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REPORT

9/28/2005

September 28, 2005

SSOCIATES, INC.

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Via e-mail: paul.sheeley@state.nm.us

Mr. Paul R. Sheeley Environmental Engineering Specialist State of New Mexico Energy, Mineral and Natural Resources Department Oil Conservation Division 1625 N. French Drive Hobbs, New Mexico 88240

Re: Closure Report for Unlined Pit Excavation and Results of Groundwater Sample Analysis, John H. Hendrix Corporation, Will Cary Lease, Unit Letter F (SE/4, NW/4), Section 22, Township 22 South, Range 37 East, Lea County, New Mexico

Dear Mr. Sheeley:

This letter is submitted to the New Mexico Oil Conservation Division ("OCD") on behalf of John H. Hendrix Corporation ("JHHC") by Larson and Associates, Inc. ("LA"), its agent, and details the closure of an unlined pit excavation ("Site"), as well as, laboratory analysis of a groundwater sample collected from a monitoring well installed near the excavation. The unlined pit was located about 300 feet east of the Will Cary #5 well in unit letter F ("SE/4, NW/4"), Section 22, Township 22 South, Range 37 East, Lea County, New Mexico. A GPS coordinate for the Site is N. 32° 22.809' and W. 103° 09.063". Figure 1 presents a location and topographic map.

Background

On July 8, 2004, JHHC received notification from the OCD to empty and remediate the pit according to its rules and guidelines. On January 20 – 21, 2005, an investigation was performed following a work plan approved by OCD ("Revised Unlined Surface Impoundment Investigation Work Plan, John H. Hendrix Corp., Will Cary Lease, Unit Letter F (SE/4, NW/4), Section 22, Township 22 South, Range 37 East, Lea County, New Mexico, January 7, 2005") that revealed vadose-zone impacts to about 28 feet below ground surface ("bgs"). These findings were presented in a report to the OCD on February 21, 2005 ("Investigation Report and Remediation Plan for Unlined Surface Impoundment, John H. Hendrix Corp., Will Cary Lease, Unit Letter F (SE/4, NW/4), Section 22, Township 22 South, Range 37 East, Lea County, New Mexico"), and included a remedial action plan to excavate soil until the OCD recommended remediation action levels ("RRAL") for benzene, total BTEX (sum of benzene, toluene, ethyl benzene and xylene) and total petroleum hydrocarbons ("TPH") was achieved.

Mr. Paul R. Sheeley September 28, 2005 Page 2

On April 19 – 22 and July 21, 2005, approximately 2,500 cubic yards of soil was excavated from the pit and transported to the JHHC landfarm (NM-02-0021) located northwest of Jal, New Mexico. Final soil samples collected from the bottom and sides of the excavation revealed no benzene, total BTEX or TPH above the RRAL of 10 milligrams per kilogram ("mg/kg") for benzene, 50 mg/kg (BTEX) and 1,000 mg/kg (TPH). Chloride ranged from 93.5 mg/kg in the bottom sample to 2,500 mg/kg in a sample from the west side at about 20 feet bgs.

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On August 4, 2005, the OCD requested JHHC to submit a plan to install a clay barrier in the excavation, a monitoring well down gradient (southeast) of the excavation and analyze a groundwater sample for BTEX, anions (alkalinity, sulfate, chloride), ions (calcium, magnesium, potassium, sodium) and metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver). The plan was submitted to the OCD on August 9, 2005.

Excavation Closure

On August 11, 2005, the excavation was filled with clean soil to about 6 feet bgs. Clay was placed over the clean soil from about 4 to 6 feet bgs, slightly crowned and compacted using a vibrating roller. Pettigrew and Associates, Inc., measured the in-situ density of the clay at 4 locations (SG-1 through SG-4) using a portable instrument, and concluded that the clay had been compacted to at least 95% standard proctor. Clean soil was placed over the clay and slightly crowned above ground surface. The Site will be seeded to range grass. Attachment A presents the density test report.

Monitoring Well and Groundwater Samples

On September 13, 2005, Scarborough Drilling, Inc., located in Lameas, Texas, drilled monitoring well TMW-1 to approximately 90 feet bgs. The well was drilled about 20 feet southeast (down-gradient) of the excavation using air and water rotary techniques. Clay commonly referred as "redbed" was observed at about 86 feet bgs. The well was constructed using 2-inch diameter schedule 40 PVC threaded casing, and screen. The screen was placed from about 68.81 to 89.50 feet bgs, and surrounded with size 10 to 20 graded silica sand. Bentonite chips were placed from ground surface to about 56 feet bgs. The static depth-to-groundwater was measured at approximately 68.87 feet bgs. Water was bailed from the well to remove fine-grained sediment. Figure 2 presents a Site drawing showing the approximate location of the well. Table 1 presents a summary of the well construction details. Appendix B presents a geologic log and well diagram.

On September 20, 2005, approximately 3 casing-volumes of groundwater was removed from the well using a dedicated bailer before a groundwater sample was collected, labeled, chilled in an ice chest, delivered under chain-of-custody control to Environmental Lab of Texas, Inc. ("ELTI"). The laboratory analyzed the sample for BTEX, anions (alkalinity, sulfate, chloride), ions (calcium, magnesium, potassium, sodium) and metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium,

Mr. Paul R. Sheeley September 28, 2005 Page 3

silver). The metal sample was filtered using 0.45-micron disposable filters prior to preservation. Table 2, Table 3 and Table 4 present summaries of the BTEX, metals general chemistry (anion and ion) results, respectively. Appendix C presents the analytical report.

