



SUNDRY NOTICES AND REPORTS ON WELLS - FORM 4

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 5749 (09-2006)

TH

Received

Well File No.

28651

FEB 18 2016

ND Oil & Gas Division

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

<input type="checkbox"/> Notice of Intent	Approximate Start Date
<input checked="" type="checkbox"/> Report of Work Done	Date Work Completed October 27, 2015
<input type="checkbox"/> Notice of Intent to Begin a Workover Project that may Qualify for a Tax Exemption Pursuant to NDCC Section 57-51.1-03.	
Approximate Start Date	

<input type="checkbox"/> Drilling Prognosis	<input type="checkbox"/> Spill Report
<input type="checkbox"/> Redrilling or Repair	<input type="checkbox"/> Shooting
<input type="checkbox"/> Casing or Liner	<input type="checkbox"/> Acidizing
<input type="checkbox"/> Plug Well	<input type="checkbox"/> Fracture Treatment
<input type="checkbox"/> Supplemental History	<input checked="" type="checkbox"/> Change Production Method
<input type="checkbox"/> Temporarily Abandon	<input type="checkbox"/> Reclamation
<input type="checkbox"/> Other	Well is now on pump

Well Name and Number Kline Federal 5300 41-18 9T					
Footages	Qtr-Qtr	Section	Township	Range	
533 F S L	237 F W L	SWSW	18	153 N	100 W
Field Baker	Pool Bakken	County McKenzie			

24-HOUR PRODUCTION RATE

Before	After	Oil	Oil
Water	Bbls	Water	Bbls
Gas	MCF	Gas	MCF

Name of Contractor(s)			
Address		City	State
			Zip Code

DETAILS OF WORK

Effective 10/27/2015 the above referenced well is on pump.

End of Tubing: 2-7/8" L-80 tubing @ 8184"

Pump: Rotaflex pump @ 7989.38'

Company Oasis Petroleum North America LLC	Telephone Number 281-404-9436	
Address 1001 Fannin, Suite 1500		
City Houston	State TX	Zip Code 77002
Signature 	Printed Name Jennifer Swenson	
Title Regulatory Specialist	Date February 17, 2016	
Email Address jswenson@oasispetroleum.com		

FOR STATE USE ONLY

<input checked="" type="checkbox"/> Received	<input type="checkbox"/> Approved
Date 3-3-2016	
By 	
Title TAYLOR ROTH	
Engineering Technician	



AUTHORIZATION TO PURCHASE AND TRANSPORT OIL FROM LEASE – Form 8

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 5698 (03-2000)

Well File No.
28651
NDIC CTB No.
116133

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.

PLEASE SUBMIT THE ORIGINAL AND FOUR COPIES.

Well Name and Number KLINE FEDERAL 5300 41-18 9T	Qtr-Qtr SWSW	Section 18	Township 153	Range 100	County McKenzie
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Operator Oasis Petroleum North America LLC	Telephone Number (281) 404-9573	Field BAKER
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Address 1001 Fannin, Suite 1500	City Houston	State TX	Zip Code 77002
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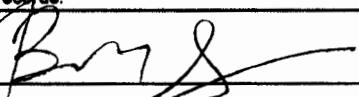
Name of First Purchaser Oasis Petroleum Marketing LLC	Telephone Number (281) 404-9627	% Purchased 100%	Date Effective September 9, 2015
Principal Place of Business 1001 Fannin, Suite 1500	City Houston	State TX	Zip Code 77002
Field Address	City	State	Zip Code
Transporter Hiland Crude, LLC	Telephone Number (580) 616-2058	% Transported 75%	Date Effective September 9, 2015
Address P.O. Box 3886	City Enid	State OK	Zip Code 73702

The above named producer authorizes the above named purchaser to purchase the percentage of oil stated above which is produced from the lease designated above until further notice. The oil will be transported by the above named transporter.

Other First Purchasers Purchasing From This Lease	% Purchased	Date Effective
Other First Purchasers Purchasing From This Lease	% Purchased	Date Effective
Other Transporters Transporting From This Lease	% Transported	Date Effective
Power Crude Transport	25%	September 9, 2015
Other Transporters Transporting From This Lease	% Transported	Date Effective
		September 9, 2015
Comments		

I hereby swear or affirm that the information provided is true, complete and correct as determined from all available records.

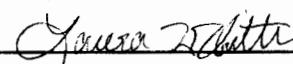
Date
October 22, 2015

Signature


Printed Name
Brianna Salinas

Title
Marketing Assistant

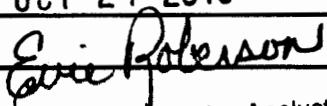
Above Signature Witnessed By:

Signature


Printed Name
Laura Whitten

Title
Marketing Analyst II



FOR STATE USE ONLY	
Date Approved	OCT 27 2015
By	
Title	Oil & Gas Production Analyst



WELL COMPLETION OR RECOMPLETION REPORT - FORM 6

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 2468 (04-2010)



PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.

PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

Designate Type of Completion

- | | | | | | |
|--|-----------------------------------|--|--|---|--|
| <input checked="" type="checkbox"/> Oil Well | <input type="checkbox"/> EOR Well | <input type="checkbox"/> Recompletion | <input type="checkbox"/> Deepened Well | <input type="checkbox"/> Added Horizontal Leg | <input type="checkbox"/> Extended Horizontal Leg |
| <input type="checkbox"/> Gas Well | <input type="checkbox"/> SWD Well | <input type="checkbox"/> Water Supply Well | <input type="checkbox"/> Other: | | |

Well Name and Number

Kline Federal 5300 41-18 9T

Spacing Unit Description

Sec. 17/18 T153N R100W

Operator

Oasis Petroleum North America

Telephone Number

(281) 404-9591

Field

Baker

Address

1001 Fannin, Suite 1500

Pool

Bakken

City

Houston

State

TX

Zip Code

77002

Permit Type

Wildcat

Development

Extension

LOCATION OF WELL

At Surface 533 F S L	237 F WL	Qtr-Qtr sww	Section 18	Township 153 N	Range 100 W	County McKenzie
Spud Date September 6, 2014	Date TD Reached December 16, 2014	Drilling Contractor and Rig Number Nabors 486			KB Elevation (Ft) 2082	Graded Elevation (Ft) 2057

Type of Electric and Other Logs Run (See Instructions)

MWD/GR FROM KOP TO TD; CBL FROM INT. TD TO SURFACE

CASING & TUBULARS RECORD (Report all strings set in well)

Well Bore	Type	String Size (Inch)	Top Set (MD Ft)	Depth Set (MD Ft)	Hole Size (Inch)	Weight (Lbs/Ft)	Anchor Set (MD Ft)	Packer Set (MD Ft)	Sacks Cement	Top of Cement
Surface Hole	Surface	13 3/8	0	2185	17 1/2	54.5			950	0
Vertical Hole	Intermediate	9 5/8	0	6136	13 1/2	36			1210	608
Vertical Hole	Intermediate	7	0	11150	8 3/4	32			805	4980
Lateral1	Liner	4 1/2	10254	20737	6	13.5			520	10254

PERFORATION & OPEN HOLE INTERVALS

Well Bore	Well Bore TD Driller's Depth (MD Ft)	Completion Type	Open Hole/Perforated Interval (MD,Ft)	Kick-off Point (MD Ft)	Top of Casing Window (MD Ft)	Date Perfd or Drilled	Date Isolated	Isolation Method	Sacks Cement
Lateral1	20742	Perforations	11150	20737	10330		06/26/2015		

PRODUCTION

Current Producing Open Hole or Perforated Interval(s), This Completion, Top and Bottom, (MD Ft) Lateral 1- 11150' to 20737'					Name of Zone (If Different from Pool Name)			
Date Well Completed (SEE INSTRUCTIONS) September 9, 2015			Producing Method flowing		Pumping-Size & Type of Pump			Well Status (Producing or Shut-In) producing
Date of Test 09/09/2015	Hours Tested 24	Choke Size 36 /64	Production for Test		Oil (Bbls) 1471	Gas (MCF) 996	Water (Bbls) 4097	Oil Gravity-API (Corr.) 42.0 °
Flowing Tubing Pressure (PSI)	Flowing Casing Pressure (PSI)		Calculated 24-Hour Rate		Oil (Bbls) 1471	Gas (MCF) 996	Water (Bbls) 4097	Gas-Oil Ratio 677

GEOLOGICAL MARKERS

PLUG BACK INFORMATION

CORES CUT

Top (Ft)	Bottom (Ft)	Formation	Top (Ft)	Bottom (Ft)	Formation

Drill Stem Test

Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
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Drill Pipe Recovery

Sample Chamber Recovery

Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
-----------	-----------	----------	-------------	--------------	--------	---------	------------------	------------------

Drill Pipe Recovery

Sample Chamber Recovery

Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
-----------	-----------	----------	-------------	--------------	--------	---------	------------------	------------------

Drill Pipe Recovery

Sample Chamber Recovery

Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
-----------	-----------	----------	-------------	--------------	--------	---------	------------------	------------------

Drill Pipe Recovery

Sample Chamber Recovery

Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
-----------	-----------	----------	-------------	--------------	--------	---------	------------------	------------------

Drill Pipe Recovery

Sample Chamber Recovery

Well Specific Stimulation

Date Stimulated 06/26/2015	Stimulated Formation Three Forks		Top (Ft) 11150	Bottom (Ft) 20737	Stimulation Stages 50	Volume 170347	Volume Units Barrels
Type Treatment Sand Frac	Acid %	Lbs Proppant 9426950	Maximum Treatment Pressure (PSI) 8928		Maximum Treatment Rate (BBLS/Min) 37.0		
Details 100 Mesh White: 220000 40/70 White: 1224040 20/40 White: 6593310 20/40 Resin Coated: 1389600							
Date Stimulated	Stimulated Formation		Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)		
Details							
Date Stimulated	Stimulated Formation		Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)		
Details							
Date Stimulated	Stimulated Formation		Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)		
Details							
Date Stimulated	Stimulated Formation		Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)		
Details							

ADDITIONAL INFORMATION AND/OR LIST OF ATTACHMENTS

I hereby swear or affirm that the information provided is true, complete and correct as determined from all available records.	Email Address jswenson@oasispetroleum.com	Date 10/12/2015
Signature 	Printed Name Jennifer Swenson	Title Regulatory Specialist



WELL COMPLETION OR RECOMPLETION REPORT - FORM

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 2468 (04-2010)

A circular stamp with a double-lined border containing the text "RECEIVED" at the top, "ND OIL & GAS" in the center, and "DIVISION" at the bottom. The date "JUL 2015" is stamped in the center. A large number "6819575" is stamped across the bottom. There is also a small arrow pointing upwards and some smaller text on the right side.

Well File No.
28651

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.

PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

Designate Type of Completion

- Oil Well EOR Well Recompletion Deepened Well Added Horizontal Leg Extended Horizontal Leg
 Gas Well SWD Well Water Supply Well Other:

Well Name and Number
Kline Federal 5300 41-18 9T

Spacing Unit Description

Operator
Oasis Petroleum North America

Telephone Number
(281) 404-9591

**Field
Baker**

Address
1001 Fannin, Suite 1500

**Pool
Bakken**

City
Houston

State
TX

Zip Code
77002

Permit Type

Development

Extension

LOCATION OF WELL

At Surface 533 F S L		Qtr-Qtr SW SW	Section 18	Township 153 N	Range 100 W	County McKenzie
Spud Date September 6, 2014		Date TD Reached December 16, 2014	Drilling Contractor and Rig Number Nabors 486		KB Elevation (Ft) 2082	Graded Elevation (Ft) 2057

Type of Electric and Other Logs Run (See Instructions)

MWD/GR FROM KOP TO TD; CBL FROM INT. TD TO SURFACE

CASING & TUBULARS RECORD (Report all strings set in well)

PERFORATION & OPEN HOLE INTERVALS

PRODUCTION

Current Producing Open Hole or Perforated Interval(s), This Completion, Top and Bottom, (MD Ft) Lateral 1-							Name of Zone (If Different from Pool Name)	
Date Well Completed (SEE INSTRUCTIONS)			Producing Method	Pumping-Size & Type of Pump			Well Status (Producing or Shut-In)	
Date of Test	Hours Tested	Choke Size /64	Production for Test	Oil (Bbls)	Gas (MCF)	Water (Bbls)	Oil Gravity-API (Corr.)	Disposition of Gas
Flowing Tubing Pressure (PSI)	Flowing Casing Pressure (PSI)		Calculated 24-Hour Rate	Oil (Bbls)	Gas (MCF)	Water (Bbls)	Gas-Oil Ratio	

GEOLOGICAL MARKERS

PLUG BACK INFORMATION

CORES CUT

Top (Ft)	Bottom (Ft)	Formation	Top (Ft)	Bottom (Ft)	Formation

Drill Stem Test

Well Specific Stimulation

Date Stimulated	Stimulated Formation		Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units Barrels
Type Treatment	Sand Frac	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details							
Date Stimulated	Stimulated Formation		Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Sand Frac	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details							
Date Stimulated	Stimulated Formation		Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Sand Frac	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details							
Date Stimulated	Stimulated Formation		Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Sand Frac	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details							
Date Stimulated	Stimulated Formation		Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Sand Frac	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details							

ADDITIONAL INFORMATION AND/OR LIST OF ATTACHMENTS

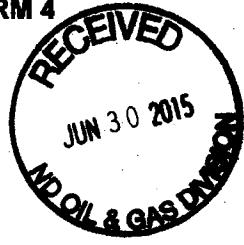
This is a preliminary completion report. A supplemental report will be filed upon first production of the well.

I hereby swear or affirm that the information provided is true, complete and correct as determined from all available records.	Email Address jswenson@oasispetroleum.com	Date 07/21/2015
Signature 	Printed Name Jennifer Swenson	Title Regulatory Specialist



SUNDRY NOTICES AND REPORTS ON WELLS - FORM 4

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 5748 (09-2008)



Well File No.
28651

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

<input checked="" type="checkbox"/> Notice of Intent	Approximate Start Date June 30, 2015	<input type="checkbox"/> Drilling Prognosis	<input type="checkbox"/> Spill Report
<input type="checkbox"/> Report of Work Done	Date Work Completed	<input type="checkbox"/> Redrilling or Repair	<input type="checkbox"/> Shooting
<input type="checkbox"/> Notice of Intent to Begin a Workover Project that may Qualify for a Tax Exemption Pursuant to NDCC Section 57-51.1-03.		<input type="checkbox"/> Casing or Liner	<input type="checkbox"/> Acidizing
Approximate Start Date		<input type="checkbox"/> Plug Well	<input type="checkbox"/> Fracture Treatment
		<input type="checkbox"/> Supplemental History	<input type="checkbox"/> Change Production Method
		<input type="checkbox"/> Temporarily Abandon	<input type="checkbox"/> Reclamation
		<input checked="" type="checkbox"/> Other	Change well status to CONFIDENTIAL

Well Name and Number Kline Federal 5300 41-18 9T					
Footages	Qtr-Qtr	Section	Township	Range	
533 F S L	237 F W L	SWSW	18	153 N	100 W
Field Baker	Pool Bakken		County McKenzie		

24-HOUR PRODUCTION RATE

	Before	After
Oil	Bbls	Oil
Water	Bbls	Water
Gas	MCF	Gas

Name of Contractor(s)			
Address	City	State	Zip Code

DETAILS OF WORK

Effective immediately, we request **CONFIDENTIAL STATUS** for the above referenced well.

This well has not been completed.

OFF CONFIDENTIAL 12/30/15.

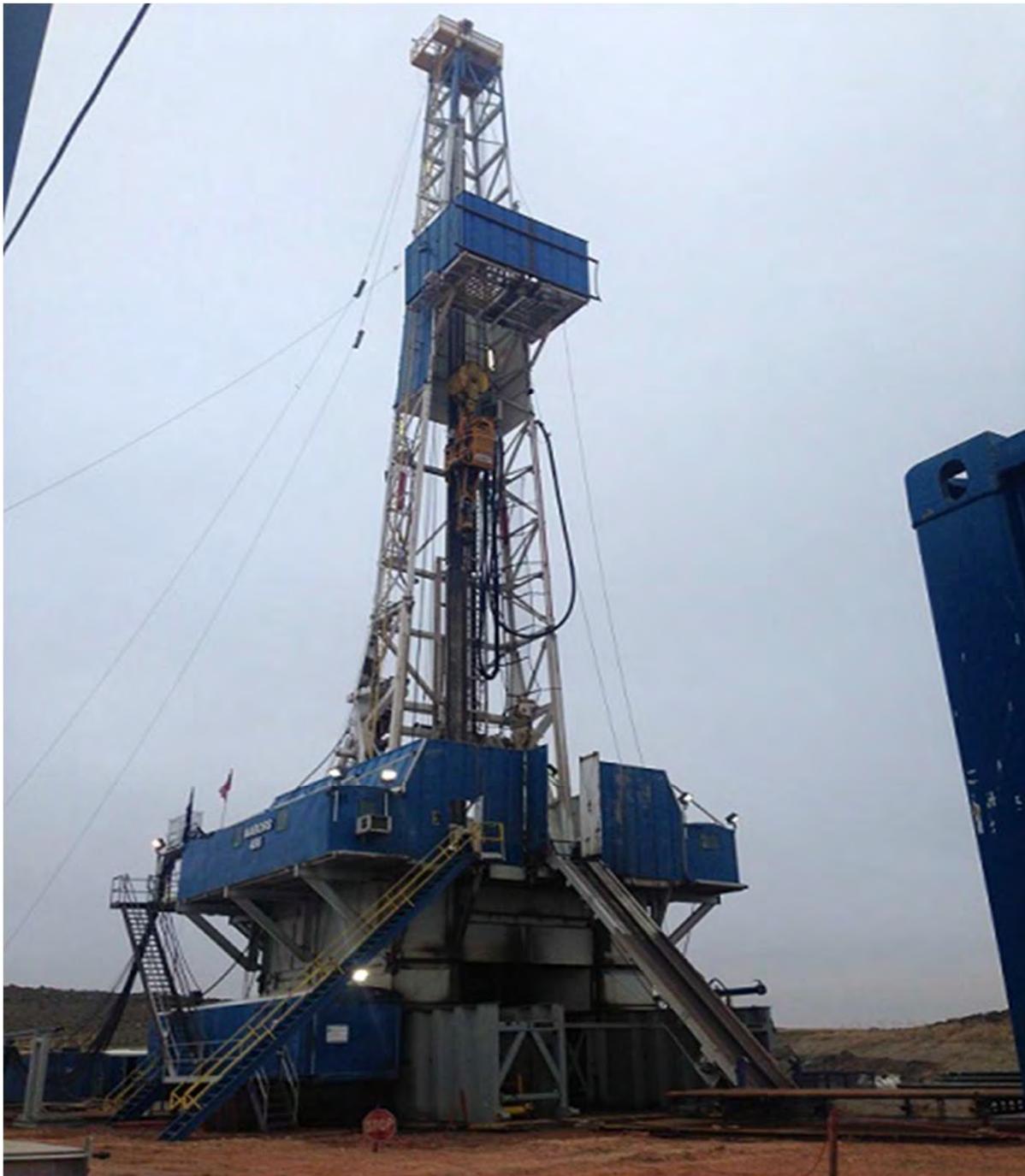
Company Oasis Petroleum North America LLC	Telephone Number 281-404-9436	
Address 1001 Fannin, Suite 1500		
City Houston	State TX	Zip Code 77002
Signature 	Printed Name Jennifer Swenson	
Title Regulatory Specialist	Date June 30, 2015	
Email Address jswenson@oasp petroleum.com		

FOR STATE USE ONLY

<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date 7/07/15	
By 	
Title Engineering Technician	

Oasis Petroleum North America

Kline Federal 5300 41-18 9T



Services Performed For:

Brendan Hargrove

Oasis Petroleum North America

1001 Fannin Suite 202

Houston, TX 77002

Onsite Geology Performed by:

Annika Tostengard, Timber Solberg

RPM Geologic

geology@rpmconsultinginc.com

(303) 595-7625

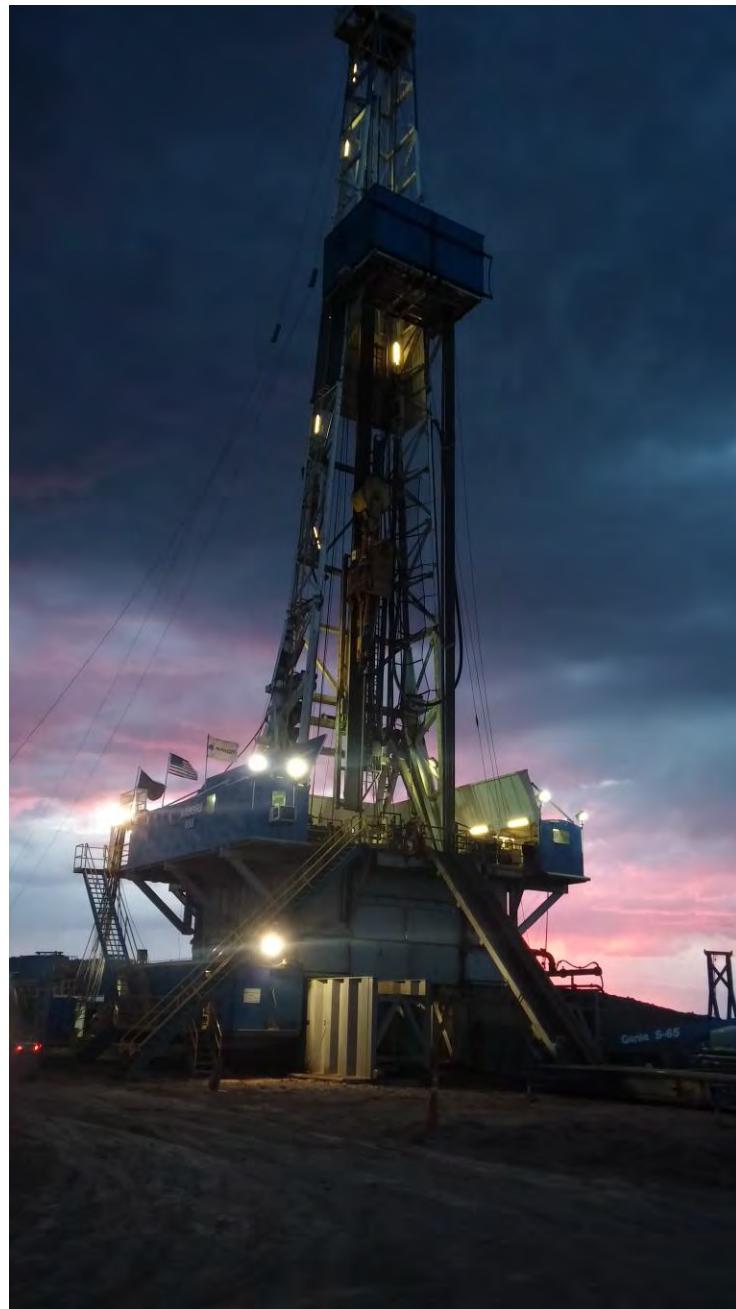
WELL EVALUATION

Oasis Petroleum

Kline Federal 5300 41-18 9T

SW SW Sec. 18, T153N, R100W

Williams County, North Dakota



Synopsis

Oasis Petroleum *Kline Federal 5300 41-18 9T* [SW SW Sec. 18 T153N R100W] is located ~6 miles Northwest of the town of Williston, North Dakota. *Kline Federal 5300 41-18 9T* is situated within the Baker Field. A single lateral leg trending 90° was proposed to be drilled from the SW SW corner of Section 18 to the SE SE corner of Section 17 targeting the porous dolostone in the first bench of the **Three Forks**.

Control Wells

Two completed wells were used as the control offsets to the *Kline Federal 5300 41-18 9T*.

The primary offset considered was the *Kline Federal 5300 41-18 11T2* [SW SW Sec. 18 T153N, R100W] which is a horizontal well drilled by Oasis Petroleum. *Kline Federal 5300 41-18 11T2* is located approximately 66 feet south of *Kline Federal 5300 41-18 9T*.

The other offset considered was the *Kline Federal 5300 41-18 10B* [SW SW Sec. 18 T153N, R100W] which is a horizontal well drilled by Oasis Petroleum. *Kline Federal 5300 41-18 10B* is located approximately 33 feet south of *Kline Federal 5300 41-18 9T*.

During the curve, the gamma ray that was produced was constantly compared to the *Kline Federal 5300 41-18 11T2* and the *Kline Federal 5300 41-18 10B* wells. Gamma ray was used to help determine a proper landing depth.

To assist in the choosing of the landing target, an isopach table (Table 1) was constructed to measure the distance of formation tops to the target depth determined from the *Kline Federal 5300 41-18 11T2* and *Kline Federal 5300 41-18 10B* offset wells. Comparison of gamma ray markers showed the most consistent isopach for up-hole formations to be the **Middle Bakken**.

<i>Control Well</i>				
Operator:	Oasis Petroleum			
Well Name:	<i>Kline Federal 5300 41-18 11T2</i>			
Location:	SW SW Sec. 18 T153N, R100W McKenzie Co., ND Approximately 66 ft South			
Elevation:	KB: 2,082'			
Formation/ Zone	Est. TVD	MSL Datum	Thickness	Dist to target
Kibbey Lime	8,382'	-6,300'	183'	2,437'
Charles Salt	8,565'	-6,483'	642'	2,254'
Base Last Salt	9,207'	-7,125'	223'	1,612'
Mission Canyon	9,430'	-7,348'	567'	1,389'
Lodgepole	9,997'	-7,915'	708'	822'
False Bakken	10,705'	-8,623'	7'	114'
Upper Bakken Shale	10,712'	-8,630'	18'	107'
Middle Bakken	10,730'	-8,648'	40'	89'
Lower Bakken	10,770'	-8,688'	12'	49'
Pronghorn	10,782'	-8,700'	17'	37'
Three Forks	10,799'	-8,717'	25'	20'
Claystone	10,824'	-8,742'	13'	-
Three Forks 2nd Bench	10,837'	-8,755'	-	-

<i>Control Well</i>				
Operator:	Oasis Petroleum			
Well Name:	<i>Kline Federal 5300 41-18 10B</i>			
Location:	SW SW Sec. 18 T153N, R100W McKenzie Co., ND Approximately 33 feet South			
Elevation:	KB: 2,082'			
Formation/Zone	Est. TVD	MSL Datum	Thickness	Dist to target
Kibbey Lime	8,376	-6,294'	190'	2,446'
Charles Salt	8,566	-6,484'	640'	2,256'
Base Last Salt	9,206	-7,124'	222'	1,616'
Mission Canyon	9,428	-7,346'	552'	1,394'
Lodgepole	9,980	-7,898'	728'	842'
False Bakken	10,708	-8,626'	8'	114'
Upper Bakken Shale	10,716	-8,634'	17'	106'
Middle Bakken	10,733	-8,651'	27'	89'

Table 1: Distance from Formation tops in the control wells were utilized to determine an initial drilling target.

Geologic Assessment

Methods

Geologic supervision of *Kline Federal 5300 41-18 9T* was provided by experienced RPM well site geologists. Gas and chromatograph levels were measured using NOV WellSight Gas Detection real time gas detector and chromatograph system. The WellSight gas detection system uses non-dispersive infrared and chemical sensor gas detection to evaluate gases liberated from the formation by the drill bit and carried to the surface by the drilling fluid.

The gas detector was interfaced with a RigWatch electronic data recorder system. RigWatch provided drill rate, on-off bottom and pump strokes to the gas detector and received total gas information from the gas detector for viewing on location and remotely.

Under the direction of RPM well site geologists, rig crews were instructed to catch lagged drill cutting samples at 30' intervals in the vertical hole and curve build from 8,350' to 11,177' MD and 50' samples from 11,177' to TD (20,742').

Sampled drill cuttings were examined wet and dry under a binocular microscope using both plain (broad spectrum) and transmitted light. Cuttings were evaluated for hydrocarbon "cut" by immersion in Acetone and inspection under a UV fluoroscope. 10% hydrochloric acid and alizarin red were used to determine the calcareous and dolomitic content of rocks and cementing.

RPM Geologic, Inc. (RPM) well site geologists also closely examined MWD gamma-ray information and penetration rates to aid in steering decisions and dip degree estimations.

Vertical Operations

Overview

The *Kline Federal 5300 41-18 9T* was spud for surface drilling on 24 August 2014 utilizing Nabors 486 as the drilling contractor. Prior to commencement of RPM mud logging services, a 13 1/2" hole was drilled with fresh water to depth of 2,140' and isolated with 9 5/8" 36# J-55 casing cemented from 2,122' to surface.

RPM well site geologists began logging the vertical interval at 8,350'.

Three PDC bits were used to drill out of surface casing to vertical TD. Bit #1 was a 17 1/2 NOV bit. PDC bit #2 (12 1/4" Varel 40007781) was used to drill from 2,185' to 6,150' and averaged an ROP of 141.61 ft/hr in 28 hours of use. 9.625" J55 36 lbs casing was set to 6,138' MD due to Dakota Formation being over pressured in this area. PDC bit #3 (8 3/4" Smith MDSI616) was used to drill from 6,150' to 9,962' and averaged an ROP of 64.60 ft/hr in 59.0 hours of use. PDC bit #4 (8 3/4" Smith MDSI616) was used to drill from 9,962' to 10,330' and averaged an ROP of 73.60 over 5 hours of use.

Diesel invert drilling fluid with a mud weight ranging from 10.05-11.70 ppg was used for the remainder of the vertical hole and in the curve builds sections. The vertical interval was drilled to a kick off point (KOP) of 10,300', at which point vertical operations were ceased.

Lithology

The top of the **Kibbey Lime** [Mississippian Madison Group] was picked at 8,380' (-6,298'), 2' high to the *Kline Federal 5300 41-18 11T2*. Samples from this interval (Figure 1) were described as:

LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white, friable to firm, crystalline to microcrystalline

SILTSTONE: reddish brown, occasional, gray to light gray, brown to light brown gray, soft, sub-blocky, earthy texture, no visible porosity, no visible oil stain



*Figure 1: Photograph of Limestone seen in sample from the **Kibbey Limestone** formation.*

The top of the **Charles Salt** [Mississippian Madison Group] was logged at 8,554' (-6,472'), 11' high to the *Kline Federal 5300 41-18 11T2*. The **Base Last Salt** was drilled at 9,206' (-7,124'), 1' high to the *Kline Federal 5300 41-18 11T2*. Samples from this interval (Figure 2) were described as:

SALT: translucent, trace off white, crystalline, firm, crystalline texture, no visible porosity, no visible oil stain

LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white, friable to firm, crystalline to microcrystalline

ANHYDRITE: off white, cream, soft to firm, amorphous texture, no visible porosity



Figure 2: Photograph of Salt seen in sample from the Charles formation.

The top of the **Mission Canyon** formation of the Madison Group [Mississippian] was reached at 9,430' (-7,348'), flat to the *Kline Federal 5300 41-18 11T2*. Samples from this interval (Figure 3) were described as:

LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white, friable to firm, crystalline to microcrystalline



Figure 3: Photograph of limestone and argillaceous limestone from the Mission Canyon formation.

The top of the **Lodgepole** formation of the Madison Group (Mississippian) was logged at 9,978' (-7,896'), 19' high to the *Kline Federal 5300 41-18 11T2*. Samples from this interval (Figure 4) were described as:

ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain



Figure 4: Photograph of argillaceous limestone from Lodgepole formation.

Directional Operations

Gyrodata provided equipment and personnel for MWD teams, while RPM Consulting provided directional personnel. RPM geologists worked closely with RPM directional as well as Gyrodata MWD teams to formulate steering decisions to maximize the footage of borehole in the pay zone.

Curve Build

Overview

One PDC bit was used to build the curve section. Bit #5 was an 8 $\frac{3}{4}$ " Security MMD55C bit used to drill the curve from a measured depth of 10,330' to 11,177' in 27.5 hours, averaging 30.80 ft/hr. 7" P-110 32# casing was set to 11,162' MD upon completion of the curve.

A Chart was constructed for the curve (Chart 1) that compared the isopach of certain easily recognizable gamma markers from the Kibbey Lime to Three Forks on the control wells *Kline Federal 5300 41-18 11T2* and *Kline 5300 41-18 10B* to the *Kline Federal 5300 41-18 9T* as marker picks were made. This chart shows the Middle Bakken top being the closest in

thickness to target based on the offset well, and was the main point used to make changes to the target landing depth during the curve. A table (Table 2) was constructed comparing *Kline Federal 5300 41-18 9T* to the offset formation tops as well as an average of the estimated landing point based on the offset wells. This chart was used to corroborate the landing point, but isopach thickness was the main consideration in choosing a landing point. The curve was completed at a measured depth of 11,177' and TVD of 10,821', ~20 feet below the base of the **Three Forks**.

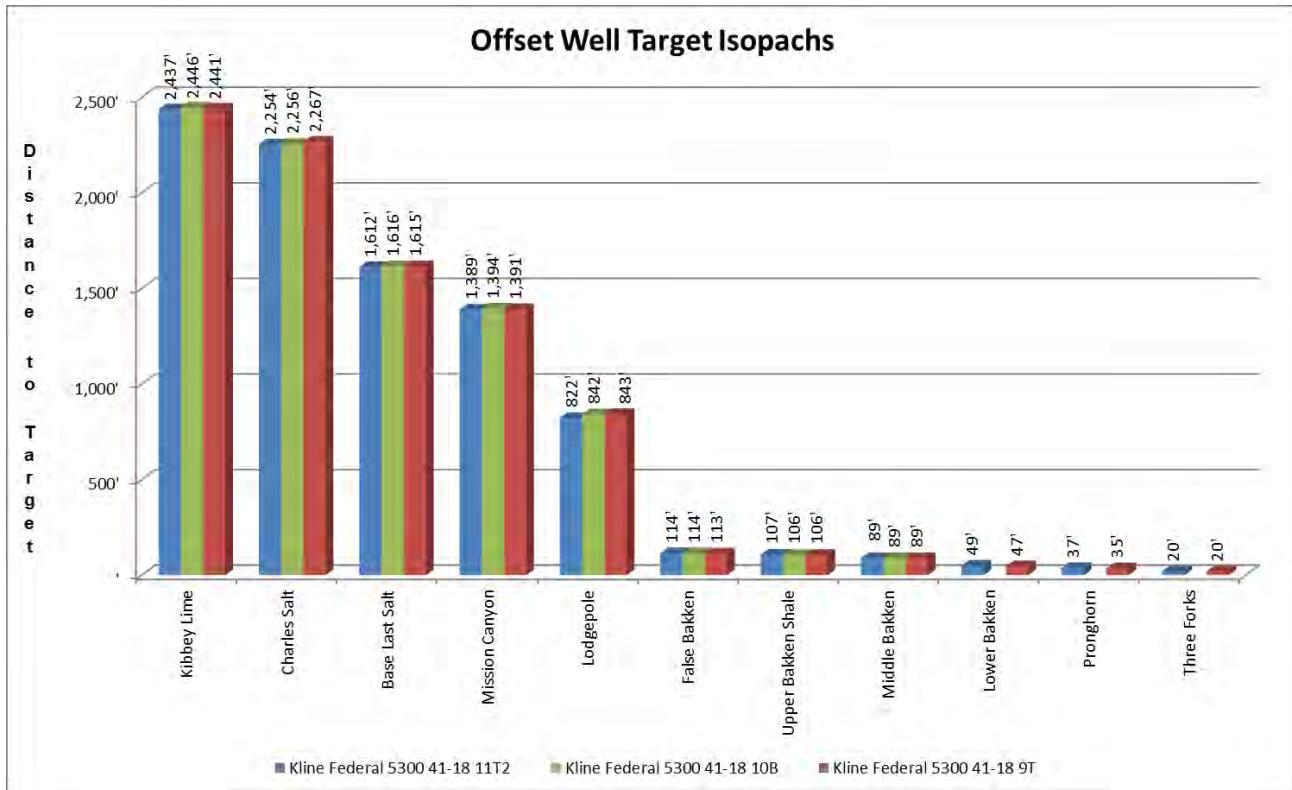


Chart 1: Comparing distances from gamma markers on the offset wells to markers in the curve.

Kline Federal 9T Target Landing Chart														
Operator: Well Name: Location:	Oasis Petroleum Kline Federal 5300 41-18 9T SW SW Sec. 18 T153N, R100W McKenzie County, ND					Oasis Petroleum Kline Federal 5300 41-18 10B SW SW Sec. 18 T153N, R100W McKenzie County, ND				Oasis Petroleum Kline Federal 5300 41-18 11T2 SW SW Sec. 18 T153N, R100W McKenzie County, ND				
	Elevation:		KB: 2,082			KB: 2,082			KB: 2,082					
Formation / Zone	Prog. Tops TVD (gamma)	Actual Tops TVD (gamma)	Primary Tops MSL	Est. Distance to Target (Isopach)	Thicknes s	Offset Tops TVD (gamma)	Offset Tops MSL	Isopach Thicknes s	Thicknes s	Offset Tops TVD (gamma)	Offset Tops MSL	Isopach Thicknes s	Thicknes s	Proj. Target Landing
Kibbey	8,381'	8,380'	-6,298'	2,441'	174'	8,376'	-6,294'	2,446'	190'	8,382'	-6,300'	2,437'	183'	10,822'
Charles	8,562'	8,554'	-6,472'	2,267'	652'	8,566'	-6,484'	2,256'	640'	8,565'	-6,483'	2,254'	642'	10,809'
Base Last Salt	9,207'	9,206'	-7,124'	1,615'	224'	9,206'	-7,124'	1,616'	222'	9,207'	-7,125'	1,612'	223'	10,820'
Mission Canyon	9,427'	9,430'	-7,348'	1,391'	548'	9,428'	-7,346'	1,394'	552'	9,430'	-7,348'	1,389'	567'	10,822'
Lodgepole	9,976'	9,978'	-7,896'	843'	111'	9,980'	-7,898'	842'	112'	9,997'	-7,915'	822'	92'	10,810'
LPA	-	10,089'	-8,007'	732'	69'	10,092'	-8,010'	730'	66'	10,089'	-8,007'	730'	81'	10,819'
LPB	-	10,158'	-8,076'	663'	52'	10,158'	-8,076'	664'	55'	10,170'	-8,088'	649'	44'	10,815'
LPC	-	10,210'	-8,128'	611'	193'	10,213'	-8,131'	609'	188'	10,214'	-8,132'	605'	193'	10,817'
LPD	-	10,403'	-8,321'	418'	155'	10,401'	-8,319'	421'	159'	10,407'	-8,325'	412'	157'	10,820'
LPE	-	10,558'	-8,476'	263'	67'	10,560'	-8,478'	262'	65'	10,564'	-8,482'	255'	65'	10,817'
LPF	-	10,625'	-8,543'	196'	83'	10,625'	-8,543'	197'	83'	10,629'	-8,547'	190'	76'	10,819'
False Bakken	10,702'	10,708'	-8,626'	113'	7'	10,708'	-8,626'	114'	8'	10,705'	-8,623'	114'	7'	10,822'
Upper Bakken Shale	10,713'	10,715'	-8,633'	106'	17'	10,716'	-8,634'	106'	17'	10,712'	-8,630'	107'	18'	10,822'
Middle Bakken	10,729'	10,732'	-8,650'	89'	42'	10,733'	-8,651'	89'	89'	10,730'	-8,648'	89'	40'	10,821'
Lower Bakken	10,771'	10,774'	-8,692'	47'	12'	-	-	-	-	10,770'	-8,688'	49'	12'	-
Pronghorn	10,782'	10,786'	-8,704'	35'	15'	-	-	-	-	10,782'	-8,700'	37'	17'	-
Three Forks	10,798'	10,801'	-8,719'	20'	20'	-	-	-	-	10,799'	-8,717'	-	-	-
Target	10,818'	10,821'	-	-	-	10,822'	-8,740'	-	-	10,819'	-8,737'	-	-	10,821'

Target--> 10,819

Table 2: Estimated landing point based on offset well formation tops.

Lithology

The top of the “**False Bakken**” was drilled at a measured depth of 10,746’ (TVD 10,708’) (-8,626’) 3’ low to the *Kline Federal 5300 41-18 11T2*.

The *Upper Shale* of the **Bakken** formation [Mississippian – Devonian] was drilled at 10,766’ MD (10,715’ TVD) (-8,633’) with sample returns of black, carbonaceous, and petroliferous shale (Figure 5) characterized by gamma ray values in excess of 255 API counts. The *Upper Shale* was 3’ low to the *Kline Federal 5300 41-18 11T2*. Samples were described as:

SHALE: black, dark gray black, firm, sub-blocky, earthy, calcareous cement, petro, carbonaceous, abundant fine disseminated pyrite, finely laminated



Figure 5: Photograph sample from the Upper Bakken Shale.

The *Middle Member* of the **Bakken** formation was penetrated at 10,808' MD, (10,732' TVD) (-8,647'), 2' low to the *Kline Federal 5300 41-18 11T2*. The *Middle Member* contained layers of sandstone and silty sandstones with varying amounts of porosity and oil stain (Figure 6). Samples from the *Middle Member* were described as:

SILTY SANDSTONE: common salt and pepper, occasional light gray to medium gray, visible white, very fine grained, soft to firm, moderately to well sorted, rounded to subrounded, moderately to poorly cemented, visible calcareous filled fractures, possible fracture porosity, common intergranular porosity, visible light brown spotty to even oil stain



Figure 6: Photograph of sandstone and silty sandstone from the middle member of the Bakken formation.

The *Lower Member* of the **Bakken** formation was penetrated at 10,886' MD, (10,774' TVD) (-8,692'), 4' low to the *Kline Federal 5300 41-18 11T2*. The *Lower Member* consists of a dark, petroliferous shale (Figure 7). Samples from the *Lower Member* were described as:

SHALE: black, dark gray black, firm, sub-blocky, earthy, calcareous cement, petroliferous, carbonaceous, abundant fine disseminated pyrite, fine laminated



Figure 7: Photograph of sandstone and silty sandstone from the lower member of the **Bakken** formation.
8 3/4" Bit & Diesel Invert Drilling Fluid

The **Pronghorn** formation was drilled at 10,922' MD, (10,786' TVD) (-8,704'), 4' low to the *Kline Federal 5300 41-18 11T2*.

The **Three Forks** formation was drilled at 10,971' MD, (10,801' TVD) (-8,719'), 2' low to the *Kline Federal 5300 41-18 11T2*. The **Three Forks** consists of a light colored, pyritic, slightly oil stained dolostone (Figure 8). Samples from the **Three Forks** were described as:

DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain



*Figure 8: Photograph of dolostone from the **Three Forks** formation.
8 3/4" Bit & Diesel Invert Drilling Fluid*

Lateral

Overview

Drilling fluid consisting of open system salt water brine (9.6-9.8 ppg) was used while drilling the lateral section up to the TD of 20,742'. Five 6" PDC bits were used to drill the lateral.

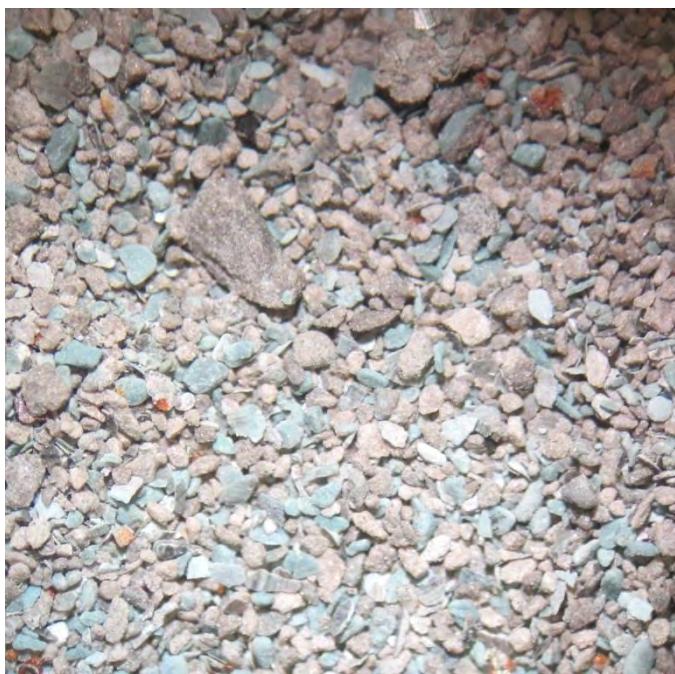
Bit #6 (Smith JJ4130) was a PDC bit used to drill the start of the lateral from 11,177' to 11,577' and averaged an ROP of 32 ft/hr over 12.5 hours of use. Bit #7 (Varel) was a PDC bit used to drill from 11,577' to 16,933'; it was used for 102.5 hours at an average drilling rate of 52.25 feet per hour. Bit #8 (Varel VM613P2) was a PDC bit used to drill from 16,933' to 19,195', and was used for 34 hours and averaged an ROP of 66.53 ft/hr. Bit #9 (Varel VM613P2) was used to drill from 19,195' to TD of 20,742'; it was used for 30 hours with an average ROP of 51.57 ft/hr.

Drilling operations were concluded at 7:00 on July 8, 2014 at a bottom hole location of 9998.39' E & 732.43' S of surface location or approximately 1265.43' FSL & 253.79' FEL of SE SE Sec. 17, T153N, R100W.

Lithology

The target Zone of the **Three Forks** consisted of a dolostone with very apparent intergranular porosity, moderate gas, and moderate to abundant oil show. Samples from the target Zone were generally described as:

DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain



*Figure 7. Photograph of dolostone and dolomitic siltstone from "Target Zone" on Diagram 1
6" Bit & Salt Water Brine*

Gas and hydrocarbon Shows

It was found that the gas and hydrocarbon shows were a fair indicator of placement in Zone throughout the lateral. While drilling in the target Dolomite gas levels maintained average levels of 800 to 900 units with peaks over 2300 units. When the bit dropped in vertical position into the claystone gas levels dropped to under 100 units with peaks nearing 300 units.

The Bloodhound gas chromatograph showed components of all C1-C4 present through the lateral while drilling in the target zone. C1 was primarily present while drilling in the claystone below. Sample cuttings throughout the lateral showed oil stain and a fast white diffuse cut when submerged in Acetone solution and observed with a UV fluoroscope. Trace oil was observed in the sample wash water.

Summary

- 1) The *Kline Federal 5300 41-18 9T* was initially spud for surface drilling on 9th of November 2014 in the Indian hills McKinley County, North Dakota. The well was spud by Nabors 486 and the vertical hole was drilled to a total depth (KOP) of 10,330'.
- 2) A mud program consisted of diesel invert (9.8-10.8 ppg) after surface casing through the curve build sections. The drilling mud was successful in maintaining stable hole conditions and minimizing washout through the salt intervals. Brine water with a weight of 9.6-9.7 ppg was used during lateral drilling operations to maintain hydrostatic balance until a TD of 20,742'.
- 3) One 12 1/4" Varel PDC bit was used to drill out of surface casing to a vertical depth of 2,185. 2 Smith 8 3/4 bits were used to drill to KOP of 10,330'. One 8 3/4" PDC bit was used to drill the curve to 11,177' MD. Six 5" PDC bits were used to drill the lateral to 21,050' TD.
- 4) The lateral was targeting the **Three Forks** member ranging from about 20' below the base of the **Pronghorn** down to approximately 1' above the **Claystone**.
- 5) Gas levels between 400 and 1000 units with peaks over 2000 units were maintained through the target zone of the lateral drilling operations while in the **Three Forks**.
- 6) The **Three Forks** target consisted of one observed gross lithology. The **Three Forks** was observed to be a dolostone with lots of disseminated pyrite and apparent intergranular porosity.
- 7) Trace to moderate oil stain was observed in zone associated with a fast, white, diffuse cut. Trace oil washed out of the samples into the wash water when they were cleaned.
- 8) Drilling operations were concluded on December 16th, 2014 at a bottom hole location of 9998.39' E & 732.43' S of surface location or approximately 1265.43' FSL & 253.79' FEL of SE SE Sec. 17, T153N-R100W.

