CLOSURE REPORT

REPORT

GROUNDWATER MONITORING REPORT

BYRD LINE RELEASE SITE MONUMENT, NEW MEXICO

RECEIVED

MAY 1 4 2001

ENVIRONMENTAL BUREAU OIL CONSERVATION DIVISION

Prepared for BP PIPELINE (NORTH AMERICA), Inc. 801 WARRENVILLE RD. LISLE, IL 60532

MAY, 2001



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Project No. 806032.01

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Background

Arco Pipe Line Company (APL) now BP Pipelines (North America), Inc. formerly operated a 4-inch crude oil transfer line in Lea County, New Mexico. The line runs east-west in the area near the town of Monument, New Mexico. In January 1998, an APL aerial patrol noted stained soil on the ground in Section 8 Township 20 Range 37E (32.35.016N and 103.16.625W, Figure 1-1). APL personnel responded and a corrosion-related leak in the 4-inch line was observed. The line was clamped and permanent repairs were scheduled. Upon removal of soil during the permanent repairs, APL personnel noted a larger volume of soil stained in the subsurface than originally anticipated.

In November 1998, APL contractors removed approximately 800 yards of stained soil from around the line leak. Upon removal of the soil from around the line, APL personnel observed an oil sheen on water in the excavation at approximately 35 feet below grade. In July 1999, the walls and floor of the 800-yard excavation were sampled and analyzed. Based on the July 1999 soil sample results, APL contractors extended the excavation area to include an additional 1500 yards of soil. Soil was removed at depth where the oil sheen was observed and laterally where stained soils were observed. Analytical results from soil samples collected from the walls and floor of the final excavation indicated concentrations below the New Mexico Oil Conservation Division (NMOCD) cleanup standards of 100 mg/kg for total petroleum hydrocarbons (TPH) except for the west side bottom samples. These soil samples were reported at 523 mg/kg and 570 mg/kg TPH,respectively.

In October 1999, URS, on behalf of APL, submitted an *Initial Site Characterization Work Plan, Byrd Line Release Site, Monument, New Mexico* to the NMOCD. The work plan was approved by the NMOCD on October 15,1999. The work plan called for the installation of four groundwater monitoring wells to be installed around the leak area. In January 2000, URS submitted an *Initial Site Characterization Report*. The report documented the monitoring well installation activities and presented the results of the first round of groundwater sampling (performed in November 1999). The *Initial Site Characterization Report, January 2000* also presented the results of soil sampling from the extended (final) excavation area and the monitoring wells.

On May 22, 2000 NMOCD recommended APL initiate quarterly groundwater sampling from the four monitoring wells installed in November 1999. This report documents the results of three additional quarters of groundwater analytical data and presents

SECTIONONE

conclusions based on evaluation of the groundwater analytical data and analytical data from the soils left in place near the release site.

Water Well Search and Local Hydrogeology

A water well search was conducted by Environmental Data Resources on December 15,1999 (Appendix A). No water wells were identified within ¹/₂ miles of the site. Nine domestic supply wells are located ¹/₂ to 1 mile from the site. According to the United States Geological Survey publication *Geology and Groundwater Conditions in Southern Lea County, New Mexico*, the depths of groundwater wells in the vicinity of the site range from 53 to 283 feet below the ground surface (bgs). Groundwater elevations range from 18 to 34 feet (bgs). The water wells are screened in either the Quaternary-age alluvium or the Tertiary-age Ogallala Formation.

SECTIONTWO

Quarterly Groundwater Sampling

From August 2000 to February 2001 URS performed quarterly groundwater sampling and analysis on the four monitoring wells at the Byrd Line Release Site. The locations of the monitoring wells are presented on Figure 2-1. The monitoring well construction logs are presented in Appendix B.

Groundwater Measurement and Sampling Procedures

Prior to purging, the monitoring wells were gauged for water levels using an electronic water level indicator probe. Table 2-1 presents the water levels and the associated groundwater elevations referenced to site arbitrary datum. Groundwater samples from the first event (11/99) were collected from the monitoring wells after development and purging. Development consisted of surging and bailing followed by over-pumping until the water was clear and the pH, temperature, and conductivity had stabilized. After the development was complete, a minimum of 24 hours was allowed to pass prior to purging and sample collection. Purging was accomplished by pumping with a submersible pump at a slow rate (~1 gallon per minute) or until no drawdown was observed. Upon removal of at least three well volumes and stabilization of the pH, temperature, and conductivity measurements, groundwater samples were collected from the discharge tubing of the pump. Groundwater samples from the second, third, and fourth event were collected from the dedicated discharge tubing of an inertial displacement pump (Waterrra®) after the pH, temperature, and conductivity had stabilized for three consecutive measurements and three well volumes had been removed. The samples were placed into the appropriate prelabeled containers and stored on ice for shipment to the analytical laboratory.

Chain-of-custody procedures were followed during sample handling. Purge and development water was placed into 55-gallon drums, labeled with contents, sealed, and left at the site pending waste characterization.

Groundwater samples collected during the first event were analyzed for benzene, toluene, ethyl benzene, and xylenes (BTEX) by EPA Method 8021, polynuclear aromatic hydrocarbons (PAH) by EPA Method 8310, major cations and anions, and heavy metals by various EPA 7000 series methods. Additionally, groundwater samples were collected for analysis of total dissolved solids. Groundwater samples collected for the second, third, and fouth events were analyzed for BTEX by EPA Method 8021B, manganese and iron.

SECTIONTHREE

Groundwater Measurement Results

Based on the results of the groundwater elevation measurements, a flow gradient consistently to the southeast ranging between 0.0017 and 0.0025 was measured. Figures 3-1 to 3-4 present the potentiometric surface maps for each of the sampling events. The potentiometric maps show MW-1 and MW-2 to be downgradient of the leak location. MW-4 serves as an upgradient well and MW-3 monitors sidegradient of the leak location.

Groundwater Analytical Results

Four groundwater sampling events have taken place at the Byrd Line Release Site. Samples were collected November 1999, August 2000, December 2000, and February 2001. The groundwater analytical results were compared to the New Mexico Water Quality Control Commission groundwater (NMWQCC) human health standards for each sampling event. The analytical results did not report any BTEX, TPH, PAH, or metals concentrations above the NMWQCC human health standards during the first sampling event nor any BTEX constituents above the standards during the remaining three events. The groundwater analytical results and the NMWQCC standards are presented on Tables 3-1 and 3-2. The laboratory analytical reports for the four sampling events are attached as Appendix C.



Based on the results of the quarterly sampling and analysis of groundwater from the Byrd Line Release Site, no impact to site groundwater above the NMWQCC human health standards has occurred. Excavation of impacted soil from the release site appears to have abated any release to groundwater during the excavation phase of the site assessment. For these reasons, BP Pipelines (North America), Inc. requests a "No Further Action" finding from the NMOCD for the Byrd Line Release Site. BP Pipelines requests concurrence from NMOCD to plug and abandon the four monitoring wells at the site.



TABLES



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TABLE 2-1 GROUNDWATER ELEVATIONS BYRD LINE RELEASE SITE - MONUMENT, NEW MEXICO

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1

			1/17/99	8	(10/00	1	2/6/00		2/5/01
Well	Top of Well	DTW	Groundwater	DTW	Groundwater	DTW	Groundwater	MTU	Groundwater
Number	Casing Elevation(ft)	(feet)	Elevation (ft)						
MW-1	102.10	30.81	71.29	30.91	71.19	30.82	71.28	30.51	71.59
MW-2	102.32	30.98	71.34	31.10	71.22	31.01	71.31	30.75	71.57
MW-3	102.87	31.37	71.50	31.55	71.32	31.36	71.51	31.02	71.85
MW-4	102.42	30.93	71.49	31.04	71.38	30.93	71.49	30.53	71.89

Notes:

Elevations based on site arbitrary datum

DTW = depth to water below top of well casing.

ft = feet

MONITORING WELLS BYRD LINE RELEASE SITE - MONUMENT, NEW MEXICO **GROUNDWATER ANALYTICAL RESULTS** (samples collected 11/17/99) TABLE 3-1

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						New Mexico WQCC Groundwater
	CONSTITUENT	1-WM	MW-2	MW-3	MW-4	Standards (HHS) ¹
BT	EX (mg/L)					
	Benzene	<.005	<.001	< 001	<.001	0.01
	Ethylbenzene	<.005	<.001	<,001	<.001	0.75
	Toluene	<.005	<.001	<.001	<.001	0.75
	Xytenes, Total	<.005	<.001	< 001	<.001	0.62
ΤPI	H (mg/L)					
	Diesel Range Organics	<0.2	<0.2	<0.2	<0.2	I
	Gasoline Range Organics	<0.5	<0.1	<0.1	<0.1	:
Cal	tion, Anion Water Quality Parameters (mg/L)					
	Chloride	630	970	590	850	1
	Fluoride	3.1	2.7	2.9	2.9	1.6
	Nitrogen, Nitrate	<0.1	0.71	0.79	<0.1	10
	Sulfate	220	300	110	110	1
101	tal Dissolved Solids (mg/L)					
	Total Dissolved Solids	1170	1480	1090	1010	

Notes:

1) New Mexico Water Quality Control Commision groundwater standards for human health

TPH = total petroleum hydrocarbons

BTEX = benzene, toluene, ethyl benzene, xytenes

mg/L=milligrams per liter
-- = no standard

MONITORING WELLS BYRD LINE RELEASE SITE - MONUMENT, NEW MEXICO **GROUNDWATER ANALTICAL RESULTS** (samples collected 11/17/99) TABLE 3-1

						1
						New Mexico
						WQCC Groundwater
	CONSTITUENT	MW-1	MW-2	MW-3	MW-4	Standards (HHS) ¹
ΡA	H (mg/L)					
	1-Methylnaphthalene	<.0002	<.0002	<.0002	<.0002	3
	2-Methylnaphthalene	<.0002	<.0002	<.0002	<.0002	
	Acenaphtene	<.0001	<.0001	<.0001	<.0001	47
	Acenaphthylene	<.0001	<.0001	<.0001	<.0001	1
	Anthracene	<.0001	<.0001	<.0001	<.0001	
	Benz(a)anthracene	<.0001	<.0001	<.0001	<.0001	
	Benzo(a)pyrene	<.0001	<.0001	<.0001	<.0001	000.
	Benzo(b)fluoranthene	<.0001	<.0001	<.0001	<.0001	-
	Benzo(g,h,l)perylene	<.0001	<.0001	<.0001	<.0001	1
	Benzo(k)fluoranthene	<.0001	<.0001	<.0001	<.0001	1
	Chrysene	<.0001	<.0001	<.0001	<.0001	
	Dibenzo(g,h)anthracene	<.0001	<.0001	<.0001	<.0001	:
	Fluoranthene	<.0001	<.0001	<.0001	<.0001	-
	Fluorene	<.0001	<.0001	<.0001	<.0001	-
	Indeno(1,2,3-cd)pyrene	<.0001	<.0001	<.0001	<.0001	
	Naphthalene	0.0002	<.0001	<.0001	<.0001	-
	Phenanthrene	<.0001	<.0001	<.0001	<.0001	-
	Pyrene	<.0001	<.0001	<.0001	<.0001	-
	Total, Naphthalene and Monomethylnaphthalenes ²	0.0002	<.0003	<.0003	<.0003	.030

Notes:

1) New Mexico Water Quality Control Commision groundwater standards for human health

2) The standard set by the New Mexico Water Quality Control Commision for naphthalene

includes total monomethylnaphthalenes.

PAH = polynuclear aromatic hydrocarbons mg/L - milligrams per liter

-- = no standard

GROUNDWATER ANALYTICAL RESULTS MONITORING WELLS BYRD LINE RELEASE SITE - MONUMENT, NEW MEXICO (samples collected 11/17/99) TABLE 3-1

					New Mexico WQCC
					Groundwater
CONSTITUENT	MW-1	MW-2	MW-3	MW-4	Standards (HHS) ¹
METALS (mg/L)					
Arsenic	0.0543	0.0258	0.0335	0.00996	0.10
Lead	0.0227	0.00712	0.0128	<0.005	0.05
Selenium	<0.005	0.0154	0.0112	<0.005	0.05
Aluminum	7.67	3.07	2.82	1.13	
Barium	0.396	0.249	0.453	0.24	1.0
Boron	0.779	0.56	0.341	0.462	-
Cadmium	<0.005	<0.005	<0.005	<0.005	0.01
Calcium	2060	859	1580	256	
Chromium	<10	<0.01	<0.01	۲.	0.05
Cobalt	<0.01	<0.01	<0.01	<0.01	
Copper	<0.01	<0.01	<0.01	<0.01	1
Iron	3.46	1.47	2.39	0.616	1
Magnesium	106	151	132	116	1
Manganese	0.456	0.204	0.474	0.0545	
Molybdenum	<0.02	<0.02	<0.02	<0.02	1
Nickel	<0.02	<0.02	<0.02	<0.02	1
Potassium	20	5.89	4.82	63.2	
Silver	<0.01	<0.01	<0.01	<0.01	0.05
Sodium	471	399	258	250	
Zinc	0.0917	0.0217	0.846	<0.02	1

<u>Notes:</u>

1) New Mexico Water Quality Control Commision groundwater standards for human health

mg/L=milligrams per liter
-- = no standard

BYRD LINE RELEASE SITE - MONUMENT, NEW MEXICO GROUNDWATER ANALYTICAL RESULTS MONITORING WELLS TABLE 3-2

													New Mexico WQCC	
													Groundwater	
CONSTITUENT		MW-1			MW-2			MW-3			MW-4		Standards (HHS) ¹	
Sample Date	8/10/00	12/6/00	2/5/01	8/10/01	12/6/00	2/5/01	8/10/01	12/6/00	2/5/01	8/10/01	12/6/00	2/5/01		
BTEX (mg/L)														
Benzene	0.0021	0.0012	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.01	
Ethylbenzene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.0015	<0.001	<0.001	0.75	
Toluene	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.75	
Xylenes, Total	<0.001	\$0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.62	
METALS (mg/L)			: 											
lron	6.61	9.51	NA	11.1	10.3	0.471	4.21	12.9	NA	4.69	3.02	2.11	÷	
Manganese	0.225	0.208	A	0.24	0.146	0.022	0.055	0.123	AN	0.0966	0.0807	0.0749	ł	
														1

1) New Mexico Water Quality Control Commision groundwater standards for human health

BTEX = benzene, toluene, ethyl benzene, xylenes

mg/L=milligrams per fiter

NA= Not analyzed (sample bottles damaged in shipment) -- = no standard



BP PIPELINES (NORTH AMERICA), IN BYRD LINE RELEASE S MONUMENT NEW MEXIC

C. TE	URS	S Corpor	ation	SITE LOCATION	мар	FILE NO. 806032.01 FIG. NO.
:o	SCALE:	DRAWN BY: rin	DATE: 1/9/99			1-1
	NOTED	MODIFIED BY: MSM	DATE: 4/20/01			









Appendix A EDR Well Search Report



v

The EDR-GeoCheck[®] Report

Arco Pipeline Byrd Line Release Byrd Line Hobbs, NM 88240

Inquiry Number: 444323.1s

December 15, 1999

EBR[®] Environmental Data Resources, Inc.

an ...edr~company

The Source For Environmental Risk Management Data

3530 Post Road Southport, Connecticut 06490

Nationwide Customer Service

 Telephone:
 1-800-352-0050

 Fax:
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 Internet:
 www.edrnet.com

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Thank you for your business. Please contact EDR at 1-800-352-0050 with any questions or comments.

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THE EDR GEOCHECK™ REPORT

The EDR GeoCheck[™] Report is a screening tool designed to assist in the hydrogeological assessment of a particular geographic area based upon publicly available information.

The EDR GeoCheck[™] Report consists of the following information within a customer specified radius of the target property.

- topography (25 foot intervals unless otherwise shown)
- major roads
- surface water bodies
- railroad tracks
- flood plains (available in selected counties)
- wetlands (available in selected counties)
- wells including depth to water table and water level variability (in federal and selected state databases)
- public water supply wells (including violations information)
- geologic data
- radon data.

The EDR GeoCheck[™] Report is a general area study. It may or may not be accurate at any specific location.

TOPOGRAPHIC MAP-444323.1s -'URS Greiner/Woodward Clyde'



WELL SEARCH SUMMARY

GEOLOGIC AGE IDENTIFICATION[†]

Geologic Code:	
Era:	
System:	
Series:	

ROCK STRATIGRAPHIC UNIT[†]

Category:

Stratifed Sequence

Qp Cenozoic Quatemary Pleistocene

SEARCH DISTANCE RADIUS INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal Database	1.000
State Database	1.000
PWS Database	1.000

FEDERAL DATABASE WELL INFORMATION

MAP	WELL	LOCATION
<u>ID</u>	ID	FROM TP
A2	323500103170801	1/2 - 1 Mile West
A1	323459103170701	1/2 - 1 Mile West
3	323449103160101	1/2 - 1 Mile ESE
4	323526103165001	1/2 - 1 Mile NNW
5	323454103155101	1/2 - 1 Mile East
6	323447103155201	1/2 - 1 Mile ESE
7	323437103171401	1/2 - 1 Mile WSW
8	323442103154501	1/2 - 1 Mile ESE
9	323426103171301	1/2 - 1 Mile SW
10	323413103164401	1/2 - 1 Mile South

STATE DATABASE WELL INFORMATION

MAP	WELL	LOCATION
<u>ID</u>	<u>ID</u>	FROM TP

NO WELLS FOUND

PUBLIC WATER SUPPLY SYSTEM INFORMATION

NO WELLS FOUND

AREA RADON INFORMATION

Zip Code: 88240

Number of sites tested: 29

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	1.655 pCi/L	93%	7%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	1.400 pCi/L	100%	0%	0%

† Source: P.G. Schruber, R.E. Amot and W.J. Bawleo, Geology of the Conterminoue U.S. at 12,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Belkman Map, USGS Digital Data Series DDS - 11 (1994).

Map ID Direction Distance

A2 West 1/2 - 1 Mile	Site ID: Site Type: Year Constructed: Attitude: Well Depth: Depth to Water Table: Date Measured:	323500103170801 Single well, other than coll Not Reported 3552.00 ft. Not Reported Not Reported Not Reported	Info. Source: lector or Ranney type County: State: Topographic Setting: Prim. Use of Site: Prim. Use of Water:	USGS Lea New Mexico Not Reported Not Reported Not Reported		
	LITHOLOGIC DATA					
	Not Reported					
	WATER LEVEL VARIABILIT	Y				
	Water Level: 26.37 ft. Date Measured: 03/29/54	ı				
					<u></u>	
A1 West	Site ID: Site Turner	323459103170701	Info. Source:	USGS		
1/2 - 1 Mile	Year Constructed:	Not Reported	County:	Lea		
	Altitude: Well Depth:	3553.00 ft. Not Reported	State: Topographic Setting:	New Mexico Not Reported		
	Depth to Water Table:	Not Reported	Prim. Use of Site:	Not Reported		
		Not Reported	Film, Use of Water,	Not nepotied		
	Not Reported					
	Rethepolieu					
	WATER LEVEL VARIABILIT	Y				
	Water Level: 25.45 ft. Date Measured: 03/01/6	Water Level: i Date Measured:	26.66 tt. Water Lev 03/03/66 Date Mea	/el: 25.22 ft. sured: 01/14/71	Water Level: Date Measured:	22.67 ft. 02/04/76
		<u> </u>			<u> </u>	
3 ESE	Site ID:	323449103160101	Info. Source:	USGS		
1/2 - 1 Mile	Site Type: Year Constructed:	Single well, other than coll Not Reported	lector or Ranney type County:	Lea		
	Altitude:	3545.00 ft.	State:	New Mexico		
	Well Depth: Depth to Water Table:	Not Reported Not Reported	Topographic Setting: Prim, Use of Site:	Not Reported Not Reported		
	Date Measured:	Not Reported	Prim. Use of Water:	Not Reported		
	LITHOLOGIC DATA					
	Not Reported					
	WATER LEVEL VARIABILIT	Y				
	Water Level: 25.04 ft.	Water Level:	23.20 ft. Water Lev	rel: 19.92 ft.	Water Level:	19.36 ft.
	Date measured: U3/22/54	+ Date Measured:	UT/14//1 Date Mea	surea: 01/30/76	Date Measured:	02/04/76

Map ID Direction Distance

4 NNW 1/2 - 1 Mile	Site ID: Site Type: Year Constructed: Altitude: Well Depth: Depth to Water Table: Date Measured:	323526103165001 Single well, other than collector of Not Reported 3556.00 ft. Not Reported Not Reported Not Reported	Info. Source: or Ranney type County: State: Topographic Setting: Prim. Use of Site: Prim. Use of Water:	USGS Lea New Mexico Not Reported Not Reported Not Reported
	LITHOLOGIC DATA			
	Not Reported			
	WATER LEVEL VARIABILIT	Ŷ		
	Water Level: 30.42 ft. Date Measured: 09/19/67	Water Level: 30.20 Date Measured: 04/10	ft. /68	
E				
5 East 1/2 - 1 Mile	Site ID: Site Type:	323454103155101 Single well, other than collector of	Info. Source: or Ranney type	USGS
	Year Constructed:	Not Reported	County:	Lea
	Altriude: Well Depth:	3545.50 π. Not Reported	State: Topographic Setting:	New Mexico Not Reported
	Depth to Water Table:	Not Reported	Prim. Use of Site:	Not Reported
	Date Measured:	Not Reported	Prim. Use of Water:	Not Reported
	LITHOLOGIC DATA			
	Not Reported			
	WATER LEVEL VARIABILIT	Ŷ		
	Water Level: 26.54 ft. Date Measured: 12/02/66	Water Level: 26.83 Date Measured: 04/10	ft. Water Lev /68 Date Meas	rel: 25.07 ft. sured: 01/18/71
6	Site ID:	222447102155201	lefe Source	11505
ESE 1/2 - 1 Mile	Site Type:	Single well, other than collector of	arria. Source. or Ranney type	0363
	Year Constructed:	Not Reported	County:	Lea
	Well Depth:	Not Reported	Topographic Setting:	New Mexico Not Reported
	Depth to Water Table: Date Measured:	Not Reported Not Reported	Prim. Use of Site: Prim. Use of Water:	Not Reported
	LITHOLOGIC DATA			•
	Not Reported			
	WATER LEVEL VARIABILIT	Y		
	Water Level: 37.90 ft. Date Measured: 02/28/61	Water Level: 40.43 Date Measured: 03/03	ft. /66	

Map ID Direction Distance

7 WSW 1/2 - 1 Mile	Site ID: Site Type: Year Constructe Altitude: Well Depth: Depth to Water T Date Measured:	d: fable:	323437103171401 Single well, other than co Not Reported 3547.00 ft. Not Reported Not Reported Not Reported	Info. Si illector or Ranne County State: Topogi Prim. L Prim. L	ource: ey type r: raphic Setting: Jse of Site: Jse of Water:	USGS Lea New Mexico Not Reported Not Reported Not Reported		
	LITHOLOGIC DAT	A						
	Not Reported							
	WATER LEVEL VA	RIABILIT	Y					
	Water Level: Date Measured:	25.15 ft. 03/30/54	Water Level: Date Measured:	26.50 ft. 09/19/67	Water Leve Date Meas	el: 26.44 ft. sured: 04/10/68		
8 ESE 1/2 - 1 Mile	Site ID; Site Type: Year Constructer Altitude: Well Depth: Depth to Water I Date Measured: LITHOLOGIC DAT Not Reported WATER LEVEL VA Water Level:	d: Table: A I RIABILIT 16.03 ft.	323442103154501 Single well, other than co Not Reported 3534.00 ft. Not Reported Not Reported Not Reported	info. Su iliector or Ranne County State: Topogr Prim. L Prim. L 16.67 ft.	ource: by type r: aphic Setting: Jse of Site: Jse of Water: Water Leve	USGS Lea New Mexico Not Reported Not Reported Not Reported	 Water Level:	11.74 ft.
9 SW 1/2 - 1 Mile	Site ID: Site Type: Year Constructed Altitude: Well Depth: Depth to Water T Date Measured: LITHOLOGIC DATA Not Reported WATER LEVEL VA	02/28/61 02/28/61 t: able: A RIABILITY 28.62 ft.	Date Measured: 323426103171301 Single well, other than co Not Reported 3548.00 ft. Not Reported Not Reported Not Reported Not Reported	Info. So Info. So Ilector or Ranne County State: Topogr Prim. U Prim. U 28.53 ft.	Date Meas Durce: burce: by type aphic Setting: lse of Site: lse of Water: Water Leve	USGS Lea New Mexico Not Reported Not Reported Not Reported	Date Measured:	01/23/76
	Date Measured:	28.62 ft. 09/19/67	vvater Level: Date Measured:	28.53 π. 01/14/71	Water Leve Date Meas	er: 26.80 ft. ured: 01/27/76		

Map ID Direction Distance

10 South 1/2 - 1 Mile	Site ID: Site Type:	32341 Single	3103164401 well, other than c	info. S oliector or Rann	ource: av type	USGS		
1/2 - 1 1000	Year Constructed	i: Not R	eported	Count	6 	Lea		
	Altitude:	3539.0	00 ft.	State:		New Mexico		
	Well Depth:	Not R	eported	Topog	raphic Setting:	Not Reported		
	Depth to Water T	able: Not Re	eported	Prim	Jse of Site:	Not Reported		
	Date Measured:	Not Re	eported	Prim.	Use of Water:	Not Reported		
L	ITHOLOGIC DATA	4						
	Not Reported							
v	VATER LEVEL VA	RIABILITY						
	Water Level:	24.86 ft.	Water Level:	26.77 ft	Water Lev	el 27.89 ft	Water Level:	27 26 ft

Water Level:	24.86 ft.	Water Level:	26.77 ft.	Water Level:	27.89 ft.	Water Level:	27.26 ft.
Date Measured:	04/01/54	Date Measured:	03/01/61	Date Measured:	03/03/66	Date Measured:	04/10/68
Water Level: Date Measured:	27.85 ft. 01/14/71	Water Level: Date Measured:	25.56 ft. 01/23/76				

NEW MEXICO GOVERNMENT WELL RECORDS SEARCHED

PWS: Public Water Systems

Source: EPA/Office of Drinking Water

Telephone: 202-260-2805

Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data

Source: EPA/Office of Drinking Water

Telephone: 202-260-2805

Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SWDIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

Area Radon Information: The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones: Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

USGS Water Wells: In November 1971 the United States Geological Survey (USGS) implemented a national water resource information tracking system. This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on more than 900,000 wells, springs, and other sources of groundwater.

