



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.

28976

MAR 18 2016

ND Oil & Gas Division

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.

PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

<input type="checkbox"/> Notice of Intent	Approximate Start Date
<input checked="" type="checkbox"/> Report of Work Done	Date Work Completed March 2, 2016
<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

Wade Federal 5300 21-30 12T

Footages	Qtr-Qtr	Section	Township	Range
1640 F N L	270 F W L	SWNW	30	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

Effective 03/02/2016 the above referenced well was converted to a rod pump.

End of Tubing: 2-7/8" L-80 tubing @ 10037.34'

Pump: 2-1/2" x 2.0" x 24' insert pump @ 10002.35'

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 March 17, 2016	
Email Address jswenson@oasispetroleum.com		

FOR STATE USE ONLY

<input checked="" type="checkbox"/> Received	<input type="checkbox"/> Approved
Date 4-7-2016	
By 	
Title JARED THUNE Engineering Technician	



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.
28976

FEB 12 2016

ND Oil & Gas Division

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

<input type="checkbox"/> Notice of Intent	Approximate Start Date
<input checked="" type="checkbox"/> Report of Work Done	Date Work Completed July 26, 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 Wade Federal 5300 21-30 12T					
Footages 1640 F N L	270 F W L	Qtr-Qtr LOT2	Section 30	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 07/26/2015 the above referenced well is on pump.

End of Tubing: 2-7/8" L-80 tubing @ 10028.58'

Pump: ESP @ 9847.75'

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 Taylor Roth	
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.
28976
NDIC CTB No.
To be assigned

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL AND FOUR COPIES.

Well Name and Number WADE FEDERAL 5300 21-30 12T	Qtr-Qtr SWNW	Section 30	Township 153	Range 100	County McKenzie
--	------------------------	----------------------	------------------------	---------------------	---------------------------

Operator Oasis Petroleum North America LLC	Telephone Number (281) 404-9573	Field BAKER
--	---	-----------------------

Address 1001 Fannin, Suite 1500	City Houston	State TX	Zip Code 77002
---	------------------------	--------------------	--------------------------

Name of First Purchaser Oasis Petroleum Marketing LLC	Telephone Number (281) 404-9627	% Purchased 100%	Date Effective May 1, 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 May 1, 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 Power Crude Transport	% Transported 25%	Date Effective May 1, 2015
Other Transporters Transporting From This Lease	% Transported	Date Effective
		May 1, 2015
Comments		

I hereby swear or affirm that the information provided is true, complete and correct as determined from all available records.	Date September 10, 2015
Signature 	Printed Name Dina Barron
	Title Mktg. Contracts Administrator

Above Signature Witnessed By:	Printed Name	Title
Signature 	Printed Name Jeremy Harris	Title Marketing Scheduler

FOR STATE USE ONLY		
Date Approved SEP 18 2015		
By		
Title 		

Erie Peterson
Oil & Gas Production Analyst

GEOLOGICAL MARKERS

PLUG BACK INFORMATION

CORES CUT

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

Drill Stem Test

Well Specific Stimulation

Date Stimulated 03/16/2015	Stimulated Formation Three Forks		Top (Ft) 11078	Bottom (Ft) 20374	Stimulation Stages 50	Volume 190732	Volume Units Barrels
Type Treatment Sand Frac	Acid %	Lbs Proppant 9170590	Maximum Treatment Pressure (PSI) 9035			Maximum Treatment Rate (BBLS/Min) 43.0	
Details 40/70 White: 1314300 20/40 White: 6500390 20/40 Resin Coated: 1355900							
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 06/09/2015
Signature 	Printed Name Jennifer Swenson	Title Regulatory Specialist

Industrial Commission of North Dakota
Oil and Gas Division

Well or Facility No
28976

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 WADE FEDERAL 5300 21-30 12T	Inspector Richard Dunn
Well Location QQ Sec Twp Rng	County MCKENZIE
SWNW 30 153 N 100 W	Field BAKER
Footages 1640 Feet From the N Line	Pool BAKKEN
270 Feet From the W Line	
Date of First Production Through Permanent Wellhead	5/2/2015 This Is The First Sales

PURCHASER / TRANSPORTER

Purchaser OASIS PETROLEUM MARKETING LLC	Transporter HOFMANN TRUCKING, LLC
---	---

TANK BATTERY

Single Well Tank Battery Number :

SALES INFORMATION This Is The First Sales

ESTIMATED BARRELS TO BE SOLD	ACTUAL BARRELS SOLD	DATE
15000	BBLS	240
	BBLS	BBLS

DETAILS

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.

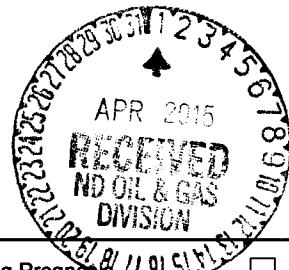
Start Date	5/2/2015
Date Approved	5/12/2015
Approved By	Richard Dunn



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.

28768
28976

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 31, 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	Change well status to CONFIDENTIAL

Well Name and Number
Wade Federal 5300 21-30 12T

Footages	Qtr-Qtr	Section	Township	Range
1640 F N L	270 F W L	SWNW	30	153 N 100 W
Field Baker	Pool BAKKEN	County McKenzie		

24-HOUR PRODUCTION RATE

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

Name of Contractor(s)

Address	City	State	Zip Code
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DETAILS OF WORK

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

This well has not been completed.*OFF CONFIDENTIAL 10/01/15.*

Company Oasis Petroleum North America LLC	Telephone Number 281-404-9436	
Address 1001 Fannin, Suite 1500		
City Houston	State TX	Zip Code 77002
Signature 	Printed Name Jennifer Swenson	
Title Regulatory Specialist	Date March 31, 2015	
Email Address jswenson@oasispetroleum.com		

FOR STATE USE ONLY

<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date 4/08/15	
By 	
Title Engineering Technician	



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
SFSN 5749 (09-2006)

Well File No.

28976

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



Notice of Intent

Approximate Start Date
September 14, 2014

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 Diagnosis

Spill Report

Redrilling or Repair

Shooting

Casing or Liner

Acidizing

Plug Well

Fracture Treatment

Supplemental History

Change Production Method

Temporarily Abandon

Reclamation

Other **offsite pit**

Well Name and Number

Wade Federal 5300 21-30 12T

Footages 1640 F N L	270 F W L	Qtr-Qtr SWNW	Section 30	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 respectfully requests to use an offsite pit for this well. The following wells will also use this pit:

Wade Federal 5300 31-30 2B - 28554
Wade Federal 5300 41-30 3T2 - 28555
Wade Federal 5300 41-30 4T - 28394
Wade Federal 5300 41-30 5T2 - 28556
Wade Federal 5300 41-30 6B - 28425 - TH
Wade Federal 5300 41-30 7T - 28557
Wade Federal 5300 41-30 8T2 - 28558 - TH
Wade Federal 5300 41-30 9B - 28744
Wade Federal 5300 21-30 13B - 28978
Wade Federal 5300 21-30 14T2 - 28977

Attached are the plats for the offsite pit location.

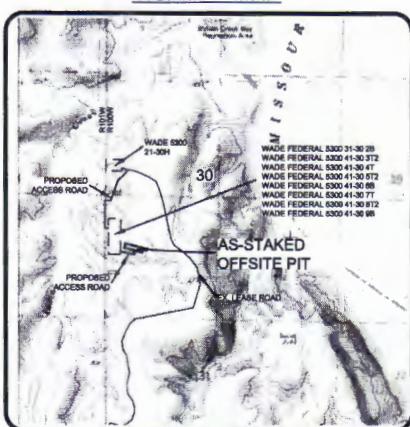
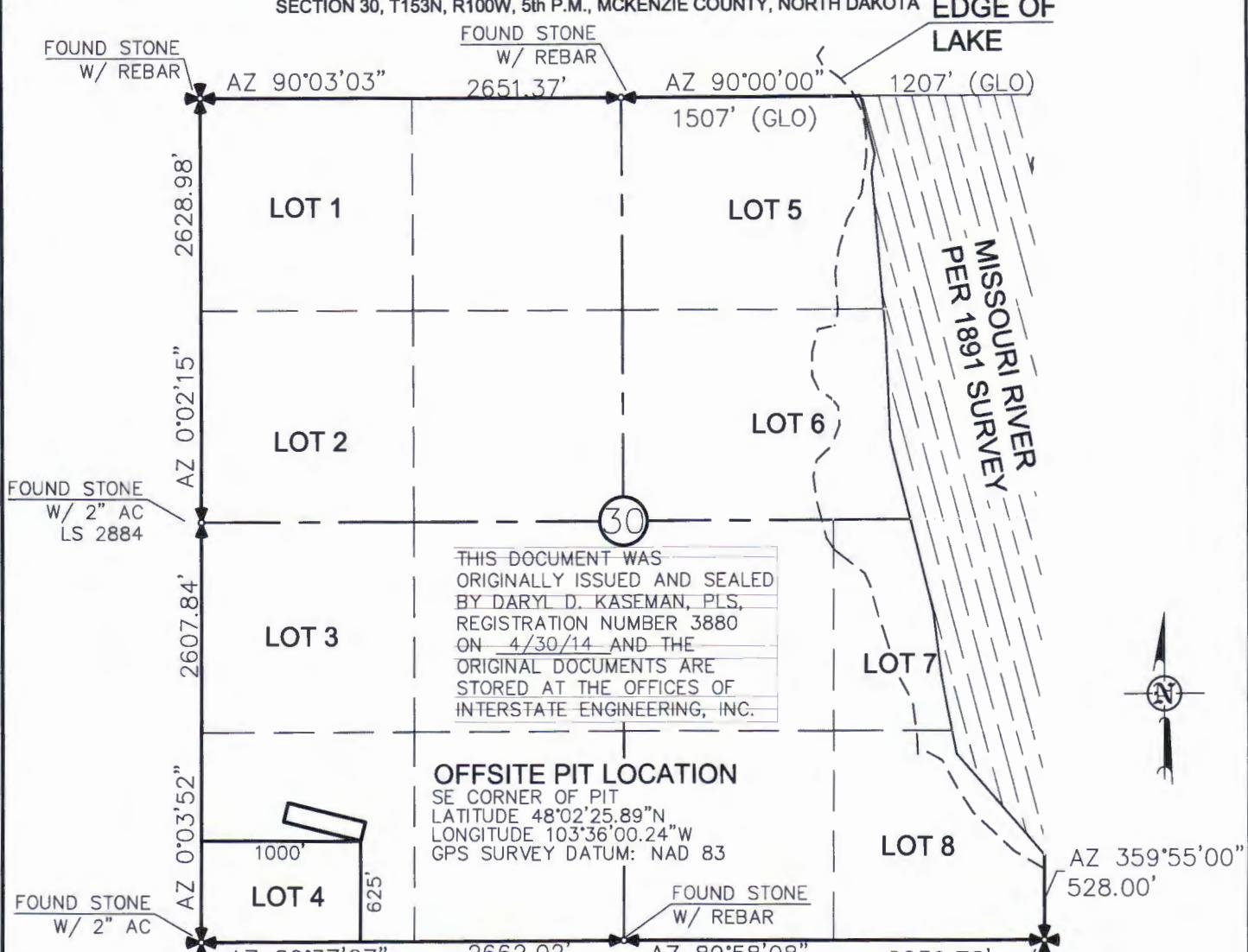
Company Oasis Petroleum North America LLC	Telephone Number 281-404-9589	
Address 1001 Fannin, Suite 1500		
City Houston	State TX	Zip Code 77002
Signature <i>Sonja Rolfs</i>	Printed Name Sonja Rolfs	
Title Regulatory Analyst	Date August 20, 2014	
Email Address srolfs@oasispetroleum.com		

FOR STATE USE ONLY

<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date 2-9-15	
By <i>Wade</i>	
Title	

OFFSITE PIT LOCATION PLAT
OASIS PETROLEUM NORTH AMERICA, LLC

1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
"AS-STAKED OFFSITE PIT FOR WADE FEDERAL 5300 31-30 2B, WADE FEDERAL 5300 41-30 3T2,
WADE FEDERAL 5300 41-30 4T, WADE FEDERAL 5300 41-30 5T2, WADE FEDERAL 5300 41-30 6B,
WADE FEDERAL 5300 41-30 7T, WADE FEDERAL 5300 41-30 8T2, & WADE FEDERAL 5300 41-30 9B"
625 FEET FROM SOUTH LINE AND 1000 FEET FROM WEST LINE
SECTION 30, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA EDGE C



 - MONUMENT - RECOVERED FOUND
2" AC

 - MONUMENT - NOT RECOVERED

STAKED ON 4/30/14
VERTICAL CONTROL DATUM WAS BASED UPON
CONTROL POINT 705 WITH AN ELEVATION OF 2158.3'

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

A circular stamp with the words "NORTH DAKOTA LAND SURVEYOR" around the perimeter. In the center, it says "REGISTRATION NO. DARYL D. KASEMAN LS-3880 DATE: 4/30/14". There is also a handwritten signature "Daryl D. Kaseman" over the registration number.

© 2014, INTERSTATE ENGINEERING, INC.

1/3



**INTERSTATE
ENGINEERING**

Professionals you need, people you trust.

