

31055-1-2000

31055-1-2005

ANNUAL LPG WELL REPORT

OPERATOR: Western Refining Company

UIC CLASS LPG STORAGE WELLS API NUMBER

31055 WELL 1: 30-025-35954

31055 WELL 2: 30-025-35955

31055 WELL 3: 30-025-35956

31055 WELL 4: 30-025-35957

WESTERN REFINING JAL STORAGE FACILITY

Company Representative: Ken Parker

Date: 1-28-16

Well Summary

Well 1

Well one was utilized in 2015 injecting 61,742 barrels of LPG into storage. Well was operated within the OCD guidelines without any issues. Injecting rate was between 230 & 250 barrels per hour with a maximum injecting pressure of 720 psig.

In 2015 42,253 barrels of LPG was withdrawn from the well. Withdraw rate was 214 barrels per hour. Operating pressure of the well was between 400 & 500 psig.

In 2015 well one stored product 10 months out of the year. The maximum volume stored in the well reached 22% capacity.

Well 2

Well two was utilized in 2015 injecting 552,329 barrels of LPG into storage. Well was operated within the OCD guidelines without any issues. Injecting rate was between 230 & 250 barrels per hour with a maximum injecting pressure of 780 psig.

In 2015 582,167 barrels of LPG was withdrawn from the well. Withdraw rate was 214 barrels per hour. Operating pressure of the well was between 400 & 600 psig.

In 2015 well two stored product 12 months out of the year. The maximum volume stored in the well reached 82% capacity.

Well 3

Well three was utilized in 2015 injecting 40,500 barrels of LPG into storage. Well was operated within the OCD guidelines without any issues. Injecting rate was between 187 barrels per hour with a maximum injecting pressure of 780 psig.

In 2015 52,235 barrels of LPG was withdrawn from the well. Withdraw rate was 214 barrels per hour. Operating pressure of the well was between 600 to 650 psig.

In 2015 well three stored product 12 months out of the year. The maximum volume stored in the well reached 29% capacity.

Well 4

Well four was utilized in 2015 injecting 85,972 barrels of LPG into storage. Well was operated within the OCD guidelines without any issues. Injecting rate was between 190-194 barrels per hour with a maximum injecting pressure of 780 psig.

In 2015 65,350 barrels of LPG was withdrawn from the well. Withdraw rate was 214 barrels per hour. Operating pressure of the well was between 600 to 650 psig.

In 2015 well four stored product 12 months out of the year. The maximum volume stored in the well reached 49% capacity.

Production Volumes

See Attachments

Well 1 Annual C-131B

Well 2 Annual C-131B

Well 3 Annual C-131B

Well 4 Annual C-131B

Injecting Fluid Analysis

See Attachment 522775

Report

Deviation From Normal Production Method

N/A

Leak and Spill Report

N/A

Ground Water Monitoring

N/A

Cavity Subsidence

See Attachment

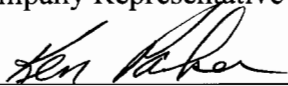
Area of Review

No activity in the year 2015

Pursuant to all applicable parts of the Water Quality Control Commission (WQCC) Regulations 20.6.2 NMAC and more specifically 20.6.2.5101. I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information. I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment.

Western Refining Company
Company Name

Ken Parker
Company Representative



Company Representative Signature

Title: Facility Manager

Date 1-28-16 Telephone No. 575-395-2632

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Submit one copy to Santa Fe
and one copy to appropriate
District Office postmarked by 24th
Day of succeeding month.
See Rule 1131.

ANNUAL LPG STORAGE REPORT

Western Refining Company
(Company)

PO Box 1345 Jal, New Mexico
(Address)

NAME OF STORAGE PROJECT Jal Terminal COUNTY Lea Month/Year 12-15

WELL NAME AND NUMBER	LOCATION UNIT SEC. TWP. RANGE	MAXIMUM INJECTION PRESSURE	INJECTION (BBLS)	WITHDRAWAL (BBLS)
31055 State LPG Storage Well No. 2 30-025-35955	M32-23S-37E	780	552,329	582,167

TOTALS

CALCULATED RESERVOIR PRESSURE @ END OF YEAR 908

TOTAL CAPACITY (BBLs) 130,201 Barrels

BEGINNING STORAGE (BBLs) 70,856

NET CHANGE (BBLs)	29,838
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ENDING STORAGE (BBLS)	<u>41,018</u>
-----------------------	---------------

I hereby certify that this report is true and complete to the best of my knowledge and belief.