No BTEX was present in the sample. Arsenic, barium and selenium were 0.0162 milligrams per liter ("mg/L)", 0.371 mg/L and 0.0061 mg/L, respectively, and were below the New Mexico Water Quality Control Commission ("WQCC") human health standards. Chloride, sulfate and total dissolved solids ("TDS") were 9,550 mg/L, 1,200 mg/L and 19,300 mg/L, respectively, and exceeded the WQCC domestic water quality standards.

Proposed Action

JHHC proposes to install a monitoring well northwest (up gradient) of the former pit to evaluate background conditions for chloride, sulfate and TDS in groundwater. The well will be constructed in the manner previously described, and a groundwater sample will be collected and analyzed for chloride, sulfate and TDS. JHHC will notify the OCD at least 72-hours prior to drilling the well and submit a report within 45 days after receipt of the laboratory report.

Your approval of the proposed action is requested. Please contact Mr. Marvin Burrows with JHHC at (505) 390-9689 or myself at (432) 687-0901 if you have questions. We may be reached by email at <u>Mburrows@valornet.com</u> or <u>Mark@LAEnvironmental.com</u>.

Sincerely,

Larson and Associates, Inc.

Mark J. Larson, P.G., C.P.G., C.G.W.P. Senior Hydrogeologist/President

Encl.

cc: Mr. Wayne Price – OCD Santa Fe Mr. Marvin Burrows – JHHC Eunice Mr. Ron Westbrook – JHHC Midland TABLES

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Unit Letter F (SE/4, NW/4), Section 22, Township 22 South, Range 37 East Summary of Monitoring Well Drilling and Completion Details John H. Hendrix Corporation, Will Cary #5 Emergency Pit

Lea County. New Mexico

(Feet BGS) (Feet BGS) (Inches) (Feet) (0) 09/13/05 90.14 88.89 2 3.25 68 Well constructed with 2-inch Schedule 40 threaded PVC casing and 0.010-inch factory-slotted screen. Depth in feet below ground surface	Well	Date Drilled	Depth	Depth Dy Manual Diar	Well	Casing Stickun	Screen	Water Level
IW-1 09/13/05 90.14 88.89 2 3.25 W-1 09/13/05 90.14 88.89 2 3.25 Well constructed with 2-inch Schedule 40 threaded PVC casing and 0.010-inch factory-slotted screen Depth in feet below ground surface Depth in feet below ground surface			(Feet BGS)	(Feet BGS)	(Inches)	(Feet)	(Feet BGS)	09/21/05 (Feet BGS)
IW-1 09/13/05 90.14 88.89 2 3.25 W-1 09/13/05 90.14 88.89 2 3.25 Well constructed with 2-inch Schedule 40 threaded PVC casing and 0.010-inch factory-slotted screen Depth in feet below ground surface 1010-inch factory-slotted screen								
IW-1 09/13/05 90.14 88.89 2 3.25 Well constructed with 2-inch Schedule 40 threaded PVC casing and 0.010-inch factory-slotted screen Depth in feet below ground surface								
	TMW-1	09/13/05	90.14	88.89	2	3.25	68.81 - 89.59	68.87
	Notes:	Well constructed w	rith 2-inch Schedule	40 threaded PVC ca	sing and 0.010-inch	factory-slotted scre	cen.	
	1. BGS:	Depth in feet below	v ground surface					

Elevation in feet above mean sea level 2: AMSL:

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Summary of BTEX Analysis of Groundwater Samples from Monitoring Well John H. Hendrix Corporation, Will Cary #5 Emergency Pit

Unit Letter F (SE/4, NW/4), Section 22, Township 22 South, Range 37 East Lea County. New Mexico

		Ter	Lea County, New Mexico	Lea County, New Mexico		Page 1 of 1
Well Number	Sample Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Total Xylene (mg/L)	BTEX (mg/L)
NMWQCC Standard:		0.01	0.75	0.75	0.62	
1-WMT	60/02/60	<0.001	<0.001	<0.001	<0.001	<0.005
Notes:	Analysis performed b	y Environmental Lab	of Texas, inc., Odes	Analysis performed by Environmental Lab of Texas, inc., Odessa, Texas, using method SW-846-8021B.	od SW-846-8021B.	

1. mg/L:

Milligrams per liter Less than method detection limit

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Summary of General Chemistry Analysis of Groundwater Samples from Monitoring Well

John H. Hendrix Corporation, Will Cary #5 Emergency Pit Unit Letter F, Section 22, Township 22 South, Range 37 East

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			Lea County	Lea County, New Mexico	lew Mexico			Page 1 of 1	
Well	Sample	Calcium	Potassium	Magnesium	Sodium	Total Alkalinity	Chloride	Sulfate	TDS
Number	Date	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
NMWOCC Standard:	tandard:			I	1	ł	250	600	1,000
2					-				-
					-				
TMW-1	09/20/05	870	102	519	4,300	233	9,550	1,200	19,300
					E				

All analysis performed by Environmental Lab of Texas, Inc., Odessa, Texas. Notes:

Milligrams per liter 1. mg/L: 2. -:

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Summary of Disspolved Metals Analysis of Groundwater Samples from Monitoring Well Unit Letter F (SE/4, NW/4), Section 22, Township 22 South, Range 37 East John H. Hendrix Corporation, Will Cary #5 Emergency Pit

Selenium Page 1 of 1 (mg/L) 0.0061 0.05 (mg/L) <0.005 Silver 0.05 Mercury <0.0005 (mg/L) 0.002 (mg/L) <0.011 Lead 0.05 Chromium Lea County, New Mexico (mg/L) <0.005 0.05 Cadmium (mg/L) <0.001 0.01 Barium (mg/L) 0.371 1.0 Arsenic (mg/L) 0.0162 0.1 Sample 09/20/05 NMWQCC Standard: Date TMW-1 Well

All analysis performed by Environmental Lab of Texas, Inc., Odessa, Texas. Notes:

Milligrams per liter 1. mg/L: ₹. .

