

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

[www.yatespetroleum.com](http://www.yatespetroleum.com)

JOHN A. YATES  
CHAIRMAN EMERITUS

JOHN A. YATES JR.  
CHAIRMAN OF THE BOARD

DOUGLAS E. BROOKS  
PRESIDENT  
CHIEF EXECUTIVE OFFICER

JOHN D. PERINI  
EXECUTIVE VICE PRESIDENT  
CHIEF FINANCIAL OFFICER

JAMES S. BROWN  
CHIEF OPERATING OFFICER

January 22, 2016

Mr. Mike Bratcher or Ms. Heather Patterson  
NMOCD District II  
811 South First  
Artesia, NM 88210

RE: Livingston Ridge SWD Water Line  
Section 1, T22S-R31E  
Eddy County, New Mexico

Mr. Bratcher or Ms. Patterson,

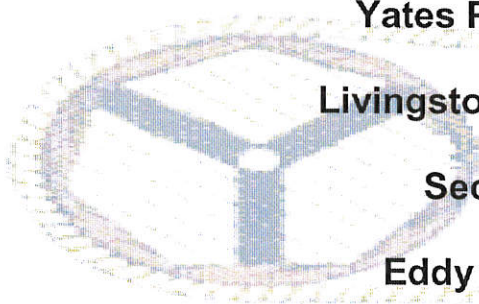
Yates Petroleum Corporation would like to submit the attached plan of work to you regarding the release that occurred at the above mentioned facility on June 3, 2015 (2RP-3045).

With NMOCD and BLM approval of this work plan, Yates will hold a bid meeting allowing several contractors the opportunity to submit bids on this remediation project. Bids that are received will be forwarded to Yates Management for review. Once Yates Management reviews the bids and gives approval, the remediation project will be awarded to a contractor for work to commence.

If you have any questions or concerns, I can be reached at (575) 748-4111 or by email at [agriffin@yatespetroleum.com](mailto:agriffin@yatespetroleum.com).

Thank You,

Amber Griffin  
Environmental Regulatory Agent  
Yates Petroleum Corporation



**Yates Petroleum Corporation**

**Livingston Ridge SWD Work Plan**

**Section 1, T22S-R31E**

**Eddy County, New Mexico**

**January 22, 2016**

## **I. Location**

The release area is located approximately 31.1 miles east of Carlsbad, NM on Highway 62/180, approximately 9 miles south of Highway 62/180 on Campbell Road (County Road 29) and approximately 1/2 mile west of Campbell Road (County Road 29) on a lease road.

## **II. Background**

On June 3, 2015, Yates had a release of 140 barrels produced water and 5 barrels crude oil, with 125 barrels produced water and 5 barrels crude oil recovered. The area affected from this release was along the pipeline right-of-way for a Yates water transfer line that transports produced water to salt water disposal facilities in the area. An initial Form C-141 was submitted, via e-mail, to the NMOCD District II on June 12, 2015.

On June 11, 2015 an initial scrape was completed of the pooling area of the release, and the overspray area was treated with a 3% Micro-Blaze solution.

On June 15, 2015 Yates returned to the release area and collected initial soil samples from the depths of 1' – 13' below surface level using a backhoe. The release area was split into three separate sections for the initial sampling process. The 1' – 3' soil samples were sent to an approved NMOCD laboratory and tested for BTEX 8021B, TPH 8015M, and Chlorides SM4500Cl-B. The 4' – 13' soil samples were sent to the same laboratory and tested only for Chlorides SM4500Cl-B. Yates received the analytical results on June 22 & 23, 2015 (Reports H501577 and H501579 attached to this work plan). The analytical results showed that both BTEX and TPH were at levels below NMOCD RRAL's. The analytical results also showed elevated chloride levels, and Yates determined that further vertical delineation of chlorides was needed within the release area.

The release area contains mostly sandy soils and these soils would collapse while digging with heavy equipment. The collapsing of soils created personnel safety issues and made it impossible to obtain discrete samples from deeper depths. As a result, it was determined that a hollow stem auger core rig would be needed to complete further vertical delineation within the release area.

On November 9, 2015 Yates contacted a company with a hollow stem auger core rig to conduct further vertical delineation of the release area. The hollow stem auger was scheduled for December 16-17, 2015 and complete vertical delineation of chlorides was completed. Soil samples obtained with the hollow stem auger were sent to an approved NMOCD laboratory and tested for Chlorides 300.0. Yates received the analytical results on January 6, 2016 (Report 1512A77 attached to this work plan). The analytical results showed that Yates had successfully found the bottom of the chloride contamination.

## **III. Surface and Ground Water**

Area surface geology is Cenozoic. The ChevronTexaco depth to ground water map shows the depth to groundwater to be approximately 125 feet making the site ranking for this site a zero (0). Watercourses in the area are dry except for infrequent flows in response to major precipitation events.

The ranking for this site is zero (0) based on the following:

Depth to ground water >100'  
Wellhead Protection Area > 1000'  
Distance to surface water body > 1000'

#### **IV. Soils**

The area consists of soils that are sand and interspersed with caliche and clay seams.

#### **V. Scope of Work**

Based off the analytical reports which show complete vertical delineation, Yates proposes to excavate four (4) feet from the release area. The excavation will be approximately 133' long, 92' wide. Once all soils have been excavated, a 20 mil synthetic liner will be placed in the bottom of the excavation. The backfill of the excavation will then be started with caliche (up to 2' below surface level) and finished with 2' of top soil or sand.

Contaminated soils that are excavated will be hauled to a NMOCD approved disposal facility, The Lea Land, Inc. Landfill.

