

MARTIN YATES, III  
1912-1985  
FRANK W. YATES  
1936-1986  
S.P. YATES  
1914-2008

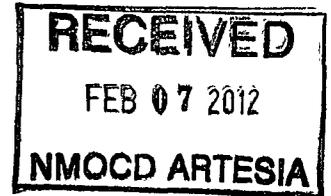


105 SOUTH FOURTH STREET  
ARTESIA, NEW MEXICO 88210-2118  
TELEPHONE (575) 748-1471

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CHIEF ADMINISTRATIVE OFFICER

February 1, 2012

Mr. Mike Bratcher  
NMOCD District II  
811 S. First Street  
Artesia, NM 88210



Re: Martha AIK Federal #1  
30-015-26549  
Section 11, T22S-R31E  
Eddy County, New Mexico

Dear Mr. Bratcher,

Enclosed please find a Form C-141, Final Report for the above captioned site regarding the release on July 8, 2011 (30 B/PW released with 0 B/PW recovered and 5 B/O released with 5 B/O recovered). The C-141 Initial Report was submitted to your office on July 22, 2011. Impacted soils within the battery around the separation equipment was excavated and hauled to an NMOCD approved facility. Vertical and horizontal delineation samples were taken on 8/24/2011, 11/22/2011 and 12/13/2011 and sent to an NMOCD approved laboratory. Enclosed are the analytical reports, results show TPH and BTEX, to be below RRAL's, based on a site ranking of zero; Yates Petroleum Corporation requests closure based on impacted soils excavated/hauled and analytical results.

If you have any questions, please call me at 575-748-4111.

Thank you.

YATES PETROLEUM CORPORATION

  
Amber Cannon  
Environmental Regulatory Agent

/anc  
Enclosure(s)

# Martha AIK Federal #1

Analytical Report- 425342 & 425341	Sample Area	Sample Date	Sample Type	Depth	BTEX	GRO	DRO	TOTAL	Chlorides
Comp-01.0	Release Area	8/24/2011	Comp/Auger	1'	ND	ND	87	87	2,590
Comp-02.0	Release Area	8/24/2011	Comp/Auger	2'	ND	ND	46.2	46.2	3,460
Comp-03.0	Release Area	8/24/2011	Comp/Auger	3'	ND	ND	19.4	19.4	2,920

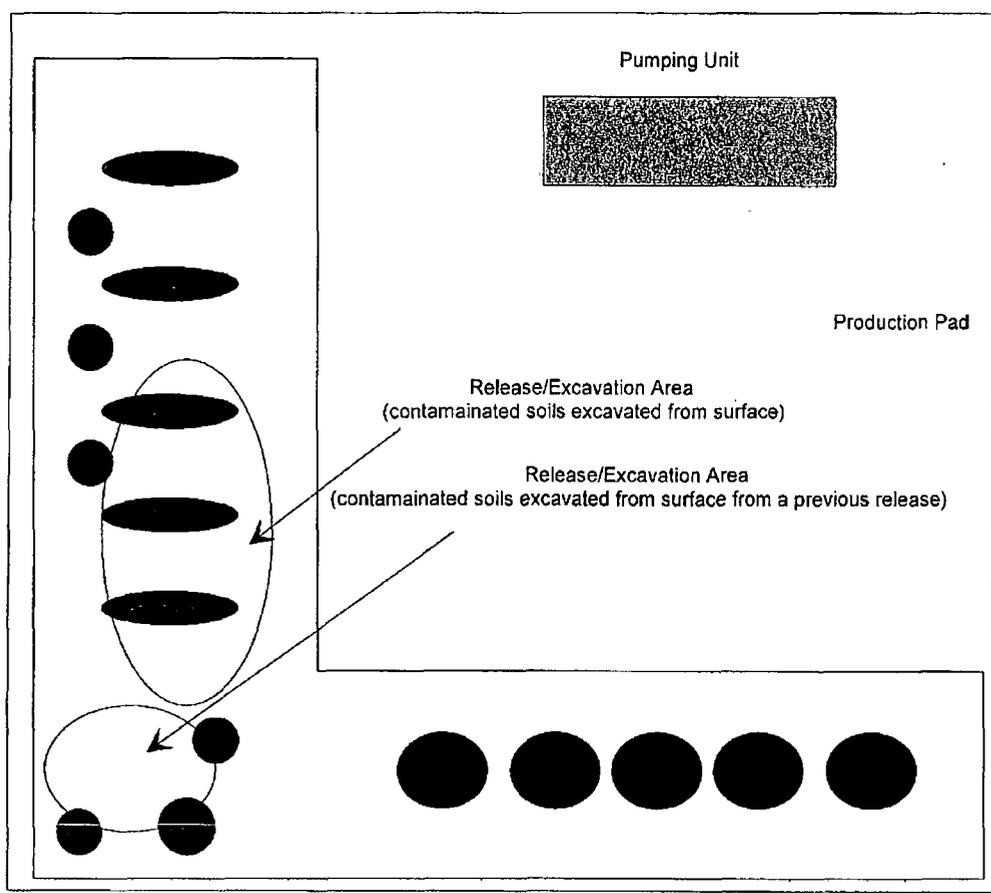
Analytical Report- 426916	Sample Area	Sample Date	Sample Type	Depth	BTEX	GRO	DRO	TOTAL	Chlorides
Grab N4	Release Area	11/22/2011	Grab/Backhoe	4'					593
Grab N5	Release Area	11/22/2011	Grab/Backhoe	5'					780
Grab N6	Release Area	11/22/2011	Grab/Backhoe	6'					1,710
Grab S4	Release Area	11/22/2011	Grab/Backhoe	4'					200
Grab S5	Release Area	11/22/2011	Grab/Backhoe	5'					164
Grab S6	Release Area	11/22/2011	Grab/Backhoe	6'					77