Respectfully submitted,
Annika Tostengard
RPM Geologic LLC

Well Information

<u>Operator:</u>	Oasis Petroleum North America	<u>API #:</u>	33-053-06025
<u>Address:</u>	1001 Fannin Suite 202 Houston, TX 77002	<u>NDIC Well File #:</u>	28651
<u>Well Name:</u>	Kline Federal 5300 41-18 9T	<u>Surface Location:</u>	SW SW Sec. 18 T153N, R100W
<u>Field/ Prospect:</u>	Baker	<u>Footages:</u>	533' FSL & 237 FWL
<u>Elevation:</u>	GL: 2,057' KB: 2,082'	<u>County, State:</u>	McKenzie Co., ND
<u>Spud Date:</u>	9-Nov-14	<u>Basin:</u>	Williston
		<u>Well Type:</u>	Horizontal Bakken

<u>Contractor:</u>	Nabors 486	<u>Chemical Company</u>	Halliburton
<u>Toolpushers:</u>	Logan Penhollow, Tyler Schultz	<u>Mud Engineer</u>	Tim Vaira
<u>Field Supervisors:</u>	Mark Lawlar/Travis Handran (curve) Mark Lawlar/---- (lateral)	<u>H2S MONITORING:</u>	NOV WellSight Gas Watch
<u>Directional Drilling</u>	RPM Consulting Mark Lawlar/Travis Handran/---- Eric Nielssen/---- (lateral)	<u>MWD</u>	Gyro Data Robert Porter, Kasey (curve) Blake Hunter, Thomas Platt (lateral)

<u>Wellsite Geologist</u>	Annika Tostengard Timber Solberg	<u>Rock Sampling:</u>	30' from 8,350' to 11,177' MD 50' 11,177' MD to 20,742' (TD)
<u>Prospect Geologist</u>	Brendan Hargrove	<u>Gas Detector</u>	NOV WellSight Gas Watch
<u>Sample Examination:</u>	Binocular microscope & fluoroscope	<u>Sample Cuts:</u>	Acetone
<u>Horizontal Target</u>	Middle Bakken		
	Key Offset Wells:		
Oasis Petroleum.	Kline Federal 5300 41-18 11T2	SW SW Sec. 18 T153N, R100W	McKenzie Co., ND
Oasis Petroleum	Kline Federal 5300 41-18 10B	SW SW Sec. 18 T153N, R100W	McKenzie Co., ND

<u>Pumps:</u>	#1 & #2: HHF 1600 Triplex - 12" Stroke length Output: 0.0997 bbl/stk
<u>Mud Type:</u>	Diesel invert mud 2,015'-11,177' (Curve TD) Salt Water Brine, 11,177' - 20742' (TD)
<u>Casing:</u>	Surface: 13 3/8" 54# J-55 @ 2,185' Intermediate: 9 5/8" 36# J55 @ 6,138', 7" 32# P-110 @ 11,162'
<u>Hole Size:</u>	17 1/2" to 2,185 MD, 12 1/4 to 6,150", 8 3/4" to 11,177 MD, 6" to 20,742'(TD)
<u>Total Drilling Days:</u>	26

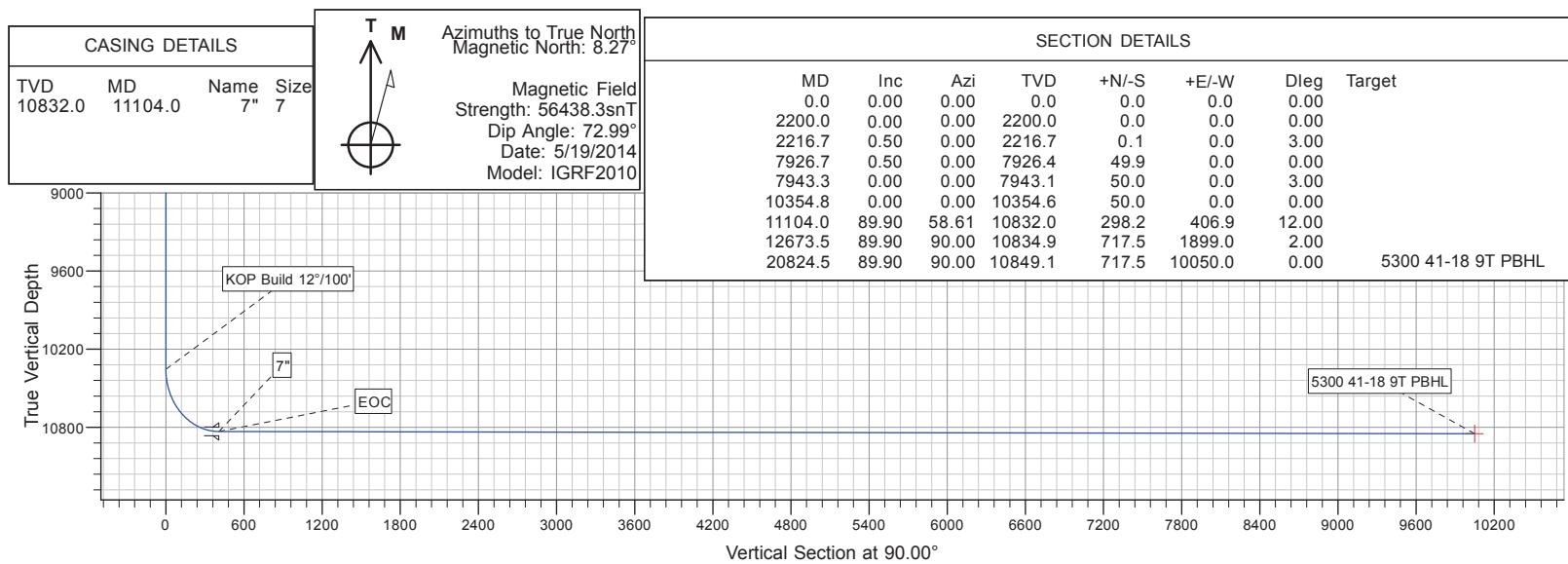
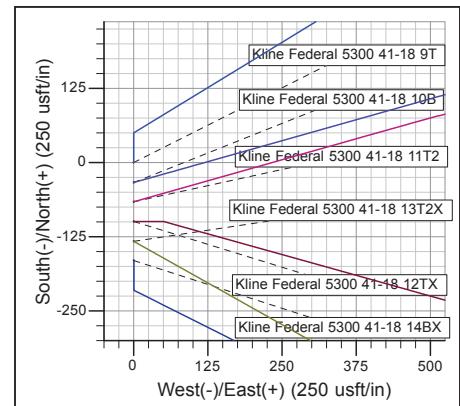
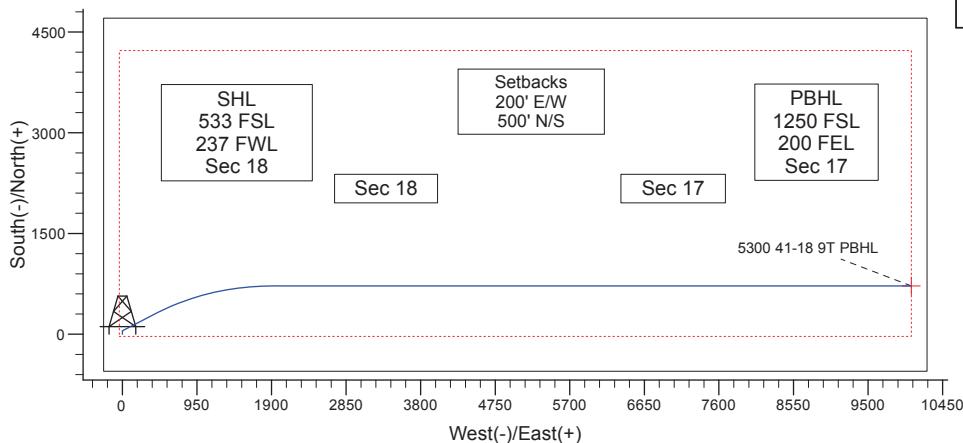
<u>Horizontal Target:</u>	<i>Three Forks 1st Bench</i>	<u>BOTTOM HOLE LOCATION:</u>
<u>Kick-Off Point / Date:</u>	<i>10,330 on Dec 4, 2014</i>	<i>9998.39' E & 732.43' S</i>
<u>Total Depth/ Date:</u>	<i>20,742' Dec 16, 2014</i>	<i>of surface location or approx.</i>
<u>Ending Vertical Section</u>	<i>9998.39'</i>	<i>1265.43' FSL & 253.79' FEL</i>
<u>Ending Azimuth</u>	<i>87.32°</i>	<i>SE SE Sec. 17, T153N, R100W</i>
<u>Status of Well:</u>	<i>Complete</i>	

Project: Indian Hills
Site: 153N-100W-17/18
Well: Kline Federal 5300 41-18 9T
Wellbore: Kline Federal 5300 41-18 9T
Design: Design #1



WELL DETAILS: Kline Federal 5300 41-18 9T

Northing	405235.88	Ground Level:	2057.0
Easting	1209971.54	Latitude	48° 4' 8.530 N
		Longitude	103° 36' 11.960 W



Daily Activity

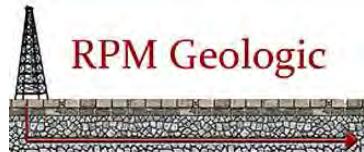
Day	Date 2014	Depth 0600 Hrs	24 Hr Footage	Bit #	WOB (Klbs) Rotate	WOB (Klbs) Slide	RPM (RT)	Pump Pressure	SPM 1	SPM 2	GPM	24 Hr Activity	Formation
1	21-Nov	2,200'	0'	1	-	-	-	-	-	-	-	rig down, rig up, nipple up bops, test bops, install/remove wear bushing, install secondary wear bushing, pick up bha, TIH, drill float and shoe	Pierre
2	22-Nov	5,378'	3,178'	2	16	0	45	2400	75	75	324	drill 5358-6150, circulate and condition followed by dry job, service rig, TOOH, rig up to run casing, run casing, rig down to run casing, circulate and condition, cementing operations	Pierre
3	23-Nov	6,150'	772'	2	16	0	46	2450	75	75	324	drill 5358-6150, circulate and condition followed by dry job, service rig, TOOH, rig up to run casing, run casing, rig down to run casing, circulate and condition, cementing operations	Dakota
4	24-Nov	6,694'	544'	3	15	0	55	3300	75	75	324	cementing operations, set packoff and test, pick up bha, TIH, pressure test casing/shoe, TIH, drill out float and shoe, drill 6150-6185, FIT test, drill 6185-6688	Rierdon
5	25-Nov	8,447'	1,783'	3	28	0	35	3200	75	75	324	Drill F/6688-7537, Rig service, Drill F/7537-7725, Drill F/7725-8195, Service top drive, Drill F/8195-8477	Kibbey
6	26-Nov	9,744'	1,267'	3	42	42	45	3500	75	75	628	Drill F/9766-9962, Circulate and condition, TOOH, Change rotating head/rubber remove rotating head TOH, Laydown BHA, Pick up BHA, TIH, Wash and ream salts, Drill F/9962-10090	Mission Canyon
7	27-Nov	10,090'	316'	4	24	0	46	3600	75	75	628	Drill F/9766-9962, Circulate and condition, TOOH, Change rotating head/rubber remove rotating head TOH, Laydown BHA, Pick up BHA, TIH, Wash and ream salts, Drill F/9962-10090	Mission Canyon

Daily Activity

Day	Date 2014	Depth 0600 Hrs	24 Hr Footage	Bit #	WOB (Klbs) Rotate	WOB (Klbs) Slide	RPM (RT)	Pump Pressure	SPM 1	SPM 2	GPM	24 Hr Activity	Formation
8	28-Nov	10,330'	240'	4	0	24	46	3600	75	75	628	Drill F/962-10325, Circ and condition, TOH open hole logs, Lay down BHA, Pick up BHA, Cut drilling line, TIH, TOH, Change tool, TIH	Lodgepole
9	11/29/014	11,004'	674'	5	28	24	16	3300	75	75	628	TIH, Drill curve, Drill F/10300-11004	Three Forks
10	30-Nov	11,177'	173'	5	30	26	16	3400	75	75	628	Drill F/11004-11177, Short trip, Circulate and condition, Lay down drill pipe	Three Forks
11	1-Dec	11,177'	-	-	-	-	-	-	-	-	-	Lay down pipe, Lay down BHA, Rig up casing crew, Run casing, Rig down casing crew, Wait on cement	Three Forks
12	2-Dec	11,177'	-	-	-	-	-	-	-	-	-	Waiting on 3rd party personnel, Primary cementing, Circulate and condition, Rig down casers, Service rig, Nipple down BOPS, Working as directed by operator.	Three Forks
13	3-Dec	11,177'	-	-	-	-	-	-	-	-	-	Nipple up BOPS, Test BOPS, Pick up BHA, Service Rig, Pick up drill pipe.	Three Forks
14	4-Dec	11,220'	43'	6	0	15	45	1535	0	75	280	Pick up pipe, Wash and ream, TIH, TOOH for tool, Lay down tool, Pick up tool, TIH	Three Forks
15	5-Dec	11,555'	335'	6	15	22	45	1865	0	75	280	TOH, Lay down tool, TIH, Drill F/11220-11555, TOH	Three Forks
16	6-Dec	11,869'	314'	6	20	42	46	2452	0	75	280	TOOH, Lay down BHA, TIH, Cut drilling line, Service rig, TIH, Drill F/11555-11869	Three Forks
17	7-Dec	12,803'	934'	6	19	25	46	2480	0	75	280	Rotary drilling, service rig, Rotary drilling, Service rig	Three Forks
18	8-Dec	13,623'	820'	6	20	42	46	2452	0	75	280	Rotary drilling, Service rig, Drill F/12803-13623	Three Forks
19	9-Dec	14,600'	977'	6	23	48	46	2840	75	0	280	Rotary drilling, Service top drive, Drill F/13623-14600	Three Forks

Daily Activity

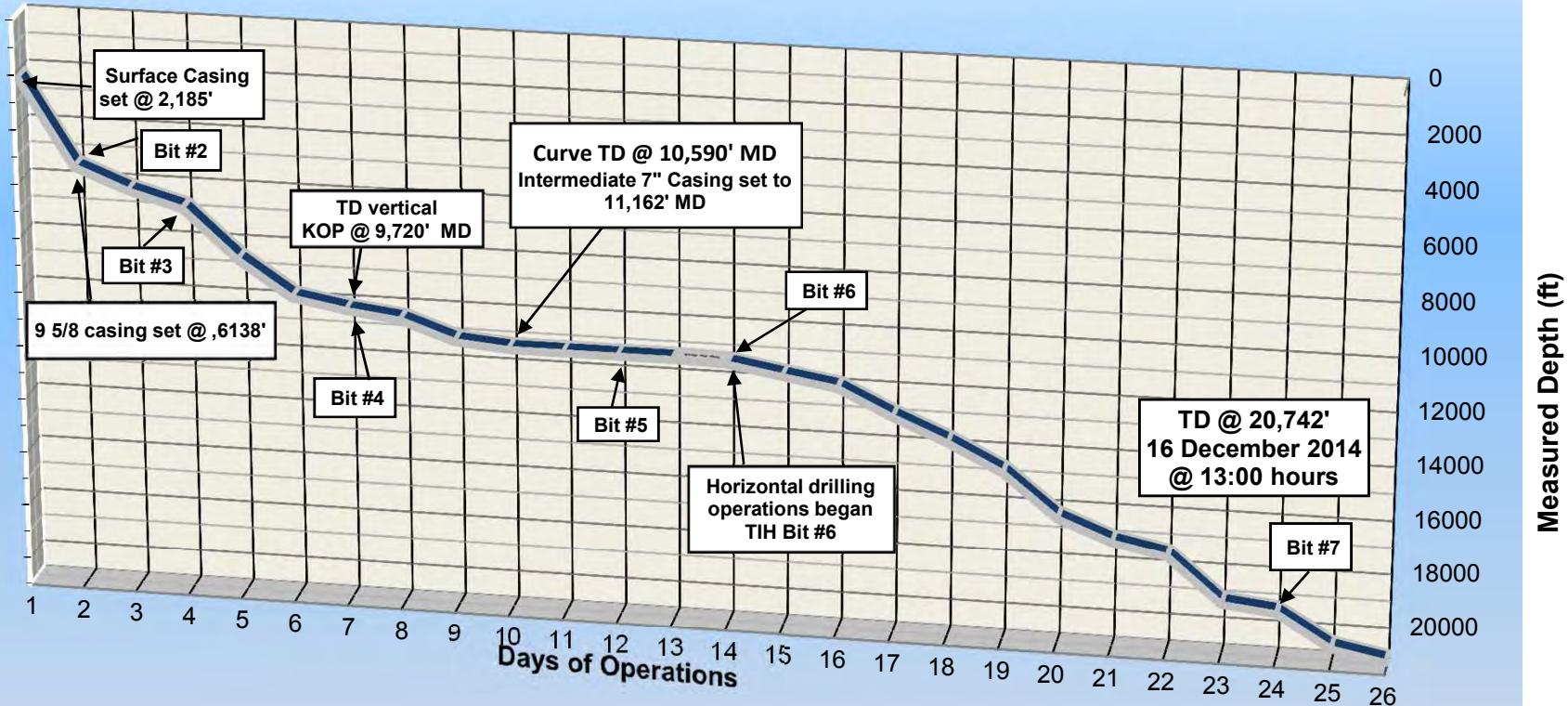
<i>Day</i>	<i>Date 2014</i>	<i>Depth 0600 Hrs</i>	<i>24 Hr Footage</i>	<i>Bit #</i>	<i>WOB (Klbs) Rotate</i>	<i>WOB (Klbs) Slide</i>	<i>RPM (RT)</i>	<i>Pump Pressure</i>	<i>SPM 1</i>	<i>SPM 2</i>	<i>GPM</i>	<i>24 Hr Activity</i>	<i>Formation</i>
20	10-Dec	16,170'	1,570'	6	35	48	35	3080	75	0	280	Rotary drill, Service top drive, Rotary Drill, Service rig, Drill F/14600-16170	Three Forks
21	11-Dec	16,935'	765'	6	15	35	32	3080	0	73	280	Drill Ahead 16172-16933', Rig Service, TOOH, TIH, Drill 16933-17330'	Three Forks
22	12-Dec	17,330'	395'	6	15	32	32	3080	0	73	280	Drill Ahead 17307-18375', Rig Service, Drill Ahead 17375-17377'.	Three Forks
23	13-Dec	18,980'	1,650'	6	15	32	32	3080	0	73	280	Drill Ahead 17377-18375', Rig Service, Drill Ahead 18375-18980'.	Three Forks
24	14-Dec	19,195'	215'	7	61	-	31	2900	0	75	267	Drill F/ 18,980'-19,195. TOOH. Lay down BHA. Pick up BHA. Rig service. TIH. Change rotating head/rubber. TIH.	Three Forks
25	15-Dec	20,363'	1,168'	7	30	72	32	3120	0	75	256	Rig service. Drilling F/ 19,195'-20,363'.	Three Forks
26	16-Dec	20,742'	379'	7	30	70	32	3100	0	75	256	Drill 20,363'-20,742, TD, TOH prepare for completions operations	Three Forks



Daily Progress

Oasis Petroleum
Ross 5603 43-10 2B

Spud 9 November 2014



Bit Record

<i>Bit #</i>	<i>Size</i>	<i>Make</i>	<i>Model</i>	<i>Serial #</i>	<i>Jets</i>	<i>Depth In</i>	<i>Depth Out</i>	<i>Footage</i>	<i>Hours</i>	<i>Mean ROP (ft/hr)</i>	<i>Accum. Hours</i>
1	17 1/2	Nov	Nov	E163630	12x16	106'	2,185'	2,079'	17.5	118.80	118.8
2	12 1/4	Varel	Varel	4007781	6x20	2,185'	6,150'	3,965'	28	141.61	260.4
3	8 3/4	Smith	MDSI616	JJ9914	6x14	6,150'	9,962'	3,812'	59	64.61	325.0
4	8 3/4	Smith	MDSI616	JJ3991	6x14	9,962'	10,330'	368'	5	73.60	398.6
5	8 3/4	SEC	MMD55C	12569562	5x18	10,330'	11,177'	847'	27.5	30.80	429.4
6	6	Smith	Smith	JJ4130	6x18	11,177'	11,220'	43'	0.5	86.00	515.4
6RR	6	Smith	Smith	JJ4130	6x18	11,220'	11,577'	357'	12	29.75	545.2
7	6	Varel	Varel	4006699	6x18	11,577'	16,933'	5,356'	102.5	52.25	597.4
8	6	Varel	VM613P2	4004837	6x18	16,933'	19,195'	2,262'	34	66.53	664.0
9	6	Varel	VM613P2	4005467	6x18	19,195'	20,742'	1,547'	30	51.57	715.5

Daily Mud Data

Day	Date 2014	Depth (0600 Hrs)	Mud WT (ppg)	VIS (sec)	PV (cP)	YP (lbs/100 ft²)	Gels (lbs/100 ft²)	600/ 300	HTHP (cc/30min)	NAP/H₂O (ratio)	Cake (APT/ HT)	Solid S (%)	pH	Alk	Cl-(mg/l)	CaCl₂	ES (v)	Loss (Bbls)
1	22-Nov	5,378'	11.70	68	22	19	10/12/19	63/41	10	77/23	2	15.2	-	-	38	-	685	-
2	23-Nov	6,150'	11.55	69	21	14	10/11/15	56/35	7	77.7/22.3	2	14.8	-	-	36	-	740	-
3	24-Nov	6,694'	11.55	69	21	14	10/11/15	56/35	7	77.7/22.3	2	14.8	-	-	36	-	740	-
4	25-Nov	8,477'	10.35	59	20	15	11/13/18	55/35	6	77.1/22.9	2	10.20	-	-	38	-	860	-
5	26-Nov	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	27-Nov	10,090'	10.05	54	22	12	8/9/14	56/34	3	79.5/21.5	2	9.70	-	-	38	-	920	-
7	28-Nov	10,330'	10.30	69	23	14	9/10/15	60/37	2	79.3/20.3	2	10.70	-	-	38	-	880	-
8	29-Nov	11,004'	10.30	69	23	14	9/10/14	60/37	2	793/20.3	2	10.50	-	-	38	-	880	-
9	30-Nov	11,177'	10.40	60	60	22	9/10/15	56/34	2	79.3/20.7	2	10.90	-	-	38	-	-	-
10	1-Dec	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	2-Dec	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	3-Dec	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	4-Dec	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	5-Dec	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Switch to Salt Water Brine

10	6-Dec	11,869'	9.65	28	1	2	0/1/0	4/3	-	0/91	-	0.20	8	-	145k	-	-	-
11	7-Dec	12,803'	9.65	28	1	2	0/1/0	4/3	-	0/91	-	0.20	8	-	145k	-	-	-
12	8-Dec	13,623'	9.75	28	1	2	0/1/0	2/1	-	0/91.2	-	0.20	9	-	144k	-	-	-
13	9-Dec	14,600'	9.75	28	1	2	0/1/0	2/1	-	0/91.2	-	0.20	9	-	144k	-	-	-
14	10-Dec	16,170'	9.80	28	1	1	0/1/0	3/2	-	0/90.2	-	0.40	9	-	145k	-	-	-
15	11-Dec	16,935'	9.80	28	1	1	0/1/0	3/2	-	0/90.2	-	0.40	9	-	145k	-	-	-
16	12-Dec	17,330'	9.75	28	1	1	0/1/0	3/2	-	0/90.2	-	0.40	9	-	145K	-	-	-
17	13-Dec	18,980'	9.80	28	1	1	0/1/0	3/2	-	0/90.2	-	0.40	9	-	145K	-	-	-
18	14-Dec	19,195'	9.80	28	1	1	0/1/0	3/2	-	0/90.2	-	0.40	9	-	145K	-	-	-
19	15-Dec	20,363'	9.75	28	1	1	0/1/0	3/2	-	0/90.2	-	0.40	9	-	158K	-	-	-
20	16-Dec	20,742'	9.75	28	1	1	0/1/1	3/3	-	0/90.3	-	1.40	10	-	158K	-	-	-

DRILLING PLAN								
OPERATOR	Oasis Petroleum			COUNTY/STATE	McKenzie Co., ND			
WELL NAME	Kline Federal 5300 41-18 9T			RIG	Nabors B22			
WELL TYPE	Horizontal Upper Three Forks							
LOCATION	SWSW 18-153N-100W	Surface Location (survey plat): 533' fsl		237' fwL				
EST. T.D.	20,825'			GROUND ELEV: 2057 Finished Pad Elev.		Sub Height: 25		
TOTAL LATERA	9,721'			KB ELEV: 2082				
PROGNOSIS:	Based on 2,082' KB(est)		LOGS:		Type	Interval		
MARKER	DEPTH (Surf Loc)	DATUM (Surf Loc)			OH Logs: Triple Combo KOP to Kirby (or min run of 1800' whichever is greater); GR/Res to BSC; GR to surf; CND through the Dakota CBL/GR: Above top of cement/GR to base of casing MWD GR: KOP to lateral TD			
Pierre	NDIC MAP	1,972	110					
Greenhorn		4,646	(2,564)					
Mowry		5,057	(2,975)					
Dakota		5,471	(3,389)					
Rierdon		6,486	(4,404)					
Dunham Salt		6,814	(4,732)					
Dunham Salt Base		6,929	(4,847)					
Spearfish		7,024	(4,942)					
Pine Salt		7,283	(5,201)					
Pine Salt Base		7,318	(5,236)					
Opeche Salt		7,374	(5,292)					
Opeche Salt Base		7,403	(5,321)	DST'S:				
Broom Creek (Top of Minnelusa Gp.)		7,605	(5,523)			None planned		
Amsden		7,684	(5,602)					
Tyler		7,853	(5,771)					
Otter (Base of Minnelusa Gp.)		8,047	(5,965)					
Kibbey Lime		8,390	(6,308)	CORES:				
Charles Salt		8,542	(6,460)			None planned		
UB		9,159	(7,077)					
Base Last Salt		9,238	(7,156)					
Ratcliffe		9,301	(7,219)					
Mission Canyon		9,454	(7,372)	MUDLOGGING:				
Lodgepole		10,022	(7,940)			Two-Man: 8,342' ~200' above the Charles (Kibbey) to Casing point; Casing point to TD		
Lodgepole Fracture Zone		10,209	(8,127)					
False Bakken		10,726	(8,644)			30' samples at direction of wellsite geologist; 10' through target @ curve land		
Upper Bakken		10,735	(8,653)					
Middle Bakken		10,751	(8,669)					
Lower Bakken		10,785	(8,703)					
Pronghorn		10,791	(8,709)	BOP:				
Three Forks		10,813	(8,731)			11" 5000 psi blind, pipe & annular		
TF Target Top		10,827	(8,745)					
TF Target Base		10,837	(8,755)					
Claystone		10,838	(8,756)					
Dip Rate:	-0.1							
Max. Anticipated BHP:	4692	Surface Formation: Glacial till						
MUD:	Interval	Type	WT	Vis	WL	Remarks		
Surface:	0' -	2,072' FW/Gel - Lime Sweeps	8.4-9.0	28-32	NC	Circ Mud Tanks		
Intermediate:	2,072' -	11,104' Invert	9.5-10.4	40-50	30+HtHp	Circ Mud Tanks		
Laterals:	11,104' -	20,825' Salt Water	9.8-10.2	28-32	NC	Circ Mud Tanks		
CASING:	Size	Wt ppf	Hole	Depth	Cement	WOC	Remarks	
Surface:	9-5/8"	36#	13-1/2"	2,072'	To Surface	12	100' into Pierre	
Intermediate:	7"	29/32#	8-3/4"	11,104'	3971	24	1500' above Dakota 50' above KOP	
Production Liner:	4.5"	11.6#	6"	20,825'	TOL @ 10,305'			
PROBABLE PLUGS, IF REQ'D:								
OTHER:	MD	TVD	FNL/FSL	FEL/FWL	S-T-R	AZI		
Surface:	2,072	2,072	533' FSL	237' FWL	SEC 18-T153N-R100W	Survey Company:		
KOP:	10,355'	10,355'	583' FSL	237' FWL	SEC 18-T153N-R100W	Build Rate:	12 deg /100'	
EOC:	11,104'	10,832'	831' FSL	644' FWL	SEC 18-T153N-R100W			
Casing Point:	11,104'	10,832'	831' FSL	644' FWL	SEC 18-T153N-R100W			
Middle Bakken Lateral TD:	20,825'	10,849'	1250' FSL	200' FEL	SEC 17-T153N-R100W			
Comments:								
Request a Sundry for an Open Hole Log Waiver								
Exception well: Oasis Petroleum's Kline Federal 5300 11-18H (153N 100W 18 NW NW) 35 packers, 35 sleeves, no frac string								
Oasis Petroleum does not use Diesel Fuel, as defined by the US EPA in the list below, in our hydraulic fracture operations. 68334-30-5 (Primary Name: Fuels, diesel) 68476-34-6 (Primary Name: Fuels, diesel, No. 2) 68476-30-2 (Primary Name: Fuel oil No. 2) 68476-31-3 (Primary Name: Fuel oil, No. 4) 8008-20-6 (Primary Name: Kerosene)								
								
Geology: M.Steed 4/23/14				Engineering: hbader rpm				

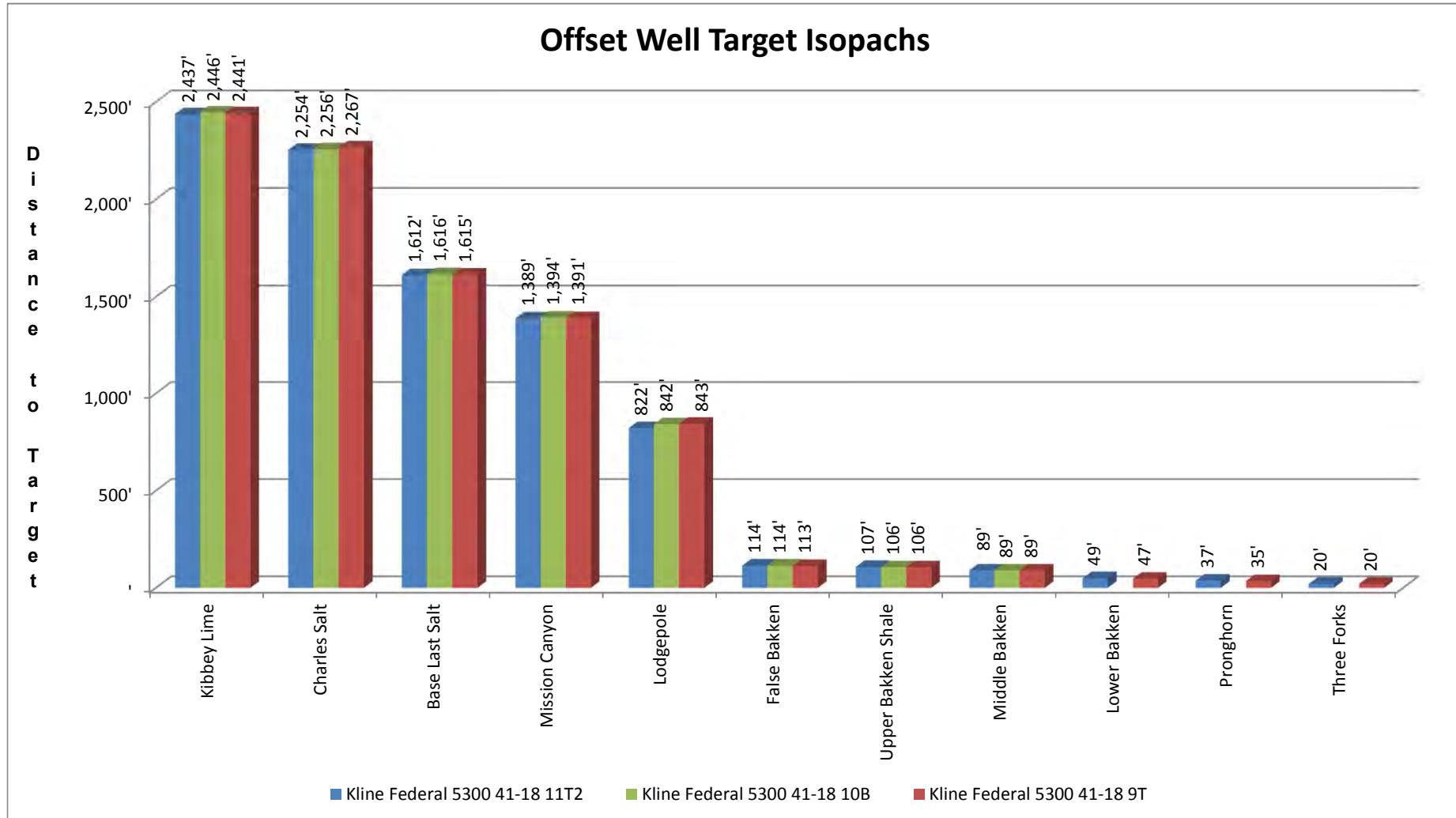
Formation Tops

Operator: Well Name: Location: Elevation:	Subject Well:							
	Oasis Petroleum North America Kline Federal 5300 41-18 9T 325' FSL & 1647' FEL SW SE Sec. 10 T156N R103W							
	GL: 2,057'	Sub: 25'			KB: 2,082'			
Formation/ Zone	Prog. Top	Prog. MSL Datum	Est. MD Top (Gamma)	TVD Top (Gamma)	Est. MLS Datum	Thickness	Dip To <i>Kline Federal 5300 41-18 11T2</i>	Distance to Target
Kibbey Lime	8,381	-6,299'	8,380'	8,380'	-6,298'	174'	2' High	2,441'
Charles Salt	8,562	-6,480'	8,554'	8,554'	-6,472'	652'	11' High	2,267'
Base Last Salt	9,207	-7,125'	9,206'	9,206'	-7,124'	224'	1' High	1,615'
Mission Canyon	9,427	-7,345'	9,430'	9,430'	-7,348'	548'	Flat	1,391'
Lodgepole	9,976	-7,894'	9,978'	9,978'	-7,896'	730'	19' High	843'
False Bakken	10,702	-8,620'	10,746'	10,708'	-8,626'	7'	3' Low	113'
Upper Bakken Shale	10,713	-8,631'	10,766'	10,715'	-8,633'	17'	3' Low	106'
Middle Bakken	10,729	-8,647'	10,808'	10,732'	-8,650'	42'	2' Low	89'
Lower Bakken	10,771	-8,689'	10,886'	10,774'	-8,692'	12'	4' Low	47'
Pronghorn	10,782	-8,700'	10,922'	10,786'	-8,704'	15'	4' Low	35'
Three Forks	10,798	-8,716'	10,971'	10,801'	-8,719'	-	2' Low	20'

Control Well

Operator: Well Name: Location:	Oasis Petroleum Kline Federal 5300 41-18 11T2 SW SW Sec. 18 T153N, R100W McKenzie Co., ND Approximately 66 ft South				Operator: Well Name: Location:	Oasis Petroleum Kline Federal 5300 41-18 10B SW SW Sec. 18 T153N, R100W McKenzie Co., ND Approximately 33 feet South			
Elevation:	KB:	2,082'			Elevation:	KB:	2,082'		
Formation/ Zone	Est. TVD	MSL Datum	Thickness	Dist to target	Formation/Zone	Est. TVD	MSL Datum	Thickness	Dist to target
Kibbey Lime	8,382'	-6,300'	183'	2,437'	Kibbey Lime	8,376	-6,294'	190'	2,446'
Charles Salt	8,565'	-6,483'	642'	2,254'	Charles Salt	8,566	-6,484'	640'	2,256'
Base Last Salt	9,207'	-7,125'	223'	1,612'	Base Last Salt	9,206	-7,124'	222'	1,616'
Mission Canyon	9,430'	-7,348'	567'	1,389'	Mission Canyon	9,428	-7,346'	552'	1,394'
Lodgepole	9,997'	-7,915'	708'	822'	Lodgepole	9,980	-7,898'	728'	842'
False Bakken	10,705'	-8,623'	7'	114'	False Bakken	10,708	-8,626'	8'	114'
Upper Bakken Shale	10,712'	-8,630'	18'	107'	Upper Bakken Shale	10,716	-8,634'	17'	106'
Middle Bakken	10,730'	-8,648'	40'	89'	Middle Bakken	10,733	-8,651'	27'	89'
Lower Bakken	10,770'	-8,688'	12'	49'	Target	10,822'	-8,740'	89'	'
Pronghorn	10,782'	-8,700'	17'	37'					
Three Forks	10,799'	-8,717'	25'	20'					
Claystone	10,824'	-8,742'	13'	-					
Three Forks 2nd Bench	10,837'	-8,755'	-	-					

Offset Well Target Isopachs



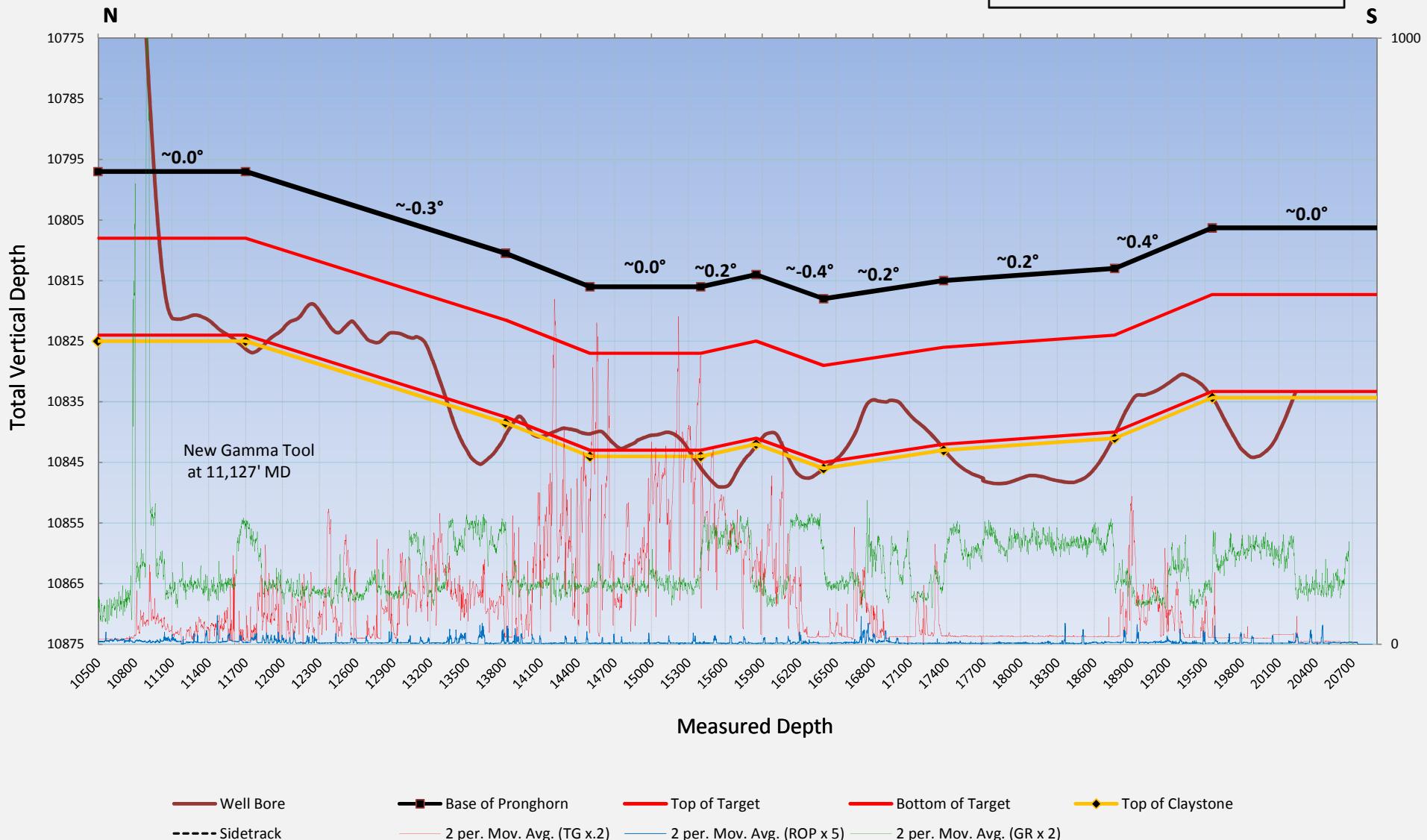


RPM Geologic

Surface: 533' FSL & 237' FWL
SW SE Sec. 18 T153N R100W
McKenzie County, ND

Kline Federal 5300 41-18 9T Cross Section

Bottom Hole Location:
732.43' N & 9998.39' E
of surface location or approx.
1265.43' FSL & 253.79' FEL
SE SE Sec. 18, T156N, R103W

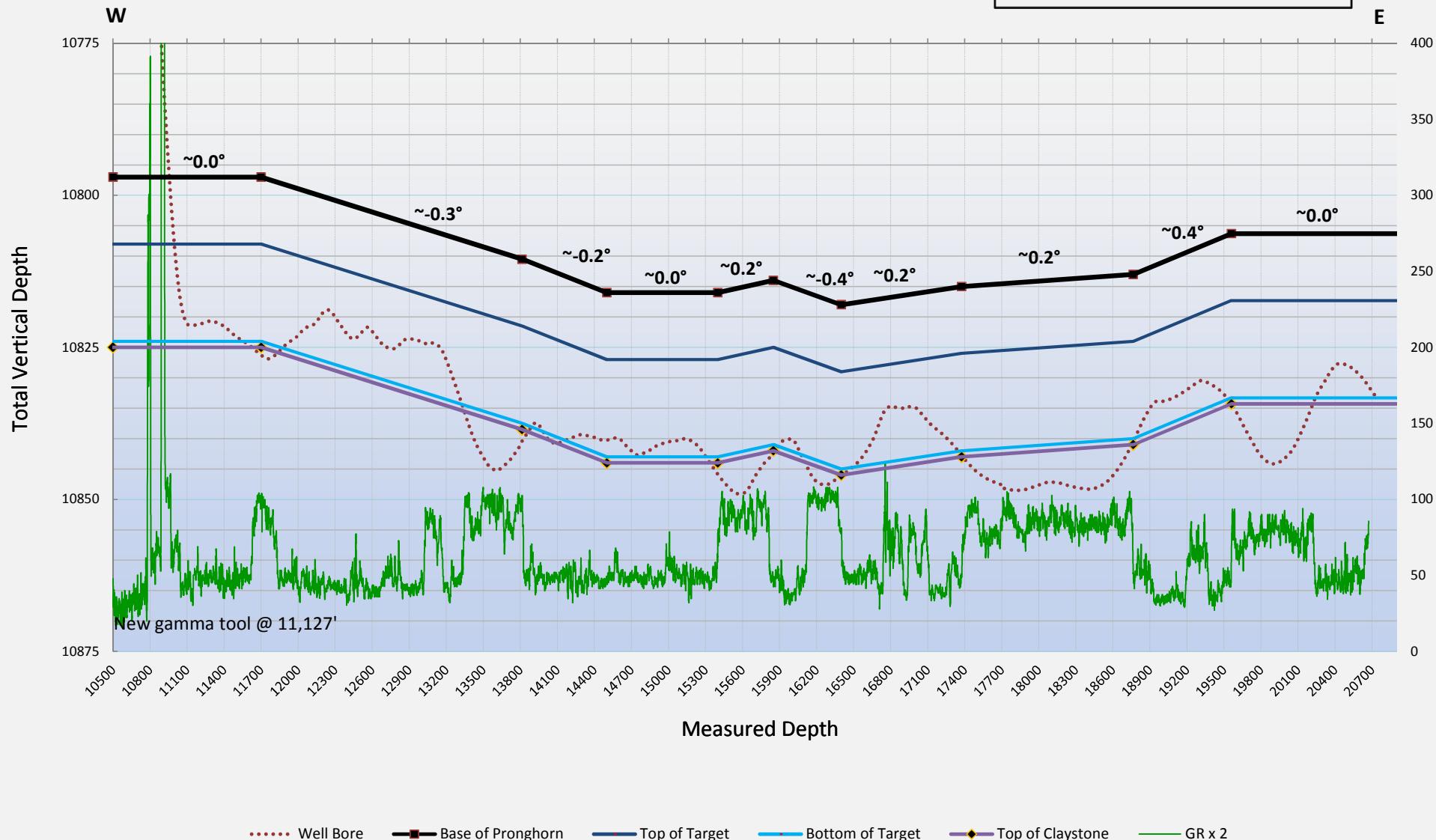




Surface: 533' FSL & 237' FWL
SW SW Sec. 18 T153N, R100W
McKenzie County, ND

Kline Federal 5300 41-18 9T Gamma Cross Section

Bottom Hole Location:
732.43' N & 9998.39' E
of surface location or approx.
1265.43' FSL & 253.79' FEL
SW SE Sec. 22, T156N, R103W





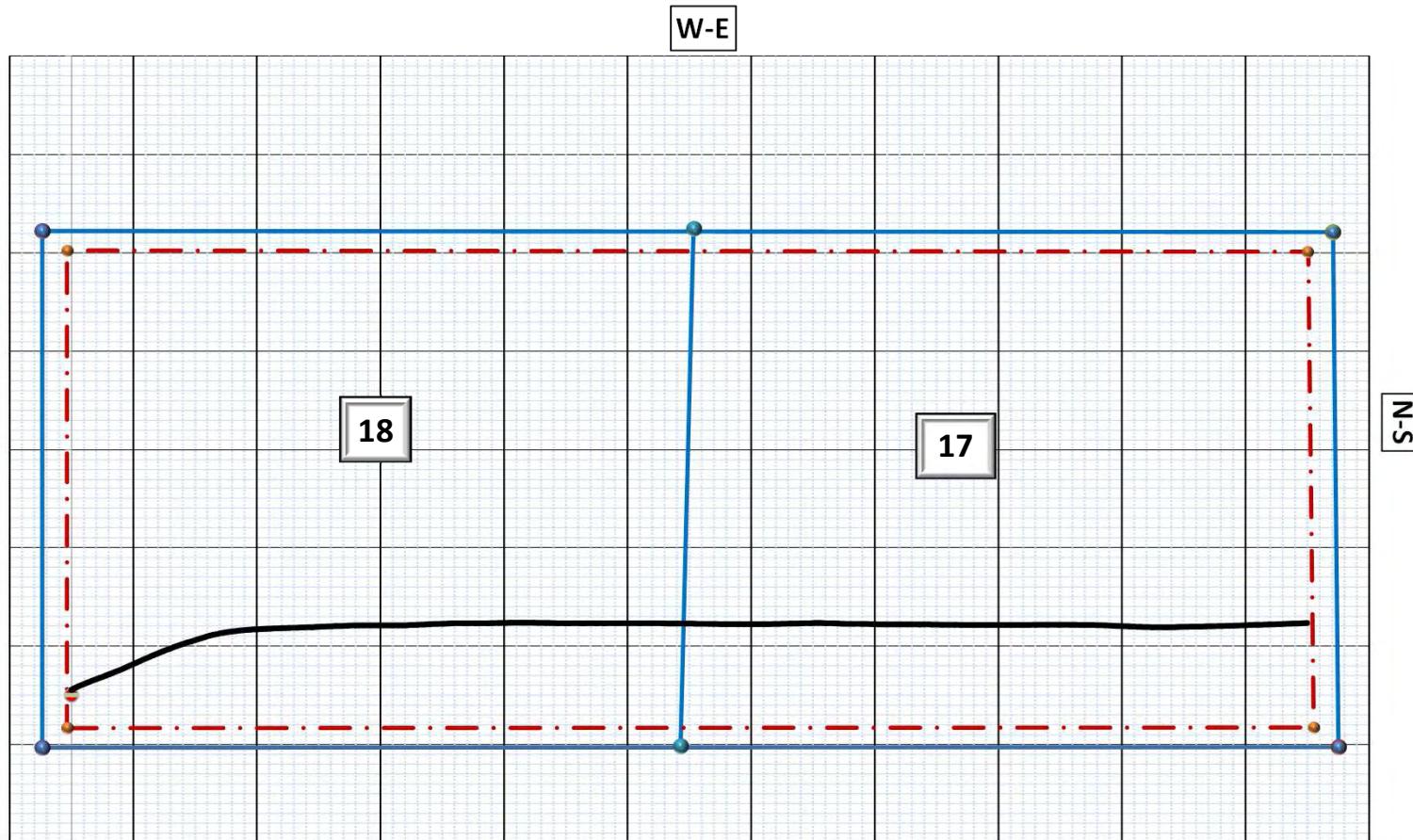
RPM Geologic



Vertical Section View

Surface Location:
533' FSL & 237' FWL
SW SW Sec. 18, T153N, R100W
McKenzie County, ND

Bottom Hole Location
9998.39' E & 732.43' S of surface
location or approx.
1265.43' FSL & 253.79' FEL
SE SE Sec. 17 T153N, R100W



SECTION BREAKDOWN

OASIS PETROLEUM NORTH AMERICA, LLC

1001 FANNIN SUITE 1500 HOUSTON, TX 77002

SECTIONS 17 & 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

533 FEET FROM SOUTH LINE AND 237 FEET FROM WEST LINE

"KLINE FEDERAL 5300 41-18.9T"

FOUND REBAR
W/ 2" AC
LS 2352 AZ 89°47'43" AZ 89°47'43" FOUND 4" AC
CORP. OF ENG.
CALCULATED
IN LAKE
AZ 90°00'00" AZ 90°00'00" AZ 90°00'00"
CALCULATED
IN LAKE

1310.63'

AZ 0°03'52"

1312.45'

AZ 89°47'43"

1314.27'

AZ 89°49'00"

AZ 89°49'00"

AZ 90°00'00"

1310.75'

AZ 0°03'33"

1313.96'

AZ 89°51'41"

AZ 89°49'00"

AZ 90°00'00"

LOT 1

AZ 0°00'41"

AZ 89°49'00"

AZ 90°00'00"

LOT 2

AZ 0°00'41"

AZ 89°49'00"

AZ 90°00'00"

LOT 3

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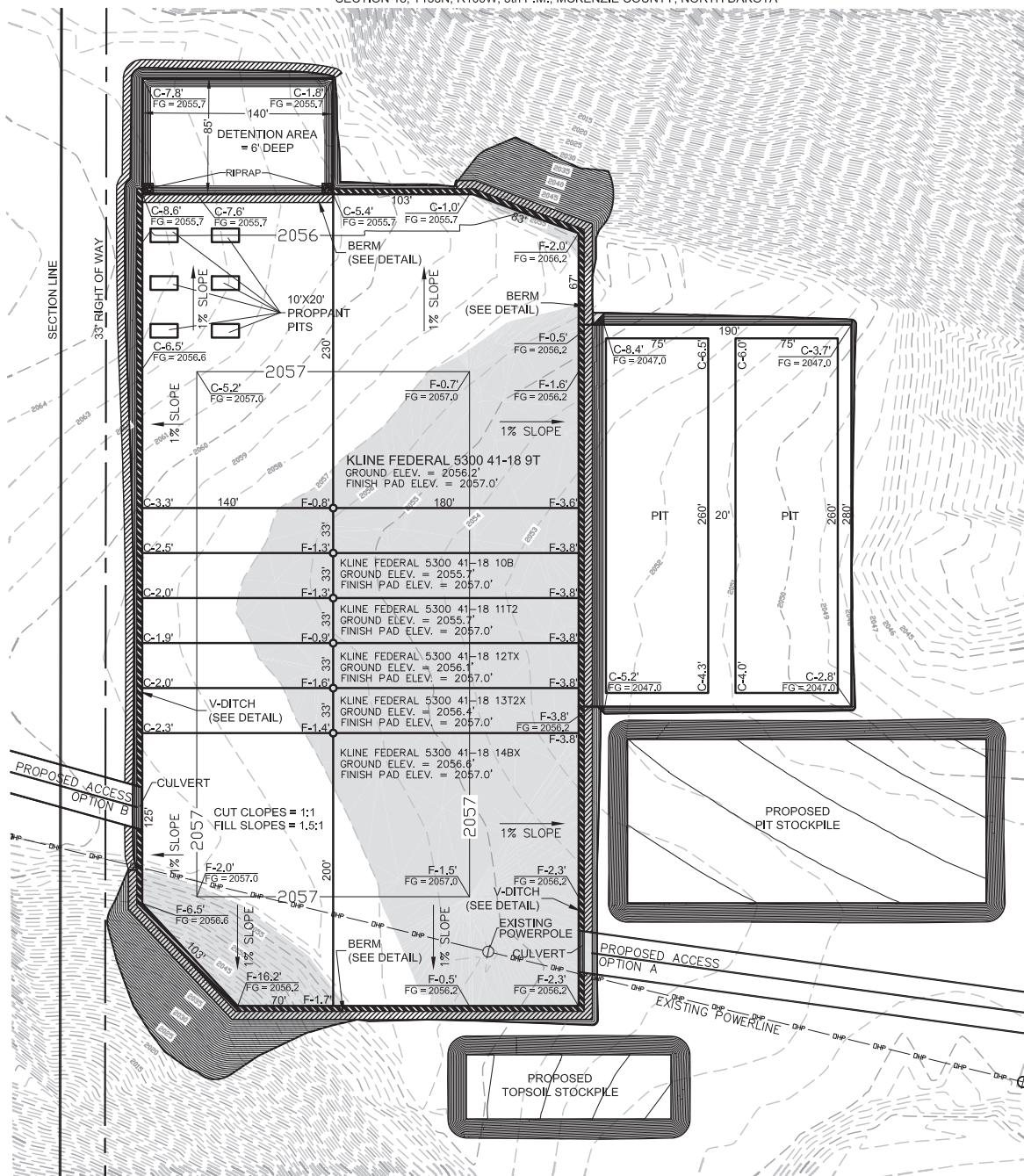
AZ 90°00'00"

PAD LAYOUT

OASIS PETROLEUM NORTH AMERICA, LLC
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002

"KLINE FEDERAL 5300 41-18 9T"

533 FEET FROM SOUTH LINE AND 237 FEET FROM WEST LINE
SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

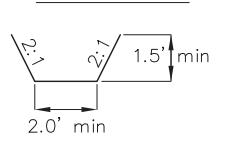


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NOTE: Pad dimensions shown are usable area, the v-ditch and berm areas shall be built to the outside of the pad dimensions.



