

JOHN A. YATES SR. CHAIRMAN EMERITUS JOHN A. YATES JR. CHAIRMAN OF THE BOARD DOUGLAS E. BROOKS PREDIDENT / CED

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

October 11, 2016

Ms. Kristen Lynch NMOCD District I 1625 N. French Dr. Hobbs, NM 88240

RE: Willie BNW State #3 30-025-36684 Section 6, T12S-R35E Lea County, New Mexico **APPROVED** NMOCD WorkPlan By Kristen Lynch at 9:54 am, Nov 14, 2016

Ms. Lynch,

Yates Petroleum Corporation (Yates) would like to submit the attached plan of work to you regarding the release that occurred at the above mentioned facility on July 3, 2016 (1RP-4342).

With NMOCD and NMSLO 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.

Thank You,

ber Griffin

Environmental Representative Yates Petroleum Corporation

Yates Petroleum Corporation

Willie BNW State Com #3 Work Plan

Section 6, T12S-R35E

Lea County, New Mexico

October 11, 2016

I. Location

The well is located approximately 8.6 miles west of Tatum, NM and approximately 1.5 miles north of Highway 380.

II. Background

On July 3, 2016, Yates had a release of 15 barrels produced water and 30 barrels of crude oil, with 5 barrels produced water and 15 barrels of crude oil recovered. The area affected from this release was within the bermed area of the battery, and there was slight overspray to the west of the tanks outside the bermed area, but all contamination remained on the production pad. Vegetation and grasses that were affected by overspray from the release were treated with a Micro-Blaze/Water mixture. The area within the berm area was scraped to remove all visible contamination.

An initial Form C-141 was submitted, via e-mail, to the NMOCD District I office on July 8, 2016 for this release.

On July 13, 2016 personnel returned to the release area and collected soil samples from the release area. The release area was split into two sections: Pooling and Overspray. The pooling area was the area affected inside the bermed battery. The overspray area was the area affected to the west of the tanks, outside the bermed battery. The pooling area was sampled at the surface and at depths of 1', 2', 3' and 4' below the surface area with a backhoe, because of hard rock that was encountered the backhoe could not successfully grab samples at deeper depths. The overspray area was sampled at the surface. The soil samples were sent to an approved NMOCD laboratory and tested for BTEX 8021B, TPH 8015M, and Chlorides 300.0. Yates received the analytical results on July 25, 2016 (Report 1607710 attached to this work plan). The analytical results showed the following:

- Chlorides were at or near acceptable levels for all samples that were collected in both the pooling and overspray areas.
- The overspray area sample showed that both TPH and BTEX were at levels below NMOCD RRALs.
- The pooling area showed elevated BTEX levels, which delineated to levels below NMOCD RRALs.
- The pooling area also showed elevated TPH levels, which did not delineate to levels below NMOCD RRALs.

On August 23, 2016 personnel returned to the release area and collected further soil samples from the pooling area at depths of 5', 6' and 7'below the surface level with a trackhoe. An impenetrable rock layer was encountered and the trackhoe, after many attempts, was unable to break through the naturally occurring barrier. The soil samples were sent to an approved NMOCD laboratory and tested for TPH 8015M. Yates received the analytical results on September 1, 2016 (Report 1608F06 attached to this work plan). The analytical results showed that TPH levels were still at levels above NMOCD RRALs.

III. Surface and Ground Water

Area surface geology is Cenozoic. The ChevronTexaco depth to ground water map shows the depth to groundwater to be less than 50 feet, making the site ranking for this site a twenty (20). Watercourses in the area are dry except for infrequent flows in response to major precipitation events.

The ranking for this site is twenty (20) based on the following:

Depth to ground water <50' Wellhead Protection Area >1000' Distance to surface water body >1000'

IV. Soils

The area consists of soils that are caliche and other hard rock.

V. Scope of Work

Based on the enclosed analytical reports and an impermeable, impenetrable rock layer that was encountered, Yates proposes the following excavation work:

- Pooling area Excavate 4' of soils. Lay a 20 mil liner in the bottom of the excavation. The liner will be cushioned on both the top and bottom with sand. Finish the backfill of the excavation with caliche.
- Contaminated soils that are excavated will be hauled to a NMOCD approved disposal facility.

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



Willie BNW State #3

	Sample Area	Sample Date	Sample Date Analytical Report	Sample Type	Depth	BTEX	GRO	DRO	BTEX GRO DRO TOTAL	Chlorides
Pooling Surface	Release Area	7/13/2016	1607710	Grab/Backhoe	Surface	21	730	5800	6530	530
Pooling 1'	Release Area	7/13/2016	1607710	Grab/Backhoe		390	4100	2600	6700	160
Pooling 2'	Release Area	7/13/2016	1607710	Grab/Backhoe	2'	247	2900 3200	3200	6100	1,400
Pooling 3'	Release Area	7/13/2016	1607710	Grab/Backhoe	ä	54.2	690	700	1390	380
Pooling 4'	Release Area	7/13/2016	1607710	Grab/Backhoe	4'	28.1	740	94	834	180
Pooling 5'	Release Area	8/23/2016	1608F06	Grab/Trackhoe	5	•	350	1500	1850	
Pooling 6'	Release Area	8/23/2016	1608F06	Grab/Trackhoe	6'	i	380	1400	1780	
Pooling 7'	Release Area	8/23/2016	1608F06	Grab/Trackhoe	7.	•	130	590	720	1
Overspray Surface	Release Area	7/13/2016	1607710	Grab/Backhoe	Surface	QN	QN	97	97	97

Site Ranking is Twenty (20). Depth to Ground Water <50' (per ChevronTexaco Trend Map).

All results are ppm.