Analytical Report- H102700	Sample Area	Sample Date	Sample Type	Depth	BTEX	GRO	DRO	TOTAL	Chlorides
Grab N1	Release Area	12/13/2011	Grab/Backhoe	1'					576
Grab N2	Release Area	12/13/2011	Grab/Backhoe	2'					448
Grab N3	Release Area	12/13/2011	Grab/Backhoe	3'					1,090
Grab N7	Release Area	12/13/2011	Grab/Backhoe	7'					336
Grab N8	Release Area	12/13/2011	Grab/Backhoe	8'					160
Grab S1	Release Area	12/13/2011	Grab/Backhoe	1'					576
Grab S2	Release Area	12/13/2011	Grab/Backhoe	2'					64
Grab S3	Release Area	12/13/2011	Grab/Backhoe	3'					48

Site Ranking is Zero (0). Depth to Ground Water >100' (approx. 150', Section 11-22S-31E, per Trend Map).

All results are ppm.Chlorides for documentation.

Released: 30 B/PW, 5 B/O; Recovered: 0 B/PW, 5 B/O. Release Date: 7/8/2011



**NOTE:** Comp 01.0, Comp 02.0, and Comp 03.0 consisted of composite samples from both yellow areas above. Grab N1, N2, N3, N4, N5, N6, N7 and N8 consisted of Grab Samples taken from the northern area. Grab S1, S2, S3, S4, S5, and Grab S6 consisted of Grab Samples taken from the southern area.



Martha AIK Federal #1  
30-015-26549  
Section 11, T22S-R31E  
Eddy County, NM

SAMPLE DIAGRAM(Not to Scale)  
Xenco Laboratories# See Attached Sample Table  
and Sample Results  
Prepared by Amber Cannon  
Environmental Regulatory Agent



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

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December 17, 2011

AMBER CANNON

Yates Energy Petroleum Corp

105 S 4th Street

Artesia, NM 88210

RE: MARTHA AIK FEDERAL #1

Enclosed are the results of analyses for samples received by the laboratory on 12/15/11 13:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-11-3. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/ga/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/ga/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

 Yates Energy Petroleum Corp  
 AMBER CANNON  
 105 S 4th Street  
 Artesia NM, 88210  
 Fax To: (505) 748-4635

Received:	12/15/2011	Sampling Date:	12/13/2011
Reported:	12/17/2011	Sampling Type:	Soil
Project Name:	MARTHA AIK FEDERAL #1	Sampling Condition:	** (See Notes)
Project Number:	30-015-26549	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY		

**Sample ID: S1 1' (H102700-01)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	576	16.0	12/16/2011	ND	416	104	400	3.77		

**Sample ID: S2 2' (H102700-02)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	12/16/2011	ND	416	104	400	3.77		

**Sample ID: S3 3' (H102700-03)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	12/16/2011	ND	416	104	400	3.77		

**Sample ID: N1 1' (H102700-04)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	576	16.0	12/16/2011	ND	416	104	400	3.77		

Cardinal Laboratories

\* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

 Yates Energy Petroleum Corp  
 AMBER CANNON  
 105 S 4th Street  
 Artesia NM, 88210  
 Fax To: (505) 748-4635

Received:	12/15/2011	Sampling Date:	12/13/2011
Reported:	12/17/2011	Sampling Type:	Soil
Project Name:	MARTHA AIK FEDERAL #1	Sampling Condition:	** (See Notes)
Project Number:	30-015-26549	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY		

**Sample ID: N2 2' (H102700-05)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	448	16.0	12/16/2011	ND	432	108	400	0.00		

**Sample ID: N3 3' (H102700-06)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1090	16.0	12/16/2011	ND	432	108	400	0.00		

**Sample ID: N7 7' (H102700-07)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	336	16.0	12/16/2011	ND	432	108	400	0.00		

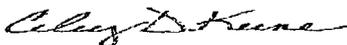
**Sample ID: N8 8' (H102700-08)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: HM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	12/16/2011	ND	432	108	400	0.00		

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

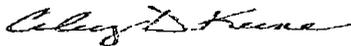
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500C-8 does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keene, Lab Director/Quality Manager



**ARDINAL LABORATORIES**  
101 East Marland, Hobbs, NM 88240

(505) 393-2326 FAX (505) 393-2476

**CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST**

Project Manager: Amber Cannon  
 Company Name: Yates Petroleum Corporation  
 Company Address: 105 South 4th Street  
 City/State/Zip: Artesia, NM 88210  
 Telephone No: 575-748-4111  
 Sampler Signature: Amber Cannon