V-DITCH DETAIL



Proposed Contours
Original Contours

BERM
DITCH

NOTE: All utilities shown are preliminary only, a complete utilities location is recommended before construction.

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0
1" = 80'

3/8



SHEET NO.

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Other offices in Minnesota, North Dakota and South Dakota

OASIS PETROLEUM NORTH AMERICA, LLC
PAD LAYOUT
SECTION 18, T153N, R100W
MCKENZIE COUNTY, NORTH DAKOTA
Drawn By: B.H.H. Project No.: S14-09-081.05
Checked By: D.D.K. Date: APRIL 2014

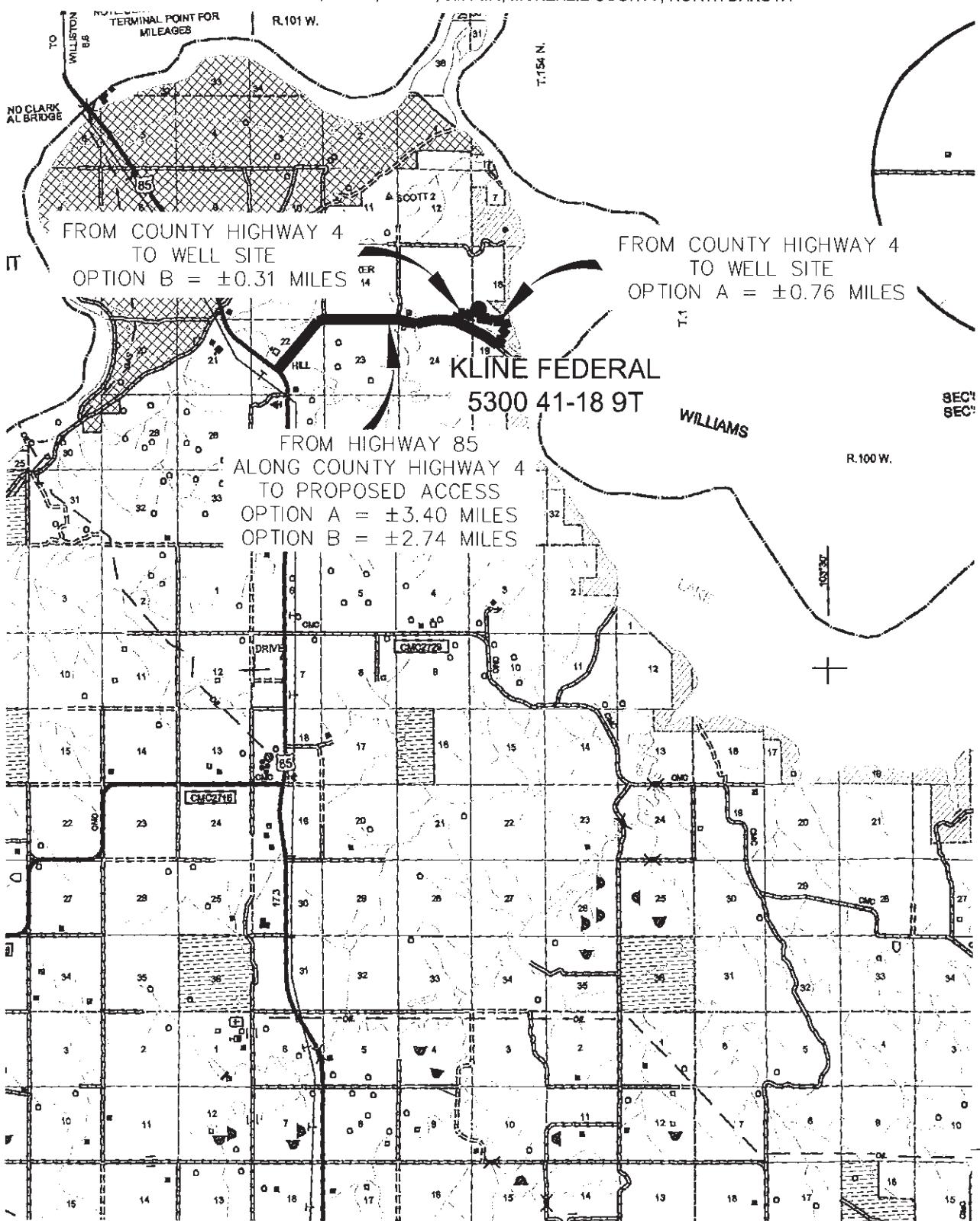
Revision No.	Date	By	Description

OASIS PETROLEUM NORTH AMERICA, LLC
PAD LAYOUT
SECTION 18, T153N, R100W
MCKENZIE COUNTY, NORTH DAKOTA
Project No.: S14-09-081.05
Location (Lat/Long): 46° 53' 30" N 100° 41' 18" W
Date: APRIL 2014
Drawn By: B.H.H.
Checked By: D.D.K.

COUNTY ROAD MAP

OASIS PETROLEUM NORTH AMERICA, LLC
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
"KLINE FEDERAL 5300 41-18 9T"

533 FEET FROM SOUTH LINE AND 237 FEET FROM WEST LINE
SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



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SCALE: 1" = 2 MILE

6/8



Professionals you need, people you trust

INTERSTATE
ENGINEERING

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Other offices in Minnesota, North Dakota and South Dakota

OASIS PETROLEUM NORTH AMERICA, LLC
COUNTY ROAD MAP
SECTION 18, T153N, R100W

MCKENZIE COUNTY, NORTH DAKOTA

Drawn By:	B.H.H.	Project No.:	S14-09-081.05
Checked By:	R.L.P.	Date:	APRIL 2014

Revision No.	Date	By	Description



Leaders in Precision Wellbore Placement

Oasis Petroleum
Mark Lawlar, Travis Handran
Kline Federal 5300 41-18 9T
Nabors 486
3.30531E+13
Baker Field
McKenzie Co.

Azimuth Reference: True North
Vertical Section Azimuth: 90
Magnetic Declination: 8.45
Grid Correction: 0
Total Correction Used: 8.45
Vertical Reference: Rotary Table
Calculation Method: Minimum Curvature
Magnetic Model:
Tool Error Model: Magnetic (Good)

SURVEY DEPTH	Inc.	Azm.	TVD	Course Length	Vertical Section	North (N) South (S)	East (E) West (W)	Feet	Feet	DLS
1158	0.84	313.34	1157.90	92.00	4.0	4.00	N	3.60	E	0.88
1250	0.62	302.53	1157.90	92.00	2.7	4.73	N	2.69	E	0.28
1342	0.40	325.03	1157.90	92.00	2.1	5.26	N	2.09	E	0.32
1433	0.35	342.96	1157.90	91.00	1.8	5.79	N	1.82	E	0.14
1528	0.26	326.96	1157.90	95.00	1.6	6.25	N	1.62	E	0.13
1623	1.23	326.70	1157.90	95.00	0.9	7.28	N	0.94	E	1.02
1719	0.62	235.03	1157.90	96.00	0.0	7.84	N	0.05	E	1.45
1813	0.66	228.00	1157.90	94.00	-0.9	7.19	N	0.87	E	0.09
1908	1.01	214.20	1157.90	95.00	-1.7	6.13	N	1.74	E	0.42
2003	1.19	237.58	1157.90	95.00	-3.0	4.91	N	3.05	E	0.50
2097	1.05	242.67	1157.90	94.00	-4.6	3.99	N	4.64	E	0.18
2185	0.84	228.26	1157.90	88.00	-5.8	3.19	N	5.84	E	0.36
4171	0.40	349.67	4170.70	95.00	14.8	14.8	N	6.80	E	0.05
4266	0.35	358.54	4265.70	95.00	15.4	15.4	N	6.90	E	0.11
4361	0.40	342.72	4360.70	95.00	16.0	16.0	N	7.00	E	0.12
4456	0.53	334.99	4455.70	95.00	16.7	16.7	N	7.30	E	0.15
4550	0.48	335.95	4549.70	94.00	17.5	17.5	N	7.60	E	0.05
4645	0.53	333.14	4644.70	95.00	18.2	18.2	N	8.00	E	0.06
4740	0.44	353.09	4739.70	95.00	19.0	19.0	N	8.20	E	0.20
4835	0.26	344.04	4834.70	95.00	19.6	19.6	N	8.30	E	0.20
4931	0.40	328.13	4930.70	96.00	20.1	20.1	N	8.50	E	0.17
5024	0.48	320.31	5023.70	93.00	20.6	20.6	N	9.00	E	0.11
5119	0.62	348.00	5118.70	95.00	21.4	21.4	N	9.30	E	0.31
5214	0.53	348.00	5213.70	95.00	22.4	22.4	N	9.50	E	0.09
5308	0.44	355.20	5213.70	94.00	23.2	23.20	N	9.60	E	0.31
5403	0.44	325.58	5213.70	95.00	23.8	23.80	N	9.90	E	0.09
5497	0.35	23.50	5213.70	94.00	24.4	24.40	N	10.00	E	0.12

5592	0.08	59.10	5213.70	95.00	24.7	24.70	N	9.70	E	0.24
5687	0.31	62.17	5213.70	95.00	24.9	24.90	N	9.40	E	0.42
5782	0.22	58.31	5213.70	95.00	25.1	25.10	N	9.00	E	0.24
5876	0.22	71.14	5213.70	94.00	25.3	25.30	N	8.70	E	0.05
5971	0.13	46.09	5213.70	95.00	25.4	25.40	N	8.40	E	0.12
6066	0.26	16.30	5213.70	95.00	25.7	25.70	N	8.30	E	0.17
6097	0.26	41.96	5213.70	31.00	25.8	25.80	N	8.20	E	0.37
6162	0.57	1.18	5213.70	65.00	26.3	26.30	N	8.10	E	0.63
6259	0.75	10.06	5213.70	97.00	27.3	27.30	N	8.00	E	0.22
6350	0.70	3.38	5213.70	91.00	28.5	28.50	N	7.80	E	0.10
6445	0.84	353.80	5213.70	95.00	29.8	29.80	N	7.90	E	0.20
6540	1.05	351.69	5213.70	95.00	31.3	31.30	N	8.10	E	0.22
7295	0.66	32.56	5213.70	755.00	42.1	42.10	N	5.80	E	0.99
7388	0.79	20.43	5213.70	93.00	43.2	43.20	N	5.30	E	0.22
7483	1.01	16.82	5213.70	95.00	44.6	44.60	N	4.80	E	0.24
7577	0.84	20.78	5213.70	94.00	46.0	46.00	N	4.30	E	0.19
7671	0.79	28.86	5213.70	94.00	47.3	47.30	N	3.80	E	0.13
7766	0.57	43.81	5213.70	95.00	48.2	48.20	N	3.10	E	0.30
7859	0.31	61.82	5213.70	93.00	48.6	48.60	N	2.60	E	0.31
7953	0.26	101.99	5213.70	94.00	48.7	48.70	N	2.10	E	0.21
8047	0.04	109.81	5213.70	94.00	48.6	48.60	N	1.90	E	0.23
8141	0.00	178.63	5213.70	94.00	48.6	48.60	N	1.90	E	0.04
8236	0.40	349.75	5213.70	95.00	49.0	49.00	N	1.90	E	0.42
8330	0.53	342.37	5213.70	94.00	49.7	49.70	N	2.10	E	0.15
8613	0.53	320.05	5213.70	283.00	51.9	51.90	N	3.70	E	0.01
8708	0.70	339.29	5213.70	95.00	52.7	52.70	N	4.20	E	0.28
8802	0.48	351.77	5213.70	94.00	53.7	53.70	N	4.40	E	0.27
8897	0.22	104.98	5213.70	95.00	54.0	54.00	N	4.30	E	0.63
8991	0.35	117.02	5213.70	94.00	53.8	53.80	N	3.90	E	0.15
9085	0.22	95.84	5213.70	94.00	53.7	53.70	N	3.40	E	0.18
9179	0.13	108.67	5213.70	94.00	53.6	53.60	N	3.20	E	0.10
9273	0.18	69.82	5213.70	94.00	53.6	53.60	N	2.90	E	0.12
9367	0.13	57.96	5213.70	94.00	53.8	53.80	N	2.70	E	0.06
9462	0.13	86.78	5213.70	95.00	53.8	53.80	N	2.50	E	0.07
9556	0.04	96.89	5213.70	94.00	53.8	53.80	N	2.30	E	0.10
9650	0.09	41.96	5213.70	94.00	53.9	53.90	N	2.30	E	0.08
9743	0.04	79.67	5213.70	93.00	53.9	53.90	N	2.20	E	0.07
9837	0.13	137.67	5213.70	94.00	53.9	53.90	N	2.10	E	0.12
9931	0.26	131.61	5213.70	94.00	53.6	53.60	N	1.90	E	0.14
10025	0.22	130.03	5213.70	94.00	53.4	53.40	N	1.60	E	0.04
10120	0.22	47.67	5213.70	95.00	53.4	53.40	N	1.30	E	0.03
10215	0.22	48.20	5213.70	95.00	53.6	53.60	N	1.00	E	0.00
10276	0.26	38.80	5213.70	61.00	53.8	53.80	N	0.80	E	0.09



Operator:	Oasis Petroleum
Well :	Kline Federal 5300 41-18 9T
MWD Providers	GyroData
Directional Supervision:	RPM

Section:	18	QQ:	SW SW	County:	McKenzie	State:	ND
Township:	153	N/S:	N	Footages:	533	FN/SL:	S
Range:	100	E/W:	W		237	FE/WL:	W

Vertical Section Plane: **90**

Coordinates

#	MD	Inc.	Azm.	T.V.D.	Ver. Sect.	+N/-S	+E/-W	DLS
Tie	10276.00	0.26	38.80	10275.48	-0.41	54.67	-0.41	0.09
1	10310.00	0.44	51.19	10309.48	-0.26	54.81	-0.26	0.57
2	10341.00	2.59	51.28	10340.47	0.38	55.32	0.38	6.94
3	10373.00	6.46	54.09	10372.36	2.40	56.83	2.40	12.11
4	10405.00	10.42	54.09	10404.01	6.21	59.59	6.21	12.38
5	10437.00	15.03	53.39	10435.21	11.88	63.76	11.88	14.41
6	10468.00	19.12	54.79	10464.84	19.26	69.09	19.26	13.26
7	10501.00	23.03	58.13	10495.63	29.16	75.62	29.16	12.39
8	10532.00	26.99	60.77	10523.72	40.46	82.25	40.46	13.27
9	10564.00	30.15	62.88	10551.82	53.95	89.47	53.95	10.36
10	10595.00	33.32	63.67	10578.18	68.51	96.79	68.51	10.31
11	10627.00	36.13	63.41	10604.48	84.83	104.92	84.83	8.79
12	10658.00	38.77	63.49	10629.09	101.69	113.34	101.69	8.52
13	10690.00	41.19	61.91	10653.61	119.96	122.78	119.96	8.20
14	10721.00	44.00	61.74	10676.42	138.45	132.68	138.45	9.07
15	10753.00	47.30	63.14	10698.79	158.73	143.26	158.73	10.78
16	10784.00	50.68	65.16	10719.13	179.79	153.45	179.79	11.96
17	10816.00	55.21	65.43	10738.41	202.98	164.12	202.98	14.17
18	10847.00	60.22	64.99	10754.96	226.76	175.10	226.76	16.21
19	10878.00	65.01	65.16	10769.22	251.72	186.70	251.72	15.46
20	10910.00	69.45	64.72	10781.60	278.44	199.20	278.44	13.93
21	10941.00	71.08	63.58	10792.07	304.70	211.92	304.70	6.30
22	10973.00	73.71	63.05	10801.74	331.95	225.62	331.95	8.37
23	11004.00	76.84	63.14	10809.62	358.68	239.18	358.68	10.10
24	11036.00	81.19	62.35	10815.72	386.60	253.57	386.60	13.81
25	11068.00	85.36	60.94	10819.47	414.56	268.66	414.56	13.75
26	11099.00	88.62	60.86	10821.09	441.60	283.71	441.60	10.52
27	11114.00	89.76	60.24	10821.31	454.66	291.09	454.66	8.65
28	11162.00	90.11	59.95	10821.36	496.27	315.02	496.27	0.95
29	11194.00	90.33	61.53	10821.24	524.19	330.66	524.19	4.99
30	11225.00	90.37	61.09	10821.05	551.38	345.54	551.38	1.43
31	11255.00	90.46	61.09	10820.83	577.64	360.04	577.64	0.30

32	11287.00	90.11	60.92	10820.67	605.63	375.55	605.63	1.22
33	11318.00	89.58	61.44	10820.75	632.79	390.50	632.79	2.40
34	11349.00	89.49	62.06	10821.01	660.10	405.17	660.10	2.02
35	11380.00	89.49	62.50	10821.28	687.54	419.59	687.54	1.42
36	11411.00	89.01	63.55	10821.69	715.16	433.65	715.16	3.72
37	11443.00	88.92	63.20	10822.27	743.77	447.99	743.77	1.13
38	11473.00	88.92	64.78	10822.83	770.72	461.14	770.72	5.27
39	11504.00	89.27	65.25	10823.32	798.82	474.23	798.82	1.89
40	11535.00	89.32	64.90	10823.70	826.93	487.29	826.93	1.14
41	11566.00	89.23	66.75	10824.09	855.21	499.99	855.21	5.97
42	11597.00	89.14	67.10	10824.54	883.72	512.14	883.72	1.17
43	11628.00	89.01	66.22	10825.04	912.18	524.42	912.18	2.87
44	11660.00	89.05	68.50	10825.58	941.71	536.73	941.71	7.13
45	11691.00	88.97	69.12	10826.11	970.61	547.94	970.61	2.02
46	11722.00	89.19	68.33	10826.61	999.49	559.18	999.49	2.65
47	11753.00	89.76	68.24	10826.90	1028.29	570.65	1028.29	1.86
48	11784.00	90.90	69.29	10826.72	1057.19	581.88	1057.19	5.00
49	11815.00	90.73	69.73	10826.28	1086.22	592.73	1086.22	1.52
50	11847.00	91.43	70.79	10825.67	1116.33	603.54	1116.33	3.97
51	11878.00	91.12	73.07	10824.98	1145.80	613.15	1145.80	7.42
52	11909.00	90.99	74.66	10824.41	1175.57	621.76	1175.57	5.15
53	11940.00	90.68	76.24	10823.96	1205.57	629.55	1205.57	5.19
54	11971.00	90.77	78.26	10823.57	1235.80	636.39	1235.80	6.52
55	12002.00	91.34	79.58	10823.00	1266.22	642.35	1266.22	4.64
56	12034.00	91.34	80.90	10822.25	1297.75	647.77	1297.75	4.12
57	12065.00	90.51	82.30	10821.75	1328.41	652.30	1328.41	5.25
58	12096.00	90.37	83.88	10821.51	1359.18	656.03	1359.18	5.12
59	12127.00	90.68	84.32	10821.23	1390.02	659.21	1390.02	1.74
60	12158.00	91.82	84.15	10820.55	1420.85	662.32	1420.85	3.72
61	12189.00	91.74	84.24	10819.59	1451.68	665.46	1451.68	0.39
62	12221.00	90.59	85.38	10818.94	1483.54	668.35	1483.54	5.06
63	12252.00	89.58	85.82	10818.89	1514.45	670.73	1514.45	3.55
64	12283.00	88.13	86.43	10819.51	1545.37	672.83	1545.37	5.07
65	12314.00	88.35	86.87	10820.46	1576.30	674.64	1576.30	1.59
66	12345.00	88.31	86.43	10821.37	1607.24	676.45	1607.24	1.42
67	12377.00	88.35	86.96	10822.30	1639.17	678.29	1639.17	1.66
68	12408.00	88.66	87.49	10823.11	1670.12	679.79	1670.12	1.98
69	12439.00	89.58	87.14	10823.58	1701.08	681.24	1701.08	3.18
70	12469.00	90.77	87.58	10823.49	1731.05	682.63	1731.05	4.23
71	12501.00	91.65	88.37	10822.82	1763.02	683.76	1763.02	3.70
72	12562.00	90.46	87.49	10821.69	1823.97	685.96	1823.97	2.43
73	12593.00	87.65	87.66	10822.20	1854.94	687.27	1854.94	9.08
74	12688.00	89.41	87.31	10824.64	1949.81	691.44	1949.81	1.89
75	12719.00	89.27	86.43	10825.00	1980.76	693.13	1980.76	2.87

76	12782.00	90.37	87.14	10825.20	2043.66	696.66	2043.66	2.08
77	12845.00	91.65	87.05	10824.09	2106.57	699.86	2106.57	2.04
78	12877.00	89.98	87.05	10823.63	2138.52	701.50	2138.52	5.22
79	12940.00	89.93	87.58	10823.68	2201.45	704.45	2201.45	0.85
80	12971.00	89.41	88.01	10823.86	2232.43	705.65	2232.43	2.18
81	13034.00	89.63	88.45	10824.39	2295.40	707.59	2295.40	0.78
82	13066.00	90.07	89.16	10824.47	2327.39	708.26	2327.39	2.61
83	13097.00	90.55	89.33	10824.30	2358.38	708.67	2358.38	1.64
84	13160.00	87.69	89.95	10825.27	2421.37	709.06	2421.37	4.65
85	13224.00	86.81	90.39	10828.34	2485.29	708.87	2485.29	1.54
86	13255.00	86.68	90.30	10830.10	2516.24	708.69	2516.24	0.51
87	13286.00	86.68	90.30	10831.90	2547.19	708.53	2547.19	0.00
88	13318.00	86.59	90.21	10833.77	2579.14	708.38	2579.14	0.40
89	13349.00	86.33	89.86	10835.69	2610.08	708.36	2610.08	1.40
90	13381.00	86.55	89.42	10837.67	2642.01	708.56	2642.01	1.53
91	13412.00	86.99	88.72	10839.42	2672.96	709.07	2672.96	2.66
92	13444.00	87.47	87.75	10840.97	2704.91	710.05	2704.91	3.38
93	13475.00	88.04	87.05	10842.18	2735.85	711.46	2735.85	2.91
94	13507.00	87.96	86.70	10843.30	2767.78	713.20	2767.78	1.12
95	13538.00	88.26	86.61	10844.32	2798.71	715.01	2798.71	1.01
96	13601.00	90.02	86.70	10845.27	2861.60	718.68	2861.60	2.80
97	13633.00	90.77	87.05	10845.05	2893.55	720.43	2893.55	2.59
98	13696.00	91.21	86.87	10843.96	2956.45	723.77	2956.45	0.75
99	13727.00	91.34	86.87	10843.27	2987.40	725.46	2987.40	0.42
100	13790.00	92.00	87.49	10841.43	3050.29	728.56	3050.29	1.44
101	13821.00	92.57	88.28	10840.20	3081.25	729.70	3081.25	3.14
102	13915.00	90.73	89.60	10837.49	3175.19	731.44	3175.19	2.41
103	13947.00	88.62	90.65	10837.67	3207.18	731.37	3207.18	7.36
104	14010.00	87.78	90.48	10839.65	3270.15	730.75	3270.15	1.36
105	14042.00	89.23	89.68	10840.48	3302.14	730.70	3302.14	5.17
106	14105.00	90.29	88.89	10840.75	3365.13	731.49	3365.13	2.10
107	14199.00	90.59	88.98	10840.03	3459.11	733.24	3459.11	0.33
108	14262.00	90.37	88.37	10839.50	3522.09	734.69	3522.09	1.03
109	14294.00	90.11	88.45	10839.37	3554.08	735.58	3554.08	0.85
110	14388.00	89.45	90.30	10839.73	3648.07	736.61	3648.07	2.09
111	14420.00	89.49	90.12	10840.02	3680.07	736.49	3680.07	0.58
112	14482.00	89.98	91.35	10840.31	3742.06	735.69	3742.06	2.14
113	14514.00	90.37	91.44	10840.21	3774.05	734.92	3774.05	1.25
114	14577.00	90.24	91.27	10839.88	3837.03	733.43	3837.03	0.34
115	14608.00	88.97	91.35	10840.09	3868.02	732.72	3868.02	4.10
116	14672.00	88.53	91.18	10841.49	3931.99	731.30	3931.99	0.74
117	14735.00	89.45	90.92	10842.60	3994.97	730.15	3994.97	1.52
118	14766.00	90.29	90.30	10842.67	4025.97	729.82	4025.97	3.37
119	14861.00	90.77	90.39	10841.79	4120.96	729.25	4120.96	0.51

120	14892.00	90.99	90.39	10841.31	4151.96	729.04	4151.96	0.71
121	14987.00	89.89	89.51	10840.58	4246.95	729.12	4246.95	1.48
122	15050.00	90.37	89.77	10840.44	4309.95	729.52	4309.95	0.87
123	15144.00	90.11	89.51	10840.05	4403.95	730.11	4403.95	0.39
124	15238.00	88.48	89.68	10841.20	4497.93	730.77	4497.93	1.74
125	15333.00	88.26	89.77	10843.90	4592.89	731.23	4592.89	0.25
126	15427.00	88.44	91.18	10846.61	4686.85	730.45	4686.85	1.51
127	15521.00	89.01	90.39	10848.70	4780.82	729.16	4780.82	1.04
128	15553.00	89.76	90.74	10849.05	4812.81	728.85	4812.81	2.59
129	15616.00	90.46	90.48	10848.93	4875.81	728.17	4875.81	1.19
130	15648.00	92.00	91.00	10848.24	4907.80	727.76	4907.80	5.08
131	15711.00	92.22	90.12	10845.92	4970.75	727.15	4970.75	1.44
132	15774.00	91.08	91.18	10844.10	5033.72	726.43	5033.72	2.47
133	15805.00	91.16	91.27	10843.50	5064.71	725.77	5064.71	0.39
134	15900.00	91.87	91.18	10840.99	5159.65	723.74	5159.65	0.75
135	15931.00	90.59	91.35	10840.32	5190.64	723.05	5190.64	4.17
136	15994.00	89.85	91.09	10840.08	5253.62	721.71	5253.62	1.24
137	16026.00	88.18	90.92	10840.63	5285.61	721.15	5285.61	5.25
138	16089.00	87.12	90.74	10843.21	5348.55	720.24	5348.55	1.71
139	16183.00	88.57	89.77	10846.75	5442.48	719.82	5442.48	1.86
140	16278.00	90.42	89.33	10847.58	5537.47	720.57	5537.47	2.00
141	16372.00	90.90	88.63	10846.50	5631.44	722.24	5631.44	0.90
142	16467.00	90.81	88.81	10845.08	5726.41	724.36	5726.41	0.21
143	16561.00	91.38	88.45	10843.29	5820.37	726.61	5820.37	0.72
144	16624.00	92.00	87.93	10841.43	5883.31	728.60	5883.31	1.28
145	16656.00	92.35	87.75	10840.22	5915.26	729.80	5915.26	1.23
146	16719.00	93.71	88.19	10836.89	5978.13	732.03	5978.13	2.27
147	16750.00	91.47	89.16	10835.48	6009.09	732.75	6009.09	7.87
148	16782.00	90.77	90.48	10834.86	6041.08	732.85	6041.08	4.67
149	16813.00	89.89	91.27	10834.68	6072.08	732.38	6072.08	3.81
150	16844.00	89.36	91.97	10834.88	6103.06	731.50	6103.06	2.83
151	16910.00	90.37	92.15	10835.04	6169.02	729.13	6169.02	1.55
152	16942.00	90.55	92.32	10834.78	6200.99	727.88	6200.99	0.77
153	17004.00	89.10	91.71	10834.97	6262.95	725.70	6262.95	2.54
154	17036.00	88.70	91.09	10835.59	6294.94	724.92	6294.94	2.31
155	17067.00	88.48	90.39	10836.35	6325.93	724.52	6325.93	2.37
156	17130.00	88.62	91.00	10837.94	6388.90	723.75	6388.90	0.99
157	17225.00	89.14	91.88	10839.80	6483.85	721.37	6483.85	1.08
158	17319.00	88.44	90.21	10841.79	6577.81	719.65	6577.81	1.93
159	17414.00	88.66	90.56	10844.19	6672.78	719.01	6672.78	0.44
160	17508.00	89.05	90.65	10846.07	6766.75	718.02	6766.75	0.43
161	17603.00	89.49	90.30	10847.28	6861.74	717.23	6861.74	0.59
162	17697.00	89.58	89.86	10848.04	6955.74	717.10	6955.74	0.48
163	17792.00	89.89	90.83	10848.48	7050.74	716.53	7050.74	1.07

164	17886.00	90.20	91.79	10848.41	7144.71	714.38	7144.71	1.07
165	17979.00	90.55	91.09	10847.80	7237.68	712.05	7237.68	0.84
166	18074.00	90.20	90.39	10847.18	7332.67	710.82	7332.67	0.82
167	18167.00	89.63	89.60	10847.31	7425.67	710.83	7425.67	1.05
168	18262.00	89.71	89.25	10847.86	7520.66	711.78	7520.66	0.38
169	18356.00	89.85	89.42	10848.22	7614.65	712.87	7614.65	0.23
170	18387.00	89.89	89.51	10848.29	7645.65	713.16	7645.65	0.32
171	18418.00	90.07	89.95	10848.30	7676.65	713.31	7676.65	1.53
172	18450.00	90.24	89.33	10848.22	7708.65	713.51	7708.65	2.01
173	18545.00	90.95	89.68	10847.23	7803.64	714.33	7803.64	0.83
174	18639.00	91.69	90.21	10845.06	7897.61	714.42	7897.61	0.97
175	18733.00	92.22	89.86	10841.86	7991.56	714.36	7991.56	0.68
176	18827.00	92.75	89.60	10837.78	8085.47	714.80	8085.47	0.63
177	18859.00	91.96	91.00	10836.47	8117.44	714.64	8117.44	5.02
178	18921.00	91.91	90.92	10834.37	8179.40	713.60	8179.40	0.15
179	18952.00	89.89	90.65	10833.89	8210.39	713.17	8210.39	6.57
180	19015.00	90.20	91.79	10833.84	8273.37	711.83	8273.37	1.88
181	19109.00	90.68	92.15	10833.12	8367.31	708.60	8367.31	0.64
182	19202.00	90.77	93.82	10831.94	8460.18	703.76	8460.18	1.80
183	19296.00	90.86	92.67	10830.60	8554.02	698.44	8554.02	1.23
184	19327.00	89.58	92.58	10830.48	8584.98	697.02	8584.98	4.14
185	19390.00	89.41	92.94	10831.04	8647.91	693.98	8647.91	0.63
186	19484.00	88.97	91.27	10832.37	8741.83	690.53	8741.83	1.84
187	19578.00	88.00	90.04	10834.85	8835.79	689.46	8835.79	1.67
188	19610.00	87.87	88.45	10836.01	8867.76	689.88	8867.76	4.98
189	19673.00	87.65	88.19	10838.47	8930.69	691.73	8930.69	0.54
190	19704.00	88.18	88.19	10839.60	8961.65	692.70	8961.65	1.71
191	19767.00	87.69	88.10	10841.87	9024.58	694.74	9024.58	0.79
192	19798.00	88.84	88.45	10842.80	9055.55	695.67	9055.55	3.88
193	19861.00	89.05	88.54	10843.96	9118.52	697.33	9118.52	0.36
194	19892.00	90.15	89.07	10844.18	9149.51	697.98	9149.51	3.94
195	19924.00	90.37	88.72	10844.04	9181.50	698.59	9181.50	1.29
196	19955.00	90.46	88.63	10843.81	9212.49	699.31	9212.49	0.41
197	20049.00	91.74	88.28	10842.01	9306.44	701.84	9306.44	1.41
198	20144.00	92.92	87.22	10838.14	9401.28	705.57	9401.28	1.67
199	20238.00	92.84	86.87	10833.42	9495.04	710.41	9495.04	0.38
200	20270.00	91.78	87.93	10832.13	9526.98	711.86	9526.98	4.68
201	20332.00	92.00	87.66	10830.09	9588.90	714.24	9588.90	0.56
202	20364.00	92.18	87.75	10828.92	9620.85	715.52	9620.85	0.63
203	20427.00	90.07	87.22	10827.68	9683.78	718.29	9683.78	3.45
204	20521.00	89.32	87.93	10828.18	9777.69	722.26	9777.69	1.10
205	20616.00	88.62	87.05	10829.89	9872.58	726.42	9872.58	1.18
206	20661.00	88.31	87.31	10831.10	9917.51	728.64	9917.51	0.90
207	20742.00	88.32	87.32	10833.48	9998.39	732.43	9998.39	0.02

line Federal 5300 41-18 9T LITHOLOGY

Rig crews caught lagged samples in 30' intervals in the vertical hole, curve build and landing from 8,350' to 11,177' MD; 50' samples were caught in the lateral from 11,177' to TD at 20,742'.

Sample and/or MWD gamma ray markers and tops are included in the sample descriptions below for reference. Samples were examined wet and dry under a binocular microscope in approximately 30' to 50' intervals. Sample descriptions begin in the Tyler formation. The drilling fluid was diesel invert during vertical and curve build sections and salt water brine in the lateral to TD.

8350-8380 SILTSTONE: reddish brown, occasional, gray to light gray, brown to light brown gray, soft, sub-blocky, earthy texture, no visible porosity, no visible oil stain

Kibbey **8,380' TVD (-6,298')**

8380-8410 SILTSTONE: reddish brown, occasional, gray to light gray, brown to light brown gray, soft, sub-blocky, earthy texture, no visible porosity, no visible oil stain; LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white, friable to firm, crystalline to microcrystalline

8410-8440 SILTY SANDSTONE: medium gray, fine grained, firm to friable, rounded, well sorted, moderately cemented, calcite cement, possible intergranular porosity, no visible oil stain; SILTSTONE: reddish brown, occasional, gray to light gray, brown to light brown gray, soft, sub-blocky, earthy texture, no visible porosity, no visible oil stain

8440-8470 SILTY SANDSTONE: medium gray, fine grained, firm to friable, rounded, well sorted, moderately cemented, calcite cement, possible intergranular porosity, no visible oil stain; SILTSTONE: reddish brown, occasional, gray to light gray, brown to light brown gray, soft, sub-blocky, earthy texture, no visible porosity, no visible oil stain

8470-8500 SILTY SANDSTONE: medium gray, fine grained, firm to friable, rounded, well sorted, moderately cemented, calcite cement, possible intergranular porosity, no visible oil stain; SILTSTONE: reddish brown, occasional, gray to light gray, brown to light brown gray, soft, sub-blocky, earthy texture, no visible porosity, no visible oil stain

8500-8530 SILTY SANDSTONE: medium gray, fine grained, firm to friable, rounded, well sorted, moderately cemented, calcite cement, possible intergranular porosity, no visible oil stain; SILTSTONE: reddish brown, occasional, gray to light gray, brown to light brown gray, soft, sub-blocky, earthy texture, no visible porosity, no visible oil stain

8530-8554 SALT: translucent, trace off white, crystalline, firm, crystalline texture, no visible porosity, no visible oil stain

Charles Salt **8,554' TVD (-6,472')**

8554-8590 SALT: translucent, trace off white, crystalline, firm, crystalline texture, no visible porosity, no visible oil stain

8590-8620 SALT: translucent, trace off white, crystalline, firm, crystalline texture, no visible porosity, no visible oil stain

9040-9070 SALT: translucent, trace off white, crystalline, firm, crystalline texture, no visible porosity, no visible oil stain, LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white, friable to firm, crystalline to microcrystalline

9070-9100 SALT: translucent, trace off white, crystalline, firm, crystalline texture, no visible porosity, no visible oil stain, LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white, friable to firm, crystalline to microcrystalline

9100-9130 SALT: translucent, trace off white, crystalline, firm, crystalline texture, no visible porosity, no visible oil stain, LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white, friable to firm, crystalline to microcrystalline

9130-9160 SALT: translucent, trace off white, crystalline, firm, crystalline texture, no visible porosity, no visible oil stain, LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white, friable to firm, crystalline to microcrystalline

9160-9190 SALT: translucent, trace off white, crystalline, firm, crystalline texture, no visible porosity, no visible oil stain, LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white, friable to firm, crystalline to microcrystalline

9190-9206 SALT: translucent, trace off white, crystalline, firm, crystalline texture, no visible porosity, no visible oil stain, LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white, friable to firm, crystalline to microcrystalline

Base Charles Salt

9,206' TVD (-7,124')

9206-9250 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white, friable to firm, crystalline to microcrystalline

9250-9280 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white, friable to firm, crystalline to microcrystalline

9280-9310 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white, friable to firm, crystalline to microcrystalline

9310-9340 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white, friable to firm, crystalline to microcrystalline

9340-9370 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white, friable to firm, crystalline to microcrystalline

9370-9400 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white, friable to firm, crystalline to microcrystalline

9400-9430 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white, friable to firm, crystalline to microcrystalline

Mission Canyon Formation**9,430' TVD (-7,348')**

9430-9460 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white, friable to firm, crystalline to microcrystalline

9460-9490 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white, friable to firm, crystalline to microcrystalline

9490-9520 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white, friable to firm, crystalline to microcrystalline

9520-9550 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white, friable to firm, crystalline to microcrystalline

9550-9580 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white, friable to firm, crystalline to microcrystalline

9580-9610 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white, friable to firm, crystalline to microcrystalline

9610-9640 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white, friable to firm, crystalline to microcrystalline

9640-9670 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white, friable to firm, crystalline to microcrystalline

9670-9700 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white, friable to firm, crystalline to microcrystalline

9700-9730 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white, friable to firm, crystalline to microcrystalline

9730-9760 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white, friable to firm, crystalline to microcrystalline

9760-9790 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white, friable to firm, crystalline to microcrystalline

9790-9820 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white, friable to firm, crystalline to microcrystalline

9820-9850 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white, friable to firm, crystalline to microcrystalline

9850-9880 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white, friable to firm, crystalline to microcrystalline

9880-9910 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white, friable to firm, crystalline to microcrystalline

9910-9940 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white, friable to firm, crystalline to microcrystalline

9940-9978 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white, friable to firm, crystalline to microcrystalline

Lodgepole Formation **9,978' TVD (-7,896')**

9978-10000 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10000-10030 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10030-10060 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10060-10090 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10090-10120 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10120-10150 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10150-10180 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10180-10210 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10210-10240 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10240-10270 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10270-10300 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10300-10330 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

KOP of 10,330' Reached at 09:00 CST on 27-November-2014

Drilling Curve in Lodgepole Formation

10330-10360 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10360-10390 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10390-10420 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10420-10450 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10450-10480 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10480-10510 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10510-10540 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10540-10570 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10570-10600 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10600-10630 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10630-10660 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10660-10690 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10690-10720 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10720-10746 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

False Bakken

MD 10,746', TVD 10,708' (-8,626')

10746-10766 SHALE: black, dark gray black, firm, sub-blocky, earthy, calcareous cement, petro, carbonaceous, abundant fine disseminated pyrite, finely laminated; LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

Bakken Formation, Upper Shale

10,766' MD / 10,715' TVD (-8,633')

10766-10808 SHALE: black, dark gray black, firm, sub-blocky, earthy, calcareous cement, petro, carbonaceous, abundant fine disseminated pyrite, finely laminated

Bakken Formation, Middle Member**10,808' MD / 10,732' TVD (-8,650')**

10808-10840 SILTY SANDSTONE: common salt and pepper, occasional light gray to medium gray, visible white, very fine grained, soft to firm, moderately to well sorted, rounded to subrounded, moderately to poorly cemented, visible calcareous filled fractures, possible fracture porosity, common intergranular porosity, visible light brown spotty to even oil stain

10840-10886 SILTY SANDSTONE: common salt and pepper, occasional light gray to medium gray, visible white, very fine grained, soft to firm, moderately to well sorted, rounded to subrounded, moderately to poorly cemented, visible calcareous filled fractures, possible fracture porosity, common intergranular porosity, visible light brown spotty to even oil stain

Bakken Formation, Lower Member**10,886' MD / 10,774' TVD (-8,692')**

10886-10900 SHALE: black, dark gray black, firm, sub-blocky, earthy, calcareous cement, petroliferous, carbonaceous, abundant fine disseminated pyrite, fine laminated, SILTY SANDSTONE: common salt and pepper, occasional light gray to medium gray, visible white, very fine grained, soft to firm, moderately to well sorted, rounded to subrounded, moderately to poorly cemented, visible calcareous filled fractures, possible fracture porosity, common intergranular porosity, visible light brown spotty to even oil stain

10900-10922 SHALE: black, dark gray black, firm, sub-blocky, earthy, calcareous cement, petroliferous, carbonaceous, abundant fine disseminated pyrite, fine laminated; LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline, SILTSTONE: medium gray, medium gray brown, friable to firm, sub-blocky, dolomite cement, moderately cemented, trace disseminated pyrite, possible intergranular porosity

Pronghorn**10,922' MD / 10,786' TVD (-8,704')**

10922-10971 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

Three Forks**10,971' MD / 10,801' TVD (-8,719')**

10971-10990 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

10990-11020 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

11020-11050 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

11050-11080 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

11080-11110 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

11110-11140 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

11140-11177 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

Curve/Turn TD of 11,177' Reached @ 12:30 hours on November 27, 2014

11177-11200 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

11200-11250 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

11250-11300 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

11300-11350 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

11350-11400 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

11400-11450 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

11450-11500 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

11500-11550 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

11550-11600 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

11600-11650 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

11650-11700 CLAYSTONE: off white, cream, light gray, moderately soft, sub-blocky, very slightly calcareous, trace silt, DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

11700-11750 CLAYSTONE: off white, cream, light gray, moderately soft, sub-blocky, very slightly calcareous, trace silica

11750-11800 CLAYSTONE: off white, cream, light gray, moderately soft, sub-blocky, very slightly calcareous, trace silica

11800-11850 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

11850-11900 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

11900-11950 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

11950-12000 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

12000-12050 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

12050-12100 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

12100-12150 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

12150-12200 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

12200-12250 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

12250-12300 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

12300-12350 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

12350-12400 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

12400-12450 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

12450-12500 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

12500-12550 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

12550-12600 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

12600-12650 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

12650-12700 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

12700-12750 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

12750-12800 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

12800-12850 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

12850-12900 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

12900-12950 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

12950-13000 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

13000-13050 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

13050-13100 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

13100-13150 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

13150-13200 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

13200-13250 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

13250-13300 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

13300-13350 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

13350-13400 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain; CLAYSTONE: off white, cream, light gray, moderately soft, sub-blocky, very slightly calcareous, trace silica

13400-13450 CLAYSTONE: off white, cream, light gray, moderately soft, sub-blocky, very slightly calcareous, trace silica

13450-13500 CLAYSTONE: off white, cream, light gray, moderately soft, sub-blocky, very slightly calcareous, trace silica

13500-13550 CLAYSTONE: off white, cream, light gray, moderately soft, sub-blocky, very slightly calcareous, trace silica

13550-13600 CLAYSTONE: off white, cream, light gray, moderately soft, sub-blocky, very slightly calcareous, trace silica

13600-13650 CLAYSTONE: off white, cream, light gray, moderately soft, sub-blocky, very slightly calcareous, trace silica

13650-13700 CLAYSTONE: off white, cream, light gray, moderately soft, sub-blocky, very slightly calcareous, trace silica

13700-13750 CLAYSTONE: off white, cream, light gray, moderately soft, sub-blocky, very slightly calcareous, trace silica

13750-13800 CLAYSTONE: off white, cream, light gray, moderately soft, sub-blocky, very slightly calcareous, trace silica

13800-13850 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

13850-13900 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

14500-14550 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

14550-14600 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

14600-14650 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

14650-14700 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

14700-14750 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

14750-14800 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

14800-14850 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

14850-14900 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

14900-14950 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

14950-15000 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

15000-15050 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

15050-15100 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

15100-15150 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

15150-15200 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

15200-15250 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

15250-15300 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

15300-15350 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

15350-15400 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

15400-15450 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain; CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, trace silica

15450-14500 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, trace silica

14500-14550 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, trace silica

14550-15600 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, trace silica

15600-15650 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, trace silica

15650-15700 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, trace silica

15700-15750 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, trace silica

15750-15800 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain; CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, trace silica

15800-15850 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

15850-15900 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

15900-15950 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

15950-16000 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

16000-16050 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

16050-16100 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

16100-16150 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, trace silica

16150-16200 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, trace silica

16200-16250 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, trace silica

16250-16300 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, trace silica

16300-16350 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, trace silica

16350-16400 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, trace silica

16400-16450 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain; CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, trace silica

16450-16500 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

16500-16550 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

16550-16600 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

16600-16650 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

16650-16700 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

16700-16750 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

16750-16800 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

16800-16850 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

16850-16900 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

16900-16950 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

16950-17000 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

17000-17050 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

17050-17100 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

17100-17150 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

17150-17200 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

17200-17250 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

17250-17300 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

17300-17350 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

17350-17400 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, trace silica

17400-17450 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, trace silica

17450-17500 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, trace silica

17500-17550 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, trace silica

17550-17600 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, trace silica

17600-17650 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, trace silica

17650-17700 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, trace silica

17700-17750 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, trace silica

17750-17800 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, trace silica

17800-17850 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, trace silica

17850-17900 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, trace silica

17900-17950 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, trace silica

17950-18000 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, trace silica

18000-18050 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, trace silica

18050-18100 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, trace silica

18100-18150 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, trace silica

18150-18200 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, no visible porosity

18200-18250 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, no visible porosity

18250-18300 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, no visible porosity

18300-18350 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, no visible porosity

18350-18400 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, no visible porosity

18400-18450 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, no visible porosity

18450-18500 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, no visible porosity

18500-18550 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, no visible porosity

18550-18600 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, no visible porosity

18600-18650 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, no visible porosity

18650-18700 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, no visible porosity

18700-18750 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, no visible porosity

18750-18800 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

18800-18850 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

18850-18900 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

18900-18950 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

18950-19000 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

19000-19050 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

19050-19100 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

19100-19150 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

19150-19200 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

19200-19250 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

19250-19300 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

19300-19350 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

19350-19400 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

19400-19450 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

19450-19500 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

19500-19550 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

19550-19600 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

19600-19650 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, no visible porosity

19650-19700 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, no visible porosity

19700-19750 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, no visible porosity

19750-19800 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, no visible porosity

19800-19850 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, no visible porosity

19850-19900 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, no visible porosity

19900-19950 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, no visible porosity

19950-20000 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, no visible porosity

20000-20050 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, no visible porosity

20050-20100 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, no visible porosity

20100-20150 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, no visible porosity

20150-20200 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, no visible porosity

20200-20250 CLAYSTONE: off white, cream, light gray, moderately soft, sub blocky, very slightly calcareous, no visible porosity

20250-20300 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

20300-20350 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

20350-20400 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

20400-20450 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

20450-20500 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

20500-20550 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

20550-20600 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

20600-20650 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

20650-20700 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

20700-20742 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

TD of 20,742' Reached @ 07:00 hours on December 16, 2014





Oil and Gas Division

28651

Lynn D. Helms - Director

Bruce E. Hicks - Assistant Director

Department of Mineral Resources

Lynn D. Helms - Director

North Dakota Industrial Commission

www.dmr.nd.gov/oilgas

January 8, 2016

Michael Kukuk
OASIS PETRO NO AMER
1001 FANNIN ST. SUITE 1500
HOUSTON, TX 77002

RE: See Attached List of Wells
List Reference WF# 28651

Dear Michael Kukuk:

We have not received the geological reports on the referenced well list. Please submit one paper copy and one digital pdf file of this report for each well.