Released: 30 B/O, 15 B/PW; Recovered: 15 B/O, 5 B/PW. Release Date: 7/3/2016. 1RP-4342



July 25, 2016

Amber Griffin Yates Petroleum Corporation 105 South Fourth Street Artesia, NM 88210 TEL: (575) 748-4195 FAX

RE: Willie BNW State #3

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

OrderNo.: 1607710

Dear Amber Griffin:

Hall Environmental Analysis Laboratory received 6 sample(s) on 7/15/2016 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 <u>www.hallenvironmental.com</u> 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 qualifers 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

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Analytical Report

Lab Order: 1607710

Date Reported: 7/25/2016

	ates Petroleum Corporat Villie BNW State #3	ion			Lab Order:	1607710	
Lab ID:	1607710-001			Collection D	ate: 7/13/2016 8:	24:00 AM	
Client Sample ID:	Pooling Surface			Ma	trix: SOIL		
Analyses		Result	PQL Qual	Units	DF Date Ana	alyzed B	Batch ID
EPA METHOD 300	.0: ANIONS					Analys	t: LGT
Chloride		530	30	mg/Kg	20 7/20/2016	6 2:45:06 AM	26483
Lab ID:	1607710-002		Anna an Anna a	Collection I	ate: 7/13/2016 8:	26:00 AM	
Client Sample ID:	Pooling 1'			Ma	trix: SOIL		
Analyses		Result	PQL Qual	Units	DF Date Ana	alyzed P	Batch ID
EPA METHOD 300	.0: ANIONS					Analys	st: LGT
Chloride		160	30	mg/Kg	20 7/20/2016	6 3:22:19 AM	26483
Lab ID:	1607710-003			Collection I	Date: 7/13/2016 8:	29:00 AM	
Client Sample ID:	Pooling 2'			Ma	trix: SOIL		
Analyses		Result	PQL Qual	Units	DF Date Ana	alyzed F	Batch ID
EPA METHOD 300	0.0: ANIONS					Analys	st: MRA
Chloride		1400	75	mg/Kg	50 7/20/2016	6:40:08 PM	26483
Lab ID:	1607710-004			Collection I	Date: 7/13/2016 8:	37:00 AM	
Client Sample ID:	Pooling 3'			Ma	trix: SOIL		
Analyses		Result	PQL Qua	l Units	DF Date Ana	alyzed F	Batch ID
EPA METHOD 300	0.0: ANIONS					Analys	st: LGT
Chloride		380	30	mg/Kg	20 7/20/2016	6 3:47:07 AM	26483
Lab ID:	1607710-005			Collection I	Date: 7/13/2016 9:	00:00 AM	
Client Sample ID:	Pooling 4'			Ma	trix: SOIL		
Analyses		Result	PQL Qua	l Units	DF Date An	alyzed I	Batch ID
EPA METHOD 300 Chloride	0.0: ANIONS	180	30	mg/Kg	20 7/20/2010	Analys 6 3:59:32 AM	st: LGT 26483

Hall Environmental Analysis Laboratory, Inc.

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

- Qualifiers: *
 - D Sample Diluted Due to Matrix
 - H Holding times for preparation or analysis exceeded

Value exceeds Maximum Contaminant Level.

- 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 Page 1 of 3
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Hall Envi	ronmental Analysis	Laborat	ory, Inc.		Date Reported	d: 7/25/2016
CLIENT: Project:	Yates Petroleum Corpor Willie BNW State #3	ation			Lab Order:	1607710
Lab ID: Client Sample	1607710-006 e ID: Overspray Surface	Ne altre a succession and a succession of the			Date: 7/13/2016 9:0 trix: SOIL	4:00 AM
Analyses		Result	PQL Qua	l Units	DF Date Anal	lyzed Batch ID
EPA METHO Chloride	D 300.0: ANIONS	85	30	mg/Kg	20 7/20/2016	Analyst: LGT 4:36:46 AM 26483

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

Qualifiers:

*

- Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix
- Н 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
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits Page 2 of 3
- Р Sample pH Not In Range
- RL **Reporting Detection Limit**
- W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory Inc

Analytical Report

Lab Order: 1607710

WO#: 1607710 25-Jul-16

Client: Project:		es Petroleum Co ie BNW State #	1	on							
Sample ID	MB-26483	SampT	ype: ME	BLK	Tes	tCode: EF	PA Method	300.0: Anion	s		
Client ID:	PBS	Batch	ID: 264	483	F	RunNo: 3	5825				
Prep Date:	7/19/2016	Analysis D	ate: 7/	19/2016	5	SeqNo: 1	108921	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		ND	1.5								
Sample ID	LCS-26483	SampT	ype: LC	S	Tes	tCode: EF	PA Method	300.0: Anion	s	and a second second second	
Client ID:	LCSS	Batch	ID: 26	483	F	RunNo: 3	5825				
Prep Date:	7/19/2016	Analysis D	ate: 7/	19/2016	5	SeqNo: 1	108922	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		14	1.5	15.00	0	93.7	90	110	9997-009119-00411000-044000		

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
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- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified
- Page 3 of 3



Hall Environmental Analysis Laboratory 1901 Hawkins NE Albiquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website www.hallenvironmental.com

Sample Log-In Check List

			na na serie de la companya de la companya de la companya de la fondada de la companya de la companya de la comp	A CONTRACTOR OF A CONTRACT OF
Client Name: Yates Petroleum Corpora Work	Order Number: 1607710		RoptNo: 1	
Received by/date:	istic			
Logged By. Lindsay Mangin 7/15/201	6 9:30:00 AM	Strudy Mago		
Completed By Lindsay Mangin 7/15/201	6 10:33:19 AM	Juning Margar		
Reviewed By	5/110	1/ 5 0		
Chain of Custody	Shirt			
1. Custody seals intact on sample bottles?	Yas 🗸	No	Not Present	
2. Is Chain of Custody complete?	Yes 🗸	No L.	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° C	to 6.0°C Yes 🔽	No 🗌	NA	
6. Sample(s) in proper container(s)?	Yes 🗸	No 🗋		
7. Sufficient sample volume for indicated lest(s)?	Yes 🔽	No 🗌		
8. Are samples (except VOA and ONG) properly preserve	/ed? 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	
	(Proved)		bottles checked	
 Does paperwork match bottle labels? (Note discrepancies on chain of custody) 	Yes 🗸	No	for pH: (<2 or :	12 unless noted
13. Are matrices correctly identified on Chain of Custody	Yes 🗸	No 🗔	Adjustec?	
14, is it clear what analyses were requested?	Yes 🖌	No 🗍		
 Were all holding times able to be met? (If no, notify customer for authorization.) 	Yes 🗸	No	Checked by	
Special Handling (if applicable)				
16. Was client notified of all discrepancies with this order	? Yes	No	NA 🗹	
Person Notified.	Date	ne cast o utilistan matthers in consistentia de tractar orbanilisti.		
By Whem:	Via: EMail	Phone Fax	In Person	
Regarding	*******	na a tanàna mandritra dia 1999. Amin'ny fanisa dia kaominina dia mampika dia mampika dia kaominina dia mampika	an a	
Client Instructions:				
17. Additional remarks:				
18. Cooler Information Cooler No Temp °C Condition Seal Infact	Cost No. Cost Date	Cineral Dec		
1 2.8 Good Yes	Seal No Seal Date	Signed By		

