch: QC27484 Date Analyzed: 2/28/03
Analyst: RR Preparation Method: E 3005A Prep Batch: PB25159 Date Prepared: 2/25/03

Param	Flag	Result	Units	Dilution	RDL
Dissolved Chromium		<0.011	mg/L	1.10	0.01

Sample: 222052 - WChamp 21903 MW-15

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC27397 Date Analyzed: 2/24/03
Analyst: JSW Preparation Method: N/A Prep Batch: PB25161 Date Prepared: 2/24/03

Param	Flag	Result	Units	Dilution	RDL
Chloride		221	mg/L	10	1

Report Date: March 3, 2003
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Sample: 222053 - WChamp 21903 MW-16

Analysis: Dissolved Metals Analytical Method: S 6010B QC Batch: QC27484 Date Analyzed: 2/28/03
Analyst: RR Preparation Method: E 3005A Prep Batch: PB25159 Date Prepared: 2/25/03

Param	Flag	Result	Units	Dilution	RDL
Dissolved Chromium		<0.011	mg/L	1.10	0.01

Sample: 222053 - WChamp 21903 MW-16

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC27397 Date Analyzed: 2/24/03
Analyst: JSW Preparation Method: N/A Prep Batch: PB25161 Date Prepared: 2/24/03

Param	Flag	Result	Units	Dilution	RDL
Chloride		474	mg/L	10	1

Sample: 222053 - WChamp 21903 MW-16

Analysis: Volatiles Analytical Method: S 8260B QC Batch: QC27374 Date Analyzed: 2/24/03
Analyst: JG Preparation Method: E 5030B Prep Batch: PB25145 Date Prepared: 2/24/03

Param	Flag	Result	Units	Dilution	RDL
Bromochloromethane		<1.00	µg/L	1	1
Dichlorodifluoromethane		<1.00	µg/L	1	1
Chloromethane (methyl chloride)		<1.00	µg/L	1	1
Vinyl Chloride		<1.00	µg/L	1	1
Bromomethane (methyl bromide)		<5.00	µg/L	1	5
Chloroethane		<1.00	µg/L	1	1
Trichlorofluoromethane		<1.00	µg/L	1	1
Acetone		<10.0	µg/L	1	10
Iodomethane (methyl iodide)		<5.00	µg/L	1	5
Carbon Disulfide		<1.00	µg/L	1	1
Acrylonitrile		<1.00	µg/L	1	1
2-Butanone (MEK)		<5.00	µg/L	1	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	1	5
2-hexanone		<5.00	µg/L	1	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	1	10
1,1-Dichloroethene		<1.00	µg/L	1	1
Methylene chloride		<5.00	µg/L	1	5
MTBE		<1.00	µg/L	1	1
trans-1,2-Dichloroethene		<1.00	µg/L	1	1
1,1-Dichloroethane		1.64	µg/L	1	1
cis-1,2-Dichloroethene		<1.00	µg/L	1	1
2,2-Dichloropropane		<1.00	µg/L	1	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1	1
Chloroform		<1.00	µg/L	1	1
1,1,1-Trichloroethane		<1.00	µg/L	1	1
1,1-Dichloropropene		<1.00	µg/L	1	1
Benzene		<1.00	µg/L	1	1
Carbon Tetrachloride		<1.00	µg/L	1	1
1,2-Dichloropropane		<1.00	µg/L	1	1
Trichloroethene (TCE)		<1.00	µg/L	1	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1	1
Bromodichloromethane		<1.00	µg/L	1	1

Continued ...

... Continued Sample: 222053 Analysis: Volatiles

Param	Flag	Result	Units	Dilution	RDL
2-Chloroethyl vinyl ether		<5.00	µg/L	1	5
cis-1,3-Dichloropropene		<1.00	µg/L	1	1
trans-1,3-Dichloropropene		<1.00	µg/L	1	1
Toluene		<1.00	µg/L	1	1
1,1,2-Trichloroethane		<1.00	µg/L	1	1
1,3-Dichloropropane		<1.00	µg/L	1	1
Dibromochloromethane		<1.00	µg/L	1	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1	1
Tetrachloroethene (PCE)		1.62	µg/L	1	1
Chlorobenzene		<1.00	µg/L	1	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1	1
Ethylbenzene		<1.00	µg/L	1	1
m,p-Xylene		<1.00	µg/L	1	1
Bromoform		<1.00	µg/L	1	1
Styrene		<1.00	µg/L	1	1
o-Xylene		<1.00	µg/L	1	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1	1
2-Chlorotoluene		<1.00	µg/L	1	1
1,2,3-Trichloropropane		<1.00	µg/L	1	1
Isopropylbenzene		<1.00	µg/L	1	1
Bromobenzene		<1.00	µg/L	1	1
n-Propylbenzene		<1.00	µg/L	1	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1	1
tert-Butylbenzene		<1.00	µg/L	1	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1	1
sec-Butylbenzene		<1.00	µg/L	1	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1	1
p-Isopropyltoluene		<1.00	µg/L	1	1
4-Chlorotoluene		<1.00	µg/L	1	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1	1
n-Butylbenzene		<1.00	µg/L	1	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	1	5
1,2,3-Trichlorobenzene		<5.00	µg/L	1	5
1,2,4-Trichlorobenzene		<5.00	µg/L	1	5
Naphthalene		<5.00	µg/L	1	5
Hexachlorobutadiene		<5.00	µg/L	1	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		49.8	µg/L	1	50	100	70 - 130
Toluene-d8		50.3	µg/L	1	50	101	70 - 130
4-Bromofluorobenzene		44.9	µg/L	1	50	90	70 - 130

Sample: 222054 - WChamp Onsite 21903

Analysis: Dissolved Metals Analytical Method: S 6010B QC Batch: QC27484 Date Analyzed: 2/28/03
Analyst: RR Preparation Method: E 3005A Prep Batch: PB25159 Date Prepared: 2/25/03

Param	Flag	Result	Units	Dilution	RDL
Dissolved Chromium		<0.011	mg/L	1.10	0.01

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Sample: 222054 - WChamp Onsite 21903

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC27397 Date Analyzed: 2/24/03
Analyst: JSW Preparation Method: N/A Prep Batch: PB25161 Date Prepared: 2/24/03

Param	Flag	Result	Units	Dilution	RDL
Chloride		347	mg/L	10	1

Sample: 222055 - WChamp Offsite 21903

Analysis: Dissolved Metals Analytical Method: S 6010B QC Batch: QC27484 Date Analyzed: 2/28/03
Analyst: RR Preparation Method: E 3005A Prep Batch: PB25159 Date Prepared: 2/25/03

Param	Flag	Result	Units	Dilution	RDL
Dissolved Chromium		<0.011	mg/L	1.10	0.01

Sample: 222055 - WChamp Offsite 21903

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC27397 Date Analyzed: 2/24/03
Analyst: JSW Preparation Method: N/A Prep Batch: PB25161 Date Prepared: 2/24/03

Param	Flag	Result	Units	Dilution	RDL
Chloride		479	mg/L	10	1

Quality Control Report Method Blank

Method Blank QCBatch: QC27363

Param	Flag	Results	Units	Reporting Limit
Chloride		<1.0	mg/L	1

Method Blank QCBatch: QC27374

Param	Flag	Results	Units	Reporting Limit
Bromochloromethane		<1.00	µg/L	1
Dichlorodifluoromethane		<1.00	µg/L	1
Chloromethane (methyl chloride)		<1.00	µg/L	1
Vinyl Chloride		<1.00	µg/L	1
Bromomethane (methyl bromide)		<5.00	µg/L	5
Chloroethane		<1.00	µg/L	1
Trichlorofluoromethane		<1.00	µg/L	1
Acetone		<10.0	µg/L	10
Iodomethane (methyl iodide)		<5.00	µg/L	5
Carbon Disulfide		<1.00	µg/L	1
Acrylonitrile		<1.00	µg/L	1
2-Butanone (MEK)		<5.00	µg/L	5
4-methyl-2-pentanone (MIBK)		<5.00	µg/L	5
2-hexanone		<5.00	µg/L	5
trans 1,4-Dichloro-2-butene		<10.0	µg/L	10
1,1-Dichloroethene		<1.00	µg/L	1
Methylene chloride		<5.00	µg/L	5
MTBE		<1.00	µg/L	1
trans-1,2-Dichloroethene		<1.00	µg/L	1
1,1-Dichloroethane		<1.00	µg/L	1
cis-1,2-Dichloroethene		<1.00	µg/L	1
2,2-Dichloropropane		<1.00	µg/L	1
1,2-Dichloroethane (EDC)		<1.00	µg/L	1
Chloroform		<1.00	µg/L	1
1,1,1-Trichloroethane		<1.00	µg/L	1
1,1-Dichloropropene		<1.00	µg/L	1
Benzene		<1.00	µg/L	1
Carbon Tetrachloride		<1.00	µg/L	1
1,2-Dichloropropane		<1.00	µg/L	1
Trichloroethene (TCE)		<1.00	µg/L	1
Dibromomethane (methylene bromide)		<1.00	µg/L	1
Bromodichloromethane		<1.00	µg/L	1
2-Chloroethyl vinyl ether		<5.00	µg/L	5
cis-1,3-Dichloropropene		<1.00	µg/L	1
trans-1,3-Dichloropropene		<1.00	µg/L	1
Toluene		<1.00	µg/L	1
1,1,2-Trichloroethane		<1.00	µg/L	1
1,3-Dichloropropane		<1.00	µg/L	1

Continued ...

... Continued

Param	Flag	Results	Units	Reporting Limit
Dibromochloromethane		<1.00	µg/L	1
1,2-Dibromoethane (EDB)		<1.00	µg/L	1
Tetrachloroethene (PCE)		<1.00	µg/L	1
Chlorobenzene		<1.00	µg/L	1
1,1,1,2-Tetrachloroethane		<1.00	µg/L	1
Ethylbenzene		<1.00	µg/L	1
m,p-Xylene		<1.00	µg/L	1
Bromoform		<1.00	µg/L	1
Styrene		<1.00	µg/L	1
o-Xylene		<1.00	µg/L	1
1,1,2,2-Tetrachloroethane		<1.00	µg/L	1
2-Chlorotoluene		<1.00	µg/L	1
1,2,3-Trichloropropane		<1.00	µg/L	1
Isopropylbenzene		<1.00	µg/L	1
Bromobenzene		<1.00	µg/L	1
n-Propylbenzene		<1.00	µg/L	1
1,3,5-Trimethylbenzene		<1.00	µg/L	1
tert-Butylbenzene		<1.00	µg/L	1
1,2,4-Trimethylbenzene		<1.00	µg/L	1
1,4-Dichlorobenzene (para)		<1.00	µg/L	1
sec-Butylbenzene		<1.00	µg/L	1
1,3-Dichlorobenzene (meta)		<1.00	µg/L	1
Isopropyltoluene		<1.00	µg/L	1
2-Chlorotoluene		<1.00	µg/L	1
1,2-Dichlorobenzene (ortho)		<1.00	µg/L	1
n-Butylbenzene		<1.00	µg/L	1
1,2-Dibromo-3-chloropropane		<5.00	µg/L	5
1,2,3-Trichlorobenzene		<5.00	µg/L	5
1,2,4-Trichlorobenzene		<5.00	µg/L	5
Naphthalene		<5.00	µg/L	5
Hexachlorobutadiene		<5.00	µg/L	5

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		50.3	µg/L	1	50	101	70 - 130
Toluene-d8		50.3	µg/L	1	50	101	70 - 130
4-Bromofluorobenzene		45.0	µg/L	1	50	90	70 - 130

Method Blank QCBatch: QC27397

Param	Flag	Results	Units	Reporting Limit
Chloride		<1.0	mg/L	1

Method Blank QCBatch: QC27483

Report Date: March 3, 2003
CH2100

Order Number: A03022118
Champion Tech

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Hobbs,NM

Param	Flag	Results	Units	Reporting Limit
Dissolved Chromium		<0.011	mg/L	0.01

Method Blank QCBatch: QC27484

Param	Flag	Results	Units	Reporting Limit
Dissolved Arsenic		<0.011	mg/L	0.01
Dissolved Chromium		<0.011	mg/L	0.01

Quality Control Report Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes QCBatch: QC27363

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	13.68	13.63	mg/L	1	12.50	<1.0	109	0	90 - 110	20
Fluoride	2.69	2.63	mg/L	1	2.50	<0.2	107	2	90 - 110	20
Nitrate-N	2.75	2.70	mg/L	1	2.50	<0.2	110	1	90 - 110	20
Sulfate	13.29	13.25	mg/L	1	12.50	<1.0	106	0	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes QCBatch: QC27374

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
1,1-Dichloroethene	104	105	µg/L	1	100	<1.00	104	1	70 - 130	20
Benzene	102	100	µg/L	1	100	<1.00	102	2	70 - 130	20
Trichloroethene (TCE)	95.1	93.4	µg/L	1	100	<1.00	95	2	70 - 130	20
Toluene	103	102	µg/L	1	100	<1.00	103	1	70 - 130	20
Chlorobenzene	104	103	µg/L	1	100	<1.00	104	1	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Dibromofluoromethane	49.2	49.7	µg/L	1	50	98	99	70 - 130
Toluene-d8	49.9	50.6	µg/L	1	50	100	101	70 - 130
4-Bromofluorobenzene	46.4	45.3	µg/L	1	50	93	91	70 - 130

Laboratory Control Spikes QCBatch: QC27397

Report Date: March 3, 2003
CH2100

Order Number: A03022118
Champion Tech

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Hobbs,NM

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	13.54	13.58	mg/L	1	12.50	<1.0	108	0	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes QCBatch: QC27483

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Dissolved Chromium	0.106	0.106	mg/L	1.20	0.10	<0.011	106	0	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes QCBatch: QC27484

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Dissolved Arsenic	0.438	0.440	mg/L	1.20	0.50	<0.011	87	0	75 - 125	20
Dissolved Chromium	0.106	0.106	mg/L	1.20	0.10	<0.011	106	0	75 - 125	20
Dissolved Lead	0.510	0.511	mg/L	1.20	0.50	<0.011	102	0	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Matrix Spikes and Duplicate Spikes

Matrix Spikes QCBatch: QC27363

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	1130	1130	mg/L	1	625	372	121	0	48 - 127	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC27397

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	1150	1150	mg/L	1	625	476	107	0	48 - 127	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC27483

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Dissolved Chromium	0.108	0.107	mg/L	1.20	0.10	<0.011	108	0	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC27484

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Dissolved Arsenic	0.498	0.494	mg/L	1.20	0.50	0.0231	94	0	75 - 125	20
Dissolved Chromium	0.197	0.196	mg/L	1.20	0.10	0.097	100	1	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Continuing Calibration Verification Standards

CCV (1) QCBatch: QC27363

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	13.62	108	90 - 110	2/21/03
Fluoride		mg/L	2.50	2.63	105	90 - 110	2/21/03
Nitrate-N		mg/L	2.50	2.71	108	90 - 110	2/21/03
Sulfate		mg/L	12.50	12.80	102	90 - 110	2/21/03

ICV (1) QCBatch: QC27363

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	13.58	108	90 - 110	2/21/03
Fluoride		mg/L	2.50	2.71	108	90 - 110	2/21/03
Nitrate-N		mg/L	2.50	2.75	110	90 - 110	2/21/03
Sulfate		mg/L	12.50	13.24	105	90 - 110	2/21/03

CCV (1) QCBatch: QC27374

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		µg/L	50	54.0	108	80 - 120	2/24/03
1,1-Dichloroethene		µg/L	50	47.0	94	80 - 120	2/24/03

Continued ...

Report Date: March 3, 2003
CH2100

Order Number: A03022118
Champion Tech

Page Number: 16 of 16
Hobbs,NM

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Arsenic		mg/L	1	0.970	97	90 - 110	2/28/03
Dissolved Chromium		mg/L	0.20	0.210	105	90 - 110	2/28/03
Dissolved Lead		mg/L	1	1.01	101	90 - 110	2/28/03

ICV (1)

QCBatch: QC27484

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Dissolved Arsenic		mg/L	1	0.980	98	90 - 110	2/28/03
Dissolved Chromium		mg/L	0.20	0.212	106	90 - 110	2/28/03
Dissolved Lead		mg/L	1	1.03	103	90 - 110	2/28/03

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # AD3022118

Company Name: ET&I Phone #: (505) 397-4882
Address: (Street, City, Zip) 2540 W. Morland Fax #: (505) 397-4701
Contact Person: Todd Choban
Invoice to: (If different from above) 4600 W. Wall, Midland, TX 79703
Project #: CH 2100 Project Name: Champion
Project Location: Hobbs Sampler Signature: [Signature]

ANALYSIS REQUEST

(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX				PRESERVATIVE METHOD						SAMPLING		Turn Around Time if different from standard	Hold
				WATER	SOIL	AIR	SLUDGE	HCl	HNO ₃	H ₂ SO ₄	NaOH	ICE	NONE	DATE	TIME		
222041	WChomp 21903 MW-1	1		X								X		2-19	10:01		
42	WChomp 21903 MW-2	1		X								X		2-19	8:46		
43	WChomp 21903 MW-3	1		X								X		2-19	9:17		
44	WChomp 21903 MW-4	1		X								X		2-19	9:40		
45	WChomp 21903 MW-5	1		X								X		2-19	9:30		
46	WChomp 21903 MW-7	1		X								X		2-19	8:20		
47	WChomp 21903 MW-8	1		X								X		2-19	9:12		
48	WChomp 21903 MW-9	1		X								X		2-19	8:27		
49	WChomp 21903 MW-10	1		X								X		2-19	10:16		
50	WChomp 21903 MW-13	1		X								X		2-19	9:22		
51	WChomp 21903 MW-14	1		X								X		2-19	9:35		

Relinquished by: [Signature] Date: 2-19-03 Time: 11:40
Received by: Jason Henry Date: 02-19-03 Time: 1140
Relinquished by: Jason Henry Date: 02-19-03 Time: 1730
Received by: Helena Shelton Date: 2/19/03 Time: 1730
Relinquished by: Helena Shelton Date: 2/19/03 Time: 1830
Received at Laboratory by: Victor Rensley Date: 2-21-03 Time: 10:44

LAB USE ONLY

Intact Y / N
Headspace Y / N
Temp 4
Log-in Review [Signature]

REMARKS: Filter ^{metal} samples before analysis. 3/4 FIP

☐ Check If Special Reporting Limits Are Needed

Carrier # Greyhound 061661303633

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

ORIGINAL COPY

Carrier # Helix/GLI 166 130 3633

Summary Report

Todd Choban
E.T.G.I.
PO Box 4845
Midland, Tx. 79704

Report Date: March 12, 2003

Order ID Number: A03022613

Project Number: CH2100
Project Name: Champion Tech
Project Location: Hobbs,NM

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
222307	D-30	Soil	2/24/03	16:10	2/26/03
222308	D-34	Soil	2/24/03	16:15	2/26/03
222309	D-35	Soil	2/24/03	15:20	2/26/03
222310	D-37	Soil	2/24/03	16:20	2/26/03

0 This report consists of a total of 1 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample: 222307 - D-30

Param	Flag	Result	Units
Chloride		1840	mg/L

Sample: 222308 - D-34

Param	Flag	Result	Units
Chloride		11900	mg/L

Sample: 222309 - D-35

Param	Flag	Result	Units
Chloride		3760	mg/L

Sample: 222310 - D-37

Param	Flag	Result	Units
Chloride		768	mg/L

This is only a summary. Please, refer to the complete report package for quality control data.



TRACE ANALYSIS, INC.

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Analytical and Quality Control Report

Todd Choban
E.T.G.I.
PO Box 4845
Midland, Tx. 79704

Report Date: March 12, 2003

Order ID Number: A03022613

Project Number: CH2100
Project Name: Champion Tech
Project Location: Hobbs, NM

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
222307	D-30	Soil	2/24/03	16:10	2/26/03
222308	D-34	Soil	2/24/03	16:15	2/26/03
222309	D-35	Soil	2/24/03	15:20	2/26/03
222310	D-37	Soil	2/24/03	16:20	2/26/03

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed. Note: the RDL is equal to MQL for all organic analytes including TPH. The test results contained within this report meet all requirements of LAC 33:I unless otherwise noted.

This report consists of a total of 4 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of Trace Analysis, Inc.

Note: Samples will be disposed of 30 days from the report date unless the lab is contacted before the 30 days has past.



Dr. Blair Leftwich, Director

Report Date: March 12, 2003
CH2100

Order Number: A03022613
Champion Tech

Page Number: 2 of 4
Hobbs,NM

Analytical Report

Sample: 222307 - D-30

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC27554 Date Analyzed: 3/3/03
Analyst: JSW Preparation Method: N/A Prep Batch: PB25283 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
Chloride		1840	mg/L	100	1

Sample: 222308 - D-34

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC27554 Date Analyzed: 3/3/03
Analyst: JSW Preparation Method: N/A Prep Batch: PB25283 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
Chloride		11900	mg/L	1000	1

Sample: 222309 - D-35

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC27554 Date Analyzed: 3/3/03
Analyst: JSW Preparation Method: N/A Prep Batch: PB25283 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
Chloride		3760	mg/L	500	1

Sample: 222310 - D-37

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC27554 Date Analyzed: 3/3/03
Analyst: JSW Preparation Method: N/A Prep Batch: PB25283 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
Chloride		768	mg/L	50	1

Quality Control Report Method Blank

Method Blank QCBatch: QC27554

Param	Flag	Results	Units	Reporting Limit
Chloride		<1.0	mg/Kg	1

Quality Control Report Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes QCBatch: QC27554

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	29.43	29.42	mg/Kg	1	12.5	15.67	110	0	90 - 110	20
Fluoride	3.38	3.4	mg/Kg	1	2.5	0.76	105	0	90 - 110	20
Nitrate-N	2.94	2.94	mg/Kg	1	2.5	0.22	109	0	90 - 110	20
Sulfate	32.55	32.42	mg/Kg	1	12.5	19.52	104	0	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Matrix Spikes and Duplicate Spikes

Matrix Spikes QCBatch: QC27554

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	25850	26000	mg/Kg	1	12500	11900	112	1	35 - 144	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Continuing Calibration Verification Standards

CCV (1) QCBatch: QC27554

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	13.82	110	90 - 110	3/3/03
Fluoride		mg/L	2.50	2.73	109	90 - 110	3/3/03

Continued ...

Report Date: March 12, 2003
CH2100

Order Number: A03022613
Champion Tech

Page Number: 4 of 4
Hobbs, NM

... Continued

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Nitrate-N		mg/L	2.50	2.75	110	90 - 110	3/3/03
Sulfate		mg/L	12.50	13.28	106	90 - 110	3/3/03

ICV (1)

QCBatch: QC27554

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	13.76	110	90 - 110	3/3/03
Fluoride		mg/L	2.50	2.72	108	90 - 110	3/3/03
Nitrate-N		mg/L	2.50	2.73	109	90 - 110	3/3/03
Sulfate		mg/L	12.50	13.18	105	90 - 110	3/3/03

222 307-18

Page 1 of 1

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1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID #

AD022613

ANALYSIS REQUEST

(Circle or Specify Method No.)

Company Name: ETU Phone #: 915-522-1139
Address: (Street, City, Zip) 4600 W. Wall Middle, TX 79703 Fax #: 915-520-4310
Contact Person: Jodd Choban
Voice to:
different from above)
Project #: CH 2100 Area 3 Delineation Project Name: Champion Tech.
Project Location: Champion Tech. Sampler Signature: [Signature]

LAB # (AB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX				PRESERVATIVE METHOD						SAMPLING	
				WATER	SOIL	AIR	SLUDGE	HCl	HNO ₃	H ₂ SO ₄	NaOH	ICE	NONE	DATE	TIME
22307	D-30	1	4oz	X								X		2-24	1600
08	D-34														1615
09	D-35														1520
10	D-37														1620

MTBE 8021B/602	BTEX 8021B/602	TPH 418.1/TX1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	CHLORIDES	Turn Around Time if different from standard	Hold
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Inquired by: [Signature] Date: 2-25-03 Time: 1800 Received by: [Signature] Date: 2/25/03 Time: 1000
Inquired by: [Signature] Date: 2/25/03 Time: 1830 Received by: [Signature] Date: 2-26-03 Time: 10:20
Inquired by: [Signature] Date: 2-26-03 Time: 10:20 Received at Laboratory by: [Signature] Date: 2-26-03 Time: 10:20

LAB USE ONLY

Intact Q / N
Headspace Y / N
Temp 2 °
Log-in Review [Signature]

REMARKS:

3/5 PIP

☐ Check If Special Reporting Limits Are Needed

Submission of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C.

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Carrier # [Signature] GLI 166-130 367-7

Summary Report

Todd Choban
E.T.G.I.
PO Box 4845
Midland, Tx. 79704

Report Date: March 10, 2003

Order ID Number: A03022822

Project Number: CH2100
Project Name: Champion Tech
Project Location: Hobbs,NM

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
222480	A2 East 1 Stockpile	Soil	2/26/03	14:20	2/28/03
222481	A2 East 2 Stockpile	Soil	2/26/03	14:45	2/28/03
222482	A2 East 3 Stockpile	Soil	2/26/03	15:10	2/28/03
222483	A2 East 4 Stockpile	Soil	2/26/03	15:50	2/28/03
222484	A2 Middle Stockpile	Soil	2/26/03	16:00	2/28/03
222485	A2 West 1 Stockpile	Soil	2/26/03	16:20	2/28/03
222486	A2 West 2 Stockpile	Soil	2/26/03	16:25	2/28/03
222487	Floorsweep Stockpile	Soil	2/26/03	15:48	2/28/03

This report consists of a total of 9 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample: 222480 - A2 East 1 Stockpile

Param	Flag	Result	Units
Corrosivity			
Corrosivity (EPA limit = >6.5 mm/yr)		non-corrosive	mm/yr
pH (EPA limit = <2 >12.5)		8.3	s.u.
Ignitability		non-ignitable	
Reactivity			
Reactivity		Non-reactive	
Hydrogen Sulfide (EPA limit = 500)		<10	mg/Kg
Hydrogen Cyanide (EPA limit = 250)		<2.5	mg/Kg
TCLP Mercury (EPA limit = 0.20)		<0.010	mg/L
TCLP Metals			
TCLP Arsenic (EPA limit = 5.0)		<0.500	mg/L
TCLP Barium (EPA limit = 100.0)		1.84	mg/L
TCLP Cadmium (EPA limit = 1.0)		<0.050	mg/L
TCLP Chromium (EPA limit = 5.0)		<0.100	mg/L
TCLP Lead (EPA limit = 5.0)		<0.100	mg/L
TCLP Selenium (EPA limit = 1.0)		<0.100	mg/L
TCLP Silver (EPA limit = 5.0)		<0.020	mg/L
TCLP Semivolatiles			
Pyridine (EPA limit = 5.0)		<0.05	mg/L
1,4-Dichlorobenzene (EPA limit = 7.5)		<0.05	mg/L
o-Cresol (EPA limit = 200.0)		<0.05	mg/L

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This is only a summary. Please, refer to the complete report package for quality control data.

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Sample 222480 continued ...

Param	Flag	Result	Units
m,p-Cresol (EPA limit = 200.0)		<0.05	mg/L
Hexachloroethane (EPA limit = 3.0)		<0.05	mg/L
Nitrobenzene (EPA limit = 2.0)		<0.05	mg/L
Hexachlorobutadiene (EPA limit = 0.5)		<0.05	mg/L
2,4,6-Trichlorophenol (EPA limit = 2.0)		<0.05	mg/L
2,4,5-Trichlorophenol (EPA limit = 400.0)		<0.05	mg/L
2,4-Dinitrotoluene (EPA limit = 0.13)		<0.05	mg/L
2,4-D (EPA limit = 10.0)		<0.05	mg/L
Hexachlorobenzene (EPA limit = 0.13)		<0.05	mg/L
2,4,5-TP (EPA limit = 1.0)		<0.05	mg/L
Pentachlorophenol (EPA limit = 100.0)		<0.05	mg/L
TCLP Volatiles			
Vinyl Chloride (EPA limit = 0.20)		<0.05	mg/L
1,1-Dichloroethene (EPA limit = 0.70)		<0.05	mg/L
Methyl ethyl ketone (EPA limit = 200.0)		<0.50	mg/L
Chloroform (EPA limit = 6.00)		<0.05	mg/L
1,2-Dichloroethane (EDC) (EPA limit = 0.50)		<0.05	mg/L
Benzene (EPA limit = 0.50)		<0.05	mg/L
Carbon Tetrachloride (EPA limit = 0.50)		<0.05	mg/L
Trichloroethene (TCE) (EPA limit = 0.50)		<0.05	mg/L
Tetrachloroethene (PCE) (EPA limit = 0.70)		<0.05	mg/L
Chlorobenzene (EPA limit = 100.00)		<0.05	mg/L
1,4-Dichlorobenzene (EPA limit = 7.50)		<0.05	mg/L

Sample: 222481 - A2 East 2 Stockpile

Param	Flag	Result	Units
Corrosivity			
Corrosivity (EPA limit = >6.5 mm/yr)		non-corrosive	mm/yr
pH (EPA limit = <2 >12.5)		8.4	s.u.
Ignitability		non-ignitable	
Reactivity			
Reactivity		Non-reactive	
Hydrogen Sulfide (EPA limit = 500)		<10	mg/Kg
Hydrogen Cyanide (EPA limit = 250)		<2.5	mg/Kg
TCLP Mercury (EPA limit = 0.20)		<0.010	mg/L
TCLP Metals			
TCLP Arsenic (EPA limit = 5.0)		<0.500	mg/L
TCLP Barium (EPA limit = 100.0)		2.10	mg/L
TCLP Cadmium (EPA limit = 1.0)		<0.050	mg/L
TCLP Chromium (EPA limit = 5.0)		<0.100	mg/L
TCLP Lead (EPA limit = 5.0)		<0.100	mg/L
TCLP Selenium (EPA limit = 1.0)		<0.100	mg/L
TCLP Silver (EPA limit = 5.0)		<0.020	mg/L
TCLP Semivolatiles			
Pyridine (EPA limit = 5.0)		<0.05	mg/L
1,4-Dichlorobenzene (EPA limit = 7.5)		<0.05	mg/L

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Sample 222481 continued ...

Param	Flag	Result	Units
o-Cresol (EPA limit = 200.0)		<0.05	mg/L
m,p-Cresol (EPA limit = 200.0)		<0.05	mg/L
Hexachloroethane (EPA limit = 3.0)		<0.05	mg/L
Nitrobenzene (EPA limit = 2.0)		<0.05	mg/L
Hexachlorobutadiene (EPA limit = 0.5)		<0.05	mg/L
2,4,6-Trichlorophenol (EPA limit = 2.0)		<0.05	mg/L
2,4,5-Trichlorophenol (EPA limit = 400.0)		<0.05	mg/L
2,4-Dinitrotoluene (EPA limit = 0.13)		<0.05	mg/L
2,4-D (EPA limit = 10.0)		<0.05	mg/L
Hexachlorobenzene (EPA limit = 0.13)		<0.05	mg/L
2,4,5-TP (EPA limit = 1.0)		<0.05	mg/L
Pentachlorophenol (EPA limit = 100.0)		<0.05	mg/L
TCLP Volatiles			
Vinyl Chloride (EPA limit = 0.20)		<0.05	mg/L
1,1-Dichloroethene (EPA limit = 0.70)		<0.05	mg/L
Methyl ethyl ketone (EPA limit = 200.0)		<0.50	mg/L
Chloroform (EPA limit = 6.00)		<0.05	mg/L
1,2-Dichloroethane (EDC) (EPA limit = 0.50)		<0.05	mg/L
Benzene (EPA limit = 0.50)		<0.05	mg/L
Carbon Tetrachloride (EPA limit = 0.50)		<0.05	mg/L
Trichloroethene (TCE) (EPA limit = 0.50)		<0.05	mg/L
Tetrachloroethene (PCE) (EPA limit = 0.70)		<0.05	mg/L
Chlorobenzene (EPA limit = 100.00)		<0.05	mg/L
1,4-Dichlorobenzene (EPA limit = 7.50)		<0.05	mg/L

Sample: 222482 - A2 East 3 Stockpile

Param	Flag	Result	Units
Corrosivity			
Corrosivity (EPA limit = >6.5 mm/yr)		non-corrosive	mm/yr
pH (EPA limit = <2 >12.5)		8.6	s.u.
Ignitability		non-ignitable	
Reactivity			
Reactivity		Non-reactive	
Hydrogen Sulfide (EPA limit = 500)		<10	mg/Kg
Hydrogen Cyanide (EPA limit = 250)		<2.5	mg/Kg
TCLP Mercury (EPA limit = 0.20)		<0.010	mg/L
TCLP Metals			
TCLP Arsenic (EPA limit = 5.0)		<0.500	mg/L
TCLP Barium (EPA limit = 100.0)		1.87	mg/L
TCLP Cadmium (EPA limit = 1.0)		<0.050	mg/L
TCLP Chromium (EPA limit = 5.0)		<0.100	mg/L
TCLP Lead (EPA limit = 5.0)		<0.100	mg/L
TCLP Selenium (EPA limit = 1.0)		<0.100	mg/L
TCLP Silver (EPA limit = 5.0)		<0.020	mg/L
TCLP Semivolatiles			
Pyridine (EPA limit = 5.0)		<0.05	mg/L

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Sample 222482 continued ...

Param	Flag	Result	Units
1,4-Dichlorobenzene (EPA limit = 7.5)		<0.05	mg/L
o-Cresol (EPA limit = 200.0)		<0.05	mg/L
m,p-Cresol (EPA limit = 200.0)		<0.05	mg/L
Hexachloroethane (EPA limit = 3.0)		<0.05	mg/L
Nitrobenzene (EPA limit = 2.0)		<0.05	mg/L
Hexachlorobutadiene (EPA limit = 0.5)		<0.05	mg/L
2,4,6-Trichlorophenol (EPA limit = 2.0)		<0.05	mg/L
2,4,5-Trichlorophenol (EPA limit = 400.0)		<0.05	mg/L
2,4-Dinitrotoluene (EPA limit = 0.13)		<0.05	mg/L
2,4-D (EPA limit = 10.0)		<0.05	mg/L
Hexachlorobenzene (EPA limit = 0.13)		<0.05	mg/L
2,4,5-TP (EPA limit = 1.0)		<0.05	mg/L
Pentachlorophenol (EPA limit = 100.0)		<0.05	mg/L
TCLP Volatiles			
Vinyl Chloride (EPA limit = 0.20)		<0.05	mg/L
1,1-Dichloroethene (EPA limit = 0.70)		<0.05	mg/L
Methyl ethyl ketone (EPA limit = 200.0)		<0.50	mg/L
Chloroform (EPA limit = 6.00)		<0.05	mg/L
1,2-Dichloroethane (EDC) (EPA limit = 0.50)		<0.05	mg/L
Benzene (EPA limit = 0.50)		<0.05	mg/L
Carbon Tetrachloride (EPA limit = 0.50)		<0.05	mg/L
Trichloroethene (TCE) (EPA limit = 0.50)		<0.05	mg/L
Tetrachloroethene (PCE) (EPA limit = 0.70)		<0.05	mg/L
Chlorobenzene (EPA limit = 100.00)		<0.05	mg/L
1,4-Dichlorobenzene (EPA limit = 7.50)		<0.05	mg/L

Sample: 222483 - A2 East 4 Stockpile

Param	Flag	Result	Units
Corrosivity			
Corrosivity (EPA limit = >6.5 mm/yr)		non-corrosive	mm/yr
pH (EPA limit = <2 >12.5)		8.6	s.u.
Ignitability		non-ignitable	
Reactivity			
Reactivity		Non-reactive	
Hydrogen Sulfide (EPA limit = 500)		<10	mg/Kg
Hydrogen Cyanide (EPA limit = 250)		<2.5	mg/Kg
TCLP Mercury (EPA limit = 0.20)		<0.010	mg/L
TCLP Metals			
TCLP Arsenic (EPA limit = 5.0)		<0.500	mg/L
TCLP Barium (EPA limit = 100.0)		1.85	mg/L
TCLP Cadmium (EPA limit = 1.0)		<0.050	mg/L
TCLP Chromium (EPA limit = 5.0)		<0.100	mg/L
TCLP Lead (EPA limit = 5.0)		<0.100	mg/L
TCLP Selenium (EPA limit = 1.0)		<0.100	mg/L
TCLP Silver (EPA limit = 5.0)		<0.020	mg/L

TCLP Semivolatiles

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Sample 222483 continued ...

Param	Flag	Result	Units
Pyridine (EPA limit = 5.0)		<0.05	mg/L
1,4-Dichlorobenzene (EPA limit = 7.5)		<0.05	mg/L
o-Cresol (EPA limit = 200.0)		<0.05	mg/L
m,p-Cresol (EPA limit = 200.0)		<0.05	mg/L
Hexachloroethane (EPA limit = 3.0)		<0.05	mg/L
Nitrobenzene (EPA limit = 2.0)		<0.05	mg/L
Hexachlorobutadiene (EPA limit = 0.5)		<0.05	mg/L
2,4,6-Trichlorophenol (EPA limit = 2.0)		<0.05	mg/L
2,4,5-Trichlorophenol (EPA limit = 400.0)		<0.05	mg/L
2,4-Dinitrotoluene (EPA limit = 0.13)		<0.05	mg/L
2,4-D (EPA limit = 10.0)		<0.05	mg/L
Hexachlorobenzene (EPA limit = 0.13)		<0.05	mg/L
2,4,5-TP (EPA limit = 1.0)		<0.05	mg/L
Pentachlorophenol (EPA limit = 100.0)		<0.05	mg/L
TCLP Volatiles			
Vinyl Chloride (EPA limit = 0.20)		<0.05	mg/L
1,1-Dichloroethene (EPA limit = 0.70)		<0.05	mg/L
Methyl ethyl ketone (EPA limit = 200.0)		<0.50	mg/L
Chloroform (EPA limit = 6.00)		<0.05	mg/L
1,2-Dichloroethane (EDC) (EPA limit = 0.50)		<0.05	mg/L
Benzene (EPA limit = 0.50)		<0.05	mg/L
Carbon Tetrachloride (EPA limit = 0.50)		<0.05	mg/L
Trichloroethene (TCE) (EPA limit = 0.50)		<0.05	mg/L
Tetrachloroethene (PCE) (EPA limit = 0.70)		<0.05	mg/L
Chlorobenzene (EPA limit = 100.00)		<0.05	mg/L
1,4-Dichlorobenzene (EPA limit = 7.50)		<0.05	mg/L

Sample: 222484 - A2 Middle Stockpile

Param	Flag	Result	Units
Corrosivity			
Corrosivity (EPA limit = >6.5 mm/yr)		non-corrosive	mm/yr
pH (EPA limit = <2 >12.5)		8.8	s.u.
Ignitability		non-ignitable	
Reactivity			
Reactivity		Non-reactive	
Hydrogen Sulfide (EPA limit = 500)		<10	mg/Kg
Hydrogen Cyanide (EPA limit = 250)		<2.5	mg/Kg
TCLP Mercury (EPA limit = 0.20)		<0.010	mg/L
TCLP Metals			
TCLP Arsenic (EPA limit = 5.0)		<0.500	mg/L
TCLP Barium (EPA limit = 100.0)		1.74	mg/L
TCLP Cadmium (EPA limit = 1.0)		<0.050	mg/L
TCLP Chromium (EPA limit = 5.0)		<0.100	mg/L
TCLP Lead (EPA limit = 5.0)		<0.100	mg/L
TCLP Selenium (EPA limit = 1.0)		<0.100	mg/L
TCLP Silver (EPA limit = 5.0)		<0.020	mg/L

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Sample 222484 continued ...

Param	Flag	Result	Units
TCLP Semivolatiles			
Pyridine (EPA limit = 5.0)		<0.05	mg/L
1,4-Dichlorobenzene (EPA limit = 7.5)		<0.05	mg/L
o-Cresol (EPA limit = 200.0)		<0.05	mg/L
m,p-Cresol (EPA limit = 200.0)		<0.05	mg/L
Hexachloroethane (EPA limit = 3.0)		<0.05	mg/L
Nitrobenzene (EPA limit = 2.0)		<0.05	mg/L
Hexachlorobutadiene (EPA limit = 0.5)		<0.05	mg/L
2,4,6-Trichlorophenol (EPA limit = 2.0)		<0.05	mg/L
2,4,5-Trichlorophenol (EPA limit = 400.0)		<0.05	mg/L
2,4-Dinitrotoluene (EPA limit = 0.13)		<0.05	mg/L
2,4-D (EPA limit = 10.0)		<0.05	mg/L
Hexachlorobenzene (EPA limit = 0.13)		<0.05	mg/L
2,4,5-TP (EPA limit = 1.0)		<0.05	mg/L
Pentachlorophenol (EPA limit = 100.0)		<0.05	mg/L
TCLP Volatiles			
Vinyl Chloride (EPA limit = 0.20)		<0.05	mg/L
1,1-Dichloroethene (EPA limit = 0.70)		<0.05	mg/L
Methyl ethyl ketone (EPA limit = 200.0)		<0.50	mg/L
Chloroform (EPA limit = 6.00)		<0.05	mg/L
1,2-Dichloroethane (EDC) (EPA limit = 0.50)		<0.05	mg/L
Benzene (EPA limit = 0.50)		<0.05	mg/L
Carbon Tetrachloride (EPA limit = 0.50)		<0.05	mg/L
Trichloroethene (TCE) (EPA limit = 0.50)		<0.05	mg/L
Tetrachloroethene (PCE) (EPA limit = 0.70)		<0.05	mg/L
Chlorobenzene (EPA limit = 100.00)		<0.05	mg/L
1,4-Dichlorobenzene (EPA limit = 7.50)		<0.05	mg/L

Sample: 222485 - A2 West 1 Stockpile

Param	Flag	Result	Units
Corrosivity			
Corrosivity (EPA limit = >6.5 mm/yr)		non-corrosive	mm/yr
pH (EPA limit = <2 >12.5)		8.1	s.u.
Ignitability		non-ignitable	
Reactivity			
Reactivity		Non-reactive	
Hydrogen Sulfide (EPA limit = 500)		<10	mg/Kg
Hydrogen Cyanide (EPA limit = 250)		<2.5	mg/Kg
TCLP Mercury (EPA limit = 0.20)		<0.010	mg/L
TCLP Metals			
TCLP Arsenic (EPA limit = 5.0)		<0.500	mg/L
TCLP Barium (EPA limit = 100.0)		1.56	mg/L
TCLP Cadmium (EPA limit = 1.0)		<0.050	mg/L
TCLP Chromium (EPA limit = 5.0)		<0.100	mg/L
TCLP Lead (EPA limit = 5.0)		<0.100	mg/L
TCLP Selenium (EPA limit = 1.0)		<0.100	mg/L
TCLP Silver (EPA limit = 5.0)		<0.020	mg/L

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Sample 222485 continued ...

