



May 7, 2020

Mr. Jonathon Travis
Ryan, LLC
2800 Post Oak Boulevard, Suite 4200
Houston, TX 77056

**RE: Kline Federal #5300 11-18 2B
Lot 1 Sec. 18, T.153N., R.100W.
McKenzie County, North Dakota
Baker Field
Well File No. 29334
STRIPPER WELL DETERMINATION**

Dear Mr. Travis:

Oasis Petroleum North America LLC (Oasis) filed with the North Dakota Industrial Commission – Oil and Gas Division (Commission) on November 19, 2019 an application for a Stripper Well Determination for the above captioned well.

Information contained in the application indicates that the above mentioned well is a stripper well pursuant to statute and rule, and Oasis has elected to designate said well as a stripper well. The well produced from a well depth greater than 10000 feet and was completed after June 30, 2013. During the qualifying period, February 1, 2018 through January 31, 2019, the well produced at a maximum efficient rate or was not capable of exceeding the production threshold. The average daily production from the well was 32.8 barrels of oil per day during this period.

It is therefore determined that the above captioned well qualifies as a “Stripper Well” pursuant to Section 57-51.1-01 of the North Dakota Century Code. This determination is applicable only to the Bakken Pool in and under said well.

The Commission shall have continuing jurisdiction, and shall have the authority to review the matter, and to amend or rescind the determination if such action is supported by additional or newly discovered information. If you have any questions, do not hesitate to contact me.

Sincerely,



David J. McCusker
Petroleum Engineer

Cc: ND Tax Department



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)

Received

Well File No.
29334

FEB 12 2016

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 December 11, 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 11-18 2B					
Footages 960 F N L	Qtr-Qtr 318 F W L	Lot 1	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

DETAILS OF WORK

Effective 12/11/2015 the above referenced well is on pump.

End of Tubing: 2-7/8" L-80 tubing @ 9924'

Pump: ESP @ 9924'

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 8, 2016	
Email Address jswenson@oasispetroleum.com		

<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.

29334

NDIC CTB No.

0

228651

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.

PLEASE SUBMIT THE ORIGINAL AND FOUR COPIES.

Well Name and Number KLINE FEDERAL 5300 11-18 2B	Qtr-Qtr LOT1	Section 18	Township 153	Range 100	County McKenzie
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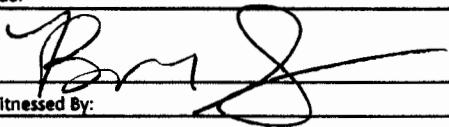
Operator Oasis Petroleum North America LLC	Telephone Number (281) 404-9573	Field BAKER
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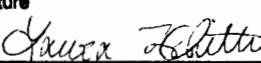
Address 1001 Fannin, Suite 1500	City Houston	State TX	Zip Code 77002
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Name of First Purchaser Oasis Petroleum Marketing LLC	Telephone Number (281) 404-9627	% Purchased 100%	Date Effective September 20, 2015
Principal Place of Business 1001 Fannin, Suite 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 20, 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 20, 2015
Other Transporters Transporting From This Lease	% Transported	Date Effective
		September 20, 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:	Printed Name	Title
Signature 	Laura Whitten	Marketing Analyst II



FOR STATE USE ONLY

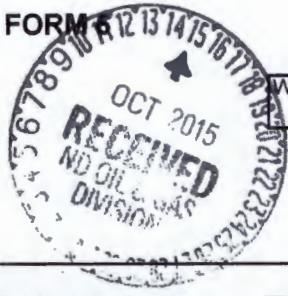
Date Approved OCT 27 2015
By Erica Goberson
Title Oil & Gas Production Analyst



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)

TH
Well File No.
29334



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"/> Gas Well		<input type="checkbox"/> SWD Well		<input type="checkbox"/> Water Supply Well		<input type="checkbox"/> Other:	
Well Name and Number Kline Federal 5300 11-18 2B				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 <input type="checkbox"/> Wildcat <input checked="" type="checkbox"/> Development <input type="checkbox"/> Extension			

LOCATION OF WELL

At Surface 960 F N L		318 F N WL	Qtr-Qtr LOT1	Section 18	Township 153 N	Range 100 W	County McKenzie
Spud Date 2.25.15 March 29, 2015		Date TD Reached April 16, 2015	Drilling Contractor and Rig Number Xtreme 21		KB Elevation (Ft) 2078	Graded Elevation (Ft) 2053	

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	String Type	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	2135	17 1/2	54.5			1226	0
Vertical Hole	Intermediate	7	0	11024	8 3/4	32			825	2150
Lateral1	Liner	4 1/2	10193	20445	6	13.5			500	10193

PERFORATION & OPEN HOLE INTERVALS

Well Bore	Well Bore TD Drillers 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
			Top	Bottom						
Lateral1	20450	Perforations	11024	20445	10225		07/16/2015			
	17597			12597						
ST 1	20450		17420	20445						

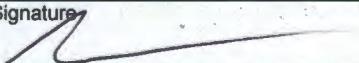
PRODUCTION

Current Producing Open Hole or Perforated Interval(s), This Completion, Top and Bottom, (MD Ft) Lateral 1- 11024' to 20445'					Name of Zone (If Different from Pool Name)			
Date Well Completed (SEE INSTRUCTIONS) September 20, 2015					Producing Method Flowing			
Pumping-Size & Type of Pump					Well Status (Producing or Shut-In) Producing			
Date of Test 09/20/2015	Hours Tested 24	Choke Size 48 /64	Production for Test	Oil (Bbls) 661	Gas (MCF) 498	Water (Bbls) 4579	Oil Gravity-API (Corr.) 42.0 °	Disposition of Gas Sold
Flowing Tubing Pressure (PSI)	Flowing Casing Pressure (PSI)		Calculated 24-Hour Rate	Oil (Bbls) 661	Gas (MCF) 498	Water (Bbls) 4579	Gas-Oil Ratio 753	

Well Specific Stimulation

Date Stimulated 07/16/2015	Stimulated Formation Bakken		Top (Ft) 11024	Bottom (Ft) 20445	Stimulation Stages 36	Volume 209640	Volume Units Barrels
Type Treatment Sand Frac	Acid %	Lbs Proppant 4168220	Maximum Treatment Pressure (PSI) 9141		Maximum Treatment Rate (BBLS/Min) 73.0		
Details 100 Mesh White: 295320 40/70 white: 1555360 30/50 White: 1740010 30/50 Resin Coated: 504920 20/40 Resin Coated: 69610							
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 10/14/2015
Signature 	Printed Name Jennifer Swenson	Title Regulatory Specialist

Industrial Commission of North Dakota
Oil and Gas Division

Well or Facility No

29334

Verbal Approval To Purchase and Transport Oil

Tight Hole Yes

OPERATOR

Operator OASIS PETROLEUM NORTH AMERICA LL	Representative Todd Hanson	Rep Phone (701) 577-1632
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WELL INFORMATION

Well Name KLINE FEDERAL 5300 11-18 2B	Inspector Richard Dunn
Well Location QQ Sec Twp Rng LOT1 18 153 N 100 W	County MCKENZIE
Footages 960 Feet From the N Line 318 Feet From the W Line	Field BAKER
Date of First Production Through Permanent Wellhead	Pool BAKKEN
This Is Not The First Sales	

PURCHASER / TRANSPORTER

Purchaser Kinder Morgan	Transporter Kinder Morgan
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TANK BATTERY

Single Well Tank Battery Number :

SALES INFORMATION This Is Not The First Sales

ESTIMATED BARRELS TO BE SOLD	ACTUAL BARRELS SOLD	DATE
1500	BBLS	
	BBLS	

DETAILS

Must E-Mail or Call Inspector at 701-770-3554/rsdunn@nd.gov on first date of sales and report amount sold, date sold, and first date of production through the permanent wellhead. Must also forward Forms 6 & 8 to State prior to reaching 15000 Bbl estimate or no later than required time frame for submitting those forms.

Start Date	8/25/2015
Date Approved	8/25/2015
Approved By	Richard Dunn



SUNDY 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)



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 14, 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 type="checkbox"/> Other	Waiver from tubing/packer requirement

Well Name and Number Kline Federal 5300 11-18 2B					
Footages 960 F N L	318 F W L	Qtr-Qtr LOT1	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

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

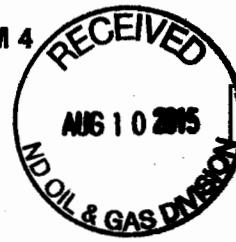
Company Oasis Petroleum North America LLC		Telephone Number 281-404-9436	
Address 1001 Fannin, Suite 1500			
City Houston		State TX	Zip Code 77002
Signature 		Printed Name Jennifer Swenson	
Title Regulatory Specialist		Date July 14, 2015	
Email Address jswenson@oasispetroleum.com			

<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date <i>July 31, 2015</i>	
By <i>J.M. Swenson</i>	
Title PETROLEUM ENGINEER	



SUNDY 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.
29334

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

Notice of Intent

Approximate Start Date

August 9, 2015

Report of Work Done

Date Work Completed

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

Drilling Prognosis

Spill Report

Redrilling or Repair

Shooting

Casing or Liner

Acidizing

Plug Well

Fracture Treatment

Supplemental History

Change Production Method

Temporarily Abandon

Reclamation

Other

Change well status to CONFIDENTIAL

Well Name and Number

Kline Federal 5300 11-18 2B

Footages	Qtr-Qtr	Section	Township	Range
960 F N L	318 F W L	LOT 1	18	153 N 100 W
Field	Pool		County	
Baker	BAKKEN		McKenzie	

24-HOUR PRODUCTION RATE

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

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 2/10/16.

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 August 10, 2015	
Email Address jswenson@oasispetroleum.com		

FOR STATE USE ONLY

<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date 8/12/15	
By 	
Title Engineering Technician	



Oasis Petroleum North America, LLC.

Kline Federal 5300 11-18 2B

960' FNL & 318' FWL

Lot 1 Section 18, T153N, R100W

Baker Field / Middle Bakken

McKenzie County, North Dakota

BOTTOM HOLE LOCATION:

**111.86' south & 9,932.10' east of surface location or approx.
1,071.86 ' FNL & 296.01' FEL, NE NE Section 17, T153N, R100W**

Prepared for:

Curtis Johnson
Oasis Petroleum
North America, LLC.
1001 Fannin, Suite 1500
Houston, TX 77002

Prepared by:

Dillon Johnson, Matt Hegland,
Ryan O'Donnell
PO Box 80507; Billings, MT 59108
(406) 259-4124
geology@sunburstconsulting.com
www.sunburstconsulting.com

WELL EVALUATION

*Oasis Petroleum North America, LLC
Kline Federal 5300 11-18 2B*



Figure 1. Xtreme 21 at the Oasis Petroleum North America, LLC *Kline Federal 5300 11-18 2B* well during June of 2015 in McKenzie County, North Dakota.

INTRODUCTION

The Oasis Petroleum, North America LLC, *Kline Federal 5300 11-18 2B* well is located approximately 4 miles south of Williston in McKenzie County, North Dakota [Lot 1 Section 18, T153N, R100W]. The *Kline Federal 5300 11-18 2B* is a horizontal, Middle Bakken Member well drilled by Xtreme rig #21 (**Figure 1**). The lateral section consists of one west to east trending, 9,932' long wellbore penetrating underneath Lake Sakakawea. The surface, vertical and curve sections were previously drilled, and this evaluation will consist of primarily operations and observations made during the lateral section.

ENGINEERING

The *Kline Federal 5300 11-18 2B* surface, vertical and curve sections were drilled earlier in 2015 by separate drilling rig. Xtreme 21 returned to location in May of 2015 to drill the laterals of the *Kline Federal 5300 11-18 2B*, 3T, 2B, and re-entered the *Kline Federal 5300 11-18 2B* on May 30, 2015.

Drilling began with a 6" Halliburton PDC bit, Ryan Directional Services MWD tools, and 1.5° adjustable Baker Hughes mud motor. This assembly drilled to 15,484' MD where a trip was made due to low penetration rates. Another complete assembly drilled to 17,597' MD, where at 23:30 CDT on June 2, 2015 the wellbore made contact with the upper Bakken shale at 17,540' MD, 10,766' TVD (-8,698'). A sidetrack was initiated at 17,420' MD, using the same assembly, and successfully kicked off. After the sidetrack, drilling continued to 20,149' MD where another trip was made due to slowing penetration rates. A new motor was picked up and the well later reached its total depth at 20,450' MD, at 08:45 CDT on June 6, 2015, generating an exposure of 9,568' linear feet of 6" hole through the Middle Bakken Member. The bottom hole location lies 111.86' south & 9,932.10' east of surface location or approximately 1,071.86' FNL & 296.01' FEL, NE NE Section 17, T153N, R100W.

GEOLOGY

Lithology

Sunburst Geology, Inc. was not present for the vertical and curve sections, therefore no lithology is discussed prior to the Middle Bakken Member.

Middle Bakken Member

The Middle Bakken Member was penetrated at 10,882' MD, 10,727' TVD (-8,659'). The middle member in this locality is generally composed of a light gray-brown to light gray, very fine to fine grained, moderately to well cemented, calcite cemented silty sandstone. It was apparent that samples observed higher in the member were often light brown, off white to cream colored, while the lower portion of the member was predominantly darker, gray-brown. Throughout the lateral, trace amounts of both disseminated and nodular pyrite were observed. Samples also displayed *trace, poor to fair intergranular porosity* and *trace spotty and occasionally even, light brown oil staining* (**Figure 2**).



Figure 2. Middle Bakken silty sandstone, observed in the upper portion of the target interval.

Geosteering

The potential pay zone for the *Kline Federal 5300 11-18 2B* was identified by evaluating gamma data collected while drilling the *Oasis Petroleum, Kline Federal 5300 41-18 11 T2*, and the steering practices from the *Oasis Petroleum, Kline Federal 5300 11-18 5B*. The target was determined to be 12' thick, and located 12' below the Upper Bakken Shale and 20' above the Lower Bakken Shale. The Middle Bakken Member displayed gamma counts ranging from 70 to 140 (API). The target was identified by having a higher gamma marker at the very top of target, moderate markers throughout the target zone and a cool marker at the base (**Figure 3**). Despite a single, upper shale strike, geologists were successful in exposing 9,568' of potentially productive Middle Bakken Member the well bore. The well was within the targeted zone for 67% of the lateral.

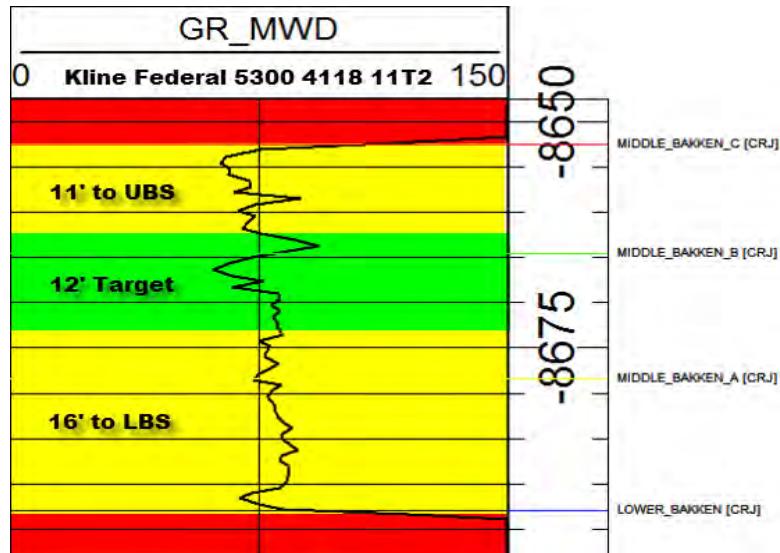


Figure 3. Gamma characteristics observed throughout the Middle Bakken Member while drilling the *Oasis Petroleum, Kline Federal 5300 41-18 11 T2*.

Shale Strike Summary

At measured depths 16,750' through 16,820', erratic high gamma counts were logged. This high count anomaly was interpreted as being the warm gamma associated with being near the top of target. Given the well bore was descending at inclinations ranging from 88.9° to 88.2° (16,750' through 16,820'), it was anticipated that this higher gamma would repeat as the well bore leveled off or slowly rose in zone. As the wells descent was controlled and the inclination raised above 90° (~17,050' MD), the dip profile displayed the well bore being ~3' from the top of target (13.5' from base of UBS). From this point forward the well bore slowly rose in section and geologists did not see any great concern with the well bore position, given that we had yet to see any warm gamma signatures associated with the top of target. In addition, a majority of the wells within this two-section corridor, drilling east, had a synclinal feature after the halfway point of the lateral. Between the surveys at 17,395' and 17,489' MD, the inclination increased from 89.9° to 91.7°. While sliding down to correct the ascending inclination gamma counts rose. It was at this time that decision to stop and circulate a bottoms-up was made. Samples from the bottoms up confirmed the Upper Bakken Shale had been contacted.

Gas and Oil Shows

Hydrocarbon shows at the beginning of the lateral were relatively low. During the first ~1,500' of lateral operations the well bore remained primarily near the base if not below the target zone. While drilling this interval background gasses rarely exceeded 1,000 units, but connection, survey and slide gasses regularly exceeded 1,000 units. Oil show throughout this period of drilling was moderate, with most cuttings reacting slowly with a *pale yellow diffuse cut fluorescence*. As the well bore reached the top of the target interval hydrocarbon shows increased. These brief periods of higher gas shows occurred three times while drilling along the upper portion of the target zone (12,250'- 12,510' MD, 13,200'-13,950' MD, and 16,300'- 16,430' MD) (**Figure 4**). Although these optimistic shows were intermittent, samples displayed a more promising oil staining than that observed in lower samples. Samples along the upper portion displayed a light to *medium brown even oil staining*. Fluorescent cuts were also slightly more promising than those observed lower in zone were. Cuts were described as: *moderate, pale yellow, streaming cut fluorescence*. While drilling from 11,510' to 11,656' MD there were issues with the gas detection, this caused low gas readings. When the system was repaired, gas shows immediately climbed. For the remainder of the well, despite of the well being high or low in zone, background gasses were low (400-1,200 units), while connection gasses occasionally exceeded 1,300 units. Unfortunately, due to heavy contamination from lubricants there were no cuts performed after 14,950' MD. Although hydrocarbon shows remained consistent despite of position within the target zone, the most promising oil staining remained in the upper most portion of the target interval.

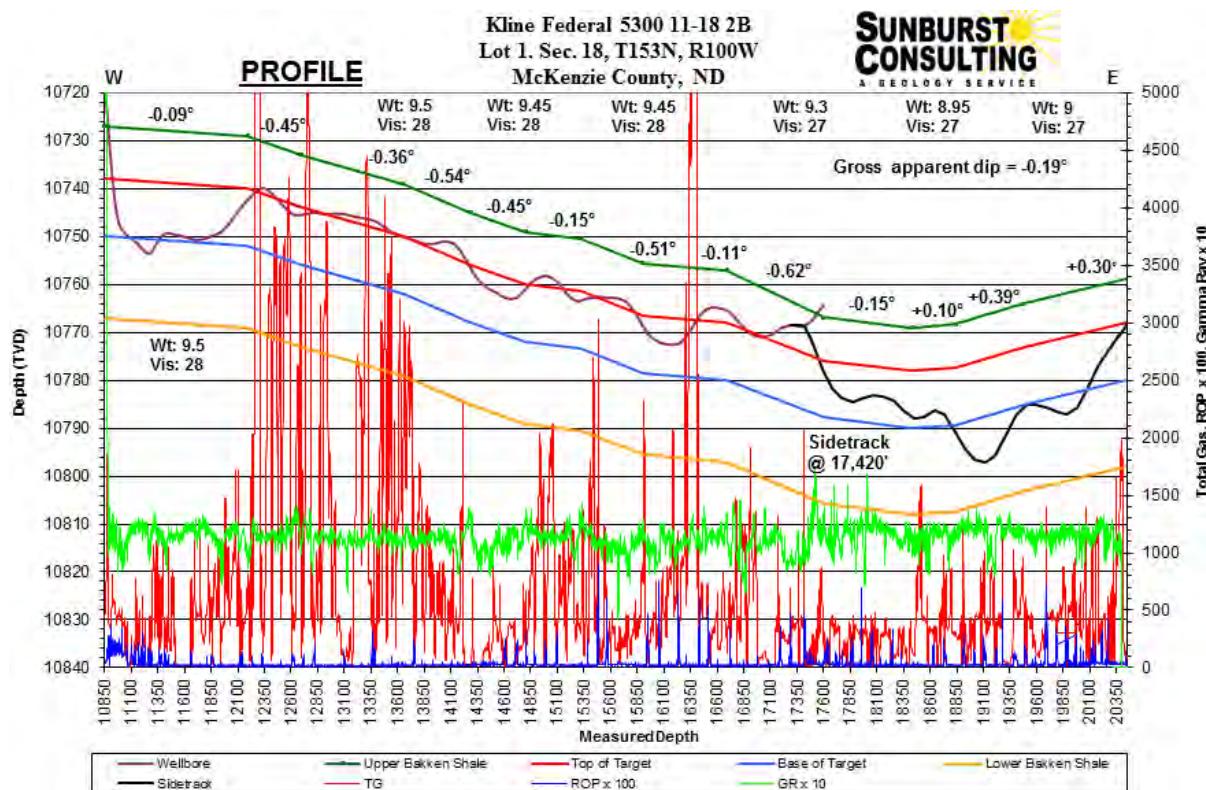


Figure 4. Cross-sectional interpretation of the *Kline Federal 5300 11-18 2B* borehole with total gas units and estimated dip based on lithology, MWD data, drill rate, and regional structural data.

SUMMARY

The Oasis Petroleum North America, LLC, *Kline Federal 5300 11-18 2B* lateral section was drilled by Xtreme 21, from re-entry to total depth, in 7 days. The well reached a total depth of 20,450' MD on June 6, 2015. Geologic data, hydrocarbon gas measurements, and sample examination indicate an encouraging Middle Bakken Member well. Multiple sections of higher gas were recorded through the lateral section. Positive connection and survey shows, exceeding 1,000 units, were recorded throughout the lateral. Samples from the target zone consisted of light brown to off white, silty sandstone and yielded a *moderate, pale yellow, streaming cut fluorescence* and poor to fair intergranular porosity. The well was within the targeted zone for 67% of the lateral and exposed 9,568' of potentially productive Middle Bakken Member to the well bore. The well currently awaits completion operations.

Respectfully submitted,
Ryan O'Donnell
Well Site Geologist
Sunburst Consulting, Inc.
June 6, 2015

WELL DATA SUMMARY

<u>OPERATOR:</u>	Oasis Petroleum North America, LLC.
<u>ADDRESS:</u>	1001 Fannin, Suite 1500 Houston, TX 77002
<u>WELL NAME:</u>	Kline Federal 5300 11-18 2B
<u>API #:</u>	33-053-06243-00-00
<u>WELL FILE #:</u>	29334
<u>SURFACE LOCATION:</u>	960' FNL & 318' FWL Lot 1 Section 18, T153N, R100W
<u>FIELD/ OBJECTIVE:</u>	Baker Field / Middle Bakken
<u>COUNTY, STATE</u>	McKenzie County, North Dakota
<u>BASIN:</u>	Williston
<u>WELL TYPE:</u>	Middle Bakken Horizontal
<u>ELEVATION:</u>	GL: 2,052' KB: 2,068'
<u>RE-ENTRY DATE:</u>	May 30, 2015
<u>BOTTOM HOLE LOCATION:</u>	111.86' south & 9,932.10' east of surface location or approx. 1,071.86 ' FNL & 296.01' FEL, NE NE Section 17, T153N, R100W
<u>CLOSURE COORDINATES:</u>	Closure Azimuth: 90.65° Closure Distance: 9,932.73'
<u>TOTAL DEPTH / DATE:</u>	20,450' on June 6, 2015 67% within target interval
<u>TOTAL DRILLING DAYS:</u>	8 Days
<u>CONTRACTOR:</u>	Xtreme #21

<u>PUMPS:</u>	Continental-Emsco F1600 (12" stroke length; 5 ½" liners) Output: 0.0838 bbls/stk at 95% efficiency
<u>TOOLPUSHERS:</u>	Josh Barkell, Allen Franklin
<u>FIELD SUPERVISORS:</u>	Dan Sandaker, Marty Amsbaugh, Miles Gordon
<u>CHEMICAL COMPANY:</u>	Mi Swaco
<u>MUD ENGINEER:</u>	Justin McNicholas
<u>MUD TYPE:</u>	Salt water in lateral
<u>MUD LOSSES:</u>	Not tracked
<u>PROSPECT GEOLOGIST:</u>	Curtis Johnson
<u>WELLSITE GEOLOGISTS:</u>	Dillon Johnson, Matt Hegland, Ryan O'Donnell
<u>GEOSTEERING SYSTEM:</u>	Sunburst Digital Wellsite Geological System
<u>ROCK SAMPLING:</u>	50' from 11,070' - 8,614'
<u>SAMPLE EXAMINATION:</u>	Binocular microscope & fluoroscope
<u>SAMPLE CUTS:</u>	Trichloroethylene
<u>GAS DETECTION:</u>	MSI (Mudlogging Systems, Inc.) TGC - total gas with chromatograph Serial Number(s): ML-488
<u>DIRECTIONAL DRILLERS:</u>	RPM Consulting, Inc. Marty Amsbaugh, Bruce Jorgenson, Derrick Ramsdell
<u>MWD:</u>	Gyro/data in vertical in curve Ryan Directional Service in lateral David Foley, David Unger
<u>CASING:</u>	Surface: 9 5/8" 36# J-55 set to 2,172' Intermediate: 7" 29# & 32# HCP-110 set to 11,024'
<u>SAFETY/ H₂S MONITORING:</u>	Oilind Safety

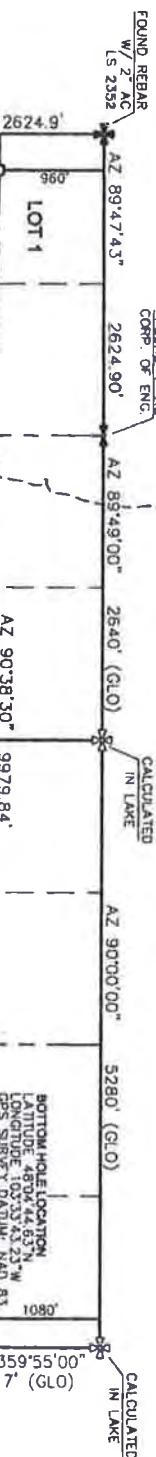
WELL LOCATION PLAT

OASIS PETROLEUM NORTH AMERICA, LLC

1001 FANNIN, SUITE 1500, HOUSTON, TX 77002

SECTION 18, T.15N4, R.100W, 60 P.M., MCKENZIE COUNTY, NORTH DAKOTA

900 FEET FROM NORTH LINE AND 310 FEET FROM WEST LINE



FOUND REBAR W/ 4 AC LS 2352

FOUND STONE

FOUND REBAR W/ 2 AC LS 2352

FOUND REBAR W/ 2 AC LS 2352

BOTTOM HOLE LOCATION
LATITUDE 49°44'53.84"N
LONGITUDE 103°33'43.23"W
GPS SURVEY DATUM: NAD 83
1080'
240'

2208' 1419' (GLO) 1056' (GLO)

1617' (GLO)

1617' (GLO)

LOT 1

LOT 3

LOT 4

SAKAWEA

LOT 1

LOT 3

LOT 4

MISSOURI RIVER
PER 1891 SURVEY

LOT 3

LOT 4

LOT 3

LOT 4

CALCULATED

IN LAKE

EDGE OF
LAKE

THIS DOCUMENT WAS ORIGINALLY
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STAKED ON 6/18/14
DATUM WAS BASED UPON
VERTICAL CONTROL POINT 4
WITH AN ELEVATION OF 2050.8'
THIS SURVEY AND PLAT IS BEING PROMPTED AT THE
REQUEST OF ERIC BAES OF OASIS PETROLEUM,
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 BELIEF.

♣ - MONUMENT – RECOVERED
✖ - MONUMENT – NOT RECOVERED



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Other offices in Montana, North Dakota and South Dakota

OASIS PETROLEUM NORTH AMERICA, LLC
WELL LOCATION PLAT
SECTION 18, T.15N4, R.100W

MCKENZIE COUNTY, NORTH DAKOTA
Surveyor: D.R.H. Project No.: 14-02-02
Checked By: D.R.H. Date: APR-2014

Section No.	Date	By	Description
REV 1	4/4/14	DRH	INITIAL SURVEY
REV 2	4/7/14	DRH	REVERSED LAYERS
REV 3	4/7/14	DRH	ADDED CHECKER BY 10' X 10'
REV 4	4/7/14	DRH	ADDED WELL NAME & SH
REV 5	4/7/14	DRH	CHANGED WELL NUMBER TO DRH

1/8



SECTION BREAKDOWN

OASIS PETROLEUM NORTH AMERICA, LLC

1001 FANNIN, SUITE 1500, HOUSTON, TX 77002

SECTIONS 17 & 18, T18SN, R100W, 30 P.M., MCKENZIE COUNTY, NORTH DAKOTA

800 FEET FROM NORTH LINE AND 318 FEET FROM WEST LINE

FOUND REBAR
W/ 2 AC
LS 2352

FOUND 4" AC
CORP. OF ENG.

FOUND 4" AC
IN LAKE

CALCULATED
IN LAKE

AZ 89°47'43" AZ 89°47'43" AZ 89°49'00" AZ 89°49'00"

AZ 89°47'43" AZ 89°49'00" AZ 89°49'00" AZ 89°49'00"

AZ 89°49'00" AZ 89°49'00" AZ 89°49'00" AZ 89°49'00"

AZ 89°49'00" AZ 89°49'00" AZ 89°49'00" AZ 89°49'00"

1310.63' 1314.27' 1320' (GLO) 1320' (GLO)

1312.45' 1313.96' 1315.48' 1320' (GLO)

1312.45' 1313.96' 1315.48' 1320' (GLO)

1310.75' 1315.36' 1320' (GLO) 1320' (GLO)

- MONUMENT - RECOVERED
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Billings, Montana 59120
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Fax: (406) 233-8818
www.interstateeng.com

OASIS PETROLEUM NORTH AMERICA, LLC
SECTION BREAKDOWN
SECTIONS 17 & 18, T18SN, R100W
MCKENZIE COUNTY, NORTH DAKOTA
Survey By: S.H.S. Project No.: 14-027
Checklist By: D.O.K. Date: NOV-2014

Number	Date	By	Description
KEY 1	1/28/15	S.H.S.	RECORDED
KEY 2	2/29/15	S.H.S.	RECORDED LATER
KEY 3	3/28/15	S.H.S.	RECORDED
KEY 4	4/28/15	S.H.S.	RECORDED
KEY 5	5/26/15	S.H.S.	RECORDED
KEY 6	5/27/15	S.H.S.	RECORDED

PAD LAYOUT

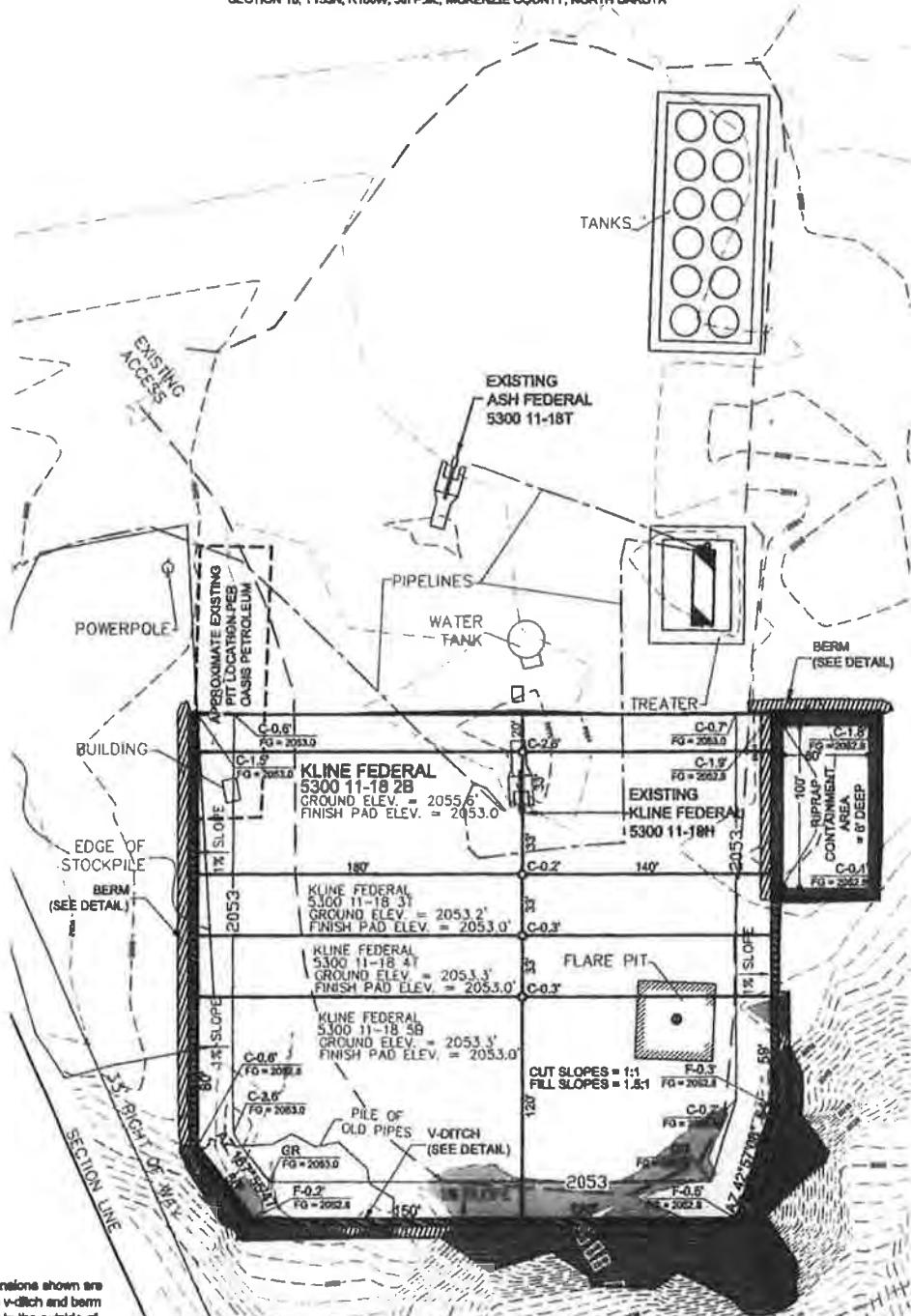
GASSIS PETROLEUM NORTH AMERICA, LLC

1001 FANNIN, SUITE 1500, HOUSTON, TX 77002

"KLINE FEDERAL 5300 11-18 2B"

860 FEET FROM NORTH LINE AND 318 FEET FROM WEST LINE

SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



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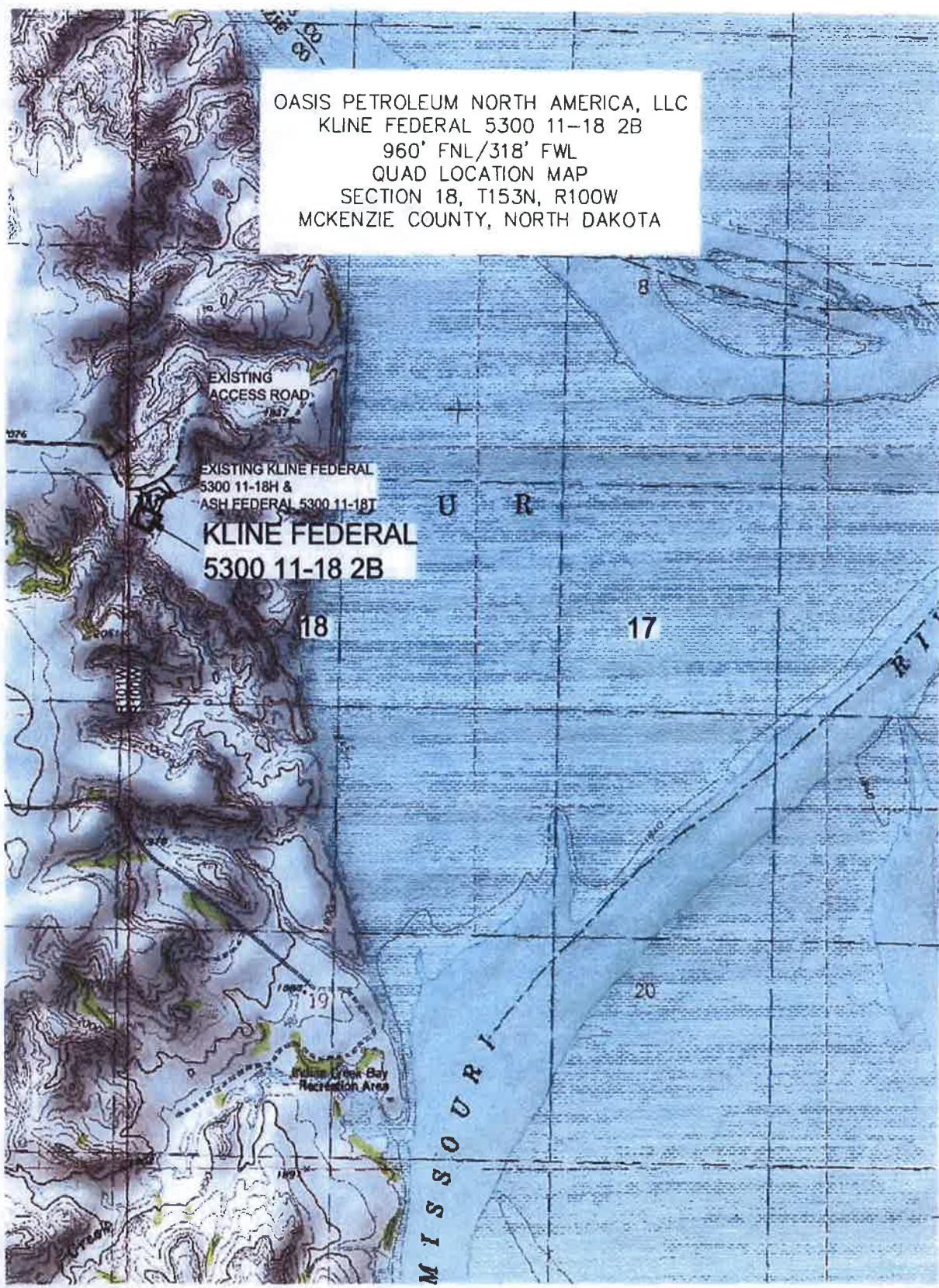
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428 East Main Street
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www.interstateengineering.com

GASSIS PETROLEUM NORTH AMERICA, LLC
PAD LAYOUT
SECTION 18, T153N, R100W
MCKENZIE COUNTY, NORTH DAKOTA

Prepared By: B.M.H. Project No.: BX4-12-027

Checked By: D.D.K. Date: 01/29/15

Number	Date	By	Description
REV 1	4/17/14	BBM	INITIAL DRAWINGS
REV 2	5/7/14	BBM	REVISED LAYERS
REV 3	5/29/14	BBM	ADDED CONTINUOUS PT IN PAD
REV 4	5/29/14	BBM	CHANGED WALL THICKNESS & SHP
REV 5	5/29/14	BBM	CHANGED WALL THICKNESS & SHP



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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.: S14-09-127
 Checked By: D.D.K. Date: APRIL 2014

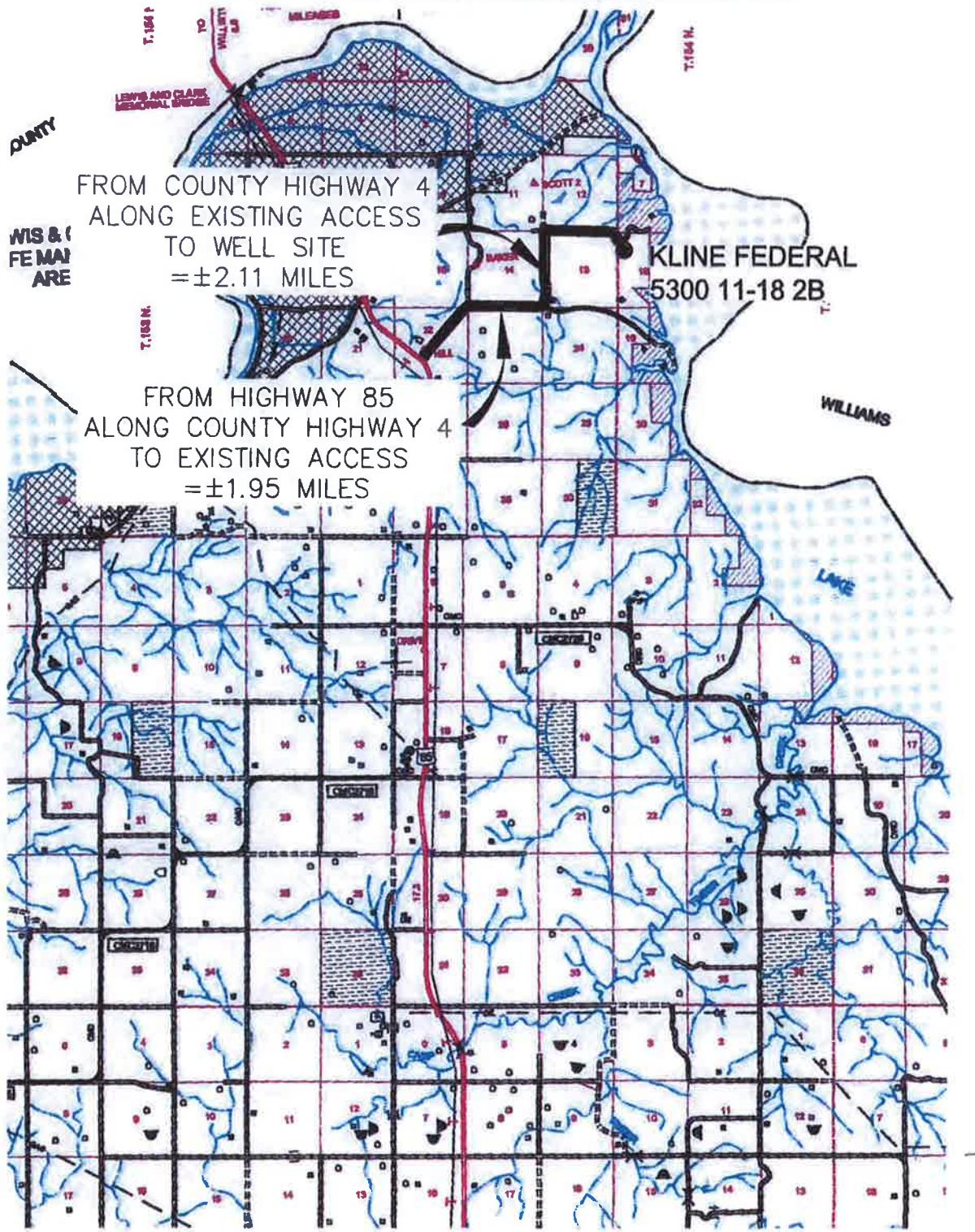
Revision No.	Date	By	Description
REV 1	4/15/14	BBH	HOSED HULLS
REV 2	4/21/14	BBH	REMOVED LAYLINE
REV 3	4/29/14	BBH	ADDED EXISTING PIT TO PAD LAYOUT
REV 4	5/29/14	BBH	CHANGED WELL NAME & SP
REV 5	5/27/14	BBH	CHANGED WELL NAME & SP

COUNTY ROAD MAP

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

"KLINE FEDERAL 5300 11-18 2B"

960 FEET FROM NORTH LINE AND 318 FEET FROM WEST LINE
SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



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SHEET NO.

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Other offices in Montana, North Dakota and South Dakota

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

Revision No.	Date	By	Description
REV 1	4/17/14	BHM	Moved wells
REV 2	4/29/14	JJS	Revised layout
REV 3	4/29/14	JJS	Added existing mtg pho layout
REV 4	5/25/14	JJS	Changed well name & SHL
REV 5	1/27/15	BHM	Changed well names & SHL

Drawn By:

Project No.:

Checked By:

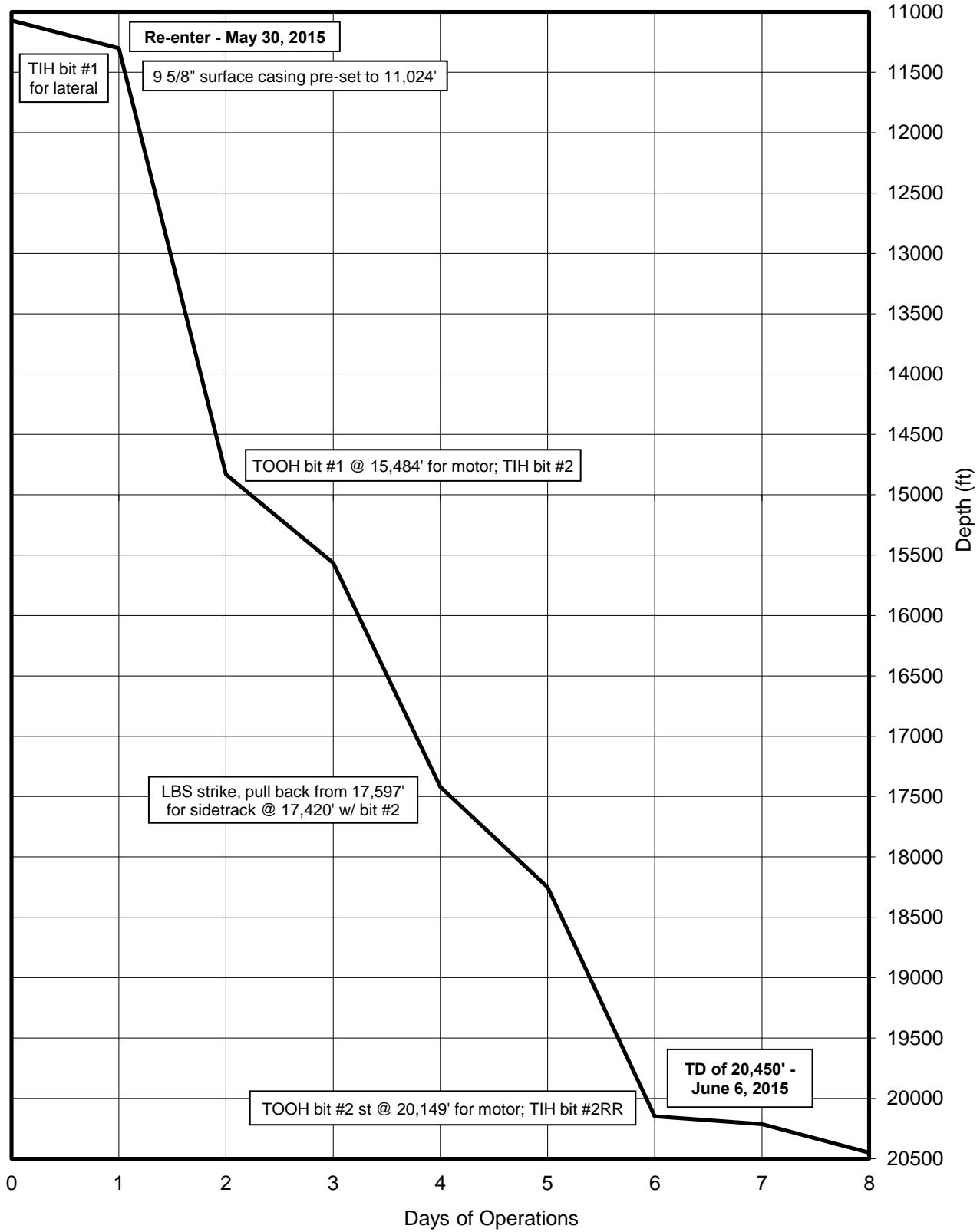
Date:

APRIL 2014

TIME VS. DEPTH

Oasis Petroleum North America, LLC.

Kline Federal 5300 11-18 2B



MORNING REPORT SUMMARY

Day	Date 2015	Depth (0600 Hrs)	24 Hr Footage	Bit #	WOB (Klbs RT)	RPM (RT)	WOB (Klbs MM)	RPM (MM)	PP	SPM 1	SPM 2	GPM	24 Hr Activity Summary		Formation
													Prep to skid rig.	Skid rig. Test BOP. Pick up BHA. TH. Slip and cut. Drill out cement. FIT test. Drill F/11,070'-11,265'.	
0	5/30	11,070'	-	-	-	-	-	-	-	-	-	-	Prepare to skid rig.	Middle Bakken	
1	5/31	11,300'	230	1	10	44	15	328	3300	0	89	318	Drill F/12,882'-14,830'.	Middle Bakken	
2	6/1	14,830'	3530	1	14	45	28	334	4150	0	90	324	Drill F/11,300'-12,882'. Lubricate rig. Drill F/12,882'-14,830'.	Middle Bakken	
3	6/2	15,565'	735	2	12	44	67	334	4130	0	90	324	Drill F/14,830'-15,484'. Pump dry pill. TOOH. Pick up new BHA. TH. Drill F/15,484'-15,565'.	Middle Bakken	
4	6/3	17,420'	1855	2	11	40	26	331	3900	0	90	321	Drill F/15,565'-16,824'. Lubricate rig. Drill F/16,824'-17,597'. Pull two stands and trough at 160 left. Time drilling.	Middle Bakken	
5	6/4	18,252'	832	2	12	40	32	331	3950	0	90	321	Time drilling. Lubricate rig. Drill F/17,438'-18,252'.	Middle Bakken	
6	6/5	20,149'	1897	2	10	39	30	331	4050	89	0	321	Drill F/18,252'-19,507'. Lubricate rig. Drill F/19,507'-20,149'. Circulate. TOOH.	Middle Bakken	
7	6/6	20,214'	65	2 RR	15	40	40	143	2900	81	0	292	Ream. Verify sidetrack. Pump dry pill. TOOH. Cut & slip. Pick up BHA. TH. Circulate. Ream sidetrack. Lubricate rig. Drill F/20,149'-20,214'.	Middle Bakken	
8	6/7	20,450'	236	2 RR	15	40	50	143	2900	81	0	292	Drill F/20,214'-20,450'. Circulate bottoms up. TOOH.	Middle Bakken	

DAILY MUD SUMMARY

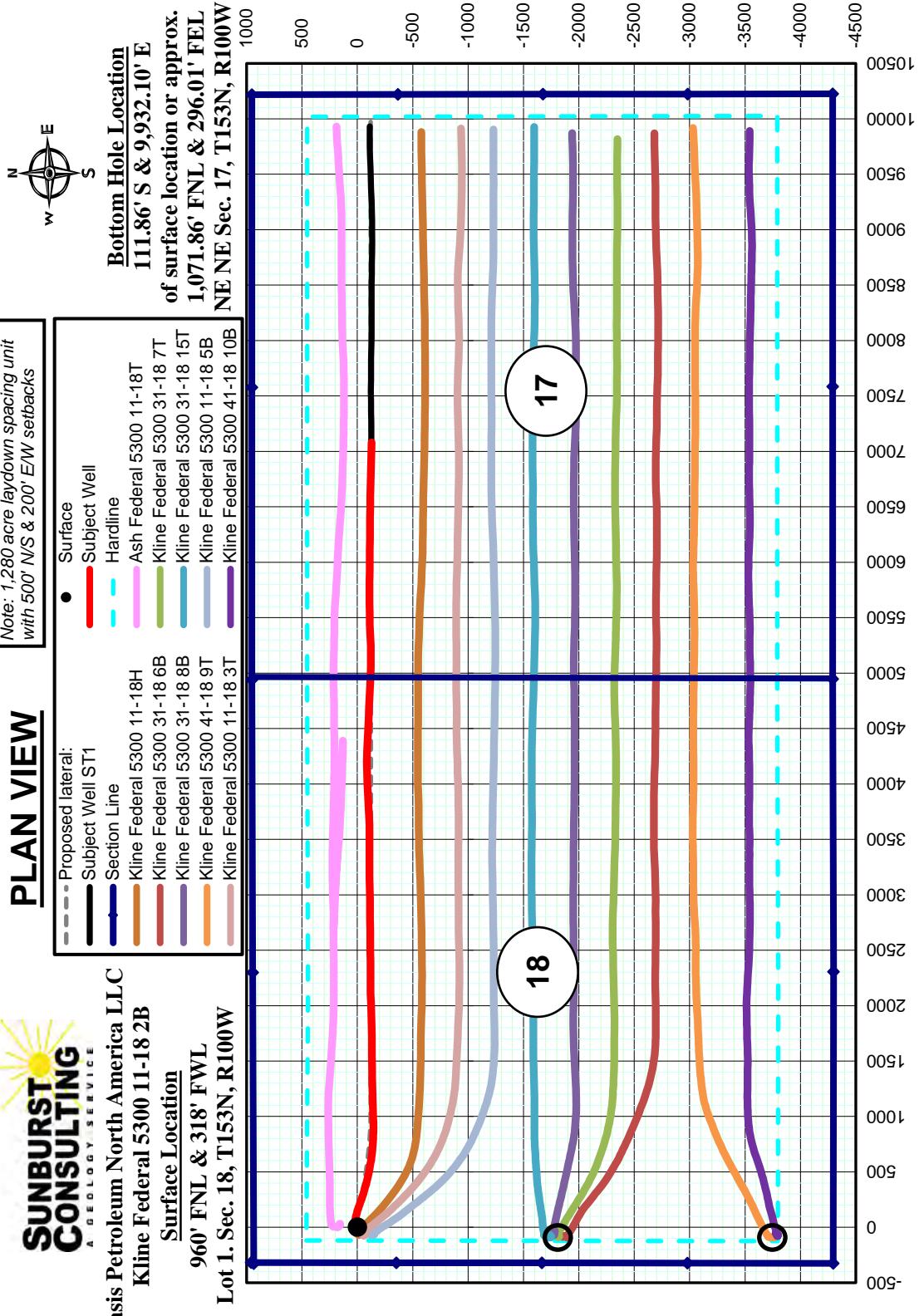
BOTTOM HOLE ASSEMBLY RECORD

Bit #	Bit Data							Motor Data				Reason For Removal			
	Size (in.)	Type	Make	Model	Depth In	Depth Out	Footage	Hours	Σ hrs	Vert. Dev.	Make	Model	Bend	Rev/Gal	
1	6	PDC	Halliburton	MM64	11,070'	15,484'	4,414'	31	31	Lateral	Baker	-	1.50°	1.03	Low ROP
2	6	PDC	Halliburton	MM64	15,484'	17,597'	2,113'	17	48	Lateral	Baker	-	1.50°	1.03	-
2 RR	6	PDC	Halliburton	MM64	17,420'	20,149'	2,729'	32.5	80.5	Sidetrack	Baker	-	1.50°	1.03	Low ROP
2 RR	6	PDC	Halliburton	MM64	20,149'	20,450'	301'	3.2	83.7	Sidetrack	Baker	XLLS	1.50°	0.49	TD lateral



PLAN VIEW

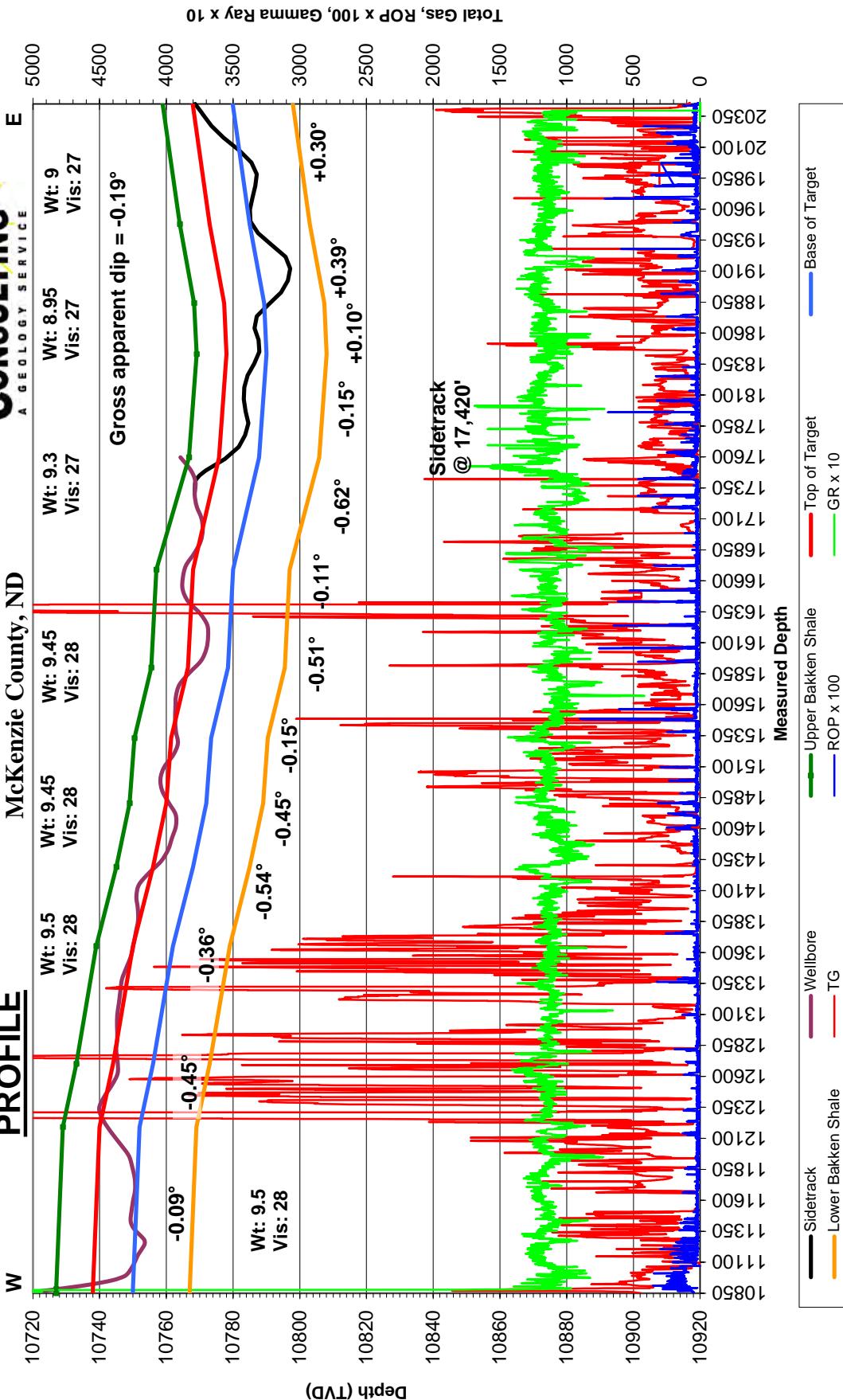
Note: 1,280 acre laydown spacing unit
with 500' N/S & 200' E/W setbacks



Oasis Petroleum North America LLC
Kline Federal 5300 11-18 2B
Lot 1. Sec. 18, T153N, R100W
McKenzie County, ND



PROFILE



FORMATION MARKERS & DIP ESTIMATES

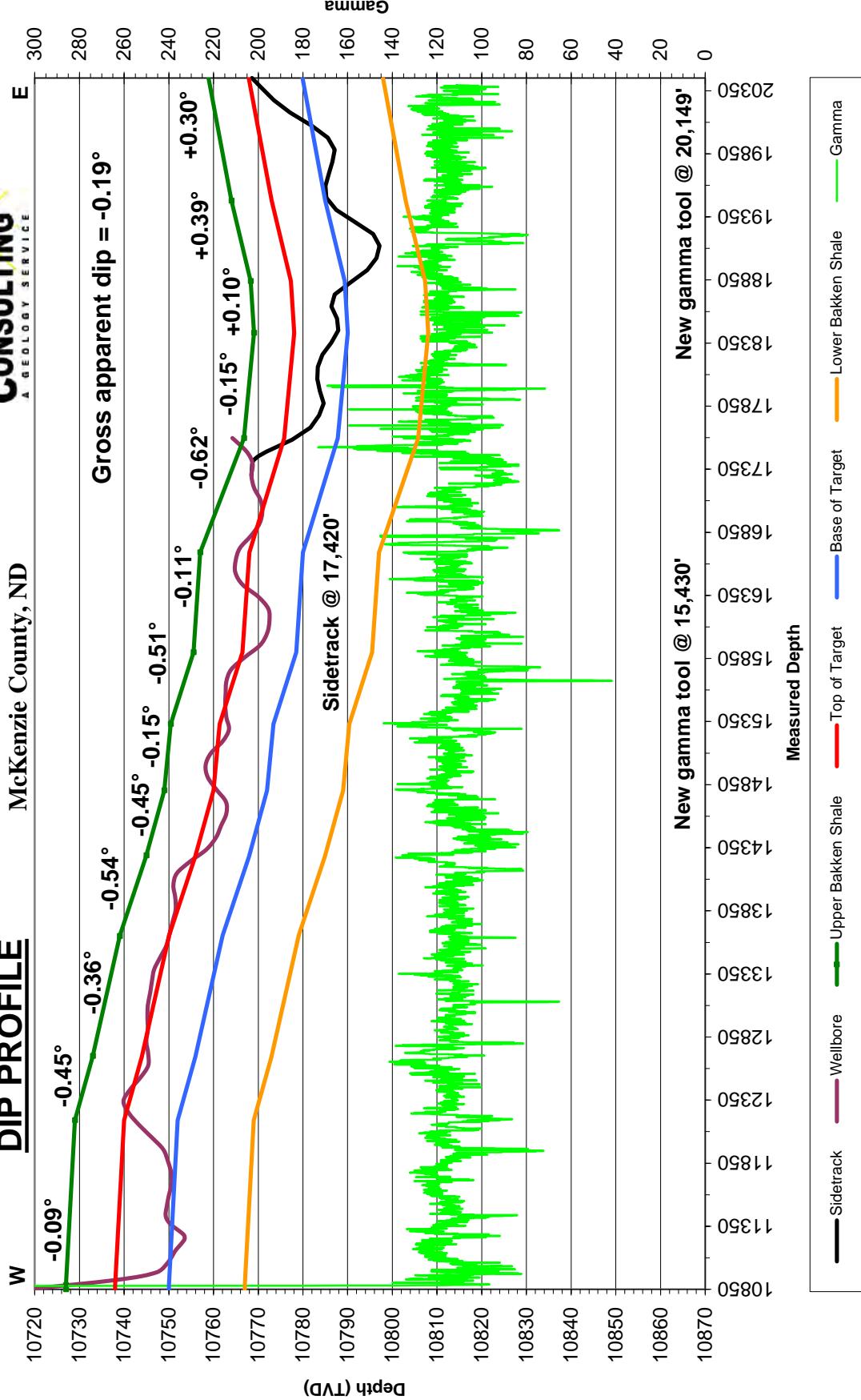
Oasis Petroleum North America LLC - Kline Federal/5300 11-18 2B

Dip Change Points	MD	TVD	TVD diff.	MD diff.	Dip	Dipping up/down	Type of Marker
Marker							
Middle Bakken Top	10,882'	10,727.00					Gamma
Projected Middle Bakken Top	12,190'	10,729.00	2.00	1308.00	-0.09	Down	Gamma
Projected Middle Bakken Top	12,700'	10,733.00	4.00	510.00	-0.45	Down	Gamma/Deflect
Projected Middle Bakken Top	13,650'	10,739.00	6.00	950.00	-0.36	Down	Gamma/Deflect
Projected Middle Bakken Top	14,290'	10,745.00	6.00	640.00	-0.54	Down	Gamma
Projected Middle Bakken Top	14,805'	10,749.00	4.00	515.00	-0.45	Down	Gamma
Projected Middle Bakken Top	15,330'	10,750.40	1.40	525.00	-0.15	Down	Gamma
Projected Middle Bakken Top	15,900'	10,755.50	5.10	570.00	-0.51	Down	Gamma
Projected Middle Bakken Top	16,690'	10,757.00	1.50	790.00	-0.11	Down	Gamma
Projected Middle Bakken Top	17,597'	10,766.81	9.81	907.00	-0.62	Down	Gamma
Projected Middle Bakken Top	18,430'	10,769.04	2.23	833.00	-0.15	Down	Gamma
Projected Middle Bakken Top	18,840'	10,768.33	-0.72	410.00	0.10	Up	Gamma
Projected Middle Bakken Top	19,478'	10,764.00	-4.33	638.00	0.39	Up	Gamma
Projected Middle Bakken Top	20,450'	10,758.90	-5.10	972.00	0.30	Up	Gamma
Gross Dip							
Initial Middle Bakken Top	10,882'	10,727.00					
Projected Final M. Bakken Top	20,450'	10,758.90	31.90	9568.00	-0.19	Down	Projection

Oasis Petroleum North America LLC
 Kline Federal 5300 11-18 2B
 Lot 1. Sec. 18, T153N, R100W
 McKenzie County, ND



DIP PROFILE



<

SUNBURST CONSULTING, INC.

>

Operator:	Oasis Petroleum North America LLC	Kick-off:	5/30/2015
Well:	Kline Federal 5300 11-18 2B	Finish:	6/3/2015
Surface Coordinates:	960' FNL & 318' FWL		
Surface Location:	Lot 1, Sec. 18, T153N, R100W		
County State:	McKenzie County, ND	Directional Supervision:	RPM Directional Inc.

Minimum Curvature Method (SPE-3362)

Proposed dir [] 90

[North and East are positive and South and West are negative, relative to surface location]

No.	MD	INC	TRUE				DLS/ 100
			AZM	TVD	N-S	E-W	
Tie	2081.00	0.90	135.20	2080.88	5.76	-5.35	-5.35 0.38
1	2176.00	1.60	146.20	2175.86	4.13	-4.09	-4.09 0.78
2	2270.00	1.70	152.90	2269.82	1.80	-2.72	-2.72 0.23
3	2365.00	1.00	160.10	2364.79	-0.24	-1.80	-1.80 0.76
4	2459.00	0.70	163.90	2458.78	-1.56	-1.36	-1.36 0.32
5	2553.00	0.50	263.40	2552.78	-2.16	-1.61	-1.61 0.98
6	2647.00	0.80	284.50	2646.77	-2.04	-2.65	-2.65 0.40
7	2742.00	1.50	298.80	2741.75	-1.28	-4.38	-4.38 0.79
8	2836.00	1.90	300.00	2835.71	0.10	-6.81	-6.81 0.43
9	2930.00	2.30	305.70	2929.65	1.97	-9.69	-9.69 0.48
10	3024.00	1.10	321.10	3023.60	3.78	-11.79	-11.79 1.35
11	3119.00	1.40	328.70	3118.58	5.48	-12.96	-12.96 0.36
12	3213.00	1.20	34.40	3212.56	7.27	-13.00	-13.00 1.51
13	3307.00	1.20	47.50	3306.54	8.75	-11.72	-11.72 0.29
14	3401.00	0.90	36.20	3400.53	10.01	-10.56	-10.56 0.39
15	3495.00	1.00	36.90	3494.51	11.26	-9.63	-9.63 0.11
16	3590.00	0.70	43.50	3589.50	12.35	-8.74	-8.74 0.33
17	3684.00	0.80	33.50	3683.49	13.31	-7.98	-7.98 0.17
18	3778.00	0.60	41.60	3777.49	14.22	-7.29	-7.29 0.24
19	3872.00	0.50	37.40	3871.48	14.92	-6.71	-6.71 0.11
20	3966.00	0.40	14.70	3965.48	15.56	-6.38	-6.38 0.22
21	4060.00	0.30	25.70	4059.48	16.10	-6.19	-6.19 0.13
22	4154.00	0.40	346.40	4153.48	16.64	-6.16	-6.16 0.27
23	4248.00	0.50	76.80	4247.47	17.05	-5.84	-5.84 0.68
24	4343.00	0.50	84.90	4342.47	17.19	-5.02	-5.02 0.07
25	4437.00	0.40	36.40	4436.47	17.49	-4.42	-4.42 0.41
26	4531.00	0.30	48.60	4530.47	17.91	-4.04	-4.04 0.13
27	4625.00	0.40	217.00	4624.47	17.81	-4.05	-4.05 0.74
28	4720.00	0.40	225.60	4719.46	17.32	-4.49	-4.49 0.06
29	4813.00	0.40	330.20	4812.46	17.37	-4.88	-4.88 0.68
30	4907.00	0.50	128.90	4906.46	17.40	-4.73	-4.73 0.94
31	5001.00	0.60	143.20	5000.46	16.75	-4.11	-4.11 0.18
32	5095.00	0.40	207.70	5094.45	16.06	-3.97	-3.97 0.60
33	5190.00	0.30	193.10	5189.45	15.53	-4.18	-4.18 0.14
34	5284.00	0.60	181.00	5283.45	14.79	-4.25	-4.25 0.33
35	5378.00	0.80	158.90	5377.44	13.69	-4.02	-4.02 0.35
36	5472.00	0.80	177.40	5471.43	12.42	-3.75	-3.75 0.27
37	5567.00	1.10	185.80	5566.42	10.85	-3.81	-3.81 0.35

<

SUNBURST CONSULTING, INC.

>

Operator:	Oasis Petroleum North America LLC	Kick-off:	5/30/2015
Well:	Kline Federal 5300 11-18 2B	Finish:	6/3/2015
Surface Coordinates:	960' FNL & 318' FWL		
Surface Location:	Lot 1, Sec. 18, T153N, R100W		
County State:	McKenzie County, ND	Directional Supervision:	RPM Directional Inc.