AL	ORY		Section 1. In the sec	Same I and			(N -	10 /	() si	Air Bubble				-				v BTEX ut	TING AY,
	ANALYSIS LABORATORY	4801 Hawkins NE - Albuquerque, NW 07103	Tel. 505-345-3975 Fax 505-345-4107	Analysis Request	-		1'²O (r.4 (H/ N.6 (8 (00 81 70 81 70 90 90	bor leta 1,10 1,10 1,10 1,10 1,10 1,10 1,10 1,1	TPH (Meth BDB (Meth 8310 (PNA Anions (F, 8081 Pest 8260B (VC 8260B (VC	×	×	×	×	×	×		0 0	Date Time cniorides on a separate report. Results needed by Friday. July 22, 2016. Thank you. This serves as notice of this possibility. Any sub-contracted data will be clearly inclated on the analytica. report.
		 er cost	Tel. 505	174			99)	98	108	3 ba	BTEX + Meth	×	×	×	×	×	×		Remarks: TPH: 8 results as mg/kg.	22, 2016
		-			-						BIEX + M	×	×	×	×	×	×			July 2 his possib
	X Standard Need by Enday 7/22/2016 Project Name:	/ State #3		1342		Griffin	5-2020	Amber Griffin Ao	°N D	20	V HEAL NO.	100-	-002	B	-024	-005	-020-		71/ S1/6 09 30	
d lime:	I Need by Fr e:	 Willie BNW State #3		1RP-4342	sger:	Amber Griffin	PO#205-2020		函 Yes	perature: Z	Preservativ e Type	lae	lce	lce	lce	lce	lce		alt 0	raccredited (sboratories.
l um-Around	X Standard I Project Name:		Project #:		Project Manager:			Sampler:	On Ice:	Sample Temperature:	Container Type and #	1 - 4oz.	1 - 4oz.	1 - 4oz.	1 - 402.	1 - 4oz.	1 - 4oz.		Received by:	Received by:
Chain-of-Custody Record	Yates Petroleum Corporation		a, NM 88210	575-513-8799 or 575-748-4111	agriffin@yatespetroleum.com		Level 4 (Full Validation)				Sample Request ID	Pooling Surface	Pooling 1'	Pooling 2'	Pooling 3'	Pooling 4'	Overspray Surface		abr 2. Erikin	Time: Relinquished by: CC Received by.
f-Cus	etroleum		et Artesia, NM	575-513-	agriffin@						Matrix	8:24 Soil	8:26 Soil	8:29 Soil	8:37 Soil	9:00 Soil	9:04 Soil		Relinquished by	Relinquished by
ain-o	Yates F	ess.	th Stre		#	ige:		2		(ə)	Time	8:24	8:26	8:29	8:37	00:6	9:04		1ime: 2:00	Time:
	lient:	alling Address.	05 South 4th Street	hone ∉:	mail or Fax#.	A/O/C Fackage:	I Standard	ccreditation:	I NELAP	1 EDD (Type)	Date	7/13/2016	7/13/2016	7/13/2016	7/13/2016	7/13/2016	7/13/2016		ate: 7/1-4/1/6	ate:

HALL ENVIRONMENTAL ANALYSIS LABORATORY

July 25, 2016

Amber Griffin Yates Petroleum Corporation 105 South Fourth Street Artesia, NM 88210 TEL: (575) 748-4195 FAX

RE: Willie BNW State #3

OrderNo.: 1607710

Hall Environmental Analysis Laboratory

TEL: 505-345-3975 FAX: 505-345-4107 Website: <u>www.hallenvironmental.com</u>

4901 Hawkins NE

Albuquerque, NM 87109

Dear Amber Griffin:

Hall Environmental Analysis Laboratory received 6 sample(s) on 7/15/2016 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 <u>www.hallenvironmental.com</u> 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 qualifers 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

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

Analytical Report Lab Order 1607710

Date Reported: 7/25/2016

Hall Environmental Analysis Laboratory, Inc.

 CLIENT: Yates Petroleum Corporation
 Client Sample ID: Pooling Surface

 Project: Willie BNW State #3
 Collection Date: 7/13/2016 8:24:00 AM

 Lab ID: 1607710-001
 Matrix: SOIL
 Received Date: 7/15/2016 9:30:00 AM

 Analyses
 Result
 POL
 Oual
 Units
 DF
 Date Analyzed

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	E ORGANICS					Analyst	: ТОМ
Diesel Range Organics (DRO)	5800	93		mg/Kg	10	7/20/2016 12:28:27 PM	26444
Surr: DNOP	0	70-130	S	%Rec	10	7/20/2016 12:28:27 PM	26444
EPA METHOD 8015D: GASOLINE RANG	GE					Analyst	: NSB
Gasoline Range Organics (GRO)	730	49		mg/Kg	10	7/18/2016 12:17:24 PM	26415
Surr: BFB	418	80-120	S	%Rec	10	7/18/2016 12:17:24 PM	26415
EPA METHOD 8021B: VOLATILES						Analyst	: NSB
Benzene	ND	0.24		mg/Kg	10	7/18/2016 12:17:24 PM	1 26415
Toluene	1.1	0.49		mg/Kg	10	7/18/2016 12:17:24 PM	1 26415
Ethylbenzene	1.9	0.49		mg/Kg	10	7/18/2016 12:17:24 PM	1 26415
Xylenes, Total	18	0.98		mg/Kg	10	7/18/2016 12:17:24 PM	1 26415
Surr: 4-Bromofluorobenzene	108	80-120		%Rec	10	7/18/2016 12:17:24 PM	1 26415
	01						

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

- * 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 Page 1 of 9
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Analytical Report	
Lab Order 1607710	

Date Reported: 7/25/2016

Hall Environmental Analysis Laboratory, Inc.