Param	Flag	Result	Units
TCLP Semivolatiles			
Pyridine (EPA limit = 5.0)		<0.05	mg/L
1,4-Dichlorobenzene (EPA limit = 7.5)		<0.05	mg/L
o-Cresol (EPA limit = 200.0)		<0.05	mg/L
m,p-Cresol (EPA limit = 200.0)		<0.05	mg/L
Hexachloroethane (EPA limit = 3.0)		<0.05	mg/L
Nitrobenzene (EPA limit = 2.0)		<0.05	mg/L
Hexachlorobutadiene (EPA limit = 0.5)		<0.05	mg/L
2,4,6-Trichlorophenol (EPA limit = 2.0)		<0.05	mg/L
2,4,5-Trichlorophenol (EPA limit = 400.0)		<0.05	mg/L
2,4-Dinitrotoluene (EPA limit = 0.13)		<0.05	mg/L
2,4-D (EPA limit = 10.0)		<0.05	mg/L
Hexachlorobenzene (EPA limit = 0.13)		<0.05	mg/L
2,4,5-TP (EPA limit = 1.0)		<0.05	mg/L
Pentachlorophenol (EPA limit = 100.0)		<0.05	mg/L
TCLP Volatiles			
Vinyl Chloride (EPA limit = 0.20)		<0.05	mg/L
1,1-Dichloroethene (EPA limit = 0.70)		<0.05	mg/L
Methyl ethyl ketone (EPA limit = 200.0)		<0.50	mg/L
Chloroform (EPA limit = 6.00)		<0.05	mg/L
1,2-Dichloroethane (EDC) (EPA limit = 0.50)		<0.05	mg/L
Benzene (EPA limit = 0.50)		<0.05	mg/L
Carbon Tetrachloride (EPA limit = 0.50)		<0.05	mg/L
Trichloroethene (TCE) (EPA limit = 0.50)		<0.05	mg/L
Tetrachloroethene (PCE) (EPA limit = 0.70)		<0.05	mg/L
Chlorobenzene (EPA limit = 100.00)		<0.05	mg/L
1,4-Dichlorobenzene (EPA limit = 7.50)		<0.05	mg/L

Sample: 222486 - A2 West 2 Stockpile

Param	Flag	Result	Units
Corrosivity			
Corrosivity (EPA limit = >6.5 mm/yr)		non-corrosive	mm/yr
pH (EPA limit = <2 >12.5)		8	s.u.
Ignitability		non-ignitable	
Reactivity			
Reactivity		Non-reactive	
Hydrogen Sulfide (EPA limit = 500)		<10	mg/Kg
Hydrogen Cyanide (EPA limit = 250)		<2.5	mg/Kg
TCLP Mercury (EPA limit = 0.20)		<0.010	mg/L
TCLP Metals			
TCLP Arsenic (EPA limit = 5.0)		<0.500	mg/L
TCLP Barium (EPA limit = 100.0)		1.95	mg/L
TCLP Cadmium (EPA limit = 1.0)		<0.050	mg/L
TCLP Chromium (EPA limit = 5.0)		<0.100	mg/L
TCLP Lead (EPA limit = 5.0)		<0.100	mg/L
TCLP Selenium (EPA limit = 1.0)		<0.100	mg/L

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Sample 222486 continued ...

Param	Flag	Result	Units
TCLP Silver (EPA limit = 5.0)		<0.020	mg/L
TCLP Semivolatiles			
Pyridine (EPA limit = 5.0)		<0.05	mg/L
1,4-Dichlorobenzene (EPA limit = 7.5)		<0.05	mg/L
o-Cresol (EPA limit = 200.0)		<0.05	mg/L
m,p-Cresol (EPA limit = 200.0)		<0.05	mg/L
Hexachloroethane (EPA limit = 3.0)		<0.05	mg/L
Nitrobenzene (EPA limit = 2.0)		<0.05	mg/L
Hexachlorobutadiene (EPA limit = 0.5)		<0.05	mg/L
2,4,6-Trichlorophenol (EPA limit = 2.0)		<0.05	mg/L
2,4,5-Trichlorophenol (EPA limit = 400.0)		<0.05	mg/L
2,4-Dinitrotoluene (EPA limit = 0.13)		<0.05	mg/L
2,4-D (EPA limit = 10.0)		<0.05	mg/L
Hexachlorobenzene (EPA limit = 0.13)		<0.05	mg/L
2,4,5-TP (EPA limit = 1.0)		<0.05	mg/L
Pentachlorophenol (EPA limit = 100.0)		<0.05	mg/L
TCLP Volatiles			
Vinyl Chloride (EPA limit = 0.20)		<0.05	mg/L
1,1-Dichloroethene (EPA limit = 0.70)		<0.05	mg/L
Methyl ethyl ketone (EPA limit = 200.0)		<0.50	mg/L
Chloroform (EPA limit = 6.00)		<0.05	mg/L
1,2-Dichloroethane (EDC) (EPA limit = 0.50)		<0.05	mg/L
Benzene (EPA limit = 0.50)		<0.05	mg/L
Carbon Tetrachloride (EPA limit = 0.50)		<0.05	mg/L
Trichloroethene (TCE) (EPA limit = 0.50)		<0.05	mg/L
Tetrachloroethene (PCE) (EPA limit = 0.70)		<0.05	mg/L
Chlorobenzene (EPA limit = 100.00)		<0.05	mg/L
1,4-Dichlorobenzene (EPA limit = 7.50)		<0.05	mg/L

Sample: 222487 - Floorsweep Stockpile

Param	Flag	Result	Units
Corrosivity			
Corrosivity (EPA limit = >6.5 mm/yr)		non-corrosive	mm/yr
pH (EPA limit = <2 >12.5)		7.5	s.u.
Ignitability		non-ignitable	
Reactivity			
Reactivity		Non-reactive	
Hydrogen Sulfide (EPA limit = 500)		<10	mg/Kg
Hydrogen Cyanide (EPA limit = 250)		<2.5	mg/Kg
TCLP Mercury (EPA limit = 0.20)		<0.010	mg/L
TCLP Metals			
TCLP Arsenic (EPA limit = 5.0)		<0.500	mg/L
TCLP Barium (EPA limit = 100.0)		<1.00	mg/L
TCLP Cadmium (EPA limit = 1.0)		<0.050	mg/L
TCLP Chromium (EPA limit = 5.0)		<0.100	mg/L
TCLP Lead (EPA limit = 5.0)		0.137	mg/L

Continued on next page ...

This is only a summary. Please, refer to the complete report package for quality control data.

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Hobbs,NM

Sample 222487 continued ...

Param	Flag	Result	Units
TCLP Selenium (EPA limit = 1.0)		<0.100	mg/L
TCLP Silver (EPA limit = 5.0)		<0.020	mg/L
TCLP Semivolatiles			
Pyridine (EPA limit = 5.0)		<0.05	mg/L
1,4-Dichlorobenzene (EPA limit = 7.5)		<0.05	mg/L
o-Cresol (EPA limit = 200.0)		<0.05	mg/L
m,p-Cresol (EPA limit = 200.0)		<0.05	mg/L
Hexachloroethane (EPA limit = 3.0)		<0.05	mg/L
Nitrobenzene (EPA limit = 2.0)		<0.05	mg/L
Hexachlorobutadiene (EPA limit = 0.5)		<0.05	mg/L
2,4,6-Trichlorophenol (EPA limit = 2.0)		<0.05	mg/L
2,4,5-Trichlorophenol (EPA limit = 400.0)		<0.05	mg/L
2,4-Dinitrotoluene (EPA limit = 0.13)		<0.05	mg/L
2,4-D (EPA limit = 10.0)		<0.05	mg/L
Hexachlorobenzene (EPA limit = 0.13)		<0.05	mg/L
2,4,5-TP (EPA limit = 1.0)		<0.05	mg/L
Pentachlorophenol (EPA limit = 100.0)		<0.05	mg/L
TCLP Volatiles			
Vinyl Chloride (EPA limit = 0.20)		<0.05	mg/L
1,1-Dichloroethene (EPA limit = 0.70)		<0.05	mg/L
Methyl ethyl ketone (EPA limit = 200.0)		<0.50	mg/L
Chloroform (EPA limit = 6.00)		<0.05	mg/L
1,2-Dichloroethane (EDC) (EPA limit = 0.50)		<0.05	mg/L
Benzene (EPA limit = 0.50)		<0.05	mg/L
Carbon Tetrachloride (EPA limit = 0.50)		<0.05	mg/L
Trichloroethene (TCE) (EPA limit = 0.50)		<0.05	mg/L
Tetrachloroethene (PCE) (EPA limit = 0.70)		<0.05	mg/L
Chlorobenzene (EPA limit = 100.00)		<0.05	mg/L
1,4-Dichlorobenzene (EPA limit = 7.50)		<0.05	mg/L

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Analytical and Quality Control Report

Todd Choban
E.T.G.I.
PO Box 4845
Midland, Tx. 79704

Report Date: March 10, 2003

Order ID Number: A03022822

Project Number: CH2100
Project Name: Champion Tech
Project Location: Hobbs, NM

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace-Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
222480	A2 East 1 Stockpile	Soil	2/26/03	14:20	2/28/03
222481	A2 East 2 Stockpile	Soil	2/26/03	14:45	2/28/03
222482	A2 East 3 Stockpile	Soil	2/26/03	15:10	2/28/03
222483	A2 East 4 Stockpile	Soil	2/26/03	15:50	2/28/03
222484	A2 Middle Stockpile	Soil	2/26/03	16:00	2/28/03
222485	A2 West 1 Stockpile	Soil	2/26/03	16:20	2/28/03
222486	A2 West 2 Stockpile	Soil	2/26/03	16:25	2/28/03
222487	Floorsweep Stockpile	Soil	2/26/03	15:48	2/28/03

~~These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.~~

Note: the RDL is equal to MQL for all organic analytes including TPH.

The test results contained within this report meet all requirements of LAC 33:I unless otherwise noted.

This report consists of a total of 27 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of TraceAnalysis, Inc.

Note: Samples will be disposed of 30 days from the report date unless the lab is contacted before the 30 days has past.



Dr. Blair Leftwich, Director

Analytical Report

Sample: 222480 - A2 East 1 Stockpile

Analysis: Corrosivity Analytical Method: S 1110 QC Batch: QC27505 Date Analyzed: 3/3/03
Analyst: JH Preparation Method: N/A Prep Batch: PB25241 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
Corrosivity		non-corrosive	mm/yr	1	
pH		8.3	s.u.	1	

Sample: 222480 - A2 East 1 Stockpile

Analysis: Ignitability Analytical Method: SW-846 Ch. 7.1 QC Batch: QC27503 Date Analyzed: 3/3/03
Analyst: JH Preparation Method: Prep Batch: PB25240 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
Ignitability		non-ignitable		1	

Sample: 222480 - A2 East 1 Stockpile

Analysis: Reactivity Analytical Method: ASTM D 5049-90/4978-95 QC Batch: QC27507 Date Analyzed: 3/3/03
Analyst: JH Preparation Method: N/A Prep Batch: PB25242 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
Reactivity		Non-reactive		1	
Hydrogen Sulfide		<10	mg/Kg	1	
Hydrogen Cyanide		<2.5	mg/Kg	1	

Sample: 222480 - A2 East 1 Stockpile

Analysis: TCLP Hg Analytical Method: S 7470A QC Batch: QC27641 Date Analyzed: 3/6/03
Analyst: BC Preparation Method: E 1311 Prep Batch: PB25356 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
TCLP Mercury		<0.010	mg/L	1	0.01

Sample: 222480 - A2 East 1 Stockpile

Analysis: TCLP Metals Analytical Method: S 6010B QC Batch: QC27645 Date Analyzed: 3/6/03
Analyst: RR Preparation Method: 1311 Prep Batch: PB25276 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
TCLP Arsenic		<0.500	mg/L	10	0.05
TCLP Barium		1.84	mg/L	10	0.10
TCLP Cadmium		<0.050	mg/L	10	0.005
TCLP Chromium		<0.100	mg/L	10	0.01
TCLP Lead		<0.100	mg/L	10	0.01
TCLP Selenium		<0.100	mg/L	10	0.01
TCLP Silver		<0.020	mg/L	10	0.002

Sample: 222480 - A2 East 1 Stockpile

Analysis: TCLP Semivolatiles Analytical Method: E 8270C QC Batch: QC27629 Date Analyzed: 3/4/03
Analyst: RC Preparation Method: 1311 Prep Batch: PB25342 Date Prepared: 3/1/03

Param	Flag	Result	Units	Dilution	RDL
Pyridine		<0.05	mg/L	1	0.25
1,4-Dichlorobenzene		<0.05	mg/L	1	0.25
o-Cresol		<0.05	mg/L	1	0.25
m,p-Cresol		<0.05	mg/L	1	0.25
Hexachloroethane		<0.05	mg/L	1	0.25
Nitrobenzene		<0.05	mg/L	1	0.25
Hexachlorobutadiene		<0.05	mg/L	1	0.25
2,4,6-Trichlorophenol		<0.05	mg/L	1	0.25
2,4,5-Trichlorophenol		<0.05	mg/L	1	0.25
2,4-Dinitrotoluene		<0.05	mg/L	1	0.25
2,4-D		<0.05	mg/L	1	0.25
Hexachlorobenzene		<0.05	mg/L	1	0.25
2,4,5-TP		<0.05	mg/L	1	0.25
Pentachlorophenol		<0.05	mg/L	1	0.25

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		26.14	mg/L	1	80	32	10 - 45
Phenol-d5		14.91	mg/L	1	80	18	6 - 33
Nitrobenzene-d5		62.44	mg/L	1	80	78	35 - 91
2-Fluorobiphenyl		58.22	mg/L	1	80	72	22 - 93
2,4,6-Tribromophenol		67.53	mg/L	1	80	84	22 - 100
Terphenyl-d14		57.41	mg/L	1	80	84	23 - 116

Sample: 222480 - A2 East 1 Stockpile

Analysis: TCLP Volatiles Analytical Method: S 8260B QC Batch: QC27630 Date Analyzed: 3/5/03
Analyst: JG Preparation Method: 1311 Prep Batch: PB25343 Date Prepared: 3/4/03

Param	Flag	Result	Units	Dilution	RDL
Vinyl Chloride		<0.05	mg/L	50	0.001
1,1-Dichloroethene		<0.05	mg/L	50	0.001
Methyl ethyl ketone		<0.50	mg/L	50	0.01
Chloroform		<0.05	mg/L	50	0.001
1,2-Dichloroethane (EDC)		<0.05	mg/L	50	0.001
Benzene		<0.05	mg/L	50	0.001
Carbon Tetrachloride		<0.05	mg/L	50	0.001
Trichloroethene (TCE)		<0.05	mg/L	50	0.001
Tetrachloroethene (PCE)		<0.05	mg/L	50	0.001
Chlorobenzene		<0.05	mg/L	50	0.001
1,4-Dichlorobenzene		<0.05	mg/L	50	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Bromofluoromethane		47.60	mg/L	50	50	95	70 - 130
Toluene-d8		49	mg/L	50	50	98	70 - 130
4-Bromofluorobenzene		48	mg/L	50	50	96	70 - 130

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Sample: 222481 - A2 East 2 Stockpile

Analysis: Corrosivity Analytical Method: S 1110 QC Batch: QC27505 Date Analyzed: 3/3/03
Analyst: JH Preparation Method: N/A Prep Batch: PB25241 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
Corrosivity		non-corrosive	mm/yr	1	
pH		8.4	s.u.	1	

Sample: 222481 - A2 East 2 Stockpile

Analysis: Ignitability Analytical Method: SW-846 Ch. 7.1 QC Batch: QC27503 Date Analyzed: 3/3/03
Analyst: JH Preparation Method: Prep Batch: PB25240 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
Ignitability		non-ignitable		1	

Sample: 222481 - A2 East 2 Stockpile

Analysis: Reactivity Analytical Method: ASTM D 5049-90/4978-95 QC Batch: QC27507 Date Analyzed: 3/3/03
Analyst: JH Preparation Method: N/A Prep Batch: PB25242 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
Reactivity		Non-reactive		1	
Hydrogen Sulfide		<10	mg/Kg	1	
Hydrogen Cyanide		<2.5	mg/Kg	1	

Sample: 222481 - A2 East 2 Stockpile

Analysis: TCLP Hg Analytical Method: S 7470A QC Batch: QC27641 Date Analyzed: 3/6/03
Analyst: BC Preparation Method: E 1311 Prep Batch: PB25356 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
TCLP Mercury		<0.010	mg/L	1	0.01

Sample: 222481 - A2 East 2 Stockpile

Analysis: TCLP Metals Analytical Method: S 6010B QC Batch: QC27645 Date Analyzed: 3/6/03
Analyst: RR Preparation Method: 1311 Prep Batch: PB25276 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
TCLP Arsenic		<0.500	mg/L	10	0.05
TCLP Barium		2.10	mg/L	10	0.10
TCLP Cadmium		<0.050	mg/L	10	0.005
TCLP Chromium		<0.100	mg/L	10	0.01
TCLP Lead		<0.100	mg/L	10	0.01
TCLP Selenium		<0.100	mg/L	10	0.01
TCLP Silver		<0.020	mg/L	10	0.002

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Sample: 222481 - A2 East 2 Stockpile

Analysis: TCLP Semivolatiles Analytical Method: E 8270C QC Batch: QC27629 Date Analyzed: 3/4/03
Analyst: RC Preparation Method: 1311 Prep Batch: PB25342 Date Prepared: 3/1/03

Param	Flag	Result	Units	Dilution	RDL
Pyridine		<0.05	mg/L	1	0.25
1,4-Dichlorobenzene		<0.05	mg/L	1	0.25
o-Cresol		<0.05	mg/L	1	0.25
m,p-Cresol		<0.05	mg/L	1	0.25
Hexachloroethane		<0.05	mg/L	1	0.25
Nitrobenzene		<0.05	mg/L	1	0.25
Hexachlorobutadiene		<0.05	mg/L	1	0.25
2,4,6-Trichlorophenol		<0.05	mg/L	1	0.25
2,4,5-Trichlorophenol		<0.05	mg/L	1	0.25
2,4-Dinitrotoluene		<0.05	mg/L	1	0.25
2,4-D		<0.05	mg/L	1	0.25
Hexachlorobenzene		<0.05	mg/L	1	0.25
2,4,5-TP		<0.05	mg/L	1	0.25
Pentachlorophenol		<0.05	mg/L	1	0.25

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		33.93	mg/L	1	80	42	10 - 45
Phenol-d5		18.41	mg/L	1	80	23	6 - 33
Nitrobenzene-d5		80.53	mg/L	1	80	100	35 - 91
2-Fluorobiphenyl		74.33	mg/L	1	80	92	22 - 93
2,4,6-Tribromophenol		86.18	mg/L	1	80	107	22 - 100
Terphenyl-d14		86.13	mg/L	1	80	107	23 - 116

Sample: 222481 - A2 East 2 Stockpile

Analysis: TCLP Volatiles Analytical Method: S 8260B QC Batch: QC27630 Date Analyzed: 3/5/03
Analyst: JG Preparation Method: 1311 Prep Batch: PB25343 Date Prepared: 3/4/03

Param	Flag	Result	Units	Dilution	RDL
Vinyl Chloride		<0.05	mg/L	50	0.001
1,1-Dichloroethene		<0.05	mg/L	50	0.001
Methyl ethyl ketone		<0.50	mg/L	50	0.01
Chloroform		<0.05	mg/L	50	0.001
1,2-Dichloroethane (EDC)		<0.05	mg/L	50	0.001
Benzene		<0.05	mg/L	50	0.001
Carbon Tetrachloride		<0.05	mg/L	50	0.001
Trichloroethene (TCE)		<0.05	mg/L	50	0.001
Tetrachloroethene (PCE)		<0.05	mg/L	50	0.001
Chlorobenzene		<0.05	mg/L	50	0.001
1,4-Dichlorobenzene		<0.05	mg/L	50	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Bromofluoromethane		48.40	mg/L	50	50	96	70 - 130
Toluene-d8		49.20	mg/L	50	50	98	70 - 130
4-Bromofluorobenzene		48.30	mg/L	50	50	96	70 - 130

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Sample: 222482 - A2 East 3 Stockpile

Analysis: Corrosivity Analytical Method: S 1110 QC Batch: QC27505 Date Analyzed: 3/3/03
Analyst: JH Preparation Method: N/A Prep Batch: PB25241 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
Corrosivity		non-corrosive	mm/yr	1	
pH		8.6	s.u.	1	

Sample: 222482 - A2 East 3 Stockpile

Analysis: Ignitability Analytical Method: SW-846 Ch. 7.1 QC Batch: QC27503 Date Analyzed: 3/3/03
Analyst: JH Preparation Method: Prep Batch: PB25240 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
Ignitability		non-ignitable		1	

Sample: 222482 - A2 East 3 Stockpile

Analysis: Reactivity Analytical Method: ASTM D 5049-90/4978-95 QC Batch: QC27507 Date Analyzed: 3/3/03
Analyst: JH Preparation Method: N/A Prep Batch: PB25242 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
Reactivity		Non-reactive		1	
Hydrogen Sulfide		<10	mg/Kg	1	
Hydrogen Cyanide		<2.5	mg/Kg	1	

Sample: 222482 - A2 East 3 Stockpile

Analysis: TCLP Hg Analytical Method: S 7470A QC Batch: QC27641 Date Analyzed: 3/6/03
Analyst: BC Preparation Method: E 1311 Prep Batch: PB25356 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
TCLP Mercury		<0.010	mg/L	1	0.01

Sample: 222482 - A2 East 3 Stockpile

Analysis: TCLP Metals Analytical Method: S 6010B QC Batch: QC27645 Date Analyzed: 3/6/03
Analyst: RR Preparation Method: 1311 Prep Batch: PB25276 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
TCLP Arsenic		<0.500	mg/L	10	0.05
TCLP Barium		1.87	mg/L	10	0.10
TCLP Cadmium		<0.050	mg/L	10	0.005
TCLP Chromium		<0.100	mg/L	10	0.01
TCLP Lead		<0.100	mg/L	10	0.01
TCLP Selenium		<0.100	mg/L	10	0.01
TCLP Silver		<0.020	mg/L	10	0.002

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Sample: 222482 - A2 East 3 Stockpile

Analysis: TCLP Semivolatiles Analytical Method: E 8270C QC Batch: QC27629 Date Analyzed: 3/4/03
Analyst: RC Preparation Method: 1311 Prep Batch: PB25342 Date Prepared: 3/1/03

Param	Flag	Result	Units	Dilution	RDL
Pyridine		<0.05	mg/L	1	0.25
1,4-Dichlorobenzene		<0.05	mg/L	1	0.25
o-Cresol		<0.05	mg/L	1	0.25
m,p-Cresol		<0.05	mg/L	1	0.25
Hexachloroethane		<0.05	mg/L	1	0.25
Nitrobenzene		<0.05	mg/L	1	0.25
Hexachlorobutadiene		<0.05	mg/L	1	0.25
2,4,6-Trichlorophenol		<0.05	mg/L	1	0.25
2,4,5-Trichlorophenol		<0.05	mg/L	1	0.25
2,4-Dinitrotoluene		<0.05	mg/L	1	0.25
2,4-D		<0.05	mg/L	1	0.25
Hexachlorobenzene		<0.05	mg/L	1	0.25
2,4,5-TP		<0.05	mg/L	1	0.25
Pentachlorophenol		<0.05	mg/L	1	0.25

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		24.22	mg/L	1	80	30	10 - 45
Phenol-d5		13.80	mg/L	1	80	17	6 - 33
Nitrobenzene-d5		55.02	mg/L	1	80	68	35 - 91
2-Fluorobiphenyl		50.78	mg/L	1	80	63	22 - 93
2,4,6-Tribromophenol		60.24	mg/L	1	80	75	22 - 100
Terphenyl-d14		62.01	mg/L	1	80	77	23 - 116

Sample: 222482 - A2 East 3 Stockpile

Analysis: TCLP Volatiles Analytical Method: S 8260B QC Batch: QC27630 Date Analyzed: 3/5/03
Analyst: JG Preparation Method: 1311 Prep Batch: PB25343 Date Prepared: 3/4/03

Param	Flag	Result	Units	Dilution	RDL
Vinyl Chloride		<0.05	mg/L	50	0.001
1,1-Dichloroethene		<0.05	mg/L	50	0.001
Methyl ethyl ketone		<0.50	mg/L	50	0.01
Chloroform		<0.05	mg/L	50	0.001
1,2-Dichloroethane (EDC)		<0.05	mg/L	50	0.001
Benzene		<0.05	mg/L	50	0.001
Carbon Tetrachloride		<0.05	mg/L	50	0.001
Trichloroethene (TCE)		<0.05	mg/L	50	0.001
Tetrachloroethene (PCE)		<0.05	mg/L	50	0.001
Chlorobenzene		<0.05	mg/L	50	0.001
1,4-Dichlorobenzene		<0.05	mg/L	50	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Bromofluoromethane		46.50	mg/L	50	50	93	70 - 130
Toluene-d8		48.90	mg/L	50	50	97	70 - 130
4-Bromofluorobenzene		48.1	mg/L	50	50	96	70 - 130

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Sample: 222483 - A2 East 4 Stockpile

Analysis: Corrosivity Analytical Method: S 1110 QC Batch: QC27505 Date Analyzed: 3/3/03
Analyst: JH Preparation Method: N/A Prep Batch: PB25241 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
Corrosivity		non-corrosive	mm/yr	1	
pH		8.6	s.u.	1	

Sample: 222483 - A2 East 4 Stockpile

Analysis: Ignitability Analytical Method: SW-846 Ch. 7.1 QC Batch: QC27503 Date Analyzed: 3/3/03
Analyst: JH Preparation Method: Prep Batch: PB25240 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
Ignitability		non-ignitable		1	

Sample: 222483 - A2 East 4 Stockpile

Analysis: Reactivity Analytical Method: ASTM D 5049-90/4978-95 QC Batch: QC27507 Date Analyzed: 3/3/03
Analyst: JH Preparation Method: N/A Prep Batch: PB25242 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
Reactivity		Non-reactive		1	
Hydrogen Sulfide		<10	mg/Kg	1	
Hydrogen Cyanide		<2.5	mg/Kg	1	

Sample: 222483 - A2 East 4 Stockpile

Analysis: TCLP Hg Analytical Method: S 7470A QC Batch: QC27641 Date Analyzed: 3/6/03
Analyst: BC Preparation Method: E 1311 Prep Batch: PB25356 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
TCLP Mercury		<0.010	mg/L	1	0.01

Sample: 222483 - A2 East 4 Stockpile

Analysis: TCLP Metals Analytical Method: S 6010B QC Batch: QC27645 Date Analyzed: 3/6/03
Analyst: RR Preparation Method: 1311 Prep Batch: PB25276 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
TCLP Arsenic		<0.500	mg/L	10	0.05
TCLP Barium		1.85	mg/L	10	0.10
TCLP Cadmium		<0.050	mg/L	10	0.005
TCLP Chromium		<0.100	mg/L	10	0.01
TCLP Lead		<0.100	mg/L	10	0.01
TCLP Selenium		<0.100	mg/L	10	0.01
TCLP Silver		<0.020	mg/L	10	0.002

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Sample: 222483 - A2 East 4 Stockpile

Analysis: TCLP Semivolatiles Analytical Method: E 8270C QC Batch: QC27629 Date Analyzed: 3/4/03
Analyst: RC Preparation Method: 1311 Prep Batch: PB25342 Date Prepared: 3/1/03

Param	Flag	Result	Units	Dilution	RDL
Pyridine		<0.05	mg/L	1	0.25
1,4-Dichlorobenzene		<0.05	mg/L	1	0.25
o-Cresol		<0.05	mg/L	1	0.25
m,p-Cresol		<0.05	mg/L	1	0.25
Hexachloroethane		<0.05	mg/L	1	0.25
Nitrobenzene		<0.05	mg/L	1	0.25
Hexachlorobutadiene		<0.05	mg/L	1	0.25
2,4,6-Trichlorophenol		<0.05	mg/L	1	0.25
2,4,5-Trichlorophenol		<0.05	mg/L	1	0.25
2,4-Dinitrotoluene		<0.05	mg/L	1	0.25
2,4-D		<0.05	mg/L	1	0.25
Hexachlorobenzene		<0.05	mg/L	1	0.25
2,4,5-TP		<0.05	mg/L	1	0.25
Pentachlorophenol		<0.05	mg/L	1	0.25

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		29.54	mg/L	1	80	36	10 - 45
Phenol-d5		16.95	mg/L	1	80	21	6 - 33
Nitrobenzene-d5		70.72	mg/L	1	80	88	35 - 91
2-Fluorobiphenyl		65.56	mg/L	1	80	81	22 - 93
2,4,6-Tribromophenol		71.99	mg/L	1	80	89	22 - 100
Terphenyl-d14		74.86	mg/L	1	80	93	23 - 116

Sample: 222483 - A2 East 4 Stockpile

Analysis: TCLP Volatiles Analytical Method: S 8260B QC Batch: QC27630 Date Analyzed: 3/5/03
Analyst: JG Preparation Method: 1311 Prep Batch: PB25343 Date Prepared: 3/4/03

Param	Flag	Result	Units	Dilution	RDL
Vinyl Chloride		<0.05	mg/L	50	0.001
1,1-Dichloroethene		<0.05	mg/L	50	0.001
Methyl ethyl ketone		<0.50	mg/L	50	0.01
Chloroform		<0.05	mg/L	50	0.001
1,2-Dichloroethane (EDC)		<0.05	mg/L	50	0.001
Benzene		<0.05	mg/L	50	0.001
Carbon Tetrachloride		<0.05	mg/L	50	0.001
Trichloroethene (TCE)		<0.05	mg/L	50	0.001
Tetrachloroethene (PCE)		<0.05	mg/L	50	0.001
Chlorobenzene		<0.05	mg/L	50	0.001
1,4-Dichlorobenzene		<0.05	mg/L	50	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Bromofluoromethane		47.3	mg/L	50	50	94	70 - 130
Toluene-d8		49.4	mg/L	50	50	98	70 - 130
4-Bromofluorobenzene		48.3	mg/L	50	50	96	70 - 130

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Sample: 222484 - A2 Middle Stockpile

Analysis: Corrosivity Analytical Method: S 1110 QC Batch: QC27505 Date Analyzed: 3/3/03
Analyst: JH Preparation Method: N/A Prep Batch: PB25241 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
Corrosivity		non-corrosive	mm/yr	1	
pH		8.8	s.u.	1	

Sample: 222484 - A2 Middle Stockpile

Analysis: Ignitability Analytical Method: SW-846 Ch. 7.1 QC Batch: QC27503 Date Analyzed: 3/3/03
Analyst: JH Preparation Method: Prep Batch: PB25240 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
Ignitability		non-ignitable		1	

Sample: 222484 - A2 Middle Stockpile

Analysis: Reactivity Analytical Method: ASTM D 5049-90/4978-95 QC Batch: QC27507 Date Analyzed: 3/3/03
Analyst: JH Preparation Method: N/A Prep Batch: PB25242 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
Reactivity		Non-reactive		1	
Hydrogen Sulfide		<10	mg/Kg	1	
Hydrogen Cyanide		<2.5	mg/Kg	1	

Sample: 222484 - A2 Middle Stockpile

Analysis: TCLP Hg Analytical Method: S 7470A QC Batch: QC27641 Date Analyzed: 3/6/03
Analyst: BC Preparation Method: E 1311 Prep Batch: PB25356 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
TCLP Mercury		<0.010	mg/L	1	0.01

Sample: 222484 - A2 Middle Stockpile

Analysis: TCLP Metals Analytical Method: S 6010B QC Batch: QC27645 Date Analyzed: 3/6/03
Analyst: RR Preparation Method: 1311 Prep Batch: PB25276 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
TCLP Arsenic		<0.500	mg/L	10	0.05
TCLP Barium		1.74	mg/L	10	0.10
TCLP Cadmium		<0.050	mg/L	10	0.005
TCLP Chromium		<0.100	mg/L	10	0.01
TCLP Lead		<0.100	mg/L	10	0.01
TCLP Selenium		<0.100	mg/L	10	0.01
TCLP Silver		<0.020	mg/L	10	0.002

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Sample: 222484 - A2 Middle Stockpile

Analysis: TCLP Semivolatiles Analytical Method: E 8270C QC Batch: QC27629 Date Analyzed: 3/4/03
Analyst: RC Preparation Method: 1311 Prep Batch: PB25342 Date Prepared: 3/1/03

Param	Flag	Result	Units	Dilution	RDL
Pyridine		<0.05	mg/L	1	0.25
1,4-Dichlorobenzene		<0.05	mg/L	1	0.25
o-Cresol		<0.05	mg/L	1	0.25
m,p-Cresol		<0.05	mg/L	1	0.25
Hexachloroethane		<0.05	mg/L	1	0.25
Nitrobenzene		<0.05	mg/L	1	0.25
Hexachlorobutadiene		<0.05	mg/L	1	0.25
2,4,6-Trichlorophenol		<0.05	mg/L	1	0.25
2,4,5-Trichlorophenol		<0.05	mg/L	1	0.25
2,4-Dinitrotoluene		<0.05	mg/L	1	0.25
2,4-D		<0.05	mg/L	1	0.25
Hexachlorobenzene		<0.05	mg/L	1	0.25
2,4,5-TP		<0.05	mg/L	1	0.25
Pentachlorophenol		<0.05	mg/L	1	0.25

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		33	mg/L	1	80	41	10 - 45
Phenol-d5		17.9	mg/L	1	80	22	6 - 33
Nitrobenzene-d5		78.52	mg/L	1	80	98	35 - 91
2-Fluorobiphenyl		72.03	mg/L	1	80	90	22 - 93
2,4,6-Tribromophenol		85.51	mg/L	1	80	106	22 - 100
Terphenyl-d14		85.28	mg/L	1	80	106	23 - 116

Sample: 222484 - A2 Middle Stockpile

Analysis: TCLP Volatiles Analytical Method: S 8260B QC Batch: QC27692 Date Analyzed: 3/9/03
Analyst: JG Preparation Method: 1311 Prep Batch: PB25391 Date Prepared: 3/7/03

Param	Flag	Result	Units	Dilution	RDL
Vinyl Chloride		<0.05	mg/L	50	0.001
1,1-Dichloroethene		<0.05	mg/L	50	0.001
Methyl ethyl ketone		<0.50	mg/L	50	0.01
Chloroform		<0.05	mg/L	50	0.001
1,2-Dichloroethane (EDC)		<0.05	mg/L	50	0.001
Benzene		<0.05	mg/L	50	0.001
Carbon Tetrachloride		<0.05	mg/L	50	0.001
Trichloroethene (TCE)		<0.05	mg/L	50	0.001
Tetrachloroethene (PCE)		<0.05	mg/L	50	0.001
Chlorobenzene		<0.05	mg/L	50	0.001
1,4-Dichlorobenzene		<0.05	mg/L	50	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Bromofluoromethane		49	mg/L	50	50	98	70 - 130
Toluene-d8		49.5	mg/L	50	50	99	70 - 130
4-Bromofluorobenzene		42	mg/L	50	50	84	70 - 130

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Sample: 222485 - A2 West 1 Stockpile

Analysis: Corrosivity Analytical Method: S 1110 QC Batch: QC27505 Date Analyzed: 3/3/03
Analyst: JH Preparation Method: N/A Prep Batch: PB25241 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
Corrosivity		non-corrosive	mm/yr	1	
pH		8.1	s.u.	1	

Sample: 222485 - A2 West 1 Stockpile

Analysis: Ignitability Analytical Method: SW-846 Ch. 7.1 QC Batch: QC27503 Date Analyzed: 3/3/03
Analyst: JH Preparation Method: Prep Batch: PB25240 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
Ignitability		non-ignitable		1	

Sample: 222485 - A2 West 1 Stockpile

Analysis: Reactivity Analytical Method: ASTM D 5049-90/4978-95 QC Batch: QC27507 Date Analyzed: 3/3/03
Analyst: JH Preparation Method: N/A Prep Batch: PB25242 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
Reactivity		Non-reactive		1	
Hydrogen Sulfide		<10	mg/Kg	1	
Hydrogen Cyanide		<2.5	mg/Kg	1	

Sample: 222485 - A2 West 1 Stockpile

Analysis: TCLP Hg Analytical Method: S 7470A QC Batch: QC27641 Date Analyzed: 3/6/03
Analyst: BC Preparation Method: E 1311 Prep Batch: PB25356 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
TCLP Mercury		<0.010	mg/L	1	0.01

Sample: 222485 - A2 West 1 Stockpile

Analysis: TCLP Metals Analytical Method: S 6010B QC Batch: QC27645 Date Analyzed: 3/6/03
Analyst: RR Preparation Method: 1311 Prep Batch: PB25276 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
TCLP Arsenic		<0.500	mg/L	10	0.05
TCLP Barium		1.56	mg/L	10	0.10
TCLP Cadmium		<0.050	mg/L	10	0.005
TCLP Chromium		<0.100	mg/L	10	0.01
TCLP Lead		<0.100	mg/L	10	0.01
TCLP Selenium		<0.100	mg/L	10	0.01
TCLP Silver		<0.020	mg/L	10	0.002

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Sample: 222485 - A2 West 1 Stockpile

Analysis: TCLP Semivolatiles Analytical Method: E 8270C QC Batch: QC27629 Date Analyzed: 3/4/03
Analyst: RC Preparation Method: 1311 Prep Batch: PB25342 Date Prepared: 3/1/03

Param	Flag	Result	Units	Dilution	RDL
Pyridine		<0.05	mg/L	1	0.25
1,4-Dichlorobenzene		<0.05	mg/L	1	0.25
o-Cresol		<0.05	mg/L	1	0.25
m,p-Cresol		<0.05	mg/L	1	0.25
Hexachloroethane		<0.05	mg/L	1	0.25
Nitrobenzene		<0.05	mg/L	1	0.25
Hexachlorobutadiene		<0.05	mg/L	1	0.25
2,4,6-Trichlorophenol		<0.05	mg/L	1	0.25
2,4,5-Trichlorophenol		<0.05	mg/L	1	0.25
2,4-Dinitrotoluene		<0.05	mg/L	1	0.25
2,4-D		<0.05	mg/L	1	0.25
Hexachlorobenzene		<0.05	mg/L	1	0.25
2,4,5-TP		<0.05	mg/L	1	0.25
Pentachlorophenol		<0.05	mg/L	1	0.25

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		24.91	mg/L	1	80	31	10 - 45
Phenol-d5		13.68	mg/L	1	80	17	6 - 33
Nitrobenzene-d5		63.21	mg/L	1	80	79	35 - 91
2-Fluorobiphenyl		59.98	mg/L	1	80	74	22 - 93
2,4,6-Tribromophenol		73.46	mg/L	1	80	91	22 - 100
Terphenyl-d14		71.31	mg/L	1	80	89	23 - 116

Sample: 222485 - A2 West 1 Stockpile

Analysis: TCLP Volatiles Analytical Method: S 8260B QC Batch: QC27692 Date Analyzed: 3/9/03
Analyst: JG Preparation Method: 1311 Prep Batch: PB25391 Date Prepared: 3/7/03

Param	Flag	Result	Units	Dilution	RDL
Vinyl Chloride		<0.05	mg/L	50	0.001
1,1-Dichloroethene		<0.05	mg/L	50	0.001
Methyl ethyl ketone		<0.50	mg/L	50	0.01
Chloroform		<0.05	mg/L	50	0.001
1,2-Dichloroethane (EDC)		<0.05	mg/L	50	0.001
Benzene		<0.05	mg/L	50	0.001
Carbon Tetrachloride		<0.05	mg/L	50	0.001
Trichloroethene (TCE)		<0.05	mg/L	50	0.001
Tetrachloroethene (PCE)		<0.05	mg/L	50	0.001
Chlorobenzene		<0.05	mg/L	50	0.001
1,4-Dichlorobenzene		<0.05	mg/L	50	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Bromofluoromethane		49	mg/L	50	50	98	70 - 130
Toluene-d8		50	mg/L	50	50	100	70 - 130
4-Bromofluorobenzene		42	mg/L	50	50	84	70 - 130

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Sample: 222486 - A2 West 2 Stockpile

Analysis: Corrosivity Analytical Method: S 1110 QC Batch: QC27505 Date Analyzed: 3/3/03
Analyst: JH Preparation Method: N/A Prep Batch: PB25241 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
Corrosivity		non-corrosive	mm/yr	1	
pH		8	s.u.	1	

Sample: 222486 - A2 West 2 Stockpile

Analysis: Ignitability Analytical Method: SW-846 Ch. 7.1 QC Batch: QC27503 Date Analyzed: 3/3/03
Analyst: JH Preparation Method: Prep Batch: PB25240 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
Ignitability		non-ignitable		1	

Sample: 222486 - A2 West 2 Stockpile

Analysis: Reactivity Analytical Method: ASTM D 5049-90/4978-95 QC Batch: QC27507 Date Analyzed: 3/3/03
Analyst: JH Preparation Method: N/A Prep Batch: PB25242 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
Reactivity		Non-reactive		1	
Hydrogen Sulfide		<10	mg/Kg	1	
Hydrogen Cyanide		<2.5	mg/Kg	1	