Water Dams: National Inventory of Dams

Source: Federal Emergency Management Agency

Telephone: 202-646-2801

National computer database of more than 74,000 dams maintained by the Federal Emergency Management Agency.

Log of Monitoring Well MW1

Sheet 1 of 1

Date(s) Drilled	11/9/99	Checked By	R.T.Murthy		
Drilling Method	HSA	Drilling Contractor GMI		Total Depth of Borehole	40.0 feet
Drill Rig Type	СМЕ	Drill Bit Size/Type	4-1/4 in. ID HSA	Surface Elevation	
Groundwater Level and Date	28.8 feet on 11/10/99	Sampler Type	5-ft. CME Sampler	Top of PVC Elevation	
Diameter of Hole (inches)	8.25 Diameter of 2 Well (inches) 2	Type of Well Casing	2 in. Schedule 40 PVC	Screen Perforation	0.010 in. machine slotted
Type of Sand Pack	20/40 Silica Sand	Type and Dep of Seal(s)	th Hydrated Bentonite Pellets, 14-1	6 ft.	
Comments					

		SAMPL	ES			gran	F		
Elevation, feet	Depth, feet	Type Number	Percent Recovery	Graphic Log	MATERIAL DESCRIPTION	Well Dia	OVA Reading, ppr		REMARKS
	0		60		SANDY SILT, pale orange, medium dense, dry, non-plastic, very fine grained, moderate to poorly graded. SILTY SAND, light brown, loose, dry, very fine to fine, moderate to		000000000000000000000000000000000000000		•
	5		80		poorly graded, subangular. CALICHE		0 0 0 0	İ	MW1-4-5 Soil jar Sample
	10-		50		SILTY SAND, pale orange, toose, dry, fine grained, moderate to poorly graded, subangular.				
	15-		55						
	20-		60		SILTY SAND, pale orange, loose to medium dense, moist, fine grained, moderate to poorly graded, subangular.		0 0 0 0		MW1-19-20 Soil Jar Sample
	25-		50		change in color to light brown, saturated		0 0 0 0		1
	30 -		60				0 0 0 0 0		MW1-29-30 Soil Jar Sample
	35 -		70		CALICHE, pale orange SILTY SAND, light brown, loose, saturated, fine grained, moderate to poorly graded, subangular.		0 0 0 0	:	
	40-)°C	 Soil boring terminated at a depth of 40 feet below existing ground. Groundwater encountered after completion of well. 				MW1-39-40 Soil Jar Sample
	45-		L		ł	1			

URS Greiner Woodward Clyde

Log of Monitoring Well MW2

Sheet 1 of 1

Date(s) Drilled	11/10/99	Logged D. Hayes By	Checked R.T.Murthy
Drilling Method	HSA	Drilling Contractor GMI	Total Depth of Borehole 40,0 feet
Drill Rig Type	CME	Drill Bit Size/Type 4-1/4 in. ID HSA	Surface Elevation
Groundwater Level and Date	30.98 feet on 11/11/99	Sampler 5-ft. CME Sampler	Top of PVC Elevation
Diameter of Hole (inches)	8.25 Diameter of Well (inches) 2	Type of 2 in. Schedule 40 PVC	Screen 0.010 in, machine slotte
Type of Sand Pack	20/40 Silica Sand	Type and Depth of Seal(s) Hydrated Bentonite Pellets,	12-14 ft.

Comments

		SAMP	LES			Т	grar	ε		
Elevation, feet	Depth, feet	Type Number	Percent Recovery	Graphic Log	MATERIAL DESCRIPTION		Well Dia	OVA Reading, pp		REMARKS
	0-		50		SILTY SAND, moderate yellow brown, loose, dry, very fine, poorly graded, subangular. SILTY SAND, caliche present, pale orange, loose, dry.			0 0 0 0		•
	5-		50					0 0 0 0		MW2-4-5 Soil Jar Sampl o
	10~ 1		50		SILTY SAND, moderate yellow brown, loose, dry, very fine, poorly graded, subangular. caliche nodules present from 10-18 feet.			0 0 0	-	
	15~		60		SILTY SAND light biguin losss to modium Evo amined medants			0		
	20-		70		to poorly graded, occasional gravel size caliche nodules present, subangular.			000000000000000000000000000000000000000		MW2-19-20 Soil Jar Sample
	25		80		change in color to light brown, loose, saturated			000000000000000000000000000000000000000		MW2-24-25 Soil Jar Sample
	30		80		⊢ └─ - ¥ -			0 0 0 0		
	35-		80		 SILTY SAND, Caliche nodules present, light brown, loose, saturated, fine grained, moderate to poorly graded, subangular. loose, no caliche present 			0 0 0		
	40- -	2 ••• ••	+		CALICHE Soil boring terminated at a depth of 40 feet below existing ground. Groundwater encountered after completion of well.			0	 	MW2-39-40 Soil Jar Sample
	45									

URS Greiner Woodward Ciyde

Log of Monitoring Well MW3

Sheet 1 of 1

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Date(s) Dniled	11/10/99		Logged D. Hayes		Checked By	R.T.Murthy	
Drilling Method	HSA		Drilling Contractor	GMI	Total Depth of Borehole	40.0 feet	
Drill Rig Type	CME		Drill Bit Size/Type	4-1/4 in. ID HSA	Surface Elevation	· · · · · · · · · · · · · · · · · · ·	
Groundwater Level and Date	31.3 on 1	1/11/99	Sampler Type	5-ft. CME Sampler	Top of PVC Elevation		
Diameter of Hole (inches)	8.25	Diameter of 2 Well (inches)	Type of Well Casing	2 in. Schedule 40 PVC	Screen Perforation	0.010 in. machine slotted	
Type of Sand Pack	20/40 Sili	ca Sand	Type and De of Seal(s)	pth Hydrated Bentonite Pellets,	12-14 ft.		

Comments

		S	AMPL	ES				y'a	_ ء	
Elevation, feet	Depth, feet	Type	Number	Percent Recovery	Graphic Log	MATERIAL DESCRIPTION			OVA Reading, ppr	REMARKS
	0	k)		70		SILTY SAND, light brown, loose, dry, fine grained, moist, moderate			0	
	5			60		SILTY SAND, loose, dry, caliche nodules present, line grained, moderate to poorly graded.		N AN AN	0 0 0 0	MW3-4-5 Soil Jar Sample
	- 10			70		SILTY SAND, pale orange, loose, dry, fine grained, moderate to poorly graded, subangular.			000000000000000000000000000000000000000	
	15-			60		change in color to light brown			0 0 0 0 0	
	20-			70		change in color to pale orange, caliche nodules present change in color to light brown			0 0 0	MW3-19-20 Soil Jar Sample
	25			60		wet, occasional caliche nodules present			0 0 0 0	
	30			60		saturaled	- - ⊻- -		0 0 0	MW3-29-30 Soil Jar Sample
	35 -			60					0 0 0	
	40-	4 				CALICHE			0	MW3-39-40 Soil Jar Sample
	45-					Soli boring terminated at a depth of 40 feet below existing ground. Groundwater encountered after completion of well.				

Log of Monitoring Well MW4

Sheet 1 of 1

Date(s) Drilled	11/10/99	Logged D. Hayes	Checked R.T.Murthy			
Drilling Method	HSA	Drilling Contractor GMI	Total Depth of Borehole 40.0 feet			
Drill Rig Type	СМЕ	Drill Bit Size/Type 4-1/4 in. ID HSA	Surface Elevation			
Groundwater Level and Date	30.96 on 11/11/99	Sampler 5-ft. CME Sampler	Top of PVC Elevation			
Diameter of Hole (inches)	8.25 Diameter of 2 Well (inches)	Type of 2 in. Schedule 40 PVC	Screen 0.010 in. machine slotted			
Type of Sand Pack	20/40 Silica Sand	Type and Depth of Seal(s) Hydrated Bentonite Pellets,	14-16 ft.			

Comments

		SAMP	LES				jra (
Elevation, feet	Depth, feet	Type Number	Percent Recovery	Graphic Log	MATERIAL DESCRIPTION			OVA Reading, ppr	REMARKS
	5		100		SILTY SAND, light brown, loose, dry, very fine to fine grained, moderate to poorly grdaed, subangular. pale orange, caliche present	<u>VANANA</u>	A A A A A A	0 0 0 0 0	MW4-4-5 Soil Jar Sample
	10-		10		- pale orange _ medium dense, some caliche present -		NANA NA	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
	15-		60					0 0 0 0 0	
	20-		50					0 0 0 0	MW4-19-20 Soil Jar Sample
	25		30		CALCITE – SILTY SAND, light brown, wet, fine grained, moderate to poorly graded, subangular. saturated – some caliche present			000000000000000000000000000000000000000	MW4-24-25 Soil Jar Sample
	30		100		some caliche present	- - 		0 0 0 0	
	35		100		some caliche present, pale orange pale orange CALICHE			0 0 0 0	MW4-39-40 Soil Jar
	40				Soil boring terminated at a depth of 40 feet below existing ground. Groundwater encountered after completion of well.		Ω.A	0	Sample
	45-			<u> </u>		I		·	



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Case Narrative for: URS Greiner Woodward Clyde

Certificate of Analysis Number:

99110449

Report To:	Project Name: BYRD LINE
URS Greiner Woodward Ctyde	<u>Site:</u> HOBBS, NM
Rick Nelson	Site Address:
6200 La Calma	
Suite 210	CO Number
Austin	<u>PO Nulliper:</u>
Texas	<u>State:</u> New Mexico
78752-	State Cert. No.:
ph (512) 458-1174 fax: (512) 458-9823	Date Reported: 12/21/1999

According to the latest promulgated version of Method 8310 for PAH's, confirmation of target compounds can be performed using either a second analytical column with different retention times for the analytes of interest or by use of the Diode Array Detector (DAD). SPL confirms all PAH compounds detected at concentrations exceeding the Practical Quantitation Limit (PQL) by examining the DAD spectra for these compounds. The spectra are compared to the reference spectra from the instrument that is used for these compounds, and a probability match is generated for the peak requiring confirmation. The effectiveness of this method of confirmation is dependent on the relative concentrations of non-target compounds that are co-extracted from the sample.

Your sample ID " MW-1-GW " (SPL ID: 9911449-01) was randomly selected for the use in SPL's quality control program for the Total Metals analysis by SW846 method 6010B. The Matrix Spike (MS) and Matrix Spike Duplicate (MSD) recoveries were outside of the advisable quality control limits for various spiked compounds (Batch ID: 1794 and 1794A), due to matrix interference. A Post Digestion Spike (PDS) and Post Digestion Spike Duplicate (PDSD) was performed, Iron and Calcium recoveries were outside the quality control limits. A Laboratory Control Sample (LCS) was analyzed as a quality control check for the analytical batch and all recoveries were within acceptable limits.

Any other data flags or quality control exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

fitte le fi

Project Manager

12/21/1999



URS Greiner Woodward Clyde

		Certificate of A 991	Analysis Number: 10449			
Report To:	URS Greiner Woodw Rick Nelson 6200 La Calma Suite 210 Austin	vard Clyde	Project Name: Site: Site Address:	BYRD LINE HOBBS, NM		
Fax To:	Texas 78752- ph: (512) 458-1174 URS Greiner Woodwa Rick Nelson	fax: (512) 458-9823 and Clyde fax: (512) 458-9823	PO Number: State: State Cert. No.: Date Reported:	New Mexico		
Clie	ent Sample ID	Lab Sample ID Matrix	Date Collected	Date Received	COCID	HOL

MW-1-GW	99110449-01	Water	11/17/99 2:25:00 PM	11/19/99 10:00:00 AM	086259
MW-2-GW	99110449-02	Water	11/17/99 2:45:00 PM	11/19/99 10:00:00 AM	086259
MW-3-GW	99110449-03	Water	11/17/99 3:10:00 PM	11/19/99 10:00:00 AM	086259
MW-4-GW	99110449-04	Water	11/17/99 1:50:00 PM	11/19/99 10:00:00 AM	086259
Trip Blank 11/11/99	99110449-05	Trip Blank	11/17/99	11/19/99 10:00:00 AM	086259

Sett G. In.

W Lynch, Pat Project Manager

> Joel Grice Laboratory Director

Ted Yen Quality Assurance Officer 12/20/99 Date



Client Sample ID M	W-1-GW	Col	lected:	11/17/99 2:25:00	SPL Sample ID): 991	10449-01
		Site	: HC	DBBS, NM		_	
Analyses/Method	Result	Rep.Limit		Dil. Factor QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE-IC			MCL	E300	Units: mg	/L	
Chloride	830	20		100	11/23/99 13:09	ES	11856
	CANICS		MCI	SWOOTER	Linite: mo		
Diesel Range Organie	rs ND	02	mou	1	11/30/99 2-58		12266
Surr: Pentacosane	20	% 20-131		1 *	11/30/99 2:58	RR	12266
Run ID/Seg #: h	P V 991125A-122663	<i>,</i> ,, <u>,</u> ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		·			
Prep Method	Pren Date	Prep Initials					
SW3510B	11/22/1999 8:14	KL					
FLUORIDE-IC			MCL	E300	Units: mg	μ/L	<u> </u>
Fluoride	3.1	0.1		1	11/19/99 12:38	ES	114564
GASOLINE RANGE	ORGANICS		MCL	SW8015B	Units: ma	./L	
Gasoline Range Orga	anics ND	0.5		5	11/23/99 2:04	DL	113837
Surr: 1,4-Difluorobe	enzene 92	% 62-144		5	11/23/99 2:04	DL	113837
Surr: 4-Bromofluor	obenzene 95	% 44-153	-	5	11/23/99 2:04	DL	113837
MERCURY, TOTAL			MCL	SW7470A	Units: mg	/L	
Mercury	ND	0.0002		1	12/15/99 10:31	AG	131554
Run ID/Seq #: F	IGL_991215A-131554						
Prep Method	Prep Date	Prep Initials					
SW7470A	12/14/1999 16:30	AG	1				
METALS BY METHO	DD 6010B, TOTAL		MCL	SW6010B	Units: mg	ı/L	
Arsenic	0.0543	0.005		1	11/29/99 14:40	EG	118303
Lead	0.0227	0.005		1	11/29/99 14:40	EG	118303
Selenium	ND	0.005		1	11/29/99 14:40	EG	118303
Aluminum	7.67	0.1		1	11/30/99 19:47	PB	1 1930
Barium	0.396	0.005		1	11/30/99 19:47	PB	11930
Boron	0.779	0.2		1	11/30/99 19:47	PB	1 1930
Cadmium	ND	0.005		1	11/30/99 19:47	PB	1 19307
Calcium	2060	100	_	10	12/01/99 17:31	PB	12038
Chromium	ND	10		10	12/01/99 17:31	PB	120388
Cobalt	ND	0.01		1	11/30/99 19:47	PB	119307
Copper	ND	0.01		1	11/30/99 19:47	PB	11930
tron	3.46	0.02		1	11/30/99 19:47	РВ	11930
Magnesium	106	0.1		1	11/30/99 19:47	PB	11930
Manganese	0.456	0.005		1	11/30/99 19:47	РВ	119307
Molybdenum	ND	0.02		1	11/30/99 19:47	PB	119307
Nickel	ND	0.02		1	11/30/99 19:47	PB	119307
Potassium	20	2		1	11/30/99 19:47	PB	119307

- B Analyte detected in the associated Method Blank
- Surrogate Recovery Outside Advisable QC Limits
- J Estimated Value between MDL and PQL

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Client Sample ID MW-1-GW				Colle	ected:	11/17/99 2:25:0	SPL Sample I	D: 9911	0449-01
				Site:	нс	BBS, NM		<u> </u>	
Analyses/Method	Res	ult		Rep.Limit		Dil. Factor QUA	L Date Analyzed	Analyst	Seq. #
Silver		٩D		0.01		1	11/30/99 19:47	PB	119307
Sodium	4	71		0.5		1	11/30/99 19:47	PB	119307
Zinc	0.09	17		0.02		1	11/30/99 19:47	PB	119307
Run ID/Seq #: TJ/	AT_991129B-118303								
Prep Method	Prep Date			Prep Initials					
SW3010A	11/22/1999 8:15			ME					
Run ID/Seq #: TJ/	A_991130B-119307								
Prep Method	Prep Date			Prep Initials					
SW3010A	11/22/1999 8:15			ME					
Run ID/Seq #: TJ/	A_991201B-120388								
Prep Method	Prep Date			Prep Initials					
SW3010A	11/22/1999 8:15			ME					
NITROGEN NITRATE	(AS N)				MCI	E300	linits' m		
Nitrogen Nitrate (As N)				0.1	mol	1	11/19/99 12:38	FS	115363
	······································		_			<u> </u>			
POLYNUCLEAR ARO	MATIC HYDROCA	RBO	VS		MCL	SW8310	Units: u	g/L	
1-Methylnaphthalene	I	1D		0.2		1	12/05/99 9:53	KA	123430
2-Methylnaphthalene	1	٩D		0.2		1	12/05/99 9:53	KA	123430
Acenaphthene		4D		0.1		1	12/05/99 9:53	KA	123430
Acenaphthylene	1	٩D	-	0.1		1	12/05/99 9:53	KA	123430
Anthracene	1	١D		0.1		1	12/05/99 9:53	KA	123430
Benz(a)anthracene		ND.		0.1		1	12/05/99 9:53	KA	123430
Benzo(a)pyrene		٩D		0.1		1	12/05/99 9:53	KA	123430
Benzo(b)fluoranthene		١D		0.1		1	12/05/99 9:53	KA	123430
Benzo(g,h,i)perylene		1D		0.1		1	12/05/99 9:53	KA	123430
Benzo(k)fluoranthene		ND D		0.1		1	12/05/99 9:53	KA	123430
Chrysene		4D		0.1		1	12/05/99 9:53	KA	123430
Dibenzo(a,h)anthracene	e l	۷D		0.1		1	12/05/99 9:53	KA	123430
Fluoranthene	1	ND D		0.1		1	12/05/99 9:53	KA	123430
Fluorene		۱D	-	0.1		1	12/05/99 9:53	KA	123430
Indeno(1,2,3-cd)pyrene		1D		0.1		1	12/05/99 9:53	KA	123430
Naphthalene	().2		0.1		1	12/05/99 9:53	KA	123430
Phenanthrene		٩D		0.1		1	12/05/99 9:53	KA	123430
Pyrene	1	10		0.1		1	12/05/99 9:53	KA	123430
Surr: 1-Fluoronaphtha	alene	60	%	30-140		1	12/05/99 9:53	KA	123430
Surr: Phenanthrene-c	110	59	%	35-140		1	12/05/99 9:53	KA	123430
Run ID/Sea #: 2 9	91202B-123430								
Prep Method	Pren Date			Dren Initiale					

SW3510B 11/23/1999 16:02 KL

Qualifiers:

ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

* - Surrogate Recovery Outside Advisable QC Limits

J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL) D - Surrogate Recovery Unreportable due to Dilution

12/20/99 3:25:20 PM



HOUSTON LABORATORY 8880 INTERCHANGE DRIVE HOUSTON, TEXAS 77054 (713) 660-0901

Client Sample ID MW-1-GW			Col	lected:	11/17/99 2:25:00	SPL Sample I	D: 9911	0449-01
			Site	e: HC)BBS, NM			
Analyses/Method	Result		Rep.Llmit		Dil. Factor QUAL	Date Analyzed	Analyst	Seq. #
PURGEABLE AROMATICS				MCL	SW8021B	Units: uç	<u>у/L</u>	· · · ·
Benzene	ND		5		5	11/23/99 2:44	DL	113715
Ethylbenzene	ND		5		5	11/23/99 2:44	DL	113715
Toluene	ND	-	5		5	11/23/99 2:44	DL	113715
Xylenes, Total	ND		5		5	11/23/99 2:44	DL	113715
Surr: 1,4-Difluorobenzene	96	%	72-137		5	11/23/99 2:44	DL	113715
Surr: 4-Bromofluorobenzene	100	%	48-156		5	11/23/99 2:44	DL	113715
SULFATE	<u></u>			MCL	E300	Units: m	g/L	
Sulfate	220		4		20	11/23/99 13:09	ES	118587
TOTAL DISSOLVED SOLIDS				MCL	E160.1	Units: m	g/L	
Total Dissolved Solids (Residue,Filterable)	1170		100		10	11/23/99 21:45	GJ	116193

Qualifiers:

ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

* - Surrogate Recovery Outside Advisable QC Limits

J - Estimated Value between MDL and PQL



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Client Sample ID M	W-2-GW		Coll	ected:	11/17/99 2:45:0	O SPL Sample II	D: 99	110449-02
			Site	: нс	BBS, NM			
Analyses/Method	Result		Rep.Limit		Dil. Factor QUA	L. Date Analyzed	Analys	it Seq.#
CHLORIDE-IC				MCL	E300	Units: m	a/L	
Chloride	970		20		100	11/23/99 13:09	ES	118570
	GANICS			MCI	SW8015B	Unite		
Diesel Range Organic	s ND		0.2		1	11/30/99 3:36	<u>8</u> R	122664
Surr: Pentacosane	21	%	20-131		1	11/30/99 3:36	RR	122664
Run ID/Seq #: H	IP_V_991125A-122664							
Prep Method	Prep Date		Prep Initials					
SW3510B	11/22/1999 8:14		KL					
FLUORIDE-IC				MCL	E300	Units: m	a/L	
Fluoride	2.7		0.1		1	11/19/99 12:38	ES	114567
GASOLINE RANGE	ORGANICS			MCL	SW8015B	Units' m	 n/l	
Gasoline Range Orga	nics ND		0.1		1	11/23/99 3:01	DL	113841
Surr: 1,4-Difluorobe	enzene 95	%	62-144		1	11/23/99 3:01	DL	113841
Surr: 4-Bromofluoro	benzene 97	%	44-153		1	11/23/99 3:01	DL	113841
MERCURY, TOTAL				MCL	SW7470A	Units: m	 a/L	
Mercury	ND		0.0002		1	12/15/99 10:31	AG	131557
Run ID/Seq #: H	GL_991215A-131557							
Prep Method	Prep Date		Prep Initials					
SW7470A	12/14/1999 16:30		AG					
METALS BY METHO	D 6010B, TOTAL			MCL	SW6010B	Units: mg]/L	
Arsenic	0.0258		0.005		1	11/29/99 15:11	EG	118309
Lead	0.00712	_	0.005		1	11/29/99 15:11	EG	118309
Selenium	0.0154		0.005		1	11/29/99 15:11	EG	118309
Aluminum	3.07		0.1		1	11/30/99 20:20	PB	119315
Barium	0.249	_	0.005		1	11/30/99 20:20	PB	119315
Boron	0.56	_	0.2		1	11/30/99 20:20	PB	119315
Cadmium	ND		0.005		1	11/30/99 20:20	PB	119315
Calcium	859	_	50		5	12/01/99 17:50	PB	120393
Chromium	ND		0.01		1	12/01/99 17:46	PB	120392
Cobalt	ND		0.01		1	11/30/99 20:20	PB	119315
Copper	ND		0.01		1	11/30/99 20:20	P8	119315
Iron	1.47		0.02		1	11/30/99 20:20	PB	119315
Magnesium	151		0.1		1	11/30/99 20:20	P8	119315
Manganese	0.204		0.005		1	11/30/99 20:20	PB	119315
Molybdenum	ND		0.02		1	11/30/99 20:20	PB	119315
Nickel	ND		0.02		1	11/30/99 20:20	PB	119315
Potassium	5.89		2		1	11/30/99 20:20	PB	119315

Qualifiers:

ND/U - Not Detected at the Reporting Limit

- B Analyte detected in the associated Method Blank
- * Surrogate Recovery Outside Advisable QC Limits
- J Estimated Value between MDL and PQL



Client Sample ID M	W-2-GW		Coll	ected:	11/17/99 2:45:00	SPL Sample II	D: 9911	0449-02
			Site	: но	BBS, NM		_	
Analyses/Method	Result		Rep.Limit		Dil. Factor QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE-IC				MCL	E300	Units: m	g/L	
Chloride	970		20		100	11/23/99 13:09	ES	118570
DIESEL DANCE OP	CANICS			MCL	SW/8015B	Unite		
Diesel Range Organic			0.2	MOL	1	11/30/00 3:36	01 <u>0</u>	122664
Sur: Pentacosane	21	%	20-131			11/30/99 3:36	88	122664
Run ID/Seg # H	IP V 9911254-122664	/0	20-101	<u> </u>		11/30/33 3.30		
Pren Method	Prep Date		Preo Initials					
SW3510B	11/22/1999 8:14		KL					
				MCI	F300	Linite: m		
Fluoride	27		0.1	INCL	1	11/19/99 12:38	FS	114567
GASOLINE RANGE	ORGANICS			MCL	SW8015B	Units: m	g/L	
Gasoline Range Orga	Inics ND		0.1		1	11/23/99 3:01	DL	113841
Surr: 1,4-Difluorobe	enzene 95	%	62-144		1	11/23/99 3:01	DL	113841
Surr: 4-Bromofluoro	obenzene 97	%	44-153		1	11/23/99 3:01	DL	113841
MERCURY, TOTAL		-		MCL	SW7470A	Units: m	 g/L_	
Mercury	ND		0.0002		1	12/15/99 10:31	AG	131557
Run ID/Seq #: H	IGL_991215A-131557							
Prep Method	Prep Date		Prep Initials					
SW7470A	12/14/1999 16:30		AG					
METALS BY METHO	DD 6010B, TOTAL			MCL	SW6010B	Units: m	 g/L	
Arsenic	0.0258		0.005	· · ·	1	11/29/99 15:11	EG	118309
Lead	0.00712		0.005		1	11/29/99 15:11	EG	118309
Selenium	0.0154		0.005		1	11/29/99 15:11	EG	118309
Atuminum	3.07		0.1		1	11/30/99 20:20	P8	119315
Barium	0.249		0.005	_	1	11/30/99 20:20	PB	119315
Boron	0.56		0.2		1	11/30/99 20:20	P8	119315
Cadmium	ND		0.005		1	11/30/99 20:20	PB	119315
Calcium	859		50		5	12/01/99 17:50	PB	120393
Chromium	ND		0.01		1	12/01/99 17:46	PB	120392
Cobalt	ND		0.01		1	11/30/99 20:20	PB	119315
Copper	ND		0.01		1	11/30/99 20:20	P8	119315
Iron	1.47		0.02		1	11/30/99 20:20	РВ	119315
Magnesium	151		0.1		1	11/30/99 20:20	P8	119315
Manganese	0.204		0.005		1	11/30/99 20:20	РВ	119315
Molybdenum	ND		0.02		1	11/30/99 20:20	PB	119315
Nickel	ND		0.02		11	11/30/99 20:20	PB	119315
Potassium	5.89		2		1	11/30/99 20:20	PB	119315

Qualifiers:

ND/U - Not Detected at the Reporting Limit

- B Analyte detected in the associated Method Blank
- * Surrogate Recovery Outside Advisable QC Limits

J - Estimated Value between MDL and PQL



99110449-01

Client Sample ID MW-1-GW

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Collected: 11/17/99 2:25:00 SPL Sample ID:

			Site	e: HC	BBS, NM			
Analyses/Method	Result		Rep.Limit		Dil. Factor QUAL	Date Analyzed	Analyst	Seq. #
PURGEABLE AROMATICS				MCL	SW8021B	Units: uç	j/L	
Benzene	ND		5		5	11/23/99 2:44	DL	113715
Ethylbenzene	ND		5		5	11/23/99 2:44	DL	113715
Toluene	ND		5		5	11/23/99 2:44	DL	113715
Xylenes, Total	ND		5		5	11/23/99 2:44	DL	113715
Surr: 1,4-Difluorobenzene	96	%	72-137		5	11/23/99 2:44	DL	113715
Surr: 4-Bromofluorobenzene	100	%	48-156		5	11/23/99 2:44	DL	113715
SULFATE				MCL	E300	Units: m	g/L	
Sulfate	220		4		20	11/23/99 13:09	ES	118587
TOTAL DISSOLVED SOLIDS				MCL	E160.1	Units: m	g/L	
Total Dissolved Solids (Residue.Filterable)	1170		100		10	11/23/99 21:45	GJ	116193

ND/U - Not Detected at the Reporting Limit

- B Analyte detected in the associated Method Blank
- * Surrogate Recovery Outside Advisable QC Limits

J - Estimated Value between MDL and PQL



Client Sample ID MW-2-GW		Coll	ected:	11/17/99 2:45:0	0 SPL Sample ID	: 9911	99110449-02	
			Site	: нс	BBS, NM			
Ana	lyses/Method	Result	Rep.Limit		Dil. Factor QUA	L Date Analyzed	Analyst	Seq. #
Si	iver	ND	0.01		1	11/30/99 20:20	PB	119315
S	xdium	399	0.5		1	11/30/99 20:20	PB	119315
Zi	nc	0.0217	0.02		1	11/30/99 20:20	PB	119315
	Run ID/Seq #: TJA	T 991129B-118309						
	Prep Method	Prep Date	Prep Initials					
	SW3010A	11/22/1999 8:15	ME					
	Run ID/Seq #: TJA	991130B-119315	;					
	Prep Method	Prep Date	Prep Initials					
	SW3010A	11/22/1999 8:15	ME					
	Run ID/Seq #: TJA	991201B-120392	*					
	Prep Method	Prep Date	Prep Initials					
	SW3010A	11/22/1999 8:15	ME					
	Run ID/Seq #: TJA	991201B-120393						
	Prep Method	Prep Date	Prep Initials					
	SW3010A	11/22/1999 8:15	ME					
NIT	ROGEN, NITRATE	(AS N)		MCL	E300) Units: ma		
Ni	trogen,Nitrate (As N)	0.71	0.1		1	11/19/99 12:38	ES	115366
PO	YNUCLEAR ARON	ATIC HYDROCARBO	NS	MCL	SW8310) Units: ug/	 ′L	
1-	Methylnaphthalene	ND	0.2		1	12/05/99 10:33	KA	123431
2-	Methylnaphthalene	ND	0.2		1	12/05/99 10:33	KA	123431
Ā	enaphthene	ND	0.1	• •	1	12/05/99 10:33	KA	123431
Ac	enaphthylene	ND	0.1		1	12/05/99 10:33	KĂ	123431
Ar	ithracene	ND	0.1		1	12/05/99 10:33	KA —	123431
Be	enz(a)anthracene	ND	0.1		1	12/05/99 10:33	KA	123431
Be	nzo(a)pyrène	ND	0.1		1	12/05/99 10:33	ка	123431
Be	enzo(b)fluoranthene	ND	0.1		1	12/05/99 10:33	KA	123431
Be	nzo(a.h.i)perviene	ND	0.1		1	12/05/99 10:33	KA	123431
Be	nzo(k)fluoranthene	ND	0.1		1	12/05/99 10:33	KA	123431
Ct	rvsene	ND	0.1		1	12/05/99 10:33	KA	123431
Di	benzo(a.h)anthracene	ND	0.1		1	12/05/99 10:33	KA	123431
FI	voranthene	ND	0.1		1	12/05/99 10:33	KA	123431
FI	lorene	ND	0.1		1	12/05/99 10:33	KA	123431
In	eno(1.2.3-cd)ovrene	ND	0.1	· · · · · · · · · · · · · · · · · · ·	<u> </u>	12/05/99 10:33	KA	123431
N	ohthalene	ND	0.1		<u>,</u>	12/05/99 10:33	KA	123431
PI	enanthrene	ND	0.1		<u>,</u> 1	12/05/99 10:33	КА	123431
P			0.1		<u>,</u>	12/05/99 10:33	KA	123431
	10110	130	v . (12100133 10.00		120701
	Sur: 1-Euronanhthal	lene 62	% 30-140		1	12/05/99 10-33	KA	123431

Qualifiers:

- ND/U Not Detected at the Reporting Limit
- B Analyte detected in the associated Method Blank
- * Surrogate Recovery Outside Advisable QC Limits
- J Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL) D - Surrogate Recovery Unreportable due to Dilution

12/20/99 3:25:22 PM



Client Sample ID M	W-2-GW			Colle	ected:	11/17/99 2:45:00	SPL Sample II	D: 991	10449-02
				Site:	нс	BBS, NM			<u> </u>
Analyses/Method		Result		Rep.Limit		Dil. Factor QUAL	Date Analyzed	Analyst	Seq. #
Run ID/Seq #: 2	_991202B-12343	1							
Prep Method	Prep Date			Prep Initials					
SW3510B	11/23/1999 16	6:02		KL					
PURGEABLE AROM	ATICS		-		MCL	SW8021B	Units: ug	/L	
Benzene		ND		1		1	11/23/99 3:15	DL	113716
Ethylbenzene		ND		1		1	11/23/99 3:15	DL	113716
Toluene	······································	ND		1		1	11/23/99 3:15	DL	113716
Xylenes,Total		ND		1		1	11/23/99 3:15	DL	113716
Surr: 1,4-Difluorobe	nzene	96	%	72-137		1	11/23/99 3:15	DL	113716
Surr: 4-Bromofluoro	benzene	100	%	48-156		1	11/23/99 3:15	DL	113716
SULFATE					MCL	E300	Units: mg	3/L	
Sulfate		300		4		20	11/23/99 13:09	ES	118588
TOTAL DISSOLVED	SOLIDS				MCL	E160.1	Units: mg	g/L	
Total Dissolved Solids (Residue, Filterable)	; ·	1480		100		10	11/23/99 21:45	GJ	116194

Qualifiers:

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ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

* - Surrogate Recovery Outside Advisable QC Limits

J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL) D - Surrogate Recovery Unreportable due to Dilution

12/20/99 3:25:22 PM



Client Sample ID M	1W-3-GW			Coll	ected:	11/17/99 3	:10:00	SPL Sample I	D: 9911	0449-03
				Site	нс	BBS, NM				
Analyses/Method	Res	ult		Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE-IC					MCL		E300	Units: m	g/L	
Chloride	{	390		20		100		11/23/99 13:09	ES	118571
DIESEL RANGE OR					MCL	SW8	015B	Units: m	a/I	
Diesel Range Organi	CS	ND		0.2		1		11/30/99 1:42	RR	122661
Surr: Pentacosane)	23	%	20-131		1		11/30/99 1:42	RR	12266
Run ID/Seg #: I	HP V 991125A-122661						•			
Prep Method	Prep Date			Prep Initials						
SW3510B	11/22/1999 8:14			KL						
	······				MCL		E300	Units: m	n/l	
Fluoride		2.9		0.1		1		11/19/99 12:38	ES	114568
				· · · · · · · · · · · · · · · · · · ·						~
GASOLINE RANGE	ORGANICS				MCL	Swa	015B	Units: m	g/L.	
Gasoline Range Orga	anics			0.1		1		11/23/99 3:04		113843
Surr: 1,4-Difluorob	enzene	92	%	62-144		1		11/23/99 3:04		113843
Surr: 4-Bromofluor		100	<u>%</u>	44-153		1		11/23/99 3:04	DL	113843
MERCURY, TOTAL					MCL	SW7	'470A	Units: m	g/L	
Mercury	· · · · · · · · · · · · · · · · · · ·	ND		0.0002		1		12/15/99 10:31	AG	131558
Run ID/Seq #: I	HGL_991215A-131558									
Prep Method	Prep Date		_	Prep Initials						
SW7470A	12/14/1999 16:30			AG						
METALS BY METHO	OD 6010B. TOTAL				MCL	SW6	010B	Units: m	a/L	
Arsenic	0.03	335		0.005		1		11/29/99 15:16	EG	118310
Lead	0.01	28		0.005		1		11/29/99 15:16	EG	118310
Selenium	0.01	112		0.005		1		11/29/99 15:16	EG	118310
Aluminum	2	.82		0.1		1		11/30/99 20:24	PB	119316
Barium	0.4	53		0.005		1		11/30/99 20:24	P8	119316
Boron	0.3	41		0.2		1		11/30/99 20:24	РВ	119316
Cadmium		ND	_	0.005		1		11/30/99 20:24	PB	119316
Calcium	15	580		50		5		12/01/99 17:58	PB	120395
Chromium		ND		0.01		1		12/01/99 17:54	PB	120394
Cobalt		ND		0.01		1		11/30/99 20:24	РВ	119316
Copper		ND		0.01		1		11/30/99 20:24	PB	119316
Iron	2	.39		0.02		1		11/30/99 20:24	PB	119316
Magnesium	1	32		0.1		1		11/30/99 20:24	РВ	119316
Manganese	0.4	74		0.005		1		11/30/99 20:24	PB	119316
Molybdenum		ND		0.02		1	·	11/30/99 20:24	PB	119316
Nickel		ND		0.02		1		11/30/99 20:24	PB	119316
Potassium	4	.82		2		1		11/30/99 20:24	PB	119316

Qualifiers:

- ND/U Not Detected at the Reporting Limit
- B Analyte detected in the associated Method Blank
- * Surrogate Recovery Outside Advisable QC Limits
- J Estimated Value between MDL and PQL



Client Sample ID MW-3-GW			Coll	ected:	11/17/99 3	:10:00	SPL Sample II	D: 991	10449-03
			Site	: но	BBS, NM	_			
Analyses/Method	Result		Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
Silver	ND		0.01		1		11/30/99 20:24	P8	119316
Sodium	258		0.5		1		11/30/99 20:24	PB	119316
Zinc	0.0846		0.02		1		11/30/99 20:24	РВ	119316
Run ID/Seq #: TJA	T_991129B-118310								
Prep Method	Prep Date		Prep Initials						
SW3010A	11/22/1999 8:15		ME						
Run ID/Seq #: TJA	_991130B-119316								
Prep Method	Prep Date		Prep Initials						
SW3010A	11/22/1999 8:15		ME						
Run ID/Seq #: TJA	_991201B-120394								
Prep Method	Prep Date		Prep Initials						
SW3010A	11/22/1999 8:15		ME						
Run ID/Seq #: TJA	991201B-120395								
Prep Method	Prep Date		Prep Initials						
SW3010A	11/22/1999 8:15		ME						
NITROGEN, NITRATE	(AS N)			MCL		E300	Units: mo	 x/L.	- <u></u>
Nitrogen, Nitrate (As N)	0.79		0.1		1		11/19/99 12:38	ES	115367
		MIC	······································	MCI	014	10240	l luites sur		· · · · · · · · · · · · · · · · · · ·
1 Mathudaaphthalana		JNS	0.2	NICL		10310	12/05/00 11:12		122422
	ND		0.2		<u>'</u>		12/05/99 11:12		120402
2-meurymaphuraiene	ND		0.2		1		12/05/09 11:12		123432
Acenaphinene	ND		0.1		I		12/05/99 11:12	1/4	120402
Acenaphilipiene			0.1		<u>_</u>		12/05/99 11.12		123432
			0.1				12/05/99 11:12		120402
Benz(a)anuracerie	ND		0.1				12/05/99 11:12		123432
Benzo(a)pyrene	NU		0.1				12/05/99 11:12	KA	123432
Benzo(b)nuorantnene	ND		0.1	· · · · ·		_	12/05/99 11:12	KA	123432
Benzo(g,n,I)perviene	ND		0.1				12/05/99 11:12	KA	123432
Benzo(k)nuorantnene	NU		0.1		1		12/05/99 11:12		123432
Chrysene	ND		0.1		1		12/05/99 11:12	KA	123432
Dibenzo(a,h)anthracene	ND		0.1		1		12/05/99 11:12	KA	123432
Fluoranthene	ND		0.1		1	_	12/05/99 11:12	KA	123432
Fluorene	ND		0.1		1		12/05/99 11:12	KA	123432
Indeno(1,2,3-cd)pyrene	ND		0.1		<u> </u>	_	12/05/99 11:12	KA	123432
Naphthalene	ND		0.1		1		12/05/99 11:12	KA	123432
Phenanthrene	ND ND		0.1		1		12/05/99 11:12	KA	123432
Pyrene	ND		0.1	·····	1		12/05/99 11:12	KA	123432
Surr: 1-Fluoronaphtha	lene 55	%	30-140		1	<u> </u>	12/05/99 11:12	КА	123432
Surr: Phenanthrene-d	10 61	%	35-140		1		12/05/99 11:12	KA	123432

ND/U - Not Detected at the Reporting Limit

- B Analyte detected in the associated Method Blank
- * Surrogate Recovery Outside Advisable QC Limits
- J Estimated Value between MDL and PQL



Client Sample ID MW-3-GW

Collected: 11/17/99 3:10:00 SPL Sample ID: 99110449-03

				Site	: но	BBS, NM			
Anatyses/Method		Result	Result Re			Dil. Factor QUAL	Date Analyzed	Analyst	Seq. #
Run ID/Seq #: 2	2_991202B-12343	2							
Prep Method	Prep Date			Prep Initials					
SW3510B	11/23/1999 1	6:02		KL					
PURGEABLE ARON	MATICS				MCL	SW8021B	Units: ug	μ/L	
Benzene		ND		1		1	11/23/99 3:44	DL	113717
Ethylbenzene		ND		1		1	11/23/99 3:44	DL	113717
Toluene		ND		1		1	11/23/99 3:44	DL	113717
Xylenes, Total		ND		1		1	11/23/99 3:44	DL	113717
Surr: 1,4-Difluorob	enzene	96	%	72-137		1	11/23/99 3:44	DL	113717
Surr: 4-Bromofluor	obenzene	100	%	48-156	· ······	1	11/23/99 3:44	DL	113717
SULFATE					MCL	E300	Units: mg	g/L.	
Sulfate		110		2		10	11/23/99 13:09	ES	118589
TOTAL DISSOLVED	SOLIDS				MCL	E160.1	Units: mg	 g/L	
Total Dissolved Solid (Residue, Filterable)	s	1090		100		10	11/23/99 21:45	GJ	116195

Qualifiers:

ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank * - Surrogate Recovery Outside Advisable QC Limits

J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL) D - Surrogate Recovery Unreportable due to Dilution

12/20/99 3:25:25 PM



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Client Sample ID MW-4-GW			Coll	ected:	11/17/99 1:50:00	SPL Sample I): 9911	0449-04
			Site	: нс	BBS, NM			
Analyses/Method	Result		Rep.Limit		Dil. Factor QUAL	Date Analyzed	Analyst	Seq. #
CHLORIDE-IC				MCL	E300	Units: m	a/L	. <u> </u>
Chloride	850		20		100	11/23/99 13:09	ES	118572
	GANICS			MCI	SW8015B	Units: m	~/i	
Diesel Range Organic	s ND		0.2	mor	1	11/30/99 2:20	RR	122662
Surr: Pentacosane	32	%	20-131		1	11/30/99 2:20	RR	122662
Run ID/Sea #: H	P V 991125A-122662							
Prep Method	Prep Date		Prep Initials					
SW3510B	11/22/1999 8:14		KL					
	· · · · · · · · · · · · · · · · · · ·			MCI	E300	linite: m	~//	
FLUORIDE4C	20		0.1	MOL	1	11/10/00 12:38	<u>µ∟</u> FS	11/660
	2.3				•			
GASOLINE RANGE	ORGANICS			MCL	SW8015B	Units: mg	g/L	
Gasoline Range Organ	nics ND		0.1		1	11/23/99 0:04	DL	113835
Surr: 1,4-Difluorobe	nzene 93	%	62-144		1	11/23/99 0:04	DL	113835
Surr: 4-Bromofluorobenzene		%	44-153		11	11/23/99 0:04	DL	113835
MERCURY, TOTAL				MCL	SW7470A	Units: mo	1/L	· · · - · · · · ·
Mercury	ND		0.0002		1	12/15/99 10:31	AG	131559
Run ID/Seq #: H	GL_991215A-131559					· · · · · ·	· · · · · · · · · · · · · · · · ·	
Prep Method	Prep Date		Prep Initials					
SW7470A	12/14/1999 16:30		AG					
METALS BY METHO	D 6010B. TOTAL			MCL	SW6010B	Units: mo	 x/L	
Arsenic	0.00996		0.005		1	11/29/99 15:32	EG	118314
Lead	ND	-	0.005		1	11/29/99 15:32	EG	118314
Selenium	ND		0.005		1	11/29/99 15:32	EG	118314
Aluminum	1.13		0.1		1	11/30/99 20:28	PB	119317
Barium	0.24		0.005		1	11/30/99 20:28	PB	119317
Boron	0.462		0.2		1	11/30/99 20:28	PB	119317
Cadmium	ND		0.005		1	11/30/99 20:28	PB	119317
Calcium	256		10		1	12/01/99 18:02	PB	120396
Chromium	ND		1		1	12/01/99 18:02	РВ	120396
Cobalt	ND		0.01		1	11/30/99 20:28	PB	119317
Copper	ND		0.01		1	11/30/99 20:28	PB	119317
Iron	0.616		0.02		1	11/30/99 20:28	PB	119317
Magnesium	116		0.1		1	11/30/99 20:28	PB	119317
Manganese	0.0545		0.005		1	11/30/99 20:28	P8	119317
Molybdenum	ND		0.02		1	11/30/99 20:28	PB	119317
Nickel	ND		0.02		1	11/30/99 20:28	PB	119317
Potassium	63.2		2		1	11/30/99 20:28	P8	119317