 CLIENT: Yates Petroleum Corporation
 Client Sample ID: Pooling 1'

 Project: Willie BNW State #3
 Collection Date: 7/13/2016 8:26:00 AM

 Lab ID: 1607710-002
 Matrix: SOIL
 Received Date: 7/15/2016 9:30:00 AM

 Analyses
 Result
 POL
 Qual
 Units
 DF
 Date Analyzed

Analyses	Result	PQL (Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS					Analyst	том
Diesel Range Organics (DRO)	2600	950		mg/Kg	100	7/20/2016 12:56:26 PM	26444
Surr: DNOP	0	70-130	S	%Rec	100	7/20/2016 12:56:26 PM	26444
EPA METHOD 8015D: GASOLINE RAM	IGE					Analyst	NSB
Gasoline Range Organics (GRO)	4100	240		mg/Kg	50	7/18/2016 12:41:45 PM	26415
Surr: BFB	279	80-120	S	%Rec	50	7/18/2016 12:41:45 PM	26415
EPA METHOD 8021B: VOLATILES						Analyst	NSB
Benzene	ND	1.2		mg/Kg	50	7/18/2016 12:41:45 PM	26415
Toluene	49	2.4		mg/Kg	50	7/18/2016 12:41:45 PM	26415
Ethylbenzene	31	2.4		mg/Kg	50	7/18/2016 12:41:45 PM	26415
Xylenes, Total	310	4.9		mg/Kg	50	7/18/2016 12:41:45 PM	26415
Surr: 4-Bromofluorobenzene	121	80-120	S	%Rec	50	7/18/2016 12:41:45 PM	26415
	000						

390

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 2 of 9
	ND	Not Detected at the Reporting Limit	Р	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	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order 1607710
Date Reported: 7/25/2016

Hall Environmental Analysis Laboratory, Inc.

 CLIENT: Yates Petroleum Corporation
 Client Sample ID: Pooling 2'

 Project: Willie BNW State #3
 Collection Date: 7/13/2016 8:29:00 AM

 Lab ID: 1607710-003
 Matrix: SOIL
 Received Date: 7/15/2016 9:30:00 AM

 Analyses
 Result
 PQL Qual Units
 DF Date Analyzed
 Batch

	0-0.000		C		()))	j	
EPA METHOD 8015M/D: DIESEL RA	NGE ORGANICS			יאַר דע הענעים די דע איז		Analy	st: TOM
Diesel Range Organics (DRO)	3200	920		mg/Kg	100	7/20/2016 1:24:31 PM	1 26444
Surr: DNOP	0	70-130	S	%Rec	100	7/20/2016 1:24:31 PM	1 26444
EPA METHOD 8015D: GASOLINE R	ANGE					Analy	st: NSB
Gasoline Range Organics (GRO)	2900	500		mg/Kg	100	7/18/2016 1:06:08 PM	A 26415
Surr: BFB	159	80-120	S	%Rec	100	7/18/2016 1:06:08 PM	A 26415
EPA METHOD 8021B: VOLATILES						Analy	st: NSB
Benzene	ND	2.5		mg/Kg	100	7/18/2016 1:06:08 PM	A 26415
Toluene	44	5.0		mg/Kg	100	7/18/2016 1:06:08 PM	A 26415
Ethylbenzene	23	5.0		mg/Kg	100	7/18/2016 1:06:08 PM	A 26415
Xylenes, Total	180	9.9		mg/Kg	100	7/18/2016 1:06:08 PM	A 26415
Surr: 4-Bromofluorobenzene	104	80-120		%Rec	100	7/18/2016 1:06:08 PM	A 26415
	0.17						

241

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 3 of 9
	ND	Not Detected at the Reporting Limit	Р	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	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1607710

Date Reported: 7/25/2016

Hall Environmental Analysis Laboratory, Inc.

 CLIENT: Yates Petroleum Corporation
 Client Sample ID: Pooling 3'

 Project: Willie BNW State #3
 Collection Date: 7/13/2016 8:37:00 AM

 Lab ID: 1607710-004
 Matrix: SOIL
 Received Date: 7/15/2016 9:30:00 AM

 Analyses
 Result
 POL
 Qual
 Units
 DF
 Date Analyzed

Analyses	Result	PQL 0	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	E ORGANICS					Analyst	: том
Diesel Range Organics (DRO)	700	95		mg/Kg	10	7/20/2016 1:52:31 PM	26444
Surr: DNOP	0	70-130	S	%Rec	10	7/20/2016 1:52:31 PM	26444
EPA METHOD 8015D: GASOLINE RANG	GE					Analyst	: NSB
Gasoline Range Organics (GRO)	690	95		mg/Kg	20	7/18/2016 1:30:27 PM	26415
Surr: BFB	225	80-120	S	%Rec	20	7/18/2016 1:30:27 PM	26415
EPA METHOD 8021B: VOLATILES						Analyst	: NSB
Benzene	ND	0.47		mg/Kg	20	7/18/2016 1:30:27 PM	26415
Toluene	4.4	0.95		mg/Kg	20	7/18/2016 1:30:27 PM	26415
Ethylbenzene	4.8	0.95		mg/Kg	20	7/18/2016 1:30:27 PM	26415
Xylenes, Total	45	1.9		mg/Kg	20	7/18/2016 1:30:27 PM	26415
Surr: 4-Bromofluorobenzene	108	80-120		%Rec	20	7/18/2016 1:30:27 PM	26415
	54.2						

	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	Е	Value above quantitation range
Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 4 of 9
ND	Not Detected at the Reporting Limit	Р	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	W	Sample container temperature is out of limit as specified
_	2010	 Holding times for preparation or analysis exceeded Not Detected at the Reporting Limit RPD outside accepted recovery limits 	H Holding times for preparation or analysis exceeded J D Not Detected at the Reporting Limit P R RPD outside accepted recovery limits RL

Analytical Report Lab Order 1607710

Date Reported: 7/25/2016

Hall Environmental Analysis Laboratory, Inc.

