

REPORTS

DATE: 2003



Highlander Environmental Corp.

Midland, Texas

December 20, 2002

RECEIVED

JAN 1 7 2003

ENVIRONMENTAL BUREAU OIL CONSERVATION DIVISION

Mr. William C. Olson, Hydrogeologist Environmental Bureau Oil Conservation Division Energy, Minerals and Natural Resources Department 2040 S. Pacheco Santa Fe, New Mexico 87505

Re: 2002 - Groundwater Monitoring Summary and Closure Report at the ChevronTexaco, Buckeye Vacuum Field Unit, Lea County, New Mexico, Section 1, T-18-S, R-34-E.

Dear Mr. Olson:

Highlander Environmental Corp. (Highlander) has been requested by ChevronTexaco Corporation to conduct monitoring of groundwater at the Vacuum Field Unit, located in Buckeye, Lea County, New Mexico. The Site is located in Section 1, Township 18 South, Range 34 East. The Site location is shown in Figure 1. The monitor wells are shown in Figure 2. This report presents the results of groundwater remediation and monitoring activities conducted at the Site during 2002.

Background

In 1989, a total of twenty-three (23) monitor wells were installed at the Site to locate the source and delineate the extent of chloride in groundwater. The wells were drilled to the base of the Ogallala aquifer, which coincides with the top of the Triassic redbed in this area. Based on the investigation, a casing leak was detected in producing well VG SAU #58. This was suspected to be the source for the chloride plume. The casing leak was detected in the well at a depth of 59 feet below ground surface and was repaired in 1990. Two (2) extraction wells #1 and #2 were installed in the plume area to remediate the groundwater impact. These wells were pumped continuously to remediate the groundwater at the Site.

During monitoring events in 1999, the concentrations in selected monitor wells showed chloride levels below the New Mexico Water Quality Control Commission (WQCC) standard of 250 mg/l. Historically, TW-23 has showed fluctuating chloride levels above WQCC standards. Based upon water sampling data, it appeared that the pumping of the initial extraction wells (#1 and #2) had remediated the chloride plume, except in the vicinity of TW-23. As a result, Highlander supervised of the installation of a new water well (Extraction Well #3) to remediate the groundwater in the

vicinity of TW-23, on October 11-12, 2001. The submersible pump from Extraction Well #2 was removed and installed into Extraction Well #3.

As previously approved by the New Mexico Oil Conservation Division (NMOCD), a total of thirteen (13) monitor wells have been plugged at this site, leaving ten (10) monitor wells and three (3) extraction wells at the Site. In 1999, Highlander Environmental performed quarterly sampling of ten (10) monitor wells and two (2) extraction wells at the Site. Based on 1999 sampling results, a total of six (6) monitor wells and two (2) extraction wells were sampled on a semi-annual basis for 2000. In 2001, Highlander Environmental performed quarterly sampling of MW-23, semi-annual sampling of five (5) monitor wells and two (2) extraction wells, and annual sampling of ten (10) monitor wells and three (3) extraction wells at the Site. In 2002, Highlander Environmental performed quarterly sampling of seven (7) monitor wells and three (3) extraction wells, and annual sampling of seven (7) monitor wells and three (3) extraction wells, and annual sampling of ten (10) monitor wells and one (1) extraction wells at the Site. Historically, the chloride levels in TW-23 (near source well VG SAU #58) have widely fluctuated, but remained well above the WQCC standard of 250 mg/l. Well VG SAU #58 was plugged in 2000.

Groundwater Monitoring Activities

Prior to sampling, static water levels were collected from the monitor wells. No water level measurements were collected from active extraction wells, due to cascading water. Table 1 shows the cumulative water level data and groundwater elevations. Water table maps for the four quarterly sampling events are presented in Figures 2 through 5. The Site shows a north/northeast hydraulic gradient, which shows depression around the extraction wells in Figures 3 and 4. Cumulative depth to water and groundwater elevation measurements can be found in Tables 1 and 2. Hydrographs for each well gauged are shown in Appendix A.

In 2002, the semi-annual and annual sampling were performed on May 15, 2002, and November 6, 2002, respectively. A minimum of three (3)-casing volumes of groundwater were removed from each well and contained in a portable tank. Following purging, groundwater samples were collected from the discharge from the pump. The groundwater samples were carefully transferred to appropriate containers, preserved, and transported under chain-of-custody control to Trace Analysis, Inc., Lubbock, Texas. The samples were analyzed for chloride by method EPA SM 4500 Cl-B. Appendix B presents the laboratory report.

Laboratory Analysis and Results

Referring to Table 3, the most recent chloride levels from the monitor wells were all below the WQCC standard of 250 mg/l, with the exception of TW-15 and TW-23. In 2002, TW-15 had fairly consistent chloride levels ranging from 487 mg/L to 571 mg/L. TW-23, which last year exhibited chloride levels in the thousands, ranged from 77.1 mg/L to 384 mg/L.

In May 2002, the water level in TW-23 had dropped to a new low of 129.67' below ground surface, while chloride levels decreased, presumably in response to pumping Extraction well #3.



Chloride levels did rise with water level elevation in TW-23, at the end of 2002 to a level of 384 mg/L. This could be due to final residual leaching in the unsaturated zone in the vicinity of TW-23. TW-15, however, which is one of the furthest monitor well from the extraction wells, had its highest chloride levels corresponding to the lowest water level elevations recorded, in May and August. As water levels began to rise in November 2002, the chloride levels decreased. This may indicate that there is a cycle between water level fluctuation and chloride content. Chloride in TW-15 may not fully manifest itself until water levels fall and chloride is concentrated in the vicinity of the wellbore.

Conclusions

- 1. Three wells (Extraction Well #3, TW-9 and TW23) showed chloride levels fluctuating above and below the WQCC standard of 250 mg/l for samples taken in 2002. Historically, TW-15 has shown chloride levels below the WQCC standard, however, in 2002, chloride levels peaked, coinciding with the lowest recorded water levels. All other wells, including Extraction Wells #1 and #2, were below WQCC standards.
- 2. Significant chloride reduction was evident in TW-23 during 2002, due primarily to the pumping of Extraction Well #3. Nearly all monitor wells are exhibiting chloride levels which meet WQCC standards. Residual chloride levels would appear to be contingent on fluctuating water level elevations and should not pose any future significant threat to groundwater in the vicinity of the Site.

Recommendations

- 1. Based on the remediation performed at this Site, the significant reduction in chloride levels and residual chloride levels which would to not pose any future significant threat to groundwater in the vicinity of the Site, Chevron Texaco requests closure of this Site.
- 2. All remaining monitor wells and extraction wells, if not to be used in the future, should be properly plugged by a licensed water well driller.

Highlander appreciates the opportunity to support ChevronTexaco on this project. Please call if you have questions.

Sincerely. Hightander Environmental Corp.

Ike Tavarez Geologist/Project Manager

CC: Rodney Bailey - ChevronTexaco Corporation.

3

H

Highlander Environmental Corp.

ChevronTexaco Corporation Buckeye Vacuum Field Unit Lea County, New Mexico

Chronology of Events

1989	Texaco and NMOCD installed twenty-three (23) monitor wells (TW-1 through TW-23) and two extraction wells (#1 and #2) to locate the source and define the extent of chloride contamination.
02-19-90	Unichem International sampled monitor wells (TW-1 through TW-23) for chloride.
03-26-90	Unichem International sampled monitor wells (TW-1 through TW-23) for chloride.
05-01-90	Unichem International sampled monitor wells (TW-1 through TW-23) for chloride.
01-07-98	Highlander personnel performed groundwater monitoring. Sampled monitor wells (TW-1 through TW-23) and two (2) extraction wells (#1 and #2) for chloride.
2-24-98	Highlander resampled monitor well TW-23.
4-7-98	Highlander performed groundwater monitoring. Sampled monitor wells (TW-1 through TW-23) and two (2) extraction wells (#1 and #2) for chloride.
May 1998	Highlander submitted Report "Results of Groundwater Monitoring" to the NMOCD. The report contained recommendations for monitor well plugging and future closure of the Site.
8-19-98	NMOCD response letter requested BTEX samples from all (23) monitor wells and (2) extraction wells.
9-2-98	Highlander performed groundwater monitoring. Sampled monitor wells (TW-1 through TW-23) and two (2) extraction wells (#1 and #2) for chloride and BTEX.
October 1998	Highlander submitted "Groundwater Monitoring Report" to NMOCD. Proposed to plug sixteen (16) monitor wells and continue to monitor seven (7) monitor wells and two (2) extraction wells (#1 and #2) on a quarterly basis for 1 year.



5

.