If you have any questions, please contact Richard Suggs at (701) 328-8020.

Sincerely,

Taylor Roth
Engineering Technician



Gyrodata Incorporated
301 Thelma Dr. #413
Casper, Wyoming 82601

307-472-0182
Fax: 307-472-0204

DIRECTIONAL SURVEY CERTIFICATION

RE: Oasis Petroleum (Operator)

Kline Federal 5300 41-18 9T (Well Name & No.)

8.21 (Magnetic Declination)

Surveyor: Blake Hunter

I, Kristopher Bertsch, having personal knowledge of all the facts, hereby certify that the attached directional survey run from measured depth of 140 feet to a measured depth of 20661 feet and is projected to 20742 feet, is true and correct as determined from all available records.


Signature

MWD Coordinator
Title

Gyrodata, Inc.
Company

*All measurements recorded with a manned MWD Survey Tool.

A Gyrodata Directional Survey

FINAL DEFINITIVE COPY

for

OASIS PETROLEUM

Lease: Kline Federal Well: 5300 41-18 9T, 8 3/4" Case, 6" Hole

Location: Nabors #486, McKenzie County, North Dakota

Job Number: RD0814M176

Run Date: 01 Sep 2014 to 15 Dec 2014

Surveyor: Blake Hunter

Calculation Method: MINIMUM CURVATURE

Survey surface coordinates obtained from: Well Plan/Plot

Survey Latitude: 48.069036 deg. N Longitude: 103.603322 deg. E

Magnetic Declination: 8.2100 deg

Total Correction: 8.2100 deg

Proposed Well Direction: 90.000 deg

Depth Reference: Rotary Table

Air Gap (RKB to Ground / RKB to MSL): 25.00

Ground Elevation (Ground to MSL / MSL to Mudline): 2057.00

Vertical Section Calculated from Well Head Location

Closure Calculated from Well Head Location

Horizontal Coordinates Calculated from Well Head Location

A Gyrodata Directional Survey

Oasis Petroleum

Lease: Kline Federal Well: 5300 41-18 9T, 8 3/4" Case, 6" Hole

Location: Nabors #486, McKenzie Co., ND

Job Number: RD0814M176

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. AZIMUTH feet deg.	HORIZONTAL COORDINATES feet
0.00	0.00	0.00	0.00	0.00	0.0 0.0	0.00 N 0.00 E

NO TIE-IN DATA PROVIDED. TIE-IN TO SURFACE.

ALL AZIMUTHS ARE REFERENCED TO TRUE NORTH.

ALL MEASURED DEPTHS AND COORDINATES REFERENCED TO NABORS 486 R.K.B. OF 25 FT.

140 - 20661 MAGNETIC MEASUREMENT WHILE DRILLING SURVEY.

STRAIGHT LINE PROJECTION TO BIT DEPTH AT 20742.

140.00	0.75	55.56	0.54	140.00	0.9	55.6	0.52 N	0.76 E
234.00	0.75	87.02	0.43	233.99	2.1	64.4	0.90 N	1.88 E
327.00	0.84	52.39	0.52	326.98	3.3	66.0	1.35 N	3.03 E
421.00	1.14	71.38	0.47	420.97	4.9	65.1	2.06 N	4.46 E
516.00	0.70	58.54	0.51	515.95	6.4	65.5	2.67 N	5.85 E
607.00	0.04	39.47	0.73	606.95	7.0	64.8	2.98 N	6.34 E
699.00	0.26	262.98	0.32	698.95	6.8	64.1	2.98 N	6.16 E
791.00	0.53	351.83	0.64	790.95	6.8	60.1	3.38 N	5.89 E
882.00	0.57	296.11	0.57	881.95	6.7	53.6	3.99 N	5.42 E
974.00	0.26	305.25	0.34	973.94	6.5	48.3	4.32 N	4.84 E
1066.00	0.13	243.11	0.25	1065.94	6.3	46.2	4.39 N	4.58 E
1158.00	0.84	313.34	0.88	1157.94	6.2	39.7	4.81 N	3.99 E
1250.00	0.62	302.53	0.28	1249.93	6.3	29.1	5.54 N	3.08 E

A Gyrodata Directional Survey

Oasis Petroleum

Lease: Kline Federal Well: 5300 41-18 9T, 8 3/4" Case, 6" Hole

Location: Nabors #486, McKenzie Co., ND

Job Number: RD0814M176

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE		HORIZONTAL COORDINATES feet
					DIST.	AZIMUTH feet deg.	
1342.00	0.40	325.03	0.32	1341.93	6.6	22.2	6.07 N 2.48 E
1433.00	0.35	342.96	0.14	1432.93	7.0	18.6	6.59 N 2.22 E
1528.00	0.26	326.96	0.13	1527.92	7.3	15.9	7.05 N 2.01 E
1623.00	1.23	326.70	1.02	1622.92	8.2	9.4	8.08 N 1.34 E
1719.00	0.62	235.03	1.45	1718.91	8.7	2.3	8.65 N 0.34 E
1813.00	0.66	228.00	0.09	1812.90	8.0	356.6	7.99 N 0.47 W
1908.00	1.01	214.20	0.42	1907.89	7.1	349.0	6.94 N 1.35 W
2003.00	1.19	237.58	0.50	2002.87	6.3	335.1	5.71 N 2.66 W
2097.00	1.05	242.67	0.18	2096.86	6.4	318.5	4.80 N 4.24 W
2131.00	0.84	228.26	0.93	2130.85	6.5	313.6	4.49 N 4.71 W
2221.00	0.79	233.30	0.10	2220.84	6.8	302.8	3.68 N 5.70 W
2284.00	0.88	228.29	0.18	2283.84	7.1	295.8	3.09 N 6.41 W
2379.00	0.97	230.66	0.10	2378.82	7.9	285.5	2.10 N 7.57 W
2472.00	0.13	255.18	0.92	2471.82	8.4	280.8	1.57 N 8.28 W
2567.00	0.09	113.77	0.22	2566.82	8.5	280.3	1.52 N 8.32 W
2662.00	0.18	217.30	0.23	2661.82	8.5	279.3	1.37 N 8.34 W
2757.00	0.70	32.64	0.93	2756.82	8.3	282.1	1.74 N 8.12 W
2852.00	0.79	22.98	0.16	2851.81	8.1	290.5	2.83 N 7.55 W
2945.00	0.57	23.42	0.24	2944.80	8.1	298.4	3.84 N 7.12 W
3039.00	0.53	6.10	0.18	3038.80	8.3	304.4	4.70 N 6.88 W
3134.00	0.62	5.49	0.09	3133.79	8.8	309.8	5.65 N 6.79 W
3227.00	0.66	4.43	0.04	3226.79	9.5	315.0	6.69 N 6.70 W

A Gyrodata Directional Survey

Oasis Petroleum

Lease: Kline Federal Well: 5300 41-18 9T, 8 3/4" Case, 6" Hole

Location: Nabors #486, McKenzie Co., ND

Job Number: RD0814M176

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE		HORIZONTAL COORDINATES feet
					DIST.	AZIMUTH feet deg.	
3322.00	0.48	357.84	0.20	3321.78	10.1	318.8	7.63 N 6.67 W
3417.00	0.62	8.30	0.18	3416.78	10.8	322.2	8.54 N 6.61 W
3512.00	0.57	6.54	0.06	3511.77	11.5	325.7	9.52 N 6.48 W
3606.00	0.57	3.11	0.04	3605.77	12.3	328.5	10.45 N 6.41 W
3701.00	0.53	359.60	0.06	3700.76	13.0	330.7	11.36 N 6.38 W
3796.00	0.57	3.46	0.06	3795.76	13.8	332.6	12.27 N 6.36 W
3890.00	0.48	7.59	0.10	3889.75	14.6	334.4	13.13 N 6.28 W
3984.00	0.57	356.87	0.14	3983.75	15.3	335.9	13.98 N 6.25 W
4079.00	0.48	353.18	0.10	4078.75	16.1	336.9	14.85 N 6.32 W
4171.00	0.44	349.67	0.05	4170.74	16.9	337.6	15.58 N 6.43 W
4266.00	0.35	358.54	0.11	4265.74	17.5	338.2	16.23 N 6.51 W
4361.00	0.40	342.72	0.12	4360.74	18.1	338.6	16.84 N 6.61 W
4456.00	0.53	334.99	0.15	4455.74	18.9	338.5	17.55 N 6.90 W
4550.00	0.48	335.95	0.05	4549.73	19.7	338.4	18.30 N 7.24 W
4645.00	0.53	333.14	0.06	4644.73	20.5	338.3	19.06 N 7.60 W
4740.00	0.44	353.09	0.20	4739.73	21.3	338.4	19.81 N 7.84 W
4835.00	0.26	344.04	0.20	4834.72	21.9	338.7	20.38 N 7.95 W
4931.00	0.40	328.13	0.17	4930.72	22.4	338.6	20.88 N 8.18 W
5024.00	0.48	320.31	0.11	5023.72	23.1	338.1	21.45 N 8.60 W
5119.00	0.62	348.00	0.31	5118.72	24.0	338.1	22.26 N 8.96 W
5214.00	0.53	348.00	0.09	5213.71	24.9	338.4	23.19 N 9.16 W
5308.00	0.44	355.20	0.12	5307.71	25.7	338.8	23.98 N 9.28 W

A Gyrodata Directional Survey

Oasis Petroleum

Lease: Kline Federal Well: 5300 41-18 9T, 8 3/4" Case, 6" Hole

Location: Nabors #486, McKenzie Co., ND

Job Number: RD0814M176

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE		HORIZONTAL COORDINATES feet
					DIST.	AZIMUTH feet deg.	
5403.00	0.44	325.58	0.24	5402.70	26.4	338.9	24.64 N 9.52 W
5497.00	0.35	23.50	0.42	5496.70	27.0	339.1	25.20 N 9.61 W
5592.00	0.18	59.10	0.24	5591.70	27.2	339.9	25.55 N 9.37 W
5687.00	0.31	62.17	0.14	5686.70	27.3	340.7	25.74 N 9.01 W
5782.00	0.22	58.31	0.10	5781.70	27.4	341.6	25.96 N 8.63 W
5876.00	0.22	71.14	0.05	5875.70	27.4	342.4	26.11 N 8.30 W
5971.00	0.13	46.09	0.12	5970.70	27.5	342.9	26.25 N 8.05 W
6066.00	0.26	16.30	0.17	6065.70	27.7	343.4	26.53 N 7.92 W
6100.00	0.26	41.96	0.34	6099.70	27.8	343.6	26.66 N 7.84 W
6162.00	0.57	1.18	0.66	6161.70	28.2	344.0	27.07 N 7.74 W
6256.00	0.75	10.06	0.22	6255.69	29.2	344.8	28.15 N 7.62 W
6350.00	0.70	3.38	0.10	6349.68	30.3	345.7	29.32 N 7.48 W
6445.00	0.84	353.80	0.20	6444.67	31.5	346.2	30.60 N 7.52 W
6540.00	1.05	351.69	0.22	6539.66	33.1	346.5	32.15 N 7.73 W
6634.00	0.92	33.79	0.76	6633.65	34.4	347.5	33.63 N 7.43 W
6728.00	1.01	33.43	0.10	6727.63	35.6	349.4	34.95 N 6.55 W
6823.00	0.88	27.90	0.17	6822.62	36.7	351.0	36.29 N 5.75 W
6917.00	0.79	18.76	0.17	6916.61	37.9	352.1	37.54 N 5.21 W
7012.00	0.66	356.08	0.33	7011.60	39.0	352.6	38.71 N 5.03 W
7106.00	0.79	356.34	0.14	7105.60	40.2	352.7	39.90 N 5.11 W
7200.00	1.23	343.60	0.52	7199.58	41.9	352.5	41.51 N 5.44 W

A Gyrodata Directional Survey

Oasis Petroleum

Lease: Kline Federal Well: 5300 41-18 9T, 8 3/4" Case, 6" Hole

Location: Nabors #486, McKenzie Co., ND

Job Number: RD0814M176

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE		HORIZONTAL COORDINATES feet
					DIST.	AZIMUTH feet deg.	
7295.00	0.66	32.56	0.99	7294.57	43.3	352.8	42.95 N 5.43 W
7388.00	0.79	20.43	0.22	7387.56	44.3	353.6	44.00 N 4.92 W
7483.00	1.01	16.82	0.24	7482.55	45.6	354.4	45.42 N 4.45 W
7577.00	0.84	20.78	0.19	7576.54	47.0	355.2	46.85 N 3.96 W
7671.00	0.79	28.86	0.13	7670.53	48.2	355.9	48.07 N 3.41 W
7766.00	0.57	43.81	0.30	7765.52	49.1	356.8	48.98 N 2.76 W
7859.00	0.31	61.82	0.31	7858.52	49.5	357.4	49.43 N 2.22 W
7953.00	0.26	101.99	0.21	7952.52	49.5	357.9	49.51 N 1.79 W
8047.00	0.04	109.81	0.23	8046.52	49.5	358.2	49.45 N 1.55 W
8141.00	0.00	178.63	0.04	8140.52	49.5	358.2	49.44 N 1.52 W
8236.00	0.40	349.75	0.42	8235.52	49.8	358.2	49.77 N 1.58 W
8330.00	0.53	342.37	0.15	8329.51	50.5	358.0	50.51 N 1.77 W
8424.00	0.57	327.52	0.16	8423.51	51.4	357.6	51.31 N 2.15 W
8519.00	0.53	319.43	0.09	8518.51	52.1	357.0	52.05 N 2.69 W
8613.00	0.53	320.05	0.01	8612.50	52.8	356.5	52.71 N 3.25 W
8708.00	0.70	339.29	0.28	8707.50	53.7	356.0	53.59 N 3.74 W
8802.00	0.48	351.77	0.27	8801.49	54.7	355.8	54.52 N 4.00 W
8897.00	0.22	104.98	0.63	8896.49	55.0	356.0	54.86 N 3.88 W
8991.00	0.35	117.02	0.15	8990.49	54.8	356.4	54.69 N 3.45 W
9085.00	0.22	95.84	0.18	9084.49	54.6	356.8	54.54 N 3.01 W
9179.00	0.13	108.67	0.10	9178.49	54.6	357.1	54.49 N 2.73 W
9273.00	0.18	69.82	0.12	9272.49	54.6	357.4	54.50 N 2.49 W

A Gyrodata Directional Survey

Oasis Petroleum

Lease: Kline Federal Well: 5300 41-18 9T, 8 3/4" Case, 6" Hole

Location: Nabors #486, McKenzie Co., ND

Job Number: RD0814M176

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE		HORIZONTAL COORDINATES feet
					DIST.	AZIMUTH deg.	
9367.00	0.13	57.96	0.06	9366.49	54.7	357.6	54.61 N 2.26 W
9462.00	0.13	86.78	0.07	9461.49	54.7	357.8	54.67 N 2.06 W
9556.00	0.04	96.89	0.10	9555.49	54.7	358.0	54.68 N 1.93 W
9650.00	0.09	41.96	0.08	9649.49	54.8	358.1	54.73 N 1.84 W
9743.00	0.04	79.67	0.07	9742.49	54.8	358.2	54.79 N 1.76 W
9837.00	0.13	137.67	0.12	9836.49	54.7	358.3	54.71 N 1.66 W
9931.00	0.26	131.61	0.14	9930.49	54.5	358.5	54.49 N 1.43 W
10025.00	0.22	130.03	0.04	10024.48	54.2	358.8	54.24 N 1.13 W
10120.00	0.22	47.76	0.30	10119.48	54.2	359.1	54.24 N 0.85 W
10215.00	0.22	48.20	0.00	10214.48	54.5	359.4	54.48 N 0.58 W
10276.00	0.26	38.80	0.09	10275.48	54.7	359.6	54.67 N 0.41 W
10310.00	0.44	51.19	0.57	10309.48	54.8	359.7	54.81 N 0.26 W
10341.00	2.59	51.28	6.94	10340.47	55.3	0.4	55.33 N 0.38 E
10373.00	6.46	54.09	12.11	10372.36	56.9	2.4	56.83 N 2.40 E
10405.00	10.42	54.09	12.38	10404.01	59.9	5.9	59.59 N 6.21 E
10437.00	15.03	53.39	14.41	10435.22	64.9	10.6	63.76 N 11.88 E
10468.00	19.12	54.79	13.26	10464.84	71.7	15.6	69.09 N 19.26 E
10501.00	23.03	58.13	12.39	10495.63	81.0	21.1	75.62 N 29.16 E
10532.00	26.99	60.77	13.27	10523.72	91.7	26.2	82.26 N 40.46 E
10564.00	30.15	62.88	10.36	10551.82	104.5	31.1	89.47 N 53.95 E
10595.00	33.32	63.67	10.31	10578.18	118.6	35.3	96.79 N 68.51 E
10627.00	36.13	63.41	8.79	10604.48	134.9	39.0	104.92 N 84.83 E

A Gyrodata Directional Survey

Oasis Petroleum

Lease: Kline Federal Well: 5300 41-18 9T, 8 3/4" Case, 6" Hole

Location: Nabors #486, McKenzie Co., ND

Job Number: RD0814M176

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE		HORIZONTAL COORDINATES feet
					DIST.	AZIMUTH feet deg.	
10658.00	38.77	63.49	8.52	10629.09	152.3	41.9	113.34 N 101.69 E
10690.00	41.19	61.91	8.20	10653.61	171.6	44.3	122.78 N 119.96 E
10721.00	44.00	61.74	9.07	10676.43	191.8	46.2	132.68 N 138.45 E
10753.00	47.30	63.14	10.78	10698.79	213.8	47.9	143.26 N 158.73 E
10784.00	50.68	65.16	11.96	10719.13	236.4	49.5	153.45 N 179.79 E
10816.00	55.21	65.43	14.17	10738.41	261.0	51.0	164.12 N 202.98 E
10847.00	60.22	64.99	16.21	10754.96	286.5	52.3	175.10 N 226.76 E
10878.00	65.01	65.16	15.46	10769.22	313.4	53.4	186.70 N 251.72 E
10910.00	69.45	64.72	13.93	10781.60	342.4	54.4	199.20 N 278.44 E
10941.00	71.08	63.58	6.30	10792.07	371.1	55.2	211.92 N 304.70 E
10973.00	73.71	63.05	8.37	10801.75	401.4	55.8	225.62 N 331.95 E
11004.00	76.84	63.14	10.10	10809.63	431.1	56.3	239.18 N 358.68 E
11036.00	81.19	62.35	13.81	10815.72	462.3	56.7	253.57 N 386.60 E
11068.00	85.36	60.94	13.75	10819.47	494.0	57.1	268.66 N 414.56 E
11099.00	88.62	60.86	10.52	10821.10	524.9	57.3	283.71 N 441.60 E
11114.00	89.76	60.24	8.65	10821.31	539.9	57.4	291.09 N 454.66 E
11162.00	90.11	59.95	0.95	10821.36	587.8	57.6	315.02 N 496.27 E
11194.00	90.33	61.53	4.99	10821.24	619.8	57.8	330.66 N 524.19 E
11225.00	90.37	61.09	1.43	10821.05	650.7	57.9	345.54 N 551.38 E
11255.00	90.46	61.09	0.30	10820.83	680.7	58.1	360.04 N 577.64 E
11287.00	90.11	60.92	1.22	10820.67	712.6	58.2	375.55 N 605.63 E

A Gyrodata Directional Survey

Oasis Petroleum

Lease: Kline Federal Well: 5300 41-18 9T, 8 3/4" Case, 6" Hole

Location: Nabors #486, McKenzie Co., ND

Job Number: RD0814M176

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE		HORIZONTAL COORDINATES feet
					DIST.	AZIMUTH feet deg.	
11318.00	89.58	61.44	2.40	10820.76	743.6	58.3	390.50 N 632.79 E
11349.00	89.49	62.06	2.02	10821.01	774.5	58.5	405.17 N 660.10 E
11380.00	89.49	62.50	1.42	10821.29	805.5	58.6	419.59 N 687.54 E
11411.00	89.01	63.55	3.72	10821.69	836.4	58.8	433.65 N 715.16 E
11443.00	88.92	63.20	1.13	10822.27	868.3	58.9	447.99 N 743.77 E
11473.00	88.92	64.78	5.27	10822.83	898.1	59.1	461.14 N 770.72 E
11504.00	89.27	65.25	1.89	10823.32	929.0	59.3	474.23 N 798.82 E
11535.00	89.32	64.90	1.14	10823.71	959.8	59.5	487.29 N 826.93 E
11566.00	89.23	66.75	5.97	10824.10	990.6	59.7	499.99 N 855.21 E
11597.00	89.14	67.10	1.17	10824.54	1021.4	59.9	512.14 N 883.72 E
11628.00	89.01	66.22	2.87	10825.04	1052.2	60.1	524.42 N 912.18 E
11660.00	89.05	68.50	7.13	10825.58	1083.9	60.3	536.73 N 941.71 E
11691.00	88.97	69.12	2.02	10826.12	1114.6	60.6	547.94 N 970.61 E
11722.00	89.19	68.33	2.65	10826.61	1145.3	60.8	559.18 N 999.49 E
11753.00	89.76	68.24	1.86	10826.90	1176.0	61.0	570.65 N 1028.29 E
11784.00	90.90	69.29	5.00	10826.72	1206.7	61.2	581.88 N 1057.19 E
11815.00	90.73	69.73	1.52	10826.28	1237.4	61.4	592.73 N 1086.22 E
11847.00	91.43	70.79	3.97	10825.68	1269.0	61.6	603.54 N 1116.33 E
11878.00	91.12	73.07	7.42	10824.99	1299.5	61.8	613.15 N 1145.80 E
11909.00	90.99	74.66	5.15	10824.41	1329.9	62.1	621.76 N 1175.57 E
11940.00	90.68	76.24	5.19	10823.96	1360.0	62.4	629.55 N 1205.57 E
11971.00	90.77	78.26	6.52	10823.57	1390.0	62.8	636.39 N 1235.80 E

A Gyrodata Directional Survey

Oasis Petroleum

Lease: Kline Federal Well: 5300 41-18 9T, 8 3/4" Case, 6" Hole

Location: Nabors #486, McKenzie Co., ND

Job Number: RD0814M176

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE		HORIZONTAL COORDINATES feet
					DIST.	AZIMUTH feet deg.	
12002.00	91.34	79.58	4.64	10823.00	1419.8	63.1	642.35 N 1266.22 E
12034.00	91.34	80.90	4.12	10822.25	1450.4	63.5	647.77 N 1297.75 E
12065.00	90.51	82.30	5.25	10821.75	1479.9	63.8	652.30 N 1328.41 E
12096.00	90.37	83.88	5.12	10821.51	1509.2	64.2	656.03 N 1359.18 E
12127.00	90.68	84.32	1.74	10821.23	1538.4	64.6	659.21 N 1390.02 E
12158.00	91.82	84.15	3.72	10820.55	1567.6	65.0	662.33 N 1420.85 E
12189.00	91.74	84.24	0.39	10819.59	1596.9	65.4	665.46 N 1451.68 E
12221.00	90.59	85.38	5.06	10818.94	1627.1	65.7	668.35 N 1483.54 E
12252.00	89.58	85.82	3.55	10818.89	1656.3	66.1	670.73 N 1514.45 E
12283.00	88.13	86.43	5.07	10819.51	1685.5	66.5	672.83 N 1545.37 E
12314.00	88.35	86.87	1.59	10820.46	1714.6	66.8	674.64 N 1576.30 E
12345.00	88.31	86.43	1.42	10821.37	1743.8	67.2	676.45 N 1607.24 E
12377.00	88.35	86.96	1.66	10822.30	1774.0	67.5	678.29 N 1639.17 E
12408.00	88.66	87.49	1.98	10823.11	1803.2	67.9	679.79 N 1670.12 E
12439.00	89.58	87.14	3.18	10823.59	1832.4	68.2	681.24 N 1701.08 E
12469.00	90.77	87.58	4.23	10823.49	1860.8	68.5	682.63 N 1731.05 E
12501.00	91.65	88.37	3.70	10822.82	1891.0	68.8	683.76 N 1763.02 E
12562.00	90.46	87.49	2.43	10821.70	1948.7	69.4	685.96 N 1823.97 E
12593.00	87.65	87.66	9.08	10822.21	1978.2	69.7	687.27 N 1854.94 E
12688.00	89.41	87.31	1.89	10824.64	2068.8	70.5	691.44 N 1949.81 E
12719.00	89.27	86.43	2.87	10825.00	2098.5	70.7	693.13 N 1980.76 E
12782.00	90.37	87.14	2.08	10825.20	2159.1	71.2	696.66 N 2043.66 E

A Gyrodata Directional Survey

Oasis Petroleum

Lease: Kline Federal Well: 5300 41-18 9T, 8 3/4" Case, 6" Hole

Location: Nabors #486, McKenzie Co., ND

Job Number: RD0814M176

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE		HORIZONTAL COORDINATES feet
					DIST.	AZIMUTH deg.	
12845.00	91.65	87.05	2.04	10824.09	2219.8	71.6	699.86 N 2106.57 E
12877.00	89.98	87.05	5.22	10823.63	2250.6	71.8	701.50 N 2138.52 E
12940.00	89.93	87.58	0.85	10823.68	2311.4	72.3	704.45 N 2201.45 E
12971.00	89.41	88.01	2.18	10823.86	2341.3	72.5	705.65 N 2232.43 E
13034.00	89.63	88.45	0.78	10824.39	2402.0	72.9	707.59 N 2295.40 E
13066.00	90.07	89.16	2.61	10824.47	2432.8	73.1	708.26 N 2327.39 E
13097.00	90.55	89.33	1.64	10824.30	2462.6	73.3	708.67 N 2358.38 E
13160.00	87.69	89.95	4.65	10825.27	2523.1	73.7	709.06 N 2421.37 E
13224.00	86.81	90.39	1.54	10828.34	2584.4	74.1	708.87 N 2485.29 E
13255.00	86.68	90.30	0.51	10830.10	2614.1	74.3	708.69 N 2516.24 E
13286.00	86.68	90.30	0.00	10831.90	2643.9	74.5	708.53 N 2547.19 E
13318.00	86.59	90.21	0.40	10833.78	2674.6	74.6	708.38 N 2579.14 E
13349.00	86.33	89.86	1.40	10835.69	2704.5	74.8	708.36 N 2610.08 E
13381.00	86.55	89.42	1.53	10837.68	2735.4	75.0	708.57 N 2642.01 E
13412.00	86.99	88.72	2.66	10839.42	2765.4	75.1	709.07 N 2672.96 E
13444.00	87.47	87.75	3.38	10840.97	2796.6	75.3	710.05 N 2704.91 E
13475.00	88.04	87.05	2.91	10842.19	2826.8	75.4	711.46 N 2735.85 E
13507.00	87.96	86.70	1.12	10843.30	2858.2	75.6	713.20 N 2767.78 E
13538.00	88.26	86.61	1.01	10844.32	2888.6	75.7	715.01 N 2798.71 E
13601.00	90.02	86.70	2.80	10845.27	2950.5	75.9	718.68 N 2861.60 E
13633.00	90.77	87.05	2.59	10845.05	2981.9	76.0	720.43 N 2893.55 E

A Gyrodata Directional Survey

Oasis Petroleum

Lease: Kline Federal Well: 5300 41-18 9T, 8 3/4" Case, 6" Hole

Location: Nabors #486, McKenzie Co., ND

Job Number: RD0814M176

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE		HORIZONTAL COORDINATES feet
					DIST.	AZIMUTH feet deg.	
13696.00	91.21	86.87	0.75	10843.96	3043.8	76.2	723.77 N 2956.45 E
13727.00	91.34	86.87	0.42	10843.27	3074.2	76.4	725.46 N 2987.40 E
13790.00	92.00	87.49	1.44	10841.44	3136.1	76.6	728.56 N 3050.29 E
13821.00	92.57	88.28	3.14	10840.20	3166.5	76.7	729.70 N 3081.25 E
13915.00	90.73	89.60	2.41	10837.49	3258.3	77.0	731.44 N 3175.19 E
13947.00	88.62	90.65	7.36	10837.67	3289.5	77.2	731.37 N 3207.18 E
14010.00	87.78	90.48	1.36	10839.65	3350.8	77.4	730.75 N 3270.15 E
14042.00	89.23	89.68	5.17	10840.49	3382.0	77.5	730.70 N 3302.14 E
14105.00	90.29	88.89	2.10	10840.75	3443.7	77.7	731.49 N 3365.13 E
14199.00	90.59	88.98	0.33	10840.03	3536.0	78.0	733.24 N 3459.11 E
14262.00	90.37	88.37	1.03	10839.50	3597.9	78.2	734.69 N 3522.09 E
14294.00	90.11	88.45	0.85	10839.37	3629.4	78.3	735.58 N 3554.08 E
14388.00	89.45	90.30	2.09	10839.73	3721.7	78.6	736.61 N 3648.07 E
14420.00	89.49	90.12	0.58	10840.02	3753.0	78.7	736.49 N 3680.07 E
14482.00	89.98	91.35	2.14	10840.31	3813.7	78.9	735.70 N 3742.06 E
14514.00	90.37	91.44	1.25	10840.21	3844.9	79.0	734.92 N 3774.05 E
14577.00	90.24	91.27	0.34	10839.88	3906.5	79.2	733.43 N 3837.03 E
14608.00	88.97	91.35	4.10	10840.09	3936.8	79.3	732.72 N 3868.02 E
14672.00	88.53	91.18	0.74	10841.49	3999.4	79.5	731.31 N 3931.99 E
14735.00	89.45	90.92	1.52	10842.60	4061.1	79.6	730.15 N 3994.97 E
14766.00	90.29	90.30	3.37	10842.67	4091.6	79.7	729.82 N 4025.97 E
14861.00	90.77	90.39	0.51	10841.79	4185.0	80.0	729.25 N 4120.96 E

A Gyrodata Directional Survey

Oasis Petroleum

Lease: Kline Federal Well: 5300 41-18 9T, 8 3/4" Case, 6" Hole

Location: Nabors #486, McKenzie Co., ND

Job Number: RD0814M176

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE		HORIZONTAL COORDINATES feet	
					DIST.	AZIMUTH deg.		
14892.00	90.99	90.39	0.71	10841.31	4215.5	80.0	729.04 N	4151.96 E
14987.00	89.89	89.51	1.48	10840.58	4309.1	80.3	729.12 N	4246.95 E
15050.00	90.37	89.77	0.87	10840.44	4371.3	80.4	729.52 N	4309.95 E
15144.00	90.11	89.51	0.39	10840.05	4464.1	80.6	730.11 N	4403.95 E
15238.00	88.48	89.68	1.74	10841.20	4556.9	80.8	730.77 N	4497.93 E
15333.00	88.26	89.77	0.25	10843.91	4650.7	81.0	731.23 N	4592.89 E
15427.00	88.44	91.18	1.51	10846.61	4743.4	81.1	730.45 N	4686.85 E
15521.00	89.01	90.39	1.04	10848.71	4836.1	81.3	729.16 N	4780.82 E
15553.00	89.76	90.74	2.59	10849.05	4867.7	81.4	728.85 N	4812.81 E
15616.00	90.46	90.48	1.19	10848.93	4929.9	81.5	728.18 N	4875.81 E
15648.00	92.00	91.00	5.08	10848.24	4961.5	81.6	727.76 N	4907.80 E
15711.00	92.22	90.12	1.44	10845.92	5023.7	81.7	727.15 N	4970.75 E
15774.00	91.08	91.18	2.47	10844.11	5085.9	81.8	726.43 N	5033.72 E
15805.00	91.16	91.27	0.39	10843.50	5116.4	81.8	725.77 N	5064.71 E
15900.00	91.87	91.18	0.75	10840.99	5210.2	82.0	723.74 N	5159.65 E
15931.00	90.59	91.35	4.17	10840.32	5240.8	82.1	723.06 N	5190.64 E
15994.00	89.85	91.09	1.24	10840.08	5303.0	82.2	721.71 N	5253.62 E
16026.00	88.18	90.92	5.25	10840.63	5334.6	82.2	721.15 N	5285.61 E
16089.00	87.12	90.74	1.71	10843.22	5396.8	82.3	720.24 N	5348.55 E
16183.00	88.57	89.77	1.86	10846.75	5489.9	82.5	719.82 N	5442.48 E
16278.00	90.42	89.33	2.00	10847.59	5584.2	82.6	720.57 N	5537.47 E
16372.00	90.90	88.63	0.90	10846.50	5677.6	82.7	722.24 N	5631.44 E

A Gyrodata Directional Survey

Oasis Petroleum

Lease: Kline Federal Well: 5300 41-18 9T, 8 3/4" Case, 6" Hole

Location: Nabors #486, McKenzie Co., ND

Job Number: RD0814M176

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE		HORIZONTAL COORDINATES feet
					DIST.	AZIMUTH feet deg.	
16467.00	90.81	88.81	0.21	10845.09	5772.0	82.8	724.36 N 5726.41 E
16561.00	91.38	88.45	0.72	10843.29	5865.5	82.9	726.61 N 5820.37 E
16624.00	92.00	87.93	1.28	10841.43	5928.3	82.9	728.60 N 5883.31 E
16656.00	92.35	87.75	1.23	10840.22	5960.1	83.0	729.81 N 5915.26 E
16719.00	93.71	88.19	2.27	10836.89	6022.8	83.0	732.03 N 5978.13 E
16750.00	91.47	89.16	7.87	10835.49	6053.6	83.0	732.75 N 6009.09 E
16782.00	90.77	90.48	4.67	10834.86	6085.4	83.1	732.85 N 6041.08 E
16813.00	89.89	91.27	3.81	10834.68	6116.1	83.1	732.38 N 6072.08 E
16844.00	89.36	91.97	2.83	10834.89	6146.7	83.2	731.50 N 6103.06 E
16910.00	90.37	92.15	1.55	10835.04	6212.0	83.3	729.13 N 6169.02 E
16942.00	90.55	92.32	0.77	10834.79	6243.6	83.3	727.88 N 6200.99 E
17004.00	89.10	91.71	2.54	10834.97	6304.9	83.4	725.70 N 6262.95 E
17036.00	88.70	91.09	2.31	10835.59	6336.5	83.4	724.92 N 6294.94 E
17067.00	88.48	90.39	2.37	10836.35	6367.3	83.5	724.52 N 6325.93 E
17130.00	88.62	91.00	0.99	10837.95	6429.8	83.5	723.75 N 6388.90 E
17225.00	89.14	91.88	1.08	10839.80	6523.9	83.7	721.37 N 6483.85 E
17319.00	88.44	90.21	1.93	10841.79	6617.1	83.8	719.65 N 6577.81 E
17414.00	88.66	90.56	0.44	10844.19	6711.4	83.8	719.02 N 6672.78 E
17508.00	89.05	90.65	0.43	10846.07	6804.7	83.9	718.02 N 6766.75 E
17603.00	89.49	90.30	0.59	10847.28	6899.1	84.0	717.24 N 6861.74 E
17697.00	89.58	89.86	0.48	10848.04	6992.6	84.1	717.10 N 6955.74 E

A Gyrodata Directional Survey

Oasis Petroleum

Lease: Kline Federal Well: 5300 41-18 9T, 8 3/4" Case, 6" Hole

Location: Nabors #486, McKenzie Co., ND

Job Number: RD0814M176

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE		HORIZONTAL COORDINATES feet
					DIST.	AZIMUTH feet deg.	
17792.00	89.89	90.83	1.07	10848.48	7087.1	84.2	716.53 N 7050.74 E
17886.00	90.20	91.79	1.07	10848.41	7180.3	84.3	714.38 N 7144.71 E
17979.00	90.55	91.09	0.84	10847.80	7272.6	84.4	712.05 N 7237.68 E
18074.00	90.20	90.39	0.82	10847.18	7367.0	84.5	710.82 N 7332.67 E
18167.00	89.63	89.60	1.05	10847.32	7459.6	84.5	710.83 N 7425.67 E
18262.00	89.71	89.25	0.38	10847.86	7554.3	84.6	711.78 N 7520.66 E
18356.00	89.85	89.42	0.23	10848.22	7647.9	84.7	712.87 N 7614.65 E
18387.00	89.89	89.51	0.32	10848.29	7678.8	84.7	713.16 N 7645.65 E
18418.00	90.07	89.95	1.53	10848.31	7709.7	84.7	713.31 N 7676.65 E
18450.00	90.24	89.33	2.01	10848.22	7741.6	84.7	713.51 N 7708.65 E
18545.00	90.95	89.68	0.83	10847.23	7836.3	84.8	714.33 N 7803.64 E
18639.00	91.69	90.21	0.97	10845.07	7929.9	84.8	714.42 N 7897.61 E
18733.00	92.22	89.86	0.68	10841.86	8023.4	84.9	714.36 N 7991.56 E
18827.00	92.75	89.60	0.63	10837.78	8117.0	84.9	714.80 N 8085.47 E
18859.00	91.96	91.00	5.02	10836.47	8148.8	85.0	714.64 N 8117.44 E
18921.00	91.91	90.92	0.15	10834.38	8210.5	85.0	713.60 N 8179.40 E
18952.00	89.89	90.65	6.57	10833.89	8241.3	85.0	713.17 N 8210.39 E
19015.00	90.20	91.79	1.88	10833.84	8303.9	85.1	711.83 N 8273.37 E
19109.00	90.68	92.15	0.64	10833.12	8397.3	85.2	708.60 N 8367.31 E
19202.00	90.77	93.82	1.80	10831.94	8489.4	85.2	703.76 N 8460.18 E
19296.00	90.86	92.67	1.23	10830.60	8582.5	85.3	698.44 N 8554.02 E
19327.00	89.58	92.58	4.14	10830.49	8613.2	85.4	697.02 N 8584.98 E

A Gyrodata Directional Survey

Oasis Petroleum

Lease: Kline Federal Well: 5300 41-18 9T, 8 3/4" Case, 6" Hole

Location: Nabors #486, McKenzie Co., ND

Job Number: RD0814M176

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE		HORIZONTAL COORDINATES feet
					DIST.	AZIMUTH deg.	
19390.00	89.41	92.94	0.63	10831.04	8675.7	85.4	693.99 N 8647.91 E
19484.00	88.97	91.27	1.84	10832.37	8769.1	85.5	690.53 N 8741.83 E
19578.00	88.00	90.04	1.67	10834.85	8862.6	85.5	689.46 N 8835.79 E
19610.00	87.87	88.45	4.98	10836.01	8894.6	85.6	689.88 N 8867.76 E
19673.00	87.65	88.19	0.54	10838.47	8957.4	85.6	691.73 N 8930.69 E
19704.00	88.18	88.19	1.71	10839.60	8988.4	85.6	692.70 N 8961.65 E
19767.00	87.69	88.10	0.79	10841.87	9051.3	85.6	694.74 N 9024.58 E
19798.00	88.84	88.45	3.88	10842.81	9082.2	85.6	695.67 N 9055.55 E
19861.00	89.05	88.54	0.36	10843.97	9145.1	85.6	697.33 N 9118.52 E
19892.00	90.15	89.07	3.94	10844.18	9176.1	85.6	697.98 N 9149.51 E
19924.00	90.37	88.72	1.29	10844.04	9208.0	85.6	698.59 N 9181.50 E
19955.00	90.46	88.63	0.41	10843.81	9239.0	85.7	699.31 N 9212.49 E
20049.00	91.74	88.28	1.41	10842.01	9332.9	85.7	701.84 N 9306.44 E
20144.00	92.92	87.22	1.67	10838.15	9427.7	85.7	705.57 N 9401.28 E
20238.00	92.84	86.87	0.38	10833.42	9521.6	85.7	710.41 N 9495.04 E
20270.00	91.78	87.93	4.68	10832.13	9553.5	85.7	711.86 N 9526.98 E
20332.00	92.00	87.66	0.56	10830.09	9615.5	85.7	714.24 N 9588.90 E
20364.00	92.18	87.75	0.63	10828.92	9647.4	85.7	715.52 N 9620.85 E
20427.00	90.07	87.22	3.45	10827.68	9710.4	85.8	718.29 N 9683.78 E
20521.00	89.32	87.93	1.10	10828.19	9804.3	85.8	722.27 N 9777.69 E
20616.00	88.62	87.05	1.18	10829.89	9899.3	85.8	726.42 N 9872.58 E
20661.00	88.31	87.31	0.90	10831.10	9944.2	85.8	728.64 N 9917.51 E

A Gyrodata Directional Survey

Oasis Petroleum

Lease: Kline Federal Well: 5300 41-18 9T, 8 3/4" Case, 6" Hole

Location: Nabors #486, McKenzie Co., ND

Job Number: RD0814M176

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. AZIMUTH feet deg.	HORIZONTAL COORDINATES feet
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STRAIGHT LINE PROJECTION TO BIT DEPTH AT 20742.

20742.00	88.31	87.31	0.00	10833.49	10025.2 85.8	732.44 N 9998.39 E
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Final Station Closure: Distance: 10025.18 ft Az: 85.81 deg.