Project Name: Martha AIK Federal #1  
 Project #: 30-015-26549  
 Project Loc: Eddy County  
 PO #: 1032020  
 Report Format:  Standard  TRRP  NPDES  
 Fax No: 575-748-4131  
 e-mail: acannon@yatespetroleum.com

(lab use only)  
 ORDER #:

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers								Matrix
								Ice	HNO <sub>3</sub>	HCl	H <sub>2</sub> SO <sub>4</sub>	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>8</sub>	None	Other (Specify)	
1	S1	1'	1'	12/13/2011	9:50 AM		1								S	
2	S2	2'	2'	12/13/2011	9:55 AM		1								S	
3	S3	3'	3'	12/13/2011	10:00 AM		1								S	
4	N1	1'	1'	12/13/2011	10:05 AM		1								S	
5	N2	2'	2'	12/13/2011	10:10 AM		1								S	
6	N3	3'	3'	12/13/2011	10:15 AM		1								S	
7	N7	7'	7'	12/13/2011	10:25 AM		1								S	
8	N8	8'	8'	12/13/2011	10:30 AM		1								S	

Analyze For:											
TCLP:											
TOTAL:											
TPH: 4TB.1	8015M	\$3:52									
TPH: TX 1005	TX 1008										
Calcium (Ca, Mg, Na, K)											
Anions (Cl, SO <sub>4</sub> , Alkalinity)											
SAR / ESP / CEC											
Metals: As Ag Ba Cd Cr Pb Hg Se											
Volatiles											
Semivolatiles											
STEEL CARTRIDGE 6030 or BTEX 6260											
RCI											
N.O.R.M.											
Coliforms											
SAR											
RUSH TAT (Pre-Schedule) 24, 48, 72 hrs											
Standard TAT											

Special Instructions:

Relinquished by:	Date	Time	Received by:	Date	Time
<u>Amber Cannon</u>	<u>12/15/11</u>	<u>8:00 AM</u>	<u>Jodi Jensen</u>	<u>12/15/11</u>	<u>1:30</u>
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT:	Date	Time

Laboratory Comments:

Sample Containers Intact? N

VOCs Free of Headspace? N

Labels on container(s)? N

Custody seals on container(s)? N

Custody seals on cooler(s)? N

Sample Hand Delivered by Sampler/Client Rep.? N

by Courier? N UPS N DHL N FedEx N Lone Star N

Temperature Upon Receipt: 20.0 °C

#26

# Analytical Report 432251

for  
**Yates Petroleum Corporation**

**Project Manager: Amber Cannon**

**Martha AIK Federal # 1**

**30-015-26549**

**01-DEC-11**

Collected By: Client



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Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

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Louisiana (04176), USDA (P330-07-00105)

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Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco Tucson (EPA Lab code: AZ000989): Arizona (AZ0758)



01-DEC-11

Project Manager: **Amber Cannon**  
**Yates Petroleum Corporation**  
105 South Fourth St.  
Artesia, NM 88210

Reference: XENCO Report No: **432251**  
**Martha AIK Federal # 1**  
Project Address: Eddy County

**Amber Cannon:**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 432251. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 432251 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

**Brent Barron II**

Odessa Laboratory Manager

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**Sample Cross Reference 432251**

**Yates Petroleum Corporation, Artesia, NM**  
Martha AIK Federal # 1

<b>Sample Id</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Sample Depth</b>	<b>Lab Sample Id</b>
Grab N4	S	11-22-11 09:30	4 - 4 ft	432251-001
Grab N5	S	11-22-11 09:40	5 - 5 ft	432251-002
Grab N6	S	11-22-11 09:50	6 - 6 ft	432251-003
Grab S4	S	11-22-11 10:00	4 - 4 ft	432251-004
Grab S5	S	11-22-11 10:10	5 - 5 ft	432251-005
Grab S6	S	11-22-11 10:20	6 - 6 ft	432251-006



## CASE NARRATIVE

*Client Name: Yates Petroleum Corporation*

*Project Name: Martha AIK Federal # 1*



*Project ID: 30-015-26549*  
*Work Order Number: 432251*

*Report Date: 01-DEC-11*  
*Date Received: 11/29/2011*

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**Sample receipt non conformances and comments:**

None

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**Sample receipt non conformances and comments per sample:**

None



# Certificate of Analysis Summary 432251

Yates Petroleum Corporation, Artesia, NM

Project Name: Martha AIK Federal # 1



Project Id: 30-015-26549

Contact: Amber Cannon

Project Location: Eddy County

Date Received in Lab: Tue Nov-29-11 12:15 pm

Report Date: 01-DEC-11

Project Manager: Brent Barron II

<i>Analysis Requested</i>	<i>Lab Id:</i>	432251-001	432251-002	432251-003	432251-004	432251-005	432251-006
	<i>Field Id:</i>	Grab N4	Grab N5	Grab N6	Grab S4	Grab S5	Grab S6
	<i>Depth:</i>	4-4 ft	5-5 ft	6-6 ft	4-4 ft	5-5 ft	6-6 ft
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Nov-22-11 09:30	Nov-22-11 09:40	Nov-22-11 09:50	Nov-22-11 10:00	Nov-22-11 10:10	Nov-22-11 10:20
<b>Anions by E300</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Nov-29-11 17:45					
	<i>Units/RL:</i>	mg/kg RL					
Chloride		593 8.63	780 8.61	1710 21.6	200 4.31	164 4.31	77.4 4.31
<b>Percent Moisture</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Nov-29-11 14:40	Nov-29-11 14:40	Nov-29-11 14:40	Nov-29-11 14:55	Nov-29-11 14:55	Nov-29-11 14:55
	<i>Units/RL:</i>	% RL					
Percent Moisture		2.62 1.00	2.45 1.00	2.64 1.00	2.64 1.00	2.65 1.00	2.57 1.00