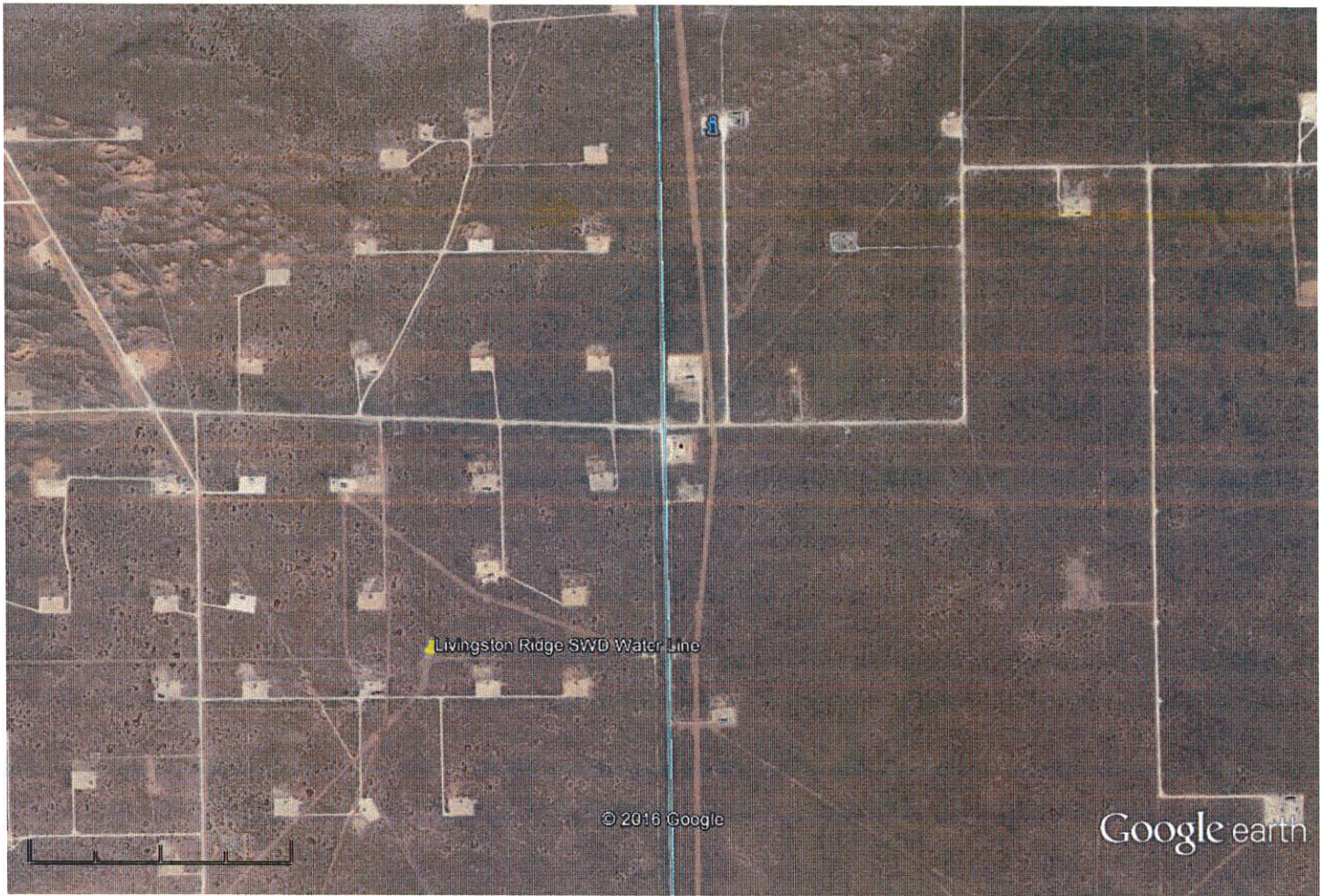
Soil samples have been collected from the overspray area of the release and sent to an approved NMOCD laboratory. The collected soil was tested in the field using Hach Chloride QuanTab® Test Strips, 30-600 mg/L with a result of less than 1,000 ppm. If official laboratory results confirm these results, no further work will be conducted in the overspray area of the release. The official results will be forwarded to NMOCD and BLM once Yates receives them from the laboratory.

The backfill material for the excavation will be purchased from the nearest BLM pit.

Once all excavation and backfill work is complete, Yates will submit a Final Form C-141 to NMOCD and BLM requesting closure of this release.

In April 2016 the release area will be re-seeded with the BLM Seed Mixture #2. The area will then be monitored for the re-establishment of vegetation.