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

**OASIS PETROLEUM NORTH AMERICA, LLC
OFFSITE PIT LOCATION PLAT
SECTION 30, T153N, R100W**

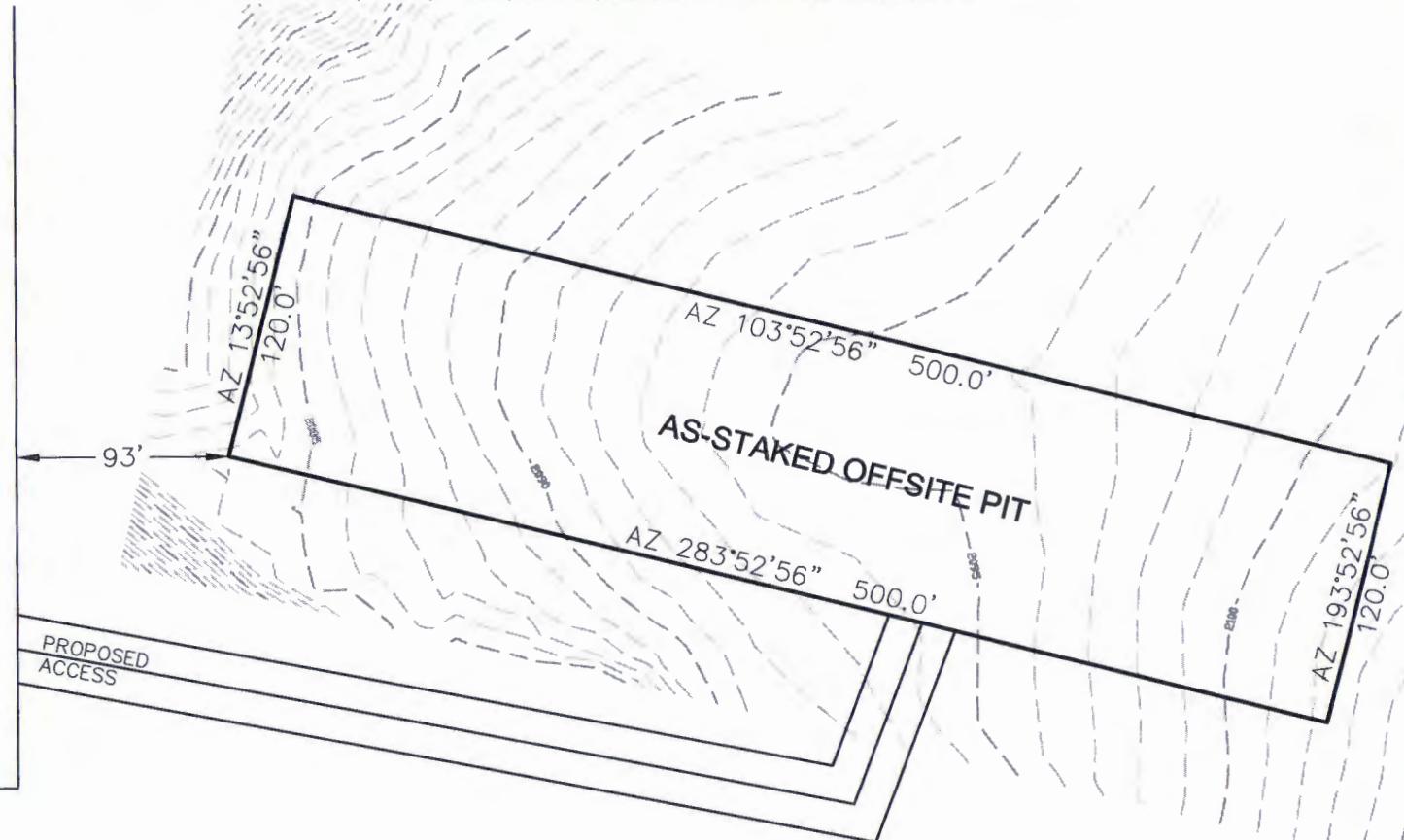
MCKENZIE COUNTY, NORTH DAKOTA

PAD LAYOUT

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

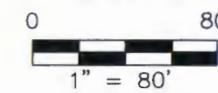
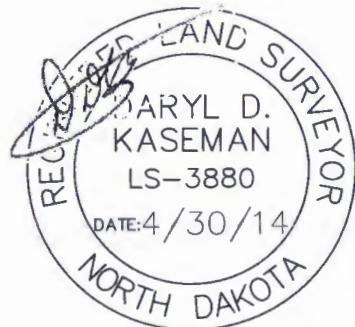
"AS-STAKED OFFSITE PIT FOR WADE FEDERAL 5300 31-30 2B, WADE FEDERAL 5300 41-30 3T2,
WADE FEDERAL 5300 41-30 4T, WADE FEDERAL 5300 41-30 5T2, WADE FEDERAL 5300 41-30 6B,
WADE FEDERAL 5300 41-30 7T, WADE FEDERAL 5300 41-30 8T2, & WADE FEDERAL 5300 41-30 9B"
625 FEET FROM SOUTH LINE AND 1000 FEET FROM WEST LINE
SECTION 30, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

WADE FEDERAL
5300 31-30 2B
WADE FEDERAL
5300 41-30 3T2
WADE FEDERAL
5300 41-30 4T
WADE FEDERAL
5300 41-30 5T2
WADE FEDERAL
5300 41-30 6B
WADE FEDERAL
5300 41-30 7T
WADE FEDERAL
5300 41-30 8T2
WADE FEDERAL
5300 41-30 9B



THIS DOCUMENT WAS ORIGINALLY ISSUED
AND SEALED BY DARYL D. KASEMAN,
PLS, REGISTRATION NUMBER 3880 ON
4/30/14 AND THE ORIGINAL
DOCUMENTS ARE STORED AT THE
OFFICES OF INTERSTATE ENGINEERING,
INC.

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 648
425 East Main Street
Sidney, Montana 59270
Ph. (406) 433-5617
Fax (406) 433-5618
www.interstateeng.com

Other offices in Missoula, North Idaho and South Dakota

2/3
SHEET NO.

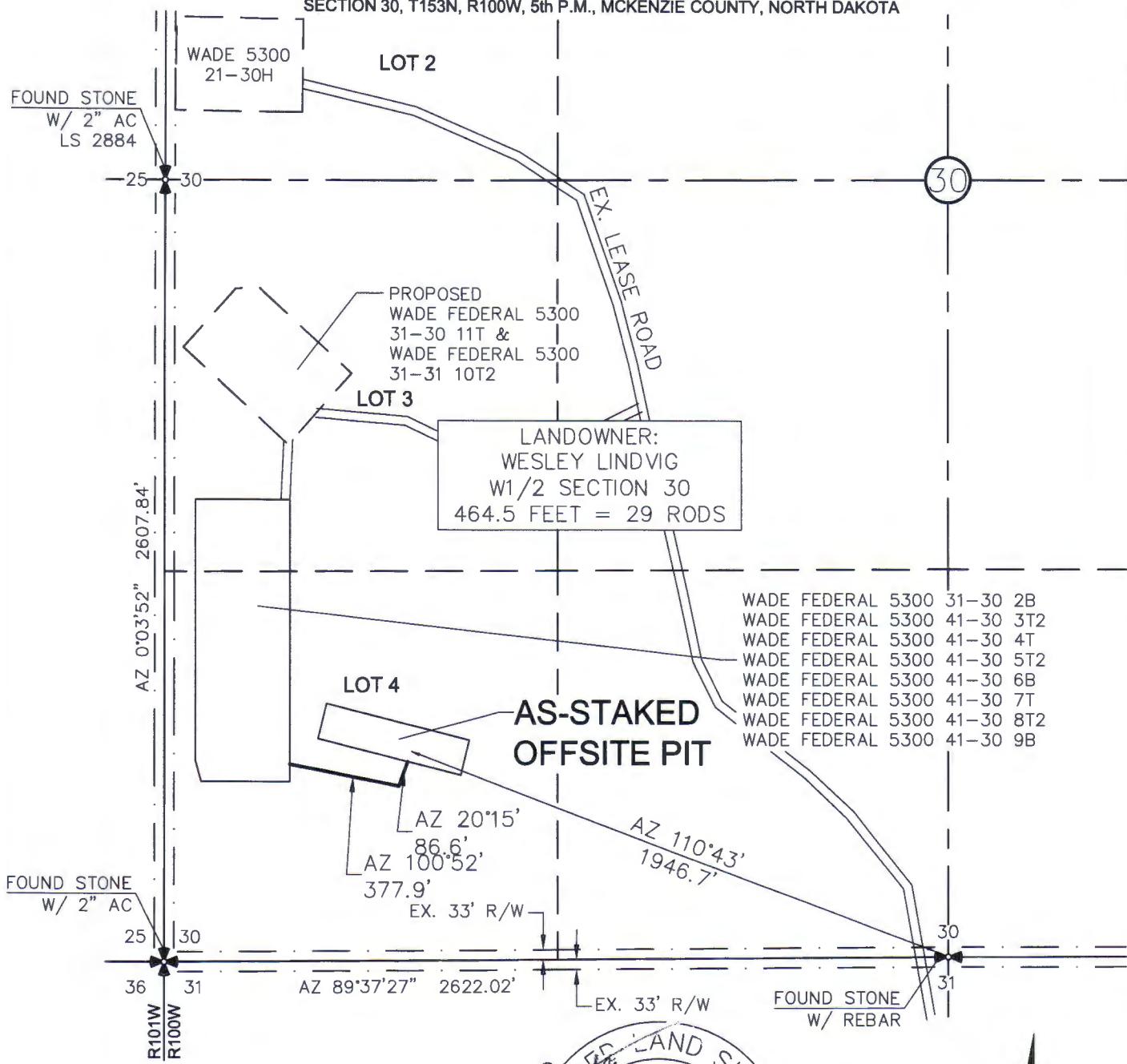
OASIS PETROLEUM NORTH AMERICA, LLC		Revision No.	Date	By	Description
PAD LAYOUT					
SECTION 30, T153N, R100W					
MCKENZIE COUNTY, NORTH DAKOTA					
Project No.: S13498-381-09					
Drawn By: B.H.H.					
Checked By: D.D.K.					
Date: APRIL 2014					

ACCESS APPROACH

OASIS PETROLEUM NORTH AMERICA, LLC

1001 FANNIN, SUITE 1500, HOUSTON, TX 77002

"AS-STAKED OFFSITE PIT FOR WADE FEDERAL 5300 31-30 2B, WADE FEDERAL 5300 41-30 3T2,
WADE FEDERAL 5300 41-30 4T, WADE FEDERAL 5300 41-30 5T2, WADE FEDERAL 5300 41-30 6B,
WADE FEDERAL 5300 41-30 7T, WADE FEDERAL 5300 41-30 8T2, & WADE FEDERAL 5300 41-30 9B"
625 FEET FROM SOUTH LINE AND 1000 FEET FROM WEST LINE
SECTION 30, 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 4/30/14 AND THE ORIGINAL DOCUMENTS ARE STORED AT THE OFFICES OF INTERSTATE ENGINEERING, INC.



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

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

OASIS PETROLEUM NORTH AMERICA, LLC

ACCESS APPROACH

SECTION 30, T153N, R100W

MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: B.H.H. Project No.: S13-09-381.09

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

Revision No.	Date	By	Description

3/3



OFF-SITE PIT AGREEMENT

In consideration of the sum of [REDACTED] paid by Oasis Petroleum North America LLC ("Oasis") the undersigned surface owners, Wesley Lindvig and Barbara Lindvig, for themselves and their heirs, successors, administrators and assigns, hereby acknowledge the receipt and sufficiency of said payment in full and complete settlement for and as a release of all claim for loss, damage or injury to the hereafter described surface property arising out of the off-site cuttings pit, in which the cuttings from the Wade Federal 5300 21-30 13B, Wade Federal 5300 21-30 14T2 wells will be buried, located on the approximately two (2.0) acre tract of land identified on the plat attached hereto as Exhibit "A" and which is situated on the following described real property located in McKenzie County, State of North Dakota, towit:

Township 153 North, Range 100 West, 5th P.M.

Section 30: Lots 3 & 4 a/k/a W $\frac{1}{2}$ SW $\frac{1}{4}$

The undersigned knows that Oasis Petroleum North America LLC is the operator and will be drilling the Wade Federal 5300 21-30 13B, Wade Federal 5300 21-30 14T2 wells. The undersigned further states that they are fully aware that the cuttings generated from the drilling of the Wade Federal 5300 21-30 13B, Wade Federal 5300 21-30 14T2 wells will be buried in the pit on the above described location.

Dated this 19 day of May, 2014.

SURFACE OWNER(S)

Wesley Lindvig
Wesley Lindvig
Barbara J. Lindvig
Barbara Lindvig

for W.G.L.
JL

JL Location will be fenced after construction.
JL Pit will be reclaimed to owners satisfaction
BCL W.G.L.

ACKNOWLEDGMENT INDIVIDUAL

State of North Dakota)

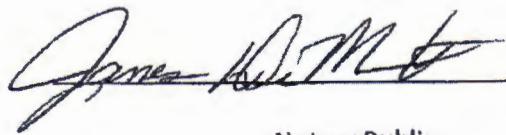
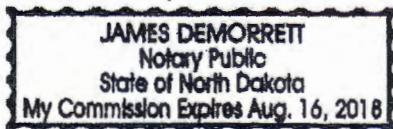
)

County of McKenzie)

BE IT REMEMBERED, That on this 19 day of May, 2014 before me, a Notary Public, in and for said County and State, personally appeared Wesley Lindvig and Barbara Lindvig, to me known to be the identical persons described in and who executed the within and foregoing instrument and acknowledged to me to that they executed the same as their free and voluntary act and deed for the uses and purposes therein set forth.

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

My Commission expires:



Notary Public



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. 28976
28796

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

<input checked="" type="checkbox"/> Notice of Intent	Approximate Start Date December 12, 2014	<input type="checkbox"/> Drilling Prognosis	<input type="checkbox"/> Spill Report
<input type="checkbox"/> Report of Work Done	Date Work Completed	<input type="checkbox"/> Redrilling or Repair	<input type="checkbox"/> Shooting
<input type="checkbox"/> Notice of Intent to Begin a Workover Project that may Qualify for a Tax Exemption Pursuant to NDCC Section 57-51.1-03.	Approximate Start Date	<input type="checkbox"/> Casing or Liner	<input type="checkbox"/> Acidizing
		<input type="checkbox"/> Plug Well	<input type="checkbox"/> Fracture Treatment
		<input type="checkbox"/> Supplemental History	<input type="checkbox"/> Change Production Method
		<input type="checkbox"/> Temporarily Abandon	<input type="checkbox"/> Reclamation
		<input type="checkbox"/> Other	Waiver from tubing/packer requirement

Well Name and Number Wade Federal 5300 21-30 12T					
Footages		Qtr-Qtr	Section	Township	Range
1640 F N L	270 F W L	LOT 2	30	153 N	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 Assistant		Date December 12, 2014
Email Address jswenson@oasispetroleum.com		

FOR STATE USE ONLY	
<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date	<i>March 22, 2014</i>
By	<i>[Signature]</i>
Title	PETROLEUM ENGINEER



Oasis Petroleum North America, LLC

Wade Federal 5301 21-30 12T

1,640' FNL & 270' FWL

SW NW Section 30, T153N, R100W

Baker Field / Three Forks

McKenzie County, North Dakota

BOTTOM HOLE LOCATION:

101.7' north & 9,962.2' east of surface location or approx.