Sample: 222486 - A2 West 2 Stockpile

Analysis: TCLP Hg Analytical Method: S 7470A QC Batch: QC27641 Date Analyzed: 3/6/03
Analyst: BC Preparation Method: E 1311 Prep Batch: PB25356 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
TCLP Mercury		<0.010	mg/L	1	0.01

Sample: 222486 - A2 West 2 Stockpile

Analysis: TCLP Metals Analytical Method: S 6010B QC Batch: QC27645 Date Analyzed: 3/6/03
Analyst: RR Preparation Method: 1311 Prep Batch: PB25276 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
TCLP Arsenic		<0.500	mg/L	10	0.05
TCLP Barium		1.95	mg/L	10	0.10
TCLP Cadmium		<0.050	mg/L	10	0.005
TCLP Chromium		<0.100	mg/L	10	0.01
TCLP Lead		<0.100	mg/L	10	0.01
TCLP Selenium		<0.100	mg/L	10	0.01
TCLP Silver		<0.020	mg/L	10	0.002

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Sample: 222486 - A2 West 2 Stockpile

Analysis: TCLP Semivolatiles Analytical Method: E 8270C QC Batch: QC27629 Date Analyzed: 3/4/03
Analyst: RC Preparation Method: 1311 Prep Batch: PB25342 Date Prepared: 3/1/03

Param	Flag	Result	Units	Dilution	RDL
Pyridine		<0.05	mg/L	1	0.25
1,4-Dichlorobenzene		<0.05	mg/L	1	0.25
o-Cresol		<0.05	mg/L	1	0.25
m,p-Cresol		<0.05	mg/L	1	0.25
Hexachloroethane		<0.05	mg/L	1	0.25
Nitrobenzene		<0.05	mg/L	1	0.25
Hexachlorobutadiene		<0.05	mg/L	1	0.25
2,4,6-Trichlorophenol		<0.05	mg/L	1	0.25
2,4,5-Trichlorophenol		<0.05	mg/L	1	0.25
2,4-Dinitrotoluene		<0.05	mg/L	1	0.25
2,4-D		<0.05	mg/L	1	0.25
Hexachlorobenzene		<0.05	mg/L	1	0.25
2,4,5-TP		<0.05	mg/L	1	0.25
Pentachlorophenol		<0.05	mg/L	1	0.25

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		28.01	mg/L	1	80	35	10 - 45
Phenol-d5		15.6	mg/L	1	80	19	6 - 33
Nitrobenzene-d5		71.18	mg/L	1	80	88	35 - 91
2-Fluorobiphenyl		65.42	mg/L	1	80	81	22 - 93
2,4,6-Tribromophenol		81.12	mg/L	1	80	101	22 - 100
Terphenyl-d14		79.24	mg/L	1	80	99	23 - 116

Sample: 222486 - A2 West 2 Stockpile

Analysis: TCLP Volatiles Analytical Method: S 8260B QC Batch: QC27692 Date Analyzed: 3/9/03
Analyst: JG Preparation Method: 1311 Prep Batch: PB25391 Date Prepared: 3/7/03

Param	Flag	Result	Units	Dilution	RDL
Vinyl Chloride		<0.05	mg/L	50	0.001
1,1-Dichloroethene		<0.05	mg/L	50	0.001
Methyl ethyl ketone		<0.50	mg/L	50	0.01
Chloroform		<0.05	mg/L	50	0.001
1,2-Dichloroethane (EDC)		<0.05	mg/L	50	0.001
Benzene		<0.05	mg/L	50	0.001
Carbon Tetrachloride		<0.05	mg/L	50	0.001
Trichloroethene (TCE)		<0.05	mg/L	50	0.001
Tetrachloroethene (PCE)		<0.05	mg/L	50	0.001
Chlorobenzene		<0.05	mg/L	50	0.001
1,4-Dichlorobenzene		<0.05	mg/L	50	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		49	mg/L	50	50	98	70 - 130
Toluene-d8		49.5	mg/L	50	50	99	70 - 130
4-Bromofluorobenzene		43	mg/L	50	50	86	70 - 130

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Sample: 222487 - Floorsweep Stockpile

Analysis: Corrosivity Analytical Method: S 1110 QC Batch: QC27505 Date Analyzed: 3/3/03
Analyst: JH Preparation Method: N/A Prep Batch: PB25241 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
Corrosivity		non-corrosive	mm/yr	1	
pH		7.5	s.u.	1	

Sample: 222487 - Floorsweep Stockpile

Analysis: Ignitability Analytical Method: SW-846 Ch. 7.1 QC Batch: QC27503 Date Analyzed: 3/3/03
Analyst: JH Preparation Method: Prep Batch: PB25240 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
Ignitability		non-ignitable		1	

Sample: 222487 - Floorsweep Stockpile

Analysis: Reactivity Analytical Method: ASTM D 5049-90/4978-95 QC Batch: QC27507 Date Analyzed: 3/3/03
Analyst: JH Preparation Method: N/A Prep Batch: PB25242 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
Reactivity		Non-reactive		1	
Hydrogen Sulfide		<10	mg/Kg	1	
Hydrogen Cyanide		<2.5	mg/Kg	1	

Sample: 222487 - Floorsweep Stockpile

Analysis: TCLP Hg Analytical Method: S 7470A QC Batch: QC27641 Date Analyzed: 3/6/03
Analyst: BC Preparation Method: E 1311 Prep Batch: PB25356 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
TCLP Mercury		<0.010	mg/L	1	0.01

Sample: 222487 - Floorsweep Stockpile

Analysis: TCLP Metals Analytical Method: S 6010B QC Batch: QC27645 Date Analyzed: 3/6/03
Analyst: RR Preparation Method: 1311 Prep Batch: PB25276 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
TCLP Arsenic		<0.500	mg/L	10	0.05
TCLP Barium		<1.00	mg/L	10	0.10
TCLP Cadmium		<0.050	mg/L	10	0.005
TCLP Chromium		<0.100	mg/L	10	0.01
TCLP Lead		0.137	mg/L	10	0.01
TCLP Selenium		<0.100	mg/L	10	0.01
TCLP Silver		<0.020	mg/L	10	0.002

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Sample: 222487 - Floorsweep Stockpile

Analysis: TCLP Semivolatiles Analytical Method: E 8270C QC Batch: QC27629 Date Analyzed: 3/4/03
Analyst: RC Preparation Method: 1311 Prep Batch: PB25342 Date Prepared: 3/1/03

Param	Flag	Result	Units	Dilution	RDL
Pyridine		<0.05	mg/L	1	0.25
1,4-Dichlorobenzene		<0.05	mg/L	1	0.25
o-Cresol		<0.05	mg/L	1	0.25
m,p-Cresol		<0.05	mg/L	1	0.25
Hexachloroethane		<0.05	mg/L	1	0.25
Nitrobenzene		<0.05	mg/L	1	0.25
Hexachlorobutadiene		<0.05	mg/L	1	0.25
2,4,6-Trichlorophenol		<0.05	mg/L	1	0.25
2,4,5-Trichlorophenol		<0.05	mg/L	1	0.25
2,4-Dinitrotoluene		<0.05	mg/L	1	0.25
2,4-D		<0.05	mg/L	1	0.25
Hexachlorobenzene		<0.05	mg/L	1	0.25
2,4,5-TP		<0.05	mg/L	1	0.25
Pentachlorophenol		<0.05	mg/L	1	0.25

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		22.77	mg/L	1	80	28	10 - 45
Phenol-d5		14.29	mg/L	1	80	17	6 - 33
Nitrobenzene-d5		71.3	mg/L	1	80	89	35 - 91
2-Fluorobiphenyl		70.77	mg/L	1	80	88	22 - 93
2,4,6-Tribromophenol		84.02	mg/L	1	80	105	22 - 100
Terphenyl-d14		81.59	mg/L	1	80	101	23 - 116

Sample: 222487 - Floorsweep Stockpile

Analysis: TCLP Volatiles Analytical Method: S 8260B QC Batch: QC27692 Date Analyzed: 3/9/03
Analyst: JG Preparation Method: 1311 Prep Batch: PB25391 Date Prepared: 3/7/03

Param	Flag	Result	Units	Dilution	RDL
Vinyl Chloride		<0.05	mg/L	50	0.001
1,1-Dichloroethene		<0.05	mg/L	50	0.001
Methyl ethyl ketone		<0.50	mg/L	50	0.01
Chloroform		<0.05	mg/L	50	0.001
1,2-Dichloroethane (EDC)		<0.05	mg/L	50	0.001
Benzene		<0.05	mg/L	50	0.001
Carbon Tetrachloride		<0.05	mg/L	50	0.001
Trichloroethene (TCE)		<0.05	mg/L	50	0.001
Tetrachloroethene (PCE)		<0.05	mg/L	50	0.001
Chlorobenzene		<0.05	mg/L	50	0.001
1,4-Dichlorobenzene		<0.05	mg/L	50	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		49.5	mg/L	50	50	99	70 - 130
Toluene-d8		50	mg/L	50	50	100	70 - 130
4-Bromofluorobenzene		42.5	mg/L	50	50	85	70 - 130

Quality Control Report Method Blank

Method Blank

QCBatch: QC27629

Param	Flag	Results	Units	Reporting Limit
Pyridine		<0.05	mg/L	0.25
1,4-Dichlorobenzene		<0.05	mg/L	0.25
o-Cresol		<0.05	mg/L	0.25
m,p-Cresol		<0.05	mg/L	0.25
Hexachloroethane		<0.05	mg/L	0.25
Nitrobenzene		<0.05	mg/L	0.25
Hexachlorobutadiene		<0.05	mg/L	0.25
2,4,6-Trichlorophenol		<0.05	mg/L	0.25
2,4,5-Trichlorophenol		<0.05	mg/L	0.25
2,4-Dinitrotoluene		<0.05	mg/L	0.25
2,4-D		<0.05	mg/L	0.25
Hexachlorobenzene		<0.05	mg/L	0.25
2,4,5-TP		<0.05	mg/L	0.25
Pentachlorophenol		<0.05	mg/L	0.25

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
2-Fluorophenol		40.19	mg/L	1	80	50	10 - 45
Phenol-d5		31.27	mg/L	1	80	39	6 - 33
Nitrobenzene-d5		81.53	mg/L	1	80	101	35 - 91
2-Fluorobiphenyl		78.12	mg/L	1	80	97	22 - 93
2,4,6-Tribromophenol		70.95	mg/L	1	80	88	22 - 100
Terphenyl-d14		80.07	mg/L	1	80	100	23 - 116

Method Blank

QCBatch: QC27630

Param	Flag	Results	Units	Reporting Limit
Vinyl Chloride		<0.05	mg/L	0.001
1,1-Dichloroethene		<0.05	mg/L	0.001
Methyl ethyl ketone		<0.50	mg/L	0.01
Chloroform		<0.05	mg/L	0.001
1,2-Dichloroethane (EDC)		<0.05	mg/L	0.001
Benzene		<0.05	mg/L	0.001
Carbon Tetrachloride		<0.05	mg/L	0.001
Trichloroethene (TCE)		<0.05	mg/L	0.001
Tetrachloroethene (PCE)		<0.05	mg/L	0.001
Chlorobenzene		<0.05	mg/L	0.001
1,4-Dichlorobenzene		<0.05	mg/L	0.001

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Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		47.2	mg/L	1	50	94	70 - 130
Toluene-d8		49.1	mg/L	1	50	98	70 - 130
4-Bromofluorobenzene		48.4	mg/L	1	50	96	70 - 130

Method Blank QCBatch: QC27641

Param	Flag	Results	Units	Reporting Limit
TCLP Mercury		<0.010	mg/L	0.01

Method Blank QCBatch: QC27645

Param	Flag	Results	Units	Reporting Limit
TCLP Arsenic		<0.500	mg/L	0.05
TCLP Barium		<1.00	mg/L	0.10
TCLP Cadmium		<0.050	mg/L	0.005
TCLP Chromium		<0.100	mg/L	0.01
TCLP Lead		<0.100	mg/L	0.01
TCLP Selenium		<0.100	mg/L	0.01
TCLP Silver		<0.020	mg/L	0.002

Method Blank QCBatch: QC27692

Param	Flag	Results	Units	Reporting Limit
Vinyl Chloride		<0.05	mg/L	0.001
1,1-Dichloroethene		<0.05	mg/L	0.001
Methyl ethyl ketone		<0.50	mg/L	0.01
Chloroform		<0.05	mg/L	0.001
1,2-Dichloroethane (EDC)		<0.05	mg/L	0.001
Benzene		<0.05	mg/L	0.001
Carbon Tetrachloride		<0.05	mg/L	0.001
Trichloroethene (TCE)		<0.05	mg/L	0.001
Tetrachloroethene (PCE)		<0.05	mg/L	0.001
Chlorobenzene		<0.05	mg/L	0.001
1,4-Dichlorobenzene		<0.05	mg/L	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Dibromofluoromethane		49	mg/L	1	50	98	70 - 130
Toluene-d8		50	mg/L	1	50	100	70 - 130
Bromofluorobenzene		42	mg/L	1	50	84	70 - 130

Quality Control Report

Duplicate Samples

Duplicate QCBatch: QC27503

Param	Flag	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Ignitability		non-ignitable	non-ignitable		1	0	20

Duplicate QCBatch: QC27505

Param	Flag	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Corrosivity		non-corrosive	non-corrosive	mm/yr	1	0	20
pH		7.5	7.5	s.u.	1	0	0

Duplicate QCBatch: QC27507

Param	Flag	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Reactivity		Non-reactive	Non-reactive		1	0	20

Quality Control Report Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes QCBatch: QC27629

Param	LCS		Units	Dil.	Spike		% Rec	RPD	% Rec Limit	RPD Limit
	Result	Result			Amount Added	Matrix Result				
Pyridine	22.67	24.16	mg/L	1	80	<0.05	28	6	0 - 92	20
1,4-Dichlorobenzene	67.57	67.07	mg/L	1	80	<0.05	84	0	20 - 124	20
o-Cresol	48.51	49.51	mg/L	1	80	<0.05	60	2	41 - 92	20
m,p-Cresol	102.7	108.6	mg/L	1	160	<0.05	64	5	7 - 127	20
Hexachloroethane	66.85	67.33	mg/L	1	80	<0.05	83	0	40 - 113	20
Nitrobenzene	72.19	70.93	mg/L	1	80	<0.05	90	1	35 - 186	20
Hexachlorobutadiene	823.67	81.51	mg/L	1	80	<0.05	1029	163	24 - 116	20
2,4,6-Trichlorophenol	72.98	73.68	mg/L	1	80	<0.05	91	0	37 - 144	20
2,4,5-Trichlorophenol	76.67	75.9	mg/L	1	80	<0.05	95	1	49 - 185	20
2,4-Dinitrotoluene	66.93	66.59	mg/L	1	80	<0.05	83	0	39 - 139	20
2,4-D	58.64	57.1	mg/L	1	80	<0.05	73	2	2 - 92	20
Hexachlorobenzene	88.05	89.74	mg/L	1	80	<0.05	110	1	0 - 152	20
2,4,5-TP	63.73	62.54	mg/L	1	80	<0.05	79	1	0 - 112	20
Pentachlorophenol	76.02	77.25	mg/L	1	80	<0.05	95	1	14 - 176	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
2-Fluorophenol	45.27	45.81	mg/L	1	80	56	57	10 - 45
Phenol-d5	31.17	31.45	mg/L	1	80	38	39	6 - 33
Nitrobenzene-d5	76.39	74.54	mg/L	1	80	95	93	35 - 91
2-Fluorobiphenyl	74.84	74.52	mg/L	1	80	93	93	22 - 93
2,4,6-Tribromophenol	87.24	85.03	mg/L	1	80	109	106	22 - 100
Terphenyl-d14	85.8	87.58	mg/L	1	80	107	109	23 - 116

Laboratory Control Spikes

QCBatch: QC27630

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Vinyl Chloride	5.47	5.44	mg/L	1	5	<0.05	109	0	55 - 131	20
1,1-Dichloroethene	5.10	5.10	mg/L	1	5	<0.05	102	0	81 - 119	20
Methyl ethyl ketone	2.70	2.49	mg/L	1	5	<0.50	54	8	41 - 157	20
Chloroform	5.07	5.07	mg/L	1	5	<0.05	101	0	79 - 126	20
1,2-Dichloroethane (EDC)	3.96	4.17	mg/L	1	5	<0.05	79	5	72 - 131	20
Benzene	5.07	5.04	mg/L	1	5	<0.05	101	0	87 - 118	20
Carbon Tetrachloride	4.82	4.89	mg/L	1	5	<0.05	96	1	43 - 162	20
Trichloroethene (TCE)	4.75	4.70	mg/L	1	5	<0.05	95	1	78 - 110	20
Tetrachloroethene (PCE)	3.60	3.55	mg/L	1	5	<0.05	72	1	48 - 81	20
Chlorobenzene	4.88	4.86	mg/L	1	5	<0.05	97	0	90 - 111	20
1,4-Dichlorobenzene	4.87	4.86	mg/L	1	5	<0.05	97	0	81 - 115	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Dibromofluoromethane	46.0	46.4	mg/L	1	50	92	92	70 - 130
Toluene-d8	49.2	48.8	mg/L	1	50	98	97	70 - 130
4-Bromofluorobenzene	49.3	48.6	mg/L	1	50	98	97	70 - 130

Laboratory Control Spikes

QCBatch: QC27641

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
TCLP Mercury	0.0514	0.0529	mg/L	1	0.05	<0.010	102	2	88 - 117	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC27645

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
TCLP Arsenic	4.97	4.99	mg/L	10	5	<0.500	99	0	80 - 120	20
TCLP Barium	10.9	11.0	mg/L	10	10	<1.00	109	0	80 - 120	20
TCLP Cadmium	2.66	2.67	mg/L	10	2.50	<0.050	106	0	80 - 120	20
TCLP Chromium	1.07	1.04	mg/L	10	1	<0.100	107	2	80 - 120	20
TCLP Lead	5.10	5.11	mg/L	10	5	<0.100	102	0	80 - 120	20

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Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
TCLP Selenium	4.28	4.33	mg/L	10	5	<0.100	85	1	80 - 120	20
TCLP Silver	1.29	1.27	mg/L	10	1.25	<0.020	103	1	80 - 120	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC27692

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Vinyl Chloride	4.88	4.84	mg/L	1	5	<0.05	97	0	55 - 131	20
1,1-Dichloroethene	4.93	4.94	mg/L	1	5	<0.05	98	0	81 - 119	20
Methyl ethyl ketone	3.36	4.00	mg/L	1	5	<0.50	67	17	41 - 157	20
Chloroform	4.57	4.59	mg/L	1	5	<0.05	91	0	79 - 126	20
1,2-Dichloroethane (EDC)	4.32	4.51	mg/L	1	5	<0.05	86	4	72 - 131	20
Benzene	4.86	4.87	mg/L	1	5	<0.05	97	0	87 - 118	20
Carbon Tetrachloride	3.98	3.80	mg/L	1	5	<0.05	79	4	43 - 162	20
Trichloroethene (TCE)	4.49	4.53	mg/L	1	5	<0.05	89	0	78 - 110	20
Tetrachloroethene (PCE)	2.91	2.91	mg/L	1	5	<0.05	58	0	48 - 81	20
Chlorobenzene	4.98	4.98	mg/L	1	5	<0.05	99	0	90 - 111	20
1,4-Dichlorobenzene	5.14	5.12	mg/L	1	5	<0.05	102	0	81 - 115	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
Dibromofluoromethane	47.5	47.5	mg/L	1	50	95	95	70 - 130
Toluene-d8	49.0	49.5	mg/L	1	50	98	99	70 - 130
4-Bromofluorobenzene	43.5	44.0	mg/L	1	50	87	88	70 - 130

Quality Control Report

Matrix Spikes and Duplicate Spikes

Matrix Spikes

QCBatch: QC27629

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Pyridine	9.72	9.1	mg/L	1	80	<0.05	12	6	0 - 92	20
1,4-Dichlorobenzene	48.77	48.39	mg/L	1	80	<0.05	60	0	20 - 124	20
o-Cresol	33.33	33.42	mg/L	1	80	<0.05	41	0	41 - 92	20
m,p-Cresol	74.02	73.4	mg/L	1	160	<0.05	46	0	7 - 127	20
Hexachloroethane	49.27	48.96	mg/L	1	80	<0.05	61	0	40 - 113	20
Nitrobenzene	54.54	54.35	mg/L	1	80	<0.05	68	0	35 - 186	20
Hexachlorobutadiene	60.82	61.23	mg/L	1	80	<0.05	76	0	24 - 116	20
2,4,6-Trichlorophenol	72.5	73.09	mg/L	1	80	<0.05	90	0	37 - 144	20
2,4,5-Trichlorophenol	75.05	75.39	mg/L	1	80	<0.05	93	0	49 - 185	20
2,4-Dinitrotoluene	68.36	68.53	mg/L	1	80	<0.05	85	0	39 - 139	20
2,4-D	82.1	83.99	mg/L	1	80	<0.05	102	2	2 - 92	20

Continued ...

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Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Hexachlorobenzene	83.62	81.89	mg/L	1	80	<0.05	104	2	0 - 152	20
2,4,5-TP	91.35	90.41	mg/L	1	80	<0.05	114	1	0 - 112	20
Pentachlorophenol	76.72	74.98	mg/L	1	80	<0.05	95	2	14 - 176	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dilution	Spike Amount	MS % Rec	MSD % Rec	Recovery Limits
2-Fluorophenol	26.33	25.55	mg/L	1	80	32	31	10 - 45
Phenol-d5	17.07	16.91	mg/L	1	80	21	21	6 - 33
Nitrobenzene-d5	55.94	56.2	mg/L	1	80	69	70	35 - 91
2-Fluorobiphenyl	63.43	62.76	mg/L	1	80	79	78	22 - 93
2,4,6-Tribromophenol	89.44	90.34	mg/L	1	80	111	112	22 - 100
Terphenyl-d14	87.61	88.00	mg/L	1	80	109	110	23 - 116

Matrix Spikes

QCBatch: QC27630

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Vinyl Chloride	5.83	5.74	mg/L	1	5	<0.05	116	1	58 - 136	20
1,1-Dichloroethene	5.29	5.24	mg/L	1	5	<0.05	105	0	81 - 125	20
Methyl ethyl ketone	2.68	2.55	mg/L	1	5	<0.50	53	4	33 - 122	20
Chloroform	5.28	5.22	mg/L	1	5	<0.05	105	1	81 - 130	20
1,2-Dichloroethane (EDC)	4.73	4.64	mg/L	1	5	<0.05	94	1	76 - 137	20
Benzene	5.21	5.11	mg/L	1	5	<0.05	104	1	88 - 121	20
Carbon Tetrachloride	5.08	4.13	mg/L	1	5	<0.05	101	20	56 - 156	20
Trichloroethene (TCE)	4.80	4.65	mg/L	1	5	<0.05	96	3	77 - 111	20
Tetrachloroethene (PCE)	3.47	3.48	mg/L	1	5	<0.05	69	0	48 - 80	20
Chlorobenzene	4.95	4.88	mg/L	1	5	<0.05	99	1	89 - 113	20
1,4-Dichlorobenzene	4.96	4.89	mg/L	1	5	<0.05	99	1	82 - 113	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dilution	Spike Amount	MS % Rec	MSD % Rec	Recovery Limits
Dibromofluoromethane	48.3	47.6	mg/L	1	50	96	95	70 - 130
Toluene-d8	49.1	49.8	mg/L	1	50	98	99	70 - 130
4-Bromofluorobenzene	47.8	47.5	mg/L	1	50	95	95	70 - 130

Matrix Spikes

QCBatch: QC27641

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
TCLP Mercury	0.0513	0.0522	mg/L	1	0.05	<0.010	102	1	82 - 119	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC27645

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
TCLP Arsenic	4.93	4.94	mg/L	10	5	<0.500	98	0	75 - 125	20
TCLP Barium	12.1	12.1	mg/L	10	10	1.95	101	0	75 - 125	20
TCLP Cadmium	2.54	2.53	mg/L	10	2.50	<0.050	101	0	75 - 125	20
TCLP Chromium	0.987	0.982	mg/L	10	1	<0.100	98	0	75 - 125	20
TCLP Lead	4.84	4.86	mg/L	10	5	<0.100	96	0	75 - 125	20
TCLP Selenium	4.32	4.32	mg/L	10	5	<0.100	86	0	75 - 125	20
TCLP Silver	1.28	1.28	mg/L	10	1.25	<0.020	102	0	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC27692

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Vinyl Chloride	4.88	4.75	mg/L	1	5	<0.05	97	2	58 - 136	20
1,1-Dichloroethene	5.05	4.91	mg/L	1	5	<0.05	101	2	81 - 125	20
Methyl ethyl ketone	¹ 2.22	² 2.25	mg/L	1	5	<0.50	44	1	33 - 122	20
Chloroform	4.70	4.58	mg/L	1	5	<0.05	94	2	81 - 130	20
1,2-Dichloroethane (EDC)	4.71	4.62	mg/L	1	5	<0.05	94	1	76 - 137	20
Benzene	4.90	4.81	mg/L	1	5	<0.05	98	1	88 - 121	20
Carbon Tetrachloride	3.70	3.81	mg/L	1	5	<0.05	74	2	56 - 156	20
Trichloroethene (TCE)	4.60	4.51	mg/L	1	5	<0.05	92	1	77 - 111	20
Tetrachloroethene (PCE)	2.84	2.79	mg/L	1	5	<0.05	56	1	48 - 80	20
Chlorobenzene	5.00	4.92	mg/L	1	5	<0.05	100	1	89 - 113	20
1,4-Dichlorobenzene	5.13	4.74	mg/L	1	5	<0.05	102	7	82 - 113	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dilution	Spike Amount	MS % Rec	MSD % Rec	Recovery Limits
Dibromofluoromethane	49.0	48.5	mg/L	1	50	98	97	70 - 130
Toluene-d8	49.0	48.5	mg/L	1	50	98	97	70 - 130
4-Bromofluorobenzene	43.5	43.0	mg/L	1	50	87	86	70 - 130

Quality Control Report Continuing Calibration Verification Standards

CCV (1) QCBatch: QC27629

¹spike recovery low due to purging characteristics of ketones.

²spike recovery low due to purging characteristics of ketones.

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Pyridine		mg/L	60	66.76	111	80 - 120	3/4/03
1,4-Dichlorobenzene		mg/L	60	68.43	114	80 - 120	3/4/03
o-Cresol		mg/L	60	67.89	113	80 - 120	3/4/03
m,p-Cresol		mg/L	60	70.01	116	80 - 120	3/4/03
Hexachloroethane		mg/L	60	71.23	118	80 - 120	3/4/03
Nitrobenzene		mg/L	60	71.37	118	80 - 120	3/4/03
Hexachlorobutadiene		mg/L	60	65.57	109	80 - 120	3/4/03
2,4,6-Trichlorophenol		mg/L	60	63.21	105	80 - 120	3/4/03
2,4,5-Trichlorophenol		mg/L	60	62.15	103	80 - 120	3/4/03
2,4-Dinitrotoluene		mg/L	60	66.49	110	80 - 120	3/4/03
2,4-D		mg/L	60	63.42	105	80 - 120	3/4/03
Hexachlorobenzene		mg/L	60	69.49	115	80 - 120	3/4/03
2,4,5-TP		mg/L	60	68.06	113	80 - 120	3/4/03
Pentachlorophenol		mg/L	60	71.91	119	80 - 120	3/4/03
2-Fluorophenol		mg/L	60	66.26	110	80 - 120	3/4/03
Nitrobenzene-d5		mg/L	60	69.83	116	80 - 120	3/4/03
2-Fluorobiphenyl		mg/L	60	61.42	102	80 - 120	3/4/03
2,4,6-Tribromophenol		mg/L	60	67.88	113	80 - 120	3/4/03
Terphenyl-d14		mg/L	60	71.01	118	80 - 120	3/4/03

CCV (1)

QCBatch: QC27630

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		mg/L	100	98	98	80 - 120	3/5/03
1,1-Dichloroethene		mg/L	100	106	106	80 - 120	3/5/03
Methyl ethyl ketone		mg/L	100	52	52	80 - 120	3/5/03
Chloroform		mg/L	100	102	102	80 - 120	3/5/03
1,2-Dichloroethane (EDC)		mg/L	100	80	80	80 - 120	3/5/03
Benzene		mg/L	100	102	102	80 - 120	3/5/03
Carbon Tetrachloride		mg/L	100	85	85	80 - 120	3/5/03
Trichloroethene (TCE)		mg/L	100	105	105	80 - 120	3/5/03
Tetrachloroethene (PCE)		mg/L	100	84	84	80 - 120	3/5/03
Chlorobenzene		mg/L	100	100	100	80 - 120	3/5/03
1,4-Dichlorobenzene		mg/L	100	101	101	80 - 120	3/5/03
Dibromofluoromethane		mg/L	50	46.5	93	80 - 120	3/5/03
Toluene-d8		mg/L	50	48.4	96	80 - 120	3/5/03
4-Bromofluorobenzene		mg/L	50	49.8	99	80 - 120	3/5/03

CCV (1)

QCBatch: QC27641

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
CLP Mercury		mg/L	0.005	0.00588	117	80 - 120	3/6/03

ICV (1) QCBatch: QC27641

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TCLP Mercury		mg/L	0.005	0.00507	101	80 - 120	3/6/03

CCV (1) QCBatch: QC27645

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TCLP Arsenic		mg/L	1	1.01	101	90 - 110	3/6/03
TCLP Barium		mg/L	2	2.03	102	90 - 110	3/6/03
TCLP Cadmium		mg/L	0.50	0.511	102	90 - 110	3/6/03
TCLP Chromium		mg/L	0.20	0.209	104	90 - 110	3/6/03
TCLP Lead		mg/L	1	1.03	103	90 - 110	3/6/03
TCLP Selenium		mg/L	1	0.985	98	90 - 110	3/6/03
TCLP Silver		mg/L	0.25	0.252	101	90 - 110	3/6/03

ICV (1) QCBatch: QC27645

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
TCLP Arsenic		mg/L	1	0.992	99	90 - 110	3/6/03
TCLP Barium		mg/L	2	1.98	99	90 - 110	3/6/03
TCLP Cadmium		mg/L	0.50	0.505	101	90 - 110	3/6/03
TCLP Chromium		mg/L	0.20	0.205	102	90 - 110	3/6/03
TCLP Lead		mg/L	1	1.01	101	90 - 110	3/6/03
TCLP Selenium		mg/L	1	0.983	98	90 - 110	3/6/03
TCLP Silver		mg/L	0.25	0.249	100	90 - 110	3/6/03

CCV (1) QCBatch: QC27692

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Vinyl Chloride		mg/L	100	96	96	80 - 120	3/9/03
1,1-Dichloroethene		mg/L	100	99	99	80 - 120	3/9/03
Methyl ethyl ketone		mg/L	100	82	82	80 - 120	3/9/03
Chloroform		mg/L	100	94	94	80 - 120	3/9/03
1,2-Dichloroethane (EDC)		mg/L	100	91	91	80 - 120	3/9/03
Benzene		mg/L	100	96	96	80 - 120	3/9/03
Carbon Tetrachloride		mg/L	100	84	84	80 - 120	3/9/03
Trichloroethene (TCE)		mg/L	100	105	105	80 - 120	3/9/03
Tetrachloroethene (PCE)		mg/L	100	93	93	80 - 120	3/9/03
Chlorobenzene		mg/L	100	101	101	80 - 120	3/9/03

Continued ...

Report Date: March 10, 2003
CH2100

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... Continued

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
1,4-Dichlorobenzene		mg/L	100	104	104	80 - 120	3/9/03
Dibromofluoromethane		mg/L	50	46.9	93	80 - 120	3/9/03
Toluene-d8		mg/L	50	50.5	101	80 - 120	3/9/03
4-Bromofluorobenzene		mg/L	50	49.5	99	80 - 120	3/9/03

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TraceAnalysis, Inc.

McCutcheon, Suite H
El Paso, Texas 79932
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # A03022822

Company Name:	<u>ETGI - Midland</u>	Phone #:	<u>915 522 1639</u>
Address:	(Street, City, Zip)	Fax #:	<u>915 520 4310</u>
Contact Person:	<u>TODD CHURAN</u>		
Invoice to:	(If different from above)		
Project #:	<u>CH2100</u>	Project Name:	<u>CHAMPION TECHNOLOGIES</u>
Project Location:	<u>Hobbs, NM</u>	Sampler Signature:	<u>Todd Churan</u>

ANALYSIS REQUEST

(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX				PRESERVATIVE METHOD						SAMPLING		MTBE 8021B/602	BTX 8021B/602	TPH 418.1/TX 1005	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B/624	GC/MS Semi. Vol. 8270C/625	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Turn Around Time if different from standard	Hold
				WATER	SOIL	AIR	SLUDGE	HCl	HNO ₃	H ₂ SO ₄	NaOH	ICE	NONE	DATE	TIME																	
222480	A2 East 1 Stockpile	3			X							X		2/27/03	1420					X	X	X	X	X								
81	A2 East 2 Stockpile	3			X							X			1445					X	X	X	X	X								
82	A2 East 3 Stockpile	3			X							X			1510					X	X	X	X	X								
83	A2 East 4 Stockpile	3			X							X			1550					X	X	X	X	X								
84	A2 Middle Stockpile	3			X							X			1600					X	X	X	X	X								
85	A2 West 1 Stockpile	3			X							X			1620					X	X	X	X	X								
86	A2 West 2 Stockpile	3			X							X			1625					X	X	X	X	X								
87	Floorsweep Stockpile	3			X							X			1548					X	X	X	X	X								

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
<u>Todd Churan</u>	<u>2/27/03</u>	<u>1630</u>	<u>Helen Shetter</u>	<u>2/27/03</u>	<u>1630</u>
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
<u>Helen Shetter</u>	<u>2/27/03</u>	<u>1830</u>			
Relinquished by:	Date:	Time:	Received at Laboratory by:	Date:	Time:
			<u>U. Churan</u>	<u>2-28-03</u>	<u>10:00</u>

LAB USE ONLY

Intact (Y) / N
Headspace Y / N
Temp 4°
Log-in Review MA

REMARKS:

PIF
3/11/03

☐ Check If Special Reporting Limits Are Needed

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C.O.C. 24 samples HS

ORIGINAL COPY

Carrier # Greyhound 61 166/30 36 88

Analytical and Quality Control Report

Todd Choban
E.T.G.I.
PO Box 4845
Midland, Tx. 79704

Report Date: March 19, 2003

Order ID Number: A03022823

Project Number: CH2100
Project Name: Champion Tech
Project Location: Hobbs, NM

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
222488	A2 W Wall Ext	Soil	2/26/03	14:53	2/28/03
222489	A2 West Wall	Soil	2/26/03	14:59	2/28/03
222490	A2 NW Wall	Soil	2/26/03	15:17	2/28/03
222491	A2 South Wall	Soil	2/26/03	14:35	2/28/03
222492	A2 SE Bench	Soil	2/26/03	16:46	2/28/03
222493	A2-WP Bottom	Soil	2/26/03	17:35	2/28/03

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed. Note: the RDL is equal to MQL for all organic analytes including TPH. The test results contained within this report meet all requirements of LAC 33:I unless otherwise noted.

This report consists of a total of 28 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of TraceAnalysis, Inc.

Note: Samples will be disposed of 30 days from the report date unless the lab is contacted before the 30 days has past.



for
Dr. Blair Leftwich, Director

Analytical Report

Sample: 222488 - A2 W Wall Ext

Analysis: Alkalinity Analytical Method: E 310.1 QC Batch: QC27633 Date Analyzed: 3/6/03
Analyst: RS Preparation Method: N/A Prep Batch: PB25346 Date Prepared: 3/6/03

Param	Flag	Result	Units	Dilution	RDL
Hydroxide Alkalinity		<1.0	mg/Kg as CaCo3	1	1
Carbonate Alkalinity		<1.0	mg/Kg as CaCo3	1	1
Bicarbonate Alkalinity		27	mg/Kg as CaCo3	1	1
Total Alkalinity		27	mg/Kg as CaCo3	1	1

Sample: 222488 - A2 W Wall Ext

Analysis: BTEX Analytical Method: S 8021B QC Batch: QC27513 Date Analyzed: 2/28/03
Analyst: CG Preparation Method: S 5035 Prep Batch: PB25246 Date Prepared: 2/28/03

Param	Flag	Result	Units	Dilution	RDL
Benzene		<0.010	mg/Kg	10	0.001
Toluene		<0.010	mg/Kg	10	0.001
Ethylbenzene		<0.010	mg/Kg	10	0.001
M,P,O-Xylene		<0.010	mg/Kg	10	0.001
Total BTEX		<0.010	mg/Kg	10	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.854	mg/Kg	10	1	85	70 - 130
4-BFB		0.769	mg/Kg	10	1	77	70 - 130

Sample: 222488 - A2 W Wall Ext

Analysis: Conductivity Analytical Method: SM 2510B QC Batch: QC27580 Date Analyzed: 3/5/03
Analyst: JSW Preparation Method: N/A Prep Batch: PB25302 Date Prepared: 3/5/03

Param	Flag	Result	Units	Dilution	RDL
Specific Conductance		5410	µMHOS/cm	1	

Sample: 222488 - A2 W Wall Ext

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC27778 Date Analyzed: 3/14/03
Analyst: BC Preparation Method: N/A Prep Batch: PB25453 Date Prepared: 3/14/03

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 222488 - A2 W Wall Ext

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC27554 Date Analyzed: 3/3/03
Analyst: JSW Preparation Method: N/A Prep Batch: PB25283 Date Prepared: 3/3/03

Report Date: March 19, 2003
CH2100

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Param	Flag	Result	Units	Dilution	RDL
Chloride		1020	mg/Kg	100	1
Fluoride		4.41	mg/Kg	10	0.20
Nitrite-N		<10	mg/Kg	50	0.10
Nitrate-N		6.69	mg/Kg	10	0.20
Sulfate		2160	mg/Kg	100	1

Sample: 222488 - A2 W Wall Ext

Analysis: TPH DRO Analytical Method: Mod. 8015B QC Batch: QC27520 Date Analyzed: 3/1/03
Analyst: BP Preparation Method: 3550 B Prep Batch: PB25251 Date Prepared: 2/28/03

Param	Flag	Result	Units	Dilution	RDL
DRO		<50.0	mg/Kg	1	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		164	mg/Kg	1	150	109	70 - 130

Sample: 222488 - A2 W Wall Ext

Analysis: TPH GRO Analytical Method: 8015B QC Batch: QC27514 Date Analyzed: 2/28/03
Analyst: CG Preparation Method: 5035 Prep Batch: PB25246 Date Prepared: 2/28/03

Param	Flag	Result	Units	Dilution	RDL
GRO		<1.00	mg/Kg	10	0.10

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.923	mg/Kg	10	0.10	92	70 - 130
4-BFB		0.815	mg/Kg	10	0.10	82	70 - 130

Sample: 222488 - A2 W Wall Ext

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC27759 Date Analyzed: 3/13/03
Analyst: RR Preparation Method: S 3050B Prep Batch: PB25268 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
Total Arsenic		4.02	mg/Kg	100	0.01
Total Barium		400	mg/Kg	100	0.01
Total Cadmium		<0.500	mg/Kg	100	0.005
Total Calcium		106000	mg/Kg	1	0.50
Total Chromium		5.48	mg/Kg	100	0.01
Total Copper		3.06	mg/Kg	100	0.01
Total Iron		4190	mg/Kg	100	0.05
Total Lead		2.75	mg/Kg	100	0.01
Total Magnesium		9790	mg/Kg	1	0.50
Total Manganese		37.2	mg/Kg	100	0.02
Total Potassium		1450	mg/Kg	1	0.50
Total Selenium		17.4	mg/Kg	100	0.01

Continued ...