Qualifiers:

ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

* - Surrogate Recovery Outside Advisable QC Limits

J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL) D - Surrogate Recovery Unreportable due to Dilution

12/20/99 3:25:26 PM



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14-13-14 14-13-14

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HOUSTON LABORATORY 8880 INTERCHANGE DRIVE HOUSTON, TEXAS 77054 (713) 660-0901

Client Sample ID MW	-4-GW	Coll	ected:	11/17/99 1	:50:00	SPL Sample II): 99	110449-04
		Site	: HC	BBS, NM	_			
Analyses/Method	Result	Rep.Limit	_	Dil. Factor	QUAL	Date Analyzed	Analys	t Seq.#
Silver	ND	0.01		1		11/30/99 20:28	PB	119317
Sodium	250	0.5		1		11/30/99 20:28	P8	119317
Zinc	ND	0.02		1		11/30/99 20:28	PB	119317
Run ID/Seq #: TJA	T_991129B-118314							
Prep Method	Prep Date	Prep Initials						
SW3010A	11/22/1999 8:15	ME						
Run ID/Seq #: TJA	_991130B-119317							
Prep Method	Prep Date	Prep Initials						
SW3010A	11/22/1999 8:15	ME						
Run ID/Seq #: TJA	_991201B-120396							
Prep Method	Prep Date	Prep Initials						
SW3010A	11/22/1999 8:15	ME						
NITROGEN, NITRATE	(AS N)		MCL		E300	Units: mg	<u>а/L</u>	
Nitrogen, Nitrate (As N)	ND	0.1		1		11/19/99 12:38	ES	115368
POLYNUCLEAR AROL	MATIC HYDROCARBO	DNS	MCL	SV	/8310	Units: ua	 /L	
1-Methylnaphthalene	ND	0.2		1		12/05/99 11:52	KA	123433
2-Methylnaphthalene	ND	0.2		1		12/05/99 11:52	KA	123433
Acenaphthene	ND	0.1		1		12/05/99 11:52	КА	123433
Acenaphthylene	ND	0.1		1		12/05/99 11:52	KA	123433
Anthracene	ND	0.1		1		12/05/99 11:52	KA	123433
Benz(a)anthracene	ND	0.1		1		12/05/99 11:52	KA	123433
Benzo(a)pyrene	ND	0.1	- <u>a</u>	. 1		12/05/99 11:52	KA	123433
Benzo(b)fluoranthene	ND	0.1		1		12/05/99 11:52	KA	123433
Benzo(g,h,i)perylene	ND	0.1		1		12/05/99 11:52	KA	123433
Benzo(k)fluoranthene	ND	0.1		1		12/05/99 11:52	KA	123433
Chrysene	ND	0.1		1		12/05/99 11:52	КА	123433
Dibenzo(a,h)anthracene	ND	0.1		1		12/05/99 11:52	KA	123433
Fluoranthene	ND	0.1		1		12/05/99 11:52	KA	123433
Fluorene	ND	0.1		1		12/05/99 11:52	КА	123433
Indeno(1,2,3-cd)pyrene	ND	0.1		1		12/05/99 11:52	KA	123433
Naphthalene	ND	0.1				12/05/99 11:52	KA	123433
Phenanthrene	ND	0.1		1		12/05/99 11:52	KA	123433
Pyrene	ND	0.1		1		12/05/99 11:52	KĀ	123433
Surr: 1-Fluoronaphtha	lene 59	% 30-140	···.			12/05/99 11:52	KA	123433
Surr: Phenanthrene-d	10 76	% 35-140		1		12/05/99 11:52	KA	123433
Run ID/Seg #: 2 9	91202B-123433							

Prep Method	Prep Date	Prep Initials
SW3510B	11/23/1999 16:02	KL

Qualifiers:

s: ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

* - Surrogate Recovery Outside Advisable QC Limits

J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL) D - Surrogate Recovery Unreportable due to Dilution

12/20/99 3:25:26 PM



Client Sample ID MW-4-GW			Co	lected:	11/17/99 1:50:00	SPL Sample II	D: 9911	0449-04
Analyses/Method	Result		Rep.Limit		Dil. Factor QUAL	Date Analyzed	Analyst	Seq. #
PURGEABLE AROMATICS		_		MCL	SW8021B	Units: ug	 /L	
Benzene	ND		1		1	11/23/99 0:48	DL	113709
Ethylbenzene	ND		1		1	11/23/99 0:48	DL	113709
Toluene	ND		1		1	11/23/99 0:48	DL	113709
Xylenes, Total	ND		1		1	11/23/99 0:48	DL	113709
Surr: 1,4-Difluorobenzene	95	%	72-137		1	11/23/99 0:48	DL	113709
Surr: 4-Bromofluorobenzene	100	%	48-156		1	11/23/99 0:48	DL	113709
SULFATE	<u></u>			MCL	E300	Units: mg]/L	
Sulfate	110		2		10	11/23/99 13:09	ES	118590
TOTAL DISSOLVED SOLIDS	i			MCL	E160.1	Units: mg]/L	<u> </u>
Total Dissolved Solids (Residue,Filterable)	1010	_	100		10	11/23/99 21:45	GJ	116197

Qualifiers:

ND/U - Not Detected at the Reporting Limit

- B Analyte detected in the associated Method Blank
- * Surrogate Recovery Outside Advisable QC Limits
- J Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL) D - Surrogate Recovery Unreportable due to Dilution

12/20/99 3:25:27 PM

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Client Sample ID Trip Blank 11/11	1/99		Col	lected:	11/17/99	SPL Sample I	D: 9911	0449-05
	<u> </u>		Site	e: HC	BBS, NM			
Analyses/Method	Result		Rep.Limit		Dil. Factor QUAL	Date Analyzed	Analyst	Seq. #
GASOLINE RANGE ORGANICS				MCL SW8015B		Units: m		
Gasoline Range Organics	ND		0.1		1	11/22/99 21:04	DL	113830
Surr: 1,4-Difluorobenzene	90	%	62-144		1	11/22/99 21:04	DL	113830
Surr: 4-Bromofluorobenzene	97	%	44-153		1	11/22/99 21:04	DL	113830
PURGEABLE AROMATICS			·	MCL	SW8021B	Units: ug		
Benzene	ND		1		1	11/22/99 21:47	DL	113705
Ethylbenzene	ND		1		1	11/22/99 21:47	DL.	113705
Toluene	ND		1		1	11/22/99 21:47	ÐL.	113705
Xylenes, Total	ND		1		1	11/22/99 21:47	DL	113705
Sur: 1,4-Difluorobenzene	98	%	72-137		1	11/22/99 21:47	DL	113705
Sutr: 4-Bromofluorobenzene	100	%	48-156		1	11/22/99 21:47	DL	113705

ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

* - Surrogate Recovery Outside Advisable QC Limits

J - Estimated Value between MDL and PQL

Quality Control Documentation

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Quality Control Report

URS Greiner Woodward Clyde BYRD LINE

Analysis:	Diesel Range Organ	nics					v	VorkOrder:	!	991104	49
Methoa:	2400128						L	au batch II	J:	1791	
	Meth	nod Blank				Samples	in Analytical	Batch:			
RuniD:	HP_V_991125A-117219	Units:	mg/l	<u>.</u>		Lab Sam	ple ID	Clie	nt Sam	ple ID	
Analysis Date:	11/25/1999 8:45	Analyst:	RR			99110449	-01E	MW	-1-GW		
Preparation Date:	11/22/1999 8:14	Prep By	: KL	Method SV	W3510B	99110449	9-02E	MW	2-GW		
						99110449	9-03E	MW	-3-GW		
·····	Apoluto		Door	It IRon Limi	A	99110449)-04E	MW	-4-GW		
Diete		·	rtesu								
Su	rr: Pentacosane		2	6.6 20-13	1						
					_						
	Laborato	ry Control S	Sample	/Laboratory	Control Sa	Imple Duplic	ate (LCS/LCS	SD)			
	RuniD:	HP_V	/_99112	5A-117220	Units:	mg/L					
	Analysis Dat	e: 11/2	5/1999	9:23	Analyst:	RR					
	Preparation	Date: 11/2	2/1999	8:14	Prep By:	KL Method	SW3510B				
Ar	nalvte	LCS	.cs i	LCS	LCSD	LCSD	LCSD	RPD	RPD	Lower	Upper
		Spike R	esult	Percent	Spike	Result	Percent		Limit	Limit	Limit
		Added		Recovery	Added		Recovery				
Diesel Range Orga	anics	2.5	2.1	84	2.5	5 1.9	78	7.8	39	53	148

Qualifiers:

ND/U - Not Detected at the Reporting Limit

* - Recovery Outside Advisable QC Limits

B - Analyte detected in the associated Method Blank

J - Estimated value between MDL and PQL

D - Recovery Unreportable due to Dilution

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Quality Control Report

URS Greiner Woodward Clyde **BYRD LINE**

				URS	6 Greiner V	Voodward	Clyde	,					
\sim					BYR	D LINE							
، در بر هو بر هو در	Analysis: Method:	Purgeable Aromati SW8021B	ics					Wor Lab	kOrder: Batch ID:	991 R5:	10449 271		
		Met	thod Blank			S	amples i	n Analytical Ba	tch:				
	RunD	HP S 991122A-11370		<u>на/</u>					0114.0			· .	
19			t offices.	ugre Di			10 Samp			ample	10		
्र	Analysis Date:	11/22/1999 21:18	Analyst:	DL		95	110449-	71A 12A	MAY-1-G	VV •\A7			
						93	110449-	134	MW-3-C	1 V V 1 A f			
						90	110449-)4A	MW-4-G	:w			
		Analyte		Result	Rep Limit	99	110449-()5A	Trip Blar	nk 11/1	1/99		
	ie	Benzene			1.0								
u a		foluene		ND	1.0								
	2	(ylenes, Total		ND	1.0								
201	L	Surr: 1,4-Diffuorobenzene		95.7	48-156								
		····											
				Lat	poratory Con	trol Sample	(LCS)						
		Runt)· +	IP S 991	122A-113703	Units:	ua/L						
		Analy	sis Date:	1/22/19	99 20:48	Analyst:	DL						
		· ····,				•							
		, 	Analyte		Spi	ce Result	Perce	ent Lower	Upper				
998 274					Ado	ed	Recov	/ery Limit	Limit				
		Benzene)			50 4	9	98 61	119				
		Ethylber	zene			50 5	1	101 70	118				
		Toluene				50 5	0	100 65	125				
		Xylenes	Total			150 14	7	98 72	116				
•													
1													
			<u>Matrix S</u>	pike (M	S) / Matrix Sp	ike Duplicat	e (MSD)						
		San	nie Sniked	991104	60-02								
		Run	ID.	HP S 9	91122A-113707	Units:	ua/L						
		Ana	ivsis Date:	11/22/1	999 22:46	Analyst	DL						
5. al			•										
444	•=•	Analyte	Sample	MS	MS Result	MS %	MSD	MSD Result	MSD %	RPD	RPD	Low	High
فتتع		•	Result	Spike		Recovery	Spike		Recovery		Limit	Limit	Limit
8-J			ł	Added			Added			ļ			
	Benzene		ND	20	1	6 77.7	20	14	70.4	9.95	21	32	164
2.53	Ethylbenzene		ND	20		4 69.2	20	12	59.6	14.9	19	52	142
20.4	Toluene		NÐ	20	1	5 74.2	20	13	64.0	14.7	20	38	159
	Xylenes, Total		ND	60	3	5 58.3	60	28,	46.7*	22.2*	17	53	143

Qualifiers:

ND/U - Not Detected at the Reporting Limit

* - Recovery Outside Advisable QC Limits

B - Analyte detected in the associated Method Blank

J - Estimated value between MDL and PQL

D - Recovery Unreportable due to Dilution

12/20/99 3:25:30 PM



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Quality Control Report

URS Greiner Woodward Clyde BYRD LINE

Analysis: Method:	Gasoline I SW8015B	Range Org	Jani cs							WorkOrder: Lab Batch ID:		991 R5	10449 277	I	
		Meth	od Blank				Sa	imples i	n Ana	ytical Ba	itch:				
RunID: Analysis Date:	HP_S_9911; 11/22/1999	22B-113829 9 21:01	Units: Analyst:	mg/L Lab Sample ID st: DL 99110449-01A 99110449-02A 99110449-03A					le ID 01A 02A 03A	<u>Client San</u> MW-1-GW MW-2-GW MW-3-GW			ID		
Gas S S	A oline Range Org urr: 1,4-Difluorot urr: 4-Bromofluo	nalyte anics penzene robenzene		Result ND 91.3 96.8	Rep Limi 0 0.10 3 62-14 3 44-15	it 0 4 3	99 99	110449- 110449-	04A 05A		MW-4-(Trip Bla	SW nk 11/1	1/99		
				La	boratory	Contro	I Sample (LCS)		. <u>.</u>					
		RunID: Analys	s Date:	HP_S_99 11/22/19	91122B-113 999 20:01	828 I	Units: Analyst:	mg/L DL							
			Analy	te		Spike Added	Result	Perce Recov	ent very	Lower Limit	Upper Limit				
	Gasoline Range O						1) 0.73	8	78	64	131				
			Matrix	Spike (M	IS) / Matri	ix Spike	e Duplicate	e (MSD)		<u> </u>					
		Samp Runt[Analy	le Spiked:): sis Date:	991104 HP_S_9 11/22/1	449-04 991122B-11 1999 23:04	3832 4	Units: Analyst;	mg/L DL							
A	nalyte		Sample Result	MS Spike Added	MS Re	sult	MS % Recovery	MSD Spike Added	MSD	Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Gasoline Range (Organics		N	0.9		0.84	89.4	0.9		0.81	87.0	2.80	36	36	160

Qualifiers:

ND/U - Not Detected at the Reporting Limit

* - Recovery Outside Advisable QC Limits

D - Recovery Unreportable due to Dilution

B - Analyte detected in the associated Method Blank

J - Estimated value between MDL and PQL

12/20/99 3:25:30 PM



Qualifiers:

Quality Control Report

URS Greiner Woodward Clyde DVDD LINE

				BAKD LII	NE					
Analysis:	Polynuclear Aromatic Hydroca SW8310	rbons					Worl Lab I	«Order: Batch ID:	99110449 1817	
<u>i</u>	Method Blank				San	nples in Ana	lytical Ba	tch:		<u>-</u>
RunID:	2_991202B-123423 Units:	ug/L			Lab	Sample ID		Client S	ample ID	
Analysis Date:	12/02/1999 6:02 Analysi	: КА			991	10449-01B		MW-1-G	W	
Preparation Date:	: 11/23/1999 16:02 Prep B	y: KL M	ethod S	W3510B	991	10449-02B		MW-2-G	w	
					991	10449-03B		MW-3-G	w	
1 2	Analyte	Recult	Ren Limi	F	991	10449-04B		MW-4-G	w	
	Analyte	rtesuit		5						
<3 <u>1-M</u> 6	ethylnaphthalene	NU	0.2							
2-M6	enyinaphinakene		0.10	1						
Acer	aphuene		0.10	4						
Anth	racene	ND	0.10	5						
Ben	z/a)anthracene	ND	0.10	2						
Benz	zo(a)ovrene	ND	0.10	วี						
273 Ben	zo(b)fluoranthene	ND	0.10	5						
Benz	zo(g,h,i)perylene	ND	0.10	ז						
8enz	zo(k)fluoranthene	ND	0.10	כ						
Chry	sene	ND	0.10	2		-				
Dibe	nzo(a,h)anthracene	ND	0.10	2						
Fluo	ranthene	ND ND	0.10	2						
Fluo		ND	0.10							
Inde	no(1,2,3-cd)pyrene		0.10	2						
Napr Napr	anthene	ND	0.10	ŧ.						
Pyre	ne	ND	0.10	2						
S.	III: 1-Fluoronaphthaleoe	56.8	30-140	0						
S	urr: Phenanthrene-d10	46.5	35-140	D						
··		· · · · · ·		_						
÷	······································	Lab	oratory	Control S	Sample (1.	CS)				
			oracory	001111011	semple 1					
	RunID:	2_991202B	3-123424	Ur	nits: u	g/L				
50-5	Analysis Date:	12/02/199	99 6:42	Ar	alyst: K	A				
	Prenaration Date:	11/23/199	9 16.02	Pr	en Rv: K	Method	SW3510B			
	r reparation Date.	111201133	30 TO.OZ	• •			01100100			
供导	Anal	yte		Spike	Result	Percent	Lower	Upper		
		-		Added		Recovery	Limit	Limit		
ŝ.	Acenanhthana			0.5	0.39	77	0.01	124		
	Acenaphthylene			0.5	0.00	76	0.01	139		
*	Anthracene			0.5	0.39	78	0.01	126		
	Benz(a)anthracene			0.5	0.41	81	12	135		
10-70	Benzo(a)nvrene			0.5	0 42	84	0.01	128		
辰1	Benzo(b)fluoraothao	<u> </u>		0.5	0.41	83		150		
	Bosto(a h i)sostoso			0.0	0.4	90	0.049	116		
and a second	benzo(g,n,n)peryrene			0.5	0.4	00	0.01	110		

0.5

0.5

0.5

0.5

0.5

0.5

0.5

0.41

0.45

0.41

0.39

0.39

0.39

0.38

ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

Benzo(k)fluoranthene

Dibenzo(a,h)anthracene

Indeno(1,2,3-cd)pyrene

Chrysene

Fluorene

Fluoranthene

Naphthalene

* - Recovery Outside Advisable QC Limits

81

90

83

79

78

79

75

0.01

0.01

0.01

0.01

0.01

0.01

14

159

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123

142

116

122

D - Recovery Unreportable due to Dilution



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Quality Control Report

URS Greiner Woodward Clyde BYRD LINE

Analysis: Method:	Polynucio SW8310	ear Aroma	ntic Hydrocart	rbons					(Order: Batch (D:	99110449 1817				
				La	boratory Contr	ol Sample (LCS)					· · · ·	<u> </u>	-
		RuniE Analy Prepa): sis Date: ration Date:	2_991202 12/02/19 11/23/19	B-123424 99 6:42 99 16:02	Units: Analyst: Prep By:	ug/L KA KL Me	thod SW3510B						
			Analyte	9	Spike Adde	e Result	Perce Recov	ent Lower very Limit	Upper Limit		-			2
		Phenant	hrene			0.5 0.4	4	80 0.01	155					
		'Pyrene		·····		0.5 0.3	3	76 0.01	140					:
			Matrix 5	Snike (M	S) / Matrix Soil	e Dunlicat								*
		Sarr Run Anal Prep	ple Spiked: D: ysis Date: paration Date:	991103 2_99120 12/02/1 11/23/1	956-04 928-123426 999 9:20 999 16:02	Units: Analyst: Prep By:	ug/L KA M	lethod						2. 21.4.3.5 Stores
<u></u>	Analyte	 	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit	N. 1946 A
Acenaphthene			1.2	0.5	1.4	58.1	0.5	1.5	78.1	29.4	30	0.01	124	
Acenaphthylene			0.91	0.5	0.95	7.98	0.5	1.9	208*	185*	30	0.01	139	1
Anthracene			ND	0.5	0.36	67.0	0.5	0.37	68.3	1.92	30	0.01	126	
Benz(a)anthrace	ene		ND	0.5	0.38	66.6	0.5	0.37:	62.9	5.72	30	12	135	
Benzo(a)pyrene			ND	0.5	0.26	51.3	0.5	0.23	46.9	8.97	30	0.01	128	3
Benzo(b)fluoran	thene		ND	0.5	0.25	49.8	0.5	0.23	46.4	7.24	30	6	150	1
Benzo(g,h,i)pery	/lene		ND	0.5	0.17	34.5	0.5	0.15	29.6	15.1	30	0.01	116	<u>,</u>
Benzo(k)fluorant	thene		ND	0.5	0.25	49.1	0.5	0.22	44.0	10.9	30	0.01	159	ç
Chrysene			ND	0.5	0.37	74.6	0.5	0.37	73.1	2.01	30	0.01	199	10.5
Dibenzo(a,h)ant	hracene		ND	0.5	0.17	33.1	0.5	0.15	30.4	8.47	30	0.01	110	122
Fluoranthene		ļ	ND	0.5	0.4	74.0	0.5	0.38;	70.5	4.78	30	14	123	
Fluorene			7.3	0.5	6.8	-91.4*	0.5	7.7	83.2	4300*	30	0.01	142	
Indeno(1,2,3-cd)	pyrene		ND	0.5	0.15	29.8	0.5	0.14	28.9	2.96	30	0.01	116	
Naphthalene			11	0.5	10	-165*	0.5	12	90.5	685*	30	0.01	122	
Phenanthrene		į	ND	0.5	0	0*	0.5	0	0*	0	30	0.01	155	;
Pyrene			0.10	0.5	0.41	60.4	0.5	0.39	57.7	4.55	30	0.01	140	

Qualifiers:

ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

* - Recovery Outside Advisable QC Limits

D - Recovery Unreportable due to Dilution

J - Estimated value between MDL and PQL

12/20/99 3:25:31 PM



Quality Control Report

URS Greiner Woodward Clyde BYRD LINE .