SUNDRY NOTICES AND REPORTS ON WELLS - FORM 4

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 5749 (09-2006)

Well File No.

28651



PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.

PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

<input checked="" type="checkbox"/> Notice of Intent	Approximate Start Date December 15, 2014	<input type="checkbox"/> Drilling Prognosis	<input type="checkbox"/> Spill Report
<input type="checkbox"/> Report of Work Done	Date Work Completed	<input type="checkbox"/> Redrilling or Repair	<input type="checkbox"/> Shooting
<input type="checkbox"/> Notice of Intent to Begin a Workover Project that may Qualify for a Tax Exemption Pursuant to NDCC Section 57-51.1-03. Approximate Start Date		<input type="checkbox"/> Casing or Liner	<input type="checkbox"/> Acidizing
		<input type="checkbox"/> Plug Well	<input type="checkbox"/> Fracture Treatment
		<input type="checkbox"/> Supplemental History	<input type="checkbox"/> Change Production Method
		<input type="checkbox"/> Temporarily Abandon	<input type="checkbox"/> Reclamation
		<input type="checkbox"/> Other	<u>Waiver from tubing/packer requirement</u>

Well Name and Number

Kline Federal 5300 41-18 9T

Footages 533 F S L	Qtr-Qtr 237 F W L	Section SWSW	Township 18	Range 153 N 100 W
Field BAKER	Pool Bakken	County MCKENZIE		

24-HOUR PRODUCTION RATE

Before	After
Oil	Ebls
Water	Water
Gas	MCF

Name of Contractor(s)

Address	City	State	Zip Code
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DETAILS OF WORK

Oasis Petroleum North America LLC requests a variance to NDAC 43-02-03-21 for the tubing/packer requirement: Casing, tubing, and cementing requirements during the completion period immediately following the upcoming fracture stimulation.

The following assurances apply:

1. the well is equipped with new 29# and 32# casing at surface with an API burst rating of 11,220 psi;
2. The Frac design will use a safety factor of 0.85 API burst rating to determine the maximum pressure;
3. Damage to the casing during the frac would be detected immediately by monitoring equipment;
4. The casing is exposed to significantly lower rates and pressures during flowback than during the frac job;
5. The frac fluid and formation fluids have very low corrosion and erosion rates;
6. Production equipment will be installed as soon as possible after the well ceases flowing;
7. A 300# gauge will be installed on the surface casing during the flowback period

Company Oasis Petroleum North America LLC	Telephone Number 281-404-9436	
Address 1001 Fannin, Suite 1500		
City Houston	State TX	Zip Code 77002
Signature 	Printed Name Jennifer Swenson	
Title Regulatory Assistant	Date December 15, 2014	
Email Address jswenson@oasispetroleum.com		

FOR STATE USE ONLY

<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date <i>December 22, 2014</i>	
By <i>J. M. Swenson</i>	
Title PETROLEUM ENGINEER	



SUNDRY NOTICES AND REPORTS ON WELLS - FORM 1

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 5749 (09-2006)

Well File No.
28651



PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

<input checked="" type="checkbox"/> Notice of Intent	Approximate Start Date July 28, 2014
<input type="checkbox"/> Report of Work Done	Date Work Completed
<input type="checkbox"/> Notice of Intent to Begin a Workover Project that may Qualify for a Tax Exemption Pursuant to NDCC Section 57-51.1-03.	
Approximate Start Date	

<input type="checkbox"/> Drilling Prognosis	<input type="checkbox"/> Spill Report
<input type="checkbox"/> Redrilling or Repair	<input type="checkbox"/> Shooting
<input checked="" type="checkbox"/> Casing or Liner	<input type="checkbox"/> Acidizing
<input type="checkbox"/> Plug Well	<input type="checkbox"/> Fracture Treatment
<input type="checkbox"/> Supplemental History	<input type="checkbox"/> Change Production Method
<input type="checkbox"/> Temporarily Abandon	<input type="checkbox"/> Reclamation
<input type="checkbox"/> Other	<u>Change casing</u>

Well Name and Number
Kline Federal 5300 41-18 9T

Footages 533 F S L	237 F W L	Qtr-Qtr SWSW	Section 18	Township 153 N	Range 100 W
Field Baker	Pool Bakken			County McKenzie	

24-HOUR PRODUCTION RATE

	Before		After
Oil	Bbls	Oil	Bbls
Water	Bbls	Water	Bbls
Gas	MCF	Gas	MCF

Name of Contractor(s)

Address	City	State	Zip Code
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DETAILS OF WORK

Oasis Petroleum respectfully requests permission to make the following changes to the above referenced well:

Surface Casing: 13-3/8, 54.5#, 17-1/2" Hole, 2,072' MD

Dakota Contingency: 9-5/8, 40#, 12-1/4" Hole, 6,101' MD

Attached are revised plats, drill plan, well summary, directional plan and plot

Company Oasis Petroleum North America LLC	Telephone Number 281-404-9563	
Address 1001 Fannin, Suite 1500		
City Houston	State TX	Zip Code 77002
Signature 	Printed Name Heather McCowan	
Title Regulatory Assistant	Date July 28, 2014	
Email Address hmccowan@oasispetroleum.com		

FOR STATE USE ONLY

<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date <i>8-5-14</i>	
By 	
Title Petroleum Resource Specialist	

DRILLING PLAN						
OPERATOR	Oasis Petroleum			COUNTY/STATE	McKenzie Co., ND	
WELL NAME	Kline Federal 5300 41-18 9T			RIG	Nabors B22	
WELL TYPE	Horizontal Upper Three Forks			LOCATION		
EST. T.D.	SWSW 18-153N-100W 20,825'			Surface Location (survey plat): 533' fsl TOTAL LATERA 9,721'		
			237' fwl		GROUND ELEV:	2057 Finished Pad Elev.
					KB ELEV:	2082
					Sub Height: 25	
PROGNOSIS:	Based on 2,082' KB(esl)			LOGS:	Type	Interval
MARKER	DEPTH (Surf Loc)	DATUM (Surf Loc)			OH Logs: CBL/GR: MWD GR:	Triple Combo KOP to Kirby (or min run of 1800' whichever is greater), GR/Res to BSC; CBL/GR: Above top of cement/GR to base of casing KOP to lateral TD
Pierre	NDIC MAP	1,972	110			
Greenhorn		4,646	(2,564)			
Mowry		5,057	(2,975)			
Dakota		5,471	(3,389)			
Rierdon		6,486	(4,404)			
Dunham Salt		6,814	(4,732)			
Dunham Salt Base		6,929	(4,847)			
Spearfish		7,024	(4,942)			
Pine Salt		7,283	(5,201)			
Pine Salt Base		7,318	(5,236)			
Opeche Salt		7,374	(5,292)			
Opeche Salt Base		7,403	(5,321)			
Broom Creek (Top of Minnelusa Gp.)		7,605	(5,523)			
Amsden		7,684	(5,602)			
Tyler		7,853	(5,771)			
Otter (Base of Minnelusa Gp.)		8,047	(5,965)			
Kibbey Lime		8,390	(6,308)			
Charles Salt		8,542	(6,460)			
UB		9,159	(7,077)			
Base Last Salt		9,238	(7,156)			
Ratcliffe		9,301	(7,219)			
Mission Canyon		9,454	(7,372)			
Lodgepole		10,022	(7,940)			
Lodgepole Fracture Zone		10,209	(8,127)			
False Bakken		10,726	(8,644)			
Upper Bakken		10,735	(8,653)			
Middle Bakken		10,751	(8,669)			
Lower Bakken		10,785	(8,703)			
Pronghorn		10,791	(8,709)			
Three Forks		10,813	(8,731)			
TF Target Top		10,827	(8,745)			
TF Target Base		10,837	(8,755)			
Claystone		10,838	(8,756)			
Dip Rate:	-0.1					
Max. Anticipated BHP:	4692			Surface Formation:	Glacial till	
MUD:	Interval	Type	WT	Vis	WL	Remarks
Surface:	0'	2,072'	FW/Gel - Lime Sweeps	8.4-9.0	28-32	NC
Intermediate:	2,072'	11,104'	Invert	9.5-10.4	40-50	30+HiHp
Lateral:	11,104'	20,825'	Salt Water	9.8-10.2	28-32	NC
CASING:	Size	WT pcf	Hole	Depth	Cement	WOC
Surface:	13-3/8"	54.5#	17-1/2"	2,072'	To Surface	12
Dakota Contingency:	9-5/8"	40#	12-1/4"	6,101'	To Surface	12
Intermediate:	7"	29/32#	8-3/4"	11,104'	3971	24
Production Liner:	4.5"	13.5#	6"	20,825'	TOL @ 10,305'	1500' above Dakota 50' above KOP
PROBABLE PLUGS, IF REQ'D:						
OTHER:	MD	TVD	FNLFSL	FELFWL	S-T-R	AZI
Surface:	2,072	2,072	533' FSL	237' FWL	SEC 18-T153N-R100W	Survey Company:
KOP:	10,355'	10,355'	583' FSL	237' FWL	SEC 18-T153N-R100W	Build Rate: 12 deg /100'
EOC:	11,104'	10,832'	631' FSL	644' FWL	SEC 18-T153N-R100W	
Casing Point:	11,104'	10,832'	831' FSL	644' FWL	SEC 18-T153N-R100W	58 61
Upper Three Forks Lateral TD:	20,825'	10,849'	1250' FSL	200' FEL	SEC 17-T153N-R100W	90 00
						90.00
Comments:						
Request a Sundry for an Open Hole Log Waiver						
Exception well: Oasis Petroleum's Kline Federal 5300 11-18H (153N 100W 18 NW NW) 35 packers, 35 sleeves, no frac string						
Oasis Petroleum does not use Diesel Fuel, as defined by the US EPA in the list below, in our hydraulic fracture operations.						
68334-30-5 (Primary Name: Fuels, diesel) 68476-34-6 (Primary Name: Fuels, diesel, No. 2) 68476-30-2 (Primary Name: Fuel oil No. 2) 68476-31-3 (Primary Name: Fuel oil, No. 4) 8008-20-6 (Primary Name: Kerosene)						
OASIS PETROLEUM						
Geology: M.Steed 4/23/14			Engineering: hbader rpm 7/18/14			



Oasis Petroleum

Indian Hills

153N-100W-17/18

Kline Federal 5300 41-18 9T

Kline Federal 5300 41-18 9T

Plan: Design #1

Standard Planning Report

23 May, 2014

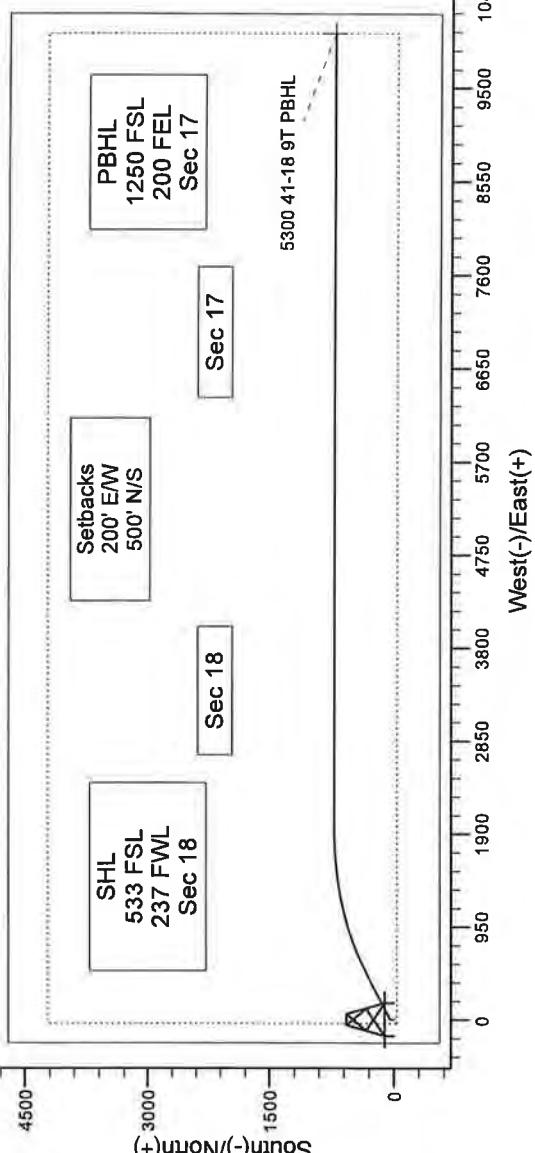
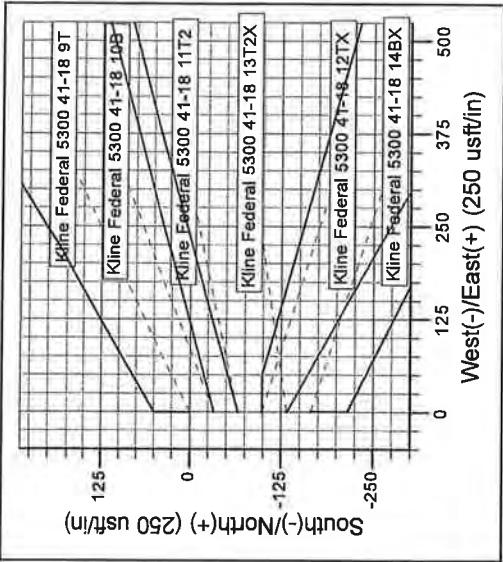


Project: Indian Hills
 Site: 153N-100W-17/18
 Well: Kline Federal 5300 41-18 9T
 Wellbore: Kline Federal 5300 41-18 9T
 Design: Design #1

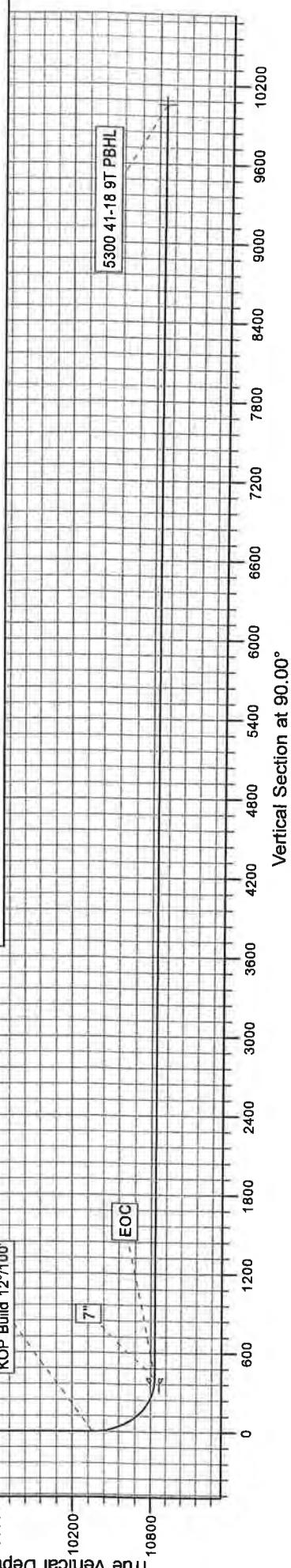


WELL DETAILS: Kline Federal 5300 41-18 9T

Ground Level: 2057.0
 Easting: 120997.54 Latitude: 48° 4' 8.530 N
 Longitude: 103° 36' 11.960 W
 Northing: 405235.88



SECTION DETAILS								
	MD	Inc	Azi	TVD	+N-S	+E-W	Dleg	Target
	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.00
	2200.0	0.00	0.00	2200.0	0.0	0.0	0.0	0.00
	2216.7	0.50	0.00	2216.7	0.1	0.0	0.0	3.00
	7926.7	0.50	0.00	7926.4	49.9	0.0	0.0	0.00
	7943.3	0.00	0.00	7943.1	50.0	0.0	0.0	3.00
	10354.8	0.00	0.00	10354.6	50.0	0.0	0.0	0.00
	11104.0	89.90	58.61	10832.0	298.2	406.9	12.00	
	12263.5	89.90	90.00	10834.9	717.5	1899.0	2.00	
	20824.5	89.90	90.00	10849.1	717.5	10050.0	0.00	
								5300 41-18 9T PBHL





Ryan Directional Services

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Kline Federal 5300 41-18 9T							
Company:	Oasis Petroleum	TVD Reference:	WELL @ 2082 0usft (Original Well Elev)							
Project:	Indian Hills	MD Reference:	WELL @ 2082 0usft (Original Well Elev)							
Site:	153N-100W-17/18	North Reference:	True							
Well:	Kline Federal 5300 41-18 9T	Survey Calculation Method:	Minimum Curvature							
Wellbore:	Kline Federal 5300 41-18 9T									
Design:	Design #1									
Project	Indian Hills									
Map System:	US State Plane 1983	System Datum:	Mean Sea Level							
Geo Datum:	North American Datum 1983									
Map Zone:	North Dakota Northern Zone									
Site	153N-100W-17/18									
Site Position:		Northing:	408,962.44 usft							
From:	Lat/Long	Easting:	1,210,229.18 usft							
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "							
Well	Kline Federal 5300 41-18 9T	Latitude:	48° 4' 45.380 N							
Well Position	+N/S -3,733.9 usft	Northing:	405,235.87 usft							
	+E/W -107.3 usft	Easting:	1,209,971.53 usft							
Position Uncertainty	2.0 usft	Wellhead Elevation:	Ground Level: 2,057.0 usft							
Latitude:	48° 4' 8.530 N									
Longitude:	103° 36' 11.960 W									
Grid Convergence:	-2.31 °									
Wellbore	Kline Federal 5300 41-18 9T									
Magnetics	Model Name	Sample Date	Declination							
	IGRF2010	5/19/2014	8.27							
			Dip Angle							
			72.99							
			Field Strength (nT) 56,438							
Design	Design #1									
Audit Notes:										
Version:		Phase:	PROTOTYPE Tie On Depth: 0.0							
Vertical Sections	Depth From (TVD) (usft)	+N/S (usft)	+E/W (usft)	Direction (°)						
	0.0	0.0	0.0	90.00						
Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/S (usft)	+E/W (usft)	Dogleg Rate (Per 100ft=ft)	Bend Rate (Per 100ft=ft)	Turn Rate (Per 100ft=ft)	TEO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,216.7	0.50	0.00	2,216.7	0.1	0.0	3.00	3.00	0.00	0.00	
7,926.7	0.50	0.00	7,926.4	49.9	0.0	0.00	0.00	0.00	0.00	
7,943.3	0.00	0.00	7,943.1	50.0	0.0	3.00	-3.00	0.00	0.00	
10,354.8	0.00	0.00	10,354.6	50.0	0.0	0.00	0.00	0.00	180.00	
11,104.0	89.90	58.61	10,832.0	298.2	406.9	12.00	12.00	0.00	0.00	
12,673.5	89.90	90.00	10,834.9	717.5	1,899.0	2.00	0.00	2.00	58.61	
20,824.5	89.90	90.00	10,849.1	717.5	10,050.0	0.00	0.00	0.00	90.03	
									0.00	5300 41-18 9T PBHL



Ryan Directional Services

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Kline Federal 5300 41-18 9T
Company:	Oasis Petroleum	TVD Reference:	WELL @ 2082 Dust (Original Well Elev)
Project:	Indian Hills	MD Reference:	WELL @ 2082 Dust (Original Well Elev)
Site:	153N-100W-17-18	North Reference:	True
Well:	Kline Federal 5300 41-18 9T	Survey Calculation Method:	Minimum Curvature
Wellbore:	Kline Federal 5300 41-18 9T		
Design:	Design #1		

Planned Survey										
Measured Depth (m) (ft)	Inclination (°) (")	Azimuth (deg)	Vertical Depth (m) (ft)	N-S (m) (ft)	E-W (m) (ft)	Vertical Section (m) (ft)	Dipleg Rate (Exposure) (°/100m/ft)	Build Rate (°/100m/ft)	Turn Rate (°/100m/ft)	
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
2,216.7	0.50	0.00	2,216.7	0.1	0.0	0.0	3.00	3.00	0.00	
2,300.0	0.50	0.00	2,300.0	0.8	0.0	0.0	0.00	0.00	0.00	
2,400.0	0.50	0.00	2,400.0	1.7	0.0	0.0	0.00	0.00	0.00	
2,500.0	0.50	0.00	2,500.0	2.5	0.0	0.0	0.00	0.00	0.00	
2,600.0	0.50	0.00	2,600.0	3.4	0.0	0.0	0.00	0.00	0.00	
2,700.0	0.50	0.00	2,700.0	4.3	0.0	0.0	0.00	0.00	0.00	
2,800.0	0.50	0.00	2,800.0	5.2	0.0	0.0	0.00	0.00	0.00	
2,900.0	0.50	0.00	2,900.0	6.0	0.0	0.0	0.00	0.00	0.00	
3,000.0	0.50	0.00	3,000.0	6.9	0.0	0.0	0.00	0.00	0.00	
3,100.0	0.50	0.00	3,100.0	7.8	0.0	0.0	0.00	0.00	0.00	
3,200.0	0.50	0.00	3,200.0	8.7	0.0	0.0	0.00	0.00	0.00	
3,300.0	0.50	0.00	3,300.0	9.5	0.0	0.0	0.00	0.00	0.00	
3,400.0	0.50	0.00	3,400.0	10.4	0.0	0.0	0.00	0.00	0.00	
3,500.0	0.50	0.00	3,500.0	11.3	0.0	0.0	0.00	0.00	0.00	
3,600.0	0.50	0.00	3,599.9	12.1	0.0	0.0	0.00	0.00	0.00	
3,700.0	0.50	0.00	3,699.9	13.0	0.0	0.0	0.00	0.00	0.00	
3,800.0	0.50	0.00	3,799.9	13.9	0.0	0.0	0.00	0.00	0.00	
3,900.0	0.50	0.00	3,899.9	14.8	0.0	0.0	0.00	0.00	0.00	
4,000.0	0.50	0.00	3,999.9	15.6	0.0	0.0	0.00	0.00	0.00	
4,100.0	0.50	0.00	4,099.9	16.5	0.0	0.0	0.00	0.00	0.00	
4,200.0	0.50	0.00	4,199.9	17.4	0.0	0.0	0.00	0.00	0.00	
4,300.0	0.50	0.00	4,299.9	18.3	0.0	0.0	0.00	0.00	0.00	
4,400.0	0.50	0.00	4,399.9	19.1	0.0	0.0	0.00	0.00	0.00	
4,500.0	0.50	0.00	4,499.9	20.0	0.0	0.0	0.00	0.00	0.00	
4,600.0	0.50	0.00	4,599.9	20.9	0.0	0.0	0.00	0.00	0.00	
4,646.1	0.50	0.00	4,646.0	21.3	0.0	0.0	0.00	0.00	0.00	
Greenhorn										
4,700.0	0.50	0.00	4,699.9	21.7	0.0	0.0	0.00	0.00	0.00	
4,800.0	0.50	0.00	4,799.9	22.6	0.0	0.0	0.00	0.00	0.00	
4,900.0	0.50	0.00	4,899.9	23.5	0.0	0.0	0.00	0.00	0.00	
5,000.0	0.50	0.00	4,999.9	24.4	0.0	0.0	0.00	0.00	0.00	
5,057.1	0.50	0.00	5,057.0	24.9	0.0	0.0	0.00	0.00	0.00	
Mowry										
5,100.0	0.50	0.00	5,099.9	25.2	0.0	0.0	0.00	0.00	0.00	
5,200.0	0.50	0.00	5,199.9	26.1	0.0	0.0	0.00	0.00	0.00	
5,300.0	0.50	0.00	5,299.9	27.0	0.0	0.0	0.00	0.00	0.00	
5,400.0	0.50	0.00	5,399.9	27.9	0.0	0.0	0.00	0.00	0.00	
5,471.1	0.50	0.00	5,471.0	28.5	0.0	0.0	0.00	0.00	0.00	
Dakota										
5,500.0	0.50	0.00	5,499.9	28.7	0.0	0.0	0.00	0.00	0.00	
5,600.0	0.50	0.00	5,599.9	29.6	0.0	0.0	0.00	0.00	0.00	
5,700.0	0.50	0.00	5,699.9	30.5	0.0	0.0	0.00	0.00	0.00	
5,800.0	0.50	0.00	5,799.9	31.3	0.0	0.0	0.00	0.00	0.00	
5,900.0	0.50	0.00	5,899.9	32.2	0.0	0.0	0.00	0.00	0.00	
6,000.0	0.50	0.00	5,999.9	33.1	0.0	0.0	0.00	0.00	0.00	
6,100.0	0.50	0.00	6,099.9	34.0	0.0	0.0	0.00	0.00	0.00	
6,200.0	0.50	0.00	6,199.8	34.8	0.0	0.0	0.00	0.00	0.00	
6,300.0	0.50	0.00	6,299.8	35.7	0.0	0.0	0.00	0.00	0.00	
6,400.0	0.50	0.00	6,399.8	36.6	0.0	0.0	0.00	0.00	0.00	
6,486.2	0.50	0.00	6,486.0	37.3	0.0	0.0	0.00	0.00	0.00	
Rierdon										
6,500.0	0.50	0.00	6,499.8	37.5	0.0	0.0	0.00	0.00	0.00	



Ryan Directional Services

Planning Report



Database Company	EDM 5000.1 Single User Db Oasis Petroleum	Local Coordinate Reference:	Well Kline Federal 5300 41-18 9T
Project Site	Indian Hills 153N-100W-17/18	TVD Reference:	WELL @ 2082.0usft (Original Well Elev)
Well Wellbore	Kline Federal 5300 41-18 9T Kline Federal 5300 41-18 9T	MD Reference:	WELL @ 2082.0usft (Original Well Elev)
Design	Design #1	North Reference:	True
		Survey Calculation Method:	Minimum Curvature

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (/100usft)	Build Rate (/100usft)	Turn Rate (/100usft)
6,600.0	0.50	0.00	6,599.8	38.3	0.0	0.0	0.00	0.00	0.00
6,700.0	0.50	0.00	6,699.8	39.2	0.0	0.0	0.00	0.00	0.00
6,800.0	0.50	0.00	6,799.8	40.1	0.0	0.0	0.00	0.00	0.00
6,814.2	0.50	0.00	6,814.0	40.2	0.0	0.0	0.00	0.00	0.00
Dunham Salt									
6,900.0	0.50	0.00	6,899.8	40.9	0.0	0.0	0.00	0.00	0.00
6,929.2	0.50	0.00	6,929.0	41.2	0.0	0.0	0.00	0.00	0.00
Dunham Salt Base									
7,000.0	0.50	0.00	6,999.8	41.8	0.0	0.0	0.00	0.00	0.00
7,024.2	0.50	0.00	7,024.0	42.0	0.0	0.0	0.00	0.00	0.00
Spearfish									
7,100.0	0.50	0.00	7,099.8	42.7	0.0	0.0	0.00	0.00	0.00
7,200.0	0.50	0.00	7,199.8	43.6	0.0	0.0	0.00	0.00	0.00
7,283.2	0.50	0.00	7,283.0	44.3	0.0	0.0	0.00	0.00	0.00
Pine Salt									
7,300.0	0.50	0.00	7,299.8	44.4	0.0	0.0	0.00	0.00	0.00
7,318.2	0.50	0.00	7,318.0	44.6	0.0	0.0	0.00	0.00	0.00
Pine Salt Base									
7,374.2	0.50	0.00	7,374.0	45.1	0.0	0.0	0.00	0.00	0.00
Opache Salt									
7,400.0	0.50	0.00	7,399.8	45.3	0.0	0.0	0.00	0.00	0.00
7,403.2	0.50	0.00	7,403.0	45.3	0.0	0.0	0.00	0.00	0.00
Opache Salt Base									
7,500.0	0.50	0.00	7,499.8	46.2	0.0	0.0	0.00	0.00	0.00
7,600.0	0.50	0.00	7,599.8	47.1	0.0	0.0	0.00	0.00	0.00
7,605.2	0.50	0.00	7,605.0	47.1	0.0	0.0	0.00	0.00	0.00
Broom Creek (Top of Minnelusa Gp.)									
7,684.2	0.50	0.00	7,684.0	47.8	0.0	0.0	0.00	0.00	0.00
Ansden									
7,700.0	0.50	0.00	7,699.8	47.9	0.0	0.0	0.00	0.00	0.00
7,800.0	0.50	0.00	7,799.8	48.8	0.0	0.0	0.00	0.00	0.00
7,853.2	0.50	0.00	7,853.0	49.3	0.0	0.0	0.00	0.00	0.00
Tyler									
7,900.0	0.50	0.00	7,899.8	49.7	0.0	0.0	0.00	0.00	0.00
7,926.7	0.50	0.00	7,926.4	49.9	0.0	0.0	0.00	0.00	0.00
7,943.3	0.00	0.00	7,943.1	50.0	0.0	0.0	3.00	-3.00	0.00
8,000.0	0.00	0.00	7,999.8	50.0	0.0	0.0	0.00	0.00	0.00
8,047.2	0.00	0.00	8,047.0	50.0	0.0	0.0	0.00	0.00	0.00
Otter (Base of Minnelusa Gp.)									
8,100.0	0.00	0.00	8,099.8	50.0	0.0	0.0	0.00	0.00	0.00
8,200.0	0.00	0.00	8,199.8	50.0	0.0	0.0	0.00	0.00	0.00
8,300.0	0.00	0.00	8,299.8	50.0	0.0	0.0	0.00	0.00	0.00
8,390.2	0.00	0.00	8,390.0	50.0	0.0	0.0	0.00	0.00	0.00
Kibbey Lime									
8,400.0	0.00	0.00	8,399.8	50.0	0.0	0.0	0.00	0.00	0.00
8,500.0	0.00	0.00	8,499.8	50.0	0.0	0.0	0.00	0.00	0.00
8,542.2	0.00	0.00	8,542.0	50.0	0.0	0.0	0.00	0.00	0.00
Charles Salt									
8,600.0	0.00	0.00	8,599.8	50.0	0.0	0.0	0.00	0.00	0.00
8,700.0	0.00	0.00	8,699.8	50.0	0.0	0.0	0.00	0.00	0.00
8,800.0	0.00	0.00	8,799.8	50.0	0.0	0.0	0.00	0.00	0.00
8,900.0	0.00	0.00	8,899.8	50.0	0.0	0.0	0.00	0.00	0.00



Ryan Directional Services

Planning Report



Database:	EDM 5000.1 Single User Db	Local Coordinate Reference:	Well Kline Federal 5300 41-18 9T
Company:	Oasis Petroleum	TVD Reference:	WELL @ 2082.0usft (Original Well Elev)
Project:	Indian Hills	MD Reference:	WELL @ 2082.0usft (Original Well Elev)
Site:	153N-100W-17718	North Reference:	True
Well:	Kline Federal 5300 41-18 9T	Survey Calculation Method:	Minimum Curvature
Wellbore:	Kline Federal 5300 41-18 9T		
Design:	Design #1		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (m)	N-S (ft)	E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
9,000.0	0.00	0.00	8,999.8	50.0	0.0	0.0	0.00	0.00	0.00	
9,100.0	0.00	0.00	9,099.8	50.0	0.0	0.0	0.00	0.00	0.00	
9,159.2	0.00	0.00	9,159.0	50.0	0.0	0.0	0.00	0.00	0.00	
UB										
9,200.0	0.00	0.00	9,199.8	50.0	0.0	0.0	0.00	0.00	0.00	
9,238.2	0.00	0.00	9,238.0	50.0	0.0	0.0	0.00	0.00	0.00	
Base Last Salt										
9,300.0	0.00	0.00	9,299.8	50.0	0.0	0.0	0.00	0.00	0.00	
9,301.2	0.00	0.00	9,301.0	50.0	0.0	0.0	0.00	0.00	0.00	
Ratcliffe										
9,400.0	0.00	0.00	9,399.8	50.0	0.0	0.0	0.00	0.00	0.00	
9,454.2	0.00	0.00	9,454.0	50.0	0.0	0.0	0.00	0.00	0.00	
Mission Canyon										
9,500.0	0.00	0.00	9,499.8	50.0	0.0	0.0	0.00	0.00	0.00	
9,600.0	0.00	0.00	9,599.8	50.0	0.0	0.0	0.00	0.00	0.00	
9,700.0	0.00	0.00	9,699.8	50.0	0.0	0.0	0.00	0.00	0.00	
9,800.0	0.00	0.00	9,799.8	50.0	0.0	0.0	0.00	0.00	0.00	
9,900.0	0.00	0.00	9,899.8	50.0	0.0	0.0	0.00	0.00	0.00	
10,000.0	0.00	0.00	9,999.8	50.0	0.0	0.0	0.00	0.00	0.00	
10,022.2	0.00	0.00	10,022.0	50.0	0.0	0.0	0.00	0.00	0.00	
Lodgepole										
10,100.0	0.00	0.00	10,099.8	50.0	0.0	0.0	0.00	0.00	0.00	
10,200.0	0.00	0.00	10,199.8	50.0	0.0	0.0	0.00	0.00	0.00	
10,209.2	0.00	0.00	10,209.0	50.0	0.0	0.0	0.00	0.00	0.00	
Lodgepole Fracture Zone										
10,300.0	0.00	0.00	10,299.8	50.0	0.0	0.0	0.00	0.00	0.00	
10,354.8	0.00	0.00	10,354.6	50.0	0.0	0.0	0.00	0.00	0.00	
KOP Build 12°/100'										
10,375.0	2.42	58.61	10,374.8	50.2	0.4	0.4	12.00	12.00	0.00	
10,400.0	5.42	58.61	10,399.7	51.1	1.8	1.8	12.00	12.00	0.00	
10,425.0	8.42	58.61	10,424.5	52.7	4.4	4.4	12.00	12.00	0.00	
10,450.0	11.42	58.61	10,449.2	54.9	8.1	8.1	12.00	12.00	0.00	
10,475.0	14.42	58.61	10,473.5	57.8	12.8	12.8	12.00	12.00	0.00	
10,500.0	17.42	58.61	10,497.6	61.4	18.7	18.7	12.00	12.00	0.00	
10,525.0	20.42	58.61	10,521.2	65.6	25.6	25.6	12.00	12.00	0.00	
10,550.0	23.42	58.61	10,544.4	70.5	33.6	33.6	12.00	12.00	0.00	
10,575.0	26.42	58.61	10,567.1	76.0	42.6	42.6	12.00	12.00	0.00	
10,600.0	29.42	58.61	10,589.1	82.1	52.6	52.6	12.00	12.00	0.00	
10,625.0	32.42	58.61	10,610.6	88.7	63.5	63.5	12.00	12.00	0.00	
10,650.0	35.42	58.61	10,631.3	96.0	75.4	75.4	12.00	12.00	0.00	
10,675.0	38.42	58.61	10,651.3	103.8	88.3	88.3	12.00	12.00	0.00	
10,700.0	41.42	58.61	10,670.5	112.2	102.0	102.0	12.00	12.00	0.00	
10,725.0	44.42	58.61	10,688.8	121.1	116.5	116.5	12.00	12.00	0.00	
10,750.0	47.42	58.61	10,706.2	130.4	131.8	131.8	12.00	12.00	0.00	
10,775.0	50.42	58.61	10,722.6	140.2	147.9	147.9	12.00	12.00	0.00	
10,780.4	51.07	58.61	10,726.0	142.4	151.5	151.5	12.00	12.00	0.00	
False Bakken										
10,795.0	52.82	58.61	10,735.0	148.4	161.3	161.3	12.00	12.00	0.00	
Upper Bakken										
10,800.0	53.42	58.61	10,738.0	150.5	164.7	164.7	12.00	12.00	0.00	
10,822.5	56.13	58.61	10,751.0	160.0	180.4	180.4	12.00	12.00	0.00	
Middle Bakken										
10,825.0	56.42	58.61	10,752.4	161.1	182.2	182.2	12.00	12.00	0.00	



Ryan Directional Services

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Kline Federal 5300 41-18 9T
Company:	Oasis Petroleum	TVD Reference:	WELL @ 2082.0usft (Original Well Elev)
Project:	Indian Hills	MD Reference:	WELL @ 2082.0usft (Original Well Elev)
Site:	153N-100W-171B	North Reference:	True
Well:	Kline Federal 5300 41-18 9T	Survey Calculation Method:	Minimum Curvature
Wellbore:	Kline Federal 5300 41-18 9T		
Design:	Design #1		

Planned Survey										
Measured Depth (feet)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Bend Rate (°/100usft)	Turn Rate (°/100usft)	
10,850.0	59.42	58.61	10,765.7	172.2	200.3	200.3	12.00	12.00	0.00	
10,875.0	62.42	58.61	10,777.8	183.5	218.9	218.9	12.00	12.00	0.00	
10,891.1	64.35	58.61	10,785.0	191.0	231.2	231.2	12.00	12.00	0.00	
Lower Bakken										
10,900.0	65.42	58.61	10,788.8	195.2	238.1	238.1	12.00	12.00	0.00	
10,905.4	66.07	58.61	10,791.0	197.8	242.3	242.3	12.00	12.00	0.00	
Pronghorn										
10,925.0	68.42	58.61	10,798.6	207.2	257.7	257.7	12.00	12.00	0.00	
10,950.0	71.42	58.61	10,807.2	219.4	277.7	277.7	12.00	12.00	0.00	
10,969.5	73.76	58.61	10,813.0	229.1	293.6	293.6	12.00	12.00	0.00	
Three Forks										
10,975.0	74.42	58.61	10,814.5	231.9	298.1	298.1	12.00	12.00	0.00	
11,000.0	77.42	58.61	10,820.6	244.5	318.8	318.8	12.00	12.00	0.00	
11,025.0	80.42	58.61	10,825.4	257.3	339.8	339.8	12.00	12.00	0.00	
11,035.3	81.66	58.61	10,827.0	262.6	348.5	348.5	12.00	12.00	0.00	
TF Target Top										
11,050.0	83.42	58.61	10,828.9	270.2	360.9	360.9	12.00	12.00	0.00	
11,075.0	86.42	58.61	10,831.1	283.2	382.2	382.2	12.00	12.00	0.00	
11,100.0	89.42	58.61	10,832.0	296.2	403.5	403.5	12.00	12.00	0.00	
11,104.0	89.90	58.61	10,832.0	298.2	406.9	406.9	11.90	11.90	0.00	
EOC - 7"										
11,200.0	89.90	60.53	10,832.2	346.9	489.7	489.7	2.00	0.00	2.00	
11,300.0	89.90	62.53	10,832.4	394.5	577.6	577.6	2.00	0.00	2.00	
11,400.0	89.90	64.53	10,832.6	439.1	667.1	667.1	2.00	0.00	2.00	
11,500.0	89.90	66.53	10,832.7	480.5	758.1	758.1	2.00	0.00	2.00	
11,600.0	89.90	68.53	10,832.9	518.7	850.5	850.5	2.00	0.00	2.00	
11,700.0	89.90	70.53	10,833.1	553.7	944.2	944.2	2.00	0.00	2.00	
11,800.0	89.90	72.53	10,833.3	585.4	1,039.0	1,039.0	2.00	0.00	2.00	
11,900.0	89.90	74.53	10,833.5	613.7	1,134.9	1,134.9	2.00	0.00	2.00	
12,000.0	89.90	76.53	10,833.7	638.7	1,231.7	1,231.7	2.00	0.00	2.00	
12,100.0	89.90	78.53	10,833.8	660.3	1,329.4	1,329.4	2.00	0.00	2.00	
12,200.0	89.90	80.53	10,834.0	678.5	1,427.7	1,427.7	2.00	0.00	2.00	
12,300.0	89.90	82.53	10,834.2	693.2	1,526.6	1,526.6	2.00	0.00	2.00	
12,400.0	89.90	84.53	10,834.4	704.5	1,626.0	1,626.0	2.00	0.00	2.00	
12,500.0	89.90	86.53	10,834.6	712.3	1,725.7	1,725.7	2.00	0.00	2.00	
12,600.0	89.90	88.53	10,834.7	716.6	1,825.6	1,825.6	2.00	0.00	2.00	
12,673.5	89.90	90.00	10,834.9	717.5	1,899.0	1,899.0	2.00	0.00	2.00	
12,700.0	89.90	90.00	10,834.9	717.5	1,925.6	1,925.6	0.00	0.00	0.00	
12,800.0	89.90	90.00	10,835.1	717.5	2,025.6	2,025.6	0.00	0.00	0.00	
12,900.0	89.90	90.00	10,835.3	717.5	2,125.6	2,125.6	0.00	0.00	0.00	
13,000.0	89.90	90.00	10,835.4	717.5	2,225.6	2,225.6	0.00	0.00	0.00	
13,100.0	89.90	90.00	10,835.6	717.5	2,325.6	2,325.6	0.00	0.00	0.00	
13,200.0	89.90	90.00	10,835.8	717.5	2,425.6	2,425.6	0.00	0.00	0.00	
13,300.0	89.90	90.00	10,835.9	717.5	2,525.6	2,525.6	0.00	0.00	0.00	
13,400.0	89.90	90.00	10,836.1	717.5	2,625.6	2,625.6	0.00	0.00	0.00	
13,500.0	89.90	90.00	10,836.3	717.5	2,725.6	2,725.6	0.00	0.00	0.00	
13,600.0	89.90	90.00	10,836.5	717.5	2,825.6	2,825.6	0.00	0.00	0.00	
13,700.0	89.90	90.00	10,836.6	717.5	2,925.6	2,925.6	0.00	0.00	0.00	
13,800.0	89.90	90.00	10,836.8	717.5	3,025.6	3,025.6	0.00	0.00	0.00	
13,900.0	89.90	90.00	10,837.0	717.5	3,125.6	3,125.6	0.00	0.00	0.00	
13,901.8	89.90	90.00	10,837.0	717.5	3,127.3	3,127.3	0.00	0.00	0.00	
TF Target Base										
14,000.0	89.90	90.00	10,837.2	717.5	3,225.6	3,225.6	0.00	0.00	0.00	



Ryan Directional Services

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Kline Federal 5300 41-18-9T
Company:	Oasis Petroleum	TVD Reference:	WELL @ 2082.0ft (Original Well Elev)
Project:	Indian Hills	MD Reference:	WELL @ 2082.0ft (Original Well Elev)
Site:	153N-100W-17/18	North Reference:	True
Well:	Kline Federal 5300 41-18-9T	Survey Calculation Method:	Minimum Curvature
Wellbore:	Kline Federal 5300 41-18-9T		
Design:	Design #1		

Planned Survey										
Measured Depth (feet)	Inclination (°)	Azimuth (°)	Vertical Depth (feet)	+N-S (feet)	+E-W (feet)	Vertical Section (feet)	Drag Rate (°/100feet)	Build Rate (°/100feet)	Total Rate (°/100feet)	
14,100.0	89.90	90.00	10,837.3	717.5	3,325.6	3,325.6	0.00	0.00	0.00	
14,200.0	89.90	90.00	10,837.5	717.5	3,425.6	3,425.6	0.00	0.00	0.00	
14,300.0	89.90	90.00	10,837.7	717.5	3,525.6	3,525.6	0.00	0.00	0.00	
14,400.0	89.90	90.00	10,837.9	717.5	3,625.6	3,625.6	0.00	0.00	0.00	
14,474.7	89.90	90.00	10,838.0	717.5	3,700.3	3,700.3	0.00	0.00	0.00	
Claystone										
14,500.0	89.90	90.00	10,838.0	717.5	3,725.6	3,725.6	0.00	0.00	0.00	
14,600.0	89.90	90.00	10,838.2	717.5	3,825.6	3,825.6	0.00	0.00	0.00	
14,700.0	89.90	90.00	10,838.4	717.5	3,925.6	3,925.6	0.00	0.00	0.00	
14,800.0	89.90	90.00	10,838.6	717.5	4,025.6	4,025.6	0.00	0.00	0.00	
14,900.0	89.90	90.00	10,838.7	717.5	4,125.6	4,125.6	0.00	0.00	0.00	
15,000.0	89.90	90.00	10,838.9	717.5	4,225.6	4,225.6	0.00	0.00	0.00	
15,100.0	89.90	90.00	10,839.1	717.5	4,325.6	4,325.6	0.00	0.00	0.00	
15,200.0	89.90	90.00	10,839.3	717.5	4,425.6	4,425.6	0.00	0.00	0.00	
15,300.0	89.90	90.00	10,839.4	717.5	4,525.6	4,525.6	0.00	0.00	0.00	
15,400.0	89.90	90.00	10,839.6	717.5	4,625.6	4,625.6	0.00	0.00	0.00	
15,500.0	89.90	90.00	10,839.8	717.5	4,725.6	4,725.6	0.00	0.00	0.00	
15,600.0	89.90	90.00	10,840.0	717.5	4,825.6	4,825.6	0.00	0.00	0.00	
15,700.0	89.90	90.00	10,840.1	717.5	4,925.6	4,925.6	0.00	0.00	0.00	
15,800.0	89.90	90.00	10,840.3	717.5	5,025.6	5,025.6	0.00	0.00	0.00	
15,900.0	89.90	90.00	10,840.5	717.5	5,125.6	5,125.6	0.00	0.00	0.00	
16,000.0	89.90	90.00	10,840.7	717.5	5,225.6	5,225.6	0.00	0.00	0.00	
16,100.0	89.90	90.00	10,840.8	717.5	5,325.6	5,325.6	0.00	0.00	0.00	
16,200.0	89.90	90.00	10,841.0	717.5	5,425.6	5,425.6	0.00	0.00	0.00	
16,300.0	89.90	90.00	10,841.2	717.5	5,525.6	5,525.6	0.00	0.00	0.00	
16,400.0	89.90	90.00	10,841.4	717.5	5,625.6	5,625.6	0.00	0.00	0.00	
16,500.0	89.90	90.00	10,841.5	717.5	5,725.6	5,725.6	0.00	0.00	0.00	
16,600.0	89.90	90.00	10,841.7	717.5	5,825.6	5,825.6	0.00	0.00	0.00	
16,700.0	89.90	90.00	10,841.9	717.5	5,925.6	5,925.6	0.00	0.00	0.00	
16,800.0	89.90	90.00	10,842.1	717.5	6,025.6	6,025.6	0.00	0.00	0.00	
16,900.0	89.90	90.00	10,842.2	717.5	6,125.6	6,125.6	0.00	0.00	0.00	
17,000.0	89.90	90.00	10,842.4	717.5	6,225.6	6,225.6	0.00	0.00	0.00	
17,100.0	89.90	90.00	10,842.6	717.5	6,325.6	6,325.6	0.00	0.00	0.00	
17,200.0	89.90	90.00	10,842.8	717.5	6,425.6	6,425.6	0.00	0.00	0.00	
17,300.0	89.90	90.00	10,842.9	717.5	6,525.6	6,525.6	0.00	0.00	0.00	
17,400.0	89.90	90.00	10,843.1	717.5	6,625.6	6,625.6	0.00	0.00	0.00	
17,500.0	89.90	90.00	10,843.3	717.5	6,725.6	6,725.6	0.00	0.00	0.00	
17,600.0	89.90	90.00	10,843.5	717.5	6,825.6	6,825.6	0.00	0.00	0.00	
17,700.0	89.90	90.00	10,843.6	717.5	6,925.6	6,925.6	0.00	0.00	0.00	
17,800.0	89.90	90.00	10,843.8	717.5	7,025.6	7,025.6	0.00	0.00	0.00	
17,900.0	89.90	90.00	10,844.0	717.5	7,125.6	7,125.6	0.00	0.00	0.00	
18,000.0	89.90	90.00	10,844.2	717.5	7,225.6	7,225.6	0.00	0.00	0.00	
18,100.0	89.90	90.00	10,844.3	717.5	7,325.6	7,325.6	0.00	0.00	0.00	
18,200.0	89.90	90.00	10,844.5	717.5	7,425.6	7,425.6	0.00	0.00	0.00	
18,300.0	89.90	90.00	10,844.7	717.5	7,525.6	7,525.6	0.00	0.00	0.00	
18,400.0	89.90	90.00	10,844.9	717.5	7,625.6	7,625.6	0.00	0.00	0.00	
18,500.0	89.90	90.00	10,845.0	717.5	7,725.6	7,725.6	0.00	0.00	0.00	
18,600.0	89.90	90.00	10,845.2	717.5	7,825.6	7,825.6	0.00	0.00	0.00	
18,700.0	89.90	90.00	10,845.4	717.5	7,925.6	7,925.6	0.00	0.00	0.00	
18,800.0	89.90	90.00	10,845.5	717.5	8,025.5	8,025.5	0.00	0.00	0.00	
18,900.0	89.90	90.00	10,845.7	717.5	8,125.5	8,125.5	0.00	0.00	0.00	
19,000.0	89.90	90.00	10,845.9	717.5	8,225.5	8,225.5	0.00	0.00	0.00	
19,100.0	89.90	90.00	10,846.1	717.5	8,325.5	8,325.5	0.00	0.00	0.00	
19,200.0	89.90	90.00	10,846.2	717.5	8,425.5	8,425.5	0.00	0.00	0.00	