Report Date: March 19, 2003
CH2100

Order Number: A03022823
Champion Tech

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Hobbs,NM

Continued Sample: 222488 Analysis: Total Metals

Param	Flag	Result	Units	Dilution	RDL
Total Silver		<0.200	mg/Kg	100	0.002
Total Sodium		1260	mg/Kg	1	0.50
Total Zinc		13.5	mg/Kg	100	0.02

Sample: 222488 - A2 W Wall Ext

Analysis: pH Analytical Method: E 150.1 QC Batch: QC27606 Date Analyzed: 3/3/03
Analyst: RS Preparation Method: N/A Prep Batch: PB25314 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
pH		7.6	s.u.	1	1

Sample: 222489 - A2 West Wall

Analysis: Alkalinity Analytical Method: E 310.1 QC Batch: QC27633 Date Analyzed: 3/6/03
Analyst: RS Preparation Method: N/A Prep Batch: PB25346 Date Prepared: 3/6/03

Param	Flag	Result	Units	Dilution	RDL
Hydroxide Alkalinity		<1.0	mg/Kg as CaCo3	1	1
Carbonate Alkalinity		<1.0	mg/Kg as CaCo3	1	1
Bicarbonate Alkalinity		48	mg/Kg as CaCo3	1	1
Total Alkalinity		48	mg/Kg as CaCo3	1	1

Sample: 222489 - A2 West Wall

Analysis: BTEX Analytical Method: S 8021B QC Batch: QC27513 Date Analyzed: 2/28/03
Analyst: CG Preparation Method: S 5035 Prep Batch: PB25246 Date Prepared: 2/28/03

Param	Flag	Result	Units	Dilution	RDL
Benzene		<0.010	mg/Kg	10	0.001
Toluene		<0.010	mg/Kg	10	0.001
Ethylbenzene		0.0539	mg/Kg	10	0.001
M,P,O-Xylene		<0.010	mg/Kg	10	0.001
Total BTEX		0.0539	mg/Kg	10	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.858	mg/Kg	10	1	86	70 - 130
4-BFB		0.742	mg/Kg	10	1	74	70 - 130

Sample: 222489 - A2 West Wall

Analysis: Conductivity Analytical Method: SM 2510B QC Batch: QC27580 Date Analyzed: 3/5/03
Analyst: JSW Preparation Method: N/A Prep Batch: PB25302 Date Prepared: 3/5/03

Param	Flag	Result	Units	Dilution	RDL
Specific Conductance		3690	μMHOS/cm	1	

Sample: 222489 - A2 West Wall

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC27778 Date Analyzed: 3/14/03
Analyst: BC Preparation Method: N/A Prep Batch: PB25453 Date Prepared: 3/14/03

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 222489 - A2 West Wall

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC27554 Date Analyzed: 3/3/03
Analyst: JSW Preparation Method: N/A Prep Batch: PB25283 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
Chloride		1260	mg/Kg	100	1
Fluoride		4.15	mg/Kg	5	0.20
Nitrite-N		<10	mg/Kg	50	0.10
Nitrate-N		13.5	mg/Kg	5	0.20
Sulfate		76.2	mg/Kg	5	1

Sample: 222489 - A2 West Wall

Analysis: TPH DRO Analytical Method: Mod. 8015B QC Batch: QC27520 Date Analyzed: 3/1/03
Analyst: BP Preparation Method: 3550 B Prep Batch: PB25251 Date Prepared: 2/28/03

Param	Flag	Result	Units	Dilution	RDL
DRO		<50.0	mg/Kg	1	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		179	mg/Kg	1	150	119	70 - 130

Sample: 222489 - A2 West Wall

Analysis: TPH GRO Analytical Method: 8015B QC Batch: QC27514 Date Analyzed: 2/28/03
Analyst: CG Preparation Method: 5035 Prep Batch: PB25246 Date Prepared: 2/28/03

Param	Flag	Result	Units	Dilution	RDL
GRO		<1.00	mg/Kg	10	0.10

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.899	mg/Kg	10	0.10	90	70 - 130
4-BFB		0.798	mg/Kg	10	0.10	80	70 - 130

Sample: 222489 - A2 West Wall

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC27759 Date Analyzed: 3/13/03
Analyst: RR Preparation Method: S 3050B Prep Batch: PB25268 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
Total Arsenic		3.36	mg/Kg	100	0.01
Total Barium		288	mg/Kg	100	0.01
Total Cadmium		<0.500	mg/Kg	100	0.005
Total Calcium		129000	mg/Kg	1	0.50
Total Chromium		4.51	mg/Kg	100	0.01
Total Copper		2.46	mg/Kg	100	0.01
Total Iron		3360	mg/Kg	100	0.05
Total Lead		<1.00	mg/Kg	100	0.01
Total Magnesium		9670	mg/Kg	1	0.50
Total Manganese		30.7	mg/Kg	100	0.02
Total Potassium		1240	mg/Kg	1	0.50
Total Selenium		16.4	mg/Kg	100	0.01
Total Silver		<0.200	mg/Kg	100	0.002
Total Sodium		660	mg/Kg	1	0.50
Total Zinc		12.8	mg/Kg	100	0.02

Sample: 222489 - A2 West Wall

Analysis: pH Analytical Method: E 150.1 QC Batch: QC27606 Date Analyzed: 3/3/03
Analyst: RS Preparation Method: N/A Prep Batch: PB25314 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
pH		7.8	s.u.	1	1

Sample: 222490 - A2 NW Wall

Analysis: Alkalinity Analytical Method: E 310.1 QC Batch: QC27633 Date Analyzed: 3/6/03
Analyst: RS Preparation Method: N/A Prep Batch: PB25346 Date Prepared: 3/6/03

Param	Flag	Result	Units	Dilution	RDL
Hydroxide Alkalinity		<1.0	mg/Kg as CaCo3	1	1
Carbonate Alkalinity		<1.0	mg/Kg as CaCo3	1	1
Bicarbonate Alkalinity		32	mg/Kg as CaCo3	1	1
Total Alkalinity		32	mg/Kg as CaCo3	1	1

Sample: 222490 - A2 NW Wall

Analysis: BTEX Analytical Method: S 8021B QC Batch: QC27513 Date Analyzed: 2/28/03
Analyst: CG Preparation Method: S 5035 Prep Batch: PB25246 Date Prepared: 2/28/03

Param	Flag	Result	Units	Dilution	RDL
Benzene		<0.010	mg/Kg	10	0.001
Toluene		<0.010	mg/Kg	10	0.001
Ethylbenzene		<0.010	mg/Kg	10	0.001
M,P,O-Xylene		<0.010	mg/Kg	10	0.001
Total BTEX		<0.010	mg/Kg	10	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.873	mg/Kg	10	1	87	70 - 130

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Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
4-BFB		0.745	mg/Kg	10	1	75	70 - 130

Sample: 222490 - A2 NW Wall

Analysis: Conductivity Analytical Method: SM 2510B QC Batch: QC27580 Date Analyzed: 3/5/03
Analyst: JSW Preparation Method: N/A Prep Batch: PB25302 Date Prepared: 3/5/03

Param	Flag	Result	Units	Dilution	RDL
Specific Conductance		6500	µMHOS/cm	1	

Sample: 222490 - A2 NW Wall

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC27778 Date Analyzed: 3/14/03
Analyst: BC Preparation Method: N/A Prep Batch: PB25453 Date Prepared: 3/14/03

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 222490 - A2 NW Wall

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC27554 Date Analyzed: 3/3/03
Analyst: JSW Preparation Method: N/A Prep Batch: PB25283 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
Chloride		1670	mg/Kg	100	1
Fluoride		4.99	mg/Kg	10	0.20
Nitrite-N		<40	mg/Kg	200	0.10
Nitrate-N		5.99	mg/Kg	10	0.20
Sulfate		1880	mg/Kg	100	1

Sample: 222490 - A2 NW Wall

Analysis: TPH DRO Analytical Method: Mod. 8015B QC Batch: QC27520 Date Analyzed: 3/1/03
Analyst: BP Preparation Method: 3550 B Prep Batch: PB25251 Date Prepared: 2/28/03

Param	Flag	Result	Units	Dilution	RDL
DRO		<50.0	mg/Kg	1	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		166	mg/Kg	1	150	110	70 - 130

Sample: 222490 - A2 NW Wall

Analysis: TPH GRO Analytical Method: 8015B QC Batch: QC27514 Date Analyzed: 2/28/03
Analyst: CG Preparation Method: 5035 Prep Batch: PB25246 Date Prepared: 2/28/03

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Param	Flag	Result	Units	Dilution	RDL
GRO		<1.00	mg/Kg	10	0.10

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		1.23	mg/Kg	10	0.10	123	70 - 130
4-BFB		0.784	mg/Kg	10	0.10	78	70 - 130

Sample: 222490 - A2 NW Wall

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC27759 Date Analyzed: 3/13/03
Analyst: RR Preparation Method: S 3050B Prep Batch: PB25268 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
Total Arsenic		1.71	mg/Kg	100	0.01
Total Barium		160	mg/Kg	100	0.01
Total Cadmium		0.676	mg/Kg	100	0.005
Total Calcium		56300	mg/Kg	1	0.50
Total Chromium		6.78	mg/Kg	100	0.01
Total Copper		2.81	mg/Kg	100	0.01
Total Iron		5550	mg/Kg	100	0.05
Total Lead		<1.00	mg/Kg	100	0.01
Total Magnesium		6600	mg/Kg	1	0.50
Total Manganese		70.1	mg/Kg	100	0.02
Total Potassium		1860	mg/Kg	1	0.50
Total Selenium		18.1	mg/Kg	100	0.01
Total Silver		<0.200	mg/Kg	100	0.002
Total Sodium		1430	mg/Kg	1	0.50
Total Zinc		17.4	mg/Kg	100	0.02

Sample: 222490 - A2 NW Wall

Analysis: pH Analytical Method: E 150.1 QC Batch: QC27606 Date Analyzed: 3/3/03
Analyst: RS Preparation Method: N/A Prep Batch: PB25314 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
pH		7.7	s.u.	1	1

Sample: 222491 - A2 South Wall

Analysis: Alkalinity Analytical Method: E 310.1 QC Batch: QC27633 Date Analyzed: 3/6/03
Analyst: RS Preparation Method: N/A Prep Batch: PB25346 Date Prepared: 3/6/03

Param	Flag	Result	Units	Dilution	RDL
Hydroxide Alkalinity		<1.0	mg/Kg as CaCo3	1	1
Carbonate Alkalinity		<1.0	mg/Kg as CaCo3	1	1
Bicarbonate Alkalinity		148	mg/Kg as CaCo3	1	1
Total Alkalinity		148	mg/Kg as CaCo3	1	1

Sample: 222491 - A2 South Wall

Analysis: BTEX Analytical Method: S 8021B QC Batch: QC27513 Date Analyzed: 2/28/03
Analyst: CG Preparation Method: S 5035 Prep Batch: PB25246 Date Prepared: 2/28/03

Param	Flag	Result	Units	Dilution	RDL
Benzene		<0.010	mg/Kg	10	0.001
Toluene		<0.010	mg/Kg	10	0.001
Ethylbenzene		<0.010	mg/Kg	10	0.001
M,P,O-Xylene		<0.010	mg/Kg	10	0.001
Total BTEX		<0.010	mg/Kg	10	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.876	mg/Kg	10	1	88	70 - 130
4-BFB		0.732	mg/Kg	10	1	73	70 - 130

Sample: 222491 - A2 South Wall

Analysis: Conductivity Analytical Method: SM 2510B QC Batch: QC27580 Date Analyzed: 3/5/03
Analyst: JSW Preparation Method: N/A Prep Batch: PB25302 Date Prepared: 3/5/03

Param	Flag	Result	Units	Dilution	RDL
Specific Conductance		1710	µMHOS/cm	1	

Sample: 222491 - A2 South Wall

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC27778 Date Analyzed: 3/14/03
Analyst: BC Preparation Method: N/A Prep Batch: PB25453 Date Prepared: 3/14/03

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 222491 - A2 South Wall

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC27555 Date Analyzed: 3/3/03
Analyst: JSW Preparation Method: N/A Prep Batch: PB25284 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
Chloride		456	mg/Kg	10	1
Fluoride		16.39	mg/Kg	5	0.20
Nitrite-N		<10	mg/Kg	50	0.10
Nitrate-N		11.0	mg/Kg	5	0.20
Sulfate		67.5	mg/Kg	5	1

Sample: 222491 - A2 South Wall

Analysis: TPH DRO Analytical Method: Mod. 8015B QC Batch: QC27520 Date Analyzed: 3/1/03
Analyst: BP Preparation Method: 3550 B Prep Batch: PB25251 Date Prepared: 2/28/03

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Param	Flag	Result	Units	Dilution	RDL
DRO		<50.0	mg/Kg	1	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		161	mg/Kg	1	150	107	70 - 130

Sample: 222491 - A2 South Wall

Analysis: TPH GRO Analytical Method: 8015B QC Batch: QC27514 Date Analyzed: 2/28/03
Analyst: CG Preparation Method: 5035 Prep Batch: PB25246 Date Prepared: 2/28/03

Param	Flag	Result	Units	Dilution	RDL
GRO		<1.00	mg/Kg	10	0.10

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		1.22	mg/Kg	10	0.10	122	70 - 130
4-BFB		0.759	mg/Kg	10	0.10	76	70 - 130

Sample: 222491 - A2 South Wall

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC27759 Date Analyzed: 3/13/03
Analyst: RR Preparation Method: S 3050B Prep Batch: PB25268 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
Total Arsenic		1.95	mg/Kg	100	0.01
Total Barium		598	mg/Kg	100	0.01
Total Cadmium		0.701	mg/Kg	100	0.005
Total Calcium		46500	mg/Kg	1	0.50
Total Chromium		7.98	mg/Kg	100	0.01
Total Copper		3.63	mg/Kg	100	0.01
Total Iron		5870	mg/Kg	100	0.05
Total Lead		2.60	mg/Kg	100	0.01
Total Magnesium		16600	mg/Kg	1	0.50
Total Manganese		50.8	mg/Kg	100	0.02
Total Potassium		2420	mg/Kg	1	0.50
Total Selenium		20.7	mg/Kg	100	0.01
Total Silver		<0.200	mg/Kg	100	0.002
Total Sodium		1080	mg/Kg	1	0.50
Total Zinc		18.4	mg/Kg	100	0.02

Sample: 222491 - A2 South Wall

Analysis: pH Analytical Method: E 150.1 QC Batch: QC27606 Date Analyzed: 3/3/03
Analyst: RS Preparation Method: N/A Prep Batch: PB25314 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
pH		8.7	s.u.	1	1

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Sample: 222492 - A2 SE Bench

Analysis: Alkalinity Analytical Method: E 310.1 QC Batch: QC27633 Date Analyzed: 3/6/03
Analyst: RS Preparation Method: N/A Prep Batch: PB25346 Date Prepared: 3/6/03

Param	Flag	Result	Units	Dilution	RDL
Hydroxide Alkalinity		<1.0	mg/Kg as CaCo3	1	1
Carbonate Alkalinity		<1.0	mg/Kg as CaCo3	1	1
Bicarbonate Alkalinity		64	mg/Kg as CaCo3	1	1
Total Alkalinity		64	mg/Kg as CaCo3	1	1

Sample: 222492 - A2 SE Bench

Analysis: BTEX Analytical Method: S 8021B QC Batch: QC27513 Date Analyzed: 2/28/03
Analyst: CG Preparation Method: S 5035 Prep Batch: PB25246 Date Prepared: 2/28/03

Param	Flag	Result	Units	Dilution	RDL
Benzene		<0.010	mg/Kg	10	0.001
Toluene		<0.010	mg/Kg	10	0.001
Ethylbenzene		<0.010	mg/Kg	10	0.001
M,P,O-Xylene		<0.010	mg/Kg	10	0.001
Total BTEX		<0.010	mg/Kg	10	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
1-FT		0.973	mg/Kg	10	1	97	70 - 130
4-BFB		0.809	mg/Kg	10	1	81	70 - 130

Sample: 222492 - A2 SE Bench

Analysis: Conductivity Analytical Method: SM 2510B QC Batch: QC27580 Date Analyzed: 3/5/03
Analyst: JSW Preparation Method: N/A Prep Batch: PB25302 Date Prepared: 3/5/03

Param	Flag	Result	Units	Dilution	RDL
Specific Conductance		2740	μ MHOS/cm	1	

Sample: 222492 - A2 SE Bench

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC27778 Date Analyzed: 3/14/03
Analyst: BC Preparation Method: N/A Prep Batch: PB25453 Date Prepared: 3/14/03

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 222492 - A2 SE Bench

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC27555 Date Analyzed: 3/3/03
Analyst: JSW Preparation Method: N/A Prep Batch: PB25284 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
Chloride		780	mg/Kg	50	1

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Continued Sample: 222492 Analysis: Ion Chromatography (IC)

Param	Flag	Result	Units	Dilution	RDL
Fluoride		6.68	mg/Kg	5	0.20
Nitrite-N		<10	mg/Kg	50	0.10
Nitrate-N		2.62	mg/Kg	5	0.20
Sulfate		276	mg/Kg	50	1

Sample: 222492 - A2 SE Bench

Analysis: TPH DRO Analytical Method: Mod. 8015B QC Batch: QC27520 Date Analyzed: 3/1/03
Analyst: BP Preparation Method: 3550 B Prep Batch: PB25251 Date Prepared: 2/28/03

Param	Flag	Result	Units	Dilution	RDL
DRO		320	mg/Kg	1	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		156	mg/Kg	1	150	104	70 - 130

Sample: 222492 - A2 SE Bench

Analysis: TPH GRO Analytical Method: 8015B QC Batch: QC27514 Date Analyzed: 2/28/03
Analyst: CG Preparation Method: 5035 Prep Batch: PB25246 Date Prepared: 2/28/03

Param	Flag	Result	Units	Dilution	RDL
GRO		<1.00	mg/Kg	10	0.10

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.967	mg/Kg	10	0.10	967	70 - 130
4-BFB		0.839	mg/Kg	10	0.10	84	70 - 130

Sample: 222492 - A2 SE Bench

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC27759 Date Analyzed: 3/13/03
Analyst: RR Preparation Method: S 3050B Prep Batch: PB25268 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
Total Arsenic		2.12	mg/Kg	100	0.01
Total Barium		330	mg/Kg	100	0.01
Total Cadmium		0.554	mg/Kg	100	0.005
Total Calcium		81600	mg/Kg	1	0.50
Total Chromium		5.83	mg/Kg	100	0.01
Total Copper		3.56	mg/Kg	100	0.01
Total Iron		4200	mg/Kg	100	0.05
Total Lead		2.28	mg/Kg	100	0.01
Total Magnesium		13100	mg/Kg	1	0.50
Total Manganese		37.6	mg/Kg	100	0.02
Total Potassium		1580	mg/Kg	1	0.50
Total Selenium		17.4	mg/Kg	100	0.01

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Continued Sample: 222492 Analysis: Total Metals

Param	Flag	Result	Units	Dilution	RDL
Total Silver		<0.200	mg/Kg	100	0.002
Total Sodium		1130	mg/Kg	1	0.50
Total Zinc		14.5	mg/Kg	100	0.02

Sample: 222492 - A2 SE Bench

Analysis: pH Analytical Method: E 150.1 QC Batch: QC27606 Date Analyzed: 3/3/03
Analyst: RS Preparation Method: N/A Prep Batch: PB25314 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
pH		8.1	s.u.	1	1

Sample: 222493 - A2-WP Bottom

Analysis: Alkalinity Analytical Method: E 310.1 QC Batch: QC27633 Date Analyzed: 3/6/03
Analyst: RS Preparation Method: N/A Prep Batch: PB25346 Date Prepared: 3/6/03

Param	Flag	Result	Units	Dilution	RDL
Hydroxide Alkalinity		<1.0	mg/Kg as CaCo3	1	1
Carbonate Alkalinity		<1.0	mg/Kg as CaCo3	1	1
Bicarbonate Alkalinity		244	mg/Kg as CaCo3	1	1
Total Alkalinity		244	mg/Kg as CaCo3	1	1

Sample: 222493 - A2-WP Bottom

Analysis: BTEX Analytical Method: S 8021B QC Batch: QC27513 Date Analyzed: 2/28/03
Analyst: CG Preparation Method: S 5035 Prep Batch: PB25246 Date Prepared: 2/28/03

Param	Flag	Result	Units	Dilution	RDL
Benzene		<0.010	mg/Kg	10	0.001
Toluene		<0.010	mg/Kg	10	0.001
Ethylbenzene		0.129	mg/Kg	10	0.001
M,P,O-Xylene		0.263	mg/Kg	10	0.001
Total BTEX		0.392	mg/Kg	10	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.969	mg/Kg	10	1	97	70 - 130
4-BFB		1.08	mg/Kg	10	1	108	70 - 130

Sample: 222493 - A2-WP Bottom

Analysis: Conductivity Analytical Method: SM 2510B QC Batch: QC27580 Date Analyzed: 3/5/03
Analyst: JSW Preparation Method: N/A Prep Batch: PB25302 Date Prepared: 3/5/03

Param	Flag	Result	Units	Dilution	RDL
Specific Conductance		545	μMHOS/cm	1	

Sample: 222493 - A2-WP Bottom

Analysis: Hg, Total Analytical Method: S 7471A QC Batch: QC27778 Date Analyzed: 3/14/03
Analyst: BC Preparation Method: N/A Prep Batch: PB25453 Date Prepared: 3/14/03

Param	Flag	Result	Units	Dilution	RDL
Total Mercury		<0.19	mg/Kg	1	0.19

Sample: 222493 - A2-WP Bottom

Analysis: Ion Chromatography (IC) Analytical Method: E 300.0 QC Batch: QC27555 Date Analyzed: 3/3/03
Analyst: JSW Preparation Method: N/A Prep Batch: PB25284 Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
Chloride		59.0	mg/Kg	5	1
Fluoride		2.88	mg/Kg	5	0.20
Nitrite-N		<10	mg/Kg	50	0.10
Nitrate-N		<1.0	mg/Kg	5	0.20
Sulfate		27.7	mg/Kg	5	1

Sample: 222493 - A2-WP Bottom

Analysis: TPH DRO Analytical Method: Mod. 8015B QC Batch: QC27520 Date Analyzed: 3/1/03
Analyst: BP Preparation Method: 3550 B Prep Batch: PB25251 Date Prepared: 2/28/03

Param	Flag	Result	Units	Dilution	RDL
DRO		1400	mg/Kg	1	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		185	mg/Kg	1	150	123	70 - 130

Sample: 222493 - A2-WP Bottom

Analysis: TPH GRO Analytical Method: 8015B QC Batch: QC27514 Date Analyzed: 2/28/03
Analyst: CG Preparation Method: 5035 Prep Batch: PB25246 Date Prepared: 2/28/03

Param	Flag	Result	Units	Dilution	RDL
GRO		20.1	mg/Kg	10	0.10

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		1.20	mg/Kg	10	0.10	120	70 - 130
4-BFB	¹	1.61	mg/Kg	10	0.10	1610	70 - 130

Sample: 222493 - A2-WP Bottom

Analysis: Total Metals Analytical Method: S 6010B QC Batch: QC27759 Date Analyzed: 3/13/03
Analyst: RR Preparation Method: S 3050B Prep Batch: PB25268 Date Prepared: 3/3/03

¹High surrogate recovery due to peak interference.

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Param	Flag	Result	Units	Dilution	RDL
Total Arsenic		2.02	mg/Kg	100	0.01
Total Barium		335	mg/Kg	100	0.01
Total Cadmium		<0.500	mg/Kg	100	0.005
Total Calcium		147000	mg/Kg	1	0.50
Total Chromium		4.80	mg/Kg	100	0.01
Total Copper		2.63	mg/Kg	100	0.01
Total Iron		2010	mg/Kg	100	0.05
Total Lead		9.57	mg/Kg	100	0.01
Total Magnesium		25500	mg/Kg	1	0.50
Total Manganese		36.1	mg/Kg	100	0.02
Total Potassium		647	mg/Kg	1	0.50
Total Selenium		13.9	mg/Kg	100	0.01
Total Silver		<0.200	mg/Kg	100	0.002
Total Sodium		945	mg/Kg	1	0.50
Total Zinc		7.90	mg/Kg	100	0.02

Sample: 222493 - A2-WP Bottom

Analysis: pH	Analytical Method: E 150.1	QC Batch: QC27606	Date Analyzed: 3/3/03
Analyst: RS	Preparation Method: N/A	Prep Batch: PB25314	Date Prepared: 3/3/03

Param	Flag	Result	Units	Dilution	RDL
pH		9.0	s.u.	1	1

Quality Control Report Method Blank

Method Blank QCBatch: QC27513

Param	Flag	Results	Units	Reporting Limit
Benzene		<0.010	mg/Kg	0.001
Toluene		<0.010	mg/Kg	0.001
Ethylbenzene		<0.010	mg/Kg	0.001
M,P,O-Xylene		<0.010	mg/Kg	0.001
Total BTEX		<0.010	mg/Kg	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.881	mg/Kg	10	1	88	70 - 130
4-BFB		0.856	mg/Kg	10	1	85	70 - 130

Method Blank QCBatch: QC27514

Param	Flag	Results	Units	Reporting Limit
GRO		<1.00	mg/Kg	0.10

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.938	mg/Kg	10	0.10	94	70 - 130
4-BFB		0.894	mg/Kg	10	0.10	89	70 - 130

Method Blank QCBatch: QC27520

Param	Flag	Results	Units	Reporting Limit
DRO		<50.0	mg/Kg	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		188	mg/Kg	1	150	114	70 - 130

Method Blank QCBatch: QC27554

Param	Flag	Results	Units	Reporting Limit
Chloride		<1.0	mg/Kg	1

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Param	Flag	Results	Units	Reporting Limit
Fluoride		<0.2	mg/Kg	0.20
Nitrite-N		<0.2	mg/Kg	0.10
Nitrate-N		<0.2	mg/Kg	0.20
Sulfate		<1.0	mg/Kg	1

Method Blank QCBatch: QC27555

Param	Flag	Results	Units	Reporting Limit
Chloride		<1.0	mg/Kg	1
Fluoride		<0.2	mg/Kg	0.20
Nitrite-N		<0.2	mg/Kg	0.10
Nitrate-N		<0.2	mg/Kg	0.20
Sulfate		<1.0	mg/Kg	1

Method Blank QCBatch: QC27580

Param	Flag	Results	Units	Reporting Limit
Specific Conductance		6.38	μ MHOS/cm	

Method Blank QCBatch: QC27633

Param	Flag	Results	Units	Reporting Limit
Hydroxide Alkalinity		<1.0	mg/Kg as CaCo3	1
Carbonate Alkalinity		<1.0	mg/Kg as CaCo3	1
Bicarbonate Alkalinity		<4.0	mg/Kg as CaCo3	1
Total Alkalinity		<4.0	mg/Kg as CaCo3	1

Method Blank QCBatch: QC27759

Param	Flag	Results	Units	Reporting Limit
Total Arsenic		<1.00	mg/Kg	0.01
Total Barium		<1.00	mg/Kg	0.01
Total Cadmium		<0.500	mg/Kg	0.005
Total Calcium		91.8	mg/Kg	0.50
Total Chromium		<1.00	mg/Kg	0.01
Total Copper		<1.25	mg/Kg	0.01
Total Iron		<5.00	mg/Kg	0.05
Total Lead		<1.00	mg/Kg	0.01
Total Magnesium		<50	mg/Kg	0.50

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Param	Flag	Results	Units	Reporting Limit
Total Manganese		<2.50	mg/Kg	0.02
Total Potassium		<50	mg/Kg	0.50
Total Selenium		<1.00	mg/Kg	0.01
Total Silver		<0.200	mg/Kg	0.002
Total Sodium		284	mg/Kg	0.50
Total Zinc		<2.50	mg/Kg	0.02

Method Blank

QCBatch: QC27778

Param	Flag	Results	Units	Reporting Limit
Total Mercury		<0.19	mg/Kg	0.19

Quality Control Report Duplicate Samples

Duplicate

QCBatch: QC27580

Param	Flag	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Specific Conductance		535	545	μ MHOS/cm	1	1	4.3

Duplicate

QCBatch: QC27606

Param	Flag	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
pH		9.0	9.0	s.u.	1	0	1

Duplicate

QCBatch: QC27633

Param	Flag	Duplicate Result	Sample Result	Units	Dilution	RPD	RPD Limit
Hydroxide Alkalinity		<1.0	<1.0	mg/Kg as CaCo3	1	0	20
Carbonate Alkalinity		<1.0	<1.0	mg/Kg as CaCo3	1	0	20
Bicarbonate Alkalinity		52	48	mg/Kg as CaCo3	1	8	20
Total Alkalinity		52	48	mg/Kg as CaCo3	1	8	20

Quality Control Report Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes

QCBatch: QC27513

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
MTBE	0.865	0.870	mg/Kg	10	1	<0.010	86	0	70 - 130	20
Benzene	0.933	0.929	mg/Kg	10	1	<0.010	93	0	70 - 130	20
Toluene	0.933	0.928	mg/Kg	10	1	<0.010	93	0	70 - 130	20
Ethylbenzene	0.934	0.935	mg/Kg	10	1	<0.010	93	0	70 - 130	20
M,P,O-Xylene	2.83	2.83	mg/Kg	10	3	<0.010	94	0	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
TFT	0.846	0.882	mg/Kg	10	1	84	88	70 - 130
4-BFB	0.872	0.901	mg/Kg	10	1	87	90	70 - 130

Laboratory Control Spikes

QCBatch: QC27514

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
GRO	9.18	10.1	mg/Kg	10	1	<1.00	92	9	80 - 120	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
TFT	0.898	0.939	mg/Kg	10	0.10	90	94	70 - 130
4-BFB	0.906	0.934	mg/Kg	10	0.10	91	93	70 - 130

Laboratory Control Spikes

QCBatch: QC27520

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
DRO	324	289	mg/Kg	1	250	<50.0	129	11	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
n-Triacontane	193	175	mg/Kg	1	150	128	116	70 - 130

Laboratory Control Spikes

QCBatch: QC27554

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	29.43	29.42	mg/Kg	1	12.50	<1.0	110	0	90 - 110	20
Fluoride	3.38	3.40	mg/Kg	1	2.50	<0.2	105	0	90 - 110	20

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Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Nitrite-N	² 2.57	³ 2.57	mg/Kg	1	2.50	<0.2	102	0	90 - 110	20
Nitrate-N	2.94	2.94	mg/Kg	1	2.50	<0.2	109	0	90 - 110	20
Sulfate	32.55	32.42	mg/Kg	1	12.50	<1.0	104	0	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC27555

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	⁴ 29.3	⁵ 29.35	mg/Kg	1	12.50	<1.0	234	0	90 - 110	20
Fluoride	⁶ 3.40	⁷ 3.43	mg/Kg	1	2.50	<0.2	136	0	90 - 110	20
Nitrite-N	2.57	2.57	mg/Kg	1	2.50	<0.2	102	0	90 - 110	20
Nitrate-N	⁸ 2.91	⁹ 2.89	mg/Kg	1	2.50	<0.2	116	0	90 - 110	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC27759

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Arsenic	46.4	46.8	mg/Kg	100	50	<1.00	92	0	75 - 125	20
Total Barium	101	101	mg/Kg	100	100	<1.00	101	0	75 - 125	20
Total Cadmium	26.2	26.5	mg/Kg	100	25	<0.500	104	1	75 - 125	20
Total Calcium	9840	8910	mg/Kg	1	10000	91.8	98	9	75 - 125	20
Total Chromium	10.7	10.8	mg/Kg	100	10	<1.00	107	0	75 - 125	20
Total Copper	13.4	13.2	mg/Kg	100	12.50	<1.25	107	1	75 - 125	20
Total Iron	55	53.9	mg/Kg	100	50	<5.00	110	2	75 - 125	20
Total Lead	54.0	54.0	mg/Kg	100	50	<1.00	108	0	75 - 125	20
Total Magnesium	9930	8290	mg/Kg	1	10000	<50	99	18	75 - 125	20
Total Manganese	24.6	24.4	mg/Kg	100	25	<2.50	98	0	75 - 125	20
Total Potassium	9580	8820	mg/Kg	1	10000	<50	95	8	75 - 125	20
Total Selenium	44	44.2	mg/Kg	100	50	<1.00	88	0	75 - 125	20
Total Silver	12.4	12.6	mg/Kg	100	12.50	<0.200	99	1	75 - 125	20
Total Sodium	10100	9200	mg/Kg	1	10000	284	101	9	75 - 125	20
Total Zinc	26.7	25.6	mg/Kg	100	25	<2.50	106	4	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC27778

²matrix difficulties

³matrix difficulties

⁴The soil blank should be subtracted from the blank spikes. LCS%EA = 108 and RPD = 0.

⁵The soil blank should be subtracted from the blank spikes. LCS%EA = 108 and RPD = 0.

⁶The soil blank should be subtracted from the blank spikes. LCS%EA = 105 and RPD = 1.

⁷The soil blank should be subtracted from the blank spikes. LCS%EA = 105 and RPD = 1.

⁸The soil blank should be subtracted from the blank spikes. LCS%EA = 108 and RPD = 1.

⁹The soil blank should be subtracted from the blank spikes. LCS%EA = 108 and RPD = 1.

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Mercury	2.46	2.46	mg/Kg	1	2.50	<0.19	98	0	88 - 123	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Matrix Spikes and Duplicate Spikes

Matrix Spikes QCBatch: QC27513

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Benzene	1.03	1.01	mg/Kg	10	1	<0.010	103	1	70 - 130	20
Toluene	1.08	1.04	mg/Kg	10	1	<0.010	108	3	70 - 130	20
Ethylbenzene	1.2	1.12	mg/Kg	10	1	0.129	107	7	70 - 130	20
M,P,O-Xylene	3.4	3.27	mg/Kg	10	3	0.263	104	4	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dilution	Spike Amount	MS % Rec	MSD % Rec	Recovery Limits
1-TFT	1.02	1.01	mg/Kg	10	1	102	101	70 - 130
4-BFB	1.1	1.1	mg/Kg	10	1	110	110	70 - 130

Matrix Spikes QCBatch: QC27514

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
GRO	28.7	29.9	mg/Kg	10	1	20.1	86	13	80 - 120	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dilution	Spike Amount	MS % Rec	MSD % Rec	Recovery Limits
TFT	1.28	1.07	mg/Kg	10	0.10	128	107	70 - 130
4-BFB	¹⁰ 1.8	¹¹ 1.48	mg/Kg	10	0.10	180	148	70 - 130

Matrix Spikes QCBatch: QC27520

¹⁰High surrogate recovery due to peak interference.

¹¹High surrogate recovery due to peak interference.

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
DRO	289	288	mg/Kg	1	250	<50.0	115	0	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dilution	Spike Amount	MS % Rec	MSD % Rec	Recovery Limits
n-Triacontane	160	158	mg/Kg	1	150	106	105	70 - 130

Matrix Spikes QCBatch: QC27554

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	25850	26000	mg/Kg	1	12500	11900	112	1	35 - 144	20
Fluoride	3010		mg/Kg	1	2500		0		82 - 104	
Nitrate-N	2920		mg/Kg	1	2500		0		53 - 130	
Sulfate	15040		mg/Kg	1	12500		0		54 - 129	

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC27555

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	1490	1490	mg/Kg	1	625	780	113	0	35 - 144	20
Fluoride	155	155	mg/Kg	1	125	6.68	118	0	82 - 104	20
Nitrite-N	¹² 15.31	¹³ 15.17	mg/Kg	1	10	<10	153	0	80 - 120	20
Nitrate-N	153	153	mg/Kg	1	125	2.62	120	0	53 - 130	20
Sulfate	961	968	mg/Kg	1	625	276	109	1	54 - 129	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC27759

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Arsenic	50.0	50.5	mg/Kg	100	50	4.02	91	1	75 - 125	20
Total Barium	506	486	mg/Kg	100	100	400	106	20	75 - 125	20
Total Cadmium	25.6	26.1	mg/Kg	100	25	<0.500	102	1	75 - 125	20
Total Calcium	¹⁴ 45400	¹⁵ 92400	mg/Kg	1	10000	106000	-606	-126	75 - 125	20
Total Chromium	15.4	15.3	mg/Kg	100	10	5.48	99	1	75 - 125	20

Continued ...

¹²matrix difficulties

¹³matrix difficulties

¹⁴ms recovery invalid due to matrix effect/dilution factor

¹⁵ms recovery invalid due to matrix effect/dilution factor

Continued

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Copper	18.5	19.0	mg/Kg	100	12.50	3.06	123	3	75 - 125	20
Total Iron	¹⁶ 4000	3830	mg/Kg	100	50	4190	-380	-61	75 - 125	20
Total Lead	61.0	60.0	mg/Kg	100	50	2.75	116	1	75 - 125	20
Total Magnesium	¹⁷ < 0.5	¹⁸ 3780	mg/Kg	1	10000	9790	-241	-120	75 - 125	20
Total Manganese	60.0	61.2	mg/Kg	100	25	37.2	91	5	75 - 125	20
Total Potassium	¹⁹ < 0.5	²⁰ 3100	mg/Kg	1	10000	1450	-26	-847	75 - 125	20
Total Selenium	56.2	57.3	mg/Kg	100	50	17.4	77	2	75 - 125	20
Total Silver	12.7	12.8	mg/Kg	100	12.50	<0.200	101	0	75 - 125	20
Total Sodium	²¹ 190	²² 4980	mg/Kg	1	10000	1260	-10	361	75 - 125	20
Total Zinc	35.9	35.4	mg/Kg	100	25	13.5	89	2	75 - 125	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes QCBatch: QC27778

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Total Mercury	2.95	3.02	mg/Kg	1	2.50	0.38	102	47	45 - 157	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Quality Control Report Continuing Calibration Verification Standards

CCV (1) QCBatch: QC27513

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/L	0.10	0.085	85	85 - 115	2/28/03
Benzene		mg/L	0.10	0.0905	90	85 - 115	2/28/03
Toluene		mg/L	0.10	0.0916	92	85 - 115	2/28/03
Ethylbenzene		mg/L	0.10	0.0928	93	85 - 115	2/28/03
M,P,O-Xylene		mg/L	0.30	0.272	91	85 - 115	2/28/03

ICV (1) QCBatch: QC27513

¹⁶Matrix spike recovery invalid due to matrix effects. LCS demonstrates process under control.

¹⁷ms recovery invalid due to matrix effect/dilution factor

¹⁸ms recovery invalid due to matrix effect/dilution factor

¹⁹ms recovery invalid due to matrix effect/dilution factor

²⁰ms recovery invalid due to matrix effect/dilution factor

²¹ms recovery invalid due to matrix effect/dilution factor

²²ms recovery invalid due to matrix effect/dilution factor

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/L	0.10	0.0758	76	85 - 115	2/28/03
Benzene		mg/L	0.10	0.0898	90	85 - 115	2/28/03
Toluene		mg/L	0.10	0.0904	90	85 - 115	2/28/03
Ethylbenzene		mg/L	0.10	0.0895	90	85 - 115	2/28/03
M,P,O-Xylene		mg/L	0.30	0.271	90	85 - 115	2/28/03

CCV (1) QCBatch: QC27514

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1	1.09	109	85 - 115	2/28/03

ICV (1) QCBatch: QC27514

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1	0.989	98	85 - 115	2/28/03

CCV (1) QCBatch: QC27520

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	296	118	75 - 125	3/1/03

ICV (1) QCBatch: QC27520

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	301	120	75 - 125	3/1/03

CCV (1) QCBatch: QC27554

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	13.82	110	90 - 110	3/3/03
Fluoride		mg/L	2.50	2.73	109	90 - 110	3/3/03

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Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Nitrite-N		mg/L	2.50	2.54	101	90 - 110	3/3/03
Nitrate-N		mg/L	2.50	2.75	110	90 - 110	3/3/03
Sulfate		mg/L	12.50	13.28	106	90 - 110	3/3/03

ICV (1)

QCBatch: QC27554

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	13.76	110	90 - 110	3/3/03
Fluoride		mg/L	2.50	2.72	108	90 - 110	3/3/03
Nitrite-N		mg/L	2.50	2.38	95	90 - 110	3/3/03
Nitrate-N		mg/L	2.50	2.73	109	90 - 110	3/3/03
Sulfate		mg/L	12.50	13.18	105	90 - 110	3/3/03

CCV (1)

QCBatch: QC27555

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	13.77	110	90 - 110	3/3/03
Fluoride		mg/L	2.50	2.75	110	90 - 110	3/3/03
Nitrite-N		mg/L	2.50	2.54	101	90 - 110	3/3/03
Nitrate-N		mg/L	2.50	2.73	109	90 - 110	3/3/03
Sulfate		mg/L	12.50	13.37	106	90 - 110	3/3/03

ICV (1)

QCBatch: QC27555

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	13.82	110	90 - 110	3/3/03
Fluoride		mg/L	2.50	2.73	109	90 - 110	3/3/03
Nitrite-N		mg/L	2.50	2.38	95	90 - 110	3/3/03
Nitrate-N		mg/L	2.50	2.75	110	90 - 110	3/3/03
Sulfate		mg/L	12.50	13.28	106	90 - 110	3/3/03

CCV (1)

QCBatch: QC27580

Continued ...

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Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Specific Conductance		μMHOS/cm	1412	1411	99	90 - 110	3/5/03

ICV (1) QCBatch: QC27580

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Specific Conductance		μMHOS/cm	1409	1377	97	90 - 110	3/5/03

CCV (1) QCBatch: QC27606

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		s.u.	7	6.9	98	-0.1 s.u. - +0.1 s.u.	3/3/03

ICV (1) QCBatch: QC27606

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
pH		s.u.	7	6.9	98	-0.1 s.u. - +0.1 s.u.	3/3/03

CCV (1) QCBatch: QC27633

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity		mg/Kg as CaCo3	0	<1.0	0	90 - 110	3/6/03
Carbonate Alkalinity		mg/Kg as CaCo3	0	224	0	90 - 110	3/6/03
Bicarbonate Alkalinity		mg/Kg as CaCo3	0	26	0	90 - 110	3/6/03
Total Alkalinity		mg/Kg as CaCo3	250	250	100	90 - 110	3/6/03

ICV (1) QCBatch: QC27633

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Hydroxide Alkalinity		mg/Kg as CaCo3	0	<1.0	0	90 - 110	3/6/03
Carbonate Alkalinity		mg/Kg as CaCo3	0	232	0	90 - 110	3/6/03
Bicarbonate Alkalinity		mg/Kg as CaCo3	0	10	0	90 - 110	3/6/03
Total Alkalinity		mg/Kg as CaCo3	250	242	96	90 - 110	3/6/03

CCV (1)

QCBatch: QC27759

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Arsenic		mg/L	1	1	100	90 - 110	3/13/03
Total Barium		mg/L	2	2.03	102	90 - 110	3/13/03
Total Cadmium		mg/L	0.50	0.511	102	90 - 110	3/13/03
Total Calcium		mg/L	25	24.6	98	90 - 110	3/13/03
Total Chromium		mg/L	0.20	0.212	106	90 - 110	3/13/03
Total Copper		mg/L	0.25	0.248	99	90 - 110	3/13/03
Total Iron		mg/L	1	1.01	101	90 - 110	3/13/03
Total Lead		mg/L	1	1.09	109	90 - 110	3/13/03
Total Magnesium		mg/L	25	24.2	96	90 - 110	3/13/03
Total Manganese		mg/L	0.50	0.511	102	90 - 110	3/13/03
Total Potassium		mg/L	25	25.4	101	90 - 110	3/13/03
Total Selenium		mg/L	1	1.02	102	90 - 110	3/13/03
Total Silver		mg/L	0.25	0.25	100	90 - 110	3/13/03
Total Sodium		mg/L	25	22.9	91	90 - 110	3/13/03
Total Zinc		mg/L	0.50	0.486	97	90 - 110	3/13/03

ICV (1)

QCBatch: QC27759

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Arsenic		mg/L	1	0.972	97	95 - 105	3/13/03
Total Barium		mg/L	2	1.96	98	95 - 105	3/13/03
Total Cadmium		mg/L	0.50	0.478	96	95 - 105	3/13/03
Total Calcium		mg/L	25	24.1	96	95 - 105	3/13/03
Total Chromium		mg/L	0.20	0.20	100	95 - 105	3/13/03
Total Copper		mg/L	0.25	0.24	96	95 - 105	3/13/03
Total Iron		mg/L	1	0.956	96	95 - 105	3/13/03
Total Lead		mg/L	1	1.00	100	95 - 105	3/13/03
Total Magnesium		mg/L	25	23.9	95	95 - 105	3/13/03
Total Manganese		mg/L	0.50	0.484	97	95 - 105	3/13/03
Total Potassium		mg/L	25	24.3	97	95 - 105	3/13/03
Total Selenium		mg/L	1	1	100	95 - 105	3/13/03
Total Silver		mg/L	0.25	0.242	97	95 - 105	3/13/03
Total Sodium		mg/L	25	23.6	94	95 - 105	3/13/03
Total Zinc		mg/L	0.50	0.471	94	95 - 105	3/13/03

Report Date: March 19, 2003
CH2100

Order Number: A03022823
Champion Tech

Page Number: 28 of 28
Hobbs,NM

CV (1)

QCBatch: QC27778

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Mercury		mg/L	0.005	0.00453	90	80 - 120	3/14/03

ICV (1)

QCBatch: QC27778

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Total Mercury		mg/L	0.005	0.00519	103	80 - 120	3/14/03

8701 Aberdeen Ave, Ste. 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

TraceAnalysis, Inc.