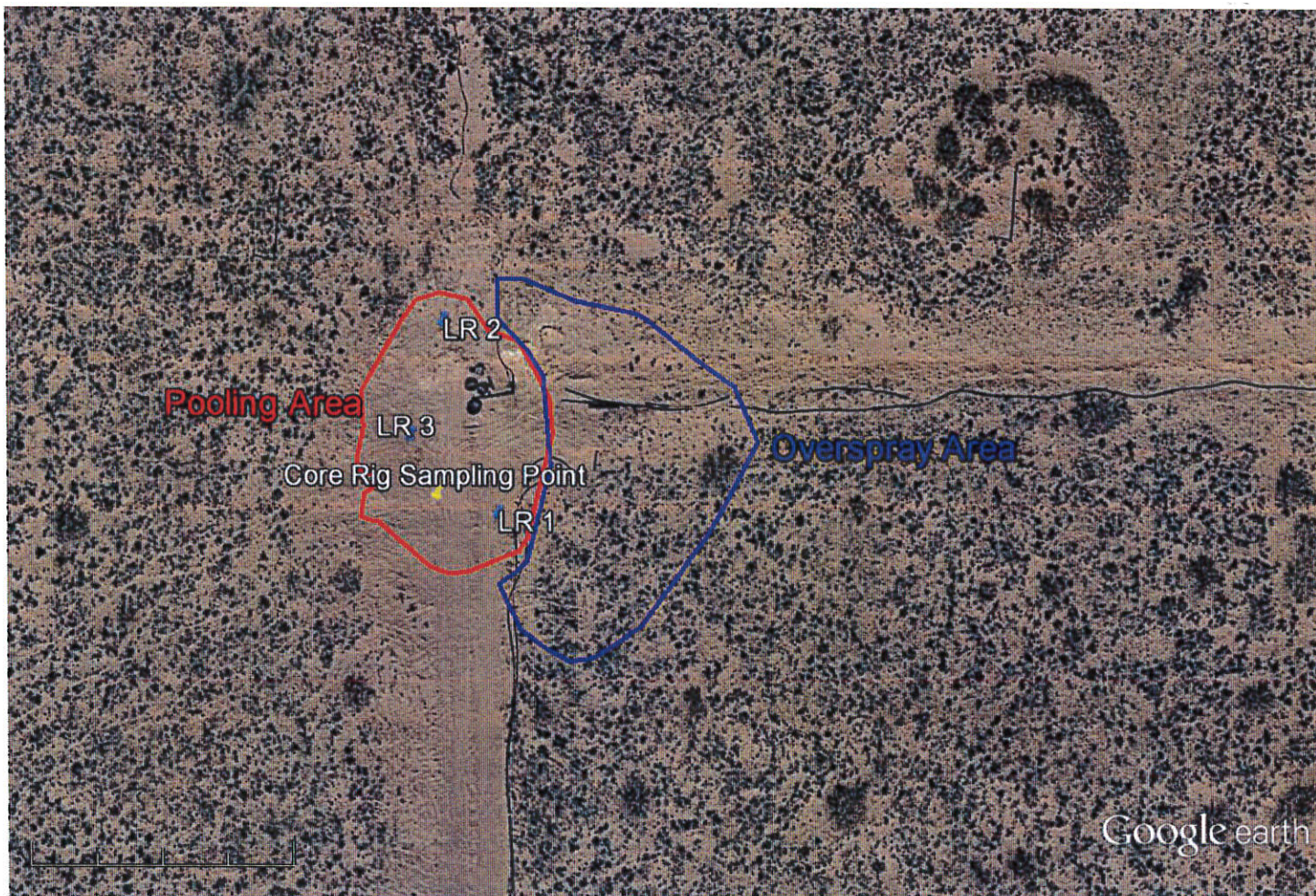




Google earth







Google earth





# Livingston Ridge SWD Water Line

	Sample Area	Sample Date	Analytical Report	Sample Type	Depth	BTEX	GRO	DRO	TOTAL	Chlorides
LR 1-1	Release Area	6/15/2015	H501577	Grab/Backhoe	1'	ND	ND	ND	ND	144
LR 1-2	Release Area	6/15/2015	H501577	Grab/Backhoe	2'	ND	ND	ND	ND	80
LR 1-3	Release Area	6/15/2015	H501577	Grab/Backhoe	3'	ND	ND	ND	ND	176
LR 1-4	Release Area	6/15/2015	H501579	Grab/Backhoe	4'	-	-	-	-	1,340
LR 1-5	Release Area	6/15/2015	H501579	Grab/Backhoe	5'	-	-	-	-	3,280
LR 1-6	Release Area	6/15/2015	H501579	Grab/Backhoe	6'	-	-	-	-	10,800
LR 1-7	Release Area	6/15/2015	H501579	Grab/Backhoe	7'	-	-	-	-	13,200
LR 1-8	Release Area	6/15/2015	H501579	Grab/Backhoe	8'	-	-	-	-	10,400
LR 1-9	Release Area	6/15/2015	H501579	Grab/Backhoe	9'	-	-	-	-	12,000
LR 1-10	Release Area	6/15/2015	H501579	Grab/Backhoe	10'	-	-	-	-	8,400
LR 1-11	Release Area	6/15/2015	H501579	Grab/Backhoe	11'	-	-	-	-	4,800
LR 1-12	Release Area	6/15/2015	H501579	Grab/Backhoe	12'	-	-	-	-	9,730
LR 1-13	Release Area	6/15/2015	H501579	Grab/Backhoe	13'	-	-	-	-	12,000
LR 2-1	Release Area	6/15/2015	H501577	Grab/Backhoe	1'	ND	ND	45.6	45.6	10,900
LR 2-2	Release Area	6/15/2015	H501577	Grab/Backhoe	2'	ND	ND	ND	ND	2,720
LR 2-3	Release Area	6/15/2015	H501577	Grab/Backhoe	3'	ND	ND	ND	ND	400
LR 2-4	Release Area	6/15/2015	H501579	Grab/Backhoe	4'	-	-	-	-	544
LR 2-5	Release Area	6/15/2015	H501579	Grab/Backhoe	5'	-	-	-	-	1,010
LR 2-6	Release Area	6/15/2015	H501579	Grab/Backhoe	6'	-	-	-	-	4,400
LR 2-7	Release Area	6/15/2015	H501579	Grab/Backhoe	7'	-	-	-	-	1,550
LR 2-8	Release Area	6/15/2015	H501579	Grab/Backhoe	8'	-	-	-	-	5,360
LR 2-9	Release Area	6/15/2015	H501579	Grab/Backhoe	9'	-	-	-	-	4,720
LR 2-10	Release Area	6/15/2015	H501579	Grab/Backhoe	10'	-	-	-	-	4,320
LR 2-11	Release Area	6/15/2015	H501579	Grab/Backhoe	11'	-	-	-	-	4,480
LR 2-12	Release Area	6/15/2015	H501579	Grab/Backhoe	12'	-	-	-	-	6,640
LR 2-13	Release Area	6/15/2015	H501579	Grab/Backhoe	13'	-	-	-	-	6,480
LR 3-1	Release Area	6/15/2015	H501577	Grab/Backhoe	1'	ND	ND	ND	ND	1,220
LR 3-2	Release Area	6/15/2015	H501577	Grab/Backhoe	2'	ND	ND	ND	ND	12,300
LR 3-3	Release Area	6/15/2015	H501577	Grab/Backhoe	3'	ND	ND	ND	ND	11,200
LR 3-4	Release Area	6/15/2015	H501579	Grab/Backhoe	4'	-	-	-	-	64
LR 3-5	Release Area	6/15/2015	H501579	Grab/Backhoe	5'	-	-	-	-	32
LR 3-6	Release Area	6/15/2015	H501579	Grab/Backhoe	6'	-	-	-	-	64
LR 3-7	Release Area	6/15/2015	H501579	Grab/Backhoe	7'	-	-	-	-	496
LR 3-8	Release Area	6/15/2015	H501579	Grab/Backhoe	8'	-	-	-	-	1,100
LR 3-9	Release Area	6/15/2015	H501579	Grab/Backhoe	9'	-	-	-	-	8,400
LR 3-10	Release Area	6/15/2015	H501579	Grab/Backhoe	10'	-	-	-	-	6,800
LR 3-11	Release Area	6/15/2015	H501579	Grab/Backhoe	11'	-	-	-	-	8,640
LR 3-12	Release Area	6/15/2015	H501579	Grab/Backhoe	12'	-	-	-	-	8,800
LR 3-13	Release Area	6/15/2015	H501579	Grab/Backhoe	13'	-	-	-	-	7,280

Site Ranking is ZERO (0). Depth to Ground Water >100' (150' PER TREND MAP)

All results are ppm.Chlorides for documentation.

Released: 140 B/PW, 5 B/O; Recovered: 125 B/PW, 5 B/O. Release Date: 6/3/2015. 2RP-3045

# Livingston Ridge SWD Water Line

	Sample Area	Sample Date	Analytical Report	Sample Type	Depth	BTEX	GRO	DRO	TOTAL	Chlorides
LR 15'	Release Area	12/16/2015	1512A77	Hollow Stem Auger	15'	-	-	-	-	19,000
LR 20'	Release Area	12/16/2015	1512A77	Hollow Stem Auger	20'	-	-	-	-	11,000
LR 25'	Release Area	12/16/2015	1512A77	Hollow Stem Auger	25'	-	-	-	-	13,000
LR 30'	Release Area	12/16/2015	1512A77	Hollow Stem Auger	30'	-	-	-	-	3,900
LR 35'	Release Area	12/16/2015	1512A77	Hollow Stem Auger	35'	-	-	-	-	3,500
LR 40'	Release Area	12/16/2015	1512A77	Hollow Stem Auger	40'	-	-	-	-	2,700
LR 45'	Release Area	12/16/2015	1512A77	Hollow Stem Auger	45'	-	-	-	-	4,100
LR 50'	Release Area	12/17/2015	1512A77	Hollow Stem Auger	50'	-	-	-	-	4,600
LR 55'	Release Area	12/17/2015	1512A77	Hollow Stem Auger	55'	-	-	-	-	260
LR 60'	Release Area	12/17/2015	1512A77	Hollow Stem Auger	60'	-	-	-	-	140

Site Ranking is ZERO (0). Depth to Ground Water >100' (150' PER TREND MAP)

All results are ppm.Chlorides for documentation.

Released: 140 B/PW, 5 B/O; Recovered: 125 B/PW, 5 B/O. Release Date: 6/3/2015. 2RP-3045

June 22, 2015

AMBER CANNON

YATES PETROLEUM CORPORATION

105 S 4th Street

Artesia, NM 88210

RE: LIVINGSTON RIDGE SWD WATER LINE

Enclosed are the results of analyses for samples received by the laboratory on 06/17/15 16:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/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,



Celey D. Keene

Lab Director/Quality Manager



**Analytical Results For:**

YATES PETROLEUM CORPORATION  
AMBER CANNON  
105 S 4th Street  
Artesia NM, 88210  
Fax To: (505) 748-4635

Received:	06/17/2015	Sampling Date:	06/15/2015
Reported:	06/22/2015	Sampling Type:	Soil
Project Name:	LIVINGSTON RIDGE SWD WATER LINE	Sampling Condition:	Cool & Intact
Project Number:	6/3/2015 RELEASE	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: LR 1 - 1 (H501577-01)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/19/2015	ND	1.74	86.8	2.00	1.25		
Toluene*	<0.050	0.050	06/19/2015	ND	1.73	86.6	2.00	1.70		
Ethylbenzene*	<0.050	0.050	06/19/2015	ND	1.82	91.2	2.00	2.34		
Total Xylenes*	<0.150	0.150	06/19/2015	ND	5.01	83.5	6.00	2.12		
Total BTEX	<0.300	0.300	06/19/2015	ND						

Surrogate: 4-Bromofluorobenzene (PIC) 108 % 61-154

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/19/2015	ND	185	92.7	200	2.20	
DRO >C10-C28	<10.0	10.0	06/19/2015	ND	199	99.3	200	0.567	

Surrogate: 1-Chlorooctane 114 % 47.2-157

Surrogate: 1-Chlorooctadecane 131 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

