

MARTIN YATES, III
1912-1985

FRANK W. YATES
1936-1986

S.P. YATES
1914-2000



105 SOUTH FOURTH STREET
ARTESIA, NEW MEXICO 88210-2118

TELEPHONE (575) 748-1471

www.yatespetroleum.com

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August 13, 2015

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

Re: Livingston Ridge SWD Water Line
(Wolf AJA Federal #17H)
30-015-39829
Section 25, T21S-R31E
Eddy County, New Mexico

Dear Mr. Bratcher:

Yates Petroleum Corporation would like to submit the following plan of work to you regarding the release that occurred at the above mentioned facility on June 18, 2015 (2RP-3074). The release was 50 barrels of produced water released, with 0 barrels of produced water recovered.

The release had a pooling area and an area that was affected by overspray. The area affected by overspray was treated with a 3% MicroBlaze solution. Yates Petroleum Corporation has had great success with vegetative recovery when overspray areas were treated with a 3% MicroBlaze solution. No excavation work will take place in this area. This approach has been approved by both NMOCD and BLM in the past for other releases nearby.

Yates Petroleum Corporation sampled the pooling section of the release area on July 28, 2015 to determine the vertical extent of TPH, BTEX and chloride contamination. There was only one sampling point for this release. The release area has both an Agave Energy gas line and a Yates Petroleum Corporation water line that run through the release area, and these lines did not allow enough room to conduct a second sampling point. The one sampling point was taken from the only available space that was safe for personnel and the backhoe operator. The analytical results showed the following:

- TPH and BTEX levels were below the NMOCD RRALs at 1', 2', and 3' below the surface level with results of non-detect.

KATHY H. PORTER
SECRETARY

DENNIS G. KINSEY
TREASURER

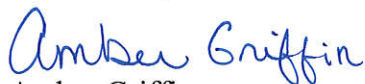
- Results did show elevated levels of chlorides in the soil. Chloride levels at 1' were 2,500 ppm and increased to 4,300 ppm at 2' and 5,600 ppm at 3'. Chlorides then started to decrease to 5,500 ppm at 4', 5,200 ppm at 5', 5,100 ppm at 6', and 2,400 ppm at 7'. At 8' the chlorides increased to 8,000 ppm. There was a slight decrease in chlorides at 9' with a result of 5,500 ppm. Once again, chlorides increased with results of 6,100 ppm at 10', 11,000 at 11', and 12,000 at 12'. Results for 13' below the surface level showed a tremendous decrease in chlorides to 2,700 ppm. During the sampling event, Yates Petroleum Corporation encountered a soft caliche layer at approximately 11' below the surface level. The caliche layer got harder as we approached 13' below the surface level. The caliche layer slowed down the chlorides and kept the majority of the chlorides at 11' and 12' below the surface level.

Based off initial analytical results for the pooling area and the depth to groundwater being >100', Yates Petroleum Corporation proposes to excavate 4' from the release area and haul the contaminated soils to a NMOCD approved facility. The excavation will then be lined with a 20 mL synthetic liner. The installation of the liner will inhibit chlorides from migrating further down towards groundwater. After the liner is laid, the excavation will be backfilled with clean, like materials. Once all excavation and backfill work has been completed a Final C-141 will be submitted to NMOCD requesting closure of this site.

Analytical results and a site diagram are attached for your review.

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

Thank You,



Amber Griffin

Environmental Regulatory Agent
Yates Petroleum Corporation

Bonneville AKK Federal #2/Nancy ALH Federal Com #1 Well Pad

Release Area

Campbell Road (C-29)

Wolf AJA Federal #17H Well Pad

938 ft

© 2015 Google

Google earth

Google earth

feet 2000
meters 700





Google earth

feet 600
meters 200



Livingston Ridge SWD Line (Wolf)