Less than method detection limit

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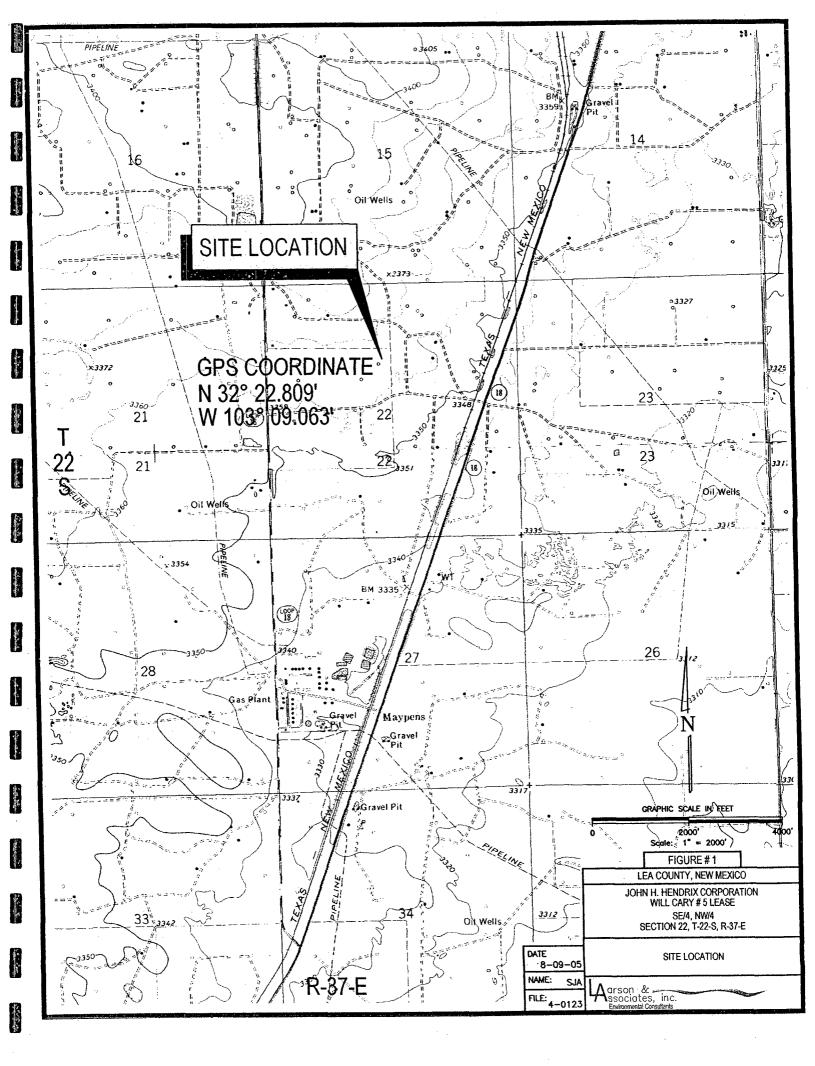
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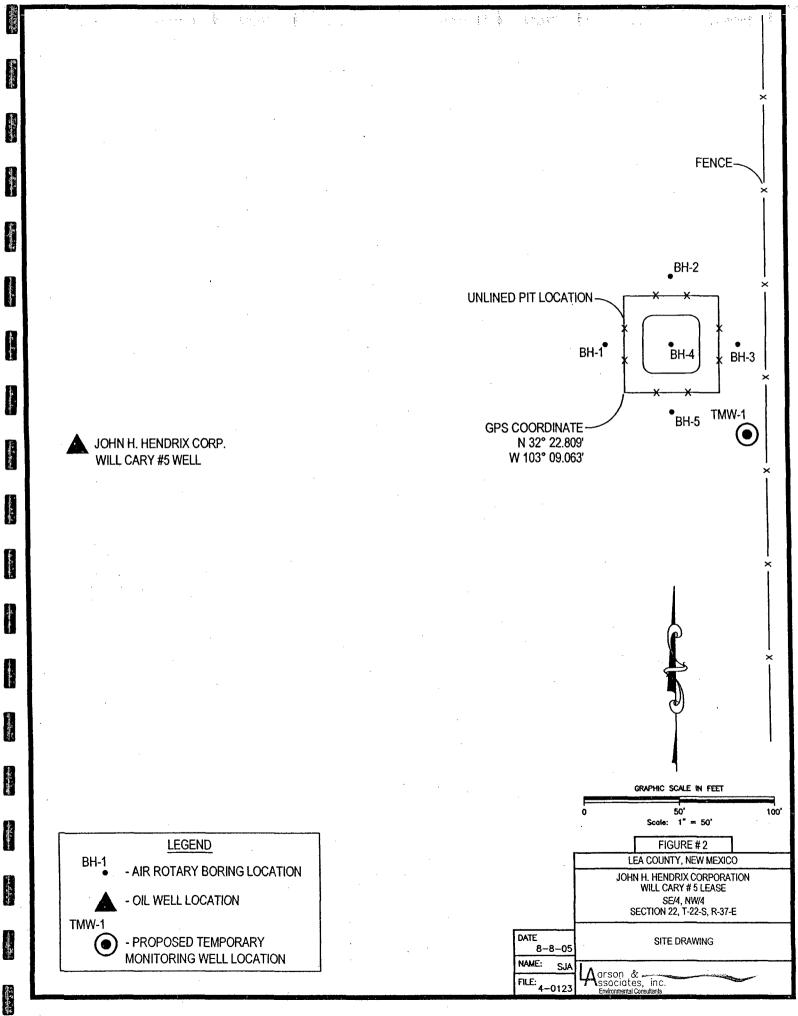
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APPENDIX A