YATES PETROLEUM CORPORATION  
AMBER CANNON  
105 S 4th Street  
Artesia NM, 88210  
Fax To: (505) 748-4635

Received:	06/17/2015	Sampling Date:	06/15/2015
Reported:	06/22/2015	Sampling Type:	Soil
Project Name:	LIVINGSTON RIDGE SWD WATER LINE	Sampling Condition:	Cool & Intact
Project Number:	6/3/2015 RELEASE	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: LR 1 - 2 (H501577-02)**

BTEX 8021B			mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/19/2015	ND	1.74	86.8	2.00	1.25		
Toluene*	<0.050	0.050	06/19/2015	ND	1.73	86.6	2.00	1.70		
Ethylbenzene*	<0.050	0.050	06/19/2015	ND	1.82	91.2	2.00	2.34		
Total Xylenes*	<0.150	0.150	06/19/2015	ND	5.01	83.5	6.00	2.12		
Total BTEX	<0.300	0.300	06/19/2015	ND						

Surrogate: 4-Bromofluorobenzene (PIL) 106 % 61-154

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	06/19/2015	ND	185	92.7	200	2.20		
DRO >C10-C28	<10.0	10.0	06/19/2015	ND	199	99.3	200	0.567		

Surrogate: 1-Chlorooctane 108 % 47.2-157

Surrogate: 1-Chlorooctadecane 134 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

YATES PETROLEUM CORPORATION  
AMBER CANNON  
105 S 4th Street  
Artesia NM, 88210  
Fax To: (505) 748-4635

Received:	06/17/2015	Sampling Date:	06/15/2015
Reported:	06/22/2015	Sampling Type:	Soil
Project Name:	LIVINGSTON RIDGE SWD WATER LINE	Sampling Condition:	Cool & Intact
Project Number:	6/3/2015 RELEASE	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: LR 1 - 3 (H501577-03)**

BTEX 8021B			mg/kg		Analyzed By: MS				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/19/2015	ND	1.90	95.0	2.00	0.282	
Toluene*	<0.050	0.050	06/19/2015	ND	1.90	94.8	2.00	0.258	
Ethylbenzene*	<0.050	0.050	06/19/2015	ND	2.01	100	2.00	0.289	
Total Xylenes*	<0.150	0.150	06/19/2015	ND	5.53	92.2	6.00	0.300	
Total BTEX	<0.300	0.300	06/19/2015	ND					

Surrogate: 4-Bromofluorobenzene (PIC) 105 % 61-154

TPH 8015M			mg/kg		Analyzed By: MS				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/19/2015	ND	185	92.7	200	2.20	
DRO >C10-C28	<10.0	10.0	06/19/2015	ND	199	99.3	200	0.567	

Surrogate: 1-Chlorooctane 104 % 47.2-157

Surrogate: 1-Chlorooctadecane 129 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

YATES PETROLEUM CORPORATION  
AMBER CANNON  
105 S 4th Street  
Artesia NM, 88210  
Fax To: (505) 748-4635

Received:	06/17/2015	Sampling Date:	06/15/2015
Reported:	06/22/2015	Sampling Type:	Soil
Project Name:	LIVINGSTON RIDGE SWD WATER LINE	Sampling Condition:	Cool & Intact
Project Number:	6/3/2015 RELEASE	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: LR 2 - 1 (H501577-04)**

BTEX 8021B			mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/19/2015	ND	1.90	95.0	2.00	0.282		
Toluene*	<0.050	0.050	06/19/2015	ND	1.90	94.8	2.00	0.258		
Ethylbenzene*	<0.050	0.050	06/19/2015	ND	2.01	100	2.00	0.289		
Total Xylenes*	<0.150	0.150	06/19/2015	ND	5.53	92.2	6.00	0.300		
Total BTEX	<0.300	0.300	06/19/2015	ND						

Surrogate: 4-Bromofluorobenzene (PIL) 107 % 61-154

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	06/19/2015	ND	185	92.7	200	2.20	
DRO >C10-C28	45.6	10.0	06/19/2015	ND	199	99.3	200	0.567	

Surrogate: 1-Chlorooctane 114 % 47.2-157

Surrogate: 1-Chlorooctadecane 131 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

YATES PETROLEUM CORPORATION  
AMBER CANNON  
105 S 4th Street  
Artesia NM, 88210  
Fax To: (505) 748-4635

Received:	06/17/2015	Sampling Date:	06/15/2015
Reported:	06/22/2015	Sampling Type:	Soil
Project Name:	LIVINGSTON RIDGE SWD WATER LINE	Sampling Condition:	Cool & Intact
Project Number:	6/3/2015 RELEASE	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: LR 2 - 2 (H501577-05)**

BTEX 8021B			mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/19/2015	ND	1.90	95.0	2.00	0.282		
Toluene*	<0.050	0.050	06/19/2015	ND	1.90	94.8	2.00	0.258		
Ethylbenzene*	<0.050	0.050	06/19/2015	ND	2.01	100	2.00	0.289		
Total Xylenes*	<0.150	0.150	06/19/2015	ND	5.53	92.2	6.00	0.300		
Total BTEX	<0.300	0.300	06/19/2015	ND						

Surrogate: 4-Bromofluorobenzene (PIE) 104 % 61-154

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	06/19/2015	ND	185	92.7	200	2.20		
DRO >C10-C28	<10.0	10.0	06/19/2015	ND	199	99.3	200	0.567		

Surrogate: 1-Chlorooctane 103 % 47.2-157

Surrogate: 1-Chlorooctadecane 128 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

YATES PETROLEUM CORPORATION  
AMBER CANNON  
105 S 4th Street  
Artesia NM, 88210  
Fax To: (505) 748-4635

Received:	06/17/2015	Sampling Date:	06/15/2015
Reported:	06/22/2015	Sampling Type:	Soil
Project Name:	LIVINGSTON RIDGE SWD WATER LINE	Sampling Condition:	Cool & Intact
Project Number:	6/3/2015 RELEASE	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: LR 2 - 3 (H501577-06)**

BTX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/19/2015	ND	1.90	95.0	2.00	0.282		
Toluene*	<0.050	0.050	06/19/2015	ND	1.90	94.8	2.00	0.258		
Ethylbenzene*	<0.050	0.050	06/19/2015	ND	2.01	100	2.00	0.289		
Total Xylenes*	<0.150	0.150	06/19/2015	ND	5.53	92.2	6.00	0.300		
Total BTX	<0.300	0.300	06/19/2015	ND						

Surrogate: 4-Bromofluorobenzene (PIE) 103 % 61-154

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	06/19/2015	ND	185	92.7	200	2.20		
DRO >C10-C28	<10.0	10.0	06/19/2015	ND	199	99.3	200	0.567		

Surrogate: 1-Chlorooctane 99.1 % 47.2-157

Surrogate: 1-Chlorooctadecane 119 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

YATES PETROLEUM CORPORATION  
AMBER CANNON  
105 S 4th Street  
Artesia NM, 88210  
Fax To: (505) 748-4635

Received:	06/17/2015	Sampling Date:	06/15/2015
Reported:	06/22/2015	Sampling Type:	Soil
Project Name:	LIVINGSTON RIDGE SWD WATER LINE	Sampling Condition:	Cool & Intact
Project Number:	6/3/2015 RELEASE	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: LR 3 - 1 (H501577-07)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/19/2015	ND	1.90	95.0	2.00	0.282		
Toluene*	<0.050	0.050	06/19/2015	ND	1.90	94.8	2.00	0.258		
Ethylbenzene*	<0.050	0.050	06/19/2015	ND	2.01	100	2.00	0.289		
Total Xylenes*	<0.150	0.150	06/19/2015	ND	5.53	92.2	6.00	0.300		
Total BTEX	<0.300	0.300	06/19/2015	ND						