	Sample Area	Sample Date	Analytical Report	Sample Type	Depth	BTEX	GRO	DRO	TOTAL	Chlorides
Wolf - 1'	Release area	7/28/2015	1507D92	Grab/Backhoe	1'	ND	ND	ND	ND	2,500
Wolf - 2'	Release area	7/28/2015	1507D92	Grab/Backhoe	2'	ND	ND	ND	ND	4,300
Wolf - 3'	Release area	7/28/2015	1507D92	Grab/Backhoe	3'	ND	ND	ND	ND	5,600
Wolf - 4'	Release area	7/28/2015	1507D93	Grab/Backhoe	4'	-	-	-	-	5,500
Wolf - 5'	Release area	7/28/2015	1507D93	Grab/Backhoe	5'	-	-	-	-	5,200
Wolf - 6'	Release area	7/28/2015	1507D93	Grab/Backhoe	6'	-	-	-	-	5,100
Wolf - 7'	Release area	7/28/2015	1507D93	Grab/Backhoe	7'	-	-	-	-	2,400
Wolf - 8'	Release area	7/28/2015	1507D93	Grab/Backhoe	8'	-	-	-	-	8,000
Wolf - 9'	Release area	7/28/2015	1507D93	Grab/Backhoe	9'	-	-	-	-	5,500
Wolf - 10'	Release area	7/28/2015	1507D93	Grab/Backhoe	10'	-	-	-	-	6,100
Wolf - 11'	Release area	7/28/2015	1507D93	Grab/Backhoe	11'	-	-	-	-	11,000
Wolf - 12'	Release area	7/28/2015	1507D93	Grab/Backhoe	12'	-	-	-	-	12,000
Wolf - 13'	Release area	7/28/2015	1507D93	Grab/Backhoe	13'	-	-	-	-	2,700

Site Ranking is ZERO (0). Depth to Ground Water >100' (approx. 125', per Chevron/Texaco trend map).

All results are ppm.Chlorides for documentation.

Released: 50 B/PW; Recovered: 0 B/PW. Release Date: 6/18/2015, 2RP-3074



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

August 07, 2015

Amber Cannon
Yates Petroleum Corporation
105 South Fourth Street
Artesia, NM 88210
TEL: (575) 748-4217
FAX

RE: Livingston Ridge SWD Water Line (Wolf)

OrderNo.: 1507D92

Dear Amber Cannon:

Hall Environmental Analysis Laboratory received 3 sample(s) on 7/31/2015 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 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,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1507D92

Date Reported: 8/7/2015

CLIENT: Yates Petroleum Corporation

Client Sample ID: Wolf-1'

Project: Livingston Ridge SWD Water Line (Wol

Collection Date: 7/28/2015 7:56:00 AM

Lab ID: 1507D92-001

Matrix: SOIL

Received Date: 7/31/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	8/3/2015 8:32:54 AM	20541
Surr: DNOP	112	57.9-140		%REC	1	8/3/2015 8:32:54 AM	20541
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/3/2015 5:14:10 PM	20550
Surr: BFB	88.5	75.4-113		%REC	1	8/3/2015 5:14:10 PM	20550
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.049		mg/Kg	1	8/3/2015 5:14:10 PM	20550
Toluene	ND	0.049		mg/Kg	1	8/3/2015 5:14:10 PM	20550
Ethylbenzene	ND	0.049		mg/Kg	1	8/3/2015 5:14:10 PM	20550
Xylenes, Total	ND	0.099		mg/Kg	1	8/3/2015 5:14:10 PM	20550
Surr: 4-Bromofluorobenzene	94.4	80-120		%REC	1	8/3/2015 5:14:10 PM	20550

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

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, Inc.