Minimum Curvature Method (SPE-3362)

Proposed dir 90

[North and East are positive and South and West are negative, relative to surface location]

No.	MD	INC	TRUE				SECT	DLS/ 100
			AZM	TVD	N-S	E-W		
38	5661.00	1.10	202.30	5660.40	9.12	-4.25	-4.25	0.34
39	5755.00	0.60	98.20	5754.40	8.22	-4.10	-4.10	1.46
40	5850.00	0.60	89.90	5849.39	8.15	-3.11	-3.11	0.09
41	5944.00	0.70	54.60	5943.39	8.48	-2.15	-2.15	0.43
42	6038.00	0.70	36.50	6037.38	9.27	-1.34	-1.34	0.23
43	6132.00	0.80	38.60	6131.37	10.25	-0.59	-0.59	0.11
44	6226.00	1.20	26.10	6225.36	11.64	0.25	0.25	0.48
45	6320.00	1.40	22.00	6319.33	13.59	1.11	1.11	0.23
46	6414.00	1.20	62.70	6413.31	15.11	2.42	2.42	0.98
47	6509.00	1.30	47.90	6508.29	16.29	4.10	4.10	0.35
48	6603.00	1.40	37.00	6602.26	17.92	5.58	5.58	0.29
49	6697.00	1.10	52.80	6696.24	19.38	6.99	6.99	0.48
50	6791.00	1.10	71.10	6790.22	20.22	8.57	8.57	0.37
51	6885.00	0.90	72.50	6884.21	20.73	10.12	10.12	0.21
52	6979.00	1.10	38.50	6978.19	21.66	11.39	11.39	0.65
53	7073.00	1.20	73.50	7072.18	22.65	12.90	12.90	0.74
54	7167.00	0.80	101.80	7166.16	22.79	14.48	14.48	0.66
55	7262.00	1.00	127.00	7261.15	22.16	15.79	15.79	0.46
56	7356.00	0.90	118.50	7355.14	21.31	17.10	17.10	0.18
57	7450.00	1.00	121.00	7449.13	20.54	18.45	18.45	0.12
58	7544.00	0.70	113.20	7543.12	19.89	19.68	19.68	0.34
59	7639.00	0.90	108.40	7638.11	19.43	20.92	20.92	0.22
60	7733.00	1.00	107.40	7732.09	18.95	22.40	22.40	0.11
61	7827.00	1.10	95.80	7826.08	18.61	24.08	24.08	0.25
62	7921.00	0.80	82.00	7920.06	18.61	25.63	25.63	0.40
63	8015.00	0.80	89.90	8014.06	18.70	26.94	26.94	0.12
64	8109.00	0.70	82.20	8108.05	18.78	28.16	28.16	0.15
65	8203.00	0.60	108.20	8202.04	18.71	29.20	29.20	0.33
66	8298.00	0.50	118.60	8297.04	18.35	30.04	30.04	0.15
67	8392.00	0.50	108.30	8391.03	18.03	30.79	30.79	0.10
68	8486.00	0.50	89.80	8485.03	17.90	31.58	31.58	0.17
69	8580.00	0.60	102.80	8579.03	17.79	32.48	32.48	0.17
70	8674.00	0.70	110.80	8673.02	17.48	33.49	33.49	0.14
71	8769.00	0.60	115.20	8768.01	17.06	34.48	34.48	0.12
72	8863.00	0.60	133.30	8862.01	16.52	35.29	35.29	0.20
73	8957.00	0.40	114.20	8956.00	16.04	35.95	35.95	0.27
74	9051.00	0.40	118.30	9050.00	15.75	36.53	36.53	0.03
75	9145.00	0.70	97.20	9144.00	15.53	37.39	37.39	0.38

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SUNBURST CONSULTING, INC.

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Operator:	Oasis Petroleum North America LLC	Kick-off:	5/30/2015
Well:	Kline Federal 5300 11-18 2B	Finish:	6/3/2015
Surface Coordinates:	960' FNL & 318' FWL		
Surface Location:	Lot 1, Sec. 18, T153N, R100W		
County State:	McKenzie County, ND	Directional Supervision:	RPM Directional Inc.

Minimum Curvature Method (SPE-3362)

Proposed dir [] 90

[North and East are positive and South and West are negative, relative to surface location]

No.	MD	INC	TRUE				DLS/ 100
			AZM	TVD	N-S	E-W	
76	9240.00	0.20	343.00	9239.00	15.61	37.92	37.92 0.85
77	9334.00	0.20	335.80	9333.00	15.92	37.80	37.80 0.03
78	9428.00	0.40	38.40	9426.99	16.32	37.94	37.94 0.38
79	9523.00	0.50	27.20	9521.99	16.95	38.34	38.34 0.14
80	9617.00	0.60	10.90	9615.99	17.80	38.62	38.62 0.20
81	9711.00	0.50	2.40	9709.98	18.69	38.73	38.73 0.14
82	9805.00	0.50	354.20	9803.98	19.51	38.70	38.70 0.08
83	9899.00	0.50	330.90	9897.98	20.28	38.46	38.46 0.21
84	9993.00	0.60	353.10	9991.97	21.13	38.20	38.20 0.25
85	10087.00	0.70	0.00	10085.97	22.19	38.14	38.14 0.13
86	10171.00	1.00	11.90	10169.96	23.42	38.30	38.30 0.41
87	10201.00	1.00	4.30	10199.95	23.94	38.37	38.37 0.44
88	10232.00	1.50	58.70	10230.94	24.42	38.74	38.74 3.96
89	10263.00	4.40	88.80	10261.90	24.65	40.27	40.27 10.30
90	10295.00	7.40	97.40	10293.73	24.41	43.54	43.54 9.75
91	10326.00	11.10	97.50	10324.32	23.77	48.48	48.48 11.94
92	10357.00	14.50	98.30	10354.55	22.82	55.28	55.28 10.98
93	10389.00	17.50	100.70	10385.30	21.34	63.98	63.98 9.60
94	10420.00	20.90	103.40	10414.58	19.20	73.94	73.94 11.33
95	10452.00	24.20	104.50	10444.12	16.23	85.85	85.85 10.40
96	10483.00	27.20	104.60	10472.06	12.85	98.86	98.86 9.68
97	10514.00	30.20	104.80	10499.24	9.07	113.25	113.25 9.68
98	10546.00	33.30	105.00	10526.45	4.74	129.52	129.52 9.69
99	10577.00	36.40	105.90	10551.89	0.02	146.59	146.59 10.14
100	10609.00	39.70	107.80	10577.09	-5.71	165.46	165.46 10.94
101	10640.00	43.20	109.50	10600.32	-12.28	184.90	184.90 11.86
102	10671.00	46.60	110.40	10622.27	-19.75	205.46	205.46 11.16
103	10703.00	50.10	110.40	10643.54	-28.08	227.87	227.87 10.94
104	10734.00	53.80	109.50	10662.64	-36.40	250.81	250.81 12.15
105	10766.00	57.80	108.00	10680.62	-44.90	275.87	275.87 13.09
106	10797.00	62.90	106.70	10695.96	-52.92	301.58	301.58 16.85
107	10828.00	67.30	106.40	10709.00	-60.93	328.53	328.53 14.22
108	10860.00	71.50	105.70	10720.26	-69.21	357.31	357.31 13.28
109	10891.00	73.50	105.60	10729.58	-77.18	385.78	385.78 6.46
110	10922.00	76.40	104.50	10737.63	-84.95	414.68	414.68 9.96
111	10954.00	81.30	103.40	10743.82	-92.52	445.14	445.14 15.68
112	10985.00	85.90	102.10	10747.27	-99.31	475.18	475.18 15.41
113	11007.00	88.40	100.60	10748.37	-103.64	496.72	496.72 13.25

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SUNBURST CONSULTING, INC.

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Operator:	Oasis Petroleum North America LLC	Kick-off:	5/30/2015
Well:	Kline Federal 5300 11-18 2B	Finish:	6/3/2015
Surface Coordinates:	960' FNL & 318' FWL		
Surface Location:	Lot 1, Sec. 18, T153N, R100W	Directional Supervision:	
County State:	McKenzie County, ND	RPM Directional Inc.	

Minimum Curvature Method (SPE-3362)

Proposed dir 90

[North and East are positive and South and West are negative, relative to surface location]

No.	MD	INC	TRUE				SECT	DLS/ 100
			AZM	TVD	N-S	E-W		
114	11032.00	88.40	101.10	10749.06	-108.34	521.27	521.27	2.00
115	11063.00	88.90	100.50	10749.79	-114.15	551.71	551.71	2.52
116	11094.00	88.80	100.70	10750.42	-119.85	582.17	582.17	0.72
117	11124.00	89.30	98.80	10750.91	-124.93	611.73	611.73	6.55
118	11155.00	88.80	97.30	10751.43	-129.27	642.42	642.42	5.10
119	11186.00	88.50	96.10	10752.16	-132.89	673.20	673.20	3.99
120	11217.00	88.70	95.40	10752.92	-135.99	704.04	704.04	2.35
121	11248.00	89.10	93.90	10753.51	-138.50	734.93	734.93	5.01
122	11279.00	91.30	93.60	10753.40	-140.53	765.86	765.86	7.16
123	11310.00	92.30	92.90	10752.43	-142.29	796.79	796.79	3.94
124	11341.00	92.10	92.80	10751.24	-143.83	827.73	827.73	0.72
125	11372.00	91.60	91.70	10750.24	-145.04	858.69	858.69	3.90
126	11403.00	90.80	90.80	10749.59	-145.72	889.68	889.68	3.88
127	11434.00	90.30	89.10	10749.29	-145.69	920.68	920.68	5.72
128	11465.00	89.60	88.10	10749.32	-144.93	951.67	951.67	3.94
129	11495.00	89.80	88.20	10749.48	-143.97	981.65	981.65	0.75
130	11588.00	89.60	87.80	10749.96	-140.72	1074.59	1074.59	0.48
131	11681.00	89.60	88.50	10750.61	-137.72	1167.54	1167.54	0.75
132	11773.00	90.50	88.30	10750.53	-135.15	1259.50	1259.50	1.00
133	11865.00	90.40	89.30	10749.81	-133.22	1351.48	1351.48	1.09
134	11960.00	90.90	89.50	10748.73	-132.23	1446.47	1446.47	0.57
135	12055.00	92.20	89.70	10746.16	-131.57	1541.43	1541.43	1.38
136	12150.00	91.10	89.80	10743.43	-131.15	1636.39	1636.39	1.16
137	12245.00	91.70	89.10	10741.11	-130.24	1731.35	1731.35	0.97
138	12340.00	89.80	89.20	10739.86	-128.83	1826.33	1826.33	2.00
139	12434.00	88.40	87.80	10741.34	-126.37	1920.28	1920.28	2.11
140	12529.00	88.80	87.60	10743.66	-122.56	2015.18	2015.18	0.47
141	12623.00	89.10	88.80	10745.38	-119.61	2109.11	2109.11	1.32
142	12719.00	90.90	90.30	10745.38	-118.85	2205.10	2205.10	2.44
143	12814.00	89.60	89.90	10744.97	-119.02	2300.10	2300.10	1.43
144	12910.00	90.00	89.50	10745.30	-118.52	2396.10	2396.10	0.59
145	13005.00	90.10	89.50	10745.22	-117.69	2491.09	2491.09	0.11
146	13100.00	89.80	89.30	10745.30	-116.69	2586.09	2586.09	0.38
147	13195.00	89.60	89.60	10745.80	-115.78	2681.08	2681.08	0.38
148	13290.00	89.90	89.60	10746.21	-115.12	2776.08	2776.08	0.32
149	13384.00	89.50	89.40	10746.71	-114.30	2870.07	2870.07	0.48
150	13480.00	88.90	89.00	10748.05	-112.96	2966.05	2966.05	0.75
151	13574.00	89.40	89.10	10749.44	-111.40	3060.03	3060.03	0.54

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SUNBURST CONSULTING, INC.

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Operator:	Oasis Petroleum North America LLC	Kick-off:	5/30/2015
Well:	Kline Federal 5300 11-18 2B	Finish:	6/3/2015
Surface Coordinates:	960' FNL & 318' FWL		
Surface Location:	Lot 1, Sec. 18, T153N, R100W		
County State:	McKenzie County, ND	Directional Supervision:	RPM Directional Inc.

Minimum Curvature Method (SPE-3362)

Proposed dir [] 90

[North and East are positive and South and West are negative, relative to surface location]

No.	MD	INC	TRUE				DLS/ 100
			AZM	TVD	N-S	E-W	
152	13671.00	89.70	88.70	10750.20	-109.54	3157.01	3157.01 0.52
153	13765.00	89.50	90.30	10750.86	-108.72	3251.00	3251.00 1.72
154	13860.00	89.70	90.20	10751.52	-109.13	3346.00	3346.00 0.24
155	13956.00	90.40	90.40	10751.44	-109.63	3442.00	3442.00 0.76
156	14051.00	90.10	89.90	10751.02	-109.88	3536.99	3536.99 0.61
157	14146.00	89.00	88.00	10751.77	-108.14	3631.97	3631.97 2.31
158	14240.00	87.40	86.80	10754.72	-103.88	3725.82	3725.82 2.13
159	14335.00	88.20	87.30	10758.37	-98.99	3820.62	3820.62 0.99
160	14431.00	89.20	87.60	10760.55	-94.72	3916.50	3916.50 1.09
161	14525.00	89.40	86.90	10761.70	-90.22	4010.39	4010.39 0.77
162	14620.00	89.20	88.60	10762.86	-86.49	4105.30	4105.30 1.80
163	14714.00	90.90	90.40	10762.78	-85.67	4199.29	4199.29 2.63
164	14809.00	91.60	92.20	10760.70	-87.82	4294.24	4294.24 2.03
165	14907.00	90.70	92.60	10758.74	-91.92	4392.13	4392.13 1.00
166	15003.00	89.90	92.90	10758.23	-96.53	4488.02	4488.02 0.89
167	15099.00	88.70	92.60	10759.41	-101.13	4583.90	4583.90 1.29
168	15194.00	88.10	92.20	10762.06	-105.11	4678.78	4678.78 0.76
169	15288.00	90.20	92.80	10763.45	-109.21	4772.68	4772.68 2.32
170	15382.00	90.50	92.90	10762.88	-113.88	4866.56	4866.56 0.34
171	15478.00	89.80	92.40	10762.63	-118.32	4962.45	4962.45 0.90
172	15573.00	90.10	91.00	10762.71	-121.14	5057.41	5057.41 1.51
173	15668.00	89.70	89.80	10762.88	-121.80	5152.40	5152.40 1.33
174	15763.00	89.00	88.40	10763.95	-120.31	5247.38	5247.38 1.65
175	15859.00	87.40	87.00	10766.97	-116.46	5343.25	5343.25 2.21
176	15955.00	88.50	88.30	10770.40	-112.53	5439.11	5439.11 1.77
177	16051.00	89.60	89.40	10772.00	-110.60	5535.07	5535.07 1.62
178	16148.00	89.80	89.20	10772.50	-109.42	5632.06	5632.06 0.29
179	16244.00	90.50	90.10	10772.25	-108.83	5728.06	5728.06 1.19
180	16340.00	92.20	91.30	10769.99	-110.00	5824.02	5824.02 2.17
181	16436.00	92.00	90.80	10766.47	-111.76	5919.94	5919.94 0.56
182	16532.00	89.90	90.00	10764.88	-112.43	6015.92	6015.92 2.34
183	16628.00	90.00	90.30	10764.96	-112.68	6111.92	6111.92 0.33
184	16724.00	88.90	90.20	10765.89	-113.10	6207.91	6207.91 1.15
185	16820.00	88.20	90.30	10768.31	-113.52	6303.88	6303.88 0.74
186	16916.00	89.50	90.80	10770.24	-114.44	6399.85	6399.85 1.45
187	17012.00	89.70	90.90	10770.91	-115.87	6495.84	6495.84 0.23
188	17106.00	90.80	91.30	10770.50	-117.67	6589.82	6589.82 1.25
189	17202.00	90.90	91.10	10769.08	-119.68	6685.79	6685.79 0.23

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SUNBURST CONSULTING, INC.

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Operator:	Oasis Petroleum North America LLC	Kick-off:	5/30/2015
Well:	Kline Federal 5300 11-18 2B	Finish:	6/3/2015
Surface Coordinates:	960' FNL & 318' FWL		
Surface Location:	Lot 1, Sec. 18, T153N, R100W		
County State:	McKenzie County, ND		
Directional Supervision:		RPM Directional Inc.	

Minimum Curvature Method (SPE-3362)

Proposed dir [] 90

[North and East are positive and South and West are negative, relative to surface location]

No.	MD	INC	TRUE				SECT	DLS/ 100
			AZM	TVD	N-S	E-W		
190	17299.00	89.80	91.30	10768.49	-121.71	6782.76	6782.76	1.15
191	17395.00	89.90	91.30	10768.74	-123.89	6878.74	6878.74	0.10
192	17489.00	91.70	91.70	10767.42	-126.35	6972.69	6972.69	1.96
193	17597.00	91.70	91.70	10764.22	-129.55	7080.60	7080.60	0.00

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SUNBURST CONSULTING, INC.

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Operator:	Oasis Petroleum North America LLC	Kick-off:	6/3/2015
	Sidetrack 1	Finish:	6/6/2015
Well:	Kline Federal 5300 11-18 2B	Directional Supervision:	
Surface Coordinates:	960' FNL & 318' FWL	RPM Directional Inc.	
Surface Location:	Lot 1. Sec. 18, T153N, R100W		
County State:	McKenzie County, ND		

Minimum Curvature Method (SPE-3362)

Proposed dir 90

[North and East are positive and South and West are negative, relative to surface location]

No.	MD	INC	TRUE				DLS/ 100
			AZM	TVD	N-S	E-W	
Tie	17299.00	89.80	91.30	10768.49	-121.71	6782.76	6782.76
1	17394.00	90.00	91.40	10768.65	-123.95	6877.74	6877.74
2	17420.00	88.90	91.00	10768.90	-124.49	6903.73	6903.73
3	17453.00	87.30	90.90	10769.99	-125.04	6936.71	6936.71
4	17489.00	87.00	90.70	10771.78	-125.54	6972.66	6972.66
5	17584.00	86.00	90.30	10777.58	-126.37	7067.48	7067.48
6	17680.00	89.10	89.90	10781.69	-126.54	7163.38	7163.38
7	17776.00	88.60	89.50	10783.61	-126.04	7259.35	7259.35
8	17872.00	90.20	89.10	10784.62	-124.86	7355.34	7355.34
9	17969.00	90.80	89.10	10783.77	-123.34	7452.32	7452.32
10	18065.00	89.90	89.90	10783.19	-122.50	7548.32	7548.32
11	18161.00	89.90	90.20	10783.35	-122.59	7644.32	7644.32
12	18258.00	88.90	90.60	10784.37	-123.26	7741.31	7741.31
13	18354.00	88.70	90.70	10786.38	-124.35	7837.28	7837.28
14	18450.00	89.50	91.20	10787.89	-125.94	7933.25	7933.25
15	18544.00	90.80	91.10	10787.64	-127.83	8027.23	8027.23
16	18640.00	90.70	90.40	10786.39	-129.09	8123.21	8123.21
17	18735.00	88.40	89.70	10787.13	-129.17	8218.20	8218.20
18	18833.00	87.40	89.50	10790.72	-128.48	8316.13	8316.13
19	18928.00	88.20	90.10	10794.37	-128.15	8411.06	8411.06
20	19023.00	89.30	90.70	10796.44	-128.82	8506.04	8506.04
21	19120.00	89.90	90.70	10797.12	-130.00	8603.03	8603.03
22	19215.00	91.80	91.20	10795.71	-131.58	8698.00	8698.00
23	19311.00	93.20	90.90	10791.52	-133.33	8793.89	8793.89
24	19406.00	91.70	90.20	10787.46	-134.24	8888.79	8888.79
25	19502.00	91.00	89.70	10785.20	-134.16	8984.77	8984.77
26	19596.00	89.20	88.60	10785.04	-132.77	9078.75	9078.75
27	19692.00	89.90	88.50	10785.79	-130.34	9174.72	9174.72
28	19787.00	89.10	88.00	10786.62	-127.44	9269.67	9269.67
29	19882.00	90.30	88.40	10787.12	-124.45	9364.62	9364.62
30	19977.00	91.60	88.40	10785.54	-121.80	9459.56	9459.56
31	20073.00	92.70	88.00	10781.94	-118.79	9555.45	9555.45
32	20177.00	92.60	87.70	10777.13	-114.89	9659.26	9659.26
33	20273.00	91.70	89.80	10773.53	-112.80	9755.17	9755.17
34	20369.00	91.50	89.60	10770.85	-112.30	9851.13	9851.13
35	20382.00	91.60	89.70	10770.50	-112.22	9864.12	9864.12
36	20450.00	91.60	89.70	10768.60	-111.86	9932.10	9932.10

FORMATION TOPS & STRUCTURAL RELATIONSHIPS

Subject Well:						
Operator: Well Name: Location: Elevation:	Oasis Petroleum North America, LLC. Kline Federal 5300 11-18 2B 960' FNL & 318' FWL Lot 1 Section 18, T153N, R100W KB: 2,078'					
Formation/ Marker	Prog. Top	Prog. Datum (MSL)	Driller's Depth Top (MD)	Driller's Depth Top (TVD)	Datum (MSL)	Interval Thickness to Target
Kibbey Lime	8,367'	-6,289'	8,355'	8,354'	-6,276'	153'
First Charles Salts	8,517'	-6,439'	8,508'	8,507'	-6,429'	616'
Upper Berenton	9,141'	-7,063'	9,124'	9,123'	-7,045'	76'
Base Last Salt	9,216'	-7,138'	9,200'	9,199'	-7,121'	223'
Mission Canyon	9,421'	-7,343'	8,423'	9,422'	-7,344'	559'
Lodgepole	9,969'	-7,921'	9,982'	9,981'	-7,903'	721'
False Bakken	10,696'	-8,618'	10,811'	10,702'	-8,624'	8'
Upper Bakken Shale	10,708'	-8,630'	10,830'	10,710'	-8,632'	17'
Middle Bakken	10,722'	-8,644'	10,882'	10,727'	-8,649'	13'

LITHOLOGY

Rig crews caught lagged samples in 50' intervals under the supervision of a Sunburst geologist. A detailed list of sampling intervals is included in the well data summary page. Samples were examined wet and dry conditions under a binocular microscope and checked for hydrocarbon cut fluorescence with Entron. Sample descriptions began at re-entry point within the Middle Bakken Member. The drilling fluid was salt water solution in the lateral.

Middle Bakken

10,882' MD; 10,727' TVD (-8,649')

11,070-11,100 SILTY SANDSTONE: light to medium gray-brown, off white, occasional tan, very fine grained, firm, sub-angular, moderately to well sorted, calcite cemented, moderately cemented, occasional disseminated pyrite, occasional nodular pyrite, trace very fine to fine intergranular porosity, trace spotty brown oil stain, slow pale yellow diffuse cut fluorescence

11,100-11,150 SILTY SANDSTONE: tan, light to medium gray-brown, off white, very fine grained, firm, sub-angular, moderately to well sorted, calcite cemented, moderately cemented, occasional disseminated pyrite, occasional nodular pyrite, trace very fine to fine intergranular porosity, trace spotty brown oil stain, slow pale yellow streaming cut fluorescence

11,150-11,200 SILTY SANDSTONE: light gray, medium to dark gray, off white, light gray-brown, very fine grained, firm, rarely hard, sub-angular, moderately to well sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow pale yellow diffuse cut fluorescence

11,200-11,250 SILTY SANDSTONE: light brown, light gray, medium to dark gray, off white, light gray-brown, very fine grained, firm, rarely hard, sub-angular, occasionally sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow pale yellow diffuse cut fluorescence

11,250-11,300 SILTY SANDSTONE: light to medium gray, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow pale yellow diffuse cut fluorescence

11,300-11,350 SILTY SANDSTONE: light to medium gray, light brown, light brown-gray, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow pale yellow diffuse cut fluorescence

11,350-11,400 SILTY SANDSTONE: off white, light brown, light brown-gray, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow pale yellow diffuse cut fluorescence

11,400-11,450 SILTY SANDSTONE: off white, light to medium gray, very fine grained, firm, rarely hard, sub-angular, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow pale yellow diffuse cut fluorescence

11,450-11,500 SILTY SANDSTONE: light brown-gray, off white, light gray, occasional dark gray, very fine grained, firm, sub-angular, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, moderately pale yellow diffuse cut fluorescence

11,500-11,550 SILTY SANDSTONE: light to medium gray, light brown, light brown-gray, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow pale yellow diffuse cut fluorescence

11,550-11,600 SILTY SANDSTONE: dark gray, light to medium gray, light brown, light brown-gray, off white, very fine grained, firm, rarely hard, sub-angular, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, moderately pale yellow diffuse cut fluorescence

11,600-11,650 SILTY SANDSTONE: light brown, light brown-gray, light gray, off white, trace dark gray, very fine grained, firm, common hard, sub-angular, occasionally sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow to moderately pale yellow diffuse cut fluorescence

11,650-11,700 SILTY SANDSTONE: light brown, light brown-gray, light gray, off white, very fine grained, firm, common hard, sub-angular, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow pale yellow diffuse cut fluorescence

11,700-11,750 SILTY SANDSTONE: light gray, medium to dark gray, off white, light gray-brown, very fine grained, firm, rarely hard, sub-angular, moderately to well sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow pale yellow diffuse cut fluorescence

11,750-11,800 SILTY SANDSTONE: dark gray, light gray, medium gray, off white, light brown-gray, very fine grained, firm, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow pale yellow diffuse cut fluorescence

11,800-11,850 SILTY SANDSTONE: off white, light to medium gray, light brown, very fine grained, firm, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, moderately pale yellow diffuse trace streaming cut fluorescence

11,850-11,900 SILTY SANDSTONE: off white, light brown, light brown-gray, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow pale yellow diffuse cut fluorescence

11,900-11,950 SILTY SANDSTONE: off white, light brown, light brown-gray, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow pale yellow diffuse cut fluorescence

11,950-12,000 SILTY SANDSTONE: light to medium gray, light brown, light brown-gray, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow to moderately pale yellow diffuse cut fluorescence

12,000-12,050 SILTY SANDSTONE: light brown, light brown-gray, off white, very fine grained, firm, rarely hard, sub-angular, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow to moderately pale yellow diffuse cut fluorescence

12,050-12,100 SILTY SANDSTONE: light brown, light brown-gray, off white, very fine grained, firm, rarely hard, sub-angular, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow to moderately pale yellow diffuse cut fluorescence

12,100-12,150 SILTY SANDSTONE: dark gray, light brown, light brown-gray, off white, very fine grained, firm, rarely hard, sub-angular, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, moderately pale yellow diffuse cut fluorescence

12,150-12,200 SILTY SANDSTONE: light brown, light to medium gray, off white, cream, very fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, moderately pale yellow diffuse cut fluorescence

12,200-12,250 SILTY SANDSTONE: off white, light brown, light brown-gray, very fine grained, firm, sub-angular, rarely sub-rounded, moderately to well sorted, calcite cemented, moderately cemented, rare disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, moderately pale yellow streaming cut fluorescence

12,250-12,300 SILTY SANDSTONE: light brown, light brown-gray, light gray, off white, trace dark gray, very fine grained, firm, common hard, sub-angular, occasionally sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow to moderately pale yellow diffuse cut fluorescence

12,300-12,350 SILTY SANDSTONE: light brown, light gray, off white, very fine grained, firm, common hard, sub-angular, occasionally sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow to moderately pale yellow diffuse cut fluorescence

12,350-12,400 SILTY SANDSTONE: light brown, light brown-gray, off white, very fine grained, firm, rarely hard, sub-angular, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow to moderately pale yellow diffuse cut fluorescence

12,400-12,450 SILTY SANDSTONE: off white, light to medium gray, light brown, very fine grained, firm, moderately sorted, calcite cemented, moderately to well cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, moderately pale yellow diffuse trace streaming cut fluorescence

12,450-12,500 SILTY SANDSTONE: off white, light brown, light brown-gray, occasional dark gray, trace tan, very fine to fine grained, firm, moderately sorted, calcite cemented, moderately to well cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, moderately pale yellow diffuse trace streaming cut fluorescence

12,500-12,550 SILTY SANDSTONE: off white, light brown, light brown-gray, very fine to fine grained, firm, moderately sorted, calcite cemented, moderately to well cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, moderately pale yellow diffuse trace streaming cut fluorescence

12,550-12,600 SILTY SANDSTONE: off white, light brown, light brown-gray, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

12,600-12,650 SILTY SANDSTONE: off white, light brown, light brown-gray, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

12,650-12,700 SILTY SANDSTONE: medium brown, light gray, tan, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, occasional nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

12,700-12,750 SILTY SANDSTONE: medium brown, medium to dark gray, tan, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

12,750-12,800 SILTY SANDSTONE: medium brown, medium to dark gray, tan, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, rare spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

12,800-12,850 SILTY SANDSTONE: light to medium gray, medium brown, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, rare spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

12,850-12,900 SILTY SANDSTONE: medium gray-brown, tan, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

12,900-12,950 SILTY SANDSTONE: tan, off white, medium gray-brown, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence.

12,950-13,000 SILTY SANDSTONE: tan, off white, medium gray-brown, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, occasional nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

13,000-13,050 SILTY SANDSTONE: tan, off white, medium gray-brown, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence.

13,050-13,100 SILTY SANDSTONE: medium gray-brown, tan, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence.

13,100-13,150 SILTY SANDSTONE: medium gray, medium to dark brown, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

13,150-13,200 SILTY SANDSTONE: medium gray-brown, tan, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence.

13,200-13,250 SILTY SANDSTONE: medium gray-brown, tan, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence.

13,250-13,300 SILTY SANDSTONE: medium gray-brown, tan, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence.

13,300-13,350 SILTY SANDSTONE: medium to dark gray, tan-medium brown, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

13,350-13,400 SILTY SANDSTONE: light to medium brown, gray, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, occasional nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

13,400-13,450 SILTY SANDSTONE: light to medium brown, gray, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, occasional nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow streaming cut fluorescence

13,450-13,500 SILTY SANDSTONE: medium brown-gray, off white, tan, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow streaming cut fluorescence

13,500-13,550 SILTY SANDSTONE: light to medium brown, gray, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow streaming cut fluorescence

13,550-13,600 SILTY SANDSTONE: off white, medium gray, light to medium brown, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow streaming cut fluorescence

13,600-13,650 SILTY SANDSTONE: medium gray, light to medium brown, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow streaming cut fluorescence

13,650-13,700 SILTY SANDSTONE: medium gray-brown, off white, light gray, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow streaming cut fluorescence

13,700-13,750 SILTY SANDSTONE: medium gray-brown, off white, light gray, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow streaming cut fluorescence

13,750-13,800 SILTY SANDSTONE: tan, light to medium gray, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow streaming cut fluorescence

13,800-13,850 SILTY SANDSTONE: medium brown, light to medium gray, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow streaming cut fluorescence

13,850-13,900 SILTY SANDSTONE: medium to dark gray-brown, off white, very fine grained, firm, trace hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow streaming cut fluorescence

13,900-13,950 SILTY SANDSTONE: off white, medium brown, light to medium gray, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow streaming cut fluorescence

13,950-14,000 SILTY SANDSTONE: gray, light to medium brown, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, rare spotty to even light brown oil stain, slow pale yellow streaming cut fluorescence

14,000-14,050 SILTY SANDSTONE: medium brown, light to medium gray, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow streaming cut fluorescence

14,050-14,100 SILTY SANDSTONE: tan, off white, medium brown, light to medium gray, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

14,100-14,150 SILTY SANDSTONE: medium gray-brown, tan, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

14,150-14,200 SILTY SANDSTONE: medium gray-brown, tan, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

14,200-14,250 SILTY SANDSTONE: off white, gray, light to medium brown, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

14,250-14,300 SILTY SANDSTONE: tan, off white, gray, light to medium brown, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

14,300-14,350 SILTY SANDSTONE: medium brown, dark gray, tan, off white, very fine grained, firm, trace hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

14,350-14,400 SILTY SANDSTONE: light to medium gray, tan, very fine grained, firm, trace hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

14,400-14,450 SILTY SANDSTONE: tan, off white, light to medium gray, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

14,450-14,500 SILTY SANDSTONE: gray-brown, cream, very fine grained, firm, trace hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

14,500-14,550 SILTY SANDSTONE: gray-brown, cream, very fine grained, firm, trace hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

14,550-14,600 SILTY SANDSTONE: off white, tan, medium gray-brown, very fine grained, firm, trace hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, occasional nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

14,600-14,650 SILTY SANDSTONE: light brown, light brown-gray, light to medium gray, off white, very fine grained, firm, trace hard, sub-angular, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow pale yellow diffuse cut fluorescence

14,650-14,700 SILTY SANDSTONE: medium gray-brown, tan, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow pale yellow diffuse cut fluorescence

14,700-14,750 SILTY SANDSTONE: light brown, off white, light to medium gray, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow pale yellow diffuse cut fluorescence

14,750-14,800 SILTY SANDSTONE: medium to dark gray, tan-medium brown, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow pale yellow diffuse cut fluorescence

14,800-14,850 SILTY SANDSTONE: medium gray, tan, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow pale yellow diffuse cut fluorescence

14,850-14,900 SILTY SANDSTONE: off white, light brown, light brown-gray, light to medium gray, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, moderately pale yellow diffuse cut fluorescence

14,900-14,950 SILTY SANDSTONE: light brown, light brown-gray, light gray, very fine grained, firm, rarely hard, sub-angular, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, moderately pale yellow diffuse cut fluorescence

14,950-15,000 SILTY SANDSTONE: off white, light brown, gray, very fine grained, firm, rarely hard, sub-angular, common sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

15,000-15,050 SILTY SANDSTONE: light to medium gray, off white, light brown dark gray, tan, very fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light to medium brown oil stain, sample moderately contaminated with lube

15,050-15,100 SILTY SANDSTONE: light gray, off white, light brown dark gray, tan, very fine grained, firm, sub-angular, occasionally sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light to medium brown oil stain, sample moderately contaminated with lube

15,100-15,150 SILTY SANDSTONE: light brown, light brown-gray, cream, off white, gray, very fine grained, firm, sub-angular, occasionally sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, sample moderately contaminated with lube

15,150-15,200 SILTY SANDSTONE: cream, light brown, light brown-gray, light gray, very fine grained, firm, rarely hard, sub-angular, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, moderately pale yellow diffuse cut fluorescence

15,200-15,250 SILTY SANDSTONE: off white, light gray, light brown, very fine grained, firm, rarely hard, sub-angular, moderately sorted, calcite cemented, well cemented, trace disseminated pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, moderately pale yellow diffuse cut fluorescence

15,250-15,300 SILTY SANDSTONE: medium gray-brown, tan, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow pale yellow diffuse cut fluorescence

15,300-15,350 SILTY SANDSTONE: medium gray-brown, tan, off white, very fine grained, firm, rarely hard, sub-angular, common sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow pale yellow diffuse cut fluorescence

15,350-15,400 SILTY SANDSTONE: off white, light brown, gray, very fine grained, firm, rarely hard, sub-angular, common sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

15,400-15,450 SILTY SANDSTONE: light to medium gray, off white, cream, light brown, occasional dark gray, very fine grained, firm, sub-angular, common sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

15,450-15,500 SILTY SANDSTONE: light to medium gray, off white, light brown, dark gray, tan, very fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

15,500-15,550 SILTY SANDSTONE: light brown, light brown-gray, light to medium gray, off white, very fine grained, firm, sub-angular, occasionally sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

15,550-15,600 SILTY SANDSTONE: cream, light brown, light brown-gray, light to medium gray, off white, very fine grained, firm, sub-angular, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

15,600-15,650 SILTY SANDSTONE: dark gray, light to medium gray, very fine grained, firm, sub-angular, trace sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

15,650-15,700 SILTY SANDSTONE: medium gray-brown, off white, light gray, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

15,700-15,750 SILTY SANDSTONE: cream, light brown, medium gray-brown, off white, light gray, very fine grained, firm, occasional hard, sub-angular, common sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

15,750-15,800 SILTY SANDSTONE: light brown-gray, off white, light to medium gray, dark gray, very fine grained, firm, rarely hard, sub-angular, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

15,800-15,850 SILTY SANDSTONE: cream, off white, light gray, very fine grained, firm, sub-angular, trace sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

15,850-15,900 SILTY SANDSTONE: light to medium brown, medium gray-brown, light gray, very fine grained, firm, sub-angular, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

15,900-15,950 SILTY SANDSTONE: gray, medium gray, light brown-gray, occasional off white, very fine to fine grained, firm, rarely hard, sub-angular, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

15,950-16,000 SILTY SANDSTONE: gray, medium gray, light brown-gray, occasional off white, very fine to fine grained, firm, rarely hard, sub-angular, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

16,000-16,050 SILTY SANDSTONE: light gray, off white, light brown dark gray, tan, very fine grained, firm, sub-angular, occasionally sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

16,050-16,100 SILTY SANDSTONE: cream, off white, light gray, light brown, very fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty medium brown oil stain, sample moderately contaminated with lube

16,100-16,150 SILTY SANDSTONE: light to medium gray, off white, light brown, dark gray, tan, very fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

16,150-16,200 SILTY SANDSTONE: light to medium gray, off white, cream, light brown, occasional dark gray, very fine grained, firm, sub-angular, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

16,200-16,250 SILTY SANDSTONE: cream, light brown, medium gray-brown, off white, light gray, very fine grained, firm, occasional hard, sub-angular, common sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

16,250-16,300 SILTY SANDSTONE: light to medium gray, cream, light brown, medium gray-brown, off white, very fine grained, firm, occasional hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

16,300-16,350 SILTY SANDSTONE: light brown, light brown-gray, very fine grained, firm, occasional hard, sub-angular, trace sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

16,350-16,400 SILTY SANDSTONE: light gray, light brown, light brown-gray, very fine grained, firm, occasional hard, sub-angular, trace sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

16,400-16,450 SILTY SANDSTONE: light to medium gray, off white, light brown, dark gray, tan, very fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

16,450-16,500 SILTY SANDSTONE: cream, light brown, medium gray-brown, off white, light gray, very fine to fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

16,500-16,550 SILTY SANDSTONE: cream, light brown, medium gray-brown, off white, light gray, very fine to fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

16,550-16,600 SILTY SANDSTONE: light to medium brown, gray, off white, very fine to fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

16,600-16,650 SILTY SANDSTONE: tan, medium gray, off white, very fine to fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

16,650-16,700 SILTY SANDSTONE: tan, medium gray, off white, very fine to fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

16,700-16,750 SILTY SANDSTONE: tan, medium gray, off white, very fine to fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

17,400-17,450 SILTY SANDSTONE: medium to dark gray, light brown, off white, very fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

17,450-17,500 SILTY SANDSTONE: medium to dark gray, light brown, off white, very fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

17,500-17,550 SILTY SANDSTONE: medium to dark gray, light brown, off white, very fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, rare SHALE: black, dark gray-brown, firm, blocky, earthy texture, occasional disseminated pyrite, petroliferous, carbonaceous, earthy porosity, sample moderately contaminated with lube

Upper Bakken/Middle Bakken Contact

17,540' MD; 10,766' TVD (-8,698')

17,500-17,597 SHALE: black, dark gray-brown, firm, blocky, earthy texture, occasional disseminated pyrite, petroliferous, carbonaceous, earthy porosity, sample moderately contaminated with lube

SIDETRACK INITIATED AT 17,420' MD

17,450-17,500 SILTY SANDSTONE: light to medium gray, off white, dark gray, very fine to fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

17,500-17,550 SILTY SANDSTONE: light to medium gray, blue-gray, off white, dark gray, very fine to fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

17,550-17,600 SILTY SANDSTONE: light gray, blue-gray, off white, dark gray, very fine to fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

17,600-17,650 SILTY SANDSTONE: medium to dark gray, blue-gray, off white, light brown, very fine to fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

17,650-17,700 SILTY SANDSTONE: medium to dark gray, blue-gray, off white, light brown, very fine to fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

17,700-17,750 SILTY SANDSTONE: light to medium gray-brown, off white, tan, very fine to fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

17,750-17,800 SILTY SANDSTONE: light to medium gray-brown, off white, tan, very fine to fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

17,800-17,850 SILTY SANDSTONE: tan, off white, light blue-gray, very fine to fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube



Directional Survey Certification

Operator: Oasis Petroleum LLC **Well Name:** Kline Federal 5300 11-18 2B **API:** 33-053-06243

Enseco Job#: S15090-02 **Job Type:** MWD D&I **County, State:** McKenzie County, N. Dakota

Well Surface Hole Location (SHL): Lot 1, Sec. 18, T153N, R100W (960' FNL & 318 FWL)

Latitude: 48° 04' 45.680 N **Longitude:** 103° 36' 10.190 W **Datum:** Nad 83

Final MWD Report Date: Feb. 28, 2015 **MWD Survey Run Date:** Feb. 25, 2015 to Feb. 27, 2015

Tied In to Surveys Provided By: Enseco Directional Drilling D&I MWD **MD:** Surface

MWD Surveyed from 00 ft to 2,081.0 ft MD **Survey Type:** Positive Pulse D&I MWD **Sensor to Bit:** 63 ft

Rig Contractor: Noble **Rig Number:** 2 **RKB Height:** 2,056.0 ft **GL Elevation:** 2,056.0 ft

MWD Surveyor Name: Brett McClain

"The data and calculations for this survey have been checked by me and conform to the calibration standards and operational procedures set forth by Enseco Energy Services USA Corp. I am authorized and qualified to review the data, calculations and this report and that the report represents a true and correct Directional Survey of this well based on the original data corrected to True North and obtained at the well site. Wellbore coordinates are calculated using the minimum curvature method."

Jonathan Hovland, Well Planner

Enseco Representative Name, Title

Jonathan Hovland

Signature

March 5th 2015

Date Signed

On this the day of , 20 , before me personally appeared First & Last Name, to me known as the person described in and who executed the foregoing instrument and acknowledged the (s)he executed the same as his/her free act and deed.

Seal: _____
Notary Public

Commission Expiry



Enseco Survey Report

05 March, 2015

Oasis Petroleum LLC

McKenzie County, North Dakota
Lot 1 Sec.18 Twp.153N Rge.100W
Kline Federal 5300 11-18 2B
Job # S15090-02
API#: 33-053-06243

Survey: Final Surveys Vertical Section



Company:	Oasis Petroleum LLC	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2B
Project:	McKenzie County, North Dakota	Ground Level Elevation:	2,056.00usft
Site:	Lot 1 Sec.18 Twp.153N Rge.100W	Wellhead Elevation:	WELL @ 2056.00usft (Original Well Elev)
Well:	Kline Federal 5300 11-18 2B	North Reference:	True
Wellbore:	Job # S15090-02	Survey Calculation Method:	Minimum Curvature
Design:	Final Surveys Vertical Section	Database:	EDM5000

Project	McKenzie County, North Dakota		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	North Dakota Northern Zone		Using geodetic scale factor

Site	Lot 1 Sec.18 Twp.153N Rge.100W		
Site Position:		Northing:	408,992.30 usft
From:	Lat/Long	Easting:	1,210,243.30 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "

Well	Kline Federal 5300 11-18 2B	API#: 33-053-06243			
Well Position	+N/-S +E/-W	0.00 usft	Northing: Easting:	408,992.30 usft 1,210,243.30 usft	
			Wellhead Elevation:	usft	
Position Uncertainty		0.00 usft		Latitude: Longitude: Grid Convergence:	48° 4' 45.680 N 103° 36' 10.190 W -2.309°

Wellbore	Job # S15090-02				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	3/5/2015	8.302	72.945	56,271

Design:	Final Surveys Vertical Section	Survey Error Model:	Standard ISCWSA MWD Tool
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
Vertical Section:		Depth From (TVD) (usft)	+N/-S (usft)
		0.00	0.00
			+E/-W (usft)
			0.00
			Direction (°)
			317.15

Company:	Oasis Petroleum LLC	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2B
Project:	McKenzie County, North Dakota	Ground Level Elevation:	2,056.00usft
Site:	Lot 1 Sec.18 Twp.153N Rge.100W	Wellhead Elevation:	WELL @ 2056.00usft (Original Well Elev)
Well:	Kline Federal 5300 11-18 2B	North Reference:	True
Wellbore:	Job # S15090-02	Survey Calculation Method:	Minimum Curvature
Design:	Final Surveys Vertical Section	Database:	EDM5000

Survey										
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/S (usft)	+E/W (usft)	Vertical Section (usft)	Dogleg Rate (%/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
Tie-in from Surface										
0.00	0.00	0.00	0.00	2,056.00	0.00	0.00	0.00	0.00	0.00	0.00
132.00	0.60	215.50	132.00	1,924.00	-0.56	-0.40	-0.14	0.45	0.45	0.00
224.00	0.50	210.10	223.99	1,832.01	-1.30	-0.88	-0.35	0.12	-0.11	-5.87
314.00	0.70	269.40	313.99	1,742.01	-1.65	-1.63	-0.10	0.69	0.22	65.89
399.00	0.60	281.10	398.98	1,657.02	-1.57	-2.58	0.61	0.19	-0.12	13.76
489.00	0.50	275.00	488.98	1,567.02	-1.44	-3.44	1.28	0.13	-0.11	-6.78
579.00	0.80	278.30	578.97	1,477.03	-1.32	-4.45	2.06	0.34	0.33	3.67
663.00	0.50	268.20	662.97	1,393.03	-1.24	-5.40	2.76	0.38	-0.36	-12.02
751.00	0.60	292.30	750.96	1,305.04	-1.08	-6.21	3.43	0.28	0.11	27.39
840.00	0.40	301.00	839.96	1,216.04	-0.74	-6.91	4.15	0.24	-0.22	9.78
927.00	0.70	307.10	926.96	1,129.04	-0.27	-7.59	4.97	0.35	0.34	7.01
1,015.00	0.70	222.00	1,014.95	1,041.05	-0.34	-8.38	5.45	1.08	0.00	-96.70
1,101.00	0.60	341.60	1,100.95	955.05	-0.31	-8.87	5.81	1.31	-0.12	139.07
1,188.00	0.50	66.70	1,187.95	868.05	0.28	-8.67	6.10	0.86	-0.11	97.82
1,277.00	0.90	38.80	1,276.94	779.06	0.97	-7.87	6.07	0.58	0.45	-31.35
1,365.00	0.90	16.80	1,364.93	691.07	2.17	-7.24	6.52	0.39	0.00	-25.00
1,450.00	0.70	15.30	1,449.92	606.08	3.31	-6.91	7.13	0.24	-0.24	-1.76
1,539.00	0.80	332.70	1,538.91	517.09	4.39	-7.05	8.01	0.62	0.11	-47.87
1,628.00	1.10	343.10	1,627.90	428.10	5.76	-7.58	9.38	0.39	0.34	11.69
1,714.00	0.40	7.80	1,713.89	342.11	6.85	-7.78	10.31	0.88	-0.81	28.72
1,803.00	0.40	120.30	1,802.89	253.11	7.00	-7.47	10.21	0.75	0.00	126.40
1,889.00	0.30	96.80	1,888.89	167.11	6.82	-6.99	9.75	0.20	-0.12	-27.33
1,987.00	0.60	120.10	1,986.89	69.11	6.53	-6.29	9.07	0.35	0.31	23.78
Last MWD Survey										
2,081.00	0.90	135.20	2,080.88	-24.88	5.76	-5.35	7.86	0.38	0.32	16.06

Survey Annotations					
Local Coordinates					
MD (usft)	TVD (usft)	+N/S (usft)	+E/W (usft)	Comment	
0.00	0.00	0.00	0.00	Tie-in from Surface	
2,081.00	2,080.88	5.76	-5.35	Last MWD Survey	



19510 Oil Center Blvd
Houston, TX 77073
Bus 281.443.1414
Fax 281.443.1676

Monday, June 15, 2015

State of North Dakota

Subject: **Surveys**

Re: **Oasis**
Kline Federal 5300 11-18 2B
McKenzie, ND

Enclosed, please find the original and one copy of the survey performed on the above-referenced well by Ryan Directional Services, Inc.. Other information required by your office is as follows:

Surveyor Name	Surveyor Title	Borehole Number	Start Depth	End Depth	Start Date	End Date	Type of	TD Straight Line Projection
Nick Brochu	MWD Operator	O.H.	2081'	17489'	05/29/15	06/03/15	MWD	17597'
Nick Brochu	MWD Operator	ST 1	17299'	20382'	06/03/15	06/05/15	MWD	20450'

If any other information is required please contact the undersigned at the letterhead address or phone number.

A handwritten signature in black ink that reads "Douglas Hudson".

Douglas Hudson
Well Planner



RYAN DIRECTIONAL SERVICES, INC.
A NABORG COMPANY

Ryan Directional Services, Inc.
19510 Oil Center Blvd.
Houston, Texas 77073
Bus: 281.443.1414
Fax: 281.443.1676

Friday, June 05, 2015

State of North Dakota
County of McKenzie

Subject: **Survey Certification Letter**

Survey Company: Ryan Directional Services, Inc.

Job Number: 8983

Survey Job Type: Ryan MWD

Customer: Oasis Petroleum North America

Well Name: Kline Federal 5300 11-18 2B

Rig Name: Xtreme 21

Surface: 48° 4' 45.680 N / 103° 36' 10.190 W

A.P.I. No: 33-053-06243

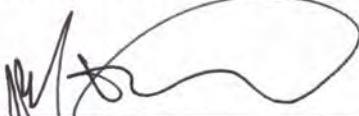
Location: McKenzie, ND

RKB Height: 2070'

Distance to Bit: 68'

<i>Surveyor Name</i>	<i>Surveyor Title</i>	<i>Borehole Number</i>	<i>Start Depth</i>	<i>End Depth</i>	<i>Start Date</i>	<i>End Date</i>	<i>Type of</i>	<i>TD Straight Line Projection</i>
Nick Brochu	MWD Supervisor	OH	11032'	17489'	05/29/15	06/03/15	MWD	17557'
Nick Brochu	MWD Supervisor	ST1	17299'	20382'	06/03/15	06/05/15	MWD	20450'

The data and calculations for this survey have been checked by me and conform to the calibration standards and operational procedures set forth by Ryan Directional Services, Inc. I am authorized and qualified to review the data, calculations and these reports; the reports represents true and correct Directional Surveys of this well based on the original data, the minimum curvature method, corrected to True North and obtained at the well site.



Nick Brochu
MWD Supervisor
Ryan Directional Services, Inc.

**SURVEY REPORT**

Customer: **Oasis Petroleum**
 Well Name: **Kline Federal 5300 11-18 2B**
 Rig #: **Nabors B27**
 API #: **33-053-06243**
 Calculation Method: **Minimum Curvature Calculation**

MWD Operator: **D.FOLEY / D.OGDEN**
 Directional Drillers: **RPM**
 Survey Corrected To: **True North**
 Vertical Section Direction: **90**
 Total Correction: **8.30**
 Temperature Forecasting Model (Chart Only): **Logarithmic**

Survey #	MD	Inc	Azm	Temp	TVD	VS	N/S	E/W	DLS
Tie in to Gyro Surveys									
Tie In	2081	0.90	135.20		2080.88	-5.35	5.76	-5.35	0.38
1	2176	1.60	146.20	77.00	2175.86	-4.09	4.13	-4.09	0.78
2	2270	1.70	152.90	66.00	2269.82	-2.72	1.80	-2.72	0.23
3	2365	1.00	160.10	82.00	2364.79	-1.80	-0.24	-1.80	0.76
4	2459	0.70	163.90	84.00	2458.78	-1.36	-1.56	-1.36	0.32
5	2553	0.50	263.40	87.00	2552.78	-1.61	-2.16	-1.61	0.98
6	2647	0.80	284.50	89.00	2646.77	-2.65	-2.04	-2.65	0.40
7	2742	1.50	298.80	91.00	2741.75	-4.38	-1.28	-4.38	0.79
8	2836	1.90	300.00	93.00	2835.71	-6.81	0.10	-6.81	0.43
9	2930	2.30	305.70	95.00	2929.65	-9.69	1.97	-9.69	0.48
10	3024	1.10	321.10	96.00	3023.60	-11.79	3.78	-11.79	1.35
11	3119	1.40	328.70	100.00	3118.58	-12.96	5.48	-12.96	0.36
12	3213	1.20	34.40	102.00	3212.56	-13.00	7.27	-13.00	1.51
13	3307	1.20	47.50	104.00	3306.54	-11.72	8.75	-11.72	0.29
14	3401	0.90	36.20	105.00	3400.53	-10.56	10.01	-10.56	0.39
15	3495	1.00	36.90	107.00	3494.51	-9.63	11.26	-9.63	0.11
16	3590	0.70	43.50	109.00	3589.50	-8.74	12.35	-8.74	0.33
17	3684	0.80	33.50	111.00	3683.49	-7.98	13.31	-7.98	0.17
18	3778	0.60	41.60	113.00	3777.49	-7.29	14.22	-7.29	0.24
19	3872	0.50	37.40	114.00	3871.48	-6.71	14.92	-6.71	0.11
20	3966	0.40	14.70	114.00	3965.48	-6.38	15.56	-6.38	0.22
21	4060	0.30	25.70	116.00	4059.48	-6.19	16.10	-6.19	0.13
22	4154	0.40	346.40	116.00	4153.48	-6.16	16.64	-6.16	0.27
23	4248	0.50	76.80	118.00	4247.47	-5.84	17.05	-5.84	0.68
24	4343	0.50	84.90	120.00	4342.47	-5.02	17.19	-5.02	0.07
25	4437	0.40	36.40	122.00	4436.47	-4.42	17.49	-4.42	0.41
26	4531	0.30	48.60	122.00	4530.47	-4.04	17.91	-4.04	0.13
27	4625	0.40	217.00	123.00	4624.47	-4.05	17.81	-4.05	0.74
28	4720	0.40	225.60	125.00	4719.46	-4.49	17.32	-4.49	0.06
29	4813	0.40	330.20	125.00	4812.46	-4.88	17.37	-4.88	0.68
30	4907	0.50	128.90	127.00	4906.46	-4.73	17.40	-4.73	0.94
31	5001	0.60	143.20	127.00	5000.46	-4.11	16.75	-4.11	0.18
32	5095	0.40	207.70	129.00	5094.45	-3.97	16.06	-3.97	0.60
33	5190	0.30	193.10	129.00	5189.45	-4.18	15.53	-4.18	0.14
34	5284	0.60	181.00	131.00	5283.45	-4.25	14.79	-4.25	0.33
35	5378	0.80	158.90	131.00	5377.44	-4.02	13.69	-4.02	0.35
36	5472	0.80	177.40	132.00	5471.43	-3.75	12.42	-3.75	0.27
37	5567	1.10	185.80	134.00	5566.42	-3.81	10.85	-3.81	0.35
38	5661	1.10	202.30	134.00	5660.40	-4.25	9.12	-4.25	0.34
39	5755	0.60	98.20	134.00	5754.40	-4.10	8.22	-4.10	1.46
40	5850	0.60	89.90	136.00	5849.39	-3.11	8.15	-3.11	0.09
41	5944	0.70	54.60	138.00	5943.39	-2.15	8.48	-2.15	0.43
42	6038	0.70	36.50	138.00	6037.38	-1.34	9.27	-1.34	0.23
43	6132	0.80	38.60	138.00	6131.37	-0.59	10.25	-0.59	0.11
44	6226	1.20	26.10	138.00	6225.36	0.25	11.64	0.25	0.48
45	6320	1.40	22.00	141.00	6319.33	1.11	13.59	1.11	0.23
46	6414	1.20	62.70	143.00	6413.31	2.42	15.11	2.42	0.98
47	6509	1.30	47.90	145.00	6508.29	4.10	16.29	4.10	0.35
48	6603	1.40	37.00	147.00	6602.26	5.58	17.92	5.58	0.29
49	6697	1.10	52.80	147.00	6696.24	6.99	19.38	6.99	0.48
50	6791	1.10	71.10	152.00	6790.22	8.57	20.22	8.57	0.37
51	6885	0.90	72.50	154.00	6884.21	10.12	20.73	10.12	0.21
52	6979	1.10	38.50	156.00	6978.19	11.39	21.66	11.39	0.65
53	7073	1.20	73.50	158.00	7072.18	12.90	22.65	12.90	0.74
54	7167	0.80	101.80	159.00	7166.16	14.48	22.79	14.48	0.66
55	7262	1.00	127.00	161.00	7261.15	15.79	22.16	15.79	0.46
56	7356	0.90	118.50	161.00	7355.14	17.10	21.31	17.10	0.18
57	7450	1.00	121.00	163.00	7449.13	18.45	20.54	18.45	0.12
58	7544	0.70	113.20	165.00	7543.12	19.68	19.89	19.68	0.34
59	7639	0.90	108.40	165.00	7638.11	20.92	19.43	20.92	0.22
60	7733	1.00	107.40	167.00	7732.09	22.40	18.95	22.40	0.11
61	7827	1.10	95.80	167.00	7826.08	24.08	18.61	24.08	0.25
62	7921	0.80	82.00	167.00	7920.06	25.63	18.61	25.63	0.40
63	8015	0.80	89.90	167.00	8014.06	26.94	18.70	26.94	0.12
64	8109	0.70	82.20	170.00	8108.05	28.16	18.78	28.16	0.15
65	8203	0.60	108.20	172.00	8202.04	29.20	18.71	29.20	0.33



SURVEY REPORT

Customer: **Oasis Petroleum**
Well Name: **Kline Federal 5300 11-18 2B**
Rig #: **Nabors B27**
API #: **33-053-06243**
Calculation Method: **Minimum Curvature Calculation**

MWD Operator: **D.FOLEY / D.OGDEN**
Directional Drillers: **RPM**
Survey Corrected To: **True North**
Vertical Section Direction: **90**
Total Correction: **8.30**
Temperature Forecasting Model (Chart Only): **Logarithmic**

Survey #	MD	Inc	Azm	Temp	TVD	VS	N/S	E/W	DLS
66	8298	0.50	118.60	174.00	8297.04	30.04	18.35	30.04	0.15
67	8392	0.50	108.30	159.00	8391.03	30.79	18.03	30.79	0.10
68	8486	0.50	89.90	161.00	8485.03	31.58	17.90	31.58	0.17
69	8580	0.60	102.80	167.00	8579.03	32.48	17.79	32.48	0.17
70	8674	0.70	110.80	168.00	8673.02	33.49	17.48	33.49	0.14
71	8769	0.60	115.20	170.00	8768.01	34.48	17.06	34.48	0.12
72	8863	0.60	133.30	172.00	8862.01	35.29	16.51	35.29	0.20
73	8957	0.40	114.20	172.00	8956.00	35.95	16.04	35.95	0.27
74	9051	0.40	118.30	174.00	9050.00	36.53	15.75	36.53	0.03
75	9145	0.70	97.20	176.00	9144.00	37.39	15.52	37.39	0.38
76	9240	0.20	343.00	177.00	9239.00	37.92	15.61	37.92	0.85
77	9334	0.20	335.80	177.00	9333.00	37.80	15.92	37.80	0.03
78	9428	0.40	38.40	179.00	9426.99	37.94	16.32	37.94	0.38
79	9523	0.50	27.20	177.00	9521.99	38.34	16.95	38.34	0.14
80	9617	0.60	10.90	177.00	9615.99	38.62	17.80	38.62	0.20
81	9711	0.50	2.40	181.00	9709.98	38.73	18.69	38.73	0.14
82	9805	0.50	354.20	185.00	9803.98	38.70	19.51	38.70	0.08
83	9899	0.50	330.90	185.00	9897.98	38.46	20.28	38.46	0.21
84	9993	0.60	353.10	186.00	9991.97	38.20	21.12	38.20	0.25
85	10087	0.70	0.00	188.00	10085.97	38.14	22.19	38.14	0.13
86	10171	1.00	11.90	188.00	10169.96	38.30	23.42	38.30	0.41
87	10201	1.00	4.30	168.00	10199.95	38.37	23.93	38.37	0.44
88	10232	1.50	58.70	176.00	10230.94	38.74	24.42	38.74	3.96
89	10263	4.40	88.80	176.00	10261.90	40.27	24.65	40.27	10.30
90	10295	7.40	97.40	176.00	10293.73	43.54	24.41	43.54	9.75
91	10326	11.10	97.50	177.00	10324.32	48.48	23.76	48.48	11.94
92	10357	14.50	98.30	177.00	10354.55	55.28	22.81	55.28	10.98
93	10389	17.50	100.70	177.00	10385.30	63.98	21.34	63.98	9.60
94	10420	20.90	103.40	179.00	10414.58	73.94	19.19	73.94	11.33
95	10452	24.20	104.50	179.00	10444.12	85.85	16.23	85.85	10.40
96	10483	27.20	104.60	179.00	10472.06	98.86	12.85	98.86	9.68
97	10514	30.20	104.80	181.00	10499.24	113.25	9.07	113.25	9.68
98	10546	33.30	105.00	181.00	10526.45	129.52	4.74	129.52	9.69
99	10577	36.40	105.90	181.00	10551.89	146.59	0.02	146.59	10.14
100	10609	39.70	107.80	183.00	10577.09	165.46	-5.71	165.46	10.94
101	10640	43.20	109.50	183.00	10600.32	184.90	-12.28	184.90	11.86
102	10671	46.60	110.40	183.00	10622.27	205.46	-19.75	205.46	11.16
103	10703	50.10	110.40	181.00	10643.54	227.87	-28.08	227.87	10.94
104	10734	53.80	109.50	174.00	10662.64	250.81	-36.41	250.81	12.15
105	10766	57.80	108.00	174.00	10680.62	275.87	-44.90	275.87	13.09
106	10797	62.90	106.70	176.00	10695.96	301.58	-52.93	301.58	16.85
107	10828	67.30	106.40	177.00	10709.00	328.53	-60.93	328.53	14.22
108	10860	71.50	105.70	177.00	10720.26	357.31	-69.21	357.31	13.28
109	10891	73.50	105.60	179.00	10729.58	385.78	-77.18	385.78	6.46
110	10922	76.40	104.50	179.00	10737.63	414.68	-84.96	414.68	9.96
111	10954	81.30	103.40	181.00	10743.82	445.14	-92.52	445.14	15.68
112	10985	85.90	102.10	183.00	10747.27	475.18	-99.31	475.18	15.41
113	11007	88.40	100.60	183.00	10748.37	496.72	-103.64	496.72	13.25
114	11032	88.40	101.10	230.00	10749.06	521.27	-108.34	521.27	2.00
115	11063	88.90	100.50	228.00	10749.79	551.71	-114.15	551.71	2.52
116	11094	88.80	100.70	226.00	10750.42	582.17	-119.85	582.17	0.72
117	11124	89.30	98.80	226.00	10750.91	611.73	-124.93	611.73	6.55
118	11155	88.80	97.30	224.00	10751.43	642.42	-129.27	642.42	5.10
119	11186	88.50	96.10	224.00	10752.16	673.20	-132.89	673.20	3.99
120	11217	88.70	95.40	224.00	10752.92	704.04	-135.99	704.04	2.35
121	11248	89.10	93.90	224.00	10753.51	734.93	-138.50	734.93	5.01
122	11279	91.30	93.60	226.00	10753.40	765.86	-140.53	765.86	7.16
123	11310	92.30	92.90	226.00	10752.43	796.79	-142.29	796.79	3.94
124	11341	92.10	92.80	226.00	10751.24	827.73	-143.83	827.73	0.72
125	11372	91.60	91.70	226.00	10750.24	858.69	-145.04	858.69	3.90
126	11403	90.80	90.80	226.00	10749.59	889.68	-145.72	889.68	3.88
127	11434	90.30	89.10	228.00	10749.29	920.68	-145.69	920.68	5.72
128	11465	89.60	88.10	230.00	10749.32	951.67	-144.94	951.67	3.94
129	11495	89.80	88.20	231.00	10749.48	981.65	-143.97	981.65	0.75
130	11588	89.60	87.80	233.00	10749.96	1074.59	-140.72	1074.59	0.48



SURVEY REPORT

Customer: **Oasis Petroleum**
Well Name: **Kline Federal 5300 11-18 2B**
Rig #: **Nabors B27**
API #: **33-053-06243**
Calculation Method: **Minimum Curvature Calculation**

MWD Operator: **D.FOLEY / D.OGDEN**
Directional Drillers: **RPM**
Survey Corrected To: **True North**
Vertical Section Direction: **90**
Total Correction: **8.30**
Temperature Forecasting Model (Chart Only): **Logarithmic**

Survey #	MD	Inc	Azm	Temp	TVD	VS	N/S	E/W	DLS
131	11681	89.60	88.50	233.00	10750.61	1167.54	-137.72	1167.54	0.75
132	11773	90.50	88.30	237.00	10750.53	1259.50	-135.15	1259.50	1.00
133	11865	90.40	89.30	237.00	10749.81	1351.48	-133.22	1351.48	1.09
134	11960	90.90	89.50	240.00	10748.73	1446.47	-132.23	1446.47	0.57
135	12055	92.20	89.70	242.00	10746.16	1541.43	-131.57	1541.43	1.38
136	12150	91.10	89.80	242.00	10743.43	1636.39	-131.15	1636.39	1.16
137	12245	91.70	89.10	242.00	10741.11	1731.35	-130.24	1731.35	0.97
138	12340	89.80	89.20	242.00	10739.86	1826.33	-128.83	1826.33	2.00
139	12434	88.40	87.80	246.00	10741.34	1920.28	-126.37	1920.28	2.11
140	12529	88.80	87.60	248.00	10743.66	2015.18	-122.56	2015.18	0.47
141	12623	89.10	88.80	246.00	10745.38	2109.11	-119.61	2109.11	1.32
142	12719	90.90	90.30	246.00	10745.38	2205.10	-118.85	2205.10	2.44
143	12814	89.60	89.90	246.00	10744.97	2300.10	-119.02	2300.10	1.43
144	12910	90.00	89.50	248.00	10745.30	2396.10	-118.52	2396.10	0.59
145	13005	90.10	89.50	249.00	10745.22	2491.09	-117.69	2491.09	0.11
146	13101	89.80	89.30	249.00	10745.30	2587.09	-116.68	2587.09	0.38
147	13195	89.60	89.60	251.00	10745.80	2681.08	-115.78	2681.08	0.38
148	13290	89.90	89.60	253.00	10746.21	2776.08	-115.12	2776.08	0.32
149	13384	89.50	89.40	251.00	10746.70	2870.07	-114.30	2870.07	0.48
150	13480	88.90	89.00	253.00	10748.04	2966.05	-112.96	2966.05	0.75
151	13574	89.40	89.10	255.00	10749.44	3060.03	-111.40	3060.03	0.54
152	13671	89.70	88.70	257.00	10750.20	3157.01	-109.54	3157.01	0.52
153	13765	89.50	90.30	255.00	10750.86	3251.00	-108.72	3251.00	1.72
154	13860	89.70	90.20	257.00	10751.52	3346.00	-109.13	3346.00	0.24
155	13956	90.40	90.40	257.00	10751.43	3442.00	-109.63	3442.00	0.76
156	14051	90.10	89.90	258.00	10751.02	3536.99	-109.88	3536.99	0.61
157	14146	89.00	88.00	258.00	10751.77	3631.97	-108.14	3631.97	2.31
158	14240	87.40	86.80	260.00	10754.72	3725.82	-103.88	3725.82	2.13
159	14335	88.20	87.30	260.00	10758.37	3820.62	-99.00	3820.62	0.99
160	14431	89.20	87.60	262.00	10760.54	3916.50	-94.73	3916.50	1.09
161	14525	89.40	86.90	262.00	10761.69	4010.39	-90.22	4010.39	0.77
162	14620	89.20	88.60	260.00	10762.85	4105.30	-86.49	4105.30	1.80
163	14714	90.90	90.40	260.00	10762.77	4199.29	-85.67	4199.29	2.63
164	14809	91.60	92.20	260.00	10760.70	4294.24	-87.82	4294.24	2.03
165	14907	90.70	92.60	262.00	10758.73	4392.13	-91.92	4392.13	1.00
166	15003	89.90	92.90	262.00	10758.23	4488.02	-96.53	4488.02	0.89
167	15099	88.70	92.60	262.00	10759.40	4583.90	-101.13	4583.90	1.29
168	15194	88.10	92.20	264.00	10762.05	4678.78	-105.11	4678.78	0.76
169	15288	90.20	92.80	264.00	10763.45	4772.68	-109.21	4772.68	2.32
170	15382	90.50	92.90	262.00	10762.87	4866.56	-113.88	4866.56	0.34
171	15478	89.80	92.40	255.00	10762.62	4962.45	-118.32	4962.45	0.90
172	15573	90.10	91.00	257.00	10762.71	5057.41	-121.14	5057.41	1.51
173	15668	89.70	89.80	258.00	10762.87	5152.40	-121.80	5152.40	1.33
174	15763	89.00	88.40	260.00	10763.95	5247.38	-120.31	5247.38	1.65
175	15859	87.40	87.00	262.00	10766.96	5343.25	-116.46	5343.25	2.21
176	15955	88.50	88.30	260.00	10770.40	5439.11	-112.53	5439.11	1.77
177	16051	89.60	89.40	258.00	10771.99	5535.07	-110.60	5535.07	1.62
178	16148	89.80	89.20	262.00	10772.50	5632.06	-109.42	5632.06	0.29
179	16244	90.50	90.10	260.00	10772.25	5728.06	-108.83	5728.06	1.19
180	16340	92.20	91.30	262.00	10769.99	5824.02	-110.00	5824.02	2.17
181	16436	92.00	90.80	260.00	10766.47	5919.94	-111.76	5919.94	0.56
182	16532	89.90	90.00	258.00	10764.88	6015.92	-112.43	6015.92	2.34
183	16628	90.00	90.30	260.00	10764.96	6111.92	-112.68	6111.92	0.33
184	16724	88.90	90.20	262.00	10765.88	6207.91	-113.10	6207.91	1.15
185	16820	88.20	90.30	264.00	10768.31	6303.88	-113.52	6303.88	0.74
186	16916	89.50	90.80	264.00	10770.24	6399.85	-114.44	6399.85	1.45
187	17012	89.70	90.90	266.00	10770.91	6495.84	-115.87	6495.84	0.23
188	17106	90.80	91.30	266.00	10770.50	6589.82	-117.67	6589.82	1.25
189	17202	90.90	91.10	264.00	10769.07	6685.79	-119.68	6685.79	0.23
190	17299	89.80	91.30	264.00	10768.48	6782.76	-121.71	6782.76	1.15
191	17394	89.90	91.30	266.00	10768.73	6877.74	-123.87	6877.74	0.11
192	17489	91.70	91.70	266.00	10767.40	6972.69	-126.35	6972.69	1.94
Projection	17597	91.70	91.70		10764.20	7080.60	-129.56	7080.60	0.00



SURVEY REPORT

Customer: Oasis Petroleum North America LLC
Well Name: Kline Federal 5300 11-18 2B
Rig #: Xtreme 21
API #: 33-053-06243
Calculation Method: Minimum Curvature Calculation

MWD Operator: Sammy Hayman / David Unger
Directional Drillers: RPM
Survey Corrected To: True North
Vertical Section Direction: 90
Total Correction: 8.30
Temperature Forecasting Model (Chart Only): Logarithmic

Survey #	MD	Inc	Azm	Temp	TVD	VS	N/S	E/W	DLS
Tie in to Gyro Surveys									
Tie In	17299	89.80	91.30	264.00	10768.48	6782.77	-121.71	6782.77	1.15
1	17394	90.00	91.40	258.00	10768.65	6877.74	-123.95	6877.74	0.24
2	17420	88.90	91.00	258.00	10768.90	6903.74	-124.49	6903.74	4.50
3	17453	87.30	90.90	258.00	10769.99	6936.71	-125.04	6936.71	4.86
4	17489	87.00	90.70	260.00	10771.78	6972.66	-125.54	6972.66	1.00
5	17584	86.00	90.30	258.00	10777.58	7067.48	-126.37	7067.48	1.13
6	17680	89.10	89.90	262.00	10781.68	7163.38	-126.54	7163.38	3.26
7	17776	88.60	89.50	262.00	10783.61	7259.36	-126.03	7259.36	0.67
8	17872	90.20	89.10	262.00	10784.61	7355.35	-124.86	7355.35	1.72
9	17969	90.80	89.10	264.00	10783.77	7452.33	-123.34	7452.33	0.62
10	18065	89.90	89.90	264.00	10783.18	7548.32	-122.50	7548.32	1.25
11	18161	89.90	90.20	264.00	10783.35	7644.32	-122.58	7644.32	0.31
12	18258	88.90	90.60	264.00	10784.36	7741.31	-123.26	7741.31	1.11
13	18354	88.70	90.70	266.00	10786.38	7837.29	-124.35	7837.29	0.23
14	18450	89.50	91.20	266.00	10787.88	7933.26	-125.94	7933.26	0.98
15	18544	90.80	91.10	267.00	10787.64	8027.24	-127.83	8027.24	1.39
16	18640	90.70	90.40	266.00	10786.38	8123.22	-129.08	8123.22	0.74
17	18735	88.40	89.70	266.00	10787.13	8218.21	-129.17	8218.21	2.53
18	18833	87.40	89.50	267.00	10790.72	8316.14	-128.48	8316.14	1.04
19	18928	88.20	90.10	266.00	10794.36	8411.07	-128.15	8411.07	1.05
20	19023	89.30	90.70	266.00	10796.44	8506.04	-128.82	8506.04	1.32
21	19120	89.90	90.70	266.00	10797.11	8603.03	-130.00	8603.03	0.62
22	19215	91.80	91.20	264.00	10795.70	8698.00	-131.57	8698.00	2.07
23	19311	93.20	90.90	266.00	10791.52	8793.89	-133.33	8793.89	1.49
24	19406	91.70	90.20	266.00	10787.46	8888.80	-134.24	8888.80	1.74
25	19502	91.00	89.70	266.00	10785.19	8984.77	-134.16	8984.77	0.90
26	19596	89.20	88.60	267.00	10785.03	9078.76	-132.76	9078.76	2.24
27	19692	89.90	88.50	266.00	10785.78	9174.72	-130.34	9174.72	0.74
28	19787	89.10	88.00	266.00	10786.61	9269.67	-127.43	9269.67	0.99
29	19882	90.30	88.40	266.00	10787.11	9364.62	-124.45	9364.62	1.33
30	19977	91.60	88.40	266.00	10785.54	9459.57	-121.80	9459.57	1.37
31	20073	92.70	88.00	264.00	10781.93	9555.45	-118.79	9555.45	1.22
32	20177	92.60	87.70	253.00	10777.13	9659.27	-114.89	9659.27	0.30
33	20273	91.70	89.80	255.00	10773.52	9755.17	-112.80	9755.17	2.38
34	20369	91.50	89.60	257.00	10770.84	9851.13	-112.29	9851.13	0.29
35	20382	91.60	89.70	257.00	10770.49	9864.13	-112.21	9864.13	1.09
Projection	20450	91.60	89.70	257.00	10768.59	9932.10	-111.86	9932.10	0.00



SUNDY 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
SFSN 5749 (09-2006)



Well File No.
29334

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

<input checked="" type="checkbox"/> Notice of Intent	Approximate Start Date April 9, 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.	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 checked="" type="checkbox"/> Other Suspension of Drilling	

Well Name and Number
Kline Federal 5300 11-18 2B

Footages 960 F N L 318 F W L	Qtr-Qtr 11	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
---------	------	-------	----------

DETAILS OF WORK

Oasis Petroleum requests permission for suspension of drilling for approximately 55 days for the referenced well under NDAC 43-02-03-055. Oasis would like to suspend drilling on this well in order to drill the approved Carson SWD 5301 12-24 (well file #90329). The current rig will move to the Carson SWD pad once the vertical well bores have been drilled for all 3 wells on the Kline 11-18 pad. Oasis will return to the Kline 11-18 pad with a second rig on approximately June 6, 2015, to drill the lateral portion of the referenced well to TD.