Ryan Directional Services

Planning Report



Database Company:	EDM 5000.1 Single User Db Oasis Petroleum	Local Coordinate Reference:	Well Kline Federal 5300 41-18 9T
Project Site:	Indian Hills	TVD Reference:	WELL @ 2082.0usft (Original Well Elev)
Site:	153N-100W 17/18	MD Reference:	WELL @ 2082.0usft (Original Well Elev)
Well Wellbore:	Kline Federal 5300 41-18 9T	North Reference:	True
Design:	Kline Federal 5300 41-18 9T	Survey Calculation Method:	Minimum Curvature
	Design #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	N-S (usft)	E-W (usft)	Vertical Section (usft)	Dogleg Rate °/100usft	Build Rate °/100usft	Turn Rate °/100usft	
19,300.0	89.90	90.00	10,846.4	717.5	8,525.5	8,525.5	0.00	0.00	0.00	
19,400.0	89.90	90.00	10,846.6	717.5	8,625.5	8,625.5	0.00	0.00	0.00	
19,500.0	89.90	90.00	10,846.8	717.5	8,725.5	8,725.5	0.00	0.00	0.00	
19,600.0	89.90	90.00	10,846.9	717.5	8,825.5	8,825.5	0.00	0.00	0.00	
19,700.0	89.90	90.00	10,847.1	717.5	8,925.5	8,925.5	0.00	0.00	0.00	
19,800.0	89.90	90.00	10,847.3	717.5	9,025.5	9,025.5	0.00	0.00	0.00	
19,900.0	89.90	90.00	10,847.5	717.5	9,125.5	9,125.5	0.00	0.00	0.00	
20,000.0	89.90	90.00	10,847.6	717.5	9,225.5	9,225.5	0.00	0.00	0.00	
20,100.0	89.90	90.00	10,847.8	717.5	9,325.5	9,325.5	0.00	0.00	0.00	
20,200.0	89.90	90.00	10,848.0	717.5	9,425.5	9,425.5	0.00	0.00	0.00	
20,300.0	89.90	90.00	10,848.2	717.5	9,525.5	9,525.5	0.00	0.00	0.00	
20,400.0	89.90	90.00	10,848.3	717.5	9,625.5	9,625.5	0.00	0.00	0.00	
20,500.0	89.90	90.00	10,848.5	717.5	9,725.5	9,725.5	0.00	0.00	0.00	
20,600.0	89.90	90.00	10,848.7	717.5	9,825.5	9,825.5	0.00	0.00	0.00	
20,700.0	89.90	90.00	10,848.9	717.5	9,925.5	9,925.5	0.00	0.00	0.00	
20,800.0	89.90	90.00	10,849.0	717.5	10,025.5	10,025.5	0.00	0.00	0.00	
20,824.5	89.90	90.00	10,849.1	717.5	10,050.0	10,050.0	0.00	0.00	0.00	
5300 41-18 9T PBHL										

Design Targets										
Target Name	Bin/Miss Target	Dip Angle (°)	Dip Dir (°)	TVD (usft)	N-S (usft)	E-W (usft)	Nothing (usft)	Easting (usft)	Latitude	Longitude
5300 41-18 9T PBHL	- plan misses target center by 0.5usft at 20824.5usft MD (10849.1 TVD, 717.5 N, 10050.0 E)	0.00	0.00	10,849.1	717.0	10,050.0	405,547.34	1,220,042.26	48° 4' 15.579 N	103° 33' 43.973 W

Casing Points										
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")						
11,104.0	10,832.0	7"	7	8-3/4						



Ryan Directional Services

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Kline Federal 5300 41-18.9T
Company:	Oasis Petroleum	TVD Reference:	WELL @ 2082.0usft (Original Well Elev)
Project:	Indian Hills	MD Reference:	WELL @ 2082.0usft (Original Well Elev)
Site:	153N-100W-17/16	North Reference:	True
Well:	Kline Federal 5300 41-18.9T	Survey Calculation Method:	Minimum Curvature
Wellbore:	Kline Federal 5300 41-18.9T		
Design:	Design #1		

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,972.0	1,972.0	Pierre			
4,646.1	4,646.0	Greenhorn			
5,057.1	5,057.0	Mowry			
5,471.1	5,471.0	Dakota			
6,486.2	6,486.0	Rierdon			
6,814.2	6,814.0	Dunham Salt			
6,929.2	6,929.0	Dunham Salt Base			
7,024.2	7,024.0	Spearfish			
7,283.2	7,283.0	Pine Salt			
7,318.2	7,318.0	Pine Salt Base			
7,374.2	7,374.0	Opeche Salt			
7,403.2	7,403.0	Opeche Salt Base			
7,605.2	7,605.0	Broom Creek (Top of Minnelusa Gp.)			
7,684.2	7,684.0	Armsden			
7,853.2	7,853.0	Tyler			
8,047.2	8,047.0	Otter (Base of Minnelusa Gp.)			
8,390.2	8,390.0	Kibbey Lime			
8,542.2	8,542.0	Charles Salt			
9,159.2	9,159.0	UB			
9,238.2	9,238.0	Base Last Salt			
9,301.2	9,301.0	Ratcliffe			
9,454.2	9,454.0	Mission Canyon			
10,022.2	10,022.0	Lodgepole			
10,209.2	10,209.0	Lodgepole Fracture Zone			
10,780.4	10,726.0	False Bakken			
10,795.0	10,735.0	Upper Bakken			
10,822.5	10,751.0	Middle Bakken			
10,891.1	10,785.0	Lower Bakken			
10,905.4	10,791.0	Pronghorn			
10,969.5	10,813.0	Three Forks			
11,035.3	10,827.0	TF Target Top			
13,901.8	10,837.0	TF Target Base			
14,474.7	10,838.0	Claystone			

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			Comment
		N-S (usft)	E-W (usft)	(±ft)	
10,354.8	10,354.6	50.0	0.0		KOP Build 12°/100'
11,104.0	10,832.0	298.2	406.9		EOC

Oasis Petroleum
Well Summary
Kline Federal 5300 41-18 9T
Section 18 T153N R100W
McKenzie County, ND

SURFACE CASING AND CEMENT DESIGN

Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Make-up Torque (ft-lbs)		
							Minimum	Optimum	Max
13-3/8"	0' to 2,072'	54.5	J-55	STC	12.615"	12.459"	4,100	5,470	6,840

Interval	Description	Collapse	Burst	Tension
		(psi) a	(psi) b	(1000 lbs) c
0' to 2,072'	13-3/8", 54.5#, J-55, STC, 8rd	1130 / 1.17	2730 / 2.82	514 / 2.61

API Rating & Safety Factor

- a) Based on full casing evacuation with 9 ppg fluid on backside (2,072' setting depth).
- b) Burst pressure based on 9 ppg fluid with no fluid on backside (2,072' setting depth).
- c) Based on string weight in 9 ppg fluid at 2,072' TVD plus 100k# overpull. (Buoyed weight equals 97k lbs.)

Cement volumes are based on 13-3/8" casing set in 17-1/2" hole with 50% excess to circulate cement back to surface.
Mix and pump the following slurry.

Pre-flush (Spacer): **20 bbls** fresh water

Lead Slurry: **635 sks** (328 bbls) 2.9 yield conventional system with 94 lb/sk cement, .25 lb/sk D130 Lost Circulation Control Agent, 2% CaCl₂, 4% D079 Extender and 2% D053 Expanding Agent.

Tail Slurry: **349 sks** (72 bbls) 1.16 yield conventional system with 94 lb/sk cement, .25% CaCl₂ and 0.25 lb/sk Lost Circulation Control Agent

Oasis Petroleum
Well Summary
Kline Federal 5300 31-18 9T
Section 18 T153N R100W
McKenzie County, ND

CONTINGENCY SURFACE CASING AND CEMENT DESIGN

Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Make-up Torque (ft-lbs)		
							Minimum	Optimum	Max
9-5/8"	0' to 6,101'	40	HCL-80	LTC	8.835"	8.75"	5,450	7,270	9,090

Interval	Description	Collapse	Burst	Tension
		(psi) a	(psi) b	(1000 lbs) c
0' to 6,101'	9-5/8", 40#, HCL-80, LTC, 8rd	4230 / 2.13	5750 / 3.72	837 / 2.78

API Rating & Safety Factor

- a) Collapse pressure based on 11.5 ppg fluid on the backside and 9 ppg fluid inside of casing.
- b) Burst pressure calculated from a gas kick coming from the production zone (Bakken Pool) at 9,000 psi and a subsequent breakdown at the 9-5/8" shoe, based on a 13.5#/ft fracture gradient. Backup of 9 ppg fluid.
- c) Yield based on string weight in 10 ppg fluid, (207k lbs buoyed weight) plus 100k lbs overpull.

Cement volumes are based on 9-5/8" casing set in 12-1/4" hole with 10% excess in OH and 0% excess inside surface casing. TOC at surface.

Pre-flush (Spacer): **20 bbls** Chem wash

Lead Slurry: **598 sks** (309 bbls) Conventional system with 75 lb/sk cement, 0.5 lb/sk lost circulation, 10% expanding agent, 2% extender, 2% CaCl₂, 0.2% anti-foam and 0.4% fluid loss agent.

Tail Slurry: **349 sks** (72 bbls) Conventional system with 94 lb/sk cement, 0.3% anti-settling agent, 0.3% fluid loss agent, 0.3 lb/sk lost circulation control agent, 0.2% anti-foam and 0.1% retarder.

Oasis Petroleum
Well Summary
Kline Federal 5300 41-18 9T
Section 18 T153N R100W
McKenzie County, ND

INTERMEDIATE CASING AND CEMENT DESIGN

Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Make-up Torque (ft-lbs)		
							Minimum	Optimum	Max
7"	0' – 6,664'	29	P-110	LTC	6.184"	6.059"	5,980	7,970	8,770
7"	6,664' – 10,355'	32	HCP-110	LTC	6.094"	6.000***	6,730	8,970	9,870
7"	10,355' – 11,104'	29	P-110	LTC	6.184"	6.059"	5,980	7,970	8,770

***Special drift

Interval	Length	Description	Collapse	Burst	Tension
			(psi) a	(psi) b	(1000 lbs) c
0' – 6,664'	6,614'	7", 29#, P-110, LTC, 8rd	8530 / 2.48*	11220 / 1.19	797 / 2.09
6,664' – 10,355'	3,691'	7", 32#, HCP-110, LTC, 8rd	11820 / 2.19*	12460 / 1.29	
6,664' – 10,355'	3,691'	7", 32#, HCP-110, LTC, 8rd	11820 / 1.08**	12460 / 1.29	
10,355' – 11,104'	749'	7", 29 lb, P-110, LTC, 8rd	8530 / 1.51*	11220 / 1.16	

API Rating & Safety Factor

- a) *Assume full casing evacuation with 10 ppg fluid on backside. **Assume full casing evacuation with 1.2 psi/ft equivalent fluid gradient across salt intervals.
- b) Burst pressure based on 9000 psig max press for stimulation plus 10.2 ppg fluid in casing and 9 ppg fluid on backside-to 10,832' TVD.
- c) Based on string weight in 10 ppg fluid, (282k lbs buoyed weight) plus 100k

Cement volumes are estimates based on 7" casing set in an 8-3/4" hole with 30% excess.

Pre-flush (Spacer): **50 bbls Saltwater**
40 bbls Weighted MudPush Express

Lead Slurry: **157 sks** (72 bbls) 2.21 yield conventional system with 47 lb/sk cement, 37 lb/sk D035 extender, 3.0% KCl, 3.0% D154 extender, 0.3% D208 viscosifier, 0.07% retarder, 0.2% anti-foam, 0.5 lb/sk, D130 LCM.

Tail Slurry: **617 sks** (170 bbls) 1.54 yield conventional system with 94 lb/sk cement, 3.0% KCl, 35.0% Silica, 0.5% retarder, 0.2% fluid loss, 0.2% anti-foam and 0.5 lb/sk LCM.

**Oasis Petroleum
Well Summary**
Kline Federal 5300 41-18 9T
Section 18 T153N R100W
McKenzie County, ND

PRODUCTION LINER

Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Estimated Torque
4-1/2"	10,305' – 20,825'	13.5	P-110	BTC	3.92"	3.795"	4,500

Interval	Description	Collapse	Burst	Tension
		(psi) a	(psi) b	(1000 lbs) c
10,305' – 20,825'	4-1/2", 13.5 lb, P-110, BTC, 8rd	10680 / 1.99	12410 / 1.28	443 / 2.00

API Rating & Safety Factor

- a) Based on full casing evacuation with 9.5 ppg fluid on backside @ 10,849' TVD.
Burst pressure based on 9000 psi treating pressure with 10.2 ppg internal fluid gradient and 9 ppg external
- b) fluid gradient @ 10,849' TVD.
- c) Based on string weight in 9.5 ppg fluid (Buoyed weight: 121k lbs.) plus 100k lbs overpull.

Oasis Petroleum does not use Diesel Fuel, as defined by the US EPA in the list below, in our hydraulic fracture operations.

68334-30-5 (Primary Name: Fuels, diesel)
68476-34-6 (Primary Name: Fuels, diesel, No. 2)
68476-30-2 (Primary Name: Fuel oil No. 2)
68476-31-3 (Primary Name: Fuel oil, No. 4)
8008-20-6 (Primary Name: Kerosene)



Oil and Gas Division

Lynn D. Helms - Director

Bruce E. Hicks - Assistant Director

Department of Mineral Resources

Lynn D. Helms - Director

North Dakota Industrial Commission

www.dmr.nd.gov/oilgas

28651

BRANDI TERRY
OASIS PETROLEUM NORTH AMERICA LLC
1001 FANNIN STE 1500
HOUSTON, TX 77002 USA

Date: 6/23/2014

RE: CORES AND SAMPLES

Well Name: **KLINE FEDERAL 5300 41-18 9T** Well File No.: **28651**
Location: **SWSW 18-153-100** County: **MCKENZIE**
Permit Type: **Development - HORIZONTAL**
Field: **BAKER** Target Horizon: **THREE FORKS B1**

Dear BRANDI TERRY:

North Dakota Century Code Section 38-08-04 provides for the preservation of cores and samples and their shipment to the State Geologist when requested. The following is required on the above referenced well:

- 1) All cores, core chips and samples must be submitted to the State Geologist as provided for under North Dakota Century Code: Section 38-08-04 and North Dakota Administrative Code: Section 43-02-03-38.1.
- 2) **Samples:** The Operator is to begin collecting sample drill cuttings no lower than the:
Base of the Last Charles Salt
 - Sample cuttings shall be collected at:
 - o 30' maximum intervals through all vertical and build sections.
 - o 100' maximum intervals through any horizontal sections.
 - Samples must be washed, dried, placed in standard sample envelopes (3" x 4.5"), packed in the correct order into standard sample boxes (3.5" x 5.25" x 15.25").
 - Samples boxes are to be carefully identified with a label that indicates the operator, well name, well file number, American Petroleum Institute (API) number, location and depth of samples; and forwarded in to the state core and sample library within 30 days of the completion of drilling operations.
- 3) **Cores:** Any cores cut shall be preserved in correct order, boxed in standard core boxes (4.5", 4.5", 35.75"), and the entire core forwarded to the state core and samples library within 180 days of completion of drilling operations. Any extension of time must have approval on a Form 4 Sundry Notice.

All cores, core chips, and samples must be shipped, prepaid, to the state core and samples library at the following address:

**ND Geological Survey Core Library
2835 Campus Road, Stop 8156
Grand Forks, ND 58202**

North Dakota Century Code Section 38-08-16 allows for a civil penalty for any violation of Chapter 38 08 not to exceed \$12,500 for each offense, and each day's violation is a separate offense.

Sincerely

Stephen Fried
Geologist



SUNDRY NOTICES AND REPORTS ON WELLS - FORM 1

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 5749 (09-2006)



Well File No.
28651

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

<input checked="" type="checkbox"/> Notice of Intent	Approximate Start Date October 1, 2014	<input type="checkbox"/> Drilling Prognosis	<input type="checkbox"/> Spill Report
<input type="checkbox"/> Report of Work Done	Date Work Completed	<input type="checkbox"/> Redrilling or Repair	<input type="checkbox"/> Shooting
<input type="checkbox"/> Notice of Intent to Begin a Workover Project that may Qualify for a Tax Exemption Pursuant to NDCC Section 57-51.1-03.		<input type="checkbox"/> Casing or Liner	<input type="checkbox"/> Acidizing
Approximate Start Date		<input type="checkbox"/> Plug Well	<input type="checkbox"/> Fracture Treatment
		<input type="checkbox"/> Supplemental History	<input type="checkbox"/> Change Production Method
		<input type="checkbox"/> Temporarily Abandon	<input type="checkbox"/> Reclamation
		<input checked="" type="checkbox"/> Other	Waiver to rule Rule 43-02-03-31

Well Name and Number Kline Federal 5300 41-18 9T						
Footages	533 F S L	237 F W L	Qtr-Qtr SWSW	Section 18	Township 153 N	Range 100 W
Field	Pool Bakken			County McKenzie		

24-HOUR PRODUCTION RATE			
Before		After	
Oil	Bbls	Oil	Bbls
Water	Bbls	Water	Bbls
Gas	MCF	Gas	MCF

Name of Contractor(s)			
Address	City	State	Zip Code

DETAILS OF WORK

Oasis Petroleum respectfully requests a waiver to Rule 43-02-03-31 in regards to running open hole logs for the above referenced well. Justification for this request is as follows:

#20275
The Oasis Petroleum's Kline Federal 5300 11-18H (153N 100W 18 NW NW) located within a mile of the subject well

If this exception is approved, Oasis Petroleum will run a CBL on the intermediate string, and we will also run GR to surface. Oasis Petroleum will also submit two digital copies of each cased hole log and a copy of the mud log containing MWD gamma ray.

Company Oasis Petroleum North America LLC	Telephone Number 281-404-9563	
Address 1001 Fannin, Suite 1500		
City Houston	State TX	Zip Code 77002
Signature <i>Heather McCowan</i>	Printed Name Heather McCowan	
Title Regulatory Assistant	Date May 29, 2014	
Email Address hmccowan@oasispetroleum.com		

FOR STATE USE ONLY	
<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date 6-17-2014	
By <i>Stephen Fried</i>	
Title Stephen Fried Geologist	



SUNDRY NOTICES AND REPORTS ON WELLS - FORM 4

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 5749 (09-2006)

Well File No.
28651

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

<input checked="" type="checkbox"/> Notice of Intent	Approximate Start Date October 1, 2014	<input type="checkbox"/> Drilling Prognosis	<input type="checkbox"/> Spill Report
<input type="checkbox"/> Report of Work Done	Date Work Completed	<input type="checkbox"/> Redrilling or Repair	<input type="checkbox"/> Shooting
<input type="checkbox"/> Notice of Intent to Begin a Workover Project that may Qualify for a Tax Exemption Pursuant to NDCC Section 57-51.1-03.		<input type="checkbox"/> Casing or Liner	<input type="checkbox"/> Acidizing
Approximate Start Date		<input type="checkbox"/> Plug Well	<input type="checkbox"/> Fracture Treatment
		<input type="checkbox"/> Supplemental History	<input type="checkbox"/> Change Production Method
		<input type="checkbox"/> Temporarily Abandon	<input type="checkbox"/> Reclamation
<input type="checkbox"/> Other		Suspension of Drilling	

Well Name and Number Kline Federal 5300 41-18 9T					
Footages 533 F S L	237 F WL	Qtr-Qtr SWSW	Section 18	Township 153 N	Range 100 W
Field	Pool Bakken	County McKenzie			

24-HOUR PRODUCTION RATE			
Before		After	
Oil	Bbls	Oil	Bbls
Water	Bbls	Water	Bbls
Gas	MCF	Gas	MCF

Name of Contractor(s) Advanced Energy Services			
Address	City	State	Zip Code

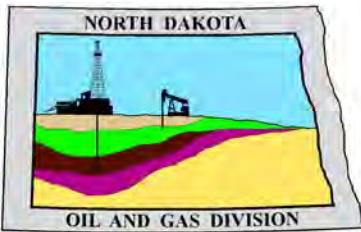
DETAILS OF WORK

Oasis Petroleum North America LLC requests permission for suspension of drilling for up to 90 days for the referenced well under NDAC 43-02-03-55. Oasis Petroleum North America LLC intends to drill the surface hole with freshwater based drilling mud and set surface casing with a small drilling rig and move off within 3 to 5 days. The casing will be set at a depth pre-approved by the NDIC per the Application for Permit to Drill NDAC 43-02-03-21. No saltwater will be used in the drilling and cementing operations of the surface casing. Once the surface casing is cemented, a plug or mechanical seal will be placed at the top of the casing to prevent any foreign matter from getting into the well. A rig capable of drilling to TD will move onto the location within the 90 days previously outlined to complete the drilling and casing plan as per the APD. The undersigned states that this request for suspension of drilling operations in accordance with the Subsection 4 of Section 43-02-03-55 of the NDAC, is being requested to take advantage of the cost savings and time savings of using an initial rig that is smaller than the rig necessary to drill a well to total depth but is not intended to alter or extend the terms and conditions of, or suspend any obligation under, any oil and gas lease with acreage in or under the spacing or drilling unit for the above-referenced well. Oasis Petroleum North America LLC understands NDAC 43-02-03-31 requirements regarding confidentiality pertaining to this permit. The drilling pit will be fenced immediately after construction if the well pad is located in a pasture (NDAC 43-02-03-19 & 19.1). Oasis Petroleum North America LLC will plug and abandon the well and reclaim the well site if the well is not drilled by the larger rotary rig within 90 days after spudding the well with the smaller drilling rig.

Notify NDIC inspector Richard Dunn at 701-770-3554 with spud and TD info.

Company Oasis Petroleum North America LLC	Telephone Number (281) 404-9563	
Address 1001 Fannin, Suite 1500		
City Houston	State TX	Zip Code 77002
Signature 	Printed Name Heather McCowan	
Title Regulatory Assistant	Date May 29, 2014	
Email Address hmccowan@oasispetroleum.com		

FOR STATE USE ONLY	
<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date 6/17/14	
By Nathaniel Erbele	
Title Petroleum Resource Specialist	



Oil and Gas Division

Lynn D. Helms - Director

Bruce E. Hicks - Assistant Director

Department of Mineral Resources

Lynn D. Helms - Director

North Dakota Industrial Commission

www.oilgas.nd.gov

June 17, 2014

Heather McCowan
Regulatory Assistant
OASIS PETROLEUM NORTH AMERICA LLC
1001 Fannin Suite 1500
Houston, TX 77002

**RE: HORIZONTAL WELL
KLINE FEDERAL 5300 41-18 9T
SWSW Section 18-153N-100W
McKenzie County
Well File # 28651**

Dear Heather:

Pursuant to Commission Order No. 23752, approval to drill the above captioned well is hereby given. The approval is granted on the condition that all portions of the well bore not isolated by cement, be no closer than the **500' setback** from the north & south boundaries and **200' setback** from the east & west boundaries within the 1280 acre spacing unit consisting of Sections 18 & 17 T153N R100W.

PERMIT STIPULATIONS: Due to the proximity of Lake Sakakawea to the well site, a dike is required surrounding the entire location. Effective June 1, 2014, a covered leak-proof container (with placard) for filter sock disposal must be maintained on the well site beginning when the well is spud, and must remain on-site during clean-out, completion, and flow-back whenever filtration operations are conducted. OASIS PETRO NO AMER must contact NDIC Field Inspector Richard Dunn at 701-770-3554 prior to location construction.

Drilling pit

NDAC 43-02-03-19.4 states that "a pit may be utilized to bury drill cuttings and solids generated during well drilling and completion operations, providing the pit can be constructed, used and reclaimed in a manner that will prevent pollution of the land surface and freshwaters. Reserve and circulation of mud system through earthen pits are prohibited. All pits shall be inspected by an authorized representative of the director prior to lining and use. Drill cuttings and solids must be stabilized in a manner approved by the director prior to placement in a cuttings pit."

Form 1 Changes & Hard Lines

Any changes, shortening of casing point or lengthening at Total Depth must have prior approval by the NDIC. The proposed directional plan is at a legal location. Based on the azimuth of the proposed lateral the maximum legal coordinate from the well head is: 10052' east.

Location Construction Commencement (Three Day Waiting Period)

Operators shall not commence operations on a drill site until the 3rd business day following publication of the approved drilling permit on the NDIC - OGD Daily Activity Report. If circumstances require operations to commence before the 3rd business day following publication on the Daily Activity Report, the waiting period may be waived by the Director. Application for a waiver must be by sworn affidavit providing the information necessary to evaluate the extenuating circumstances, the factors of NDAC 43-02-03-16.2 (1), (a)-(f), and any other information that would allow the Director to conclude that in the event another owner seeks revocation of the drilling permit, the applicant should retain the permit.

Permit Fee & Notification

Payment was received in the amount of \$100 via credit card .The permit fee has been received. It is requested that notification be given immediately upon the spudding of the well. This information should be relayed to the Oil & Gas Division, Bismarck, via telephone. The following information must be included: Well name, legal location, permit number, drilling contractor, company representative, date and time of spudding. Office hours are 8:00 a.m. to 12:00 p.m. and 1:00 p.m. to 5:00 p.m. Central Time. Our telephone number is (701) 328-8020, leave a message if after hours or on the weekend.

Survey Requirements for Horizontal, Horizontal Re-entry, and Directional Wells

NDAC Section 43-02-03-25 (Deviation Tests and Directional Surveys) states in part (that) the survey contractor shall file a certified copy of all surveys with the director free of charge within thirty days of completion. Surveys must be submitted as one electronic copy, or in a form approved by the director. However, the director may require the directional survey to be filed immediately after completion if the survey is needed to conduct the operation of the director's office in a timely manner. Certified surveys must be submitted via email in one adobe document, with a certification cover page to certsurvey@nd.gov.

Survey points shall be of such frequency to accurately determine the entire location of the well bore.

Specifically, the Horizontal and Directional well survey frequency is 100 feet in the vertical, 30 feet in the curve (or when sliding) and 90 feet in the lateral.

Surface casing cement

Tail cement utilized on surface casing must have a minimum compressive strength of 500 psi within 12 hours, and tail cement utilized on production casing must have a minimum compressive strength of 500 psi before drilling the plug or initiating tests.

Logs

NDAC Section 43-02-03-31 requires the running of (1) a suite of open hole logs from which formation tops and porosity zones can be determined, (2) a Gamma Ray Log run from total depth to ground level elevation of the well bore, and (3) a log from which the presence and quality of cement can be determined (Standard CBL or Ultrasonic cement evaluation log) in every well in which production or intermediate casing has been set, this log must be run prior to completing the well. All logs run must be submitted free of charge, as one digital TIFF (tagged image file format) copy and one digital LAS (log ASCII) formatted copy. Digital logs may be submitted on a standard CD, DVD, or attached to an email sent to digitallogs@nd.gov

Thank you for your cooperation.

Sincerely,

Nathaniel Erbele
Petroleum Resource Specialist



APPLICATION FOR PERMIT TO DRILL HORIZONTAL WELL - FORM 1H

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 54269 (08-2005)

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.

PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

Type of Work New Location	Type of Well Oil & Gas	Approximate Date Work Will Start 10 / 1 / 2013	Confidential Status No
Operator OASIS PETROLEUM NORTH AMERICA LLC		Telephone Number 281-404-9591	
Address 1001 Fannin Suite 1500		City Houston	State TX Zip Code 77002

Notice has been provided to the owner of any permanently occupied dwelling within 1,320 feet. This well is not located within five hundred feet of an occupied dwelling.

WELL INFORMATION (If more than one lateral proposed, enter data for additional laterals on page 2)

Well Name KLINE FEDERAL			Well Number 5300 41-18 9T				
Surface Footages 533 F S L 237 F W L		Qtr-Qtr SWSW	Section 18	Township 153 N	Range 100 W	County McKenzie	
Longstring Casing Point Footages 831 F S L 643 F W L		Qtr-Qtr SWSW	Section 18	Township 153 N	Range 100 W	County McKenzie	
Longstring Casing Point Coordinates From Well Head 298 N From WH 406 E From WH		Azimuth 58.6 °	Longstring Total Depth 11104 Feet MD 10832 Feet TVD				
Bottom Hole Footages From Nearest Section Line 1250 F S L 202 F E L		Qtr-Qtr SESE	Section 17	Township 153 N	Range 100 W	County McKenzie	
Bottom Hole Coordinates From Well Head 717 N From WH 10050 E From WH		KOP Lateral 1 10355 Feet MD		Azimuth Lateral 1 90 °		Estimated Total Depth Lateral 1 20824 Feet MD 10849 Feet TVD	
Latitude of Well Head 48 ° 04 ' 8.53 "	Longitude of Well Head -103 ° 36 ' 11.96 "	NAD Reference NAD83		Description of Spacing Unit: Sections 18 & 17 T153N R100W (Subject to NDIC Approval)			
Ground Elevation 2056 Feet Above S.L.	Acres in Spacing/Drilling Unit 1280	Spacing/Drilling Unit Setback Requirement 500 Feet N/S 200 Feet E/W		Industrial Commission Order 23752			
North Line of Spacing/Drilling Unit 10544 Feet	South Line of Spacing/Drilling Unit 10489 Feet	East Line of Spacing/Drilling Unit 5244 Feet		West Line of Spacing/Drilling Unit 5256 Feet			
Objective Horizons Three Forks B1						Pierre Shale Top 1972	
Proposed Surface Casing	Size 9 - 5/8 "	Weight 36 Lb./Ft.	Depth 2072 Feet	Cement Volume 749 Sacks	NOTE: Surface hole must be drilled with fresh water and surface casing must be cemented back to surface.		
Proposed Longstring Casing	Size 7 - "	Weight(s) 29/32 Lb./Ft.	Longstring Total Depth 11104 Feet MD 10832 Feet TVD		Cement Volume 760 Sacks	Cement Top 3971 Feet	Top Dakota Sand 5471 Feet
Base Last Charles Salt (If Applicable) 9238 Feet		NOTE: Intermediate or longstring casing string must be cemented above the top Dakota Group Sand.					
Proposed Logs Triple Combo: KOP to Kibby GR/Res to BSC GR to surf CND through the Dakota							
Drilling Mud Type (Vertical Hole - Below Surface Casing) Invert				Drilling Mud Type (Lateral) Salt Water Gel			
Survey Type in Vertical Portion of Well MWD Every 100 Feet		Survey Frequency: Build Section 30 Feet		Survey Frequency: Lateral 90 Feet		Survey Contractor Ryan	

NOTE: A Gamma Ray log must be run to ground surface and a CBL must be run on intermediate or longstring casing string if set.

Surveys are required at least every 30 feet in the build section and every 90 feet in the lateral section of a horizontal well. Measurement inaccuracies are not considered when determining compliance with the spacing/drilling unit boundary setback requirement except in the following scenarios: 1) When the angle between the well bore and the respective boundary is 10 degrees or less; or 2) If Industry standard methods and equipment are not utilized. Consult the applicable field order for exceptions.

If measurement inaccuracies are required to be considered, a 2° MWD measurement inaccuracy will be applied to the horizontal portion of the well bore. This measurement inaccuracy is applied to the well bore from KOP to TD.

REQUIRED ATTACHMENTS: Certified surveyor's plat, horizontal section plat, estimated geological tops, proposed mud/cementing plan, directional plot/plan, \$100 fee.

See Page 2 for Comments section and signature block.

COMMENTS, ADDITIONAL INFORMATION, AND/OR LIST OF ATTACHMENTS**Documents forwarded by email: Drill plan with drilling fluids, Well Summary with casing/cement plans, Directional Plan & Plot, Plats**

Lateral 2

KOP Lateral 2 Feet MD	Azimuth Lateral 2 °	Estimated Total Depth Lateral 2 Feet MD Feet TVD			KOP Coordinates From Well Head From WH From WH		
Formation Entry Point Coordinates From Well Head From WH		Bottom Hole Coordinates From Well Head From WH			From WH		
KOP Footages From Nearest Section Line F L		Qtr-Qtr	Section	Township N	Range W	County	
Bottom Hole Footages From Nearest Section Line F L		Qtr-Qtr	Section	Township N	Range W	County	

Lateral 3

KOP Lateral 3 Feet MD	Azimuth Lateral 3 °	Estimated Total Depth Lateral 3 Feet MD Feet TVD			KOP Coordinates From Well Head From WH From WH		
Formation Entry Point Coordinates From Well Head From WH		Bottom Hole Coordinates From Well Head From WH			From WH		
KOP Footages From Nearest Section Line F L		Qtr-Qtr	Section	Township N	Range W	County	
Bottom Hole Footages From Nearest Section Line F L		Qtr-Qtr	Section	Township N	Range W	County	

Lateral 4

KOP Lateral 4 Feet MD	Azimuth Lateral 4 °	Estimated Total Depth Lateral 4 Feet MD Feet TVD			KOP Coordinates From Well Head From WH From WH		
Formation Entry Point Coordinates From Well Head From WH		Bottom Hole Coordinates From Well Head From WH			From WH		
KOP Footages From Nearest Section Line F L		Qtr-Qtr	Section	Township N	Range W	County	
Bottom Hole Footages From Nearest Section Line F L		Qtr-Qtr	Section	Township N	Range W	County	

Lateral 5

KOP Lateral 5 Feet MD	Azimuth Lateral 5 °	Estimated Total Depth Lateral 5 Feet MD Feet TVD			KOP Coordinates From Well Head From WH From WH		
Formation Entry Point Coordinates From Well Head From WH		Bottom Hole Coordinates From Well Head From WH			From WH		
KOP Footages From Nearest Section Line F L		Qtr-Qtr	Section	Township N	Range W	County	
Bottom Hole Footages From Nearest Section Line F L		Qtr-Qtr	Section	Township N	Range W	County	

I hereby swear or affirm the information provided is true, complete and correct as determined from all available records.

Date

5 / 29 / 2014

ePermit

Printed Name
Heather McCowanTitle
Regulatory Assistant**FOR STATE USE ONLY**

Permit and File Number 28651	API Number 33 - 053 - 06025
Field BAKER	
Pool BAKKEN	Permit Type DEVELOPMENT

FOR STATE USE ONLY

Date Approved 6 / 17 / 2014
By Nathaniel Erbele
Title Petroleum Resource Specialist



Oil and Gas Division

Lynn D. Helms - Director

Bruce E. Hicks - Assistant Director

Department of Mineral Resources

Lynn D. Helms - Director

North Dakota Industrial Commission

www.oilgas.nd.gov

April 9, 2014

**RE: Filter Socks and Other Filter Media
Leakproof Container Required
Oil and Gas Wells**

Dear Operator,

North Dakota Administrative Code Section 43-02-03-19.2 states in part that all waste material associated with exploration or production of oil and gas must be properly disposed of in an authorized facility in accord with all applicable local, state, and federal laws and regulations.

Filtration systems are commonly used during oil and gas operations in North Dakota. The Commission is very concerned about the proper disposal of used filters (including filter socks) used by the oil and gas industry.

Effective June 1, 2014, a container must be maintained on each well drilled in North Dakota beginning when the well is spud and must remain on-site during clean-out, completion, and flow-back whenever filtration operations are conducted. The on-site container must be used to store filters until they can be properly disposed of in an authorized facility. Such containers must be:

- leakproof to prevent any fluids from escaping the container
- covered to prevent precipitation from entering the container
- placard to indicate only filters are to be placed in the container

If the operator will not utilize a filtration system, a waiver to the container requirement will be considered, but only upon the operator submitting a Sundry Notice (Form 4) justifying their request.

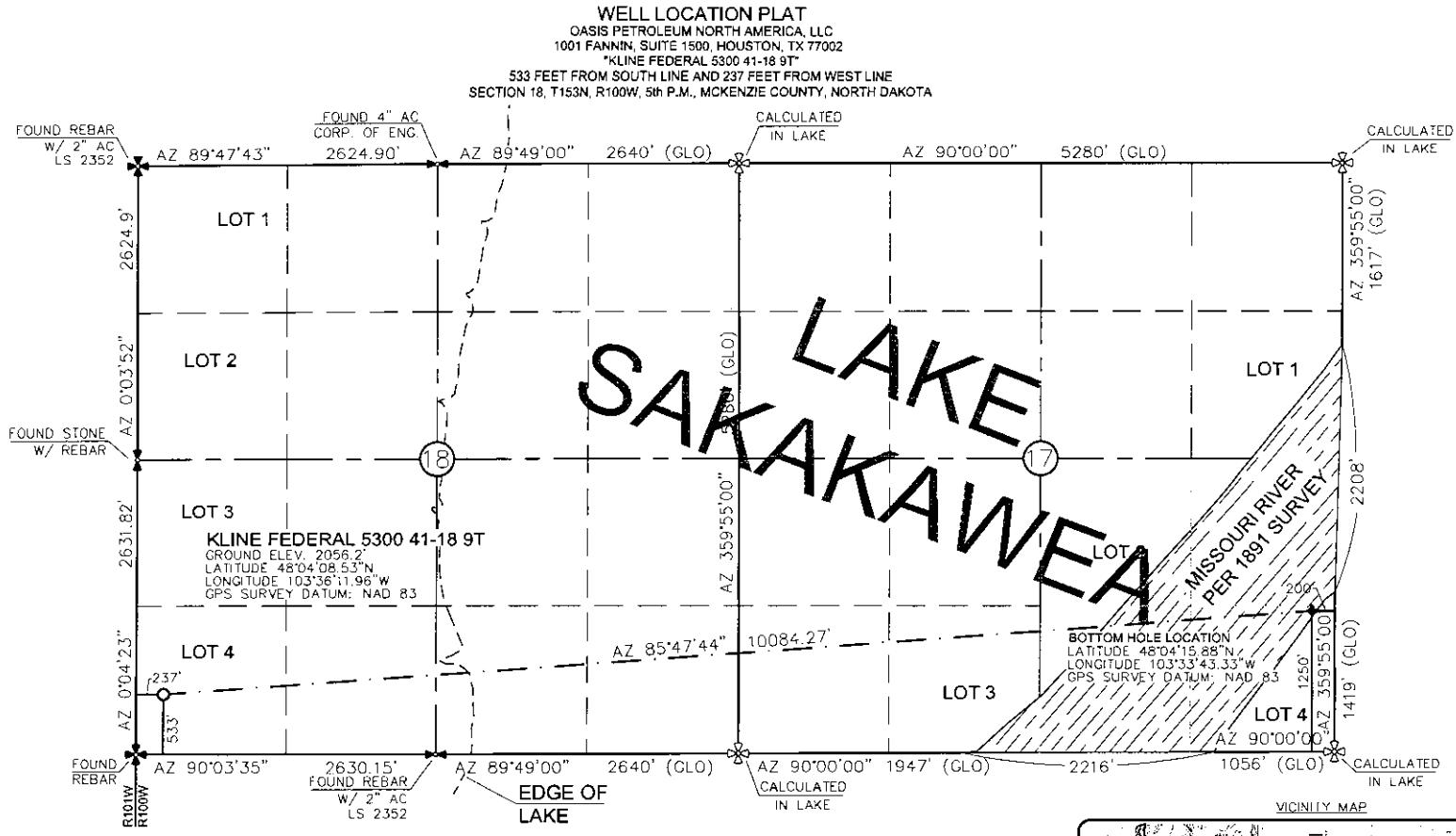
As previously stated in our March 13, 2014 letter, North Dakota Administrative Code Section 33-20-02.1-01 states in part that every person who transports solid waste (which includes oil and gas exploration and production wastes) is required to have a valid permit issued by the North Dakota Department of Health, Division of Waste Management. Please contact the Division of Waste Management at (701) 328-5166 with any questions on the solid waste program. Note oil and gas exploration and production wastes include produced water, drilling mud, invert mud, tank bottom sediment, pipe scale, filters, and fly ash.

Thank you for your cooperation.

Sincerely,

Bruce E. Hicks

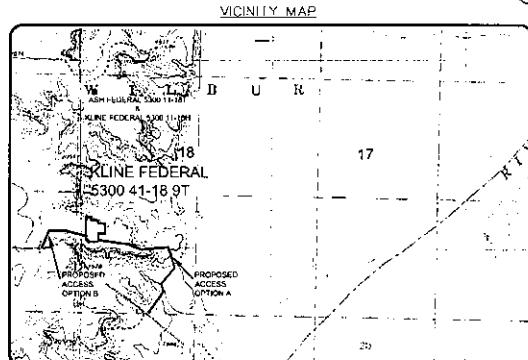
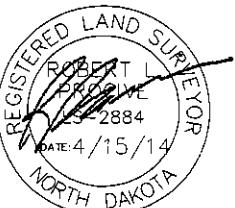
Assistant Director



STAKED ON 4/15/14
VERTICAL CONTROL DATUM WAS BASED UPON
CONTROL POINT 4 WITH AN ELEVATION OF 2090.8'

THIS SURVEY AND PLAT IS BEING PROVIDED AT THE REQUEST OF ERIC BAYES OF OASIS PETROLEUM. I CERTIFY THAT THIS PLAT CORRECTLY REPRESENTS WORK PERFORMED BY ME OR UNDER MY SUPERVISION AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND ABILITY.

ROBERT L. PROCIVE 2884LS



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OASIS PETROLEUM NORTH AMERICA, LLC	
WELL LOCATION PLAT	
SECTION 18, T153N, R100W	
MCKENZIE COUNTY, NORTH DAKOTA	
Drawn By:	B. H. S.
Checked By:	R. L. P.
Plotted No.:	18-14
Date:	April 15, 2014



1/8

SHEET NO.

DRILLING PLAN							
OPERATOR	Oasis Petroleum			COUNTY/STATE	McKenzie Co., ND		
WELL NAME	Kline Federal 5300 41-18 9T			RIG	Nabors B22		
WELL TYPE	Horizontal Upper Three Forks			LOCATION	Surface Location (survey plat): 533' fsl		
EST. T.D.	SWSW 18-153N-100W 20,825'			GROUND ELEV:	2057 Finished Pad Elev.		
TOTAL LATERA	9,721'			KB ELEV:	2082		
PROGNOSIS:	Based on 2,082' KB(est)			LOGS:	Type	Interval	
MARKER	DEPTH (Surf Loc)	DATUM (Surf Loc)			OH Logs: Triple Combo KOP to Kirby (or min run of 1800' whichever is greater); GR/Res to BSC; GR to surf; CND through the Dakota		
Pierre	NDIC MAP	1,972	110		CBL/GR: Above top of cement/GR to base of casing		
Greenhorn		4,646	(2,564)		MWD GR: KOP to lateral TD		
Mowry		5,057	(2,975)	DEVIATION:			
Dakota		5,471	(3,389)				
Rierdon		6,486	(4,404)		Surf: 3 deg. max., 1 deg / 100'; svry every 500'		
Dunham Salt		6,814	(4,732)		Prod: 5 deg. max., 1 deg / 100'; svry every 100'		
Dunham Salt Base		6,929	(4,847)				
Spearfish		7,024	(4,942)	DST'S:			
Pine Salt		7,283	(5,201)		None planned		
Pine Salt Base		7,318	(5,236)				
Opeche Salt		7,374	(5,292)				
Opeche Salt Base		7,403	(5,321)	CORES:			
Broom Creek (Top of Minnelusa Gp.)		7,605	(5,523)		None planned		
Amsden		7,684	(5,602)				
Tyler		7,853	(5,771)				
Otter (Base of Minnelusa Gp.)		8,047	(5,965)				
Kibbey Lime		8,390	(6,308)	MUDLOGGING:			
Charles Salt		8,542	(6,460)				
UB		9,159	(7,077)				
Base Last Salt		9,238	(7,156)				
Ratcliffe		9,301	(7,219)				
Mission Canyon		9,454	(7,372)				
Lodgepole		10,022	(7,940)				
Lodgepole Fracture Zone		10,209	(8,127)				
False Bakken		10,726	(8,644)				
Upper Bakken		10,735	(8,653)				
Middle Bakken		10,751	(8,669)				
Lower Bakken		10,785	(8,703)				
Pronghorn		10,791	(8,709)				
Three Forks		10,813	(8,731)	BOP:			
TF Target Top		10,827	(8,745)		11" 5000 psi blind, pipe & annular		
TF Target Base		10,837	(8,755)				
Claystone		10,838	(8,756)				
Dip Rate:	-0.1						
Max. Anticipated BHP:	4692			Surface Formation:	Glacial till		
MUD:	Interval	Type	WT	Vis	WL	Remarks	
Surface:	0' -	2,072' FW/Gel - Lime Sweeps	8.4-9.0	28-32	NC	Circ Mud Tanks	
Intermediate:	2,072' -	11,104' Invert	9.5-10.4	40-50	30+HtHp	Circ Mud Tanks	
Laterals:	11,104' -	20,825' Salt Water	9.8-10.2	28-32	NC	Circ Mud Tanks	
CASING:	Size	Wt pfp	Hole	Depth	Cement	WOC	Remarks
Surface:	9-5/8"	36#	13-1/2"	2,072'	To Surface	12	100' into Pierre
Intermediate:	7"	29/32#	8-3/4"	11,104'	3971	24	1500' above Dakota
Production Liner:	4.5"	11.6#	6"	20,825'	TOL @ 10,305'		50' above KOP
PROBABLE PLUGS, IF REQ'D:							
OTHER:	MD	TVF	FNL/FSL	FEL/FWL	S-T-R	AZI	
Surface:	2,072	2,072	533' FSL	237' FWL	SEC 18-T153N-R100W		Survey Company:
KOP:	10,355'	10,355'	583' FSL	237' FWL	SEC 18-T153N-R100W		Build Rate:
EOC:	11,104'	10,832'	831' FSL	644' FWL	SEC 18-T153N-R100W		12 deg /100'
Casing Point:	11,104'	10,832'	831' FSL	644' FWL	SEC 18-T153N-R100W		
Middle Bakken Lateral TD:	20,825'	10,849'	1250' FSL	200' FEL	SEC 17-T153N-R100W		
Comments:							
Request a Sundry for an Open Hole Log Waiver							
Exception well: Oasis Petroleum's Kline Federal 5300 11-18H (153N 100W 18 NW NW) 35 packers, 35 sleeves, no frac string							
Oasis Petroleum does not use Diesel Fuel, as defined by the US EPA in the list below, in our hydraulic fracture operations. 68334-30-5 (Primary Name: Fuels, diesel) 68476-34-6 (Primary Name: Fuels, diesel, No. 2) 68476-30-2 (Primary Name: Fuel oil No. 2) 68476-31-3 (Primary Name: Fuel oil, No. 4) 8008-20-6 (Primary Name: Kerosene)							
 OASIS PETROLEUM							
Geoav: M.Steed 4/23/14			Engineering: hbader rpm				

Oasis Petroleum
Well Summary
Kline Federal 5300 41-18 9T
Section 18 T153N R100W
McKenzie County, ND

SURFACE CASING AND CEMENT DESIGN

Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Make-up Torque (ft-lbs)		
							Minimum	Optimum	Max
9-5/8"	0' to 2,072'	36	J-55	LTC	8.921"	8.765"	3400	4530	5660

Interval	Description	Collapse	Burst	Tension	Cost per ft
		(psi) a	(psi) b	(1000 lbs) c	
0' to 2,072'	9-5/8", 36#, J-55, LTC, 8rd	2020 / 2.08	3520 / 3.62	453 / 2.76	

API Rating & Safety Factor

- a) Based on full casing evacuation with 9 ppg fluid on backside (2,072' setting depth).
- b) Burst pressure based on 9 ppg fluid with no fluid on backside (2,072' setting depth).
- c) Based on string weight in 9 ppg fluid at 2,072' TVD plus 100k# overpull. (Buoyed weight equals 64k lbs.)