EPA MET	THOD 8015M/D: DIESEL RANG	E ORGANIC	S			Analys	t: TOM
Analyses		Result	PQL	Qual	Units	DF Date Analyzed	Batch
Lab ID:	1607710-005	Matrix:	SOIL		Received	Date: 7/15/2016 9:30:00 AM	
Project:	Willie BNW State #3				Collection	Date: 7/13/2016 9:00:00 AM	
CLIENT:	Yates Petroleum Corporation			C	lient Samj	ole ID: Pooling 4'	

EDA METHOD MAANID DIEGEL DANOT						A	TON
EPA METHOD 8015M/D: DIESEL RANGE	- ORGANICS	8				Analyst	
Diesel Range Organics (DRO)	94	9.5		mg/Kg	1	7/20/2016 2:20:35 PM	26444
Surr: DNOP	0	70-130	S	%Rec	1	7/20/2016 2:20:35 PM	26444
EPA METHOD 8015D: GASOLINE RANG	Ε					Analyst	NSB
Gasoline Range Organics (GRO)	740	97		mg/Kg	20	7/18/2016 1:54:48 PM	26415
Surr: BFB	347	80-120	S	%Rec	20	7/18/2016 1:54:48 PM	26415
EPA METHOD 8021B: VOLATILES						Analyst	: NSB
EPA METHOD 8021B: VOLATILES Benzene	ND	0.49		mg/Kg	20	Analyst 7/18/2016 1:54:48 PM	: NSB 26415
	ND ND	0.49 0.97		mg/Kg mg/Kg	20 20		
Benzene					/ 100 /3100/11	7/18/2016 1:54:48 PM	26415
Benzene Toluene	ND	0.97		mg/Kg	20	7/18/2016 1:54:48 PM 7/18/2016 1:54:48 PM	26415 26415
Benzene Toluene Ethylbenzene	ND 3.1	0.97 0.97		mg/Kg mg/Kg	20 20	7/18/2016 1:54:48 PM 7/18/2016 1:54:48 PM 7/18/2016 1:54:48 PM	26415 26415 26415

28.1

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 5 of 9
	ND	Not Detected at the Reporting Limit	Р	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	W	Sample container temperature is out of limit as specified

Analytical Report Lab Order 1607710 Date Reported: 7/25/2016

Hall Environmental Analysis Laboratory, Inc.

 CLIENT: Yates Petroleum Corporation
 Client Sample ID: Overspray Surface

 Project: Willie BNW State #3
 Collection Date: 7/13/2016 9:04:00 AM

 Lab ID: 1607710-006
 Matrix: SOIL
 Received Date: 7/15/2016 9:30:00 AM

 Analyses
 Result
 POL Onal Units
 DF Date Analyzed

Result	PQL Qu	al Units	DF	Date Analyzed	Batch
E ORGANICS	;			Analys	t: TOM
97	9.9	mg/Kg	1	7/21/2016 8:31:48 PM	26444
110	70-130	%Rec	1	7/21/2016 8:31:48 PM	26444
θE				Analys	t: NSB
ND	4.8	mg/Kg	1	7/18/2016 2:19:22 PM	26415
94.7	80-120	%Rec	1	7/18/2016 2:19:22 PM	26415
				Analys	t: NSB
ND	0.024	mg/Kg	1	7/18/2016 2:19:22 PM	26415
ND	0.048	mg/Kg	1	7/18/2016 2:19:22 PM	26415
ND	0.048	mg/Kg	1	7/18/2016 2:19:22 PM	26415
ND	0.096	mg/Kg	1	7/18/2016 2:19:22 PM	26415
100	80-120	%Rec	1	7/18/2016 2:19:22 PM	26415
	E ORGANICS 97 110 SE ND 94.7 ND ND ND ND ND	E ORGANICS 97 9.9 110 70-130 SE ND 4.8 94.7 80-120 ND 0.024 ND 0.048 ND 0.048 ND 0.048 ND 0.048 ND 0.096	E ORGANICS 97 9.9 mg/Kg 110 70-130 %Rec SE ND 4.8 mg/Kg 94.7 80-120 %Rec ND 0.024 mg/Kg ND 0.048 mg/Kg ND 0.048 mg/Kg ND 0.048 mg/Kg	E ORGANICS 97 9.9 mg/Kg 1 110 70-130 %Rec 1 SE ND 4.8 mg/Kg 1 94.7 80-120 %Rec 1 ND 0.024 mg/Kg 1 ND 0.048 mg/Kg 1 ND 0.048 mg/Kg 1 ND 0.048 mg/Kg 1	E ORGANICS Analys 97 9.9 mg/Kg 1 7/21/2016 8:31:48 PM 110 70-130 %Rec 1 7/21/2016 8:31:48 PM 5E Analys ND 4.8 mg/Kg 1 7/18/2016 2:19:22 PM 94.7 80-120 %Rec 1 7/18/2016 2:19:22 PM Analys ND 0.024 mg/Kg 1 7/18/2016 2:19:22 PM ND 0.048 mg/Kg 1 7/18/2016 2:19:22 PM ND 0.048 mg/Kg 1 7/18/2016 2:19:22 PM ND 0.048 mg/Kg 1 7/18/2016 2:19:22 PM

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 6 of 9
	ND	Not Detected at the Reporting Limit	Р	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	W	Sample container temperature is out of limit as specified