Company Oasis Petroleum North America LLC	Telephone Number 281-404-9575	
Address 1001 Fannin St, Suite 1500		
City Houston	State TX	Zip Code 77002
Signature 	Printed Name Michael Kukuk	
Title Regulatory Supervisor	Date March 26, 2015	
Email Address mkukuk@oasispetroleum.com		

FOR STATE USE ONLY

<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date 4/6/15	
By 	Title Mineral Resources Permit Manager

Holweger, Todd L.

From: Michael Kukuk <mkukuk@oasispetroleum.com>
Sent: Thursday, March 26, 2015 6:40 PM
To: Holweger, Todd L.
Cc: Regulatory; APD; Karyme Martin; Jason Swaren
Subject: SOD sundries for the Kline Federal 5300 11-18 pad
Attachments: Kline Federal 11-18 SOD sundries.pdf; ATT00001.txt

Importance: High

Good Evening Todd,

Per our conversation I have attached the SOD sundries for the 3 wells on the Kline pad. A few key points:

- 1) We will move the rig to the Carson SWD pad once we have finished drilling the vertical portions of all 3 wells on this pad.
- 2) We will finish drilling the vertical portion of the third well, the Kline Federal 5300 11-18 2B, on April 9th.
- 3) We will utilize a 2nd rig to drill the lateral portions of the 3 wells on this pad.
- 4) The 2nd rig is currently drilling wells on a different pad and is scheduled to reach TD on the final well in late May/early June, leaving a gap of approximately 55 days.
- 5) We will be able to return to the Kline Federal 5300 11-18 pad on or before June 6th.

Given the time sensitive nature of this request, expedited review of these sundries would be greatly appreciated.

Thank you for your consideration,

Michael P. Kukuk
Regulatory Supervisor
1001 Fannin, Suite 1500
Houston, Texas 77002
281-404-9575
281-382-5877 (cell)

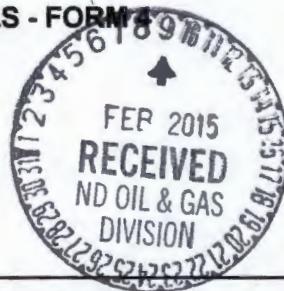
mkukuk@oasispetroleum.com





SUNDY 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.
29334

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

<input checked="" type="checkbox"/> Notice of Intent	Approximate Start Date March 17, 2015
<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 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 checked="" type="checkbox"/> Other | Change to Original APD |

Well Name and Number
Kline Federal 5300 11-18 2T2

Footages	Qtr-Qtr	Section	Township	Range
960 F N L	318 F W L	LOT1	18	153 N 100 W
Field Baker	Pool Bakken	County McKenzie		

24-HOUR PRODUCTION RATE

Before	After
Oil	Bbls
Water	Bbls
Gas	MCF

Name of Contractor(s)

Address	City	State	Zip Code
---------	------	-------	----------

DETAILS OF WORK

Oasis Petroleum respectfully requests approval to make the following changes to the original APD as follows:

Name Change: Kline Federal 5300 11-18 2B (previously 2T2)

Formation Change: Bakken (previously Three Forks second bench)

255' NDIC calc
BHL change: 1080' FNL & 250' FEL Sec 17 T153N R100W
(previously: 1530' FNL & 205' FEL)

Surface casing design:

Surface Casing of 13 3/8" set at 2068' (previously 9 5/8")

Contingency Casing of 9 5/8" set at 6450'

Intermediate Casing of 7" with weight of 32 set at 11,005' (previously set at 11,111)

Production liner of 4 1/2" set from 10,446' to 20920' (previously set from 10,313' to 20,718')

See attached supporting documents.

CC 25.00 2-20-15 KB

CC 25.00

Company Oasis Petroleum North America LLC	Telephone Number (281) 404-9652	
Address 1001 Fannin Suite 1500		
City Houston	State TX	Zip Code 77002
Signature <i>VS</i>	Printed Name Victoria Siemieniewski	
Title Regulatory Specialist	Date February 5, 2015	
Email Address vsiemieniewski@oasispetroleum.com		

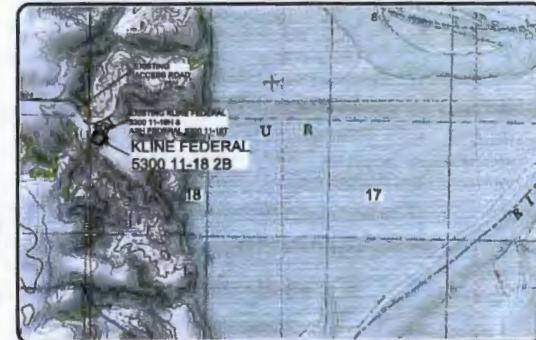
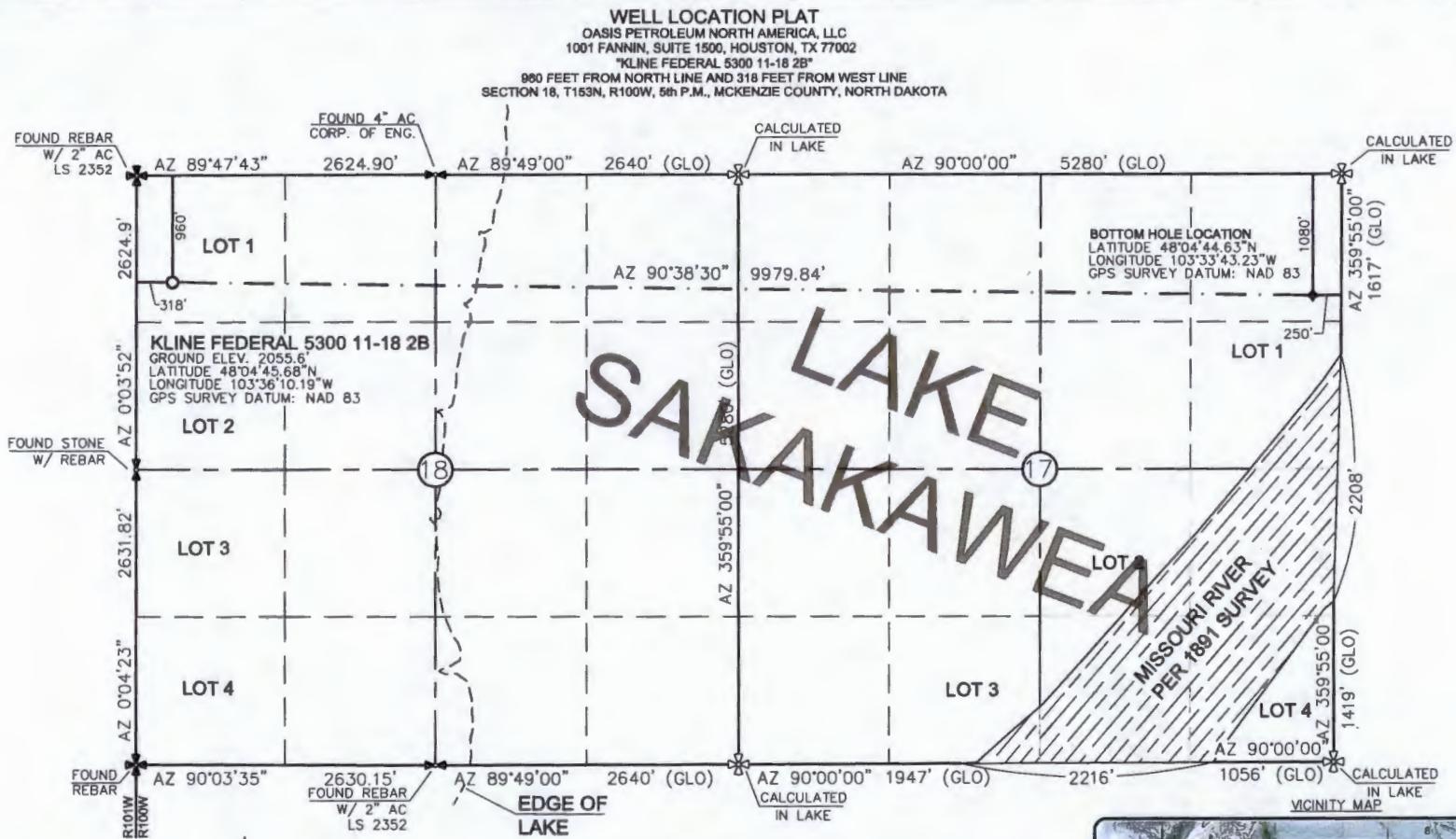
<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date <i>2-12-2015</i>	
By <i>David Burns</i>	
Title David Burns	Engineering Tech.

<p>OASIS PETROLEUM NORTH AMERICA, LLC WELL LOCATION PLAT SECTION 18, T153N, R100W, MCKENZIE COUNTY, NORTH DAKOTA</p> <p>Project No.: 10345-B-127 Drawn By: B.E.H. Checked By: D.D.S.</p> <p>Interstate Engineering, Inc. P.O. Box 648 425 East Main Street Bismarck, North Dakota 58501 Phone: (701) 223-3870 Fax: (701) 223-3874 Email: info@interstateengineering.com Website: www.interstateengineering.com</p> <p>Checklist for Instrumentation, Survey Control and Survey Checks</p>
<p>REV 1 6/18/14 REV 2 6/29/14 REV 3 6/29/14 REV 4 7/2/14 REV 5 7/27/14</p>
<p>BIN MOVED HILLS REV 1 MOVED LATITUDE MOVED ELEVATION PT TO FAD MOVED NAME & INI MOVED SELL NAMES & SPK MOVED</p>

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1/8



THIS DOCUMENT WAS ORIGINALLY ISSUED AND SEALED BY DARYL D. KASEMAN, PLS, REGISTRATION NUMBER 3880 ON 1/29/15 AND THE ORIGINAL DOCUMENTS ARE STORED AT THE OFFICES OF INTERSTATE ENGINEERING, INC.

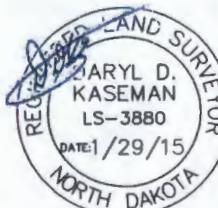
0 1000
1" = 1000'

- MONUMENT - RECOVERED
- MONUMENT - NOT RECOVERED

DARYL D. KASEMAN LS-3880

STAKED ON 6/18/14
VERTICAL CONTROL DATUM WAS BASED UPON
CONTROL POINT 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 BELIEF.



DARYL D.
KASEMAN
LS-3880

DATE 1/29/15

DRILLING PLAN							
OPERATOR	Oasis Petroleum			COUNTY/STATE	McKenzie Co. ND		
WELL NAME	Kline Federal 5300 11-18 2B			RIG	0		
WELL TYPE	Horizontal Middle Bakken			Surface Location (survey plat):	960' fml	318' fml	
LOCATION	NNNW 18-153N-100W			GROUND ELEV:	2053	Finished Pad Elev.	
EST. T.D.	20,462'			KB ELEV:	2078	Sub Height: 25	
TOTAL LATERA	9,457'						
PROGNOSIS:	Based on 2,078' KB(est)			LOGS:	Type	Interval	
MARKER	DEPTH (Surf Loc)	DATUM (Surf Loc)		OH Logs:	Triple Combo KOP to Kibby (or min run of 1800' whichever is greater); GR/Res to BSC; GR to surf; CND through the Dakota		
Pierre	NDIC MAP	1,988	110	CBL/GR:	Above top of cement/GR to base of casing		
Greenhorn		5,023	(2,945)	MWD GR:	KOP to lateral TD		
Mowry		5,103	(3,025)	DEVIATION:			
Dakota		5,469	(3,391)		Surf:	3 deg. max., 1 deg / 100'; svy every 500'	
Rierdon		6,450	(4,372)		Prod:	5 deg. max., 1 deg / 100'; svy every 100'	
Dunham Salt		6,785	(4,707)	DSTS:			
Dunham Salt Base		6,896	(4,818)		None planned		
Spearfish		6,993	(4,915)	CORES:			
Pine Salt		7,248	(5,170)		None planned		
Pine Salt Base		7,298	(5,218)	MUDLOGGING:			
Opeche Salt		7,341	(5,263)		Two-Man:	8,317'	
Opeche Salt Base		7,371	(5,293)			~200' above the Charles (Kibby) to Casing point; Casing point to TD	
Broom Creek (Top of Minnelusa Gp.)		7,573	(5,495)			30' samples at direction of wellsite geologist; 10' through target @ curve land	
Amsden		7,653	(5,575)	BOP:			
Tyler		7,821	(5,743)		11" 5000 psi blind, pipe & annular		
Otter (Base of Minnelusa Gp.)		8,012	(5,934)				
Kibby Lime		8,387	(6,289)				
Charles Salt		8,517	(6,439)				
UB		9,141	(7,063)				
Base Last Salt		9,216	(7,138)				
Ratcliffe		9,284	(7,186)				
Mission Canyon		9,421	(7,343)				
Lodgepole		9,999	(7,921)				
Lodgepole Fracture Zone		10,173	(8,095)				
False Bakken		10,698	(8,620)				
Upper Bakken		10,708	(8,630)				
Middle Bakken		10,722	(8,644)				
Middle Bakken Sand Target		10,731	(8,653)				
Base Middle Bakken Sand Target		10,741	(8,663)				
Lower Bakken		10,766	(8,688)				
Three Forks		10,781	(8,703)				
Dip Rate:	0.3						
Max. Anticipated BHP:	4665			Surface Formation:	Glacial till		
MUD:	Interval	Type	WT	VIS	WL	Remarks	
Surface:	0' -	2,088' FW/Gel - Lime Sweeps	8.4-9.0	28-32	NC	Circ Mud Tanks	
Intermediate:	2,088' -	11,005' Invert	9.5-10.4	40-50	30+HHP	Circ Mud Tanks	
Lateral:	11,005' -	20,462' Salt Water	9.8-10.2	28-32	NC	Circ Mud Tanks	
CASING:	Size	WT pcf	Hole	Depth	Cement	WOC	Remarks
Surface:	13-3/8"	54.5#	17-1/2"	2,088'	To Surface	12	100' into Pierre
Dakota Contingency:	9-5/8"	36#	12-1/4"	6,450'	To Surface	12	Below Dakota
Intermediate:	7"	32#	8-3/4"	11,005'	4969	24	500' above Dakota
Production Liner:	4.5"	13.5#	6"	20,462'	TOL @ 10,208'		50' above KOP
PROBABLE PLUGS, IF REQ'D:							
OTHER:	MD	TVD	FNL/FSL	FEL/FWL	S-T-R	AZI	
Surface:	2,088	2,088	980 FNL	318 FWL	SEC 18-T153N-R100W		
KOP:	10,258'	10,258'	980 FNL	368 FWL	SEC 18-T153N-R100W		Build Rate: 12 deg /100'
EOC:	11,005'	10,735'	1039 FNL	836 FWL	SEC 18-T153N-R100W	99.80	
Casing Point:	11,005'	10,735'	1039 FNL	836 FWL	SEC 18-T153N-R100W	99.80	
Middle Bakken Lateral TD:	20,462'	10,784'	1080 FNL	250 FEL	SEC 17-T153N-R100W	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)							
Completion Notes: 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: Fuel, diesel) 68476-34-6 (Primary Name: Fuel, diesel, No. 2) 68476-30-2 (Primary Name: Fuel oil No. 2)							
68476-31-3 (Primary Name: Fuel oil, No. 4) 68008-20-6 (Primary Name: Kerosene)							
OASIS PETROLEUM							
Geology: M. Steed 5/12/2014	Engineering: Agonzalez 1-27-2015						

Oasis Petroleum
Well Summary
Kline Federal 5300 11-18 2B
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' - 2068'	54.5	J-55	STC	12.615"	12.459"	4100	5470	6840

Interval	Description	Collapse (psi) / a	Burst (psi) / b	Tension (1000 lbs) / c
0' - 2068'	13-3/8", 54.5#, J-55, LTC, 8rd	1130 / 1.16	2730 / 1.95	514 / 2.60

API Rating & Safety Factor

- a) Collapse based on full casing evacuation with 9 ppg fluid on backside (2068' setting depth).
- b) Burst pressure based on 13 ppg fluid with no fluid on backside (2068' setting depth).
- c) Based on string weight in 9 ppg fluid at 2068' 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 60% excess to circulate cement back to surface.

Mix and pump the following slurry.

Pre-flush (Spacer): 20 bbls fresh water

Lead Slurry: 694 sks (358 bbls), 11.5 lb/gal, 2.97 cu. ft./sk Varicem Cement with 0.125 lb/sk Lost Circulation Additive

Tail Slurry: 300 sks (62 bbls), 13.0 lb/gal, 2.01 cu.ft./sk Varicem with .125 lb/sk Lost Circulation Agent

**Oasis Petroleum
Well Summary**
Kline Federal 5300 11-18 2B
Section 18 T153N R100W
McKenzie County, ND

Contingency INTERMEDIATE CASING AND CEMENT DESIGN

Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Make-up Torque (ft-lbs)		
							Minimum	Optimum	Max
9-5/8"	0' - 6450'	36	HCL-80	LTC	8.835"	8.75"	5450	7270	9090

Interval	Description	Collapse	Burst	Tension
		(psi) / a	(psi) / b	(1000 lbs) / c
0' - 6450'	9-5/8", 36#, J-55, LTC, 8rd	2020 / 2.17	3520 / 1.28	453 / 1.53

API Rating & Safety Factor

- a) Collapse based on full casing evacuation with 10.4 ppg fluid on backside (6450' setting depth).
- b) Burst pressure calculated from a gas kick coming from the production zone (Bakken Pool) at 9,000psi and a subsequent breakdown at the 9-5/8" shoe, based on a 15.2#/ft fracture gradient. Backup of 9 ppg fluid..
- c) Tension based on string weight in 10.4 ppg fluid at 6450' TVD plus 100k# overpull. (Buoyed weight equals 195k lbs.)

Cement volumes are based on 9-5/8" casing set in 12-1/4 " hole with 10% excess to circulate cement back to surface.

Pre-flush (Spacer): 20 bbls Chem wash

Lead Slurry: 570 sks (295 bbls), 2.90 ft³/sk, 11.5 lb/gal Conventional system with 94 lb/sk cement, 4% D079 extender, 2% D053 expanding agent, 2% CaCl₂ and 0.250 lb/sk D130 lost circulation control agent.

Tail Slurry: 605 sks (125 bbls), 1.16 ft³/sk 15.8 lb/gal Conventional system with 94 lb/sk cement, 0.25% CaCl₂, and 0.250 lb/sk lost circulation control agent

Oasis Petroleum
Well Summary
Kline Federal 5300 11-18 2B
Section 18 T153N R100W
McKenzie County, ND

INTERMEDIATE CASING AND CEMENT DESIGN

Size	Interval	Weight	Grade	Coupling	I.D.	Make-up Torque (ft-lbs)			
						Drift**	Minimum	Optimum	Max
7"	0' - 11005'	32	HCP-110	LTC	6.094"	6.000***	6730	8970	9870

**Special Drift 7" 32# to 6.0"

Interval	Length	Description	Collapse (psi) a	Burst (psi) b	Tension (1000 lbs) / c
0' - 11005'	11005'	7", 32#, HCP-110, LTC, 8rd	11820 / 2.11*	12460 / 1.26	897 / 2.25
6785' - 9216'	2431'	7", 32#, HCP-110, LTC, 8rd	11820 / 1.06**	12460 / 1.30	

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 10735' TVD.
- c) Based on string weight in 10 ppg fluid, (298k lbs buoyed weight) plus 100k lbs overpull.

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

Mix and pump the following slurry

Pre-flush (Spacer): **100 bbls** Saltwater
20 bbls Tuned Spacer III

Lead Slurry: **175 sks** (81 bbls), 11.8 ppg, 2.55 cu. ft./sk Econocem Cement with .3% Fe-2 and .25 lb/sk Lost Circulation Additive

Tail Slurry: **577 sks** (169 bbls), 14.0 ppg, 1.55 cu. ft./sk Extenderm System with .2% HR-5 Retarder and .25 lb/sk Lost Circulation Additive

Oasis Petroleum
Well Summary
Kline Federal 5300 11-18 2B
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"	10208' - 20462'	13.5	P-110	BTC	3.920"	3.795"	2270	3020	3780

Interval	Length	Description	Collapse (psi) a	Burst (psi) b	Tension (1000 lbs) c
10208' - 20462'	10254	4-1/2", 13.5 lb, P-110, BTC	10670 / 2.00	12410 / 1.28	443 / 2.02

API Rating & Safety Factor

- a) Based on full casing evacuation with 9.5 ppg fluid on backside @ 10784' TVD.
- b) Burst pressure based on 9000 psi treating pressure with 10.2 ppg internal fluid gradient and 9 ppg external fluid gradient @ 10784' TVD.
- c) Based on string weight in 9.5 ppg fluid (Buoyed weight: 118k lbs.) plus 100k lbs overpull.

Project: Indian Hills
 Site: 153N-100W-17/18
 Well: Kline Federal 5300 11-18 2B
 Wellbore: Kline Federal 5300 11-18 2B
 Design: Design #5



WELL DETAILS: Kline Federal 5300 11-18 2B

Northing
 408992.29

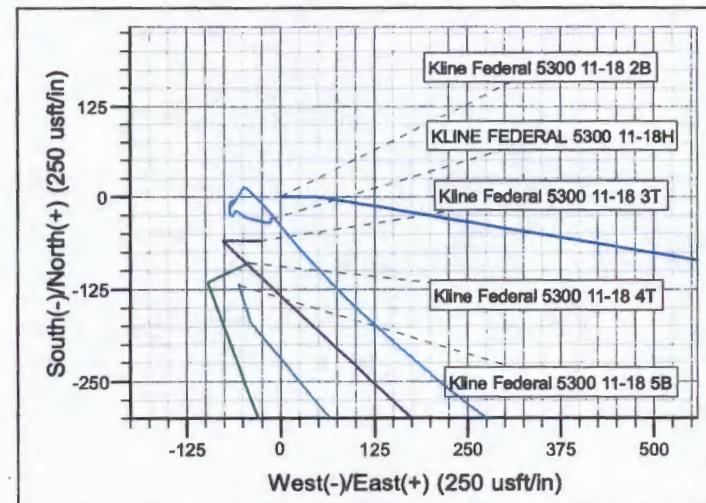
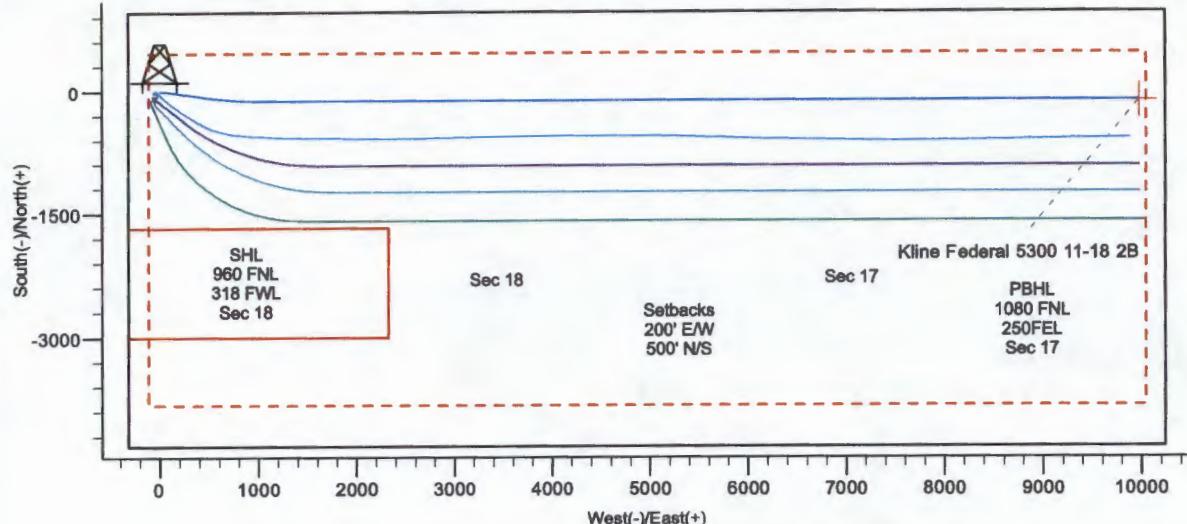
Ground Level: 2053.0

Easting
 1210243.30

Latitude

48° 4' 45.680 N

Longitude
 103° 36' 10.190 W



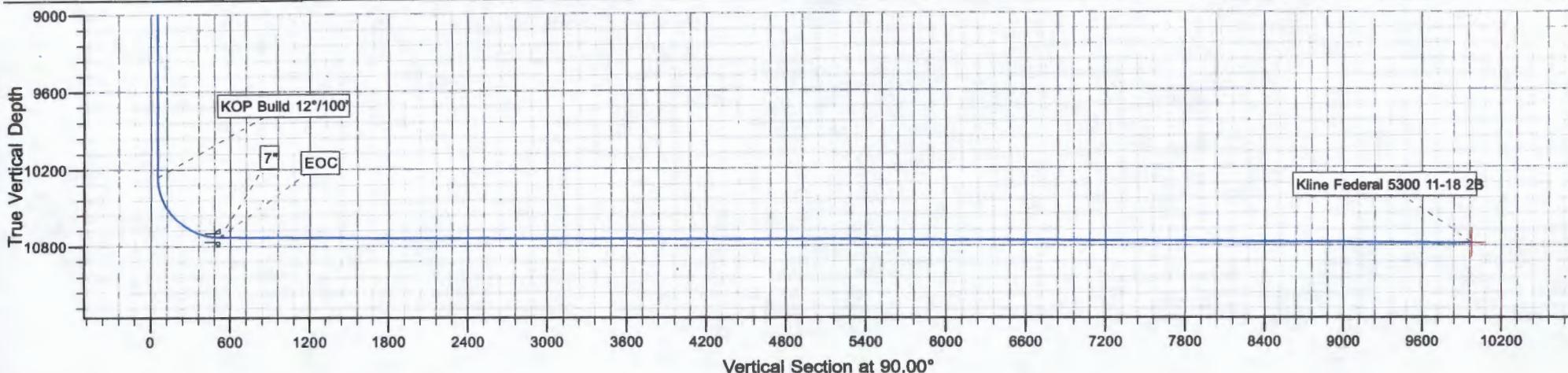
Azimuths to True North
Magnetic North: 8.4°

Magnetic Field
Strength: 56376.9nT
Dip Angle: 72.99°
Date: 4/22/2014
Model: IGRF2015

CASING DETAILS			
TVD	MD	Name	Size
2068.0	2068.0	13 3/8"	13.375
6449.9	6450.0	9 5/8"	9.625
10735.0	11006.0	7"	7.000

SECTION DETAILS

MD	Inc	Azi	TVD	+N/S	+E/W	Dleg	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	
2500.0	0.00	0.00	2500.0	0.0	0.0	0.00	
2516.7	0.50	90.00	2518.7	0.0	0.1	3.00	
8228.7	0.50	90.00	8228.4	0.0	49.9	0.00	
8243.3	0.00	0.00	8243.1	0.0	50.0	3.00	
10257.7	0.00	0.00	10257.5	0.0	50.0	0.00	
11005.2	89.70	99.60	10735.0	-79.2	518.3	12.00	
11485.0	89.70	90.00	10737.5	-119.3	995.8	2.00	
20462.3	89.70	90.00	10784.0	-120.0	9973.0	0.00	Kline Federal 5300 11-18 2B



Oasis

**Indian Hills
153N-100W-17/18
Kline Federal 5300 11-18 2B
T153N R100W SEC. 18**

Plan: Design #5

Standard Planning Report

27 January, 2015

Planning Report

Database:	OpenWellsCompass - EDM Prod	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2B							
Company:	Oasis	TVD Reference:	Ref KB @ 2078.0usft							
Project:	Indian Hills	MD Reference:	Ref KB @ 2078.0usft							
Site:	153N-100W-17/18	North Reference:	True							
Well:	Kline Federal 5300 11-18 2B	Survey Calculation Method:	Minimum Curvature							
Wellbore:	Kline Federal 5300 11-18 2B									
Design:	Design #5									
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:	408,982.44 usft							
From:	Lat/Long	Easting:	1,210,229.18 usft							
Position Uncertainty:	0.0 usft	Slot Radius:	13.200 in							
			Latitude: 48° 4' 45.380 N							
			Longitude: 103° 36' 10.380 W							
			Grid Convergence: -2.31 °							
Well	Kline Federal 5300 11-18 2B									
Well Position	+N/S +E/W	30.4 usft 12.9 usft	Northing: 408,992.29 usft Easting: 1,210,243.30 usft							
Position Uncertainty	2.0 usft		Latitude: 48° 4' 45.680 N Longitude: 103° 36' 10.190 W							
			Ground Level: 2,053.0 usft							
Wellbore	Kline Federal 5300 11-18 2B									
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)					
	IGRF2015	4/22/2014	8.41	72.99	56,377					
Design	Design #5									
Audit Notes:										
Version:		Phase:	PROTOTYPE	Tie On Depth:	0.0					
Vertical Section:		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 (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00
2,516.7	0.50	90.00	2,516.7	0.0	0.1	3.00	3.00	0.00	90.00	
8,226.7	0.50	90.00	8,226.4	0.0	49.9	0.00	0.00	0.00	0.00	0.00
8,243.3	0.00	0.00	8,243.1	0.0	50.0	3.00	-3.00	0.00	180.00	
10,257.7	0.00	0.00	10,257.5	0.0	50.0	0.00	0.00	0.00	0.00	0.00
11,005.2	89.70	99.60	10,735.0	-79.2	518.3	12.00	12.00	0.00	99.60	
11,485.0	89.70	90.00	10,737.5	-119.3	995.8	2.00	0.00	-2.00	-90.01	
20,462.3	89.70	90.00	10,784.0	-120.0	9,973.0	0.00	0.00	0.00	0.00	Kline Federal 5300 11

Planning Report

Database:	OpenWellsCompass - EDM Prod	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2B						
Company:	Oasis	TVD Reference:	Ref KB @ 2078.0usft						
Project:	Indian Hills	MD Reference:	Ref KB @ 2078.0usft						
Site:	153N-100W-17/18	North Reference:	True						
Well:	Kline Federal 5300 11-18 2B	Survey Calculation Method:	Minimum Curvature						
Wellbore:	Kline Federal 5300 11-18 2B								
Design:	Design #5								
Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,516.7	0.50	90.00	2,516.7	0.0	0.1	0.1	3.00	3.00	0.00
2,600.0	0.50	90.00	2,600.0	0.0	0.8	0.8	0.00	0.00	0.00
2,700.0	0.50	90.00	2,700.0	0.0	1.7	1.7	0.00	0.00	0.00
2,800.0	0.50	90.00	2,800.0	0.0	2.5	2.5	0.00	0.00	0.00
2,900.0	0.50	90.00	2,900.0	0.0	3.4	3.4	0.00	0.00	0.00
3,000.0	0.50	90.00	3,000.0	0.0	4.3	4.3	0.00	0.00	0.00
3,100.0	0.50	90.00	3,100.0	0.0	5.2	5.2	0.00	0.00	0.00
3,200.0	0.50	90.00	3,200.0	0.0	6.0	6.0	0.00	0.00	0.00
3,300.0	0.50	90.00	3,300.0	0.0	6.9	6.9	0.00	0.00	0.00
3,400.0	0.50	90.00	3,400.0	0.0	7.8	7.8	0.00	0.00	0.00
3,500.0	0.50	90.00	3,500.0	0.0	8.7	8.7	0.00	0.00	0.00
3,600.0	0.50	90.00	3,600.0	0.0	9.5	9.5	0.00	0.00	0.00
3,700.0	0.50	90.00	3,700.0	0.0	10.4	10.4	0.00	0.00	0.00
3,800.0	0.50	90.00	3,800.0	0.0	11.3	11.3	0.00	0.00	0.00
3,900.0	0.50	90.00	3,899.9	0.0	12.1	12.1	0.00	0.00	0.00
4,000.0	0.50	90.00	3,999.9	0.0	13.0	13.0	0.00	0.00	0.00
4,100.0	0.50	90.00	4,099.9	0.0	13.9	13.9	0.00	0.00	0.00
4,200.0	0.50	90.00	4,199.9	0.0	14.8	14.8	0.00	0.00	0.00
4,300.0	0.50	90.00	4,299.9	0.0	15.6	15.6	0.00	0.00	0.00
4,400.0	0.50	90.00	4,399.9	0.0	16.5	16.5	0.00	0.00	0.00
4,500.0	0.50	90.00	4,499.9	0.0	17.4	17.4	0.00	0.00	0.00
4,600.0	0.50	90.00	4,599.9	0.0	18.3	18.3	0.00	0.00	0.00
4,700.0	0.50	90.00	4,699.9	0.0	19.1	19.1	0.00	0.00	0.00
4,800.0	0.50	90.00	4,799.9	0.0	20.0	20.0	0.00	0.00	0.00
4,900.0	0.50	90.00	4,899.9	0.0	20.9	20.9	0.00	0.00	0.00
5,000.0	0.50	90.00	4,999.9	0.0	21.7	21.7	0.00	0.00	0.00
5,100.0	0.50	90.00	5,099.9	0.0	22.6	22.6	0.00	0.00	0.00
5,200.0	0.50	90.00	5,199.9	0.0	23.5	23.5	0.00	0.00	0.00
5,300.0	0.50	90.00	5,299.9	0.0	24.4	24.4	0.00	0.00	0.00
5,400.0	0.50	90.00	5,399.9	0.0	25.2	25.2	0.00	0.00	0.00
5,500.0	0.50	90.00	5,499.9	0.0	26.1	26.1	0.00	0.00	0.00
5,600.0	0.50	90.00	5,599.9	0.0	27.0	27.0	0.00	0.00	0.00
5,700.0	0.50	90.00	5,699.9	0.0	27.9	27.9	0.00	0.00	0.00
5,800.0	0.50	90.00	5,799.9	0.0	28.7	28.7	0.00	0.00	0.00
5,900.0	0.50	90.00	5,899.9	0.0	29.6	29.6	0.00	0.00	0.00
6,000.0	0.50	90.00	5,999.9	0.0	30.5	30.5	0.00	0.00	0.00
6,100.0	0.50	90.00	6,099.9	0.0	31.3	31.3	0.00	0.00	0.00
6,200.0	0.50	90.00	6,199.9	0.0	32.2	32.2	0.00	0.00	0.00
6,300.0	0.50	90.00	6,299.9	0.0	33.1	33.1	0.00	0.00	0.00
6,400.0	0.50	90.00	6,399.9	0.0	34.0	34.0	0.00	0.00	0.00
6,450.0	0.50	90.00	6,449.8	0.0	34.4	34.4	0.00	0.00	0.00
9 5/8"									
6,500.0	0.50	90.00	6,499.8	0.0	34.8	34.8	0.00	0.00	0.00
6,600.0	0.50	90.00	6,599.8	0.0	35.7	35.7	0.00	0.00	0.00
6,700.0	0.50	90.00	6,699.8	0.0	36.6	36.6	0.00	0.00	0.00
6,800.0	0.50	90.00	6,799.8	0.0	37.5	37.5	0.00	0.00	0.00
6,900.0	0.50	90.00	6,899.8	0.0	38.3	38.3	0.00	0.00	0.00
7,000.0	0.50	90.00	6,999.8	0.0	39.2	39.2	0.00	0.00	0.00
7,100.0	0.50	90.00	7,099.8	0.0	40.1	40.1	0.00	0.00	0.00
7,200.0	0.50	90.00	7,199.8	0.0	40.9	40.9	0.00	0.00	0.00
7,300.0	0.50	90.00	7,299.8	0.0	41.8	41.8	0.00	0.00	0.00
7,400.0	0.50	90.00	7,399.8	0.0	42.7	42.7	0.00	0.00	0.00
7,500.0	0.50	90.00	7,499.8	0.0	43.8	43.8	0.00	0.00	0.00
7,600.0	0.50	90.00	7,599.8	0.0	44.4	44.4	0.00	0.00	0.00

Planning Report

Database:	OpenWellsCompass - EDM Prod	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2B						
Company:	Oasis	TVD Reference:	Ref KB @ 2078.0usft						
Project:	Indian Hills	MD Reference:	Ref KB @ 2078.0usft						
Site:	153N-100W-17/18	North Reference:	True						
Well:	Kline Federal 5300 11-18 2B	Survey Calculation Method:	Minimum Curvature						
Wellbore:	Kline Federal 5300 11-18 2B								
Design:	Design #5								
Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
7,700.0	0.50	90.00	7,699.8	0.0	45.3	45.3	0.00	0.00	0.00
7,800.0	0.50	90.00	7,799.8	0.0	46.2	46.2	0.00	0.00	0.00
7,900.0	0.50	90.00	7,899.8	0.0	47.1	47.1	0.00	0.00	0.00
8,000.0	0.50	90.00	7,999.8	0.0	47.9	47.9	0.00	0.00	0.00
8,100.0	0.50	90.00	8,099.8	0.0	48.8	48.8	0.00	0.00	0.00
8,200.0	0.50	90.00	8,199.8	0.0	49.7	49.7	0.00	0.00	0.00
8,226.7	0.50	90.00	8,226.4	0.0	49.9	49.9	0.00	0.00	0.00
8,243.3	0.00	0.00	8,243.1	0.0	50.0	50.0	3.00	-3.00	0.00
8,300.0	0.00	0.00	8,299.8	0.0	50.0	50.0	0.00	0.00	0.00
8,400.0	0.00	0.00	8,399.8	0.0	50.0	50.0	0.00	0.00	0.00
8,500.0	0.00	0.00	8,499.8	0.0	50.0	50.0	0.00	0.00	0.00
8,600.0	0.00	0.00	8,599.8	0.0	50.0	50.0	0.00	0.00	0.00
8,700.0	0.00	0.00	8,699.8	0.0	50.0	50.0	0.00	0.00	0.00
8,800.0	0.00	0.00	8,799.8	0.0	50.0	50.0	0.00	0.00	0.00
8,900.0	0.00	0.00	8,899.8	0.0	50.0	50.0	0.00	0.00	0.00
9,000.0	0.00	0.00	8,999.8	0.0	50.0	50.0	0.00	0.00	0.00
9,100.0	0.00	0.00	9,099.8	0.0	50.0	50.0	0.00	0.00	0.00
9,200.0	0.00	0.00	9,199.8	0.0	50.0	50.0	0.00	0.00	0.00
9,300.0	0.00	0.00	9,299.8	0.0	50.0	50.0	0.00	0.00	0.00
9,400.0	0.00	0.00	9,399.8	0.0	50.0	50.0	0.00	0.00	0.00
9,500.0	0.00	0.00	9,499.8	0.0	50.0	50.0	0.00	0.00	0.00
9,600.0	0.00	0.00	9,599.8	0.0	50.0	50.0	0.00	0.00	0.00
9,700.0	0.00	0.00	9,699.8	0.0	50.0	50.0	0.00	0.00	0.00
9,800.0	0.00	0.00	9,799.8	0.0	50.0	50.0	0.00	0.00	0.00
9,900.0	0.00	0.00	9,899.8	0.0	50.0	50.0	0.00	0.00	0.00
10,000.0	0.00	0.00	9,999.8	0.0	50.0	50.0	0.00	0.00	0.00
10,100.0	0.00	0.00	10,099.8	0.0	50.0	50.0	0.00	0.00	0.00
10,200.0	0.00	0.00	10,199.8	0.0	50.0	50.0	0.00	0.00	0.00
10,257.7	0.00	0.00	10,257.5	0.0	50.0	50.0	0.00	0.00	0.00
KOP Build 12°/100'									
10,275.0	2.07	99.60	10,274.8	-0.1	50.3	50.3	11.98	11.98	0.00
10,300.0	5.07	99.60	10,299.7	-0.3	51.8	51.8	12.00	12.00	0.00
10,325.0	8.07	99.60	10,324.8	-0.8	54.6	54.6	12.00	12.00	0.00
10,350.0	11.07	99.60	10,349.2	-1.5	58.7	58.7	12.00	12.00	0.00
10,375.0	14.07	99.60	10,373.6	-2.4	64.1	64.1	12.00	12.00	0.00
10,400.0	17.07	99.60	10,397.7	-3.5	70.7	70.7	12.00	12.00	0.00
10,425.0	20.07	99.60	10,421.4	-4.8	78.6	78.6	12.00	12.00	0.00
10,450.0	23.07	99.60	10,444.6	-6.4	87.6	87.6	12.00	12.00	0.00
10,475.0	26.07	99.60	10,487.4	-8.1	97.9	97.9	12.00	12.00	0.00
10,500.0	29.07	99.60	10,489.5	-10.0	109.3	109.3	12.00	12.00	0.00
10,525.0	32.07	99.60	10,511.0	-12.2	121.8	121.8	12.00	12.00	0.00
10,550.0	35.07	99.60	10,531.9	-14.5	135.5	135.5	12.00	12.00	0.00
10,575.0	38.07	99.60	10,551.9	-16.9	150.1	150.1	12.00	12.00	0.00
10,600.0	41.07	99.60	10,571.2	-19.6	165.8	185.8	12.00	12.00	0.00
10,625.0	44.07	99.60	10,589.6	-22.4	182.5	182.5	12.00	12.00	0.00
10,650.0	47.07	99.60	10,607.1	-25.4	200.1	200.1	12.00	12.00	0.00
10,675.0	50.07	99.60	10,623.7	-28.5	218.6	218.6	12.00	12.00	0.00
10,700.0	53.07	99.60	10,639.2	-31.8	237.9	237.9	12.00	12.00	0.00
10,725.0	56.07	99.60	10,653.7	-35.2	258.0	258.0	12.00	12.00	0.00
10,750.0	59.07	99.60	10,667.1	-38.7	278.8	278.8	12.00	12.00	0.00
10,775.0	62.07	99.60	10,679.4	-42.3	300.3	300.3	12.00	12.00	0.00
10,800.0	65.07	99.60	10,690.5	-46.1	322.3	322.3	12.00	12.00	0.00
10,825.0	68.07	99.60	10,700.4	-49.9	344.9	344.9	12.00	12.00	0.00
10,850.0	71.07	99.60	10,709.2	-53.8	368.0	368.0	12.00	12.00	0.00
10,875.0	74.07	99.60	10,716.6	-57.8	391.6	391.6	12.00	12.00	0.00

Planning Report

Database:	OpenWellsCompass - EDM Prod	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2B
Company:	Oasis	TVD Reference:	Ref KB @ 2078.0usft
Project:	Indian Hills	MD Reference:	Ref KB @ 2078.0usft
Site:	153N-100W-17/18	North Reference:	True
Well:	Kline Federal 5300 11-18 2B	Survey Calculation Method:	Minimum Curvature
Wellbore:	Kline Federal 5300 11-18 2B		
Design:	Design #5		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
10,900.0	77.07	99.60	10,722.9	-61.8	415.4	415.4	12.00	12.00	0.00	
10,925.0	80.07	99.60	10,727.8	-65.9	439.6	439.6	12.00	12.00	0.00	
10,950.0	83.07	99.60	10,731.5	-70.0	464.0	464.0	12.00	12.00	0.00	
10,975.0	86.07	99.60	10,733.9	-74.2	488.5	488.5	12.00	12.00	0.00	
11,000.0	89.07	99.60	10,734.9	-78.3	513.1	513.1	12.00	12.00	0.00	
11,005.2	89.70	99.60	10,735.0	-79.2	518.3	518.3	12.00	12.00	0.00	
EOC										
11,006.0	89.70	99.58	10,735.0	-79.3	519.0	519.0	1.97	0.40	-1.93	
T										
11,100.0	89.70	97.70	10,735.5	-93.5	612.0	812.0	2.00	0.00	-2.00	
11,200.0	89.70	95.70	10,736.0	-105.1	711.3	711.3	2.00	0.00	-2.00	
11,300.0	89.70	93.70	10,736.5	-113.3	810.9	810.9	2.00	0.00	-2.00	
11,400.0	89.70	91.70	10,737.0	-118.1	910.8	910.8	2.00	0.00	-2.00	
11,485.0	89.70	90.00	10,737.5	-119.3	995.8	995.8	2.00	0.00	-2.00	
11,500.0	89.70	90.00	10,737.6	-119.3	1,010.8	1,010.8	0.00	0.00	0.00	
11,600.0	89.70	90.00	10,738.1	-119.3	1,110.8	1,110.8	0.00	0.00	0.00	
11,700.0	89.70	90.00	10,738.6	-119.3	1,210.8	1,210.8	0.00	0.00	0.00	
11,800.0	89.70	90.00	10,739.1	-119.3	1,310.8	1,310.8	0.00	0.00	0.00	
11,900.0	89.70	90.00	10,739.6	-119.4	1,410.8	1,410.8	0.00	0.00	0.00	
12,000.0	89.70	90.00	10,740.1	-119.4	1,510.8	1,510.8	0.00	0.00	0.00	
12,100.0	89.70	90.00	10,740.7	-119.4	1,610.8	1,810.8	0.00	0.00	0.00	
12,200.0	89.70	90.00	10,741.2	-119.4	1,710.8	1,710.8	0.00	0.00	0.00	
12,300.0	89.70	90.00	10,741.7	-119.4	1,810.8	1,810.8	0.00	0.00	0.00	
12,400.0	89.70	90.00	10,742.2	-119.4	1,910.8	1,910.8	0.00	0.00	0.00	
12,500.0	89.70	90.00	10,742.7	-119.4	2,010.8	2,010.8	0.00	0.00	0.00	
12,600.0	89.70	90.00	10,743.3	-119.4	2,110.8	2,110.8	0.00	0.00	0.00	
12,700.0	89.70	90.00	10,743.8	-119.4	2,210.8	2,210.8	0.00	0.00	0.00	
12,800.0	89.70	90.00	10,744.3	-119.4	2,310.8	2,310.8	0.00	0.00	0.00	
12,900.0	89.70	90.00	10,744.8	-119.4	2,410.8	2,410.8	0.00	0.00	0.00	
13,000.0	89.70	90.00	10,745.3	-119.4	2,510.8	2,510.8	0.00	0.00	0.00	
13,100.0	89.70	90.00	10,745.8	-119.4	2,610.8	2,610.8	0.00	0.00	0.00	
13,200.0	89.70	90.00	10,746.4	-119.5	2,710.8	2,710.8	0.00	0.00	0.00	
13,300.0	89.70	90.00	10,746.9	-119.5	2,810.8	2,810.8	0.00	0.00	0.00	
13,400.0	89.70	90.00	10,747.4	-119.5	2,910.8	2,910.8	0.00	0.00	0.00	
13,500.0	89.70	90.00	10,747.9	-119.5	3,010.8	3,010.8	0.00	0.00	0.00	
13,600.0	89.70	90.00	10,748.4	-119.5	3,110.8	3,110.8	0.00	0.00	0.00	
13,700.0	89.70	90.00	10,749.0	-119.5	3,210.8	3,210.8	0.00	0.00	0.00	
13,800.0	89.70	90.00	10,749.5	-119.5	3,310.8	3,310.8	0.00	0.00	0.00	
13,900.0	89.70	90.00	10,750.0	-119.5	3,410.8	3,410.8	0.00	0.00	0.00	
14,000.0	89.70	90.00	10,750.5	-119.5	3,510.8	3,510.8	0.00	0.00	0.00	
14,100.0	89.70	90.00	10,751.0	-119.5	3,610.8	3,810.8	0.00	0.00	0.00	
14,200.0	89.70	90.00	10,751.5	-119.5	3,710.8	3,710.8	0.00	0.00	0.00	
14,300.0	89.70	90.00	10,752.1	-119.5	3,810.8	3,810.8	0.00	0.00	0.00	
14,400.0	89.70	90.00	10,752.6	-119.5	3,910.8	3,910.8	0.00	0.00	0.00	
14,500.0	89.70	90.00	10,753.1	-119.6	4,010.8	4,010.8	0.00	0.00	0.00	
14,600.0	89.70	90.00	10,753.6	-119.6	4,110.8	4,110.8	0.00	0.00	0.00	
14,700.0	89.70	90.00	10,754.1	-119.6	4,210.8	4,210.8	0.00	0.00	0.00	
14,800.0	89.70	90.00	10,754.7	-119.6	4,310.8	4,310.8	0.00	0.00	0.00	
14,900.0	89.70	90.00	10,755.2	-119.6	4,410.8	4,410.8	0.00	0.00	0.00	
15,000.0	89.70	90.00	10,755.7	-119.6	4,510.8	4,510.8	0.00	0.00	0.00	
15,100.0	89.70	90.00	10,756.2	-119.6	4,610.8	4,610.8	0.00	0.00	0.00	
15,200.0	89.70	90.00	10,756.7	-119.6	4,710.8	4,710.8	0.00	0.00	0.00	
15,300.0	89.70	90.00	10,757.2	-119.6	4,810.8	4,810.8	0.00	0.00	0.00	
15,400.0	89.70	90.00	10,757.8	-119.6	4,910.8	4,910.8	0.00	0.00	0.00	

Planning Report

Database:	OpenWellsCompass - EDM Prod	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2B
Company:	Oasis	TVD Reference:	Ref KB @ 2078.0usft
Project:	Indian Hills	MD Reference:	Ref KB @ 2078.0usft
Site:	153N-100W-17/18	North Reference:	True
Well:	Kline Federal 5300 11-18 2B	Survey Calculation Method:	Minimum Curvature
Wellbore:	Kline Federal 5300 11-18 2B		
Design:	Design #5		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
15,500.0	89.70	90.00	10,758.3	-119.6	5,010.8	5,010.8	0.00	0.00	0.00	0.00
15,600.0	89.70	90.00	10,758.8	-119.6	5,110.8	5,110.8	0.00	0.00	0.00	0.00
15,700.0	89.70	90.00	10,759.3	-119.6	5,210.8	5,210.8	0.00	0.00	0.00	0.00
15,800.0	89.70	90.00	10,759.8	-119.6	5,310.8	5,310.8	0.00	0.00	0.00	0.00
15,900.0	89.70	90.00	10,760.4	-119.7	5,410.8	5,410.8	0.00	0.00	0.00	0.00
16,000.0	89.70	90.00	10,760.9	-119.7	5,510.7	5,510.7	0.00	0.00	0.00	0.00
16,100.0	89.70	90.00	10,761.4	-119.7	5,610.7	5,810.7	0.00	0.00	0.00	0.00
16,200.0	89.70	90.00	10,761.9	-119.7	5,710.7	5,710.7	0.00	0.00	0.00	0.00
16,300.0	89.70	90.00	10,762.4	-119.7	5,810.7	5,810.7	0.00	0.00	0.00	0.00
16,400.0	89.70	90.00	10,762.9	-119.7	5,910.7	5,910.7	0.00	0.00	0.00	0.00
16,500.0	89.70	90.00	10,763.5	-119.7	6,010.7	6,010.7	0.00	0.00	0.00	0.00
16,600.0	89.70	90.00	10,764.0	-119.7	6,110.7	6,110.7	0.00	0.00	0.00	0.00
16,700.0	89.70	90.00	10,764.5	-119.7	6,210.7	6,210.7	0.00	0.00	0.00	0.00
16,800.0	89.70	90.00	10,765.0	-119.7	6,310.7	6,310.7	0.00	0.00	0.00	0.00
16,900.0	89.70	90.00	10,765.5	-119.7	6,410.7	6,410.7	0.00	0.00	0.00	0.00
17,000.0	89.70	90.00	10,766.1	-119.7	6,510.7	6,510.7	0.00	0.00	0.00	0.00
17,100.0	89.70	90.00	10,766.6	-119.7	6,610.7	6,610.7	0.00	0.00	0.00	0.00
17,200.0	89.70	90.00	10,767.1	-119.8	6,710.7	6,710.7	0.00	0.00	0.00	0.00
17,300.0	89.70	90.00	10,767.6	-119.8	6,810.7	6,810.7	0.00	0.00	0.00	0.00
17,400.0	89.70	90.00	10,768.1	-119.8	6,910.7	6,910.7	0.00	0.00	0.00	0.00
17,500.0	89.70	90.00	10,768.6	-119.8	7,010.7	7,010.7	0.00	0.00	0.00	0.00
17,600.0	89.70	90.00	10,769.2	-119.8	7,110.7	7,110.7	0.00	0.00	0.00	0.00
17,700.0	89.70	90.00	10,769.7	-119.8	7,210.7	7,210.7	0.00	0.00	0.00	0.00
17,800.0	89.70	90.00	10,770.2	-119.8	7,310.7	7,310.7	0.00	0.00	0.00	0.00
17,900.0	89.70	90.00	10,770.7	-119.8	7,410.7	7,410.7	0.00	0.00	0.00	0.00
18,000.0	89.70	90.00	10,771.2	-119.8	7,510.7	7,510.7	0.00	0.00	0.00	0.00
18,100.0	89.70	90.00	10,771.8	-119.8	7,610.7	7,610.7	0.00	0.00	0.00	0.00
18,200.0	89.70	90.00	10,772.3	-119.8	7,710.7	7,710.7	0.00	0.00	0.00	0.00
18,300.0	89.70	90.00	10,772.8	-119.8	7,810.7	7,810.7	0.00	0.00	0.00	0.00
18,400.0	89.70	90.00	10,773.3	-119.8	7,910.7	7,910.7	0.00	0.00	0.00	0.00
18,500.0	89.70	90.00	10,773.8	-119.8	8,010.7	8,010.7	0.00	0.00	0.00	0.00
18,600.0	89.70	90.00	10,774.3	-119.9	8,110.7	8,110.7	0.00	0.00	0.00	0.00
18,700.0	89.70	90.00	10,774.9	-119.9	8,210.7	8,210.7	0.00	0.00	0.00	0.00
18,800.0	89.70	90.00	10,775.4	-119.9	8,310.7	8,310.7	0.00	0.00	0.00	0.00
18,900.0	89.70	90.00	10,775.9	-119.9	8,410.7	8,410.7	0.00	0.00	0.00	0.00
19,000.0	89.70	90.00	10,776.4	-119.9	8,510.7	8,510.7	0.00	0.00	0.00	0.00
19,100.0	89.70	90.00	10,776.9	-119.9	8,610.7	8,610.7	0.00	0.00	0.00	0.00
19,200.0	89.70	90.00	10,777.5	-119.9	8,710.7	8,710.7	0.00	0.00	0.00	0.00
19,300.0	89.70	90.00	10,778.0	-119.9	8,810.7	8,810.7	0.00	0.00	0.00	0.00
19,400.0	89.70	90.00	10,778.5	-119.9	8,910.7	8,910.7	0.00	0.00	0.00	0.00
19,500.0	89.70	90.00	10,779.0	-119.9	9,010.7	9,010.7	0.00	0.00	0.00	0.00
19,600.0	89.70	90.00	10,779.5	-119.9	9,110.7	9,110.7	0.00	0.00	0.00	0.00
19,700.0	89.70	90.00	10,780.0	-119.9	9,210.7	9,210.7	0.00	0.00	0.00	0.00
19,800.0	89.70	90.00	10,780.6	-119.9	9,310.7	9,310.7	0.00	0.00	0.00	0.00
19,900.0	89.70	90.00	10,781.1	-120.0	9,410.7	9,410.7	0.00	0.00	0.00	0.00
20,000.0	89.70	90.00	10,781.6	-120.0	9,510.7	9,510.7	0.00	0.00	0.00	0.00
20,100.0	89.70	90.00	10,782.1	-120.0	9,610.7	9,610.7	0.00	0.00	0.00	0.00
20,200.0	89.70	90.00	10,782.6	-120.0	9,710.7	9,710.7	0.00	0.00	0.00	0.00
20,300.0	89.70	90.00	10,783.2	-120.0	9,810.7	9,810.7	0.00	0.00	0.00	0.00
20,400.0	89.70	90.00	10,783.7	-120.0	9,910.7	9,910.7	0.00	0.00	0.00	0.00
20,462.3	89.70	90.00	10,784.0	-120.0	9,973.0	9,973.0	0.00	0.00	0.00	0.00

Kline Federal 5300 11-18 2B

Planning Report

Database:	OpenWellsCompass - EDM Prod	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2B
Company:	Oasis	TVD Reference:	Ref KB @ 2078.0usft
Project:	Indian Hills	MD Reference:	Ref KB @ 2078.0usft
Site:	153N-100W-17/18	North Reference:	True
Well:	Kline Federal 5300 11-18 2B	Survey Calculation Method:	Minimum Curvature
Wellbore:	Kline Federal 5300 11-18 2B		
Design:	Design #5		

Design Targets										
Target Name	Dip Angle	Dip Dir.	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude	
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)			
- Shape										
Kline Federal 5300 11-11	0.00	0.00	10,784.0	-120.0	9,973.0	408,470.60	1,220,203.37	48° 4' 44.470 N	103° 33' 43.314 W	
- plan hits target center										
- Point										

Casing Points						
Measured Depth (usft)	Vertical Depth (usft)	Name			Casing Diameter (in)	Hole Diameter (in)
2,068.0	2,068.0	13 3/8"			13.375	17.500
6,450.0	6,449.8	9 5/8"			9.625	12.250
11,006.0	10,735.0	7"			7.000	8.750

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name		Lithology	Dip (°)	Dip Direction (°)
1,968.0	1,968.0	Pierre				
5,023.1	5,023.0	Greenhorn				
5,103.1	5,103.0	Mowry				
5,469.1	5,469.0	Dakota				
6,450.1	6,450.0	Rierdon				
6,785.2	6,785.0	Dunham Salt				
6,896.2	6,896.0	Dunham Salt Base				
6,993.2	6,993.0	Spearfish				
7,248.2	7,248.0	Pine Salt				
7,296.2	7,296.0	Pine Salt Base				
7,341.2	7,341.0	Opeche Salt				
7,371.2	7,371.0	Opeche Salt Base				
7,573.2	7,573.0	Broom Creek (Top of Minnelusa Gp.)				
7,653.2	7,653.0	Amsden				
7,821.2	7,821.0	Tyler				
8,012.2	8,012.0	Otter (Base of Minnelusa Gp.)				
8,387.2	8,367.0	Kibbey Lime				
8,517.2	8,517.0	Charles Salt				
9,141.2	9,141.0	UB				
9,216.2	9,216.0	Base Last Salt				
9,284.2	9,284.0	Ratcliffe				
9,421.2	9,421.0	Mission Canyon				
9,999.2	9,999.0	Lodgepole				
10,173.2	10,173.0	Lodgepole Fracture Zone				
10,818.6	10,698.0	False Bakken				
10,848.5	10,708.0	Upper Bakken				
10,896.2	10,722.0	Middle Bakken				
10,948.1	10,731.0	Middle Bakken Sand Target				
12,165.5	10,741.0	Base Middle Bakken Sand Target				
16,989.2	10,766.0	Lower Bakken				
19,883.5	10,761.0	Three Forks				

Planning Report

Database:	OpenWellsCompass - EDM Prod	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2B
Company:	Oasis	TVD Reference:	Ref KB @ 2078.0usft
Project:	Indian Hills	MD Reference:	Ref KB @ 2078.0usft
Site:	153N-100W-17/18	North Reference:	True
Well:	Kline Federal 5300 11-18 2B	Survey Calculation Method:	Minimum Curvature
Wellbore:	Kline Federal 5300 11-18 2B		
Design:	Design #5		

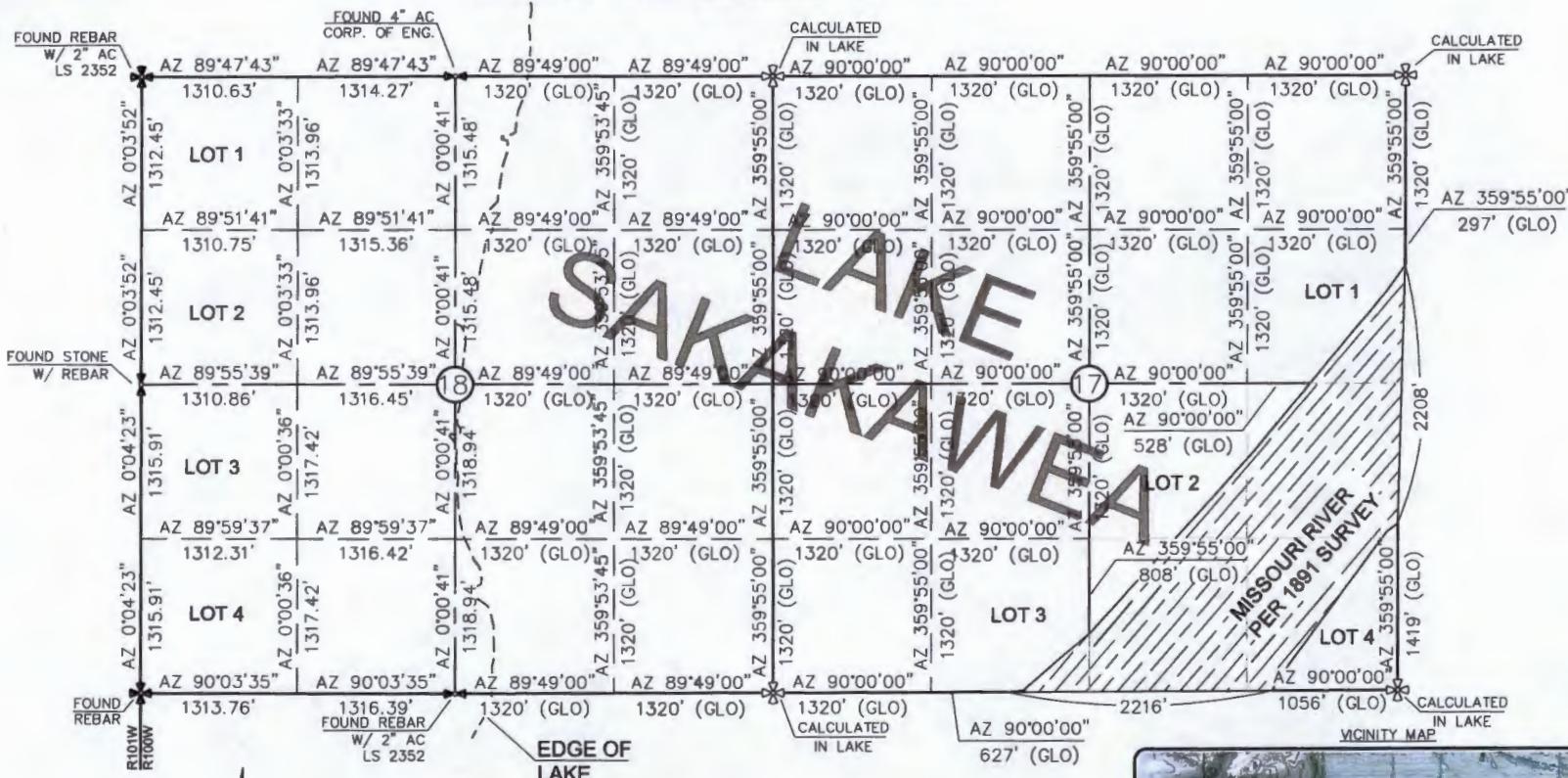
Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			Comment
		+N-S (usft)	+E-W (usft)		
10,257.7	10,257.5	0.0	50.0	KOP Build 12°/100'	
11,005.2	10,735.0	-79.2	518.3	EOC	

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

"KLINE FEDERAL 5300 11-18 2B"

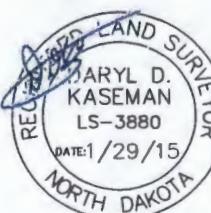
980 FEET FROM NORTH LINE AND 318 FEET FROM WEST LINE
SECTIONS 17 & 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



THIS DOCUMENT WAS ORIGINALLY ISSUED AND SEALED BY DARYL D. KASEMAN, PLS, REGISTRATION NUMBER 3880 ON 1/29/15 AND THE ORIGINAL DOCUMENTS ARE STORED AT THE OFFICES OF INTERSTATE ENGINEERING, INC.

ALL AZIMUTHS ARE BASED ON G.P.S. OBSERVATIONS. THE ORIGINAL SURVEY OF THIS AREA FOR THE GENERAL LAND OFFICE (G.L.O.) WAS 1891. THE CORNERS FOUND ARE AS INDICATED AND ALL OTHERS ARE COMPUTED FROM THOSE CORNERS FOUND AND BASED ON G.L.O. DATA. THE MAPPING ANGLE FOR THIS AREA IS APPROXIMATELY 0°3'.