Cement volumes are based on 9-5/8" casing set in 13-1/2" hole with 60% excess to circulate cement back to surface.
Mix and pump the following slurry.

Pre-flush (Spacer): 20 bbls fresh water

Lead Slurry: **449 sks** (232 bbls) Conventional system with 94 lb/sk cement, 4% extender, 2% expanding agent, 2% CaCl₂ and 0.25 lb/sk lost circulation control agent

Tail Slurry: **300 sks** (62 bbls) Conventional system with 94 lb/sk cement, 3% NaCl, and 0.25 lb/sk lost circulation control agent

Oasis Petroleum
Well Summary
Kline Federal 5300 41-18 9T
Section 18 T153N R100W
McKenzie County, ND

INTERMEDIATE CASING AND CEMENT DESIGN

Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Make-up Torque (ft-lbs)		
							Minimum	Optimum	Max
7"	0' – 6,614'	29	P-110	LTC	6.184"	6.059"	5,980	7,970	8,770
7"	6,614' – 10,355'	32	HCP-110	LTC	6.094"	6.000***	6,730	8,970	9,870
7"	10,355' – 11,104'	29	P-110	LTC	6.184"	6.059"	5,980	7,970	8,770

***Special drift

Interval	Length	Description	Collapse	Burst	Tension
			(psi) a	(psi) b	(1000 lbs) c
0' – 6,614'	6,614'	7", 29#, P-110, LTC, 8rd	8530 / 2.48*	11220 / 1.19	797 / 2.02
6,614' – 10,355'	3,741'	7", 32#, HCP-110, LTC, 8rd	11820 / 2.20*	12460 / 1.29	
6,614' – 10,355'	3,741'	7", 32#, HCP-110, LTC, 8rd	11820 / 1.07**	12460 / 1.29	
10,355' – 11,104'	749'	7", 29 lb, P-110, LTC, 8rd	8530 / 1.51*	11220 / 1.16	

API Rating & Safety Factor

- a) *Assume full casing evacuation with 10 ppg fluid on backside
- **Assume full casing evacuation with 1.2 psi/ft equivalent fluid gradient across salt intervals. (Bottom of last salt 9,238' TVD)
- b) Burst pressure based on 9000 psig max press for stimulation plus 10.2 ppg fluid in casing and 9 ppg fluid on backside-to 10,832' TVD.
- c) Based on string weight in 10 ppg fluid, (295k lbs buoyed weight) plus 100k

Cement volumes are estimates based on 7" casing set in an 8-3/4" hole with 30% excess.

Pre-flush (Spacer): **170 bbls** Saltwater
20 bbls CW8 System
10 bbls Fresh Water

Lead Slurry: **177 sks** (82 bbls) Conventional system with 47 lb/sk cement, 10% NaCl, 34 lb/sk extender, 10% D020 extender, 1% D079 extender, 1% anti-settling agent, 1% fluid loss agent, 0.2% anti-foam agent, 0.7% retarder, 0.125 lb/sk lost circulation control agent, and 0.3% dispersant

Tail Slurry: **583 sks** (170 bbls) Conventional system with 94 lb/sk cement, 10% NaCl, 35% Silica, 0.2% fluid loss agent, 0.8% dispersant, 0.125 lb/sk lost circulation control agent and 0.3% retarder

Oasis Petroleum
Well Summary
Kline Federal 5300 41-18 9T
Section 18 T153N R100W
McKenzie County, ND

PRODUCTION LINER

Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Make-up Torque (ft-lbs)		
							Minimum	Optimum	Max
4-1/2"	10,305' – 20,825'	11.6	P-110	BTC	4.000"	3.875"			

Interval	Description	Collapse (psi) a	Burst (psi) b	Tension (1000 lbs) c	Cost per ft
10,305' – 20,825'	4-1/2", 11.6 lb, P-110, BTC, 8rd	7560 / 1.41	10690 / 1.10	385 / 1.89	

API Rating & Safety Factor

- a) Based on full casing evacuation with 9.5 ppg fluid on backside @ 10,832' TVD.
 Burst pressure based on 9000 psi treating pressure with 10.2 ppg internal fluid gradient and 9 ppg external
- b) fluid gradient @ 10,832' TVD.
- c) Based on string weight in 9.5 ppg fluid (Buoyed weight: 104k lbs.) plus 100k lbs overpull.



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E&'!*F***# &\$>.22\$43@3D\$GH

E&'!*F***# &\$>.22\$43@3D\$GH

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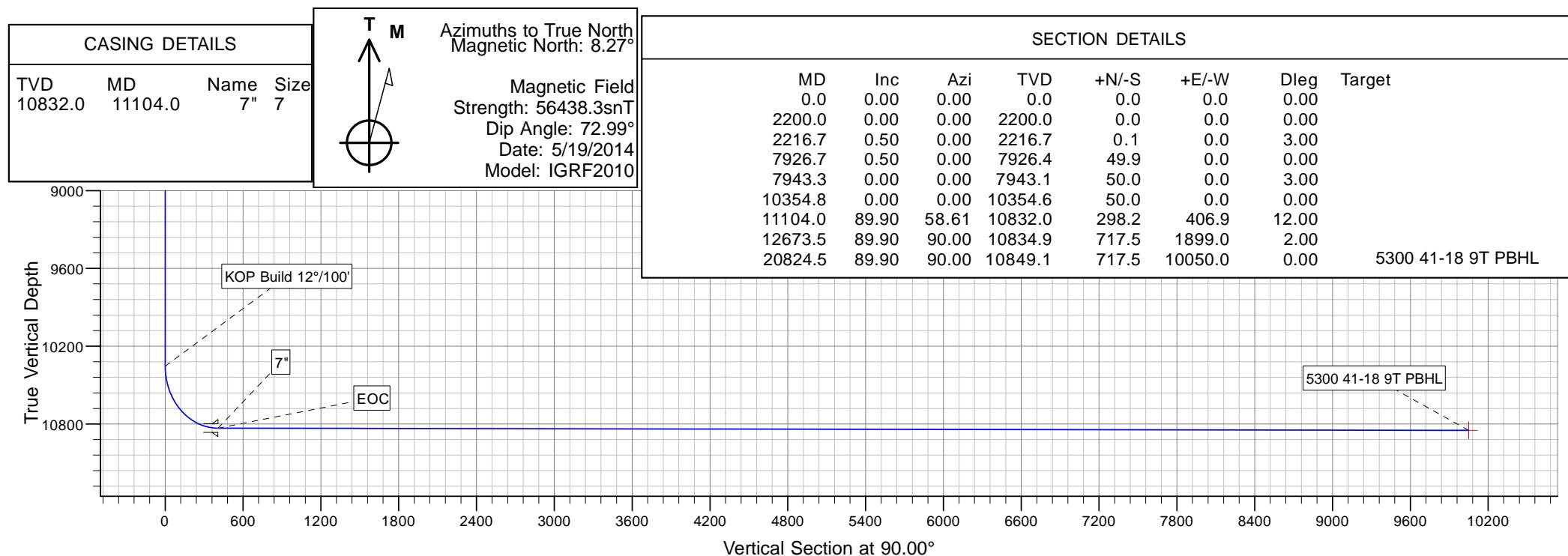
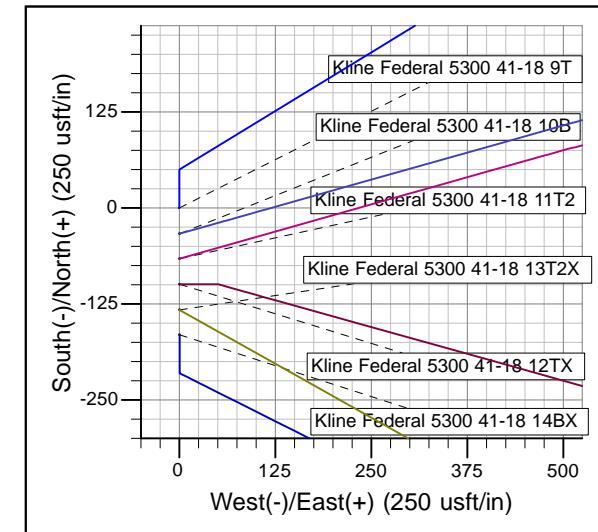
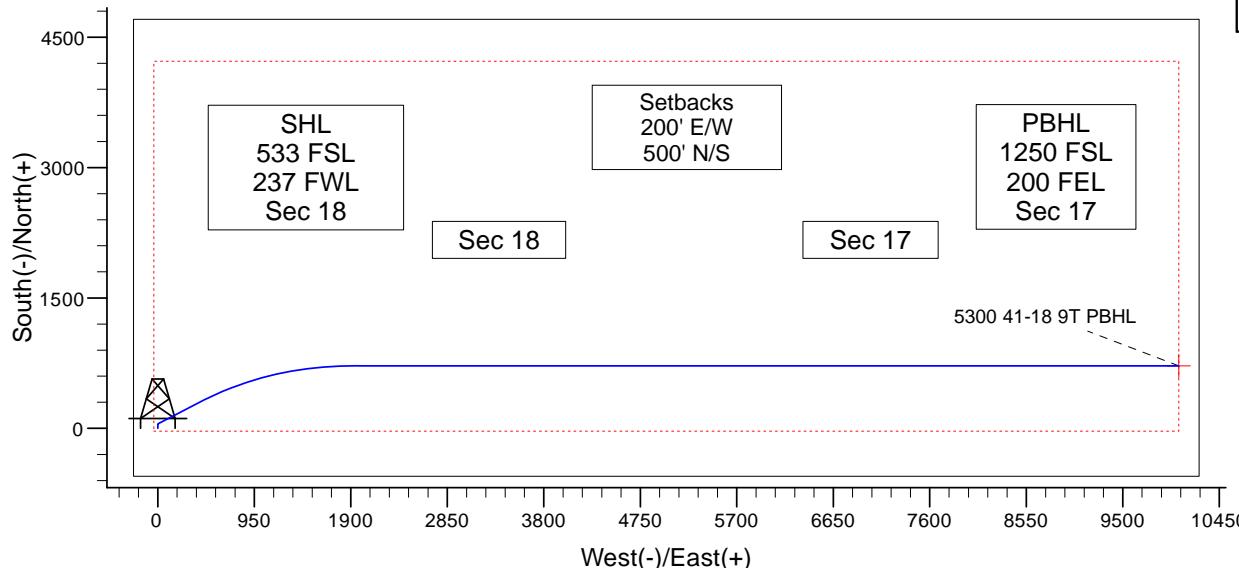


Project: Indian Hills
 Site: 153N-100W-17/18
 Well: Kline Federal 5300 41-18 9T
 Wellbore: Kline Federal 5300 41-18 9T
 Design: Design #1



WELL DETAILS: Kline Federal 5300 41-18 9T

Northing 405235.88	Ground Level: 2057.0
Easting 1209971.54	Latitude 48° 4' 8.530 N
	Longitude 103° 36' 11.960 W





) 0 !\$6'#!À',! &\$À*#J'I*7

Planning Report



6 Ä N 7*5 L.;+ 105 %#,P*À5 À'À*5 A* 85 A *&&N,#*5 6*7'(15	EDM 5000.1 Single User Db Oasis Petroleum Indian Hills 153N-100W-17/18 Kline Federal 5300 41-18 9T Kline Federal 5300 41-18 9T Design #1	K,I &\$L,@,#""! À*\$)*M*#*!!*5 HO6\$)*M*#*!!*5 /6\$)*M*#*!!*5 ?,#ÀQ\$)*M*#*!!*5 À:#J*0\$L &I:& À',!\$/*ÀQ,"5	Well Kline Federal 5300 41-18 9T WELL @ 2082.0usft (Original Well Elev) WELL @ 2082.0usft (Original Well Elev) True Minimum Curvature
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%#,P*1À	Indian Hills		
/ +\$À07À*:5	US State Plane 1983	À07À*:5	Mean Sea Level
R*,\$6 À;;5	North American Datum 1983		
/ +\$S,I*5	North Dakota Northern Zone		

À'À*	153N-100W-17/18				
À'À*\$%,7'À',!5		?,#ÀQ'!(5	408,962.44 usft	K À'À:"*5	48° 4' 45.380 N
F#,;5	Lat/Long	U 7À'!(5	1,210,229.18 usft	K,!('À:"*5	103° 36' 10.380 W
%,7'À',!\$T!!#À',!À05	0.0 usft	À,À\$) "";75	13-3/16 "	R#"#\$L,IJ*#(*!!*5	-2.31 °

A* &	Kline Federal 5300 41-18 9T				
A *&&%,,7'À',!	V?C@À	-3,733.9 usft	?,#ÀQ'!(5	405,235.87 usft	K À'À:"*5
VUC@A		-107.3 usft	U 7À'!(5	1,209,971.53 usft	K,!('À:"*5
%,7'À',!\$T!!#À',!À05		2.0 usft	A *&&Q* "\$U&*J À',!5		R#,;!"\$K*J*&5

A *&&N,#*	Kline Federal 5300 41-18 9T				
/ (!À'À!7	/,;"&? ;*	À ;+&\$6 À*	6*I&! À',! WXY	6'+\$ZI(& WXY	F*&"\$ÀÀ#*!(ÀQ WIHY
	IGRF2010	5/19/2014	8.27	72.99	56,438

6*7'(!	Design #1				
Z:"À\$?À*75					
O#7',!5		%Q 7*5	PROTOTYPE	H*\$9!\$6*+ÀQ5	0.0
O#À'À &\$À*À',!5		6*+ÀQ\$F#,;\$WHO6Y W:7MÀY	V?C@À W:7MÀY	VUC@A W:7MÀY	6#*À',! WXY
		0.0	0.0	0.0	90.00

/* 7:#**" 6*+ÀQ W:7MÀY	<!!&! À',! WXY	Z[":ÀQ WXY	O#À'À & 6*+ÀQ W:7MÀY	V?C@À W:7MÀY	VUC@A W:7MÀY	6,(8*()À* WXC322:7MÀYWXC322:7MÀYWXC322:7MÀY	\'&")À* H:#)À* HF9 WXY	HF9 WXY	H #À
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.00	0.00	0.00	0.00
2,216.7	0.50	0.00	2,216.7	0.1	0.0	3.00	3.00	0.00	0.00
7,926.7	0.50	0.00	7,926.4	49.9	0.0	0.00	0.00	0.00	0.00
7,943.3	0.00	0.00	7,943.1	50.0	0.0	3.00	-3.00	0.00	180.00
10,354.8	0.00	0.00	10,354.6	50.0	0.0	0.00	0.00	0.00	0.00
11,104.0	89.90	58.61	10,832.0	298.2	406.9	12.00	12.00	0.00	58.61
12,673.5	89.90	90.00	10,834.9	717.5	1,899.0	2.00	0.00	2.00	90.03
20,824.5	89.90	90.00	10,849.1	717.5	10,050.0	0.00	0.00	0.00	5300 41-18 9T PBHL



) 0 !\$#*!À',! &\$À*#J'I*7

Planning Report



6 À N 7*5 L.;+ 105 %#,P*À5 ÀÀ*5 A* 85 A *&N,#5 6*7'(15	EDM 5000.1 Single User Db Oasis Petroleum Indian Hills 153N-100W-17/18 Kline Federal 5300 41-18 9T Kline Federal 5300 41-18 9T Design #1	K,I &\$L,@,#""! À*\$)*M*#*!!*5 HO6\$)*M*#*!!*5 /6\$)*M*#*!!*5 ?,#ÀQ\$)*M*#*!!*5 À:#J*0\$L &I:& À',!\$/ÀQ,"5	Well Kline Federal 5300 41-18 9T WELL @ 2082.0usft (Original Well Elev) WELL @ 2082.0usft (Original Well Elev) True Minimum Curvature
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%& !!*"\$À:#J*0									
/* 7:#** 6*+ÀQ W:7MÀY	<!&! À',! WXY	ZI';:ÀQ WXY	O#À'! & 6*+ÀQ W:7MÀY	V?C@À W:7MÀY	VUC@À W:7MÀY	O#À'! & À*À',! W:7MÀY	6,(&(*)À* WXC322:7MÀY	À* WXC322:7MÀY	H:# À* WXC322:7MÀY
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,216.7	0.50	0.00	2,216.7	0.1	0.0	0.0	3.00	3.00	0.00
2,300.0	0.50	0.00	2,300.0	0.8	0.0	0.0	0.00	0.00	0.00
2,400.0	0.50	0.00	2,400.0	1.7	0.0	0.0	0.00	0.00	0.00
2,500.0	0.50	0.00	2,500.0	2.5	0.0	0.0	0.00	0.00	0.00
2,600.0	0.50	0.00	2,600.0	3.4	0.0	0.0	0.00	0.00	0.00
2,700.0	0.50	0.00	2,700.0	4.3	0.0	0.0	0.00	0.00	0.00
2,800.0	0.50	0.00	2,800.0	5.2	0.0	0.0	0.00	0.00	0.00
2,900.0	0.50	0.00	2,900.0	6.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.50	0.00	3,000.0	6.9	0.0	0.0	0.00	0.00	0.00
3,100.0	0.50	0.00	3,100.0	7.8	0.0	0.0	0.00	0.00	0.00
3,200.0	0.50	0.00	3,200.0	8.7	0.0	0.0	0.00	0.00	0.00
3,300.0	0.50	0.00	3,300.0	9.5	0.0	0.0	0.00	0.00	0.00
3,400.0	0.50	0.00	3,400.0	10.4	0.0	0.0	0.00	0.00	0.00
3,500.0	0.50	0.00	3,500.0	11.3	0.0	0.0	0.00	0.00	0.00
3,600.0	0.50	0.00	3,599.9	12.1	0.0	0.0	0.00	0.00	0.00
3,700.0	0.50	0.00	3,699.9	13.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.50	0.00	3,799.9	13.9	0.0	0.0	0.00	0.00	0.00
3,900.0	0.50	0.00	3,899.9	14.8	0.0	0.0	0.00	0.00	0.00
4,000.0	0.50	0.00	3,999.9	15.6	0.0	0.0	0.00	0.00	0.00
4,100.0	0.50	0.00	4,099.9	16.5	0.0	0.0	0.00	0.00	0.00
4,200.0	0.50	0.00	4,199.9	17.4	0.0	0.0	0.00	0.00	0.00
4,300.0	0.50	0.00	4,299.9	18.3	0.0	0.0	0.00	0.00	0.00
4,400.0	0.50	0.00	4,399.9	19.1	0.0	0.0	0.00	0.00	0.00
4,500.0	0.50	0.00	4,499.9	20.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.50	0.00	4,599.9	20.9	0.0	0.0	0.00	0.00	0.00
4,646.1	0.50	0.00	4,646.0	21.3	0.0	0.0	0.00	0.00	0.00
R##*!Q,#!									
4,700.0	0.50	0.00	4,699.9	21.7	0.0	0.0	0.00	0.00	0.00
4,800.0	0.50	0.00	4,799.9	22.6	0.0	0.0	0.00	0.00	0.00
4,900.0	0.50	0.00	4,899.9	23.5	0.0	0.0	0.00	0.00	0.00
5,000.0	0.50	0.00	4,999.9	24.4	0.0	0.0	0.00	0.00	0.00
5,057.1	0.50	0.00	5,057.0	24.9	0.0	0.0	0.00	0.00	0.00
I,]#0									
5,100.0	0.50	0.00	5,099.9	25.2	0.0	0.0	0.00	0.00	0.00
5,200.0	0.50	0.00	5,199.9	26.1	0.0	0.0	0.00	0.00	0.00
5,300.0	0.50	0.00	5,299.9	27.0	0.0	0.0	0.00	0.00	0.00
5,400.0	0.50	0.00	5,399.9	27.9	0.0	0.0	0.00	0.00	0.00
5,471.1	0.50	0.00	5,471.0	28.5	0.0	0.0	0.00	0.00	0.00
6 ^,À									
5,500.0	0.50	0.00	5,499.9	28.7	0.0	0.0	0.00	0.00	0.00
5,600.0	0.50	0.00	5,599.9	29.6	0.0	0.0	0.00	0.00	0.00
5,700.0	0.50	0.00	5,699.9	30.5	0.0	0.0	0.00	0.00	0.00
5,800.0	0.50	0.00	5,799.9	31.3	0.0	0.0	0.00	0.00	0.00
5,900.0	0.50	0.00	5,899.9	32.2	0.0	0.0	0.00	0.00	0.00
6,000.0	0.50	0.00	5,999.9	33.1	0.0	0.0	0.00	0.00	0.00
6,100.0	0.50	0.00	6,099.9	34.0	0.0	0.0	0.00	0.00	0.00
6,200.0	0.50	0.00	6,199.8	34.8	0.0	0.0	0.00	0.00	0.00
6,300.0	0.50	0.00	6,299.8	35.7	0.0	0.0	0.00	0.00	0.00
6,400.0	0.50	0.00	6,399.8	36.6	0.0	0.0	0.00	0.00	0.00
6,486.2	0.50	0.00	6,486.0	37.3	0.0	0.0	0.00	0.00	0.00
)*#*,!									
6,500.0	0.50	0.00	6,499.8	37.5	0.0	0.0	0.00	0.00	0.00

6 AN 7*5 L.;+ 105 %#,P*À5 ÀÀ*5 A* 85 A *&N,#5 6*7'(15	EDM 5000.1 Single User Db Oasis Petroleum Indian Hills 153N-100W-17/18 Kline Federal 5300 41-18 9T Kline Federal 5300 41-18 9T Design #1	K,I &\$L,@,#"! À\$)*M*#*II*5 HO6S)*M*#*II*5 /6\$)*M*#*II*5 ?,#ÀQ\$)*M*#*II*5 À:#J*0\$L &I:& À',!\$/ÀQ,"5	Well Kline Federal 5300 41-18 9T WELL @ 2082.0usft (Original Well Elev) WELL @ 2082.0usft (Original Well Elev) True Minimum Curvature
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%& !!*"\$À:#J*0									
/ *:#** 6*+ÀQ W:7MÀY	<I&!' À',! WXY	ZI';:ÀQ WXY	O#À'I &\$ 6*+ÀQ W:7MÀY	V?C@À W:7MÀY	VUC@À W:7MÀY	O#À'I & À*À',! W:7MÀY	6,(&(*)À* WXC322:7MÀYWXC322:7MÀY	\:&")À* WXC322:7MÀY	H:#)À*
6,600.0	0.50	0.00	6,599.8	38.3	0.0	0.0	0.00	0.00	0.00
6,700.0	0.50	0.00	6,699.8	39.2	0.0	0.0	0.00	0.00	0.00
6,800.0	0.50	0.00	6,799.8	40.1	0.0	0.0	0.00	0.00	0.00
6,814.2	0.50	0.00	6,814.0	40.2	0.0	0.0	0.00	0.00	0.00
6:IQ ;\$À &À									
6,900.0	0.50	0.00	6,899.8	40.9	0.0	0.0	0.00	0.00	0.00
6,929.2	0.50	0.00	6,929.0	41.2	0.0	0.0	0.00	0.00	0.00
6:IQ ;\$À &À\$1 7*									
7,000.0	0.50	0.00	6,999.8	41.8	0.0	0.0	0.00	0.00	0.00
7,024.2	0.50	0.00	7,024.0	42.0	0.0	0.0	0.00	0.00	0.00
À++* #M'7Q									
7,100.0	0.50	0.00	7,099.8	42.7	0.0	0.0	0.00	0.00	0.00
7,200.0	0.50	0.00	7,199.8	43.6	0.0	0.0	0.00	0.00	0.00
7,283.2	0.50	0.00	7,283.0	44.3	0.0	0.0	0.00	0.00	0.00
%'!*\$À &À									
7,300.0	0.50	0.00	7,299.8	44.4	0.0	0.0	0.00	0.00	0.00
7,318.2	0.50	0.00	7,318.0	44.6	0.0	0.0	0.00	0.00	0.00
%'!*\$À &À\$1 7*									
7,374.2	0.50	0.00	7,374.0	45.1	0.0	0.0	0.00	0.00	0.00
9+*IQ*\$À &À									
7,400.0	0.50	0.00	7,399.8	45.3	0.0	0.0	0.00	0.00	0.00
7,403.2	0.50	0.00	7,403.0	45.3	0.0	0.0	0.00	0.00	0.00
9+*IQ*\$À &À\$1 7*									
7,500.0	0.50	0.00	7,499.8	46.2	0.0	0.0	0.00	0.00	0.00
7,600.0	0.50	0.00	7,599.8	47.1	0.0	0.0	0.00	0.00	0.00
7,605.2	0.50	0.00	7,605.0	47.1	0.0	0.0	0.00	0.00	0.00
W,,;SL***^\$WH ,+\$,M\$/!!*&:7 \$R+_Y									
7,684.2	0.50	0.00	7,684.0	47.8	0.0	0.0	0.00	0.00	0.00
Z;7**!									
7,700.0	0.50	0.00	7,699.8	47.9	0.0	0.0	0.00	0.00	0.00
7,800.0	0.50	0.00	7,799.8	48.8	0.0	0.0	0.00	0.00	0.00
7,853.2	0.50	0.00	7,853.0	49.3	0.0	0.0	0.00	0.00	0.00
H0&#									
7,900.0	0.50	0.00	7,899.8	49.7	0.0	0.0	0.00	0.00	0.00
7,926.7	0.50	0.00	7,926.4	49.9	0.0	0.0	0.00	0.00	0.00
7,943.3	0.00	0.00	7,943.1	50.0	0.0	0.0	3.00	-3.00	0.00
8,000.0	0.00	0.00	7,999.8	50.0	0.0	0.0	0.00	0.00	0.00
8,047.2	0.00	0.00	8,047.0	50.0	0.0	0.0	0.00	0.00	0.00
9ÀÀ*#\$W\ 7*\$,M\$/!!*&:7 \$R+_Y									
8,100.0	0.00	0.00	8,099.8	50.0	0.0	0.0	0.00	0.00	0.00
8,200.0	0.00	0.00	8,199.8	50.0	0.0	0.0	0.00	0.00	0.00
8,300.0	0.00	0.00	8,299.8	50.0	0.0	0.0	0.00	0.00	0.00
8,390.2	0.00	0.00	8,390.0	50.0	0.0	0.0	0.00	0.00	0.00
E'NN*0\$K';*									
8,400.0	0.00	0.00	8,399.8	50.0	0.0	0.0	0.00	0.00	0.00
8,500.0	0.00	0.00	8,499.8	50.0	0.0	0.0	0.00	0.00	0.00
8,542.2	0.00	0.00	8,542.0	50.0	0.0	0.0	0.00	0.00	0.00
LQ #&*7\$À &À									
8,600.0	0.00	0.00	8,599.8	50.0	0.0	0.0	0.00	0.00	0.00
8,700.0	0.00	0.00	8,699.8	50.0	0.0	0.0	0.00	0.00	0.00
8,800.0	0.00	0.00	8,799.8	50.0	0.0	0.0	0.00	0.00	0.00
8,900.0	0.00	0.00	8,899.8	50.0	0.0	0.0	0.00	0.00	0.00

6 AN 7*5 L.;+ 105 %#,P*À5 ÀÀ*5 A* 85 A *&N,*5 6*7'(15	EDM 5000.1 Single User Db Oasis Petroleum Indian Hills 153N-100W-17/18 Kline Federal 5300 41-18 9T Kline Federal 5300 41-18 9T Design #1	K,I &\$L,@,#"! À\$)*M*#*II*5 HO6\$)*M*#*II*5 /6\$)*M*#*II*5 ?,#ÀQ\$)*M*#*II*5 À:#J*0\$L &I:& À',!\$/*ÀQ,"5	Well Kline Federal 5300 41-18 9T WELL @ 2082.0usft (Original Well Elev) WELL @ 2082.0usft (Original Well Elev) True Minimum Curvature
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%& !!*"\$À:#J*0									
/* 7:#** 6*+ÀQ W:7MÀY	<!!&! À',! WXY	ZI';:ÀQ WXY	O#À'I &\$ 6*+ÀQ W:7MÀY	V?C@À W:7MÀY	VUC@À W:7MÀY	O#À'I & À*À',! W:7MÀY	6,(&(*)À* WXC322:7MÀYWXC322:7MÀY	\\:&")À* WXC322:7MÀY	H:#)À*
9,000.0	0.00	0.00	8,999.8	50.0	0.0	0.0	0.00	0.00	0.00
9,100.0	0.00	0.00	9,099.8	50.0	0.0	0.0	0.00	0.00	0.00
9,159.2	0.00	0.00	9,159.0	50.0	0.0	0.0	0.00	0.00	0.00
T\									
9,200.0	0.00	0.00	9,199.8	50.0	0.0	0.0	0.00	0.00	0.00
9,238.2	0.00	0.00	9,238.0	50.0	0.0	0.0	0.00	0.00	0.00
\7*\$K 7À\$À &À									
9,300.0	0.00	0.00	9,299.8	50.0	0.0	0.0	0.00	0.00	0.00
9,301.2	0.00	0.00	9,301.0	50.0	0.0	0.0	0.00	0.00	0.00
) ÀI&MM*									
9,400.0	0.00	0.00	9,399.8	50.0	0.0	0.0	0.00	0.00	0.00
9,454.2	0.00	0.00	9,454.0	50.0	0.0	0.0	0.00	0.00	0.00
/77',!\$L !0,!									
9,500.0	0.00	0.00	9,499.8	50.0	0.0	0.0	0.00	0.00	0.00
9,600.0	0.00	0.00	9,599.8	50.0	0.0	0.0	0.00	0.00	0.00
9,700.0	0.00	0.00	9,699.8	50.0	0.0	0.0	0.00	0.00	0.00
9,800.0	0.00	0.00	9,799.8	50.0	0.0	0.0	0.00	0.00	0.00
9,900.0	0.00	0.00	9,899.8	50.0	0.0	0.0	0.00	0.00	0.00
10,000.0	0.00	0.00	9,999.8	50.0	0.0	0.0	0.00	0.00	0.00
10,022.2	0.00	0.00	10,022.0	50.0	0.0	0.0	0.00	0.00	0.00
K,"(*+,&									
10,100.0	0.00	0.00	10,099.8	50.0	0.0	0.0	0.00	0.00	0.00
10,200.0	0.00	0.00	10,199.8	50.0	0.0	0.0	0.00	0.00	0.00
10,209.2	0.00	0.00	10,209.0	50.0	0.0	0.0	0.00	0.00	0.00
K,"(*+,&*F# IÀ:#\$\$,!*									
10,300.0	0.00	0.00	10,299.8	50.0	0.0	0.0	0.00	0.00	0.00
10,354.8	0.00	0.00	10,354.6	50.0	0.0	0.0	0.00	0.00	0.00
E9%\$!&"\$3-XC322'									
10,375.0	2.42	58.61	10,374.8	50.2	0.4	0.4	12.00	12.00	0.00
10,400.0	5.42	58.61	10,399.7	51.1	1.8	1.8	12.00	12.00	0.00
10,425.0	8.42	58.61	10,424.5	52.7	4.4	4.4	12.00	12.00	0.00
10,450.0	11.42	58.61	10,449.2	54.9	8.1	8.1	12.00	12.00	0.00
10,475.0	14.42	58.61	10,473.5	57.8	12.8	12.8	12.00	12.00	0.00
10,500.0	17.42	58.61	10,497.6	61.4	18.7	18.7	12.00	12.00	0.00
10,525.0	20.42	58.61	10,521.2	65.6	25.6	25.6	12.00	12.00	0.00
10,550.0	23.42	58.61	10,544.4	70.5	33.6	33.6	12.00	12.00	0.00
10,575.0	26.42	58.61	10,567.1	76.0	42.6	42.6	12.00	12.00	0.00
10,600.0	29.42	58.61	10,589.1	82.1	52.6	52.6	12.00	12.00	0.00
10,625.0	32.42	58.61	10,610.6	88.7	63.5	63.5	12.00	12.00	0.00
10,650.0	35.42	58.61	10,631.3	96.0	75.4	75.4	12.00	12.00	0.00
10,675.0	38.42	58.61	10,651.3	103.8	88.3	88.3	12.00	12.00	0.00
10,700.0	41.42	58.61	10,670.5	112.2	102.0	102.0	12.00	12.00	0.00
10,725.0	44.42	58.61	10,688.8	121.1	116.5	116.5	12.00	12.00	0.00
10,750.0	47.42	58.61	10,706.2	130.4	131.8	131.8	12.00	12.00	0.00
10,775.0	50.42	58.61	10,722.6	140.2	147.9	147.9	12.00	12.00	0.00
10,780.4	51.07	58.61	10,726.0	142.4	151.5	151.5	12.00	12.00	0.00
F &7*\$!^*!									
10,795.0	52.82	58.61	10,735.0	148.4	161.3	161.3	12.00	12.00	0.00
T++*\$!^*!									
10,800.0	53.42	58.61	10,738.0	150.5	164.7	164.7	12.00	12.00	0.00
10,822.5	56.13	58.61	10,751.0	160.0	180.4	180.4	12.00	12.00	0.00
10,825.0	56.42	58.61	10,752.4	161.1	182.2	182.2	12.00	12.00	0.00

6 Å N 7*5 L.;+ 105 %#,P*À5 ÀÀ*5 A* 85 A *&N,#*5 6*7'(15	EDM 5000.1 Single User Db Oasis Petroleum Indian Hills 153N-100W-17/18 Kline Federal 5300 41-18 9T Kline Federal 5300 41-18 9T Design #1	K,I &\$L,@,#""! À*\$)*M*#*II*5 HO6\$)*M*#*II*5 /6\$)*M*#*II*5 ?,#ÀQ\$)*M*#*II*5 À:#J*0\$L &I:& À',!\$/*ÀQ,"5	Well Kline Federal 5300 41-18 9T WELL @ 2082.0usft (Original Well Elev) WELL @ 2082.0usft (Original Well Elev) True Minimum Curvature
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%& !!*"\$À:#J*0									
/* 7:#** 6*+ÀQ W:7MÀY	<I&! À',! WXY	ZI';:ÀQ WXY	O#À'I &\$ 6*+ÀQ W:7MÀY	V?C@À W:7MÀY	VUC@À W:7MÀY	O#À'I & À*À',! W:7MÀY	6,(&(*)À* WXC322:7MÀY	À*&" WXC322:7MÀY	H:# WXC322:7MÀY
10,850.0	59.42	58.61	10,765.7	172.2	200.3	200.3	12.00	12.00	0.00
10,875.0	62.42	58.61	10,777.8	183.5	218.9	218.9	12.00	12.00	0.00
10,891.1	64.35	58.61	10,785.0	191.0	231.2	231.2	12.00	12.00	0.00
K,J*#\$\ ^**!									
10,900.0	65.42	58.61	10,788.8	195.2	238.1	238.1	12.00	12.00	0.00
10,905.4	66.07	58.61	10,791.0	197.8	242.3	242.3	12.00	12.00	0.00
%#,!(Q,#!									
10,925.0	68.42	58.61	10,798.6	207.2	257.7	257.7	12.00	12.00	0.00
10,950.0	71.42	58.61	10,807.2	219.4	277.7	277.7	12.00	12.00	0.00
10,969.5	73.76	58.61	10,813.0	229.1	293.6	293.6	12.00	12.00	0.00
HQ##*\$F,#^7									
10,975.0	74.42	58.61	10,814.5	231.9	298.1	298.1	12.00	12.00	0.00
11,000.0	77.42	58.61	10,820.6	244.5	318.8	318.8	12.00	12.00	0.00
11,025.0	80.42	58.61	10,825.4	257.3	339.8	339.8	12.00	12.00	0.00
11,035.3	81.66	58.61	10,827.0	262.6	348.5	348.5	12.00	12.00	0.00
HF\$#(*À\$H+									
11,050.0	83.42	58.61	10,828.9	270.2	360.9	360.9	12.00	12.00	0.00
11,075.0	86.42	58.61	10,831.1	283.2	382.2	382.2	12.00	12.00	0.00
11,100.0	89.42	58.61	10,832.0	296.2	403.5	403.5	12.00	12.00	0.00
11,104.0	89.90	58.61	10,832.0	298.2	406.9	406.9	11.90	11.90	0.00
U9L\$@\$Ba									
11,200.0	89.90	60.53	10,832.2	346.9	489.7	489.7	2.00	0.00	2.00
11,300.0	89.90	62.53	10,832.4	394.5	577.6	577.6	2.00	0.00	2.00
11,400.0	89.90	64.53	10,832.6	439.1	667.1	667.1	2.00	0.00	2.00
11,500.0	89.90	66.53	10,832.7	480.5	758.1	758.1	2.00	0.00	2.00
11,600.0	89.90	68.53	10,832.9	518.7	850.5	850.5	2.00	0.00	2.00
11,700.0	89.90	70.53	10,833.1	553.7	944.2	944.2	2.00	0.00	2.00
11,800.0	89.90	72.53	10,833.3	585.4	1,039.0	1,039.0	2.00	0.00	2.00
11,900.0	89.90	74.53	10,833.5	613.7	1,134.9	1,134.9	2.00	0.00	2.00
12,000.0	89.90	76.53	10,833.7	638.7	1,231.7	1,231.7	2.00	0.00	2.00
12,100.0	89.90	78.53	10,833.8	660.3	1,329.4	1,329.4	2.00	0.00	2.00
12,200.0	89.90	80.53	10,834.0	678.5	1,427.7	1,427.7	2.00	0.00	2.00
12,300.0	89.90	82.53	10,834.2	693.2	1,526.6	1,526.6	2.00	0.00	2.00
12,400.0	89.90	84.53	10,834.4	704.5	1,626.0	1,626.0	2.00	0.00	2.00
12,500.0	89.90	86.53	10,834.6	712.3	1,725.7	1,725.7	2.00	0.00	2.00
12,600.0	89.90	88.53	10,834.7	716.6	1,825.6	1,825.6	2.00	0.00	2.00
12,673.5	89.90	90.00	10,834.9	717.5	1,899.0	1,899.0	2.00	0.00	2.00
12,700.0	89.90	90.00	10,834.9	717.5	1,925.6	1,925.6	0.00	0.00	0.00
12,800.0	89.90	90.00	10,835.1	717.5	2,025.6	2,025.6	0.00	0.00	0.00
12,900.0	89.90	90.00	10,835.3	717.5	2,125.6	2,125.6	0.00	0.00	0.00
13,000.0	89.90	90.00	10,835.4	717.5	2,225.6	2,225.6	0.00	0.00	0.00
13,100.0	89.90	90.00	10,835.6	717.5	2,325.6	2,325.6	0.00	0.00	0.00
13,200.0	89.90	90.00	10,835.8	717.5	2,425.6	2,425.6	0.00	0.00	0.00
13,300.0	89.90	90.00	10,835.9	717.5	2,525.6	2,525.6	0.00	0.00	0.00
13,400.0	89.90	90.00	10,836.1	717.5	2,625.6	2,625.6	0.00	0.00	0.00
13,500.0	89.90	90.00	10,836.3	717.5	2,725.6	2,725.6	0.00	0.00	0.00
13,600.0	89.90	90.00	10,836.5	717.5	2,825.6	2,825.6	0.00	0.00	0.00
13,700.0	89.90	90.00	10,836.6	717.5	2,925.6	2,925.6	0.00	0.00	0.00
13,800.0	89.90	90.00	10,836.8	717.5	3,025.6	3,025.6	0.00	0.00	0.00
13,900.0	89.90	90.00	10,837.0	717.5	3,125.6	3,125.6	0.00	0.00	0.00
13,901.8	89.90	90.00	10,837.0	717.5	3,127.3	3,127.3	0.00	0.00	0.00
HF\$#(*À\$17*									
14,000.0	89.90	90.00	10,837.2	717.5	3,225.6	3,225.6	0.00	0.00	0.00

6 AN 7*5 L.;+ 105 %#,P*À5 ÀÀ*5 A* 85 A *&N,#*5 6*7'(15	EDM 5000.1 Single User Db Oasis Petroleum Indian Hills 153N-100W-17/18 Kline Federal 5300 41-18 9T Kline Federal 5300 41-18 9T Design #1	K,I &\$L,@,#""! À*\$)*M*#*!!*5 HO6\$)*M*#*!!*5 /6\$)*M*#*!!*5 ?,#ÀQ\$)*M*#*!!*5 À:#J*0\$L &I:& À',!\$/*ÀQ,"5	Well Kline Federal 5300 41-18 9T WELL @ 2082.0usft (Original Well Elev) WELL @ 2082.0usft (Original Well Elev) True Minimum Curvature
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%& !!**\$À:#J*0

/* 7:#** 6*+ÀQ W:7MÀY	<!!&! À',! WXY	ZI';:ÀQ WXY	O#À'I &\$ 6*+ÀQ W:7MÀY	V?C@À W:7MÀY	VUC@À W:7MÀY	O#À'I & À*À',! W:7MÀY	6,(&(*)À* WXC322:7MÀYWXC322:7MÀY	\:&")À* WXC322:7MÀY	H:#)À*
14,100.0	89.90	90.00	10,837.3	717.5	3,325.6	3,325.6	0.00	0.00	0.00
14,200.0	89.90	90.00	10,837.5	717.5	3,425.6	3,425.6	0.00	0.00	0.00
14,300.0	89.90	90.00	10,837.7	717.5	3,525.6	3,525.6	0.00	0.00	0.00
14,400.0	89.90	90.00	10,837.9	717.5	3,625.6	3,625.6	0.00	0.00	0.00
14,474.7	89.90	90.00	10,838.0	717.5	3,700.3	3,700.3	0.00	0.00	0.00
L& 07À,I*									
14,500.0	89.90	90.00	10,838.0	717.5	3,725.6	3,725.6	0.00	0.00	0.00
14,600.0	89.90	90.00	10,838.2	717.5	3,825.6	3,825.6	0.00	0.00	0.00
14,700.0	89.90	90.00	10,838.4	717.5	3,925.6	3,925.6	0.00	0.00	0.00
14,800.0	89.90	90.00	10,838.6	717.5	4,025.6	4,025.6	0.00	0.00	0.00
14,900.0	89.90	90.00	10,838.7	717.5	4,125.6	4,125.6	0.00	0.00	0.00
15,000.0	89.90	90.00	10,838.9	717.5	4,225.6	4,225.6	0.00	0.00	0.00
15,100.0	89.90	90.00	10,839.1	717.5	4,325.6	4,325.6	0.00	0.00	0.00
15,200.0	89.90	90.00	10,839.3	717.5	4,425.6	4,425.6	0.00	0.00	0.00
15,300.0	89.90	90.00	10,839.4	717.5	4,525.6	4,525.6	0.00	0.00	0.00
15,400.0	89.90	90.00	10,839.6	717.5	4,625.6	4,625.6	0.00	0.00	0.00
15,500.0	89.90	90.00	10,839.8	717.5	4,725.6	4,725.6	0.00	0.00	0.00
15,600.0	89.90	90.00	10,840.0	717.5	4,825.6	4,825.6	0.00	0.00	0.00
15,700.0	89.90	90.00	10,840.1	717.5	4,925.6	4,925.6	0.00	0.00	0.00
15,800.0	89.90	90.00	10,840.3	717.5	5,025.6	5,025.6	0.00	0.00	0.00
15,900.0	89.90	90.00	10,840.5	717.5	5,125.6	5,125.6	0.00	0.00	0.00
16,000.0	89.90	90.00	10,840.7	717.5	5,225.6	5,225.6	0.00	0.00	0.00
16,100.0	89.90	90.00	10,840.8	717.5	5,325.6	5,325.6	0.00	0.00	0.00
16,200.0	89.90	90.00	10,841.0	717.5	5,425.6	5,425.6	0.00	0.00	0.00
16,300.0	89.90	90.00	10,841.2	717.5	5,525.6	5,525.6	0.00	0.00	0.00
16,400.0	89.90	90.00	10,841.4	717.5	5,625.6	5,625.6	0.00	0.00	0.00
16,500.0	89.90	90.00	10,841.5	717.5	5,725.6	5,725.6	0.00	0.00	0.00
16,600.0	89.90	90.00	10,841.7	717.5	5,825.6	5,825.6	0.00	0.00	0.00
16,700.0	89.90	90.00	10,841.9	717.5	5,925.6	5,925.6	0.00	0.00	0.00
16,800.0	89.90	90.00	10,842.1	717.5	6,025.6	6,025.6	0.00	0.00	0.00
16,900.0	89.90	90.00	10,842.2	717.5	6,125.6	6,125.6	0.00	0.00	0.00
17,000.0	89.90	90.00	10,842.4	717.5	6,225.6	6,225.6	0.00	0.00	0.00
17,100.0	89.90	90.00	10,842.6	717.5	6,325.6	6,325.6	0.00	0.00	0.00
17,200.0	89.90	90.00	10,842.8	717.5	6,425.6	6,425.6	0.00	0.00	0.00
17,300.0	89.90	90.00	10,842.9	717.5	6,525.6	6,525.6	0.00	0.00	0.00
17,400.0	89.90	90.00	10,843.1	717.5	6,625.6	6,625.6	0.00	0.00	0.00
17,500.0	89.90	90.00	10,843.3	717.5	6,725.6	6,725.6	0.00	0.00	0.00
17,600.0	89.90	90.00	10,843.5	717.5	6,825.6	6,825.6	0.00	0.00	0.00
17,700.0	89.90	90.00	10,843.6	717.5	6,925.6	6,925.6	0.00	0.00	0.00
17,800.0	89.90	90.00	10,843.8	717.5	7,025.6	7,025.6	0.00	0.00	0.00
17,900.0	89.90	90.00	10,844.0	717.5	7,125.6	7,125.6	0.00	0.00	0.00
18,000.0	89.90	90.00	10,844.2	717.5	7,225.6	7,225.6	0.00	0.00	0.00
18,100.0	89.90	90.00	10,844.3	717.5	7,325.6	7,325.6	0.00	0.00	0.00
18,200.0	89.90	90.00	10,844.5	717.5	7,425.6	7,425.6	0.00	0.00	0.00
18,300.0	89.90	90.00	10,844.7	717.5	7,525.6	7,525.6	0.00	0.00	0.00
18,400.0	89.90	90.00	10,844.9	717.5	7,625.6	7,625.6	0.00	0.00	0.00
18,500.0	89.90	90.00	10,845.0	717.5	7,725.6	7,725.6	0.00	0.00	0.00
18,600.0	89.90	90.00	10,845.2	717.5	7,825.6	7,825.6	0.00	0.00	0.00
18,700.0	89.90	90.00	10,845.4	717.5	7,925.6	7,925.6	0.00	0.00	0.00
18,800.0	89.90	90.00	10,845.5	717.5	8,025.5	8,025.5	0.00	0.00	0.00
18,900.0	89.90	90.00	10,845.7	717.5	8,125.5	8,125.5	0.00	0.00	0.00
19,000.0	89.90	90.00	10,845.9	717.5	8,225.5	8,225.5	0.00	0.00	0.00
19,100.0	89.90	90.00	10,846.1	717.5	8,325.5	8,325.5	0.00	0.00	0.00
19,200.0	89.90	90.00	10,846.2	717.5	8,425.5	8,425.5	0.00	0.00	0.00