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Density Test Report

507 North Marienfeld, Suite 202 Midland, Texas 79701 Ph. (432) 687-0901 Fax (432) 687-0456

TETTICREA NCLARENCE SUBJECT		LABORATORY TEST R PETTIGREW & ASSOC 1110 N. GRIMES HOBBS, NM 88240 (505) 393-9827	EPORT	ASHTO RIB DEBRA P. HICKS, P.E./L.S.I. WILLIAM M. HICKS. III, P.E./P.S.
То:	Larson & Associates Attn: Mark Larson 507 N. Marienseld Suite 202 Midland, TX 79701		Material: Test Method:	Red Clay ASTM: D 2922
Project:	Will Cary #5			
Date of Test:	August 11, 2005		Depth:	Finished Subgrade

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Test No.	Location	Dry Density % Maximum	% Moisture	Depth
SG-1	Pit - 15' W. & 30' S. of the NE Corner	97.3	12.5	
SG-2	Pit - 15' E. & 15' N. of the SW Corner	97.0	12.1	•
SG-3	Pit - 22' N. & 25' W. of the SE Corner	97.2	13.9	
SG-4	Pit - 12' W. & 20' N. of the SE Corner	100.2	12.2	

Control Density	/: 111.4 ASTM: D 698	Optimum Moisture:
Required Comp	paction: 95%	
Lab No.:	05 8582-8585	PETT
Copies To:	Larson & Associates 🗸	BY:2

PETTIGREW & ASSOCIATES

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APPENDIX B

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Geologic Log and Well Diagram

507 North Marienfeld, Suite 202 & Midland, Texas 79701 & Ph. (432) 687-0901 & Fax (432) 687-0456

Client: John Hendrix Corpration

Project: Will Cary # 5

Project No.: 4-0123

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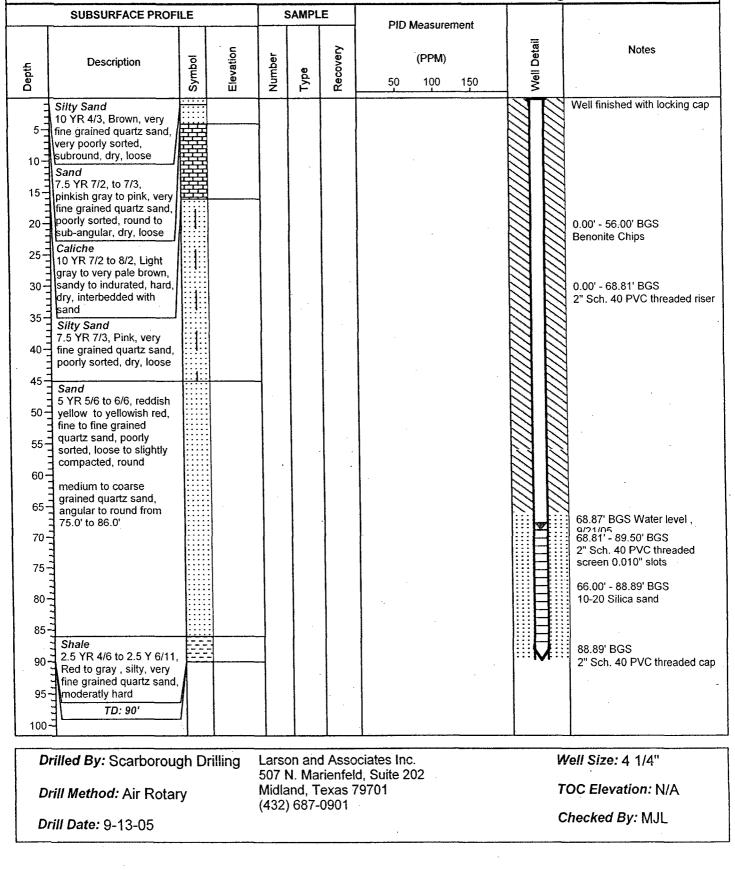
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Location: Lea County, New Mexico

Log: MW-1

Geologist: Mark Larson

Page: 1 of 1



APPENDIX C

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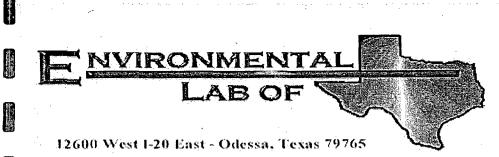
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Laboratory Report

507 North Marienfeld, Suite 202 & Midland, Texas 79701 & Ph. (432) 687-0901 & Fax (432) 687-0456



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Analytical Report

Prepared for: Mark Larson Larson & Associates, Inc. P.O. Box 50685 Midland, TX 79710

Project: John H. Hendrix/ Will Cary #5 Project Number: 4-0123 Location: None Given

Lab Order Number: 5I21001

Report Date: 09/28/05

Larson & Associates, Inc. P.O. Box 50685

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Midland TX, 79710

Project: John H. Hendrix/ Will Cary #5 Project Number: 4-0123 Project Manager: Mark Larson

Fax: (432) 687-0456

Reported: 09/28/05 08:28

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	5121001-01	Water	09/20/05 11:30	09/21/05 09:05

Larson & Associates, Inc.Project:John H. Hendrix/ Will Cary #5Fax: (432) 687-0456P.O. Box 50685Project Number:4-0123Reported:Midland TX, 79710Project Manager:Mark Larson09/28/05 08:28