- MONUMENT - RECOVERED
- MONUMENT - NOT RECOVERED



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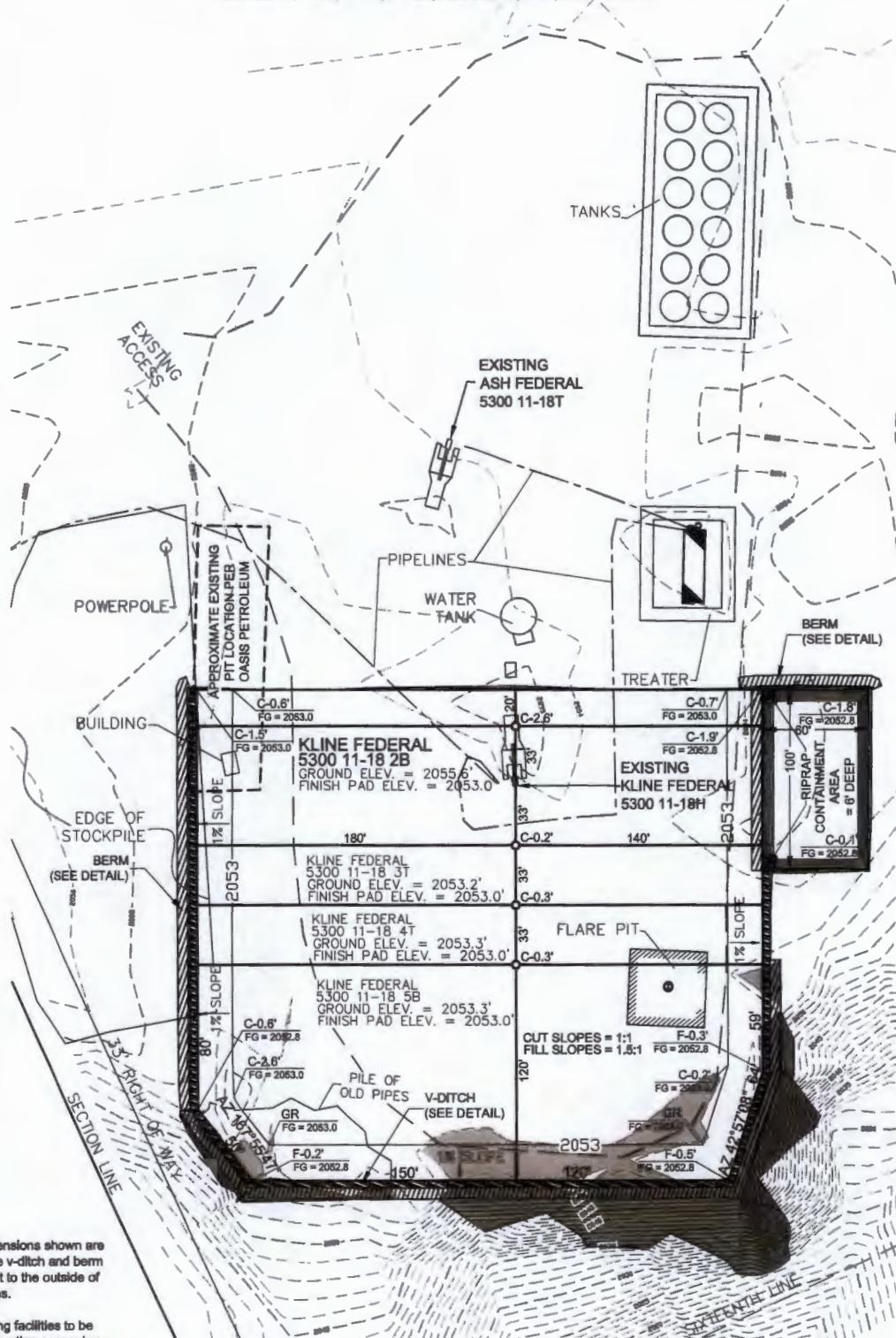
OASIS PETROLEUM NORTH AMERICA, LLC	Project No.: 1001 FANNIN	Date: 01/29/15	By: Daryl D. Kaseman
SECTION BREAKDOWN	Rev. 1	REV. 1	RECORDED
SECTIONS 17 & 18, T153N, R100W	Rev. 2	REV. 2	RECORDED WELLS
MCKENZIE COUNTY, NORTH DAKOTA	Rev. 3	REV. 3	RECORDED LATITUDE
	Rev. 4	REV. 4	RECORDED ELEVATION PT TO PAD
	Rev. 5	REV. 5	RECORDED WELL NAME & SP.
	Rev. 6	REV. 6	RECORDED WELL NAMES & SP.
	Rev. 7	REV. 7	RECORDED WELL NAMES & SP.
	Rev. 8	REV. 8	RECORDED WELL NAMES & SP.
	Rev. 9	REV. 9	RECORDED WELL NAMES & SP.
	Rev. 10	REV. 10	RECORDED WELL NAMES & SP.



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PAD LAYOUT

OASIS PETROLEUM NORTH AMERICA, LLC
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
"KLINE FEDERAL 5300 11-18 2B"
960 FEET FROM NORTH LINE AND 318 FEET FROM WEST LINE
SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

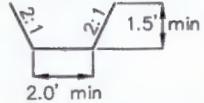


NOTE 1: Pad dimensions shown are to usable area, the v-ditch and berm areas shall be built to the outside of the pad dimensions.

NOTE 2: All existing facilities to be removed on construction expansion.

NOTE 3: Cuttings will be hauled to approved disposal site.

V-DITCH DETAIL



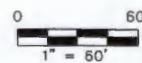
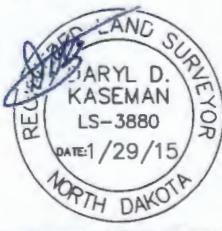
Proposed Contours

Original Contours

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

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www.interstateengineering.com

Other offices in Missoula, Helena and Great Falls

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

MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: BHJ Project No.: 814-08-127
Checked By: D.D.K Date: APRIL 2014

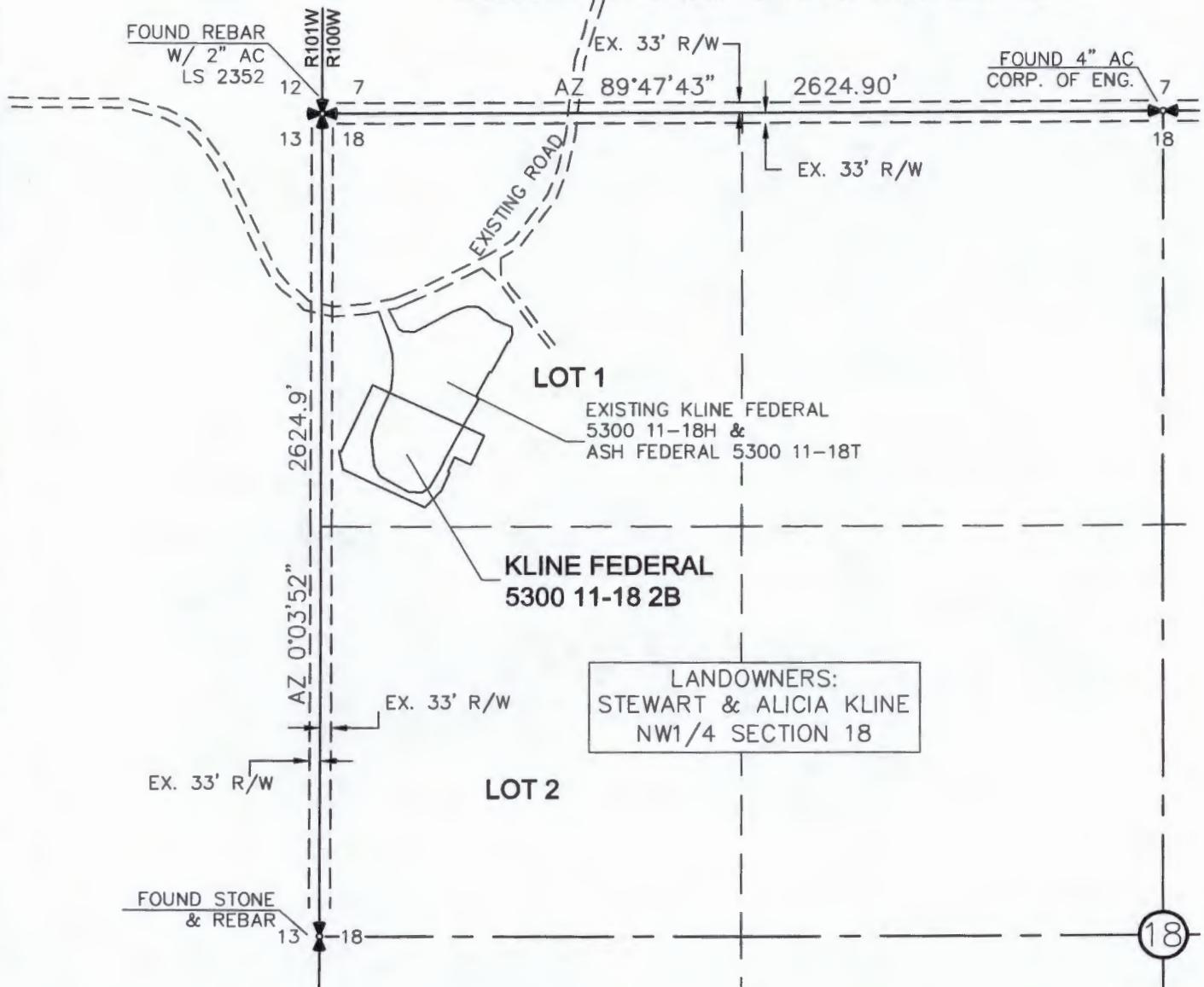
Revision No.	Date	By	Description
REV 1	5/06/14	BHJ	Moved wells
REV 2	5/24/14	JJB	REMOVED LAIRIDGE
REV 3	5/29/14	JJB	ADDED EXISTING PIT TO PAD
REV 4	5/30/14	JJB	CHANGED WELL NAME & BH
REV 5	5/27/15	BHJ	CHANGED WELL NAMES & BH

ACCESS APPROACH

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

"KLINE FEDERAL 5300 11-18 2B"

960 FEET FROM NORTH LINE AND 318 FEET FROM WEST LINE
SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



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



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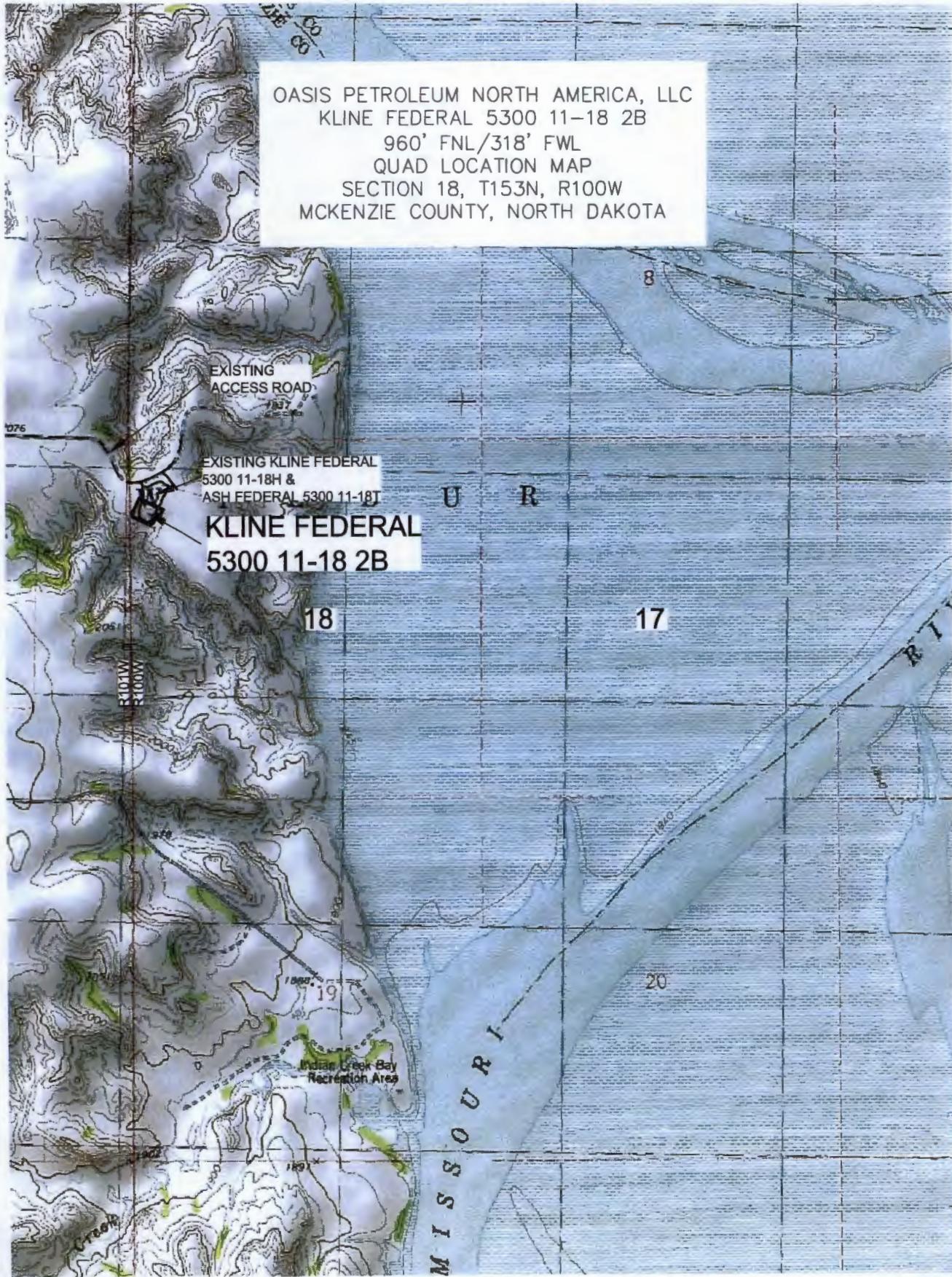
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Project No.	Date	By	Description
REV 1	1/16/14	BS	Moved wells
REV 2	1/27/14	BS	Revised latitude
REV 3	1/29/14	BS	Added Existing Pnt to Pad Layout
REV 4	2/26/14	BS	Changed well name & BH
REV 5	1/27/15	BS	Changed well names & BHs

Project No. S14-09-177
Drawn By: B.H.H.
Checked By: D.D.C.
Date: APRIL 2014



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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.: S14-09-127
Checked By: D.D.K. Date: APRIL 2014

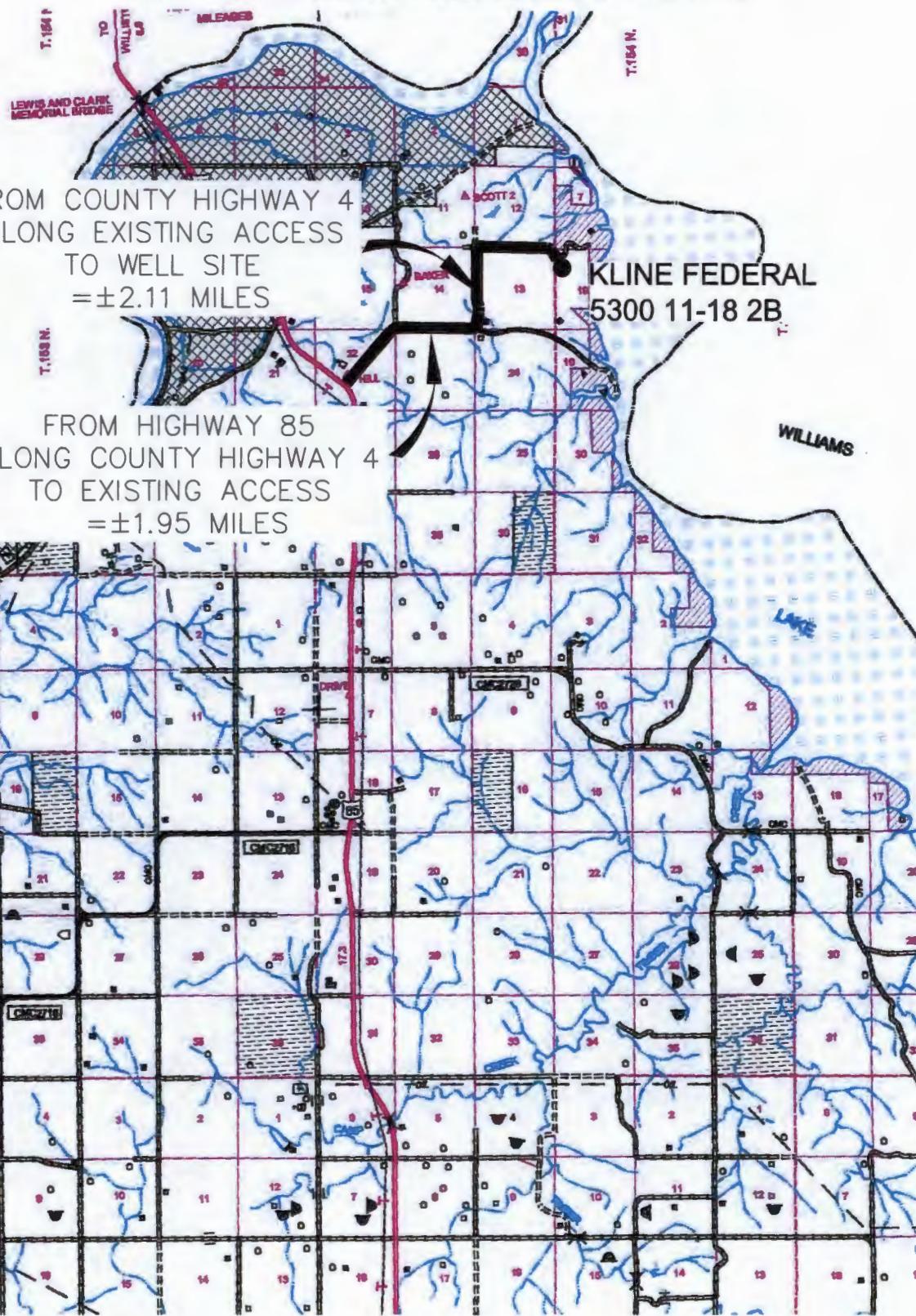
Revision No.	Date	By	Description
REV 1	6/16/14	BHH	Moved wells
REV 2	6/24/14	JJS	Revised latitude
REV 3	6/29/14	JJS	Added existing pit to pad layout
REV 4	12/30/14	JJS	Changed well name & BH
REV 5	1/27/15	BHH	Changed well names & BH

COUNTY ROAD MAP

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

"KLINE FEDERAL 5300 11-18 2B"

960 FEET FROM NORTH LINE AND 318 FEET FROM WEST LINE
SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



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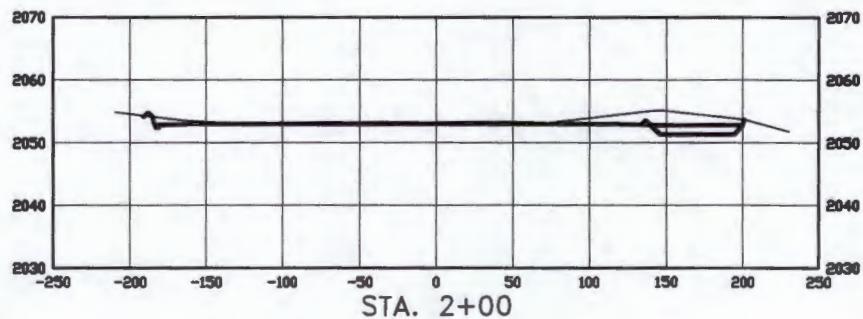
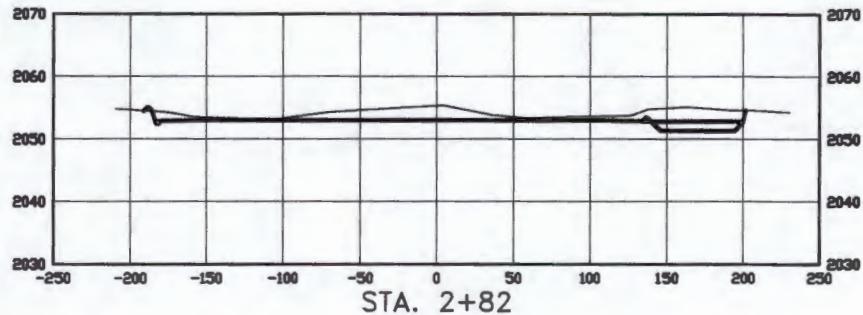
OASIS PETROLEUM NORTH AMERICA, LLC
COUNTY ROAD MAP
SECTION 18, T153N, R100W
MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: B.H.H. Project No.: S14-09-127
Checked By: D.D.K. Date: APRIL 2014

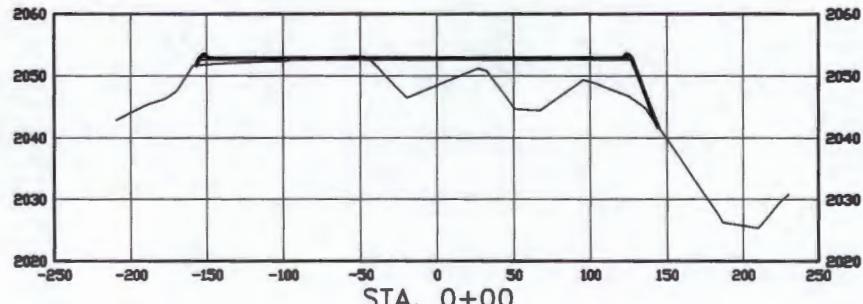
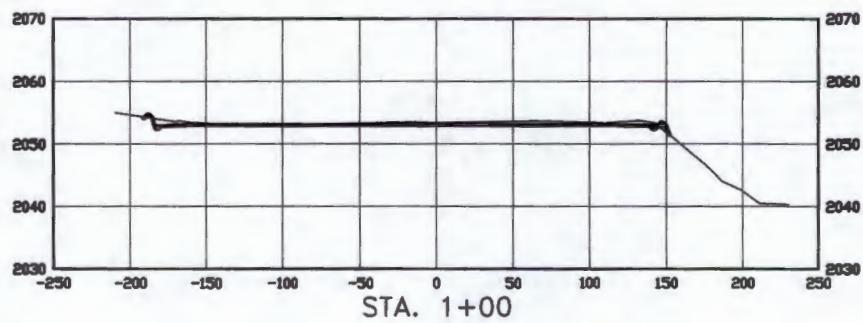
Revision No.	Date	By	Description
REV 1	6/16/14	BHH	Moved wells
REV 2	6/24/14	JBS	Revised latitude
REV 3	6/29/14	AJS	Added existing RT to pad layout
REV 4	12/30/14	JBS	Changed well name & BH
REV 5	1/27/15	BHH	Changed well names & BH

CROSS SECTIONS

OASIS PETROLEUM NORTH AMERICA, LLC
 1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
 "KLINE FEDERAL 5300 11-18 2B"
 960 FEET FROM NORTH LINE AND 318 FEET FROM WEST LINE
 SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



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SCALE

HORIZ 1"=120'
 VERT 1"=30'

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OASIS PETROLEUM NORTH AMERICA, LLC
 PAD CROSS SECTIONS
 SECTION 18, T153N, R100W
 MCKENZIE COUNTY, NORTH DAKOTA
 Drawn By: B.H.H. Project No.: S14-09-127
 Checked By: D.D.K. Date: APRIL 2014

Revision No.	Date	By	Description
REV 1	6/16/14	BHH	Moved wells
REV 2	6/24/14	JHS	Revised latitude
REV 3	8/29/14	JHS	Added existing pit to pad layout
REV 4	12/30/14	JHS	Changed well name & BH
REV 5	1/27/15	BHH	Changed well names & BH

WELL LOCATION SITE QUANTITIES
 OASIS PETROLEUM NORTH AMERICA, LLC
 1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
 "KLINE FEDERAL 5300 11-18 2B"
 960 FEET FROM NORTH LINE AND 318 FEET FROM WEST LINE
 SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

WELL SITE ELEVATION	2055.6
WELL PAD ELEVATION	2053.0
EXCAVATION	1,906
PLUS PIT	0
	<hr/>
EMBANKMENT	869
PLUS SHRINKAGE (30%)	261
	<hr/>
	1,130
STOCKPILE PIT	0
STOCKPILE TOP SOIL (6")	1,934
BERMS	883 LF = 286 CY
DITCHES	727 LF = 111 CY
CONTAINMENT AREA	1,112 CY
ADDITIONAL MATERIAL NEEDED	221
DISTURBED AREA FROM PAD	2.40 ACRES

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

CUT END SLOPES AT 1:1

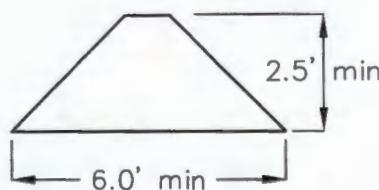
FILL END SLOPES AT 1.5:1

WELL SITE LOCATION

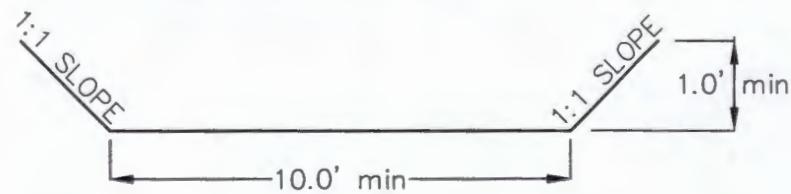
960' FNL

318' FWL

BERM DETAIL



DIVERSION DITCH DETAIL



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OASIS PETROLEUM NORTH AMERICA, LLC
 QUANTITIES
 SECTION 18, T153N, R100W
 MCKENZIE COUNTY, NORTH DAKOTA
 Drawn By: B.H.H. Project No.: S14-09-127
 Checked By: D.D.K. Date: APRIL 2014

Revision No.	Date	By	Description
REV 1	6/16/14	B.H.H.	Moved wells
REV 2	6/24/14	J.E.	Revised latitude
REV 3	6/29/14	J.E.	Added existing pit to pad layout
REV 4	12/30/14	J.E.	Changed well name & BH
REV 5	1/27/15	B.H.H.	Changed well names & BH



Oil and Gas Division 29334

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/

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

Date: 9/15/2014

RE: CORES AND SAMPLES

Well Name: **KLINE FEDERAL 5300 11-18 2T2** Well File No.: 29334
Location: **LOT1 18-153-100** County: MCKENZIE
Permit Type: **Development - HORIZONTAL**
Field: **BAKER** Target Horizon: THREE FORKS B2

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 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.
29334

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 2, 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 checked="" 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 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 11-18 2T2					
Footages 960 F N L	318 F W L	Qtr-Qtr LOT 1	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:

The Oasis Petroleum/ Kline Federal 5300 11-18H 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.

Approved Per #20275

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 2, 2014	
Email Address hmccowan@oasp petroleum.com		

FOR STATE USE ONLY

<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date 9/8/2014	
By Matthew Messana	
Title Engineering Tech	



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.
29334

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 2, 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		Suspension of Drilling	

Well Name and Number KLINE FEDERAL 5300 11-18 2T2					
Footages	960 F N L	318 F WL	Qtr-Qtr LOT 1	Section 18	Township 153 N
Field	Pool		County		Range 100 W
BAKER	BAKKEN		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
--	---------	------	-------	----------

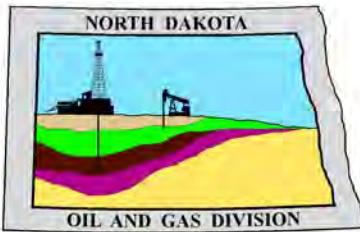
DETAILS OF WORK

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 July 2, 2014	
Email Address hmccowan@oasispetroleum.com		

FOR STATE USE ONLY	
<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date 9/8/2014	
By Matthew Messana	
Title Engineering Tech	



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

September 8, 2014

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

**RE: HORIZONTAL WELL
KLINE FEDERAL 5300 11-18 2T2
LOT1 Section 18-153N-100W
McKenzie County
Well File # 29334**

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: 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. In addition, OASIS PETROLEUM NORTH AMERICA LLC must take into consideration NDAC 43-02-03-28 (Safety Regulation) when contemplating simultaneous operations on the above captioned location. Pursuant to NDAC 43-02-03-28 (Safety Regulation) "No boiler, portable electric lighting generator, or treater shall be placed nearer than 150 feet to any producing well or oil tank." Lastly, OASIS PETROLIUM NORTH AMERICA LLC 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: 10028' E.

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,

Matt Messana
Engineering Technician



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 281-404-9563	
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 11-18 2T2				
Surface Footages 960 F N L 318 F W L		Qtr-Qtr LOT1	Section 18	Township 153 N	Range 100 W	County McKenzie	
Longstring Casing Point Footages 1198 F N L 782 F W L		Qtr-Qtr LOT1	Section 18	Township 153 N	Range 100 W	County McKenzie	
Longstring Casing Point Coordinates From Well Head 238 S From WH 464 E From WH		Azimuth 120 °	Longstring Total Depth 11111 Feet MD 10840 Feet TVD				
Bottom Hole Footages From Nearest Section Line 1530 F N L 205 F E L		Qtr-Qtr SENE	Section 17	Township 153 N	Range 100 W	County McKenzie	
Bottom Hole Coordinates From Well Head 570 S From WH 10023 E From WH		KOP Lateral 1 10363 Feet MD		Azimuth Lateral 1 90 °		Estimated Total Depth Lateral 1 20718 Feet MD 10890 Feet TVD	
Latitude of Well Head 48 ° 04 ' 45.68 "	Longitude of Well Head -103 ° 36 ' 10.19 "	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 B2						Pierre Shale Top 1968	
Proposed Surface Casing	Size 9 - 5/8 "	Weight 36 Lb./Ft.	Depth 2068 Feet	Cement Volume 984 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 11111 Feet MD 10840 Feet TVD		Cement Volume 835 Sacks	Cement Top 3947 Feet	Top Dakota Sand 5448 Feet
Base Last Charles Salt (If Applicable) 9216 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

7 / 02 / 2014

ePermit

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

Permit and File Number 29334	API Number 33 - 053 - 06243
Field BAKER	
Pool BAKKEN	Permit Type DEVELOPMENT

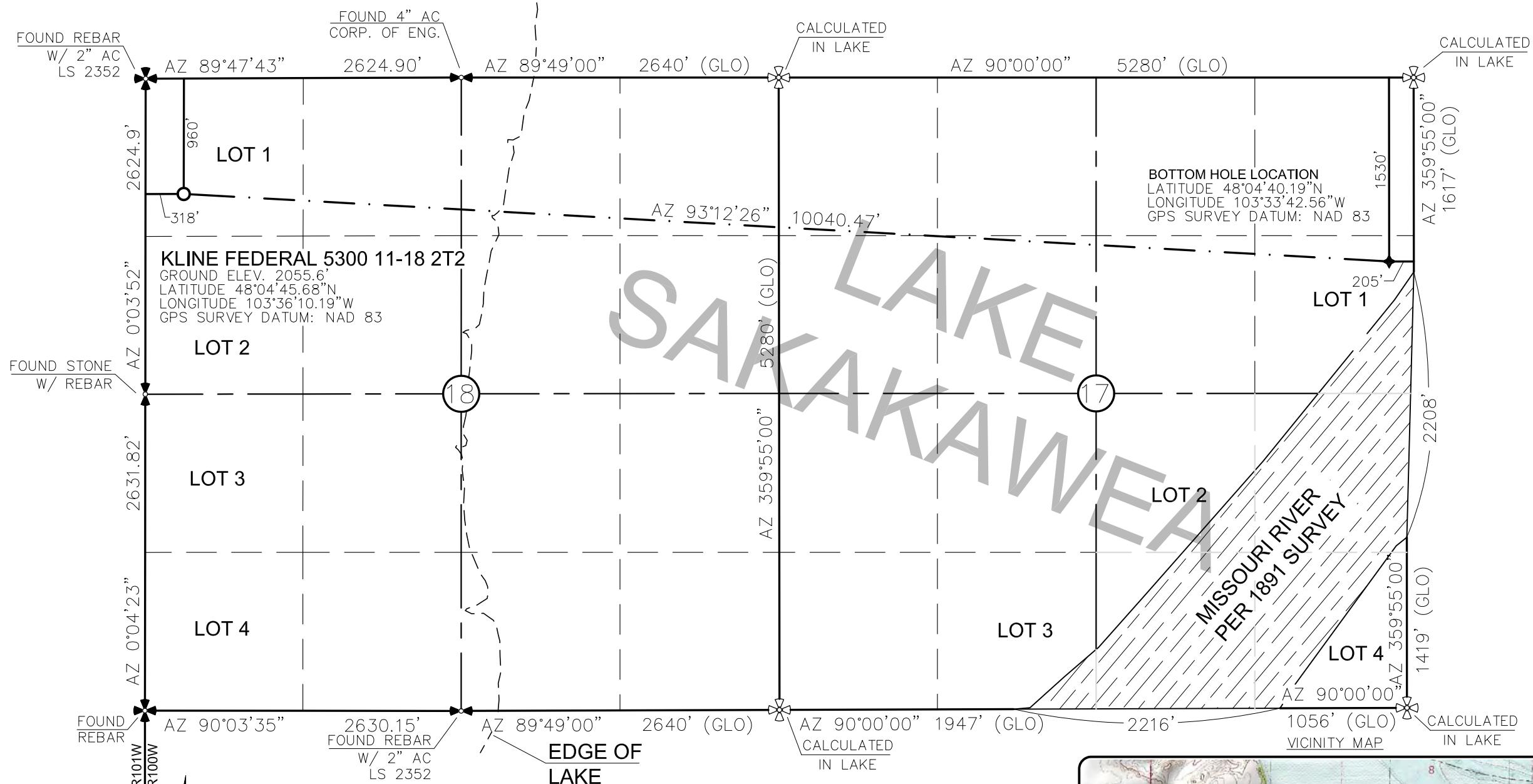
FOR STATE USE ONLY

Date Approved 9 / 8 / 2014
By Matt Messana
Title Engineering Technician

WELL LOCATION PLAT

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

"KLINE FEDERAL 5300 11-18 2T2"
960 FEET FROM NORTH LINE AND 318 FEET FROM WEST LINE
SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

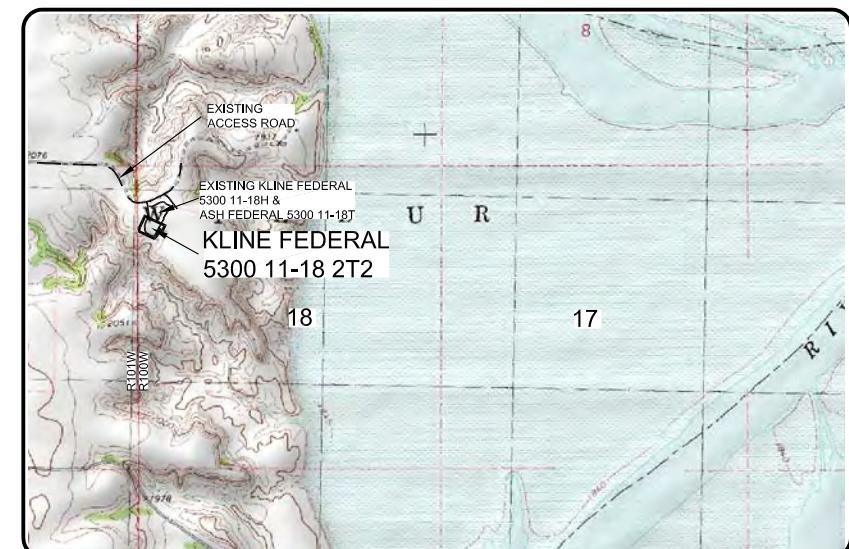
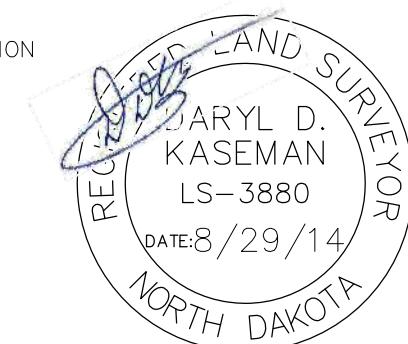


THIS DOCUMENT WAS ORIGINALLY
ISSUED AND SEALED BY DARYL D.
KASEMAN, PLS, REGISTRATION NUMBER
3880 ON 8/29/14 AND THE
ORIGINAL DOCUMENTS ARE STORED AT
THE OFFICES OF INTERSTATE
ENGINEERING, INC.



-  — MONUMENT — RECOVERED
 — MONUMENT — NOT RECOVERED

DARYL D. KASEMAN LS-3880

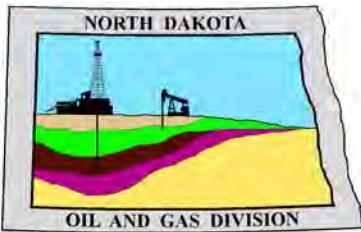


OASIS RETIREMENT
INTERSTATE FINANCIAL INC.

P.O. Box 648 425 East Main Street Sidney, Montana 59270 Ph. (406) 433-5617 Fax. (406) 433-5618 www.interstateeng.com		WELL LOCATION PLA SECTION 18, T153N, R100W MCKENZIE COUNTY, NORTH DAKOTA		Drawn By: <u>B.H.H.</u> Checked By: <u>D.D.K.</u>	Project No.: <u>S14-08-127</u> Date: <u>APRIL 2014</u>	REV 1 6/16/14 BHJ MOVED WELLS REV 2 6/24/14 JUS REVISED LATITUDE REV 3 8/29/14 JUS ADDED EXISTING PIT TO PAD	2014 STH-197 Gas Pipeline - 1st Well of 4 on Quad Pad for Kline Interstate Federal 5300-11-251-04 Other offices in Minnesota, North Dakota and South Dakota
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INTERSTATE
ENGINEERING

1/8



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

DRILLING PLAN									
OPERATOR	Oasis Petroleum	COUNTY/STATE	McKenzie Co., ND						
WELL NAME	Kline Federal 5300 11-18 2T2	RIG	0						
WELL TYPE	Horizontal Three Forks	Surface Location (survey plat):	960' fnl 318' fwl						
LOCATION	NWNW 18-153N-100W	GROUND ELEV:	2052 Finished Pad Elev. Sub Height: 25						
EST. T.D.	20,718'	KB ELEV:	2077						
TOTAL LATERAL:	9,607' (est)	LOGS:	Type	Interval					
PROGNOSIS: Based on 2,077' KB(est)		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							
MARKER	DEPTH (Surf Loc)	DATUM (Surf Loc)	DEVIATION:						
Pierre	NDIC MAP	1,967	Surf:	3 deg. max., 1 deg / 100'; svry every 500'					
Greenhorn		4,614	Prod:	5 deg. max., 1 deg / 100'; svry every 100'					
Mowry		5,020							
Dakota		5,447							
Rierdon		6,446							
Dunham Salt		6,784							
Dunham Salt Base		6,895							
Spearfish		6,992							
Pine Salt		7,247							
Pine Salt Base		7,295							
Opeche Salt		7,340							
Opeche Salt Base		7,370							
Broom Creek (Top of Minnelusa Gp.)		7,572							
Amsden		7,652							
Tyler		7,820							
Otter (Base of Minnelusa Gp.)		8,011							
Kibbey		8,366							
Charles Salt		8,516							
UB		9,140							
Base Last Salt		9,215							
Ratcliffe		9,263							
Mission Canyon		9,439							
Lodgepole		10,001							
Lodgepole Fracture Zone		10,207							
False Bakken		10,697							
Upper Bakken		10,707							
Middle Bakken		10,721							
Lower Bakken		10,766							
Pronghorn		10,780							
Three Forks 1st Bench		10,792							
Three Forks 1st Bench Claystone		10,815							
Three Forks 2nd Bench		10,824							
Three Forks 2nd Bench Claystone		10,852							
Three Forks 3rd Bench		10,872							
Dip Rate:	-0.3								
Max. Anticipated BHP:	4702		Surface Formation: Glacial till						
MUD:	Interval	Type	WT	Vis	WL	Remarks			
Surface:	0' -	2,068'	FW	8.4-9.0	28-32	NC Circ Mud Tanks			
Intermediate:	2,068' -	11,111'	Invert	9.5-10.4	40-50	30+HtHp Circ Mud Tanks			
Lateral:	11,111' -	20,718'	Salt Water	9.8-10.2	28-32	NC Circ Mud Tanks			
CASING:	Size	Wt ppf	Hole	Depth	Cement	WOC	Remarks		
Surface:	13-3/8"	54.5#	17-1/2"	2,068"	To Surface	12	100' into Pierre		
Inermediate (Dakota):	9-5/8"	40#	12-1/4"	6,100'	To Surface	24	Set Casing across Dakota		
Intermediate:	7"	29/32#	8-3/4"	11,111'	3,947"	24	1500' above Dakota		
Production Liner:	4-1/2"	13.5#	6"	20,718"	TOL @ 10,313'		50' above KOP		
PROBABLE PLUGS, IF REQ'D:									
OTHER:	MD	TVD	FNL/FSL	FEL/FWL	S-T-R	AZI			
Surface:	2,068	2,068	960' FNL	318' FWL	SEC 18-T153N-R100W		Survey Company: Build Rate: 12 deg /100'		
KOP:	10,363'	10,363'	960' FNL	370' FWL	SEC 18-T153N-R100W				
EOC:	11,111'	10,840'	1198' FNL	781' FWL	SEC 18-T153N-R100W	120.00			
Casing Point:	11,111'	10,840'	1198' FNL	781' FWL	SEC 18-T153N-R100W	120.00			
Three Forks Lateral TD:	20,718'	10,890"	1530' FNL	205' FEL	SEC 17-T153N-R100W	90.00			
Comments:									
<u>Request Sundry to Waive Open Hole Logs</u>									
<u>Exception well: Oasis Petroleum's Kline 5300 11-18H</u>									
Completion Notes: 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 4/9/2014 Engineering: hlbadger rpm 5/29/14					

**Oasis Petroleum
Well Summary**
Kline Federal 5300 11-18 2T2
Sec. 18 T153N R100W
McKenzie County, North Dakota

SURFACE CASING AND CEMENT DESIGN

Make-up Torque (ft-lbs)									
Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Minimum	Optimum	Max
13-3/8"	0' to 2,068'	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 2,068'	13-3/8", 54.5#, J-55, STC, 8rd	1130 / 1.17	2730 / 2.82	514 / 2.61

API Rating & Safety Factor

- a) Collapse pressure based on full casing evacuation with 9 ppg fluid on backside (2068' setting depth).
- b) Burst pressure based on 9 ppg fluid with no fluid on backside (2068' setting depth).
- c) Based on string weight in 9 ppg fluid at 2068' 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 lb/sk Lost Circulation Control Agent, and .25% CaCL2.

**Oasis Petroleum
Well Summary**
Kline Federal 5300 11-18 2T2
Sec. 18 T153N R100W
McKenzie County, North Dakota

CONTINGENCY INTERMEDIATE CASING AND CEMENT DESIGN

Make-up Torque (ft-lbs)									
Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Minimum	Optimum	Max
9-5/8"	0' - 6101'	40	HCL-80	LTC	8.835"	8.75"**	5,450	7,270	9,090

**Special Drift

Interval	Description	Collapse	Burst	Tension
		(psi) a	(psi) b	(1000 lbs) c
0' - 6101'	9-5/8", 40#, HCL-80, LTC, 8rd	4230 / 5.33	5750 / 1.23	837 / 2.73

API Rating & Safety Factor

- a. Collapse pressure based on 11.5ppg fluid on backside and 9ppg fluid inside of casing.
- b. Burst pressure calculated from a gas kick coming from the production zone (Bakken Pool) at 9,000psi 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 buoied weight) plus 100k lbs overpull.

Cement volumes are estimates based on 9-5/8" casing set in a 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, 0.5lb/sk lost circulation, 10% expanding agent, 2% extender, 2% CaCl2, 0.2% anti foam, and 0.4% fluid loss

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 11-18 2T2
Sec. 18 T153N R100W
McKenzie County, North Dakota

INTERMEDIATE CASING AND CEMENT DESIGN

Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Make-up Torque (ft-lbs)		
							Minimum	Optimum	Max
7"	0' - 6634'	29	P-110	LTC	6.184"	6.059"	5980	7970	8770
7"	6634' - 10363'	32	HCP-110	LTC	6.094"	6.000***	6730	8970	9870
7"	10363' - 11111'	29	P-110	LTC	6.184"	6.059"	5980	7970	8770

**Special Drift

Interval	Description	Collapse	Burst	Tension
		(psi) a	(psi) b	(1000 lbs) c
0' - 6634'	7", 29#, P-110, LTC, 8rd	8530 / 2.47*	11220 / 1.19	797 / 2.08
6634' - 10363'	7", 32#, HCP-110, LTC, 8rd	11820 / 2.19*	12460 / 1.29	
6634' - 10363'	7", 32#, HCP-110, LTC, 8rd	11820 / 1.28**	12460 / 1.29	
10363' - 11111'	7", 29#, P-110, LTC, 8rd	8530 / 1.51*	11220 / 1.15	

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 10,840' TVD.
- c. Based on string weight in 10 ppg fluid, (301k lbs buoyed weight) plus 100k lbs overpull.

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: **207 sks (81 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, 0.5lb/sk D130 LCM

Tail Slurry: **628 sks (172 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, 0.5 lb/sk LCM

**Oasis Petroleum
Well Summary**
Kline Federal 5300 11-18 2T2
Sec. 18 T153N R100W
McKenzie County, North Dakota

PRODUCTION LINER

Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Torque
4-1/2"	10,313' – 20,718'	13.5	P-110	BTC	3.92"	3.795"	4,500

Interval	Description	Collapse	Burst	Tension
		(psi) a	(psi) b	(1000 lbs) c
10,313' – 20,718'	4-1/2", 13.5 lb, P-110, BTC, 8rd	10680 / 1.99	12410 / 1.28	443 / 1.86

API Rating & Safety Factor

- a) Collapse pressure based on full casing evacuation with 9.5 ppg fluid on backside @ 10890' TVD.
- b) Burst pressure based on 9000 psi treating pressure with 10.2 ppg internal fluid gradient and 9 ppg external fluid gradient @ 10890' TVD.
- c) Based on string weight in 9.5 ppg fluid (Buoyed weight: 126k 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)



Company: Oasis Petroleum
 Field: Indian Hills
 Location: 153N-100W-17/18
 Well: Kline Federal 5300 11-18 2T2
 Wellbore #1

Plan: Design #6 (Kline Federal 5300 11-18 2T2/Wellbore #1)

gyro/data
 Precision Wellbore Placement

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/S	+E/W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.0	0.0
2	2500.0	0.00	0.00	2500.0	0.0	0.0	0.0	0.00	0.0	0.0
3	2650.0	3.00	90.00	2649.9	0.0	3.9	2.00	90.00	0.0	3.9
4	3501.2	3.00	90.00	3500.0	0.0	48.5	0.00	0.00	0.0	48.4
5	3651.2	0.00	0.00	3649.9	0.0	52.4	2.00	-180.00	0.0	52.3
6	10363.3	0.00	0.00	10362.0	0.0	52.4	0.00	0.00	0.0	52.3
7	11110.8	89.70	120.00	10839.5	-237.5	463.7	12.00	120.00	0.0	476.5
8	11125.8	89.70	120.00	10839.5	-245.0	476.7	0.00	0.00	0.0	489.9
9	12110.4	89.70	90.46	10844.8	-500.8	1416.3	3.00	-90.08	1442.4	PBHL Kline Federal 5300 11-18 2T2
10	20717.6	89.70	90.46	10889.9	-570.0	10023.0	0.00	0.00	10039.2	PBHL Kline Federal 5300 11-18 2T2

WELL DETAILS: Kline Federal 5300 11-18 2T2

+N/S	+E/W	Northing	Ground Level:	Easting	Latitude	Longitude	Slot
0.0	0.0	408992.29	2053.0	1210243.30	48° 4' 45.680 N	103° 36' 10.190 W	

WELLBORE TARGET DETAILS

Name	TVD	+N/S	+E/W	Latitude	Longitude	Shape
PBHL Kline Federal 5300 11-18 2T2	20890.0	-570.0	10023.0	48° 4' 40.028 N	103° 33' 42.582 W	Point

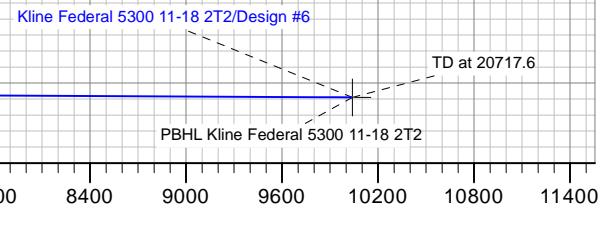
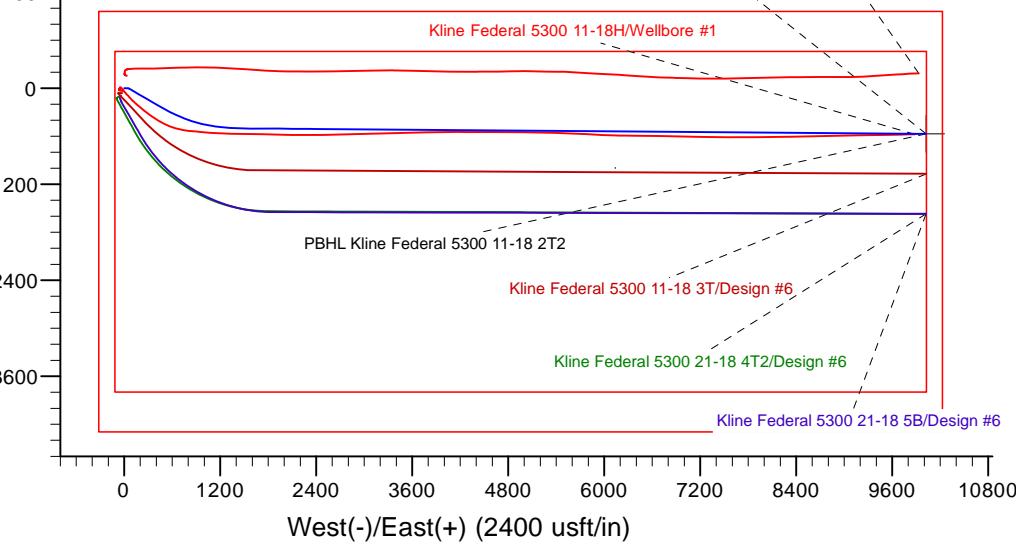
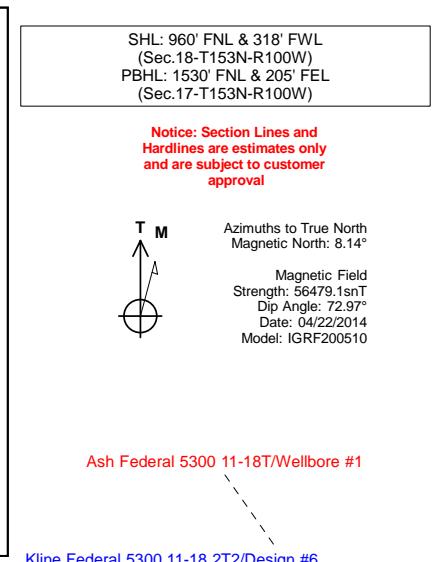
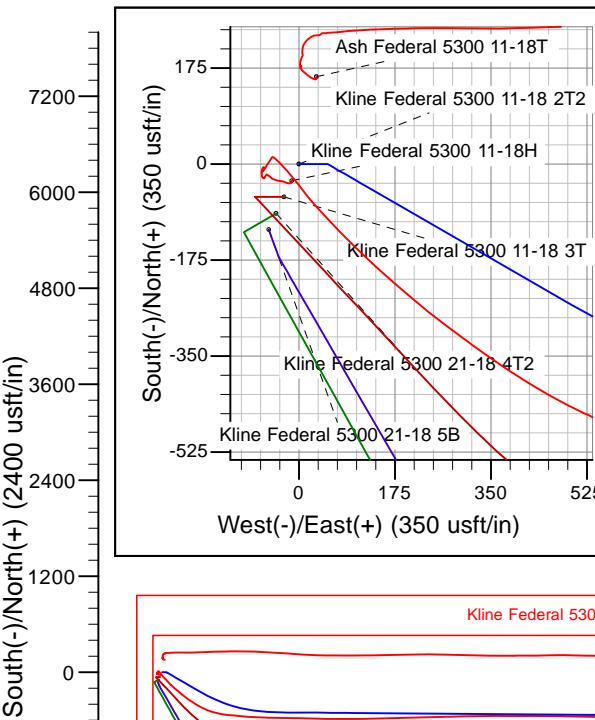
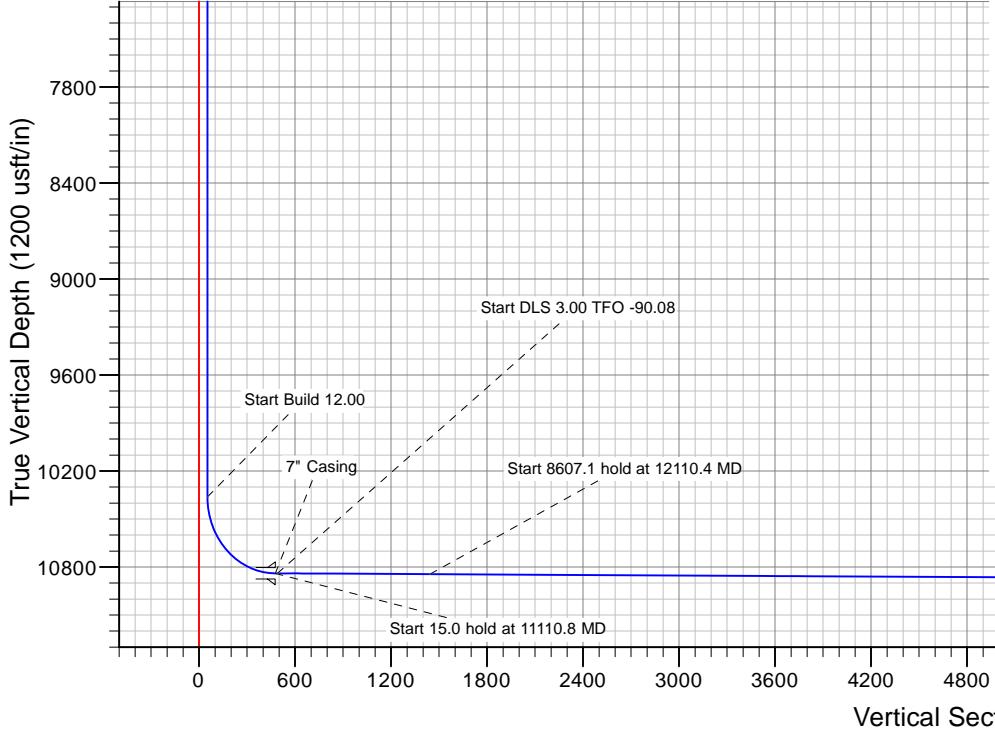
ANNOTATIONS

CASING DETAILS

TVD	MD	Annotation	TVD	MD	Name	Size
2500.0	2500.0	Start Build 2.00	2068.0	2068.0	13 3/8" Casing	13-3/8
2649.9	2650.0	Start 851.2 hold at 2650.0 MD	10839.5	11111.0	7" Casing	7
3500.0	3501.2	Start DLS 2.00 TFO -180.00	6100.0	6101.3	9 5/8" Casing	9-5/8
3649.9	3651.2	Start 6712.1 hold at 3651.2 MD				
10362.0	10363.3	Start Build 12.00				
10839.5	11110.8	Start 15.0 hold at 11110.8 MD				
10839.5	11125.8	Start DLS 3.00 TFO -90.08				
10844.8	12110.4	Start 8607.1 hold at 12110.4 MD				
10889.9	20717.6	TD at 20717.6				

Plan: Design #6 (Kline Federal 5300 11-18 2T2/Wellbore #1)

Created By: M. Loucks Date: 15:24, June 30 2014





Oasis Petroleum

Indian Hills
153N-100W-17/18
Kline Federal 5300 11-18 2T2

Wellbore #1

Plan: Design #6

Standard Planning Report

30 June, 2014

gyro*data*
Precision Wellbore Placement

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2T2
Company:	Oasis Petroleum	TVD Reference:	WELL @ 2078.0usft (Original Well Elev)
Project:	Indian Hills	MD Reference:	WELL @ 2078.0usft (Original Well Elev)
Site:	153N-100W-17/18	North Reference:	True
Well:	Kline Federal 5300 11-18 2T2	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #6		

Project	Indian Hills	
Map System:	US State Plane 1983	System Datum:
Geo Datum:	North American Datum 1983	Mean Sea Level
Map Zone:	North Dakota Northern Zone	

Site	153N-100W-17/18			
Site Position:		Northing:	408,992.30 usft	Latitude:
From:	Lat/Long	Easting:	1,210,243.30 usft	Longitude:
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:

Well	Kline Federal 5300 11-18 2T2				
Well Position	+N/S +E/W	0.0 usft	Northing: Easting:	408,992.29 usft 1,210,243.30 usft	Latitude: Longitude:
Position Uncertainty		0.0 usft	Wellhead Elevation:		Ground Level:

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	04/22/14	8.14	72.97	56,479

Design	Design #6				
Audit Notes:					
Version:		Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:		Depth From (TVD) (usft)	+N/S (usft)	+E/W (usft)	Direction (°)
		0.0	0.0	0.0	93.25

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/S (usft)	+E/W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00
2,650.0	3.00	90.00	2,649.9	0.0	3.9	2.00	2.00	0.00	0.00	90.00
3,501.2	3.00	90.00	3,500.0	0.0	48.5	0.00	0.00	0.00	0.00	0.00
3,651.2	0.00	0.00	3,649.9	0.0	52.4	2.00	-2.00	-60.00	-180.00	
10,363.3	0.00	0.00	10,362.0	0.0	52.4	0.00	0.00	0.00	0.00	0.00
11,110.8	89.70	120.00	10,839.5	-237.5	463.7	12.00	12.00	0.00	120.00	
11,125.8	89.70	120.00	10,839.5	-245.0	476.7	0.00	0.00	0.00	0.00	
12,110.4	89.70	90.46	10,844.8	-500.8	1,416.3	3.00	0.00	-3.00	-90.08	PBHL Kline Federal 5
20,717.6	89.70	90.46	10,889.9	-570.0	10,023.0	0.00	0.00	0.00	0.00	PBHL Kline Federal 5

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2T2
Company:	Oasis Petroleum	TVD Reference:	WELL @ 2078.0usft (Original Well Elev)
Project:	Indian Hills	MD Reference:	WELL @ 2078.0usft (Original Well Elev)
Site:	153N-100W-17/18	North Reference:	True
Well:	Kline Federal 5300 11-18 2T2	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #6		

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,968.0	0.00	0.00	1,968.0	0.0	0.0	0.0	0.00	0.00	0.00
Pierre									
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,068.0	0.00	0.00	2,068.0	0.0	0.0	0.0	0.00	0.00	0.00
13 3/8" Casing									
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
Start Build 2.00									
2,600.0	2.00	90.00	2,600.0	0.0	1.7	1.7	2.00	2.00	0.00
2,650.0	3.00	90.00	2,649.9	0.0	3.9	3.9	2.00	2.00	0.00
Start 851.2 hold at 2650.0 MD									
2,700.0	3.00	90.00	2,699.9	0.0	6.5	6.5	0.00	0.00	0.00
2,800.0	3.00	90.00	2,799.7	0.0	11.8	11.8	0.00	0.00	0.00
2,900.0	3.00	90.00	2,899.6	0.0	17.0	17.0	0.00	0.00	0.00
3,000.0	3.00	90.00	2,999.5	0.0	22.2	22.2	0.00	0.00	0.00
3,100.0	3.00	90.00	3,099.3	0.0	27.5	27.4	0.00	0.00	0.00
3,200.0	3.00	90.00	3,199.2	0.0	32.7	32.7	0.00	0.00	0.00
3,300.0	3.00	90.00	3,299.0	0.0	37.9	37.9	0.00	0.00	0.00
3,400.0	3.00	90.00	3,398.9	0.0	43.2	43.1	0.00	0.00	0.00
3,501.2	3.00	90.00	3,500.0	0.0	48.5	48.4	0.00	0.00	0.00
Start DLS 2.00 TFO -180.00									
3,600.0	1.02	90.00	3,598.7	0.0	51.9	51.9	2.00	-2.00	0.00
3,651.2	0.00	0.00	3,649.9	0.0	52.4	52.3	2.00	-2.00	-175.66
Start 6712.1 hold at 3651.2 MD									
3,700.0	0.00	0.00	3,698.7	0.0	52.4	52.3	0.00	0.00	0.00
3,800.0	0.00	0.00	3,798.7	0.0	52.4	52.3	0.00	0.00	0.00
3,900.0	0.00	0.00	3,898.7	0.0	52.4	52.3	0.00	0.00	0.00
4,000.0	0.00	0.00	3,998.7	0.0	52.4	52.3	0.00	0.00	0.00
4,100.0	0.00	0.00	4,098.7	0.0	52.4	52.3	0.00	0.00	0.00
4,200.0	0.00	0.00	4,198.7	0.0	52.4	52.3	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2T2
Company:	Oasis Petroleum	TVD Reference:	WELL @ 2078.0usft (Original Well Elev)
Project:	Indian Hills	MD Reference:	WELL @ 2078.0usft (Original Well Elev)
Site:	153N-100W-17/18	North Reference:	True
Well:	Kline Federal 5300 11-18 2T2	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #6		

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)
4,300.0	0.00	0.00	4,298.7	0.0	52.4	52.3	0.00	0.00	0.00
4,400.0	0.00	0.00	4,398.7	0.0	52.4	52.3	0.00	0.00	0.00
4,500.0	0.00	0.00	4,498.7	0.0	52.4	52.3	0.00	0.00	0.00
4,600.0	0.00	0.00	4,598.7	0.0	52.4	52.3	0.00	0.00	0.00
4,616.3	0.00	0.00	4,615.0	0.0	52.4	52.3	0.00	0.00	0.00
Greenhorn									
4,700.0	0.00	0.00	4,698.7	0.0	52.4	52.3	0.00	0.00	0.00
4,800.0	0.00	0.00	4,798.7	0.0	52.4	52.3	0.00	0.00	0.00
4,900.0	0.00	0.00	4,898.7	0.0	52.4	52.3	0.00	0.00	0.00
5,000.0	0.00	0.00	4,998.7	0.0	52.4	52.3	0.00	0.00	0.00
5,022.3	0.00	0.00	5,021.0	0.0	52.4	52.3	0.00	0.00	0.00
Mowry									
5,100.0	0.00	0.00	5,098.7	0.0	52.4	52.3	0.00	0.00	0.00
5,200.0	0.00	0.00	5,198.7	0.0	52.4	52.3	0.00	0.00	0.00
5,300.0	0.00	0.00	5,298.7	0.0	52.4	52.3	0.00	0.00	0.00
5,400.0	0.00	0.00	5,398.7	0.0	52.4	52.3	0.00	0.00	0.00
5,449.3	0.00	0.00	5,448.0	0.0	52.4	52.3	0.00	0.00	0.00
Dakota									
5,500.0	0.00	0.00	5,498.7	0.0	52.4	52.3	0.00	0.00	0.00
5,600.0	0.00	0.00	5,598.7	0.0	52.4	52.3	0.00	0.00	0.00
5,700.0	0.00	0.00	5,698.7	0.0	52.4	52.3	0.00	0.00	0.00
5,800.0	0.00	0.00	5,798.7	0.0	52.4	52.3	0.00	0.00	0.00
5,900.0	0.00	0.00	5,898.7	0.0	52.4	52.3	0.00	0.00	0.00
6,000.0	0.00	0.00	5,998.7	0.0	52.4	52.3	0.00	0.00	0.00
6,100.0	0.00	0.00	6,098.7	0.0	52.4	52.3	0.00	0.00	0.00
6,101.3	0.00	0.00	6,100.0	0.0	52.4	52.3	0.00	0.00	0.00
9 5/8" Casing									
6,200.0	0.00	0.00	6,198.7	0.0	52.4	52.3	0.00	0.00	0.00
6,300.0	0.00	0.00	6,298.7	0.0	52.4	52.3	0.00	0.00	0.00
6,400.0	0.00	0.00	6,398.7	0.0	52.4	52.3	0.00	0.00	0.00
6,448.3	0.00	0.00	6,447.0	0.0	52.4	52.3	0.00	0.00	0.00
Rierdon									
6,500.0	0.00	0.00	6,498.7	0.0	52.4	52.3	0.00	0.00	0.00
6,600.0	0.00	0.00	6,598.7	0.0	52.4	52.3	0.00	0.00	0.00
6,700.0	0.00	0.00	6,698.7	0.0	52.4	52.3	0.00	0.00	0.00
6,786.3	0.00	0.00	6,785.0	0.0	52.4	52.3	0.00	0.00	0.00
Dunham Salt									
6,800.0	0.00	0.00	6,798.7	0.0	52.4	52.3	0.00	0.00	0.00
6,897.3	0.00	0.00	6,896.0	0.0	52.4	52.3	0.00	0.00	0.00
Dunham Salt Base									
6,900.0	0.00	0.00	6,898.7	0.0	52.4	52.3	0.00	0.00	0.00
6,994.3	0.00	0.00	6,993.0	0.0	52.4	52.3	0.00	0.00	0.00
Spearfish									
7,000.0	0.00	0.00	6,998.7	0.0	52.4	52.3	0.00	0.00	0.00
7,100.0	0.00	0.00	7,098.7	0.0	52.4	52.3	0.00	0.00	0.00
7,200.0	0.00	0.00	7,198.7	0.0	52.4	52.3	0.00	0.00	0.00
7,249.3	0.00	0.00	7,248.0	0.0	52.4	52.3	0.00	0.00	0.00
Pine Salt									
7,297.3	0.00	0.00	7,296.0	0.0	52.4	52.3	0.00	0.00	0.00
Pine Salt Base									
7,300.0	0.00	0.00	7,298.7	0.0	52.4	52.3	0.00	0.00	0.00
7,342.3	0.00	0.00	7,341.0	0.0	52.4	52.3	0.00	0.00	0.00
Opeche Salt									

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2T2
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Project:	Indian Hills	MD Reference:	WELL @ 2078.0usft (Original Well Elev)
Site:	153N-100W-17/18	North Reference:	True
Well:	Kline Federal 5300 11-18 2T2	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #6		

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)	
7,372.3	0.00	0.00	7,371.0	0.0	52.4	52.3	0.00	0.00	0.00	
Opeche Salt Base										
7,400.0	0.00	0.00	7,398.7	0.0	52.4	52.3	0.00	0.00	0.00	
7,500.0	0.00	0.00	7,498.7	0.0	52.4	52.3	0.00	0.00	0.00	
7,574.3	0.00	0.00	7,573.0	0.0	52.4	52.3	0.00	0.00	0.00	
Broom Creek (Top of Minnelusa Gp.)										
7,600.0	0.00	0.00	7,598.7	0.0	52.4	52.3	0.00	0.00	0.00	
7,654.3	0.00	0.00	7,653.0	0.0	52.4	52.3	0.00	0.00	0.00	
Amson										
7,700.0	0.00	0.00	7,698.7	0.0	52.4	52.3	0.00	0.00	0.00	
7,800.0	0.00	0.00	7,798.7	0.0	52.4	52.3	0.00	0.00	0.00	
7,822.3	0.00	0.00	7,821.0	0.0	52.4	52.3	0.00	0.00	0.00	
Tyler										
7,900.0	0.00	0.00	7,898.7	0.0	52.4	52.3	0.00	0.00	0.00	
8,000.0	0.00	0.00	7,998.7	0.0	52.4	52.3	0.00	0.00	0.00	
8,013.3	0.00	0.00	8,012.0	0.0	52.4	52.3	0.00	0.00	0.00	
Otter (Base of Minnelusa Gp.)										
8,100.0	0.00	0.00	8,098.7	0.0	52.4	52.3	0.00	0.00	0.00	
8,200.0	0.00	0.00	8,198.7	0.0	52.4	52.3	0.00	0.00	0.00	
8,300.0	0.00	0.00	8,298.7	0.0	52.4	52.3	0.00	0.00	0.00	
8,368.3	0.00	0.00	8,367.0	0.0	52.4	52.3	0.00	0.00	0.00	
Kibby										
8,400.0	0.00	0.00	8,398.7	0.0	52.4	52.3	0.00	0.00	0.00	
8,500.0	0.00	0.00	8,498.7	0.0	52.4	52.3	0.00	0.00	0.00	
8,518.3	0.00	0.00	8,517.0	0.0	52.4	52.3	0.00	0.00	0.00	
Charles Salt										
8,600.0	0.00	0.00	8,598.7	0.0	52.4	52.3	0.00	0.00	0.00	
8,700.0	0.00	0.00	8,698.7	0.0	52.4	52.3	0.00	0.00	0.00	
8,800.0	0.00	0.00	8,798.7	0.0	52.4	52.3	0.00	0.00	0.00	
8,900.0	0.00	0.00	8,898.7	0.0	52.4	52.3	0.00	0.00	0.00	
9,000.0	0.00	0.00	8,998.7	0.0	52.4	52.3	0.00	0.00	0.00	
9,100.0	0.00	0.00	9,098.7	0.0	52.4	52.3	0.00	0.00	0.00	
9,142.3	0.00	0.00	9,141.0	0.0	52.4	52.3	0.00	0.00	0.00	
UB										
9,200.0	0.00	0.00	9,198.7	0.0	52.4	52.3	0.00	0.00	0.00	
9,217.3	0.00	0.00	9,216.0	0.0	52.4	52.3	0.00	0.00	0.00	
Base Last Salt										
9,265.3	0.00	0.00	9,264.0	0.0	52.4	52.3	0.00	0.00	0.00	
Ratcliffe										
9,300.0	0.00	0.00	9,298.7	0.0	52.4	52.3	0.00	0.00	0.00	
9,400.0	0.00	0.00	9,398.7	0.0	52.4	52.3	0.00	0.00	0.00	
9,441.3	0.00	0.00	9,440.0	0.0	52.4	52.3	0.00	0.00	0.00	
Mission Canyon										
9,500.0	0.00	0.00	9,498.7	0.0	52.4	52.3	0.00	0.00	0.00	
9,600.0	0.00	0.00	9,598.7	0.0	52.4	52.3	0.00	0.00	0.00	
9,700.0	0.00	0.00	9,698.7	0.0	52.4	52.3	0.00	0.00	0.00	
9,800.0	0.00	0.00	9,798.7	0.0	52.4	52.3	0.00	0.00	0.00	
9,900.0	0.00	0.00	9,898.7	0.0	52.4	52.3	0.00	0.00	0.00	
10,000.0	0.00	0.00	9,998.7	0.0	52.4	52.3	0.00	0.00	0.00	
10,003.3	0.00	0.00	10,002.0	0.0	52.4	52.3	0.00	0.00	0.00	
Lodgepole										
10,100.0	0.00	0.00	10,098.7	0.0	52.4	52.3	0.00	0.00	0.00	