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Brent Barron II  
Odessa Laboratory Manager



## Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

\* Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

**MDL** Method Detection Limit      **SDL** Sample Detection Limit      **LOD** Limit of Detection

**PQL** Practical Quantitation Limit      **MQL** Method Quantitation Limit      **LOQ** Limit of Quantitation

**DL** Method Detection Limit

**NC** Non-Calculable

+ Outside XENCO's scope of NELAC Accreditation.      ^ NELAC or State program does not offer Accreditation at this time.

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 2505 North Falkenburg Rd, Tampa, FL 33619  
 5757 NW 158th St, Miami Lakes, FL 33014  
 12600 West I-20 East, Odessa, TX 79765  
 6017 Financial Drive, Norcross, GA 30071  
 3725 E Atlanta Ave, Phoenix, AZ 85040

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(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(305) 823-8500	(305) 823-8555
(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	



# BS / BSD Recoveries



Project Name: Martha AIK Federal # 1

Work Order #: 432251

Analyst: BRB

Date Prepared: 11/29/2011

Project ID: 30-015-26549

Date Analyzed: 11/29/2011

Lab Batch ID: 875947

Sample: 875947-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Anions by E300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<0.840	20.0	19.9	100	20.0	20.3	102	2	75-125	20	

Relative Percent Difference RPD =  $200 * |(C-F)/(C+F)|$

Blank Spike Recovery [D] =  $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] =  $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes



# Form 3 - MS Recoveries

Project Name: Martha AIK Federal # 1

Work Order #: 432251

Lab Batch #: 875947

Date Analyzed: 11/29/2011

QC- Sample ID: 432251-002 S

Reporting Units: mg/kg

Project ID: 30-015-26549

Analyst: BRB

Date Prepared: 11/29/2011

Batch #: 1

Matrix: Soil

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	780	205	971	93	75-125	

Lab Batch #: 875947

Date Analyzed: 11/29/2011

QC- Sample ID: 432252-001 S

Reporting Units: mg/kg

Date Prepared: 11/29/2011

Analyst: BRB

Batch #: 1

Matrix: Soil

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	4730	2210	7220	113	75-125	

Matrix Spike Percent Recovery [D] =  $100 \cdot (C-A) / B$   
 Relative Percent Difference [E] =  $200 \cdot (C-A) / (C+B)$   
 All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



# Sample Duplicate Recovery



Project Name: Martha AIK Federal # 1

Work Order #: 432251

Lab Batch #: 875947

Project ID: 30-015-26549

Date Analyzed: 11/29/2011 17:45

Date Prepared: 11/29/2011

Analyst: BRB

QC- Sample ID: 432252-001 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	4730	5430	14	20	

Lab Batch #: 875863

Date Analyzed: 11/29/2011 10:25

Date Prepared: 11/29/2011

Analyst: BRB

QC- Sample ID: 432217-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	1.79	1.94	8	20	

Spike Relative Difference RPD  $200 * |(B-A)/(B+A)|$   
 All Results are based on MDL and validated for QC purposes.  
 BRL - Below Reporting Limit





XENCO Laboratories  
 Atlanta, Boca Raton, Corpus Christi, Dallas  
 Houston, Miami, Odessa, Philadelphia  
 Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist  
 Document No.: SYS-SRC  
 Revision/Date: No. 01, 5/27/2010  
 Effective Date: 8/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client: Yates Petroleum  
 Date/Time: 11-29-11 12:15  
 Lab ID #: 432251  
 Initials: AE

Sample Receipt Checklist

1. Samples on ice?	Blue	Water	<u>No</u>	
2. Shipping container in good condition?	<u>Yes</u>	No	<u>None/AE</u>	
3. Custody seals intact on shipping container (cooler) and bottles?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	No	<u>N/A</u>	
17. VOC sample have zero head space?	Yes	No	<u>N/A</u>	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>145</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

Nonconformance Documentation

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Regarding: \_\_\_\_\_  
 Corrective Action Taken: \_\_\_\_\_

- Check all that apply:
- Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1 a.1.
  - Initial and Backup Temperature confirm out of temperature conditions
  - Client understands and would like to proceed with analysis

# Analytical Report 426558

for

## Yates Petroleum Corporation

Project Manager: Amber Cannon

Martha AIK Federal #1

30-015-26549

08-SEP-11

Collected By: Client



Celebrating 20 Years of commitment to excellence in Environmental Testing Services



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Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

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Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco Tucson (EPA Lab code: AZ000989): Arizona (AZ0758)



08-SEP-11

Project Manager: **Amber Cannon**  
**Yates Petroleum Corporation**  
105 South Fourth St.  
Artesia, NM 88210

Reference: XENCO Report No: **426558**  
**Martha AIK Federal #1**  
Project Address: Eddy County

**Amber Cannon:**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 426558. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 426558 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