Analytical Report

Lab Order 1507D92

Date Reported: 8/7/2015

CLIENT: Yates Petroleum Corporation

Client Sample ID: Wolf-2'

Project: Livingston Ridge SWD Water Line (Wol

Collection Date: 7/28/2015 7:58:00 AM

Lab ID: 1507D92-002

Matrix: SOIL

Received Date: 7/31/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/3/2015 8:59:53 AM	20541
Surr: DNOP	111	57.9-140		%REC	1	8/3/2015 8:59:53 AM	20541
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/3/2015 5:38:51 PM	20550
Surr: BFB	87.0	75.4-113		%REC	1	8/3/2015 5:38:51 PM	20550
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.048		mg/Kg	1	8/3/2015 5:38:51 PM	20550
Toluene	ND	0.048		mg/Kg	1	8/3/2015 5:38:51 PM	20550
Ethylbenzene	ND	0.048		mg/Kg	1	8/3/2015 5:38:51 PM	20550
Xylenes, Total	ND	0.095		mg/Kg	1	8/3/2015 5:38:51 PM	20550
Surr: 4-Bromofluorobenzene	91.9	80-120		%REC	1	8/3/2015 5:38:51 PM	20550

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

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, Inc.

Analytical Report

Lab Order 1507D92

Date Reported: 8/7/2015

CLIENT: Yates Petroleum Corporation

Client Sample ID: Wolf-3'

Project: Livingston Ridge SWD Water Line (Wol

Collection Date: 7/28/2015 8:00:00 AM

Lab ID: 1507D92-003

Matrix: SOIL

Received Date: 7/31/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	8/3/2015 9:26:49 AM	20541
Surr: DNOP	104	57.9-140		%REC	1	8/3/2015 9:26:49 AM	20541
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	8/4/2015 12:40:22 AM	20550
Surr: BFB	91.3	75.4-113		%REC	1	8/4/2015 12:40:22 AM	20550
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.049		mg/Kg	1	8/4/2015 12:40:22 AM	20550
Toluene	ND	0.049		mg/Kg	1	8/4/2015 12:40:22 AM	20550
Ethylbenzene	ND	0.049		mg/Kg	1	8/4/2015 12:40:22 AM	20550
Xylenes, Total	ND	0.098		mg/Kg	1	8/4/2015 12:40:22 AM	20550
Surr: 4-Bromofluorobenzene	97.8	80-120		%REC	1	8/4/2015 12:40:22 AM	20550

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

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		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507D92

10-Aug-15

Client: Yates Petroleum Corporation

Project: Livingston Ridge SWD Water Line (Wolf)

Sample ID	MB-20541	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	20541	RunNo:	27904					
Prep Date:	7/31/2015	Analysis Date:	8/3/2015	SeqNo:	839331	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Surr: DNOP	10		10.00		101	57.9	140			

Sample ID	LCS-20541	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	20541	RunNo:	27904					
Prep Date:	7/31/2015	Analysis Date:	8/3/2015	SeqNo:	839332	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	95.8	57.4	139			
Surr: DNOP	5.0		5.000		101	57.9	140			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507D92

10-Aug-15

Client: Yates Petroleum Corporation

Project: Livingston Ridge SWD Water Line (Wolf)

Sample ID	MB-20550	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	20550	RunNo:	27919					
Prep Date:	7/31/2015	Analysis Date:	8/3/2015	SeqNo:	839770	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	910		1000		91.4	75.4	113			

Sample ID	LCS-20550	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	20550	RunNo:	27919					
Prep Date:	7/31/2015	Analysis Date:	8/3/2015	SeqNo:	839772	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	103	79.6	122			
Surr: BFB	1000		1000		101	75.4	113			

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	R27950	RunNo:	27950					
Prep Date:		Analysis Date:	8/4/2015	SeqNo:	840981	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	910		1000		91.1	75.4	113			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	R27950	RunNo:	27950					
Prep Date:		Analysis Date:	8/4/2015	SeqNo:	840982	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1000		1000		101	75.4	113			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507D92

10-Aug-15

Client: Yates Petroleum Corporation
Project: Livingston Ridge SWD Water Line (Wolf)

Sample ID	MB-20550		SampType:	MBLK		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	PBS		Batch ID:	20550		RunNo:	27919			
Prep Date:	7/31/2015		Analysis Date:	8/3/2015		SeqNo:	839800		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.99		1.000		99.1	80	120			