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2T2
Company:	Oasis Petroleum	TVD Reference:	WELL @ 2078.0usft (Original Well Elev)
Project:	Indian Hills	MD Reference:	WELL @ 2078.0usft (Original Well Elev)
Site:	153N-100W-17/18	North Reference:	True
Well:	Kline Federal 5300 11-18 2T2	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #6		

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)	
10,200.0	0.00	0.00	10,198.7	0.0	52.4	52.3	0.00	0.00	0.00	0.00
10,209.3	0.00	0.00	10,208.0	0.0	52.4	52.3	0.00	0.00	0.00	0.00
Lodgepole Fracture Zone										
10,300.0	0.00	0.00	10,298.7	0.0	52.4	52.3	0.00	0.00	0.00	0.00
10,363.3	0.00	0.00	10,362.0	0.0	52.4	52.3	0.00	0.00	0.00	0.00
Start Build 12.00										
10,375.0	1.40	120.00	10,373.7	-0.1	52.5	52.4	12.00	12.00	1,025.96	
10,400.0	4.40	120.00	10,398.7	-0.7	53.6	53.6	12.00	12.00	0.00	
10,425.0	7.40	120.00	10,423.5	-2.0	55.8	55.9	12.00	12.00	0.00	
10,450.0	10.40	120.00	10,448.2	-3.9	59.2	59.3	12.00	12.00	0.00	
10,475.0	13.40	120.00	10,472.7	-6.5	63.7	63.9	12.00	12.00	0.00	
10,500.0	16.40	120.00	10,496.8	-9.7	69.2	69.7	12.00	12.00	0.00	
10,525.0	19.40	120.00	10,520.6	-13.6	75.9	76.5	12.00	12.00	0.00	
10,550.0	22.40	120.00	10,544.0	-18.0	83.6	84.5	12.00	12.00	0.00	
10,575.0	25.40	120.00	10,566.8	-23.1	92.4	93.5	12.00	12.00	0.00	
10,600.0	28.40	120.00	10,589.1	-28.7	102.2	103.6	12.00	12.00	0.00	
10,625.0	31.40	120.00	10,610.8	-35.0	113.0	114.8	12.00	12.00	0.00	
10,650.0	34.40	120.00	10,631.8	-41.8	124.7	126.9	12.00	12.00	0.00	
10,675.0	37.40	120.00	10,652.0	-49.1	137.4	140.0	12.00	12.00	0.00	
10,700.0	40.40	120.00	10,671.5	-56.9	151.0	154.0	12.00	12.00	0.00	
10,725.0	43.40	120.00	10,690.1	-65.3	165.5	168.9	12.00	12.00	0.00	
10,736.0	44.73	120.00	10,698.0	-69.1	172.1	175.8	12.00	12.00	0.00	
False Bakken										
10,750.0	46.40	120.00	10,707.8	-74.1	180.8	184.7	12.00	12.00	0.00	
10,750.3	46.44	120.00	10,708.0	-74.2	181.0	184.9	12.00	12.00	0.00	
Upper Bakken										
10,771.1	48.94	120.00	10,722.0	-81.9	194.3	198.6	12.00	12.00	0.00	
Middle Bakken										
10,775.0	49.40	120.00	10,724.5	-83.4	196.8	201.2	12.00	12.00	0.00	
10,800.0	52.40	120.00	10,740.3	-93.1	213.6	218.6	12.00	12.00	0.00	
10,825.0	55.40	120.00	10,755.0	-103.2	231.1	236.6	12.00	12.00	0.00	
10,846.8	58.02	120.00	10,767.0	-112.3	246.9	252.9	12.00	12.00	0.00	
Lower Bakken										
10,850.0	58.40	120.00	10,768.7	-113.7	249.3	255.3	12.00	12.00	0.00	
10,874.5	61.35	120.00	10,781.0	-124.3	267.6	274.3	12.00	12.00	0.00	
Pronghorn										
10,875.0	61.40	120.00	10,781.2	-124.5	268.0	274.6	12.00	12.00	0.00	
10,900.0	64.40	120.00	10,792.6	-135.6	287.3	294.5	12.00	12.00	0.00	
10,900.9	64.51	120.00	10,793.0	-136.0	288.0	295.2	12.00	12.00	0.00	
Three Forks 1st Bench										
10,925.0	67.40	120.00	10,802.8	-147.0	307.0	314.9	12.00	12.00	0.00	
10,950.0	70.40	120.00	10,811.8	-158.7	327.2	335.7	12.00	12.00	0.00	
10,963.0	71.96	120.00	10,816.0	-164.8	337.9	346.7	12.00	12.00	0.00	
Three Forks 1st Bench Claystone										
10,975.0	73.40	120.00	10,819.6	-170.5	347.8	356.9	12.00	12.00	0.00	
10,995.5	75.86	120.00	10,825.0	-180.4	364.9	374.5	12.00	12.00	0.00	
Three Forks 2nd Bench										
11,000.0	76.40	120.00	10,826.1	-182.6	368.7	378.5	12.00	12.00	0.00	
11,025.0	79.40	120.00	10,831.3	-194.8	389.9	400.3	12.00	12.00	0.00	
11,050.0	82.40	120.00	10,835.3	-207.2	411.2	422.3	12.00	12.00	0.00	
11,075.0	85.40	120.00	10,837.9	-219.6	432.8	444.5	12.00	12.00	0.00	
11,100.0	88.40	120.00	10,839.3	-232.1	454.4	466.8	12.00	12.00	0.00	

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2T2
Company:	Oasis Petroleum	TVD Reference:	WELL @ 2078.0usft (Original Well Elev)
Project:	Indian Hills	MD Reference:	WELL @ 2078.0usft (Original Well Elev)
Site:	153N-100W-17/18	North Reference:	True
Well:	Kline Federal 5300 11-18 2T2	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #6		

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)	
11,110.8	89.70	120.00	10,839.5	-237.5	463.7	476.5	12.00	12.00	0.00	
Start 15.0 hold at 11110.8 MD										
11,111.0	89.70	120.00	10,839.5	-237.6	463.9	476.6	0.00	0.00	0.00	
7" Casing										
11,125.8	89.70	120.00	10,839.5	-245.0	476.7	489.9	0.00	0.00	0.00	
Start DLS 3.00 TFO -90.08										
11,200.0	89.70	117.77	10,839.9	-280.8	541.7	556.8	3.00	0.00	-3.00	
11,300.0	89.69	114.77	10,840.5	-325.1	631.3	648.8	3.00	0.00	-3.00	
11,400.0	89.69	111.77	10,841.0	-364.6	723.2	742.7	3.00	0.00	-3.00	
11,500.0	89.69	108.77	10,841.5	-399.2	817.0	838.3	3.00	0.00	-3.00	
11,600.0	89.69	105.77	10,842.1	-428.9	912.5	935.3	3.00	0.00	-3.00	
11,700.0	89.69	102.77	10,842.6	-453.6	1,009.4	1,033.5	3.00	0.00	-3.00	
11,800.0	89.69	99.77	10,843.2	-473.1	1,107.4	1,132.5	3.00	0.00	-3.00	
11,900.0	89.69	96.77	10,843.7	-487.5	1,206.4	1,232.1	3.00	0.00	-3.00	
12,000.0	89.70	93.77	10,844.2	-496.7	1,305.9	1,332.0	3.00	0.00	-3.00	
12,100.0	89.70	90.77	10,844.8	-500.7	1,405.8	1,432.0	3.00	0.00	-3.00	
12,110.4	89.70	90.46	10,844.8	-500.8	1,416.3	1,442.4	3.00	0.00	-3.00	
Start 8607.1 hold at 12110.4 MD										
12,200.0	89.70	90.46	10,845.3	-501.5	1,505.8	1,531.9	0.00	0.00	0.00	
12,300.0	89.70	90.46	10,845.8	-502.3	1,605.8	1,631.8	0.00	0.00	0.00	
12,400.0	89.70	90.46	10,846.3	-503.1	1,705.8	1,731.6	0.00	0.00	0.00	
12,500.0	89.70	90.46	10,846.8	-503.9	1,805.8	1,831.5	0.00	0.00	0.00	
12,600.0	89.70	90.46	10,847.4	-504.7	1,905.8	1,931.4	0.00	0.00	0.00	
12,700.0	89.70	90.46	10,847.9	-505.5	2,005.8	2,031.3	0.00	0.00	0.00	
12,800.0	89.70	90.46	10,848.4	-506.3	2,105.8	2,131.2	0.00	0.00	0.00	
12,900.0	89.70	90.46	10,848.9	-507.1	2,205.8	2,231.0	0.00	0.00	0.00	
13,000.0	89.70	90.46	10,849.5	-507.9	2,305.8	2,330.9	0.00	0.00	0.00	
13,100.0	89.70	90.46	10,850.0	-508.7	2,405.8	2,430.8	0.00	0.00	0.00	
13,200.0	89.70	90.46	10,850.5	-509.5	2,505.8	2,530.7	0.00	0.00	0.00	
13,300.0	89.70	90.46	10,851.0	-510.4	2,605.8	2,630.6	0.00	0.00	0.00	
13,400.0	89.70	90.46	10,851.6	-511.2	2,705.8	2,730.4	0.00	0.00	0.00	
13,500.0	89.70	90.46	10,852.1	-512.0	2,805.8	2,830.3	0.00	0.00	0.00	
13,600.0	89.70	90.46	10,852.6	-512.8	2,905.8	2,930.2	0.00	0.00	0.00	
13,674.9	89.70	90.46	10,853.0	-513.4	2,980.7	3,005.1	0.00	0.00	0.00	
Three Forks 2nd Bench Claystone										
13,700.0	89.70	90.46	10,853.1	-513.6	3,005.8	3,030.1	0.00	0.00	0.00	
13,800.0	89.70	90.46	10,853.7	-514.4	3,105.8	3,130.0	0.00	0.00	0.00	
13,900.0	89.70	90.46	10,854.2	-515.2	3,205.8	3,229.8	0.00	0.00	0.00	
14,000.0	89.70	90.46	10,854.7	-516.0	3,305.8	3,329.7	0.00	0.00	0.00	
14,100.0	89.70	90.46	10,855.2	-516.8	3,405.7	3,429.6	0.00	0.00	0.00	
14,200.0	89.70	90.46	10,855.7	-517.6	3,505.7	3,529.5	0.00	0.00	0.00	
14,300.0	89.70	90.46	10,856.3	-518.4	3,605.7	3,629.4	0.00	0.00	0.00	
14,400.0	89.70	90.46	10,856.8	-519.2	3,705.7	3,729.2	0.00	0.00	0.00	
14,500.0	89.70	90.46	10,857.3	-520.0	3,805.7	3,829.1	0.00	0.00	0.00	
14,600.0	89.70	90.46	10,857.8	-520.8	3,905.7	3,929.0	0.00	0.00	0.00	
14,700.0	89.70	90.46	10,858.4	-521.6	4,005.7	4,028.9	0.00	0.00	0.00	
14,800.0	89.70	90.46	10,858.9	-522.4	4,105.7	4,128.8	0.00	0.00	0.00	
14,900.0	89.70	90.46	10,859.4	-523.2	4,205.7	4,228.6	0.00	0.00	0.00	
15,000.0	89.70	90.46	10,859.9	-524.0	4,305.7	4,328.5	0.00	0.00	0.00	
15,100.0	89.70	90.46	10,860.5	-524.8	4,405.7	4,428.4	0.00	0.00	0.00	
15,200.0	89.70	90.46	10,861.0	-525.6	4,505.7	4,528.3	0.00	0.00	0.00	
15,300.0	89.70	90.46	10,861.5	-526.4	4,605.7	4,628.2	0.00	0.00	0.00	
15,400.0	89.70	90.46	10,862.0	-527.2	4,705.7	4,728.0	0.00	0.00	0.00	
15,500.0	89.70	90.46	10,862.6	-528.0	4,805.7	4,827.9	0.00	0.00	0.00	

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2T2
Company:	Oasis Petroleum	TVD Reference:	WELL @ 2078.0usft (Original Well Elev)
Project:	Indian Hills	MD Reference:	WELL @ 2078.0usft (Original Well Elev)
Site:	153N-100W-17/18	North Reference:	True
Well:	Kline Federal 5300 11-18 2T2	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #6		

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)	
15,600.0	89.70	90.46	10,863.1	-528.8	4,905.7	4,927.8	0.00	0.00	0.00	
15,700.0	89.70	90.46	10,863.6	-529.7	5,005.7	5,027.7	0.00	0.00	0.00	
15,800.0	89.70	90.46	10,864.1	-530.5	5,105.7	5,127.5	0.00	0.00	0.00	
15,900.0	89.70	90.46	10,864.7	-531.3	5,205.7	5,227.4	0.00	0.00	0.00	
16,000.0	89.70	90.46	10,865.2	-532.1	5,305.7	5,327.3	0.00	0.00	0.00	
16,100.0	89.70	90.46	10,865.7	-532.9	5,405.7	5,427.2	0.00	0.00	0.00	
16,200.0	89.70	90.46	10,866.2	-533.7	5,505.6	5,527.1	0.00	0.00	0.00	
16,300.0	89.70	90.46	10,866.7	-534.5	5,605.6	5,626.9	0.00	0.00	0.00	
16,400.0	89.70	90.46	10,867.3	-535.3	5,705.6	5,726.8	0.00	0.00	0.00	
16,500.0	89.70	90.46	10,867.8	-536.1	5,805.6	5,826.7	0.00	0.00	0.00	
16,600.0	89.70	90.46	10,868.3	-536.9	5,905.6	5,926.6	0.00	0.00	0.00	
16,700.0	89.70	90.46	10,868.8	-537.7	6,005.6	6,026.5	0.00	0.00	0.00	
16,800.0	89.70	90.46	10,869.4	-538.5	6,105.6	6,126.3	0.00	0.00	0.00	
16,900.0	89.70	90.46	10,869.9	-539.3	6,205.6	6,226.2	0.00	0.00	0.00	
17,000.0	89.70	90.46	10,870.4	-540.1	6,305.6	6,326.1	0.00	0.00	0.00	
17,100.0	89.70	90.46	10,870.9	-540.9	6,405.6	6,426.0	0.00	0.00	0.00	
17,200.0	89.70	90.46	10,871.5	-541.7	6,505.6	6,525.9	0.00	0.00	0.00	
17,300.0	89.70	90.46	10,872.0	-542.5	6,605.6	6,625.7	0.00	0.00	0.00	
17,400.0	89.70	90.46	10,872.5	-543.3	6,705.6	6,725.6	0.00	0.00	0.00	
17,494.7	89.70	90.46	10,873.0	-544.1	6,800.3	6,820.2	0.00	0.00	0.00	
Three Forks 3rd Bench										
17,500.0	89.70	90.46	10,873.0	-544.1	6,805.6	6,825.5	0.00	0.00	0.00	
17,600.0	89.70	90.46	10,873.6	-544.9	6,905.6	6,925.4	0.00	0.00	0.00	
17,700.0	89.70	90.46	10,874.1	-545.7	7,005.6	7,025.3	0.00	0.00	0.00	
17,800.0	89.70	90.46	10,874.6	-546.5	7,105.6	7,125.1	0.00	0.00	0.00	
17,900.0	89.70	90.46	10,875.1	-547.3	7,205.6	7,225.0	0.00	0.00	0.00	
18,000.0	89.70	90.46	10,875.6	-548.1	7,305.6	7,324.9	0.00	0.00	0.00	
18,100.0	89.70	90.46	10,876.2	-549.0	7,405.6	7,424.8	0.00	0.00	0.00	
18,200.0	89.70	90.46	10,876.7	-549.8	7,505.6	7,524.7	0.00	0.00	0.00	
18,300.0	89.70	90.46	10,877.2	-550.6	7,605.6	7,624.5	0.00	0.00	0.00	
18,400.0	89.70	90.46	10,877.7	-551.4	7,705.5	7,724.4	0.00	0.00	0.00	
18,500.0	89.70	90.46	10,878.3	-552.2	7,805.5	7,824.3	0.00	0.00	0.00	
18,600.0	89.70	90.46	10,878.8	-553.0	7,905.5	7,924.2	0.00	0.00	0.00	
18,700.0	89.70	90.46	10,879.3	-553.8	8,005.5	8,024.1	0.00	0.00	0.00	
18,800.0	89.70	90.46	10,879.8	-554.6	8,105.5	8,123.9	0.00	0.00	0.00	
18,900.0	89.70	90.46	10,880.4	-555.4	8,205.5	8,223.8	0.00	0.00	0.00	
19,000.0	89.70	90.46	10,880.9	-556.2	8,305.5	8,323.7	0.00	0.00	0.00	
19,100.0	89.70	90.46	10,881.4	-557.0	8,405.5	8,423.6	0.00	0.00	0.00	
19,200.0	89.70	90.46	10,881.9	-557.8	8,505.5	8,523.5	0.00	0.00	0.00	
19,300.0	89.70	90.46	10,882.5	-558.6	8,605.5	8,623.3	0.00	0.00	0.00	
19,400.0	89.70	90.46	10,883.0	-559.4	8,705.5	8,723.2	0.00	0.00	0.00	
19,500.0	89.70	90.46	10,883.5	-560.2	8,805.5	8,823.1	0.00	0.00	0.00	
19,600.0	89.70	90.46	10,884.0	-561.0	8,905.5	8,923.0	0.00	0.00	0.00	
19,700.0	89.70	90.46	10,884.5	-561.8	9,005.5	9,022.9	0.00	0.00	0.00	
19,800.0	89.70	90.46	10,885.1	-562.6	9,105.5	9,122.7	0.00	0.00	0.00	
19,900.0	89.70	90.46	10,885.6	-563.4	9,205.5	9,222.6	0.00	0.00	0.00	
20,000.0	89.70	90.46	10,886.1	-564.2	9,305.5	9,322.5	0.00	0.00	0.00	
20,100.0	89.70	90.46	10,886.6	-565.0	9,405.5	9,422.4	0.00	0.00	0.00	
20,200.0	89.70	90.46	10,887.2	-565.8	9,505.5	9,522.3	0.00	0.00	0.00	
20,300.0	89.70	90.46	10,887.7	-566.6	9,605.5	9,622.1	0.00	0.00	0.00	
20,400.0	89.70	90.46	10,888.2	-567.4	9,705.5	9,722.0	0.00	0.00	0.00	
20,500.0	89.70	90.46	10,888.7	-568.3	9,805.5	9,821.9	0.00	0.00	0.00	
20,600.0	89.70	90.46	10,889.3	-569.1	9,905.4	9,921.8	0.00	0.00	0.00	

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2T2
Company:	Oasis Petroleum	TVD Reference:	WELL @ 2078.0usft (Original Well Elev)
Project:	Indian Hills	MD Reference:	WELL @ 2078.0usft (Original Well Elev)
Site:	153N-100W-17/18	North Reference:	True
Well:	Kline Federal 5300 11-18 2T2	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #6		

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)	
20,700.0	89.70	90.46	10,889.8	-569.9	10,005.4	10,021.7	0.00	0.00	0.00	
20,717.6	89.70	90.46	10,889.9	-570.0	10,023.0	10,039.2	0.00	0.00	0.00	
TD at 20717.6										

Design Targets										
Target Name										
- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/S (usft)	+E/W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
PBHL Kline Federal 530	0.00	0.00	10,890.0	-570.0	10,023.0	408,018.95	1,220,235.20	48° 4' 40.028 N	103° 33' 42.582 W	
- plan misses target center by 0.1usft at 20717.6usft MD (10889.9 TVD, -570.0 N, 10023.0 E)										
- Point										

Casing Points										
Measured Depth (usft)	Vertical Depth (usft)	Name					Casing Diameter ("")	Hole Diameter ("")		
2,068.0	2,068.0	13 3/8" Casing					13-3/8	17-1/2		
6,101.3	6,100.0	9 5/8" Casing					9-5/8	12-1/4		
11,111.0	10,839.5	7" Casing					7	8-3/4		

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2T2
Company:	Oasis Petroleum	TVD Reference:	WELL @ 2078.0usft (Original Well Elev)
Project:	Indian Hills	MD Reference:	WELL @ 2078.0usft (Original Well Elev)
Site:	153N-100W-17/18	North Reference:	True
Well:	Kline Federal 5300 11-18 2T2	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #6		

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,968.0	1,968.0	Pierre			
4,616.3	4,615.0	Greenhorn			
5,022.3	5,021.0	Mowry			
5,449.3	5,448.0	Dakota			
6,448.3	6,447.0	Rierdon			
6,786.3	6,785.0	Dunham Salt			
6,897.3	6,896.0	Dunham Salt Base			
6,994.3	6,993.0	Spearfish			
7,249.3	7,248.0	Pine Salt			
7,297.3	7,296.0	Pine Salt Base			
7,342.3	7,341.0	Opeche Salt			
7,372.3	7,371.0	Opeche Salt Base			
7,574.3	7,573.0	Broom Creek (Top of Minnelusa Gp.)			
7,654.3	7,653.0	Amsden			
7,822.3	7,821.0	Tyler			
8,013.3	8,012.0	Otter (Base of Minnelusa Gp.)			
8,368.3	8,367.0	Kibbey			
8,518.3	8,517.0	Charles Salt			
9,142.3	9,141.0	UB			
9,217.3	9,216.0	Base Last Salt			
9,265.3	9,264.0	Ratcliffe			
9,441.3	9,440.0	Mission Canyon			
10,003.3	10,002.0	Lodgepole			
10,209.3	10,208.0	Lodgepole Fracture Zone			
10,736.0	10,698.0	False Bakken			
10,750.3	10,708.0	Upper Bakken			
10,771.1	10,722.0	Middle Bakken			
10,846.8	10,767.0	Lower Bakken			
10,874.5	10,781.0	Pronghorn			
10,900.9	10,793.0	Three Forks 1st Bench			
10,963.0	10,816.0	Three Forks 1st Bench Claystone			
10,995.5	10,825.0	Three Forks 2nd Bench			
13,674.9	10,853.0	Three Forks 2nd Bench Claystone			
17,494.7	10,873.0	Three Forks 3rd Bench			

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			Comment
		+N/S (usft)	+E/W (usft)		
2,500.0	2,500.0	0.0	0.0	Start Build 2.00	
2,650.0	2,649.9	0.0	3.9	Start 851.2 hold at 2650.0 MD	
3,501.2	3,500.0	0.0	48.5	Start DLS 2.00 TFO -180.00	
3,651.2	3,649.9	0.0	52.4	Start 6712.1 hold at 3651.2 MD	
10,363.3	10,362.0	0.0	52.4	Start Build 12.00	
11,110.8	10,839.5	-237.5	463.7	Start 15.0 hold at 11110.8 MD	
11,125.8	10,839.5	-245.0	476.7	Start DLS 3.00 TFO -90.08	
12,110.4	10,844.8	-500.8	1,416.3	Start 8607.1 hold at 12110.4 MD	
20,717.6	10,889.9	-570.0	10,023.0	TD at 20717.6	

SECTION BREAKDOWN

OASIS PETROLEUM NORTH AMERICA, LLC

1 FANNIN, SUITE 1500, HOUSTON, TX 77002
U.S. POSTAGE PAID

KLINE FEDERAL 5300 11-18 2T2"

960 FEET FROM NORTH LINE AND 318 FEET FROM WEST LINE
SECTIONS 17 & 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

MISSOURI RIVER PER 1891 SURVEY

LOT 1

LOT 2

LOT 3

LOT 4

EDGE OF LAKE

FOUND REBAR W/ 2" AC LS 2352

FOUND STONE W/ REBAR

FOUND 4" AC CORP. OF ENG.

CALCULATED IN LAKE

R101W

1056' (GLO)

1419' (GLO)

2208'

297' (GLO)

627' (GLO)

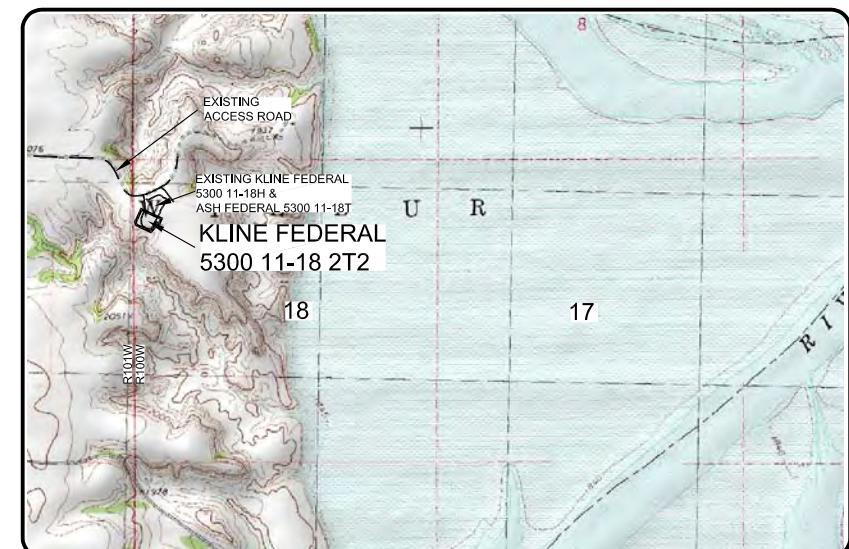
2216'

VICINITY MAP

MISSOURI RIVER PER 1891 SURVEY

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ALL AZIMUTHS ARE BASED ON G.P.S. OBSERVATIONS. THE ORIGINAL SURVEY OF THIS AREA FOR THE GENERAL LAND OFFICE (G.L.O.) WAS 1891. THE CORNERS FOUND ARE AS INDICATED AND ALL OTHERS ARE COMPUTED FROM THOSE CORNERS FOUND AND BASED ON G.L.O. DATA. THE MAPPING ANGLE FOR THIS AREA IS APPROXIMATELY 0'03'.



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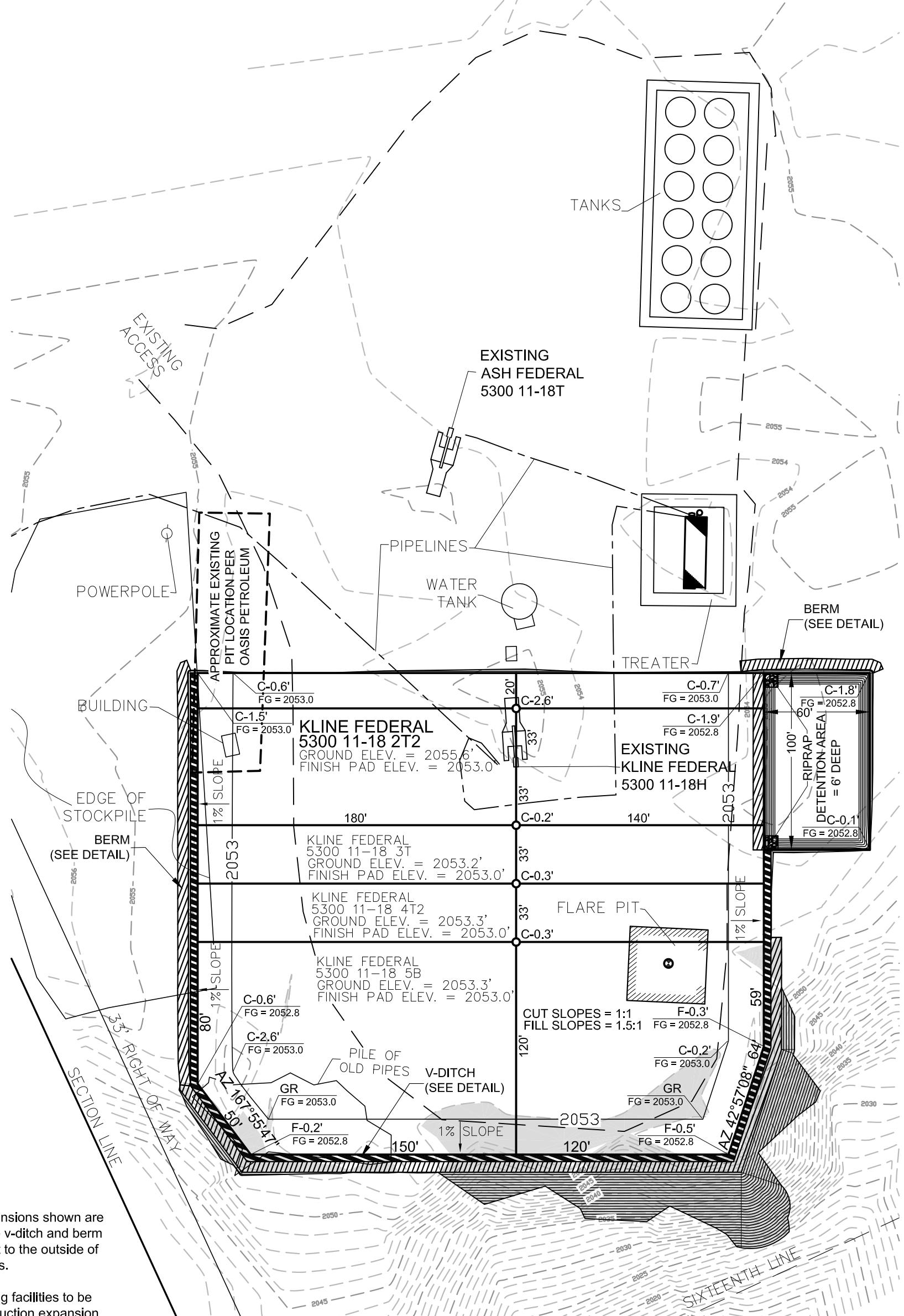
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SHEET NO. 10

2/8

PAD LAYOUT

OASIS PETROLEUM NORTH AMERICA, LLC
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
"KLINE FEDERAL 5300 11-18 2T2"
960 FEET FROM NORTH LINE AND 318 FEET FROM WEST LINE
SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

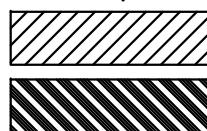


NOTE 1: Pad dimensions shown are to usable area, the v-ditch and berm areas shall be built to the outside of the pad dimensions.

NOTE 2: All existing facilities to be removed on construction expansion.

NOTE 3: Cuttings will be hauled to approved disposal site.

V-DITCH DETAIL



— Proposed Contours
- - - - - Original Contours

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

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

Revision No.	Date	By	Description
REV 1	6/16/14	BHH	MOVED WELLS
REV 2	6/24/14	JJS	REVISED LATITUDE
REV 3	8/29/14	JJS	ADDED EXISTING PIT TO PAD

WELL LOCATION SITE QUANTITIES
 OASIS PETROLEUM NORTH AMERICA, LLC
 1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
 "KLINE FEDERAL 5300 11-18 2T2"
 960 FEET FROM NORTH LINE AND 318 FEET FROM WEST LINE
 SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

WELL SITE ELEVATION	2055.6
WELL PAD ELEVATION	2053.0
EXCAVATION	1,906
PLUS PIT	<u>0</u>
	<u>1,906</u>
EMBANKMENT	869
PLUS SHRINKAGE (30%)	<u>261</u>
	<u>1,130</u>
STOCKPILE PIT	0
STOCKPILE TOP SOIL (6")	1,934
BERMS	883 LF = 286 CY
DITCHES	727 LF = 111 CY
DETENTION AREA	1,112 CY
ADDITIONAL MATERIAL NEEDED	221
DISTURBED AREA FROM PAD	2.40 ACRES

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

CUT END SLOPES AT 1:1

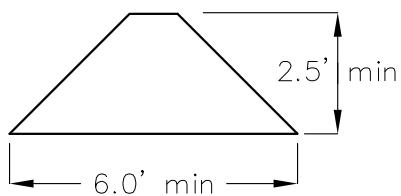
FILL END SLOPES AT 1.5:1

WELL SITE LOCATION

960' FNL

318' FWL

BERM DETAIL



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QUANTITIES

SECTION 18, T153N, R100W

MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: B.H.H. Project No.: S14-09-127

Checked By: D.D.K. Date: APRIL 2014

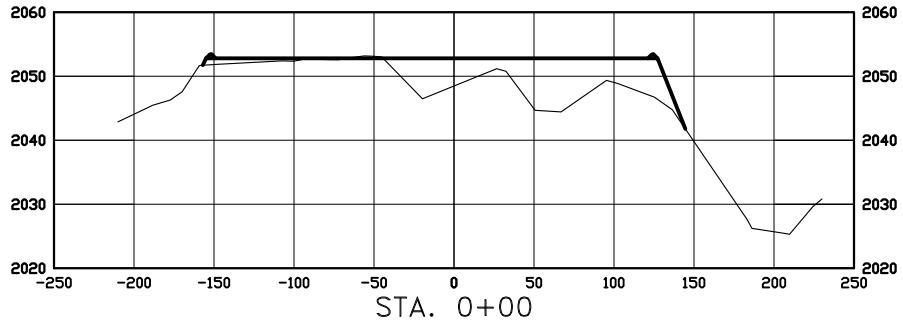
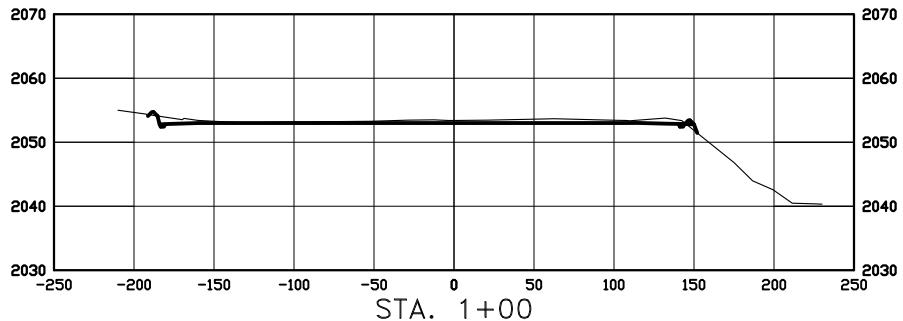
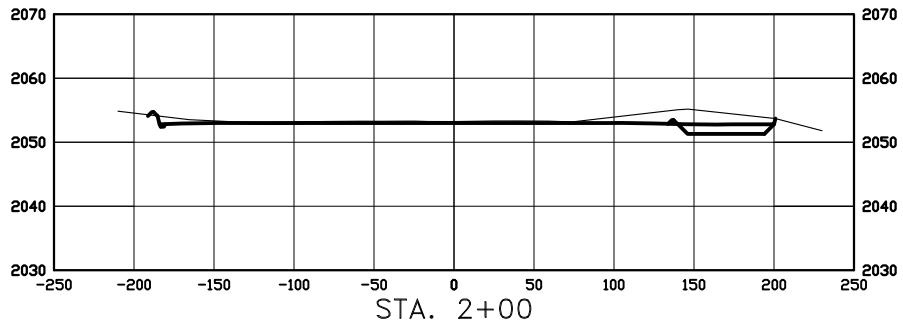
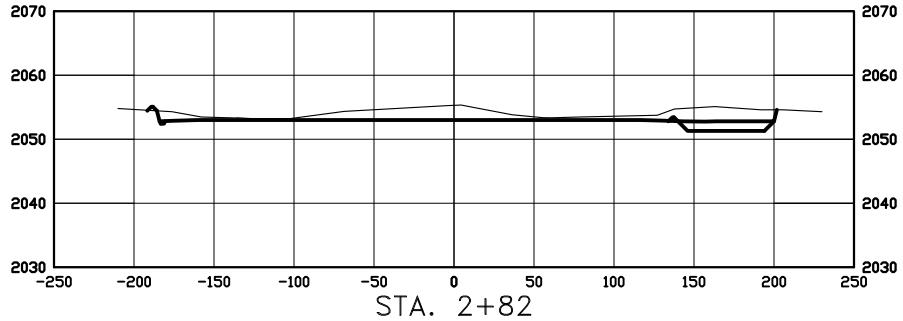
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REV 1	6/16/14	BHH	MOVED WELLS
REV 2	6/24/14	JJS	REVISED LATITUDE
REV 3	8/29/14	JJS	ADDED EXISTING PIT TO PAD LAYOUT

CROSS SECTIONS

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

"KLINE FEDERAL 5300 11-18 2T2"

960 FEET FROM NORTH LINE AND 318 FEET FROM WEST LINE
SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



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SCALE
HORIZ 1"=120'
VERT 1"=30'

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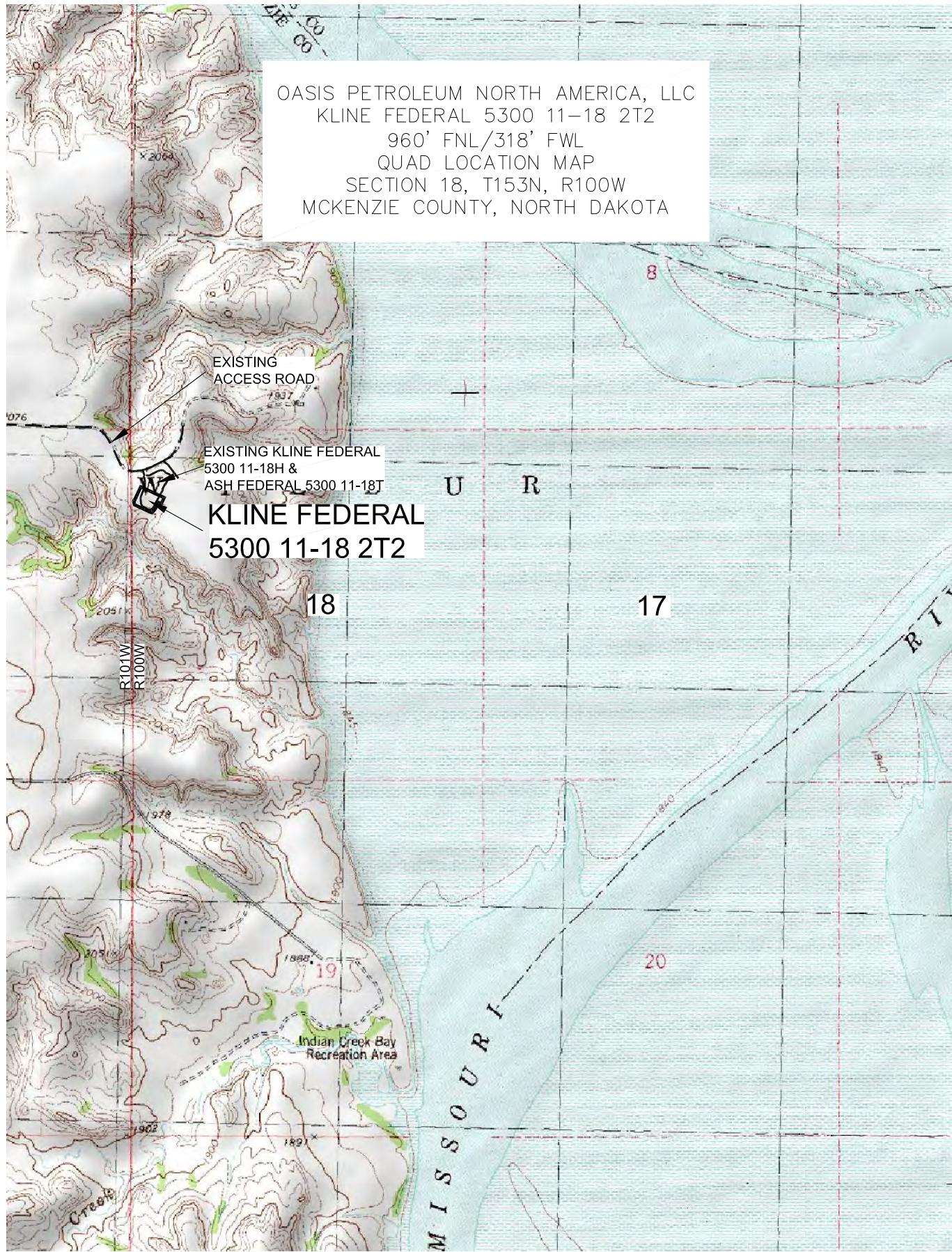
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OASIS PETROLEUM NORTH AMERICA, LLC
PAD CROSS SECTIONS
SECTION 18, T153N, R100W

MCKENZIE COUNTY, NORTH DAKOTA

Drawn By:	B.H.H.	Project No.:	S14-09-127
Checked By:	D.D.K.	Date:	APRIL 2014

Revision No.	Date	By	Description
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OASIS PETROLEUM NORTH AMERICA, LLC
 QUAD LOCATION MAP
 SECTION 18, T153N, R100W
 MCKENZIE COUNTY, NORTH DAKOTA

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Checked By:	D.D.K.	Date:	APRIL 2014

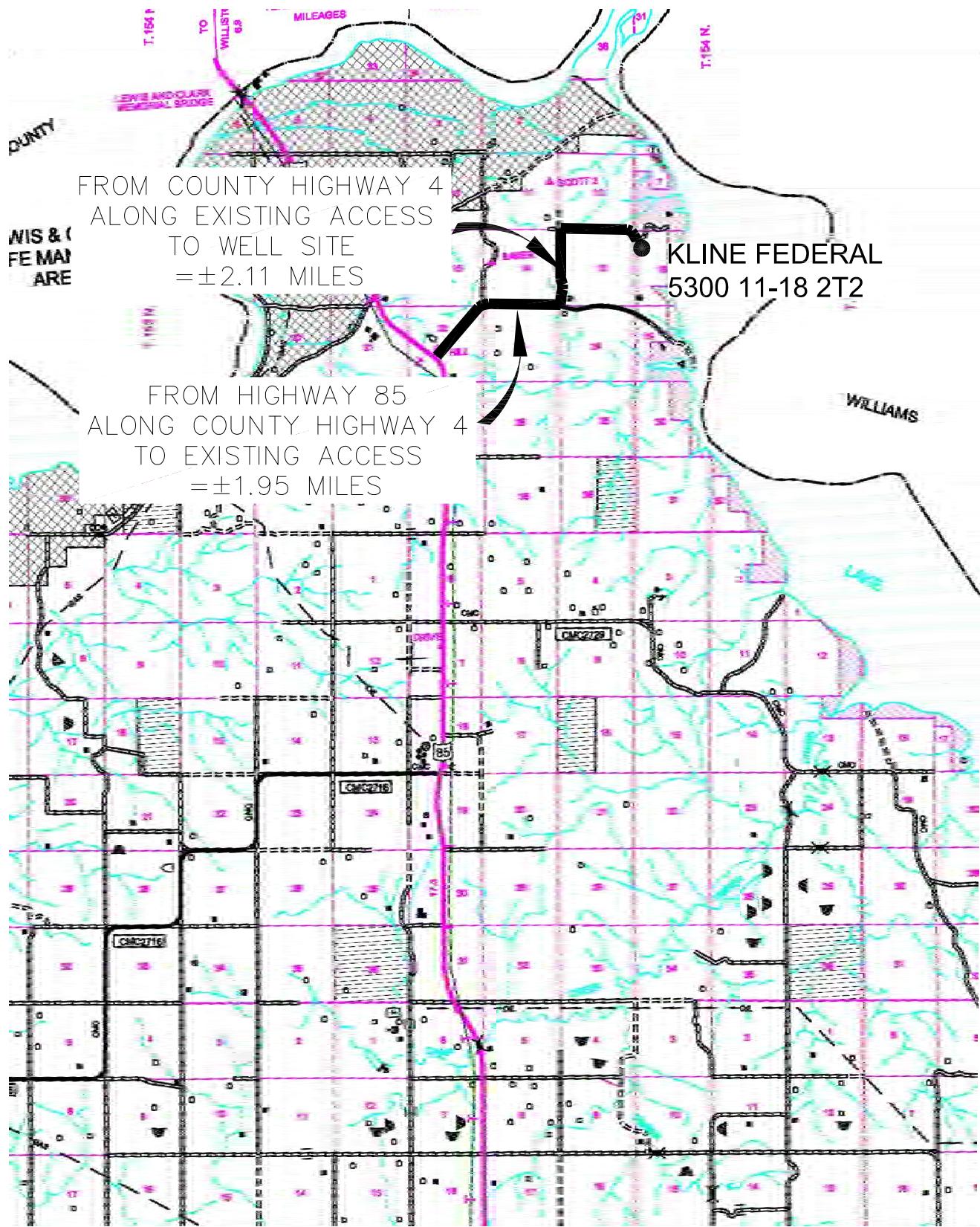
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REV 2	6/24/14	JJS	REVISED LATITUDE
REV 3	8/29/14	JJS	ADDED EXISTING PIT TO PAD LAYOUT

COUNTY ROAD MAP

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

"KLINE FEDERAL 5300 11-18 2T2"

960 FEET FROM NORTH LINE AND 318 FEET FROM WEST LINE
SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



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

MCKENZIE COUNTY, NORTH DAKOTA

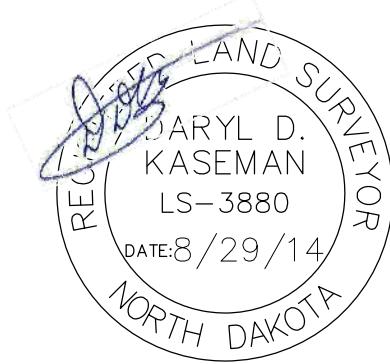
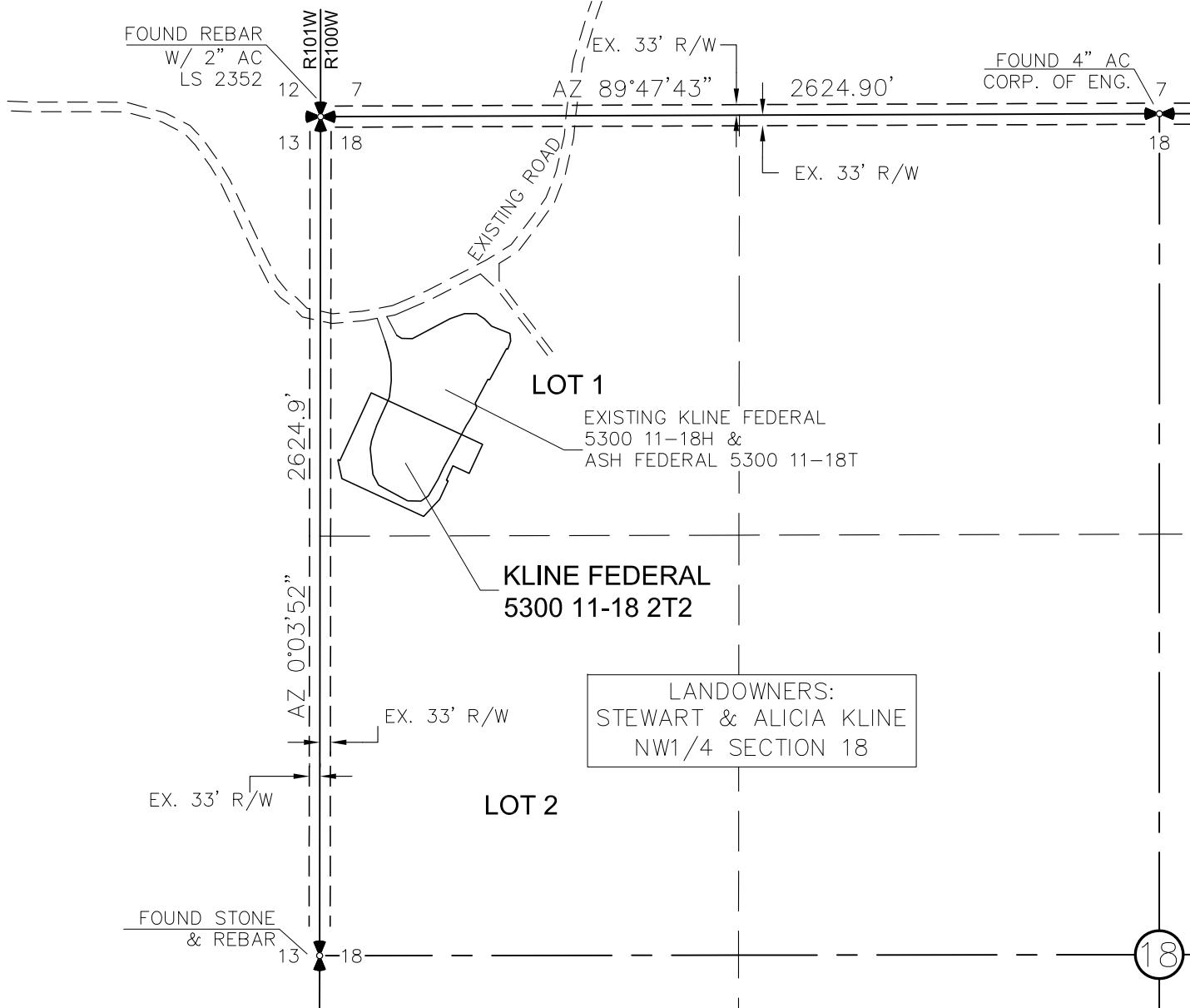
Drawn By: B.H.H. Project No.: S14-09-127
Checked By: D.D.K. Date: APRIL 2014

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ACCESS APPROACH

OASIS PETROLEUM NORTH AMERICA, LLC
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
"KLINE FEDERAL 5300 11-18 2T2"

960 FEET FROM NORTH LINE AND 318 FEET FROM WEST LINE
SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



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Revision No.	Date	By	Description
REV 1	6/16/14	J.S.	MOVED WELLS
REV 2	6/24/14	J.S.	REVISED LATITUDE
REV 3	8/29/14	J.S.	ADDED LOGGING PT TO PAD LAYOUT

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SHEET NO.

GAS CAPTURE PLAN AFFIDAVIT

STATE OF TEXAS §
 §
COUNTY OF HARRIS §

Robert Eason, being duly sworn, states as follows:

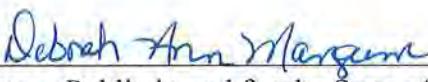
1. He is employed by Oasis Petroleum North America LLC ("Oasis") as Marketing Manager, is over the age of 21 and has personal knowledge of the matters set forth in this affidavit.
2. This affidavit is submitted in conjunction with the Application for Permit to Drill for the Kline Federal 5300 11-18 2T2 well, with a surface location in the NW NW of Section 18, Township 153 North, Range 100 West, McKenzie County, North Dakota (the "Well").
3. Oasis currently anticipates that gas to be produced from the Well will be gathered by Hiland Partners (the "Gathering Company"). Oasis has advised the Gathering Company of its intent to drill the Well and has advised the Gathering Company that it currently anticipates that the Well will be completed in May 2015, with an initial gas production rate of approximately 579 mcf/day.



Robert Eason
Marketing Manager

Subscribed and sworn to before me this 24 day of June, 2014.





Notary Public in and for the State of Texas
My Commission expires: 3-28-2015

GAS CAPTURE PLAN – OASIS PETROLEUM

Kline Federal 5300 11-18 2T2

Section 18-T153N-R100W

Baker Field

McKenzie County, North Dakota

Anticipated first flow date	May-15
Gas Gatherer:	Hiland Partners
Gas to be processed at*:	Hiland Operated Watford City Plant
Maximum Daily Capacity of Existing Gas Line*:	55,000 MCFD
Current Throughput of Existing Gas Line*:	33,000 MCFD
Anticipated Daily Capacity of Existing Gas Line at Date of First Gas Sales*:	66,000 MCFD
Anticipated Throughput of Existing Gas Line at Date of First Gas Sales*:	65,000 MCFD
Gas Gatherer's Issues or Expansion Plans for the Area*:	Line looping and compression
Map:	Attached
Affidavit:	Attached

*Provided by Gatherer

Flowback Strategy

Total Number of Wells at Location: 10

Multi-Well Start-up Plan: Initial production from the 1st new well at the CTB is anticipated in May 2015 with each following well making 1st production approximately every 5th day thereafter

Estimated Flow Rate:	Kline Federal 5300 11-18 2T2 (well)		Kline DSU (10 wells)	
	MCFD	BOPD	MCFD	BOPD
30 Days:	579	643	5,100	5,646
60 Days:	497	552	6,302	6,982
180 Days:	297	330	3,543	3,918

Oasis Flaring Percentage

Statewide	Baker Field
-----------	-------------

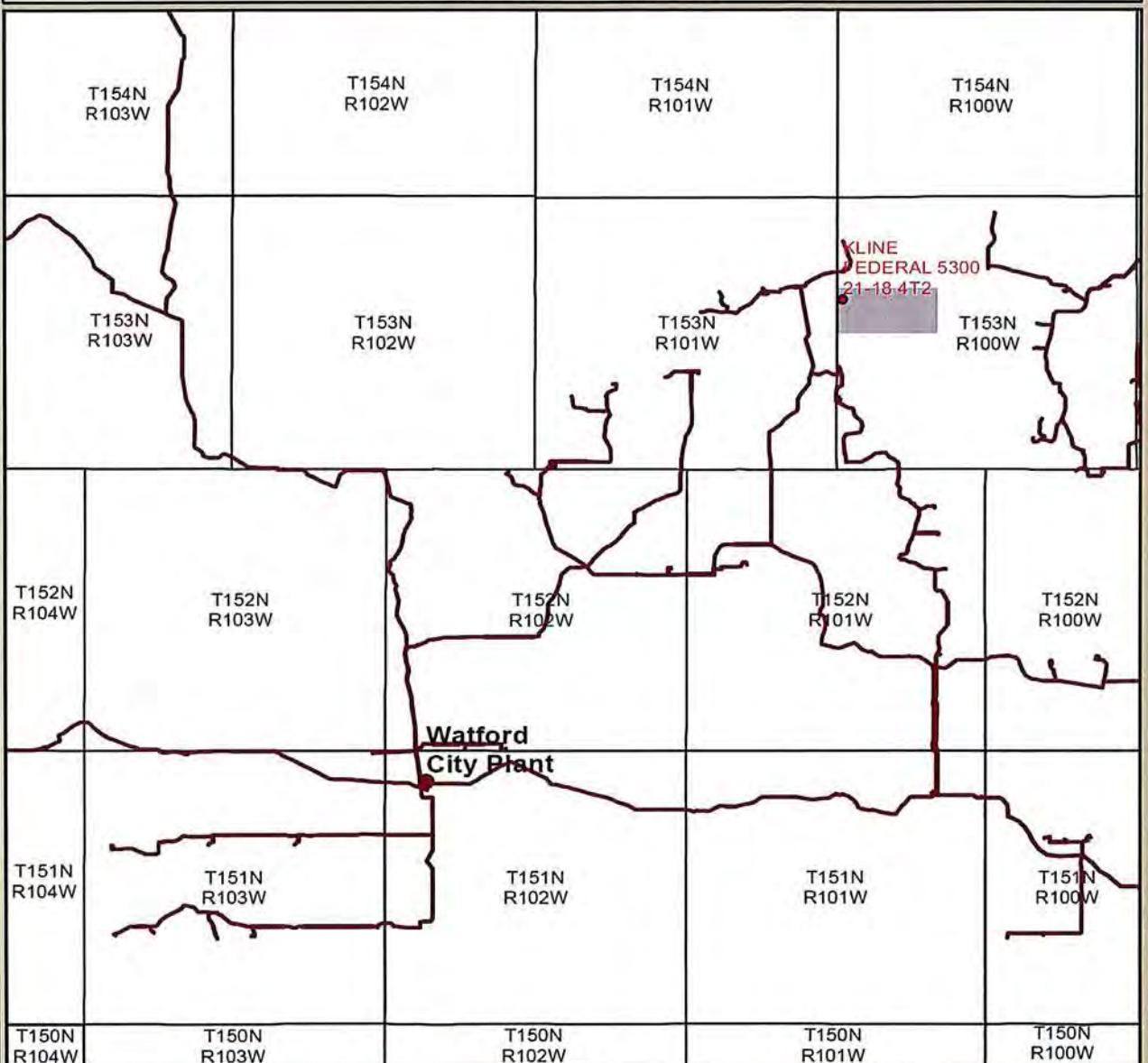
12%	6%
-----	----

Average over the last 6 months

Alternatives to Flaring

SOURCE: Oasis Marketing (281) 404-9435

Gas Capture Plan - Overview
KLINE FEDERAL 5300 21-18 4T2
Section 18 T153N R100W
McKenzie County, North Dakota

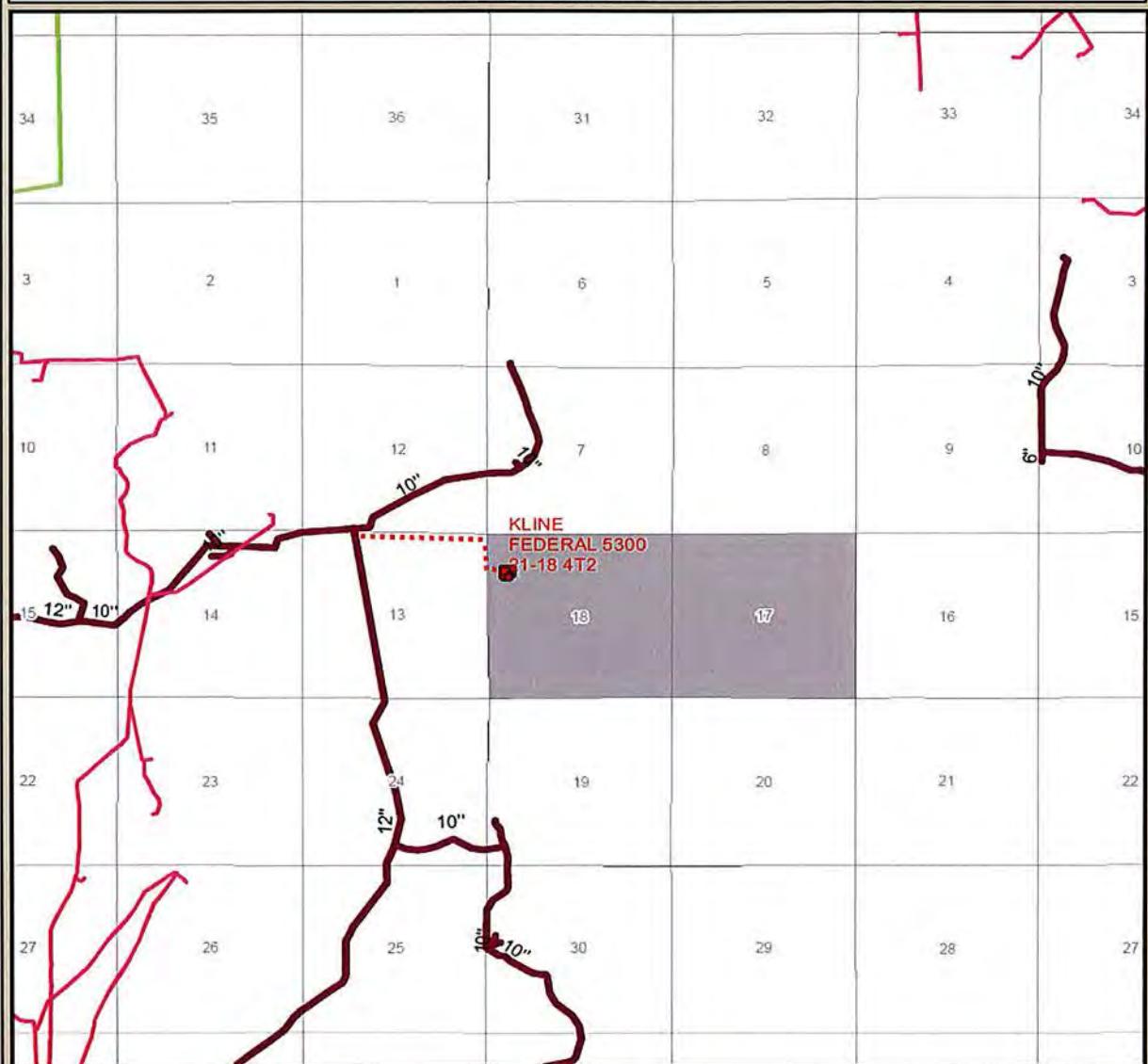


- Proposed Well
- Hiland Gas Line
- Processing Plant

Gas Gatherer: Hiland Partners, LP
Gas to be processed at: Watford City Plant



Gas Capture Plan
KLINE FEDERAL 5300 21-18 4T2
Section 18 T153N R100W
McKenzie County, North Dakota



Gas Gatherer: Hiland Partners, LP
Gas to be processed at: Watford City Plant



- Proposed Well
- Proposed CTB
- Hiland Gas Line
- Oneok Gas Line
- Williston Basin Interstate



8/20/2014

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

RE: Kline Federal 5300 11-18 2T2
Kline Federal 5300 11-18 3T
Kline Federal 5300 11-18 4T2
Kline Federal 5300 11-18 5B
Request for a legal street address

Dear NDIC:

Oasis Petroleum has requested a physical street address for the Kline Federal 5300 11-18 2T2, Kline Federal 5300 11-18 3T, Kline Federal 5300 11-18 4T2 and Kline Federal 5300 11-18 5B. The request was made to Aaron Chisolm (address@co.mckenzie.nd.us) 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 blue ink that reads "Heather McCowan". The signature is fluid and cursive, with "Heather" on top and "McCowan" below it, both starting with a capital letter.

Heather McCowan
Regulatory Assistant
Oasis Petroleum North America, LLC

Hello Taylor,

They will be hauled to the JMAC Resources Disposal
5009 139th Ave NW, Williston, ND 58801
(701) 774-8511

Thanks,

Heather McCowan

**Regulatory Assistant | 1001 Fannin, Suite 1500, Houston, Texas 77002 | 281-404-9563 Direct |
hmccowan@oasispetroleum.com**



From: Roth, Taylor J. [<mailto:tjroth@nd.gov>]
Sent: Wednesday, August 20, 2014 9:59 AM
To: Heather McCowan
Subject: RE: Kline Federal pad

Heather,

What will Oasis be doing with the cuttings on this pad?

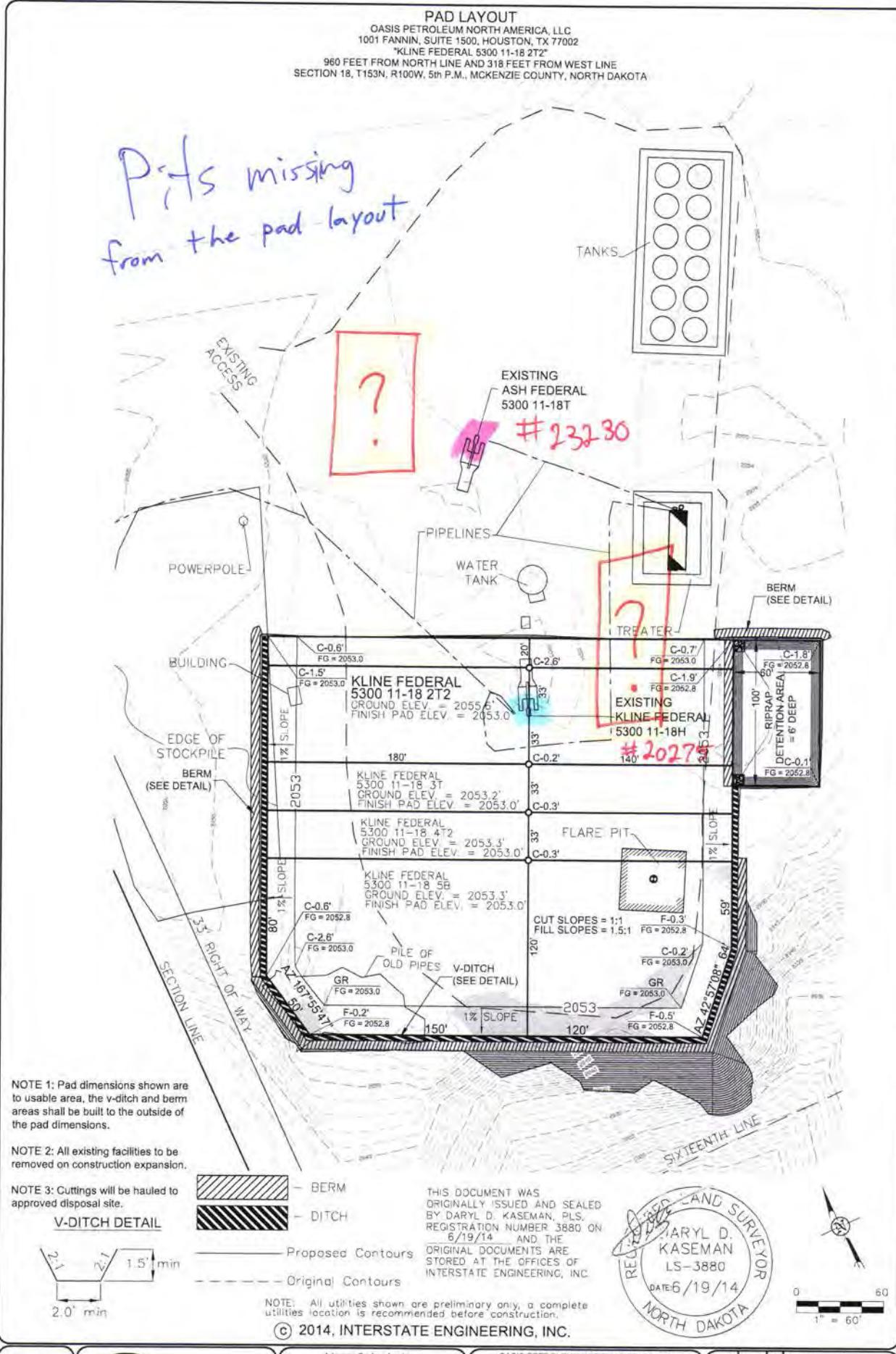
Thank you very much,

Taylor J. Roth
Survey & Permitting Technician
NDIC, Dept. Mineral Resources
Oil and Gas Division
701-328-1720 (direct)
tjroth@nd.gov



PAD LAYOUT
 OASIS PETROLEUM NORTH AMERICA, LLC
 1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
 "KLINE FEDERAL 5300 11-18 2T2"
 960 FEET FROM NORTH LINE AND 318 FEET FROM WEST LINE
 SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

Pits missing
from the pad layout



3/8



EXHIBIT NO.