01-29-98	NMOCD response letter approved recommendation to monitor the seven (7) monitor wells listed in the Groundwater Monitoring Report. However, three additional monitor wells, TW-10, TW-13, and TW-20, were included in the quarterly monitoring program. NMOCD requested a work plan for the plugging and abandonment of the monitor wells.
02-22-99	Highlander performed 1st quarter monitoring, sampling ten (10) monitor wells, and two extraction wells (#1 and #2) at the Site.
04-14-99	Highlander submitted "Workplan for Plugging of Monitor wells" to plug 13 monitor wells.
05-26-99	Highlander performed 2nd quarter monitoring, sampling ten (10) monitor wells, and two extraction wells (#1 and #2) at the Site.
06-14-99	NMOCD response letter approved the workplan for plugging (13) monitor wells.
07 22 00	
11-18-99	Scarborough Drilling Inc. plugged (13) monitor wells. (TW-1, TW-2, TW-3, TW-4, TW-5, TW-6, TW-7, TW-8, TW-12, TW-16, TW-18, TW-21, and TW-22)
08-19-99	Highlander performed 3rd quarter monitoring, sampling ten (10) monitor wells, and two extraction wells (#1 and #2) at the Site.
09-21-99	Highlander sampled TW-23 (monthly basis).
10-25-99	Highlander sampled TW-23 (monthly basis).
11-22-99	Highlander performed 4^{th} quarter monitoring, sampling ten (10) monitor wells, and two extraction wells (#1 and #2) at the Site.
12-22-99	Surveyed current monitor wells and extraction wells.
2000	Texaco plugged VG SAU Well #58.
04-26-00	Highlander performed semi-annual monitoring, sampling (6) monitor wells, and two extraction wells (#1 and #2) at the Site. As directed by the NMOCD.
11-21-00	Highlander performed annual monitoring, sampling (6) monitor wells, and two extraction wells (#1 and #2) at the Site.
Dec. 2000	Highlander submitted the 2000 Annual Groundwater Monitoring Report to the NMOCD for review.



a llu

1.11

111

T Ti l

02-23-01	Highlander performed quarterly monitoring sampling on TW-23.
06-14-01	Highlander performed annual monitoring, sampling (6) monitor wells, and two extraction wells (#1 and #2) at the Site.
08-10-01	Highlander performed quarterly monitoring sampling on TW-23.
10-11-01	Highlander supervised the installation of water well (extraction well #3) near TW-23 for remediation.
11-14-01	Highlander performed annual monitoring, sampling (10) monitor wells and two extraction wells (#1 and #2) at the Site.
12-12-01	The submersible pump from extraction well #2 was removed and installed into extraction well #3.
12-17-02	ChevronTexaco started pumping Extraction Well #3.
02-21-02	Highlander performed quarterly monitoring sampling on TW-23 and Extraction well #3.
05-15-02	Highlander performed semi-annual monitoring, sampling (7) monitor wells and three extraction wells at the Site.
08-29-02	Highlander performed quarterly monitoring sampling on TW-15, TW-23 and Extraction wells #1 and #3.
09-26-02	Highlander samples TW-15.



-C IV

ł

FIGURES













.

t' f

Cumulative Depth to Water Measuement Buckeye, Vacuum Field Unit Lea County, New Mexico ChevronTexaco Corporation Table 1

i |||||

11

11

							_		_						_		1
EW-3	1	•	ŀ	4	3	1	T	1	ı	•	126.18	-	1		•	125.47	
EW-2	-	•	-	-	**138.6	1	-	1	•	•	-	129.25	129.88	129.60	-	128.91	
EW-1	•	ı	•	•	•	1	ı		1	1	١	1	-	-	•		
TW-23	•	125.82	126.00	125.66	125.89	124.78	125.82	125.62	127.56	125.86	126.08	126.47	129.67	129.61	-	125.87	
TW-20	•	130.25	130.42	129.99	130.21	,	130.31	1	,	•	130.84	131.40	131.67	131.25	ı	131.01	
TW-19	1	124.69	124.90	124.55	124.77	123.80	*	1	*127.04	1	*126.6	*127.13	*128.47	*128.32	1	*126.6	
TW-17	1	125.26	125.46	125.30	125.38	124.62	125.32)	126.01	1	126.04	126.31	127.04	127.04	1	125.96	
TW-15	-	124.04	124.23	123.94	124.06	123.46	124.05	•	124.72	,	124.62	125.08	125.66	125.59	125.43	124.73	
TW-14	•	128.19	128.46	128.03	128.23	127.12	128.21	•	129.86	1	128.66	128.93	129.96	129.74		128.32	
TW-13	1	130.20	130.44	129.70	130.20		130.34	,	1	1	131.09	131.23	131.69	131.31	,	130.74	
TW-11		130.29	130.50	130.70	130.37	129.33	130.37		131.1		130.86	131.04	131.92	131.84	•	130.44	
TW-10	,	129.49	129.74	129.25	129.58	,	129.51	,	,	,	129.62	130.03	130.60	130.31	,	129.41	
TW-9		129.97	130.15	129.72	129.93	ı	129.97	ı	1		130.42	130.94	131.30	130.93	1	130.83	-seind
Monitoring Date	2/22/99	05/26/99	08/19/99	11/22/99	12/22/99	4/26/00	11/21/00	2/23/01	6/14/01	8/10/01	11/13/01	2/21/02	5/15/02	8/29/02	9/26/02	11/6/02	Measurements collected top of

Pumping level
 No Data
 Damaged Top Casing EW - extraction well

ļ

ļ

ļ

ł

Cumulative Groundwater Elevation Buckeye, Vacuum Field Unit Lea County, New Mexico ChevronTexaco Corporation Table 2

Elevation of Top	TW-9	TW-10	TW-11	TW-13	TW-14	TW-15	TW-17	TW-19	TW-20	TW-23	EW-1	EW-2	EW-3
of Casing (ft)	3988.60	3987.77	3989.14	3988.70	3986.67	3984.07	3985.22	3983.73	3988.39	3984.76	3986.90	3986.99	

	r-2 EW-3	-
	N-1 EW	
	TW-23 E/	3858.29
	TW-20	3856.99
	TW-19	3856.60
	TW-17	3858.91
	TW-15	3858.99
	TW-14	3857.74
	TW-13	3857.47
	TW-11	3858.10
	TW-10	3857.74
	6-WT	3857.66
02/21/02	Elevation of Top	of Groundwater (ft)

05/15/02													
Elevation of Top	6-WT	TW-10	TW-11	TW-13	TW-14	TW-15	TW-17	TW-19	TW-20	TW-23	EW-1	EW-2	EW-3
of Groundwater (ft)	3857.30	3857.17	3857.22	3857.01	3856.71	3858.41	3858.18	3855.26	3856.72	3855.09	,	•	,
08/29/02													

								And the second s					
Elevation of Top	1W-9	TW-10	TW-11	TW-13	TW-14	TW-15	TW-17	TW-19	TW-20	TW-23	EW-1	EW-2	EW-3
of Groundwater (ft)	3857.67	3857.46	3857.30	3857.39	3856.93	3858.48	3858.18	3855.41	3857.14	3855.15		,	•
11/06/02													
									00 10 14	00111			

11/06/02													
Elevation of Top	6-W1	TW-10	TW-11	TW-13	TW-14	TW-15	TW-17	TW-19	TW-20	TW-23	EW-1	EW-2	EW-3
of Groundwater (ft)	3857.77	3858.36	3858.70	3857.96	3858.35	3859.34	3859.26	3857.13	3857.38	3858.89	-	-	

l

Table 3

ļ

2001 and 2002 Cumulative Groundwater Sample Results ChevronTexaco Corporation

.

Section Sec.

Name of Street

55.23°

Standard -

A LO DE LO

gall and an internal of

A COMPANY

 $\frac{\partial u}{\partial t} = \frac{\partial u}{\partial t} + \frac{\partial u}{\partial t} +$

Buckeye, Vacuum Field Unit Lea County, New Mexico

-	luarter	1/6/02		173	44.3	25.1	24.3	30.4	494.9	26.1	27.5	45.9	3843	1	89	,
	0	6/02 1					•		8729		-	•	-	•		
JLD	Quarter	3/29/02 9/2			,	,			(57/12) P		1		276	239		128929
Semi-Annual	Sampling	5/15/02		360	•	30.6	•	91.1	V 5623	27.5	29.2	•	157.0	1273	68.6	1386
1st	Quarter	2/21/02	(•	,	,	,		1		1	•	77.1	1	1	247
Semi-Annual	Sampling	1.1/1.4/01	Chloride (mg/	303	39.2	34.8	47.8	41.5	13839	27.2	25.8	37	SOZOTA	217	223	×47050A
3rd	Quarter	8/10/01			ı	1	I	1	. 1	1	•		Q7420	-	1	,
Semi-Annual	Sampling	6/14/01				39.6		39.4	233	31.9			(5;330m)	156	205	ŀ
1st	Quarter	2/23/01		•		1	1	•	•	P	•		00018272007772	,	•	,
	Sample ID			TW-9	TW-10	TW-11	TW-13	TW-14	TW-15	TW-17	TW-19	TW-20	TW-23	Ex. Well #1	Ex. Well #2	Ex. Well #3

Not Sampled (-) Ex. Well #1 and #3 - (pumping)

APPENDIX A

GRAPHS

TW-9 Hydrograph

111



.