Organics by GC

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1 (5121001-01) Water									
Benzene	ND	0.00100	mg/L	1	EI52622	09/26/05	09/26/05	EPA 8021B	
Toluene	ND	0.00100	u	"	*	n	π	**	
Ethylbenzene	ND	0.00100	. *	м	н	"	۳	"	
Xylene (p/m)	ND	0.00100	"			**	"	H .	
Xylene (o)	ND	0.00100		"	"	"	M	n	
Surrogate: a,a,a-Trifluorotoluene		93.2 %	80-12	20	"	n	<i>"</i> и	N	
Surrogate: 4-Bromofluorobenzene		96.0 %	80-12	20		"	"	"	

Environmental Lab of Texas

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The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

Larson & Associates, Inc. P.O. Box 50685 Midland TX, 79710

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Project: John H. Hendrix/ Will Cary #5 Project Number: 4-0123 Project Manager: Mark Larson

Fax: (432) 687-0456

Reported:

09/28/05 08:28

General Chemistry Parameters by EPA / Standard Methods

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1 (5121001-01) Water									
Total Alkalinity	233	2.00	mg/L	1	EI52214	09/21/05	09/21/05	EPA 310.2M	
Chloride	9550 -	250	n	500	EI52207	09/22/05	09/22/05	EPA 300.0	
Total Dissolved Solids	19300	5.00	"	1	EI52607	09/21/05	09/22/05	EPA 160.1	
Sulfate	1200	250	п	500	EI52207	09/22/05	09/22/05	EPA 300.0	

Environmental Lab of Texas

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

Larson & Associates, Inc. P.O. Box 50685 Midland TX, 79710

Project: John H. Hendrix/ Will Cary #5 Project Number: 4-0123 Project Manager: Mark Larson

Reported: 09/28/05 08:28

Total Metals by EPA / Standard Methods

Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-1 (5121001-01) Water							·····		
Silver	ND	0.00500	mg/L	1	E152603	09/22/05	09/23/05	EPA 6010B .	
Arsenic	0.0162	0.00800			"	n	"	н	
Barium	0.371	0.00100	"	н	"	· •	n	6010B	
Calcium	870	2.00	"	200	EI52709	09/27/05	09/27/05	EPA 6010B	
Magnesium	519	0.0500	n	50		n	n	. "	
Potassium	102	10.0		200	n	"		"	
Sodium	4300	20.0	n	2000	. *	м	н	*	
Cadmium	ND	0.00100	"	1	EI52603	09/22/05	09/23/05		
Chromium	ND	0.00500	11	"	n	n	"	"	
Mercury	ND	0.000500	*1	м	EI52712	09/27/05	09/27/05	EPA 7470A	
Lead	ND	0.0110	۳	۳	EI52603	09/22/05	09/23/05	EPA 6010B	
Selenium	0.00610	0.00400	"	"			"	"	

Environmental Lab of Texas

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

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Larson & Associates, Inc. P.O. Box 50685 Midland TX, 79710		Pro Project Nur Project Man	nber: 4-0		/ Will Cary	r #5			Fax: (432) Repo 09/28/0	rted:
		ganics by Environm	_	•						
					.as					· · · · · · · · · · · · · · · · · · ·
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EI52622 - EPA 5030C (GC)										
Blank (EI52622-BLK1)				Prepared &	Analyzed	09/26/05				
Benzene	ND	0.00100	mg/L							
Foluene	ND	0.00100	н							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00100	#							
Xylene (o)	ND	0.00100								
Surrogate: a,a,a-Trifluorotoluene	44.5		ug/l	40.0		111	80-120			
Surrogate: 4-Bromofluorobenzene	47.8		"	40.0		120	80-120			
LCS (EI52622-BS1)				Prepared &	Analyzed	09/26/05				
Benzene	43.1		ug/l	50.0		86.2	80-120			
Toluene	41.6		*	50.0		83.2	80-120			
Ethylbenzene	49.3			50.0		98.6	80-120			
Xylene (p/m)	91.4		N	100		91.4	80-120			
Xylene (0)	52.4		"	50.0		105	80-120			
Surrogate: a,a,a-Trifluorotoluene	38.0		14	40.0		95.0	80-120			
Surrogate: 4-Bromofluorobenzene	42.0		. 7	40.0		105	80-120			
Calibration Check (EI52622-CCV1)	•			Prepared: 0	9/26/05 A	nalyzed: 0	9/27/05			
Benzene	49.9		ug/l	50.0		99.8	80-120			
Toluene	44.9		"	50.0		89.8	80-120			
Ethylbenzene	50.2	-	"	50.0		100	80-120			
Xylene (p/m)	92.4		"	100		92.4	80-120			
Xylene (o)	50.9		"	50.0		102	80-120			
Surrogate: a,a,a-Trifluorotoluene	40.2		N	40.0		100	0-200			
Surrogate: 4-Bromofluorobenzene	39.6		"	40.0		99.0	0-200			
Matrix Spike (EI52622-MS1)	Sou	ırce: 5123008-	07	Prepared: (09/26/05 A	analyzed: 0	9/27/05			
Benzene	0.0413	0.00100	mg/L	0.0500	ND	82.6	80-120			
Toluene	0.0406	0.00100	"	0.0500	ND	81.2	80-120			
Ethylbenzene	0.0483	0.00100	н	0.0500	ND	96.6	80-120	,		
Xylene (p/m)	0.0887	0.00100	**	0.100	ND	88.7	80-120			
Xylene (o)	0.0537	0.00100	*	0.0500	ND	107	80-120			
Surrogate: a, a, a-Trifluorotoluene	33.5		ug/l	40.0		83.8	80-120	-		
Surrogate: 4-Bromofluorobenzene	43.5		"	40.0		109	80-120			