Interstate Engineering, Inc.
 P.O. Box 646
 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
 PAD LAYOUT
 SECTION 18, T153N, R100W

MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: B.J.H. Project No.: 514-09-127
 Checked By: D.D.K. Date: APRIL 2014

Revision No.	Date	By	Description

PAD LAYOUT

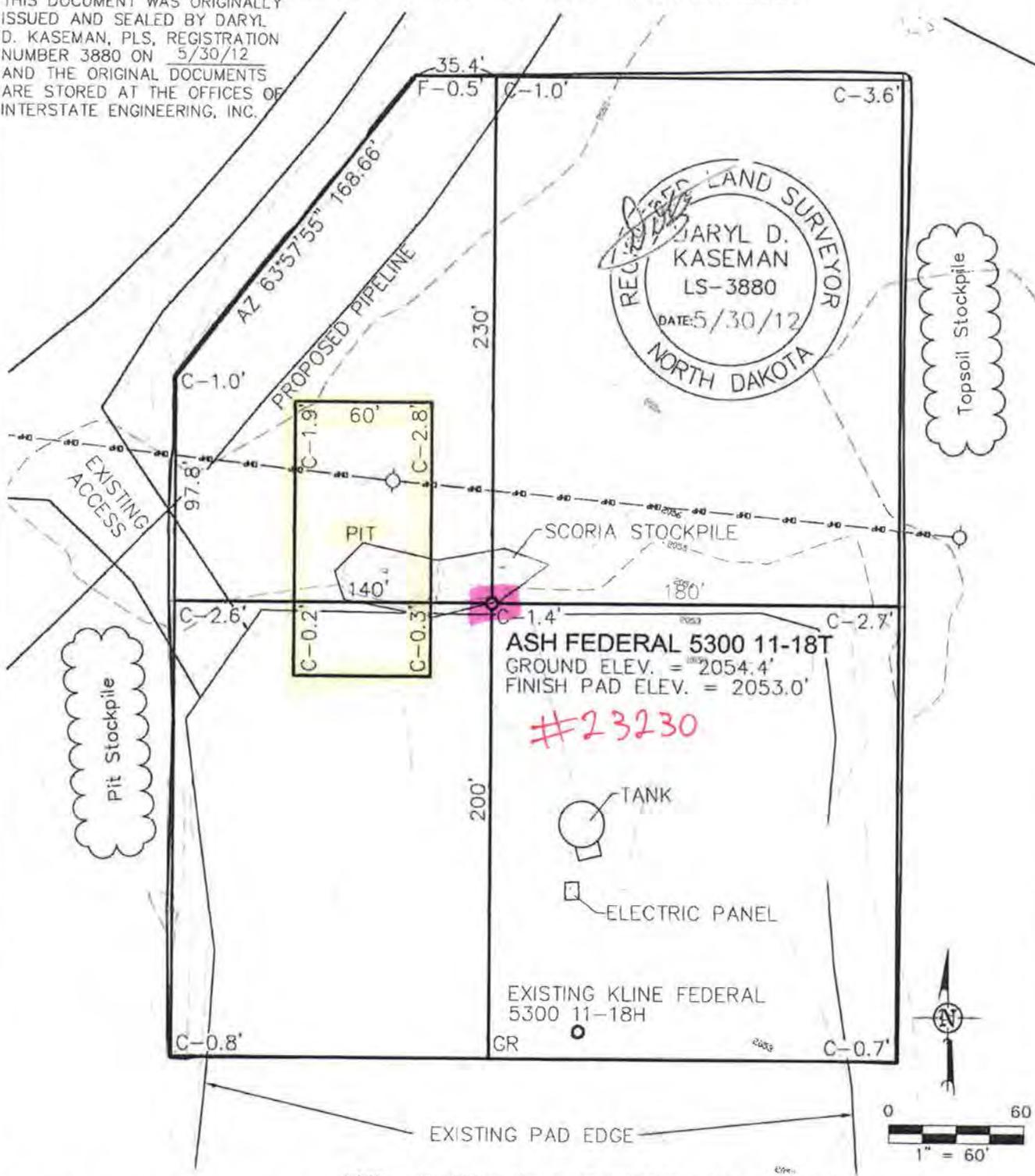
OASIS PETROLEUM NORTH AMERICA, LLC
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002

"ASH FEDERAL 5300 11-18T"

800 FEET FROM NORTH LINE AND 350 FEET FROM WEST LINE

SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

THIS DOCUMENT WAS ORIGINALLY
ISSUED AND SEALED BY DARYL
D. KASEMAN, PLS, REGISTRATION
NUMBER 3880 ON 5/30/12
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Interstate Engineering, Inc.
P.O. Box 848
425 East Main Street
Sidney, Montana 59270
Ph: (406) 433-5617
Fax: (406) 433-5618
www.lengl.com
Other offices in Missoula, North Dakota and South Dakota

OASIS PETROLEUM NORTH AMERICA, LLC
PAD LAYOUT
SECTION 18, T153N, R100W
MCKENZIE COUNTY, NORTH DAKOTA
Drawn By: B.J.H. Project No.: S12-09-145
Checked By: D.D.K. Date: MAY 2012

Revision No.	Date	By	Description

PAD LAYOUT

OASIS PETROLEUM NORTH AMERICA, LLC
1001 FANNIN, SUITE 202 HOUSTON, TX 77002

"KLINE 5300 11-18H"

990 FEET FROM NORTH LINE AND 305 FEET FROM WEST LINE
SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

UHP

UHP

UHP

UHP

PROPOSED
ACCESS

C-2.1'

C-3.1'

C-2.6

C-1.5'

180'

130'

C-1.9'

C-0.8'

KLINE 5300 11-18H
GROUND ELEV = 2053.8'
FINISH PAD ELEV = 2053.0'

#20275

Topsoil Stockpile



230'

230'

F-7.3'

F-6.7'

F-19.8'



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

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Interstate Engineering, Inc.
P.O. Box 848
425 East Main Street
Sidney, Montana 59270
Ph. (406) 433-5617
Fax (406) 433-5618
www.jengl.com
Other offices in Missoula, North Dakota and South Dakota

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

MCKENZIE COUNTY, NORTH DAKOTA

Drawn By:	J.J.S.	Project No.:	S10-9-160
Checked By:	A.J.H./R.L.P.	Date:	OCT. 2010

Requester	Date	By	Description



Oasis Petroleum

Indian Hills

153N-100W-17/18

Kline Federal 5300 11-18 2T2

Wellbore #1

Design #6

Anticollision Report

30 June, 2014

gyro*data*
Precision Wellbore Placement



Gyrodta, Inc.
Anticollision Report



Company:	Oasis Petroleum	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2T2
Project:	Indian Hills	TVD Reference:	WELL @ 2078.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	MD Reference:	WELL @ 2078.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Kline Federal 5300 11-18 2T2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #6	Offset TVD Reference:	Offset Datum

Reference	Design #6		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 2,000.0 usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	06/30/14	
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	20,717.6	Design #6 (Wellbore #1)	MWD	MWD - Standard

Summary		Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance		Separation Factor		Warning
Site Name	Offset Well - Wellbore - Design			Between Centres (usft)	Between Ellipses (usft)			
153N-100W-17/18	Ash Federal 5300 11-18T - Wellbore #1 - Wellbore #1	2,845.8	2,817.8	155.5	148.0	20.755	CC	
	Ash Federal 5300 11-18T - Wellbore #1 - Wellbore #1	2,900.0	2,871.7	155.6	147.9	20.139	ES	
	Ash Federal 5300 11-18T - Wellbore #1 - Wellbore #1	20,600.0	20,419.4	755.3	220.7	1.413	Level 3, SF	
	Kline Federal 5300 11-18 3T - Wellbore #1 - Design #6	2,500.0	2,500.0	65.7	54.7	5.993	CC	
	Kline Federal 5300 11-18 3T - Wellbore #1 - Design #6	20,717.6	21,035.1	500.4	-84.1	0.856	Level 1, ES, SF	
	Kline Federal 5300 11-18H - Wellbore #1 - Wellbore #1	2,132.6	2,108.5	33.1	28.4	7.073	CC	
	Kline Federal 5300 11-18H - Wellbore #1 - Wellbore #1	18,241.7	18,315.6	95.3	-200.2	0.323	Level 1, SF	
	Kline Federal 5300 11-18H - Wellbore #1 - Wellbore #1	18,300.0	18,372.4	95.8	-200.5	0.323	Level 1, ES	
	Kline Federal 5300 21-18 4T2 - Wellbore #1 - Design #6	2,500.0	2,500.0	99.2	88.3	9.057	CC, ES	
	Kline Federal 5300 21-18 4T2 - Wellbore #1 - Design #6	20,717.6	21,371.1	1,000.2	415.8	1.711	SF	
	Kline Federal 5300 21-18 5B - Wellbore #1 - Design #6	2,500.0	2,500.0	131.6	120.7	12.011	CC, ES	
	Kline Federal 5300 21-18 5B - Wellbore #1 - Design #6	20,717.6	21,195.2	1,003.3	421.8	1.725	SF	

Offset Design		153N-100W-17/18 - Ash Federal 5300 11-18T - Wellbore #1 - Wellbore #1										Offset Site Error:	0.0 usft
Survey Program:		2261-MWD, 13302-MWD										Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis				Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Hightside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
300.0	300.0	2,180.0	2,183.0	0.5	0.0	11.34	159.1	31.9	1,913.9	1,913.4	0.53	3,583.932	
400.0	400.0	2,180.0	2,183.0	0.8	0.0	11.34	159.1	31.9	1,814.3	1,813.5	0.76	2,391.017	
500.0	500.0	2,180.0	2,183.0	1.0	0.0	11.34	159.1	31.9	1,714.7	1,713.7	0.98	1,743.369	
600.0	600.0	2,180.0	2,183.0	1.2	0.0	11.34	159.1	31.9	1,615.2	1,614.0	1.21	1,336.709	
700.0	700.0	2,180.0	2,183.0	1.4	0.0	11.34	159.1	31.9	1,515.7	1,514.3	1.43	1,057.655	
800.0	800.0	2,180.0	2,183.0	1.7	0.0	11.34	159.1	31.9	1,416.3	1,414.7	1.66	854.313	
900.0	900.0	2,180.0	2,183.0	1.9	0.0	11.34	159.1	31.9	1,317.0	1,315.1	1.88	699.575	
1,000.0	1,000.0	2,180.0	2,183.0	2.1	0.0	11.34	159.1	31.9	1,217.9	1,215.7	2.11	577.900	
1,100.0	1,100.0	2,180.0	2,183.0	2.3	0.0	11.34	159.1	31.9	1,118.8	1,116.5	2.33	479.741	
1,200.0	1,200.0	2,180.0	2,183.0	2.6	0.0	11.34	159.1	31.9	1,020.0	1,017.4	2.56	398.913	
1,300.0	1,300.0	2,180.0	2,183.0	2.8	0.0	11.34	159.1	31.9	921.4	918.6	2.78	331.237	
1,400.0	1,400.0	2,180.0	2,183.0	3.0	0.0	11.34	159.1	31.9	823.1	820.1	3.01	273.794	
1,500.0	1,500.0	2,180.0	2,183.0	3.2	0.0	11.34	159.1	31.9	725.4	722.1	3.23	224.491	
1,600.0	1,600.0	2,180.0	2,183.0	3.5	0.0	11.34	159.1	31.9	628.3	624.9	3.46	181.803	
1,700.0	1,700.0	2,180.0	2,183.0	3.7	0.0	11.34	159.1	31.9	532.3	528.6	3.68	144.625	
1,800.0	1,800.0	2,180.0	2,183.0	3.9	0.0	11.34	159.1	31.9	438.1	434.2	3.91	112.187	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Oasis Petroleum	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2T2
Project:	Indian Hills	TVD Reference:	WELL @ 2078.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	MD Reference:	WELL @ 2078.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Kline Federal 5300 11-18 2T2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #6	Offset TVD Reference:	Offset Datum

Offset Design 153N-100W-17/18 - Ash Federal 5300 11-18T - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 usft
Survey Program: 2261-MWD, 13302-MWD												Offset Well Error:	0.0 usft
Reference				Semi Major Axis				Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
1,900.0	1,900.0	2,180.0	2,183.0	4.1	0.0	11.34		159.1	31.9	347.2	343.1	4.13	84.070
2,000.0	2,000.0	2,180.0	2,183.0	4.4	0.0	11.34		159.1	31.9	263.0	258.6	4.36	60.391
2,100.0	2,100.0	2,180.0	2,183.0	4.6	0.0	11.34		159.1	31.9	194.3	189.8	4.58	42.436
2,200.0	2,200.0	2,180.0	2,183.0	4.8	0.0	11.34		159.1	31.9	162.4	157.6	4.80	33.800
2,300.0	2,300.0	2,276.1	2,279.1	5.0	0.1	11.47		157.9	32.0	161.2	156.0	5.15	31.270
2,400.0	2,400.0	2,375.4	2,378.3	5.3	0.3	11.60		156.2	32.1	159.5	153.9	5.59	28.549
2,500.0	2,500.0	2,474.6	2,477.5	5.5	0.5	11.55		155.0	31.7	158.2	152.2	6.02	26.270
2,600.0	2,600.0	2,573.5	2,576.5	5.7	0.8	-79.29		154.6	31.0	157.3	150.9	6.45	24.406
2,650.0	2,649.9	2,623.3	2,626.3	5.8	0.9	-80.27		154.5	30.5	156.8	150.1	6.66	23.558
2,700.0	2,699.9	2,673.2	2,676.1	5.9	1.0	-81.48		154.6	29.8	156.3	149.4	6.87	22.755
2,800.0	2,799.7	2,772.5	2,775.5	6.1	1.2	-83.99		154.7	28.1	155.6	148.3	7.30	21.326
2,845.8	2,845.4	2,817.8	2,820.8	6.2	1.3	-85.17		154.9	27.3	155.5	148.0	7.49	20.755 CC
2,900.0	2,899.6	2,871.7	2,874.6	6.3	1.4	-86.58		155.3	26.3	155.6	147.9	7.73	20.139 ES
3,000.0	2,999.5	2,970.8	2,973.7	6.5	1.6	-89.21		156.2	24.3	156.2	148.1	8.16	19.144
3,100.0	3,099.3	3,070.2	3,073.0	6.7	1.9	-91.90		157.5	22.1	157.6	149.0	8.59	18.342
3,200.0	3,199.2	3,170.0	3,172.8	7.0	2.1	-94.47		158.9	20.2	159.4	150.4	9.01	17.692
3,300.0	3,299.0	3,270.0	3,272.8	7.2	2.2	-96.92		160.1	18.4	161.3	151.9	9.42	17.130
3,400.0	3,398.9	3,369.4	3,372.2	7.4	2.5	-99.25		161.4	16.7	163.6	153.7	9.84	16.625
3,501.2	3,500.0	3,476.0	3,473.3	7.6	2.7	-101.52		162.8	15.1	166.2	155.9	10.27	16.179
3,600.0	3,598.7	3,569.4	3,572.1	7.8	2.9	-103.15		164.0	13.6	168.5	157.8	10.68	15.781
3,651.2	3,649.9	3,620.8	3,623.6	7.9	3.0	-13.52		164.6	12.8	169.3	158.5	10.84	15.617
3,700.0	3,698.7	3,669.8	3,672.5	8.0	3.1	-13.71		165.1	12.1	170.0	158.9	11.05	15.389
3,800.0	3,798.7	3,769.5	3,772.3	8.2	3.3	-14.08		166.2	10.7	171.3	159.9	11.48	14.928
3,900.0	3,898.7	3,869.6	3,872.3	8.5	3.5	-14.41		167.3	9.4	172.8	160.9	11.92	14.500
4,000.0	3,998.7	3,970.0	3,972.7	8.7	3.7	-14.69		168.3	8.3	174.0	161.7	12.35	14.089
4,100.0	4,098.7	4,069.9	4,072.6	8.9	3.9	-14.93		169.3	7.3	175.2	162.4	12.79	13.702
4,200.0	4,198.7	4,169.8	4,172.5	9.1	4.1	-15.15		170.3	6.3	176.4	163.2	13.23	13.340
4,300.0	4,298.7	4,270.2	4,272.9	9.4	4.4	-15.33		171.3	5.5	177.6	164.0	13.66	13.000
4,400.0	4,398.7	4,370.8	4,373.4	9.6	4.6	-15.44		172.0	4.9	178.5	164.4	14.10	12.660
4,500.0	4,498.7	4,470.9	4,473.5	9.8	4.8	-15.52		172.6	4.5	179.1	164.6	14.53	12.328
4,600.0	4,598.7	4,570.6	4,573.3	10.0	5.0	-15.60		173.2	4.1	179.8	164.9	14.96	12.016
4,700.0	4,698.7	4,669.9	4,672.5	10.2	5.2	-15.69		174.0	3.5	180.8	165.4	15.40	11.741
4,800.0	4,798.7	4,769.5	4,772.2	10.5	5.4	-15.81		175.2	2.8	182.1	166.3	15.83	11.501
4,900.0	4,898.7	4,870.2	4,872.8	10.7	5.6	-15.78		176.4	2.5	183.3	167.1	16.27	11.267
5,000.0	4,998.7	4,970.4	4,973.0	10.9	5.8	-15.66		177.5	2.7	184.3	167.6	16.71	11.031
5,100.0	5,098.7	5,071.0	5,073.7	11.1	6.0	-15.44		178.4	3.1	185.0	167.9	17.14	10.794
5,200.0	5,198.7	5,172.0	5,174.6	11.4	6.3	-15.22		178.9	3.8	185.4	167.8	17.57	10.548
5,300.0	5,298.7	5,273.3	5,276.0	11.6	6.5	-15.18		178.6	3.9	185.0	167.0	18.00	10.280
5,400.0	5,398.7	5,373.6	5,376.2	11.8	6.7	-15.09		177.8	4.5	184.1	165.7	18.43	9.990
5,500.0	5,498.7	5,472.4	5,475.0	12.0	6.9	-15.04		177.4	4.8	183.7	164.8	18.86	9.739
5,540.6	5,539.3	5,512.7	5,515.3	12.1	7.0	-15.02		177.4	4.8	183.6	164.6	19.03	9.648
5,600.0	5,598.7	5,571.6	5,574.2	12.2	7.1	-15.00		177.5	4.9	183.7	164.4	19.29	9.525
5,700.0	5,698.7	5,671.6	5,674.2	12.5	7.3	-15.03		177.8	4.7	184.1	164.4	19.72	9.337
5,800.0	5,798.7	5,771.2	5,773.8	12.7	7.5	-15.19		177.9	4.1	184.4	164.2	20.15	9.150
5,900.0	5,898.7	5,870.8	5,873.4	12.9	7.7	-15.40		178.4	3.3	185.0	164.4	20.58	8.990
6,000.0	5,998.7	5,970.5	5,973.1	13.1	7.9	-15.52		179.0	2.7	185.8	164.8	21.02	8.839
6,100.0	6,098.7	6,069.7	6,072.3	13.4	8.1	-15.53		180.0	2.4	186.8	165.4	21.46	8.708
6,200.0	6,198.7	6,168.5	6,171.0	13.6	8.3	-15.47		181.6	2.2	188.4	166.5	21.89	8.608
6,300.0	6,298.7	6,267.2	6,269.7	13.8	8.6	-15.25		183.9	2.3	190.7	168.4	22.33	8.540
6,400.0	6,398.7	6,367.6	6,370.1	14.0	8.8	-14.95		186.6	2.6	193.2	170.4	22.77	8.486
6,500.0	6,498.7	6,466.8	6,469.3	14.3	9.0	-14.49		189.5	3.4	195.8	172.6	23.20	8.437
6,600.0	6,598.7	6,565.9	6,568.3	14.5	9.2	-13.89		192.8	4.7	198.8	175.1	23.64	8.406

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Gyrodta, Inc.
Anticollision Report



Company:	Oasis Petroleum	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2T2
Project:	Indian Hills	TVD Reference:	WELL @ 2078.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	MD Reference:	WELL @ 2078.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Kline Federal 5300 11-18 2T2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #6	Offset TVD Reference:	Offset Datum

Offset Design 153N-100W-17/18 - Ash Federal 5300 11-18T - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 usft	
Survey Program: 2261-MWD, 13302-MWD				Distance								Offset Well Error:	0.0 usft	
Measured Depth (usft)	Vertical Depth (usft)	Offset		Semi Major Axis			Highside Toolface (°)	Offset Wellbore Centre +N/S (usft)	Offset Wellbore Centre +E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
		Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset (usft)	Offset (usft)								
6,700.0	6,698.7	6,665.4	6,667.7	14.7	9.4	-13.17	196.9	6.4	202.3	178.2	24.08	8.400		
6,800.0	6,798.7	6,768.0	6,770.2	14.9	9.6	-12.85	199.8	6.8	204.9	180.4	24.52	8.359		
6,900.0	6,898.7	6,867.6	6,869.8	15.2	9.8	-12.83	201.9	6.4	207.1	182.2	24.95	8.302		
7,000.0	6,998.7	6,967.0	6,969.2	15.4	10.0	-12.70	204.5	6.3	209.7	184.3	25.38	8.262		
7,100.0	7,098.7	7,067.2	7,069.3	15.6	10.3	-12.51	207.2	6.4	212.3	186.4	25.82	8.221		
7,200.0	7,198.7	7,167.4	7,169.5	15.8	10.5	-12.33	209.7	6.6	214.8	188.5	26.25	8.181		
7,300.0	7,298.7	7,267.4	7,269.5	16.0	10.7	-12.11	212.2	6.9	217.1	190.4	26.69	8.135		
7,400.0	7,398.7	7,367.4	7,369.5	16.3	10.9	-11.83	214.8	7.4	219.5	192.4	27.13	8.093		
7,500.0	7,498.7	7,468.1	7,470.1	16.5	11.1	-11.40	217.3	8.6	221.8	194.2	27.57	8.044		
7,600.0	7,598.7	7,568.1	7,570.1	16.7	11.3	-10.91	219.7	10.1	223.8	195.8	28.00	7.992		
7,700.0	7,698.7	7,668.9	7,670.9	16.9	11.5	-10.41	221.9	11.6	225.7	197.2	28.43	7.937		
7,800.0	7,798.7	7,768.4	7,770.3	17.2	11.7	-9.88	224.1	13.4	227.5	198.6	28.87	7.881		
7,900.0	7,898.7	7,870.2	7,872.1	17.4	12.0	-9.45	225.9	14.8	229.0	199.7	29.30	7.816		
8,000.0	7,998.7	7,971.2	7,973.1	17.6	12.2	-9.15	227.0	15.9	229.9	200.2	29.73	7.733		
8,100.0	8,098.7	8,071.5	8,073.4	17.8	12.4	-8.83	227.8	17.0	230.5	200.3	30.16	7.643		
8,200.0	8,198.7	8,171.4	8,173.2	18.1	12.6	-8.53	228.6	18.1	231.1	200.5	30.59	7.556		
8,300.0	8,298.7	8,271.6	8,273.5	18.3	12.8	-8.30	229.3	18.9	231.7	200.7	31.02	7.471		
8,400.0	8,398.7	8,371.7	8,373.6	18.5	13.0	-8.11	229.9	19.6	232.2	200.8	31.45	7.384		
8,500.0	8,498.7	8,471.6	8,473.5	18.7	13.2	-7.93	230.5	20.3	232.7	200.8	31.88	7.300		
8,600.0	8,598.7	8,571.9	8,573.7	19.0	13.4	-7.69	231.1	21.2	233.2	200.9	32.31	7.217		
8,700.0	8,698.7	8,671.6	8,673.4	19.2	13.6	-7.36	231.7	22.5	233.6	200.9	32.75	7.134		
8,800.0	8,798.7	8,771.8	8,773.6	19.4	13.8	-6.99	232.4	23.9	234.2	201.0	33.19	7.057		
8,900.0	8,898.7	8,871.9	8,873.7	19.6	14.0	-6.60	233.0	25.4	234.6	201.0	33.62	6.978		
9,000.0	8,998.7	8,972.1	8,973.9	19.9	14.2	-6.27	233.6	26.7	235.0	200.9	34.05	6.901		
9,100.0	9,098.7	9,072.6	9,074.4	20.1	14.5	-5.92	233.9	28.2	235.2	200.7	34.48	6.821		
9,200.0	9,198.7	9,172.6	9,174.4	20.3	14.7	-5.56	234.2	29.6	235.3	200.4	34.91	6.741		
9,300.0	9,298.7	9,272.4	9,274.2	20.5	14.9	-5.22	234.5	31.0	235.5	200.2	35.34	6.664		
9,400.0	9,398.7	9,372.8	9,374.5	20.8	15.1	-4.89	234.8	32.3	235.7	199.9	35.77	6.588		
9,500.0	9,498.7	9,473.1	9,474.8	21.0	15.3	-4.58	234.8	33.6	235.6	199.4	36.20	6.508		
9,518.4	9,517.1	9,491.4	9,493.1	21.0	15.3	-4.52	234.9	33.8	235.6	199.3	36.28	6.494		
9,600.0	9,598.7	9,572.9	9,574.6	21.2	15.5	-4.29	235.0	34.8	235.7	199.0	36.63	6.433		
9,700.0	9,698.7	9,673.1	9,674.8	21.4	15.7	-4.02	235.0	35.9	235.6	198.5	37.06	6.357		
9,722.4	9,721.1	9,695.3	9,697.1	21.5	15.7	-3.96	235.0	36.1	235.6	198.4	37.16	6.340		
9,800.0	9,798.7	9,772.7	9,774.4	21.6	15.9	-3.73	235.1	37.1	235.6	198.1	37.50	6.284		
9,900.0	9,898.7	9,872.6	9,874.3	21.9	16.1	-3.45	235.4	38.2	235.8	197.9	37.93	6.217		
10,000.0	9,998.7	9,972.1	9,973.8	22.1	16.3	-3.25	235.6	39.0	236.0	197.7	38.36	6.153		
10,100.0	10,098.7	10,071.5	10,073.2	22.3	16.5	-3.07	236.2	39.7	236.6	197.8	38.79	6.098		
10,200.0	10,198.7	10,171.3	10,173.0	22.5	16.7	-2.87	236.9	40.5	237.2	198.0	39.23	6.048		
10,300.0	10,298.7	10,270.7	10,272.4	22.8	17.0	-2.66	237.8	41.4	238.1	198.4	39.66	6.002		
10,363.3	10,362.0	10,335.5	10,337.2	22.9	17.1	-2.45	238.4	42.2	238.6	198.7	39.94	5.975		
10,375.0	10,373.7	10,348.1	10,349.7	22.9	17.1	-122.32	238.5	42.8	238.7	198.7	40.00	5.968		
10,400.0	10,398.7	10,373.3	10,374.9	23.0	17.2	-121.93	238.5	45.3	239.4	199.3	40.09	5.972		
10,425.0	10,423.5	10,396.7	10,397.9	23.0	17.2	-121.34	238.7	49.1	240.8	200.7	40.15	5.997		
10,450.0	10,448.2	10,420.1	10,420.7	23.1	17.3	-120.51	239.1	54.7	243.1	202.9	40.20	6.046		
10,475.0	10,472.7	10,444.0	10,444.5	23.1	17.3	-119.54	239.6	61.6	246.2	205.9	40.25	6.115		
10,500.0	10,496.8	10,467.7	10,466.0	23.2	17.4	-118.64	240.2	69.0	250.0	209.7	40.30	6.204		
10,525.0	10,520.6	10,489.1	10,486.2	23.3	17.4	-117.84	240.8	76.0	254.6	214.3	40.33	6.313		
10,550.0	10,544.0	10,512.2	10,507.7	23.3	17.5	-116.99	241.8	84.4	260.2	219.8	40.38	6.443		
10,575.0	10,566.8	10,538.4	10,531.6	23.4	17.6	-116.01	242.8	95.2	266.2	225.7	40.44	6.582		
10,600.0	10,589.1	10,562.6	10,553.1	23.5	17.6	-115.02	243.6	106.2	272.6	232.1	40.50	6.731		
10,625.0	10,610.8	10,587.4	10,574.5	23.5	17.7	-113.91	244.3	118.7	279.6	239.0	40.59	6.888		
10,650.0	10,631.8	10,610.7	10,593.7	23.6	17.8	-112.67	244.9	131.9	287.1	246.4	40.71	7.053		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Company:	Oasis Petroleum	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2T2
Project:	Indian Hills	TVD Reference:	WELL @ 2078.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	MD Reference:	WELL @ 2078.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Kline Federal 5300 11-18 2T2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #6	Offset TVD Reference:	Offset Datum

Offset Design 153N-100W-17/18 - Ash Federal 5300 11-18T - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 usft	
Survey Program: 2261-MWD, 13302-MWD				Distance								Offset Well Error:	0.0 usft	
Reference		Offset		Semi Major Axis				Distance						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface	(°)	Offset Wellbore Centre +N/S (usft)	+E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,675.0	10,652.0	10,633.2	10,611.6	23.7	17.9	-111.37		245.5	145.6	295.1	254.3	40.84	7.226	
10,700.0	10,671.5	10,655.7	10,629.0	23.8	18.0	-110.09		246.1	159.8	303.7	262.7	41.00	7.407	
10,725.0	10,690.1	10,679.4	10,646.6	23.9	18.1	-108.77		246.7	175.6	312.8	271.5	41.20	7.590	
10,750.0	10,707.8	10,704.2	10,663.8	24.0	18.2	-107.32		247.1	193.4	322.1	280.7	41.45	7.772	
10,775.0	10,724.5	10,728.5	10,679.6	24.1	18.3	-105.82		247.3	211.8	331.7	290.0	41.72	7.950	
10,800.0	10,740.3	10,751.0	10,693.9	24.3	18.5	-104.42		247.4	229.3	341.6	299.6	42.02	8.131	
10,825.0	10,755.0	10,769.9	10,705.3	24.4	18.6	-103.04		247.6	244.3	352.0	309.7	42.32	8.317	
10,850.0	10,768.7	10,791.6	10,717.3	24.6	18.8	-101.56		247.9	262.4	362.8	320.2	42.67	8.503	
10,875.0	10,781.2	10,818.7	10,730.9	24.8	19.0	-100.02		247.9	285.9	373.7	330.6	43.09	8.673	
10,900.0	10,792.6	10,844.0	10,742.3	25.0	19.3	-98.50		247.5	308.4	384.6	341.1	43.53	8.836	
10,925.0	10,802.8	10,862.8	10,750.1	25.2	19.4	-97.01		247.2	325.5	395.7	351.7	43.94	9.005	
10,950.0	10,811.8	10,880.6	10,757.0	25.4	19.6	-95.53		247.0	342.0	407.1	362.8	44.36	9.178	
10,975.0	10,819.6	10,896.9	10,762.7	25.7	19.8	-94.03		247.0	357.2	418.9	374.2	44.78	9.356	
11,000.0	10,826.1	10,913.5	10,768.0	25.9	20.0	-92.53		247.2	372.9	431.2	386.0	45.21	9.537	
11,025.0	10,831.3	10,930.6	10,773.0	26.2	20.2	-91.05		247.5	389.4	443.7	398.0	45.66	9.718	
11,050.0	10,835.3	10,948.5	10,777.7	26.5	20.5	-89.61		248.0	406.6	456.4	410.3	46.12	9.897	
11,075.0	10,837.9	10,969.0	10,782.3	26.8	20.7	-88.25		248.6	426.5	469.3	422.7	46.61	10.069	
11,100.0	10,839.3	10,988.3	10,786.1	27.1	21.0	-86.92		249.2	445.5	482.2	435.1	47.11	10.237	
11,110.8	10,839.5	10,997.8	10,787.8	27.2	21.2	-86.39		249.4	454.8	487.8	440.5	47.33	10.305	
11,125.8	10,839.5	11,010.2	10,789.9	27.4	21.4	-86.71		249.8	467.0	495.5	447.9	47.68	10.394	
11,200.0	10,839.9	11,067.4	10,796.1	28.5	22.3	-87.72		251.5	523.8	533.0	483.4	49.59	10.749	
11,300.0	10,840.5	11,155.4	10,795.5	30.1	23.8	-87.84		254.9	611.7	580.7	528.0	52.66	11.028	
11,400.0	10,841.0	11,252.8	10,792.6	31.9	25.7	-87.70		257.3	709.0	622.6	566.3	56.29	11.060	
11,500.0	10,841.5	11,358.5	10,792.9	33.9	28.0	-87.84		259.0	814.7	658.7	598.2	60.46	10.894	
11,600.0	10,842.1	11,449.6	10,795.9	36.0	30.0	-88.17		259.4	905.8	688.7	624.1	64.64	10.655	
11,700.0	10,842.6	11,539.9	10,798.7	38.1	32.1	-88.43		260.8	996.0	714.8	645.8	68.97	10.364	
11,800.0	10,843.2	11,664.4	10,798.0	40.4	35.2	-88.38		261.3	1,120.5	734.9	660.7	74.23	9.901	
11,900.0	10,843.7	11,796.6	10,795.2	42.7	38.5	-88.13		255.8	1,252.5	745.2	665.4	79.81	9.337	
12,000.0	10,844.2	11,907.6	10,795.8	45.0	41.4	-88.12		247.8	1,363.2	747.1	662.2	84.87	8.803	
12,100.0	10,844.8	12,004.5	10,798.2	47.4	44.0	-88.24		240.5	1,459.8	743.5	654.0	89.46	8.311	
12,110.4	10,844.8	12,014.4	10,798.5	47.6	44.2	-88.26		239.8	1,469.7	742.9	652.9	89.93	8.260	
12,200.0	10,845.3	12,104.9	10,801.7	49.8	46.7	-88.45		233.4	1,560.0	737.1	642.6	94.60	7.793	
12,300.0	10,845.8	12,199.1	10,805.0	52.2	49.2	-88.66		226.8	1,653.8	730.9	631.2	99.69	7.332	
12,400.0	10,846.3	12,294.3	10,808.5	54.7	51.8	-88.89		221.0	1,748.8	725.5	620.6	104.88	6.918	
12,500.0	10,846.8	12,379.2	10,811.1	57.3	54.1	-89.06		216.8	1,833.5	721.3	611.5	109.83	6.568	
12,600.0	10,847.4	12,472.3	10,811.8	59.9	56.7	-89.07		213.9	1,926.6	719.0	603.9	115.05	6.249	
12,700.0	10,847.9	12,562.3	10,812.5	62.5	59.2	-89.09		211.8	2,016.6	717.5	597.3	120.22	5.968	
12,745.7	10,848.1	12,603.1	10,812.8	63.7	60.3	-89.09		211.3	2,057.4	717.3	594.7	122.59	5.852	
12,800.0	10,848.4	12,652.6	10,813.0	65.1	61.7	-89.09		211.1	2,106.8	717.5	592.1	125.43	5.720	
12,900.0	10,848.9	12,745.4	10,812.4	67.8	64.3	-89.01		211.5	2,199.7	718.7	588.0	130.74	5.498	
13,000.0	10,849.5	12,847.1	10,812.2	70.4	67.2	-88.95		212.3	2,301.3	720.4	584.1	136.32	5.285	
13,100.0	10,850.0	12,950.1	10,811.9	73.1	70.1	-88.88		212.7	2,404.3	721.6	579.6	141.98	5.083	
13,200.0	10,850.5	13,042.1	10,811.3	75.9	72.7	-88.80		213.4	2,496.3	723.1	575.8	147.33	4.908	
13,300.0	10,851.0	13,153.3	10,810.8	78.6	75.7	-88.72		214.0	2,607.5	724.6	571.4	153.17	4.731	
13,400.0	10,851.6	13,258.6	10,812.0	81.3	77.7	-88.77		213.4	2,712.8	724.8	566.8	157.96	4.589	
13,456.1	10,851.9	13,313.6	10,813.3	82.9	78.7	-88.85		212.8	2,767.8	724.6	564.2	160.47	4.516	
13,500.0	10,852.1	13,345.3	10,814.1	84.1	79.0	-88.90		212.8	2,799.5	724.9	562.9	162.02	4.474	
13,600.0	10,852.6	13,416.6	10,817.3	86.9	79.8	-89.13		215.2	2,870.7	728.9	563.3	165.59	4.402	
13,700.0	10,853.1	13,536.4	10,819.2	89.6	81.2	-89.23		219.8	2,990.4	733.6	563.8	169.79	4.321	
13,800.0	10,853.7	13,640.6	10,818.2	92.4	82.5	-89.12		221.7	3,094.5	736.2	562.3	173.91	4.233	
13,900.0	10,854.2	13,740.2	10,817.7	95.2	83.8	-89.04		223.7	3,194.1	739.0	561.0	178.07	4.150	
14,000.0	10,854.7	13,857.7	10,815.4	98.0	85.5	-88.82		224.5	3,311.6	740.7	558.1	182.57	4.057	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Oasis Petroleum	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2T2
Project:	Indian Hills	TVD Reference:	WELL @ 2078.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	MD Reference:	WELL @ 2078.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Kline Federal 5300 11-18 2T2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #6	Offset TVD Reference:	Offset Datum

Offset Design 153N-100W-17/18 - Ash Federal 5300 11-18T - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 usft		
Survey Program: 2261-MWD, 13302-MWD												Offset Well Error:	0.0 usft		
Reference Offset				Semi Major Axis								Distance			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Hightside Toolface	Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
14,100.0	10,855.2	13,969.3	10,813.7	100.8	87.2	-88.64	222.6	3,423.1	739.8	552.8	187.08	3.955			
14,200.0	10,855.7	14,069.0	10,814.4	103.7	88.7	-88.65	220.6	3,522.9	738.6	547.1	191.51	3.857			
14,300.0	10,856.3	14,173.4	10,812.9	106.5	90.5	-88.49	217.5	3,627.1	736.4	540.4	196.07	3.756			
14,400.0	10,856.8	14,265.7	10,811.9	109.3	92.1	-88.37	215.7	3,719.4	735.3	534.8	200.50	3.668			
14,500.0	10,857.3	14,371.8	10,811.4	112.2	93.9	-88.28	213.1	3,825.4	733.7	528.5	205.23	3.575			
14,600.0	10,857.8	14,469.4	10,812.1	115.0	95.7	-88.29	210.6	3,923.0	731.9	522.0	209.89	3.487			
14,700.0	10,858.4	14,563.2	10,813.8	117.9	97.5	-88.38	209.1	4,016.8	731.0	516.5	214.53	3.408			
14,800.0	10,858.9	14,661.1	10,814.7	120.7	99.4	-88.41	207.6	4,114.7	730.3	511.0	219.29	3.330			
14,831.8	10,859.1	14,689.7	10,814.6	121.6	100.0	-88.40	207.3	4,143.3	730.3	509.5	220.77	3.308			
14,900.0	10,859.4	14,757.4	10,813.8	123.6	101.3	-88.31	206.8	4,211.0	730.3	506.2	224.06	3.259			
15,000.0	10,859.9	14,854.1	10,812.2	126.4	103.3	-88.14	206.4	4,307.7	730.9	502.0	228.87	3.193			
15,100.0	10,860.5	14,942.1	10,813.8	129.3	105.1	-88.23	206.8	4,395.6	732.0	498.4	233.57	3.134			
15,200.0	10,861.0	15,040.9	10,816.8	132.1	107.1	-88.43	208.8	4,494.4	734.7	496.2	238.54	3.080			
15,300.0	10,861.5	15,151.6	10,818.3	135.0	109.5	-88.50	209.5	4,605.0	736.2	492.4	243.80	3.020			
15,400.0	10,862.0	15,248.7	10,817.4	137.9	111.6	-88.40	209.4	4,702.2	736.9	488.1	248.78	2.962			
15,500.0	10,862.6	15,333.0	10,816.9	140.7	113.5	-88.33	210.4	4,786.4	739.0	485.5	253.52	2.915			
15,600.0	10,863.1	15,438.5	10,816.5	143.6	115.8	-88.26	213.7	4,891.9	743.1	484.3	258.75	2.872			
15,700.0	10,863.6	15,565.3	10,816.8	146.5	118.7	-88.24	213.9	5,018.7	744.1	479.5	264.52	2.813			
15,800.0	10,864.1	15,668.9	10,817.9	149.4	121.1	-88.28	211.9	5,122.2	742.9	473.1	269.80	2.753			
15,900.0	10,864.7	15,766.5	10,817.8	152.3	123.4	-88.23	210.0	5,219.8	741.8	466.8	274.97	2.698			
16,000.0	10,865.2	15,865.0	10,819.1	155.1	125.7	-88.29	208.1	5,318.3	740.6	460.4	280.19	2.643			
16,100.0	10,865.7	15,961.6	10,821.3	158.0	128.0	-88.42	206.8	5,414.9	740.0	454.6	285.40	2.593			
16,200.0	10,866.2	16,090.1	10,825.3	160.9	131.1	-88.67	204.2	5,543.3	739.0	447.6	291.42	2.536			
16,300.0	10,866.7	16,200.4	10,823.8	163.8	133.8	-88.50	197.6	5,653.3	733.8	436.9	296.98	2.471			
16,400.0	10,867.3	16,298.4	10,819.8	166.7	136.2	-88.13	190.9	5,751.0	728.0	425.7	302.23	2.409			
16,500.0	10,867.8	16,393.8	10,819.6	169.6	138.6	-88.06	185.3	5,846.3	722.9	415.5	307.47	2.351			
16,600.0	10,868.3	16,492.4	10,823.5	172.5	141.0	-88.32	180.2	5,944.6	718.4	405.5	312.86	2.296			
16,700.0	10,868.8	16,582.6	10,826.2	175.4	143.3	-88.49	176.0	6,034.7	714.5	396.5	318.05	2.247			
16,800.0	10,869.4	16,699.2	10,828.5	178.3	146.2	-88.62	170.2	6,151.1	710.4	386.5	323.90	2.193			
16,900.0	10,869.9	16,797.8	10,827.0	181.2	148.7	-88.44	163.8	6,249.5	704.7	375.4	329.29	2.140			
17,000.0	10,870.4	16,905.5	10,825.7	184.1	151.5	-88.28	156.1	6,356.9	698.4	363.4	334.92	2.085			
17,100.0	10,870.9	17,001.6	10,826.7	187.0	153.9	-88.30	149.0	6,452.7	691.8	351.5	340.29	2.033			
17,200.0	10,871.5	17,093.0	10,827.0	189.9	156.3	-88.28	143.5	6,543.9	686.6	341.1	345.55	1.987			
17,300.0	10,872.0	17,185.6	10,827.1	192.8	158.7	-88.23	138.7	6,636.5	682.3	331.4	350.85	1.945			
17,400.0	10,872.5	17,280.8	10,829.1	195.7	161.2	-88.35	135.0	6,731.5	679.1	322.8	356.25	1.906			
17,500.0	10,873.0	17,374.0	10,829.8	198.6	163.6	-88.36	131.8	6,824.7	676.4	314.8	361.59	1.871			
17,600.0	10,873.6	17,478.2	10,831.0	201.5	166.3	-88.41	128.6	6,928.8	674.2	306.9	367.24	1.836			
17,700.0	10,874.1	17,568.5	10,831.4	204.4	168.7	-88.41	126.0	7,019.1	672.2	299.6	372.53	1.804			
17,800.0	10,874.6	17,667.5	10,832.1	207.3	171.3	-88.42	124.3	7,118.1	671.2	293.1	378.05	1.775			
17,900.0	10,875.1	17,764.5	10,831.1	210.2	173.9	-88.28	122.4	7,215.0	670.1	286.6	383.51	1.747			
18,000.0	10,875.6	17,863.1	10,831.3	213.1	176.5	-88.25	121.3	7,313.6	669.8	280.8	389.03	1.722			
18,088.9	10,876.1	17,949.5	10,830.2	215.7	178.8	-88.13	120.3	7,400.0	669.5	275.6	393.90	1.700			
18,100.0	10,876.2	17,959.6	10,830.1	216.0	179.1	-88.11	120.2	7,410.1	669.5	275.1	394.49	1.697			
18,200.0	10,876.7	18,053.9	10,829.1	218.9	181.6	-87.99	120.1	7,504.4	670.3	270.4	399.90	1.676			
18,300.0	10,877.2	18,151.0	10,828.4	221.8	184.2	-87.89	120.2	7,601.5	671.2	265.8	405.38	1.656			
18,400.0	10,877.7	18,240.3	10,827.2	224.7	186.6	-87.75	121.5	7,690.8	673.5	262.8	410.66	1.640			
18,500.0	10,878.3	18,333.0	10,827.8	227.6	189.1	-87.77	123.8	7,783.4	676.8	260.8	416.06	1.627			
18,600.0	10,878.8	18,420.8	10,827.5	230.5	191.4	-87.72	127.1	7,871.2	681.5	260.2	421.32	1.618			
18,700.0	10,879.3	18,527.5	10,827.7	233.4	194.3	-87.71	132.6	7,977.7	687.4	260.4	427.10	1.610			
18,800.0	10,879.8	18,645.1	10,830.1	236.4	197.5	-87.88	136.0	8,095.2	691.2	257.9	433.23	1.595			
18,900.0	10,880.4	18,749.9	10,832.2	239.3	200.3	-88.01	137.3	8,200.0	693.1	254.1	439.02	1.579			
19,000.0	10,880.9	18,847.2	10,834.9	242.2	203.0	-88.20	138.2	8,297.3	694.8	250.2	444.63	1.563			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Company:	Oasis Petroleum	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2T2
Project:	Indian Hills	TVD Reference:	WELL @ 2078.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	MD Reference:	WELL @ 2078.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Kline Federal 5300 11-18 2T2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #6	Offset TVD Reference:	Offset Datum

Offset Design 153N-100W-17/18 - Ash Federal 5300 11-18T - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 usft
Survey Program: 2261-MWD, 13302-MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
19,100.0	10,881.4	18,942.7	10,837.7	245.1	205.6	-88.39	139.7	8,392.7	697.1	246.9	450.18	1.548	
19,200.0	10,881.9	19,048.8	10,841.4	248.0	208.5	-88.65	141.3	8,498.8	699.3	243.3	456.04	1.533	
19,300.0	10,882.5	19,158.6	10,844.7	250.9	211.5	-88.87	141.5	8,608.5	700.3	238.3	462.00	1.516	
19,400.0	10,883.0	19,258.1	10,846.2	253.8	214.2	-88.95	141.1	8,708.0	700.6	233.0	467.66	1.498 Level 3	
19,500.0	10,883.5	19,356.1	10,846.2	256.7	216.9	-88.91	140.8	8,806.0	701.1	227.9	473.27	1.481 Level 3	
19,600.0	10,884.0	19,454.3	10,845.4	259.7	219.6	-88.81	140.8	8,904.2	702.0	223.1	478.88	1.466 Level 3	
19,700.0	10,884.5	19,555.0	10,843.7	262.6	222.4	-88.63	140.7	9,004.9	702.7	218.2	484.55	1.450 Level 3	
19,800.0	10,885.1	19,644.0	10,841.9	265.5	224.9	-88.44	141.1	9,093.9	704.0	214.1	489.89	1.437 Level 3	
19,900.0	10,885.6	19,730.6	10,840.8	268.4	227.3	-88.33	142.9	9,180.4	707.1	211.9	495.17	1.428 Level 3	
20,000.0	10,886.1	19,815.9	10,840.3	271.3	229.6	-88.26	146.7	9,265.6	712.4	212.0	500.43	1.424 Level 3	
20,100.0	10,886.6	19,905.8	10,840.7	274.2	232.1	-88.27	152.6	9,355.4	719.8	213.9	505.82	1.423 Level 3	
20,200.0	10,887.2	20,007.7	10,840.8	277.2	234.9	-88.26	159.6	9,457.0	727.4	215.9	511.54	1.422 Level 3	
20,300.0	10,887.7	20,112.7	10,841.0	280.1	237.8	-88.25	166.3	9,561.8	734.6	217.2	517.35	1.420 Level 3	
20,400.0	10,888.2	20,212.7	10,841.0	283.0	240.5	-88.22	172.4	9,661.6	741.5	218.4	523.03	1.418 Level 3	
20,500.0	10,888.7	20,309.1	10,840.5	285.9	243.2	-88.16	178.5	9,757.8	748.7	220.1	528.60	1.416 Level 3	
20,600.0	10,889.3	20,419.4	10,838.9	288.8	246.3	-88.01	184.8	9,868.0	755.3	220.7	534.53	1.413 Level 3, SF	
20,700.0	10,889.8	20,482.0	10,837.6	291.7	248.0	-87.90	187.9	9,930.4	762.0	222.8	539.15	1.413 Level 3	
20,717.6	10,889.9	20,482.0	10,837.6	292.3	248.0	-87.90	187.9	9,930.4	764.0	224.4	539.67	1.416 Level 3	



Gyrodta, Inc.
Anticollision Report



Company:	Oasis Petroleum	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2T2
Project:	Indian Hills	TVD Reference:	WELL @ 2078.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	MD Reference:	WELL @ 2078.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Kline Federal 5300 11-18 2T2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #6	Offset TVD Reference:	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 11-18 3T - Wellbore #1 - Design #6												Offset Site Error:	0.0 usft	
Survey Program: 0-MWD												Offset Well Error:	0.0 usft	
Reference		Offset		Semi Major Axis				Distance						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface	(°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-155.57		-59.8	-27.2	65.7				
100.0	100.0	100.0	100.0	0.1	0.1	-155.57		-59.8	-27.2	65.7	65.5	0.17	389.542	
200.0	200.0	200.0	200.0	0.3	0.3	-155.57		-59.8	-27.2	65.7	65.0	0.62	106.239	
300.0	300.0	300.0	300.0	0.5	0.5	-155.57		-59.8	-27.2	65.7	64.6	1.07	61.507	
400.0	400.0	400.0	400.0	0.8	0.8	-155.57		-59.8	-27.2	65.7	64.1	1.52	43.283	
500.0	500.0	500.0	500.0	1.0	1.0	-155.57		-59.8	-27.2	65.7	63.7	1.97	33.389	
600.0	600.0	600.0	600.0	1.2	1.2	-155.57		-59.8	-27.2	65.7	63.3	2.42	27.177	
700.0	700.0	700.0	700.0	1.4	1.4	-155.57		-59.8	-27.2	65.7	62.8	2.87	22.914	
800.0	800.0	800.0	800.0	1.7	1.7	-155.57		-59.8	-27.2	65.7	62.4	3.32	19.807	
900.0	900.0	900.0	900.0	1.9	1.9	-155.57		-59.8	-27.2	65.7	61.9	3.76	17.442	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-155.57		-59.8	-27.2	65.7	61.5	4.21	15.582	
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.3	-155.57		-59.8	-27.2	65.7	61.0	4.66	14.080	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-155.57		-59.8	-27.2	65.7	60.6	5.11	12.842	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	-155.57		-59.8	-27.2	65.7	60.1	5.56	11.804	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	-155.57		-59.8	-27.2	65.7	59.7	6.01	10.922	
1,500.0	1,500.0	1,500.0	1,500.0	3.2	3.2	-155.57		-59.8	-27.2	65.7	59.2	6.46	10.162	
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	-155.57		-59.8	-27.2	65.7	58.8	6.91	9.501	
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	-155.57		-59.8	-27.2	65.7	58.3	7.36	8.921	
1,800.0	1,800.0	1,800.0	1,800.0	3.9	3.9	-155.57		-59.8	-27.2	65.7	57.9	7.81	8.407	
1,900.0	1,900.0	1,900.0	1,900.0	4.1	4.1	-155.57		-59.8	-27.2	65.7	57.4	8.26	7.950	
2,000.0	2,000.0	2,000.0	2,000.0	4.4	4.4	-155.57		-59.8	-27.2	65.7	57.0	8.71	7.540	
2,100.0	2,100.0	2,100.0	2,100.0	4.6	4.6	-155.57		-59.8	-27.2	65.7	56.5	9.16	7.170	
2,200.0	2,200.0	2,200.0	2,200.0	4.8	4.8	-155.57		-59.8	-27.2	65.7	56.1	9.61	6.834	
2,300.0	2,300.0	2,300.0	2,300.0	5.0	5.0	-155.57		-59.8	-27.2	65.7	55.6	10.06	6.529	
2,400.0	2,400.0	2,400.0	2,400.0	5.3	5.3	-155.57		-59.8	-27.2	65.7	55.2	10.51	6.249	
2,500.0	2,500.0	2,500.0	2,500.0	5.5	5.5	-155.57		-59.8	-27.2	65.7	54.7	10.96	5.993 CC	
2,600.0	2,600.0	2,598.9	2,598.9	5.7	5.7	117.07		-59.8	-28.9	67.2	55.8	11.38	5.904	
2,650.0	2,649.9	2,648.2	2,648.1	5.8	5.8	120.18		-59.8	-31.0	69.3	57.7	11.57	5.984	
2,700.0	2,699.9	2,697.9	2,697.8	5.9	5.9	123.76		-59.8	-33.6	72.0	60.3	11.78	6.118	
2,800.0	2,799.7	2,797.3	2,797.1	6.1	6.1	130.11		-59.8	-38.8	78.4	66.2	12.18	6.433	
2,900.0	2,899.6	2,896.8	2,896.4	6.3	6.3	135.46		-59.8	-44.0	85.5	72.9	12.59	6.792	
3,000.0	2,999.5	2,996.3	2,995.7	6.5	6.5	139.96		-59.8	-49.2	93.2	80.2	12.99	7.176	
3,100.0	3,099.3	3,095.7	3,095.0	6.7	6.7	143.75		-59.8	-54.4	101.5	88.1	13.40	7.572	
3,200.0	3,199.2	3,195.2	3,194.3	7.0	6.9	146.97		-59.8	-59.6	110.1	96.3	13.81	7.970	
3,300.0	3,299.0	3,294.6	3,293.7	7.2	7.2	149.71		-59.8	-64.8	119.0	104.8	14.23	8.365	
3,400.0	3,398.9	3,394.1	3,393.0	7.4	7.4	152.06		-59.8	-70.0	128.2	113.5	14.64	8.752	
3,501.2	3,500.0	3,494.7	3,493.5	7.6	7.6	154.13		-59.8	-75.3	137.6	122.5	15.07	9.133	
3,600.0	3,598.7	3,597.5	3,596.2	7.8	7.8	155.46		-59.8	-79.1	144.0	128.5	15.48	9.301	
3,651.2	3,649.9	3,651.2	3,649.9	7.9	7.9	-114.37		-59.8	-79.6	144.9	129.2	15.71	9.220	
3,700.0	3,698.7	3,700.0	3,698.7	8.0	8.0	-114.37		-59.8	-79.6	144.9	129.0	15.92	9.103	
3,800.0	3,798.7	3,800.0	3,798.7	8.2	8.2	-114.37		-59.8	-79.6	144.9	128.5	16.36	8.856	
3,900.0	3,898.7	3,900.0	3,898.7	8.5	8.5	-114.37		-59.8	-79.6	144.9	128.1	16.80	8.622	
4,000.0	3,998.7	4,000.0	3,998.7	8.7	8.7	-114.37		-59.8	-79.6	144.9	127.6	17.25	8.400	
4,100.0	4,098.7	4,100.0	4,098.7	8.9	8.9	-114.37		-59.8	-79.6	144.9	127.2	17.69	8.189	
4,200.0	4,198.7	4,200.0	4,198.7	9.1	9.1	-114.37		-59.8	-79.6	144.9	126.7	18.14	7.988	
4,300.0	4,298.7	4,300.0	4,298.7	9.4	9.4	-114.37		-59.8	-79.6	144.9	126.3	18.58	7.797	
4,400.0	4,398.7	4,400.0	4,398.7	9.6	9.6	-114.37		-59.8	-79.6	144.9	125.8	19.03	7.614	
4,500.0	4,498.7	4,500.0	4,498.7	9.8	9.8	-114.37		-59.8	-79.6	144.9	125.4	19.47	7.440	
4,600.0	4,598.7	4,600.0	4,598.7	10.0	10.0	-114.37		-59.8	-79.6	144.9	125.0	19.92	7.274	
4,700.0	4,698.7	4,700.0	4,698.7	10.2	10.2	-114.37		-59.8	-79.6	144.9	124.5	20.36	7.114	
4,800.0	4,798.7	4,800.0	4,798.7	10.5	10.5	-114.37		-59.8	-79.6	144.9	124.1	20.81	6.962	
4,900.0	4,898.7	4,900.0	4,898.7	10.7	10.7	-114.37		-59.8	-79.6	144.9	123.6	21.26	6.816	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Gyrodata, Inc.
Anticollision Report



Company:	Oasis Petroleum	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2T2
Project:	Indian Hills	TVD Reference:	WELL @ 2078.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	MD Reference:	WELL @ 2078.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Kline Federal 5300 11-18 2T2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #6	Offset TVD Reference:	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 11-18 3T - Wellbore #1 - Design #6													Offset Site Error:	0.0 usft		
Survey Program: 0-MWD															Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning			
5,000.0	4,998.7	5,000.0	4,998.7	10.9	10.9	-114.37	-59.8	-79.6	144.9	123.2	21.70	6.676				
5,100.0	5,098.7	5,100.0	5,098.7	11.1	11.1	-114.37	-59.8	-79.6	144.9	122.7	22.15	6.541				
5,200.0	5,198.7	5,200.0	5,198.7	11.4	11.4	-114.37	-59.8	-79.6	144.9	122.3	22.59	6.412				
5,300.0	5,298.7	5,300.0	5,298.7	11.6	11.6	-114.37	-59.8	-79.6	144.9	121.8	23.04	6.288				
5,400.0	5,398.7	5,400.0	5,398.7	11.8	11.8	-114.37	-59.8	-79.6	144.9	121.4	23.49	6.168				
5,500.0	5,498.7	5,500.0	5,498.7	12.0	12.0	-114.37	-59.8	-79.6	144.9	120.9	23.94	6.053				
5,600.0	5,598.7	5,600.0	5,598.7	12.2	12.2	-114.37	-59.8	-79.6	144.9	120.5	24.38	5.942				
5,700.0	5,698.7	5,700.0	5,698.7	12.5	12.5	-114.37	-59.8	-79.6	144.9	120.0	24.83	5.835				
5,800.0	5,798.7	5,800.0	5,798.7	12.7	12.7	-114.37	-59.8	-79.6	144.9	119.6	25.28	5.732				
5,900.0	5,898.7	5,900.0	5,898.7	12.9	12.9	-114.37	-59.8	-79.6	144.9	119.2	25.72	5.632				
6,000.0	5,998.7	6,000.0	5,998.7	13.1	13.1	-114.37	-59.8	-79.6	144.9	118.7	26.17	5.536				
6,100.0	6,098.7	6,100.0	6,098.7	13.4	13.4	-114.37	-59.8	-79.6	144.9	118.3	26.62	5.443				
6,200.0	6,198.7	6,200.0	6,198.7	13.6	13.6	-114.37	-59.8	-79.6	144.9	117.8	27.07	5.353				
6,300.0	6,298.7	6,300.0	6,298.7	13.8	13.8	-114.37	-59.8	-79.6	144.9	117.4	27.51	5.266				
6,400.0	6,398.7	6,400.0	6,398.7	14.0	14.0	-114.37	-59.8	-79.6	144.9	116.9	27.96	5.181				
6,500.0	6,498.7	6,500.0	6,498.7	14.3	14.3	-114.37	-59.8	-79.6	144.9	116.5	28.41	5.100				
6,600.0	6,598.7	6,600.0	6,598.7	14.5	14.5	-114.37	-59.8	-79.6	144.9	116.0	28.86	5.021				
6,700.0	6,698.7	6,700.0	6,698.7	14.7	14.7	-114.37	-59.8	-79.6	144.9	115.6	29.30	4.944				
6,800.0	6,798.7	6,800.0	6,798.7	14.9	14.9	-114.37	-59.8	-79.6	144.9	115.1	29.75	4.870				
6,900.0	6,898.7	6,900.0	6,898.7	15.2	15.2	-114.37	-59.8	-79.6	144.9	114.7	30.20	4.797				
7,000.0	6,998.7	7,000.0	6,998.7	15.4	15.4	-114.37	-59.8	-79.6	144.9	114.2	30.65	4.727				
7,100.0	7,098.7	7,100.0	7,098.7	15.6	15.6	-114.37	-59.8	-79.6	144.9	113.8	31.09	4.659				
7,200.0	7,198.7	7,200.0	7,198.7	15.8	15.8	-114.37	-59.8	-79.6	144.9	113.3	31.54	4.593				
7,300.0	7,298.7	7,300.0	7,298.7	16.0	16.0	-114.37	-59.8	-79.6	144.9	112.9	31.99	4.529				
7,400.0	7,398.7	7,400.0	7,398.7	16.3	16.3	-114.37	-59.8	-79.6	144.9	112.4	32.44	4.466				
7,500.0	7,498.7	7,500.0	7,498.7	16.5	16.5	-114.37	-59.8	-79.6	144.9	112.0	32.89	4.405				
7,600.0	7,598.7	7,600.0	7,598.7	16.7	16.7	-114.37	-59.8	-79.6	144.9	111.5	33.34	4.346				
7,700.0	7,698.7	7,700.0	7,698.7	16.9	16.9	-114.37	-59.8	-79.6	144.9	111.1	33.78	4.288				
7,800.0	7,798.7	7,800.0	7,798.7	17.2	17.2	-114.37	-59.8	-79.6	144.9	110.6	34.23	4.232				
7,900.0	7,898.7	7,900.0	7,898.7	17.4	17.4	-114.37	-59.8	-79.6	144.9	110.2	34.68	4.178				
8,000.0	7,998.7	8,000.0	7,998.7	17.6	17.6	-114.37	-59.8	-79.6	144.9	109.7	35.13	4.124				
8,100.0	8,098.7	8,100.0	8,098.7	17.8	17.8	-114.37	-59.8	-79.6	144.9	109.3	35.58	4.072				
8,200.0	8,198.7	8,200.0	8,198.7	18.1	18.1	-114.37	-59.8	-79.6	144.9	108.9	36.02	4.022				
8,300.0	8,298.7	8,300.0	8,298.7	18.3	18.3	-114.37	-59.8	-79.6	144.9	108.4	36.47	3.972				
8,400.0	8,398.7	8,400.0	8,398.7	18.5	18.5	-114.37	-59.8	-79.6	144.9	108.0	36.92	3.924				
8,500.0	8,498.7	8,500.0	8,498.7	18.7	18.7	-114.37	-59.8	-79.6	144.9	107.5	37.37	3.877				
8,600.0	8,598.7	8,600.0	8,598.7	19.0	19.0	-114.37	-59.8	-79.6	144.9	107.1	37.82	3.831				
8,700.0	8,698.7	8,700.0	8,698.7	19.2	19.2	-114.37	-59.8	-79.6	144.9	106.6	38.27	3.786				
8,800.0	8,798.7	8,800.0	8,798.7	19.4	19.4	-114.37	-59.8	-79.6	144.9	106.2	38.72	3.742				
8,900.0	8,898.7	8,900.0	8,898.7	19.6	19.6	-114.37	-59.8	-79.6	144.9	105.7	39.16	3.699				
9,000.0	8,998.7	9,000.0	8,998.7	19.9	19.9	-114.37	-59.8	-79.6	144.9	105.3	39.61	3.657				
9,100.0	9,098.7	9,100.0	9,098.7	20.1	20.1	-114.37	-59.8	-79.6	144.9	104.8	40.06	3.616				
9,200.0	9,198.7	9,200.0	9,198.7	20.3	20.3	-114.37	-59.8	-79.6	144.9	104.4	40.51	3.576				
9,300.0	9,298.7	9,300.0	9,298.7	20.5	20.5	-114.37	-59.8	-79.6	144.9	103.9	40.96	3.537				
9,400.0	9,398.7	9,400.0	9,398.7	20.8	20.8	-114.37	-59.8	-79.6	144.9	103.5	41.41	3.499				
9,500.0	9,498.7	9,500.0	9,498.7	21.0	21.0	-114.37	-59.8	-79.6	144.9	103.0	41.86	3.461				
9,600.0	9,598.7	9,600.0	9,598.7	21.2	21.2	-114.37	-59.8	-79.6	144.9	102.6	42.30	3.425				
9,700.0	9,698.7	9,700.0	9,698.7	21.4	21.4	-114.37	-59.8	-79.6	144.9	102.1	42.75	3.389				
9,800.0	9,798.7	9,800.0	9,798.7	21.6	21.6	-114.37	-59.8	-79.6	144.9	101.7	43.20	3.353				
9,900.0	9,898.7	9,900.0	9,898.7	21.9	21.9	-114.37	-59.8	-79.6	144.9	101.2	43.65	3.319				
10,000.0	9,998.7	10,000.0	9,998.7	22.1	22.1	-114.37	-59.8	-79.6	144.9	100.8	44.10	3.285				
10,100.0	10,098.7	10,100.0	10,098.7	22.3	22.3	-114.37	-59.8	-79.6	144.9	100.3	44.55	3.252				

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Gyrodata, Inc.
Anticollision Report



Company:	Oasis Petroleum	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2T2
Project:	Indian Hills	TVD Reference:	WELL @ 2078.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	MD Reference:	WELL @ 2078.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Kline Federal 5300 11-18 2T2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #6	Offset TVD Reference:	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 11-18 3T - Wellbore #1 - Design #6													Offset Site Error:	0.0 usft
Survey Program: 0-MWD														
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface	Offset	Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,200.0	10,198.7	10,200.0	10,198.7	22.5	22.5	-114.37	-59.8	-79.6	144.9	99.9	45.00	3.220		
10,300.0	10,298.7	10,300.0	10,298.7	22.8	22.8	-114.37	-59.8	-79.6	144.9	99.4	45.45	3.188		
10,363.3	10,362.0	10,366.1	10,364.8	22.9	22.9	-114.72	-60.5	-78.9	144.6	98.9	45.72	3.163		
10,375.0	10,373.7	10,379.0	10,377.7	22.9	22.9	124.99	-61.2	-78.3	144.4	98.7	45.76	3.156		
10,400.0	10,398.7	10,406.5	10,404.9	23.0	23.0	124.24	-63.5	-76.1	144.3	98.4	45.83	3.148		
10,400.5	10,399.1	10,407.0	10,405.4	23.0	23.0	124.22	-63.6	-76.0	144.3	98.4	45.83	3.148		
10,425.0	10,423.5	10,433.8	10,431.8	23.0	23.0	123.34	-67.0	-72.8	144.4	98.5	45.87	3.148		
10,450.0	10,448.2	10,461.0	10,458.3	23.1	23.1	122.29	-71.6	-68.6	144.9	99.0	45.90	3.158		
10,475.0	10,472.7	10,488.0	10,484.1	23.1	23.1	121.11	-77.2	-63.3	145.8	99.9	45.91	3.176		
10,500.0	10,496.8	10,514.8	10,509.4	23.2	23.2	119.82	-83.8	-57.2	147.0	101.1	45.93	3.202		
10,525.0	10,520.6	10,541.4	10,533.9	23.3	23.2	118.42	-91.4	-50.1	148.7	102.7	45.94	3.236		
10,550.0	10,544.0	10,567.8	10,557.6	23.3	23.3	116.94	-99.9	-42.1	150.7	104.7	45.98	3.277		
10,575.0	10,566.8	10,594.0	10,580.4	23.4	23.3	115.38	-109.3	-33.4	153.1	107.1	46.03	3.326		
10,600.0	10,589.1	10,620.0	10,602.3	23.5	23.4	113.77	-119.5	-23.9	155.9	109.8	46.10	3.381		
10,625.0	10,610.8	10,645.7	10,623.3	23.5	23.4	112.13	-130.5	-13.7	159.1	112.9	46.21	3.443		
10,650.0	10,631.8	10,671.3	10,643.2	23.6	23.5	110.45	-142.1	-2.8	162.7	116.3	46.35	3.510		
10,675.0	10,652.0	10,696.6	10,662.1	23.7	23.5	108.77	-154.4	8.7	166.6	120.1	46.53	3.581		
10,700.0	10,671.5	10,721.7	10,680.0	23.8	23.6	107.08	-167.3	20.7	171.0	124.2	46.74	3.658		
10,725.0	10,690.1	10,746.5	10,696.7	23.9	23.7	105.41	-180.8	33.3	175.7	128.7	46.99	3.739		
10,750.0	10,707.8	10,771.2	10,712.3	24.0	23.8	103.75	-194.7	46.3	180.7	133.4	47.27	3.823		
10,775.0	10,724.5	10,795.6	10,726.8	24.1	23.9	102.12	-209.1	59.7	186.1	138.5	47.57	3.911		
10,800.0	10,740.3	10,819.9	10,740.2	24.3	24.0	100.52	-223.9	73.5	191.7	143.8	47.91	4.002		
10,825.0	10,755.0	10,843.9	10,752.4	24.4	24.1	98.95	-239.0	87.6	197.6	149.4	48.26	4.095		
10,850.0	10,768.7	10,867.8	10,763.5	24.6	24.3	97.43	-254.5	102.0	203.8	155.2	48.63	4.191		
10,875.0	10,781.2	10,891.5	10,773.4	24.8	24.4	95.94	-270.2	116.6	210.2	161.2	49.03	4.288		
10,900.0	10,792.6	10,915.0	10,782.2	25.0	24.6	94.50	-286.1	131.5	216.9	167.4	49.43	4.387		
10,925.0	10,802.8	10,938.3	10,789.9	25.2	24.8	93.11	-302.3	146.6	223.7	173.8	49.85	4.487		
10,950.0	10,811.8	10,961.6	10,796.5	25.4	24.9	91.76	-318.6	161.8	230.6	180.3	50.27	4.587		
10,975.0	10,819.6	10,984.7	10,801.9	25.7	25.1	90.46	-335.0	177.1	237.7	187.0	50.71	4.688		
11,000.0	10,826.1	11,007.6	10,806.2	25.9	25.3	89.21	-351.5	192.5	244.9	193.7	51.15	4.788		
11,025.0	10,831.3	11,030.5	10,809.5	26.2	25.6	88.00	-368.0	207.9	252.2	200.6	51.60	4.887		
11,050.0	10,835.3	11,053.3	10,811.6	26.5	25.8	86.84	-384.6	223.4	259.5	207.5	52.05	4.986		
11,075.0	10,837.9	11,076.0	10,812.6	26.8	26.0	85.72	-401.2	238.8	266.9	214.4	52.52	5.082		
11,100.0	10,839.3	11,099.5	10,812.8	27.1	26.3	84.70	-418.4	254.9	274.3	221.3	53.00	5.175		
11,110.8	10,839.5	11,111.6	10,812.9	27.2	26.4	84.36	-427.2	263.1	277.4	224.1	53.25	5.210		
11,125.8	10,839.5	11,128.4	10,813.0	27.4	26.6	84.46	-439.4	274.7	281.6	228.0	53.63	5.251		
11,200.0	10,839.9	11,212.5	10,813.4	28.5	27.7	84.86	-498.7	334.4	301.9	246.3	55.62	5.428		
11,300.0	10,840.5	11,327.8	10,814.1	30.1	29.4	85.31	-575.7	420.2	328.7	270.0	58.69	5.601		
11,400.0	10,841.0	11,445.4	10,814.7	31.9	31.4	85.69	-648.6	512.3	354.7	292.6	62.09	5.713		
11,500.0	10,841.5	11,565.1	10,815.4	33.9	33.6	86.00	-717.0	610.7	379.8	314.0	65.75	5.776		
11,600.0	10,842.1	11,687.2	10,816.1	36.0	36.1	86.28	-780.2	715.0	403.8	334.2	69.60	5.801		
11,700.0	10,842.6	11,811.5	10,816.8	38.1	38.7	86.51	-837.6	825.3	426.6	353.0	73.62	5.795		
11,800.0	10,843.2	11,938.1	10,817.5	40.4	41.5	86.71	-888.5	941.2	448.1	370.4	77.73	5.765		
11,900.0	10,843.7	12,066.9	10,818.2	42.7	44.5	86.88	-932.3	1,062.3	468.3	386.4	81.88	5.719		
12,000.0	10,844.2	12,197.9	10,819.0	45.0	47.6	87.03	-968.4	1,188.1	486.9	400.8	86.02	5.660		
12,100.0	10,844.8	12,330.9	10,819.7	47.4	50.7	87.16	-996.2	1,318.2	503.8	413.7	90.14	5.589		
12,110.4	10,844.8	12,344.9	10,819.8	47.6	51.0	87.17	-998.6	1,332.0	505.5	414.9	90.56	5.582		
12,200.0	10,845.3	12,466.2	10,820.5	49.8	53.9	87.26	-1,015.0	1,452.1	516.9	421.1	95.79	5.396		
12,300.0	10,845.8	12,603.3	10,821.2	52.2	57.1	87.31	-1,024.4	1,588.9	523.0	421.2	101.80	5.137		
12,400.0	10,846.3	12,717.6	10,821.8	54.7	59.8	87.31	-1,025.7	1,703.2	523.2	415.9	107.33	4.875		
12,500.0	10,846.8	12,817.6	10,822.3	57.3	62.2	87.31	-1,026.3	1,803.2	522.9	410.4	112.56	4.646		
12,600.0	10,847.4	12,917.6	10,822.8	59.9	64.6	87.31	-1,026.8	1,903.2	522.7	404.8	117.85	4.435		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Gyrodata, Inc.
Anticollision Report