1,538.3' FNL & 281.2' FEL, SE NE Section 29, T153N, R100W

Prepared for:

Clay Hargett
Oasis Petroleum North America, LLC
1001 Fannin Street, Suite 1500
Houston, Texas 77002

Prepared by:

Hannah Thatcher, Daniel Haynes
PO Box 80507; Billings, MT 59108
(406) 259-4124
geology@sunburstconsulting.com
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WELL EVALUATION

Wade Federal 5300 21-30 12T



Figure 1: Nabors B25 drilling the Oasis Petroleum North America Wade Federal 5300 21-30 12T during November 2014, south of Williston in McKenzie County, North Dakota.
(Photos by Hannah Thatcher, wellsite geologist)

INTRODUCTION

The Oasis Petroleum North America, LLC Wade Federal 5300 21-30 12T [SW NW Section 30, T153N, R100W] is located approximately 5 miles south of Williston, North Dakota. The horizontal well was spud on September 30, 2014 and represents a continuation of Oasis Petroleum's development of the Three Forks Formation within Baker Field. The Wade Federal 5300 21-30 12T was planned to drill an approximately 9,350' lateral along a proposed azimuth of 89.37°. The well bore will be enhanced for production by multistage fracture stimulation.

OFFSET CONTROL INFORMATION

Offset well data used for depth correlation during curve operations are found 'Structure' section appended to this report. Offset well control was essential in curve operations, to successfully land within the Three Forks. Formation thicknesses expressed by gamma ray signatures in these wells were compared to gamma data collected during drilling operations in order to successfully land the curve.

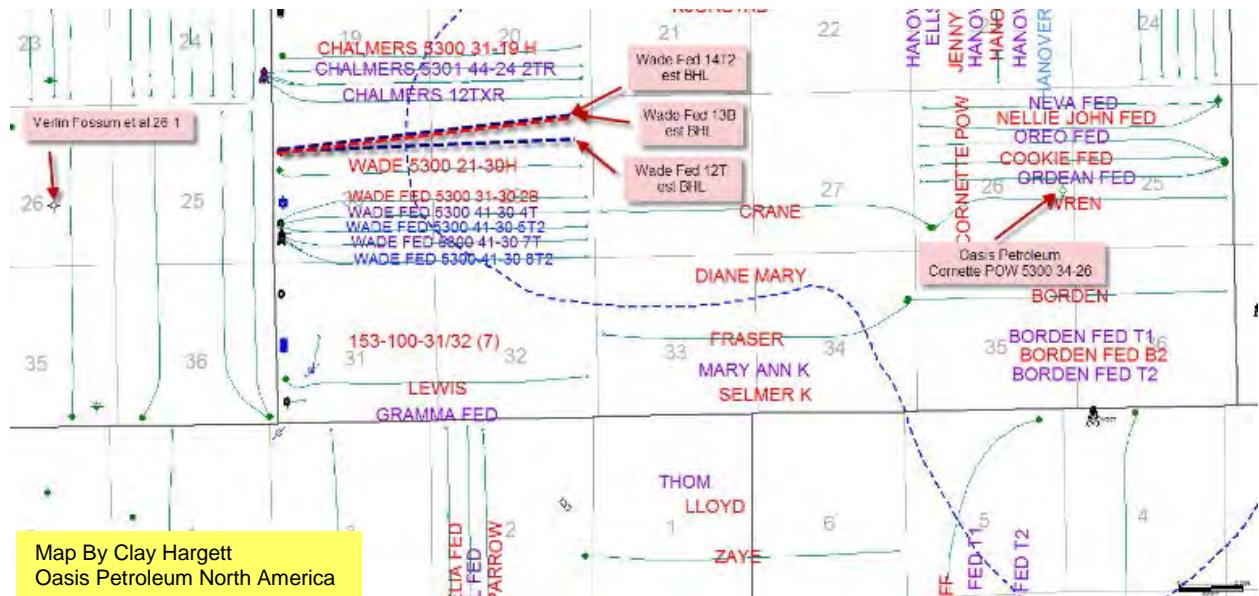


Figure 2: Offsetting control wells in relation to the Wade Federal 5300 21-30 12T well.

GEOLOGIC EVALUATION

Methods:

Geologic supervision of the Wade Federal 5300 21-30 12T was provided by Sunburst Consulting, Inc. with two well site geologists. A digital gas detector and chromatograph were interfaced with a Pason electronic data recorder system. The unit of measure for gas on this well was units (u), which was defined as 100 units equaling 1% methane equivalent in air. The EDR provided drill rate, on-off bottom and pump strokes to the gas detection computer and received total gas information from Sunburst for viewing around location. Lagged samples were caught by the rig crew in 30' intervals from 4,870' MD to 6,020' MD, 30' intervals from 8,200' MD to 10,840' MD, 10' intervals from 10,840' MD to 11,080' MD, and 30' intervals from 11,080' MD to 20,430' TD. Wet and dry cuttings were examined under a tri-ocular microscope and complete lithologic descriptions and sampling intervals are provided in the lithology document within this evaluation. The set of dry cuttings collected during the duration of the well were sent to the State of North Dakota. Evidence of light hydrocarbons present in the drilling fluid was reported by the gas chromatography equipment and documented on the mud log presented with this report.

Zones of Interest:

The Mission Canyon Formation (Mississippian; Madison Group) was drilled at 9,330' TVD (-7,306') and is comprised largely of light gray lime mudstone followed by gray to tan earthy textured argillaceous lime mudstone. Shows within the Mission Canyon ranged from 50 to 467 units against 10.0 ppg mud.



Figure 3 & 4: Wet cutting of the Lodgepole Formation (left) and False Bakken sub-interval (right) at 10X.

The top of the Lodgepole Formation was logged at 9,886' TVD (-7,862'). In general the Lodgepole can be described as a medium to dark gray brown argillaceous lime mudstone with a crystalline texture and trace amounts of disseminated pyrite (Figure 3). The False Bakken (Carrington Shale), drilled at 10,612' TVD (-8,588'), is comprised of very dark brown to black, slightly pyritic shale with an earthy texture, and was found to be soft to firm (Figure 4). Strong hydrocarbon shows in the lower 100' of the Lodgepole were as high as 2,600 total gas units; suggest that some of the oil and gas from the Upper Bakken Shale may be exploiting fractures thought to exist in the Lower Lodgepole.

The Bakken Formation (Devonian – Mississippian) has four formal members, an upper and lower black, fissile, organic-rich pyritic shale, separated by an arenaceous limestone, siltstone and silty sandstone middle member. These three members overlay a silty shale or siltstone of the Pronghorn Member toward the basin depositional center. The Upper Bakken Shale was drilled at 10,621' TVD (-8,597') with sample returns typically described as black, carbonaceous, *petroliferous* shale with trace amounts of disseminated pyrite (Figure 5). The Middle Bakken, penetrated at 10,638' TVD (-8,614'), consists of a varying thickness and sequence of interbedded siltstone, limestone and silty sandstone. *Trace spotty light brown oil staining* was present along with gas shows as high as 829 TGU. This light brown spotty oil staining was common. Penetrated at 10,678' TVD (-8,654'), the Lower Bakken Shale was described as a black to dark brown carbonaceous shale with trace amounts of disseminated pyrite (Figure 6). Gas shows encountered in the Lower Bakken read as high as 797u (C1-C4). The Pronghorn was penetrated at 10,688' TVD (-8,664') and is commonly described as a dark to medium gray siltstone with calcite cement.



Figure 5 & 6: Wet cuttings of the Upper Bakken Shale (left), Lower Bakken Shale (right) at 10X.

The Three Forks Formation (Devonian; Kaskaskia Sequence.) represents a regressive sequence deposited in a supratidal sabkha environment. The top of the Three Forks was drilled at 10,708' TVD (-8,684') and is comprised of a light to medium gray, cream to off white sucrosic dolomite with trace to occasional amounts of disseminated pyrite and light green shale also with trace amounts of disseminated pyrite (Figures 7 & 8). Shows within the Three Forks Formation ranged from 250 to 491 units in a drilling mud of 9.6-9.9 ppg.



Figure 7 & 8: Wet cuttings of the Three Forks dolomite and shale (left and right) at 10X.

Geo-steering:

Kick-off point for the curve was established from the isopach of the “base last salt” marker to the Three Forks “target” in the offset wells. The Chalmers 5301 44-24 2TR was used as the primary offset through the vertical and curve sections. While drilling the curve, measured gamma ray signatures were compared to those of the three offsets and aided in the landing of the curve. The landing target was confirmed by the depth of the False Bakken, which was consistent with the offset wells. The curve was successfully landed within the Three Forks Formation at a depth of 11,080' MD (10,734' TVD) placing the well bore approximately 26' below the top of the Three Forks Formation. Directional tools were then pulled out of the hole and a string of 7" casing was set (11,072' MD) and then cemented by Schlumberger.

Samples from the target zone varied in porosity, oil staining, color, cementation, and pyrite content. Stratigraphic location in the target zone was based on these sample observations along with gas shows, drill rates and gamma ray values. Severe doglegs were to be avoided so as to obtain the desired vertical section and aid in a successful completion liner run at TD.

The Oasis Petroleum North America, LLC prospect geologist defined the an initial target zone as an 9' zone that began 18' below the top of the Three Forks Formation and ended at the claystone member 27' below the Three Forks Formation. The target zone consisted of an upper dolomite and shale interval reading 90-120 count gamma (A marker). The center of the target interval was comprised of a warmer dolomite with greater amounts of shale reading 100-140 count gamma (B marker). The base of the target zone was characterized by a clean dolomite with trace amounts of shale with gamma readings of 35-90 (C marker). The A-C gamma markers were used for determining depth within the target interval and plotted on the Wade Federal 5300 21-30 12T dip profile (Figure 10).

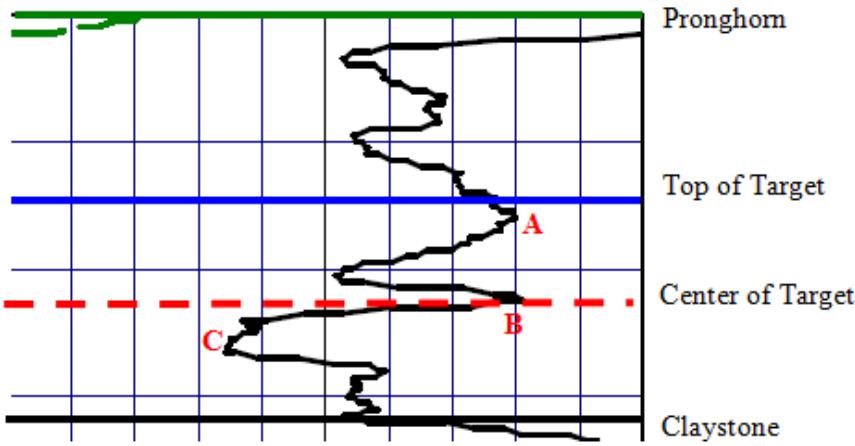


Figure 9: Offset gamma ray profile of the upper Three Forks (0-100 api. scale) *See dip profile (Figure 10) for marker presentation*

Using the aforementioned information gathered during drilling, offset log information and the structural data provided from Oasis Petroleum North America, LLC., well site geologists were able to anticipate, and interpret the local apparent dip during the drilling of the Wade Federal 5300 21-30 12T well. A total depth of 20,430' MD was reached on December 01, 2014 at 6:45 CDT. The target resultant was 100% within the Three Forks Formation. The resulting structure of the Three Forks was a fall in TVD of 67.70' over 9,495' MD; resulting in an overall down dip of 0.41° as portrayed on the Wade Federal 5300 21-30 12T dip profile (Figure 10).

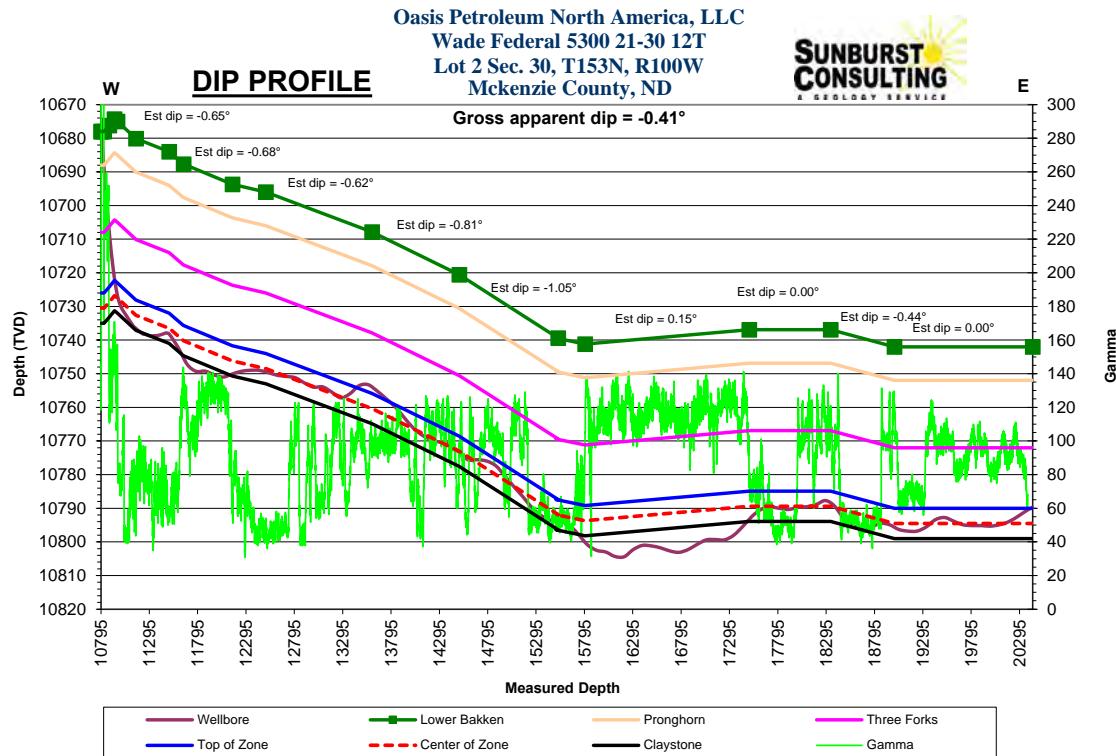


Figure 10: Well profile representing estimated dip value & gamma ray for the Wade Federal 5300 21-30 12T lateral.