			URS	S Grein		dward C	Clyde				
Analysis: Method:	Metais by Method SW6010B	6010B, Total		·				Worl	(Order: Batch ID:	9911044 1794	9
	Me	thod Blank				San	nples in Ana	alytical Ba	tch:		
RunID: Analysis Date: Preparation Date:	TJA_991130B-119305 11/30/1999 19:39 11/22/1999 8:15	5 Units: Analyst: Prep By:	mg/L PB ME N	Method S	W3010A	<u>Lab</u> 991 991	Sample ID 10449-01C 10449-02C		<u>Client Sa</u> MW-1-G MW-2-G	ample ID N N	
						991	10449-03C		MW-3-G	N	
	Analyte	I	Result	Rep Limi	t	991	10449-04C		MW-4-G	N	
Alum	inum		ND	0.1							
Bariu	<u>m</u>			0.00	2						
Cadr	nium		ND	0.005	2						
Coba	<u>lt</u>		ND ND	0.01						1	
tron			ND	0.02	2						
Magr	esium		ND	0.1							
Manc	anese			0.00	2						
Nicke	N		ND	0.02	2						
Potas	sium				2						
Sodiu	im		ND	0.5	5						
Zinc			ND	0.02	2						
			La	boratory	Control	Sample (L	CS)				
	Runi Anal <u>i</u> Prep	D: ysis Date: aration Date:	TJA_9911 11/30/19 11/22/19	1308-11930 199 19:43 199 8:15	6 Ui Ai Pi	nits: m nalyst: P rep By: M	ng/L B IE Method	SW3010A			,
		Analyt	e		Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit		
	ii Alumini			<u>+</u>	2	2.03	101	80:	120		
	Barium				2	2.05	102	80:	120		
	Boron		<u> </u>		4	3.95	99	80	120		
	Cadmiu	im			2	2	100	80	120		
	Cobalt				2	2	100	80	120		
	Copper				2	2.04	102	80	120		
	Iron				2	2.04	102	80	120		
	Magnes	sium			20	20.5	103	80	120		
	Mangar	nese			2	2.04	102	80	120		
	Molybd	enum			2	2.04	102	80	120		
	Nickel				2	2.02	101	80	120		
	Potassi	um			20	20.6	103	80	120		
	ISHVer				2	2.07	104	08	120		
	700	· ····································			20	19.4	97	100	120		
					2	2.02	IVIĮ	001	120		
		Post Digesti	on Spike	e (PDS) / F	Post Dige	estion Spi	ke Duplicate	e (PDSD)		······	
Qualifiers:	ND/U - Not Detecte	ed at the Repor	ting Limit	<u>.</u>	*-1	Recovery (Outside Advi:	sable QC i	imits	·	-
	B - Analyte detecte	ed in the associ	ated Meti	hod Blank	D-	Recovery	Unreportable	e due to Di	lution		
	J - Estimated value	e between MDL	and PQL	_							
1											12/20/99 3:25



URS Greiner Woodward Clyde BYRD LINE

Analysis:	Metals by Method 60	10B, Total		Wo	rkOrder:	99110449	
Method:	SW6010B			Lat	Batch ID:	1794	
Sample Spiked:	99110449-01						
RunID:	TJA_991130B-119313	Units:	mg/L				
Analysis Date:	11/30/1999 20:12	Analyst:	PB				

Analy	te Sar Re	npte sult	PDS Spike Added	PDS Result	PDS % Recovery	PDSD Spike Added	PDSD Result	PDSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Aluminum		7.67	1	8.5	83	1	8.46	79	5.0	20	75	125
Iron		3.46	1	4.32	86	1	4.28	82	5.0	20	75	125
Sodium		471	10	468	-34*	10	464	-69*	70*	20	75	125

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked:	99110449-01		
RunID:	TJA_991130B-119308	Units:	mg/L
Analysis Date:	11/30/1999 19:51	Analyst:	PB

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Aluminum	7.7	1	9.8	213*	1	8.74	107	66.7*	20	75	125
Barium	0.40	1	1.35	95.8	1	1.34	94.6	1.20	20	75	125
Boron	0.78	2	2.63	92.7	2	2.64	92.8	0.130	20	75	125
Cadmium	ND	1	0.958	95.8	1	0.959	95.9	0.112	20	75	125
Cobalt	ND	1	0.875	87.0	1	0.875	87.0	.0161	20	75	125
Copper	ND	1	0.997	98.9	1	0.991	98.3	0.630	20	75	125
Iron	3.5	1	4.64	117	1	4.07	60.4*	64.0*	20	75	125
Magnesium	110	10	117	106	10	115	90.2	16.6	20	75	125
Manganese	0.46	1	1.37	91.5	. 1	1.36	90.9	0.760	20	75	125
Molybdenum	ND	1	0.919	91.3	1	0.922	91.6	0.366	20	75	125
Nickel	ND	1	0.878	87.8	1	0.873	87.3	0.522	20	75	125
Potassium	20	10	31.5	115	10	30.8	108	6.10	20	75	125
Silver	ND	1	0.992	99.2	1	0.995	99.5	0.235	20	75	125
Sodium	470	10	481	101	10	475	35.6*	95.6*	20	75	125
Zinc	0.092	1	1.08	99.1	1	1.1	101	2.15	. 20	75	125

Qualifiers:

ND/U - Not Detected at the Reporting Limit

* - Recovery Outside Advisable QC Limits

B - Analyte detected in the associated Method Blank

J - Estimated value between MDL and PQL

D - Recovery Unreportable due to Dilution



HOUSTON LABORATORY 8880 INTERCHANGE DRIVE HOUSTON, TEXAS 77054 (713) 660-0901

Quality Control Report

URS Greiner Woodward Clyde BYRD LINE

$\langle \cdot \rangle$					E	SYRD L	INE							
4	Analysis: Method:	Metals by Metho SW6010B	d 6010B, Total						Worl Lab	«Order: Batch ID:	991 179	10449 4-T		
		M	lethod Blank				Sa	mples i	n Analytical Ba	tch:		·		
	RuniD.		301 Units	mo/l					-	<u>.</u>				
	Audula Data	14/00/1000 44-00	ber Onits.	nig/c				b Samp		Client S	ample	<u>D</u>		
1	Analysis Date:	11/29/1999 14:30	Analyst:	EG		100404	99	110449-0		MW-1-G	W			
	Preparation Date:	11/22/1999 8:15	Prep By:	MEI	vietnoa Sv	V3010A	, 99°	110449-0		MW-2-G	WV			
g						_	99	110449-4		MWV-3-G	AN CONTRACT			
S.	· ····	Analyte		Result	Rep Limit		55	1104454	J 4C	10104-4-0	WW .			
1	Arser	nic		NC	0.005									
	Selen	ium			0.005									
	1		_											
0,01				La	boratory (Control	Sample (I	LCS)						
1.		Rur	ID:	99_TALT	1129B-11830	02 L	Jnits: r	ng/L						
2 2		Ana	lysis Date:	11/29/19	99 14:35	A	Analyst: E	EG						
4		Pre	paration Date:	11/22/19	99 8:15	F	Prep By: N	ME Me	thod SW3010A					
				_			_							
3			Analyt	e		Spike	Result	Perce	ent Lower	Upper				
-31						Added		Recov	/ery Limit	Limit				
÷		Arseni	c				4 4.15	5 	104 80	120				
ي. وفي		Lead	·				2 1.97	<u> </u>	99 80	120				
<u>ي</u> ن		Seleni	um				4 4.09	<u> </u>	102 80	120				
S.			Matrix	Spike (N	S) / Matrix	c Spike	Duplicate	(MSD)				-		
0														
er si	, 1	Sa	mple Spiked:	991104	449-01									
19-1		Ru	IND:	TJAT_9	91129B-118	304	Units:	mg/L						
		Ar	alysis Date:	11/29/1	1999 14:45		Analyst:	EG						
K3	ł													
	An	alvte	Samole	MS	MS Res	sult	MS %	MSD	MSD Result	MSD %	RPD	RPD	Low	High
			Result	Spike		1	Recovery	Spike		Recovery		Limit	Limit	Limit
52	}			Added				Added						
	Arsenic		0.054	2		2.13	104	2	2.13	104	0.326	20	75	125
2.476	Lead		0.023	1		0.91	88.7	1	0.907,	88.4	0.345	20	75	125
878	Selenium		ND	2	l	2.02	101	2	2.02	101	0.305	20	75	125
22.5														
ድኅ	T									•				
2	1													
	- a													
en	Qualific							<u> </u>						
	wuanners:	NU/U - Not Detect	ed at the Report	ung Limil	I	*.	Recovery	Outside	Advisable QC L	imits				
25)	B - Analyte detect	ed in the associa	ated Met	hod Blank	D	- Recovery	Unrepo	rtable due to Dil	ution				
		J - Estimated valu	e between MDL	and PQ	-									



URS Greiner Woodward Clyde BYRD LINE

Analysis: Method:	Metals by Method (SW6010B	6010B, Total					Wor Lab	kOrder: Batch ID:	991 179	10449 4A		
	Met	thod Blank	_		S	amples i	n Analytical Ba	itch:				
RunID:	TJA_991201B-120384	Units:	mg/L		La	ab Samp	le ID	Client S	iample	ID		
Analysis Date:	12/01/1999 17:13	Analyst:	PB		99	9110449-	01C	MW-1-G	W			
Preparation Date:	11/22/1999 8:15	Prep By:	ME N	Nethod SW3010)A 99	91 10 449-	02C	MW-2-0	w			
					99	110449-	03C	MW-3-G	W			
	Analyte		Result	Rep Limit	99	9110449-	04C	MW-4-G	W			
Calciu	m		ND	10								
Chrom	nium		ND	0.01								
	1		Lai	boratory Contr	ol Sample	(LCS)						
	Runiŭ):	TJA_9912	01B-120385	Units:	mg/L						
	Analy	sis Date:	12/01/19	99 17:17	Analyst:	PB						
	Prepa	ration Date:	11/22/19	99 8:15	Prep By:	ME Me	thod SW3010A	\				
								•				
	Ţ	Analyte	Э	Spike	Result	Perce	ent Lower	Upper				
				Adde	a	Reco	very Limit	Limit				
	Calcium				20 20.	5	103 80	120				
	Chromiu	m		,,,,,,,,,,,,	2 2.0	4	102 80	120				
<u>.</u>		Post Digestic	on Spike	(PDS) / Post D	ligestion S	pike Dup	licate (PDSD)	····				
						_						
Sample Spiked:	99110449-01 TiA 0012019 120280	Linitos										
Applysic Date:	13A_9912010-120309	Analyst	mg/L DQ									
Analysis Date.	12/01/1999 17.34	Analysi.	10									
An	alyte	Sample	PDS	PDS Result	PDS %	PDSD	PDSD Result	PDSD %	RPD	RPD	Low	High
		Result	Spike Added		Recovery	Spike Added		Recovery		Limit	Limit	Limit
Calcium		2060	100	2170	116	100	2000	E1	650*	20	75	125
Chromium		ND	10	9.93	90	10	10	100	10	20	75	125

Qualifiers:

ND/U - Not Detected at the Reporting Limit

* - Recovery Outside Advisable QC Limits

B - Analyte detected in the associated Method Blank

J - Estimated value between MDL and PQL

D - Recovery Unreportable due to Dilution

		P	8	i	Quality Co	ontrol Repo	ort		HOUS 8880 HOI	TON LA INTERCH JSTON, TR (713) 660	BORA ANGE D EXAS 77 2-0901	ATORY RIVE 7054	,
				URS	Greiner	Noodward	Clyde						
招 約	Analysis: Method:	Mercury, Total SW7470A			DIN			Work Lab B	Order: Batch ID:	9911 2151	0449		
		M	ethod Blank			Sa	mples i	n Analytical Bat	ch:	·			
	RunID:	HGL_991215A-1315	52 Units:	mg/L		La	b Samp	e ID	Client S	ample I	D		
	Analysis Date: Preparation Date:	12/15/1999 10:31 12/14/1999 16:30	Analyst: Prep By:	AG AG M	lethod SW74	99 70A 99 99	110449-(110449-(110449-))1C)2C)3C	MW-1-G MW-2-G MW-3-G	w w w			
	Mercu	Analyte		Result ND	Rep Limit 0.0002	99	110449-	04C	MW-4-G	W			
% ٦				Lat	oratory Cor	trol Sample (LCS						
		Run Ana	ID: I	 HGL_9912 12/15/199	15A-131553 99 10:31	Units:	mg/L AG						
		Preș	paration Date:	12/14/199	99 16:30	Prep By:	AG Me	thod SW7470A					
		Mercu	Analyte y		Sp Ad	ike Result ded).002 0.00192	Perce Recov	ent Lower very Lîmit 96 80	Upper Limit 120				
	<u> </u>		 Matrix §	Spike (M	S) / Matrix S	pike Duplicate	(MSD)						
		\$	mple Sniked	991104	49-01								
	1	Ru	iniD:	HGL_99	1215A-131555	Units:	mg/L						
		Ac Pr	alysis Date: eparation Date:	12/15/1 12/14/1	999 10:31 999 16:30	Analyst: Prep By:	AG AG M	lethod SW7470/	٩				
	An	alyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
	Mercury	······	ND	0.002	0.002	12 106	0.002	0.002	100	5.58	20	75	125
87	Qualifiers:	ND/U - Not Detect	ed at the Report	ing Limit		* - Recovery	Outside	Advisable QC Li	mits				
ی ایک ایک		B - Analyte detected	ed in the associa	ted Meth	od Blank	D - Recovery	[,] Unrepo	rtable due to Dile	ution				
ۍ . ط		J - Estimated value	e between MDL :	and PQL							1:	2/20/99 3):25:33 PM



URS Greiner Woodward Clyde

BYRD LINE

Analysis: Method:	Fluoride-IC E300							Wor Lab	kOrder: Batch ID:	991 R53	10449 306	İ	
		lethod Blank			S	amples in	n Anal	ytical Ba	itch:			<u> </u>	
RunID:	WET_991119O-114	562 Units:	mg/L		L	ab Sampl	le ID		Client S	Sample	ID		
Analysis Date:	11/19/1999 12:38	Analyst:	ES		9	9110449-0	01D		MW-1-G	SW	<u> </u>		
					9	9110449-(02D		MW-2-G	SW			
					9	9110449-(03D		MW-3-G	W			
Flug	Analyte		Result ND	Rep Limit	9	9110449-(04D		MW-4-G	W			
			La	boratory Cont	rol Sample	(LCS)						- <u>-</u>	
	Ru	nID:	WET_991	1190-114563	Units:	ma/L							
	An	alvsis Date:	11/19/19	99 12:38	Analyst:	ES							
	:	Analyt	e	Spik	e Resul	t Perce	ent	Lower	Upper Limit				
	Fluor	de			10 9	.5i	95	90	110				
			· · · · · · · · · · · · · · · · · · ·										
		Matrix	Spike (M	S) / Matrix Spi	ke Duplica	te (MSD)							
	ç	ample Spiked:	991104	49-01									
	· · · · · ·	unID:	WET_99	911190-114565	Units:	mg/L							
	A	nalysis Date:	11/19/1	999 12:38	Analyst:	ES							
A	nalvte	Samole	MS	MS Result	MS %	MSD	MSD	Result	MSD %	RPD	RPD	Low	High
		Result	Spike Added		Recovery	Spike Added			Recovery		Limit	Limit	Limit
Fluoride		3.1	10	1:	3 96.2	2 10		13	95.6	0.709	20	80	120

Qualifiers:

ND/U - Not Detected at the Reporting Limit

* - Recovery Outside Advisable QC Limits

B - Analyte detected in the associated Method Blank D -

J - Estimated value between MDL and PQL

D - Recovery Unreportable due to Dilution

12/20/99 3:25:34 PM

		7	Quali	ity Con	froi Repo	rt		HOUS 8880 HOL	TON LI INTERCI ISTON, T (713) 60	ABORA TANGE I TEXAS 73 50-0901	ATORY DRIVE 7054	1
			URS Gre	iner Wo	bodward	Clyde						
Analysis:	Nitrogen, Nitrate (/ E300	4s N)		BIRD			Worl Lab	«Order: Batch ID:	991 R53	10449 152		
RunID:	<u>Me</u> WET_991119P-11536 e: 11/19/1999 12:38	r <u>nod Blank</u> 1 Units: 1 Analyst: 1	mg/L ES		5a 99 99 99	mples in <u>b Samp</u> 110449-4 110449-4 110449-4	e ID 01D 02D 03D	Client Sa <u>Client Sa</u> MW-1-G MW-2-G MW-3-G	ample W W W	<u>ID</u>		
	Analyte Nitrogen Nitrate (As N)	R	ND (imit).10	99	110449-(94D	MW <u>-</u> 4-G ¹	W			
	Runii Analy): Wi sis Date: 11	Laborato ET_991119P-11 /19/1999 12:3	ry Contro 5362 38	ol Sample (Units: r Analyst: l	L CS) ng/L ES						
	[Analyte		Spike	Result	Perce	ent Lower	Upper				
	Nitroger	,Nitrate (As N)		Adde	d 10 9.4	Recov	very Limit 94 90	Limit 110				
8 8	San Run Ana	Matrix Sp nple Spiked: S ID: N Iysis Date:	<mark>ike (MS) / Ma</mark> 99110449-01 WET_991119P- 11/19/1999 12	atrix Spik 115364 1:38	e Duplicate Units: Analyst:	mg/L ES						
*] 8	Analyte	Sample Result S	MS MS Spike Added	Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Nitrogen,Nitra	ite (As N)	ND	10	11	111	10	9.5	95.1	15.3	20	86	115
Qualifiers:	ND/U - Not Detecte B - Analyte detecte	d at the Reporting	g Limit ed Method Bla	nk C	- Recovery D - Recovery	Outside Unrepo	Advisable QC L rtable due to Dif	imits lution				
	J - Estimated value	between MDL ar	nd PQL							٩	2/20/99 :	3:25:34 PM



URS Greiner Woodward Clyde

BYRD LINE

Analysis: Method:	Total Dissolved Solids E160.1					Wor Lab	kOrder: Batch ID:	99110449 R5394A
	Method Blank			San	nples in Ana	lytical Ba	tch:	
RunID:	WET_991123J-116185 Units:	mg/L		Lab	Sample ID		Client Sa	ample ID
Analysis Date:	11/23/1999 21:45 Analyst:	GJ		991	10449-01D		MW-1-G	w
				991	10449-02D		MW-2-G	W
				991	10449-03D		MW-3-G	W
Tot	Analyte al Dissolved Solids (Residue,Filterable)	Result Rep Lin	nit: 10	991	10449-04D		MW-4-G'	W
		Laboratory	Control S	Sample (L	CS)			
	Analysis Date:	11/23/1999 21:45	5 Ar	halyst: G	-3 			
		te	Added	Result	Recovery	Limit	Limit	
	Total Dissolved Solids	s (Residue, Filtera	450	452	100	80	120	
		S	ample Dup	olicate			<u> </u>	
	Original Sample RunID: Applicato Data:	: 99110438-04 WET_991123J-	116188 1-45	Units: Analyst:	mg/L			
	Analysis Dale.	11/20/1999 2		, and you				
		Analyte	Sar	nple D	UP RP	DR	PD	

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Total Dissolved Solids (Residue, Filtera	2790	2670	4	20

Qualifiers:

ND/U - Not Detected at the Reporting Limit

* - Recovery Outside Advisable QC Limits

D - Recovery Unreportable due to Dilution

J - Estimated value between MDL and PQL

B - Analyte detected in the associated Method Blank

	J.J.P.							HOUS 8880 HOI	TON L INTERCI JSTON, 7 (713) 6	ABORA HANGE D TEXAS 73	TOR) RIVE 7054	1
<u>ি</u> ন্দের্ন			Quali	ty Contro	ol Repoi	rt						
			URS Grei	ner Woo BYRD LII	dward C NE	Clyde						
	Analysis: Chloride-IC Method: E300	;					Worl Lab	kOrder: Batch ID:	991 R5:	10449 511		
	- <u> </u>	Method Blank			San	nples in An	alytical Ba	tch:				
7- 1	RunID: WET_991123	0-118565 Units:	mg/L		Lab	Sampie ID		Client S	ample	<u>ID</u>		
100 100	Analysis Date: 11/23/1999	13:09 Analyst:	ES		991 001	10449-01D		MW-1-G	W M			
					991	10449-03D		MW-3-G	w			
1	An	alvte	Result Rep Li	mit	991	10449-04D		MW-4-G	W			
1 m m	Chloride		ND 0	.20		-						
	·····		Laborator	y Control S	Sample (L	.CS)		<u> </u>				<u> </u>
		RuniD.	WET 9911230-11	8566 Ur	uits: m	na/L						
.000		Analysis Date:	11/23/1999 13:0	9 Ar	alyst: E	S						
26 9 49	2	Apply		Soike	Result	Percent	Lower	Linner				
				Added	, court	Recovery	Limit	Limit				
Č.		Chloride		10	9.5	95	90	110				
27												
	<u> </u>	Matrix	Spike (MS) / Ma	trix Spike I	Duplicate	(MSD)	•······					
		Sample Spiked:	99110449-01									
1		RunID:	WET_991123O-	118568 l	Jnits:	mg/L						
		Analysis Date:	11/23/1999 13	:09 /	Analyst:	ES						
	Analyte	Sample	MS MS	Result	MS %	MSD MS	SD Result	MSD %	RPD	RPD	Low	High
ar - 5		Result	Spike Added		ecovery	Spike Added		Recovery	ļ	Limit	Limit	
N.S.	Chloride	83	0 1000	1900	104	1000	1900	104	.0760	20		120
1999 - 1999 -			■┹ ┯ ──── ,,\$ _₩ ━─── _─ ,			I ,,m	<u>-</u>		<u>ــــــــــــــــــــــــــــــــــــ</u>			
ಹಲತ												
800												
	Qualifiers: ND/U - Not	Detected at the Report	ting Limit	* - F	Recovery (Outside Adv	isable QC I	Limits				
¥.1	B - Analyte	detected in the assoc	iated Method Bia	nk D-	Recovery	Unreportabl	le due to Di	lution				
	J - Estimate	d value between MDL	and PQL	,								
-										1	2/20/99	3:25:35 (



URS Greiner Woodward Clyde

BYRD LINE

Analysis: Method:	Sulfate E300							Worl Lab I	Order: Batch ID:	991 R5	10449 513		
	Method Blank			Samples in A		mples in An	alytical Batch:						
RunID:	WET_991123P-118585	Units:	mg/L			Lat	o Samole ID		Client S	Samole	1D		
Analysis Date:	11/23/1999 13:09	Analyst:	ES			991	10449-01D		MW-1-0	W	<u></u>		
,						991	10449-02D		MW-2-0	SW SW			
						991	10449-03D		MW-3-0	ŚW			
					_	991	10449-04D		MW-4-0	SW			
:	Analyte		Result	Rep Limi	it								
Sulf	ate	İ	ND	0.20	ōl								
			La	boratory	Control	Sample (L	_CS)						
	Analysi	s Date:	11/23/19	999 13:09	A	nalyst: E	ËS						
	1	Analyt	e		Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit				
	Sulfate	·			10	9.7	97	90	110				
		Matrix	Soika (M	(S) / Matri	iv Snike	Duolicato	(4450)			·		· ·	
		MAUIA	оріке (а	10/7 magi	IN OPINE	Duplicate							
	Samp	le Spiked:	991104	496-01									
	RunID	:	WET_99	91123P-118	3592	Units:	mg/L						
	Analys	sis Date:	11/23/1	1999 13:09	9	Analyst:	ES						

12

Qualifiers:

Sulfate

ND/U - Not Detected at the Reporting Limit

* - Recovery Outside Advisable QC Limits

Added

10

12

107 0.357

20

80

120

106

B - Analyte detected in the associated Method Blank D - F

Added

10

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J - Estimated value between MDL and PQL