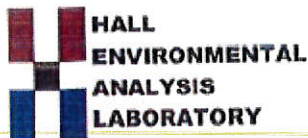
Sample ID	LCS-20550		SampType:	LCS		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	LCSS		Batch ID:	20550		RunNo:	27919			
Prep Date:	7/31/2015		Analysis Date:	8/3/2015		SeqNo:	839801		Units: mg/Kg	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	103	76.6	128			
Toluene	1.0	0.050	1.000	0	104	75	124			
Ethylbenzene	1.1	0.050	1.000	0	105	79.5	126			
Xylenes, Total	3.4	0.10	3.000	0	113	78.8	124			
Surr: 4-Bromofluorobenzene	1.1		1.000		108	80	120			

Sample ID	5ML RB		SampType:	MBLK		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	PBS		Batch ID:	R27950		RunNo:	27950			
Prep Date:			Analysis Date:	8/4/2015		SeqNo:	841022		Units: %REC	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		99.5	80	120			

Sample ID	100NG BTEX LCS		SampType:	LCS		TestCode:	EPA Method 8021B: Volatiles			
Client ID:	LCSS		Batch ID:	R27950		RunNo:	27950			
Prep Date:			Analysis Date:	8/4/2015		SeqNo:	841023		Units: %REC	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		1.000		108	80	120			

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 Corpora

Work Order Number: 1507D92

RcptNo: 1

Received by/date:

JA

07/31/15

Logged By: Lindsay Mangin

7/31/2015 8:00:00 AM

Completed By: Lindsay Mangin

7/31/2015 9:03:57 AM

Reviewed By:

CS

07/31/15

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°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 ☒

of preserved
bottles checked
for pH

(<2 or >12 unless noted)

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 ☐

Adjusted? _____

14. Is it clear what analyses were requested?

Yes ☒

No ☐

15. Were all holding times able to be met?

Yes ☒

No ☐

Checked by: _____

(If no, notify customer for authorization.)

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	4.9	Good	Not Present			

**HALL ENVIRONMENTAL
ANALYSIS LABORATORY**

4901 Hawkins NE - Albuquerque, NM 87109

Tel 505-345-3975 Fax 505-345-4107

Analysis Request

Chain-of-Custody Record						Turn-Around Time:
Client:	Yates Petroleum Corporation					<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Rush
Mailing Address:						Project Name:
05 South 4th Street Artesia, NM 88210						Livingston Ridge SWD Water Line (Wolf)
Phone #:	575-513-8799 or 575-748-4111					Project #:
Email or Fax#:	acannon@yatespetroleum.com					2RP-3074
A/QC Package:						Project Manager:
<input type="checkbox"/> Standard	<input type="checkbox"/> Level 4 (Full Validation)					Amber Griffin
Credentiation:						PO # 205-2020
<input type="checkbox"/> NELAP	<input type="checkbox"/> Other _____					Sampler:
EDD (Type) _____						On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
						Sample Temperature: <u>49</u>
Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.
7/28/2015	7:56	Soil	Wolf - 1"	1 - 4oz.	Ice	-001 1507092
7/28/2015	7:58	Soil	Wolf - 2"	1 - 4oz.	Ice	-002
7/28/2015	8:00	Soil	Wolf - 3"	1 - 4oz.	Ice	-003
Date: 7/15	Time:	Relinquished by: Amber Griffin	Received by: J.E. Acosta		Date	Time
Date:	Time:	Relinquished by:	Received by:		Date	Time

If necessary samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



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

August 07, 2015

Amber Cannon
Yates Petroleum Corporation
105 South Fourth Street
Artesia, NM 88210
TEL: (575) 748-4217
FAX

RE: Livingston Ridge SWD Water Line (Wolf)

OrderNo.: 1507D92

Dear Amber Cannon:

Hall Environmental Analysis Laboratory received 3 sample(s) on 7/31/2015 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 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 ReportLab Order **1507D92**Date Reported: **8/7/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Yates Petroleum Corporation**Client Sample ID:** Wolf-1'**Project:** Livingston Ridge SWD Water Line (Wol**Collection Date:** 7/28/2015 7:56:00 AM**Lab ID:** 1507D92-001**Matrix:** SOIL**Received Date:** 7/31/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	2500	150		mg/Kg	100	8/5/2015 2:27:02 PM	20587