155 McCutcheon, Suite H
El Paso, Texas 79932
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 586-3443

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # A03020823

Company Name: ETGI - Midland

Phone #: 915 522 1139

Address: (Street, City, Zip)

Fax #: 915 520 4310

Contact Person: TODD CHOBAN

Invoice to:
(if different from above)

Project #: CH2100

Project Name: CHAMPAIN TECHNOLOGIES

Project Location: HOBBS, NM

Sample Signature: Todd Choban

ANALYSIS REQUEST

(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX				PRESERVATIVE METHOD					SAMPLING		MTBE 8021B/602	STEX 8021B/602	TPH+HAP+PAH+605	PAH 8270C	Total Metals Ag As Ba	TCLP Metals Ag As Ba	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	ACI	GC/MS Vol. 8260B/62	GC/MS Semi. Vol. 827	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	WACC METAL	GENERAL CH		Turn Around Time if different	Hold
				WATER	SOIL	AIR	SLUDGE	HCl	HNO ₃	H ₂ SO ₄	NaOH	ICE	NONE	DATE																				
220488	A2 W Wall Ext	4		X						X		2/24/03	14:53	X	X														X	X				
89	A2 West Wall	4								X			1/4/99	X	X														X	X				
90	A2 NW Wall	4								X			1/5/02	X	X														X	X				
91	A2 SOUTH WALL	4								X			1/4/05	X	X														X	X				
92	A2 SE BENCH	4								X			6/4/01	X	X														X	X				
93	A2-WP BOTTOM	4								X			1/7/05	X	X														X	X				

MTBE 8021B/602
ETEX 8021B/602
TPH+HCB+PCB+PBB 8015 M
PAH 8270C
Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7
TCLP Metals Ag As Ba Cd Cr Pb Se Hg
TCLP Volatiles
TCLP Semi Volatiles
TCLP Pesticides
RCI
GC/MS Vol. 8260B/824
GC/MS Semi. Vol. 8270C/625
PCB's 8082/608
Pesticides 8081A/608
BOD, TSS, pH
WACC METALS
GENERAL CHEMISTRY

Relinquished by: Todd Choban Date: 2/27/03 Time: 16:30
Received by: Helena Helton Date: 2/27/03 Time: 16:30

Relinquished by: Helena Helton Date: 2/27/03 Time: 18:30
Received by: Helena Helton Date: 2/27/03 Time: 18:30

Relinquished by: Helena Helton Date: 2/27/03 Time: 18:30
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Received by: Helena Helton Date: 2/27/03 Time: 18:30

LAB USE ONLY

Intact (Y) N
Headspace Y / N
Temp 4
Log in Review MA

REMARKS:

Please FAX results
ASAP

☐ Check If Special Reporting Limits Are Needed

Carrier # Greyhound GLI 146/30 3/6/03

ORIGINAL COPY

APPENDIX D
MANIFESTS FOR DISPOSAL OF EXCAVATED MATERIALS

Manifests are not reproduced here. Copies are filed and can be found in ETGI's Midland office and can be obtained upon request.

APPENDIX E
MODELING OF CHLORIDE REPORT

Good Morning Wayne:

Inside this fed-ex mailer are ten pages:

6 page report

1 table

3 plates

Please just insert them into your binder from ETGI and throw away the old ones.

Thanks very much!

Regards,
Michelle Hunter



RECEIVED
APR 11 7 2003
Environmental Bureau
Oil Conservation Division

SIMULATION OF CHLORIDE TRANSPORT AT THE CHAMPION FACILITY IN HOBBS, NEW MEXICO

1. Purpose

The Champion facility in Hobbs, New Mexico stores and distributes chemicals for the petroleum industry. The site is subject to environmental oversight by the New Mexico Oil Conservation Division (NMOCD). The chloride concentration in the unsaturated zone exceeds 1000 ppm in some locations. NMOCD informal guidance allows closure of the regulatory file with respect to chloride ion if the soil chloride concentration in the unsaturated zone is less than 250 ppm. If the soil chloride concentration exceeds 250 ppm, the responsible party may elect to excavate the soil or to demonstrate to the NMOCD that the residual chloride content in the soil will not cause impairment of ground water quality at a place of reasonably foreseeable future use.

At the Champion facility, Environmental Technologies Group, Inc. (ETGI) excavated and removed from the vadose zone certain areas of identified contaminants. The excavation ceased where chloride concentrations decreased to relatively low values or where a hard caliche layer precluded further excavation. ETGI and others collected subsurface and ground water data at the site.

R.T. Hicks Consultants, Ltd. used HYDRUS1D to simulate chloride fate at this site to assist in developing an appropriate remedy.

2. Approach

We used the numerical model HYDRUS1D to simulate the transport of chloride from the surface through the vadose zone to groundwater. We used the predicted flux of chloride to ground water from HYDRUS1D as input into a simple groundwater mixing-model to evaluate the impact on ground water quality. As Appendix A describes, this modeling effort requires 9 input parameters. Appendix A also describes our modeling approach used in this effort.

In our previous work with HYDRUS1D, we found that some input

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In our previous work with HYDRUS1D, we found that some input

parameters had little effect on the prediction of chloride concentration in ground water while other factors had a profound effect. The Sensitivity Analysis presented in Appendix A describes the relative importance of each of the input parameters. Site specific data exist for the most important input factors (e.g. chloride load, depth to ground water). For some input parameters we employed regional data or values based upon professional judgement (see Table 1).

We also used data from the Champion site to verify the predictions of the HYDRUS1D model. This simulation served as a "calibration" effort to support our selection of model input parameters.

3. Data Employed for the Champion Site

We present three scenarios to describe possible chloride migration at the site. Plate 1 shows a typical soil profile at the site (ETGI personal communication, 2003). We input these lithologies (input #1, soil texture) into HYDRUS1D and allowed the model's library of hydraulic properties to generate the hydraulic properties shown in Plate 1. We then used these hydraulic properties in simulations of these scenarios. For all scenarios, we used data for the Ogallala Aquifer as described in NicholSEN and Clebsch, (1961) as input to the mixing model (input #2, aquifer thickness; input #3, ground water flux). Other data are described below.

Scenario 1: Initial Conditions

As described in Appendix A, the distribution of the mass of chloride in the vadose zone is the most important input parameter for prediction of chloride concentrations in ground water. One can calculate the mass of chloride from a known fluid release by simply multiplying the known chloride concentration of the released fluid (mg/L) by the volume of the release (L). Calculating the distribution of this mass requires a surface measurement of the area (m^2) of the release. Simple division creates the value of chloride load (mg/m^2) used in the simulation. More times than not, however, we do not have good data concerning the release characteristics. Site specific sampling, can provide these same data.

We used chloride measurements from boreholes and other samples to determine the maximum chloride load at the site. ETGI data shows that essentially all of the chloride resides in the vadose zone from ground surface to a depth of about 25 feet. In this zone, we calculated a chloride load of about 118 kg per square meter (input #4). Appendix B describes the method employed for chloride calculation. Plate 2 shows the data used and the calculation of chloride load for this scenario. Plates 1 and 2 also show the depth to ground water, 55 feet (input #5).

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Because we have soils analysis showing 8% moisture, we employed this value in this simulation (input #6). Based upon our experience, we employed a dispersion length of 100 cm (input #7). The selected dispersion length is 7% of the total length of the HYDRUS1D model (55 feet). Many researchers suggest that a dispersion length that is 7-10% of the total model length provides reasonable results for simulation experiments.

The daily climate data available from the Pearl weather station near the Hobbs Airport served as input for all climate indices required by HYDRUS1D (input #8). For the final input parameter, background ground water chloride concentration, we used 375 mg/L based upon site data — ?

We used the results of this simulation effort to calibrate our input parameters. For example, we first attempted to use an aquifer thickness of three meters in our mixing model calculation. The resultant concentration in ground water was much higher than is currently observed. We then used the actual aquifer thickness at the site, 80 feet, which returned a result similar to what we currently observe in monitoring wells. The fact that chloride ion is relatively well distributed throughout the thickness of aquifer at the site (see ETGI data) supports our use of 80 feet in the mixing model. Additionally, chloride-rich vadose zone water is generally denser than the underlying water in the aquifer. Density flow at the site would also increase the mixing in the aquifer.

After calibration of the model, we employed the resultant chloride distribution as initial conditions for the two restoration scenarios.

Scenario 2: Remove Chloride Load

In this simulation we assumed removal of the 6 m deep chloride impact zone and backfilling with a "clean" soil. Plate 3 shows the calculation of chloride load for this simulation. All other input parameters remain the same as described in Scenario 1.

Scenario 3: Reduce Infiltration

To minimize the potential for any leaching of residual chloride from the vadose zone, we assumed a surface remedy that would reduce infiltration of precipitation. To simulate such a remedy, we simply reduced the precipitation values by 70%. This simulation predicts the effect of (a) covering the site with asphalt (which would result in almost 100% reduction of infiltration), (b) sloping the site to cause runoff of the larger precipitation events (c) placement of a clay or synthetic barrier between the parking lot gravel and the underlying soil or (e) placement of a graded compacted layer at the surface to minimize infiltration, facilitate

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NOT VALID!!
BE CL-
FLUX OVER
20 YRS ??
UNKNOWN

How WAS THIS
DETERMINED!!

2. Run 9
REDUCE
INFILTRATION!

L?

GROUND WATER
IMPACTED BY CL

runoff and prevent ponding of precipitation. All other input parameters are the same as Scenario 1.

4. Results

Figure 1 presents the simulated chloride distribution in the **vadose zone**

using the input parameters of Scenario 1. This figure plots the distribution of chloride with depth assuming that the calculated chloride load (118 Kg/m²) was discharged to the surface (pit) over a relatively short period then allowed to

infiltrate with precipitation over 20 years. The simulated chloride distribution approximates the chloride distribution observed in boreholes at the site. This good agreement between the simulated response and the measured values suggests that the model represents a good approximation of the site. **We understand the chloride-rich fluids may have been placed in the pits about 20 years ago.**

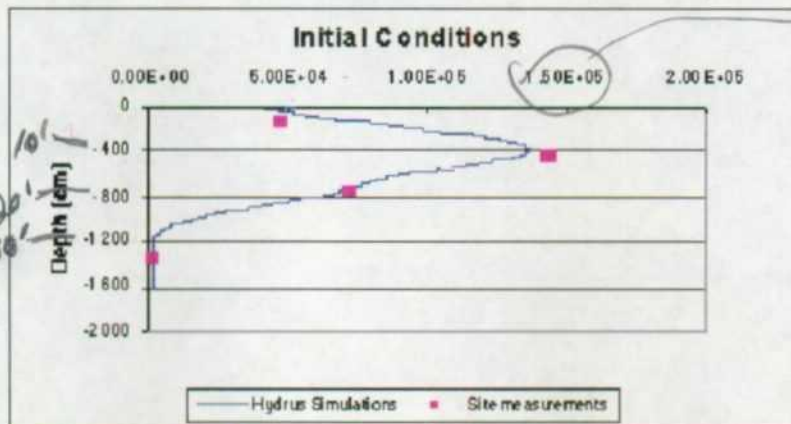
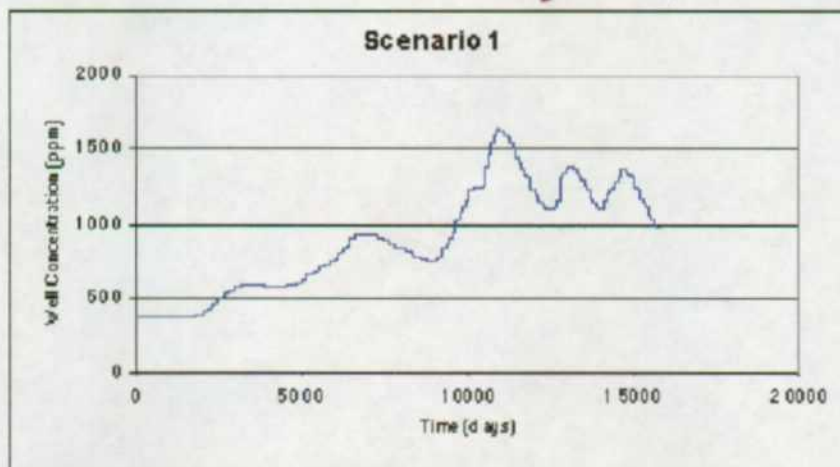


Figure 1. Simulated chloride distribution in the vadose zone assuming no action (Scenario 1) compared with field data (red squares). The period of simulation was 20 years.

Figure 2: Chloride content in ground water, Scenario 1, No Action

Figure 2 shows the response in a monitoring well located immediately adjacent to the release site. The chloride content of the monitoring well steadily rises from 375 at day zero to a maximum of about 1600 mg/L near day 12000 (32 years). time.

We ceased this simulation after 45 years. Clearly ground water will exceed background concentrations for many more decades.



THERE IS NO EVIDENCE
THIS WAS A WATER DISPOSAL
PIT - OR AT LEAST
PIT. SPILL!
NEVER AVE PHOTO'S

WHEN
SITE!!

PPA CC - ?
OR WHAT
HIS HOW
DEVELOPED

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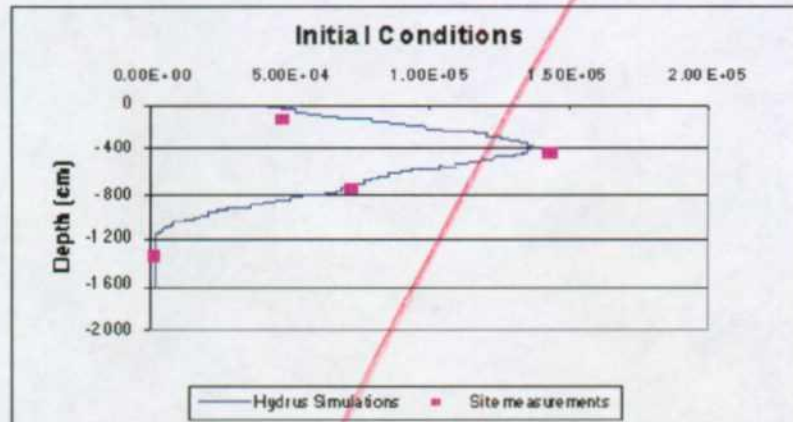


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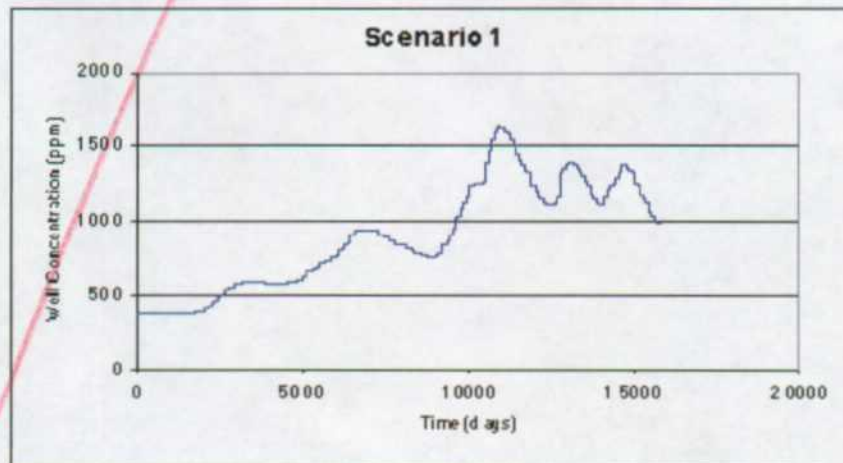


Figure 2: Chloride content in ground water, Scenario 1, No Action

After 32 years, the chloride concentration fluctuates, but begins to decline with time.

Figure 3 presents the results of our simulation of Scenario 2. The similarity between

Scenario 1 and Scenario 2 is not surprising. The excavation program did not materially reduce the chloride load (118 kg/m² in Scenario 1 to 95 kg/m² in Scenario 2). However, the rate of decline of chloride concentrations in the adjacent monitoring well is greater than predicted in Scenario 1 (no action). Although we simulated this scenario for only 47 years, Figure 3 suggests that the monitoring well will return to background conditions near day 20,000 (about 55 years).

Figure 4 presents the results of the simulation for Scenario 3. Reducing precipitation by 70% causes the chloride mass to remain in the vadose zone – even after 198 years.

Figure 5 shows the response of the adjacent monitoring well. After an initial rise

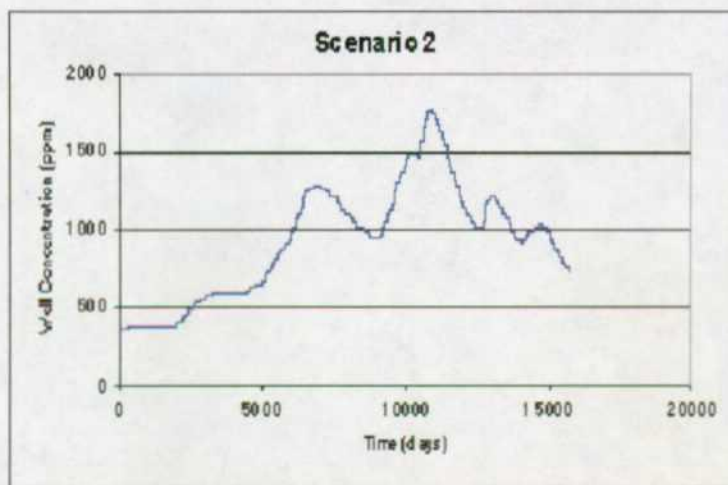


Figure 3. Chloride content in the ground water assuming removal of the upper 6 m deep chloride impact zone and replacement with "clean" fill, Scenario 2.

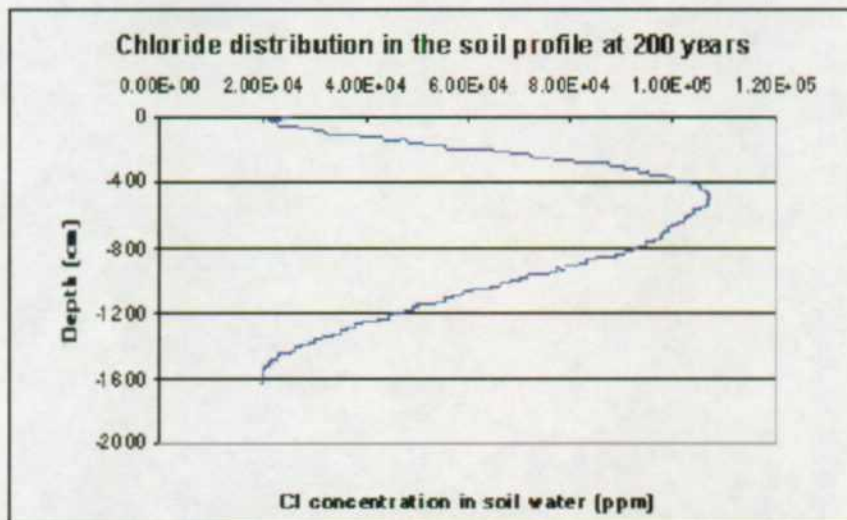


Figure 4. Scenario 3: Chloride distribution in the soil profile after 198 years of simulation

After 32 years, the chloride concentration fluctuates, but begins to decline with concentrations for many more decades.

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55

Figure 4 presents the results of the simulation for Scenario 3. Reducing precipitation by 70% causes the chloride mass to remain in the vadose zone – even after 198 years.

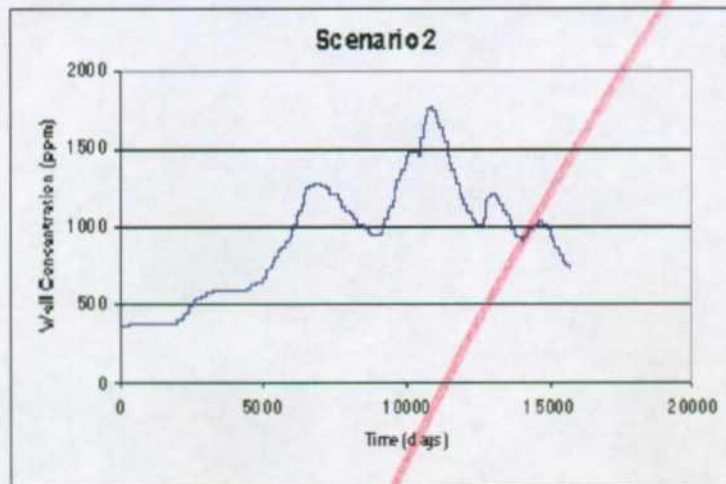
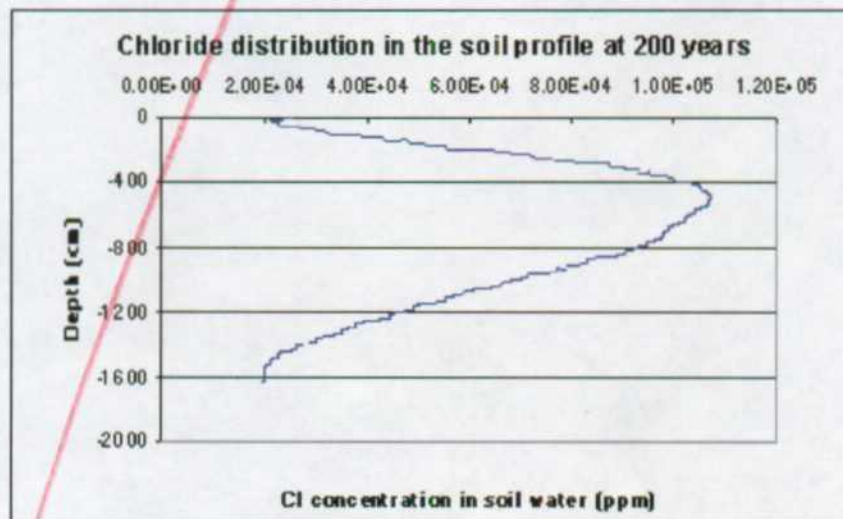


Figure 3. Chloride content in the ground water assuming removal of the upper 6 m deep chloride impact zone and replacement with "clean" fill, Scenario 2.

Figure 4. Scenario 3: Chloride distribution in the soil profile after 198 years of simulation



from 375 mg/L to about 475, natural ground water flow causes a gradual decline in chloride concentrations.

The flux of chloride from the vadose zone to ground water may be reduced in several ways. One method, excavation and backfilling, was simulated in Scenario 2. In Scenario 3 we reduced infiltration by a surface remedy that had the same effect as reduction of precipitation by 70%.

5. Conclusion

We believe the HYDRUS1D simulations for the Champion Hobbs facility provide reasonably good predictions of chloride concentrations in ground water for the various scenarios. We find a material difference in chloride concentrations in ground water between two potential remedies for the site:

1. Excavation and removal of the near-surface chloride in the vadose zone, and
2. Reduction of infiltration

At the Champion site, the majority of the chloride remains below the hard caliche layer observed in the subsurface (95 kg of chloride remains below 18 feet, see Plate 2). A remedy that provides for reduction of infiltration will be more cost-effective than a remedy of excavation and disposal. Chloride is a "conservative ion". Chloride does not sorb to clays or organic material (like dissolved metals); it does not mineralize to oxides on grain surfaces (like metals), and it does not degrade (like hydrocarbons). A remedy that permanently immobilizes chloride ion in the vadose zone, will more readily cause immobilization of certain metals and petroleum hydrocarbons.

Figure 5. Scenario 3: Chloride content in ground water after reducing precipitation by 70% in the same area simulated in Scenario 1. The period of simulation was 198 Years.

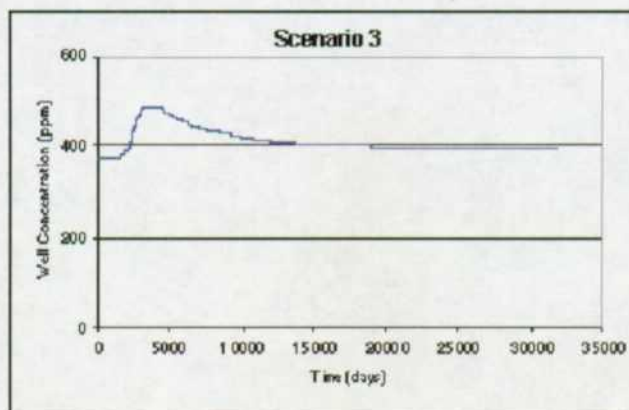


Figure 5 shows the response of the adjacent monitoring well. After an initial rise from 375 mg/L to about 475, natural ground water flow causes a gradual decline in chloride concentrations.

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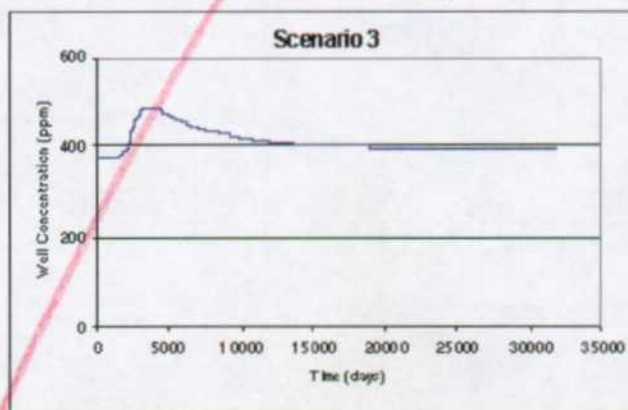


Table 1 **Input parameters for the simulations**

Parameter	Scenario 1	Scenario 2	Scenario 3	Source of Data
1. Vadose Zone Texture (see Plate 1)				Site Data
2. Aquifer Thickness (feet)	100	100	100	Site Data
3. Ground Water Flux (cm/day)	1.4	1.4	1.4	Graciela
4. Chloride Load (Kg/m ²)	154	93	Cl distribution from scenario 1 after 40 years.	Site Data
5. Depth to Ground Water (feet)	55	55	55	Site Data
6. Water Content (%)	8	8	8	Site Data
7. Dispersion Length (meters)	1	1	1	Professional Judgement
8. Cimate Index	Hobbs	Hobbs	Hobbs	NOAA data
9. Background Ground Water Chloride (mg/L)	375	375	375	Site Data
10. Length of chloride impact area parallel to ground water flow (meters)	30	30	30	Site Data

80
2
100

No!

NEED COPY!

Table 1 Input parameters for the simulations

Parameter	Scenario 1	Scenario 2	Scenario 3	Source of Data
1. Vadose Zone Texture (see Plate 1)				Site Data
2. Aquifer Thickness (feet)	100	100	100	Site Data
3. Ground Water Flux (cm/day)	1.4	1.4	1.4	Graciela
4. Chloride Load (Kg/m ²)	154	93	Cl distribution from scenario 1 after 40 years.	Site Data
5. Depth to Ground Water (feet)	55	55	55	Site Data
6. Water Content (%)	8	8	8	Site Data
7. Dispersion Length (meters)	1	1	1	Professional Judgement
8. Cimate Index	Hobbs	Hobbs	Hobbs	NOAA data
9. Background Ground Water Chloride (mg/L)	375	375	375	Site Data
10. Length of chloride impact area parallel to ground water flow (meters)	30	30	30	Site Data

WHICH
AREA 2 or 3?

Depth		Lithologic Description	Hydraulic Properties	
		0-0.5 Compact Caliche or Clay		
		0.5-23 feet Caliche with fractures filled with silty sand	Qr= 0.005, Qs=0.37, alpha=0.015, n= 1.4,	Ks=0.7 cm/d
20 feet		23-28 Feet Hard Caliche	Qr= 0.005, Qs=0.032, alpha=0.02, n= 1.41,	Ks=0.76 cm/d
		28-50 Feet Caliche with fractures filled with silty sand	Qr= 0.005, Qs=0.37, alpha=0.015, n= 1.4,	Ks=0.7 cm/d
40 feet		50-55 Hard Caliche	As Above	
		Aquifer = Ogallala Medium Sand	Flux 1.4 cm/d	
60 feet				
80 feet				
Break in Scale				
		Aquifer = Ogallala		
140 feet		Dockham Red Bed		

Qr = Residual Water Content

Qs = Saturated Water Content

alpha= Van Genuten parameter

n = Van Genuten parameter

Ks = Saturated Hydraulic Conductivity

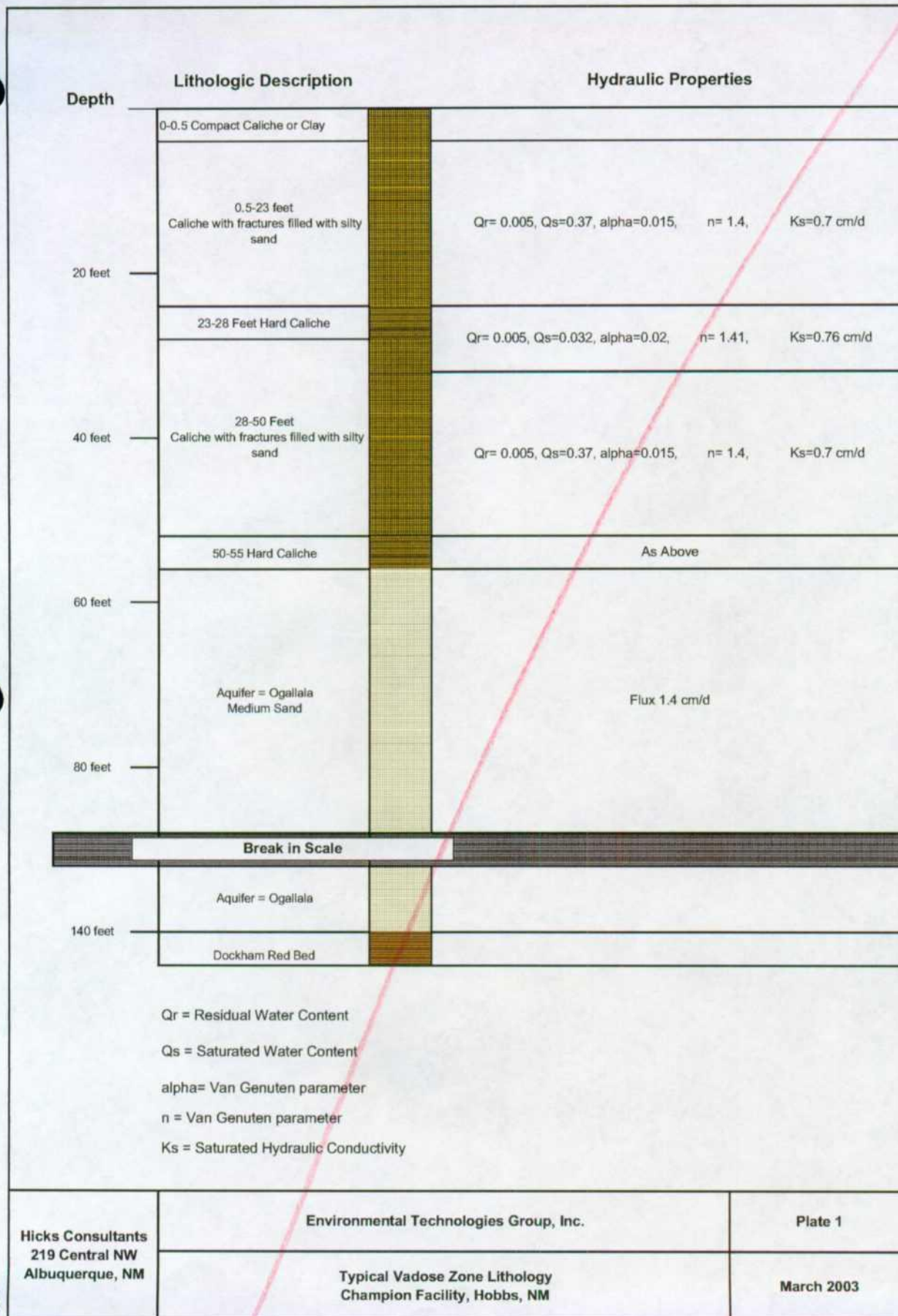
Hicks Consultants
219 Central NW
Albuquerque, NM

Environmental Technologies Group, Inc.

Plate 1

Typical Vadose Zone Lithology
Champion Facility, Hobbs, NM

March 2003



Depth	Lithologic Description	Measured Soil Chloride Concentration mg/kg	Bulk Density of Sample kg/cubic meter	Thickness of Column (ft)	Calculated Chloride Mass in Column (kg/m2)
	0-0.5 Compact Caliche	11900	1858	5	36.62602696
	0.5-23 feet Caliche with fractures filled with silty sand	6600	1858	9	36.56447061
20 feet	23-28 Feet Hard Caliche	3000	1858	10	18.46690435
40 feet	28-50 Feet Caliche with fractures filled with silty sand	1405	1858	31	26.8108673
	50-55 Hard Caliche				
60 feet	Aquifer = Medium Sand				
Calculated Chloride Load					118.4682692

0-34
AREA 3

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219 Central NW
Albuquerque, NM

Environmental Technologies Group, Inc.

Plate 2

Calculation of Chloride Load, Champion Facility,
Hobbs Scenarios 1 and 3

Mar-03

Depth	Lithologic Description	Measured Soil Chloride Concentration mg/kg	Bulk Density of Sample kg/cubic meter	Thickness of Column (ft)	Calculated Chloride Mass in Column (kg/m2)
	0-0.5 Compact Caliche	11900	1858	5	36.62602696
	0.5-23 feet Caliche with fractures filled with silty sand	6600	1858	9	36.56447061
20 feet	23-28 Feet Hard Caliche	3000	1858	10	18.46690435
40 feet	28-50 Feet Caliche with fractures filled with silty sand	1405	1858	31	26.8108673
	50-55 Hard Caliche				
60 feet	Aquifer = Medium Sand				
Calculated Chloride Load					118.4682692
WHICH BOREHOLES					
Hicks Consultants 219 Central NW Albuquerque, NM	Environmental Technologies Group, Inc.			Plate 2	
	Calculation of Chloride Load, Champion Facility, Hobbs Scenarios 1 and 3			Mar-03	

WHICH AREA ?

		Measured Soil Chloride Concentration mg/kg	Bulk Density of Sample kg/cubic meter	Thickness of Column (ft)	Calculated Chloride Mass in Column (kg/m2)
20 feet	0-0.5 Compact Caliche	97	1858	5	0.298548287
	0.5-23 feet Caliche with fractures filled with silty sand	97	1858	13	0.776225546
		<u>11600</u>	1858	10	71.40536348
	23-28 Feet Hard Caliche				
40 feet	28-50 Feet Caliche with fractures filled with silty sand	1405	1858	27	23.35140055
60 feet	50-55 Hard Caliche				
	Aquifer = Medium Sand				
Calculated Chloride Load					95.83153786
R.T. Hicks Consultants, Ltd. 219 Central NW Albuquerque, NM		Environmental Technologies Group, Inc.		Plate 3	
		Calculation of Chloride Load, Champion Facility, Hobbs Scenarios 2 - Excavate and Replace		Mar-03	

Depth	Lithologic Description	Measured Soil Chloride Concentration mg/kg	Bulk Density of Sample kg/cubic meter	Thickness of Column (ft)	Calculated Chloride Mass in Column (kg/m2)
	0-0.5 Compact Caliche	97	1858	5	0.298548287
	0.5-23 feet Caliche with fractures filled with silty sand	97	1858	13	0.776225546
20 feet	23-28 Feet Hard Caliche	11600	1858	10	71.40536348
40 feet	28-50 Feet Caliche with fractures filled with silty sand	1405	1858	27	23.35140055
	50-55 Hard Caliche				
60 feet	Aquifer = Medium Sand				
Calculated Chloride Load					95.83153786
R.T. Hicks Consultants, Ltd. 219 Central NW Albuquerque, NM		Environmental Technologies Group, Inc. Calculation of Chloride Load, Champion Facility, Hobbs Scenarios 2 - Excavate and Replace		Plate 3 Mar-03	

APPENDIX A

1.0 FACTORS INFLUENCING THE MIGRATION OF CHLORIDE FROM A RELEASE

Chloride ion migration is controlled by a combination of factors related to the vadose zone, the aquifer and the characteristics of a release. Eleven factors control chloride ion migration. Here we discuss how these factors affect the movement of the chloride ion through the vadose zone and in the aquifer.

1. Vadose Zone Texture

The proportion of sand, silt, and clay in a soil or sediment defines its texture. Texture affects the flow of water and the transport of dissolved chloride. In the vadose zone, fine-grained layers containing silt and clay, which generally have relatively high moisture content, can often transmit water more quickly than drier coarse-grained units containing sand and gravel. A vadose zone composed of layers of fine-grained and coarse-grained units will often transmit water more slowly than a homogeneous, fine-grained profile. In the unsaturated zone, open fractures do not transmit water.

2. Water Content in the Vadose Zone

The soil moisture content is the volumetric fraction of water in a soil or sediment. Climate and soil texture influence soil moisture contents. Wetter, more humid environments result in higher moisture contents. Fine grained and heterogeneous soils retain water better than coarse-grained, more homogeneous soils. Therefore, the more heterogeneous and finer grained the material, the greater the water content.

The water content of a soil or sediment affects its ability to transmit fluids because the hydraulic conductivity increases with increasing water content. The hydraulic conductivity of a sandy soil with water content of 20% can be 1,000 times greater than the same soil in an arid climate where water content is only 5%. Although chloride ion from a release may migrate much faster in a wet soil profile, the natural water in the soil also dilutes the chloride concentration and provides some mitigation of its effects on ground water quality.

3. Dispersion Length of Chloride in the Vadose Zone

The dispersion length describes the amount of mixing of a solute such as chloride will undergo in the vadose zone. Dispersion causes dilution of solute concentrations through mixing with ambient vadose water or ground water in a longitudinal direction parallel to water flow as well as in a transverse direction perpendicular to water flow. Systems with larger dispersion lengths produce greater mixing. Soil and aquifer heterogeneity tend to increase dispersion.

The dispersion length is very difficult to measure in the field. Researchers and field personnel rely upon professional judgement and published values (from laboratory or field experiments) to arrive at the dispersion length for a particular site. In general, researchers employ a dispersion length that is 7-10% of the total model length. When modeling a ten meter thick vadose zone, one may set the dispersion length at 10% of ten meters (100 cm).

4. Depth to Ground Water or Vadose Zone Thickness

The vadose zone is the region between the land surface and ground water table, and its thickness is defined by the depth to the ground water table. The vadose zone (also referred to as the unsaturated zone) includes the capillary fringe (pore space completely filled with water, under negative soil water pressure) and the overlying soil and sediment where the pore space is partially filled with water. Because ground water table depth rises and falls due to seasonal fluctuations in precipitation, ground water pumping withdrawals, and other factors, the thickness of the vadose zone is not constant. Like soil texture, the thickness of the vadose zone affects the time required for a release at the ground surface to reach the water table. The thicker the vadose zone, generally, the longer the travel time from ground surface to the water table. A relatively thick vadose zone also has more open pore space to temporarily store released fluid. A thick vadose zone can attenuate the effects of a chloride ion release more effectively than a thin vadose zone.

5. Climate

Precipitation and evaporation affect the water content of the vadose zone (before a release) and exert control over the migration of chloride after a release. In a humid climate regular and gener-

ous precipitation over the annual cycle can create relatively uniform infiltration patterns and a predictable soil water profile. In arid climates, where rainfall occurs in short-duration thunderstorms punctuated by long periods of drought, the infiltration is not uniform and occurs only immediately after large precipitation events. Arid climates exhibit vadose zones with relatively low water contents.

In humid climates with relatively uniform infiltration patterns, one could employ monthly climate data for simulation modeling. In arid climates, daily precipitation and evaporation data are necessary.

6. Chloride Concentration of Release

Chloride concentration in oil field chloride ions can be 100,000 ppm, or much lower if the producing formation contains fresh water due to infiltration of precipitation over geologic time. One of the easiest input parameters to measure in the oil and gas fields is the chloride concentration of the produced water. The chloride concentration in other types of released fluids can also be measured. The effect of chloride concentration in a released substance is straightforward: the higher the chloride concentration, the greater the environmental threat.

7. Release Volume and Chloride Mass

The volume of the release multiplied by the chloride concentration of the release yields the total mass of chloride released to the environment. The total mass released is a very important input parameter because it determines for a specific site the risk for ground water impairment. In the absence of reliable data on the volume of a release, the total mass of chloride can generally be estimated by a field investigation.