Surrogate: 4-Bromofluorobenzene (PIL) 104 % 61-154

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	06/19/2015	ND	185	92.7	200	2.20		
DRO >C10-C28	<10.0	10.0	06/19/2015	ND	199	99.3	200	0.567		

Surrogate: 1-Chlorooctane 104 % 47.2-157

Surrogate: 1-Chlorooctadecane 124 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

 YATES PETROLEUM CORPORATION  
 AMBER CANNON  
 105 S 4th Street  
 Artesia NM, 88210  
 Fax To: (505) 748-4635

Received:	06/17/2015	Sampling Date:	06/15/2015
Reported:	06/22/2015	Sampling Type:	Soil
Project Name:	LIVINGSTON RIDGE SWD WATER LINE	Sampling Condition:	Cool & Intact
Project Number:	6/3/2015 RELEASE	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: LR 3 - 2 (H501577-08)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/19/2015	ND	1.90	95.0	2.00	0.282		
Toluene*	<0.050	0.050	06/19/2015	ND	1.90	94.8	2.00	0.258		
Ethylbenzene*	<0.050	0.050	06/19/2015	ND	2.01	100	2.00	0.289		
Total Xylenes*	<0.150	0.150	06/19/2015	ND	5.53	92.2	6.00	0.300		
Total BTEX	<0.300	0.300	06/19/2015	ND						

Surrogate: 4-Bromofluorobenzene (PIE) 105 % 61-154

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	06/19/2015	ND	185	92.7	200	2.20		
DRO >C10-C28	<10.0	10.0	06/19/2015	ND	199	99.3	200	0.567		

Surrogate: 1-Chlorooctane 100 % 47.2-157

Surrogate: 1-Chlorooctadecane 122 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

YATES PETROLEUM CORPORATION  
AMBER CANNON  
105 S 4th Street  
Artesia NM, 88210  
Fax To: (505) 748-4635

Received:	06/17/2015	Sampling Date:	06/15/2015
Reported:	06/22/2015	Sampling Type:	Soil
Project Name:	LIVINGSTON RIDGE SWD WATER LINE	Sampling Condition:	Cool & Intact
Project Number:	6/3/2015 RELEASE	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: LR 3 - 3 (H501577-09)**

BTX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/19/2015	ND	1.90	95.0	2.00	0.282		
Toluene*	<0.050	0.050	06/19/2015	ND	1.90	94.8	2.00	0.258		
Ethylbenzene*	<0.050	0.050	06/19/2015	ND	2.01	100	2.00	0.289		
Total Xylenes*	<0.150	0.150	06/19/2015	ND	5.53	92.2	6.00	0.300		
Total BTX	<0.300	0.300	06/19/2015	ND						

Surrogate: 4-Bromofluorobenzene (PIE) 103 % 61-154

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	06/19/2015	ND	185	92.7	200	2.20		
DRO >C10-C28	<10.0	10.0	06/19/2015	ND	199	99.3	200	0.567		

Surrogate: 1-Chlorooctane 115 % 47.2-157

Surrogate: 1-Chlorooctadecane 125 % 52.1-176

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



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 SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

---

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



---

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 or 575-513-8799

Sampler Signature: Amber Cannon

Fax No: 575-748-4131  
e-mail: acannon@yatespetroleum.com

Project Name: Livingston Ridge SWD Water Line

Project #: 6/3/2015 Release

Project Loc: Eddy County

PO #: 205-2020

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

LAB # (lab use only)		FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	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>3</sub>	None	Other (Specify)	DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Matrix	TPH: 418 1 8015M 8015B	TPH: TX 1005 TX 1006	Cations (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	BTEX 8021B/5030 or BTEX 8260	RCI	N O R M	Chlorides	SAR	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
1	LR 1-1	1'	1'	6/15/2015	10:32 AM			1	X									S	X														X
2	LR 1-2	2'	2'	6/15/2015	10:35 AM			1	X									S	X														X
3	LR 1-3	3'	3'	6/15/2015	10:38 AM			1	X									S	X														X
4	LR 2-1	1'	1'	6/15/2015	11:37 AM			1	X									S	X														X
5	LR 2-2	2'	2'	6/15/2015	11:40 AM			1	X									S	X														X
6	LR 2-3	3'	3'	6/15/2015	11:44 AM			1	X									S	X														X
7	LR 3-1	1'	1'	6/15/2015	12:30 PM			1	X									S	X														X
8	LR 3-2	2'	2'	6/15/2015	12:35 PM			1	X									S	X														X
9	LR 3-3	3'	3'	6/15/2015	1:22 AM			1	X									S	X														X

Special Instructions: **TPH: 8015B, BTEX: 8021B.** Please show BTEX results as mg/kg. **Please put chlorides on a separate report.** Thank you.

Relinquished by: Amber Cannon Date: 6/15/15 Time: 4:15 Received by: Steve Shepherd Date: 6/15/15 Time: 4:30

Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Laboratory Comments: ☒ Sample Containers Intact? ☒ VOCs Free of Headspace? ☒ Labels on container(s) ☒ Custody seals on container(s) ☒ Custody seals on cooler(s) ☒ Sample Hand Delivered by Sampler/Client Rep. ? ☒ UPS ☒ DHL ☒ FedEx ☒ Lone Star Temperature Upon Receipt: 4.2 °C

June 22, 2015

AMBER CANNON

YATES PETROLEUM CORPORATION

105 S 4th Street

Artesia, NM 88210

RE: LIVINGSTON RIDGE SWD WATER LINE

Enclosed are the results of analyses for samples received by the laboratory on 06/17/15 16:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/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,



Celey D. Keene

Lab Director/Quality Manager



**Analytical Results For:**

YATES PETROLEUM CORPORATION  
AMBER CANNON  
105 S 4th Street  
Artesia NM, 88210  
Fax To: (505) 748-4635

Received:	06/17/2015	Sampling Date:	06/15/2015
Reported:	06/22/2015	Sampling Type:	Soil
Project Name:	LIVINGSTON RIDGE SWD WATER LINE	Sampling Condition:	Cool & Intact
Project Number:	6/3/2015 RELEASE	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: LR 1 - 1 (H501577-01)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	144	16.0	06/22/2015	ND	432	108	400	3.77		

**Sample ID: LR 1 - 2 (H501577-02)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	06/18/2015	ND	416	104	400	0.00	

**Sample ID: LR 1 - 3 (H501577-03)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	176	16.0	06/18/2015	ND	416	104	400	0.00	

**Sample ID: LR 2 - 1 (H501577-04)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	10900	16.0	06/18/2015	ND	416	104	400	0.00		

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

 YATES PETROLEUM CORPORATION  
 AMBER CANNON  
 105 S 4th Street  
 Artesia NM, 88210  
 Fax To: (505) 748-4635

Received:	06/17/2015	Sampling Date:	06/15/2015
Reported:	06/22/2015	Sampling Type:	Soil
Project Name:	LIVINGSTON RIDGE SWD WATER LINE	Sampling Condition:	Cool & Intact
Project Number:	6/3/2015 RELEASE	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: LR 2 - 2 (H501577-05)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2720	16.0	06/18/2015	ND	416	104	400	0.00	