---

**Brent Barron II**

Odessa Laboratory Manager

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**Sample Cross Reference 426558**



**Yates Petroleum Corporation, Artesia, NM**  
Martha AIK Federal #1

<b>Sample Id</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Sample Depth</b>	<b>Lab Sample Id</b>
Comp-01.0	S	08-24-11 10:56	1 - 1 ft	426558-001
Comp-02.0	S	08-24-11 11:38	2 - 2 ft	426558-002
Comp-03.0	S	08-24-11 12:20	3 - 3 ft	426558-003



## CASE NARRATIVE

*Client Name: Yates Petroleum Corporation*

*Project Name: Martha AIK Federal #1*



*Project ID: 30-015-26549*  
*Work Order Number: 426558*

*Report Date: 08-SEP-11*  
*Date Received: 08/26/2011*

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**Sample receipt non conformances and comments:**

None

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**Sample receipt non conformances and comments per sample:**

None

**Analytical non conformances and comments:**

*Batch: LBA-868829 BTEX by EPA 8021B*  
*SW8021BM*

*Batch 868829, o-Xylene recovered below QC limits in the Matrix Spike.*

*Samples affected are: 426558-003, -001, -002.*

*The Laboratory Control Sample for o-Xylene is within laboratory Control Limits*

*Batch: LBA-869315 TPH By SW8015B Mod*  
*SW8015B\_NM*

*Batch 869315, C6-C10 Gasoline Range Hydrocarbons recovered below QC limits in the Matrix Spike Duplicate.*

*Samples affected are: 426558-003, -001, -002.*

*The Laboratory Control Sample for C6-C10 Gasoline Range Hydrocarbons is within laboratory Control Limits*



# Certificate of Analysis Summary 426558

Yates Petroleum Corporation, Artesia, NM



Project Id: 30-015-26549

Contact: Amber Cannon

Project Location: Eddy County

Project Name: Martha AIK Federal #1

Date Received in Lab: Fri Aug-26-11 09:30 am

Report Date: 08-SEP-11

Project Manager: Brent Barron II

Analysis Requested	Lab Id:	426558-001	426558-002	426558-003			
	Field Id:	Comp-01.0	Comp-02.0	Comp-03.0			
	Depth:	1-1 ft	2-2 ft	3-3 ft			
	Matrix:	SOIL	SOIL	SOIL			
	Sampled:	Aug-24-11 10:56	Aug-24-11 11:38	Aug-24-11 12:20			
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Aug-29-11 14:00	Aug-29-11 14:00	Aug-29-11 14:00			
	<i>Analyzed:</i>	Aug-30-11 00:40	Aug-30-11 01:03	Aug-30-11 01:26			
	<i>Units/RL:</i>	mg/kg    RL	mg/kg    RL	mg/kg    RL			
Benzene		ND 0.00103	ND 0.00103	ND 0.00103			
Toluene		ND 0.00205	ND 0.00205	ND 0.00205			
Ethylbenzene		ND 0.00103	ND 0.00103	ND 0.00103			
m_p-Xylenes		ND 0.00205	ND 0.00205	ND 0.00205			
o-Xylene		ND 0.00103	ND 0.00103	ND 0.00103			
Total Xylenes		ND 0.00103	ND 0.00103	ND 0.00103			
Total BTEX		ND 0.00103	ND 0.00103	ND 0.00103			
<b>Percent Moisture</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Aug-26-11 12:25	Aug-26-11 12:25	Aug-26-11 12:30			
	<i>Units/RL:</i>	%    RL	%    RL	%    RL			
Percent Moisture		2.75    1.00	2.97    1.00	2.99    1.00			
<b>TPH By SW8015B Mod</b>	<i>Extracted:</i>	Aug-26-11 12:25	Aug-26-11 12:25	Aug-26-11 12:25			
	<i>Analyzed:</i>	Sep-04-11 00:57	Sep-04-11 01:27	Sep-04-11 01:59			
	<i>Units/RL:</i>	mg/kg    RL	mg/kg    RL	mg/kg    RL			
C6-C10 Gasoline Range Hydrocarbons		ND    15.4	ND    15.4	ND    15.4			
C10-C28 Diesel Range Hydrocarbons		87.0    15.4	46.2    15.4	19.4    15.4			
Total TPH		87.0    15.4	46.2    15.4	19.4    15.4			

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Version: 1.0

Brent Barron II  
 Odessa Laboratory Manager



## Flagging Criteria

- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
  - B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
  - D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
  - E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
  - F RPD exceeded lab control limits.
  - J The target analyte was positively identified below the quantitation limit and above the detection limit.
  - U Analyte was not detected.
  - L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
  - H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
  - K Sample analyzed outside of recommended hold time.
  - JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- BRL** Below Reporting Limit
- RL** Reporting Limit
- MDL** Method Detection Limit      **SDL** Sample Detection Limit      **LOD** Limit of Detection
- PQL** Practical Quantitation Limit      **MQL** Method Quantitation Limit      **LOQ** Limit of Quantitation
- DL** Method Detection Limit
- NC** Non-Calculable
- + Outside XENCO's scope of NELAC Accreditation.