Environmental Lab of Texas

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Page 5 of 12

Project: John H. Hendrix/ Will Cary #5 Project Number: 4-0123 Project Manager: Mark Larson

Fax: (432) 687-0456

Reported: 09/28/05 08:28

Organics by GC - Quality Control

Environmental Lab of Texas

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EI52622 - EPA 5030C (GC)	<u> </u>		•							
Matrix Spike Dup (EI52622-MSD1)	Sour	-ce: 5123008-0)7	Prepared: ()9/26/05 A	nalyzed: 09	/27/05			
Benzene	0.0461	0.00100	mg/L	0.0500	ND	92.2	80-120	11.0	20	
Toluene	0.0448	0.00100	**	0.0500	ND	89.6	80-120	9.84	20	
Ethylbenzene	0.0553	0.00100	"	0.0500	ND	111	80-120	13.9	20	
Xylene (p/m)	0.0985	0.00100	"	0.100	ND	98.5	80-120	10.5	20	
Xylene (o)	0.0572	0.00100	"	0.0500	ND -	114	80-120	6.33	20	
Surrogate: a,a,a-Trifluorotoluene	34.5		ug/l	40.0		86.2	80-120			
Surrogate: 4-Bromofluorobenzene	46.8		"	40.0		117	80-120			

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12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

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Larson & Associates, Inc.			piect Joh	n H. Hendrix	/ Will Carv	#5			Fax: (432)	687-0456
P.O. Box 50685		Project Nur	2		Cury				Repo	rted:
Midland TX, 79710		Project Man							09/28/0	
	• • •		-							
General Chem	istry Paran	neters by	EPA /	Standard	Method	ls - Qual	ity Cont	rol		
	I	Environm	ental L	ab of Tex	tas					
	_	Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EI52207 - General Preparation (Wet	Chem)									
Blank (EI52207-BLK1)				Prepared &	Analyzed:	09/22/05				
Sulfate	ND	0.500	mg/L		<u> </u>					
Chloride	ND	0.500	۳							
LCS (EI52207-BS1)				Prepared &	Analyzed	09/22/05				
Sulfate	8.98		mg/L	10.0	muly200.	89.8	80-120			
Chloride	8.42		л — П	10.0		84.2	80-120			
California Charle (FIE2207 CONVA)				D		00/02/07				
Calibration Check (EI52207-CCV1)	8.44		mc/ſ	Prepared & 10.0	Analyzed:		80-120		·	
Sulfate	8.44 8.99		mg/L "	10.0		84.4 89.9	80-120 80-120			
- Antare	0.27			10.0		02.7	00-120			
Duplicate (EI52207-DUP1)	Sour	ce: 5119032-(16	Prepared &		09/22/05				
Chloride	2040	100	mg/L		2070			1.46	20	
Sulfate	796	100	. "		804			1.00	20	
Batch EI52214 - General Preparation (Wet	Chem)									
Blank (EI52214-BLK1)				Prepared &	k Analyzed	: 09/21/05				
Total Alkalinity	ND	2.00	mg/L	······		in the state of the state				
Calibration Check (EI52214-CCV1)				Prepared &	k Analyzed	09/21/05				
Bicarbonate Alkalinity	229		mg/L	200	c Analyzeu	114	80-120			
			-							
Duplicate (EI52214-DUP1)		ce: 5119006-		Prepared &	& Analyzed	: 09/21/05				···
Total Alkalinity	174	2.00	mg/L		173		•	0.576	20	
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Page 7 of 12

Larson & Associates, Inc.Project:John H. Hendrix/ Will Cary #5Fax: (432) 687-0436P.O. Box 50685Project Number:4-0123Reported:Midland TX, 79710Project Manager:Mark Larson09/28/05 08:28											
	General Chemistry Para	imeters by Environm				s - Qual	ity Cont	rol			
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes	

mg/L

mg/L

Source: 5119003-01

Source: 5119033-08

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Prepared & Analyzed: 09/22/05

Prepared & Analyzed: 09/22/05

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Duplicate (EI52607-DUP1)

Duplicate (EI52607-DUP2)

Total Dissolved Solids

Total Dissolved Solids

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Larson & Associates, Inc.		Pro	oject: Joh	n H. Hendrix	/ Will Cary #5				Fax: (432)	687-0456
P.O. Box 50685		Project Nur	•		÷				Repor	ted:
Midland TX, 79710		Project Man	ager: Ma	rk Larson					09/28/05	5 08:28
Т	otal Metals b	y EPA / Sta	andard	Methods	- Quality (Contr	ol			
·		Environm	ental L	ab of Tex	as					
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result %	REC	%REC Limits	RPD	RPD Limit	Notes
Batch EI52603 - EPA 3005A										
Blank (EI52603-BLK1)				Prepared: 0	9/22/05 Analy	zed: 09	/23/05			
Selenium	ND	0.00400	mg/L							
Lead	ND	0.0110								
Chromium	ND	0.00500	Ħ							
Cadmium	ND	0.00100	u		•					
Barium	ND	0.00100	۳.							
Arsenic	ND	0.00800	"							
Silver	ND	0.00500	"							
LCS (E152603-BS1)				Prepared: ()9/22/05 Analy	zed: 09	/23/05			
Cadmium	0.203	0.00100	mg/L	0.200		102	85-115			
Selenium	0.424	0.00400	м	0.400		106	85-115			
Silver	0.103	0.00500	н	0.100		103	85-115			
Chromium	0.205	0.00500	n	0.200		102	85-115			
Barium	0.215	0.00100	"	0.200		108	85-115			
Arsenic	0.822	0.00800	"	0.800		103	85-115		4	
Lead	1.08	0.0110	"	1.10	·	98.2	85-115		`	
LCS Dup (EI52603-BSD1)				Prepared:	09/22/05 Analy	zed: 09	/23/05			
Silver	0.0953	0.00500	mg/L	0.100		95.3	85-115	7.77	20	
Chromium	0.213	0.00500	Ħ	0.200		106	85-115	3.83	20	
Cadmium	0.200	0:00100	н	0.200		100	85-115	1.49	20	
Barium	0.212	0.00100	"	0.200	-	106	85-115	1.41	20	
Arsenic	0.835	0.00800	"	0.800		104	85-115	1.57	20	
Selenium	0.434	0.00400		0.400		108	85-115	2.33	20	
Lead	1.07	0.0110	t i	1.10		97.3	85-115	0.930	20	
Calibration Check (EI52603-CCV1)					09/22/05 Anal					
Lead	1.04		mg/L	1.00		104	90-110			
Barium	1.08		*	1.00		108	90-110			
Cadmium	1.08		9 11	1.00		108	90-110			
Selenium Arsenic	1.03		. "	1.00		103	90-110			
Chromium	1.06			1.00 1.00		106 110	90-110 90-110			
Silver	0.521		-	0.500		104	90-110 90-110			