Hydrocarbons:

Gas monitoring and fluid gains were monitored to evaluate the viability of this reservoir during the drilling of the Wade Federal 5300 21-30 12T well. In the invert mud system, hydrostatic conditions were maintained near balance. This allowed for gas and fluid gains from the well to be monitored. Gas shows were encountered in vertical, curve and lateral drilling of the well.

Invert drilling fluid was used throughout the drilling of the vertical and curve weighing 9.8-11.0 ppg. The lateral was drilled with saline drilling fluid with a mud weight of 9.7-9.8 ppg. Background gas observed during the drilling of the lateral ranged from 50 to 500 units. Gas shows ranged up to 886 units and connection gases were observed up to 777 units. C1-C4 gas components were observed throughout the course of the lateral. Oil shows were very light throughout the lateral ranging from 0-3% in sample. When present it was a *light brown spotty oil stain that yielded a slow to moderate streaming to diffuse light green cut fluorescence*.

SUMMARY

The Nabors B25 drilling rig successfully drilled a two-section horizontal well bore within the Three Forks Formation at the Wade Federal 5300 21-30 12T. A net of 9,350' was drilled within the Three Forks. A mud program consisting of diesel invert (9.8 – 11.0 ppg), during the vertical and curve build sections, and saline based mud (9.7 -9.8 ppg), during the lateral maintained stable hole conditions and permitted adequate analysis of gas concentrations.

Projections of dip were successfully used to maintain the well bore in the Three Forks Formation target for 80% of the lateral. Samples from the target consisted of a light to medium gray, cream to off white dolomite with trace to occasional amounts of disseminated pyrite and light green shale also with trace amounts of disseminated pyrite. Intercrystalline porosity was generally seen throughout the entire lateral. Hydrocarbon shows in the target zone were high throughout the lateral. Samples from the ideal zone contained a spotty light brown oil stain.

The Wade Federal 5300 21-30 12T will be fitted with a 4 ½" production liner and swell packers in preparation for a fracture stimulation that will determine the true commercial value of the well. The well currently awaits fracture stimulation.

Respectfully submitted,

Hannah Thatcher
Sunburst Consulting, Inc.
December 01, 2014

WELL DATA SUMMARY

OPERATOR: **Oasis Petroleum North America, LLC**

ADDRESS: 1001 Fannin Street, Suite 1500
Houston, Texas 77002

WELL NAME: **Wade Federal 5301 21-30 12T**

API #: 33-053-06129-00-00

WELL FILE #: 28976

SURFACE LOCATION: 1,640' FNL & 270' FWL
SW NW Section 30, T153N, R100W

FIELD/ OBJECTIVE: Baker Field / Three Forks

COUNTY, STATE McKenzie County, North Dakota

BASIN: Williston

WELL TYPE: Three Forks Horizontal

ELEVATION: GL: 1,999'
KB: 2,024'

SPUD/ RE-ENTRY DATE: September 30, 2014

BOTTOM HOLE LOCATION: 101.7' north & 9,962.2' east of surface location or approx.
1,538.3' FNL & 281.2' FEL, SE NE Section 29, T153N, R100W

CLOSURE COORDINATES: Closure Azimuth: 89.4°
Closure Distance: 9,962.7'

TOTAL DEPTH / DATE: 20,430' on December 01, 2014
80% within target interval

TOTAL DRILLING DAYS: 21 days

CONTRACTOR: Nabors B25

<u>PUMPS:</u>	H & H Triplex (stroke length - 12")
<u>TOOLPUSHERS:</u>	Casey Pippenger, Bruce Walter
<u>FIELD SUPERVISORS:</u>	Mike Crow, Travis Handran
<u>CHEMICAL COMPANY:</u>	Fluid Control
<u>MUD ENGINEER:</u>	Keith McCarty, Warren Carlson
<u>MUD TYPE:</u>	Fresh water in surface hole Diesel invert in curve; Salt water in lateral
<u>MUD LOSSES:</u>	Invert Mud: 864 bbls., Salt Water: Not tracked
<u>PROSPECT GEOLOGIST:</u>	Clay Hargett
<u>WELLSITE GEOLOGISTS:</u>	Hannah Thatcher, Daniel Haynes
<u>GEOSTEERING SYSTEM:</u>	Sunburst Digital Wellsite Geological System
<u>ROCK SAMPLING:</u>	30' from 4,870' - 6,020' 30' from 8,200' - 10,840' 10' from 10,840' -11,080' 30' from 11,080' - 20,430' (TD)
<u>SAMPLE EXAMINATION:</u>	trinocular microscope & fluoroscope
<u>SAMPLE CUTS:</u>	Trichloroethylene
<u>GAS DETECTION:</u>	MSI (Mudlogging Systems, Inc.) TGC - total gas with chromatograph Serial Number(s): ML-382
<u>DIRECTIONAL DRILLERS:</u>	RPM Mike Crow, Travis Handran, Jordon Jensen
<u>MWD:</u>	Ryan Directional Service Inc. Daniel Ogden, Blair Hibert
<u>CASING:</u>	Surface: 13.375" 36# J-55 set to 2,050' Intermediate Surface: 9 5/8" 40# HCL-180 set to 6,020' Intermediate: 7" 32# HCP-110 set to 11,072'
<u>SAFETY/ H₂S MONITORING:</u>	Oilind Safety

KEY OFFSET WELLS:

Oasis Petroleum North America

Chalmers 5301 44-24 3BR

SE SE Section 24, T153N, R101W

McKenzie Co., ND

KB: 1,968'

Oasis Petroleum North America

Chalmers 5301 44-24 2TR

SE SE Section 24, T153N, R101W

McKenzie Co., ND

KB: 1,968'

Oasis Petroleum North America

Chalmers 5301 44-24 4T2R

SE SE Section 24, T153N, R101W

McKenzie Co., ND

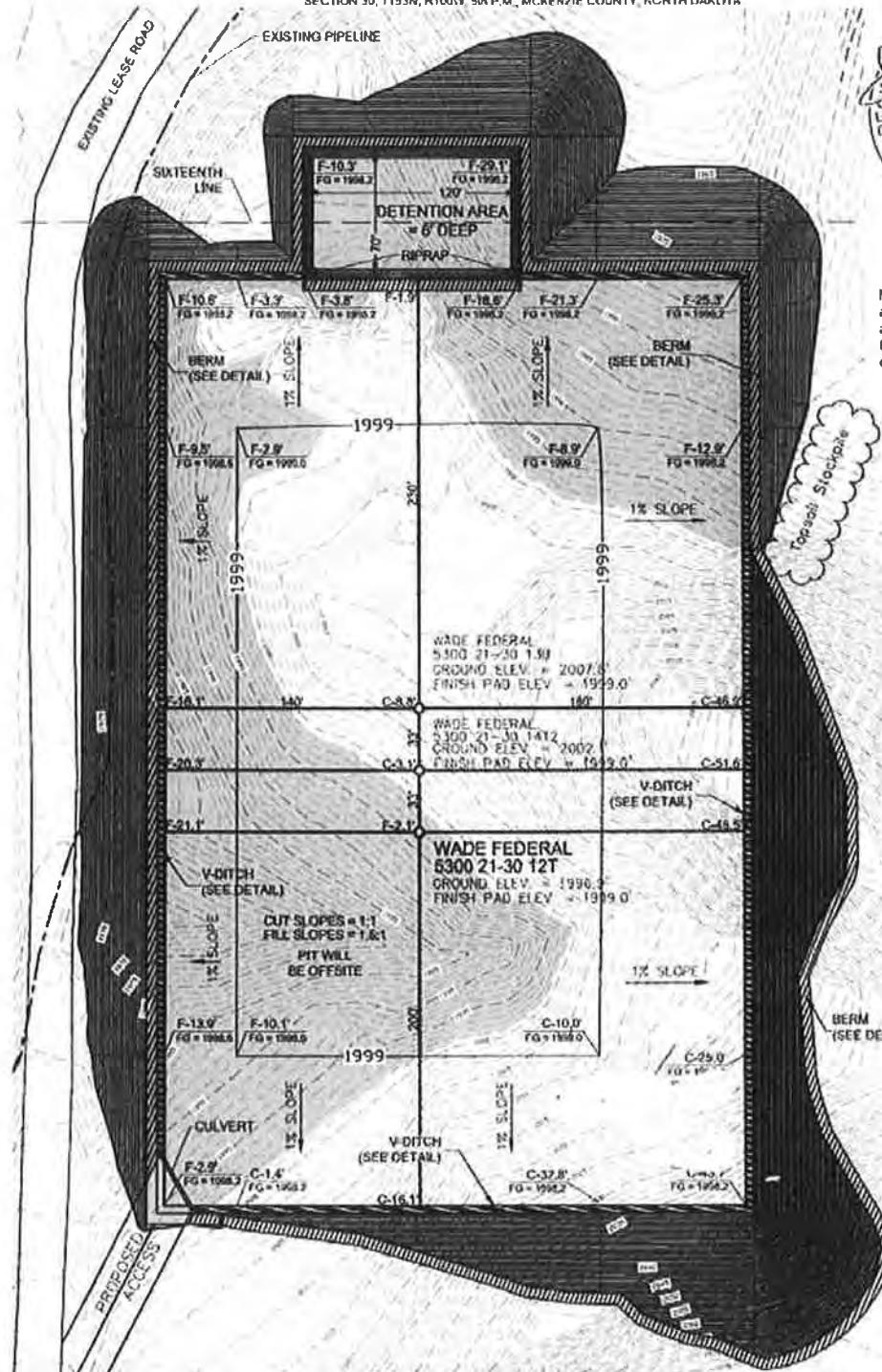
KB: 1,968'

PAD LAYOUT

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

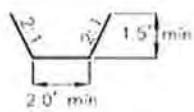
"WADE FEDERAL 5300 21-30 12T"

1640 FEET FROM NORTH LINE AND 270 FEET FROM WEST LINE
SECTION 30, T153N, R100W, MCKENZIE COUNTY, NORTH DAKOTA



THIS DOCUMENT WAS ORIGINALLY ISSUED AND
SEALED BY DARYL D. KASEMAN, PLS.
REGISTRATION NUMBER 3880 ON 3/19/14
AND THE ORIGINAL DOCUMENTS ARE STORED
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INC.

V-DITCH DETAIL



Proposed Contours - BERM
Original Contours - DITCH



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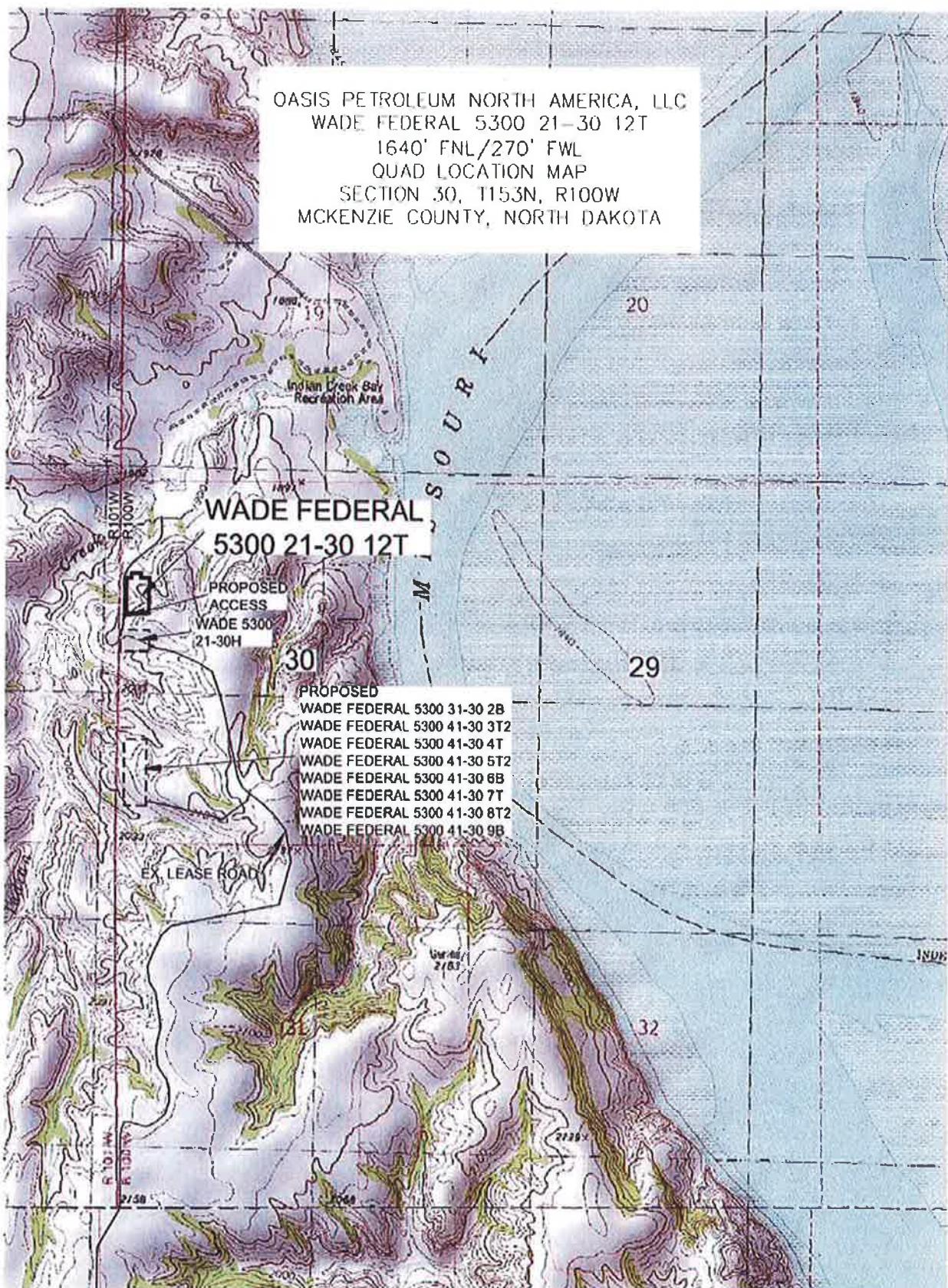
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Interstate Engineering, Inc.
P.O. Box 649
425 East Main Street
Sister Bay, Wisconsin 54234
Ph: (920) 633-5617
Fax: (920) 633-5618
www.interstateeng.com

OASIS PETROLEUM NORTH AMERICA, LLC
PAD LAYOUT
SECTION 30, T153N, R100W
MCKENZIE COUNTY, NORTH DAKOTA

Sheet No.	Page No.	Drawing No.
3/8	1	1



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SHEET NO.