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(432) 563-1800	(432) 563-1713
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(602) 437-0330	



# Form 2 - Surrogate Recoveries

Project Name: Martha AIK Federal #1

Work Orders : 426558,

Project ID: 30-015-26549

Lab Batch #: 868829

Sample: 426558-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08/30/11 00:40

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0278	0.0300	93	80-120	
4-Bromofluorobenzene	0.0261	0.0300	87	80-120	

Lab Batch #: 868829

Sample: 426558-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08/30/11 01:03

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0285	0.0300	95	80-120	

Lab Batch #: 868829

Sample: 426558-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08/30/11 01:26

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0281	0.0300	94	80-120	
4-Bromofluorobenzene	0.0281	0.0300	94	80-120	

Lab Batch #: 869315

Sample: 426558-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/04/11 00:57

### SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.3	99.9	90	70-135	
o-Terphenyl	41.5	50.0	83	70-135	

Lab Batch #: 869315

Sample: 426558-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/04/11 01:27

### SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.4	99.7	92	70-135	
o-Terphenyl	42.0	49.9	84	70-135	

\* Surrogate outside of Laboratory QC limits  
 \*\* Surrogates outside limits; data and surrogates confirmed by reanalysis  
 \*\*\* Poor recoveries due to dilution  
 Surrogate Recovery [D] = 100 \* A / B  
 All results are based on MDL and validated for QC purposes.



## Form 2 - Surrogate Recoveries

Project Name: Martha AIK Federal #1

Work Orders : 426558,

Project ID: 30-015-26549

Lab Batch #: 869315

Sample: 426558-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/04/11 01:59

### SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.0	99.5	87	70-135	
o-Terphenyl	40.6	49.8	82	70-135	

Lab Batch #: 868829

Sample: 610727-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08/29/11 17:28

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0265	0.0300	88	80-120	
4-Bromofluorobenzene	0.0257	0.0300	86	80-120	

Lab Batch #: 869315

Sample: 610991-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09/04/11 00:25

### SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.8	99.9	92	70-135	
o-Terphenyl	42.7	50.0	85	70-135	

Lab Batch #: 868829

Sample: 610727-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08/29/11 15:57

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0283	0.0300	94	80-120	

Lab Batch #: 869315

Sample: 610991-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09/03/11 23:24

### SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	99.9	109	70-135	
o-Terphenyl	46.0	50.0	92	70-135	

\* Surrogate outside of Laboratory QC limits  
 \*\* Surrogates outside limits; data and surrogates confirmed by reanalysis  
 \*\*\* Poor recoveries due to dilution  
 Surrogate Recovery [D] = 100 \* A / B  
 All results are based on MDL and validated for QC purposes.



# Form 2 - Surrogate Recoveries

Project Name: Martha AIK Federal #1

Work Orders : 426558,

Project ID: 30-015-26549

Lab Batch #: 868829

Sample: 610727-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08/29/11 16:20

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0293	0.0300	98	80-120	
4-Bromofluorobenzene	0.0284	0.0300	95	80-120	

Lab Batch #: 869315

Sample: 610991-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 09/03/11 23:54

### SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	99.8	116	70-135	
o-Terphenyl	46.2	49.9	93	70-135	

Lab Batch #: 868829

Sample: 426147-004 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08/29/11 21:37

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0301	0.0300	100	80-120	
4-Bromofluorobenzene	0.0300	0.0300	100	80-120	

Lab Batch #: 869315

Sample: 426561-003 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/04/11 04:06

### SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	43.6	50.0	87	70-135	

Lab Batch #: 868829

Sample: 426147-004 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08/29/11 22:00

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	99	80-120	
4-Bromofluorobenzene	0.0298	0.0300	99	80-120	

\* Surrogate outside of Laboratory QC limits  
 \*\* Surrogates outside limits; data and surrogates confirmed by reanalysis  
 \*\*\* Poor recoveries due to dilution  
 Surrogate Recovery [D] = 100 \* A / B  
 All results are based on MDL and validated for QC purposes.



## Form 2 - Surrogate Recoveries

Project Name: Martha AIK Federal #1

Work Orders : 426558,

Project ID: 30-015-26549

Lab Batch #: 869315

Sample: 426561-003 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 09/04/11 04:36

### SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.7	101	99	70-135	
o-Terphenyl	43.0	50.3	85	70-135	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] =  $100 * A / B$

All results are based on MDL and validated for QC purposes.



# BS / BSD Recoveries



Project Name: Martha AIK Federal #1

Work Order #: 426558

Analyst: ASA

Lab Batch ID: 868829

Units: mg/kg

Sample: 610727-1-BKS

Date Prepared: 08/29/2011

Batch #: 1

Project ID: 30-015-26549

Date Analyzed: 08/29/2011

Matrix: Solid

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B											
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.114	114	0.100	0.113	113	1	70-130	35	
Toluene	<0.00200	0.100	0.104	104	0.100	0.103	103	1	70-130	35	
Ethylbenzene	<0.00100	0.100	0.115	115	0.100	0.116	116	1	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.241	121	0.200	0.242	121	0	70-135	35	
o-Xylene	<0.00100	0.100	0.107	107	0.100	0.107	107	0	71-133	35	

Analyst: BBH

Date Prepared: 08/26/2011

Date Analyzed: 09/03/2011

Lab Batch ID: 869315

Sample: 610991-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015B Mod											
Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	999	750	75	998	794	80	6	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	999	881	88	998	919	92	4	70-135	35	