Environmental Lab of Texas

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Page 9 of 12

Larson & Associates, Inc. P.O. Box 50685

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Midland TX, 79710

Project: John H. Hendrix/ Will Cary #5 Project Number: 4-0123 Project Manager: Mark Larson

Fax: (432) 687-0456

Reported:

09/28/05 08:28

Total Metals by EPA / Standard Methods - Quality Control

Environmental Lab of Texas

								······		
		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch EI52603 - EPA 3005A

Matrix Spike (EI52603-MS1)	Sour	-ce: 5I21001-0)1	Prepared:	09/22/05 An	alyzed: 09	9/23/05			
Chromium	0.185	0.00500	mg/L	0.200	ND	92.5	75-125			
Cadmium	0.193	0.00100	"	0.200	ND	96.5	75-125			
Lead	1.19	0.0110	Ħ	1.10	ND	108	75-125			
Selenium	0.443	0.00400	"	0.400	0.00610	109	75-125			
Silver	0.150	0.00500	۳.	0.100	ND	150	75-125			
Arsenic	0.882	0.00800	"	0.800	0.0162	108	75-125			
Barium	0.577	0.00100	н	0.200	0.371	103	75-125			
Matrix Spike Dup (EI52603-MSD1)	Sou	rce: 5121001-0	01	Prepared:	09/22/05 An	alyzed: 0	9/23/05			
Barium	0.575	0.00100	mg/L	0.200	0.371	102	75-125	0.347	20	
Cadmium	0.195	0.00100		0.200	ND	97.5	75-125	1.03	20	
Chromium	0.197	0.00500		0.200	ND	98.5	75-125	6.28	20	
Lead	1.16	0.0110	'n	1.10	ND	105	75-125	2.55	20	
Selenium	0.435	0.00400	н	0.400	0.00610	107	75-125	1.82	20	
Arsenic	0.866	0.00800	ņ	0.800	0.0162	106	75-125	1.83	20	
Silver	0.157	0.00500	n	0.100	ND	157	75-125	4.56	20	
Post Spike (EI52603-PS1)	Sou	rce: 5I21001-	01	Prepared:	09/22/05 Ar	alyzed: 0	9/23/05			
Silver	0.170		mg/L	0.100	ND	170	85-115			PS-

Batch EI52709 - 6010B/No Digestion

Blank (EI52709-BLK1)				Prepared & Analyzed: 09/27/05	
Calcium	ND	0.0100	mg/L	· ·	
Magnesium	ND	0.00100	"		
Potassium	ND	0.0500	n		
Sodium	ND	0.0100	n		
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Larson & Associates, Inc. Project: John H. Hendrix/ Will Cary #5 P.O. Box 50685 Project Number: 4-0123 Midland TX, 79710 Project Manager: Mark Larson Total Metals by EPA / Standard Methods - Quality Control **Environmental Lab of Texas** RPD %REC Reporting Spike Source Level Limit Analyte Result Limit Units Result %REC Limits RPD Batch EI52709 - 6010B/No Digestion

Calibration Check (EI52709-CCV1) Prepared & Analyzed: 09/27/05 Calcium 2.00 85-115 2.02 mg/L 101 2.00 91.5 -85-115 Magnesium 1.83 2.00 85-115 Potassium 2.08 104 Sodium 1.77 2.00 88.5 85-115 Duplicate (EI52709-DUP1) Source: 5119003-01 Prepared & Analyzed: 09/27/05 Calcium 2.78 20 78.0 0.500 80.2 mg/L 20 Magnesium 32.2 0010.0 " 32.6 . 1.23 Potassium * 8.08 0.124 20 8.07 0.250 н 87.7 Sodium 88.9 0.500 1.36 20

Batch EI52712 - EPA 7470A

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Blank (EI52712-BLK1)				Prepared & A	Analyzed:	09/27/05				
Мегситу	ND	0.000500	mg/L							
LCS (E152712-BS1)				Prepared & A	Analyzed:	09/27/05				
Мегсигу	0.000860	0.000500	mg/L	0.00100		86.0	85-115			
Calibration Check (EI52712-CCV1)				Prepared & A	Analyzed:	09/27/05				
Мегсигу	0.000900		mg/L	0.00100		90.0	90-110			
Matrix Spike (EI52712-MS1)	Sou	rce: 5121001-0	01	Prepared & A	Analyzed:	09/27/05				
Mercury	0.000750	0.000500	mg/L	0.00100	ND	75.0	75-125			
Matrix Spike Dup (EI52712-MSD1)	Sou	arce: 5I21001-	D1	Prepared & A	Analyzed:	09/27/05				
Mercury	0.000760	0.000500	mg/L	0.00100	ND	76.0	75-125	1.32	20	