**Sample ID: LR 2 - 3 (H501577-06)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	400	16.0	06/18/2015	ND	416	104	400	0.00	

**Sample ID: LR 3 - 1 (H501577-07)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1220	16.0	06/18/2015	ND	416	104	400	0.00	

**Sample ID: LR 3 - 2 (H501577-08)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	12300	16.0	06/18/2015	ND	416	104	400	0.00	

**Sample ID: LR 3 - 3 (H501577-09)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	11200	16.0	06/18/2015	ND	416	104	400	0.00	

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



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 SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

---

Cardinal Laboratories

\*=Accredited Analyte

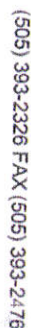
PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



---

Celey D. Keene, Lab Director/Quality Manager





## Project Name: I Inoculated Did Not Grow

Project Loc: Eddy County

Telephone No. 575-748-4111 or 575-513-8799 Fax No. \_\_\_\_\_

Sampler Signature: Amber Cannon e-mail \_\_\_\_\_

Fax No: 575-748-4131

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

e-mail: [acannon@yatespetroleum.com](mailto:acannon@yatespetroleum.com)

ORDER #: H501577

Handwritten signature

June 23, 2015

AMBER CANNON

YATES PETROLEUM CORPORATION

105 S 4th Street

Artesia, NM 88210

RE: LIVINGSTON RIDGE SWD WATER LINE

Enclosed are the results of analyses for samples received by the laboratory on 06/17/15 16:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-13-5. 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/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/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,



Celey D. Keene

Lab Director/Quality Manager



**Analytical Results For:**

YATES PETROLEUM CORPORATION  
AMBER CANNON  
105 S 4th Street  
Artesia NM, 88210  
Fax To: (505) 748-4635

Received:	06/17/2015	Sampling Date:	06/15/2015
Reported:	06/23/2015	Sampling Type:	Soil
Project Name:	LIVINGSTON RIDGE SWD WATER LINE	Sampling Condition:	Cool & Intact
Project Number:	6/3/2015 RELEASE	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: LR 1-4 (H501579-01)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1340	16.0	06/18/2015	ND	416	104	400	0.00	

**Sample ID: LR 1-5 (H501579-02)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3280	16.0	06/18/2015	ND	416	104	400	0.00	

**Sample ID: LR 1-6 (H501579-03)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	10800	16.0	06/18/2015	ND	416	104	400	0.00	

**Sample ID: LR 1-7 (H501579-04)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	13200	16.0	06/18/2015	ND	416	104	400	0.00	

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

YATES PETROLEUM CORPORATION  
AMBER CANNON  
105 S 4th Street  
Artesia NM, 88210  
Fax To: (505) 748-4635

Received:	06/17/2015	Sampling Date:	06/15/2015
Reported:	06/23/2015	Sampling Type:	Soil
Project Name:	LIVINGSTON RIDGE SWD WATER LINE	Sampling Condition:	Cool & Intact
Project Number:	6/3/2015 RELEASE	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: LR 1-8 (H501579-05)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	10400	16.0	06/18/2015	ND	416	104	400	0.00	

**Sample ID: LR 1-9 (H501579-06)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	12000	16.0	06/18/2015	ND	416	104	400	0.00	

**Sample ID: LR 1-10 (H501579-07)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	8400	16.0	06/18/2015	ND	416	104	400	0.00	

**Sample ID: LR 1-11 (H501579-08)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4800	16.0	06/22/2015	ND	416	104	400	3.92	

**Sample ID: LR 1-12 (H501579-09)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	9730	16.0	06/22/2015	ND	416	104	400	3.92	

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

YATES PETROLEUM CORPORATION  
AMBER CANNON  
105 S 4th Street  
Artesia NM, 88210  
Fax To: (505) 748-4635

Received:	06/17/2015	Sampling Date:	06/15/2015
Reported:	06/23/2015	Sampling Type:	Soil
Project Name:	LIVINGSTON RIDGE SWD WATER LINE	Sampling Condition:	Cool & Intact
Project Number:	6/3/2015 RELEASE	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: LR 1-13 (H501579-10)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	12000	16.0	06/22/2015	ND	416	104	400	3.92	

**Sample ID: LR 2-4 (H501579-11)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	544	16.0	06/22/2015	ND	416	104	400	3.92	

**Sample ID: LR 2-5 (H501579-12)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1010	16.0	06/22/2015	ND	416	104	400	3.92	

**Sample ID: LR 2-6 (H501579-13)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4400	16.0	06/22/2015	ND	416	104	400	3.92	

**Sample ID: LR 2-7 (H501579-14)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1550	16.0	06/22/2015	ND	416	104	400	3.92	

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

YATES PETROLEUM CORPORATION  
AMBER CANNON  
105 S 4th Street  
Artesia NM, 88210  
Fax To: (505) 748-4635

Received:	06/17/2015	Sampling Date:	06/15/2015
Reported:	06/23/2015	Sampling Type:	Soil
Project Name:	LIVINGSTON RIDGE SWD WATER LINE	Sampling Condition:	Cool & Intact
Project Number:	6/3/2015 RELEASE	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: LR 2-8 (H501579-15)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	5360	16.0	06/22/2015	ND	416	104	400	3.92	

**Sample ID: LR 2-9 (H501579-16)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4720	16.0	06/22/2015	ND	416	104	400	3.92	

**Sample ID: LR 2-10 (H501579-17)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4320	16.0	06/22/2015	ND	416	104	400	3.92	

**Sample ID: LR 2-11 (H501579-18)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	4480	16.0	06/22/2015	ND	416	104	400	3.92	

**Sample ID: LR 2-12 (H501579-19)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	6640	16.0	06/22/2015	ND	416	104	400	3.92	

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

YATES PETROLEUM CORPORATION  
AMBER CANNON  
105 S 4th Street  
Artesia NM, 88210  
Fax To: (505) 748-4635

Received:	06/17/2015	Sampling Date:	06/15/2015
Reported:	06/23/2015	Sampling Type:	Soil
Project Name:	LIVINGSTON RIDGE SWD WATER LINE	Sampling Condition:	Cool & Intact
Project Number:	6/3/2015 RELEASE	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: LR 2-13 (H501579-20)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	6480	16.0	06/22/2015	ND	416	104	400	3.92	

**Sample ID: LR 3-4 (H501579-21)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	06/22/2015	ND	416	104	400	3.92	

**Sample ID: LR 3-5 (H501579-22)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	06/22/2015	ND	416	104	400	3.92	

**Sample ID: LR 3-6 (H501579-23)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	06/22/2015	ND	416	104	400	3.92	

**Sample ID: LR 3-7 (H501579-24)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	496	16.0	06/22/2015	ND	416	104	400	3.92	

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager



**Analytical Results For:**

YATES PETROLEUM CORPORATION  
AMBER CANNON  
105 S 4th Street  
Artesia NM, 88210  
Fax To: (505) 748-4635

Received:	06/17/2015	Sampling Date:	06/15/2015
Reported:	06/23/2015	Sampling Type:	Soil
Project Name:	LIVINGSTON RIDGE SWD WATER LINE	Sampling Condition:	Cool & Intact
Project Number:	6/3/2015 RELEASE	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: LR 3-8 (H501579-25)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1100	16.0	06/22/2015	ND	416	104	400	3.92	