Relative Percent Difference RPD = 200\*|(C-F)/(C+F)|

Blank Spike Recovery [D] = 100\*(C)/[B]

Blank Spike Duplicate Recovery [G] = 100\*(F)/[E]

All results are based on MDL and Validated for QC Purposes



# Form 3 - MS / MSD Recoveries



**Project Name: Martha AIK Federal #1**

Work Order #: 426558

Project ID: 30-015-26549

Lab Batch ID: 868829

QC- Sample ID: 426147-004 S

Batch #: 1 Matrix: Soil

Date Analyzed: 08/29/2011

Date Prepared: 08/29/2011

Analyst: ASA

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00105	0.105	0.0802	76	0.105	0.0899	86	11	70-130	35	
Toluene	<0.00209	0.105	0.0737	70	0.105	0.0806	77	9	70-130	35	
Ethylbenzene	<0.00105	0.105	0.0826	79	0.105	0.0886	84	7	71-129	35	
m_p-Xylenes	<0.00209	0.209	0.163	78	0.209	0.176	84	8	70-135	35	
o-Xylene	<0.00105	0.105	0.0718	68	0.105	0.0787	75	9	71-133	35	X

Lab Batch ID: 869315

QC- Sample ID: 426561-003 S

Batch #: 1 Matrix: Soil

Date Analyzed: 09/04/2011

Date Prepared: 08/26/2011

Analyst: BBH

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
TPH By SW8015B Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<16.9	1130	797	71	1130	778	69	2	70-135	35	X
C10-C28 Diesel Range Hydrocarbons	<16.9	1130	903	80	1130	903	80	0	70-135	35	

Matrix Spike Percent Recovery  $[D] = 100 * (C-A) / B$   
 Relative Percent Difference  $RPD = 200 * (C-F) / (C+F)$

Matrix Spike Duplicate Percent Recovery  $[G] = 100 * (F-A) / E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable, N = See Narrative, EQL = Estimated Quantitation Limit



# Sample Duplicate Recovery



Project Name: Martha AIK Federal #1

Work Order #: 426558

Lab Batch #: 868531

Project ID: 30-015-26549

Date Analyzed: 08/26/2011 10:50

Date Prepared: 08/26/2011

Analyst: BRB

QC- Sample ID: 426524-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	2.90	2.92	1	20	

Spike Relative Difference RPD  $200 * |(B-A)/(B+A)|$   
 All Results are based on MDL and validated for QC purposes.  
 BRL - Below Reporting Limit

Version: 1 %





XENCO Laboratories  
 Atlanta, Boca Raton, Corpus Christi, Dallas  
 Houston, Miami, Odessa, Philadelphia  
 Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist  
 Document No.: SYS-SRC  
 Revision/Date: No. 01, 5/27/2010  
 Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client: Yates  
 Date/Time: 8-26-11 9:30  
 Lab ID #: 426558/426559-C1  
 Initials: EM

Sample Receipt Checklist

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	<u>No</u>	N/A	
17. VOC sample have zero head space?	Yes	No	<u>N/A</u>	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs 2.1 °C	lbs °C	lbs °C	lbs °C	lbs °C

Nonconformance Documentation

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Regarding: \_\_\_\_\_

Corrective Action Taken: \_\_\_\_\_

- Check all that apply:  Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.  
 Initial and Backup Temperature confirm out of temperature conditions  
 Client understands and would like to proceed with analysis

# Analytical Report 426559

for  
Yates Petroleum Corporation

Project Manager: Amber Cannon

Martha AIK Federal #1

30-015-26549

07-SEP-11

Collected By: Client



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Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

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Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco Tucson (EPA Lab code: AZ000989): Arizona (AZ0758)



07-SEP-11

Project Manager: **Amber Cannon**  
**Yates Petroleum Corporation**  
105 South Fourth St.  
Artesia, NM 88210

Reference: XENCO Report No: **426559**  
**Martha AIK Federal #1**  
Project Address: Eddy County

**Amber Cannon:**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 426559. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 426559 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

---

**Brent Barron II**

Odessa Laboratory Manager

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**Sample Cross Reference 426559**



**Yates Petroleum Corporation, Artesia, NM**  
Martha AIK Federal #1

<b>Sample Id</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Sample Depth</b>	<b>Lab Sample Id</b>
Comp-01.0	S	08-24-11 10:56	1 - 1 ft	426559-001
Comp-02.0	S	08-24-11 11:38	2 - 2 ft	426559-002
Comp-03.0	S	08-24-11 12:20	3 - 3 ft	426559-003



## CASE NARRATIVE

*Client Name: Yates Petroleum Corporation*

*Project Name: Martha AIK Federal #1*



*Project ID: 30-015-26549*

*Report Date: 07-SEP-11*

*Work Order Number: 426559*

*Date Received: 08/26/2011*

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**Sample receipt non conformances and comments:**