D - Recovery Unreportable due to Dilution

12/20/99 3:25:35 PM

Chain of Custody And Sample Receipt Checklist

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	A	nalysis Re	duest.	s. Cha	in of C	ustody	Recor	р	d	3110	ノナロ	5	bag	L of	1
Client Name (NES Greiner V	Nordwerd	1 Clyde		matri	x bottle	size	pres.			a B	Jueste	d An	alysis		
Address Phones 62:00 La Calmia	sk. 210. A	stin. TX 78	252		sselg	lsiv		 						· · ·	
Clime Contract: D.C.N.N.15	Haye	Ŋ		iet:	Set 8		et: O3	ICL2			50				
Projet Name TARS BYK	NUJUS	5		lioe: Lioe:	ime. Ime.	zo9 7 zo	οιγ NH	nistr 	20		90 9				
Project Number: 9399 001	0 162	2000	R	=0 = S	=\ =\	[=9]=9	=0 =7	100 	(0) 7/17		לי <i>ד</i> ,	(5			
Project Location: HOBBS	NEW	MEX/C	0	ler dge	s Dic	در ۴ ۱	¥0	10 1 	(83)	5	05'	108			
Immice Tex URSEWC				n s= .em=	glas Plas	zo8 Jiti	H7S HCJ	, ex , ex , ex , ex , ex , ex , ex , ex	H	eta	17) 0			
SAMPLE ID	DATE	TIME	comp gra	=7S =M	C= b=l	}=8 (= ([= [] =]	19 19	49	w	2 dT	AQ		-	
MW-1-GW	66/21/11	1425	×	3	IP, A, V	1,40	1,2	× ۲	X	X	X	\searrow			
MW-2-6W	66/61/11	IHHS	X	3	PA,V	1,40 1	2	8 X	X	Х	X	$\overline{\mathbf{X}}$			1
MW-3-GW	66/61/10	1510	X.	N N	P,A,V	1,40	1,2	8 X	\mathbf{X}	X	X				
MW-4-GW	65/6111	1350	X	3	P.A.V	1,40	7'1	× 8	\mathbf{X}	\mathbf{X}	X				
TRIP BLANK				Z	>	유		N X				 			
										0					
	· · · ·										5				
Client/Consultant Remarks:		phe is		Laboral	ory remark	1 141 /a	00	5/5	K W C	52	2g	H E V	tac?		z
Requested TAT	Special Repor	ting Requirement	at Fax	Results	Ø	Raw Data		pecial Detec	tion Limit	((ipecify)			₩ I	eview (initia	ŝ
	St	andard QC	Icw	el 3 QC	٥	Level 4 QC		NN	50	Ś			7	Ŀ	
24hr [] 72hr	1. Relification	d by Sampler	hear	0		11-11	A I	2.70D) 2. Root	ived by:					
48hr 🔲 Standard 🚰	3. Relinquish	rd by.	$\left \right $			date	<u>13</u>	ž	4. Rea	ived by:					
Other	5. Relinquish	ed by:				date		ž	19-0-0 19-0-0 19-0-0	N N	Portory	T		61	
 8880 Interchange Drive, 459 Hundres Drive, Trave 	, Houston, '	TX 77054 (7	13) 660-(106		٥	00 Am	bassador	Caffery	Parkw	ay, Sco	IF LA 3	0588 (3)	(8) 237-4	38



Sample Receipt Checklist

Workorder:	99110449		Received by:		Stelly, D'Anna
Date and Time Received:	11/19/99 10:00:00 AM		Carrier name:		FedEx
Temperature:	5				······································
Shipping container/cooler in	good condition?	Yes 🗹	No 🗍	Not Present	0
Custody seals intact on ship	pping container/cooler?	Yes 🗹	No 🗌	Not Present	
Custody seals intact on sam	ple bottles?	Yes 🗌	No 🗔	Not Present	
Chain of custody present?		Yes 🗹	No		
Chain of custody signed who	en relinquished and received?	Yes 🗹	No 🗋		
Chain of custody agrees with	h sample labels?	Yes 🗹	No		
Samples in proper container	/bottle?	Yes 🗹	No 🗔		
Sample containers intact?		Yes 🗹	No 🗔		
Sufficient sample volume for	r indicated test?	Yes 🗹	No 🗔		
All samples received within I	holding time?	Yes 🗹	No		
Container/Temp Blank temp	erature in compliance?	Yes 🗹	No 🗀		
Water - VOA vials have zero	headspace?	Yes 🗹	No 🗌	Not Present	
Water - pH acceptable upon	receipt?	Yes 🗹	No		


Case Narrative for: URS Greiner Woodward Clyde

Certific ort To: URS Greiner Woodward Clyde Rick Nelson P.O. Box 201088 (78720) 8501 N. Mopac Blvd. Austin Texas 78759-	icate of Analysis Number: 00080351	;;;;;;; _	
Report To:	Project Name:	9399000162.02/00001	
URS Greiner Woodward Clyde Rick Nelson	Site: Site Address:	APL-Byrdline, Hobbs, NM	
P.O. Box 201088 (78720) 8501 N. Mopac Blvd. Austin	PO Number:		
Texas 78759- ph: (512) 419-5320 fax:	<u>State:</u> State Cert. No.: Date Reported:	New Mexico	

Any data flags or quality control exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

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URS Greiner Woodward Clyde

		Cert	ificate of A	nalysis Number:			
			0000	<u></u>			
Report To:	URS Greiner Woodwa	ard Clyde		Project Name:	9399000162.02/00001		Ş
	Rick Nelson			Site:	APL-Byrdline, Hobbs, N	N	a a
	P.O. Box 201088 (787 8501 N. Mopac Blvd.	20)		Site Address:			: X
	Texas			PO Number:			
	ph: (512) 419-5320	fax: (512) 419-\$	5445	<u>State:</u> State Cert. No.:	New Mexico		
Fax To:		fax:		Date Reported:			
C	lient Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
Fax To:	78759- ph: (512) 419-5320 lient Sample ID	fax: (512) 419-5 fax: Lab Sample ID	5445 Matrix	State: State Cert. No.: Date Reported: Date Collected	New Mexico Date Received	coc	; ID

MW01	00080351-01	Water	8/10/00 11:50:00 AM	8/11/00 10:00:00 AM	099179
MW02	00080351-02	Water	8/10/00 12:30:00 PM	8/11/00 10:00:00 AM	099179
MW03	00080351-03	Water	8/10/00 12:45:00 PM	8/11/00 10:00:00 AM	099179
MW04	00080351-04	Water	8/10/00 1:10:00 PM	8/11/00 10:00:00 AM	099179
Trip Blanks	00080351-05	Water	8/10/00	8/11/00 10:00:00 AM	099179

Sommers, El one sa Senior Project Manager

Joel Grice Laboratory Director

Ted Yen Quality Assurance Officer 8/21/00

Date

8/21/00 1:17:43 PM

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Client Sample ID MW01				Colle	ected:	8/10/00 11:50:00	SPL Sample ID	b: 0008	0351-01
				Site:	APL	Byrdline, Hobbs	, NM		
Analyses/Method		Result		Rep.Limit		Dil. Factor QUAL	Date Analyzed	Analyst	Seq. #
METALS BY ME	THOD 6010B, TO	TAL			MCL	SW6010B	Units: mg	g/L.	
Iron	·	6.61		0.02		1	08/14/00 20:51	E_ B	369939
Manganese		0.225		0.005		1	08/14/00 20:51	E_B	369939
Run ID/Seq	#: TJA_000814F-36	9939							
Prep Metho	d Prep Date			Prep Initials					
SW3010A	08/12/2000 1	13:30		MR					
PURGEABLE A	ROMATICS				MCL	SW8021B	Units: ug	/L	
Benzene		2.1		1		1	08/17/00 12:28	DL	372094
Ethylbenzene		ND		1		1	08/17/00 12:28	DL	372094
Toluene		ND		1		1	08/17/00 12:28	DL	372094
Xylenes, Total		ND		1		1	08/17/00 12:28	DL	372094
Surr: 1,4-Diflue	probenzene	101	%	72-137		1	08/17/00 12:28	DL	372094
Surr: 4-Bromo	fluorobenzene	110	%	48-156	· · · ·	1	08/17/00 12:28	DL	372094

Qualifiers:

ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

* - Surrogate Recovery Outside Advisable QC Limits

J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL) D - Surrogate Recovery Unreportable due to Dilution Mi - Matrix Interference



Client Sample ID MW02			Colle	ected:	8/10/00 12:30:00	SPL Sample ID	b: 0008	0351-02
			Site:	AP	L-Byrdline, Hobbs	, NM		_
Analyses/Method	Result		Rep.Limit		Dil. Factor QUAL	Date Analyzed	Analyst	Seq. #
METALS BY METHO	DD 6010B, TOTAL			MCL.	SW6010B	Units: mg	<u></u>	
Iron	11.1		0.02		1	08/14/00 20:55	E_B	369940
Manganese	0.24		0.005		1	08/14/00 20:55	E_B	369940
Run ID/Seq #: T	JA_000814F-369940							
Prep Method	Prep Date		Prep Initials					
SW3010A	08/12/2000 13:30		MR					
PURGEABLE ARON	ATICS			MCL	SW8021B	Units: ug	/L	
Benzene	ND		1		1	08/14/00 18:52	DL	369622
Ethylbenzene	ND		1		1	08/14/00 18:52	DL	369622
Toluene	ND		1		1	08/14/00 18:52	DL	369622
Xylenes,Total	ND		1		1	08/14/00 18:52	DL	369622
Surr: 1,4-Difluorobe	enzene 99.5	%	72-137		1	08/14/00 18:52	DL	369622
Surr: 4-Bromofluor	obenzene 105	%	48-156		1	08/14/00 18:52	DL	369622

Qualifiers:

ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

* - Surrogate Recovery Outside Advisable QC Limits

J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL) D - Surrogate Recovery Unreportable due to Dilution MI - Matrix Interference

8/21/00 1:17:46 PM

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Client Sample ID MW	03		Colle	ected:	8/10/00 12:45:00	SPL Sample I): 0008	30351-03
			Site:	APL	Byrdline, Hobbs	, NM		
Analyses/Method	Result	·	Rep.Limit		Dil. Factor QUAL	Date Analyzed	Analyst	Seq. #
METALS BY METHOD	6010B, TOTAL			MCL	SW6010B	Units: mg	 g/L	
Iron	4.21		0.02		· 1	08/14/00 20:59	E_8	369941
Manganese	0.055		0.005		1	08/14/00 20:59	E_B	369941
Run ID/Seq #: TJA	_000814F-369941							
Prep Method	Prep Date		Prep Initials					
SW3010A	08/12/2000 13:30		MR					
PURGEABLE AROMA	TICS			MCL	SW8021B	Units: ug	/L	
Benzene	ND		1		1	08/14/00 18:00	DL	369620
Ethylbenzene	ND		1		1	08/14/00 18:00	DL	369620
Toluene	ND		1		1	08/14/00 18:00	DL	369620
Xylenes, Total	ND		1		1	08/14/00 18:00	DL	369620
Surr: 1,4-Difluorobenz	ene 100	%	72-137		1	08/14/00 18:00	DL	369620
Surr: 4-Bromofluorobe	enzene 106	%	48-156		1	08/14/00 18:00	DL	369620

Qualifiers:

ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

* - Surrogate Recovery Outside Advisable QC Limits

J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL) D - Surrogate Recovery Unreportable due to Dilution MI - Matrix interference

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Client Sample ID MW04			Colle	cted:	8/10/00 1:10:00	SPL Sample II): 000	80351-04
			Site:	API	Byrdline, Hobbs	, NM		
Analyses/Method	Result	F	Rep.Limit		Dil. Factor QUAL	Date Analyzed	Analys	Seq. #
METALS BY METHO	D 6010B, TOTAL			MCL	SW6010B	Units: m	g/L	
Iron	4.69		0.02		1	08/14/00 21:03	E_B	369942
Manganese	0.0966		0.005		1	08/14/00 21:03	E_B	369942
Run ID/Seq #: T.	IA_000814F-369942							·
Prep Method	Prep Date		Prep Initials					
SW3010A	08/12/2000 13:30		MR					
PURGEABLE AROM	ATICS			MCL	SW8021B	Units: ug	/L	
Benzene	ND		1		1	08/14/00 18:26	DL.	369621
Ethylbenzene	1.5		1		1	08/14/00 18:26	DL	369621
Toluene	ND		1		1	08/14/00 18:26	DL	369621
Xylenes,Total	ND		1		1	08/14/00 18:26	DL	369621
Surr: 1,4-Difluorober	nzene 99.4	%	72-137		1	08/14/00 18:26	DL	369621
Surr: 4-Bromofluoro	benzene 104	%	48-156		1	08/14/00 18:26	DL	369621

Qualifiers:

ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

* - Surrogate Recovery Outside Advisable QC Limits

J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL) D - Surrogate Recovery Unreportable due to Dilution MI - Matrix Interference

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Client Sample ID Trip Blanks			Col	lected:	SPL Sample ID	: 0008	0351-05							
	Site: APL-Byrdline, Hobbs, NM													
Analyses/Method	Result		Rep.Limit		Dil. Factor QUAL	Date Analyzed	Analyst	Seq. #						
PURGEABLE AROMATICS				MCL	SW8021B	Units: ug	/L							
Benzene	ND		1		1	08/15/00 19:06	DL	370541						
Ethylbenzene	ND		1		1	08/15/00 19:06	DL	370541						
Toluene	ND		1		1	08/15/00 19:06	DL	370541						
Xylenes,Total	ND		1		1	08/15/00 19:06	DL	370541						
Surr: 1,4-Difluorobenzene	97.9	%	72-137		1	08/15/00 19:06	DL	370541						
Surr: 4-Bromofluorobenzene	103	%	48-156		1	08/15/00 19:06	DL	370541						

Qualifiers:

ND/U - Not Detected at the Reporting Limit

- B Analyte detected in the associated Method Blank
- * Surrogate Recovery Outside Advisable QC Limits
- J Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL) D - Surrogate Recovery Unreportable due to Dilution MI - Matrix Interference **Quality Control Documentation**

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Quality Control Report

URS Greiner Woodward Clyde 9399000162.02/00001

Analysis: Method:	Purgeable SW8021B	Aromati	cs							Work Lab f	Order: Batch ID:	000 R19	80351 010		
	<u></u>	Met	hod Blank				Sa	mples in	Analytica	al Bat	tch:			-	
RunID: Analysis Date:	HP_N_0008 08/14/2000	14A-36961) 17:34	9 Units: Analyst:	ug/L DL			<u>Lai</u> 000	b Sampl 080351-0	e ID 2A		<u>Client Sa</u> MW02	ample	<u>ID</u>		
							000 000	080351-0 080351-0	3A 4A		MW03 MW04				
	A enzene thylbenzene oluene ylenes, Total	nalyte		Result ND ND ND	Rep Limit										
E	Surr: 1,4-Difluorol Surr: 4-Bromofluo	oenzene robenzene		99.0 105.0	72-137 48-156	r i									
		RunIE Analy Benzene Ethylber Toluene Xylenes); sis Date: Analyte azene Total	HP_N_00 08/14/20	0814A-3696	Spike Added 5 5 5 5 15	Units: u Analyst: I Result 0 53 0 54 0 54 0 54	ug/L DL Recov 3 3 4	ent Low rery Lin 106 107 109	rer nit 70 70 70 70	Upper Limit 130 130 130 130				
			Matrix	Snike (N	IS) / Matri	x Spike	Duolicate	(MSD)			· · · · · ·				
		San Run Ana	nple Spiked: ID: Iysis Date:	000803 HP_N_0 08/14/2	351-03 000814A-36 2000 16:42	9617 2	Units: Analyst:	ug/L DL							
	Analyte		Sample Result	MS Spike Added	MS Re	sult	MS % Recovery	MSD Spike Added	MSD Re	sult	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene			ND	20)	22	109	20		21	107	2.29	21	32	164
Ethylbenzene			ND	20	H .	22	108	20		21	105	2.83	19	52	142

22

65

Qualifiers:

Toluene

Xylenes, Total

ND/U - Not Detected at the Reporting Limit

* - Recovery Outside Advisable QC Limits

20

60

108

108

21

64

105

107 0.637

107

2.83

1.55

19

20

18

38

53

159

144

B - Analyte detected in the associated Method Blank

ND

ND

20

60

J - Estimated value between MDL and PQL

D - Recovery Unreportable due to Dilution MI - Matrix Interference

> 8/21/00 1:17:48 PM

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Quality Control Report

URS Greiner Woodward Clyde

				000000010								
Analysis: Method:	Purgeable Arom SW8021B	atics					Work Lab I	(Order: Batch ID:	000 R19	80351 059		
	R	Nethod Blank			Sa	mples in	Analytical Ba	tch:			. .	
RuniD:	- HP_U_000815A-370	0538 Units:	ug/L		ام ا	Somel		Client C				
Analysis Date	.: 08/15/2000 17:28	Analyst	DL		<u>Lai</u> 00()80351-0	5A	Trip Blan	ampre i ks	μ		
, interporte d'acc		· · · · · · · · · · · · · · · · · · ·		-				inp blan				
	Analyte		Result	Rep Limit								
	Benzene Ethuthonzona		ND	1.0								
	Toluene			1.0								
	Xylenes,Total		ND	1.0								
	Sur: 1,4-Difluorobenzene		97.8	72-137								
			102.0	48-130								
	······································	······	Lal	poratory Contr	ol Sample (I	LCS)	<u> </u>					
	D	nID:	HD (1 000	18154-370525	l Inito:							
	Ru	niU: alvele Deter	08/15/200	0104-070000	Analysis (vg/∟ N						
	An	alysis Date:	00/15/20	00 15.52	Analyst: L	JL,						
		,										
						······	······					
		Analyl	e	Spike	e Result	Perce	nt Lower	Upper				
		·····		Adde		Recov	ery Limit					
	Benzo	ene			50 47	<u> </u>	95 70	130				
	Ethyl	Denzene			50 49	2	98 70	130				
		ne			50 48	3	95 70	130				
	Xylen	es, Total			150 145		97 70	130				
		-										
			Colico (M	C) / Motely Cal								
		Matrix	Shike lin	S) r maurix Spr	Ke Duplicate	(MSD)						
				00.00								
	S	ample Spiked:	000803	00-02								
	S	ample Spiked: unID:	000803 HP_U_0	00-02 00815A-370536	Units:	ug/L						
	S R A	ample Spiked: unID: nalysis Date:	000803 HP_U_0 08/15/2	00-02 00815A-370536 000 16:39	Units: Analyst:	ug/L DL						
	S R A	ample Spiked: unID: nalysis Date:	000803 HP_U_0 08/15/2	88-02 00815A-370536 000 16:39	Units: Analyst:	ug/L DL						
	S R A	ample Spiked: unID: nalysis Date:	000803 HP_U_0 08/15/2	88-02 00815A-370536 000 16:39	Units: Analyst:	ug/L DL						
	S R A	ample Spiked: unID: nalysis Date: Sample	000803 HP_U_0 08/15/2	00-02 00815A-370536 000 16:39 MS Resutt	Units: Analyst:	ug/L DL	MSD Result	MSD %	RPD	RPD	Low	High
77. /	S R A Analyte	ample Spiked: unID: nalysis Date: Sample Result	000803 HP_U_0 08/15/2 MS Spike	66-02 00815A-370536 000 16:39 MS Result	Units: Analyst: MS % Recovery	ug/L DL MSD Spike	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limi
71.7	S R A Analyte	ample Spiked: unID: nalysis Date: Sample Result	000803 HP_U_0 08/15/2 MS Spike Added	66-02 00815A-370536 000 16:39 MS Result	Units: Analyst: MS % Recovery	ug/L DL MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limi
Benzene	S R A Analyte	ample Spiked: unID: nalysis Date: Sample Result	000803 HP_U_0 08/15/2 MS Spike Added	00-02 00815A-370536 000 16:39 MS Result	Units: Analyst: MS % Recovery 99.2	ug/L DL MSD Spike Added 20	MSD Result	MSD % Recovery 100	RPD 0.875	RPD Limit	Low Limit	High Limi 16
Benzene Ethylbenzene	S R A Analyte	ample Spiked: unID: nalysis Date: Sample Result 1.0	000803 HP_U_0 08/15/2 MS Spike Added 0 20 20	00-02 00815A-370536 000 16:39 MS Result 21 20	Units: Analyst: MS % Recovery 99.2 102	ug/L DL MSD Spike Added 20 20	MSD Result	MSD % Recovery 100 103	RPD 0.875 1.15	RPD Limit 21 19	Low Limit 32 52	High Limi 16 14
3enzene Ethylbenzene Foluene	S R Analyte	ample Spiked: unID: nalysis Date: Sample Result 1.0 NE	000803 HP_U_0 08/15/2 MS Spike Added 20 20 20	88-02 00815A-370536 000 16:39 MS Result 21 20 20	Units: Analyst: MS % Recovery 99.2 9 102 9 8.5	ug/L DL MSD Spike Added 20 20 20	MSD Result 21 21 20	MSD % Recovery 100 103 101	RPD 0.875 1.15 2.55	RPD Limit 21 19 20	Low Limit 32 52 38	High Limit 16 14 15

Qualifiers:

ND/U - Not Detected at the Reporting Limit

* - Recovery Outside Advisable QC Limits

B - Analyte detected in the associated Method Blank

J - Estimated value between MDL and PQL

D - Recovery Unreportable due to Dilution MI - Matrix Interference

8/21/00 1:17:49 PM



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 $\mathcal{M}_{\mathcal{M}} = \left\{ \mathcal{M}_{\mathcal{M}} \right\}$

S 24 - 2

Quality Control Report

URS Greiner Woodward Clyde 9399000162 02/00001

			UIK	9399000162	.02/00001	oryde							
Analysis: Method:	Purgeable Aromatic SW8021B	s					Wor Lab	kOrder: Batch ID:	000 R19	80351 1098			
	Meth	od Blank			Sa	mples in	Analytical Ba	tch:	· -		_		
RunID:	HP_U_000816A-371498	Units:	ug/L		La	b Sampl	e ID	Client S	ample	ID			54.
Analysis Date:	08/16/2000 13:23	Analyst:	DL		00	080351-0)1A	MW01					
Ben Ethy	Analyte Izene ylbenzene		Result ND ND	Rep Limit 1.0 1.0									
Xyte S S	enes,Total Surr: 1,4-Difluorobenzene Surr: 4-Bromofluorobenzene		ND 97.8 102.3	1.0 72-137 48-156									
	RuniD	is Date;	HP_U_00	boratory Contro 0816A-371497 00 12:10	o <mark>l Sample (</mark> Units: Analyst:	LCS) Jg/L DL							
		Analyti			Boout	Deres							
	Benzene		,	Adde	50 5	Recov	very Limit	Limit					
	Ethylben	rene			50 53	2	105 70	130					а. а
	Xylenes,	Total		1	50 55 50 155	2	104 70 101 70	130					
		Matrix S	Spike (M	S) / Matrix Spik	e Duplicate	(MSD)							-8
	Sam	le Spiked:	000804	20-02									
	Runii Anaiy	D: rsis Date:	HP_U_0 08/16/2	x00816A-371499 2000 14:13	Units: Analyst:	ug/L DL							
	Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit	
Benzene		6.3	20	26	97.6	20	26	97.1	0.502	21	32	164	()
Ethylbenzene		ND	20	21	105	20	21	105	0.541	19	52	142	ند د ب
Xvienes Total		ND 2.5	20 60	21	101	20	21 es	102	0.366	20	38	159	
regiones, rotai		2.0	L0	00	104	00	60	104	0	10		144	5

Qualifiers:

ND/U - Not Detected at the Reporting Limit

* - Recovery Outside Advisable QC Limits

B - Analyte detected in the associated Method Blank

J - Estimated value between MDL and PQL

D - Recovery Unreportable due to Dilution MI - Matrix Interference

8/21/00 1:17:49 PM



HOUSTON LABORATORY 8880 INTERCHANGE DRIVE HOUSTON, TEXAS 77054 (713) 660-0901

Quality Control Report

URS Greiner Woodward Clyde

				043	93990001	62.0	2/00001	iyue							
Analysis:	Metals b SW6010	by Method 6 B	010B, Total							Work Lab E	Order: Batch ID:	0008 6614	80351 4A		
<u></u>		Met	hod Blank				San	nples in	Ana	lytical Bat	ch:				
RunID:	5000_ALT	314F-369929	Units:	mg/L			Lab	Sampl	e ID		Client Sa	mole I	D		
Analysis Dat	e: 08/14/20	00 20:07	Analyst:	E_B			000	80351-0	1B		MW01		=		
Preparation I	Date: 08/12/20	00 13:30	Prep By:	MR M	ethod SW30	10A	000	80351-0	2B		MW02				
							000	80351-0	3B		MW03				
		Analyte	r	Result	Ren Limit		000	80351-0	4B		MW04				
ि (अर्थ (1) सम् सम्बद्ध	Iron			ND	0.02										
2.19	Manganese			ND	0.005										
3				Lat	oratory Cor	trol	Sample (L	.CS)		· · · · · · · · · · · · · · · · · · ·					<u></u>
		RunID	; т	JA_00081	4F-369930	U	nits: m	ng/L							
		Analys	sis Date: 0	8/14/200	00 20:11	A	nalyst: E	Е_В							
		Prepa	ration Date: 0	8/12/200	00 13:30	P	rep By: N	/IR Me	thod	SW3010A					
							Desut	Deres	<u> </u>	1					
2			Analyte		Ad	ded	Result	Recov	ery	Limit	Limit				
		iron				2	1.9		95	80	120				
		Mangan	ese			2	2 1.94		97	80	120				
2.8.1 Dest.			Matrix S	pike (M	S) / Matrix S	pike	Duplicate	(MSD)					····		<u> </u>
		0	. I. O W J.	000000	04.04										
		Sam	ipie Spikea:	T.1A 000	04-01 8145-369932		1 inite:	നസ്							
EXC.4		Anal	vsis Date:	08/14/2	000 20:19		Analyst:	EB							
- (1) (1) (1) (1) (1) (1) (1) (1)			,					-							
	Analyte		Sample	MS	MS Result		MS %	MSD	MS	D Result	MSD %	RPD	RPD	Low	High
			Result	Spike Added			Recovery	Added			Recovery			LIMIC	Limat
			ND.		0.0	21	01.0			0.904	89.2	2 07	20	75	125
Manganese			ND	1	0.9	35	93.4	1		0.909	90.8	2.79	20	75	125
									·		<u></u> _				
82J															
511 1911 1911															
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2014 2014															
541															
の1年 															
Qualifiers:	ND/U -	Not Detecte	d at the Report	ing Limit	· · · · ·	*.	Recovery	Outside	Advi	sable QC L	Jmits	· ·			
	B - Anal	lyte detected	I in the associa	ited Meth	od Blank	D-	- Recovery	[,] Unrepo	rtable	e due to Di	lution				
24	J - Estin	nated value	between MDL	and PQL		М	- Matrix In	iterferen	œ						

Chain of Custody And Sample Receipt Checklist

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Sample Receipt Checklist

Workorder:	00080351		Received by:		Barrera, Nancy
Date and Time Received:	8/11/00 10:00:00 AM		Carrier name:		FedEx
Temperature:	3				
Shipping container/cooler in	good condition?	Yes 🔽	No 🛄	Not Present	
Custody seals intact on ship	pping container/cooler?	Yes 🗌	No 🗀	Not Present	
Custody seals intact on sam	ple bottles?	Yes 🗌	No 🗌	Not Present	\checkmark
Chain of custody present?		Yes 🗹			
Chain of custody signed whe	en relinquished and received?	Yes 🗹	No 🗔		
Chain of custody agrees with	h sample labels?	Yes 🔽	No 🗆		
Samples in proper container	/bottle?	Yes 🗹	No 🗔		
Sample containers intact?		Yes 🗹	No 🗔		
Sufficient sample volume for	indicated test?	Yes 🗹	No 🗌		
All samples received within I	holding time?	Yes 🗹	No 🗌		
Container/Temp Blank temp	erature in compliance?	Yes 🗹	No 🗌		
Water - VOA vials have zero	headspace?	Yes 🗹	No 🗌	Not Present	
Water - pH acceptable upon	receipt?	Yes 🗹	No 🗌		

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			S	PL,]	nc.				Ĕ (<u>)</u>	.660	62
	A	nalysis Ree	quest 4	s. Cha	in of C	ustody	Recor	q	\mathcal{C}		$\sum_{i=1}^{n}$	$\overline{\Omega}$	page	of
Client Name: URS			_	matrix	d bottle	size	pres.			Req	uested	Analys	is	
Address Phone: 850 N. MOPAC	BUND. ANST	IN'TY THIS	1 419-53	-9	sselg	lsiv				N/N				
Client Contact: RICK NEL501	У	-	1	Jet:	ן per ו	-0¥	ıcı: 103	sian	Hq.	4				
Project Name: APL BYRINLI	INE			lios = 1jo =	m6= 6iv=	zo9] - zo	-no= NH∗	ilistri	1-					
Project Number. 9 399 00016	2.02 /	00001		°O ≓S	=∧ =∀	[=9 }=	0: 5=		0°] 7.00					
Project Location: HDB195, NM				ter idge	cic s	در ج در خ	¥09	10 15 	$\frac{v_1}{x_2}$	<u> </u>				
Invoice To: UKS-RICK NEI	Nas			= s]ח שא=	glas glas	zo8 14 [H32	qui					<u></u>	
SAMPLE ID	DATE	TIME	amp gral	TS M	с= Ъ=	=8 = [=E = T	nN	<u>み</u> 9					
MW 0 1	000100	1150	\times	Μ	\sqrt{P}	40,110	1,0	3 \	イス					
MW07	000100	1230	×	M	۷, ۲	91107	1,0	4 ×	X					
MW03	001000	1245	\times	R	V'P	4016	ر, 0 ا	4 ×	X					
MW04	061000	1310	\times	3	Ч,Р	40,16	0,~	4	イイ	· ·				
TRIP BLANKS					-		-	2 1						
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						•								
Client/Consultant Remarks:				Laborat	ory remark	;;						Intact	Z Z	z
							ľ	1				Temp	Υ, Υ	
Requested TAT	Special Report	ting Requirement	n Net S	Results	0	Raw Data		pecial Det	ection Lim	its (specify):			PM review ((Leidin
	Su	ndard QC	آبر ا	13 00	σ	Level 4 Q	0						S	
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48hr D Standard	3. Relinquishe	d by:				भग	2	ž	4 8	tel by:				/
Other	5. Relinquishe	i ph:				date		2	6. Ro	X UW	A B	vola	8/11/20	B
8880 Interchange Drive, D	, Houston, 7	TX 77054 (7)	3) 660-(106		с С	300 Am	bassadc	Caffe	y Parkwa	y, Scott,	LA 7058	3 (318) 23	1-4775
L 429-Hugnes Unve, Iran	verse Lity, r	10) 420044 [D	-/FK (0	111										



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Case Narrative for: URS Greiner Woodward Clyde

Certificate o	of Analysis Number:		
<u></u>	0120220		
Report To:	Project Name:	APL-Byrd Line/#806032.01	
URS Greiner Woodward Clyde	<u>Site:</u>	Hobbs, NM	
Rick Nelson	Site Address:		
P.O. Box 201088 (78720)			
8501 N. Mopac Blvd.	BO Number		
Austin	FO Number:		
Texas	State:	New Mexico	
78759-	State Cert. No .:		
ph: (512) 419-5320 fax:	Date Reported:	12/18/00	

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Jones ers, Elessa Senior Project Manager



CONTRACT OF

URS Greiner Woodward Clyde

····	Се	tificate of Analysis Number	r:	
		<u>00120228</u>		
<u>Report To:</u>	URS Greiner Woodward Clyde Rick Nelson P.O. Box 201088 (78720) 8501 N. Mopac Blvd. Austin	Project Site: Site Ad	<u>t Name:</u> APL-Byrd Line/#806032.01 Hobbs, NM Idress:	
Fax To:	Texas 78759- ph: (512) 419-5320 fax: (512) 41	9-5445 PO Nui 9-5445 State C	mber: New Mexico Cert. No.:	
Fax To:	8501 N. Mopac Blvd. Austin Texas 78759- ph: (512) 419-5320 fax: (512) 41	9-5445 Date R	mber: New Mexico <u>Cert. No.:</u> <u>eported:</u> 12/18/00	

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
/W-1	00120228-01	Water	12/6/00 1:00:00 PM	12/7/00 10:00:00 AM	081054	
<i>/</i> ₩-2	00120228-02	Water	12/6/00 12:45:00 PM	12/7/00 10:00:00 AM	081054	ΠΠ
AM-3	00120228-03	Water	12/6/00 12:25:00 PM	12/7/00 10:00:00 AM	081054	
ЛW-4	00120228-04	Water	12/6/00 12:00:00 PM	12/7/00 10:00:00 AM	081054	
Frips 11/2/00	00120228-05	Trip Blank	12/6/00	12/7/00 10:00:00 AM	081054	

Jones w Elessa ner Senior Project Manager

Joel Grice Laboratory Director

Ted Yen Quality Assurance Officer 12/18/00 Date

12/18/00 2:42:57 PM



Client Sample ID M	W-1		Coll	ected:	12/6/00 1:00:00	SPL Sample II	D: 0012	0228-01
			Site	: Hol	bbs, NM			
Analyses/Method	Result		Rep.Limit		Dil. Factor QUAL	Date Analyzed	Analyst	Seq. 1
METALS BY METHO	D 6010B, TOTAL			MCL	SW6010B	Units: m	g/L	
Iron	9.51		0.02		1	12/12/00 21:53	E_B	504682
Manganese	0.208		0.005		1	12/12/00 21:53	E_B	504682
Prep Method	Prep Date		Prep Initials					
SW3010A	12/08/2000 9:00		MR					
PURGEABLE AROM	ATICS			MCL	SW8021B	Units: ug	/L	
Benzene	1.2	<u></u>	1		1	12/14/00 12:38	D_R	505510
Ethylbenzene	ND		1		1	12/14/00 12:38	D_R	505510
Toluene	ND		1		1	12/14/00 12:38	D_R	505510
Xylenes, Total	ND		1		1	12/14/00 12:38	D_R	505510
Surr: 1,4-Difluorobe	nzene 95.5	%	72-137		1	12/14/00 12:38	D_R	505510
Surr: 4-Bromofluoro	benzene 103	%	48-156		1	12/14/00 12:38	D_R	505510

Qualifiers:

ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

* - Surrogate Recovery Outside Advisable QC Limits

J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL) D - Surrogate Recovery Unreportable due to Dilution MI - Matrix Interference

12/18/00 2:43:02 PM



Client Sample ID M	W-2		Colle	ected:	12/6/00 12:45:00	SPL Sample II	D: 0012	0228-02
			Site	Hol	bbs, NM			
Analyses/Method	Result		Rep.Limit		Dil. Factor QUAL	Date Analyzed	Analyst	Seq. #
METALS BY METHO	DD 6010B, TOTAL			MCL	SW6010B	Units: m	g/L	
Iron	10.3		0.02		1	12/12/00 21:57	E_B	504683
Manganese	0.146	·	0.005		1	12/12/00 21:57	E_B	504683
Prep Method	Prep Date		Prep Initials					
SW3010A	12/08/2000 9:00		MR					
PURGEABLE ARON	ATICS			MCL	SW8021B	Units: ug	μ/L	
Benzene	ND		1		1	12/14/00 1:04	D_R	505511
Ethylbenzene	ND		1		1	12/14/00 1:04	D_R	505511
Toluene	ND		1		1	12/14/00 1:04	D_R	505511
Xylenes, Total	ND		1		1	12/14/00 1:04	D_R	505511
Surr: 1,4-Difluorob	enzene 95.8	%	72-137		1	12/14/00 1:04	D_R	505511
Surr: 4-Bromofluor	obenzene 97.3	%	48-156		1	12/14/00 1:04	D_R	505511

Qualifiers:

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J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL) D - Surrogate Recovery Unreportable due to Dilution MI - Matrix Interference



Clien	t Sample ID M	W-3			Coll	ected:	12/6/00 12:25:00	SPL Sample I): 0012	0228-03
				_	Site	: Hol	bbs, NM			
Analy	ses/Method	Re	sult		Rep.Limit		Dil. Factor QUAL	Date Analyzed	Analyst	Seq. i
META	ALS BY METHO	DD 6010B, TOTAL				MCL	SW6010B	Units: m	g/L	
Iron			12.9		0.02		1	12/12/00 22:13	E_B	504686
Мап	ganese	0.	123		0.005		1	12/12/00 22:13	E_B	504686
	Prep Method	Prep Date			Prep Initials					
	SW3010A	12/08/2000 9:00			MR					
PUR	SEABLE ARON	ATICS				MCL	SW8021B	Units: ug	/L	
Ben	zene		ND		1		1	12/14/00 5:28	D_R	507497
Ethy	Ibenzene		ND		1		1	12/14/00 5:28	D_R	507497
Tolu	ene		ND		1		1	12/14/00 5:28	D_R	507497
Xyle	nes,Total		ND		1		1	12/14/00 5:28	D_R	507497
S	urr: 1,4-Difluorobe	enzene	92.2	%	72-137		1	12/14/00 5:28	D_R	507497
S	urr: 4-Bromofluor	obenzene	97.8	%	48-156		1	12/14/00 5:28	D_R	507497

Qualifiers:

ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

* - Surrogate Recovery Outside Advisable QC Limits

J - Estimated Value between MOL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL) D - Surrogate Recovery Unreportable due to Dilution MI - Matrix Interference

12/18/00 2:43:03 PM



Clien	t Sample ID M	W-4			Col	ected:	12/6/00 12:00:00	SPL Sample ID): 0012	0228-04
					Site	: Hol	obs, NM			
Analy	ses/Method		Result		Rep.Limit		Dil. Factor QUAL	Date Analyzed	Analyst	Seq. #
MET	ALS BY METHO	D 6010B, TO	TAL			MCL	SW6010B	Units: mg	j/L	
iron		······	3.02		0.02		1	12/12/00 22:17	E_B	504687
Mar	ganese		0.0807		0.005		1	12/12/00 22:17	E_B	504687
	Prep Method	Prep Date			Prep Initials					
	SW3010A	12/08/2000 9	9:00		MR					
PUR	GEABLE AROM	IATICS				MCL	SW8021B	Units: ug	/L	
Ben	zene		ND		1		1	12/14/00 9:31	D_R	507469
Ethy	ylbenzene		ND		1		1	12/14/00 9:31	D_R	507469
Tolu	teue		ND		1		1	12/14/00 9:31	D_R	507469
Xyle	nes, Total		ND		1		1	12/14/00 9:31	D_R	507469
S	urr: 1,4-Difluorobe	enzene	92.0	%	72-137		1	12/14/00 9:31	D_R	507469
s	urr: 4-Bromofluor	benzene	111	%	48-156		1	12/14/00 9:31	D_R	507469

Qualifiers:

ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

* - Surrogate Recovery Outside Advisable QC Limits

J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL) D - Surrogate Recovery Unreportable due to Dilution MI - Matrix Interference

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Client Sample ID Trips 11/2/00			Coli	ected:	12/6/00		SPL Sample ID	D: 0012	20228-05
	-		Site	: Hol	obs, NM		、		
Analyses/Method	Result		Rep.Limit		Dil. Factor	QUAL	Date Analyzed	Analyst	Seq. #
PURGEABLE AROMATICS				MCL	SW8	021B	Units: ug	/L	
Benzene	ND		1		1		12/13/00 17:00	D_R	509299
Ethylbenzene	ND		1		1		12/13/00 17:00	D_R	509299
Toluene	ND		1		1		12/13/00 17:00	D_R	509299
Xylenes,Total	ND		1		1		12/13/00 17:00	D_R	509299
Surr: 1,4-Difluorobenzene	89.6	%	72-137		1		12/13/00 17:00	D_R	509299
Surr: 4-Bromofluorobenzene	98.9	%	48-156		1		12/13/00 17:00	D_R	509299

Qualifiers:

ND/U - Not Detected at the Reporting Limit

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>MCL - Result Over Maximum Contamination Limit(MCL) D - Surrogate Recovery Unreportable due to Dilution MI - Matrix Interference



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\$. S. M.

Quality Control Report

URS Greiner Woodward Clyde APL-Byrd Line/#806032.01

Analysis: Method:	Purgeabl SW8021E	e Aromati S	CS					Wor Lab	kOrder: Batch ID:	001 R26	20228 5146		
		Met	hod Blank			San	ples in <i>i</i>	Analytical Bato	:h:				
RunID: Analysis Date	HP_S_001; : 12/13/200	213A-50548 0 10:24	8 Units: Analyst:	ug/L D_R		<u>Lab</u> 0012 0012	Sample 20228-01 20228-02	<u>1D</u> A A	<u>Client Sa</u> MW-1 MW-2	mple 10	2		
						0012	20228-05	A	Trips 11/2	2/00			
·		Analyte		Result	Rep Limit								
	Benzene			ND	1.0								
	Ethylbenzene				1.0								
	Xvienes Total			ND	1.0								
	Sur: 1.4-Difluoro	benzene		96.7	72-137								
ĺ	Sun: 4-Bromofiu	orobenzene		99.2	48-156								
		······		Là	oratory Contr	ol Sample (LCS)						
		RuniD):	HP S 001	213A-505487	Units:	ua/l						
		Analy	sis Nate:	12/13/20	00.9-01	Analyst	D B						
		Analy	sis Date.		00 0.01	Analysi.	0_i(
			Analy	e	Spik	e Result	Perce	nt Lower	Upper				
					Adde	ed	Recov	very Limit	Limit				
		Benzene)			50 5	1	101 70	130				
		Ethylben	zene			50 5	1	102 70	130				
		Toluene				50 5	2	103 70	130				
		Xvlenes	Total			150 15	1	101 70	130				
		prylencs,					<u> </u>		100				
			<u>Matrix</u>	Spike (M	<u>S) / Matrix Spi</u>	ke Duplicat	<u>e (MSD)</u>						
		Sam	ple Spiked:	001203	42-03								
		Runi	ID:	HP_S_0	01213A-505501	Units:	ua/L						
		Anal	vsis Date:	12/13/2	000 18:48	Analyst:	DR						
_			,				- -						
1													
	Analyte		Sample Result	MS Spike	MS Result	MS % Recovery	MSD Spike	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
				Added			Auged						
Benzene			NC	20	19	95.2	20	20	100	5.33	21	32	164
Ethylbenzene	····-		NC	20	18	90.3	20	19	96.0	6.14	19	52	142
Toluene			NC	20	19	92.8	20	20	98.6	6.05	20	38	159
Xylenes, Total			NE	60	57	95.0	60	60	100	5.13	18	53	144

Qualifiers:

ND/U - Not Detected at the Reporting Limit

MI - Matrix Interference

B - Analyte detected in the associated Method Blank

D - Recovery Unreportable due to Dilution

ween MDL and PQL *- Recovery Outside Advisable QC Limits

J - Estimated value between MDL and PQL

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

12/18/00 2:43:08 PM

	PL	B						HOUS1 8880 HOU	ON LA INTERCH STON, T (713) 66	BORA IANGE D EKAS 77 0-0901	TORY RIVE 1054	•
			(Quality Con	trol Repo	rt						
9			URS	Greiner Wo	odward	Clyde						
				APL-Byrd Line	#806032.0	1						
Analysis: Methodi	Purgeable Aromati	cs					Work	kOrder: Batch ID:	001. R26	20228		
wethou.	Met	thod Blank			Sam	ples in /	Analytical Bate	h:				
s RunID:	HP_S_001214A-50749	2 Units:	ug/L		Lab	Samula	ID	Client San	nnia IC			
Analysis Date:	12/14/2000 4:09	Analyst:	D_R		0012	0228-03	A	MW-3		<u>-</u>		
					0012	0228-04	A	MW-4				
Bee	Analyte		Result	Rep Limit								
Ethy	lbenzene		ND	1.0								
Xyte	nes,Total		ND ND	1.0								
	urr: 1,4-Difluorobenzene urr: 4-Bromofluorobenzene		94.6 98.8	<u>72-137</u> 48-156								
u					ol Samolo (i	(2)						
	0. 10		<u>Lar</u>	2644 507500								
	Analy	sis Date:	12/14/200	2144-507500	Analyst:	Jy/L DR						
}					•	-						
		<u> </u>										
9		Analyte	8	Spike	e Result	Perce	ent Lower /erv Limit	Upper Limit				
	Benzene				50 50		99 70	130				
•	Ethylber	izene			50 51		102 70	130				
	Toluene				50 51	<u> </u>	102 70	130				
	Xylenes	,10131	<u> </u>		50 15	<u> </u>		130				
1												
		<u>Matrix</u> \$	Spike (M	<u>S) / Matrix Spil</u>	ce Duplicate	(MSD)						
4	San	nple Spiked:	001202	79-01								
	Run	ID:	HP_S_0	01214A-507475	Units:	ug/L						
j	Ana	iysis Date:	12/14/2	000 10.43	Andiyst.	0_R						
2												
. /	Analyte	Sample	MS	MS Result	MS %	MSD Spike	MSD Result	MSD %	RPD	RPD	Low	High
-		rcesuit	Added			Added						
jenzene		ND	20	20	98.9	20	21	103	3.64	21	32	164
thylbenzene		ND	20	19	93.2	20	20	99.5	6.53	19	52	142
Toluene Tylenes Total		ND ND	20	19	95.8	20	20 E1	101	5.40 6 79	20	38	159
			00			L	L		5.70		L	<u> </u>
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The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.