WO#: 1607710

Page 7 of 9

25-Jul-16

Client: Project:		Petroleum Corporati BNW State #3	on							
Sample ID	LCS-26444	SampType: LC	s	Test	Code: EF	PA Method	8015M/D: Die	esel Range	e Organics	
Client ID:	LCSS	Batch ID: 26	444	R	RunNo: 35794					
Prep Date:	7/18/2016	Analysis Date: 7/	19/2016	S	eqNo: 1	108676	Units: mg/K	g		
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range (Organics (DRO)	48 10	50.00	0	96.9	62.6	124			
Surr: DNOP		5.1	5.000	ور الله معامل المراجع	102	70	130			
Sample ID	MB-26444	SampType: MI	BLK	Tes	tCode: El	PA Method	8015M/D: Die	esel Rang	e Organics	
Client ID:	PBS	Batch ID: 26	444	R	RunNo: 3	5794				
Prep Date:	7/18/2016	Analysis Date: 7	/19/2016	S	SeqNo: 1	108679	Units: mg/K	g		
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
	Organics (DRO)	ND 10								
Surr: DNOP		11	10.00		107	70	130			
Sample ID	MB-26465	SampType: M	BLK	Tes	tCode: El	PA Method	8015M/D: Die	esel Rang	e Organics	
Client ID:	PBS	Batch ID: 26	6465	F	RunNo: 3	5794				
Prep Date:	7/19/2016	Analysis Date: 7	/20/2016	5	SeqNo: 1	110143	Units: %Re	C		
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP		10	10.00		101	70	130			
Sample ID	LCS-26443	SampType: LO	cs	Tes	tCode: E	PA Method	8015M/D: Di	esel Rang	e Organics	
Client ID:	LCSS	Batch ID: 26	6443	F	RunNo: 3	5827				
Prep Date:	7/18/2016	Analysis Date: 7	/20/2016	5	SeqNo: 1	110532	Units: %Re	c		
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOF		4.5	5.000		89.6	70	130			
Sample ID	MB-26443	SampType: M	BLK	Tes	tCode: E	PA Method	8015M/D: Di	esel Rang	e Organics	
Client ID:	PBS	Batch ID: 20	6443	F	RunNo: 3	5827		-	~ 0755	
Prep Date:	7/18/2016	Analysis Date: 7	/20/2016	5	SeqNo: 1	110534	Units: %Re	с		
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOF)	8.8	10.00		87.5	70	130			

- * 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
- W Sample container temperature is out of limit as specified

WO#: 1607710 25-Jul-16

	etroleum Corporation NW State #3							
Sample ID MB-26415	SampType: MBLK	TestCode: EPA Method	TestCode: EPA Method 8015D: Gasoline Range					
Client ID: PBS	Batch ID: 26415	RunNo: 35780						
Prep Date: 7/15/2016	Analysis Date: 7/18/2016	SeqNo: 1107183	Units: mg/Kg					
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual				
Gasoline Range Organics (GRO) Surr: BFB	ND 5.0 890 1000	88.6 80	120					
Sample ID LCS-26415	SampType: LCS	TestCode: EPA Method	8015D: Gasoline Rang	e				
Client ID: LCSS	Batch ID: 26415	RunNo: 35780						
Prep Date: 7/15/2016	Analysis Date: 7/18/2016	SeqNo: 1107184	Units: mg/Kg					
Analyte	Result PQL SPK value	SPK Ref Val %REC LowLimit	HighLimit %RPD	RPDLimit Qual				
Gasoline Range Organics (GRO) Surr: BFB	29 5.0 25.00 870 1000		120 120					

- * 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
- W Sample container temperature is out of limit as specified
- Page 8 of 9
- rage o or

WO#: 1607710

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25-Jul-16

	troleum Co NW State ‡		on							
Sample ID MB-26415	SampT	ype: MB	BLK	Test	Code: El	PA Method	8021B: Volat	iles		
Client ID: PBS	Batch	n ID: 264	415	R	unNo: 3	5780				
Prep Date: 7/15/2016	Analysis D	ate: 7/	18/2016	S	eqNo: 1	107222	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		101	80	120			
Sample ID LCS-26415	SampT	ype: LC	S	Tes	TestCode: EPA Method 8021B: Volatiles					
Client ID: LCSS	Batch	n ID: 264	415	F	tunNo: 3	5780				
Prep Date: 7/15/2016	Analysis D	Date: 7/	18/2016	5	eqNo: 1	107223	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.99	0.025	1.000	0	98.8	75.3	123			
Toluene	0.85	0.050	1.000	0	85.3	80	124			
Ethylbenzene	0.85	0.050	1.000	0	84.5	82.8	121			
Xylenes, Total	2.6	0.10	3.000	0	86.0	83.9	122			
Surr: 4-Bromofluorobenzene	0.89		1.000		89.3	80	120			

- * 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
- W Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY	Hall Environmental A Albig TEL: 505-345-39754 Website www.hall	4901 Hawkins mergue, NM 87 AX: 505-345-4	NE 109 Samp 107	le Log-In Check List
Client Name: Yates Petroleum Corpora	Work Order Number:	1607710		RoptNo: 1
Received by/date:	3) Islu			
Logged By. Lindsay Mangin	7/15/2016 9:30:00 AM		Spruby Harger	
Completed By: Lindsay Mangin	7/15/2016 10:33:19 AM		July Mago	
Reviewed By	orlistica		D V	
Chain of Custody	11 31.4			
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		
t an la				
Log In				
Was an attempt made to cool the samples:	7	Yes 🖌	No	NA
5 Were all samples received at a temperature	a of ⇒0° 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 🛄	
Are samples (except VOA and ONG) prope	rly 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 brok	en?	Yes	No 🗹	
				# of preserved bottles checked
12. Does paperwork match bottle labels?		Yes 🗸	No	for pH:
(Note discrepancies on chain of custody) 13. Are matrices correctly identified on Chain o	(Cuetoda)	Yes V	No	(<2 or >12 unless noted) Adjusted?
14, is it clear what analyses were requested?	(Costody)	Yes V	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			