Signature

Printed Name & Title Ken Parker, Manager

E-mail Address ken.parker@wnr.com

Date 1-28-16 Telephone No. 575-395-2632

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Submit one copy to Santa Fe
and one copy to appropriate
District Office postmarked by 24th
Day of succeeding month.
See Rule 113].

ANNUAL LPG STORAGE REPORT

Western Refining Company
(Company)

PO Box 1345 Jal, New Mexico
(Address)

NAME OF STORAGE PROJECT	Jal Terminal	COUNTY	Lea	Month/Year	12-15
-------------------------	--------------	--------	-----	------------	-------

WELL NAME AND NUMBER	LOCATION UNIT SEC. TWP. RANGE	MAXIMUM INJECTION PRESSURE	INJECTION (BBLs)	WITHDRAWAL (BBLs)
31055 State LPG Storage Well No. 3 30-025-35956	M32-23S-37E	780	40,500	52,235

TOTALS

CALCULATED RESERVOIR PRESSURE @ END OF YEAR 467

TOTAL CAPACITY (BBLs) 79,692 Barrels

BEGINNING STORAGE (BBLS) 11,735

NET CHANGE (BBLs)	<u>11,735</u>
-------------------	---------------

ENDING STORAGE (BBLS)	0
-----------------------	---

I hereby certify that this report is true and complete to the best of my knowledge and belief.

Signature

Printed Name & Title Ken Parker, Manager

E-mail Address ken.parker@wnr.com

Date 1-28-16 Telephone No. 575-395-2632

Date 1-28-16 Telephone No. 575-395-2632

Analytical Report 522775

**for
Western Refining**

Project Manager: Ken Parker

South Brine Pond

25-JAN-16

Collected By: Client



1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-15-19), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

Xenco-Lakeland: Florida (E84098)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)

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)



25-JAN-16

Project Manager: **Ken Parker**
Western Refining
P.O. Box 1345
Jal, NM 88252

Reference: XENCO Report No(s): **522775**
South Brine Pond
Project Address: Jal, NM

Ken Parker:

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(s) 522775. 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. The uncertainty of measurement associated with the results of analysis reported is available upon request. 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. 522775 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,

Kelsey Brooks
Project Manager

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Sample Cross Reference 522775



Western Refining, Jal, NM

South Brine Pond

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
South Pond	W	01-13-16 10:25	- 1 ft	522775-001



CASE NARRATIVE



Client Name: Western Refining

Project Name: South Brine Pond

Project ID:

Work Order Number(s): 522775

Report Date: 25-JAN-16

Date Received: 01/13/2016

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-985929 Metals by EPA 200.8

Sample diluted due high amount of Sodium. BHRE 01/25/2015



Certificate of Analysis Summary 522775



Western Refining, Jal, NM

Project Name: South Brine Pond

Project Id:

Contact: Ken Parker

Project Location: Jal, NM

Date Received in Lab: Wed Jan-13-16 01:50 pm

Report Date: 25-JAN-16

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	522775-001					
	Field Id:	South Pond					
	Depth:	-1 ft					
	Matrix:	WATER					
	Sampled:	Jan-13-16 10:25					
Alkalinity by SM2320B SUB: TX104704215	Extracted:						
	Analyzed:	Jan-18-16 12:11					
	Units/RL:	mg/L RL					
Alkalinity, Total (as CaCO3)		121 4.00					
BTEX by EPA 8021B	Extracted:	Jan-14-16 09:30					
	Analyzed:	Jan-14-16 10:35					
	Units/RL:	mg/L RL					
Benzene		ND 0.00100					
Toluene		ND 0.00200					
Ethylbenzene		ND 0.00100					
m_p-Xylenes		ND 0.00200					
o-Xylene		ND 0.00100					
Total Xylenes		ND 0.00100					
Total BTEX		ND 0.00100					
Inorganic Anions by EPA 300/300.1	Extracted:	Jan-15-16 23:15					
	Analyzed:	Jan-15-16 23:15					
	Units/RL:	mg/L RL					
Chloride		10800 4000					
Mercury, Total by EPA 245.1 SUB: TX104704215	Extracted:	Jan-19-16 11:15					
	Analyzed:	Jan-19-16 18:31					
	Units/RL:	mg/L RL					
Mercury		ND 0.000200					

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

Kelsey Brooks
Project Manager



Certificate of Analysis Summary 522775

Western Refining, Jal, NM

Project Name: South Brine Pond



Project Id:

Contact: Ken Parker

Project Location: Jal, NM

Date Received in Lab: Wed Jan-13-16 01:50 pm

Report Date: 25-JAN-16

Project Manager: Kelsey Brooks

Analysis Requested	Lab Id:	522775-001					
	Field Id:	South Pond					
	Depth:	-1 ft					
	Matrix:	WATER					
	Sampled:	Jan-13-16 10:25					
Metals by EPA 200.8 SUB: TX104704215	Extracted:	Jan-14-16 10:30					
	Analyzed:	Jan-22-16 23:00					
	Units/RL:	mg/L RL					
Arsenic		ND 0.0200					
Barium		ND 0.400					
Cadmium		ND 0.0200					
Chromium		ND 0.0400					
Lead		ND 0.200					
Selenium		0.0617 0.0200					
Silver		ND 0.0200					
Metals per ICP by EPA 200.7 SUB: TX104704215	Extracted:	Jan-14-16 10:00					
	Analyzed:	Jan-14-16 19:42					
	Units/RL:	mg/L RL					
Calcium		306 200					
Magnesium		1020 400					
Potassium		2690 500					
Sodium		68400 500					
TDS by SM2540C	Extracted:						
	Analyzed:	Jan-15-16 17:04					
	Units/RL:	mg/L RL					
Total dissolved solids		276000 5.00					
pH by SM4500-H	Extracted:						
	Analyzed:	Jan-14-16 14:10					
	Units/RL:	Deg C RL					
Temperature		19.5					

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Kelsey Brooks
Project Manager



Certificate of Analysis Summary 522775

Western Refining, Jal, NM

Project Name: South Brine Pond



Project Id:

Contact: Ken Parker

Project Location: Jal, NM

Date Received in Lab: Wed Jan-13-16 01:50 pm

Report Date: 25-JAN-16

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	522775-001					
	<i>Field Id:</i>	South Pond					
	<i>Depth:</i>	-1 ft					
	<i>Matrix:</i>	WATER					
	<i>Sampled:</i>	Jan-13-16 10:25					
pH by SM4500-H	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jan-14-16 14:10					
	<i>Units/RL:</i>	SU RL					
pH		7.22					

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Kelsey Brooks
Project Manager



- 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

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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 2525 W. Huntington Dr. - Suite 102, Tempe AZ 85282

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(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(432) 563-1800	(432) 563-1713
(602) 437-0330	



Form 2 - Surrogate Recoveries
Project Name: South Brine Pond

Work Orders : 522775,

Lab Batch #: 985602

Sample: 522775-001 / SMP

Project ID:

Batch: 1 **Matrix:** Water

Units: mg/L

Date Analyzed: 01/14/16 10:35

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0275	0.0300	92	80-120	

Lab Batch #: 985602

Sample: 703442-1-BLK / BLK

Batch: 1 **Matrix:** Water

Units: mg/L

Date Analyzed: 01/14/16 08:56

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0354	0.0300	118	80-120	
4-Bromofluorobenzene	0.0331	0.0300	110	80-120	

Lab Batch #: 985602

Sample: 703442-1-BKS / BKS

Batch: 1 **Matrix:** Water

Units: mg/L

Date Analyzed: 01/14/16 08:05

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0309	0.0300	103	80-120	
4-Bromofluorobenzene	0.0278	0.0300	93	80-120	

Lab Batch #: 985602

Sample: 703442-1-BSD / BSD

Batch: 1 **Matrix:** Water

Units: mg/L

Date Analyzed: 01/14/16 08:22

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0294	0.0300	98	80-120	

Lab Batch #: 985602

Sample: 522775-001 S / MS

Batch: 1 **Matrix:** Water

Units: mg/L

Date Analyzed: 01/14/16 10:54

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0319	0.0300	106	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	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.