) 0 !\$6'#!À',! &\$À*#J'I*7

Planning Report



6 Ä N 7*5 L.;+ 105 %#,P*À5 ÀÀ*5 A* 85 A *&N,#*5 6*7'(15	EDM 5000.1 Single User Db Oasis Petroleum Indian Hills 153N-100W-17/18 Kline Federal 5300 41-18 9T Kline Federal 5300 41-18 9T Design #1	K,I &\$L,@,#""! À*\$)*M*#*!!*5 HO6\$)*M*#*!!*5 /6\$)*M*#*!!*5 ?,#ÀQ\$)*M*#*!!*5 À:#J*0\$L &I:& À',!\$/*ÀQ,"5	Well Kline Federal 5300 41-18 9T WELL @ 2082.0usft (Original Well Elev) WELL @ 2082.0usft (Original Well Elev) True Minimum Curvature
---	--	--	---

%& !!*"\$À:#J*0

/* 7:#**\$ 6*+ÀQ W:7MÄY	<!!&! À',! WXY	ZI';:ÀQ WXY	O#À'I &\$ 6*+ÀQ W:7MÄY	V?C@À W:7MÄY	VUC@A W:7MÄY	O#À'I & À*À',! W:7MÄY	6,(&(*)À* WXC322:7MÄYWXC322:7MÄY	\:&")À* WXC322:7MÄY	H:#)À*
19,300.0	89.90	90.00	10,846.4	717.5	8,525.5	8,525.5	0.00	0.00	0.00
19,400.0	89.90	90.00	10,846.6	717.5	8,625.5	8,625.5	0.00	0.00	0.00
19,500.0	89.90	90.00	10,846.8	717.5	8,725.5	8,725.5	0.00	0.00	0.00
19,600.0	89.90	90.00	10,846.9	717.5	8,825.5	8,825.5	0.00	0.00	0.00
19,700.0	89.90	90.00	10,847.1	717.5	8,925.5	8,925.5	0.00	0.00	0.00
19,800.0	89.90	90.00	10,847.3	717.5	9,025.5	9,025.5	0.00	0.00	0.00
19,900.0	89.90	90.00	10,847.5	717.5	9,125.5	9,125.5	0.00	0.00	0.00
20,000.0	89.90	90.00	10,847.6	717.5	9,225.5	9,225.5	0.00	0.00	0.00
20,100.0	89.90	90.00	10,847.8	717.5	9,325.5	9,325.5	0.00	0.00	0.00
20,200.0	89.90	90.00	10,848.0	717.5	9,425.5	9,425.5	0.00	0.00	0.00
20,300.0	89.90	90.00	10,848.2	717.5	9,525.5	9,525.5	0.00	0.00	0.00
20,400.0	89.90	90.00	10,848.3	717.5	9,625.5	9,625.5	0.00	0.00	0.00
20,500.0	89.90	90.00	10,848.5	717.5	9,725.5	9,725.5	0.00	0.00	0.00
20,600.0	89.90	90.00	10,848.7	717.5	9,825.5	9,825.5	0.00	0.00	0.00
20,700.0	89.90	90.00	10,848.9	717.5	9,925.5	9,925.5	0.00	0.00	0.00
20,800.0	89.90	90.00	10,849.0	717.5	10,025.5	10,025.5	0.00	0.00	0.00
20,824.5	89.90	90.00	10,849.1	717.5	10,050.0	10,050.0	0.00	0.00	0.00

>.22\$43@3D\$GH\$%=K

6*7'(!\$H #(*À7									
H#(*À\$? ;*									
\$\$\$\$\$@\$Q'ÀC;77\$À #(*À6'+\$Z!(&* \$\$\$\$\$@\$ÀQ +*	6'+\$6#_ WXY	6*+ÀQ WXY	HO6 W:7MÄY	V?C@À W:7MÄY	VUC@A W:7MÄY	?,#ÀQ'!(W:7MÄY	U 7À'!(W:7MÄY	K À'À:/*	K,!(*À:/*
5300 41-18 9T PBHL	0.00	0.00	10,849.1	717.0	10,050.0	405,547.34	1,220,042.26	48° 4' 15.579 N	103° 33' 43.97 W
- plan misses target center by 0.5usft at 20824.5usft MD (10849.1 TVD, 717.5 N, 10050.0 E)									
- Point									

L 7'!(\$%,!À7									
/* 7:#**\$ 6*+ÀQ W:7MÄY	O#À'I &\$ 6*+ÀQ W:7MÄY						L 7'!(6';*À*# WaY	=,&* 6';*À*# WaY	
11,104.0	10,832.0	7"					7	8-3/4	



) 0 !\$6'#!À',! &\$À*#J'I*7

Planning Report



6 Ä N 7*5
L.;+ 105
%#,P*À5
ÀÄ*5
A* 85
A *&N,#*5
6*7'(!5

EDM 5000.1 Single User Db
Oasis Petroleum
Indian Hills
153N-100W-17/18
Kline Federal 5300 41-18 9T
Kline Federal 5300 41-18 9T
Design #1

K,I &\$L,@,#""! À*\$)*M*#*!!*5
HO6\$)*M*#*!!*5
/6\$)*M*#*!!*5
?,#ÀQ\$)*M*#*!!*5
À:#J*0\$L &I:& À',!\$/*ÀQ,"5

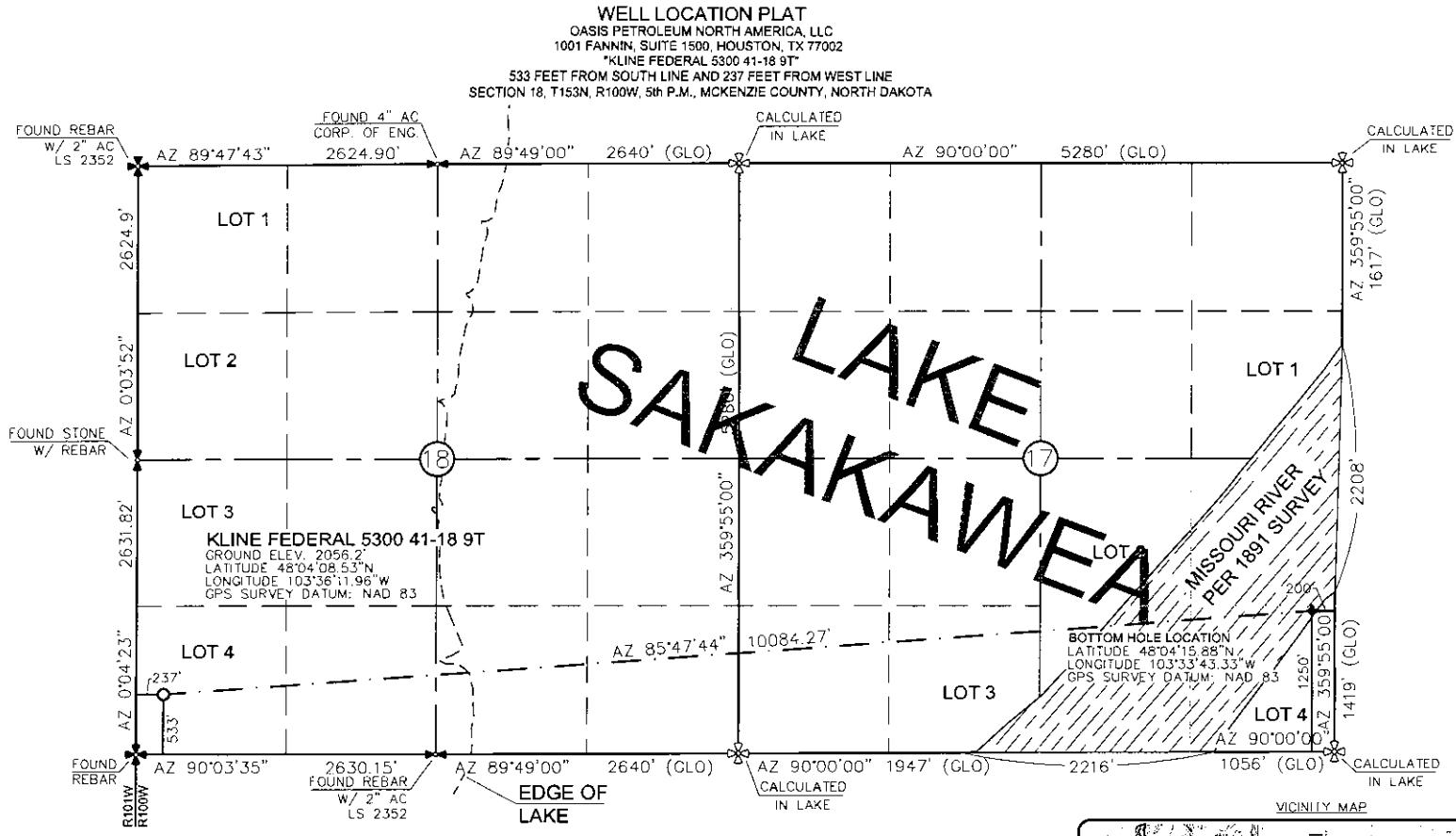
Well Kline Federal 5300 41-18 9T
WELL @ 2082.0usft (Original Well Elev)
WELL @ 2082.0usft (Original Well Elev)
True
Minimum Curvature

F#: À',!7

/* 7:#**" 6*+ÀQ W:7MÄY	O#À'I & 6*+ÀQ W:7MÄY	? ;*	K'ÀQ,&,(0	6'+ WXY	6#*!À',! WXY
1,972.0	1,972.0	Pierre			
4,646.1	4,646.0	Greenhorn			
5,057.1	5,057.0	Mowry			
5,471.1	5,471.0	Dakota			
6,486.2	6,486.0	Rierdon			
6,814.2	6,814.0	Dunham Salt			
6,929.2	6,929.0	Dunham Salt Base			
7,024.2	7,024.0	Spearfish			
7,283.2	7,283.0	Pine Salt			
7,318.2	7,318.0	Pine Salt Base			
7,374.2	7,374.0	Opeche Salt			
7,403.2	7,403.0	Opeche Salt Base			
7,605.2	7,605.0	Broom Creek (Top of Minnelusa Gp.)			
7,684.2	7,684.0	Amsden			
7,853.2	7,853.0	Tyler			
8,047.2	8,047.0	Otter (Base of Minnelusa Gp.)			
8,390.2	8,390.0	Kibbey Lime			
8,542.2	8,542.0	Charles Salt			
9,159.2	9,159.0	UB			
9,238.2	9,238.0	Base Last Salt			
9,301.2	9,301.0	Ratcliffe			
9,454.2	9,454.0	Mission Canyon			
10,022.2	10,022.0	Lodgepole			
10,209.2	10,209.0	Lodgepole Fracture Zone			
10,780.4	10,726.0	False Bakken			
10,795.0	10,735.0	Upper Bakken			
10,822.5	10,751.0	Middle Bakken			
10,891.1	10,785.0	Lower Bakken			
10,905.4	10,791.0	Pronghorn			
10,969.5	10,813.0	Three Forks			
11,035.3	10,827.0	TF Target Top			
13,901.8	10,837.0	TF Target Base			
14,474.7	10,838.0	Claystone			

%& !\$!!À Ä',!7

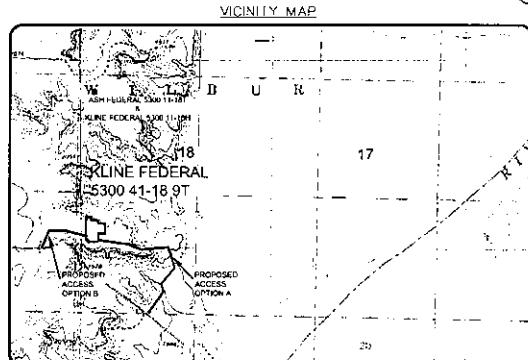
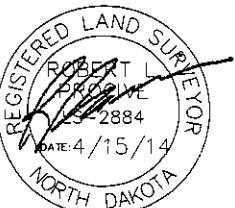
/* 7:#**" 6*+ÀQ W:7MÄY	O#À'I & 6*+ÀQ W:7MÄY	K,I &\$L,,#"! À*7	V?C@À W:7MÄY	VUC@À W:7MÄY	L,;;*!À
10,354.8	10,354.6	50.0		0.0	KOP Build 12°/100'
11,104.0	10,832.0	298.2		406.9	EOC



STAKED ON 4/15/14
VERTICAL CONTROL DATUM WAS BASED UPON
CONTROL POINT 4 WITH AN ELEVATION OF 2090.8'

THIS SURVEY AND PLAT IS BEING PROVIDED AT THE REQUEST OF ERIC BAYES OF OASIS PETROLEUM. I CERTIFY THAT THIS PLAT CORRECTLY REPRESENTS WORK PERFORMED BY ME OR UNDER MY SUPERVISION AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND ABILITY.

ROBERT L. PROCIVE 2884PLS



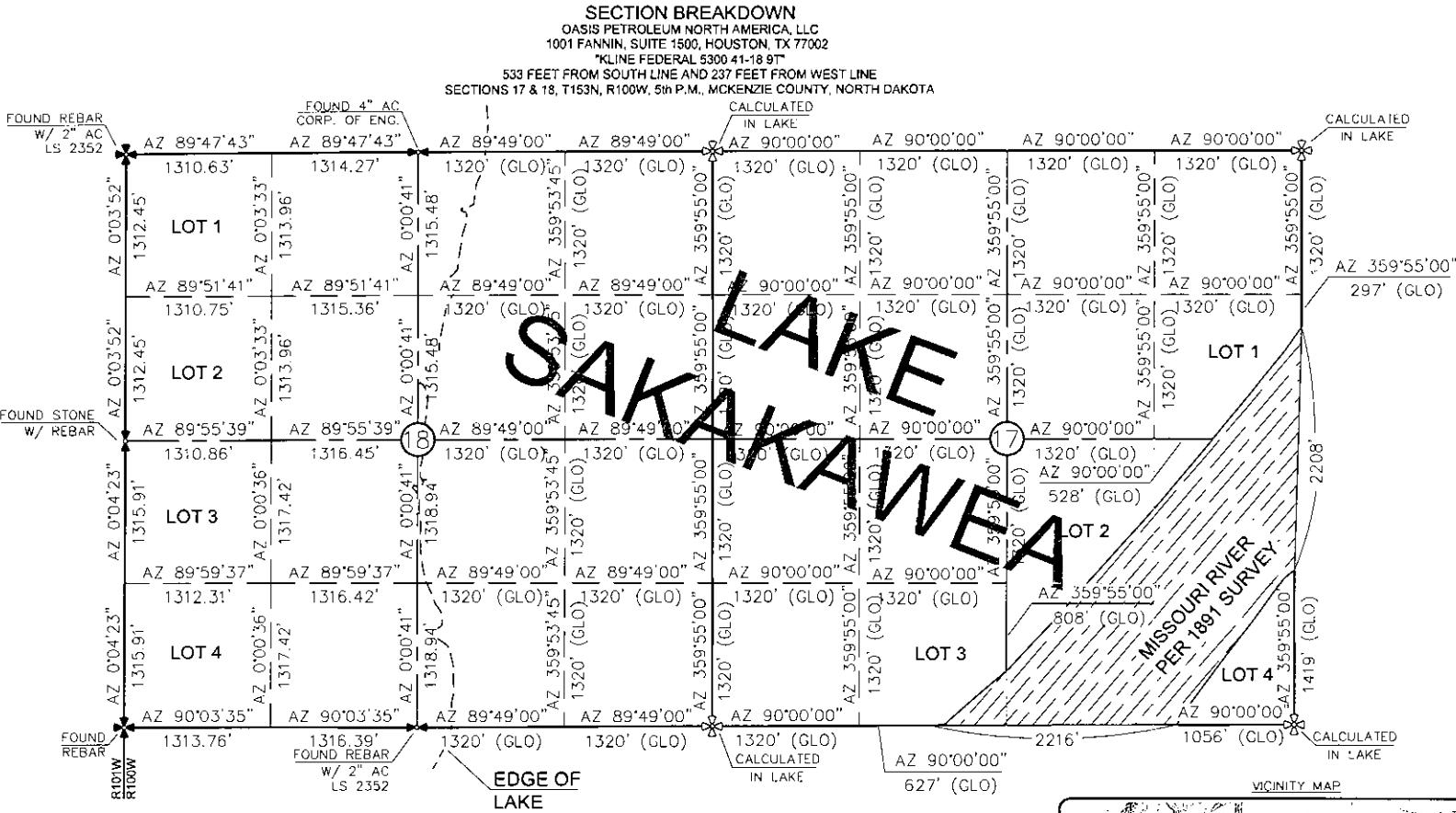
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OASIS PETROLEUM NORTH AMERICA, LLC	
WELL LOCATION PLAT	
SECTION 18, T153N, R100W	
MCKENZIE COUNTY, NORTH DAKOTA	
Drawn By:	B. H. S.
Checked By:	R. L. P.
Printed On:	April 14, 2014
Date:	



1/8

SHEET NO.



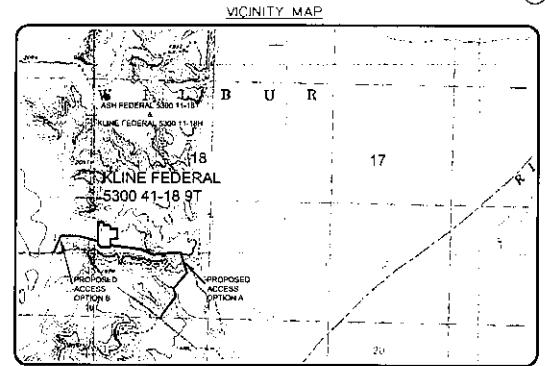
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Project No.:	S153N R100W
Date:	APRIL 2014

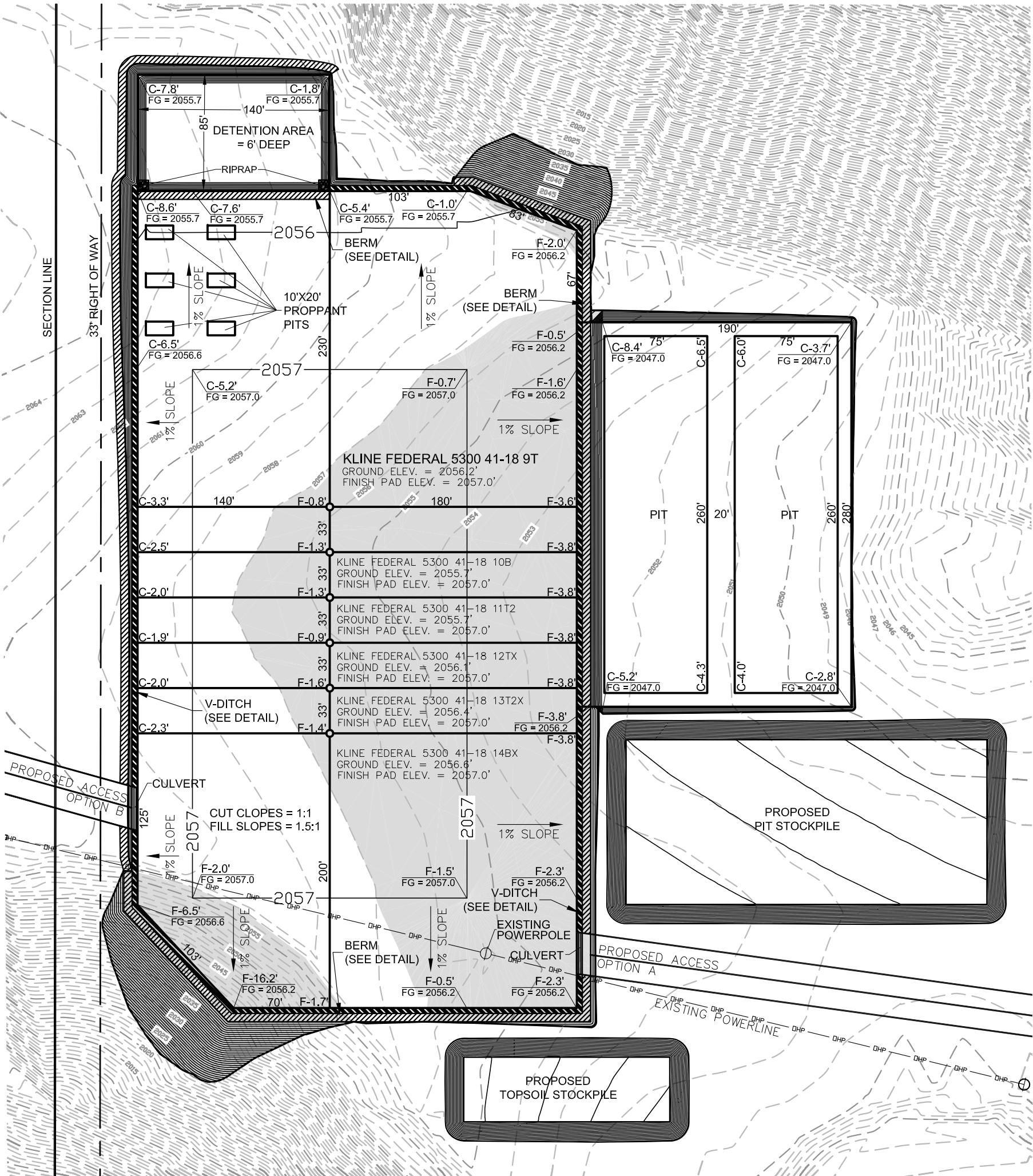
Interstate Engineering Inc. P.O. Box 648 425 East Main Street Stanley, Montana 59270 Ph. (406) 833-5611 Fax (406) 833-5618 www.interstate-engineering.com
Drawn By: S.H.N.
Checked By: E.L.C.
Drawn On: 4/15/2014 Checked On: 4/15/2014



PAD LAYOUT

OASIS PETROLEUM NORTH AMERICA, LLC
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
"KLINE FEDERAL 5300 41 18 9T"

KLINE FEDERAL 5300 41-18 91
533 FEET FROM SOUTH LINE AND 237 FEET FROM WEST LINE
SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

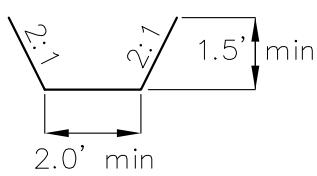


THIS DOCUMENT WAS ORIGINALLY ISSUED
AND SEALED BY ROBERT L. PROVIC,
PLS, REGISTRATION NUMBER 2884 ON
4/15/14 AND THE ORIGINAL
DOCUMENTS ARE STORED AT THE
OFFICES OF INTERSTATE ENGINEERING,
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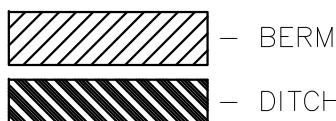
NOTE: Pad dimensions shown are to usable area, the v-ditch and berm areas shall be built to the outside of the pad dimensions.



V-DITCH DETAIL



— Proposed Contours
- - - - - Original Contours



NOTE: All utilities shown are preliminary only, a complete utility location is recommended before construction.

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Professionals you need, people you trust

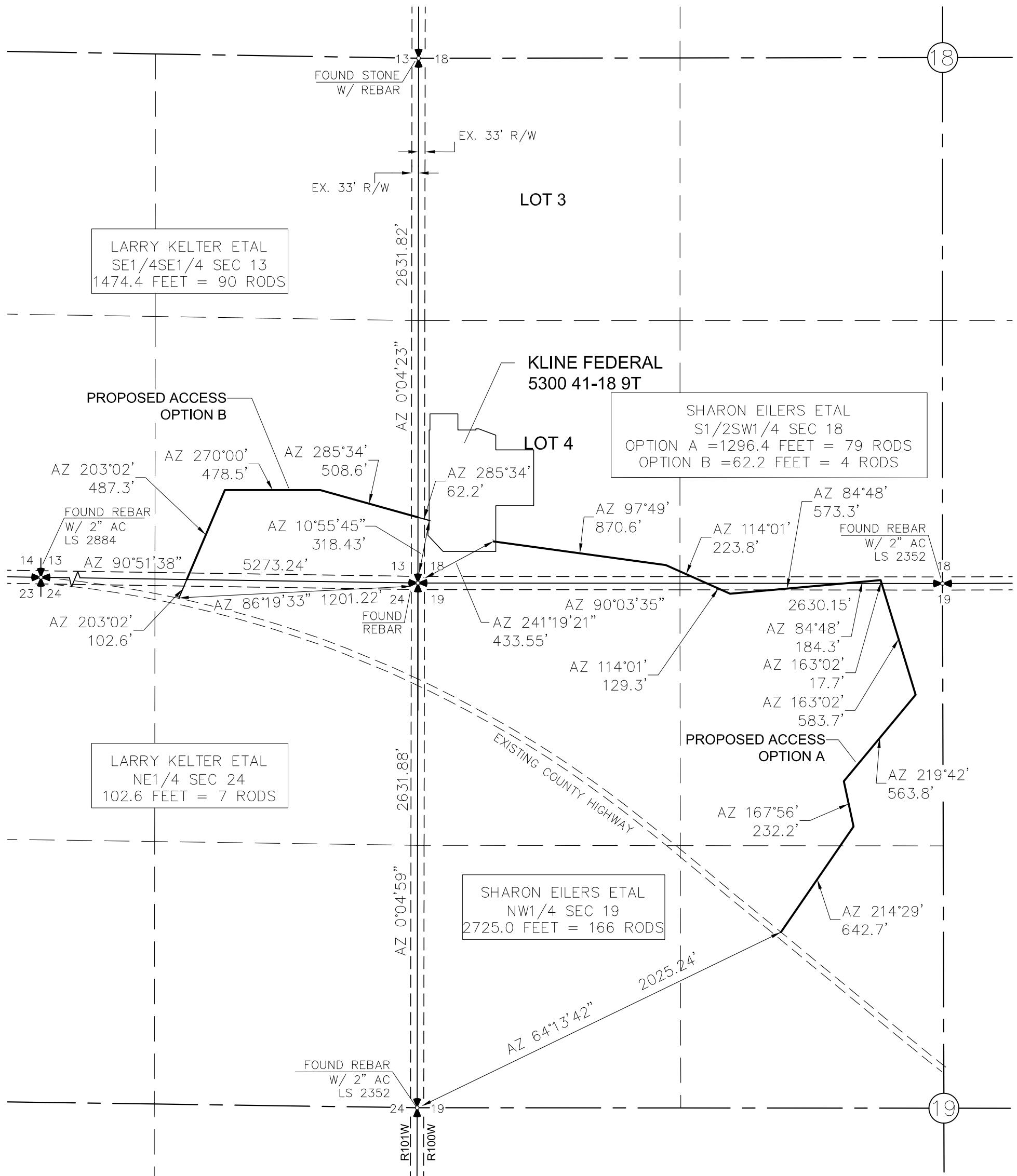
Interstate Engineering, Inc.
P.O. Box 648
425 East Main Street
Sidney, Montana 59270
Ph (406) 433-5617
Fax (406) 433-5618
www.interstateeng.com

OASIS PETROLEUM NORTH AMERICA, LLC
PAD LAYOUT
SECTION 18 T153N R100W

McKENZIE COUNTY, NORTH DAKOTA

Drawn By: B.H.H. Project No.: S14-09-081.05
Checked By: D.D.K. Date: APRIL 2014

ACCESS APPROACH
 OASIS PETROLEUM NORTH AMERICA, LLC
 1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
 "KLINE FEDERAL 5300 41-18 9T"
 533 FEET FROM SOUTH LINE AND 237 FEET FROM WEST LINE
 SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



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0 500
1" = 500'

NOTE: All utilities shown are preliminary only, a complete
utilities location is recommended before construction.

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SHEET NO.

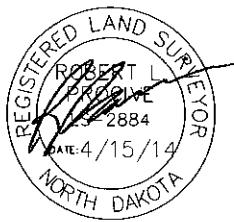
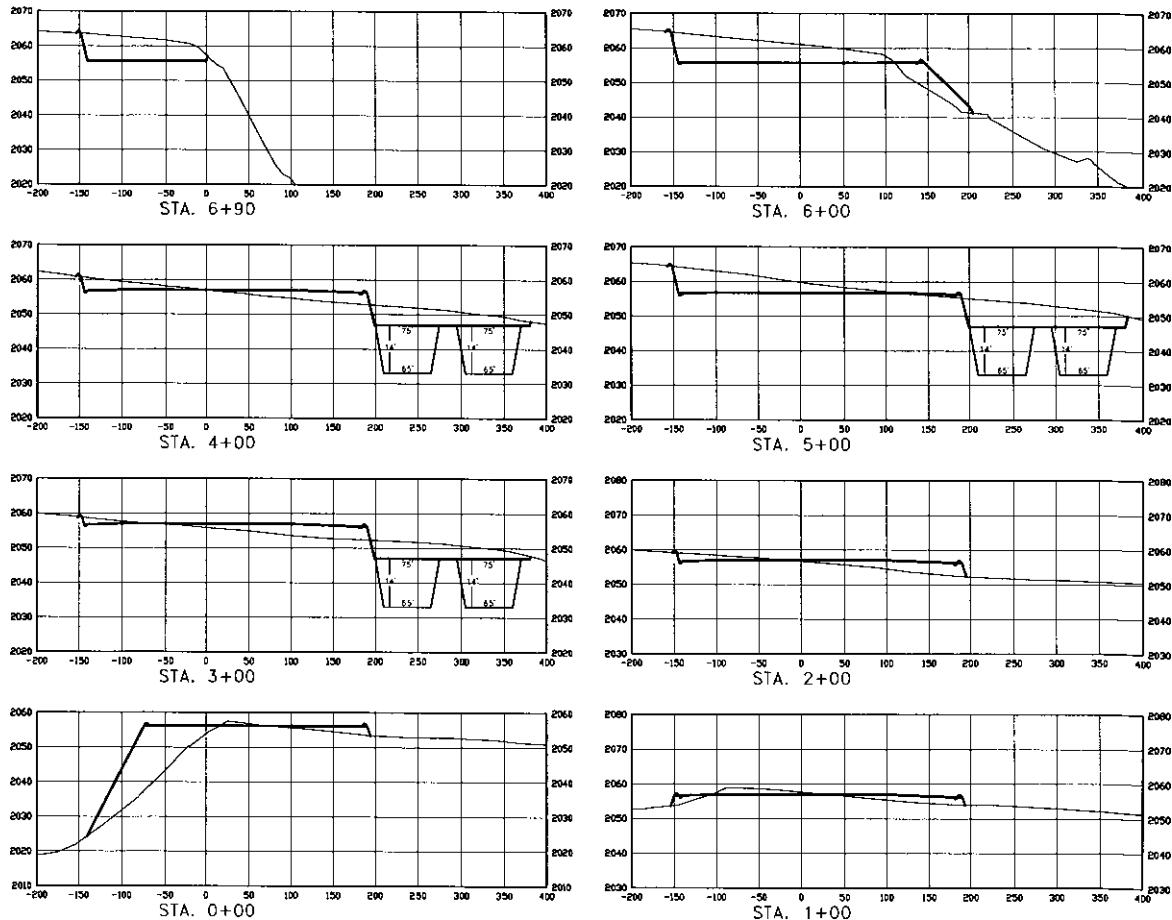
Interstate Engineering, Inc.
P.O. Box 648
425 East Main Street
Sidney, Montana 59270
Ph (406) 433-5617
Fax (406) 433-5618
www.interstateeng.com
Other offices in Minnesota, North Dakota and South Dakota

OASIS PETROLEUM NORTH AMERICA, LLC
ACCESS APPROACH
SECTION 18, T153N, R100W
MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: B.H.H. Project No.: S14-09-081.05
Checked By: R.L.P. Date: APRIL 2014

Revision No.	Date	By	Description
			0: \2014\ S14-09-081.05 Location CAD (Kline Federal 5300 41-18 9t.dwg - 4/15/2014 3:59 PM) jsm schmierer

CROSS SECTIONS
 OASIS PETROLEUM NORTH AMERICA, LLC
 1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
 KLINE FEDERAL 5300 41-18 9T
 533 FEET FROM SOUTH LINE AND 237 FEET FROM WEST LINE
 SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



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SCALE
 HORIZ 1"=140'
 VERT 1"=35'

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 425 East Main Street
 Sidney, Montana 59270
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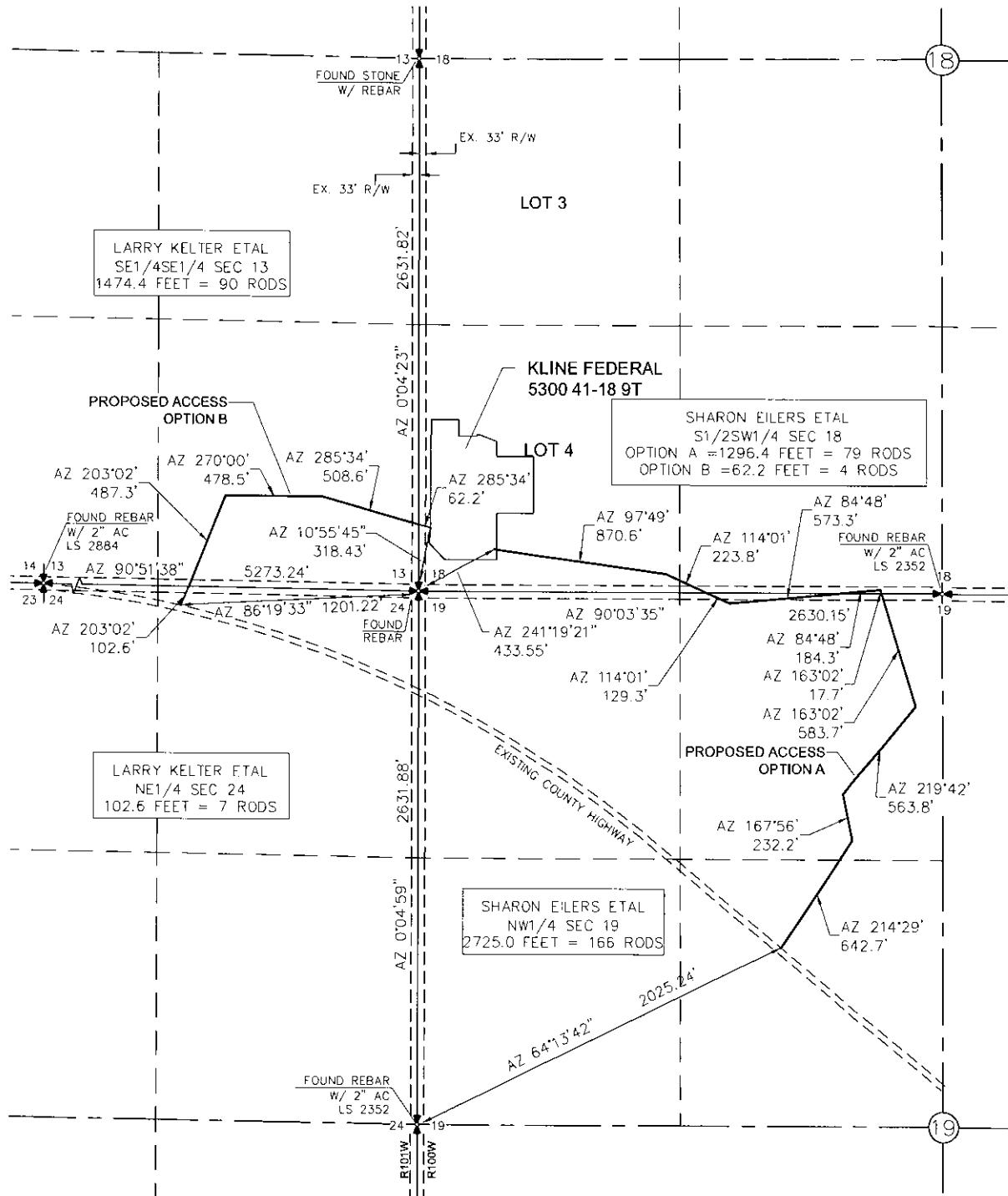
OASIS PETROLEUM NORTH AMERICA, LLC
 CROSS SECTIONS
 SECTION 18, T153N, R100W

MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: B.H.ZL Project No.: S14-09-081.05
 Checked By: R.L.P. Date: APRIL 2014

Reorder No.	Date	By	Description

ACCESS APPROACH
OASIS PETROLEUM NORTH AMERICA, LLC
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
"KLINE FEDERAL, 5300 41-18 97"
533 FEET FROM SOUTH LINE AND 237 FEET FROM WEST LINE
SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



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Page 1

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Sidney, Montana 59270
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OASIS PETROLEUM NORTH AMERICA, LLC
ACCESS APPROACH
SECTION 18, T153N, R100W

MCKENZIE COUNTY, NORTH DAKOTA



OASIS PETROLEUM NORTH AMERICA, LLC
KLINE FEDERAL 5300 41-18 9T
533' FSL/237' FWL
QUAD LOCATION MAP
SECTION 18, T153N, R100W
MCKENZIE COUNTY, NORTH DAKOTA

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OASIS PETROLEUM NORTH AMERICA, LLC
QUAD LOCATION MAP
SECTION 18, T153N, R100W
MCKENZIE COUNTY, NORTH DAKOTA

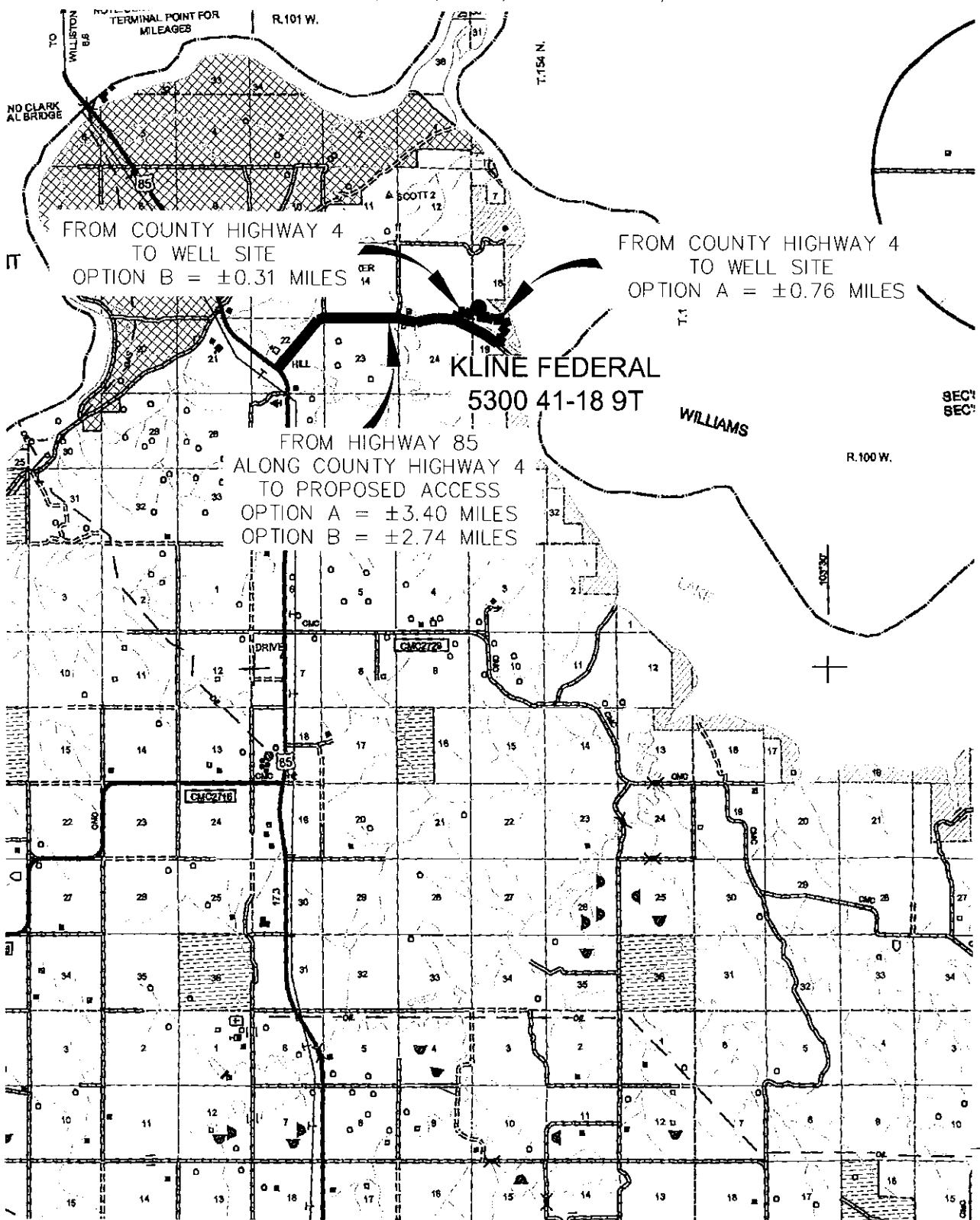
Drawn By: B.H.H. Project No.: S14-09-081.05
Checked By: R.J.P. Date: APRIL 2014

Revision No.	Date	By	Description

COUNTY ROAD MAP

OASIS PETROLEUM NORTH AMERICA, LLC
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
"KLINE FEDERAL 5300 41-18 9T"

533 FEET FROM SOUTH LINE AND 237 FEET FROM WEST LINE
SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



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SCALE: 1" = 2 MILE

6/8



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OASIS PETROLEUM NORTH AMERICA, LLC
COUNTY ROAD MAP
SECTION 18, T153N, R100W
MCKENZIE COUNTY, NORTH DAKOTA

Drawn By:	B.H.H.	Project No.:	S14-09-081.05
Checked By:	R.L.P.	Date:	APRIL 2014

Revision No.	Date	By	Description

WELL LOCATION SITE QUANTITIES
 OASIS PETROLEUM NORTH AMERICA, LLC
 1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
 "KLINE FEDERAL 5300 41-18 9T"
 533 FEET FROM SOUTH LINE AND 237 FEET FROM WEST LINE
 SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

WELL SITE ELEVATION	2056.2
WELL PAD ELEVATION	2057.0
EXCAVATION	20,682
PLUS PIT	<u>18,900</u>
	39,582
EMBANKMENT	11,538
PLUS SHRINKAGE (30%)	<u>3,461</u>
	14,999
STOCKPILE PIT	18,900
STOCKPILE TOP SOIL (6")	5,261
BERMS	1,889 LF = 612 CY
DITCHES	1,649 LF = 252 CY
DETENTION AREA	2,341 CY
STOCKPILE MATERIAL	2,403
DISTURBED AREA FROM PAD	6.52 ACRES

NOTE: ALL QUANTITIES ARE IN CUBIC YARDS (UNLESS NOTED)

CUT END SLOPES AT 1:1

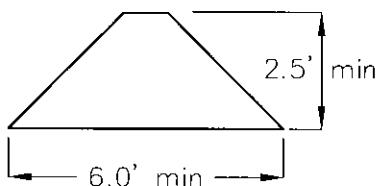
FILL END SLOPES AT 1.5:1

WELL SITE LOCATION

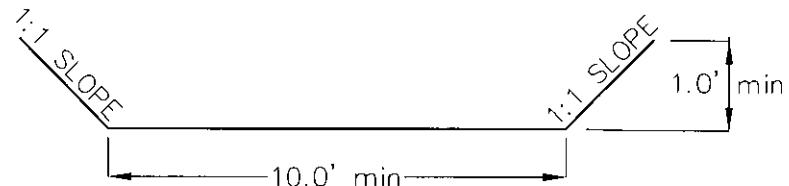
533' FSL

237' FWL

BERM DETAIL



DITCH DETAIL



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8/8
SHEET NO.



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OASIS PETROLEUM NORTH AMERICA, LLC
QUANTITIES
SECTION 18, T153N, R100W

MCKENZIE COUNTY, NORTH DAKOTA

Revision No.	Date	By	Description

Drawn By: B.H.H. Project No.: S14-09-081.05

Checked By: R.L.P. Date: APRIL 2014



5/29/2014

Mineral Resources Permit Manager
North Dakota Industrial Commission
600 East Boulevard Avenue Dept. 405
Bismarck, ND 58505-0840

RE: **Kline Federal 5300 41-18 9T**
 Kline Federal 5300 41-18 10B
 Kline Federal 5300 41-18 11T2
 Kline Federal 5300 41-18 12TX
 Kline Federal 5300 41-18 13T2X
 Kline Federal 5300 41-18 14BX
Request for a legal street address

Dear NDIC:

Oasis Petroleum has requested a physical street address for the Kline Federal 5300 41-18 9T, Kline Federal 5300 41-18 10B, Kline Federal 5300 41-18 11T2, Kline Federal 5300 41-18 12TX, Kline Federal 5300 41-18 13T2X, and Kline Federal 5300 41-18 14BX. The request was made to Aaron Chisolm, in McKenzie County. Upon receiving a legal street address, Oasis will submit the address to the NDIC on a Sundry Notice (form 4) pursuant to 43-02-03-28.

Thank you for your consideration.

Respectfully,

A handwritten signature in black ink, appearing to read "Heather McCowan".

Heather McCowan
Regulatory Assistant
Oasis Petroleum North America, LLC

Surface Damage Affidavit

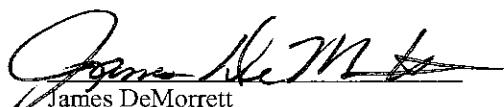
STATE OF NORTH DAKOTA)
) ss.
COUNTY OF WILLIAMS)

James DeMorrett, being duly sworn, states as follows:

The below described lands are not located in a wellhead protection/source water protection area per the website provided by the NDIC

and the adjacent landowner is fully aware that Oasis Petroleum will be drilling and operating multiple wells on spacing unit from a surface location in Section 18: Lot 4 a/k/a SW $\frac{1}{4}$ SW $\frac{1}{4}$, Township 153 North, Range 100 West, 5th P.M., McKenzie County, North Dakota. (totaling 6.52 acres). The adjacent surface landowner is fully aware that the above referenced location will consist of the well bores and pumping units only and will not have cuttings pits, storage tanks or flare pits.

Dated this 16th day of June, 2014



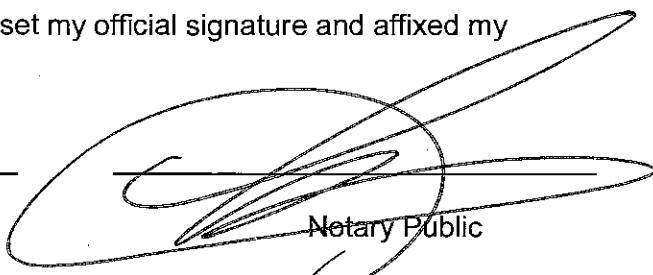
James DeMorrett

STATE OF NORTH DAKOTA }
 } SS.
COUNTY OF WILLIAMS }

BE IT REMEMBERED, That on this 16 day of June, 2014 before me, a Notary Public, in and for said County and State, personally appeared James DeMorrett, to me known to be the identical persons described in and who executed the within and foregoing instrument and acknowledged to me that he executed the same as his free and voluntary act and deed for the uses and purposes therein set forth.

IN WITNESS WHEREOF, I have hereunto set my official signature and affixed my notarial seal, the day and year first above written.

My commission expires: Nov 18, 2017



Notary Public