Quality Control Report

URS Greiner Woodward Clyde

APL-Byrd Line/#806032.01

Analysis: Method:	Metal SW60	s by Method 60 10B	010B, Total						Wor Lab	kOrder: Batch ID:	001 909	20228 0		
		Meth	od Blank			Sa	mples i	n Analy	tical Bato	:h:				
RunID:	TJA_0	01212C-504674	Units:	mg/L		La	b Samp	le ID		Client Sa	mole li	S		
Analysis Date	e: 12/12/	/2000 21:18	Analyst:	EВ		00	120228-	01B		MW-1		- .		
Preparation D	Date: 12/08	/2000 9:00	Prep By:	MR N	lethod SW30	10A 00	120228-	02B		MW-2				
·						00	120228-	03B		MW-3				
ſ		Anglida	<u> </u>	Beault	Pop Limit	00	120228-	04B		MW-4				
		Analyte												
1	Manganese				0.005									
				La	boratory Con	trol Sample	(LCS)							
		RunID:		TJA_0012	212C-504675	Units:	mg/L							
		Analysi	s Date:	12/12/20	00 21:22	Analyst:	E_B							
		Prepara	ation Date:	12/08/20	00 9:00	Prep By:	MR N	lethod	SW3010A	N Contraction				
			Analyt	9	Spi	ke Resu	lt Per	cent	Lower	Upper				
					Ado	led	Rec	overy	Limit	Limit				
		Iron				2 2	09	105	80	120				
		Mangane	se			2 2	14	107	80	120				
	<u> </u>													
			Matrix	Spike (M	S) / Matrix Sp	ike Duplic	ite (MSE	<u>91</u>						
		Sam	le Spiked:	001202	215-01									
		Runii	D:	TJA_00	1212C-504677	Units:	mg/L							
		Analy	sis Date:	12/12/2	2000 21:31	Analyst	EB							
		Prepa	aration Date:	12/08/2	2000 9:00	Prep By	. MR	Metho	d SW3010	A				
											T ====		Low	High
	Analyte		Sample	MS	MS Result	MS %	MSD	MS	D Result	MSD %	RPD		1 2014	
	Analyte		Sample Result	MS Spike	MS Result	MS % Recover	MSD y Spike	MS	D Result	MSD % Recovery	RPD	Limit	Limit	Limit
	Analyte		Sample Result	MS Spike Added	MS Result	MS % Recover	MSD Spike Adde	MS d	D Result	MSD % Recovery	RPD	Limit	Limit	Limit
Iron	Analyte		Sample Result 0.80	MS Spike Added 1	MS Result	MS % Recover	MSD Spike Adde	d 1	D Result 1.8	MSD % Recovery 101	8PD 3.51	Limit	Limit	Limit 125

Qualifiers:

ND/U - Not Detected at the Reporting Limit

MI - Matrix Interference

B - Analyte detected in the associated Method Blank

J - Estimated value between MDL and PQL

D - Recovery Unreportable due to Dilution

* - Recovery Outside Advisable QC Limits

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Sample Receipt Checklist And Chain of Custody

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HOUSTON LABORATORY 8880 INTERCHANGE DRIVE HOUSTON, TEXAS 77054 (713) 660-0901

Sample Receipt Checklist

Workorder:	00120228		Received by:		Estrada, Ruben
Date and Time Received:	12/7/00 10:00:00 AM		Carrier name:		FedEx
Temperature:	3				
Shipping container/cooler in c	good condition?	Yes 🗹	No 🗌	Not Present	
Custody seals intact on shipp	ping container/cooler?	Yes 🗌	No 🗔	Not Present	
Custody seals intact on samp	ble bottles?	Yes 🗌	No 🗔	Not Present	
Chain of custody present?		Yes 🗹	No 🗌		
Chain of custody signed when	n relinquished and received?	Yes 🗹	No 🗖		
Chain of custody agrees with	sample labels?	Yes 🗹	No 🗌		
Samples in proper container/	bottle?	Yes 🗹	No 🗀		
Sample containers intact?		Yes 🗹	No 🗆		
Sufficient sample volume for	indicated test?	Yes 🗹	No 🗀		
All samples received within h	olding time?	Yes 🗹	No 🗔		
Container/Temp Blank tempe	rature in compliance?	Yes 🗹	No 🗔		
Water - VOA vials have zero	headspace?	Yes 🗹	No 🗖	Not Present	
Water - pH acceptable upon i	receipt?	Yes 🗹	No 🗔		

				SPL, .	lnc.				<u>6</u>)			((õ	8105
	₹	alysis Ru	Ducst	& Cha	in of C	ustody	Reco	Ŀ		$\hat{\mathcal{A}}$)prol	opp of		8 -
				matri	x bottle	*izc	pres.			-	Reque	sted An:	alysis	
1 N 1028 1998 N 1	Nopac	Arthon 7	የንን		558(2	{ B [V		L	┝	┝	22	K	-	
meconom Rick Nebon				(et;	3 390	\=0	er: 03	CL1			2	Ż		
HOL-BWS LI	ine			130- 1103 130-	íms Ísiv	209 1- 20	ory HN	ករេស			<u> </u>	/		
Horater 806032,01				-0 -s	=\ =\	[=9 0}=	0= 5=	uog	-	329				
MN, coldon				dge ler	ric T	بر در غ	70	101	hon 0					
muite Tec				п[5 -	selg Issic	zog	132 10H	مت equ	ם 		7			÷
SAMPLE ID	DATE	TIME		-75 - M	6=1	3×8 (= 1	3=1 [=1	inN TIN		W				
Mw-[ia huloo	i300	Ê	3	4.7	10.54	0	F	Ŕ	Ľ			┨	
Mw-à		5461				_		T		\mathbf{X}	 			
Mw-3		1225	×					7		$\left \right\rangle$			ļ	<u> </u>
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Trips					>	>		r	X					
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	Kalingatha	<u>F</u>				Ĩ	7		1	0 (L) (d')	0		12/4	
X 8880 Interchange Drive, H	louston, T.	X 77054 (7)	13) 660-	1064		٥	WY DO	basecto						



HOUSTON LABORATORY 8880 INTERCHANGE DRIVE HOUSTON, TEXAS 77054 (713) 660-0901

Case Narrative for: URS Greiner Woodward Clyde

Certificate of Analysis Number:

01020264

Report To:	Project Name: BPA Byrd Line/93-99000162-	02
URS Greiner Woodward Clyde	Site: Monument,NM	
Rick Nelson	<u>Site Address:</u>	
P.O. Box 201088 (78720)		
8501 N. Mopac Blvd.	PO Number;	
Austin	State: New Mexico	
78759-	State Cert. No.:	
ph: (512) 419-5320 fax: (512) 419-5445	Date Reported: 2/16/01	

The metals containers for samples MW1 and MW3 spilled in shipment and could not be analyzed.

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Manager

2/16/01



URS Greiner Woodward Clyde

Certificate	of Analysis	Number:
	01020264	

Report To:	URS Greiner Woodw	ard Clyde		Project Name:	BPA Byrd Line/93-9900	0162-02	
	Rick Nelson			Site:	Monument,NM		
	P.O. Box 201088 (78 8501 N. Monac Blvd	720)	•	Site Address:			···.
	Austin						
	Texas			PO Number:			
	78759-			State:	New Mexico		<i></i>
	ph: (512) 419-5320	fax: (512) 4 ⁻	19-5445	State Cert. No.	:		
<u>Fax To:</u>	URS Greiner Woodw	ard Clyde		Date Reported	2/16/01		4.17 1
	Rick Nelson	fax : (512)	419-5445		-		
Clie	nt Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COCID	HOLD
MW-4		01020264-01	Water	2/5/01 2:30:00 PM	2/9/01 10:00:00 AM	091049	П∛
MW-3		01020264-02	Water	2/5/01 3:00:00 PM	2/9/01 10:00:00 AM	091049	\square
MW-2		01020264-03	Water	2/5/01 3:30:00 PM	2/9/01 10:00:00 AM	091049	
MW-1		01020264-04	Water	2/5/01 4:00:00 PM	2/9/01 10:00:00 AM	091049	
Trip 11/16/00		01020264-05	Water	2/5/01	2/9/01 10:00:00 AM	091049	

ner 10 mmed s, Elessa Senior Project Manager

Joel Grice Laboratory Director

Ted Yen Quality Assurance Officer 98 107 194

2/16/01

Date



				_
Client	Comple	ID.	NA107 1	
CILCILL	Sample	IU.	14144-1	

Collected: 2/5/01 4:00:00 P SPL Sample ID: 01020264-04

			Site	e: Moi	nument,NM		
Analyses/Method	Result		Rep.Limit		Dil. Factor QUAL	Date Analyzed Analy	st Seq. #
PURGEABLE AROMATICS				MCL	SW8021B	Units: ug/L	
Benzene	ND		1		1	02/13/01 20:40 CJ	566848
Ethylbenzene	ND		1		1	02/13/01 20:40 CJ	566848
Toluene	ND		1		1	02/13/01 20:40 CJ	566848
m,p-Xyle∩e	ND		1		1	02/13/01 20:40 CJ	566848
o-Xylene	ND		1		1	02/13/01 20:40 CJ	566848
Xylenes,Total	ND		1		1	02/13/01 20:40 CJ	566848
Surr: 1,4-Difluorobenzene	96.5	%	72-137		1	02/13/01 20:40 CJ	566848
Surr: 4-Bromofluorobenzene	103	%	48-156		1	02/13/01 20:40 CJ	566848

Qualifiers:

ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

* - Surrogate Recovery Outside Advisable QC Limits

J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL) D - Surrogate Recovery Unreportable due to Dilution MI - Matrix Interference



Ethylbenzene

Toluene

m,p-Xylene

Xylenes,Total

Surr: 1,4-Difluorobenzene

Surr: 4-Bromofluorobenzene

o-Xylene

HOUSTON LABORATORY 8880 INTERCHANGE DRIVE HOUSTON, TEXAS 77054 (713) 660-0901

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Client Sample ID MW-2 Collected: 2/5/01 3:30:00 P SPL Sample ID: 01020264-03 Site: Monument,NM Analyses/Method Result Rep.Limit Dil. Factor QUAL Date Analyzed Analyst Seq. # METALS BY METHOD 6010B, TOTAL MCL SW6010B Units: mg/L Iron 0.471 0.02 02/14/01 17:41 E B 1 569985 0.022 0.005 Manganese 02/14/01 17:41 E_B 569985 1 Prep Method Prep Date Prep Initials SW3010A 02/09/2001 17:00 R_T PURGEABLE AROMATICS MCL SW8021B Units: ug/L ND Benzene 1 02/13/01 20:15 CJ 566847

1

1

1

1

1

72-137

48-156

1

1

1

1

1

1

1

1

02/13/01 20:15

02/13/01 20:15

02/13/01 20:15 CJ

02/13/01 20:15 CJ

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. Qualifiers:

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ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

ND

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ND

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95.8

%

%

* - Surrogate Recovery Outside Advisable QC Limits

J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL) D - Surrogate Recovery Unreportable due to Dilution MI - Matrix Interference



Client Sample ID MW-3			Co	llected:	2/5/01 3:00:00 P	SPL Sample I	D: 01020	0264-02
			Site	e: Mo	nument,NM			
Analyses/Method	Result		Rep.Limit		Dil. Factor QUAL	Date Analyzed	Analyst	Seq. ‡
PURGEABLE AROMATICS				MCL		Units: ug	/L	
Benzene	NĎ		1		1	02/13/01 19:49	CJ	566846
Ethylbenzene	ND		1		1	02/13/01 19:49	CJ	566846
Toluene	ND		1		1	02/13/01 19:49	CJ	566846
m,p-Xylene	ND		1		1	02/13/01 19:49	CJ	566846
o-Xylene	ND		1		1	02/13/01 19:49	CJ	566846
Xylenes,Total	ND		1		1	02/13/01 19:49	CJ	566846
Surr: 1,4-Difluorobenzene	93.5	%	72-137		1	02/13/01 19:49	CJ	566846
Surr: 4-Bromofluorobenzene	99.9	%	48-156		1	02/13/01 19:49	CJ	566846

Qualifiers:

ND/U - Not Detected at the Reporting Limit

B - Analyte detected in the associated Method Blank

* - Surrogate Recovery Outside Advisable QC Limits

J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL) D - Surrogate Recovery Unreportable due to Dilution MI - Matrix Interference

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Client Sample ID M	W-4		Coll	ected:	2/5/01 2:30:00 P	SPL Sample ID	: 01020	0264-01
			Site	: Mo	nument,NM			
Analyses/Method	Resul	t	Rep.Limit		Dil. Factor QUAL	Date Analyzed	Analyst	Seq. #
METALS BY METHO	DD 6010B, TOTAL			MCL		Units: mg	/L	
Iron	2.1	1	0.02		1	02/14/01 17:27	Е_В	569982
Manganese	0.074	9	0.005		1	02/14/01 17:27	E_8	569982
Prep Method	Prep Date		Prep Initials					
SW3010A	02/09/2001 17:00		R_T					
PURGEABLE ARON	MATICS			MCL	SW8021B	Units: ug/	Ľ	
Benzene	N	5	1		1	02/13/01 19:24	CJ	566845
Ethylbenzene	N	D	1		1	02/13/01 19:24	CJ	566845
Toluene	N	5	1		1	02/13/01 19:24	C1	566845
m,p-Xylene	N	C	1		1	02/13/01 19:24	ĹĴ	566845
o-Xvlene	N	С	1		1	02/13/01 19:24	CJ	566845
Xvlenes,Total	N	C	1		1	02/13/01 19:24	ĊJ	566845
Surr: 1,4-Difluorob	enzene 92.	5%	72-137		1	02/13/01 19:24	ĊĴ	566845
Surr: 4-Bromofluor	obenzene 11	3 %	48-156		1	02/13/01 19:24	CJ	566845

Qualifiers:

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Client Sample ID Trip 11/16/00			Collected	: 2/5/01	SPL Sample I	D: 0102	0264-05
	_		Site: M	onument,NM			
Analyses/Method	Result	Rep.Lin	nit	Dil. Factor QUAL	Date Analyzed	Analyst	Seq. #
PURGEABLE AROMATICS			MC	L SW8021B	Units: ug	ı/L	
Benzene	ND	1	l	1	02/13/01 18:59	CJ	566844
Ethylbenzene	ND	1	i	1	02/13/01 18:59	CJ	566844
Toluene	ND	1	l	1	02/13/01 18:59	CJ	566844
m,p-Xylene	ND	1	i	1	02/13/01 18:59	CJ	566844
o-Xylene	ND	1	1	1	02/13/01 18:59	CJ	566844
Xylenes,Total	NĎ	1	1	1	02/13/01 18:59	CJ	566844
Surr: 1,4-Difluorobenzene	91.6	% 72-137	,	1	02/13/01 18:59	CJ	566844
Surr: 4-Bromofluorobenzene	101	% 48-156	5	1	02/13/01 18:59	CJ	566844

Qualifiers:

ND/U - Not Detected at the Reporting Limit

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B - Analyte detected in the associated Method Blank

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J - Estimated Value between MDL and PQL

>MCL - Result Over Maximum Contamination Limit(MCL) D - Surrogate Recovery Unreportable due to Dilution MI - Matrix Interference

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Quality Control Report

URS Greiner Woodward Clyde BPA Byrd Line/93-99000162-02

Analysis: Method:	Purgeable Aromatic SW8021B	S					Work Lab I	Order: Batch ID:	01020 R2959	264 10		
	Meti	nod Blank		<u></u>	Sam	ples in A	nalytical Batc					,·
RuniD:	VARD_010213A-56683	0 Units:	ug/L		Lah	Sample J	ID	Client San	inle ID			
Analysis Date:	02/13/2001 11:16	Analyst:	CJ		0102	0264-01	B	MW-4				
and you batter.					0102	0264-021	B	MW-3				
					0102	20264-03	- B	MW-2				
			. 1		0102	0264-04	- B	MW-1				
	Analyte		Result F	tep Limit	0102	20264-05	- A	Trip 11/16/	00			
Ben: Eth	zene dhenzene		ND: ND:	1.0				•	•			
Tolu	iene	. :	ND	1.0								
m,p-	-Xylene			1.0								
<u>(0-A)</u> Xyle	nes,Total		ND	1.0								
Ś	urr: 1,4-Difluorobenzene		98.4	72-137								
S	urr: 4-Bromofluorobenzene		100,5¦	48-156								
			l ah	oratory Contre	Sample /							
	RuniD	:	VARD_0102	213A-566829	Units:	ug/L						
	Analys	is Date:	02/13/200	1 10:51	Analyst:	CJ						
				1 – .	1_	4 -						
		Analy	te	Spike	Result	Perce	nt Lower	Upper				
	<u>.</u>					Recov	ery Limit					
	Benzene				50 50	0	99 70	130				
	Ethylben	zene			50 5' 50 0'	1	101 70	130				
	Toluene m a Vida			•	00 49	9	99; 70	130				
	ni,p-Ayle	ne		· · ·	50 EU		101 70	130				
	U-Aylene Yulanoo	Total		1	50 150	ò	100 70	120				
	Луюнез,	i Utai			JU: 13(9	100 10	. 150				
		Matrix	Spike (MS) / Matrix Spik	e Duplicate	(MSD)						
	Sam	nla Snikod:	0102026	<i>4_</i> 01								
	San Run	D. Dia ohiven	VARD 01	0213A-566842	L)nite:	uali						
	Anal	vsis Date [.]	02/13/20	01 17:43	Analvet	cy/c Cl						
	, and	,				~~						
1	Analyte	Sample	MS	MS Result	MS %		MSD Result	MSD %			_ow [F	ligh
		Result	Spike		Recovery	Spike		Recovery	L	imit l	.imit L	Limit
			Added			Added			İ	Ì		
Benzene		N	D 20	18	87.7	20	19	90.6	3.17	21	32	164
Ethylbenzene		N	D 20	18	87.6	20	18	88.6	1.09	19	52	142
Toluene		N	20	18	89.6	20	18	90.4	0.839	20	38	159
m,p-Xylene		N	5 40	35	87.7	40	36	89.0	1.50	17	53	144
o-Xvlene		N	D 20	18	90.1	20	18	91.2	1.15	18	53	143
				•••••		•••••••••••••••••••••••••••••••••••••••			i	l_		
	ND/LL N=4 D=4-17	Latthe Der	tion I loub		41 11-1-1-1							
Qualifiers:	ND/U - Not Detected	at the Report	rting Limit	d Blook - 1	MI - Matrix I	nterferen			_			

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

URS Greiner Woodward Clyde BPA Byrd Line/93-99000162-02

					2 00000162	on						
Analysis: "Method:	Purgeable Aromatic SW8021B	CS	Вн	A Byra Line/9	3-99000162	-02	Work Lab E	Order: Batch ID:	0102 R29	20264 590		
		Matrix	Spike (MS	i) / Matrix Spik	e Duplicate	(MSD)						
	San Run Anai	nple Spiked: ID: lysís Date:	0102026 VARD_01 02/13/20	64-01 10213A-566842 001 17:43	Units: Analyst:	ug/L CJ						
	Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Xylenes,Total		ND	60	53	88.3	60	54	90.0	1.87	18	53	144
and a second second second second second second second second second second second second second second second												
								·				
6-44 												
Qualifiers:	ND/U - Not Detecte B - Analyte detecte J - Estimated value	d at the Repor d in the associ between MDL	ting Limit ated Meth and PQL	od Blank	MI - Matrix 1 D - Recover * - Recover	Interferen ry Unrepo y Outside	ce ortable due to Di Advisable QC I	lution _imits			-	
The percent rounding, the	recoveries for QC samples reported RPD may differ	s are correct as from the displa	s reported ayed RPD	. Due to signific values but is c	cant figures orrect as rep	and xorted.					2/16/0	(3:56:12 F



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Quality Control Report

URS Greiner Woodward Clyde

BPA Byrd Line/93-99000162-02

Analysis: Method:	Metals by Metho SW6010B	d 6010B, Total					Wor Lab	rkOrder: Batch ID:	01020264 10210		
	<u></u> <u>۸</u>	lethod Blank			Sar	nples in	Analytical Bat	ch:		•	
RunID:	TJA_010214A-5699	70 Units:	mg/L		Lat	Sample	ID	Client Sa	nole (D		
Analysis Date:	02/14/2001 16:45	Analyst:	E_B		010	20264-0	1A	MW-4			
Preparation Date	e: 02/09/2001 17:00	Prep By:	R_T Mel	hod SW301	0A 010	20264-0	3A	MW-2	-		
			,								
6.	Analyte		Result R	ep Limit							
Cac	çmium		ND: ND:	0.005							
Co	pper		ND	0.01							
Iror Ma	nganese	:	ND ND	0.02							
Nic	kel	•	ND	0.02							
Silv Zin	/er		ND ND	0.01							
					<u> </u>				* ·		
			Labo	ratory Cont	rol Sample	<u>(LCS)</u>					
	Ru	ปD:	TJA_010214	A-569971	Units:	mg/L					
	An	alysis Date:	02/14/2001	16:50	Analyst:	<u>Е_</u> В	athed SW2010	•			
	FIE FIE	paration Date:	02/09/2001	17:00	Ртер Ву:	R_I M	einoa Svy3010	A			
		Analy	te	Spik Add	e Resul	t Perc	ent Lower	Upper			
	Cadm	ium			~~ 	12	106 8	120			
	Chror	nium			2 2	17	109 8	0 120			
	Copp	er			2 2	17	108 8	0 120			
	Iron				2 2.	14	107 80	0 120			
	Mang	anese			2 2.	07	104 80	0 120			
	Nicke	l	,		2 2.	16	108 8	0 120			
	Silver			•	2 2.	09	104 8	0 120			
	Zinc			, ,	2 2.	18	109 80	0 120			
·		Matrix	Spike (MS)	/ Matrix Spi	ke Duplica	e (MSD)			<u> </u>		
	s	ample Spiked:	01020253	3-08							
	R	unID:	TJA_0102	14A-569973	Units:	ma/L					
	A	nalysis Date:	02/14/200	01 16:59	Analyst:	E_B					
	P	reparation Date:	02/09/200	01 17:00	Prep By	R_T I	Method SW301	0A			
· • • • •	Analyte	Sample	MS	MS Result	MS %	MSD	MSD Result	MSD %	RPD RPD	Low	Hiah
		Result	Spike Added		Recovery	Spike		Recovery	Limit	Limit	Limit
Cadmium		N	D 1	1.0	5 10	5	1 1.07	7 107	1.82 20	75	125
Chromium		NC	1	1.0	6 10	6	1.0	7. 107	1.57 20	75	125
Copper		N) <u>1</u>	1.0	8 10	8	1 1.08	3 108	0.128 20	75	125

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.



Quality Control Report

URS Greiner Woodward Clyde

3			BP	A Byrd Line/9	3-99000162	-02						
Analysis:	Metals by Me	thod 6010B, Total		r byra Einerst		•-	Work	Order:	0102	20264		
Method:	SW6010B	·					Lab E	Batch ID:	102	10		
		Matrix S	pike (MS) / Matrix Spik	e Duplicate	(MSD)	<u> </u>		<u>.</u>			
		Sample Spiked: RunID: Analysis Date:	0102025 TJA_0102 02/14/20	3-08 214A-569973 101 16:59	Units: Analyst:	mg/L . E_B						
		Preparation Date:	02/09/20	01 17:00	Prep By:	R_T I	Method SW3010	A				
हि.स हि.स हे हे हे हे हे ह	Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
lron		1.5	1	2.5	101	} ,	2.54	104	3.40	20	75	125
Manganese		0.21	1	1.22	101		1 1.24	103	1.60	20	75	125
Nickel		ND	1	1.05	105		1 1.07	107	1.41	20	75	125
Silver		ND	1	1.03	103		1.04	104	1.26	20	75	125
£4∠INC		ļ 0.020	1	1.1	108		1 1.11	109	1.44	20	75	125
Qualifiers:	ND/U - Not E B - Analyte d J - Estimated	Detected at the Report etected in the associa I value between MDL	ing Limit ited Metho and PQL	od Blank [MI - Matrix I D - Recover	nterfere y Unrep / Outside	nce ortable due to Di e Advisable QC I	lution Limits				
The percent rounding, th	recoveries for QC s reported RPD may	amples are correct as differ from the displa	reported. yed RPD	Due to significa values but is co	ant figures a prrect as rep	and orted.					2/16/01	3:56:14 PM

Sample Receipt Checklist And Chain of Custody Ŋ 同时

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2/16/01 3:56:14 PM



Sample Receipt Checklist

Workorder:	01020264		Received by:		Barrera, Nancy
Date and Time Received:	2/9/01 10:00:00 AM		Carrier name:		FedEx
Temperature:	2				
Shipping container/cooler in g	good condition?	Yes 🗹	No 🗌	Not Present	
Custody seals intact on shipp	pping container/cooler?	Yes 🗹	No 🗔	Not Present	
Custody seals intact on samp	ble bottles?	Yes 🗋	No 🗔	Not Present	
Chain of custody present?		Yes 🗹	No 🗔		
Chain of custody signed whe	n relinquished and received?	Yes 🗹	No 🗔		
Chain of custody agrees with	sample labels?	Yes 🗹	No 🗌		
Samples in proper container/	'bottle?	Yes 🗹	No 🗌		
Sample containers intact?		Yes 🗹	No 🗔		
Sufficient sample volume for	indicated test?	Yes 🗹	No 🗆		
All samples received within h	olding time?	Yes 🗹	No 🗆		
Container/Temp Blank temps	erature in compliance?	Yes 🗹	No 🗀		
Water - VOA vials have zero	headspace?	Yes 🗹	No 🗆	Not Present	
Water - pH acceptable upon	receipt?	Yes 🗹	No 🗆		

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CERT NAME UNS CURRENT	ATION			matrix	bottle	size	pres.		103011	A Reque	sted Ar	nalysis		
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48hr 🔲 Standard 🕅	3. Relinquisha	d by:				late	tin		4. Rocci	ind by:			-	
Other	5. Relinquish	d by:				late	ţ.		÷.	notel y Labor	J'W	200	10/0/	0
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423-Hugnes Drive, Iraverse City, MI 49084 (616) 94/-5/7/