Company:	Oasis Petroleum	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2T2
Project:	Indian Hills	TVD Reference:	WELL @ 2078.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	MD Reference:	WELL @ 2078.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Kline Federal 5300 11-18 2T2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #6	Offset TVD Reference:	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 11-18 3T - Wellbore #1 - Design #6													Offset Site Error:	0.0 usft
Survey Program: 0-MWD													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Reference Offset		Semi Major Axis			Distance							Warning
		Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Hightside Toolface	Offset	Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
12,700.0	10,847.9	13,017.6	10,823.4	62.5	67.1	87.31	-1,027.3	2,003.2	522.4	399.2	123.20	4.240		
12,800.0	10,848.4	13,117.6	10,823.9	65.1	69.6	87.31	-1,027.9	2,103.2	522.1	393.5	128.59	4.060		
12,900.0	10,848.9	13,217.6	10,824.4	67.8	72.1	87.30	-1,028.4	2,203.2	521.8	387.8	134.01	3.894		
13,000.0	10,849.5	13,317.6	10,824.9	70.4	74.7	87.30	-1,028.9	2,303.2	521.6	382.1	139.47	3.740		
13,100.0	10,850.0	13,417.6	10,825.5	73.1	77.3	87.30	-1,029.5	2,403.2	521.3	376.3	144.97	3.596		
13,200.0	10,850.5	13,517.6	10,826.0	75.9	79.9	87.30	-1,030.0	2,503.2	521.0	370.5	150.49	3.462		
13,300.0	10,851.0	13,617.6	10,826.5	78.6	82.6	87.30	-1,030.5	2,603.2	520.7	364.7	156.03	3.337		
13,400.0	10,851.6	13,717.6	10,827.0	81.3	85.2	87.30	-1,031.0	2,703.2	520.5	358.9	161.60	3.221		
13,500.0	10,852.1	13,817.6	10,827.6	84.1	87.9	87.30	-1,031.6	2,803.2	520.2	353.0	167.18	3.112		
13,600.0	10,852.6	13,917.6	10,828.1	86.9	90.6	87.29	-1,032.1	2,903.1	519.9	347.1	172.79	3.009		
13,700.0	10,853.1	14,017.6	10,828.6	89.6	93.3	87.29	-1,032.6	3,003.1	519.6	341.2	178.41	2.913		
13,800.0	10,853.7	14,117.6	10,829.1	92.4	96.0	87.29	-1,033.2	3,103.1	519.4	335.3	184.04	2.822		
13,900.0	10,854.2	14,217.6	10,829.6	95.2	98.7	87.29	-1,033.7	3,203.1	519.1	329.4	189.69	2.737		
14,000.0	10,854.7	14,317.6	10,830.2	98.0	101.5	87.29	-1,034.2	3,303.1	518.8	323.5	195.35	2.656		
14,100.0	10,855.2	14,417.6	10,830.7	100.8	104.2	87.29	-1,034.7	3,403.1	518.6	317.5	201.03	2.580		
14,200.0	10,855.7	14,517.6	10,831.2	103.7	107.0	87.29	-1,035.3	3,503.1	518.3	311.6	206.71	2.507		
14,300.0	10,856.3	14,617.6	10,831.7	106.5	109.8	87.28	-1,035.8	3,603.1	518.0	305.6	212.40	2.439		
14,400.0	10,856.8	14,717.6	10,832.3	109.3	112.6	87.28	-1,036.3	3,703.1	517.7	299.6	218.10	2.374		
14,500.0	10,857.3	14,817.6	10,832.8	112.2	115.3	87.28	-1,036.9	3,803.1	517.5	293.6	223.81	2.312		
14,600.0	10,857.8	14,917.6	10,833.3	115.0	118.1	87.28	-1,037.4	3,903.1	517.2	287.7	229.52	2.253		
14,700.0	10,858.4	15,017.6	10,833.8	117.9	120.9	87.28	-1,037.9	4,003.1	516.9	281.7	235.25	2.197		
14,800.0	10,858.9	15,117.6	10,834.4	120.7	123.7	87.28	-1,038.5	4,103.1	516.6	275.7	240.98	2.144		
14,900.0	10,859.4	15,217.6	10,834.9	123.6	126.6	87.28	-1,039.0	4,203.1	516.4	269.6	246.71	2.093		
15,000.0	10,859.9	15,317.6	10,835.4	126.4	129.4	87.27	-1,039.5	4,303.1	516.1	263.6	252.45	2.044		
15,100.0	10,860.5	15,417.6	10,835.9	129.3	132.2	87.27	-1,040.0	4,403.1	515.8	257.6	258.20	1.998		
15,200.0	10,861.0	15,517.6	10,836.5	132.1	135.0	87.27	-1,040.6	4,503.1	515.5	251.6	263.95	1.953		
15,300.0	10,861.5	15,617.6	10,837.0	135.0	137.9	87.27	-1,041.1	4,603.1	515.3	245.6	269.70	1.910		
15,400.0	10,862.0	15,717.6	10,837.5	137.9	140.7	87.27	-1,041.6	4,703.1	515.0	239.5	275.46	1.870		
15,500.0	10,862.6	15,817.6	10,838.0	140.7	143.5	87.27	-1,042.2	4,803.1	514.7	233.5	281.23	1.830		
15,600.0	10,863.1	15,917.6	10,838.5	143.6	146.4	87.27	-1,042.7	4,903.1	514.4	227.4	286.99	1.792		
15,700.0	10,863.6	16,017.6	10,839.1	146.5	149.2	87.26	-1,043.2	5,003.1	514.2	221.4	292.76	1.756		
15,800.0	10,864.1	16,117.6	10,839.6	149.4	152.1	87.26	-1,043.7	5,103.1	513.9	215.3	298.54	1.721		
15,900.0	10,864.7	16,217.6	10,840.1	152.3	154.9	87.26	-1,044.3	5,203.1	513.6	209.3	304.31	1.688		
16,000.0	10,865.2	16,317.6	10,840.6	155.1	157.8	87.26	-1,044.8	5,303.1	513.3	203.2	310.09	1.655		
16,100.0	10,865.7	16,417.6	10,841.2	158.0	160.6	87.26	-1,045.3	5,403.1	513.1	197.2	315.88	1.624		
16,200.0	10,866.2	16,517.6	10,841.7	160.9	163.5	87.26	-1,045.9	5,503.1	512.8	191.1	321.66	1.594		
16,300.0	10,866.7	16,617.6	10,842.2	163.8	166.4	87.26	-1,046.4	5,603.1	512.5	185.1	327.45	1.565		
16,400.0	10,867.3	16,717.6	10,842.7	166.7	169.2	87.25	-1,046.9	5,703.1	512.2	179.0	333.24	1.537		
16,500.0	10,867.8	16,817.6	10,843.3	169.6	172.1	87.25	-1,047.5	5,803.1	512.0	172.9	339.03	1.510		
16,600.0	10,868.3	16,917.6	10,843.8	172.5	175.0	87.25	-1,048.0	5,903.1	511.7	166.9	344.83	1.484 Level 3		
16,700.0	10,868.8	17,017.6	10,844.3	175.4	177.8	87.25	-1,048.5	6,003.1	511.4	160.8	350.63	1.459 Level 3		
16,800.0	10,869.4	17,117.6	10,844.8	178.3	180.7	87.25	-1,049.0	6,103.0	511.1	154.7	356.42	1.434 Level 3		
16,900.0	10,869.9	17,217.6	10,845.4	181.2	183.6	87.25	-1,049.6	6,203.0	510.9	148.6	362.22	1.410 Level 3		
17,000.0	10,870.4	17,317.6	10,845.9	184.1	186.5	87.25	-1,050.1	6,303.0	510.6	142.6	368.03	1.387 Level 3		
17,100.0	10,870.9	17,417.6	10,846.4	187.0	189.4	87.24	-1,050.6	6,403.0	510.3	136.5	373.83	1.365 Level 3		
17,200.0	10,871.5	17,517.6	10,846.9	189.9	192.2	87.24	-1,051.2	6,503.0	510.0	130.4	379.64	1.344 Level 3		
17,300.0	10,872.0	17,617.6	10,847.4	192.8	195.1	87.24	-1,051.7	6,603.0	509.8	124.3	385.44	1.323 Level 3		
17,400.0	10,872.5	17,717.6	10,848.0	195.7	198.0	87.24	-1,052.2	6,703.0	509.5	118.2	391.25	1.302 Level 3		
17,500.0	10,873.0	17,817.6	10,848.5	198.6	200.9	87.24	-1,052.7	6,803.0	509.2	112.2	397.06	1.282 Level 3		
17,600.0	10,873.6	17,917.6	10,849.0	201.5	203.8	87.24	-1,053.3	6,903.0	508.9	106.1	402.87	1.263 Level 3		
17,700.0	10,874.1	18,017.6	10,849.5	204.4	206.7	87.23	-1,053.8	7,003.0	508.7	100.0	408.68	1.245 Level 2		
17,800.0	10,874.6	18,117.6	10,850.1	207.3	209.5	87.23	-1,054.3	7,103.0	508.4	93.9	414.50	1.227 Level 2		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Oasis Petroleum	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2T2
Project:	Indian Hills	TVD Reference:	WELL @ 2078.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	MD Reference:	WELL @ 2078.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Kline Federal 5300 11-18 2T2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #6	Offset TVD Reference:	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 11-18 3T - Wellbore #1 - Design #6												Offset Site Error:	0.0 usft	
Survey Program: 0-MWD												Offset Well Error:	0.0 usft	
Reference		Offset		Semi Major Axis				Distance						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
17,900.0	10,875.1	18,217.6	10,850.6	210.2	212.4	87.23		-1,054.9	7,203.0	508.1	87.8	420.31	1.209	Level 2
18,000.0	10,875.6	18,317.6	10,851.1	213.1	215.3	87.23		-1,055.4	7,303.0	507.8	81.7	426.13	1.192	Level 2
18,100.0	10,876.2	18,417.6	10,851.6	216.0	218.2	87.23		-1,055.9	7,403.0	507.6	75.6	431.94	1.175	Level 2
18,200.0	10,876.7	18,517.6	10,852.2	218.9	221.1	87.23		-1,056.5	7,503.0	507.3	69.5	437.76	1.159	Level 2
18,300.0	10,877.2	18,617.6	10,852.7	221.8	224.0	87.23		-1,057.0	7,603.0	507.0	63.4	443.58	1.143	Level 2
18,400.0	10,877.7	18,717.6	10,853.2	224.7	226.9	87.22		-1,057.5	7,703.0	506.8	57.3	449.40	1.128	Level 2
18,500.0	10,878.3	18,817.6	10,853.7	227.6	229.8	87.22		-1,058.0	7,803.0	506.5	51.3	455.22	1.113	Level 2
18,600.0	10,878.8	18,917.6	10,854.3	230.5	232.7	87.22		-1,058.6	7,903.0	506.2	45.2	461.04	1.098	Level 2
18,700.0	10,879.3	19,017.6	10,854.8	233.4	235.6	87.22		-1,059.1	8,003.0	505.9	39.1	466.87	1.084	Level 2
18,800.0	10,879.8	19,117.6	10,855.3	236.4	238.5	87.22		-1,059.6	8,103.0	505.7	33.0	472.69	1.070	Level 2
18,900.0	10,880.4	19,217.6	10,855.8	239.3	241.4	87.22		-1,060.2	8,203.0	505.4	26.9	478.51	1.056	Level 2
19,000.0	10,880.9	19,317.6	10,856.3	242.2	244.3	87.22		-1,060.7	8,303.0	505.1	20.8	484.34	1.043	Level 2
19,100.0	10,881.4	19,417.6	10,856.9	245.1	247.2	87.21		-1,061.2	8,403.0	504.8	14.7	490.16	1.030	Level 2
19,200.0	10,881.9	19,517.6	10,857.4	248.0	250.1	87.21		-1,061.7	8,503.0	504.6	8.6	495.99	1.017	Level 2
19,300.0	10,882.5	19,617.6	10,857.9	250.9	253.0	87.21		-1,062.3	8,603.0	504.3	2.5	501.82	1.005	Level 2
19,400.0	10,883.0	19,717.6	10,858.4	253.8	255.9	87.21		-1,062.8	8,703.0	504.0	-3.6	507.64	0.993	Level 1
19,500.0	10,883.5	19,817.6	10,859.0	256.7	258.8	87.21		-1,063.3	8,803.0	503.7	-9.7	513.47	0.981	Level 1
19,600.0	10,884.0	19,917.6	10,859.5	259.7	261.7	87.21		-1,063.9	8,903.0	503.5	-15.8	519.30	0.969	Level 1
19,700.0	10,884.5	20,017.6	10,860.0	262.6	264.6	87.20		-1,064.4	9,003.0	503.2	-21.9	525.13	0.958	Level 1
19,800.0	10,885.1	20,117.6	10,860.5	265.5	267.5	87.20		-1,064.9	9,103.0	502.9	-28.1	530.96	0.947	Level 1
19,900.0	10,885.6	20,217.6	10,861.1	268.4	270.4	87.20		-1,065.5	9,202.9	502.6	-34.2	536.79	0.936	Level 1
20,000.0	10,886.1	20,317.6	10,861.6	271.3	273.3	87.20		-1,066.0	9,302.9	502.4	-40.3	542.62	0.926	Level 1
20,100.0	10,886.6	20,417.6	10,862.1	274.2	276.2	87.20		-1,066.5	9,402.9	502.1	-46.4	548.45	0.915	Level 1
20,200.0	10,887.2	20,517.6	10,862.6	277.2	279.2	87.20		-1,067.0	9,502.9	501.8	-52.5	554.28	0.905	Level 1
20,300.0	10,887.7	20,617.6	10,863.2	280.1	282.1	87.20		-1,067.6	9,602.9	501.5	-58.6	560.12	0.895	Level 1
20,400.0	10,888.2	20,717.6	10,863.7	283.0	285.0	87.19		-1,068.1	9,702.9	501.3	-64.7	565.95	0.886	Level 1
20,500.0	10,888.7	20,817.6	10,864.2	285.9	287.9	87.19		-1,068.6	9,802.9	501.0	-70.8	571.78	0.876	Level 1
20,600.0	10,889.3	20,917.6	10,864.7	288.8	290.8	87.19		-1,069.2	9,902.9	500.7	-76.9	577.62	0.867	Level 1
20,700.0	10,889.8	21,017.6	10,865.3	291.7	293.7	87.19		-1,069.7	10,002.9	500.4	-83.0	583.45	0.858	Level 1
20,717.6	10,889.9	21,035.1	10,865.3	292.3	294.2	87.19		-1,069.8	10,020.5	500.4	-84.1	584.47	0.856	Level 1, ES, SF

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Company:	Oasis Petroleum	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2T2
Project:	Indian Hills	TVD Reference:	WELL @ 2078.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	MD Reference:	WELL @ 2078.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Kline Federal 5300 11-18 2T2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #6	Offset TVD Reference:	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 11-18H - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 usft
Survey Program: 2175-MWD												Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Reference Offset		Semi Major Axis			Distance					Warning	
		Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Hightside Toolface (°)	Offset	Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
200.0	200.0	2,090.0	2,090.0	0.3	0.0	-157.01	-30.4	-12.9	1,914.3	1,914.0	0.31	6,190.021	
300.0	300.0	2,090.0	2,090.0	0.5	0.0	-157.01	-30.4	-12.9	1,814.3	1,813.8	0.53	3,397.443	
400.0	400.0	2,090.0	2,090.0	0.8	0.0	-157.01	-30.4	-12.9	1,714.3	1,713.6	0.76	2,259.292	
500.0	500.0	2,090.0	2,090.0	1.0	0.0	-157.01	-30.4	-12.9	1,614.3	1,613.4	0.98	1,641.335	
600.0	600.0	2,090.0	2,090.0	1.2	0.0	-157.01	-30.4	-12.9	1,514.4	1,513.2	1.21	1,253.280	
700.0	700.0	2,090.0	2,090.0	1.4	0.0	-157.01	-30.4	-12.9	1,414.4	1,413.0	1.43	986.953	
800.0	800.0	2,090.0	2,090.0	1.7	0.0	-157.01	-30.4	-12.9	1,314.4	1,312.8	1.66	792.843	
900.0	900.0	2,090.0	2,090.0	1.9	0.0	-157.01	-30.4	-12.9	1,214.4	1,212.6	1.88	645.086	
1,000.0	1,000.0	2,090.0	2,090.0	2.1	0.0	-157.01	-30.4	-12.9	1,114.5	1,112.4	2.11	528.850	
1,100.0	1,100.0	2,090.0	2,090.0	2.3	0.0	-157.01	-30.4	-12.9	1,014.5	1,012.2	2.33	435.023	
1,200.0	1,200.0	2,090.0	2,090.0	2.6	0.0	-157.01	-30.4	-12.9	914.6	912.0	2.56	357.696	
1,300.0	1,300.0	2,090.0	2,090.0	2.8	0.0	-157.01	-30.4	-12.9	814.7	811.9	2.78	292.870	
1,400.0	1,400.0	2,090.0	2,090.0	3.0	0.0	-157.01	-30.4	-12.9	714.8	711.8	3.01	237.744	
1,500.0	1,500.0	2,090.0	2,090.0	3.2	0.0	-157.01	-30.4	-12.9	614.9	611.7	3.23	190.296	
1,600.0	1,600.0	2,090.0	2,090.0	3.5	0.0	-157.01	-30.4	-12.9	515.1	511.6	3.46	149.035	
1,700.0	1,700.0	2,090.0	2,090.0	3.7	0.0	-157.01	-30.4	-12.9	415.3	411.6	3.68	112.835	
1,800.0	1,800.0	2,090.0	2,090.0	3.9	0.0	-157.01	-30.4	-12.9	315.7	311.8	3.91	80.843	
1,900.0	1,900.0	2,090.0	2,090.0	4.1	0.0	-157.01	-30.4	-12.9	216.5	212.4	4.13	52.426	
2,000.0	2,000.0	2,090.0	2,090.0	4.4	0.0	-157.01	-30.4	-12.9	118.7	114.3	4.36	27.253	
2,100.0	2,100.0	2,090.0	2,090.0	4.6	0.0	-157.01	-30.4	-12.9	35.9	31.3	4.58	7.833	
2,132.6	2,132.6	2,108.5	2,108.5	4.7	0.0	-157.04	-30.4	-12.9	33.1	28.4	4.67	7.073 CC	
2,200.0	2,200.0	2,175.5	2,175.5	4.8	0.1	-157.59	-31.2	-12.8	33.7	28.8	4.90	6.873	
2,300.0	2,300.0	2,275.5	2,275.5	5.0	0.3	-158.55	-32.8	-12.9	35.2	29.9	5.34	6.600	
2,400.0	2,400.0	2,375.5	2,375.5	5.3	0.5	-158.59	-34.1	-13.4	36.7	30.9	5.78	6.346	
2,500.0	2,500.0	2,475.6	2,475.6	5.5	0.7	-157.20	-34.9	-14.7	37.9	31.7	6.23	6.089	
2,600.0	2,600.0	2,575.7	2,575.6	5.7	1.0	117.42	-35.2	-16.5	39.7	33.0	6.65	5.963	
2,650.0	2,649.9	2,625.6	2,625.5	5.8	1.1	121.61	-35.1	-17.7	41.2	34.4	6.86	6.010	
2,700.0	2,699.9	2,675.3	2,675.2	5.9	1.2	126.36	-34.8	-19.2	43.3	36.2	7.07	6.123	
2,800.0	2,799.7	2,775.0	2,774.8	6.1	1.4	135.09	-34.3	-22.7	48.7	41.2	7.49	6.500	
2,900.0	2,899.6	2,875.5	2,875.3	6.3	1.6	141.31	-33.4	-24.8	53.5	45.6	7.90	6.776	
3,000.0	2,999.5	2,975.0	2,974.8	6.5	1.8	146.23	-32.5	-26.4	58.5	50.2	8.31	7.043	
3,100.0	3,099.3	3,074.3	3,074.1	6.7	2.0	150.31	-31.9	-28.6	64.5	55.8	8.73	7.389	
3,200.0	3,199.2	3,173.7	3,173.5	7.0	2.3	153.83	-31.4	-31.4	71.4	62.2	9.15	7.801	
3,300.0	3,299.0	3,273.6	3,273.3	7.2	2.5	156.60	-31.1	-34.1	78.5	69.0	9.56	8.213	
3,400.0	3,398.9	3,373.5	3,373.1	7.4	2.7	158.89	-30.7	-36.6	85.5	75.5	9.97	8.576	
3,501.2	3,500.0	3,474.7	3,474.3	7.6	2.9	160.89	-30.2	-38.9	92.5	82.1	10.38	8.907	
3,600.0	3,598.7	3,573.2	3,572.8	7.8	3.1	162.31	-29.6	-41.0	97.6	86.8	10.79	9.041	
3,651.2	3,649.9	3,624.4	3,624.0	7.9	3.2	-107.21	-29.3	-42.2	99.0	88.0	11.04	8.973	
3,700.0	3,698.7	3,673.3	3,672.9	8.0	3.3	-106.86	-29.0	-43.2	100.0	88.7	11.24	8.892	
3,800.0	3,798.7	3,773.8	3,773.4	8.2	3.5	-106.18	-28.3	-45.1	101.6	89.9	11.67	8.703	
3,900.0	3,898.7	3,873.6	3,873.2	8.5	3.7	-105.49	-27.5	-46.7	102.9	90.8	12.10	8.503	
4,000.0	3,998.7	3,973.9	3,973.5	8.7	3.9	-104.82	-26.7	-48.4	104.3	91.7	12.53	8.320	
4,100.0	4,098.7	4,074.2	4,073.7	8.9	4.1	-104.14	-25.7	-49.7	105.3	92.3	12.96	8.123	
4,200.0	4,198.7	4,174.5	4,174.1	9.1	4.3	-103.56	-24.9	-50.7	106.1	92.7	13.39	7.920	
4,300.0	4,298.7	4,274.2	4,273.7	9.4	4.6	-103.00	-24.0	-51.7	106.8	93.0	13.82	7.729	
4,400.0	4,398.7	4,374.3	4,373.8	9.6	4.8	-102.43	-23.2	-52.8	107.7	93.5	14.26	7.556	
4,500.0	4,498.7	4,474.5	4,474.0	9.8	5.0	-101.94	-22.5	-53.7	108.5	93.8	14.69	7.387	
4,600.0	4,598.7	4,574.7	4,574.1	10.0	5.2	-101.55	-21.8	-54.4	109.1	93.9	15.12	7.213	
4,700.0	4,698.7	4,674.5	4,674.0	10.2	5.4	-101.22	-21.3	-55.2	109.7	94.1	15.55	7.052	
4,800.0	4,798.7	4,774.5	4,774.0	10.5	5.6	-100.92	-20.9	-55.9	110.3	94.3	15.98	6.902	
4,900.0	4,898.7	4,874.6	4,874.1	10.7	5.8	-100.52	-20.3	-56.6	110.9	94.5	16.41	6.757	
5,000.0	4,998.7	4,974.7	4,974.1	10.9	6.0	-100.29	-19.9	-57.2	111.4	94.5	16.85	6.612	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Gyrodta, Inc.
Anticollision Report



Company:	Oasis Petroleum	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2T2
Project:	Indian Hills	TVD Reference:	WELL @ 2078.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	MD Reference:	WELL @ 2078.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Kline Federal 5300 11-18 2T2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #6	Offset TVD Reference:	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 11-18H - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 usft
Survey Program: 2175-MWD												Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Reference Offset		Semi Major Axis			Distance					Warning	
		Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
5,100.0	5,098.7	5,074.4	5,073.8	11.1	6.2	-99.95	-19.4	-58.0	112.0	94.8	17.28	6.484	
5,200.0	5,198.7	5,174.4	5,173.8	11.4	6.4	-99.72	-19.1	-58.9	112.9	95.2	17.71	6.374	
5,300.0	5,298.7	5,274.5	5,274.0	11.6	6.6	-99.95	-19.6	-59.5	113.6	95.4	18.15	6.259	
5,400.0	5,398.7	5,374.6	5,374.0	11.8	6.8	-100.24	-20.3	-60.0	114.2	95.6	18.58	6.148	
5,500.0	5,498.7	5,474.0	5,473.5	12.0	7.1	-100.62	-21.2	-60.6	114.9	95.9	19.01	6.046	
5,600.0	5,598.7	5,574.1	5,573.5	12.2	7.3	-101.26	-22.7	-61.5	116.2	96.7	19.44	5.974	
5,700.0	5,698.7	5,674.4	5,673.8	12.5	7.5	-101.98	-24.3	-62.0	117.0	97.1	19.88	5.885	
5,800.0	5,798.7	5,774.4	5,773.8	12.7	7.7	-102.48	-25.4	-62.5	117.7	97.4	20.31	5.797	
5,900.0	5,898.7	5,874.2	5,873.5	12.9	7.9	-102.68	-26.0	-63.2	118.5	97.8	20.74	5.715	
6,000.0	5,998.7	5,974.1	5,973.5	13.1	8.1	-102.57	-26.0	-64.3	119.6	98.4	21.18	5.646	
6,100.0	6,098.7	6,074.1	6,073.5	13.4	8.3	-102.09	-25.3	-65.5	120.6	99.0	21.61	5.580	
6,200.0	6,198.7	6,174.7	6,174.0	13.6	8.5	-101.50	-24.2	-66.6	121.4	99.4	22.05	5.506	
6,300.0	6,298.7	6,275.3	6,274.6	13.8	8.7	-100.79	-22.8	-67.1	121.7	99.2	22.48	5.412	
6,400.0	6,398.7	6,375.5	6,374.9	14.0	9.0	-99.92	-21.0	-67.4	121.6	98.7	22.92	5.307	
6,500.0	6,498.7	6,475.7	6,475.0	14.3	9.2	-98.97	-18.9	-67.5	121.4	98.1	23.36	5.199	
6,600.0	6,598.7	6,575.8	6,575.1	14.5	9.4	-97.78	-16.4	-67.6	121.2	97.4	23.79	5.092	
6,700.0	6,698.7	6,676.0	6,675.2	14.7	9.6	-96.47	-13.6	-67.6	120.8	96.6	24.23	4.985	
6,800.0	6,798.7	6,776.5	6,775.7	14.9	9.8	-95.00	-10.5	-67.4	120.2	95.6	24.67	4.874	
6,900.0	6,898.7	6,877.2	6,876.4	15.2	10.0	-93.90	-8.1	-66.3	119.0	93.9	25.10	4.740	
7,000.0	6,998.7	6,976.8	6,976.0	15.4	10.2	-93.04	-6.2	-65.1	117.7	92.2	25.53	4.611	
7,100.0	7,098.7	7,076.5	7,075.7	15.6	10.4	-92.89	-5.9	-64.2	116.8	90.8	25.96	4.499	
7,200.0	7,198.7	7,175.9	7,175.1	15.8	10.6	-92.85	-5.8	-63.5	116.1	89.7	26.39	4.398	
7,228.5	7,227.2	7,204.1	7,203.2	15.9	10.7	-92.96	-6.0	-63.5	116.0	89.5	26.51	4.376	
7,300.0	7,298.7	7,275.2	7,274.3	16.0	10.8	-93.47	-7.0	-63.6	116.2	89.4	26.82	4.333	
7,400.0	7,398.7	7,374.9	7,374.0	16.3	11.0	-94.22	-8.6	-63.9	116.7	89.4	27.25	4.281	
7,500.0	7,498.7	7,474.7	7,473.7	16.5	11.2	-94.97	-10.2	-64.5	117.4	89.7	27.68	4.240	
7,600.0	7,598.7	7,574.6	7,573.7	16.7	11.5	-95.60	-11.5	-65.3	118.2	90.1	28.12	4.205	
7,700.0	7,698.7	7,675.0	7,674.1	16.9	11.7	-96.08	-12.6	-65.9	119.0	90.5	28.56	4.168	
7,800.0	7,798.7	7,775.5	7,774.6	17.2	11.9	-96.38	-13.2	-66.2	119.3	90.3	28.99	4.115	
7,900.0	7,898.7	7,875.8	7,874.9	17.4	12.1	-96.52	-13.5	-66.1	119.3	89.8	29.43	4.053	
8,000.0	7,998.7	7,976.2	7,975.3	17.6	12.3	-96.37	-13.2	-65.8	119.0	89.1	29.87	3.983	
8,100.0	8,098.7	8,076.1	8,075.1	17.8	12.5	-96.14	-12.7	-65.4	118.5	88.2	30.30	3.910	
8,200.0	8,198.7	8,176.3	8,175.3	18.1	12.7	-95.84	-12.0	-65.0	118.1	87.3	30.74	3.841	
8,300.0	8,298.7	8,276.8	8,275.8	18.3	12.9	-95.44	-11.1	-64.4	117.3	86.1	31.17	3.763	
8,400.0	8,398.7	8,376.8	8,375.8	18.5	13.1	-94.96	-10.1	-63.5	116.3	84.7	31.61	3.680	
8,500.0	8,498.7	8,476.7	8,475.8	18.7	13.4	-94.46	-9.0	-62.6	115.3	83.3	32.04	3.600	
8,600.0	8,598.7	8,576.8	8,575.8	19.0	13.6	-93.96	-7.9	-61.7	114.4	81.9	32.47	3.522	
8,700.0	8,698.7	8,676.4	8,675.4	19.2	13.8	-93.45	-6.8	-61.0	113.6	80.7	32.90	3.453	
8,800.0	8,798.7	8,776.5	8,775.5	19.4	14.0	-92.93	-5.8	-60.4	112.9	79.6	33.34	3.388	
8,900.0	8,898.7	8,876.6	8,875.6	19.6	14.2	-92.37	-4.6	-59.6	112.1	78.4	33.77	3.321	
9,000.0	8,998.7	8,976.6	8,975.6	19.9	14.4	-91.62	-3.2	-58.9	111.4	77.2	34.21	3.256	
9,100.0	9,098.7	9,076.8	9,075.8	20.1	14.6	-90.89	-1.7	-58.0	110.4	75.7	34.64	3.186	
9,200.0	9,198.7	9,176.7	9,175.7	20.3	14.8	-90.12	-0.2	-57.1	109.5	74.4	35.08	3.122	
9,300.0	9,298.7	9,276.7	9,275.6	20.5	15.0	-89.47	1.0	-56.1	108.5	73.0	35.51	3.057	
9,400.0	9,398.7	9,376.7	9,375.6	20.8	15.2	-88.81	2.2	-55.3	107.8	71.8	35.94	2.999	
9,500.0	9,498.7	9,476.7	9,475.6	21.0	15.4	-88.08	3.6	-54.3	106.8	70.4	36.38	2.936	
9,600.0	9,598.7	9,576.5	9,575.4	21.2	15.6	-87.35	4.9	-53.5	106.1	69.2	36.81	2.881	
9,700.0	9,698.7	9,676.4	9,675.3	21.4	15.9	-86.69	6.1	-52.8	105.4	68.2	37.24	2.831	
9,800.0	9,798.7	9,776.5	9,775.4	21.6	16.1	-86.11	7.1	-52.1	104.8	67.1	37.67	2.782	
9,900.0	9,898.7	9,876.4	9,875.2	21.9	16.3	-85.54	8.1	-51.4	104.2	66.1	38.10	2.734	
10,000.0	9,998.7	9,976.4	9,975.3	22.1	16.5	-84.90	9.2	-50.8	103.7	65.1	38.54	2.690	
10,100.0	10,098.7	10,076.5	10,075.3	22.3	16.7	-84.17	10.5	-50.1	103.1	64.1	38.97	2.644	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Oasis Petroleum	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2T2
Project:	Indian Hills	TVD Reference:	WELL @ 2078.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	MD Reference:	WELL @ 2078.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Kline Federal 5300 11-18 2T2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #6	Offset TVD Reference:	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 11-18H - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 usft
Survey Program:		2175-MWD											Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	Offset	Wellbore Centre +N/-S (usft)	Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,200.0	10,198.7	10,176.4	10,175.3	22.5	16.9	-83.36	11.8	-49.3	102.4	63.0	39.41	2.599		
10,300.0	10,298.7	10,280.4	10,279.2	22.8	17.1	-82.66	12.9	-47.7	101.1	61.2	39.85	2.536		
10,363.3	10,362.0	10,358.0	10,355.9	22.9	17.3	-86.17	6.1	-39.0	93.4	53.2	40.15	2.325		
10,375.0	10,373.7	10,371.1	10,368.6	22.9	17.3	152.57	3.7	-36.6	91.2	51.0	40.15	2.271		
10,400.0	10,398.7	10,398.5	10,394.6	23.0	17.3	149.40	-2.3	-30.8	86.7	46.5	40.20	2.158		
10,425.0	10,423.5	10,424.8	10,419.3	23.0	17.4	145.79	-9.0	-24.4	83.0	42.8	40.21	2.064		
10,450.0	10,448.2	10,450.0	10,442.5	23.1	17.4	141.86	-16.4	-17.9	80.2	40.0	40.19	1.996		
10,475.0	10,472.7	10,475.0	10,465.0	23.1	17.5	137.54	-24.6	-11.1	78.6	38.5	40.18	1.958		
10,493.4	10,490.5	10,493.2	10,481.2	23.2	17.5	134.19	-31.1	-5.9	78.3	38.1	40.18	1.949		
10,500.0	10,496.8	10,499.7	10,486.9	23.2	17.5	133.00	-33.6	-4.1	78.3	38.2	40.19	1.949		
10,525.0	10,520.6	10,524.4	10,508.5	23.3	17.6	128.55	-43.1	3.3	79.3	39.1	40.23	1.971		
10,550.0	10,544.0	10,549.8	10,530.4	23.3	17.7	124.34	-53.3	11.2	81.2	40.9	40.31	2.015		
10,575.0	10,566.8	10,576.8	10,553.1	23.4	17.7	120.16	-64.7	20.5	83.7	43.2	40.46	2.068		
10,600.0	10,589.1	10,603.4	10,574.4	23.5	17.8	116.09	-76.5	30.9	86.3	45.7	40.65	2.124		
10,625.0	10,610.8	10,629.3	10,594.2	23.5	17.9	111.96	-89.0	42.2	89.4	48.5	40.89	2.186		
10,650.0	10,631.8	10,654.6	10,612.2	23.6	18.0	107.81	-102.0	54.2	92.8	51.7	41.18	2.254		
10,675.0	10,652.0	10,679.2	10,628.7	23.7	18.1	103.77	-115.3	66.8	96.8	55.3	41.50	2.334		
10,700.0	10,671.5	10,704.2	10,644.3	23.8	18.2	99.80	-129.4	80.3	101.3	59.5	41.83	2.421		
10,725.0	10,690.1	10,729.4	10,658.9	23.9	18.4	96.05	-143.9	94.8	106.0	63.8	42.16	2.514		
10,750.0	10,707.8	10,754.3	10,672.4	24.0	18.5	92.65	-158.5	109.8	110.8	68.3	42.48	2.609		
10,775.0	10,724.5	10,778.4	10,684.2	24.1	18.7	89.42	-172.9	125.1	115.8	73.1	42.77	2.708		
10,800.0	10,740.3	10,801.4	10,694.0	24.3	18.9	86.33	-187.0	140.3	121.2	78.1	43.03	2.816		
10,825.0	10,755.0	10,825.3	10,702.8	24.4	19.1	83.16	-201.9	156.8	126.7	83.5	43.26	2.930		
10,850.0	10,768.7	10,849.1	10,710.2	24.6	19.3	80.10	-216.8	173.8	132.3	88.9	43.44	3.046		
10,875.0	10,781.2	10,872.7	10,717.0	24.8	19.5	77.53	-231.6	190.9	138.0	94.3	43.61	3.163		
10,900.0	10,792.6	10,895.7	10,722.8	25.0	19.8	75.33	-246.0	207.8	143.5	99.8	43.78	3.279		
10,925.0	10,802.8	10,919.0	10,727.6	25.2	20.1	73.24	-260.7	225.4	149.1	105.1	43.94	3.392		
10,950.0	10,811.8	10,942.4	10,730.8	25.4	20.4	71.12	-275.2	243.4	154.4	110.4	44.06	3.505		
10,975.0	10,819.6	10,965.8	10,732.7	25.7	20.7	69.04	-289.4	261.8	159.6	115.4	44.17	3.614		
11,000.0	10,826.1	10,990.4	10,734.0	25.9	21.0	67.16	-304.3	281.5	164.5	120.1	44.32	3.710		
11,025.0	10,831.3	11,015.2	10,734.9	26.2	21.4	65.71	-319.0	301.4	168.8	124.3	44.54	3.790		
11,050.0	10,835.3	11,040.2	10,735.5	26.5	21.7	64.64	-333.7	321.6	172.6	127.8	44.85	3.849		
11,075.0	10,837.9	11,066.6	10,735.9	26.8	22.1	63.94	-349.0	343.0	175.8	130.5	45.28	3.882		
11,100.0	10,839.3	11,094.0	10,736.3	27.1	22.6	63.69	-364.6	365.6	178.0	132.2	45.88	3.880		
11,110.8	10,839.5	11,105.9	10,736.4	27.2	22.7	63.73	-371.3	375.4	178.7	132.5	46.19	3.870		
11,125.8	10,839.5	11,122.5	10,736.7	27.4	23.0	63.93	-380.5	389.3	179.5	132.8	46.65	3.847		
11,200.0	10,839.9	11,206.0	10,737.0	28.5	24.5	64.34	-423.8	460.7	182.3	133.4	48.93	3.727		
11,300.0	10,840.5	11,330.7	10,737.1	30.1	26.9	63.93	-477.0	573.3	180.9	128.6	52.30	3.459		
11,400.0	10,841.0	11,451.7	10,738.7	31.9	29.4	62.45	-512.8	688.8	171.1	115.6	55.47	3.084		
11,500.0	10,841.5	11,570.1	10,739.6	33.9	31.9	58.92	-532.1	805.5	154.4	96.7	57.74	2.674		
11,600.0	10,842.1	11,665.7	10,740.1	36.0	34.0	54.96	-541.3	900.6	137.3	78.3	59.04	2.326		
11,700.0	10,842.6	11,767.5	10,739.3	38.1	36.4	50.26	-549.9	1,002.1	125.0	65.4	59.54	2.099		
11,800.0	10,843.2	11,867.8	10,739.3	40.4	38.8	46.16	-556.7	1,102.1	115.7	55.9	59.81	1.935		
11,900.0	10,843.7	11,968.1	10,739.4	42.7	41.2	43.23	-563.1	1,202.3	110.4	49.9	60.45	1.825		
12,000.0	10,844.2	12,069.2	10,739.6	45.0	43.7	41.23	-567.3	1,303.3	107.2	45.7	61.52	1.743		
12,031.4	10,844.4	12,100.3	10,739.6	45.8	44.5	40.97	-568.6	1,334.3	107.0	44.9	62.13	1.722		
12,100.0	10,844.8	12,170.8	10,739.8	47.4	46.3	41.11	-571.3	1,404.8	107.5	43.4	64.08	1.677		
12,110.4	10,844.8	12,181.8	10,739.9	47.6	46.6	41.20	-571.6	1,415.8	107.5	43.1	64.44	1.668		
12,200.0	10,845.3	12,273.5	10,741.8	49.8	48.9	41.79	-572.5	1,507.4	106.6	38.4	68.13	1.564		
12,300.0	10,845.8	12,372.7	10,744.2	52.2	51.5	42.40	-573.1	1,606.7	105.0	32.8	72.27	1.453 Level 3		
12,400.0	10,846.3	12,473.6	10,746.1	54.7	54.1	42.82	-573.8	1,707.5	104.0	27.6	76.36	1.362 Level 3		
12,487.0	10,846.8	12,558.8	10,748.2	56.9	56.4	43.57	-574.8	1,792.7	103.0	22.6	80.40	1.281 Level 3		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Gyrodata, Inc.

Anticollision Report



Company:	Oasis Petroleum	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2T2
Project:	Indian Hills	TVD Reference:	WELL @ 2078.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	MD Reference:	WELL @ 2078.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Kline Federal 5300 11-18 2T2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #6	Offset TVD Reference:	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 11-18H - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 usft	
Survey Program: 2175-MWD		Distance											Offset Well Error:	0.0 usft	
Reference		Offset		Semi Major Axis											
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Hightside Toolface	Offset	Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
12,500.0	10,846.8	12,571.4	10,748.4	57.3	56.7	43.75	-575.1	1,805.3	103.0	21.9	81.09	1.270	Level 3		
12,600.0	10,847.4	12,669.6	10,750.2	59.9	59.4	45.43	-579.0	1,903.4	104.3	17.4	86.89	1.200	Level 2		
12,700.0	10,847.9	12,772.8	10,752.1	62.5	62.2	46.74	-581.8	2,006.5	104.8	12.3	92.52	1.132	Level 2		
12,760.8	10,848.2	12,832.6	10,753.1	64.1	63.8	47.12	-582.6	2,066.3	104.5	9.1	95.44	1.095	Level 2		
12,800.0	10,848.4	12,871.7	10,753.5	65.1	64.9	47.29	-583.2	2,105.3	104.6	7.3	97.26	1.075	Level 2		
12,900.0	10,848.9	12,972.9	10,754.6	67.8	67.7	47.60	-584.2	2,206.5	104.4	2.6	101.81	1.025	Level 2		
13,000.0	10,849.5	13,074.4	10,757.1	70.4	70.5	48.09	-584.1	2,308.1	102.4	-4.3	106.67	0.960	Level 1		
13,100.0	10,850.0	13,173.9	10,759.5	73.1	73.2	48.33	-583.5	2,407.5	100.1	-11.1	111.21	0.900	Level 1		
13,200.0	10,850.5	13,274.3	10,760.8	75.9	76.0	47.97	-582.5	2,507.9	98.2	-16.7	114.91	0.855	Level 1		
13,300.0	10,851.0	13,374.5	10,762.6	78.6	78.8	47.43	-580.5	2,608.0	95.3	-23.0	118.27	0.805	Level 1		
13,400.0	10,851.6	13,473.4	10,762.4	81.3	81.5	45.72	-578.0	2,706.9	93.4	-26.2	119.58	0.781	Level 1		
13,500.0	10,852.1	13,572.7	10,761.5	84.1	84.3	43.78	-575.8	2,806.2	92.3	-27.9	120.19	0.768	Level 1		
13,600.0	10,852.6	13,672.4	10,760.1	86.9	87.1	41.81	-574.0	2,905.9	91.9	-28.5	120.41	0.763	Level 1		
13,700.0	10,853.1	13,775.4	10,759.8	89.6	89.9	39.98	-571.8	3,008.8	90.6	-30.0	120.61	0.751	Level 1		
13,800.0	10,853.7	13,873.9	10,761.2	92.4	92.7	38.15	-568.2	3,107.3	87.1	-33.3	120.43	0.723	Level 1		
13,900.0	10,854.2	13,974.0	10,759.9	95.2	95.5	34.93	-564.3	3,207.3	85.8	-31.0	116.78	0.734	Level 1		
14,000.0	10,854.7	14,074.1	10,759.8	98.0	98.3	32.18	-560.6	3,307.3	83.8	-29.8	113.63	0.738	Level 1		
14,100.0	10,855.2	14,174.7	10,760.6	100.8	101.2	30.11	-557.8	3,407.9	81.7	-30.0	111.72	0.731	Level 1		
14,165.7	10,855.6	14,238.4	10,760.9	102.7	103.0	28.88	-556.3	3,471.5	80.7	-29.8	110.57	0.730	Level 1		
14,200.0	10,855.7	14,271.4	10,760.3	103.7	103.9	28.12	-555.8	3,504.5	81.0	-28.6	109.60	0.739	Level 1		
14,300.0	10,856.3	14,370.7	10,757.4	106.5	106.8	25.76	-554.5	3,603.8	83.2	-23.1	106.28	0.783	Level 1		
14,400.0	10,856.8	14,472.4	10,755.6	109.3	109.7	24.32	-554.1	3,705.4	84.7	-20.4	105.12	0.806	Level 1		
14,500.0	10,857.3	14,573.5	10,755.5	112.2	112.5	23.06	-553.2	3,806.5	84.6	-19.7	104.30	0.811	Level 1		
14,600.0	10,857.8	14,675.7	10,757.1	115.0	115.5	20.93	-550.2	3,908.7	82.2	-18.7	100.88	0.815	Level 1		
14,794.1	10,858.9	14,867.1	10,760.0	120.5	120.9	17.57	-546.1	4,100.0	78.5	-17.3	95.87	0.819	Level 1		
14,800.0	10,858.9	14,872.9	10,760.0	120.7	121.1	17.49	-546.0	4,105.8	78.5	-17.3	95.79	0.820	Level 1		
14,900.0	10,859.4	14,971.7	10,758.9	123.6	123.9	16.77	-546.3	4,204.6	79.9	-16.0	95.89	0.833	Level 1		
15,000.0	10,859.9	15,072.5	10,758.4	126.4	126.9	16.20	-546.5	4,305.4	80.7	-15.6	96.34	0.838	Level 1		
15,100.0	10,860.5	15,171.8	10,757.7	129.3	129.7	15.88	-547.2	4,404.7	81.9	-15.6	97.49	0.840	Level 1		
15,200.0	10,861.0	15,271.7	10,756.6	132.1	132.6	15.68	-548.2	4,504.6	83.5	-15.4	98.93	0.844	Level 1		
15,300.0	10,861.5	15,372.4	10,755.7	135.0	135.5	15.29	-548.8	4,605.3	84.9	-14.9	99.80	0.850	Level 1		
15,400.0	10,862.0	15,473.0	10,755.9	137.9	138.4	15.05	-549.3	4,705.9	85.0	-16.0	101.07	0.841	Level 1		
15,500.0	10,862.6	15,573.0	10,756.2	140.7	141.3	14.64	-549.6	4,805.9	85.2	-16.7	101.83	0.836	Level 1		
15,600.0	10,863.1	15,673.7	10,756.7	143.6	144.2	13.93	-549.3	4,906.6	84.9	-16.7	101.60	0.836	Level 1		
15,700.0	10,863.6	15,774.5	10,758.3	146.5	147.1	13.40	-549.0	5,007.4	83.6	-18.3	101.91	0.821	Level 1		
15,793.8	10,864.1	15,866.9	10,759.9	149.2	149.8	13.41	-549.5	5,099.8	82.4	-21.3	103.71	0.795	Level 1		
15,800.0	10,864.1	15,872.9	10,759.9	149.4	150.0	13.44	-549.6	5,105.8	82.4	-21.5	103.90	0.794	Level 1		
15,900.0	10,864.7	15,972.6	10,759.9	152.3	152.9	14.21	-551.7	5,205.4	83.3	-25.0	108.27	0.769	Level 1		
16,000.0	10,865.2	16,072.2	10,760.3	155.1	155.8	15.61	-554.7	5,305.0	84.0	-31.0	115.00	0.730	Level 1		
16,100.0	10,865.7	16,172.3	10,760.4	158.0	158.7	17.23	-558.1	5,405.1	85.1	-37.8	122.94	0.692	Level 1		
16,200.0	10,866.2	16,273.7	10,761.6	160.9	161.6	19.17	-561.7	5,506.4	85.4	-47.2	132.57	0.644	Level 1		
16,300.0	10,866.7	16,373.8	10,764.3	163.8	164.6	22.04	-566.3	5,606.3	84.7	-61.8	146.50	0.578	Level 1		
16,400.0	10,867.3	16,474.1	10,767.7	166.7	167.5	25.80	-571.8	5,706.4	84.0	-80.9	164.94	0.509	Level 1		
16,442.4	10,867.5	16,515.9	10,769.1	167.9	168.7	27.43	-574.2	5,748.1	83.8	-89.3	173.12	0.484	Level 1		
16,500.0	10,867.8	16,572.9	10,770.4	169.6	170.4	29.31	-577.3	5,805.0	84.1	-98.9	182.97	0.460	Level 1		
16,600.0	10,868.3	16,672.9	10,772.1	172.5	173.3	31.83	-581.7	5,904.9	85.0	-112.1	197.15	0.431	Level 1		
16,700.0	10,868.8	16,773.1	10,774.0	175.4	176.2	34.31	-586.0	6,004.9	85.8	-125.6	211.41	0.406	Level 1		
16,800.0	10,869.4	16,872.5	10,774.8	178.3	179.1	35.88	-589.5	6,104.3	87.1	-134.7	221.79	0.393	Level 1		
16,900.0	10,869.9	16,973.4	10,774.8	181.2	182.0	36.24	-591.4	6,205.2	88.1	-138.9	227.03	0.388	Level 1		
17,000.0	10,870.4	17,074.0	10,775.3	184.1	185.0	36.10	-592.0	6,305.7	88.0	-142.0	230.02	0.383	Level 1		
17,016.0	10,870.5	17,089.8	10,775.4	184.5	185.4	36.10	-592.1	6,321.6	88.0	-142.6	230.57	0.382	Level 1		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Oasis Petroleum	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2T2
Project:	Indian Hills	TVD Reference:	WELL @ 2078.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	MD Reference:	WELL @ 2078.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Kline Federal 5300 11-18 2T2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #6	Offset TVD Reference:	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 11-18H - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 usft
Survey Program: 2175-MWD													Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Reference Offset		Semi Major Axis			Distance					Warning		
		Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
17,100.0	10,870.9	17,173.5	10,775.8	187.0	187.9	36.30	-593.2	6,405.3	88.3	-146.3	234.55	0.376	Level 1	
17,200.0	10,871.5	17,274.1	10,776.8	189.9	190.8	36.75	-594.5	6,505.9	88.2	-152.1	240.29	0.367	Level 1	
17,300.0	10,872.0	17,373.8	10,778.0	192.8	193.7	37.22	-595.7	6,605.6	87.8	-158.3	246.15	0.357	Level 1	
17,302.9	10,872.0	17,376.7	10,778.1	192.8	193.8	37.24	-595.7	6,608.4	87.8	-158.5	246.34	0.357	Level 1	
17,400.0	10,872.5	17,473.2	10,779.0	195.7	196.6	38.05	-597.7	6,704.9	88.2	-165.6	253.79	0.348	Level 1	
17,500.0	10,873.0	17,572.7	10,779.4	198.6	199.5	38.72	-599.9	6,804.4	89.2	-171.5	260.74	0.342	Level 1	
17,600.0	10,873.6	17,672.4	10,779.6	201.5	202.4	39.49	-602.6	6,904.0	90.7	-177.6	268.29	0.338	Level 1	
17,700.0	10,874.1	17,772.5	10,779.5	204.4	205.3	40.07	-605.1	7,004.2	92.3	-182.7	274.99	0.336	Level 1	
17,800.0	10,874.6	17,872.4	10,779.3	207.3	208.2	40.40	-607.2	7,104.0	93.7	-186.8	280.46	0.334	Level 1	
17,900.0	10,875.1	17,973.5	10,778.7	210.2	211.2	40.29	-608.7	7,205.1	95.0	-188.9	283.87	0.334	Level 1	
18,000.0	10,875.6	18,073.5	10,779.1	213.1	214.1	40.24	-609.6	7,305.1	95.1	-192.5	287.56	0.331	Level 1	
18,100.0	10,876.2	18,173.5	10,779.6	216.0	217.0	40.59	-611.1	7,405.0	95.6	-197.7	293.23	0.326	Level 1	
18,200.0	10,876.7	18,274.5	10,779.6	218.9	219.9	40.08	-611.3	7,506.1	95.5	-199.0	294.55	0.324	Level 1	
18,241.7	10,876.9	18,315.6	10,779.8	220.1	221.1	39.96	-611.3	7,547.1	95.3	-200.2	295.53	0.323	Level 1, SF	
18,300.0	10,877.2	18,372.4	10,779.5	221.8	222.8	39.67	-611.7	7,604.0	95.8	-200.5	296.23	0.323	Level 1, ES	
18,400.0	10,877.7	18,472.5	10,777.7	224.7	225.7	38.67	-612.2	7,704.0	97.4	-197.3	294.70	0.330	Level 1	
18,500.0	10,878.3	18,573.6	10,776.2	227.6	228.6	37.44	-611.9	7,805.1	98.3	-193.3	291.66	0.337	Level 1	
18,600.0	10,878.8	18,675.0	10,776.1	230.5	231.6	36.48	-611.2	7,906.6	97.9	-192.1	289.98	0.338	Level 1	
18,700.0	10,879.3	18,775.0	10,776.6	233.4	234.5	35.60	-610.2	8,006.5	96.8	-191.7	288.53	0.336	Level 1	
18,800.0	10,879.8	18,874.6	10,777.0	236.4	237.4	34.87	-609.5	8,106.1	96.1	-191.7	287.77	0.334	Level 1	
18,900.0	10,880.4	18,975.1	10,777.0	239.3	240.3	33.54	-608.0	8,206.6	95.2	-188.1	283.26	0.336	Level 1	
19,000.0	10,880.9	19,075.3	10,777.2	242.2	243.2	31.90	-605.8	8,306.8	93.9	-182.7	276.57	0.339	Level 1	
19,100.0	10,881.4	19,175.1	10,777.4	245.1	246.1	30.46	-604.0	8,406.5	92.8	-178.0	270.83	0.343	Level 1	
19,200.0	10,881.9	19,275.0	10,777.8	248.0	249.0	29.01	-602.2	8,506.4	91.6	-173.1	264.73	0.346	Level 1	
19,300.0	10,882.5	19,374.6	10,777.5	250.9	251.9	27.47	-600.7	8,606.0	91.2	-166.6	257.80	0.354	Level 1	
19,400.0	10,883.0	19,475.1	10,777.5	253.8	254.9	25.62	-598.5	8,706.5	90.4	-158.2	248.62	0.364	Level 1	
19,500.0	10,883.5	19,574.8	10,777.6	256.7	257.8	23.63	-596.1	8,806.2	89.4	-148.8	238.25	0.375	Level 1	
19,600.0	10,884.0	19,674.7	10,777.4	259.7	260.7	21.96	-594.3	8,906.1	89.1	-140.7	229.84	0.388	Level 1	
19,700.0	10,884.5	19,775.1	10,777.7	262.6	263.6	20.28	-592.5	9,006.5	88.4	-132.9	221.25	0.399	Level 1	
19,800.0	10,885.1	19,874.7	10,777.9	265.5	266.5	18.27	-590.1	9,106.1	87.6	-122.9	210.48	0.416	Level 1	
19,900.0	10,885.6	19,975.0	10,777.9	268.4	269.4	16.42	-588.1	9,206.3	87.2	-113.6	200.81	0.434	Level 1	
20,000.0	10,886.1	20,074.9	10,778.3	271.3	272.3	14.36	-585.7	9,306.1	86.5	-103.7	190.21	0.455	Level 1	
20,076.0	10,886.5	20,150.5	10,778.4	273.5	274.5	12.97	-584.2	9,381.8	86.3	-97.1	183.47	0.471	Level 1	
20,100.0	10,886.6	20,174.4	10,778.3	274.2	275.2	12.53	-583.8	9,405.6	86.4	-95.0	181.38	0.476	Level 1	
20,200.0	10,887.2	20,274.0	10,777.9	277.2	278.1	10.71	-582.0	9,505.2	86.8	-86.5	173.29	0.501	Level 1	
20,300.0	10,887.7	20,374.3	10,777.4	280.1	281.0	9.01	-580.3	9,605.5	87.4	-79.2	166.55	0.525	Level 1	
20,400.0	10,888.2	20,473.8	10,777.0	283.0	283.9	7.37	-578.7	9,705.0	87.9	-73.1	161.02	0.546	Level 1	
20,500.0	10,888.7	20,572.7	10,775.8	285.9	286.8	5.95	-577.5	9,803.9	89.4	-67.8	157.23	0.569	Level 1	
20,542.0	10,889.0	20,614.4	10,774.9	287.1	288.0	5.49	-577.2	9,845.6	90.5	-65.9	156.35	0.579	Level 1	
20,600.0	10,889.3	20,650.0	10,774.2	288.8	289.0	5.13	-577.0	9,881.2	94.6	-61.4	155.98	0.606	Level 1	
20,700.0	10,889.8	20,650.0	10,774.2	291.7	289.0	5.13	-577.0	9,881.2	154.6	-2.2	156.74	0.986	Level 1	
20,717.6	10,889.9	20,650.0	10,774.2	292.3	289.0	5.13	-577.0	9,881.2	169.0	12.2	156.87	1.078	Level 2	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Gyrodata, Inc.
Anticollision Report



Company:	Oasis Petroleum	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2T2
Project:	Indian Hills	TVD Reference:	WELL @ 2078.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	MD Reference:	WELL @ 2078.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Kline Federal 5300 11-18 2T2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #6	Offset TVD Reference:	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 21-18 4T2 - Wellbore #1 - Design #6												Offset Site Error:	0.0 usft	
Survey Program: 0-MWD												Offset Well Error:	0.0 usft	
Measured Depth (usft)	Vertical Depth (usft)	Reference Offset		Semi Major Axis				Distance				Warning		
		Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface	(°)	Offset Wellbore Centre +N/S (usft)	+E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.0	0.0	0.0	0.0	0.0	0.0	-155.33		-90.2	-41.4	99.2				
100.0	100.0	100.0	100.0	0.1	0.1	-155.33		-90.2	-41.4	99.2	99.1	0.17	588.711	
200.0	200.0	200.0	200.0	0.3	0.3	-155.33		-90.2	-41.4	99.2	98.6	0.62	160.558	
300.0	300.0	300.0	300.0	0.5	0.5	-155.33		-90.2	-41.4	99.2	98.2	1.07	92.954	
400.0	400.0	400.0	400.0	0.8	0.8	-155.33		-90.2	-41.4	99.2	97.7	1.52	65.412	
500.0	500.0	500.0	500.0	1.0	1.0	-155.33		-90.2	-41.4	99.2	97.3	1.97	50.461	
600.0	600.0	600.0	600.0	1.2	1.2	-155.33		-90.2	-41.4	99.2	96.8	2.42	41.073	
700.0	700.0	700.0	700.0	1.4	1.4	-155.33		-90.2	-41.4	99.2	96.4	2.87	34.630	
800.0	800.0	800.0	800.0	1.7	1.7	-155.33		-90.2	-41.4	99.2	95.9	3.32	29.934	
900.0	900.0	900.0	900.0	1.9	1.9	-155.33		-90.2	-41.4	99.2	95.5	3.76	26.360	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-155.33		-90.2	-41.4	99.2	95.0	4.21	23.548	
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.3	-155.33		-90.2	-41.4	99.2	94.6	4.66	21.279	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-155.33		-90.2	-41.4	99.2	94.1	5.11	19.408	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	-155.33		-90.2	-41.4	99.2	93.7	5.56	17.840	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	-155.33		-90.2	-41.4	99.2	93.2	6.01	16.506	
1,500.0	1,500.0	1,500.0	1,500.0	3.2	3.2	-155.33		-90.2	-41.4	99.2	92.8	6.46	15.358	
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	-155.33		-90.2	-41.4	99.2	92.3	6.91	14.359	
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	-155.33		-90.2	-41.4	99.2	91.9	7.36	13.482	
1,800.0	1,800.0	1,800.0	1,800.0	3.9	3.9	-155.33		-90.2	-41.4	99.2	91.4	7.81	12.706	
1,900.0	1,900.0	1,900.0	1,900.0	4.1	4.1	-155.33		-90.2	-41.4	99.2	91.0	8.26	12.015	
2,000.0	2,000.0	2,000.0	2,000.0	4.4	4.4	-155.33		-90.2	-41.4	99.2	90.5	8.71	11.394	
2,100.0	2,100.0	2,100.0	2,100.0	4.6	4.6	-155.33		-90.2	-41.4	99.2	90.1	9.16	10.835	
2,200.0	2,200.0	2,200.0	2,200.0	4.8	4.8	-155.33		-90.2	-41.4	99.2	89.6	9.61	10.328	
2,300.0	2,300.0	2,300.0	2,300.0	5.0	5.0	-155.33		-90.2	-41.4	99.2	89.2	10.06	9.867	
2,400.0	2,400.0	2,400.0	2,400.0	5.3	5.3	-155.33		-90.2	-41.4	99.2	88.7	10.51	9.445	
2,500.0	2,500.0	2,500.0	2,500.0	5.5	5.5	-155.33		-90.2	-41.4	99.2	88.3	10.96	9.057 CC, ES	
2,600.0	2,600.0	2,597.1	2,597.1	5.7	5.7	116.04		-91.0	-42.8	101.4	90.0	11.37	8.920	
2,650.0	2,649.9	2,645.5	2,645.5	5.8	5.8	117.66		-92.0	-44.6	104.1	92.6	11.56	9.013	
2,700.0	2,699.9	2,695.1	2,695.0	5.9	5.9	119.63		-93.3	-46.9	107.6	95.9	11.75	9.161	
2,800.0	2,799.7	2,794.6	2,794.3	6.1	6.1	123.20		-95.9	-51.4	115.0	102.8	12.14	9.470	
2,900.0	2,899.6	2,894.1	2,893.7	6.3	6.2	126.34		-98.5	-55.9	122.7	110.2	12.54	9.789	
3,000.0	2,999.5	2,993.6	2,993.1	6.5	6.4	129.10		-101.1	-60.4	130.8	117.8	12.93	10.110	
3,100.0	3,099.3	3,093.1	3,092.4	6.7	6.6	131.53		-103.7	-64.9	139.1	125.7	13.34	10.429	
3,200.0	3,199.2	3,192.6	3,191.8	7.0	6.9	133.69		-106.3	-69.4	147.6	133.9	13.74	10.743	
3,300.0	3,299.0	3,292.1	3,291.1	7.2	7.1	135.61		-108.9	-73.9	156.4	142.2	14.15	11.050	
3,400.0	3,398.9	3,391.5	3,390.5	7.4	7.3	137.33		-111.6	-78.4	165.2	150.7	14.56	11.349	
3,501.2	3,500.0	3,492.3	3,491.0	7.6	7.5	138.88		-114.2	-83.0	174.4	159.4	14.98	11.642	
3,600.0	3,598.7	3,590.7	3,589.3	7.8	7.7	140.01		-116.8	-87.5	182.1	166.7	15.38	11.835	
3,651.2	3,649.9	3,641.8	3,640.4	7.9	7.8	129.72		-118.1	-89.8	185.1	169.5	15.59	11.872	
3,700.0	3,698.7	3,690.5	3,689.0	8.0	7.9	129.58		-119.4	-92.0	187.6	171.8	15.79	11.877	
3,800.0	3,798.7	3,790.4	3,788.7	8.2	8.1	129.33		-122.0	-96.5	192.8	176.5	16.23	11.875	
3,900.0	3,898.7	3,896.7	3,895.0	8.5	8.4	129.14		-124.0	-100.0	196.5	179.8	16.68	11.780	
4,000.0	3,998.7	4,000.4	3,998.7	8.7	8.6	129.11		-124.2	-100.4	197.0	179.8	17.11	11.508	
4,100.0	4,098.7	4,100.4	4,098.7	8.9	8.8	129.11		-124.2	-100.4	197.0	179.4	17.55	11.220	
4,200.0	4,198.7	4,200.4	4,198.7	9.1	9.0	129.11		-124.2	-100.4	197.0	179.0	18.00	10.945	
4,300.0	4,298.7	4,300.4	4,298.7	9.4	9.2	129.11		-124.2	-100.4	197.0	178.5	18.44	10.683	
4,400.0	4,398.7	4,400.4	4,398.7	9.6	9.4	129.11		-124.2	-100.4	197.0	178.1	18.88	10.433	
4,500.0	4,498.7	4,500.4	4,498.7	9.8	9.7	129.11		-124.2	-100.4	197.0	177.6	19.32	10.195	
4,600.0	4,598.7	4,600.4	4,598.7	10.0	9.9	129.11		-124.2	-100.4	197.0	177.2	19.76	9.966	
4,700.0	4,698.7	4,700.4	4,698.7	10.2	10.1	129.11		-124.2	-100.4	197.0	176.8	20.20	9.748	
4,800.0	4,798.7	4,800.4	4,798.7	10.5	10.3	129.11		-124.2	-100.4	197.0	176.3	20.65	9.539	
4,900.0	4,898.7	4,900.4	4,898.7	10.7	10.5	129.11		-124.2	-100.4	197.0	175.9	21.09	9.339	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Company:	Oasis Petroleum	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2T2
Project:	Indian Hills	TVD Reference:	WELL @ 2078.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	MD Reference:	WELL @ 2078.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Kline Federal 5300 11-18 2T2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #6	Offset TVD Reference:	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 21-18 4T2 - Wellbore #1 - Design #6												Offset Site Error:	0.0 usft	
Survey Program: 0-MWD			Distance									Offset Well Error:	0.0 usft	
Reference		Offset		Semi Major Axis										
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	Offset	Wellbore Centre +N/S (usft)	Centre +E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,000.0	4,998.7	5,000.4	4,998.7	10.9	10.8	-129.11	-124.2	-100.4	197.0	175.4	21.53	9.146		
5,100.0	5,098.7	5,100.4	5,098.7	11.1	11.0	-129.11	-124.2	-100.4	197.0	175.0	21.98	8.962		
5,200.0	5,198.7	5,200.4	5,198.7	11.4	11.2	-129.11	-124.2	-100.4	197.0	174.5	22.42	8.784		
5,300.0	5,298.7	5,300.4	5,298.7	11.6	11.4	-129.11	-124.2	-100.4	197.0	174.1	22.87	8.614		
5,400.0	5,398.7	5,400.4	5,398.7	11.8	11.6	-129.11	-124.2	-100.4	197.0	173.6	23.31	8.449		
5,500.0	5,498.7	5,500.4	5,498.7	12.0	11.9	-129.11	-124.2	-100.4	197.0	173.2	23.75	8.291		
5,600.0	5,598.7	5,600.4	5,598.7	12.2	12.1	-129.11	-124.2	-100.4	197.0	172.8	24.20	8.139		
5,700.0	5,698.7	5,700.4	5,698.7	12.5	12.3	-129.11	-124.2	-100.4	197.0	172.3	24.64	7.992		
5,800.0	5,798.7	5,800.4	5,798.7	12.7	12.5	-129.11	-124.2	-100.4	197.0	171.9	25.09	7.850		
5,900.0	5,898.7	5,900.4	5,898.7	12.9	12.8	-129.11	-124.2	-100.4	197.0	171.4	25.53	7.713		
6,000.0	5,998.7	6,000.4	5,998.7	13.1	13.0	-129.11	-124.2	-100.4	197.0	171.0	25.98	7.581		
6,100.0	6,098.7	6,100.4	6,098.7	13.4	13.2	-129.11	-124.2	-100.4	197.0	170.5	26.42	7.453		
6,200.0	6,198.7	6,200.4	6,198.7	13.6	13.4	-129.11	-124.2	-100.4	197.0	170.1	26.87	7.330		
6,300.0	6,298.7	6,300.4	6,298.7	13.8	13.6	-129.11	-124.2	-100.4	197.0	169.6	27.32	7.210		
6,400.0	6,398.7	6,400.4	6,398.7	14.0	13.9	-129.11	-124.2	-100.4	197.0	169.2	27.76	7.094		
6,500.0	6,498.7	6,500.4	6,498.7	14.3	14.1	-129.11	-124.2	-100.4	197.0	168.7	28.21	6.982		
6,600.0	6,598.7	6,600.4	6,598.7	14.5	14.3	-129.11	-124.2	-100.4	197.0	168.3	28.65	6.874		
6,700.0	6,698.7	6,700.4	6,698.7	14.7	14.5	-129.11	-124.2	-100.4	197.0	167.9	29.10	6.768		
6,800.0	6,798.7	6,800.4	6,798.7	14.9	14.7	-129.11	-124.2	-100.4	197.0	167.4	29.55	6.666		
6,900.0	6,898.7	6,900.4	6,898.7	15.2	15.0	-129.11	-124.2	-100.4	197.0	167.0	29.99	6.567		
7,000.0	6,998.7	7,000.4	6,998.7	15.4	15.2	-129.11	-124.2	-100.4	197.0	166.5	30.44	6.470		
7,100.0	7,098.7	7,100.4	7,098.7	15.6	15.4	-129.11	-124.2	-100.4	197.0	166.1	30.89	6.377		
7,200.0	7,198.7	7,200.4	7,198.7	15.8	15.6	-129.11	-124.2	-100.4	197.0	165.6	31.33	6.286		
7,300.0	7,298.7	7,300.4	7,298.7	16.0	15.9	-129.11	-124.2	-100.4	197.0	165.2	31.78	6.198		
7,400.0	7,398.7	7,400.4	7,398.7	16.3	16.1	-129.11	-124.2	-100.4	197.0	164.7	32.23	6.112		
7,500.0	7,498.7	7,500.4	7,498.7	16.5	16.3	-129.11	-124.2	-100.4	197.0	164.3	32.67	6.028		
7,600.0	7,598.7	7,600.4	7,598.7	16.7	16.5	-129.11	-124.2	-100.4	197.0	163.8	33.12	5.947		
7,700.0	7,698.7	7,700.4	7,698.7	16.9	16.7	-129.11	-124.2	-100.4	197.0	163.4	33.57	5.867		
7,800.0	7,798.7	7,800.4	7,798.7	17.2	17.0	-129.11	-124.2	-100.4	197.0	162.9	34.01	5.790		
7,900.0	7,898.7	7,900.4	7,898.7	17.4	17.2	-129.11	-124.2	-100.4	197.0	162.5	34.46	5.715		
8,000.0	7,998.7	8,000.4	7,998.7	17.6	17.4	-129.11	-124.2	-100.4	197.0	162.0	34.91	5.642		
8,100.0	8,098.7	8,100.4	8,098.7	17.8	17.6	-129.11	-124.2	-100.4	197.0	161.6	35.36	5.571		
8,200.0	8,198.7	8,200.4	8,198.7	18.1	17.9	-129.11	-124.2	-100.4	197.0	161.2	35.80	5.501		
8,300.0	8,298.7	8,300.4	8,298.7	18.3	18.1	-129.11	-124.2	-100.4	197.0	160.7	36.25	5.433		
8,400.0	8,398.7	8,400.4	8,398.7	18.5	18.3	-129.11	-124.2	-100.4	197.0	160.3	36.70	5.367		
8,500.0	8,498.7	8,500.4	8,498.7	18.7	18.5	-129.11	-124.2	-100.4	197.0	159.8	37.15	5.302		
8,600.0	8,598.7	8,600.4	8,598.7	19.0	18.8	-129.11	-124.2	-100.4	197.0	159.4	37.59	5.239		
8,700.0	8,698.7	8,700.4	8,698.7	19.2	19.0	-129.11	-124.2	-100.4	197.0	158.9	38.04	5.177		
8,800.0	8,798.7	8,800.4	8,798.7	19.4	19.2	-129.11	-124.2	-100.4	197.0	158.5	38.49	5.117		
8,900.0	8,898.7	8,900.4	8,898.7	19.6	19.4	-129.11	-124.2	-100.4	197.0	158.0	38.94	5.058		
9,000.0	8,998.7	9,000.4	8,998.7	19.9	19.6	-129.11	-124.2	-100.4	197.0	157.6	39.38	5.001		
9,100.0	9,098.7	9,100.4	9,098.7	20.1	19.9	-129.11	-124.2	-100.4	197.0	157.1	39.83	4.945		
9,200.0	9,198.7	9,200.4	9,198.7	20.3	20.1	-129.11	-124.2	-100.4	197.0	156.7	40.28	4.890		
9,300.0	9,298.7	9,300.4	9,298.7	20.5	20.3	-129.11	-124.2	-100.4	197.0	156.2	40.73	4.836		
9,400.0	9,398.7	9,400.4	9,398.7	20.8	20.5	-129.11	-124.2	-100.4	197.0	155.8	41.18	4.783		
9,500.0	9,498.7	9,500.4	9,498.7	21.0	20.8	-129.11	-124.2	-100.4	197.0	155.3	41.62	4.732		
9,600.0	9,598.7	9,600.4	9,598.7	21.2	21.0	-129.11	-124.2	-100.4	197.0	154.9	42.07	4.681		
9,700.0	9,698.7	9,700.4	9,698.7	21.4	21.2	-129.11	-124.2	-100.4	197.0	154.4	42.52	4.632		
9,800.0	9,798.7	9,800.4	9,798.7	21.6	21.4	-129.11	-124.2	-100.4	197.0	154.0	42.97	4.584		
9,900.0	9,898.7	9,900.4	9,898.7	21.9	21.7	-129.11	-124.2	-100.4	197.0	153.5	43.42	4.537		
10,000.0	9,998.7	10,000.4	9,998.7	22.1	21.9	-129.11	-124.2	-100.4	197.0	153.1	43.86	4.490		
10,100.0	10,098.7	10,100.4	10,098.7	22.3	22.1	-129.11	-124.2	-100.4	197.0	152.6	44.31	4.445		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Gyrodata, Inc.
Anticollision Report