TW-11 Hydrograph



11/6/02 3857.96 3857.39 8/29/02 3857.01 5/15/02 3857.47 2/21/02 11/13/01 3858.36 3857.61 11/21/00 3858.50 12/22/99 3859.00 11/22/99 3858.26 8/19/99 5/26/99 3858.50 3859.00 3857.00 3856.00 3858.50 3858.00 3857.50 3856.50 3859.50 Groundwater Elevation (ft)

TW-13 Hydrograph

TW-14 Hydrograph

111







TW-15 Groundwater Elevation vs Chloride Concentrations



TW-17 Hydrograph



TW-19 Hydrograph



| |



TW-20 Hydrograph

TW-23 Hydrograph



TW-23 Hydrograph Groundwater Elevations vs Chloride Concentrations



APPENDIX B

SUMMARY REPORTS & LAB ANALYSIS



First Quarter

·

TraceAnalysis, In	c. 6701	Aberdeen Ave., Suite 9	Lubbock	, TX 79424-1515	(806) 794-1296
Report Date: Feb 1057	ruary 27, 2002 Te	Order Number: A02022510 xaco/Texaco-Vacuum Field E	6 3ukeye		Page Number: 1 of 1 Lea County,New Mexico
		Summary H	Report		
Ike Tavarez Highlander Enviro 1910 N. Big Sprin	onmental Services g St.			Report Date:	February 27, 2002
Midland, TX 7970	5			Order ID Numb	er: A02022516
Project Number: Project Name: Project Location:	1057 Texaco/Texaco Lea County,Nev	-Vacuum Field Bukeye w Mexico			
			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
191581	TW-23	Water	2/21/02	14:30	2/23/02
191582	EW-3	Water	2/21/02	14:45	2/23/02

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

Sample: 191581 -	• TW-23		
Param	Flag	Result	Units
Chloride		77.1	mg/L

Sample: 191582 -	EW-3		
Param	Flag	Result	Units
Chloride		247	mg/L

6701 Aberdeen Avenue, Suite 9 155 McCutcheon, Suite H

Lubbock, Texas 79424 El Paso, Texas 79932

800 • 378 • 1296 888•588•3443

806 • 794 • 1296 FAX 806 • 794 • 1298 FAX 915•585•4944

E-Mail: lab@traceanalysis.com

915•585•3443

Analytical and Quality Control Report

Ike Tavarez Highlander Environmental Services 1910 N. Big Spring St. Midland, TX 79705

Report Date:

February 27, 2002

Order ID Number: A02022516

Project Number: 1057 Project Name: Texaco/Texaco-Vacuum Field Bukeye **Project Location:** Lea County, New Mexico

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

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
191581	TW-23	Water	2/21/02	14:30	2/23/02
191582	EW-3	Water	2/21/02	14:45	2/23/02

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

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

Dr. Blair Leftwich, Director

.

Analytical Report

Sample:	191581 -	TW-23			
Analysis:	Ion Chromate	ography (IC)	Analytical Method:	E 300.0 QC Batch:	QC18454 Date Analyzed: $2/25/02$
Analyst:	JS		Preparation Method:	N/A Prep Batch:	PB17927 Date Prepared: 2/25/02
			-		
Param	Flag	Result	Units	Dilution	RDL
Chloride		77.1	mg/L	10	0.50

Sample: 191582 - EW-3

Analysis:	Ion Chromato	graphy (IC)	Analytical Method:	E 300.0	QC Batch:	QC18454 Date Analyzed: 2/25/02
Analyst:	$_{ m JS}$,	Preparation Method:	N/A	Prep Batch:	PB17927 Date Prepared: 2/25/02
			·	,	-	- , ,
Param	Flag	Result	Units	Dilution	1	RDL
Chloride		247	mg/L	10		0.50

Order Number: A02022516 Texaco/Texaco-Vacuum Field Bukeye

Quality Control Report Method Blank

Method Blank	QCBatch:	QC18454		
				Reporting
Param	Flag	Results	\mathbf{Units}	Limit
Chloride		<2.0	mg/L	0.50

Quality Control Report Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes QCBatch:

					Spike					
	LCS	LCSD			Amount	Matrix			$\% \ { m Rec}$	RPD
Param	Result	Result	Units	Dil.	Added	Result	$\% { m Rec}$	RPD	Limit	Limit
Chloride	11.37	11.63	mg/L	1	12.50	<2.0	90	2	90 - 110	20

QC18454

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

Quality Control Report Matrix Spikes and Duplicate Spikes

Matrix Spikes

QCBatch: QC18454

					Spike					
	MS	MSD			Amount	Matrix			$\% { m Rec}$	RPD
Param	Result	\mathbf{Result}	Units	Dil.	Added	Result	$\% { m Rec}$	RPD	Limit	Limit
Chloride	357.95	358.26	mg/L	1	125	247	88	0	52 - 131	20

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

Quality Control Report Continuing Calibration Verification Standards

CCV(1)		QCBatch:	QC18454				
			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/L	12.50	11.32	90	90 - 110	2/25/02

ICV (1) QCBatch: QC18454

Report Date: February 27, 2002 1057		Orde Texaco/T	Order Number: A02022516 Texaco/Texaco-Vacuum Field Bukeye			Page Number: 4 of 4 Lea County,New Mexico	
			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride	·····	mg/L	12.50	11.36	90	90 - 110	2/25/02

ļ

•

1 11

1

THE I

Ì

Ì

i



Lubbock, TX 79424-1515

(806) 794-1296

Report Date: June 5, 2002 1057

2002 Order Number: A02052122 Texaco/Texaco-Vacuum Field Bukeye Page Number: 1 of 2 Lea County,New Mexico

Summary Report

Ike Tavarez Highlander Environmental Services 1910 N. Big Spring St. Midland, TX 79705 Report Date: June 5, 2002

Order ID Number: A02052122

Project Number:1057Project Name:Texaco/Texaco-Vacuum Field BukeyeProject Location:Lea County,New Mexico

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
197518	TW-9	Water	5/15/02	13:35	5/21/02
197519	TW-11	Water	5/15/02	17:05	5/21/02
197520	TW-14	Water	5/15/02	16:00	5/21/02
197521	TW-15	Water	5/16/02	10:30	5/21/02
197522	TW-17	Water	5/16/02	9:30	5/21/02
197523	TW-19	Water	5/16/02	12:00	5/21/02
197524	TW-23	Water	5/16/02	17:16	5/21/02
197525	EW-1	Water	5/16/02	13:35	5/21/02
197526	EW-2	Water	5/15/02	14:35	5/21/02
197527	EW-3	Water	5/16/02	13:15	5/21/02

0 This report consists of a total of 2 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample: 197518 -	TW-9		
Param	Flag	Result	Units
Chloride		360	mg/L

Sample: 197519 - TW-11

Param	Flag	Result	Units
Chloride		30.6	mg/L

Sample: 197520 - TW-14

Param	Flag	Result	Units
Chloride		91.1	mg/L

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

	of of fiberacen five, suite s	Lubbock, TX 79424-1515	(800) 794-129
Report Date: June 5, 200 1057	02 Order Number: A02052122 Texaco/Texaco-Vacuum Field Bukey	e	Page Number: 2 o Lea County,New Mex
Sample: 197521 - 7	ſW-15		
Param	Flag	Result	Units
Chloride	1	562	mg/L
Sample: 197522 - 7	ΓW-17		
Param	Flag	Result	Units
Chloride		27.5	mg/L
Sample: 197523 - 7	ГW-19		
Param	Flag	Result	Units
Chloride		29.2	mg/L
Sample: 197524 - 7	FW-23	Bogult	Unite
Sample: 197524 - 7 Param Chloride	FW-23 Flag	Result 157	Units mg/L
Sample: 197524 - 7 Param Chloride Sample: 197525 - H Param Chloride	FW-23 Flag EW-1 Flag	Result 157 Result 273	Units mg/L Units mg/L
Sample: 197524 - 7 Param Chloride Sample: 197525 - I Param Chloride	FW-23 Flag EW-1 Flag	Result 157 Result 273	Units mg/L Units mg/L
Sample: 197524 - 7 Param Chloride Sample: 197525 - H Param Chloride Sample: 197526 - H	FW-23 Flag EW-1 Flag EW-2	Result 157 Result 273	Units mg/L Units mg/L
Sample: 197524 - 7 Param Chloride Sample: 197525 - H Param Chloride Sample: 197526 - H Param Chloride	FW-23 Flag EW-1 Flag EW-2 Flag	Result 157 Result 273 Result 68.6	Units mg/L Units mg/L Units mg/I
Sample: 197524 - 7 Param Chloride Sample: 197525 - H Param Chloride Sample: 197526 - H Param Chloride	FW-23 Flag EW-1 Flag EW-2 Flag	Result 157 Result 273 Result 68.6	Units mg/L Units mg/L Units mg/L
Sample: 197524 - 7 Param Chloride Sample: 197525 - H Param Chloride Sample: 197526 - H Param Chloride Sample: 197527 - H Param	Flag EW-1 Flag EW-2 Flag EW-3 Flag	Result 157 Result 273 Result 68.6	Units mg/L Units mg/L Units mg/L

.