**Sample ID: LR 3-9 (H501579-26)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	8400	16.0	06/22/2015	ND	416	104	400	3.92	

**Sample ID: LR 3-10 (H501579-27)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	6800	16.0	06/22/2015	ND	416	104	400	3.92	

**Sample ID: LR 3-11 (H501579-28)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	8640	16.0	06/22/2015	ND	416	104	400	3.92	

**Sample ID: LR 3-12 (H501579-29)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	8800	16.0	06/22/2015	ND	416	104	400	3.92	

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

YATES PETROLEUM CORPORATION  
AMBER CANNON  
105 S 4th Street  
Artesia NM, 88210  
Fax To: (505) 748-4635

Received:	06/17/2015	Sampling Date:	06/15/2015
Reported:	06/23/2015	Sampling Type:	Soil
Project Name:	LIVINGSTON RIDGE SWD WATER LINE	Sampling Condition:	Cool & Intact
Project Number:	6/3/2015 RELEASE	Sample Received By:	Jodi Henson
Project Location:	EDDY COUNTY, NM		

**Sample ID: LR 3-13 (H501579-30)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AP					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	7280	16.0	06/22/2015	ND	416	104	400	3.92	

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



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 SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

---

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.



---

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 or 575-513-8799

Sampler Signature: Amber Cannon

Fax No: 575-748-4131  
e-mail: acannon@yatespetroleum.com

Job use only)

ORDER #: 1501579

Project Name: Livingston Ridge SWD Water Line

Project #: 6/3/2015 Release

Project Loc: Eddy County

PO #: 205-2020

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	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>3</sub>	None	Other (Specify)	DW=Drinking Water SL=Sludge GW=Groundwater S=Soil/Solid NP=Non-Potable Specify Other	TPH: 418.1 8015M 8015	TPH: TX 1005 TX 1006	Cations (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	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M	Chlorides	SAR	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT	
1	LR 1-4	4'	4'	6/15/2015	10:41 AM		1									S																X
2	LR 1-5	5'	5'	6/15/2015	10:45 AM		1									S																X
3	LR 1-6	6'	6'	6/15/2015	10:52 AM		1									S																X
4	LR 1-7	7'	7'	6/15/2015	11:02 AM		1									S																X
5	LR 1-8	8'	8'	6/15/2015	11:06 AM		1									S																X
6	LR 1-9	9'	9'	6/15/2015	11:10 AM		1									S																X
7	LR 1-10	10'	10'	6/15/2015	11:14 AM		1									S																X
8	LR 1-11	11'	11'	6/15/2015	11:17 AM		1									S																X
9	LR 1-12	12'	12'	6/15/2015	11:23 AM		1									S																X
10	LR 1-13	13'	13'	6/15/2015	11:32 AM		1									S																X

Page 1 of 3

Special Instructions:

Relinquished by:

Amber Cannon

Relinquished by:

6/17/15

Date

Time

Received by:

6/17/15

Date

Time

Received by:

6/17/15

Date

Time

Received by:

6/17/15

Date

Time

Laboratory Comments:

Sample Containers Intact?

VOCs Free of Headspace?

Labels on container(s)

Custody seals on container(s)

Sample Hand Delivered

by Sampler/Client Rep.?

by Courier? UPS DHL

Temperature Upon Receipt:

4.2 °C





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 or 575-513-8799

Sampler Signature: Amber Cannon

e-mail: acannon@yatespetroleum.com

Fax No: 575-748-4131

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Project Name: Livingston Ridge SWD Water Line

Project #: 6/3/2015 Release

Project Loc: Eddy County

PO #: 205-2020

lab use only

ORDER #: 1501579

LAB # (lab use only)		FIELD CODE		Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	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>3</sub>	None	Other ( Specify)	DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	TPH: 418.1 8015M 8015	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO <sub>4</sub> , Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg S	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N O R M	Chlorides	SAR	RUSH TAT (Pre-Schedule) 24, 48,	Standard TAT	
11	LR 2-4	4'	4'	6/15/2015	11:47 AM				1									S															X	X
12	LR 2-5	5'	5'	6/15/2015	11:53 AM				1									S															X	X
13	LR 2-6	6'	6'	6/15/2015	11:59 AM				1									S															X	X
14	LR 2-7	7'	7'	6/15/2015	12:03 PM				1									S															X	X
15	LR 2-8	8'	8'	6/15/2015	12:08 PM				1									S															X	X
16	LR 2-9	9'	9'	6/15/2015	12:12 PM				1									S															X	X
17	LR 2-10	10'	10'	6/15/2015	12:16 PM				1									S															X	X
18	LR 2-11	11'	11'	6/15/2015	12:20 PM				1									S															X	X
19	LR 2-12	12'	12'	6/15/2015	12:24 PM				1									S															X	X
20	LR 2-13	13'	13'	6/15/2015	12:28 PM				1									S															X	X

Special Instructions:

Page 2 of 3

Special Instructions:

Page 2 of 3

Relinquished by:

Relinquished by:

Relinquished by:

Date

Time

Received by:

Date

Time

Date

Time

Received by:

Date

Time

Date

Time

Received by ELDT:

Date

Time

Laboratory Comments:

Sample Containers Intact?

VOCs Free of Headspace?

Labels on container(s)

Custody seals on container(s)

Custody seals on cooler(s)

Sample Hand Delivered

by Sampler/Client Rep.?

by Courier?

UPS

DHL

FedEx

Lone Star

Temperature Upon Receipt:

4.2 °C





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 or 575-513-8799

Sampler Signature: Amber Cannon

e-mail: acannon@yatespetroleum.com

Fax No: 575-748-4131

Report Format: ☒ Standard

☐ TRRP

☐ NPDES

Project Name: Livingston Ridge SWD Water Line

Project #: 6/3/2015 Release

Project Loc: Eddy County

PO #: 205-2020

ORDER #: 1501579

ORDER #: 4501579		LAB # (lab use only)		FIELD CODE		Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Preservation & # of Containers							Matrix	Analyze For:																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
21	LR 3-4	4'	4'	6/15/2015	12:42 PM		1					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>3</sub>	None	Other ( Specify )	DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	TPH: 418.1 8015M 8015	TPH: TX 1005 TX 1006	Cations (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	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	Chlorides	SAR	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
22	LR 3-5	5'	5'	6/15/2015	12:45 PM		1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							

Page 3 of 3

Relinquished by: Amber Cannon

Relinquished by: Amber Cannon

Relinquished by: Amber Cannon

Date: 6/17/15

Date: 6/17/15

Date: 6/17/15

Time: 4:45

Time: 4:45

Time: 4:45

Received by: Amber Cannon

Received by: Amber Cannon

Received by: Amber Cannon

Date: 6/17/15

Date: 6/17/15

Date: 6/17/15

Time: 4:45

Time: 4:45

Time: 4:45

Laboratory Comments:

Sample Containers Intact?

VOCs Free of Headspace?

Labels on containers?

Custody seals on container(s)?

Custody seals on cooler(s)?