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Fax: (406) 433-5618
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Other offices in Minnesota, North Dakota and South Dakota

OASIS PETROLEUM NORTH AMERICA, LLC
QUAD LOCATION MAP
SECTION 30, T153N, R100W
MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: A.H. Project No: SI14901903
Checked By: D.D.K. Date: MAR 2014

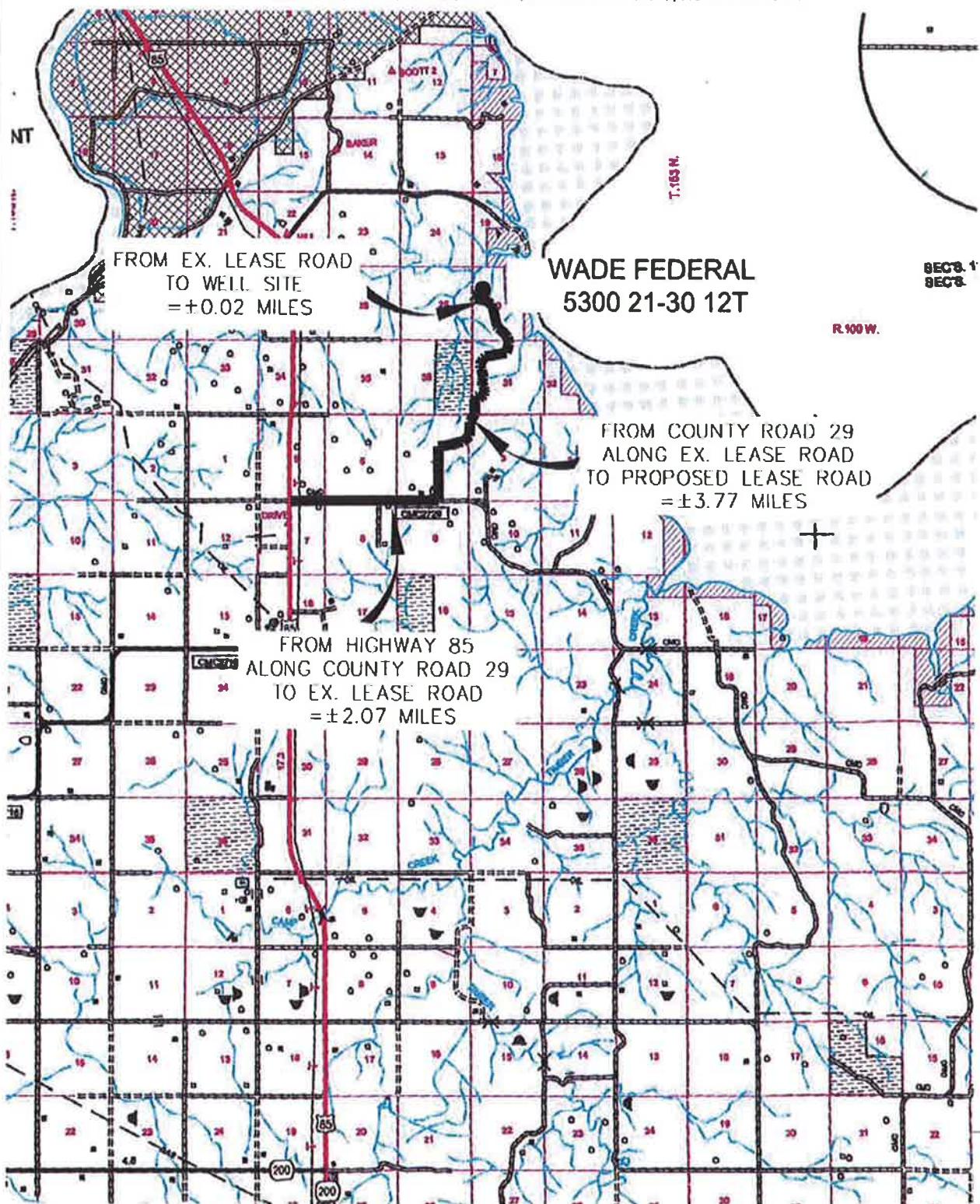
Revision No.	Date	By	Description

COUNTY ROAD MAP

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

"WADE FEDERAL 5300 21-30 12T"

1840 FEET FROM NORTH LINE AND 270 FEET FROM WEST LINE
SECTION 30, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



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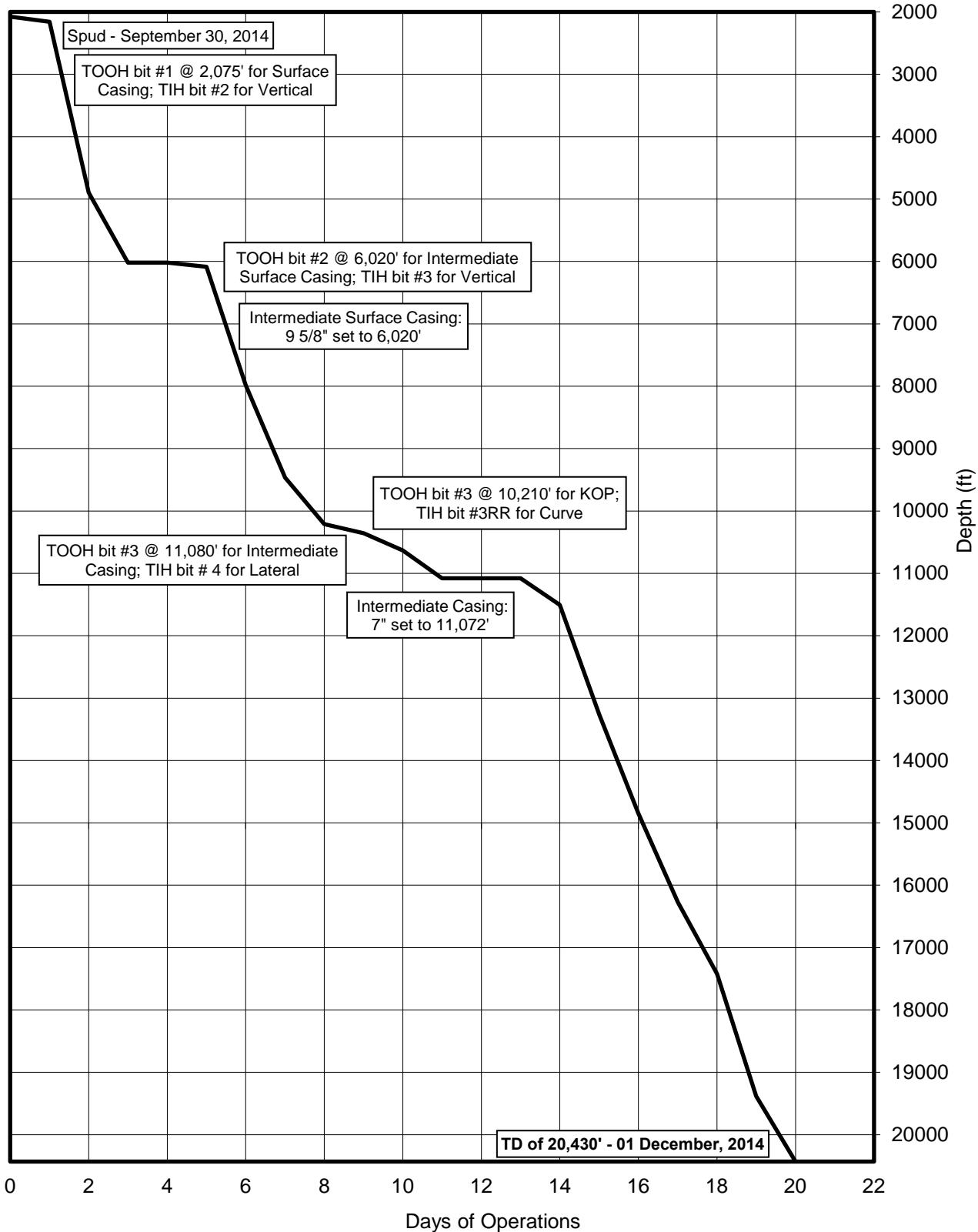
OASIS PETROLEUM NORTH AMERICA, LLC
COUNTY ROAD MAP
SECTION 30, T153N, R100W
MCKENZIE COUNTY, NORTH DAKOTA

Drawn By:	B.H.	Project No.:	S1409019.03
Checked By:	D.D.K.	Date:	MAR. 2014

TIME VS. DEPTH

Oasis Petroleum North America, LLC

Wade Federal 5301 21-30 12T



MORNING REPORT SUMMARY

Day	Date 2014	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
0	10/2	2,076'	-	2	25	-	-	-	-	-	-	-	Primary cementing. Rig up/down to run casing RD cementers, Waiting on cement L.D. 3rd party tools, remove mouse hole, pressure wash cellar, F/welder, RD cellar pumps, reinstall quill, Install wellheads, cut casing, weld wellhead on, Working as directed by operator fill outside of casing with cement, Nipple up BOPs N/D RH, N/U RH stack BOP, invert in tanks at 23:00		-
1	10/3	2,159'	83	2	15	70	10	310	2250	90	90	633	Nipple up BOPs finish nipple up choke, flowline & modify new flowline, Test BOPs, Install/remove wear bushing, Pick up BHA, TIH, Change rotating head/rubber install rotating head, TIH, Service rig fix flow line leak, Service rig hammer up leaky flow line, Formation integrity test (fit) 180# @ 30 min, Drilling cement float and shoe equipment, Directional surveys trouble shoot MWD tool failure, TOOH		-
2	10/4	4,897'	4897	2	20	60	10	310	3800	90	90	633	TOOH, L/D BHA, change out MWD tool, TIH, install/remove wear bushing, install rotating head, test MWD, drill F/2159 to 3419, service top drive, drill F/3419 to 4000, service rig fix flow sensor, drill F/4000 to 4897		Greenhorn
3	10/5	6,020'	1123	2	27	40	25	310	3100	90	90	633	Drilling F/4897 to 5964, GOT multiple flow checks in Dakota formation, Change rotating head/rubber, pull rot. Head check flow, no flow, Drill F/5964 to 6020, Circulate and condition remove rotating head, cut mud, check flow		Swift
4	10/6	6,020'	0	2	27	40	25	310	3100	90	90	633	Circulate and condition stage down mud weight, mix pill, TOOH, Change rotating head/rubber remove rot. Head install trip nipple, TOOH, TIH, Change rotating head/rubber install rot. Head remove trip nipple, Circulate and condition weigh up, Change rotating head/rubber, pull rot. Head ck. for flow, Circulate and condition, TOOH, Change rotating head/rubber, TOOH, Lay down BHA, Install/remove wear bushing, rig up/down to run casing, Run casing		Swift
5	10/7	6,085'	65	2	27	40	25	310	3100	90	90	633	Run casing, Run casing land 9 5/8 weatherford verify landing rig up cement head, Circulate and condition bottoms up. Primary cementing, Rig up/down to run casing/rig down cementers, Working as directed by operator lay down landing joint and weatherford install pack off, Install/remove wear bushing/install pack off tool and wear bushing, Pick up BHA, TIH, Install/remove wear bushing/pull trip nipple/install rotating, TIH, Pressure test CSG/shoe held 1500 PSI for 30 min., Drilling cement/float @ 5966 shoe @ 6008, Formation integrity test (fit) EMW 11.5 current MW 10.8 held 218 PSI for 30 min., Rotary drilling F/6020-6085, Drills-BOP etc. 6.2 min.		Swift
6	10/8	7,980'	1895	3	25	40	30	258	3300	75	75	527	Drill F/6085 to 6997, Service rig greased blocks crown LWC, Drill F/6979 to 7930		Otter
7	10/9	9,464'	1484	3	20	60	10	310	3800	75	75	527	Drill F/7325 to 8065, Drills BOP etc., Rotary drilling, Service rig blow down mud line and fix leak on 2 inch union, Drill F/8065 to 9464		Ratcliffe
8	10/10	10,210'	746	3	35	40	45	310	3400	75	75	527	Drill F/9464-9944, Service Rig, Drill 9944-10210 circulate and condition, TOOH		Lodgepole
9	10/11	10,358'	148	3RR	15	20	40	269	3500	78	78	548	Pick up BHA, Pre job safety rig up/run wire line with third party, Cased hole logs rig up/rig down, Pick up BHA, TIH, Change rotating head/rubber/remove trip nipple/install rotating head, TIH, Slide drilling F/10210 to 10358		Lodgepole