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

1111

 $^{-1}$

6701 Aberdeen Avenue, Suite 9 155 McCutcheon, Suite H

Lubbock, Texas 79424 El Paso, Texas 79932

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

806 • 794 • 1296 FAX 806 • 794 • 1298 915 • 585 • 3443

FAX 915•585•4944

Analytical and Quality Control Report

Ike Tavarez Highlander Environmental Services 1910 N. Big Spring St. Midland, TX 79705

Report Date: June 5, 2002

Order ID Number: A02052122

Project Number: 1057 **Project Name:** Texaco/Texaco-Vacuum Field Bukeye Project Location: Lea County, New Mexico

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

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
197518	TW-9	Water	5/15/02	13:35	5/21/02
197519	TW-11	Water	5/15/02	17:05	5/21/02
197520	TW-14	Water	5/15/02	16:00	5/21/02
197521	TW-15	Water	5/16/02	10:30	5/21/02
197522	TW-17	Water	5/16/02	9:30	5/21/02
197523	TW-19	Water	5/16/02	12:00	5/21/02
197524	TW-23	Water	5/16/02	17:16	5/21/02
197525	EW-1	Water	5/16/02	13:35	5/21/02
197526	EW-2	Water	5/15/02	14:35	5/21/02
197527	EW-3	Water	5/16/02	13:15	5/21/02

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

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

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

Dr. Blair Leftwich, Director

•

Analytical Report

Sample: Analysis: Analyst:	197518 - Ion Chromate JSW	197518 - TW-9 Ion Chromatography (IC) Analytical Method: JSW Preparation Method		E 300.0 QC Batch: N/A Prep Batch:	QC20426 Date Analyzed: 5/29/02 PB19519 Date Prepared: 5/29/02
Param	Flag	Result	Units	Dilution	RDL
Chloride		360	mg/L	10	1
Sample: Analysis: Analyst:	197519 - Ion Chromato JSW	TW-11 ography (IC) A Pr	nalytical Method: reparation Method:	E 300.0 QC Batch: N/A Prep Batch:	QC20426 Date Analyzed: 5/29/02 PB19519 Date Prepared: 5/29/02
Param	Flag	Result	Units	Dilution	RDL
Chloride		30.6	mg/L	5	1
Sample: Analysis: Analyst: Param	197520 - Ion Chromate JSW Flag	TW-14 ography (IC) A: Pr Result	nalytical Method: reparation Method: Units	E 300.0 QC Batch: N/A Prep Batch: Dilution	QC20426 Date Analyzed: 5/29/02 PB19519 Date Prepared: 5/29/02 RDL
Chloride		91.1	mg/L	5	1
Sample: Analysis: Analyst:	197521 - Ion Chromato JSW	TW-15 ography (IC) Ar Pi	nalytical Method: reparation Method:	E 300.0 QC Batch: N/A Prep Batch:	QC20426 Date Analyzed: 5/29/02 PB19519 Date Prepared: 5/29/02
Param	Flag	Result	Units	Dilution	RDL
Chloride	1	562	mg/L	50	1
Sample: Analysis: Analyst:	197522 - Ion Chromato JSW	TW-17 ography (IC) Ar Pr	nalytical Method: reparation Method:	E 300.0 QC Batch: N/A Prep Batch:	QC20426 Date Analyzed: 5/29/02 PB19519 Date Prepared: 5/29/02
Param	Flag	Result	Units	Dilution	RDL
Chloride		27.5	m mg/L	5	1
Sample: Analysis: Analyst:	197523 - Ion Chromato JSW	TW-19 ography (IC) Ar Pr	nalytical Method: reparation Method:	E 300.0 QC Batch: N/A Prep Batch:	QC20426 Date Analyzed: 5/29/02 PB19519 Date Prepared: 5/29/02

¹This sample was reran on IC060302-1 with matrix spikes: %EA = 91 and RPD =0 Blank spikes: %EA = 92 and RPD = 1. For Chloride

Report Day 1057	te: June 5, 200	2	Order Numbe Texaco/Texaco-Vac	r: A02052122 cuum Field Bukeye	Page Number: 3 of 5 Lea County,New Mexico
Param	Flag	Result	Units	Dilution	RDL
Chloride		29.2	mg/L	5	1
Sample: Analysis: Analyst:	197524 - Ion Chromat JSW	TW-23 ography (IC)	Analytical Method: Preparation Method:	E 300.0 QC Batch: N/A Prep Batch:	QC20426 Date Analyzed: 5/29/02 PB19519 Date Prepared: 5/29/02
Param	Flag	Result	Units	Dilution	RDL
Chloride	<u>_</u>	157	mg/L	5	1
Sample: Analysis: Analyst:	197525 - Ion Chromat JSW	EW-1 ography (IC)	Analytical Method: Preparation Method: Units	E 300.0 QC Batch: N/A Prep Batch: Dilution	QC20426 Date Analyzed: 5/29/02 PB19519 Date Prepared: 5/29/02
Chlorida	r lag				<u></u>
Sample: Analysis: Analyst:	197526 - Ion Chromat JSW	EW-2 ography (IC)	Analytical Method: Preparation Method:	E 300.0 QC Batch: N/A Prep Batch:	QC20426 Date Analyzed: 5/29/02 PB19519 Date Prepared: 5/29/02
Param	Flag	Result	Units	Dilution	RDL
Chloride Sample:	197527 -	68.6 EW-3	mg/L	5 E 200.0.0C B-t-t	0C20426 Data Arabash 5/20/02
Analysis: Analyst:	JSW	ograpny (IC)	Preparation Method:	N/A Prep Batch:	PB19519 Date Prepared: 5/29/02
Param	Flag	Result	Units	Dilution	RDL
Chloride		386	mg/L	10	1

+ + + + +

L.

η F

.

Laboratory Control Spikes

Quality Control Report Method Blank

Method Blank	QCBatch:	QC20426		
Param	Flag	Results	Units	Reporting Limit
Chloride		<1.0	mg/L	1

Quality Control Report Lab Control Spikes and Duplicate Spikes

	c	-		-						
					Spike					
	LCS	LCSD			Amount	Matrix			$\% \mathrm{Rec}$	RPD
Param	Result	Result	Units	Dil.	Added	Result	$\% { m Rec}$	RPD	Limit	Limit
Chloride	11.50	11.55	mg/L	1	12.50	<1.0	92	0	90 - 110	20

QC20426

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

QCBatch:

Quality Control Report Matrix Spikes and Duplicate Spikes

Matrix Spikes

QCBatch: QC20426

					Spike					
	MS	MSD			Amount	Matrix			$\% { m Rec}$	RPD
Param	Result	Result	Units	Dil.	Added	Result	$\% { m Rec}$	RPD	Limit	Limit
Chloride	499.98	497.14	mg/L	1	125	386	91	2	48 - 127	20

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

Quality Control Report Continuing Calibration Verification Standards

CCV(1)		QCBatch:	QC20426				
			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/L	12.50	11.60	92	90 - 110	5/29/02

ICV (1)

QCBatch: QC20426

Report Date: June 5, 2002 1057			Order Texaco/Texa	Order Number: A02052122 Texaco/Texaco-Vacuum Field Bukeye			Page Number: 5 of 5 Lea County,New Mexico	
			CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date	
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed	
Chloride mg/L			12.50	11.52	92	90 - 110	5/29/02	

Analysis Raynast and Chain of Custor	W Ronrd	PAGE:	/ 01F: /
Allalysis hequest and chall of custor	The Trecol a	ANALYSIS REQU	IEST
HIGHLANDER ENVIRONMENTAL	CORP.	(Circle or Specify M	sthod No.)
1910 N. Big Spring St.		95 BH (5 BH (900 D	
MIQIAIIQ, IEXAS 79700 (915) 682-4559 MIQIAIIQ, IEXAS 79700 Fax	(815) 682-3946	2 C- 59 C- 14 C- 1	op
LIENT NAME: TEXG D TXE TAVA REE	R PRESERVATIVE	590\634 590\634 89 Cq 89 Cq 89 Cq 12 MOD	Chlori
ROJECT NO.: PROJECT NAME, DS7 TEXACO /BUCKEYE VCC GUM UNIT	//N) CONTA	808/ 809/ 80104019 80104019 80104019 80104019 80104019 80104019 809/ 809/ 809/ 809/ 809/ 809/ 809/ 809	808 108 108 108 108 108 108 108 108 108
AB I.D. DATE TIME REAL SAMPLE DENTIFICATION UMBER 24 C. N.M. SAMPLE DENTIFICATION	NONE ICE HINO3 HCT LITLERED (J NORHES OL	BCB, BCB, BCB, GCTR2 GCTR2 GCTR3 GCTR3 KGB GCG LCTP KGB GCG LLTP KGB GCG LLH K18 BLH K18 BLKX BOSO	Резеі. 608/6 Резеі. 608/6 Аірћа Веіа Рім Кабса
77518 Alefoz 1:35 W TW-9	X		· X
11-ML M soishedsilf bi	× 2 -		Ķ
20 5/12/02 4:00 W 7W - 14	× ~		
21 Flood W. B W TW-15	<u>بر</u> -		*
71- M 02:39 W TW-17	× ~		·X
33 5/1/02/12:00 W TW -19	X		·X
24 Mapersile w Tw-23	× ~ ~		· X/
25 3/4021:35 W EW-1	× ~ ~ ~		××
06 5/622.35W EW-2	X N		· X:
1 E- m3 MS1;1 2719/5 Le			X
ungularian ar: (sama (ure) Date: 5/24/62 Tractary Br: (sugha ure) 1.	M Date: 5 25 L	- SAMPLED BY: (Print & Sign)	Date: 5//14/5/12 Time: 4.30 A
LACUTATION BY (Standord) Date: 3/2/02 RECEIVED BY: (Signature)	Date: 5.21.02	SAMPLE SHIPPED BY: (Circle)	Alex Aces and
	1 Date:	HIGHLANDER CONTACT PERSON:	Reaults by:
CERVING LABORATORY: 4 X X X X X X X X X X X X X X X X X X	TAK:	- Ilie TANAREZ	RUSH Charges Authorised: Yes No
UPLE CONDITION WHEN RECEIVED: MATRIX: A-Mr SD-Solid 3-Solid 91-Solid 91-Solid 91-Solid 91-Solid 91-Solid	REMARKS: /'JULO	of Sherningen 1	