Environmental Lab of Texas

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Fax: (432) 687-0456

Reported: 09/28/05 08:28

Notes

Larson & A	Associates, Inc.	Project: John H. Hendrix/ Will Cary #5	Fax: (432) 687-0456
P.O. Box 5	0685	Project Number: 4-0123	Reported:
Midland T	X, 79710	Project Manager: Mark Larson	09/28/05 08:28
		Notes and Definitions	
PS-1	Matix spike recoveries were outside by similar results from a post matrix	method and/or historical control limits due to matrix interference. Interferen spike.	ce was confirmed
DET	Analyte DETECTED		
ND	Analyte NOT DETECTED at or above the	he reporting limit	
NR	Not Reported		
dry	Sample results reported on a dry weight	basis	
RPD	Relative Percent Difference		
LCS	Laboratory Control Spike		
MS	Matrix Spike		
Dup	Duplicate		

Report Approved By:

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Raland K Julies

Date:

9/28/2005

Raland K. Tuttle, Lab Manager Celey D. Keene, Lab Director, Org. Tech Director Peggy Allen, QA Officer

Jeanne Mc Murrey, Inorg. Tech Director LaTasha Cornish, Chemist Sandra Sanchez, Lab Tech.

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Environmental Lab of Texas

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12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

CLIENT NAME:				SITE MANAGER:			٧d	RAMF	TFRS/	PARAMETERS/METHOD		NUMBER	<u>م</u>	CHAIN-	CHAIN-OF-CUSTODY	FODY RECORD
				Mark Larson	5		-			5				et uncu		
PROJECT NO	m			PROJECT NAME Will Cary#5	Ś	Sajniatno		~		7 V LƏV	···.				CISON & Convertigents 432-687-0901 Environmental Convertants 432-687-0901	c: 432-687-0456 432-687-0901
PAGE / OF	-		LAB.	LAB. PO #		0 . CC	SN							507 N. Mari	enfeld, Ste. 202 •	507 N. Marienfeld, Ste. 202 • Midland, TX 79701
JUNI JUNI	MAJER	, ¹ 05	d'stylo	SAMPLE IDENTIFICATION	. '	NUMBER	01747	VIINV	919 501		-	<u>.</u>		LAB. I.D. NUMBER (LAB USE ONLY)	F. ALTE PRESERVE GRAE	REMARKS (1.E., Filtered, Unfritered, Preserved, Unfriserved, Grab, composite
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SAMPLED BY (Signature)	Binoture	1.		DATE: 3/20	REINVOOISHED BY Signature	R	anat	(e)			DATE: O	DATE: 9/2		RECEIVED BY: (Signature)	ature)	DATE: TIME:
RELINQUISHED BY: (Signature)	Y: (Signe	iture)			RECEIVED BY: (Signature)	(Signal	ure)				DATE		1	SAMPLE SHIPPED BY: (Circle)	Y: (Circle)	
	· ·.			TIME							TIME.		뷴	FEDEX		AIRBILL #:
COMMENTS:					•				TURNA	Turnaround time needed	TIME A	JEEDED	₽ \$	HAND DELIVERED	NG LAB	OTHEK:
			tet	- Area	IQ	DECENTED BY. (Signatura	N 10		. 10				<u>ष्ट्र</u>	VELLOW - RECEIVIN	- RECEIVING LAB (TO BE RETURNED TO	URNED TO
RECEIVING LABORALORY: ADDRESS;	KAIUKY	1	$ \dot{1} $					$\frac{9}{2}$	g	8			Mid	ł	LA AFIEK KELEIFIJ PROJECT MANAGER	
				STATE: ZIP: ZIP: ZIP:		DATE: 9	Irzl.	5	. INGE	9:6	R		Ğ	1	QA/QC COORDINATOR	
	WHEN REC	EWED:	ĺ		1.0°C	IA CO	NTACI	LA CONTACT PERSON:	Ä			•	Ş	SAMPLE TYPE:		
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Environmental Lab of Texas Variance / Corrective Action Report - Sample Log-In.

	Client:	USON
	•	9/21/05 9:05
	Order #:	5I21001
3-A-2-0-1	Initials:	CH

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Sample Receipt Checklist

Temperature of container/cooler?	Yes	No	[.0 C]
Shipping container/cooler in good condition?	LES	No	1
Custody Seals intact on shipping container/cooler?	Yes	No	Not present
Custody Seals intact on sample bottles?	Yes	No	Not present
Chain of custody present?	Xes	No	
Sample Instructions complete on Chain of Custody?	Yes	No	
Chain of Custody signed when relinquished and received?	Ves	No	
Chain of custody agrees with sample label(s)	des	No	
Container labels legible and intact?	Kes	No	
Sample Matrix and properties same as on chain of custody?	Yes	No	
Samples in proper container/bottle?	Yes	No	}
Samples properly preserved?	Ves	No	
Sample bottles intact?	Æ	No	[
Preservations documented on Chain of Custody?	1 Yes	No	1
Containers documented on Chain of Custody?	1 cres	No	
Sufficient sample amount for indicated test?	Xes	No	
All samples received within sufficient hold time?	1 Ves	No	
VOC samples have zero headspace?	Kes	No	Not Applicable

Other observations:

Variance Documentation:

Contact Person: -_____ Date/Time: _____ Contacted by: _____ Regarding:

.

Corrective Action Taken:

•_____

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