17. Additional remarks:

18. Cooler Information

 Ccoler No
 Temp °C
 Condition
 Seal Intact
 Seal No
 Seal Date
 Signed By

 1
 2.8
 Good
 Yes
 Yes
 Yes

	۲. ۲						3996-1410-1410-1410		(N -	10 /	() se	əlddu8 iiA							BTEX	day,	
HALL ENVIRONMENTAL	ANALYSIS LABORATORY	www.hallenvironmental.com	4601 Hawkins NE - Albuquerque, NM 87109	Tel. 505-345-3975 Fax 505-345-4107	Analysis Request			d'²C	(H) (H) (L)+	49 201 201 201 201 201 201 201 201 201 201	bor stef I,ID, icid icid	1000 (PM) 8310 (PM) 8 APDR 7001 (F, 98260B (VC) 9200 (Sen 700 (Sen	×	×	×	×	×	×	TPH: 8015B, BTEX: 8021B. Please show BTEX	results as mg/kg. Anions: Chloride Only. Please put chlorides on a separate report. <mark>Results needed by Friday. July 22, 2016. Thank you.</mark>	Any sub-contracted data will be clearly notated on the analytical report.
			01 Haw	el. 505-		950	Q/SI	Locian Correct		-		rpH Meth TPH Meth	×	×	×	×	×	×		as mg/kg. es on a sep 2016. Tha	
Ĩ			46	Ţ		-						81EX + W 81EX + W	×	×	×	×	×	×	Remarks:	results as mg/ chiorides on a July 22, 2016.	possibility
	rd Need by Friday 7/22/2016		/ State #3		1342		Griffin	5-2020	Amber Griffin 45	ON D	2ª	и НЕАL NO.	100-	-002	600	-024	-005	-020-		7/1 5/16 09 35 Date Time	ories. This serves as notice of this possibility.
d lime:	Need by Fr	ä	Willie BNW State #3		1RP-4342	:Jeger:	Amber Griffin	PO # 205-2020		Z Yes	perature: Z	Preservativ e Type	lce	Ice	lce	lce	lce	lce		alt 0	scoredited laborati
l um-Around	X Standard	Project Name:		Project #:		Project Manager	Carry 1 600-		Sampler:	On Ice:	Sample Temperature:	Container Type and #	1 - 4 oz.	1 - 4oz.	1 - 402.	1 - 402.	1 - 402.	1 - 402.	Received by:	Received by:	ontracted to other a
Chain-of-Custody Record	Yates Petroleum Corporation			05 South 4th Street Artesia, NM 88210	575-513-8799 or 575-748-4111	agriffin@yatespetroleum.com		Level 4 (Full Validation)				Sample Request ID	Pooling Surface	Pooling 1'	Pooling 2'	Pooling 3'	Pooling 4'	Overspray Surface	đby:	der Englin	if necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories.
f-Cus	etroleum			et Artesia	575-513-	aqriffin@				□ Other		Matrix	8:24 Soil	8:26 Soil	8:29 Soil	8:37 Soil	9:00 Soil	9:04 Soil	Relinquished by:	Q mber Relinquished by	semples subm
ain-o	Yates F		ress:	4th Stre		世	age:	, 	ç		pe)	Цше							Time:		necessary.
ć	lient		alling Address:	05 South	hone #:	mail or Fax#:	A/O/C Package:	I Standard	coreditation:	I NELAP	I EDD (Type)	Date	7/13/2016	7/13/2016	7/13/2016	7/13/2016	7/13/2016	7/13/2016	15 15 15	1/14/16 ate:	¥.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

September 01, 2016

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

RE: Willie BNW State 3

OrderNo.: 1608F06

Dear Amber Griffin:

Hall Environmental Analysis Laboratory received 3 sample(s) on 8/25/2016 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 <u>www.hallenvironmental.com</u> 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 qualifers 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

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

						Date Reported. 9/1/2010) Mahamatan da karanga ka		
CLIENT: Yates Petroleum Corporation			C	lient Sampl	e ID: Poo	oling 5'			
Project: Willie BNW State 3				Collection]	Date: 8/2	3/2016 8:54:00 AM			
Lab ID: 1608F06-001	Matrix:	SOIL		Date: 8/25/2016 9:20:00 AM					
Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch		
EPA METHOD 8015M/D: DIESEL RANG	E ORGANIC	S				Analyst	: том		
Diesel Range Organics (DRO)	1500	100		mg/Kg	10	8/30/2016 3:36:01 PM	27220		
Surr: DNOP	0	70-130	S	%Rec	10	8/30/2016 3:36:01 PM	27220		
EPA METHOD 8015D: GASOLINE RANG	ЭE					Analyst	: NSB		
Gasoline Range Organics (GRO)	350	98		mg/Kg	20	8/29/2016 6:35:38 PM	27186		
Surr: BFB	167	68.3-144	S	%Rec	20	8/29/2016 6:35:38 PM	27186		

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

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 Page 1 of 5
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report Lab Order 1608F06 Date Reported: 9/1/2016

Analytical Report	
Lab Order 1608F06	

Date Reported: 9/1/2016

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Yates Petroleum CorporationProject:Willie BNW State 3Lab ID:1608F06-002Matrix: SOIL

Client Sample ID: Pooling 6' Collection Date: 8/23/2016 9:03:00 AM Received Date: 8/25/2016 9:20:00 AM

Analyses	Result	PQL (Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RA	NGE ORGANIC	S				Analys	t: TOM
Diesel Range Organics (DRO) Surr: DNOP	1400 0	97 70-130	s	mg/Kg %Rec	10 10	8/31/2016 12:34:37 Pf 8/31/2016 12:34:37 Pf	
EPA METHOD 8015D: GASOLINE RA	ANGE					Analys	t: NSB
Gasoline Range Organics (GRO) Surr: BFB	380 216	94 68.3-144	S	mg/Kg %Rec	20 20	8/29/2016 6:58:59 PM 8/29/2016 6:58:59 PM	

transferrer and a local second s				
Qualifiers:	*	Value exceeds Maximum Contaminant Level.	в	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 2 of 5
	ND	Not Detected at the Reporting Limit	Р	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	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis	s Labora	tory, In	c.		Date Reported: 9/1/2016
CLIENT: Yates Petroleum Corporation			C	lient Samp	ble ID: Pooling 7'
Project: Willie BNW State 3				Collection	Date: 8/23/2016 9:14:00 AM
Lab ID: 1608F06-003	Matrix:	SOIL		Received	Date: 8/25/2016 9:20:00 AM
Analyses	Result	PQL	Qual	Units	DF Date Analyzed Batch
EPA METHOD 8015M/D: DIESEL RANG	E ORGANIC	S			Analyst: TOM
Diesel Range Organics (DRO)	590	100		mg/Kg	10 8/31/2016 12:56:06 PM 27220
Surr: DNOP	0	70-130	S	%Rec	10 8/31/2016 12:56:06 PM 27220
EPA METHOD 8015D: GASOLINE RANG	θE				Analyst: NSB
Gasoline Range Organics (GRO)	130	25		mg/Kg	5 8/29/2016 7:22:26 PM 27186
Surr: BFB	263	68.3-144	S	%Rec	5 8/29/2016 7:22:26 PM 27186