3 £



-

1111

111

,

Lubbock, TX 79424-1515

Report Date: September 4, 2002Order Number: A020903051057Texaco/Texaco-Vacuum Field Bukeye

Page Number: 1 of 1 Lea County,New Mexico

Summary Report

Ike Tavarez		Report Date:	September 4, 2002
Highlander Enviro	nmental Services		
1910 N. Big Spring	; St.		
Midland, TX 7970	5	Order ID Number:	A02090305
Project Number:	1057		
Project Name:	Texaco/Texaco-Vacuum Field Bukeye		
Project Location:	Lea County,New Mexico		

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
207004	TW-15	Water	8/29/02	12:15	8/31/02
207005	TW-23	Water	8/29/02	13:25	8/31/02
207006	RW-1 (Extraction Well)	Water	8/29/02	13:40	8/31/02
207007	RW-3 (Extraction Well)	Water	8/29/02	13:30	8/31/02

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

Sample: 207004 - TW-15

Param	\mathbf{Flag}	Result	Units
Chloride		571	mg/L

Sample: 207005 - TW-23

Param	\mathbf{Flag}	Result	Units
Chloride		276	mg/L

Sample: 207006 - RW-1 (Extraction Well)

Param	Flag	Result	Units
Chloride		239	mg/L

Sample: 207007 - RW-3 (Extraction Well)

Param	Flag	Result	Units
Chloride		289	mg/L

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

806 • 794 • 1296

6701 Aberdeen Avenue, Suite 9 155 McCutcheon, Suite H

Lubbock, Texas 79424 El Paso, Texas 79932

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

FAX 806 • 794 • 1298 FAX 915•585•4944 915•585•3443

Analytical and Quality Control Report

Report Date:

September 4, 2002

Order ID Number: A02090305

Project Number: 1057 **Project Name:** Texaco/Texaco-Vacuum Field Bukeye Project Location: Lea County, New Mexico

Ike Tavarez

1910 N. Big Spring St.

Midland, TX 79705

Highlander Environmental Services

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

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
207004	TW-15	Water	8/29/02	12:15	8/31/02
207005	TW-23	Water	8/29/02	13:25	8/31/02
207006	RW-1 (Extraction Well)	Water	8/29/02	13:40	8/31/02
207007	RW-3 (Extraction Well)	Water	8/29/02	13:30	8/31/02

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

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

This report consists of a total of 3 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of TraceAnalysis, Inc.

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

Dr. Blair Leftwich, Director

Order Number: A02090305 Texaco/Texaco-Vacuum Field Bukeye •

Analytical Report

Sample:	207004 - 7	ΓW-15				
Analysis: Analyst:	Ion Chromato JSW	graphy (IC)	Analytical Method: Preparation Method:	E 300.0 N/A	QC Batch: Prep Batch:	QC23282 Date Analyzed: 9/3/02 PB21846 Date Prepared: 9/3/02
Param	Flag	Result	Units	Dilutior	1	RDI
Chloride		571	mg/L	50]
Sample:	207005 - [ΓW-23				
Analysis:	Ion Chromato	graphy (IC)	Analytical Method:	E 300.0	QC Batch:	QC23282 Date Analyzed: 9/3/02
Analyst:	JSW		Preparation Method:	N/A	Prep Batch:	PB21846 Date Prepared: 9/3/02
D	Flor	Result	Units	Dilutior	1	RDI
Param	riag					
Param Chloride Sample: Analysis:	207006 - 1 Ion Chromato	276 RW-1 (Ex graphy (IC)	mg/L traction Well) Analytical Method:	10 E 300.0	QC Batch:	QC23282 Date Analyzed: 9/3/0
Param Chloride Sample: Analysis: Analyst: Param	207006 - I Ion Chromato JSW Flag	276 RW-1 (Ex graphy (IC) Result	mg/L ctraction Well) Analytical Method: Preparation Method: Units	10 E 300.0 N/A Dilution	QC Batch: Prep Batch:	QC23282 Date Analyzed: 9/3/02 PB21846 Date Prepared: 9/3/02 RDI
Param Chloride Sample: Analysis: Analyst: Param Chloride	207006 - I Ion Chromato JSW Flag	276 RW-1 (Ex graphy (IC) Result 239	mg/L ctraction Well) Analytical Method: Preparation Method: Units mg/L	10 E 300.0 N/A Dilutior 10	QC Batch: Prep Batch:	QC23282 Date Analyzed: 9/3/0 PB21846 Date Prepared: 9/3/0 RDI
Param Chloride Sample: Analysis: Analyst: Param Chloride Sample: Analysis: Analysis:	207006 - I Ion Chromato JSW Flag 207007 - I Ion Chromato JSW	276 RW-1 (Ex graphy (IC) Result 239 RW-3 (Ex graphy (IC)	mg/L traction Well) Analytical Method: Preparation Method: Units mg/L traction Well) Analytical Method: Preparation Method:	10 E 300.0 N/A Dilution 10 E 300.0 N/A	QC Batch: Prep Batch: QC Batch: Prep Batch:	QC23282 Date Analyzed: 9/3/02 PB21846 Date Prepared: 9/3/02 RDI QC23282 Date Analyzed: 9/3/02 PB21846 Date Prepared: 9/3/02
Param Chloride Sample: Analysis: Analyst: Param Chloride Sample: Analysis: Analysis: Analyst: Param	207006 - H Ion Chromato, JSW Flag 207007 - H Ion Chromato, JSW Flag	276 RW-1 (Ex graphy (IC) Result 239 RW-3 (Ex graphy (IC) Result	mg/L traction Well) Analytical Method: Preparation Method: Units mg/L traction Well) Analytical Method: Preparation Method: Units	E 300.0 N/A Dilution 10 E 300.0 N/A Dilution	QC Batch: Prep Batch: QC Batch: Prep Batch:	QC23282 Date Analyzed: 9/3/02 PB21846 Date Prepared: 9/3/02 RDI QC23282 Date Analyzed: 9/3/02 PB21846 Date Prepared: 9/3/02 RDI

Quality Control Report Method Blank

Method Blank	QCBatch:	QC23282		
Param	Flag	Results	Units	Reporting Limit
Chloride	······································	<1.0	mg/L	1

Quality Control Report Lab Control Spikes and Duplicate Spikes

Laborato	ory Cont	rol Spik	es	QCBatch:	QC23282	1				
	T CS	I COD			Spike	Motnix			% Bog	תסמ
	LUS	LCOD			Amount	Mathx			70 nec	nu D
Param	\mathbf{Result}	Result	Units	Dil.	Added	Result	$\% { m Rec}$	RPD	Limit	Limit
Chloride	11.33	11.30	mg/L	1	12.50	<1.0	90	0	90 - 110	20
Fluoride	2.28	2.27	mg/L	1	2.50	< 0.2	91	0	90 - 110	20
Nitrate-N	2.25	2.25	mg/L	1	2.50	< 0.2	90	0	90 - 110	20
Sulfate	11.63	11.79	$\mathrm{mg/L}$	1	12.50	< 0.2	93	1	90 - 110	20

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

Quality Control Report Continuing Calibration Verification Standards

CCV(1)	QC	CBatch: C	2C23282				
			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/L	12.50	11.35	90	90 - 110	9/3/02
Fluoride		mg/L	2.50	2.30	92	90 - 110	9/3/02
Nitrate-N		mg/L	2.50	2.26	90	90 - 110	9/3/02
Sulfate		$\mathrm{mg/L}$	12.50	11.74	93	90 - 110	9/3/02

ICV (1) QCBatch: QC23282

1-1 _

			CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	\mathbf{F} lag	\mathbf{Units}	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/L	12.50	11.24	89	90 - 110	9/3/02
Fluoride		mg/L	2.50	2.35	94	90 - 110	9/3/02
Nitrate-N		mg/L	2.50	2.24	89	90 - 110	9/3/02
Sulfate		mg/L	12.50	13.53	108	90 - 110	9/3/02

Cord PAGE: 0F: 1	COLU ANALYSIS REQUEST	O (Circle or Specify Method No.)	2 2 2 2 3 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3		2-3946	RESERVATIVE Bacca Bacca Bacca Bacca Bacca	2008 2008	birn (черсец birn (черсец widdy and			, X					e: 8/30/02 Symmer BY: (Print & Shar) Date: 3/10/10+	e:	e: HAND DELIVERED UPS OTHER:	TUM CONTROL PERSON: RUSH CARAVA	BOAN I / 10 C 10 W/ 42 Authorized: No	SUARISS:
leet and Chain of Custody Re	lest alla vitalli ut vustoury ive	DER ENVIRONMENTAL CORI	1010 N Rig Spring St	Midland. Texas 79705	Fax (815) 68	EtPINU SITE MANAGER: I/CE TUUNEZ B	e Kato Mucheye Variaum Field Unite 2	L EG (OUNTY N/M. OF PULTERED OF NUMBER OF CRAB	X TW-15 11 W	X TU-23	V Qu-1 (ExTraction well) 1/W	NAW-3 (EXTraction well) IN			2	nate: <u>2430 / 02</u> REFERENCE BY: (Bignature) How Date	Date: <u>3/30/02</u> RECEIVED BY: (Signature) Det Time: 1830	Date: RECEIVED BY: (Signature) Dat	C RECEIVED BY: (Signatury) (L/1000) 100	1/1 2002 THE DATE: 1/1/ 2002 THE: 1/1	MATRIX: C-Tates A-Air 3D-Solid RI 3-Saul 3L-Sudage 0-Other
Anglycic Rom	Allaly siever	HIGHLANI	TA TUTTTE O TTE		(815) 882-4558	CLIENT NAME: JEX &CO	PROJECT NO.: 1057 PR	LAB I.D. DATE TIME RY	07004 \$27102 1215 W	5 812962 1:25 V	6 812962 1.40 W	7 8/24021:30 W				ELINQUISHED BY (SETATURE)	EUN CURREN BY (Suprature)	ELINQUISHED BY: (Signature)	DEREVING LABORATORY: 1740	TTY: STATE: PHON	AMPLE CONDITION WHEN RECEIVED:

ł

6701 Aberdeen Avenue, Suite 9 155 McCutcheon, Suite H

Lubbock, Texas 79424 El Paso, Texas 79932

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

806 • 794 • 1296 FAX 806 • 794 • 1298 915•585•3443

FAX 915•585•4944

Analytical and Quality Control Report

Ike Tavarez Highlander Environmental Services 1910 N. Big Spring St. Midland, TX 79705

Report Date:

October 2, 2002

Order ID Number: A02093022

Project Number: 1057 **Project Name:** Texaco/Texaco-Vacuum Field Bukeye Project Location: Lea County, New Mexico

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

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
209328	TW-15	Water	9/26/02	11:00	9/28/02

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

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

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

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

Dr. Blair Leftwich, Director

TraceAnalysis, Inc.

Report Date: October 2, 2002 Order Number: A02093022 1057 Texaco/Texaco-Vacuum Field Bukeye Page Number: 1 of 1 Lea County,New Mexico

Summary Report

Ike Tavarez				Report Date:	October 2, 2002
Highlander Enviro	nmental Services				
1910 N. Big Spring	g St.				
Midland, TX 7970	5			Order ID Number:	A02093022
Project Number:	1057				
Project Name:	Texaco/Texaco-Vac	uum Field Bukeye			
Project Location:	Lea County,New M	exico			
			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
209328	TW-15	Water	9/26/02	11:00	9/28/02

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

Sample: 209328 - TW-15ParamFlagResultUnitsChloride487mg/L

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

.

Analytical Report

Sample: Analysis:	209328 - ' Ion Chromato	FW-15 graphy (IC)	Analytical Method:	E 300	.0 QC Batch:	QC23892 Date Analyzed: 10/1/02
Analyst:	JSW	8 F -5 ()	Preparation Method:	N/A	Prep Batch:	PB22338 Date Prepared: 10/1/02
Param	Flag	Result	Units	Diluti	on	RDL
Chloride		487	mg/L	50		1

Quality Control Report Method Blank

Method Blank	QCBatch:	QC23892		
Param	Flag	Results	Units	Reporting Limit
Chloride	1 105	<1.0	mg/L	1

Quality Control Report Lab Control Spikes and Duplicate Spikes

Laborat	ory Con	trol Spik	kes	QCBate	ch: QC238	92				
Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Chloride	11.88	11.85	mg/L	1	12.50	<1.0	95	0	90 - 110	20
Fluoride	2.41	2.36	mg/L	1	2.50	< 0.2	96	2	90 - 110	20
Sulfate	11.92	11.92	mg/L	1	12.50	<1.0	95	0	90 - 110	20

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

Quality Control Report Matrix Spikes and Duplicate Spikes

Matrix	Spikes	QCB	atch:	QC23892						
	MS	MSD			Spike Amount	Matrix			% Bec	RPD
	14115	MDD			mount	Mann			70 1000	ILL D
Param	Result	Result	Units	Dil.	Added	Result	$\% { m Rec}$	RPD	Limit	Limit
Chloride	1 3125	2 3116	mg/L	1	1250	2170	76	0	48 - 127	20

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

Quality Control Report Continuing Calibration Verification Standards

CCV(1)		QCBatch:	QC23892				
			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/L	12.50	11.88	95	90 - 110	10/1/02

Continued

¹This sample was spiked at a different dilution. MS %EA = 91 and RPD = 0.

²This sample was spiked at a different dilution. MS %EA = 91 and RPD = 0.

Report Date 1057	e: October 2,	2002	Order Texaco/Te	r Number: A02 xaco-Vacuum I	Page Number: 4 of 4 Lea County,New Mexico		
Continue	d		aav	COV	COV	Demonst	
			CCVs	CCVs	CUVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Fluoride		mg/L	2.50	2.38	95	90 - 110	10/1/02
Sulfate		mg/L	12.50	12.03	96	90 - 110	10/1/02

•

ICV (1) QCBatch: QC23892

1

11

11T

			CCVs	\mathbf{CCVs}	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	\mathbf{Units}	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/L	12.50	11.84	94	90 - 110	10/1/02
Fluoride		mg/L	2.50	2.39	95	90 - 110	10/1/02
Sulfate		mg/L	12.50	11.95	95	90 - 110	10/1/02

: (Signature) Date: 12101 Excepted BT: (Statistical ACA Date: 472.)02 Statistic BT: (Print's Sign) Date: 477/01 7. (Signature) Date: 12.02 RECEIVED BT: (Signature) Date: 47.202 Statistic BT: (Circle) ACC4 Conversed Acad Statistic Conversed Acad Conversed Acad Statistic Conversed Acad Conversed Acad Conversed Acad Conversed Acad Statistic Conversed Acad Acad Conversed Acad Conversed Acad Conve
STATE: ZIP: DATE:

E PE

.

Fourth Quarter

.

TraceAnalysis, Inc.

Ike Tavarez

Highlander Environmental Services

1910 N. Big Spring St. Midland, TX 79705

Lubbock, TX 79424-1515

Report Date: November 14, 2002 Order Number: A02111212 1057 Texaco/Texaco-Vacuum Field Bukeye

Page Number: 1 of 2 Lea County,New Mexico

Summary Report

Report Date:

November 14, 2002

Order ID Number: A02111212

Project Number: 1057 **Project Name:** Texaco/Texaco-Vacuum Field Bukeye Project Location: Lea County, New Mexico

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
213118	TW-#9	Water	11/6/02	12:30	11/12/02
213119	TW-#10	Water	11/6/02	17:00	11/12/02
213120	TW-#11	Water	11/7/02	13:20	11/12/02
213121	TW-#13	Water	11/6/02	16:00	11/12/02
213122	TW-#14	Water	11/7/02	12:25	11/12/02
213123	TW-#15	Water	11/7/02	17:25	11/12/02
213124	TW-#17	Water	11/7/02	15:00	11/12/02
213125	TW-#19	Water	11/7/02	16:10	11/12/02
213126	TW-#20	Water	11/6/02	13:35	11/12/02
213127	TW-#23	Water	11/8/02	10:40	11/12/02
213128	EW-#2 (Extraction Well)	Water	11/7/02	11:30	11/12/02

0 This report consists of a total of 2 page(s) and is intended only as a summary of results for the sample(s) listed above.

Sample: 213118 - TW-#9 Flag Param Result Units Chloride 173 mg/L

Sample: 213119 - TW-#10 Param Units Flag Result Chloride 44.1 mg/L

Sample: 213120	Sample: 213120 - TW-#11								
Param	Flag	Result	Units						
Chloride		25.1	mg/L						

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

TraceAnalysis, Inc. 6701 Aberdeen Ave., Suite 9	Lubbock, TX 79424-1515	(806) 794-1296	
Report Date: November 14, 2002 Order Number: A021112 1057 Texaco/Texaco-Vacuum Field	212 Bukeye	Page Number: 2 of Lea County,New Mexic	
Sample: 213121 - TW-#13			
Param Flag	Result	Units	
Chloride	24.3	mg/L	
Sample: 213122 - TW-#14			
Param Flag	Result	Units	
Chloride	30.4	mg/L	
Sample: $213123 - TW - #15$			
Param $Flag$	Result	Units	
Chloride	494	mg/L	
Sample: 213124 - TW-#17 Param Flag Chloride	Result 26.1	Units mg/L	
Sample: 213125 - TW-#19			
Param Flag	Result	Units	
Chloride	27.5	mg/L	
Sample: 213126 - TW-#20	Dervik	II-:4-	
Chloride	45.9	Units	
	, <u>, , , , , , , , , , , , , , , , , , </u>		
Sample: 213127 - TW-#23	Damit	T1_!	
raram Flag Chloride		Units	
	004	ing/12	
Sample: 213128 - EW-#2 (Extraction Well)		Unite	
r aram r lag Kesult		mg/L	
SHIOLIGE 09.0		ш <u>ь/</u> ш	

111

.