MORNING REPORT SUMMARY

Day	Date 2014	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
10	10/12	10,635'	277	3RR	20	20	35	269	3300	78	78	548	Slide drilling 10358 to 10612, TOO from 10612, Change rotating head/rubber removed rotatgin head installed trip nipple, TOO, Lay down BHA, Pick up BHA, Cut drilling line /13 wraps cut, Service rig/repair hoses for rotating head clamp, TIH to 6637 , Change rotating head/rubber/pull trip nipple/install rotating head, TIH, Slide Logepole		
11	10/13	11,080'	445	3RR	25	25	35	269	3200	78	78	548	Slide Drilling 10654-11080, Service Rig, Short trip 100 and F/10100 to 11080 (team 10800-10890), Circulate and condition, TOO f/11080 to 2395, Change rotating head/rubber/pull rotating head/install trip nipple, TOO, L/D BHA, install/remove wear bushing, R/U to run casing, R/U casers, run casing		
12	10/14	11,080'	0	3RR	25	25	35	269	3200	78	78	548	Run casing, R/U casers, fill hole balls, elevators, run casing, remaining/washing F/10660-11099, circulate and condition, R/D casers, circulate and condition, R/U cementers, primary cementing @ 11080, R/D cementers, change rotating head/rubber, remove trip nipple, nipple down BOP, flowline, run casing P/U 1 it of casing to land, nipple down BOP, P/U BOP to set casing, dies & cuts, rig suspended at 3:00.		
13	11/25	11,080'	0	3RR	25	25	35	269	3200	78	78	548	Skid rig (walk rig 33 ft), rig up flowline & cat walk, nipple up BOP, Weatherford bolt down BOP/packoff, nipple up BOP, flow line to RH, choke line, RH remote slings, center stack, test BOP		
14	11/26	11,504'	424	4	15	40	30	258	2600	75	75	527	Test BOPs test pipe & blinds HCR, Mudkill, Dartvale 5000 PSI 10 min annular 2500 PSI 10 min Casing 1500 PSI 30 min, Cut drilling line, TIH, Install/remove wear bushing, TIH, Install/remove wear bushing, TIH, Change rotating head/rubber, TIH, Rotary drilling drill out float @10992 & show assembly @11078, Drill F/11078, Drill T/11504		
15	11/27	13,263'	1759	4	20	40	35	258	3000	75	75	527	Drill F/11655 T/13263		Three Forks
16	11/28	14,849'	1586	4	20	40	40	258	3100	75	75	527	Drill F/13263 T/14199, Service top drive, Drill F/14199 to 14849		Three Forks
17	11/29	16,270'	1421	4	25	40	45	258	3250	75	75	527	Drill F/14849 T/15709, Servie top drive, Drill F/15709 T/16270		Three Forks
18	11/30	17,420'	1150	4	21	40	45	258	3250	75	75	527	Drill F/16270 to 16184, Rig service, Drill F/16184-17420		Three Forks
19	12/1	19,382'	1962	4	22	40	47	258	3600	75	75	527	Drill F/17428 T/18444, Service top drive, Drill F/18444 T/19382		Three Forks
20	12/2	20,430'	1048	4	22	40	47	258	3600	75	75	527	Drill F/19382 to 20430		Three Forks

DAILY MUD SUMMARY

Date 2014	Mud Depth	Mud WT (ppg)	VIS (sec/ qt)	PV (cP)	YP (lbs/ 100 ft ²)	Gels (lbs/ 100 ft ²)	600/ 300 (ratio)	NAP/ H ₂ O (ratio)	NAP/ H ₂ O (% by vol)	Cake (API/ HTHP)	Cor. Solids (%)	Oil/ H ₂ O (%)	Alk	pH	Excess Lime (lb/bbl)	Cl ⁻ (mg/L)	LGS/ HGS (%)	Salinity (ppm)	ES	Gain/ Loss (bbls)
10/01	90'	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-/-	
10/02	2,076'	10.6	89	19	6	9/14/-	44/25	78.6/21.4	66/18	-	14.1	66/18	2.1	-	2.7	32K	11.2/2.8	226,592	525	-/184
10/03	3,175'	10.85	58	19	9	6/5/-	47/28	78.6/21.4	66/18	-	14.1	66/18	2.1	-	2.7	32K	13.4/0.7	226,592	565	-/-
10/04	4,977'	11	48	19	9	10/15/-	47/28	80.7/19.3	67/16	3	15.1	67/16	1.9	-	2.5	32K	13.7/1.2	247,894	625	-/6
10/05	6,020'	10.1	45	18	13	10/15/-	49/31	77/23	67/20	3	11.1	67/20	2	-	2.6	32K	10.5/0.6	208,660	580	-/183
10/06	6,020'	11	69	19	12	11/16/-	50/31	75.9/24.1	63/20	3	15.3	63/20	1.6	-	2.1	28K	13.1/2.1	187,467	530	-/61
10/07	6,607'	10.6	55	18	12	10/15/-	48/30	75/25	63/21	3	14.2	63/21	2.4	-	3.1	30K	10.8/3.4	190,564	500	-/37
10/08	8,140'	9.8	40	13	9	8/13/-	35/22	78.7/21.3	68.5/18.5	3	11.3	68.5/18.5	1.8	-	2.3	28K	8.2/3.4	199,633	615	-/176
10/09	9,647'	9.88	42	14	11	8/11/-	39/25	79.1/20.9	68/18	3	11.8	68/18	1.4	-	1.8	36K	7.4/4.4	247,894	673	-/76
10/10	10,210'	10.1	45	16	11	9/12/-	43/27	80.9/19.1	68.8/16.2	3	12.8	68.8/16.2	1.8	-	2.3	40K	8.5/4.3	264,320	770	-/21
10/11	10,445'	10.22	43	15	14	10/14/-	44/29	81.1/18.9	68.5/16	3	13.4	68.5/16	2	-	2.6	37K	8.6/4.8	264,320	817	-/76
10/12	10,773'	10.32	42	17	13	10/-/-	47/30	81.1/18.9	68.8/16	3	13.1	68.8/16	2.1	-	2.7	39K	8.7/4.4	264,320	878	-/44
10/13	11,080'	10.32	42	17	13	10/-/-	47/30	81.1/18.9	68.8/16	3	13.1	68.8/16	2.1	-	2.7	39K	8.7/4.4	264,320	878	-/-
10/14	11,080'	10.32	42	17	13	10/-/-	47/31	81.1/18.10	68.8/17	3	13.1	68.8/17	3.1	-	3.7	39K	8.7/4.5	264,320	878	-/-
10/15	11,080'																			
11/25	11,110'	9.7	27	1	1	-	3/2	-	0/90.6	-	-	-	-	-	8	-	153K	0/0.2	-	-
11/26	11,718'	9.8	27	1	1	-	3/2	-	0/90.1	-	-	-	-	-	8	-	162K	0.1/0.2	-	-
11/27	13,263'	9.8	27	1	1	-	3/2	-	0/90.1	-	-	-	-	-	8	-	162K	0.1/0.2	-	-
11/28	15,207'	9.8	27	1	1	-	3/2	-	0/89.9	-	-	-	-	-	8	-	166K	0/0.2	-	-
11/29	16,270'	9.8	27	1	1	-	3/2	-	0/89.9	-	-	-	-	-	8	-	166K	0/0.2	-	-
11/30	17,688'	9.8	27	1	1	-	3/2	-	0/90	-	-	-	-	-	8	-	164K	0.1/0.1	-	-
12/01	19,382'	9.8	27	1	1	-	3/2	-	0/90	-	-	-	-	-	8	-	164K	0.1/0.1	-	-

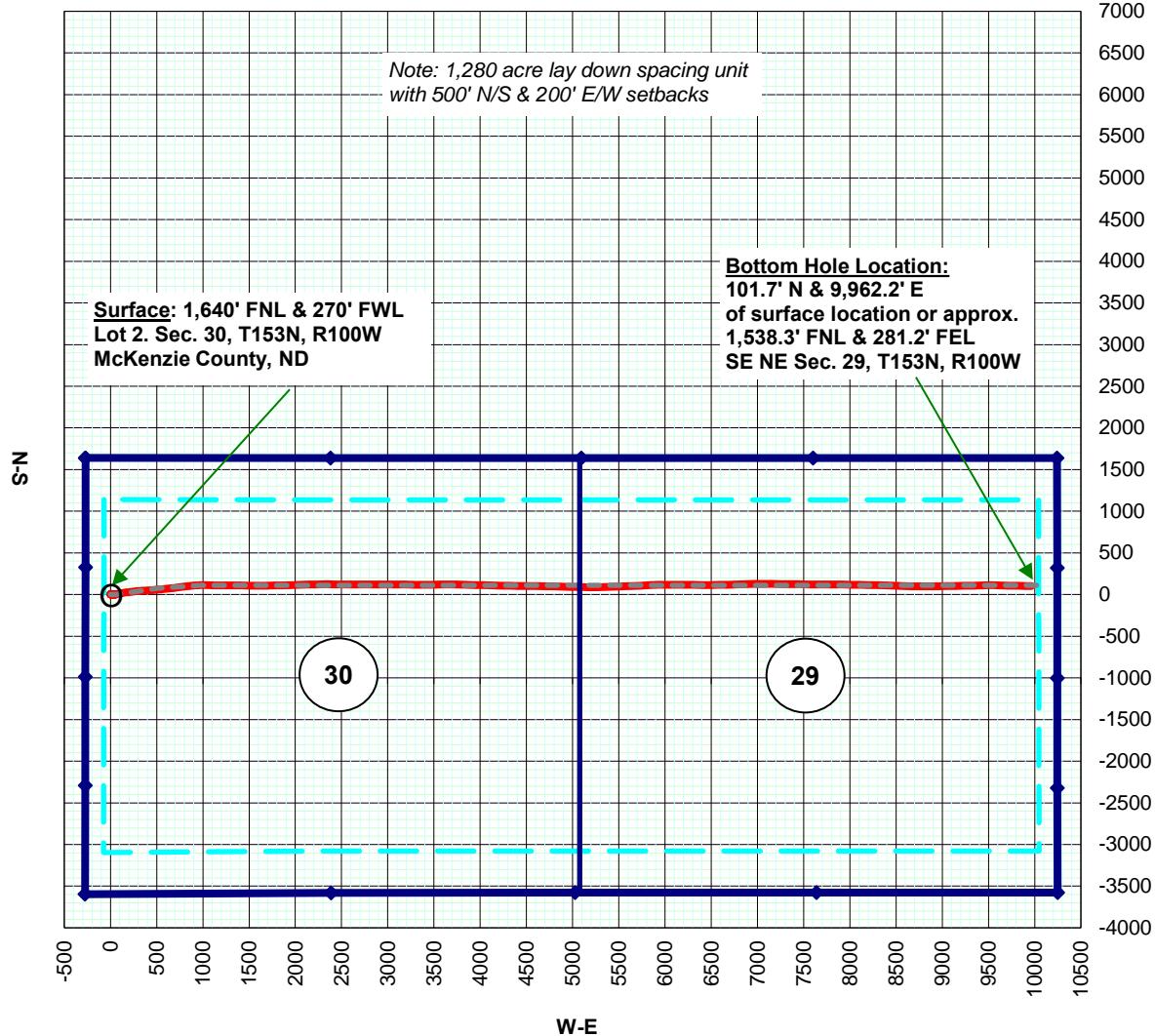
Change mud from diesel invert to salt water

BOTTOM HOLE ASSEMBLY RECORD

Bit #	Size (in.)	Type	Make	Model	Bit Data					Motor Data				Reason For Removal	
					Depth In	Depth Out	Footage	Hours	Σ hrs	Vert. Dev.	Make	Model	Bend		
1	17 1/2	PDC	Hughes	HC605S	90'	2,075'	1,985'	12.5	12.5	Surface	-	-	-	TD surface	
2	12 1/4	PDC	NOV	DEH1616DK2	2,075'	6,020'	3,945'	42.5	55	Vertical	Baker	1.00°	0.29	TD 2nd Surface	
3	8 3/4	PDC	Security	MMD65D	6,020'	10,210'	4,190'	60.5	115.5	Vertical	Baker	1.50°	0.29	TD Vertical	
3RR	8 3/4	PDC	Security	MMD65D	10,210'	11,080'	870'	36	151.5	Curve	Baker	2.50°	0.29	TD Curve	
4	6	PDC	Smith	Z613	11,080'	20,430'	9,350'	141.5	293	Lateral	Baker	-	1.50°	0.29	TD Lateral

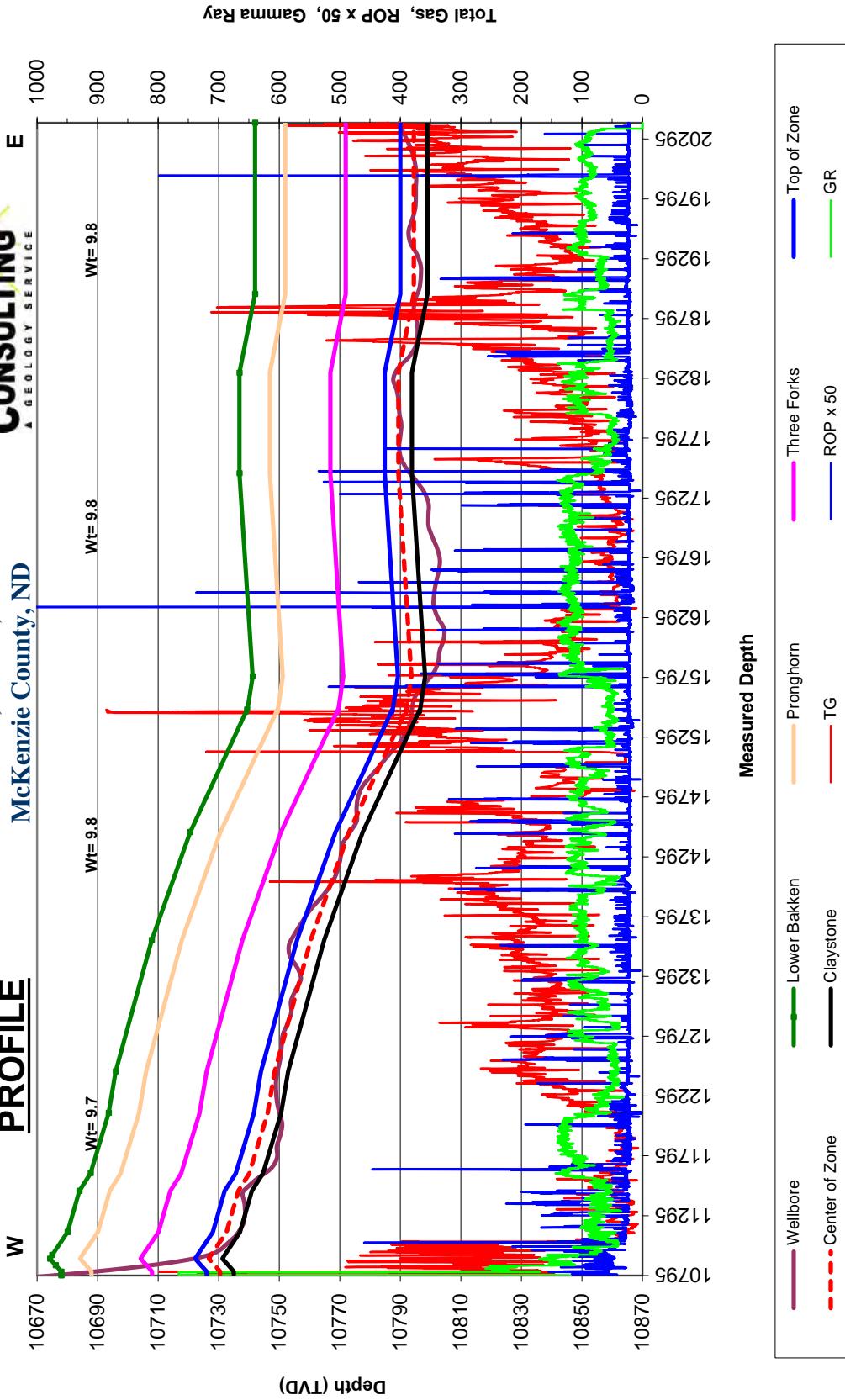
PLAN VIEW

**Oasis Petroleum North America, LLC
Wade Federal 5300 21-30 12T**



Oasis Petroleum North America, LLC
 Wade Federal 5300 21-30 12T
 Lot 2 Sec. 30, T153N, R100W
 McKenzie County, ND