*None*

---

**Sample receipt non conformances and comments per sample:**

*None*



# Certificate of Analysis Summary 426559

Yates Petroleum Corporation, Artesia, NM



Project Id: 30-015-26549

Contact: Amber Cannon

Project Location: Eddy County

Project Name: Martha AIK Federal #1

Date Received in Lab: Fri Aug-26-11 09:30 am

Report Date: 07-SEP-11

Project Manager: Brent Barron II

<i>Analysis Requested</i>	<i>Lab Id:</i>	426559-001	426559-002	426559-003			
	<i>Field Id:</i>	Comp-01.0	Comp-02.0	Comp-03.0			
	<i>Depth:</i>	1-1 ft	2-2 ft	3-3 ft			
	<i>Matrix:</i>	SOIL	SOIL	SOIL			
	<i>Sampled:</i>	Aug-24-11 10:56	Aug-24-11 11:38	Aug-24-11 12:20			
<b>Anions by E300</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Aug-27-11 17:31	Aug-27-11 17:31	Aug-27-11 17:31			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		2590 43.2	3460 43.3	2920 43.3			
<b>Percent Moisture</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Aug-26-11 12:30	Aug-26-11 12:30	Aug-26-11 12:30			
	<i>Units/RL:</i>	% RL	% RL	% RL			
Percent Moisture		2.75 1.00	2.97 1.00	2.99 1.00			

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

  
Brent Barron II  
Odessa Laboratory Manager



## Flagging Criteria

- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
  - B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
  - D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
  - E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
  - F RPD exceeded lab control limits.
  - J The target analyte was positively identified below the quantitation limit and above the detection limit.
  - U Analyte was not detected.
  - L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
  - H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
  - K Sample analyzed outside of recommended hold time.
  - JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- BRL** Below Reporting Limit.
- RL** Reporting Limit
- MDL** Method Detection Limit     **SDL** Sample Detection Limit     **LOD** Limit of Detection
- PQL** Practical Quantitation Limit     **MQL** Method Quantitation Limit     **LOQ** Limit of Quantitation
- DL** Method Detection Limit
- NC** Non-Calculable
- + Outside XENCO's scope of NELAC Accreditation.

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Phone	Fax																		
(281) 240-4200	(281) 240-4280																		
(214) 902 0300	(214) 351-9139																		
(210) 509-3334	(210) 509-3335																		
(813) 620-2000	(813) 620-2033																		
(305) 823-8500	(305) 823-8555																		
(432) 563-1800	(432) 563-1713																		
(770) 449-8800	(770) 449-5477																		
(602) 437-0330																			



# BS / BSD Recoveries



Project Name: Martha AIK Federal #1

Work Order #: 426559

Analyst: BRB

Date Prepared: 08/27/2011

Project ID: 30-015-26549

Date Analyzed: 08/27/2011

Lab Batch ID: 868506

Sample: 868506-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Anions by E300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Chloride	<0.840	20.0	22.8	114	20.0	23.1	116	1	75-125	20	

Relative Percent Difference RPD =  $200 * [(C-F) / (C+F)]$

Blank Spike Recovery [D] =  $100 * (C) / [B]$

Blank Spike Duplicate Recovery [G] =  $100 * (F) / [E]$

All results are based on MDL and Validated for QC Purposes



# Form 3 - MS Recoveries



Project Name: Martha AIK Federal #1

Work Order #: 426559

Lab Batch #: 868506

Project ID: 30-015-26549

Date Analyzed: 08/27/2011

Date Prepared: 08/27/2011

Analyst: BRB

QC- Sample ID: 426524-002 S

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

## MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300  Analytes	Parent-Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	30.2	100	135	105	75-125	

Matrix Spike Percent Recovery [D] = 100\*(C-A)/B

Relative Percent Difference [E] = 200\*(C-A)/(C+B)

All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



# Sample Duplicate Recovery



Project Name: Martha AIK Federal #1

Work Order #: 426559

Lab Batch #: 868506

Project ID: 30-015-26549

Date Analyzed: 08/27/2011 17:31

Date Prepared: 08/27/2011

Analyst: BRB

QC- Sample ID: 426524-002 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	30.2	29.2	3	20	

Lab Batch #: 868531

Date Analyzed: 08/26/2011 10:50

Date Prepared: 08/26/2011

Analyst: BRB

QC- Sample ID: 426524-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	2.90	2.92	1	20	

Spike Relative Difference RPD  $200 * |(B-A)/(B+A)|$   
 All Results are based on MDL and validated for QC purposes.  
 BRL - Below Reporting Limit





**XENCO Laboratories**  
 Atlanta, Boca Raton, Corpus Christi, Dallas  
 Houston, Miami, Odessa, Philadelphia  
 Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist  
 Document No.: SYS-SRC  
 Revision/Date: No. 01, 5/27/2010  
 Effective Date: 6/1/2010 Page 1 of 1

**Prelogin / Nonconformance Report - Sample Log-In**

Client: Yates  
 Date/Time: 8-26-11 9:30  
 Lab ID #: 426558/426559-C1  
 Initials: RM

**Sample Receipt Checklist**

1. Samples on Ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	<u>No</u>	N/A	
17. VOC sample have zero head space?	Yes	No	<u>N/A</u>	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs   2.1 °C	lbs   °C	lbs   °C	lbs   °C	lbs   °C

**Nonconformance Documentation**

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Regarding: \_\_\_\_\_

Corrective Action Taken: \_\_\_\_\_

- Check all that apply:
- Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.6.8.3.1.a.1.
  - Initial and Backup Temperature confirm out of temperature conditions
  - Client understands and would like to proceed with analysis