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

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		

Analytical Report

Lab Order 1507D92

Date Reported: 8/7/2015

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Yates Petroleum Corporation**Client Sample ID:** Wolf-2'**Project:** Livingston Ridge SWD Water Line (Wol**Collection Date:** 7/28/2015 7:58:00 AM**Lab ID:** 1507D92-002**Matrix:** SOIL**Received Date:** 7/31/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	4300	150		mg/Kg	100	8/5/2015 3:04:15 PM	20587

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 2 of 4
	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			

Analytical Report

Lab Order 1507D92

Date Reported: 8/7/2015

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Yates Petroleum Corporation**Client Sample ID:** Wolf-3'**Project:** Livingston Ridge SWD Water Line (Wol**Collection Date:** 7/28/2015 8:00:00 AM**Lab ID:** 1507D92-003**Matrix:** SOIL**Received Date:** 7/31/2015 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	5600	300		mg/Kg	200	8/5/2015 3:16:40 PM	20587

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 3 of 4
	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#: 1507D92

10-Aug-15

Client: Yates Petroleum Corporation
Project: Livingston Ridge SWD Water Line (Wolf)

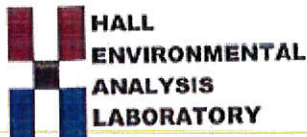
Sample ID	MB-20587	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	20587	RunNo:	27959					
Prep Date:	8/4/2015	Analysis Date:	8/4/2015	SeqNo:	841176	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-20587	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	20587	RunNo:	27959					
Prep Date:	8/4/2015	Analysis Date:	8/4/2015	SeqNo:	841177	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	90.5	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit



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 Corpora

Work Order Number: 1507D92

RcptNo: 1

Received by/date:

JA

07/31/15

Logged By: Lindsay Mangin

7/31/2015 8:00:00 AM

Completed By: Lindsay Mangin

7/31/2015 9:03:57 AM

Reviewed By:

CS

07/31/15

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°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 ☒

of preserved
bottles checked
for pH

(<2 or >12 unless noted)

Adjusted? _____

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.)

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 °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.9	Good	Not Present			



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August 07, 2015

Amber Cannon

Yates Petroleum Corporation

105 South Fourth Street

Artesia, NM 88210

TEL: (575) 748-4217

FAX

RE: Livingston Ridge SWD Water Line (Wolf)

OrderNo.: 1507D93

Dear Amber Cannon:

Hall Environmental Analysis Laboratory received 10 sample(s) on 7/31/2015 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 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: 1507D93

Date Reported: 8/7/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Yates Petroleum Corporation
Project: Livingston Ridge SWD Water Line (Wolf)

Lab Order: 1507D93

Lab ID: 1507D93-001 **Collection Date:** 7/28/2015 8:06:00 AM
Client Sample ID: Wolf-4' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS Analyst: LGT							
Chloride	5500	300		mg/Kg	200	8/5/2015 3:29:05 PM	20587

Lab ID: 1507D93-002 **Collection Date:** 7/28/2015 8:11:00 AM
Client Sample ID: Wolf-5' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS Analyst: LGT							
Chloride	5200	300		mg/Kg	200	8/5/2015 3:41:30 PM	20587

Lab ID: 1507D93-003 **Collection Date:** 7/28/2015 8:16:00 AM
Client Sample ID: Wolf-6' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS Analyst: LGT							
Chloride	5100	300		mg/Kg	200	8/5/2015 3:53:54 PM	20587

Lab ID: 1507D93-004 **Collection Date:** 7/28/2015 8:28:00 AM
Client Sample ID: Wolf-7' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS Analyst: LGT							
Chloride	2400	75		mg/Kg	50	8/5/2015 4:06:19 PM	20587