PROFILE



FORMATION MARKERS & DIP ESTIMATES

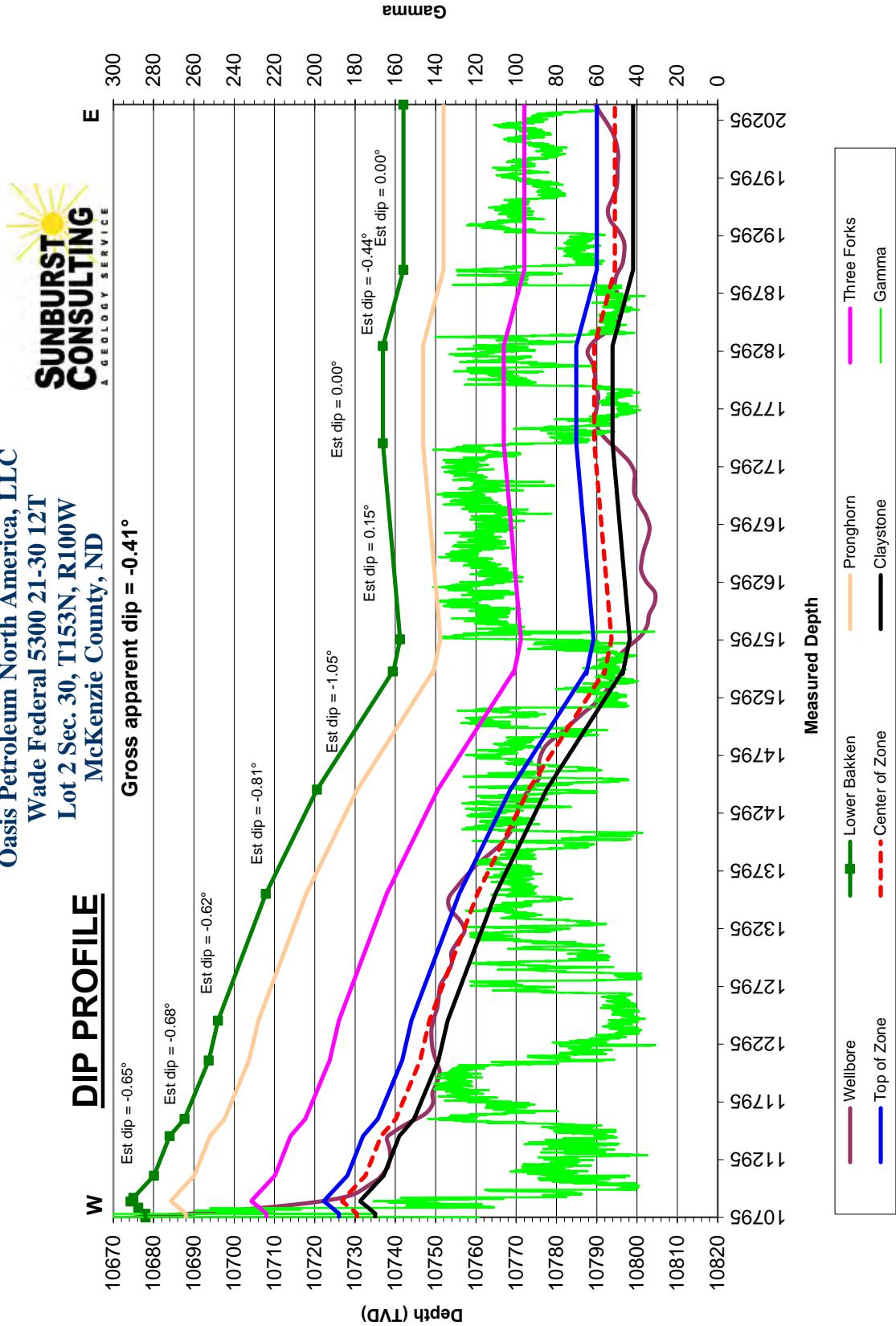
Oasis Petroleum North America, LLC - Wade Federal 5300 21-30 12T

Dip Change Points	MD	TVD	TVD diff.	MD diff.	Dip	Dipping up/down	Type of Marker
Marker							
Center of Target	10,935	10,674.30					Gamma
Base of Target	10,965	10,675.00	0.70	30.00	-1. 34	Down	Gamma
Base of Target	11,156	10,680.10	5.10	191.00	-1. 53	Down	Gamma
Base of Target	11,500	10,684.00	3.90	344.00	-0. 65	Down	Gamma
Center of Target	11,650	10,687.70	3.70	150.00	-1. 41	Down	Gamma
Claystone	12,154	10,693.70	6.00	504.00	-0. 68	Down	Gamma
Base of Target	12,500	10,696.00	2.30	346.00	-0. 38	Down	Gamma
Top of Target	13,598	10,707.90	11.90	1098.00	-0. 62	Down	Gamma
Center of Target	14,500	10,720.60	12.70	902.00	-0. 81	Down	Gamma
Base of Target	15,524	10,739.40	18.80	1024.00	-1. 05	Down	Gamma
Base of Target	15,801	10,741.20	1.80	277.00	-0. 37	Down	Gamma
Base of Target	17,500	10,736.90	-4.30	1699.00	0.15	Up	Gamma
Center of Target	18,341	10,736.90	0.00	841.00	0.00	Flat	Gamma
Center of Target	19,000	10,742.00	5.10	659.00	-0. 44	Down	Gamma
TD	20,430	10,742.00	0.00	1430.00	0.00	Flat	Gamma
Gross Dip							
Initial Target Contact	10,935	10,674.30					
Projected Final Target Contact	20,430	10,742.00	67.70	9495.00	-0. 41	Down	Projection

Oasis Petroleum North America, LLC
 Wade Federal 5300 21-30 12T
 Lot 2 Sec. 30, T153N, R100W
 McKenzie County, ND

DIP PROFILE

Gross apparent dip = -0.41°



<

SUNBURST CONSULTING, INC.

>

Operator:	Oasis Petroleum North America, LLC	
Well :	Wade Federal 5300 21-30 12T	
County:	McKenzie	State: ND
QQ:	Lot 2	Section: 30
Township:	153	N/S: N
Range:	100	E/W: W
Footages:	1640	FN/SL: N
	270	FE/WL: W

Kick-off:	10/10/2014
Finish:	12/1/2014
Directional Supervision:	RPM

Date: 12/12/2014
 Time: 12:36
F9 to re-calculate

Proposed dir: 89.37

Minimum Curvature Method (SPE-3362)

[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		
Tie	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	151.00	0.30	82.90	151.00	0.05	0.39	0.39	0.20
2	244.00	0.40	75.60	244.00	0.16	0.95	0.95	0.12
3	337.00	0.30	100.40	337.00	0.20	1.50	1.50	0.19
4	430.00	0.50	103.20	429.99	0.06	2.14	2.14	0.22
5	524.00	0.40	94.70	523.99	-0.06	2.86	2.86	0.13
6	615.00	0.70	65.20	614.99	0.15	3.68	3.69	0.44
7	707.00	0.60	48.60	706.98	0.70	4.56	4.56	0.23
8	799.00	0.60	75.50	798.98	1.14	5.38	5.40	0.30
9	891.00	0.60	83.50	890.97	1.32	6.33	6.34	0.09
10	983.00	0.70	63.30	982.96	1.62	7.31	7.33	0.27
11	1075.00	1.10	80.70	1074.95	2.02	8.68	8.70	0.52
12	1167.00	0.40	84.80	1166.95	2.19	9.87	9.90	0.76
13	1260.00	1.00	245.40	1259.94	1.88	9.46	9.48	1.49
14	1352.00	0.80	261.40	1351.93	1.45	8.09	8.11	0.35
15	1444.00	0.70	276.50	1443.92	1.42	6.90	6.92	0.24
16	1537.00	0.90	287.00	1536.91	1.70	5.64	5.66	0.27
17	1630.00	0.90	272.10	1629.90	1.94	4.21	4.23	0.25
18	1723.00	1.20	258.50	1722.89	1.77	2.53	2.54	0.42
19	1816.00	0.40	342.80	1815.88	1.88	1.48	1.50	1.32
20	1909.00	0.70	314.80	1908.87	2.60	0.98	1.00	0.42
21	2002.00	0.90	280.60	2001.87	3.13	-0.14	-0.11	0.55
22	2023.00	0.80	280.10	2022.86	3.19	-0.45	-0.42	0.48
23	2089.00	0.90	273.20	2088.86	3.30	-1.42	-1.39	0.22
24	2182.00	1.10	50.70	2181.85	3.90	-1.46	-1.42	2.01
25	2276.00	1.10	59.10	2275.83	4.94	0.01	0.07	0.17
26	2369.00	1.10	65.80	2368.82	5.76	1.59	1.65	0.14
27	2462.00	0.60	49.90	2461.81	6.44	2.78	2.85	0.59
28	2555.00	0.30	19.70	2554.80	6.98	3.23	3.31	0.40
29	2648.00	0.80	150.40	2647.80	6.65	3.64	3.71	1.10
30	2742.00	1.00	161.80	2741.79	5.30	4.22	4.27	0.28
31	2835.00	1.20	154.80	2834.77	3.65	4.88	4.92	0.26
32	2928.00	0.90	157.50	2927.76	2.09	5.58	5.60	0.33
33	3021.00	1.10	153.00	3020.74	0.62	6.26	6.27	0.23
34	3114.00	1.10	163.90	3113.72	-1.03	6.92	6.90	0.22

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SUNBURST CONSULTING, INC.

>

Operator:	Oasis Petroleum North America, LLC	
Well :	Wade Federal 5300 21-30 12T	
County:	McKenzie	State: ND
QQ:	Lot 2	Section: 30
Township:	153	N/S: N
Range:	100	E/W: W
Footages:	1640	FN/SL: N
	270	FE/WL: W

Kick-off:	10/10/2014
Finish:	12/1/2014
Directional Supervision:	
RPM	

Date: 12/12/2014
 Time: 12:36
F9 to re-calculate

Proposed dir: 89.37

Minimum Curvature Method (SPE-3362)

[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		
35	3208.00	0.30	74.10	3207.72	-1.83	7.40	7.38	1.21
36	3301.00	0.50	85.40	3300.72	-1.73	8.04	8.02	0.23
37	3394.00	0.40	84.60	3393.71	-1.67	8.77	8.75	0.11
38	3487.00	0.30	71.90	3486.71	-1.56	9.32	9.31	0.14
39	3580.00	0.30	89.00	3579.71	-1.48	9.80	9.78	0.10
40	3674.00	0.20	105.00	3673.71	-1.52	10.20	10.19	0.13
41	3767.00	0.30	47.30	3766.71	-1.40	10.54	10.52	0.28
42	3861.00	0.30	51.30	3860.71	-1.08	10.91	10.90	0.02
43	3954.00	1.30	79.60	3953.70	-0.74	12.14	12.13	1.12
44	4047.00	1.30	80.80	4046.67	-0.38	14.22	14.21	0.03
45	4140.00	1.10	72.10	4139.65	0.07	16.11	16.11	0.29
46	4233.00	0.20	136.60	4232.65	0.22	17.07	17.07	1.11
47	4326.00	0.30	112.80	4325.65	0.01	17.41	17.41	0.15
48	4420.00	0.30	149.10	4419.64	-0.30	17.76	17.76	0.20
49	4513.00	0.30	167.00	4512.64	-0.74	17.94	17.93	0.10
50	4606.00	0.20	264.80	4605.64	-0.99	17.83	17.82	0.41
51	4699.00	0.20	261.50	4698.64	-1.03	17.51	17.50	0.01
52	4792.00	0.40	219.50	4791.64	-1.31	17.14	17.13	0.31
53	4885.00	0.70	228.60	4884.64	-1.93	16.51	16.49	0.33
54	4978.00	0.30	239.90	4977.63	-2.43	15.87	15.85	0.44
55	5072.00	0.30	147.90	5071.63	-2.76	15.79	15.76	0.46
56	5165.00	0.90	79.10	5164.63	-2.83	16.64	16.61	0.90
57	5258.00	1.00	81.50	5257.61	-2.57	18.16	18.13	0.12
58	5351.00	1.00	84.30	5350.60	-2.37	19.77	19.74	0.05
59	5444.00	0.90	95.40	5443.59	-2.36	21.30	21.28	0.22
60	5537.00	0.90	93.80	5536.58	-2.48	22.76	22.73	0.03
61	5630.00	1.10	106.90	5629.56	-2.79	24.34	24.31	0.33
62	5722.00	1.10	115.70	5721.54	-3.43	25.98	25.94	0.18
63	5815.00	1.00	115.60	5814.53	-4.16	27.52	27.47	0.11
64	5908.00	1.00	116.70	5907.51	-4.88	28.98	28.92	0.02
65	5964.00	1.00	113.50	5963.51	-5.29	29.86	29.80	0.10
66	6024.00	0.80	144.80	6023.50	-5.84	30.58	30.52	0.87
67	6086.00	0.30	343.80	6085.50	-6.04	30.79	30.72	1.75
68	6180.00	0.50	347.40	6179.50	-5.41	30.63	30.57	0.21
69	6273.00	0.70	307.40	6272.49	-4.66	30.09	30.04	0.49

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SUNBURST CONSULTING, INC.