Company:	Oasis Petroleum	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2T2
Project:	Indian Hills	TVD Reference:	WELL @ 2078.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	MD Reference:	WELL @ 2078.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Kline Federal 5300 11-18 2T2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #6	Offset TVD Reference:	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 21-18 4T2 - Wellbore #1 - Design #6												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Reference Offset		Semi Major Axis			Distance					Warning	
		Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	Offset	Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	
10,200.0	10,198.7	10,200.4	10,198.7	22.5	22.3	-129.11	-124.2	-100.4	197.0	152.2	44.76	4.400	
10,300.0	10,298.7	10,300.4	10,298.7	22.8	22.6	-129.11	-124.2	-100.4	197.0	151.7	45.21	4.357	
10,342.0	10,340.9	10,342.6	10,340.9	22.9	22.7	-129.11	-124.2	-100.4	197.0	151.6	45.40	4.339	
10,363.3	10,362.0	10,363.7	10,362.0	22.9	22.7	-129.11	-124.2	-100.4	197.0	151.5	45.49	4.329	
10,375.0	10,373.7	10,375.0	10,373.3	22.9	22.7	110.88	-124.4	-100.4	197.0	151.5	45.55	4.325	
10,400.0	10,398.7	10,397.9	10,396.2	23.0	22.8	110.81	-125.3	-99.8	197.7	152.1	45.63	4.332	
10,425.0	10,423.5	10,421.2	10,419.3	23.0	22.8	110.67	-127.3	-98.7	199.0	153.3	45.70	4.355	
10,450.0	10,448.2	10,444.4	10,442.3	23.1	22.8	110.47	-130.2	-97.1	201.0	155.3	45.76	4.393	
10,475.0	10,472.7	10,467.5	10,465.0	23.1	22.9	110.19	-134.1	-95.0	203.7	157.9	45.81	4.447	
10,500.0	10,496.8	10,490.6	10,487.4	23.2	22.9	109.85	-138.9	-92.3	207.0	161.2	45.86	4.515	
10,525.0	10,520.6	10,513.5	10,509.4	23.3	23.0	109.45	-144.6	-89.1	211.0	165.1	45.91	4.597	
10,550.0	10,544.0	10,536.4	10,530.9	23.3	23.0	108.99	-151.2	-85.4	215.6	169.7	45.96	4.692	
10,575.0	10,566.8	10,559.0	10,551.9	23.4	23.0	108.47	-158.7	-81.3	220.9	174.9	46.01	4.801	
10,600.0	10,589.1	10,581.6	10,572.4	23.5	23.1	107.89	-167.0	-76.7	226.7	180.6	46.07	4.921	
10,625.0	10,610.8	10,603.9	10,592.2	23.5	23.1	107.27	-176.0	-71.7	233.1	187.0	46.15	5.052	
10,650.0	10,631.8	10,626.1	10,611.4	23.6	23.2	106.59	-185.7	-66.3	240.1	193.9	46.24	5.193	
10,675.0	10,652.0	10,648.1	10,629.9	23.7	23.2	105.87	-196.2	-60.6	247.6	201.3	46.34	5.343	
10,700.0	10,671.5	10,670.0	10,647.7	23.8	23.2	105.10	-207.2	-54.4	255.7	209.2	46.47	5.501	
10,725.0	10,690.1	10,691.6	10,664.7	23.9	23.3	104.29	-218.9	-47.9	264.2	217.6	46.62	5.667	
10,750.0	10,707.8	10,713.1	10,681.0	24.0	23.3	103.44	-231.2	-41.2	273.2	226.4	46.80	5.838	
10,775.0	10,724.5	10,734.4	10,696.6	24.1	23.4	102.55	-243.9	-34.1	282.6	235.6	47.00	6.013	
10,800.0	10,740.3	10,755.6	10,711.3	24.3	23.4	101.63	-257.2	-26.7	292.5	245.2	47.23	6.193	
10,825.0	10,755.0	10,776.6	10,725.3	24.4	23.5	100.68	-270.9	-19.1	302.7	255.2	47.48	6.376	
10,850.0	10,768.7	10,797.4	10,738.5	24.6	23.6	99.70	-285.0	-11.3	313.3	265.6	47.76	6.561	
10,875.0	10,781.2	10,818.2	10,750.9	24.8	23.7	98.69	-299.5	-3.3	324.3	276.2	48.06	6.747	
10,900.0	10,792.6	10,838.7	10,762.5	25.0	23.8	97.65	-314.4	5.0	335.5	287.1	48.38	6.935	
10,925.0	10,802.8	10,859.2	10,773.2	25.2	23.9	96.60	-329.7	13.5	347.0	298.3	48.72	7.122	
10,950.0	10,811.8	10,879.7	10,783.2	25.4	24.0	95.53	-345.2	22.1	358.8	309.7	49.08	7.310	
10,975.0	10,819.6	10,900.0	10,792.4	25.7	24.1	94.45	-361.1	30.9	370.8	321.3	49.46	7.497	
11,000.0	10,826.1	10,920.3	10,800.8	25.9	24.2	93.35	-377.3	39.8	383.0	333.1	49.85	7.683	
11,025.0	10,831.3	10,940.6	10,808.4	26.2	24.3	92.25	-393.7	49.0	395.3	345.1	50.25	7.868	
11,050.0	10,835.3	10,960.9	10,815.2	26.5	24.5	91.15	-410.5	58.2	407.8	357.2	50.65	8.052	
11,075.0	10,837.9	10,981.2	10,821.2	26.8	24.6	90.05	-427.4	67.6	420.5	369.4	51.06	8.234	
11,100.0	10,839.3	11,001.6	10,826.4	27.1	24.8	88.96	-444.7	77.2	433.2	381.7	51.48	8.414	
11,110.8	10,839.5	11,010.4	10,828.3	27.2	24.8	88.49	-452.2	81.4	438.7	387.0	51.66	8.491	
11,125.8	10,839.5	11,022.8	10,830.8	27.4	24.9	88.88	-462.8	87.2	446.3	394.4	51.94	8.594	
11,200.0	10,839.9	11,084.6	10,838.6	28.5	25.5	90.01	-516.4	116.9	485.7	432.4	53.33	9.107	
11,300.0	10,840.5	11,182.7	10,839.8	30.1	26.5	90.13	-601.8	165.2	542.0	486.5	55.50	9.766	
11,400.0	10,841.0	11,300.5	10,840.5	31.9	27.9	90.15	-701.2	228.5	598.4	540.3	58.05	10.308	
11,500.0	10,841.5	11,424.4	10,841.2	33.9	29.7	90.16	-801.3	301.4	653.8	592.9	60.88	10.739	
11,600.0	10,842.1	11,555.0	10,841.9	36.0	31.8	90.18	-901.4	385.2	708.0	644.1	63.95	11.071	
11,700.0	10,842.6	11,693.1	10,842.7	38.1	34.3	90.20	-1,000.9	481.0	760.7	693.5	67.23	11.315	
11,800.0	10,843.2	11,839.6	10,843.6	40.4	37.1	90.21	-1,098.4	590.1	811.5	740.8	70.75	11.470	
11,900.0	10,843.7	11,995.1	10,844.5	42.7	40.4	90.23	-1,192.6	713.9	860.0	785.6	74.47	11.549	
12,000.0	10,844.2	12,160.6	10,845.5	45.0	44.0	90.24	-1,281.4	853.5	905.8	827.3	78.43	11.548	
12,100.0	10,844.8	12,336.7	10,846.6	47.4	47.9	90.25	-1,362.2	1,009.8	948.1	865.5	82.61	11.477	
12,110.4	10,844.8	12,355.7	10,846.7	47.6	48.4	90.26	-1,370.0	1,027.1	952.3	869.3	83.06	11.466	
12,200.0	10,845.3	12,525.2	10,847.7	49.8	52.3	90.25	-1,432.3	1,184.8	984.6	895.7	88.89	11.077	
12,300.0	10,845.8	12,727.1	10,848.9	52.2	56.9	90.25	-1,488.0	1,378.8	1,011.5	915.3	96.12	10.523	
12,400.0	10,846.3	12,938.9	10,850.1	54.7	61.8	90.24	-1,524.0	1,587.4	1,027.7	923.7	103.97	9.885	
12,500.0	10,846.8	13,153.6	10,851.3	57.3	66.6	90.24	-1,536.7	1,801.6	1,032.8	920.7	112.12	9.211	
12,600.0	10,847.4	13,253.6	10,851.8	59.9	68.8	90.24	-1,537.1	1,901.6	1,032.4	915.0	117.41	8.793	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Gyrod Data, Inc.
Anticollision Report



Company:	Oasis Petroleum	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2T2
Project:	Indian Hills	TVD Reference:	WELL @ 2078.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	MD Reference:	WELL @ 2078.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Kline Federal 5300 11-18 2T2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #6	Offset TVD Reference:	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 21-18 4T2 - Wellbore #1 - Design #6												Offset Site Error:	0.0 usft
Survey Program: 0-MWD				Distance								Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis				Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface		Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
12,700.0	10,847.9	13,353.6	10,852.3	62.5	71.1	90.24		-1,537.5	2,001.6	1,032.0	909.2	122.74	8.408
12,800.0	10,848.4	13,453.6	10,852.8	65.1	73.4	90.24		-1,537.9	2,101.6	1,031.6	903.5	128.13	8.051
12,900.0	10,848.9	13,553.6	10,853.4	67.8	75.8	90.24		-1,538.3	2,201.6	1,031.2	897.7	133.55	7.721
13,000.0	10,849.5	13,653.6	10,853.9	70.4	78.2	90.24		-1,538.7	2,301.6	1,030.8	891.8	139.01	7.415
13,100.0	10,850.0	13,753.6	10,854.4	73.1	80.6	90.24		-1,539.1	2,401.6	1,030.4	885.9	144.50	7.131
13,200.0	10,850.5	13,853.6	10,854.9	75.9	83.1	90.24		-1,539.5	2,501.6	1,030.0	880.0	150.02	6.866
13,300.0	10,851.0	13,953.6	10,855.5	78.6	85.6	90.24		-1,539.9	2,601.6	1,029.6	874.1	155.56	6.619
13,400.0	10,851.6	14,053.6	10,856.0	81.3	88.2	90.24		-1,540.4	2,701.6	1,029.2	868.1	161.13	6.388
13,500.0	10,852.1	14,153.6	10,856.5	84.1	90.7	90.25		-1,540.8	2,801.6	1,028.8	862.1	166.71	6.171
13,600.0	10,852.6	14,253.6	10,857.0	86.9	93.3	90.25		-1,541.2	2,901.6	1,028.4	856.1	172.32	5.968
13,700.0	10,853.1	14,353.6	10,857.6	89.6	95.9	90.25		-1,541.6	3,001.5	1,028.0	850.1	177.94	5.777
13,800.0	10,853.7	14,453.6	10,858.1	92.4	98.5	90.25		-1,542.0	3,101.5	1,027.6	844.1	183.58	5.598
13,900.0	10,854.2	14,553.6	10,858.6	95.2	101.1	90.25		-1,542.4	3,201.5	1,027.2	838.0	189.23	5.429
14,000.0	10,854.7	14,653.6	10,859.1	98.0	103.8	90.25		-1,542.8	3,301.5	1,026.8	831.9	194.89	5.269
14,100.0	10,855.2	14,753.6	10,859.6	100.8	106.5	90.25		-1,543.2	3,401.5	1,026.4	825.9	200.57	5.118
14,200.0	10,855.7	14,853.6	10,860.2	103.7	109.1	90.25		-1,543.6	3,501.5	1,026.0	819.8	206.25	4.975
14,300.0	10,856.3	14,953.6	10,860.7	106.5	111.8	90.25		-1,544.0	3,601.5	1,025.7	813.7	211.95	4.839
14,400.0	10,856.8	15,053.6	10,861.2	109.3	114.5	90.25		-1,544.4	3,701.5	1,025.3	807.6	217.65	4.711
14,500.0	10,857.3	15,153.6	10,861.7	112.2	117.3	90.25		-1,544.8	3,801.5	1,024.9	801.5	223.36	4.588
14,600.0	10,857.8	15,253.6	10,862.3	115.0	120.0	90.25		-1,545.2	3,901.5	1,024.5	795.4	229.08	4.472
14,700.0	10,858.4	15,353.6	10,862.8	117.9	122.7	90.25		-1,545.7	4,001.5	1,024.1	789.3	234.81	4.361
14,800.0	10,858.9	15,453.6	10,863.3	120.7	125.5	90.25		-1,546.1	4,101.5	1,023.7	783.1	240.54	4.256
14,900.0	10,859.4	15,553.6	10,863.8	123.6	128.2	90.25		-1,546.5	4,201.5	1,023.3	777.0	246.28	4.155
15,000.0	10,859.9	15,653.6	10,864.4	126.4	131.0	90.25		-1,546.9	4,301.5	1,022.9	770.8	252.03	4.059
15,100.0	10,860.5	15,753.6	10,864.9	129.3	133.7	90.25		-1,547.3	4,401.5	1,022.5	764.7	257.78	3.967
15,200.0	10,861.0	15,853.6	10,865.4	132.1	136.5	90.25		-1,547.7	4,501.5	1,022.1	758.5	263.53	3.878
15,300.0	10,861.5	15,953.6	10,865.9	135.0	139.3	90.25		-1,548.1	4,601.5	1,021.7	752.4	269.29	3.794
15,400.0	10,862.0	16,053.6	10,866.5	137.9	142.1	90.25		-1,548.5	4,701.5	1,021.3	746.2	275.06	3.713
15,500.0	10,862.6	16,153.6	10,867.0	140.7	144.9	90.25		-1,548.9	4,801.5	1,020.9	740.1	280.83	3.635
15,600.0	10,863.1	16,253.6	10,867.5	143.6	147.7	90.25		-1,549.3	4,901.5	1,020.5	733.9	286.60	3.561
15,700.0	10,863.6	16,353.6	10,868.0	146.5	150.5	90.25		-1,549.7	5,001.5	1,020.1	727.7	292.38	3.489
15,800.0	10,864.1	16,453.6	10,868.5	149.4	153.3	90.25		-1,550.1	5,101.5	1,019.7	721.5	298.15	3.420
15,900.0	10,864.7	16,553.6	10,869.1	152.3	156.1	90.25		-1,550.5	5,201.5	1,019.3	715.4	303.94	3.354
16,000.0	10,865.2	16,653.6	10,869.6	155.1	158.9	90.25		-1,551.0	5,301.5	1,018.9	709.2	309.72	3.290
16,100.0	10,865.7	16,753.6	10,870.1	158.0	161.7	90.25		-1,551.4	5,401.5	1,018.5	703.0	315.51	3.228
16,200.0	10,866.2	16,853.6	10,870.6	160.9	164.6	90.25		-1,551.8	5,501.5	1,018.1	696.8	321.30	3.169
16,300.0	10,866.7	16,953.6	10,871.2	163.8	167.4	90.25		-1,552.2	5,601.5	1,017.7	690.6	327.10	3.111
16,400.0	10,867.3	17,053.6	10,871.7	166.7	170.2	90.25		-1,552.6	5,701.5	1,017.3	684.4	332.89	3.056
16,500.0	10,867.8	17,153.6	10,872.2	169.6	173.1	90.25		-1,553.0	5,801.5	1,016.9	678.2	338.69	3.003
16,600.0	10,868.3	17,253.6	10,872.7	172.5	175.9	90.25		-1,553.4	5,901.5	1,016.5	672.0	344.49	2.951
16,700.0	10,868.8	17,353.6	10,873.3	175.4	178.8	90.25		-1,553.8	6,001.5	1,016.1	665.8	350.29	2.901
16,800.0	10,869.4	17,453.6	10,873.8	178.3	181.6	90.25		-1,554.2	6,101.5	1,015.7	659.6	356.10	2.852
16,900.0	10,869.9	17,553.6	10,874.3	181.2	184.4	90.25		-1,554.6	6,201.5	1,015.3	653.4	361.91	2.806
17,000.0	10,870.4	17,653.6	10,874.8	184.1	187.3	90.25		-1,555.0	6,301.5	1,014.9	647.2	367.71	2.760
17,100.0	10,870.9	17,753.6	10,875.4	187.0	190.1	90.25		-1,555.4	6,401.4	1,014.6	641.0	373.52	2.716
17,200.0	10,871.5	17,853.6	10,875.9	189.9	193.0	90.25		-1,555.8	6,501.4	1,014.2	634.8	379.34	2.674
17,300.0	10,872.0	17,953.6	10,876.4	192.8	195.9	90.25		-1,556.3	6,601.4	1,013.8	628.6	385.15	2.632
17,400.0	10,872.5	18,053.6	10,876.9	195.7	198.7	90.25		-1,556.7	6,701.4	1,013.4	622.4	390.96	2.592
17,500.0	10,873.0	18,153.6	10,877.4	198.6	201.6	90.25		-1,557.1	6,801.4	1,013.0	616.2	396.78	2.553
17,600.0	10,873.6	18,253.6	10,878.0	201.5	204.4	90.25		-1,557.5	6,901.4	1,012.6	610.0	402.60	2.515
17,700.0	10,874.1	18,353.6	10,878.5	204.4	207.3	90.25		-1,557.9	7,001.4	1,012.2	603.8	408.42	2.478
17,800.0	10,874.6	18,453.6	10,879.0	207.3	210.2	90.25		-1,558.3	7,101.4	1,011.8	597.5	414.24	2.443

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Gyrodta, Inc.
Anticollision Report



Company:	Oasis Petroleum	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2T2
Project:	Indian Hills	TVD Reference:	WELL @ 2078.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	MD Reference:	WELL @ 2078.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Kline Federal 5300 11-18 2T2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #6	Offset TVD Reference:	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 21-18 4T2 - Wellbore #1 - Design #6												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis				Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
17,900.0	10,875.1	18,553.6	10,879.5	210.2	213.0	90.25		-1,558.7	7,201.4	1,011.4	591.3	420.06	2.408
18,000.0	10,875.6	18,653.6	10,880.1	213.1	215.9	90.25		-1,559.1	7,301.4	1,011.0	585.1	425.88	2.374
18,100.0	10,876.2	18,753.6	10,880.6	216.0	218.8	90.25		-1,559.5	7,401.4	1,010.6	578.9	431.70	2.341
18,200.0	10,876.7	18,853.6	10,881.1	218.9	221.7	90.25		-1,559.9	7,501.4	1,010.2	572.7	437.53	2.309
18,300.0	10,877.2	18,953.6	10,881.6	221.8	224.5	90.25		-1,560.3	7,601.4	1,009.8	566.4	443.35	2.278
18,400.0	10,877.7	19,053.6	10,882.2	224.7	227.4	90.25		-1,560.7	7,701.4	1,009.4	560.2	449.18	2.247
18,500.0	10,878.3	19,153.6	10,882.7	227.6	230.3	90.25		-1,561.2	7,801.4	1,009.0	554.0	455.01	2.218
18,600.0	10,878.8	19,253.6	10,883.2	230.5	233.2	90.25		-1,561.6	7,901.4	1,008.6	547.8	460.84	2.189
18,700.0	10,879.3	19,353.6	10,883.7	233.4	236.1	90.25		-1,562.0	8,001.4	1,008.2	541.5	466.67	2.160
18,800.0	10,879.8	19,453.6	10,884.3	236.4	238.9	90.25		-1,562.4	8,101.4	1,007.8	535.3	472.50	2.133
18,900.0	10,880.4	19,553.6	10,884.8	239.3	241.8	90.25		-1,562.8	8,201.4	1,007.4	529.1	478.33	2.106
19,000.0	10,880.9	19,653.6	10,885.3	242.2	244.7	90.25		-1,563.2	8,301.4	1,007.0	522.9	484.16	2.080
19,100.0	10,881.4	19,753.6	10,885.8	245.1	247.6	90.25		-1,563.6	8,401.4	1,006.6	516.6	489.99	2.054
19,200.0	10,881.9	19,853.6	10,886.3	248.0	250.5	90.25		-1,564.0	8,501.4	1,006.2	510.4	495.82	2.029
19,300.0	10,882.5	19,953.6	10,886.9	250.9	253.4	90.25		-1,564.4	8,601.4	1,005.8	504.2	501.66	2.005
19,400.0	10,883.0	20,053.6	10,887.4	253.8	256.3	90.25		-1,564.8	8,701.4	1,005.4	497.9	507.49	1.981
19,500.0	10,883.5	20,153.6	10,887.9	256.7	259.1	90.25		-1,565.2	8,801.4	1,005.0	491.7	513.33	1.958
19,600.0	10,884.0	20,253.6	10,888.4	259.7	262.0	90.25		-1,565.6	8,901.4	1,004.6	485.5	519.16	1.935
19,700.0	10,884.5	20,353.6	10,889.0	262.6	264.9	90.25		-1,566.0	9,001.4	1,004.2	479.2	525.00	1.913
19,800.0	10,885.1	20,453.6	10,889.5	265.5	267.8	90.25		-1,566.5	9,101.4	1,003.8	473.0	530.84	1.891
19,900.0	10,885.6	20,553.6	10,890.0	268.4	270.7	90.25		-1,566.9	9,201.4	1,003.5	466.8	536.68	1.870
20,000.0	10,886.1	20,653.6	10,890.5	271.3	273.6	90.25		-1,567.3	9,301.4	1,003.1	460.5	542.51	1.849
20,100.0	10,886.6	20,753.6	10,891.1	274.2	276.5	90.25		-1,567.7	9,401.4	1,002.7	454.3	548.35	1.828
20,200.0	10,887.2	20,853.6	10,891.6	277.2	279.4	90.25		-1,568.1	9,501.4	1,002.3	448.1	554.19	1.809
20,300.0	10,887.7	20,953.6	10,892.1	280.1	282.3	90.25		-1,568.5	9,601.4	1,001.9	441.8	560.03	1.789
20,400.0	10,888.2	21,053.6	10,892.6	283.0	285.2	90.25		-1,568.9	9,701.3	1,001.5	435.6	565.87	1.770
20,500.0	10,888.7	21,153.6	10,893.2	285.9	288.1	90.25		-1,569.3	9,801.3	1,001.1	429.4	571.71	1.751
20,600.0	10,889.3	21,253.6	10,893.7	288.8	291.0	90.25		-1,569.7	9,901.3	1,000.7	423.1	577.55	1.733
20,700.0	10,889.8	21,353.6	10,894.2	291.7	293.9	90.25		-1,570.1	10,001.3	1,000.3	416.9	583.39	1.715
20,717.6	10,889.9	21,371.1	10,894.3	292.3	294.4	90.25		-1,570.2	10,018.9	1,000.2	415.8	584.42	1.711 SF

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Gyrodta, Inc.
Anticollision Report



Company:	Oasis Petroleum	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2T2
Project:	Indian Hills	TVD Reference:	WELL @ 2078.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	MD Reference:	WELL @ 2078.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Kline Federal 5300 11-18 2T2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #6	Offset TVD Reference:	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 21-18 5B - Wellbore #1 - Design #6												Offset Site Error:	0.0 usft		
Survey Program: 0-MWD		Distance												Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Reference Offset		Semi Major Axis				Distance				Warning			
		Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface	(°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-155.30		-119.6	-55.0	131.6					
100.0	100.0	100.0	100.0	0.1	0.1	-155.30		-119.6	-55.0	131.6	131.4	0.17	780.729		
200.0	200.0	200.0	200.0	0.3	0.3	-155.30		-119.6	-55.0	131.6	131.0	0.62	212.926		
300.0	300.0	300.0	300.0	0.5	0.5	-155.30		-119.6	-55.0	131.6	130.5	1.07	123.273		
400.0	400.0	400.0	400.0	0.8	0.8	-155.30		-119.6	-55.0	131.6	130.1	1.52	86.748		
500.0	500.0	500.0	500.0	1.0	1.0	-155.30		-119.6	-55.0	131.6	129.6	1.97	66.920		
600.0	600.0	600.0	600.0	1.2	1.2	-155.30		-119.6	-55.0	131.6	129.2	2.42	54.470		
700.0	700.0	700.0	700.0	1.4	1.4	-155.30		-119.6	-55.0	131.6	128.7	2.87	45.925		
800.0	800.0	800.0	800.0	1.7	1.7	-155.30		-119.6	-55.0	131.6	128.3	3.32	39.698		
900.0	900.0	900.0	900.0	1.9	1.9	-155.30		-119.6	-55.0	131.6	127.8	3.76	34.958		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-155.30		-119.6	-55.0	131.6	127.4	4.21	31.229		
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.3	-155.30		-119.6	-55.0	131.6	126.9	4.66	28.219		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-155.30		-119.6	-55.0	131.6	126.5	5.11	25.738		
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	-155.30		-119.6	-55.0	131.6	126.0	5.56	23.658		
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	-155.30		-119.6	-55.0	131.6	125.6	6.01	21.890		
1,500.0	1,500.0	1,500.0	1,500.0	3.2	3.2	-155.30		-119.6	-55.0	131.6	125.1	6.46	20.367		
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	-155.30		-119.6	-55.0	131.6	124.7	6.91	19.042		
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	-155.30		-119.6	-55.0	131.6	124.3	7.36	17.879		
1,800.0	1,800.0	1,800.0	1,800.0	3.9	3.9	-155.30		-119.6	-55.0	131.6	123.8	7.81	16.850		
1,900.0	1,900.0	1,900.0	1,900.0	4.1	4.1	-155.30		-119.6	-55.0	131.6	123.4	8.26	15.933		
2,000.0	2,000.0	2,000.0	2,000.0	4.4	4.4	-155.30		-119.6	-55.0	131.6	122.9	8.71	15.111		
2,100.0	2,100.0	2,100.0	2,100.0	4.6	4.6	-155.30		-119.6	-55.0	131.6	122.5	9.16	14.369		
2,200.0	2,200.0	2,200.0	2,200.0	4.8	4.8	-155.30		-119.6	-55.0	131.6	122.0	9.61	13.697		
2,300.0	2,300.0	2,300.0	2,300.0	5.0	5.0	-155.30		-119.6	-55.0	131.6	121.6	10.06	13.085		
2,400.0	2,400.0	2,400.0	2,400.0	5.3	5.3	-155.30		-119.6	-55.0	131.6	121.1	10.51	12.525		
2,500.0	2,500.0	2,500.0	2,500.0	5.5	5.5	-155.30		-119.6	-55.0	131.6	120.7	10.96	12.011 CC, ES		
2,600.0	2,600.0	2,596.8	2,596.8	5.7	5.7	114.83		-121.1	-54.4	133.5	122.2	11.36	11.757		
2,650.0	2,649.9	2,645.1	2,645.1	5.8	5.8	114.99		-123.0	-53.7	136.0	124.4	11.54	11.779		
2,700.0	2,699.9	2,694.9	2,694.7	5.9	5.8	115.20		-125.5	-52.9	138.9	127.2	11.73	11.842		
2,800.0	2,799.7	2,794.7	2,794.4	6.1	6.0	115.61		-130.4	-51.1	144.8	132.7	12.11	11.958		
2,900.0	2,899.6	2,894.5	2,894.1	6.3	6.2	115.98		-135.3	-49.3	150.8	138.3	12.50	12.060		
3,000.0	2,999.5	2,994.3	2,993.8	6.5	6.4	116.32		-140.2	-47.5	156.7	143.8	12.89	12.151		
3,100.0	3,099.3	3,094.2	3,093.5	6.7	6.6	116.64		-145.1	-45.7	162.6	149.3	13.30	12.231		
3,200.0	3,199.2	3,194.0	3,193.2	7.0	6.8	116.93		-150.0	-43.9	168.6	154.9	13.70	12.301		
3,300.0	3,299.0	3,293.8	3,292.8	7.2	7.0	117.21		-154.9	-42.1	174.5	160.4	14.11	12.364		
3,400.0	3,398.9	3,393.6	3,392.5	7.4	7.2	117.46		-159.8	-40.3	180.4	165.9	14.53	12.419		
3,501.2	3,500.0	3,494.7	3,493.4	7.6	7.4	117.71		-164.8	-38.5	186.5	171.5	14.96	12.468		
3,600.0	3,598.7	3,597.6	3,596.3	7.8	7.6	117.90		-168.3	-37.2	190.5	175.1	15.38	12.389		
3,651.2	3,649.9	3,651.2	3,649.9	7.9	7.7	-152.07		-168.8	-37.1	191.1	175.5	15.51	12.315		
3,700.0	3,698.7	3,700.0	3,698.7	8.0	7.8	-152.07		-168.8	-37.1	191.1	175.3	15.72	12.153		
3,800.0	3,798.7	3,800.0	3,798.7	8.2	8.0	-152.07		-168.8	-37.1	191.1	174.9	16.16	11.821		
3,900.0	3,898.7	3,900.0	3,898.7	8.5	8.2	-152.07		-168.8	-37.1	191.1	174.5	16.60	11.507		
4,000.0	3,998.7	4,000.0	3,998.7	8.7	8.5	-152.07		-168.8	-37.1	191.1	174.0	17.04	11.209		
4,100.0	4,098.7	4,100.0	4,098.7	8.9	8.7	-152.07		-168.8	-37.1	191.1	173.6	17.49	10.926		
4,200.0	4,198.7	4,200.0	4,198.7	9.1	8.9	-152.07		-168.8	-37.1	191.1	173.1	17.93	10.657		
4,300.0	4,298.7	4,300.0	4,298.7	9.4	9.1	-152.07		-168.8	-37.1	191.1	172.7	18.37	10.400		
4,400.0	4,398.7	4,400.0	4,398.7	9.6	9.3	-152.07		-168.8	-37.1	191.1	172.2	18.81	10.155		
4,500.0	4,498.7	4,500.0	4,498.7	9.8	9.6	-152.07		-168.8	-37.1	191.1	171.8	19.26	9.922		
4,600.0	4,598.7	4,600.0	4,598.7	10.0	9.8	-152.07		-168.8	-37.1	191.1	171.4	19.70	9.698		
4,700.0	4,698.7	4,700.0	4,698.7	10.2	10.0	-152.07		-168.8	-37.1	191.1	170.9	20.14	9.485		
4,800.0	4,798.7	4,800.0	4,798.7	10.5	10.2	-152.07		-168.8	-37.1	191.1	170.5	20.59	9.280		
4,900.0	4,898.7	4,900.0	4,898.7	10.7	10.4	-152.07		-168.8	-37.1	191.1	170.0	21.03	9.084		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Oasis Petroleum	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2T2
Project:	Indian Hills	TVD Reference:	WELL @ 2078.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	MD Reference:	WELL @ 2078.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Kline Federal 5300 11-18 2T2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #6	Offset TVD Reference:	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 21-18 5B - Wellbore #1 - Design #6												Offset Site Error:	0.0 usft
Survey Program: 0-MWD				Distance								Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis				Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface		Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
5,000.0	4,998.7	5,000.0	4,998.7	10.9	10.7	-152.07		-168.8	-37.1	191.1	169.6	21.48	8.896
5,100.0	5,098.7	5,100.0	5,098.7	11.1	10.9	-152.07		-168.8	-37.1	191.1	169.1	21.92	8.716
5,200.0	5,198.7	5,200.0	5,198.7	11.4	11.1	-152.07		-168.8	-37.1	191.1	168.7	22.37	8.542
5,300.0	5,298.7	5,300.0	5,298.7	11.6	11.3	-152.07		-168.8	-37.1	191.1	168.2	22.81	8.376
5,400.0	5,398.7	5,400.0	5,398.7	11.8	11.6	-152.07		-168.8	-37.1	191.1	167.8	23.26	8.215
5,500.0	5,498.7	5,500.0	5,498.7	12.0	11.8	-152.07		-168.8	-37.1	191.1	167.4	23.70	8.061
5,600.0	5,598.7	5,600.0	5,598.7	12.2	12.0	-152.07		-168.8	-37.1	191.1	166.9	24.15	7.912
5,700.0	5,698.7	5,700.0	5,698.7	12.5	12.2	-152.07		-168.8	-37.1	191.1	166.5	24.59	7.769
5,800.0	5,798.7	5,800.0	5,798.7	12.7	12.4	-152.07		-168.8	-37.1	191.1	166.0	25.04	7.631
5,900.0	5,898.7	5,900.0	5,898.7	12.9	12.7	-152.07		-168.8	-37.1	191.1	165.6	25.48	7.497
6,000.0	5,998.7	6,000.0	5,998.7	13.1	12.9	-152.07		-168.8	-37.1	191.1	165.1	25.93	7.368
6,100.0	6,098.7	6,100.0	6,098.7	13.4	13.1	-152.07		-168.8	-37.1	191.1	164.7	26.38	7.243
6,200.0	6,198.7	6,200.0	6,198.7	13.6	13.3	-152.07		-168.8	-37.1	191.1	164.2	26.82	7.123
6,300.0	6,298.7	6,300.0	6,298.7	13.8	13.6	-152.07		-168.8	-37.1	191.1	163.8	27.27	7.006
6,400.0	6,398.7	6,400.0	6,398.7	14.0	13.8	-152.07		-168.8	-37.1	191.1	163.3	27.72	6.893
6,500.0	6,498.7	6,500.0	6,498.7	14.3	14.0	-152.07		-168.8	-37.1	191.1	162.9	28.16	6.784
6,600.0	6,598.7	6,600.0	6,598.7	14.5	14.2	-152.07		-168.8	-37.1	191.1	162.4	28.61	6.678
6,700.0	6,698.7	6,700.0	6,698.7	14.7	14.4	-152.07		-168.8	-37.1	191.1	162.0	29.06	6.576
6,800.0	6,798.7	6,800.0	6,798.7	14.9	14.7	-152.07		-168.8	-37.1	191.1	161.6	29.50	6.476
6,900.0	6,898.7	6,900.0	6,898.7	15.2	14.9	-152.07		-168.8	-37.1	191.1	161.1	29.95	6.379
7,000.0	6,998.7	7,000.0	6,998.7	15.4	15.1	-152.07		-168.8	-37.1	191.1	160.7	30.40	6.286
7,100.0	7,098.7	7,100.0	7,098.7	15.6	15.3	-152.07		-168.8	-37.1	191.1	160.2	30.84	6.194
7,200.0	7,198.7	7,200.0	7,198.7	15.8	15.6	-152.07		-168.8	-37.1	191.1	159.8	31.29	6.106
7,300.0	7,298.7	7,300.0	7,298.7	16.0	15.8	-152.07		-168.8	-37.1	191.1	159.3	31.74	6.020
7,400.0	7,398.7	7,400.0	7,398.7	16.3	16.0	-152.07		-168.8	-37.1	191.1	158.9	32.19	5.936
7,500.0	7,498.7	7,500.0	7,498.7	16.5	16.2	-152.07		-168.8	-37.1	191.1	158.4	32.63	5.855
7,600.0	7,598.7	7,600.0	7,598.7	16.7	16.5	-152.07		-168.8	-37.1	191.1	158.0	33.08	5.776
7,700.0	7,698.7	7,700.0	7,698.7	16.9	16.7	-152.07		-168.8	-37.1	191.1	157.5	33.53	5.699
7,800.0	7,798.7	7,800.0	7,798.7	17.2	16.9	-152.07		-168.8	-37.1	191.1	157.1	33.98	5.623
7,900.0	7,898.7	7,900.0	7,898.7	17.4	17.1	-152.07		-168.8	-37.1	191.1	156.6	34.42	5.550
8,000.0	7,998.7	8,000.0	7,998.7	17.6	17.3	-152.07		-168.8	-37.1	191.1	156.2	34.87	5.479
8,100.0	8,098.7	8,100.0	8,098.7	17.8	17.6	-152.07		-168.8	-37.1	191.1	155.7	35.32	5.410
8,200.0	8,198.7	8,200.0	8,198.7	18.1	17.8	-152.07		-168.8	-37.1	191.1	155.3	35.77	5.342
8,300.0	8,298.7	8,300.0	8,298.7	18.3	18.0	-152.07		-168.8	-37.1	191.1	154.8	36.21	5.276
8,400.0	8,398.7	8,400.0	8,398.7	18.5	18.2	-152.07		-168.8	-37.1	191.1	154.4	36.66	5.211
8,500.0	8,498.7	8,500.0	8,498.7	18.7	18.5	-152.07		-168.8	-37.1	191.1	153.9	37.11	5.149
8,600.0	8,598.7	8,600.0	8,598.7	19.0	18.7	-152.07		-168.8	-37.1	191.1	153.5	37.56	5.087
8,700.0	8,698.7	8,700.0	8,698.7	19.2	18.9	-152.07		-168.8	-37.1	191.1	153.1	38.01	5.027
8,800.0	8,798.7	8,800.0	8,798.7	19.4	19.1	-152.07		-168.8	-37.1	191.1	152.6	38.45	4.969
8,900.0	8,898.7	8,900.0	8,898.7	19.6	19.4	-152.07		-168.8	-37.1	191.1	152.2	38.90	4.911
9,000.0	8,998.7	9,000.0	8,998.7	19.9	19.6	-152.07		-168.8	-37.1	191.1	151.7	39.35	4.855
9,100.0	9,098.7	9,100.0	9,098.7	20.1	19.8	-152.07		-168.8	-37.1	191.1	151.3	39.80	4.801
9,200.0	9,198.7	9,200.0	9,198.7	20.3	20.0	-152.07		-168.8	-37.1	191.1	150.8	40.25	4.747
9,300.0	9,298.7	9,300.0	9,298.7	20.5	20.3	-152.07		-168.8	-37.1	191.1	150.4	40.69	4.695
9,400.0	9,398.7	9,400.0	9,398.7	20.8	20.5	-152.07		-168.8	-37.1	191.1	149.9	41.14	4.644
9,500.0	9,498.7	9,500.0	9,498.7	21.0	20.7	-152.07		-168.8	-37.1	191.1	149.5	41.59	4.594
9,600.0	9,598.7	9,600.0	9,598.7	21.2	20.9	-152.07		-168.8	-37.1	191.1	149.0	42.04	4.545
9,700.0	9,698.7	9,700.0	9,698.7	21.4	21.2	-152.07		-168.8	-37.1	191.1	148.6	42.49	4.497
9,800.0	9,798.7	9,800.0	9,798.7	21.6	21.4	-152.07		-168.8	-37.1	191.1	148.1	42.93	4.450
9,900.0	9,898.7	9,900.0	9,898.7	21.9	21.6	-152.07		-168.8	-37.1	191.1	147.7	43.38	4.404
10,000.0	9,998.7	10,000.0	9,998.7	22.1	21.8	-152.07		-168.8	-37.1	191.1	147.2	43.83	4.359
10,100.0	10,098.7	10,100.0	10,098.7	22.3	22.0	-152.07		-168.8	-37.1	191.1	146.8	44.28	4.315

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Gyrodata, Inc.
Anticollision Report



Company:	Oasis Petroleum	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2T2
Project:	Indian Hills	TVD Reference:	WELL @ 2078.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	MD Reference:	WELL @ 2078.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Kline Federal 5300 11-18 2T2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #6	Offset TVD Reference:	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 21-18 5B - Wellbore #1 - Design #6												Offset Site Error:	0.0 usft
Survey Program: 0-MWD				Distance								Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis				Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface		Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
10,200.0	10,198.7	10,200.0	10,198.7	22.5	22.3	-152.07		-168.8	-37.1	191.1	146.3	44.73	4.272
10,259.7	10,258.4	10,259.7	10,258.4	22.7	22.4	-152.07		-168.8	-37.1	191.1	146.1	45.00	4.246
10,300.0	10,298.7	10,295.4	10,294.0	22.8	22.5	-152.20		-169.2	-36.8	191.4	146.2	45.16	4.238
10,363.3	10,362.0	10,347.0	10,345.4	22.9	22.6	-153.48		-173.7	-34.3	194.8	149.4	45.39	4.292
10,375.0	10,373.7	10,356.4	10,354.7	22.9	22.6	86.05		-175.0	-33.5	195.9	150.4	45.52	4.303
10,400.0	10,398.7	10,375.0	10,372.9	23.0	22.6	85.13		-178.1	-31.7	198.5	152.9	45.60	4.353
10,425.0	10,423.5	10,396.3	10,393.6	23.0	22.7	84.19		-182.4	-29.2	201.7	156.0	45.70	4.414
10,450.0	10,448.2	10,416.0	10,412.6	23.1	22.7	83.36		-187.1	-26.5	205.3	159.5	45.78	4.485
10,475.0	10,472.7	10,435.6	10,431.2	23.1	22.8	82.59		-192.4	-23.5	209.4	163.6	45.87	4.566
10,500.0	10,496.8	10,455.1	10,449.4	23.2	22.8	81.88		-198.3	-20.0	214.0	168.0	45.96	4.656
10,525.0	10,520.6	10,475.0	10,467.8	23.3	22.8	81.23		-205.1	-16.2	218.9	172.9	46.05	4.755
10,550.0	10,544.0	10,493.5	10,484.5	23.3	22.9	80.64		-211.9	-12.2	224.3	178.2	46.13	4.862
10,575.0	10,566.8	10,512.4	10,501.3	23.4	22.9	80.10		-219.5	-7.8	230.0	183.8	46.21	4.977
10,600.0	10,589.1	10,531.2	10,517.6	23.5	23.0	79.61		-227.5	-3.2	236.1	189.8	46.29	5.100
10,625.0	10,610.8	10,550.0	10,533.5	23.5	23.0	79.17		-236.2	1.8	242.5	196.1	46.38	5.229
10,650.0	10,631.8	10,568.3	10,548.6	23.6	23.1	78.76		-245.1	7.0	249.3	202.8	46.46	5.365
10,675.0	10,652.0	10,586.6	10,563.3	23.7	23.1	78.38		-254.5	12.4	256.3	209.8	46.55	5.506
10,700.0	10,671.5	10,604.7	10,577.5	23.8	23.2	78.03		-264.3	18.1	263.7	217.0	46.64	5.653
10,725.0	10,690.1	10,625.0	10,592.8	23.9	23.3	77.78		-275.8	24.7	271.3	224.6	46.75	5.803
10,750.0	10,707.8	10,640.5	10,604.1	24.0	23.3	77.38		-285.0	30.0	279.2	232.3	46.85	5.960
10,775.0	10,724.5	10,658.2	10,616.6	24.1	23.4	77.09		-295.8	36.3	287.3	240.4	46.96	6.119
10,800.0	10,740.3	10,675.0	10,628.1	24.3	23.5	76.77		-306.5	42.4	295.7	248.7	47.08	6.281
10,825.0	10,755.0	10,693.1	10,639.9	24.4	23.5	76.52		-318.4	49.3	304.4	257.1	47.23	6.445
10,850.0	10,768.7	10,710.4	10,650.7	24.6	23.6	76.24		-330.1	56.0	313.2	265.8	47.38	6.611
10,875.0	10,781.2	10,725.0	10,659.4	24.8	23.7	75.83		-340.2	61.9	322.3	274.8	47.53	6.781
10,900.0	10,792.6	10,744.6	10,670.6	25.0	23.8	75.69		-354.2	70.0	331.5	283.8	47.74	6.945
10,925.0	10,802.8	10,761.6	10,679.7	25.2	23.9	75.42		-366.6	77.1	341.0	293.0	47.94	7.112
10,950.0	10,811.8	10,778.5	10,688.2	25.4	24.0	75.14		-379.3	84.4	350.5	302.4	48.16	7.278
10,975.0	10,819.6	10,795.4	10,696.2	25.7	24.1	74.86		-392.1	91.8	360.3	311.9	48.41	7.443
11,000.0	10,826.1	10,812.2	10,703.7	25.9	24.2	74.58		-405.1	99.4	370.2	321.5	48.67	7.606
11,025.0	10,831.3	10,828.9	10,710.6	26.2	24.3	74.30		-418.3	107.0	380.2	331.2	48.95	7.767
11,050.0	10,835.3	10,845.7	10,717.0	26.5	24.4	74.02		-431.8	114.7	390.3	341.1	49.26	7.924
11,075.0	10,837.9	10,862.4	10,722.8	26.8	24.6	73.74		-445.3	122.6	400.5	351.0	49.58	8.078
11,100.0	10,839.3	10,879.2	10,728.1	27.1	24.7	73.46		-459.1	130.5	410.8	360.9	49.93	8.228
11,110.8	10,839.5	10,886.4	10,730.2	27.2	24.8	73.34		-465.1	134.0	415.3	365.2	50.09	8.292
11,125.8	10,839.5	10,896.6	10,733.0	27.4	24.8	73.94		-473.6	138.9	421.6	371.2	50.45	8.357
11,200.0	10,839.9	10,947.6	10,743.7	28.5	25.3	76.13		-516.8	163.8	455.8	403.6	52.15	8.740
11,300.0	10,840.5	11,016.9	10,749.7	30.1	26.0	77.72		-576.5	198.3	508.9	454.5	54.36	9.362
11,400.0	10,841.0	11,121.3	10,750.3	31.9	27.2	78.93		-665.9	252.1	566.5	509.6	56.92	9.952
11,500.0	10,841.5	11,239.1	10,750.9	33.9	28.8	80.04		-763.2	318.5	623.8	564.0	59.76	10.438
11,600.0	10,842.1	11,363.2	10,751.6	36.0	30.7	80.98		-861.1	394.8	680.3	617.5	62.79	10.835
11,700.0	10,842.6	11,494.4	10,752.4	38.1	32.9	81.78		-958.9	482.3	735.7	669.7	65.99	11.149
11,800.0	10,843.2	11,633.6	10,753.2	40.4	35.6	82.47		-1,055.8	582.1	789.7	720.3	69.39	11.381
11,900.0	10,843.7	11,781.7	10,754.1	42.7	38.6	83.07		-1,150.7	695.7	841.8	768.8	72.95	11.539
12,000.0	10,844.2	11,939.6	10,755.0	45.0	42.0	83.60		-1,241.8	824.6	891.5	814.8	76.71	11.623
12,100.0	10,844.8	12,108.2	10,756.0	47.4	45.7	84.07		-1,327.1	970.1	938.4	857.8	80.65	11.637
12,110.4	10,844.8	12,126.5	10,756.2	47.6	46.1	84.11		-1,335.5	986.3	943.1	862.1	81.08	11.632
12,200.0	10,845.3	12,290.1	10,757.1	49.8	49.9	84.56		-1,404.2	1,134.7	980.0	893.4	86.62	11.314
12,300.0	10,845.8	12,487.1	10,758.3	52.2	54.5	84.93		-1,469.7	1,320.4	1,012.4	918.8	93.56	10.821
12,400.0	10,846.3	12,696.3	10,759.5	54.7	59.3	85.17		-1,517.9	1,523.9	1,034.6	933.4	101.20	10.224
12,500.0	10,846.8	12,913.7	10,760.7	57.3	64.3	85.29		-1,544.1	1,739.5	1,045.9	936.5	109.34	9.565
12,600.0	10,847.4	13,077.7	10,761.6	59.9	68.0	85.30		-1,548.2	1,903.5	1,047.0	930.7	116.26	9.005

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Gyrodata, Inc.
Anticollision Report



Company:	Oasis Petroleum	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2T2
Project:	Indian Hills	TVD Reference:	WELL @ 2078.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	MD Reference:	WELL @ 2078.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Kline Federal 5300 11-18 2T2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #6	Offset TVD Reference:	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 21-18 5B - Wellbore #1 - Design #6													Offset Site Error:	0.0 usft		
Survey Program: 0-MWD															Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Reference Offset		Semi Major Axis			Distance							Warning		
		Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor				
12,700.0	10,847.9	13,177.7	10,762.1	62.5	70.2	85.30	-1,548.4	2,003.5	1,046.4	924.8	121.57	8.608				
12,800.0	10,848.4	13,277.7	10,762.6	65.1	72.6	85.29	-1,548.7	2,103.5	1,045.9	918.9	126.93	8.240				
12,900.0	10,848.9	13,377.7	10,763.2	67.8	74.9	85.29	-1,548.9	2,203.5	1,045.3	913.0	132.33	7.900				
13,000.0	10,849.5	13,477.7	10,763.7	70.4	77.3	85.29	-1,549.2	2,303.5	1,044.8	907.0	137.76	7.584				
13,100.0	10,850.0	13,577.7	10,764.2	73.1	79.8	85.29	-1,549.5	2,403.5	1,044.3	901.0	143.23	7.291				
13,200.0	10,850.5	13,677.7	10,764.7	75.9	82.2	85.28	-1,549.7	2,503.5	1,043.7	895.0	148.73	7.018				
13,300.0	10,851.0	13,777.7	10,765.3	78.6	84.7	85.28	-1,550.0	2,603.5	1,043.2	888.9	154.25	6.763				
13,400.0	10,851.6	13,877.7	10,765.8	81.3	87.3	85.28	-1,550.3	2,703.5	1,042.6	882.9	159.79	6.525				
13,500.0	10,852.1	13,977.7	10,766.3	84.1	89.8	85.28	-1,550.5	2,803.5	1,042.1	876.8	165.36	6.302				
13,600.0	10,852.6	14,077.7	10,766.8	86.9	92.4	85.27	-1,550.8	2,903.5	1,041.6	870.6	170.94	6.093				
13,700.0	10,853.1	14,177.7	10,767.3	89.6	95.0	85.27	-1,551.1	3,003.5	1,041.0	864.5	176.54	5.897				
13,800.0	10,853.7	14,277.7	10,767.9	92.4	97.6	85.27	-1,551.3	3,103.5	1,040.5	858.3	182.15	5.712				
13,900.0	10,854.2	14,377.7	10,768.4	95.2	100.2	85.27	-1,551.6	3,203.5	1,040.0	852.2	187.78	5.538				
14,000.0	10,854.7	14,477.7	10,768.9	98.0	102.9	85.26	-1,551.9	3,303.5	1,039.4	846.0	193.42	5.374				
14,100.0	10,855.2	14,577.7	10,769.4	100.8	105.5	85.26	-1,552.1	3,403.5	1,038.9	839.8	199.08	5.218				
14,200.0	10,855.7	14,677.7	10,770.0	103.7	108.2	85.26	-1,552.4	3,503.5	1,038.3	833.6	204.74	5.071				
14,300.0	10,856.3	14,777.7	10,770.5	106.5	110.9	85.26	-1,552.6	3,603.5	1,037.8	827.4	210.41	4.932				
14,400.0	10,856.8	14,877.7	10,771.0	109.3	113.6	85.25	-1,552.9	3,703.5	1,037.3	821.2	216.10	4.800				
14,500.0	10,857.3	14,977.7	10,771.5	112.2	116.3	85.25	-1,553.2	3,803.4	1,036.7	814.9	221.79	4.674				
14,600.0	10,857.8	15,077.7	10,772.1	115.0	119.0	85.25	-1,553.4	3,903.4	1,036.2	808.7	227.49	4.555				
14,700.0	10,858.4	15,177.7	10,772.6	117.9	121.8	85.25	-1,553.7	4,003.4	1,035.7	802.5	233.19	4.441				
14,800.0	10,858.9	15,277.7	10,773.1	120.7	124.5	85.24	-1,554.0	4,103.4	1,035.1	796.2	238.90	4.333				
14,900.0	10,859.4	15,377.7	10,773.6	123.6	127.3	85.24	-1,554.2	4,203.4	1,034.6	790.0	244.62	4.229				
15,000.0	10,859.9	15,477.7	10,774.2	126.4	130.0	85.24	-1,554.5	4,303.4	1,034.0	783.7	250.34	4.130				
15,100.0	10,860.5	15,577.7	10,774.7	129.3	132.8	85.24	-1,554.8	4,403.4	1,033.5	777.4	256.07	4.036				
15,200.0	10,861.0	15,677.7	10,775.2	132.1	135.6	85.23	-1,555.0	4,503.4	1,033.0	771.2	261.81	3.946				
15,300.0	10,861.5	15,777.7	10,775.7	135.0	138.3	85.23	-1,555.3	4,603.4	1,032.4	764.9	267.55	3.859				
15,400.0	10,862.0	15,877.7	10,776.3	137.9	141.1	85.23	-1,555.5	4,703.4	1,031.9	758.6	273.29	3.776				
15,500.0	10,862.6	15,977.7	10,776.8	140.7	143.9	85.23	-1,555.8	4,803.4	1,031.3	752.3	279.04	3.696				
15,600.0	10,863.1	16,077.7	10,777.3	143.6	146.7	85.22	-1,556.1	4,903.4	1,030.8	746.0	284.79	3.620				
15,700.0	10,863.6	16,177.7	10,777.8	146.5	149.5	85.22	-1,556.3	5,003.4	1,030.3	739.7	290.54	3.546				
15,800.0	10,864.1	16,277.7	10,778.3	149.4	152.3	85.22	-1,556.6	5,103.4	1,029.7	733.4	296.30	3.475				
15,900.0	10,864.7	16,377.7	10,778.9	152.3	155.1	85.22	-1,556.9	5,203.4	1,029.2	727.1	302.06	3.407				
16,000.0	10,865.2	16,477.7	10,779.4	155.1	158.0	85.21	-1,557.1	5,303.4	1,028.7	720.8	307.82	3.342				
16,100.0	10,865.7	16,577.7	10,779.9	158.0	160.8	85.21	-1,557.4	5,403.4	1,028.1	714.5	313.59	3.279				
16,200.0	10,866.2	16,677.7	10,780.4	160.9	163.6	85.21	-1,557.7	5,503.4	1,027.6	708.2	319.36	3.218				
16,300.0	10,866.7	16,777.7	10,781.0	163.8	166.4	85.21	-1,557.9	5,603.4	1,027.0	701.9	325.13	3.159				
16,400.0	10,867.3	16,877.7	10,781.5	166.7	169.3	85.20	-1,558.2	5,703.4	1,026.5	695.6	330.90	3.102				
16,500.0	10,867.8	16,977.7	10,782.0	169.6	172.1	85.20	-1,558.5	5,803.4	1,026.0	689.3	336.68	3.047				
16,600.0	10,868.3	17,077.7	10,782.5	172.5	174.9	85.20	-1,558.7	5,903.4	1,025.4	683.0	342.46	2.994				
16,700.0	10,868.8	17,177.7	10,783.1	175.4	177.8	85.20	-1,559.0	6,003.4	1,024.9	676.6	348.24	2.943				
16,800.0	10,869.4	17,277.7	10,783.6	178.3	180.6	85.19	-1,559.2	6,103.4	1,024.3	670.3	354.02	2.893				
16,900.0	10,869.9	17,377.7	10,784.1	181.2	183.5	85.19	-1,559.5	6,203.4	1,023.8	664.0	359.81	2.845				
17,000.0	10,870.4	17,477.7	10,784.6	184.1	186.3	85.19	-1,559.8	6,303.4	1,023.3	657.7	365.59	2.799				
17,100.0	10,870.9	17,577.7	10,785.2	187.0	189.2	85.19	-1,560.0	6,403.4	1,022.7	651.4	371.38	2.754				
17,200.0	10,871.5	17,677.7	10,785.7	189.9	192.0	85.18	-1,560.3	6,503.4	1,022.2	645.0	377.17	2.710				
17,300.0	10,872.0	17,777.7	10,786.2	192.8	194.9	85.18	-1,560.6	6,603.4	1,021.7	638.7	382.96	2.668				
17,400.0	10,872.5	17,877.7	10,786.7	195.7	197.8	85.18	-1,560.8	6,703.4	1,021.1	632.4	388.75	2.627				
17,500.0	10,873.0	17,977.7	10,787.2	198.6	200.6	85.18	-1,561.1	6,803.4	1,020.6	626.0	394.55	2.587				
17,600.0	10,873.6	18,077.7	10,787.8	201.5	203.5	85.17	-1,561.4	6,903.3	1,020.0	619.7	400.34	2.548				
17,700.0	10,874.1	18,177.7	10,788.3	204.4	206.3	85.17	-1,561.6	7,003.3	1,019.5	613.4	406.14	2.510				
17,800.0	10,874.6	18,277.7	10,788.8	207.3	209.2	85.17	-1,561.9	7,103.3	1,019.0	607.0	411.94	2.474				

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Oasis Petroleum	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2T2
Project:	Indian Hills	TVD Reference:	WELL @ 2078.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	MD Reference:	WELL @ 2078.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Kline Federal 5300 11-18 2T2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #6	Offset TVD Reference:	Offset Datum

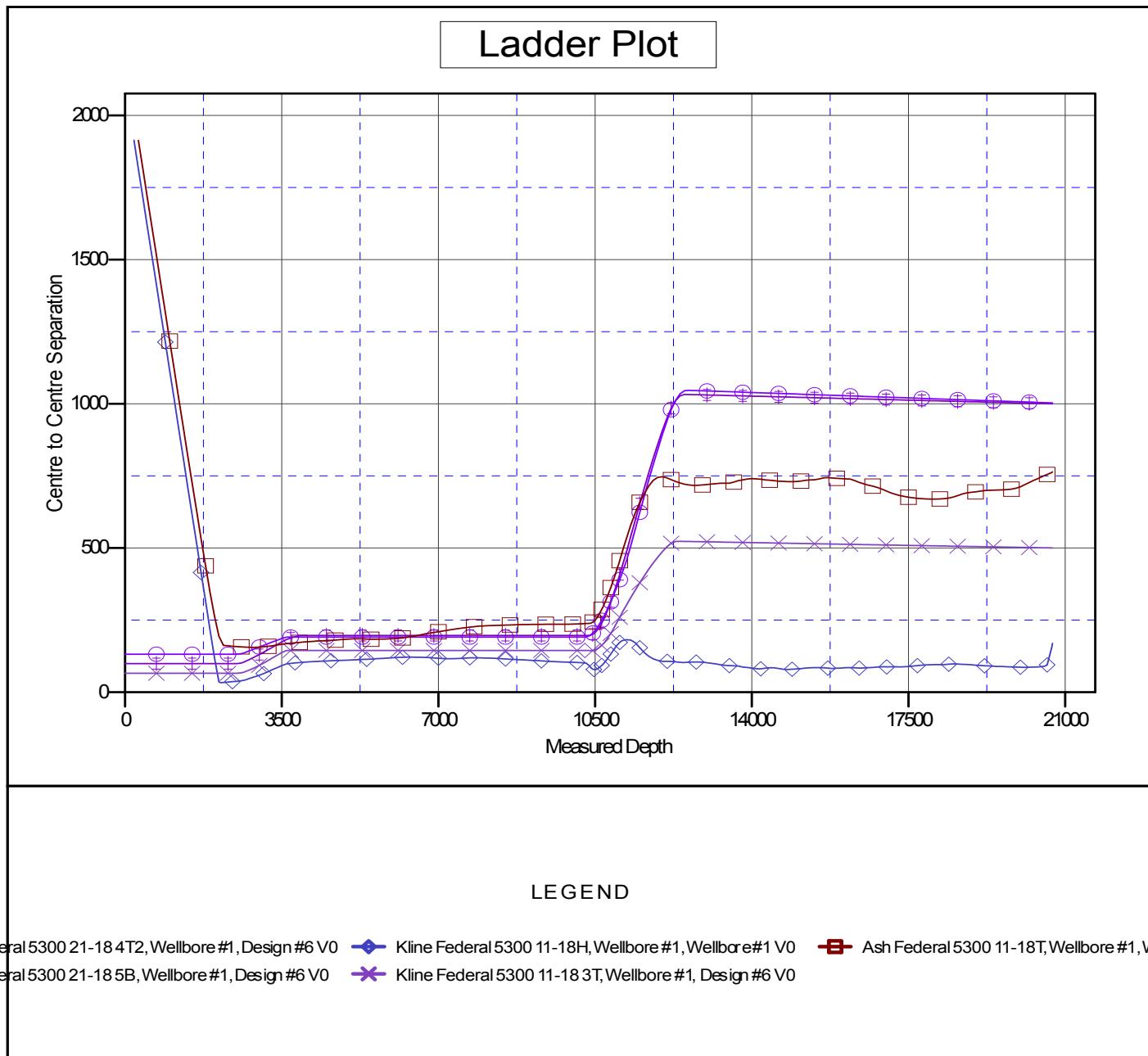
Offset Design 153N-100W-17/18 - Kline Federal 5300 21-18 5B - Wellbore #1 - Design #6												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis				Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
17,900.0	10,875.1	18,377.7	10,789.3	210.2	212.1	85.17		-1,562.2	7,203.3	1,018.4	600.7	417.74	2.438
18,000.0	10,875.6	18,477.7	10,789.9	213.1	215.0	85.16		-1,562.4	7,303.3	1,017.9	594.4	423.54	2.403
18,100.0	10,876.2	18,577.7	10,790.4	216.0	217.8	85.16		-1,562.7	7,403.3	1,017.4	588.0	429.34	2.370
18,200.0	10,876.7	18,677.7	10,790.9	218.9	220.7	85.16		-1,562.9	7,503.3	1,016.8	581.7	435.14	2.337
18,300.0	10,877.2	18,777.7	10,791.4	221.8	223.6	85.16		-1,563.2	7,603.3	1,016.3	575.3	440.94	2.305
18,400.0	10,877.7	18,877.7	10,792.0	224.7	226.5	85.15		-1,563.5	7,703.3	1,015.7	569.0	446.75	2.274
18,500.0	10,878.3	18,977.7	10,792.5	227.6	229.3	85.15		-1,563.7	7,803.3	1,015.2	562.7	452.55	2.243
18,600.0	10,878.8	19,077.7	10,793.0	230.5	232.2	85.15		-1,564.0	7,903.3	1,014.7	556.3	458.36	2.214
18,700.0	10,879.3	19,177.7	10,793.5	233.4	235.1	85.15		-1,564.3	8,003.3	1,014.1	550.0	464.16	2.185
18,800.0	10,879.8	19,277.7	10,794.1	236.4	238.0	85.14		-1,564.5	8,103.3	1,013.6	543.6	469.97	2.157
18,900.0	10,880.4	19,377.7	10,794.6	239.3	240.9	85.14		-1,564.8	8,203.3	1,013.0	537.3	475.78	2.129
19,000.0	10,880.9	19,477.7	10,795.1	242.2	243.7	85.14		-1,565.1	8,303.3	1,012.5	530.9	481.59	2.102
19,100.0	10,881.4	19,577.7	10,795.6	245.1	246.6	85.14		-1,565.3	8,403.3	1,012.0	524.6	487.40	2.076
19,200.0	10,881.9	19,677.7	10,796.1	248.0	249.5	85.13		-1,565.6	8,503.3	1,011.4	518.2	493.21	2.051
19,300.0	10,882.5	19,777.7	10,796.7	250.9	252.4	85.13		-1,565.8	8,603.3	1,010.9	511.9	499.02	2.026
19,400.0	10,883.0	19,877.6	10,797.2	253.8	255.3	85.13		-1,566.1	8,703.3	1,010.4	505.5	504.83	2.001
19,500.0	10,883.5	19,977.6	10,797.7	256.7	258.2	85.13		-1,566.4	8,803.3	1,009.8	499.2	510.64	1.978
19,600.0	10,884.0	20,077.6	10,798.2	259.7	261.1	85.12		-1,566.6	8,903.3	1,009.3	492.8	516.45	1.954
19,700.0	10,884.5	20,177.6	10,798.8	262.6	264.0	85.12		-1,566.9	9,003.3	1,008.7	486.5	522.27	1.931
19,800.0	10,885.1	20,277.6	10,799.3	265.5	266.9	85.12		-1,567.2	9,103.3	1,008.2	480.1	528.08	1.909
19,900.0	10,885.6	20,377.6	10,799.8	268.4	269.7	85.11		-1,567.4	9,203.3	1,007.7	473.8	533.89	1.887
20,000.0	10,886.1	20,477.6	10,800.3	271.3	272.6	85.11		-1,567.7	9,303.3	1,007.1	467.4	539.71	1.866
20,100.0	10,886.6	20,577.6	10,800.9	274.2	275.5	85.11		-1,568.0	9,403.3	1,006.6	461.1	545.52	1.845
20,200.0	10,887.2	20,677.6	10,801.4	277.2	278.4	85.11		-1,568.2	9,503.3	1,006.1	454.7	551.34	1.825
20,300.0	10,887.7	20,777.6	10,801.9	280.1	281.3	85.10		-1,568.5	9,603.3	1,005.5	448.4	557.15	1.805
20,400.0	10,888.2	20,877.6	10,802.4	283.0	284.2	85.10		-1,568.8	9,703.3	1,005.0	442.0	562.97	1.785
20,500.0	10,888.7	20,977.6	10,803.0	285.9	287.1	85.10		-1,569.0	9,803.3	1,004.4	435.7	568.79	1.766
20,600.0	10,889.3	21,077.6	10,803.5	288.8	290.0	85.10		-1,569.3	9,903.3	1,003.9	429.3	574.61	1.747
20,700.0	10,889.8	21,177.6	10,804.0	291.7	292.9	85.09		-1,569.5	10,003.3	1,003.4	422.9	580.42	1.729
20,717.6	10,889.9	21,195.2	10,804.1	292.3	293.4	85.09		-1,569.6	10,020.8	1,003.3	421.8	581.44	1.725 SF

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Oasis Petroleum	Local Co-ordinate Reference:	Well Kline Federal 5300 11-18 2T2
Project:	Indian Hills	TVD Reference:	WELL @ 2078.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	MD Reference:	WELL @ 2078.0usft (Original Well Elev)
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Kline Federal 5300 11-18 2T2	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 5000.1 Single User Db
Reference Design:	Design #6	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 2078.0usft (Original Well Ele
Offset Depths are relative to Offset Datum
Central Meridian is 100° 30' 0.000 W

Coordinates are relative to: Kline Federal 5300 11-18 2T2
Coordinate System is US State Plane 1983, North Dakota Northern Zone
Grid Convergence at Surface is: -2.31°



Company:	Oasis Petroleum
Project:	Indian Hills
Reference Site:	153N-100W-17/18
Site Error:	0.0 usft
Reference Well:	Kline Federal 5300 11-18 2T2
Well Error:	0.0 usft
Reference Wellbore	Wellbore #1
Reference Design:	Design #6

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Output errors are at
Database:
Offset TVD Reference:

Well Kline Federal 5300 11-18 2T2
WELL @ 2078.0usft (Original Well Elev)
WELL @ 2078.0usft (Original Well Elev)
True
Minimum Curvature
2.00 sigma
EDM 5000.1 Single User Db
Offset Datum

Reference Depths are relative to WELL @ 2078.0usft (Original Well Ele
 Offset Depths are relative to Offset Datum
 Central Meridian is 100° 30' 0.000 W

Coordinates are relative to: Kline Federal 5300 11-18 2T2
 Coordinate System is US State Plane 1983, North Dakota Northern Zone
 Grid Convergence at Surface is: -2.31°