Blank Spike Recovery

Project Name: South Brine Pond



Work Order #: 522775

Project ID:

Lab Batch #: 985692

Sample: 985692-1-BKS

Matrix: Water

Date Analyzed: 01/15/2016

Date Prepared: 01/15/2016

Analyst: MNR

Reporting Units: mg/L

Batch #: 1

BLANK/BLANK SPIKE RECOVERY STUDY

TDS by SM2540C Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Total dissolved solids	<5.00	1000	970	97	80-120	

Blank Spike Recovery [D] = $100 \times [C] / [B]$

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

BRL - Below Reporting Limit



BS / BSD Recoveries



Project Name: South Brine Pond

Work Order #: 522775

Analyst: SYG

Lab Batch ID: 985602

Units: mg/L

Date Prepared: 01/14/2016

Sample: 703442-1-BKS

Batch #: 1

Project ID:

Date Analyzed: 01/14/2016

Matrix: Water

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
BTEX by EPA 8021B	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											
Benzene	<0.00100	0.100	0.0869	87	0.100	0.0858	86	1	70-125	25	
Toluene	<0.00200	0.100	0.0868	87	0.100	0.0858	86	1	70-125	25	
Ethylbenzene	<0.00100	0.100	0.0935	94	0.100	0.0929	93	1	71-129	25	
m_p-Xylenes	<0.00200	0.200	0.194	97	0.200	0.192	96	1	70-131	25	
o-Xylene	<0.00100	0.100	0.0928	93	0.100	0.0914	91	2	71-133	25	

Analyst: MNR

Date Prepared: 01/15/2016

Date Analyzed: 01/15/2016

Lab Batch ID: 985744

Sample: 703394-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
Inorganic Anions by EPA 300/300.1	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	<1.00	25.0	25.3	101	25.0	25.5	102	1	90-110	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



BS / BSD Recoveries



Project Name: South Brine Pond

Work Order #: 522775

Project ID:

Analyst: BHRE

Date Prepared: 01/19/2016

Date Analyzed: 01/19/2016

Lab Batch ID: 985903

Sample: 703533-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Mercury, Total by EPA 245.1	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											
Mercury	<0.000200	0.00200	0.00193	97	0.00200	0.00195	98	1	85-115	20	

Analyst: BHRE

Date Prepared: 01/14/2016

Date Analyzed: 01/19/2016

Lab Batch ID: 985929

Sample: 703400-1-BKS

Batch #: 1

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Metals by EPA 200.8	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											
Arsenic	<0.00200	0.100	0.106	106	0.100	0.104	104	2	85-115	20	
Barium	<0.00400	0.100	0.101	101	0.100	0.104	104	3	85-115	20	
Cadmium	<0.00200	0.100	0.106	106	0.100	0.109	109	3	85-115	20	
Chromium	<0.00400	0.100	0.104	104	0.100	0.102	102	2	85-115	20	
Lead	<0.00200	0.100	0.104	104	0.100	0.106	106	2	85-115	20	
Selenium	<0.00200	0.100	0.106	106	0.100	0.105	105	1	85-115	20	
Silver	<0.00200	0.0500	0.0530	106	0.0500	0.0545	109	3	85-115	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



BS / BSD Recoveries



Project Name: South Brine Pond

Work Order #: 522775

Analyst: BHRE

Lab Batch ID: 985607

Units: mg/L

Date Prepared: 01/14/2016

Sample: 703399-1-BKS

Batch #: 1

Project ID:

Date Analyzed: 01/14/2016

Matrix: Water

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Metals per ICP by EPA 200.7	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											
Calcium	<0.200	25.0	24.1	96	25.0	24.7	99	2	85-115	20	
Magnesium	<0.400	25.0	23.4	94	25.0	24.0	96	3	85-115	20	
Potassium	<0.500	10.0	9.50	95	10.0	9.83	98	3	85-115	20	
Sodium	<0.500	25.0	24.1	96	25.0	24.8	99	3	85-115	20	

Analyst: DHE

Date Prepared: 01/18/2016

Date Analyzed: 01/18/2016

Lab Batch ID: 985772

Sample: 985772-1-BKS

Batch #: 5

Matrix: Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Alkalinity by SM2320B	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											
Alkalinity, Total (as CaCO ₃)	<4.00	250	250	100	250	253	101	1	80-120	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: South Brine Pond



Work Order #: 522775

Lab Batch #: 985602

Date Analyzed: 01/14/2016

QC- Sample ID: 522775-001 S

Reporting Units: mg/L

Date Prepared: 01/14/2016

Batch #: 1

Project ID:

Analyst: SYG

Matrix: Water

MATRIX / MATRIX SPIKE RECOVERY STUDY						
BTEX by EPA 8021B	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Benzene	<0.00100	0.100	0.0844	84	70-125	
Toluene	<0.00200	0.100	0.0838	84	70-125	
Ethylbenzene	<0.00100	0.100	0.0885	89	71-129	
m_p-Xylenes	<0.00200	0.200	0.181	91	70-131	
o-Xylene	<0.00100	0.100	0.0832	83	71-133	

Lab Batch #: 985744

Date Analyzed: 01/15/2016

QC- Sample ID: 522757-001 S

Reporting Units: mg/L

Date Prepared: 01/15/2016

Batch #: 1

Analyst: MNR

Matrix: Water

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	5.33	25.0	31.5	105	80-120	

Lab Batch #: 985929

Date Analyzed: 01/22/2016

QC- Sample ID: 522764-001 S

Reporting Units: mg/L

Date Prepared: 01/14/2016

Batch #: 1

Analyst: BHRE

Matrix: Water

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Metals by EPA 200.8	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Arsenic	0.00318	0.100	0.0963	93	70-130	
Barium	<0.00400	0.100	0.0976	98	70-130	
Cadmium	<0.00200	0.100	0.106	106	70-130	
Chromium	<0.00400	0.100	0.0996	100	70-130	
Lead	<0.00200	0.100	0.106	106	70-130	
Selenium	<0.00200	0.100	0.0951	95	70-130	
Silver	<0.00200	0.0500	0.0527	105	70-130	

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

BRL - Below Reporting Limit



Form 3 - MS Recoveries

Project Name: South Brine Pond



Work Order #: 522775

Lab Batch #: 985607

Date Analyzed: 01/14/2016

QC- Sample ID: 522767-002 S

Reporting Units: mg/L

Date Prepared: 01/14/2016

Batch #: 1

Project ID:

Analyst: BHRE

Matrix: Drinking Water

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Metals per ICP by EPA 200.7 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Calcium	48.2	25.0	6.46	0	70-130	X
Magnesium	10.3	25.0	3.11	0	70-130	X
Potassium	1.25	10.0	0.983	0	70-130	X
Sodium	11.4	25.0	32.4	84	70-130	

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



Form 3 - MS / MSD Recoveries



Project Name: South Brine Pond

Work Order #: 522775

Lab Batch ID: 985903

Date Analyzed: 01/19/2016

Reporting Units: mg/L

Project ID:

QC- Sample ID: 522767-001 S

Batch #: 1 Matrix: Drinking Water

Date Prepared: 01/19/2016

Analyst: BHRE

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Mercury, Total by EPA 245.1 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
Mercury	<0.000200	0.00200	0.00188	94	0.00200	0.00197	99	5	70-130	20	