8. Height of Spill

Chloride ion releases occur in bermed areas when produced water storage tanks fail or within the natural terrain due to transmission line leaks and other transportation accidents. Releases may pond in a berm, pit, or natural depression, or can be dispersed over a large area. If the release is contained within a berm, the spill height is equal to or less than the height of the berm. In an open field, the spill height may vary. For a given site the amount of chloride ion infiltration into the soil is a function of the hydrau-

lic head or ponding depth. As the ponding depth increases, so does the hydraulic head, (pressure, at the soil/chloride ion spill interface). Understanding the depth of ponding and the total amount of infiltration per unit area guides the characterization efforts. A large amount of infiltration may require deep drilling for site characterization while a small release may require sampling with a hand shovel.

9. Ground Water Flux

Ground water moves through an aquifer in response to its capacity for transmitting water, or, hydraulic conductivity (m/day), and the driving force caused by a sloping water table (hydraulic gradient). The hydraulic conductivity of aquifers can be measured in the field, and can be found in publications that often provide estimates of this parameter. The hydraulic gradient can be measured in the field by determining the depth to water at three wells of known surface elevation. Multiplication of the hydraulic conductivity by the hydraulic gradient yields the ground water flux, which is the volume of water flowing through a unit area of aquifer over a specified time period (expressed in $\text{m}^3/(\text{m}^2 * \text{day}) = \text{m/day}$). The lower the ground water flux, the higher the probability that a release will cause unacceptable ground water quality impairment.

10. Aquifer Thickness

A thick aquifer contains more water than a thin aquifer. A given amount of chloride that enters from the vadose zone in a thick aquifer will result in a lower chloride concentration than the same amount entering a thin aquifer since aquifers that contain more water can be more effective at diluting contaminants. A thick aquifer that exhibits a large ground water flux may be able to absorb chloride from a large surface release without any severe impact to water quality.

11. Aquifer Ambient Chloride Concentration

Ambient chloride concentrations of ground water will influence whether or not a release causes unacceptable ground water quality impairment. If ground water has a low chloride concentration, even a considerable release may not cause chloride concentrations to exceed the US EPA Secondary Standard of 250 ppm or preclude the use of the water for agricultural needs. A high chloride concentration in ground water increases the risk that a chlo-

ride ion release will render the groundwater unfit for use. Simple field measurements from nearby well water or published data can supply an accurate estimate of the ambient chloride concentration in an aquifer.

1.1 HETEROGENEITY

Heterogeneity, most often caused by the layering of different sediment or soil types within a vadose zone, is more common in nature than not. Heterogeneity affects the distribution of chloride and other solutes through its strong influence on dispersion and hydraulic permeability.

One of the most common simplifying assumptions employed by regulators and guidance manuals is the assumption of homogeneity. However, a clay lens one meter thick found 3 meters below a release in a sandy soil will have a profound effect on the migration of chloride through the vadose zone. Heterogeneity can increase the attenuation of a release and help mitigate the effects on ground water quality.

1.2 RELEASE VOLUME, SPILL HEIGHT, AND CHLORIDE CONCENTRATION OF THE RELEASE

We have found that knowledge of the volume of a release is less important than understanding (1) the chloride load per unit area and (2) the geometry of the release with respect to ground water flow. Because release volume is seldom known with accuracy, we have combined chloride concentration in the release and spill height into a single parameter: chloride load/unit area. We then used the release volume and spill height to calculate the size of a circular release. As described below, we used the diameter of the release as the length of a release parallel to ground water flow. If an oblong release geometry is oriented parallel to ground water flow, more chloride will enter the aquifer along a specific flow line, yielding a higher chloride concentration in the down gradient well. If the long axis of the oval release is perpendicular to ground water flow, the impact to a well will be less. By re-arranging and combining these factors, we reduced the total number of factors from 11 to 10.

2.0 MODELING APPROACH

The modeling of chloride ion migration from the soil surface through the vadose zone into a shallow aquifer towards a monitoring well would require a sophisticated three-dimensional model, which takes into account the full coupling between unsaturated flow in the vadose zone and saturated flow in the aquifer. Such an approach is outside the scope of this study since generally acceptable three-dimensional models capable of such simulations are still being developed. Moreover, the computer time necessary to conduct such simulations would have been prohibitive for regulators and oil field personnel.

We used an approach based upon the assumption that flow through the vadose zone is mainly downward. This assumption is reasonable for humid climates where precipitation exceeds evapotranspiration most of the year. It is also reasonable in arid climates when the ground water table is so deep that no upward flow due to capillary rise can be maintained. Under these conditions, it is possible to de-couple the modeling of water flow and chloride transport in the vadose zone from the modeling of water flow and chloride transport in the aquifer. We assume that flow in the vadose zone is one-dimensional downward and flow in the aquifer is one-dimensional horizontal. This assumption allows us to first simulate water flow and chloride transport through the vadose zone using the model HYDRUS-1D. The output from HYDRUS-1D is the downward water flow seeping out of the vadose zone and the downward chloride flux over time. These outputs are used as input into the model for the aquifer. In this study, we used two models for the aquifer: MODFLOW and a simple groundwater mixing model. MODFLOW is a standard code for modeling water flow and solute transport through aquifers (Domenico & Schwartz, 1998). Since it takes quite some time to setup a simulation in MODFLOW, we used a validated excel spreadsheet mixing model to generate results more cost effectively.

2.1 VADOSE ZONE MODEL: HYDRUS-1D

2.1.1 Model Overview

HYDRUS-1D (Simunek et. al, 1998) is used to simulate one-dimensional transport of water, heat, and solute movement in variably saturated porous media. The HYDRUS- 1D model was developed by the George E. Brown Jr., Salinity Laboratory, USDA, ARS, Riverside, California and is distributed by the International

Ground Water Modeling Center (IGWMC), Golden, Colorado. A Microsoft Windows™ based Graphics User Interface (GUI) supports HYDRUS-1D.

The HYDRUS-1D model numerically solves the Richards' equation for water flow and Fickian-based advection-dispersion equations for heat and solute transport. The HYDRUS-1D flow equation includes a sink term (a term used to specify water leaving the system) to account for transpiration by plants. The solute transport equation considers advective, dispersive transport in the liquid phase, diffusion in the gaseous phase, nonlinear and non-equilibrium sorption, linear equilibrium reactions between the liquid and gaseous phases, zero-order production, and first-order degradation. The heat transport equation describes conduction as well as convection.

HYDRUS-1D can handle large numbers of soil layers, and uses the van Genuchten-Mualem, Brooks-Corey, Kosugi lognormal, and Durner dual porosity models to describe soil hydraulic properties. When values of soil hydraulic properties are unavailable, HYDRUS-1D can estimate them from a small catalog of values based on major textural classes (e.g., sand, sandy loam, etc.) or neural network based predictions.

The HYDRUS-1D code can simulate a wide range of boundary conditions. These are constant and time-variable pressure heads and fluxes, free drainage, seepage face, and an atmospheric boundary condition. An atmospheric boundary condition can be used to either generate run-off when the precipitation rate exceeds the infiltration capacity of the soil, or store excess water on the land surface allowing the water to infiltrate when precipitation stops. Time-variable conditions can be entered hourly, daily, or any general time interval.

We used HYDRUS-1D for the vadose zone simulations of this research project because we are interested in the vertical transport of water and chloride through the vadose zone. The outputs from HYDRUS-1D are the daily water flow and chloride flux from the vadose zone over the time period of the simulation expressed as cm day^{-1} and $\text{mg cm}^{-2} \text{ day}^{-1}$ respectively. These outputs are used as inputs into the simple mixing model.

2.1.2 Applicability of HYDRUS-1D for Chloride ion Releases

Surface or near surface releases of chloride ion migrate through the vadose zone under variably saturated conditions as a function

of release volume, topography, and climatic conditions (i.e., precipitation and evapotranspiration). Although other vadose zone models exist that satisfy this criterion, we selected HYDRUS-1D over other models for the following three reasons:

1. It can simulate water and solute transport through heterogeneous porous media: horizons and sediments of varying geology;
2. It can incorporate daily climatic data; and
3. We are familiar with the model.

Dr. Jirka Šimůnek of our team developed the HYDRUS-1D model with his colleagues Dr. van Genuchten and Dr. Sejna; Dr. Jan Hendrickx, another team member, has used the HYDRUS-1D model for many years for evaluation of groundwater recharge and salt movement through the vadose zone.

2.2 SATURATED ZONE MODEL: MIXING MODEL AND MODFLOW

As stated, the objective of this part of this study is to evaluate the impact of chloride releases on ground water quality as measured in a well adjacent to and down gradient of the release. The chloride flux leaving the vadose zone, the horizontal flux in the unconfined aquifer, the original chloride concentration in the ground water, and the thickness of the unconfined aquifer also affect the chloride concentration of the aquifer. Since the water flux seeping from the vadose zone and its chloride concentration vary with time, no simple analytical solutions are available for determination of the time-varying chloride concentration in the well.

Therefore, we implemented a simple spreadsheet ground water mixing model for the determination of the chloride concentration in the well. This mixing model uses the output of the HYDRUS-1D model as input. We have to define the aquifer volume, (the mixing compartment underneath the spill) as a first step in the ground water mixing modeling process. Assuming a circular spill area and a unidirectional horizontal flux in the aquifer, the highest impact will occur where the ground water has the longest exposure to the incoming chloride from the vadose zone. This takes place along the diameter of the circular spill. Therefore, the length of the mixing compartment is made equal to the diameter of the spill area, D . The depth of the mixing compartment is the thickness of the aquifer, H . The width, W , of the mixing compartment is taking equal to unity (one) to simplify the calculations.

Now we will develop the relation between the water flux seeping out of the vadose q_v , the chloride concentration in the vadose zone flux, C_v , the horizontal flux in the aquifer underneath the release entering the compartment, q_{in} , the original chloride concentration in the aquifer, C_{in} , the horizontal flux in the aquifer underneath the release leaving the compartment, q_{out} , and the chloride concentration of the aquifer flux leaving the area underneath the chloride ion release, C_{out} . The latter concentration is the one that will be monitored in the down gradient well. We make the following reasonable assumptions to determine C_{out} :

1. Ground water flow is in steady state. The discharge entering into the mixing compartment from the vadose zone, $q_v HDHW$, plus the horizontal discharge in the aquifer entering the mixing compartment at its up-gradient side, $q_{in} HHHW$, are equal to the discharge leaving the mixing compartment, $q_{out} HHHW$.
2. Changes in thickness of the saturated aquifer are small compared to the total thickness of the aquifer H .
3. The thickness of the aquifer, H , and its porosity, n , are constant.
4. Mixing of the chloride entering the mixing partment is complete and immediate. This assumption appears invalid from data published in the recent literature (LeBlanc et al., 1991; Zhang et al., 1998). We can use the results of the mixing model as an excellent indicator of the mean chloride concentration in a supply well penetrating the aquifer underlying the release, but not as an indicator of the chloride distribution in the aquifer.

The volume of the mixing compartment, V , will be constant under these assumptions, and is equal to:

$$V = D \times H \times W \times n \quad (2-1)$$

The water balance of the mixing compartment is equal to:

$$q_{in} \times H \times W + q_v \times D \times W = q_{out} \times H \times W \quad (2-2)$$

We can eliminate variable W from Eqs. [2-1] and [2-2] by putting $W = 1$ m.

The chloride balance of this mixing compartment during any time period dt is:

$$[(q_{in} \times C_{in} \times H + q_v \times C_v \times D) - (q_{in} \times H + q_v \times D) \times C_{out}]dt = [D \times H \times n]dC \quad (2-3)$$

where dC is the change of chloride concentration occurring during time period dt .

Rearranging Eq. [2-3] we obtain the ordinary differential equation:

$$\frac{dC}{dt} = \frac{q_{in} \times C_{in} \times H + q_v \times C_v \times D - (q_{in} \times H + q_v \times D) \times C_{out}}{H \times D \times n} \quad (2-4)$$

As soon as chloride from the release enters the ground water, the volume average concentration in the mixing compartment is C_{out} after complete mixing has occurred. Thus the chloride concentration of the water leaving the department, C_{out} , becomes:

$$C = C_{out}$$

$$\text{and} \quad dC = dC_{out} \quad (2-5)$$

Therefore, we can convert Eq. [2-4] in a forward finite difference expression:

$$\frac{C_{out}^{i+1} - C_{out}^i}{t^{i+1} - t^i} = \frac{q_{in}^i \times C_{in}^i \times H + q_v^i \times C_v^i \times D - (q_{in}^i \times H + q_v^i \times D) \times C_{out}^i}{H \times D \times n} \quad (2-6)$$

which yields an explicit expression for C_{out}^{i+1} ,

$$C_{out}^{i+1} = C_{out}^i + \frac{[q_{in}^i \times C_{in}^i \times H + q_v^i \times C_v^i \times D - (q_{in}^i \times H + q_v^i \times D) \times C_{out}^i] \times [t^{i+1} - t^i]}{H \times D \times n} \quad (2-7)$$

Using the output from HYDRUS-1D: the chloride concentration, C_v^i , of the water, q_v^i , entering the ground water table on day, t^i , we have put into a spreadsheet the mixing model of Eq.

[2-7]. By changing the values for spill diameter, D , ground water flux, q_{in} , original chloride concentration in the aquifer, C_{in} , and the aquifer thickness, H , we have evaluated the effect of these four factors of an unconfined aquifer.

Figure 2-1 Comparison between MODFLOW and the Mixing Model

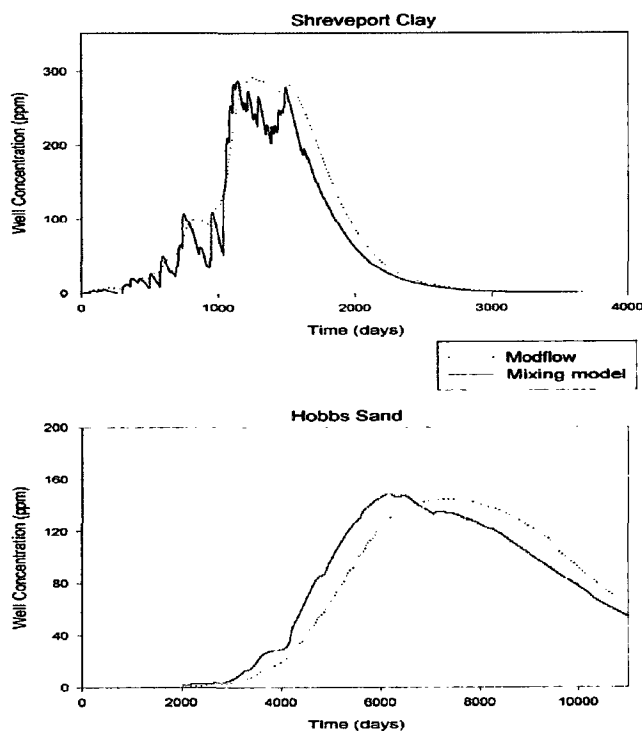


Figure 2-1 presents two comparisons between the chloride concentrations in the well located down gradient of the entry point of the release obtained with the mixing model Eq. [2-7] and those obtained with the model MODFLOW. The two comparisons deal with two complete different sets of environmental and release factors. In Shreveport the vadose zone texture is clay, the dispersion length 0.1 m, release chloride concentration 10,000 ppm, spill height 0.6 m, and aquifer flux 0.05 m/day. In Hobbs, vadose zone texture is sand, dispersion length 2.0 m, release chloride concentration 100,000 ppm, spill height 0.025 m, and aquifer flux 0.004 m/day. The maximum chloride concentrations predicted by the two models is quite similar, although the time of arrival to the maximum concentration is different between the two models. We have conducted

this part of the study using the less expensive mixing model Eq. [2-7]. (Our approach using HYDRUS-1D in combination with MODFLOW and Eq. [2-7] is valid for situations where the vadose zone seepage flux, q_v , is downward. A downward flux in the vadose zone is always found in the profiles with a deep ground water table depth. However, in the profiles with a ground water table depth between 0 - (+/-) 10 m an upward flux from ground water table towards the soil surface does occur as a result of capillary rise. The magnitude of the upward capillary flux depends on soil type and climate.

A large amount of precipitation enables the downward vadose zone flux to dominate the chloride transport in both the sandy and clayey soil in the humid climate of Shreveport. Occasionally in the clayey soil an upward flux is encountered during short periods without rain.

An upward flux is sometimes found in the sand soil but is prevalent in the clay soil in the arid climate of Hobbs. For example, when the ground water table depth is 3 m, the average upward flux in a clay profile would be 0.04 cm/day or 13.5 cm/year; this upward capillary flux causes the chloride and soil water from the release to stay in the vadose zone and protects the ground water from impairment. In hydrogeological situations where capillary rise is common, vadose zone water movement towards ground water is sporadic. However, a big storm can push chloride ion into a shallow aquifer very quickly.

There is a strong dynamic interaction between all eleven factors, outlined in section 1.1., when water leaving the vadose zone, q_v , changes direction frequently (up and down). The only manner to correctly simulate the interaction between these factors is by employing a two- or three-dimensional model, such as HYDRUS-2D. However, the main objective of this study is ground water impairment and the effect of capillary rise in diminishing the leaching of chloride to the ground water, and is not the chloride ion concentration in the root zone, we used the mixing model Eq. [2-7] for ground water table depths of 3 m. We used the equation only for downward fluxes and made it inactive when the vadose zone flux q_v goes upward. It was initiated again with the next occurrence of a downward flux, q_v , taking the C_{out} value of the previous occurrence of a downward q_v . In this manner a conservative estimate is obtained of the chloride concentration in the monitoring well assuming perfect mixing for shallow groundwater tables.

3.0 SENSITIVITY ANALYSIS OF FACTORS DETERMINING CHLORIDE ION FATE

3.1 PURPOSE

After a chloride release, the concentration of chloride in the vadose zone decreases with time and distance traveled through the vadose zone towards ground water because of dilution with ambient soil water. Further dilution occurs in the aquifer after the chloride reaches the ground water. The maximum chloride concentration occurring at a well down gradient from the release will depend on all the factors that affect chloride transport through the vadose zone and shallow aquifer. Understanding these factors is critical for the design and implementation of a site characterization program after a chloride ion release. The degree of ground water quality impairment determines to a large extent the need for a ground water remedy. The purpose of this sensitivity study is to evaluate which of the eleven factors have the greatest effect on prediction of maximum chloride concentration in the well down gradient of the release.

3.2 MODELING SPECIFICS

We needed to optimize our simulation efforts in order to obtain the maximum amount of information from the modeling. Statistics of experimental designs (e.g. Law & Kelton, 2000; Snedecor & Cochran, 1967; Steel & Torrie, 1980) allow us to decide which combination of factors to simulate so that the desired information can be obtained with the lowest possible number of simulations.

The factors used in experimental design statistics are the input variables to our simulation models. The outputs of our simulations are the responses. The responses that we consider in this study are the maximum chloride concentration, C_{max} , occurring in the well and the time at which the maximum chloride concentration reaches the well, T_{max} .

We have opted for a 2^k *factorial design* that requires us to choose two levels of each factor in this study. This design results in a

total of 2^k simulation runs, where k is the number of factors. We chose the two values for each factor so that they represent two opposite conditions such as an arid and a humid climate. The factors can be qualitative like climate or quantitative like depth to ground water. The two input values should not be too extreme or unrealistic. Additionally, the two values should not be too similar or the simulations may not adequately evaluate important aspects of the transport process under consideration. The 11 factors of this sensitivity analysis (see Table 3-1) resulted in 2^{11} or 2,048 different chloride ion release scenarios.

Table 3-1: Vadose zone, aquifer, and brine release factors determining maximum chloride concentration arriving at a monitoring well down gradient.

3.2.1 VADOSE ZONE FACTORS

Climate

We selected the two contrasting climates of Lea County, New Mexico, and Shreveport, Louisiana for the sensitivity analysis. Lea County is located in the arid southwest, and Shreveport is in the humid south. Lea County's annual precipitation and potential evapotranspiration is 14 inches and 59 inches, respectively, while annual precipitation and potential evapotranspiration for Shreveport is 46

inches and 67 inches, respectively. Lea County and Shreveport also differ in how precipitation occurs. In Lea County, the majority of precipitation occurs during the "monsoon" of July-August and much of the remainder of the year resembles drought conditions. Shreveport's precipitation falls throughout the year.

Vadose Zone Texture

We selected sand and clay as contrasting soil textures for the sensitivity analysis. Sand and clay differ not only in grain size but also in their ability to retain and transmit water. Sand has a relatively high-saturated hydraulic conductivity and low water retention; whereas clay has a relatively low saturated hydraulic conductivity and high water retention.

Factor	Factor	Factor	Maximum Chloride Concentration	
#	Description	Abbreviation	Decrease	Increase
1	Climate	clim	Arid	Humid
2	Soil Texture	soil	Clay	Sand
3	Initial Water Content	wcin	Wet	Dry
4	Chloride Dispersion Length	disp	2.0 m	0.1 m
5	Ground Water Depth	gwl	30 m	3 m
6	Ground Water Flux	qaq	0.05 m/day	0.001 m/day
7	Ambient Aquifer Cl Concentration	cin	0 ppm	100 ppm
8	Aquifer Thickness	thick	30 m	3 m
9	Release Volume	vol	100 barrels	10,000 barrels
10	Release Height	depth	0.025 m	.6m
11	Release Chloride Concentration	ckon	10,000 ppm	100,000 ppm
10*11	Release Chloride Mass	clmass	250 g/m ²	60,000 g/m ²

Water Content in Vadose Zone

We hypothesized that higher initial water content in the vadose zone would result in slower chloride ion movement because the initial moisture must be displaced before the chloride ion can move downward through the vadose zone. We used HYDRUS-1D to predict initial water contents for both vadose zone textures in both Lea County and Shreveport. We used these predictions as initial conditions in the sensitivity analysis.

We ran simulations for one hundred years or until we achieved dynamic equilibrium between soil water content and climatic conditions for both the wet and dry initial conditions. To create *wet* conditions, we ran simulations without any vegetation (low evapotranspiration); and ran simulations with vegetation (high evapotranspiration) in *dry* conditions. We used evergreen plants capable of transpiring soil water all year round with a 3 meter (~10 ft) deep root zone. Transpiration of soil water created a drier soil profile than simulations without vegetation.

Dispersion Length of Chloride in Vadose Zone

For the sensitivity analysis, we selected minimum and maximum chloride dispersion lengths of 0.10 m (0.33 ft) and 2.0 m (6.6 ft), respectively. The larger dispersion length will produce greater mixing of chloride ion with ambient soil water in the vadose zone, and it is expected to result in a lower maximum chloride concentration in the well. Conversely, the smaller dispersion length will result in minimal mixing, e.g. minimal attenuation of the release, and larger maximum chloride concentrations. We based our selection of dispersion lengths on values reported in the literature (Gelhar, 1993).

Depth to Ground Water

Deep groundwater allows for more storage of chloride ion and more attenuation of the maximum chloride concentration during its downward migration. We selected groundwater depths of 3.0 m (9.8 ft) and 30 m (98 ft) for the sensitivity analysis. These depths represent reasonable values for a shallow and deep aquifer, respectively.

3.2.2 AQUIFER FACTORS

Ground Water Flux

Groundwater flux represents the rate of groundwater movement and effects the ability of an aquifer to dilute chloride and other constituents of a chloride ion release. A large groundwater flux produces greater dilution.

We based our selection of minimum and maximum groundwater fluxes on literature values for the Ogallala aquifer, Southern Lea County, New Mexico (Native and Smith, 1987). We used 0.10 cm/day (0.0033 ft/day) and 5.0 cm/day (0.16 ft/day) as minimum and maximum values, respectively. The maximum flux is lower than some of the ground water fluxes reported in the literature (e.g. 40 cm/day by Zhang et al., 1998) and, thus, is a conservative estimate.

Aquifer Ambient Chloride Concentration

We selected ambient chloride concentrations for groundwater of 0 ppm and 100 ppm. One hundred parts per million or less is typical for groundwater of the Ogallala aquifer (Nicholson and Clebsch, 1961) and the Carrizo-Wilcox aquifer in Caddo Parish, Louisiana (Rapp, 1992). Although 10-ppm chloride is a more characteristic minimum value for the Ogallala and Carrizo-Wilcox aquifers, we selected 0.0 ppm to create a greater difference between minimum and maximum chloride concentrations of groundwater.

Aquifer Thickness

The thicker the aquifer, the more opportunity for mixing (dilution), and the lower the predicted chloride concentration will be in the aquifer. We selected two aquifer thicknesses, 3.0 m (9.8 ft) and 30 m (98 ft). Three meters are approximately equal to the length of most well screens used to monitor the chloride changes. Therefore, an aquifer thickness of 3 meters provides a good estimate of expected chloride concentrations at a monitor well in a thicker aquifer under conditions of limited vertical mixing. Many unconfined, alluvial aquifers are greater than 30m thick, but we have selected 30 m as the maximum value. A 30-m thick saturated sandy formation with a hydraulic conductivity of at least 0.0005 m/s (140 ft/day) is classified as a good aquifer (Freeze and Cherry, 1979).

3.2.3 CHLORIDE ION RELEASE FACTORS

Release Volume

We used minimum and maximum release volumes of 100 bbl (16 m³) and 10,000 bbl (1,600 m³), respectively. These release volumes are representative of large and very large releases based on the experience of oil and gas industry personnel.

In the one-dimensional HYDRUS-1D model we used only spill height as an input variable. The spill volume was introduced into the mixing model using the diameter of the spill. For example, a 100 barrel release resulting in a chloride ion release of 0.025 m height with circular shape will have a diameter of 29 m while a release of 0.6 m height will have a diameter of only 6 m (Figure 3-1). Table 3-2 summarizes the four chloride ion release areas evaluated with the mixing model. These four release areas are combinations of the two spill heights (0.025 and 0.6 m) and two release volumes (large: 100 barrels and very large: 10,000 barrels).

We represented all spill areas as circles, and then, used the mixing model to evaluate mixing along the diameter of each circular spill (see Table 3-2). The diameter of each circle represents the longest path groundwater must flow beneath each release area, and thus provides a conservative estimate of groundwater quality impairment at a well immediately down gradient of a release.

Chloride Concentration of Release

We selected chloride concentrations of 10,000 and 100,000 ppm, as the minimum and maximum concentrations for the chloride ion release input parameter in consultation with experienced professionals. These concentrations are representative of most chloride ion releases.

The mixing model does not consider density differences between the density of the chloride ion arriving at the aquifer and the density of the water in the aquifer. These differences (even if small) may cause chloride ion to sink in an aquifer (LeBlanc et al., 1991; Zhang et al., 1998) and would influence the distribution of chloride ion in the aquifer. Since our approach assumes complete mixing in the aquifer, the chloride distribution is not taken into account. Water extracted from a well by bailing or pumping typically would represent a well mixed sample. The

Figure 3-1. Schematic of Two Possible Brine Release Characteristics After a Release of 100 Barrels.

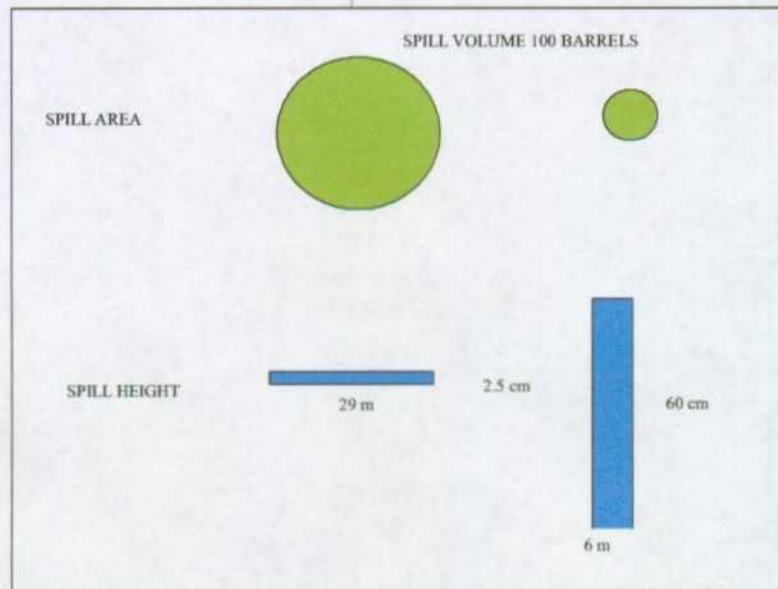


Table 3-2. Characteristics of brine releases in this study.

Volume Barrels	Depth		Area		Diameter m
	m ³	m	m ²	acres	
100	16	0.025	640	0.16	29
		0.6	26.67	0.007	6
10000	1600	0.025	64000	16	285
		0.6	2666.67	0.7	58

results of the mixing model help to identify environmental and release characteristics that cause groundwater quality impairment and provide a measure of the overall impact of a chloride ion release on an aquifer.

Height of Spill

We selected 0.025 m (1 inch) and 0.6 m (2 ft) as the minimum and maximum spill heights, respectively, of chloride ion on the land surface, based on observations of oil and gas industry personnel. A 0.6 m (two-foot) height represents a discharge of 1600 m³ (10,000-bbls) of chloride ion to a 2670 m² (0.7 acre) bermed area or large depression. Releases to flat or gently sloped areas are likely to result in initial heights of 0.025m (an inch) or less.

Chloride Mass

Table 3-1 presents a final factor, "Release Chloride Mass". This factor, which is the product of "Release Height" and "Release Chloride Concentration", is the mass of chloride released to the ground surface per unit area. As Table 3-1 shows, a chloride ion release (see Release Chloride Concentration) of 100,000 ppm chloride that ponds to a depth of 0.6 meters (see Release Height) causes a subsurface chloride input of 60,000 grams per square meter (the Release Chloride Mass).

3.3 SIMULATION RESPONSES

The simulations with the HYDRUS-1D code and the mixing model yield large amounts of information about the flow of water and the transport of chloride through the vadose zone and the underlying aquifer. As mentioned above, we have selected two critical response variables for the sensitivity analysis: (i) the maximum chloride concentration in a down gradient monitoring well, C_{max} , and (ii) the time of arrival of the maximum chloride concentration at the monitoring well, T_{max} .

Maximum Chloride Concentration

The maximum chloride concentration defines the center of mass of a release as it migrates through the vadose zone into the aquifer and reaches a well. For this reason, we used the maximum chloride concentration, C_{max} , to identify those factors listed in Table 3-1 that have a significant influence on chloride migration through the vadose zone and the aquifer as the release moves toward the well. Evaluation of C_{max} can also identify the environmental con-

ditions that result in significant attenuation of chloride ion. For example, for those simulations where C_{max} is much less than the original chloride concentration of released chloride ion, environmental factors cause significant chloride ion attenuation. Additionally, an evaluation of C_{max} can be used to identify release scenarios that pose little or no threat to groundwater quality. For instance, simulations that predict a C_{max} less than the EPA Secondary Water Quality Standard of 250-ppm chloride will not cause water quality impairment. On the other hand, when predictions of C_{max} are greater than 250-ppm, ground water quality may be threatened by the release. Thus, the maximum chloride concentration in the well informs us about the risk for ground water impairment and its severity.

Time of Arrival of Maximum Concentration at the Well

Time of arrival of maximum concentration, T_{max} , is the time required for the chloride center of mass to reach the well. It dictates the urgency to implement a field investigation and possible remedy. A relatively rapid response is required if simulations suggest a chloride concentration of 250 ppm or more at a well within a few years. However, when input factors combine to predict that decades or centuries are required for a well to show ground water impairment, an immediate ground water investigation may be of little value.

3.4 STATISTICAL ANALYSIS OF THE RESPONSES AT MONITORING WELL

Following the statistical approach by Law & Kelton (2000) for simulation modeling and analysis, we determined the impact of each factor presented in Table 3-1 on the migration of chloride ion through the vadose zone and aquifer. We did this by inspecting the effect of each factor on the maximum chloride concentration in a down gradient well, C_{max} , and the arrival time of this concentration, T_{max} , at the well.

Table 3-3. Main effects of the vadose zone, aquifer, and brine release factors on the maximum chloride concentration

Factor	Effect on Cmax	
	ppm	Relative Effect
Height of Brine Release	4,340	1
Release Chloride Concentration	4,017	0.93
Thickness of Aquifer	3,237	0.75
Soil	2,070	0.48
Aquifer Flux	1,994	0.46
Dispersion Length	1,545	0.36
Climate	1,184	0.27
Ground Water Depth	1,081	0.25
Volume of Brine Release	932	0.21
Ambient Cl Concentration	76	0.02
Initial Water Content of Soil	25	0.01

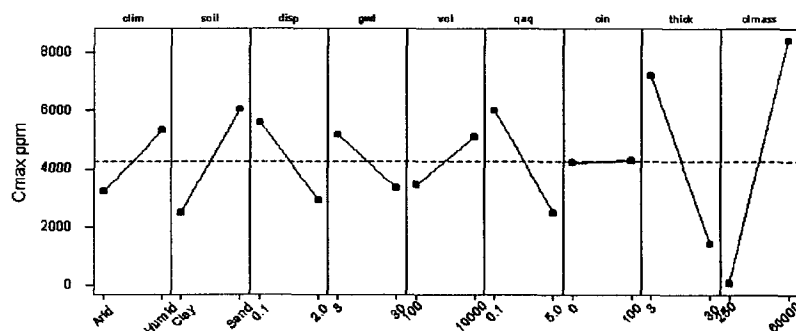
3.4.1 MAXIMUM CHLORIDE CONCENTRATION

Table 3-3 presents the sensitivity of C_{max} to each of the 11 factors considered in this study (Table 3-1). The factors are sorted according to their impact on C_{max} in Table 3-3. The most important factors are the Height of Chloride ion Release and the Release Chloride Concentration. Changing the Height of Chloride ion Release from 0.025 to 0.6 m while holding all other factors fixed results in an increase of maximum chloride concentration of 4,340 ppm. Changing the Release Chloride Concentration from 10,000 to 100,000 ppm results in an increase of 4,017 ppm in maximum chloride concentration in the well. The absolute concentration values depend on the setup of the simulation experiment. We have added the relative effects of each factor in Table 3-3. The factors Height of Chloride ion Release and Release Chloride Concentration have relative effects of 1.00 and 0.93 respectively, much higher than of any other factor. The predicted difference in C_{max} due to the difference in Release Chloride Concentration is 93% of predicted difference for the Height of Chloride ion Release. The predicted difference in C_{max} for the two climates indices, however, was only 27% of predicted difference for the Height of Chloride ion Release. As Table 3-3 shows, Initial Water Content of Soil exerts the smallest influence on the prediction of C_{max} .

The two most important factors, Height of Chloride ion Release and the Release Chloride Concentration, determine the Mass of Chloride entering the soil surface during a release. If the Height of Chloride ion Release or the Release Chloride Concentration increases, the Mass of Chloride increases and consequently, the maximum chloride concentration increases. Because the Mass of Chloride appears to be the key factor in determining the maximum chloride concentration arriving at a down gradient monitoring well, we repeated the sensitivity analysis using Mass of Chloride instead of Height of Chloride ion Release and Release Chloride Concentration. We eliminated the Initial Water Content of Soil in the second sensitivity analysis since this factor has very little impact on C_{max} .

The results of the second analysis are presented in Table 3-4 and in Figure 3-2. The mean chloride concentration of all 256 scenarios with Mass of Chloride 250 g/m² is 89 ppm and that of all 256 scenarios

Figure 3-2 The effect of nine brine release, vadose zone, and aquifer factors



with Mass of Chloride 60,000 g/m² is 8,446 ppm (See Figure 3-2). The difference between these two values is 8,357 ppm, which is the predicted sensitivity of the maximum chloride concentration for an increase of factors fixed.

The Thickness of Aquifer also has a large impact with a sensitivity of 5,632 ppm for a change from 3 to 30 m. All other factors are less important. For comparison, we have determined the relative impacts of each factor by dividing each affect by the influence of the Mass of Chloride (Table 3-4). The most important factors Mass of Chloride and Thickness of Aquifer with relative affects of 1.00 and 0.67, respectively. The factors Soil, Aquifer Flux, and Dispersion Length have relative affects of 0.43, 0.42, and 0.32, respectively. The factors Climate, Ground Water Depth, and Volume of Chloride ion Release have much less impact with relative affects of 0.25, 0.22, and 0.20. Ambient Chloride Concentration (Relative effect 0.01) has virtually no effect.

We know that the predicted maximum and minimum values of C_{max} for a factor of interest can depend on the values of other factors. Where this is the case, the two factors are said to interact. An Analysis of Variance revealed that six interactions affect the maximum chloride concentration. These are the interactions between:

- Chloride Mass and Thickness of Aquifer,
- Chloride Mass and Vadose zone texture,
- Chloride Mass and Aquifer Flux,

Table 3-4. Main effects and important interactions of the vadose zone, aquifer, and brine release factors on the maximum chloride concentration arriving at the monitoring well C_{max} and the time of arrival of the maximum concentration T_{max} .

Factor	Effect on C_{max}		Effect on T_{max}	
	ppm	Relative Effect	Years	Relative Effect
Main Effects				
Chloride Mass	8357	1	52	0.46
Aquifer Thickness	5632	0.67	5	0.04
Soil	3560	0.43	106	0.93
Aquifer Flux	3525	0.42	7	0.06
Dispersion Length	2699	0.32	11	0.06
Climate	2099	0.25	114	1
Ground Water Depth	1826	0.22	104	0.91
Volume of Brine Release	1631	0.2	0	0
Ambient Cl Concentration	82	0.01	44	0.39
Interaction Effects				
Chloride Mass x Aquifer Thickness	5573	0.67		
Chloride Mass x Soil	3519	0.42		
Chloride Mass x Aquifer Flux	3509	0.42		
Aquifer Thickness x Aquifer Flux	2529	0.3		
Aquifer Thickness x Soil	2509	0.3		
Soil x Aquifer Flux	1223	0.15		
Soil x Climate			98	0.86
Climate x Depth Ground Water			95	0.83
Soil x Depth Ground Water			90	0.79

- Thickness of Aquifer and Aquifer Flux,
- Thickness of Aquifer and Vadose zone texture, and
- Vadose Zone Texture and Aquifer Flux.

Table 3-4 shows the relative importance of each interaction and the interactions are presented in Figure 3-3. As shown in Figure 3-3, if Mass of Chloride increases from 250 to 60,000 g/m² above an aquifer with a thickness of 3 m, the maximum chloride concentration at the well increases from 118 to 14,501 ppm. The same increase of Mass of Chloride occurring above an aquifer with a thickness of 30 m causes only a modest chloride increase from 60 to 2,757 ppm. In a sandy vadose zone, C_{max} increases from 110 to 11,985 ppm in response to the different chloride loads to the ground surface. However, different chloride ion releases to a clay result in smaller differences, 68 to 4,906 ppm, but fall within the range of responses in a sandy zone.

The implication of the results of our sensitivity analysis is determination of Mass of Chloride per unit surface area and

Thickness of Aquifer is critical for the evaluation of ground water impairment. Knowledge of Vadose Zone Texture Conditions, Aquifer Flux, Dispersion length, Climate, Ground Water Depth, and Volume of Chloride ion Release can provide useful additional information, while ambient Chloride Concentration and Initial Water Content of Soil provide little relevant information.

The results of the sensitivity analysis cannot be used to directly evaluate field sites because they are based on the average change of maximum chloride concentration. For each factor, the maximum chloride concentration exhibits a wide range of values as is shown in Table 3-5.

Figure 3-3. Interaction effects between the factors soil, flux in aquifer, thickness of aquifer, and chloride load on the maximum chloride concentration in a downgradient monitoring well.

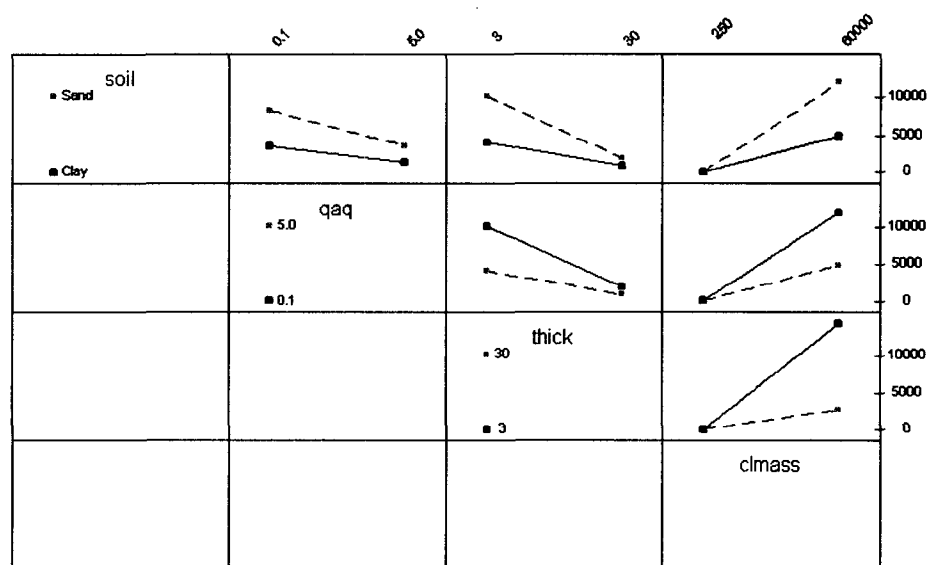


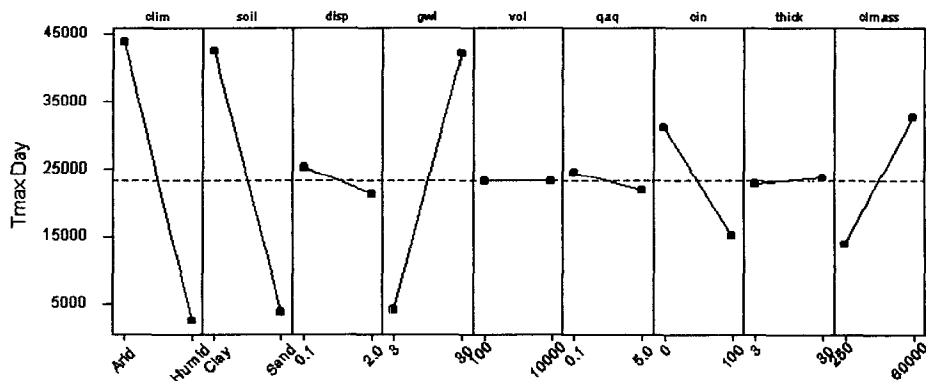
Table 3-5. Statistics of maximum chloride concentrations (ppm) determined in the sensitivity analysis.