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

6701 Aberdeen Avenue, Suite 9 155 McCutcheon, Suite H

Lubbock, Texas 79424 El Paso, Texas 79932

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

FAX 806 • 794 • 1298 806 • 794 • 1296 915•585•3443 FAX 915 • 585 • 4944

Analytical and Quality Control Report

Ike Tavarez Highlander Environmental Services 1910 N. Big Spring St. Midland, TX 79705

Report Date:

November 14, 2002

Order ID Number: A02111212

Project Number: 1057**Project Name:** Texaco/Texaco-Vacuum Field Bukeye Project Location: Lea County, New Mexico

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

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
213118	TW-#9	Water	11/6/02	12:30	11/12/02
213119	TW-#10	Water	11/6/02	17:00	11/12/02
213120	TW-#11	Water	11/7/02	13:20	11/12/02
213121	TW-#13	Water	11/6/02	16:00	11/12/02
213122	TW-#14	Water	11/7/02	12:25	11/12/02
213123	TW-#15	Water	11/7/02	17:25	11/12/02
213124	TW-#17	Water	11/7/02	15:00	11/12/02
213125	TW-#19	Water	11/7/02	16:10	11/12/02
213126	TW-#20	Water	11/6/02	13:35	11/12/02
213127	TW-#23	Water	11/8/02	10:40	11/12/02
213128	EW-#2 (Extraction Well)	Water	11/7/02	11:30	11/12/02

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

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

This report consists of a total of 6 pages and shall not be reproduced except in its entirety including the chain of custody (COC), without written approval of TraceAnalysis, Inc.

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

Mila T. auf Dr. Blair Leftwich, Director

.

| || ||

l

1

61

Į

1.11

Analytical Report

on Chromato SW Flag 213119 - 7 on Chromato SW Flag	ography (IC) An Pro Result 173 TW-#10 ography (IC) An Pro Result 44.1	alytical Method: paration Method: Units mg/L alytical Method: paration Method: Units mg/L	E 300.0QC Batch: N/A Prep Batch Dilution 5 E 300.0QC Batch: N/A Prep Batch	QC24916Date Analyzed:11/13/0 PB23172 Date Prepared: 11/13/0 RE QC24916Date Analyzed:11/13/0 PB23172 Date Prepared: 11/13/0
SW Flag 213119 - 7 on Chromato SW Flag	Pro Result 173 TW-#10 ography (IC)An Pro Result 44.1	units Units mg/L alytical Method: paration Method: Units mg/L	N/A Prep Batch Dilution 5 E 300.0QC Batch: N/A Prep Batch	2012 PB23172 Date Prepared: 11/13/0 RE QC24916Date Analyzed: 11/13/0 PB23172 Date Prepared: 11/13/0
Flag 213119 - 7 on Chromato SW Flag	Result 173 TW-#10 ography (IC)An Pre Result 44.1	Units mg/L alytical Method: paration Method: Units mg/L	Dilution 5 E 300.0QC Batch: N/A Prep Batch	RE QC24916Date Analyzed:11/13/0 1: PB23172 Date Prepared: 11/13/0
213119 - 7 on Chromato SW Flag	173 TW-#10 ography (IC)An Pre Result 44.1	mg/L alytical Method: paration Method: Units mg/L	5 E 300.0QC Batch: N/A Prep Batch	QC24916Date Analyzed:11/13/ 1: PB23172 Date Prepared: 11/13/
213119 - 7 on Chromatog SW Flag	TW-#10 ography (IC)An Pre <u>Result</u> 44.1	alytical Method: paration Method: Units mg/L	E 300.0QC Batch: N/A Prep Batch	QC24916Date Analyzed:11/13/ 1: PB23172 Date Prepared: 11/13/
213119 - 7 on Chromato SW Flag	TW-#10 ography (IC)An Pre Result 44.1	alytical Method: paration Method: <u>Units</u> mg/L	E 300.0QC Batch: N/A Prep Batch	QC24916Date Analyzed:11/13/
on Chromatog SW Flag	ography (IC)An Pre Result 44.1	alytical Method: paration Method: <u>Units</u> mg/L	E 300.0QC Batch: N/A Prep Batch	QC24916Date Analyzed:11/13/
SW Flag	Pre Result 44.1	paration Method: Units mg/L	N/A Prep Batch	n: PB23172 Date Prepared: 11/13/
Flag	Result 44.1	Units mg/L		- , ,
	44.1	mg/L	Dilution	RL
		0/ ***	5	
2 13120 - 7 on Chromatog SW	TW-#11 ography (IC)An Pre	alytical Method: paration Method:	E 300.0 QC Batch: N/A Prep Batch	QC24916Date Analyzed:11/13/ 1: PB23172Date Prepared:11/13/
Flag	Result	Units	Dilution	BĽ
1 lag	25.1	mg/I	5	
213121 - 7	TW-#13			
213121 - 7 on Chromatog SW	TW-#13 ography (IC)An Pre	alytical Method: paration Method:	E 300.0QC Batch: N/A Prep Batch	QC24916Date Analyzed: 11/13/ n: PB23172Date Prepared: 11/13/
213121 - 7 on Chromatog SW Flag	TW-#13 ography (IC)An Pre Result	alytical Method: paration Method: Units	E 300.0QC Batch: N/A Prep Batch Dilution	QC24916Date Analyzed:11/13/ n: PB23172Date Prepared:11/13/ RI
213121 - 7 on Chromatog SW Flag	TW-#13 ography (IC)An Pre Result 24.3	alytical Method: paration Method: Units mg/L	E 300.0QC Batch: N/A Prep Batch Dilution 5	QC24916Date Analyzed:11/13/ n: PB23172Date Prepared:11/13/ RI
213121 - 7 on Chromatog SW Flag 213122 - 7 on Chromatog SW	TW-#13 ography (IC)An Pre Result 24.3 TW-#14 ography (IC)An Pre	alytical Method: paration Method: <u>Units</u> <u>mg/L</u> alytical Method: paration Method:	E 300.0QC Batch: N/A Prep Batch Dilution 5 E 300.0QC Batch: N/A Prep Batch	QC24916Date Analyzed: 11/13/ n: PB23172 Date Prepared: 11/13/ RI QC24916Date Analyzed: 11/13/ n: PB23172 Date Prepared: 11/13/
213121 - 7 on Chromatog SW Flag 213122 - 7 on Chromatog SW Flag	TW-#13 ography (IC)An Pre Result 24.3 TW-#14 ography (IC)An Pre Result	alytical Method: paration Method: <u>Units</u> <u>mg/L</u> alytical Method: paration Method: Units	E 300.0QC Batch: N/A Prep Batch Dilution 5 E 300.0QC Batch: N/A Prep Batch Dilution	QC24916Date Analyzed:11/13/ n: PB23172Date Prepared:11/13/ RI QC24916Date Analyzed:11/13/ n: PB23172Date Prepared:11/13/ RI
2 5 S	1 3120 - n Chromato W Flag	13120 - TW-#11 n Chromatography (IC)Ana W Pre Flag Result 25.1	13120 - TW-#11 In Chromatography (IC) Analytical Method: W Preparation Method: Flag Result Units 25.1 mg/L	a Chromatography (IC) Analytical Method: E 300.0 QC Batch: W Preparation Method: N/A Flag Result Units Dilution 25.1 mg/L 5

Report Dat 1057	e: November	14, 2002	Order Nur Texaco/Texaco-	nber: A Vacuur	.02111212 n Field Bukeye	Page Number: 4 of 6 Lea County,New Mexico		
Sample: Analysis: Analyst:	213124 - Ion Chromat JSW	124 - TW-#17 hromatography (IC)Analytical Method: Preparation Method:		E 300 N/A	0.0QC Batch: Prep Batch:	QC24916Date Analyzed:11/13/02 PB23172Date Prepared:11/13/02		
Param	Flag	Result	Units	Dilut	ion	RDL		
Chloride		26.1	mg/L	5		1		
Sample: Analysis: Analyst:	213125 - Ion Chromat JSW	TW-#19 ography (IC)Ar Pr	alytical Method: eparation Method:	E 300 N/A	.0QC Batch: Prep Batch:	QC24916Date Analyzed:11/13/02 PB23172Date Prepared:11/13/02		
Param	Flag Result		Units	Diluti	ion	RDL		
Chloride •		27.5	mg/L	5		1		
Sample: Analysis: Analyst:	213126 - Ion Chromat JSW	TW-#20 ography (IC)Ar Pr	alytical Method: eparation Method:	E 300 N/A	.0QC Batch: Prep Batch:	QC24916Date Analyzed:11/13/02 PB23172 Date Prepared: 11/13/02		
Param	Flag	Result	Units	Diluti	ion	RDL		
Sample: Analysis: Analyst:	213127 - Ion Chromat JSW	TW-#23 ography (IC)Ar Pr	alytical Method: eparation Method:	E 300 N/A	.0QC Batch: Prep Batch:	QC24916Date Analyzed:11/13/02 PB23172Date Prepared:11/13/02		
Param	Flag	Result	Units	Diluti	ion	RDL		
Chloride		384	mg/L	10		1		
Sample: Analysis: Analyst:	213128 - Ion Chromat JSW	EW-#2 (Ex ography (IC)An Pr	xtraction Well alytical Method: eparation Method:	E 300 N/A	.0QC Batch: Prep Batch:	QC24915Date Analyzed:11/13/02 PB23173Date Prepared:11/13/02		
Param	Flag	Result	Units	Diluti	ion	RDL		
Chloride		89.0	mg/L	5		1		

I

ļ

l

ЪĽ

Quality Control Report Method Blank

QCBatch:	QC24915		
Flag	Results	Units	Reporting Limit
	<1.0	mg/L	1
QCBatch:	QC24916		
Flag	Results	Units	Reporting Limit
	<1.0	mg/L	1
	QCBatch: Flag QCBatch: Flag	QCBatch: QC24915 Flag Results QCBatch: QC24916 Flag Results <1.0	QCBatch:QC24915FlagResultsUnits<1.0