Lab ID: 1507D93-005 **Collection Date:** 7/28/2015 8:40:00 AM
Client Sample ID: Wolf-8' **Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS Analyst: LGT							
Chloride	8000	300		mg/Kg	200	8/5/2015 4:18:43 PM	20587

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

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	Page 1 of 3
	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		

Analytical Report

Lab Order: 1507D93

Date Reported: 8/7/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Yates Petroleum Corporation
Project: Livingston Ridge SWD Water Line (Wolf)

Lab Order: 1507D93**Lab ID:** 1507D93-006**Collection Date:** 7/28/2015 8:57:00 AM**Client Sample ID:** Wolf-9'**Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	5500	300		mg/Kg	200	8/5/2015 4:31:07 PM	20603

Lab ID: 1507D93-007**Collection Date:** 7/28/2015 9:00:00 AM**Client Sample ID:** Wolf-10'**Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	6100	300		mg/Kg	200	8/5/2015 4:43:32 PM	20603

Lab ID: 1507D93-008**Collection Date:** 7/28/2015 9:03:00 AM**Client Sample ID:** Wolf-11'**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	8/5/2015 4:55:57 PM	20603

Lab ID: 1507D93-009**Collection Date:** 7/28/2015 9:08:00 AM**Client Sample ID:** Wolf-12'**Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	12000	750		mg/Kg	500	8/5/2015 5:33:11 PM	20603

Lab ID: 1507D93-010**Collection Date:** 7/28/2015 9:17:00 AM**Client Sample ID:** Wolf-13'**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	8/5/2015 5:45:35 PM	20603

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

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		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1507D93

07-Aug-15

Client: Yates Petroleum Corporation

Project: Livingston Ridge SWD Water Line (Wolf)

Sample ID	MB-20587	SampType	MBLK	TestCode	EPA Method 300.0: Anions					
Client ID	PBS	Batch ID	20587	RunNo	27959					
Prep Date	8/4/2015	Analysis Date	8/4/2015	SeqNo	841176	Units	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-20587	SampType	LCS	TestCode	EPA Method 300.0: Anions					
Client ID	LCSS	Batch ID	20587	RunNo	27959					
Prep Date	8/4/2015	Analysis Date	8/4/2015	SeqNo	841177	Units	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	90.5	90	110			

Sample ID	MB-20603	SampType	MBLK	TestCode	EPA Method 300.0: Anions					
Client ID	PBS	Batch ID	20603	RunNo	27959					
Prep Date	8/4/2015	Analysis Date	8/4/2015	SeqNo	841213	Units	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-20603	SampType	LCS	TestCode	EPA Method 300.0: Anions					
Client ID	LCSS	Batch ID	20603	RunNo	27959					
Prep Date	8/4/2015	Analysis Date	8/4/2015	SeqNo	841214	Units	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	96.4	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 Corpora

Work Order Number: 1507D93

RcptNo: 1

Received by/date:

DA 07/31/15

Logged By: Lindsay Mangin

7/31/2015 8:00:00 AM

Lindsay Mangin

Completed By: Lindsay Mangin

7/31/2015 9:09:09 AM

Lindsay Mangin

Reviewed By:

OS 07/31/15

Chain of Custody

1. Custody seals intact on sample bottles?
2. Is Chain of Custody complete?
3. How was the sample delivered?

Yes ☐

No ☐

Not Present ☒

Yes ☒

No ☐

Not Present ☐

Courier

Log In

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

Yes ☒

No ☐

NA ☐

Yes ☒

No ☒

NA ☐

APPROVED BY CLIENT: *[Signature]* 07/31/15

Yes ☒

No ☐

Yes ☒

No ☐

Yes ☒

No ☐

Yes ☐

No ☒

NA ☐

Yes ☐

No ☐

No VOA Vials ☒

Yes ☐

No ☒

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Yes ☒

No ☐

Adjusted? ☐

Yes ☒

No ☐

Yes ☒

No ☐

Yes ☒

No ☐

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	-4.9	Good	No: Present			