Main Effect	Level	Mean	Minimum	Maximum
Mass of Chloride	250 g/m ²	89	0	303
	60,000 g/m ²	8,446	0	46,633
Thickness of Aquifer	30 m	1,429	0	15,354
	3 m	7,195	0	46,633
Soil	Clay	2,487	0	37,233
	Sand	6,047	2	46,633
Aquifer Flux	0.05 m/day	2,505	0	29,779
	0.001 m/day	6,030	0	46,633
Climate	Arid	3,218	0	44,372
	Humid	5,317	0	46,633
Ground Water Depth	30 m	3,354	0	40,758
	3 m	5,181	0	46,633
Volume of Brine Release	100 barrels	3,452	0	41,603
	10,000 barrels	5,083	0	46,633
Dispersion Length	2.0 m	2,918	0	25,653
	0.1 m	5,617	0	46,633
Ambient Cl Concentration	0 ppm	4,226	0	46,593
	100 ppm	4,308	0	46,633

3.4.2 ARRIVAL TIME OF MAXIMUM CHLORIDE CONCENTRATION

We present the effects of the factors on the arrival time of the maximum chloride concentration at the well in Table 3-4. The arrival time strongly depends on climate (relative effect of 1.0 in Table 3-4), vadose zone texture, and depth of ground water. In the arid climate of Lea County, New Mexico, a chloride ion release will require an additional 114 years (40,515 days) for the maximum concentration to arrive at a well than a similar release in the humid climate of Shreveport, Louisiana. The vadose zone texture and ground water table effects are of the same order of magnitude (106 and 104 years respectively). Other factors are less important. Figure 3-4 graphically displays this same information. Our Analysis of Variance identified three important interactions that effect the length of time required

Figure 3-4 The effect of nine brine release, vadose zone, and aquifer factors on the time when the maximum chloride concentration arrives in a downgradient monitoring well.

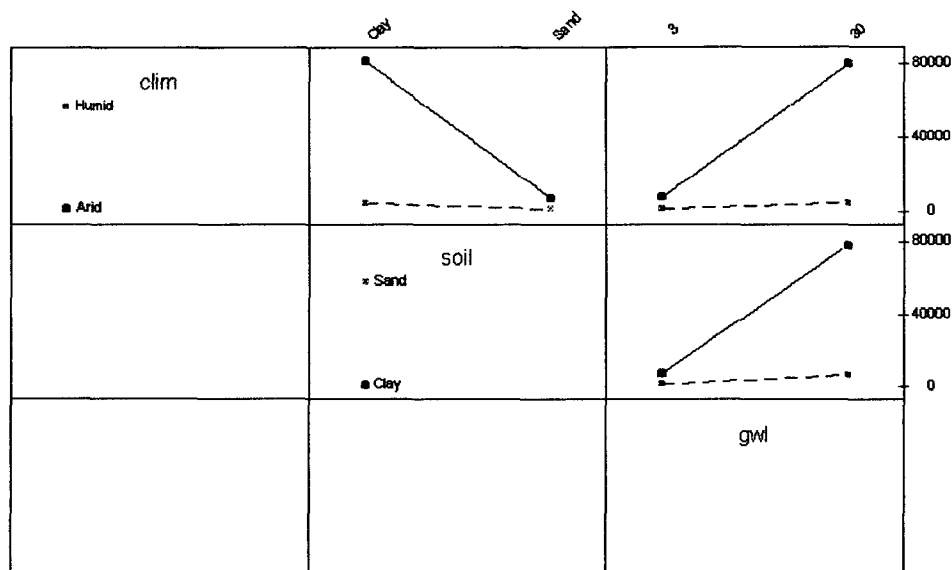


for C_{max} to reach a well:

- Vadose Zone Texture and Climate,
- Climate and Depth to Ground Water, and
- Vadose Zone Texture and Depth to Ground Water.

The lower right section of Figure 3-5 shows that the depth to groundwater has little effect on the arrival time of C_{max} if the texture of the vadose zone is sand. In a clay profile, however, the time of arrival is very different: nearly 80,000 days (219 years). This same relationship is expressed with the interaction between Climate and Depth to Ground Water (plotted in the upper right portion of Figure 3-5). In a humid climate, the texture of the vadose zone has little impact on the arrival time of C_{max} . However, in the arid Lea County, a release to a clay profile will require over 200 years longer for C_{max} to reach a well than the same release to a sandy vadose zone would.

Figure 3-5. Interaction effects between the factors climate, soil, and ground water depth on the time when the maximum chloride concentration arrives in a downgradient monitoring well.



APPENDIX B

Chloride Content in the Vadose Zone

The purpose of this appendix is to explain different ways to quantify the amount of chloride present in the vadose zone. First, we present a number of concepts dealing with quantifying water and chloride contents. Next, we present our approach to calculate the chloride load.

Definitions

Gravimetric water content 2_g

$$\theta_g = \frac{W_{water}}{W_{dry\ soil}} \quad [1]$$

where W_{water} is the weight of water (kg) and W_{soil} is the weight of the dry soil (kg).

Volumetric water content 2_v

$$\theta_v = \frac{V_{water}}{V_{soil}} \quad [2]$$

where V_{water} is the volume of water (m³) and V_{soil} is the volume of the soil (m³).

The relationship between 2_g and 2_v is

$$\theta_v = \frac{\rho_{soil}^{dry}}{\rho_{water}} \theta_g \quad [3]$$

where Δ_{soil}^{dry} is the bulk density of the dry soil (kg/m³) and Δ_{water} is the density of water (in this appendix taken as 1000 kg/m³). We also recognize the bulk density of moist soil Δ_{soil}^{moist} . The bulk densities can be found using the following expressions.

$$\rho_{soil}^{moist} = \frac{W_{moist\ soil}}{V_{soil}} = \frac{W_{dry\ soil} + W_{water}}{V_{soil}} \quad [4]$$

$$\rho_{soil}^{dry} = \frac{W_{dry\ soil}}{V_{soil}} \quad [5]$$

Gravimetric chloride content in moist soil $Cl_g^{moist\ soil}$

$$Cl_g^{moist\ soil} = \frac{W_{chloride}}{W_{moist\ soil}} \quad [6]$$

where $W_{chloride}$ is the weight of chloride (kg) and $W_{moist\ soil}$ is the weight of the moist soil (kg). Since the chloride content is often so small compared with the amount of soil, it is a custom to express chloride content in mg and soil in kg. The dimensions of $Cl_g^{moist\ soil}$ are then mg/kg or ppm.

Since the water content of a soil will vary, we prefer to express the chloride content as a weight fraction of the dry soil.

Gravimetric chloride content in dry soil $Cl_g^{dry\ soil}$

$$Cl_g^{dry\ soil} = \frac{W_{chloride}}{W_{dry\ soil}} \quad [7]$$

where $W_{chloride}$ is the weight of chloride (kg) and $W_{dry\ soil}$ is the weight of the dry soil (kg).

Volumetric chloride content in the soil Cl_v

$$Cl_v = \frac{W_{chloride}}{V_{soil}} \quad [8]$$

The relationship between $Cl_v^{dry\ soil}$ and $Cl_g^{moist\ soil}$ is

$$Cl_v^{dry\ soil} = \frac{Cl_g^{moist\ soil} W_{dry\ soil} (1 + \theta_g)}{V_{soil}} = Cl_g^{moist\ soil} \rho_b^{dry\ soil} (1 + \theta_g) \quad [9]$$

Calculation of chloride load and chloride concentration

Step 1. Gather data.

The minimum set of data we need for the calculation of the chloride load are the gravimetric chloride content in moist soil $Cl_g^{moist\ soil}$, the gravimetric soil water content 2_g , and the bulk density of the dry soil Δ_{soil}^{dry} . The gravimetric chloride content and the gravimetric water content can be measured from core samples; the bulk density of dry soil will often be estimated.

Example: $Cl_g^{moist\ soil} = 6,000$ ppm; $2_g = 0.08$; $\Delta_{soil}^{dry} = 1500$ kg/m³.

Step 2. Express water content on a volumetric basis.

Since computer models for water flow and chloride transport are constructed on a volumetric basis, we need to express the measured gravimetric chloride and water contents on a volumetric basis. We can do this using Eq. [3] for the water content.

Example: $2_v = 0.08 \times 1500/1000 = 0.12$

Step 3. Calculate chloride load for one-meter depth.

Example: Chloride load in one m^3 which equals a volume of soil with thickness 1 m and area 1 m^2 is 9,720,000 mg/ m^3 or 9.720 kg/ m^3 .

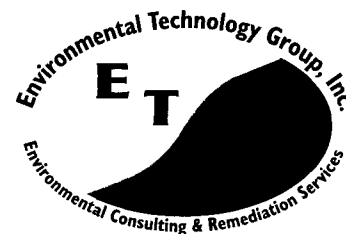
Step 4. Calculate chloride load for entire vadose zone.

For a homogeneous vadose zone with thickness D, the total chloride load is the sum of the chloride loads of all depths.

Example: Depth of vadose zone 10 m. Total chloride load is $9.720 \times 10 = 97.2$ kg/ m^2 .

For a heterogeneous vadose zone first calculate for each layer the chloride load following Steps [1-4] and sum over entire vadose zone.

APPENDIX F
RISK ASSESSMENT REPORT



RISK ASSESSMENT REPORT

**CHAMPION TECHNOLOGIES HOBBS FACILITY – GW199
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APPENDIX F:	Chemical Data for Selected COCs

1.0 INTRODUCTION

This Risk Assessment Report evaluates the potential risks from the contaminants at the Champion Technologies Site. Specific objectives of the site investigation include collecting data to characterize the ecological setting of the affected property and evaluating potential exposure pathways to human and environmental receptors.

2.0 TIER 1 SCREENING EVALUATION

A Tier 1 screening evaluation is intended to screen all concentrations of the chemicals of concern (COC) to help establish assessment levels for each contaminant and determine if further remedial action is warranted. Tier 1 soil screening levels (SSL) were developed by the New Mexico Environment Department (NMED) along with existing regulations with groundwater by the New Mexico Water Quality Control Commission (WQCC) to assist in managing petroleum releases. The concentrations of each COC for this site were compared to the SSL and WQCC standards to determine the contaminants that needed further evaluation.

The table below provides a list of contaminants that exhibited high concentrations that were not eliminated by background concentrations.

CHEMICAL OF CONCERN	REPRESENTATIVE CONCENTRATION (in GW / in SOIL)	WQCC STANDARD ¹ (mg/L)	MAXIMUM CONTAMINANT LEVELS (MCLs) (mg/L)	DAF 20 ² (mg/kg)
Arsenic	0.0731 / 33.3	0.1	0.05	60
Barium	4.78 / 758	1.0	2	800
Benzene	<0.001 / 3.51	0.01	0.005	0.060
Cadmium	0.003 / 1.67	0.01	0.005	20
Chromium III	0.333 / 28.4	0.05	0.1	200
Chromium IV	0.296 / 28.4	0.05	0.1	20
Ethylbenzene	<0.001 / 17.6	0.75	0.7	8
Lead	0.04 / 23.3	0.05	0.015	53.08 ³
Manganese	0.426 / 628	0.2	—	0.7
Mercury	0.0009 / 0.257	0.002	0.002	2
Naphthalene	<0.005 / 10.3	0.03		0.2
Toluene	<0.001 / 9.34	0.75	1	5
Total Xylenes	<0.001 / 31.5	0.62	10	100

¹ Guidelines for Remediation of Leaks, Spills, and Releases

² State of New Mexico Soil Screening Levels

³ Risk Based Evaluation of Petroleum Releases

The concentrations in bold exceeded the Tier 1 screening evaluation and were evaluated for the Tier 1 Risk-Based Screening Level (RBSL) for each COC. Under the NMED Risk-Based Decision Making (RBDM) process, Tier 1 RBSLs are based on an assumed exposure in immediate proximity to the source. To determine the RBSL, the exposure factors of target risk, body weight, average timing, oral slope

factor, exposure frequency and duration, and water ingestion rate are taken into consideration. For each COC evaluated, these values are provided in the Input Parameter Summary attached as Appendix A. The RBSLs were calculated utilizing the RBCA Tool Kit for Chemical Release modeling program created by Groundwater Services, Inc. in accordance with ASTM PS-104 *Standard Provisional Guide for Risk-Based Corrective Action*. A table providing the applicable RBSL for complete exposure pathways is provided below. The complete tables of Groundwater and Soil RBSL Values are provided in Appendix B.

CHEMICAL OF CONCERN	GROUNDWATER REPRESENTATIVE CONCENTRATION (mg/L)	GROUNDWATER RBSL VALUES (mg/L)	SOIL REPRESENTATIVE CONCENTRATIONS (mg/kg)	SOIL RBSL VALUES (mg/kg)
Barium	4.78	7.2	857	1400
Benzene	<0.001	0.0099	3.51	0.032
Chromium	0.333	150	28.4	1.3E+9
Chromium VI	0.296	0.039	28.4	3.5
Ethylbenzene	<0.001	10	17.6	180
Manganese	0.426	2	628	4800
Naphthalene	<0.005	>31	10.3	>620
Toluene	<0.001	20	9.34	140

The concentrations in bold exceed the applicable Tier 1 RBSL. Benzene, Chromium VI and Manganese, along with fractionated TPH will be evaluated for Tier 2 site-specific target levels (SSTL) for human health and environmental risk in the subsequent sections.

3.0 TIER 2 RISK BASED EVALUATION

The following sections present the results of the risk-based assessment conducted for the Champion Technologies site. This risk assessment follows the approach outlined in ASTM's standard entitled *Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites* and New Mexico Environment Department risk-based decision making (RBDM) program. This risk assessment utilizes the data collected in the site investigations and remediation activities to evaluate the potential human health risk from exposure to the COC and to determine the SSTL for constituents that pose a potential risk.

3.1 Exposure Pathways

Exposure pathways through groundwater, soil, and air are identified to evaluate risks for both potential and actual receptors. A one-half mile radius receptor survey was completed by ETGI to assess potential receptors on and off site.

Potential onsite receptors of concern include:

- Construction workers via inhalation
- Site visitors inhalation
- Groundwater ingestion

Potential offsite receptors of concern include:

- Residents via inhalation or ingestion
- Water wells via groundwater

These receptors were evaluated for both existing and future conditions. The construction worker is potentially exposed to the highest risk from the source media through inhalation of vapors and particulates suspended in the air. Onsite visitors could potentially be exposed to vapors and particulates suspended in the air or groundwater ingestion. Residents living near the site could potentially be exposed through inhalation of vapors or ingestion of groundwater. An illustration of the Exposure Pathway Flowchart for all potential and actual receptors is provided as Appendix C of this report.

3.1.1 Chemicals-of-Concern

Ongoing site investigations and groundwater monitoring conducted at this site have provided a substantial quantity of soil and groundwater data to identify and delineate the COC that may present a risk to human health and environment. The compounds identified as the COC for this site are:

- Chromium
- Hexavalent Chromium
- Dissolved Chromium
- Manganese
- Benzene
- Total Petroleum Hydrocarbons (TPH)

3.1.2 Media of Concern

Soil Exposure

Exposure to the COC in the soils at the site can occur by dermal contact, ingestion, or inhalation of impacted surface or subsurface soils. Another potential exposure route is contamination in soils leaching into the groundwater.

Delineation of the affected soil media relevant to exposure pathways separates the soil into surface soil, which is the first five feet below ground surface (bgs), and subsurface soil which is all soil below five feet till the groundwater bearing zone. The surface soil is evaluated to develop the SSTLs for soil ingestion, inhalation, and dermal contact and soil leaching to groundwater pathway. For this site, all surface soils have been excavated for remediation. Therefore, this pathway is not complete

and will not be evaluated for potential risk. The subsurface soil is evaluated to develop the SSTL for soil volatilization to air and soil leaching to groundwater.

Groundwater Exposure

Exposure to the COC present in the groundwater at the site can occur through ingestion of drinking water or volatilization to air. Since there is no open excavations or exposure to groundwater at or near the vicinity of the site, the volatilization to air pathway is incomplete and will not be evaluated for potential risk.

Air Exposure

Exposure to volatiles from the soil and groundwater can occur through inhalation of residual hydrocarbons through dispersion and transport of these volatiles in the atmosphere.

3.2 Statistical Analysis of COC in Soil and Groundwater

The results of investigations and laboratory analyses indicate that Chromium, Chromium VI, Manganese, Benzene, and TPH concentrations in the subsurface soils and groundwater represented the compounds and media of concern, respectively, at the site. For these COC, the RBCA Tool Kit for Chemical Releases model was used for SSTL development. For TPH in soils, individual calculations for each exposure pathway were calculated to develop the applicable total TPH SSTL value. Subsurface Soil and Groundwater SSTL values established from the RBCA Tool Kit for Chemical Releases are provided in Appendix D.

For soils, all surface soils and some of the subsurface soils from zero to approximately eighteen feet were removed during remediation activities. The highest value from the cumulative data set for Chromium, Chromium VI, Manganese, Benzene, and TPH concentrations was used to develop on and offsite SSTLs for the site.

For groundwater, the maximum Chromium, Chromium VI, Manganese, Benzene, and TPH concentrations from the most contaminated monitor wells (MW-4, MW-6 and MW-13) were used to develop the on and offsite SSTLs. Groundwater samples from the 8/2/02 sampling event were analyzed for TPH 8015M Extended and further analyzed by fractionating the TPH into seven aliphatic boiling point ranges and six aromatic boiling point ranges of petroleum hydrocarbons. These hydrocarbon fractions are used to calculate the SSTLs for the total TPH mixture. Once the SSTL for the total TPH mixture is calculated, it is compared back to the representative TPH concentrations (8015M and 418.1 methods) from the affected media.

Each complete exposure pathway for each COC is discussed in the following sections.

3.2.1 Groundwater Ingestion

The maximum concentration for each COC in the groundwater was compared to each SSTL calculated for this site. No Benzene concentrations have been detected in the groundwater to date. For TPH, both 8015M Extended and a fractionated TPH was analyzed and indicated no detection above reporting limits of <3 mg/L. In the table below, the most stringent SSTL for groundwater ingestion were compared to each COC based on human health risks. All concentrations are in mg/L.

Chemical of Concern	Representative Concentration	Onsite SSTL	Offsite (360ft) SSTL
Chromium	0.333	15	50
Chromium VI	0.296	0.039	0.11
Dissolved Chromium	0.281	15	50
Manganese	0.426	2	6.7
Benzene	<0.001	0.0099	0.027
TPH (8015M Ext.)	<3	---	---

Based on the SSTLs established for the site, there is a Chromium VI human health risk for onsite ingestion of groundwater. The model also shows that there is a potential risk for future offsite migration of Chromium VI.

All other COC remain below the SSTL established for that constituent.

3.2.2 Soil Leaching to Groundwater Ingestion

Each COC maximum concentration selected from the complete set of data analyses was used to calculate the human health SSTL for soils leaching into the groundwater on and offsite. A summary of calculated SSTL is provided in the table below. All concentrations are in mg/kg.

Chemical of Concern	Representative Concentration	Onsite SSTL	Offsite (360ft) SSTL
Chromium	28.4	9.0E+10	3.0E+11
Chromium VI	28.4	70	190
Manganese	628	13000	44000
Benzene	3.51	0.36	0.98
TPH (8015M Ext.)	13360	Protective	Protective
TPH (418.1)	28000	Protective	Protective

The Chromium, Chromium VI, and Manganese concentrations remain below the SSTL for on and offsite.

The SSTL for Benzene on and offsite was exceeded in several locations in the soil that remains onsite. This means for subsurface soils that will not be excavated, there is a potential for Benzene in the soil to leach to groundwater on and offsite.

For TPH, using the fractionated aliphatic and aromatic boiling point ranges to develop the SSTL values, the risk-based target concentration is greater than the residual soil concentration for each boiling point range. This limits the model's ability to calculate an applicable total TPH SSTL value to compare to the TPH analytical data. The values calculated in the Calculation of SSTL Values for TPH worksheet (Appendix E) for the applicable SSTLs for each TPH boiling point range are the residual soil concentrations. If the residual soil concentrations are less than the risk-based target concentration, then the potential for mobile non-aqueous phase liquids (NAPL) is present if the maximum representative concentration onsite exceeds the residual soil concentration. This determination can be accomplished by calculating a Tier 2 residual soil saturation limit ($Soil_{Res}$) value and determining whether or not that concentration is exceeded, or by using field evidence to determine if mobile TPH NAPL is present. From the site investigations and remediation activities it is conclusive that no free phase hydrocarbons exist in the soil or groundwater. This restricts the capability of calculating the $Soil_{Res}$ but provides evidence that there is no mobile NAPL present on or offsite.

Since the modeling program does not calculate the total TPH SSTL value, the SSTL are determined by individual calculations. The Tier 1 soil-to-groundwater RBSL is calculated using the toxicity factors and the COC chemical/physical properties presented in the Chemical Data for Selected COCs in Appendix F. To establish the Tier 2 soil to groundwater SSTL for the total TPH, the hazard quotient (HQ) must be ≥ 1 and hazard index (HI) must be ≥ 10 . If the HQ ≥ 1 for each boiling point range and HI ≥ 10 then the leachate is protective for the groundwater because the solubility limits. The TPH cannot dissolve enough into the groundwater to exceed groundwater SSTL, regardless of the concentrations of the TPH in the soil. Calculations of the soil-to-groundwater total TPH SSTL value are provided in the table below.

Boiling Point Range	MF	Mf/MW	Tier 1 SSL (mg/kg)	x	MF/SSL (mg/kg) ⁻¹	SSL/MF (mg/kg)	HQ
>C ₆ -C ₈ Aliphatic	0.0313	3.1E-04	6.3E+02	6.0E-02	4.97E-05	2.01E+04	6.3E-03
>C ₈ -C ₁₀ Aliphatic	0.0568	4.4E-04	5.4E+03	8.4E-02	1.05E-05	9.51E+04	4.7E-04
>C ₁₀ -C ₁₂ Aliphatic	0.2247	1.4E-03	3.8E+04	2.7E-01	5.91E-06	1.69E+05	1.2E-04
>C ₁₂ -C ₁₆ Aliphatic	0.3079	1.5E-03	7.4E+05	3.0E-01	4.16E-07	2.40E+06	3.1E-06
>C ₁₆ -C ₂₁ Aliphatic	0.1802	6.7E-04	1.0E+06	1.3E-01	1.80E-07	5.55E+06	4.1E-07
>C ₂₁ -C ₃₅ Aliphatic	0.1560	5.9E-04	1.0E+06	1.1E-01	1.56E-07	6.41E+06	3.6E-07
>C ₇ -C ₈ Aromatic	0.0047	5.1E-05	3.0E+01	9.8E-03	1.57E-04	6.38E+03	6.8E-02
>C ₈ -C ₁₀ Aromatic	0.0004	3.3E-06	9.7E+01	6.4E-04	4.12E-06	2.43E+05	1.4E-03
>C ₁₀ -C ₁₂ Aromatic	0.0021	1.6E-05	1.5E+02	3.1E-03	1.40E-05	7.14E+04	2.7E-03
>C ₁₂ -C ₁₆ Aromatic	0.0076	5.0E-05	3.0E+02	9.7E-03	2.53E-05	3.95E+04	1.9E-03
>C ₁₆ -C ₂₁ Aromatic	0.0110	5.8E-05	7.0E+02	1.1E-02	1.57E-05	6.36E+04	3.3E-04
>C ₂₁ -C ₃₅ Aromatic	0.0132	5.5E-05	5.5E+03	1.1E-02	2.40E-06	4.17E+05	3.2E-06
SUM =		5.2E-3			MIN =	2.01E+04	
				SUM =	2.85E-4	HI =	8.1E-02

Mass Fraction (MF) = boiling point range concentration/Total TPH concentration
 Molecular Weight (MW) = physical property of individual boiling point range (Appendix F)
 Soil Screening Level (SSL) = soil-to-groundwater Tier 1 values for each boiling point range
 Mole fraction (x_i) = (MF/MW)/SUM (MF/MW)
 Hazard Quotient (HQ) = $x \cdot S / (K_{sw} \cdot SSTL)$
 Hazard Index (HI) = SUM (HQ_a + HQ_b + ...)
 Solubility (S) = physical property of individual boiling point range (Appendix F)
 Soil-leachate partition factor (K_{sw}) = $\rho_b / \theta_w (K_d \cdot \rho_b) + (H' \cdot \theta_a)$
 Soil bulk density (ρ_b) = 1.85 g/cm³, site-specific value (Appendix A)
 Volumetric water content (θ_w) = 0.16, site-specific value (Appendix A)
 Volumetric air content (θ_a) = 0.15, site-specific value (Appendix A)
 Henry's Law Constant (H') = physical property of individual boiling point range (Appendix F)
 Soil-water partition coefficient (K_d) = $K_{oc} \cdot foc$
 Soil organic carbon-water partition coefficient (K_{oc}) = physical property of individual boiling point range (Appendix F)
 Fraction organic carbon (foc) = 0.002, site-specific value (Appendix A)

The maximum HQ is ≤ 1 and the HI ≤ 10 for the TPH, therefore the TPH is protective of the underlying groundwater and the soil-to-groundwater SSTL does not need to be calculated for the total TPH.

3.2.3 Soil Volatilization to Outdoor Air Inhalation

The SSTLs were developed for exposure of impacted soil particulates to the ambient air onsite. A summary of SSTLs established for Chromium, Chromium VI, Manganese, Benzene, and TPH onsite is provided in the table below. All concentrations are in mg/kg.

Chemical of Concern	Representative Concentration	Onsite SSTL	Offsite (360ft) SSTL
Chromium	28.4	Not calculated	Not calculated
Chromium VI	28.4	>2.3E+6	>2.3E+6
Manganese	628	>47000	>47000
Benzene	3.51	3	6.6
TPH (8015M Ext.)	13360	49000	49000
TPH (418.1)	28000	49000	49000

The on and offsite SSTLs for Chromium is not calculated in the risk model because chromium does not have a potential to volatilize. For Chromium VI and Manganese, the SSTL values are greater than the residual soil concentration of 2.3E+6 mg/kg for Chromium VI and 47,000 mg/kg for Manganese. In this case, if the representative concentration exceeds the residual soil concentration, it is required to verify that no mobile NAPL is present. The maximum concentration for Chromium VI or Manganese does not exceed the residual soil concentration limit for soil volatilizing to outdoor air.

For Benzene, the maximum concentration of 3.51 mg/kg exceeds the onsite SSTL of 3 mg/kg. This indicates that there is a potential for inhalation of Benzene constituents in areas onsite that are over the SSTL.

Similar to the soil-to-groundwater SSTLs, the modeling program was not able to calculate the total TPH SSTL for soil volatilization to outdoor air because the risk-based target concentration is greater than the constituent residual saturation limit. To determine the soil volatilization to outdoor air Tier 2 SSTLs for total TPH the mass fraction, and the ratios of mass fraction/SSTL and SSTL/mass fraction must first be calculated. The results are provided in the table below.

Boiling Point Range	MF	Tier 1 SSTL (mg/kg)	MF/SSTL (mg/kg) ⁻¹	SSTL/MF (mg/kg)	HQ
>C ₆ -C ₈ Aliphatic	0.0313	2.2E+03	1.4E-05	7.1E+04	7.0E-01
>C ₈ -C ₁₀ Aliphatic	0.0568	1.1E+04	5.1E-06	1.9E+05	2.5E-01
>C ₁₀ -C ₁₂ Aliphatic	0.2247	1.1E+04	2.0E-05	4.9E+04	1.0E+00
>C ₁₂ -C ₁₆ Aliphatic	0.3079	1.7E+04	1.8E-05	5.6E+04	8.7E-01
>C ₁₆ -C ₂₁ Aliphatic	0.1802	0.0E+00	*	*	*
>C ₂₁ -C ₃₅ Aliphatic	0.1560	0.0E+00	*	*	*
>C ₇ -C ₈ Aromatic	0.0047	1.1E+04	4.2E-07	2.4E+06	2.1E-02
>C ₈ -C ₁₀ Aromatic	0.0004	2.2E+03	1.8E-07	5.5E+06	8.9E-03
>C ₁₀ -C ₁₂ Aromatic	0.0021	4.8E+03	4.4E-07	2.3E+06	2.2E-02
>C ₁₂ -C ₁₆ Aromatic	0.0076	1.1E+04	6.9E-07	1.4E+06	3.4E-02
>C ₁₆ -C ₂₁ Aromatic	0.0110	0.0E+00	*	*	*
>C ₂₁ -C ₃₅ Aromatic	0.0132	0.0E+00	*	*	*
		SUM =	5.9E-05	4.9E+04	
				HI =	2.9E+00

Mass Fraction (MF) = boiling point range concentration/Total TPH concentration

Site Specific Target Limits (SSTL) = soil volatilization to outdoor air Tier 1 values for each boiling point range

Hazard Quotient (HQ) = $x * S / (K_{sw} * SSTL)$

Hazard Index (HI) = SUM (HQ_a + HQ_b + ...)

To determine the total TPH SSTL value for soil volatilization to air calculate using the formulas below and set the total TPH SSTL value as the lesser of the two.

$$\text{Total TPH SSTL} = \text{HI} / \text{SUM (MF/SSTL)} = 10 / 5.9\text{E-}5 = 1.69\text{E+}5$$

or

$$\text{Total TPH SSTL} = \text{MIN (SSTL/MF)} = 4.9\text{E+}4$$

The lesser of the two is 49,000 mg/kg, therefore that is the establish SSTL for subsurface soil.

4.0 LIMITATIONS AND ASSUMPTIONS

The risk assessment was completed with the data collected by ETGI from July 2002 to February 2003. This data was derived using several different analytical methods. For TPH, methods 418.1, EPA Method 8015 Modified and 8015 Extended were utilized. In July and August of 2002 soil and groundwater samples were taken for assessment of TPH by 8015M Aliphatic and Aromatic Method for development of SSTL. These results were used for both the RBCA Tool Kit for Chemical Releases modeling program and individual calculations of SSTL. The TPH SSTL were compared to the TPH 8015M Extended and 418.1 data provided in the analytical tables.

The RBCA Tool Kit for Chemical Releases modeling program does not calculate a total TPH SSTL value if the risk-based target concentration is greater than the residual saturation value for soil or solubility for groundwater. In this case, if the residual saturation value or solubility is lower than the maximum concentration for the site, then verification that no mobile NAPL present at the site is necessary.

The subsurface soils SSTL were evaluated in comparison to historical TPH data using all analytical TPH methods (418.1, 8015M, and 8015M Extended). The 418.1 analytical method includes all hydrocarbon ranging from C₁₀ to C₄₅. This includes larger chained hydrocarbons that have a lower solubility and therefore are less likely to leach to groundwater. TPH data analyzed by method 418.1 can be compared to the SSTL however, it must be understood that because of the large range of hydrocarbons, there is a possibility of overstating the actual risk.

5.0 CONCLUSIONS

ETGI has completed extensive investigations and remediation to address the release of contaminants into the soil and groundwater. A risk assessment utilizing site-specific parameters was completed using the RBCA Tool Kit for Chemical Releases and individual RBCA calculations. Based on the results of site investigations, remedial actions completed to date, and this risk assessment, ETGI presents the following conclusions:

Soil Assessment

The extent of soil contamination both horizontally and vertically has been defined by the excavations and drilling of several soil borings. Residual COC in the soil are present in the subsurface soil only. The total Chromium, Chromium VI and dissolved Chromium, and Manganese concentrations in the soil do not pose a human health risk for soils leaching to groundwater or volatilizing to outdoor air as illustrated in Sections 3.2.2 and 3.2.3. The TPH COCs in the soils are at concentrations that are protective soils leaching to groundwater and volatilization to outdoor air as illustrated in Sections 3.2.2 and 3.2.3.

There is a potential risk for the Benzene concentrations over the onsite SSTL of 0.36 mg/kg to leach from the subsurface soils to the groundwater. All Benzene concentrations over the offsite SSTL of 0.98 mg/kg also have a potential to migrate to offsite groundwater. There are several locations that exceed the on and offsite SSTL. Monitor wells surrounding these locations onsite have been sampled periodically and have shown no detection of Benzene in the groundwater to date.

A potential for inhalation of Benzene volatiles from the soil onsite is possible in one soil boring location (13-1820-A) that exceeds the onsite SSTL of 3 mg/kg. Remediation efforts are being taken to prevent volatilization of subsurface soils into the atmosphere.

Groundwater Assessment

The delineation of groundwater impact has been completed at this site with the installation of 16 monitor wells. ETGI has continued to monitor the groundwater from July 2002 to present. In completing this risk assessment, the only COC to exceed the established SSTL is Chromium VI as shown in Section 3.2.1. The onsite and offsite SSTLs for Chromium VI are 0.039 mg/L and 0.11 mg/L, respectively. The groundwater was sampled once in November of 2002 for Chromium VI and three monitor wells (MW-4, MW-6, and MW-13) exceeded the onsite SSTLs. There is a potential for future offsite migration of Chromium VI from monitor well MW-4. Ongoing monitoring of Chromium VI in this well and down gradient wells will provide sufficient evidence of any migration to actual receptors.

For TPH concentrations onsite, one sampling event indicated a TPH 418.1 result of 2.35 mg/L in monitor wells MW-6. This result is less the reporting limit for the 8015M Extended TPH method and the aliphatics and aromatics could not be determined. The TPH for monitor wells MW-4 and MW-6 were fractionated with a <3 mg/L 8015M Ext. result and conclusively showed not aliphatics and aromatics.

APPENDIX A

Input Parameter Summary

RBCA SITE ASSESSMENT

Input Parameter Summary

Site Name: Champion Technologies, Inc.
Site Location: Hobbs, New Mexico

Completed By: Matina Smith
Date Completed: 15-Mar-03

Job ID: CH2100

1 OF 1

Exposure Parameters		Residential		Commercial/Industrial	
		Adult	(1-6yrs)	Chronic	Construc.
AT _c	Averaging time for carcinogens (yr)	70			
AT _n	Averaging time for non-carcinogens (yr)	30		25	1
BW	Body weight (kg)	70	15	70	
ED	Exposure duration (yr)	30	6	25	1
t	Averaging time for vapor flux (yr)	30		25	1
EF	Exposure frequency (days/yr)	350		250	180
EF _D	Exposure frequency for dermal exposure	350		250	
IR _w	Ingestion rate of water (L/day)	2		1	
IR _s	Ingestion rate of soil (mg/day)	100	200	50	100
SA	Skin surface area (dermal) (cm ²)	5800		5800	5800
M	Soil to skin adherence factor	1			
ET _{swim}	Swimming exposure time (hr/event)	3			
EV _{swim}	Swimming event frequency (events/yr)	12	12		
IR _{swim}	Water ingestion while swimming (L/hr)	0.05	0.5		
SA _{swim}	Skin surface area for swimming (cm ²)	23000	8100		
IR _{fish}	Ingestion rate of fish (kg/yr)	0.025			
F _{fish}	Contaminated fish fraction (unitless)	1			

Complete Exposure Pathways and Receptors	On-site	Off-site 1	Off-site 2
Groundwater:			
Groundwater Ingestion	Commercial	Residential	None
Soil Leaching to Groundwater Ingestion	Commercial	Residential	None
Applicable Surface Water Exposure Routes:			
Swimming			NA
Fish Consumption			NA
Aquatic Life Protection			NA
Soil:			
Direct Ingestion and Dermal Contact	None		
Outdoor Air:			
Particulates from Surface Soils	None	None	None
Volatilization from Soils	Commercial	Residential	None
Volatilization from Groundwater	None	None	None
Indoor Air:			
Volatilization from Subsurface Soils	None	NA	NA
Volatilization from Groundwater	None	NA	NA

Receptor Distance from Source Media	On-site	Off-site 1	Off-site 2	(Units)
Groundwater receptor	0	360	NA	(ft)
Soil leaching to groundwater receptor	0	360	NA	(ft)
Outdoor air inhalation receptor	0	360	NA	(ft)

Target Health Risk Values	Individual	Cumulative
TR _{ab} Target Risk (class A&B carcinogens)	1.0E-6	1.0E-5
TR _c Target Risk (class C carcinogens)	1.0E-5	
THQ Target Hazard Quotient (non-carcinogenic risk)	1.0E+0	1.0E+0

Modeling Options	
RBCA tier	Tier 2
Outdoor air volatilization model	Surface model only
Indoor air volatilization model	NA
Soil leaching model	ASTM leaching model
Use soil attenuation model (SAM) for leachate?	Yes
Air dilution factor	3-D Gaussian dispersion
Groundwater dilution-attenuation factor	Domenico model

NOTE: NA = Not applicable

Surface Parameters	General	Construction	(Units)
A	Source zone area	1.7E+4	NA
W	Length of source-zone area parallel to wind	1.2E+2	NA
W _{gw}	Length of source-zone area parallel to GW flow	1.2E+2	(ft)
U _{air}	Ambient air velocity in mixing zone	7.4E+0	(ft/s)
z _{air}	Air mixing zone height	6.8E+0	(ft)
P _a	Areal particulate emission rate	NA	(g/cm ² /s)
L _{sa}	Thickness of affected surface soils	NA	(ft)

Surface Soil Column Parameters	Value	(Units)
h _{cap}	Capillary zone thickness	NA
h _v	Vadose zone thickness	NA
ρ _s	Soil bulk density	1.9E+0
f _{oc}	Fraction organic carbon	3.0E-3
ν _t	Soil total porosity	3.1E-1
K _{vs}	Vertical hydraulic conductivity	8.7E-6
k _v	Vapor permeability	1.1E-14
L _{gw}	Depth to groundwater	5.5E+1
L _a	Depth to top of affected soils	1.8E+1
L _{base}	Depth to base of affected soils	5.5E+1
L _{soil}	Thickness of affected soils	3.7E+1
pH	Soil/groundwater pH	8.1E+0
ν _w	Volumetric water content	0.16
ν _a	Volumetric air content	0.15

Building Parameters	Residential	Commercial	(Units)
L _b	Building volume/area ratio	NA	(ft)
A _b	Foundation area	NA	(ft ²)
X _{cm}	Foundation perimeter	NA	(ft)
ER	Building air exchange rate	NA	(1/s)
L _{cm}	Foundation thickness	NA	(ft)
Z _{cm}	Depth to bottom of foundation slab	NA	(ft)
η	Foundation crack fraction	NA	(-)
dP	Indoor/outdoor differential pressure	NA	(g/cm/s ²)
U _a	Convective air flow through slab	NA	(ft ³ /s)

Groundwater Parameters	Value	(Units)
Q _{gw}	Groundwater mixing zone depth	1.0E+1
I _f	Net groundwater infiltration rate	1.9E-1
U _{gw}	Groundwater Darcy velocity	2.4E-5
V _{gw}	Groundwater seepage velocity	9.5E-5
K _s	Saturated hydraulic conductivity	7.9E-3
i	Groundwater gradient	3.0E-3
S _w	Width of groundwater source zone	1.2E+2
z _d	Depth of groundwater source zone	1.0E+1
ν _{eff}	Effective porosity in water-bearing unit	2.5E-1
f _{oc-wat}	Fraction organic carbon in water-bearing unit	3.0E-3
pH _{wat}	Groundwater pH	7.4E+0
	Biodegradation considered?	No

Transport Parameters	Off-site 1	Off-site 2	Off-site 1	Off-site 2	(Units)
Lateral Groundwater Transport					
α _x	Longitudinal dispersivity	3.6E+1	NA	3.6E+1	(ft)
α _y	Transverse dispersivity	1.2E+1	NA	1.2E+1	(ft)
α _z	Vertical dispersivity	1.8E+0	NA	1.8E+0	(ft)
Lateral Outdoor Air Transport					
σ _y	Transverse dispersion coefficient	3.8E+1	NA	NA	(ft)
σ _z	Vertical dispersion coefficient	2.5E+1	NA	NA	(ft)
ADF	Air dispersion factor	3.3E+0	NA	NA	(-)

Surface Water Parameters	Off-site 2	(Units)
Q _{sw}	Surface water flowrate	NA
W _{pl}	Width of GW plume at SW discharge	NA
ν _{pl}	Thickness of GW plume at SW discharge	NA
U _{sw}	Groundwater-to-surface water dilution factor	NA

APPENDIX B

Groundwater and Soil RBSL Values

RBCA SITE ASSESSMENT

Site Name: Champion Technologies (Tier 1 Screen)

Completed By: MVS

Job ID: CH2100

Site Location: Hobbs, New Mexico

Date Completed: 30-Mar-03

1 OF 1

GROUNDWATER RBSL VALUES

Target Risk (Class A & B) 1.0E-6

Target Risk (Class C) 1.0E-5

Target Hazard Quotient 1.0E+0

RBSL Results For Complete Exposure Pathways ("X" if Complete)

CONSTITUENTS OF CONCERN		Representative Concentration (mg/L)	X	Groundwater Ingestion			GW Vol. to Indoor Air	Groundwater Volatilization to Outdoor Air			Applicable RBSL	RBSL Exceeded ?	Required CRF
				On-site (0 cm)	NA	NA	On-site (0 cm)	On-site (0 cm)	NA	NA	(mg/L)	"■" if yes	Only if "yes" left
				Commercial	NA	NA	None	None	NA	NA			
CAS No.	Name												
7440-39-3	Barium	4.8E+0		7.2E+0	NA	NA	NA	NA	NA	NA	7.2E+0	☐	<1
71-43-2	Benzene	<0.001		9.9E-3	NA	NA	NA	NA	NA	NA	9.9E-3	☐	NA
16065-83-1	Chromium (III)	3.3E-1		1.5E+2	NA	NA	NA	NA	NA	NA	1.5E+2	☐	<1
18540-29-9	Chromium (VI)	3.0E-1		3.9E-2	NA	NA	NA	NA	NA	NA	3.9E-2	☒	7.6E+0
100-41-4	Ethylbenzene	<0.001		1.0E+1	NA	NA	NA	NA	NA	NA	1.0E+1	☐	NA
7439-96-5	Manganese	4.3E-1		2.0E+0	NA	NA	NA	NA	NA	NA	2.0E+0	☐	<1
91-20-3	Naphthalene	<0.005		>3.1E+1	NA	NA	NA	NA	NA	NA	>3.1E+1	☐	NA
108-88-3	Toluene	<0.001		2.0E+1	NA	NA	NA	NA	NA	NA	2.0E+1	☐	NA

">" indicates risk-based target concentration greater than constituent solubility value. NA = Not applicable. NC = Not calculated.