Sample Hand Delivered by Sampler/Client Rep.?

by Courier? UPS

DHL

FedEx

Lone Star

Temperature Upon Receipt: 4.2 °C





Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

January 06, 2016

Amber Griffin

Yates Petroleum Corporation  
105 South Fourth Street  
Artesia, NM 88210  
TEL: (575) 748-4111  
FAX

RE: Livingston Ridge SWD Water Line

OrderNo.: 1512A77

Dear Amber Griffin:

Hall Environmental Analysis Laboratory received 10 sample(s) on 12/23/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

## Analytical Report

Lab Order: 1512A77

Date Reported: 1/6/2016

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Yates Petroleum Corporation  
**Project:** Livingston Ridge SWD Water Line

Lab Order: 1512A77

Lab ID: 1512A77-001

Collection Date: 12/16/2015 3:15:00 PM

Client Sample ID: 15'

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
----------	--------	----	------	-------	----	---------------	----------

## EPA METHOD 300.0: ANIONS

Analyst: LGT

Chloride	19000	750		mg/Kg	500	12/30/2015 5:04:51 PM	23001
----------	-------	-----	--	-------	-----	-----------------------	-------

Lab ID: 1512A77-002

Collection Date: 12/16/2015 3:25:00 PM

Client Sample ID: 20'

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
----------	--------	----	------	-------	----	---------------	----------

## EPA METHOD 300.0: ANIONS

Analyst: LGT

Chloride	11000	750		mg/Kg	500	12/30/2015 5:17:15 PM	23001
----------	-------	-----	--	-------	-----	-----------------------	-------

Lab ID: 1512A77-003

Collection Date: 12/16/2015 3:35:00 PM

Client Sample ID: 25'

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
----------	--------	----	------	-------	----	---------------	----------

## EPA METHOD 300.0: ANIONS

Analyst: LGT

Chloride	13000	750		mg/Kg	500	12/30/2015 5:29:39 PM	23001
----------	-------	-----	--	-------	-----	-----------------------	-------

Lab ID: 1512A77-004

Collection Date: 12/16/2015 3:50:00 PM

Client Sample ID: 30'

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
----------	--------	----	------	-------	----	---------------	----------

## EPA METHOD 300.0: ANIONS

Analyst: LGT

Chloride	3900	150		mg/Kg	100	12/30/2015 5:42:03 PM	23001
----------	------	-----	--	-------	-----	-----------------------	-------

Lab ID: 1512A77-005

Collection Date: 12/16/2015 4:05:00 PM

Client Sample ID: 35'

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
----------	--------	----	------	-------	----	---------------	----------

## EPA METHOD 300.0: ANIONS

Analyst: LGT

Chloride	3500	150		mg/Kg	100	12/30/2015 5:54:28 PM	23001
----------	------	-----	--	-------	-----	-----------------------	-------

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank	
	D Sample Diluted Due to Matrix	E Value above quantitation range	
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits	
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range	Page 1 of 3
	R RPD outside accepted recovery limits	RL Reporting Detection Limit	
	S % Recovery outside of range due to dilution or matrix		

## Analytical Report

Lab Order: 1512A77

Date Reported: 1/6/2016

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Yates Petroleum Corporation  
**Project:** Livingston Ridge SWD Water Line

**Lab Order:** 1512A77**Lab ID:** 1512A77-006**Collection Date:** 12/16/2015 4:25:00 PM**Client Sample ID:** 40'**Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
----------	--------	----	------	-------	----	---------------	----------

**EPA METHOD 300.0: ANIONS**

Analyst: LGT

Chloride	2700	150		mg/Kg	100	12/30/2015 6:06:53 PM	23001
----------	------	-----	--	-------	-----	-----------------------	-------

**Lab ID:** 1512A77-007**Collection Date:** 12/16/2015 4:41:00 PM**Client Sample ID:** 45'**Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
----------	--------	----	------	-------	----	---------------	----------

**EPA METHOD 300.0: ANIONS**

Analyst: LGT

Chloride	4100	150		mg/Kg	100	12/30/2015 6:19:18 PM	23001
----------	------	-----	--	-------	-----	-----------------------	-------

**Lab ID:** 1512A77-008**Collection Date:** 12/17/2015 7:50:00 AM**Client Sample ID:** 50'**Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
----------	--------	----	------	-------	----	---------------	----------

**EPA METHOD 300.0: ANIONS**

Analyst: LGT

Chloride	4600	150		mg/Kg	100	12/30/2015 6:31:43 PM	23001
----------	------	-----	--	-------	-----	-----------------------	-------

**Lab ID:** 1512A77-009**Collection Date:** 12/17/2015 8:12:00 AM**Client Sample ID:** 55'**Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
----------	--------	----	------	-------	----	---------------	----------

**EPA METHOD 300.0: ANIONS**

Analyst: LGT

Chloride	260	30		mg/Kg	20	12/30/2015 10:02:38 PM	23001
----------	-----	----	--	-------	----	------------------------	-------

**Lab ID:** 1512A77-010**Collection Date:** 12/17/2015 8:55:00 AM**Client Sample ID:** 60'**Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
----------	--------	----	------	-------	----	---------------	----------

**EPA METHOD 300.0: ANIONS**

Analyst: LGT

Chloride	140	30		mg/Kg	20	12/30/2015 10:15:02 PM	23001
----------	-----	----	--	-------	----	------------------------	-------

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
	D Sample Diluted Due to Matrix	E Value above quantitation range
	H Holding times for preparation or analysis exceeded	J Analyte detected below quantitation limits
	ND Not Detected at the Reporting Limit	P Sample pH Not In Range
	R RPD outside accepted recovery limits	RL Reporting Detection Limit
	S % Recovery outside of range due to dilution or matrix	



# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1512A77

06-Jan-16

Client: Yates Petroleum Corporation  
Project: Livingston Ridge SWD Water Line

Sample ID	MB-23001	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	23001	RunNo:	31145					
Prep Date:	12/29/2015	Analysis Date:	12/30/2015	SeqNo:	953296	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-23001	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	23001	RunNo:	31145					
Prep Date:	12/29/2015	Analysis Date:	12/30/2015	SeqNo:	953297	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.4	90	110			

## Qualifiers:

- |   |   |
|---|---|
| * Value exceeds Maximum Contaminant Level.              | B Analyte detected in the associated Method Blank |
| D Sample Diluted Due to Matrix                          | E Value above quantitation range                  |
| H Holding times for preparation or analysis exceeded    | J Analyte detected below quantitation limits      |
| ND Not Detected at the Reporting Limit                  | P Sample pH Not In Range                          |
| R RPD outside accepted recovery limits                  | RL Reporting Detection Limit                      |
| S % Recovery outside of range due to dilution or matrix |   |



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: www.hallenvironmental.com

## Sample Log-In Check List

Client Name: Yates Petroleum Corporat

Work Order Number: 1512A77

RcptNo: 1

Received by/date:

*[Signature]* 12/23/15

Logged By: Lindsay Mangin

12/23/2015 9:40:00 AM

*[Signature]*

Completed By: Lindsay Mangin

12/23/2015 10:37:19 AM

*[Signature]*

Reviewed By:

CS 12/23/15

### Chain of Custody

1. Custody seals intact on sample bottles? Yes ☒ No ☐ Not Present ☐  
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐  
3. How was the sample delivered? Courier

### Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐  
5. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐  
6. Sample(s) in proper container(s)? Yes ☒ No ☐  
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐  
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐  
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐  
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒  
11. Were any sample containers received broken? Yes ☐ No ☒  
12. Does paperwork match bottle labels? Yes ☒ No ☐  
(Note discrepancies on chain of custody)  
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐  
14. Is it clear what analyses were requested? Yes ☒ No ☐  
15. Were all holding times able to be met? Yes ☒ No ☐  
(If no, notify customer for authorization.)

# of preserved  
bottles checked  
for pH:

(<2 or >12 unless noted)

Adjusted?

Checked by:

### Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

### 18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	9.8	Good	Yes			