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

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 Page 3 of 5

Analytical Report Lab Order 1608F06

- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

WO#: 1608F06

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	etroleum Con 3NW State 3	÷	on								
Sample ID LCS-27220	8015M/D: Die	esel Range	e Organics								
Client ID: LCSS	Batch	ID: 27	220	F	RunNo: 3	6852					
Prep Date: 8/29/2016	Analysis Da	ate: 8/	30/2016	S	SeqNo: 1	142472	Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	45	10	50.00	0	90.4	62.6	124				
Surr: DNOP	4.3		5.000		86.1	70	130				
Sample ID MB-27220	SampTy	pe: ME	BLK	Tes	tCode: El	PA Method	8015M/D: Di	esel Rang	e Organics		
Client ID: PBS	Batch	ID: 27	220	F	RunNo: 3	6852					
Prep Date: 8/29/2016	Analysis Da	ate: 8/	30/2016	5	SeqNo: 1	142473	Units: mg/k	ζg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	ND	10									
Surr: DNOP	11		10.00		110	70	130				

- * 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
- W Sample container temperature is out of limit as specified

WO#: 1608F06

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01-Sep-16

	etroleum Co NW State 3		on								
Sample ID MB-27186	SampT	8015D: Gasc	line Rang	e	den aplican estado anteración						
Client ID: PBS	Batch	ID: 27	186	F	unNo: 3	6828					
Prep Date: 8/26/2016	Analysis D	ate: 8/	29/2016	S	ieqNo: 1	141862	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	850		1000		84.6	68.3	144			11 - 12 - 12 - 12 - 12 - 12 - 12 - 12 -	
Sample ID LCS-27186	SampT	ype: LC	S	Tes	e	NY NEW A STATE HERE AND BARRADOUS					
Client ID: LCSS	Batch	ID: 27	186	F	RunNo: 3	6828					
Prep Date: 8/26/2016	Analysis D	ate: 8/	29/2016	5	SeqNo: 1	141863	Units: mg/k	٢g			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	22	5.0	25.00	0	89.4	80	120				
Surr: BFB	910		1000		90.7	68.3	144				

- * 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
- W Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY	Hall Environmental A Albud TEL: 505-345-3975 I Website: www.hal	4901 1 querque FAX: 50	lawkins NE NM 87109 5-345-4107	Samp	ole Log-In Ch	neck List
Client Name: Yates Petroleum Corpora	Work Order Number:	1608F	06		RcptNo:	1
Received by/date: Logged By: Ashley Gallegos Completed By: Ashley Gallegos	08/25/1 8/25/2016 9:20:00 AM 8/25/2016 5:51:15 PM	Y	5	AJ AJ		
Reviewed By: My	08/24/14	•		Ů.		i
Chain of Custody	1.					
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?		<u>Couri</u>	er			
Log In					•	
4. Was an attempt made to cool the sample	s?	Yes		No 🗌	NA 🖾	
5. Were all samples received at a temperatu	re of >0° C to 6.0°C	Yes		No 🗌	NA 🗌	
6. Sample(s) in proper container(s)?		Yes		No 🗌		
7. Sufficient sample volume for indicated tes	t(s)?	Yes		No 🗆		
8. Are samples (except VOA and ONG) prop	erly 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 bro	oken?	Yes		No 🛃		
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)		Yes		No 🗆	# of preserved bottles checked for pH: (<2 o	r >12 unless noted)
13. Are matrices correctly identified on Chain	of Custody?	Yes		No	Adjusted?	
14. Is it clear what analyses were requested?	tillen (sel and de jog forget d'algen e ligt an eine an	Yes		No 🗌		
15. Were all holding times able to be met? (If no, notify customer for authorization.)		Yes		No 🗌	Checked by:	
Special Handling (if applicable)						
16. Was client notified of all discrepancies with	th this order?	Yes		No 🗌	NA 🛃	
Person Notified:	Date	15 MC DALALDUR	ana ang ang ang ang ang ang ang ang ang	GALENDAR AND		
By Whom: Regarding: Client Instructions:		🔲 eMa	ail 🗌 Pho	one 🗌 Fax	in Person	

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.2	Good	Yes			

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RONMENTA	ANALYSIS LABORATORY	www.hallenvironmental.com	4901 Hawkins NE - Albuquerque, NM 87109	Fax 505-345-4107	Analysis Request					(\	im92) 0728										TPH: 8015B, Results needed by Wednesday, 2016. Thank you.	Date Time Date Time
2	SI	onme	duerc	ax 50	sis Re						O, Anions (F, C		_	_	 +	-	+	$\left \cdot \right $	+	+	ults ne	
	YS.	llenvir	- Albt		Analys					elist	ARCRA 8 Me					T					Remarks: TPH: 8015B, Rest August 31, 2016. Thank you.	
NL	AL	wv.ha	NE	Tel. 505-345-3975	1					_	AN9) 0168			_		-			_		015B Than	
I	A	M	wkins	-345-							EDB (Methodathodathodathodathodathodathodathoda			_	 +	+-	+	$\left \cdot \right $		_	7H: 8	
			1 Ha	1. 505		950	d/st				odteM HqT	×	×	×	+	+			+		31, 20	
			49(Ч,					-	-	TM + XƏT8										Remarks: August 3	4
						(12	:08)	s'a	WI +	BE	IM + XƏT8				_						Aug	
			State #3		42		riffin	-2020	Amber Griffin TG	7_07+27	HEAL No.	100-	-002	-003							Date Time	Date Time
-01111	I D Rush	9:	Willie BNW State #3		1RP-4342	anager:	Amber Griffin	PO # 205-2020	An An	2	Preservativ e Type	lce	lce	lce							No.	
וווום הווהסואל-וווח	C Standard	Project Name:		Project #:		Project Mana		-	Sampler:		Container Type and #	1 - 402.	1 - 4oz.	1 - 4oz.	 						Received by:	tion 1
Chain-of-Custody Record	Yates Petroleum Corporation			05 South 4th Street Artesia, NM 88210	575-513-8799 or 575-748-4111	agriffin@yatespetroleum.com		Level 4 (Full Validation)			Sample Request ID	Pooling 5'	Pooling 6'	Pooling 7'							9	slinquished by:
1-Cus	etroleum			at Artesia	575-513-	agriffin@					Matrix	Soil	Soil								Relinquished by:	Relinquished by:
ain-o	Yates P		ress:	4th Stree		₩.	age:		ï	lec	Time	8:54 Soil									Time:	
5	lient:		ailing Address:	05 South	hone #:	nail or Fax#.	A/QC Package:	I Standard	coreditation:	EDD (TVDA)	Date	8/23/2016	8/23/2016	8/23/2016							ate: Inulia	ate:

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