RBCA SITE ASSESSMENT

Site Name: Champion Technologies (Tier 1 Screen)

Completed By: MVS

Job ID: CH2100

Site Location: Hobbs, New Mexico

Date Completed: 30-Mar-03

1 OF 1

SOIL (0 - 300 cm) RBSL VALUES

Target Risk (Class A & B) 1.0E-6

Target Risk (Class C) 1.0E-5

Target Hazard Quotient 1.0E+0

RBSL Results For Complete Exposure Pathways ("X" if Complete)

CONSTITUENTS OF CONCERN			Representative Concentration	X	Soil Leaching to Groundwater Ingestion				Soil Vol. to Indoor Air	X	Soil Volatilization to Outdoor Air				Surface Soil Inhalation, Ingestion, Dermal Contact		Applicable RBSL	RBSL Exceeded ?	Required CRF
				On-site (0 cm)	NA	NA	On-site (0 cm)	On-site (0 cm)		NA	NA	On-site (0 cm)		None	Construction Worker				
CAS No.	Name	(mg/kg)	Commercial	NA	NA	None	Commercial	Construction Worker	NA	NA	None	Construction Worker	(mg/kg)	"■" if yes	Only if "yes" left				
7440-39-3	Barium	8.6E+2	1.4E+3	NA	NA	NA	>1.5E+7	NA	NA	NA	NA	NA	1.4E+3	☐	<1				
71-43-2	Benzene	3.5E+0	3.2E-2	NA	NA	NA	7.6E+0	NA	NA	NA	NA	NA	3.2E-2	☒	1.1E+2				
16065-83-1	Chromium (III)	2.8E+1	1.3E+9	NA	NA	NA	NC	NA	NA	NA	NA	NA	1.3E+9	☐	<1				
18540-29-9	Chromium (VI)	2.8E+1	3.5E+0	NA	NA	NA	>3.2E+6	NA	NA	NA	NA	NA	3.5E+0	☒	8.0E+0				
100-41-4	Ethylbenzene	1.8E+1	1.8E+2	NA	NA	NA	>6.3E+2	NA	NA	NA	NA	NA	1.8E+2	☐	<1				
7439-96-5	Manganese	6.3E+2	4.8E+2	NA	NA	NA	>4.7E+4	NA	NA	NA	NA	NA	4.8E+2	☒	1.3E+0				
91-20-3	Naphthalene	1.0E+1	>6.2E+2	NA	NA	NA	>6.2E+2	NA	NA	NA	NA	NA	>6.2E+2	☐	NA				
108-88-3	Toluene	9.3E+0	1.4E+2	NA	NA	NA	>7.5E+2	NA	NA	NA	NA	NA	1.4E+2	☐	<1				

">" indicates risk-based target concentration greater than constituent residual saturation value. NA = Not applicable. NC = Not calculated.

APPENDIX C
Exposure Pathway Flowchart

Exposure Pathway Flowchart

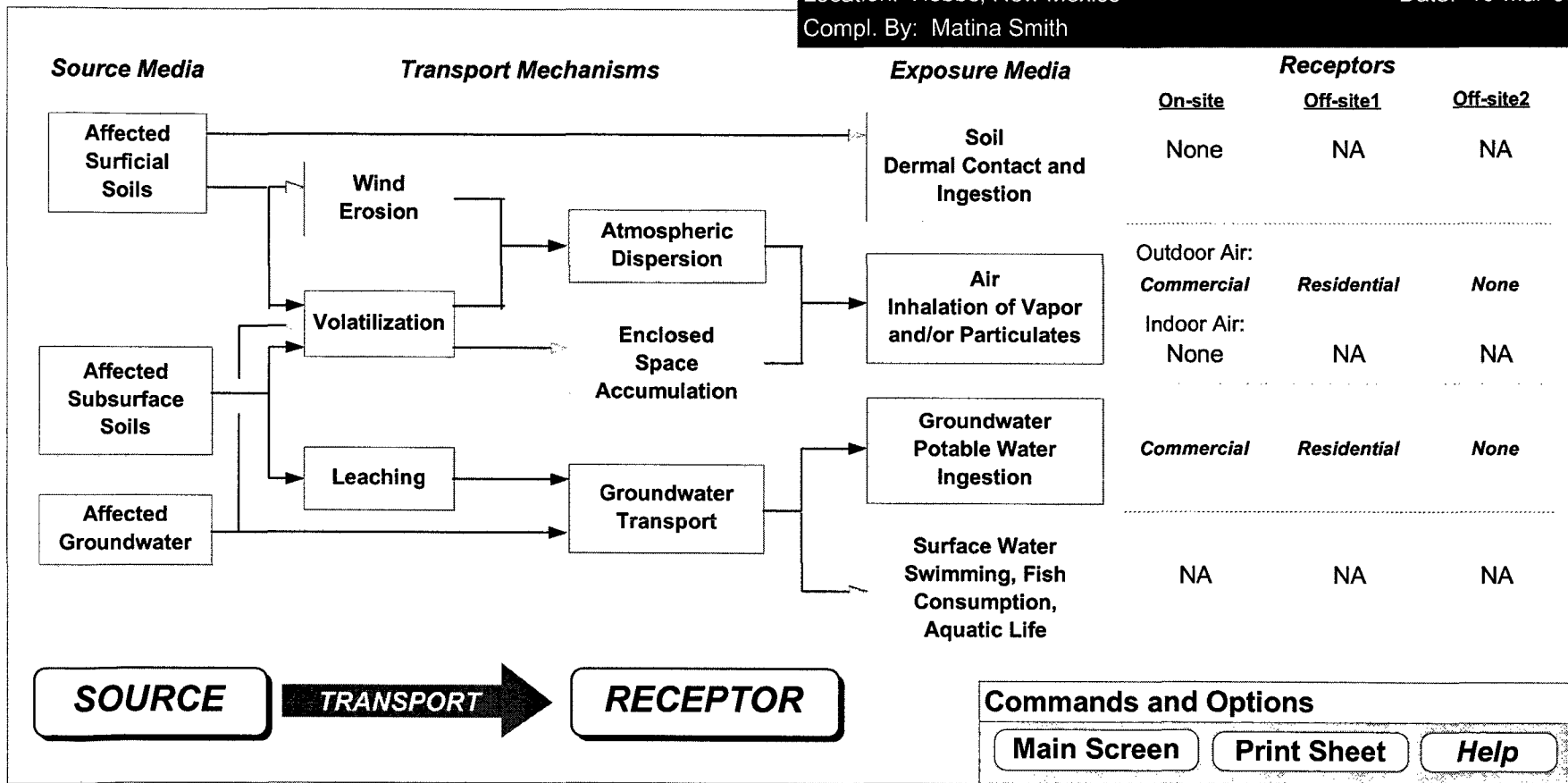
Site Name: Champion Technologies, Inc.

Job ID: CH2100

Location: Hobbs, New Mexico

Date: 15-Mar-03

Compl. By: Matina Smith



APPENDIX D

Groundwater and Soil SSTL Values

RBCA SITE ASSESSMENT

Site Name: Champion Technologies, Inc.

Completed By: Matina Smith

Job ID: CH2100

Site Location: Hobbs, New Mexico

Date Completed: 15-Mar-03

1 OF 1

GROUNDWATER SSTL VALUES

Target Risk (Class A & B) 1.0E-6

Target Risk (Class C) 1.0E-5

Target Hazard Quotient 1.0E+0

Groundwater DAF Option: Domenico - No Decay
(One-directional vert. dispersion)

SSTL Results For Complete Exposure Pathways ("X" if Complete)

CONSTITUENTS OF CONCERN			X	Groundwater Ingestion			GW Vol. to Indoor Air	Groundwater Volatilization to Outdoor Air			Applicable SSTL	SSTL Exceeded ?	Required CRF
			Representative Concentration (mg/L)	On-site (0 ft)	Off-site 1 (360 ft)	Off-site 2 (0 ft)	On-site (0 ft)	On-site (0 ft)	Off-site 1 (360 ft)	Off-site 2 (0 ft)	(mg/L)	"■" if yes	Only if "yes" left
				Commercial	Residential	None	None	None	None	None			
16065-83-1	Chromium (III)	3.3E-1		1.5E+2	5.0E+2	NA	NA	NA	NA	NA	1.5E+2	☐	<1
18540-29-9	Chromium (VI)	3.0E-1		3.9E-2	1.1E-1	NA	NA	NA	NA	NA	3.9E-2	☒	7.6E+0
0-00-0	TPH - Aliph >C06-C08	0.0E+0		>5.4E+0	>5.4E+0	NA	NA	NA	NA	NA	>5.4E+0	☐	NA
0-00-0	TPH - Aliph >C08-C10	0.0E+0		>4.3E-1	>4.3E-1	NA	NA	NA	NA	NA	>4.3E-1	☐	NA
0-00-0	TPH - Aliph >C10-C12	0.0E+0		>3.4E-2	>3.4E-2	NA	NA	NA	NA	NA	>3.4E-2	☐	NA
0-00-0	TPH - Aliph >C12-C16	0.0E+0		>7.6E-4	>7.6E-4	NA	NA	NA	NA	NA	>7.6E-4	☐	NA
0-00-0	TPH - Aliph >C16-C21	0.0E+0		>2.5E-6	>2.5E-6	NA	NA	NA	NA	NA	>2.5E-6	☐	NA
0-00-0	TPH - Aliph >C21-C34	0.0E+0		>2.5E-6	>2.5E-6	NA	NA	NA	NA	NA	>2.5E-6	☐	NA
0-00-0	TPH - Arom >C07-C08	0.0E+0		2.0E+1	6.7E+1	NA	NA	NA	NA	NA	2.0E+1	☐	<1
0-00-0	TPH - Arom >C08-C10	0.0E+0		4.1E+0	1.3E+1	NA	NA	NA	NA	NA	4.1E+0	☐	<1
0-00-0	TPH - Arom >C10-C12	0.0E+0		4.1E+0	1.3E+1	NA	NA	NA	NA	NA	4.1E+0	☐	<1
0-00-0	TPH - Arom >C12-C16	0.0E+0		4.1E+0	>5.8E+0	NA	NA	NA	NA	NA	4.1E+0	☐	<1
0-00-0	TPH - Arom >C16-C21	0.0E+0		>6.5E-1	>6.5E-1	NA	NA	NA	NA	NA	>6.5E-1	☐	NA
0-00-0	TPH - Arom >C21-C35	0.0E+0		>6.6E-3	>6.6E-3	NA	NA	NA	NA	NA	>6.6E-3	☐	NA
71-43-2	Benzene	0.0E+0		9.9E-3	2.7E-2	NA	NA	NA	NA	NA	9.9E-3	☐	<1
7439-96-5	Manganese	4.3E-1		2.0E+0	6.7E+0	NA	NA	NA	NA	NA	2.0E+0	☐	<1

>" indicates risk-based target concentration greater than constituent solubility value.

NA = Not applicable.

NC = Not calculated.

RBCA SITE ASSESSMENT

Site Name: Champion Technologies, Inc.

Completed By: Matina Smith

Job ID: CH2100

Site Location: Hobbs, New Mexico

Date Completed: 15-Mar-03

1 OF 1

SOIL (18 - 55 ft) SSTL VALUES

Target Risk (Class A & B) 1.0E-6

Target Risk (Class C) 1.0E-5

Target Hazard Quotient 1.0E+0

Groundwater DAF Option: Domenico - No Decay

(One-directional vert. dispersion)

SSTL Results For Complete Exposure Pathways ("X" If Complete)

CONSTITUENTS OF CONCERN			Representative Concentration	X	Soil Leaching to Groundwater Ingestion			Soil Vol. to Indoor Air	X	Soil Volatilization to Outdoor Air				Surface Soil Inhalation, Ingestion, Dermal Contact		Applicable SSTL	SSTL Exceeded ?	Required CRF
				On-site (0 ft)	Off-site 1 (360 ft)	Off-site 2 (0 ft)	On-site (0 ft)	On-site (0 ft)		Off-site 1 (360 ft)	Off-site 2 (0 ft)	On-site (0 ft)						
								Commercial	Construction Worker			Commercial	Construction Worker	None	Construction Worker			
CAS No.	Name	(mg/kg)	Commercial	Residential	None	None	Commercial	Construction Worker	Residential	None	None	Construction Worker	(mg/kg)	■ if yes	Only if "yes" left			
16065-83-1	Chromium (III)	2.8E+1	9.0E+10	3.0E+11	NA	NA	NC	NA	NC	NA	NA	NA	9.0E+10	☐	<1			
18540-29-9	Chromium (VI)	2.8E+1	7.0E+1	1.9E+2	NA	NA	>2.3E+6	NA	>2.3E+6	NA	NA	NA	7.0E+1	☐	<1			
0-00-0	TPH - Aliph >C06-C08	2.9E+2	>8.6E+1	>8.6E+1	NA	NA	>8.6E+1	NA	>8.6E+1	NA	NA	NA	>8.6E+1	☐	NA			
0-00-0	TPH - Aliph >C08-C10	5.3E+2	>4.4E+1	>4.4E+1	NA	NA	>4.4E+1	NA	>4.4E+1	NA	NA	NA	>4.4E+1	☐	NA			
0-00-0	TPH - Aliph >C10-C12	2.1E+3	>2.6E+1	>2.6E+1	NA	NA	>2.6E+1	NA	>2.6E+1	NA	NA	NA	>2.6E+1	☐	NA			
0-00-0	TPH - Aliph >C12-C16	2.9E+3	>1.1E+1	>1.1E+1	NA	NA	>1.1E+1	NA	>1.1E+1	NA	NA	NA	>1.1E+1	☐	NA			
0-00-0	TPH - Aliph >C16-C21	1.7E+3	>4.7E+0	>4.7E+0	NA	NA	NC	NA	NC	NA	NA	NA	>4.7E+0	☐	NA			
0-00-0	TPH - Aliph >C21-C34	1.5E+3	>4.7E+0	>4.7E+0	NA	NA	NC	NA	NC	NA	NA	NA	>4.7E+0	☐	NA			
0-00-0	TPH - Arom >C07-C08	4.4E+1	>4.5E+2	>4.5E+2	NA	NA	>4.5E+2	NA	>4.5E+2	NA	NA	NA	>4.5E+2	☐	NA			
0-00-0	TPH - Arom >C08-C10	3.7E+0	>3.2E+2	>3.2E+2	NA	NA	>3.2E+2	NA	>3.2E+2	NA	NA	NA	>3.2E+2	☐	NA			
0-00-0	TPH - Arom >C10-C12	2.0E+1	>1.9E+2	>1.9E+2	NA	NA	>1.9E+2	NA	>1.9E+2	NA	NA	NA	>1.9E+2	☐	NA			
0-00-0	TPH - Arom >C12-C16	7.0E+1	>8.8E+1	>8.8E+1	NA	NA	>8.8E+1	NA	>8.8E+1	NA	NA	NA	>8.8E+1	☐	NA			
0-00-0	TPH - Arom >C16-C21	1.0E+2	>3.1E+1	>3.1E+1	NA	NA	NC	NA	NC	NA	NA	NA	>3.1E+1	☐	NA			
0-00-0	TPH - Arom >C21-C35	1.2E+2	>2.5E+0	>2.5E+0	NA	NA	NC	NA	NC	NA	NA	NA	>2.5E+0	☐	NA			
71-43-2	Benzene	3.5E+0	3.6E-1	9.8E-1	NA	NA	3.0E+0	NA	6.6E+0	NA	NA	NA	3.6E-1	☒	9.7E+0			
7439-96-5	Manganese	6.3E+2	1.3E+4	4.4E+4	NA	NA	>4.7E+4	NA	>4.7E+4	NA	NA	NA	1.3E+4	☐	<1			

">" indicates risk-based target concentration greater than constituent residual saturation value. NA = Not applicable. NC = Not calculated.

APPENDIX E

Calculation of SSTL Values

RBCA SITE ASSESSMENT

TPH Criteria SSTL Worksheet

Site Name: Champion Technologies, Inc.

Completed By: Matina Smith

Job ID: CH2100

Site Location: Hobbs, New Mexico

Date Completed: 15-Mar-03

1 OF 1

CALCULATION OF SSTL VALUES FOR TPH

CONSTITUENTS OF CONCERN		Mass Fractions		Representative Concentrations		Calculated Concentration Limits		Applicable SSTL Values	
		Soil	Groundwater	Soil	Groundwater	Residual Soil Concentration	Solubility	Soils (18 - 55 ft)	Groundwater
CAS No.	Name	(-)	(-)	(mg/kg)	(mg/L)	(mg/kg)	(mg/L)	(mg/kg)	(mg/L)
0-00-0	TPH - Aliph >C06-C08	3.1E-2	0.0E+0	2.9E+2	0.0E+0	8.6E+1	5.4E+0	>8.6E+1	>5.4E+0
0-00-0	TPH - Aliph >C08-C10	5.7E-2	0.0E+0	5.3E+2	0.0E+0	4.4E+1	4.3E-1	>4.4E+1	>4.3E-1
0-00-0	TPH - Aliph >C10-C12	2.2E-1	0.0E+0	2.1E+3	0.0E+0	2.6E+1	3.4E-2	>2.6E+1	>3.4E-2
0-00-0	TPH - Aliph >C12-C16	3.1E-1	0.0E+0	2.9E+3	0.0E+0	1.1E+1	7.6E-4	>1.1E+1	>7.6E-4
0-00-0	TPH - Aliph >C16-C21	1.8E-1	0.0E+0	1.7E+3	0.0E+0	4.7E+0	2.5E-6	>4.7E+0	>2.5E-6
0-00-0	TPH - Aliph >C21-C34	1.6E-1	0.0E+0	1.5E+3	0.0E+0	4.7E+0	2.5E-6	>4.7E+0	>2.5E-6
0-00-0	TPH - Arom >C07-C08	4.7E-3	0.0E+0	4.4E+1	0.0E+0	4.5E+2	5.2E+2	>4.5E+2	2.0E+1
0-00-0	TPH - Arom >C08-C10	4.0E-4	0.0E+0	3.7E+0	0.0E+0	3.2E+2	6.5E+1	>3.2E+2	4.1E+0
0-00-0	TPH - Arom >C10-C12	2.1E-3	0.0E+0	2.0E+1	0.0E+0	1.9E+2	2.5E+1	>1.9E+2	4.1E+0
0-00-0	TPH - Arom >C12-C16	7.6E-3	0.0E+0	7.0E+1	0.0E+0	8.8E+1	5.8E+0	>8.8E+1	4.1E+0
0-00-0	TPH - Arom >C16-C21	1.1E-2	0.0E+0	1.0E+2	0.0E+0	3.1E+1	6.5E-1	>3.1E+1	>6.5E-1
0-00-0	TPH - Arom >C21-C35	1.3E-2	0.0E+0	1.2E+2	0.0E+0	2.5E+0	6.6E-3	>2.5E+0	>6.6E-3
Total		1.0E+0	0.0E+0	9.3E+3	0.0E+0	Total TPH SSTL value		>Res	

">" indicates risk-based target concentration greater than constituent residual saturation value. NC = Not calculated.

APPENDIX F

Chemical Data for Selected COCs

CHEMICAL DATA FOR SELECTED COCs

Physical Property Data

Constituent	CAS Number	type	Molecular Weight (g/mole)		Diffusion Coefficients				log (Koc) or log(Kd) (@ 20 - 25 C)				Henry's Law Constant (@ 20 - 25 C)				Vapor Pressure (@ 20 - 25 C)		Solubility (@ 20 - 25 C)		acid pKa	base pKb	ref
					In air (cm2/s)		In water (cm2/s)		log(L/kg) partition		(atm-m3) mol (unitless)		ref		ref		ref						
					Dair	ref	Dwat	ref		ref		ref		ref		ref		ref					
			Barium	7440-39-3	N	137.33	31	0.00E+00	-	0.00E+00	-	f(pH)	Kd	30	0.00E+00	0.00E+00	-	0.00E+00	-	3.80E+05			
Benzene	71-43-2	A	78.1	PS	8.80E-02	PS	9.80E-06	PS	1.77	Koc	PS	5.55E-03	2.29E-01	PS	9.52E+01	PS	1.75E+03	PS	-	-	-		
Chromium (III)	16065-83-1	N	52	-	0.00E+00	-	0.00E+00	-	f(pH)	Kd	30	0.00E+00	0.00E+00	-	0.00E+00	-	1.67E+05	27	-	-	-		
Chromium (VI)	18540-29-9	N	52	-	0.00E+00	-	0.00E+00	-	f(pH)	Kd	30	0.00E+00	0.00E+00	-	0.00E+00	14	1.67E+05	27	-	-	-		
Ethylbenzene	100-41-4	A	106.2	PS	7.50E-02	PS	7.80E-06	PS	2.56	Koc	PS	7.88E-03	3.25E-01	PS	1.00E+01	PS	1.69E+02	PS	-	-	-		
Manganese	7439-96-5	N	54.938	21	0.00E+00	-	0.00E+00	-	1.70	Kd	29	0.00E+00	0.00E+00	-	0.00E+00	-	9.30E+02	28	-	-	-		
Naphthalene	91-20-3	PAH	128.2	PS	5.90E-02	PS	7.50E-06	PS	3.30	Koc	PS	4.83E-04	1.99E-02	PS	2.30E-01	PS	3.10E+01	PS	-	-	-		
Toluene	108-88-3	A	92.4	5	8.50E-02	A	9.40E-06	A	2.13	Koc	A	6.30E-03	2.60E-01	A	3.00E+01	4	5.15E+02	29	-	-	-		

Site Name: Champion Technologies (Tier 1 Screen)

Completed By: MVS

Job ID: CH2100

Site Location: Hobbs, New Mexico

Date Completed: 30-Mar-03

CHEMICAL DATA FOR SELECTED COCs

Toxicity Data

Constituent	Reference Dose				Reference Conc.				Slope Factors				Unit Risk Factor				EPA Weight of Evidence	Is Constituent Carcinogenic ?
	(mg/kg/day)				(mg/m3)				1/(mg/kg/day)				1/(µg/m3)					
	(mg/kg/day)				(mg/m3)				1/(mg/kg/day)				1/(µg/m3)					
	Oral		Dermal		Inhalation		Oral		Dermal		Inhalation		Oral		Dermal			
	RfD_oral	ref	RfD_dermal	ref	RfC_inhal	ref	SF_oral	ref	SF_dermal	ref	URF_inhal	ref						
Barium	7.00E-02	R	4.90E-03	TX	4.90E-04	R	-	-	-	-	-	-	D	-				
Benzene	3.00E-03	R	-	-	5.95E-03	R	2.90E-02	PS	2.99E-02	TX	8.29E-06	PS	A	TRUE				
Chromium (III)	1.50E+00	R	1.95E-02	TX	-	-	-	-	-	-	-	-	-	FALSE				
Chromium (VI)	3.00E-03	R	-	-	1.05E-04	R	7.30E-03	-	2.92E-01	TX	1.20E-02	R	A	TRUE				
Ethylbenzene	1.00E-01	PS	9.70E-02	TX	1.00E+00	PS	-	-	-	-	-	-	D	FALSE				
Manganese	2.00E-02	R	1.20E-03	TX	5.01E-05	R	-	-	-	-	-	-	D	FALSE				
Naphthalene	4.00E-01	PS	3.56E-01	TX	1.40E+00	PS	-	-	-	-	-	-	D	FALSE				
Toluene	2.00E-01	A,R	1.60E-01	TX	4.00E-01	A,R	-	-	-	-	-	-	D	FALSE				

Site Name: Champion Technology

Site Location: Hobbs, New Mexico

	Miscellaneous Chemical Data
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Constituent	Maximum Contaminant Level		Time-Weighted Average Workplace Criteria		Aquatic Life Prot. Criteria		Bioconcentration Factor (L-wat/kg-fish)
	MCL (mg/L)	ref	TWA (mg/m3)	ref	AQL (mg/L)	ref	
Barium	2.00E+00	-	5.00E-01	NIOSH	-	-	1
Benzene	5.00E-03	52 FR 25690	3.25E+00	PS	-	-	12.6
Chromium (III)	1.00E-01	56 FR 3526 (30 Jan 91)	5.00E-01	NIOSH	5.50E-01	33	1
Chromium (VI)	1.00E-01	56 FR 3526 (30 Jan 91)	-	-	1.50E-02	33	1
Ethylbenzene	7.00E-01	56 FR 3526 (30 Jan 91)	4.35E+02	PS	-	-	1
Manganese	-	-	1.00E+00	NIOSH	-	-	1
Naphthalene	-	-	5.00E+01	PS	-	-	430
Toluene	1.00E+00	56 FR 3526 (30 Jan 91)	1.47E+02	ACGIH	-	-	70

Site Name: Champion Technolog

Site Location: Hobbs, New M

CHEMICAL DATA FOR SELECTED COCs

Miscellaneous Chemical Data

Constituent	Dermal	Water Dermal Permeability Data						Detection Limits				Half Life		
	Relative	Dermal	Lag time for	Critical	Relative	Water/Skin	ref	Groundwater		Soil		(First-Order Decay)		ref
	Absorp.	Permeability	Dermal	Exposure	Contr of Derm	Derm Adsorp		(mg/L)	(mg/kg)	(days)	Saturated	Unsaturated		
	Factor (unitless)	Coeff. (cm/hr)	Exposure (hr)	Time (hr)	Perm Coeff (unitless)	Factor (cm/event)								
Barium	0	-	-	-	-	-	-	0.1	34	-	-	-	-	-
Benzene	0.5	0.021	0.26	0.63	0.013	7.3E-2	D	0.002	S	0.005	S	720	720	H
Chromium (III)	0	0.001	-	-	-	3.0E-3	D	0.01	S	0.007	S	-	-	-
Chromium (VI)	0	0.001	-	-	-	3.0E-3	D	0.01	S	0.007	S	-	-	-
Ethylbenzene	0.5	0.074	0.39	1.3	0.14	2.7E-1	D	0.002	S	0.005	S	228	228	H
Manganese	0	0.001	-	-	-	3.0E-3	D	-	-	0.002	S	7	7	H
Naphthalene	0.05	0.069	0.53	2.2	0.2	2.7E-1	D	0.01	32	0.01	32	258	258	H
Toluene	0.5	0.045	0.32	0.77	0.054	1.6E-1	D	0.002	S	0.005	S	28	28	H

Site Name: Champion Technolo

Site Location: Hobbs, New M

CHEMICAL DATA FOR SELECTED COCs

Physical Property Data

Constituent	CAS Number	type	Molecular Weight (g/mole)		Diffusion Coefficients				log (Koc) or log(Kd)				Henry's Law Constant				Vapor Pressure		Solubility		acid pKa	base pKb	
					in air (cm2/s)		in water (cm2/s)		log(Kd) (@ 20 - 25 C)		Henry's Law Constant (@ 20 - 25 C)		Pressure (@ 20 - 25 C)		Solubility (@ 20 - 25 C)								
					Dair	ref	Dwat	ref	partition	ref	mol	(unitless)	ref	ref	ref	ref							
			MW	ref	Dair	ref	Dwat	ref	partition	ref	mol	(unitless)	ref	ref	ref	ref							
Chromium (III)	16065-83-1	N	52	-	0.00E+00	-	0.00E+00	-	f(pH)	Kd	30	0.00E+00	0.00E+00	-	0.00E+00	-	1.67E+05	27	-	-	-		
Chromium (VI)	18540-29-9	N	52	-	0.00E+00	-	0.00E+00	-	f(pH)	Kd	30	0.00E+00	0.00E+00	-	0.00E+00	14	1.67E+05	27	-	-	-		
TPH - Aliph >C06-C08	0-00-0	T	100	T	1.00E-01	T	1.00E-05	T	3.60	Koc	T	1.17E+00	4.81E+01	T	4.79E+01	-	5.40E+00	T	-	-	-		
TPH - Aliph >C08-C10	0-00-0	T	130	T	1.00E-01	T	1.00E-05	T	4.50	Koc	T	1.90E+00	7.85E+01	T	4.79E+00	-	4.30E-01	T	-	-	-		
TPH - Aliph >C10-C12	0-00-0	T	160	T	1.00E-01	T	1.00E-05	T	5.40	Koc	T	2.96E+00	1.22E+02	T	4.79E-01	-	3.40E-02	T	-	-	-		
TPH - Aliph >C12-C16	0-00-0	T	200	T	1.00E-01	T	1.00E-05	T	6.70	Koc	T	1.26E+01	5.21E+02	T	3.65E-02	-	7.60E-04	T	-	-	-		
TPH - Aliph >C16-C21	0-00-0	T	270	T	1.00E-01	T	1.00E-05	T	8.80	Koc	T	1.19E+02	4.90E+03	T	8.36E-04	-	2.50E-06	T	-	-	-		
TPH - Aliph >C21-C34	0-00-0	T	400	-	1.00E-01	-	1.00E-05	-	8.80	Koc	-	1.76E+02	7.26E+03	-	8.36E-04	-	2.50E-06	-	-	-	-		
TPH - Arom >C07-C08	0-00-0	T	92	T	1.00E-01	T	1.00E-05	T	2.40	Koc	T	6.72E-03	2.77E-01	T	2.89E+01	-	5.20E+02	T	-	-	-		
TPH - Arom >C08-C10	0-00-0	T	120	T	1.00E-01	T	1.00E-05	T	3.20	Koc	T	1.16E-02	4.80E-01	T	4.79E+00	-	6.50E+01	T	-	-	-		
TPH - Arom >C10-C12	0-00-0	T	130	T	1.00E-01	T	1.00E-05	T	3.40	Koc	T	3.28E-03	1.35E-01	T	4.79E-01	-	2.50E+01	T	-	-	-		
TPH - Arom >C12-C16	0-00-0	T	150	T	1.00E-01	T	1.00E-05	T	3.70	Koc	T	1.24E-03	5.12E-02	T	3.65E-02	-	5.80E+00	T	-	-	-		
TPH - Arom >C16-C21	0-00-0	T	190	T	1.00E-01	T	1.00E-05	T	4.20	Koc	T	3.22E-04	1.33E-02	T	8.36E-04	-	6.50E-01	T	-	-	-		
TPH - Arom >C21-C35	0-00-0	T	240	T	1.00E-01	T	1.00E-05	T	5.10	Koc	T	1.60E-05	6.60E-04	T	3.34E-07	-	6.60E-03	T	-	-	-		
Benzene	7143-2	A	78.1	PS	8.80E-02	PS	9.80E-06	PS	1.77	Koc	PS	5.55E-03	2.29E-01	PS	9.52E+01	PS	1.75E+03	PS	-	-	-		
Manganese	7439-96-5	N	54.938	21	0.00E+00	-	0.00E+00	-	1.70	Kd	29	0.00E+00	0.00E+00	-	0.00E+00	-	9.30E+02	28	-	-	-		

Site Name: Champion Technologies, Inc.

Completed By: Matina Smith

Job ID: CH2100

Site Location: Hobbs, New Mexico

Date Completed: 15-Mar-03

CHEMICAL DATA FOR SELECTED COCs

Toxicity Data

Constituent	Reference Dose				Reference Conc.		Slope Factors				Unit Risk Factor		EPA Weight of Evidence	Is Constituent Carcinogenic ?
	(mg/kg/day)				(mg/m3)		1/(mg/kg/day)				1/(µg/m3)			
	(mg/kg/day)				(mg/m3)		1/(mg/kg/day)				1/(µg/m3)			
	Oral RfD_oral	ref	Dermal RfD_dermal	ref	Inhalation RfC_inhal	ref	Oral SF_oral	ref	Dermal SF_dermal	ref	Inhalation URF_inhal	ref		
Chromium (III)	1.50E+00	R	1.95E-02	TX	-	-	-	-	-	-	-	-	-	FALSE
Chromium (VI)	3.00E-03	R	-	-	1.05E-04	R	7.30E-03	-	2.92E-01	TX	1.20E-02	R	A	TRUE
TPH - Aliph >C06-C08	5.00E+00	T	-	-	1.84E+01	T	-	-	-	-	-	-	D	FALSE
TPH - Aliph >C08-C10	1.00E-01	T	-	-	1.00E+00	T	-	-	-	-	-	-	D	FALSE
TPH - Aliph >C10-C12	1.00E-01	T	-	-	1.00E+00	T	-	-	-	-	-	-	D	FALSE
TPH - Aliph >C12-C16	1.00E-01	T	-	-	1.00E+00	T	-	-	-	-	-	-	D	FALSE
TPH - Aliph >C16-C21	2.00E+00	T	-	-	-	T	-	-	-	-	-	-	D	FALSE
TPH - Aliph >C21-C34	2.00E+00	T	-	-	-	T	-	-	-	-	-	-	D	FALSE
TPH - Arom >C07-C08	2.00E-01	T	-	-	4.00E-01	T	-	-	-	-	-	-	D	FALSE
TPH - Arom >C08-C10	4.00E-02	T	-	-	2.00E-01	T	-	-	-	-	-	-	D	FALSE
TPH - Arom >C10-C12	4.00E-02	T	-	-	2.00E-01	T	-	-	-	-	-	-	D	FALSE
TPH - Arom >C12-C16	4.00E-02	T	-	-	2.00E-01	T	-	-	-	-	-	-	D	FALSE
TPH - Arom >C16-C21	3.00E-02	T	-	-	-	T	-	-	-	-	-	-	D	FALSE
TPH - Arom >C21-C35	3.00E-02	T	-	-	-	T	-	-	-	-	-	-	D	FALSE
Benzene	3.00E-03	R	-	-	5.95E-03	R	2.90E-02	PS	2.99E-02	TX	8.29E-06	PS	A	TRUE
Manganese	2.00E-02	R	1.20E-03	TX	5.01E-05	R	-	-	-	-	-	-	D	FALSE

Site Name: Champion Technolog

Site Location: Hobbs, New M

Miscellaneous Chemical Data

Constituent	Maximum Contaminant Level		Time-Weighted Average Workplace Criteria		Aquatic Life Prot. Criteria		Bioconcentration Factor (L-wat/kg-fish)
	MCL (mg/L)	ref	TWA (mg/m3)	ref	AQL (mg/L)	ref	
Chromium (III)	1.00E-01	56 FR 3526 (30 Jan 91)	5.00E-01	NIOSH	5.50E-01	33	1
Chromium (VI)	1.00E-01	56 FR 3526 (30 Jan 91)	-	-	1.50E-02	33	1
TPH - Aliph >C06-C08	-	-	-	-	-	-	1
TPH - Aliph >C08-C10	-	-	-	-	-	-	1
TPH - Aliph >C10-C12	-	-	-	-	-	-	1
TPH - Aliph >C12-C16	-	-	-	-	-	-	1
TPH - Aliph >C16-C21	-	-	-	-	-	-	1
TPH - Aliph >C21-C34	-	-	-	-	-	-	1
TPH - Arom >C07-C08	-	-	-	-	-	-	1
TPH - Arom >C08-C10	-	-	-	-	-	-	1
TPH - Arom >C10-C12	-	-	-	-	-	-	1
TPH - Arom >C12-C16	-	-	-	-	-	-	1
TPH - Arom >C16-C21	-	-	-	-	-	-	1
TPH - Arom >C21-C35	-	-	-	-	-	-	1
Benzene	5.00E-03	52 FR 25690	3.25E+00	PS	-	-	12.6
Manganese	-	-	1.00E+00	NIOSH	-	-	1

Site Name: Champion Technolo

Site Location: Hobbs, New M

CHEMICAL DATA FOR SELECTED COCs

Miscellaneous Chemical Data

Constituent	Dermal	Water Dermal Permeability Data						Detection Limits				Half Life		
	Relative	Dermal	Lag time for	Critical	Relative	Water/Skin	ref	Groundwater		Soil	(First-Order Decay)		ref	
	Absorp.	Permeability	Dermal	Exposure	Contr of Derm	Derm Adsorp		(mg/L)	(mg/kg)	(days)	Saturated	Unsaturated		
	Factor (unitless)	Coeff. (cm/hr)	Exposure (hr)	Time (hr)	Perm Coeff (unitless)	Factor (cm/event)								
Chromium (III)	0	0.001	-	-	-	3.0E-3	D	0.01	S	0.007	S	-	-	-
Chromium (VI)	0	0.001	-	-	-	3.0E-3	D	0.01	S	0.007	S	-	-	-
TPH - Aliph >C06-C08	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH - Aliph >C08-C10	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH - Aliph >C10-C12	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH - Aliph >C12-C16	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH - Aliph >C16-C21	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH - Aliph >C21-C34	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH - Arom >C07-C08	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH - Arom >C08-C10	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH - Arom >C10-C12	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH - Arom >C12-C16	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH - Arom >C16-C21	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-
TPH - Arom >C21-C35	0.05	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzene	0.5	0.021	0.26	0.63	0.013	7.3E-2	D	0.002	S	0.005	S	720	720	H
Manganese	0	0.001	-	-	-	3.0E-3	D	-	-	0.002	S	7	7	H

Site Name: Champion Technolo

Site Location: Hobbs, New M

**APPENDIX G
PHOTOGRAPHS**



View north. Beginning of excavation of Area 3 "Trenched Area" (7-22-02).



View east. Debris removed from Area 3 "Trenched Area" (7-22-02).



View west. Completed excavation of Area 3 "Trenched Area" (7-23-02).



View east. Soil boring SB-41 location (7-25-02).



Stockpile of drill cuttings from soil boring SB-41 (7-30-02).



View west. Excavating toward center of Area 2 (7-31-02).



View south. East side of Area 2 excavation (7-31-02).



View west. Area 2 excavation north of drum storage area (8-06-02).



Tires & debris removed from Area 2 excavation (8-06-02).



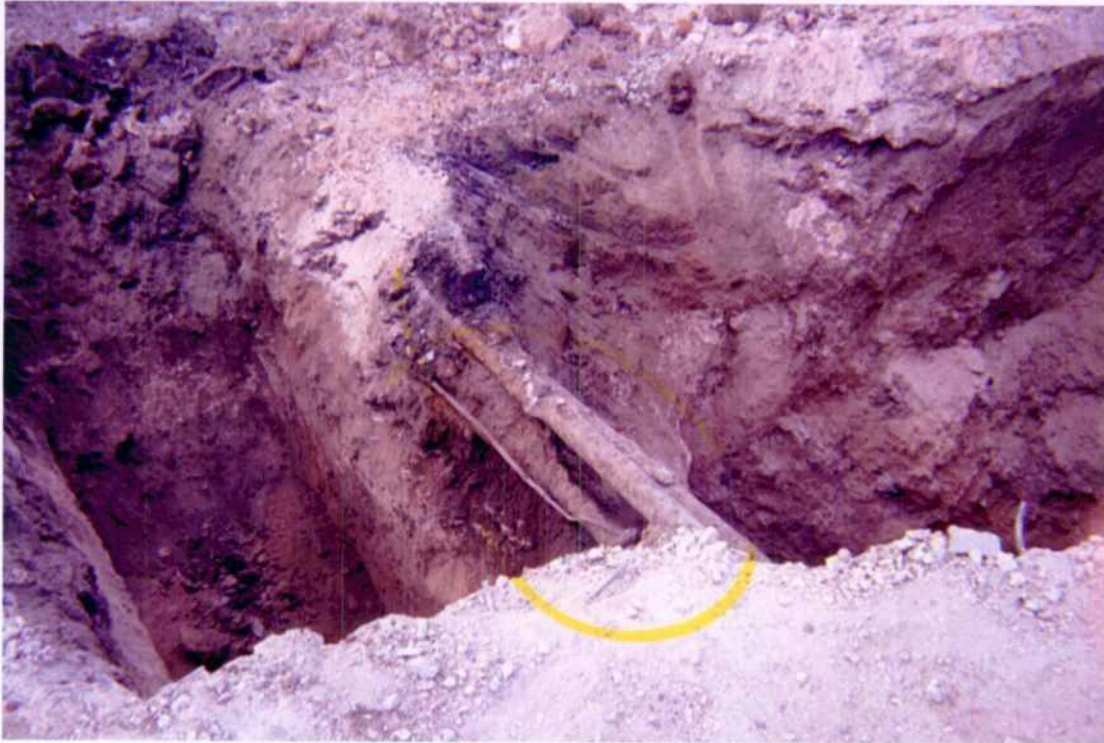
View northwest. Area 2 excavation central pit area (8-07-02).



View south. South wall of Area 2 showing stain below bulk storage area (8-09-02).



View north-northeast. North & east sidewalls, stain on bottom. (8-09-02).



Drain system from warehouse to Area 2 pit (8-09-02).



View south. Area 2 west pit sidewall, prior to being excavated out (8-10-02).



View south-southwest. Metal pipes (drain system) from warehouse exposed (8-10-02).



View south. Prepare to install monitor well MW-11 (9-24-02).



View south. Placement of soil boring SB-49 (9-27-02).



View south. Placement of soil boring SB-57 above stained south side wall (9-27-02).



Drain system pipelines from warehouse (10-4-02).



View south. East trench excavation on southeast corner of property.



View east. Removal of concrete pad over Area 2 (1-21-03).



View south. South sidewall of Area 2, view from bottom of Area 2 excavation.
(1-24-03)



View south. "Final" southwall of Area 2 below remaining bulk chemical containment area (1-28-03).



View south. Area 2 excavation complete (1-29-03).



Looking down at "discovered" well casing embedded in south sidewall Area 2 (2-25-03).



View south. Excavated water well casing in south sidewall of Area 2 (2-25-03).



Detail of water well excavated in Area 2 excavation (2-25-03).