Lab Batch ID: 985929

QC- Sample ID: 522730-001 S

Batch #: 1 Matrix: Ground Water

Date Analyzed: 01/20/2016

Date Prepared: 01/14/2016

Analyst: BHRE

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Metals by EPA 200.8 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
Arsenic	0.0117	0.100	0.116	104	0.100	0.115	103	1	70-130	20	
Barium	0.623	0.100	0.715	92	0.100	0.703	80	2	70-130	20	
Cadmium	<0.00200	0.100	0.105	105	0.100	0.105	105	0	70-130	20	
Chromium	<0.00400	0.100	0.0989	99	0.100	0.0979	98	1	70-130	20	
Lead	0.0185	0.100	0.122	104	0.100	0.121	103	1	70-130	20	
Selenium	0.00253	0.100	0.0897	87	0.100	0.0898	87	0	70-130	20	
Silver	<0.00200	0.0500	0.0515	103	0.0500	0.0523	105	2	70-130	20	

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, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



Form 3 - MS / MSD Recoveries



Project Name: South Brine Pond

Work Order #: 522775

Lab Batch ID: 985607

Date Analyzed: 01/14/2016

Reporting Units: mg/L

Project ID:

QC- Sample ID: 522782-003 S

Batch #: 1 Matrix: Water

Date Prepared: 01/14/2016

Analyst: BHRE

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Metals per ICP by EPA 200.7 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
Calcium	32.7	25.0	57.2	98	25.0	57.8	100	1	70-130	20	
Magnesium	25.2	25.0	49.1	96	25.0	49.7	98	1	70-130	20	
Potassium	2.31	10.0	12.3	100	10.0	12.4	101	1	70-130	20	
Sodium	34.9	25.0	60.0	100	25.0	60.4	102	1	70-130	20	

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, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Project Name: South Brine Pond

Work Order #: 522775

Lab Batch #: 985772

Date Analyzed: 01/18/2016 12:11

QC- Sample ID: 522656-001 D

Reporting Units: mg/L

Project ID:

Analyst: DHE

Matrix: Water

Date Prepared: 01/18/2016

Batch #: 1

SAMPLE / SAMPLE DUPLICATE RECOVERY

Alkalinity by SM2320B	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Alkalinity, Total (as CaCO ₃)	115	116	1	20	

Lab Batch #: 985692

Date Analyzed: 01/15/2016 17:04

QC- Sample ID: 522656-001 D

Reporting Units: mg/L

Date Prepared: 01/15/2016

Batch #: 1

Analyst: MNR

Matrix: Water

SAMPLE / SAMPLE DUPLICATE RECOVERY

TDS by SM2540C	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Total dissolved solids	2970	3050	3	10	

Lab Batch #: 985578

Date Analyzed: 01/14/2016 14:10

QC- Sample ID: 522448-001 D

Reporting Units: Deg C

Date Prepared: 01/14/2016

Batch #: 1

Analyst: WRU

Matrix: Water

SAMPLE / SAMPLE DUPLICATE RECOVERY

pH by SM4500-H	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Temperature	19.2	19.2	0	20	

Lab Batch #: 985578

Date Analyzed: 01/14/2016 14:10

QC- Sample ID: 522448-001 D

Reporting Units: SU

Date Prepared: 01/14/2016

Batch #: 1

Analyst: WRU

Matrix: Water

SAMPLE / SAMPLE DUPLICATE RECOVERY

pH by SM4500-H	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
pH	7.28	7.29	0	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



Setting the Standard since 1990

Stafford, Texas (281-240-4200)

Dallas, Texas (214-902-0300)

Service Center - San Antonio, Texas (210-509-3334)

CHAIN OF CUSTODY

Page ____ Of ____

www.xenco.com

Odessa, Texas (432-563-1800)

Lakeland, Florida (863-646-8526)

Norcross, Georgia (770-449-8800)

Tampa, Florida (813-620-2000)

Xenco Quote #

Xenco Job #

562775

Analytical Information

Matrix Codes

Client / Reporting Information

Project Information

Company Name / Branch:

Project Name/Number:

Company Address:

Project Location:

Email:

Phone No:

Invoice To:

Project Contact:

PO Number:

Samplers' Name:

A = Air
S = Soil/Sed/Solid
GW = Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
WW = Waste Water
W = Wipe
O = Oil
WW = Waste Water

No. Field ID / Point of Collection

Sample Depth

Date

Time

Matrix

of bottles

HCl

NaOH/Zn

Acetate

HNO3

H2SO4

NaOH

NaHSO4

MEOH

NONE

Field Comments

1

South Pond

1'

1-13-16

10:25

W

6

Turnaround Time (Business days)

Data Deliverable Information

Notes:

☐ Same Day TAT

☒ 5 Day TAT

☐ Level II Std QC

☐ Level IV (Full Data Pkg /raw data)

☐ Next Day EMERGENCY

☒ 7 Day TAT

☐ Level III Std QC+ Forms

☐ TRRP Level IV

☐ 2 Day EMERGENCY

☐ Contract TAT

☐ Level 3 (CLP Forms)

☐ UST / RG -411

☐ 3 Day EMERGENCY

☐ TRRP Checklist

TAT Starts Day received by Lab, if received by 3:00 pm

FED-EX / UPS: Tracking #

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

Relinquished by Sampler:

Date Time:

Received By:

Relinquished By:

Date Time:

Received By:

Relinquished by:

Date Time:

Received By:

Relinquished By:

Date Time:

Received By:

Relinquished by:

Date Time:

Received By:

Custody Seal #

Preserved where applicable

On Ice

Cooler Temp.

Thermo. Corr. Factor

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to XENCO Laboratories and its affiliates, subcontractors and assigns XENCO's standard terms and conditions of service unless previously negotiated under a fully executed client contract.



XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In



Client: Western Refining

Date/ Time Received: 01/13/2016 01:50:00 PM

Work Order #: 522775

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : r8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	4.9
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	Yes
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	Yes subcontract to xenco houston
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	No samples had headspace
#21 <2 for all samples preserved with HNO ₃ , HCL, H ₂ SO ₄ ? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	Yes
#22 >10 for all samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH?	N/A

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:

PH Device/Lot#: oc679789

Checklist completed by:

Carley Owens
Carley Owens

Date: 01/13/2016

Checklist reviewed by:

Kelsey Brooks
Kelsey Brooks

Date: 01/13/2016



PETTIGREW
& ASSOCIATES PA

ENGINEERING | SURVEYING | TESTING
DEFINING QUALITY SINCE 1965

Ken Parker, Western Refining
PO Box 1345
Jal, New Mexico, 88252
575-392-2632

14 January, 2016

RE: Survey Report
Western Refining Subsidence Monitoring

Dear Mr. Parker,

Please review this report of survey findings for the subject project. Please comment as necessary.

SUBSIDENCE MONUMENT MONITORING

The surveyed elevations along with deltas from established values as follows:

NAME	BASE ELEVATION 5/13/2009	ELEVATION 12/21/2012	CHANGE IN ELEVATION
CP-1	3293.47	3293.48	+ 0.01'
CP-2	3297.82	3297.82	No Change
CP-3	3293.56	3293.55	- 0.01'
SM-1	3292.27	3292.27	No Change
SM-2	3294.56	3294.57	+ 0.01'
SM-3	3294.85	3294.86	+ 0.01'
SM-4	3294.86	3294.89	+ 0.02'
SMF-1 (Mid Flange)	3295.62	3295.63	+ 0.01'
SMF-1 (Lower Flange)	3293.67	3293.70	+ 0.03'
SMF-2 (Mid Flange)	3297.42	3297.43	+ 0.01'
SMF-2 (Lower Flange)	3295.52	3295.51	- 0.01'
SMF-3 (Mid Flange)	3298.18	3298.18	No Change
SMF-3 (Lower Flange)	3296.44	3296.44	No Change
SMF-4 (Lower Flange)	3295.99	3296.00	+ 0.01'
BM-1	3294.30	3294.31	+ 0.01'
BM-2	3296.62	3296.61	- 0.01'
BM-3	3297.73	3297.74	+ 0.01'