Quality Control Report Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes			QCBate	ch: QC249	15					
	LCS	LCSD			Spike Amount	Matrix			% Rec	RPD
Param	Result	Result	Units	Dil.	Added	Result	% Rec	RPD	Limit	Limit
Chloride	11.78	11.84	mg/L	1	12.50	<1.0	94	0	90 - 110	20

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

Laboratory Control Spikes QCBatch:

					Spike					
	LCS	LCSD			Amount	Matrix			% Rec	RPD
Param	Result	Result	Units	Dil.	Added	Result	% Rec	RPD	Limit	Limit
Chloride	11.70	11.77	mg/L	1	12.50	<1.0	93	0	90 - 110	20

QC24916

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

Quality Control Report Matrix Spikes and Duplicate Spikes

Matrix	Spikes	QCI	Batch:	QC24915						
	MC	MED			Spike Amount	Matuir			% Pag	מסס
	IVIS	MSD			Amount	Matrix			70 nec	RF D
Param	Result	\mathbf{Result}	Units	Dil.	Added	Result	$\% { m Rec}$	RPD	Limit	Limit
Chloride	11080	11020	mg/L	1	6250	4940	98	0	48 - 127	20

ł

l

Ì

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

Matrix Spikes	QCBatch:	QC24916
---------------	----------	---------

					Spike					
	MS	MSD			Amount	Matrix			$\% { m Rec}$	RPD
Param	\mathbf{Result}	\mathbf{Result}	Units	Dil.	Added	\mathbf{Result}	$\% { m Rec}$	RPD	Limit	Limit
Chloride	1090	1090	mg/L	1	625	494	95	0	48 - 127	20

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

Quality Control Report Continuing Calibration Verification Standards

CCV(1)	Q	CBatch:	QC24915				
Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/L	12.50	11.93	95	90 - 110	11/13/02
ICV (1)	QC	Batch:	QC24915				
_			CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
CCV (1)	Q	CBatch:	QC24916				
			CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
ICV (1)	QC	mg/L	12.50 QC24916 CCVs	CCVs	95 CCVs	90 - 110 Percent	<u>11/13/02</u>
Param	Flag	Unite	Conc	Found	Percent	Limits	Date Analyzed
Chloride	1 lag	mø/I.	12.50	11.80	94	90 - 110	11/13/02
				11.00			

Analysis Request	, and Chain of Custody R	ecord	PAGE: PAGE	. or: 2
	ICA I FURININA CONTRACTOR		Circle or Specify Metho	d No.)
	N. Big Spring St.		≥S B _H ≥S B _H 9001	
Mid. (915) 682-4559	land, Texas 79705 Fax (915) f	682-3946	2 P-d - 2 Qui	•p
INT NAME: (he uton / C/Ca CC) SITE MANAGER: L/KC / UCO/E2 28	PRESERVATIVE METHOD	5570/628 860/628 86 Cd 86 Cd	Chlorid
UECT NO .: 1057 BRODECT N	10410 / Buckeye Vacum Unit, 88 8	809/	/608 1.1 80 1.1 80 1. 70.4 13 1.2 70.4 1	н, Тря, (Alr) (Alr) (Alr)
LD. DATE THE COMP.	SAMPLE DENTIFICATION / NUM. OF SAMPLE DENTIFICATION / NUM.	HLEX 8050/ NONE ICE HN03 HCT	Безе, 609,6 БСВ, 8 6080, СС. ИЗ 2000, СС. ИЗ 2000, КСІР 2000, ЦСІР 2000, КСІР 400, КСІР 400, <t< td=""><td>BOD, TSST, DV II Alphe Bota Sonna Spi Alphe Bota Plan Alphe Bota</td></t<>	BOD, TSST, DV II Alphe Bota Sonna Spi Alphe Bota Plan Alphe Bota
118 11/6/02 12 30 V	M = # g	X		X
119 116102 5.00 V	N/1 01#- M	×		X
1 20 117102 1.20 V T	V - #// / #//	×		•>>
1/ 100 h [2019/11 1 ci	W - # 13 11 W	X		ý
T 422:21/20/1/11 261	W -#14 11	×		ý
33 11/7102 5.25 W TU	U - #15 //	×		X.
11 1 00% ZOLLIN V CV	W- #17	X		×.
Tu 1/1/1024/10 V	W //	X		×
11/11/021:35 V TU	N1 07#-1	×.		X
11 NOH 0/ 7.0/8/11/ Cer	1 N	×.		×
QUINTED BY (Signature) Da	te: 1/11 03 Reprintin BY: (Slegenthre) 1-001	Date: 11 11 02 Time: 10 25	Superson of Content program (10	e Parting U.W. P.
outsetten BY: (Signature) Low	ate: 11 192 RECEIVED BY: (Signed ye)	Date: <u>//-/ J·() 2</u> Time: <u>//,() ()</u>	SAMPLE SHIPPED BY: (Circle) L	ALL ROAM
RQUISHED BY: (Signature) Da	ate: RECEIVED BY: (Signature) ()	Date: Time:	HAND DELIVERED UPS	OTHER: Results by:
MUNG LABORATORY. / POCO CC	2 RECEIVED BY: (Signature)		The Transk cuntact PERSON:	RUSH Charges
	ZIP: DATE: TALE:		The lamit	You No
LE CONDITION WHEN RECEIVED:	MATRIX: C-Nater A-Air SD-Solid	REVARKS:	i /E	

111

u Illi

		┝							<u> </u>				 -			 								
																			24				Na	
5							<u> </u>	(y lori	\geq		ļ				 	ļ			Ë,	Z			ij	
						·		PLA (Asbest					<u> </u>						83	2	1		Loq	
g							-///	eta smms						1					ite:	Ra			Ye	
	Ň				opµ	Chiol	Sal 'He	god, Tssi, p			1		<u> </u>		<u> </u>				5 2 2	之間	HHLO	k		1
d	t Po						808	Pest. 808/6											ert	B.				
	5 g	 					909/	PCB's 8080,	ļ		 			ļ	ļ	ļ			45	20		÷		
أفقا	12 A		,		555	9/022	9 70A .	TOA SHEDD	·						┣──	<u> </u>			E\$	1	SE I	NOST	,]
AG	YSIS Spec	┢──						BCI BCI						†		<u> </u>			5 4 {	3		EZ,	Ľ.	
	NAL					P	Volatile	TCLP Send											ΗH	Ä		LACT	à	
	le A						89	ICLP Volati						<u> </u>					E		REU R	NOS I	о С	
	Circ		S 9H	Pd 4	0 P	Be Co	87 87 1 87 89 -	ICIP Netoja		ļ		<u> </u>							NH S		ILVE	Бă I		
	Ċ		a ~H	10 5	5 P	<u> </u>		-VER 1479					<u> </u>	+	<u> </u>				Bz	E ×	DE	IAM	ž	Ł
		F	900	IXI	. a	OM 91	08 1.	91 1 Hdl					<u> </u>	1					K	ALAR NUM	INNE	HIGH	1	
							809/	V195 8080													, ~]	_	<u></u>	ł
\square	-1						809,	\0208 XIT8	·				ļ	<u> </u>					1.1	3				
1						VE			<u> </u>			ļ	 		<u> </u>	ļ			<u> </u>	22		11		1
	,			46		VATI IOD		JNON					ļ	_	<u> </u>	ļ			وا	12				
15	\$			30,		SER'		ICE	\times	 	<u> </u>		ļ	<u> </u>	<u> </u>				F	F				LEKCS
	a 3	J.		<u>_</u>	2	NR: N		EONH	·		ļ	ļ	[_	ļ	l				ite:	ite:	í		PRIV
Rel	2 C	R		A P	5	H .	L	HCT	<u> </u>						ļ				42	125	Af	1		–
	<u>ו</u>	2		5	3		(N/2		1-2	ļ	ļ	ļ		_		ļ			ر ا	Ś	1		Ŕ	
		\mathcal{L}		b)	5+	Saan	CONTA	NUMBER OF	-				 	+	 				4		Š		Ē	
nd Chain of Custo		IN VIRONMENTAL	Big Spring St.	d, Texas 79705 ^{Ray}	L GA	SITE MANAGER: IKE JUWI REZ	Excellacter ye Vic un Un	Leg County, N/N Sample IDENTIFICATION	-#2 (EXHaction Well)									_	11192 RECEIVED BY: (Signature)	(1) (1) 102 RECENTED BY: (Stanature)	RECENTED BY: (Signature)	RECEIVED BY: (Signature)	ZIP: DATE: DATE:	ATRIX:
nuest a		VDER	1910 N	Midlar		, Texulo	PROJECT NAME	EVBS CONDS	EW										Date: 1 Time:	Date: Time:	Date:	uc c	TE: X	
] ě						,õ		A A TRIX	1	<u> </u>	+		╄		+							4	AT2	IVI3:
is R		HL		0221-	8004-	heur	757	. LINE	711.71										Signature	Signature	Signature	RY:	CCK	VHEN REC
alvs		HIG		5) AB2	200 (0	NAME: C	. NO.: /	DATE	11/1/0							-			THE IN	IED BY: (100 BY: (LABORATC		I NOLLIGN
An				101	Ta	CILIENT 1	PROJECT	LAB I.D. VUMBER	BelEl										NAL DATE	ELINQUIST	ELINQUISE	ECEIVING	DURINE	AMPLE CO