>

Operator:	Oasis Petroleum North America, LLC	
Well :	Wade Federal 5300 21-30 12T	
County:	McKenzie	State: ND
QQ:	Lot 2	Section: 30
Township:	153	N/S: N
Range:	100	E/W: W
Footages:	1640	FN/SL: N
	270	FE/WL: W

Kick-off:	10/10/2014
Finish:	12/1/2014
Directional Supervision:	RPM

Date: 12/12/2014
 Time: 12:36
F9 to re-calculate

Proposed dir: 89.37

Minimum Curvature Method (SPE-3362)

[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		
70	6366.00	0.40	300.50	6365.49	-4.15	29.36	29.31	0.33
71	6460.00	1.10	11.80	6459.48	-3.10	29.26	29.22	1.11
72	6553.00	1.20	14.30	6552.46	-1.29	29.68	29.67	0.12
73	6646.00	0.70	357.70	6645.45	0.22	29.90	29.90	0.61
74	6739.00	0.40	91.70	6738.44	0.78	30.20	30.21	0.89
75	6832.00	0.20	29.80	6831.44	0.91	30.61	30.61	0.38
76	6925.00	0.40	253.60	6924.44	0.96	30.38	30.38	0.60
77	7017.00	0.50	275.80	7016.44	0.91	29.67	29.68	0.22
78	7110.00	1.20	79.90	7109.43	1.12	30.22	30.23	1.81
79	7203.00	1.20	83.80	7202.41	1.40	32.15	32.16	0.09
80	7297.00	1.60	66.50	7296.39	2.03	34.33	34.35	0.61
81	7390.00	1.10	75.70	7389.36	2.77	36.39	36.42	0.58
82	7483.00	1.10	67.60	7482.34	3.33	38.08	38.11	0.17
83	7576.00	0.90	43.60	7575.33	4.20	39.41	39.45	0.49
84	7669.00	0.80	138.70	7668.32	4.24	40.34	40.38	1.35
85	7763.00	0.60	110.00	7762.32	3.58	41.24	41.27	0.42
86	7856.00	0.30	196.90	7855.31	3.18	41.62	41.65	0.71
87	7949.00	0.50	193.60	7948.31	2.55	41.46	41.48	0.22
88	8042.00	0.60	227.30	8041.31	1.83	41.00	41.02	0.36
89	8136.00	0.70	199.90	8135.30	0.95	40.45	40.45	0.34
90	8229.00	0.60	212.20	8228.30	0.01	39.99	39.99	0.18
91	8322.00	0.30	139.90	8321.29	-0.59	39.89	39.88	0.63
92	8415.00	0.50	154.60	8414.29	-1.14	40.22	40.21	0.24
93	8508.00	0.50	148.70	8507.29	-1.86	40.61	40.58	0.06
94	8602.00	0.50	193.30	8601.28	-2.61	40.72	40.69	0.40
95	8695.00	0.70	191.70	8694.28	-3.56	40.52	40.47	0.22
96	8788.00	0.60	205.90	8787.27	-4.55	40.19	40.14	0.20
97	8881.00	0.40	169.80	8880.27	-5.31	40.03	39.97	0.39
98	8975.00	0.50	75.90	8974.27	-5.53	40.49	40.43	0.70
99	9068.00	0.40	98.90	9067.27	-5.48	41.20	41.14	0.22
100	9161.00	0.70	59.90	9160.26	-5.25	42.02	41.95	0.50
101	9254.00	0.40	112.50	9253.26	-5.09	42.81	42.75	0.60
102	9348.00	0.40	27.40	9347.26	-4.92	43.26	43.20	0.58
103	9441.00	0.10	358.50	9440.25	-4.55	43.41	43.36	0.34
104	9534.00	0.40	91.20	9533.25	-4.48	43.73	43.68	0.45

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SUNBURST CONSULTING, INC.

>

Operator:	Oasis Petroleum North America, LLC	
Well :	Wade Federal 5300 21-30 12T	
County:	McKenzie	State: ND
QQ:	Lot 2	Section: 30
Township:	153	N/S: N
Range:	100	E/W: W
Footages:	1640	FN/SL: N
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Kick-off:	10/10/2014
Finish:	12/1/2014
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F9 to re-calculate

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Minimum Curvature Method (SPE-3362)

[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		
105	9627.00	0.40	86.30	9626.25	-4.47	44.38	44.33	0.04
106	9720.00	0.10	176.60	9719.25	-4.53	44.71	44.66	0.44
107	9813.00	0.30	285.30	9812.25	-4.54	44.48	44.42	0.37
108	9906.00	0.40	17.73	9905.25	-4.17	44.34	44.29	0.55
109	10000.00	0.60	313.70	9999.25	-3.52	44.09	44.04	0.59
110	10093.00	0.50	350.60	10092.24	-2.78	43.67	43.63	0.39
111	10156.00	0.50	287.60	10155.24	-2.43	43.36	43.33	0.83
112	10174.00	0.40	323.60	10173.24	-2.35	43.25	43.22	1.63
113	10205.00	0.70	37.70	10204.24	-2.11	43.30	43.27	2.27
114	10236.00	3.80	66.90	10235.21	-1.56	44.36	44.34	10.35
115	10266.00	7.20	68.50	10265.07	-0.48	47.03	47.02	11.34
116	10297.00	10.40	72.10	10295.70	1.09	51.50	51.51	10.47
117	10328.00	14.80	75.80	10325.95	2.92	58.00	58.03	14.42
118	10359.00	18.50	77.20	10355.64	4.98	66.64	66.69	12.00
119	10391.00	22.30	77.60	10385.63	7.41	77.52	77.60	11.88
120	10422.00	25.80	77.60	10413.93	10.13	89.86	89.97	11.29
121	10453.00	28.70	78.40	10441.49	13.07	103.74	103.88	9.43
122	10484.00	31.80	78.70	10468.27	16.17	119.05	119.22	10.01
123	10515.00	34.80	79.90	10494.17	19.32	135.77	135.97	9.91
124	10546.00	37.90	80.70	10519.14	22.41	153.88	154.12	10.12
125	10577.00	41.10	81.20	10543.06	25.51	173.35	173.62	10.37
126	10608.00	44.70	81.60	10565.76	28.66	194.21	194.52	11.65
127	10639.00	48.30	82.30	10587.10	31.81	216.47	216.81	11.73
128	10670.00	51.80	82.80	10607.00	34.89	240.03	240.40	11.36
129	10701.00	53.90	83.30	10625.72	37.87	264.56	264.96	6.90
130	10732.00	56.10	83.90	10643.50	40.70	289.79	290.22	7.27
131	10763.00	59.00	84.90	10660.13	43.25	315.83	316.28	9.74
132	10795.00	63.30	85.60	10675.57	45.57	343.75	344.23	13.57
133	10826.00	67.00	86.40	10688.59	47.53	371.81	372.31	12.16
134	10857.00	69.60	86.50	10700.05	49.31	400.55	401.07	8.39
135	10888.00	72.90	86.10	10710.02	51.21	429.84	430.38	10.72
136	10919.00	76.42	85.10	10718.22	53.50	459.65	460.21	11.77
137	10950.00	80.40	84.60	10724.45	56.23	489.88	490.47	12.94
138	10981.00	84.60	84.50	10728.49	59.15	520.47	521.09	13.55
139	11012.00	87.20	84.10	10730.71	62.22	551.24	551.89	8.49

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SUNBURST CONSULTING, INC.

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Operator:	Oasis Petroleum North America, LLC	
Well :	Wade Federal 5300 21-30 12T	
County:	McKenzie	State: ND
QQ:	Lot 2	Section: 30
Township:	153	N/S: N
Range:	100	E/W: W
Footages:	1640	FN/SL: N
	270	FE/WL: W

Kick-off:	10/10/2014
Finish:	12/1/2014
Directional Supervision:	
RPM	

Date: 12/12/2014
 Time: 12:36
F9 to re-calculate

Proposed dir: 89.37

Minimum Curvature Method (SPE-3362)

[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		
140	11023.00	87.30	83.80	10731.23	63.38	562.16	562.83	2.87
141	11123.00	87.70	81.70	10735.60	75.98	661.26	662.06	2.14
142	11131.00	87.60	81.70	10735.92	77.14	669.17	669.98	1.25
143	11224.00	89.70	81.90	10738.12	90.40	761.19	762.14	2.27
144	11254.00	89.50	81.40	10738.33	94.75	790.87	791.87	1.80
145	11285.00	89.30	81.70	10738.65	99.31	821.54	822.58	1.16
146	11317.00	90.20	84.30	10738.79	103.21	853.29	854.38	8.60
147	11348.00	90.10	84.50	10738.71	106.23	884.15	885.26	0.72
148	11379.00	90.10	85.10	10738.65	109.04	915.02	916.16	1.94
149	11409.00	90.60	88.00	10738.47	110.85	944.96	946.12	9.81
150	11440.00	90.50	88.60	10738.17	111.77	975.94	977.11	1.96
151	11471.00	90.50	88.90	10737.90	112.44	1006.94	1008.11	0.97
152	11502.00	88.20	90.60	10738.25	112.58	1037.93	1039.11	9.23
153	11595.00	86.80	91.00	10742.31	111.28	1130.83	1131.99	1.57
154	11689.00	87.10	90.60	10747.31	109.97	1224.69	1225.82	0.53
155	11781.00	90.40	90.90	10749.32	108.77	1316.65	1317.76	3.60
156	11873.00	89.70	90.40	10749.24	107.72	1408.64	1409.74	0.94
157	11966.00	88.90	90.20	10750.38	107.24	1501.63	1502.72	0.89
158	12058.00	90.30	90.60	10751.02	106.59	1593.62	1594.70	1.58
159	12152.00	90.80	89.60	10750.12	106.43	1687.62	1688.68	1.19
160	12243.00	90.20	88.70	10749.32	107.78	1778.60	1779.68	1.19
161	12336.00	90.20	88.20	10749.00	110.30	1871.57	1872.67	0.54
162	12429.00	89.80	88.00	10749.00	113.38	1964.52	1965.64	0.48
163	12524.00	89.40	87.30	10749.66	117.27	2059.43	2060.60	0.85
164	12618.00	89.60	89.10	10750.48	120.23	2153.38	2154.57	1.93
165	12713.00	90.00	88.50	10750.81	122.22	2248.36	2249.56	0.76
166	12807.00	89.50	90.30	10751.22	123.20	2342.35	2343.56	1.99
167	12901.00	88.60	90.70	10752.78	122.38	2436.33	2437.53	1.05
168	12995.00	89.90	90.20	10754.01	121.64	2530.32	2531.50	1.48
169	13089.00	90.20	89.90	10753.93	121.56	2624.31	2625.49	0.45
170	13182.00	87.90	89.40	10755.47	122.13	2717.29	2718.47	2.53
171	13276.00	90.00	90.50	10757.19	122.21	2811.27	2812.45	2.52
172	13370.00	91.50	90.40	10755.96	121.47	2905.26	2906.42	1.60
173	13464.00	91.40	90.00	10753.58	121.14	2999.23	3000.38	0.44
174	13557.00	89.00	90.80	10753.26	120.49	3092.22	3093.35	2.72

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SUNBURST CONSULTING, INC.

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Operator:	Oasis Petroleum North America, LLC	
Well :	Wade Federal 5300 21-30 12T	
County:	McKenzie	State: ND
QQ:	Lot 2	Section: 30
Township:	153	N/S: N
Range:	100	E/W: W
Footages:	1640	FN/SL: N
	270	FE/WL: W

Kick-off:	10/10/2014
Finish:	12/1/2014
Directional Supervision:	
RPM	

Date: 12/12/2014
 Time: 12:36
F9 to re-calculate

Proposed dir: 89.37

Minimum Curvature Method (SPE-3362)

[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		
175	13651.00	88.70	90.90	10755.15	119.10	3186.19	3187.30	0.34
176	13745.00	88.50	90.20	10757.44	118.20	3280.15	3281.26	0.77
177	13839.00	88.50	90.00	10759.90	118.03	3374.12	3375.22	0.21
178	13933.00	87.60	89.10	10763.10	118.77	3468.06	3469.16	1.35
179	14027.00	88.60	89.80	10766.22	119.67	3562.00	3563.11	1.30
180	14122.00	88.80	89.80	10768.37	120.00	3656.98	3658.08	0.21
181	14216.00	89.60	91.10	10769.69	119.27	3750.96	3752.05	1.62
182	14311.00	89.50	91.60	10770.43	117.03	3845.94	3846.99	0.54
183	14406.00	89.80	91.60	10771.01	114.38	3940.90	3941.92	0.32
184	14501.00	87.30	91.00	10773.42	112.22	4035.83	4036.82	2.71
185	14596.00	90.00	92.00	10775.65	109.73	4130.76	4131.72	3.03
186	14690.00	90.10	91.90	10775.57	106.54	4224.71	4225.63	0.15
187	14785.00	89.40	91.10	10775.99	104.05	4319.68	4320.56	1.12
188	14879.00	88.90	90.90	10777.38	102.41	4413.65	4414.51	0.57
189	14974.00	87.40	90.50	10780.45	101.25	4508.59	4509.43	1.63
190	15069.00	88.70	90.80	10783.68	100.17	4603.53	4604.35	1.40
191	15163.00	87.60	90.80	10786.72	98.86	4697.47	4698.27	1.17
192	15258.00	88.40	91.20	10790.03	97.20	4792.39	4793.17	0.94
193	15353.00	88.90	91.60	10792.27	94.88	4887.34	4888.09	0.67
194	15448.00	89.50	91.10	10793.60	92.64	4982.30	4983.02	0.82
195	15543.00	90.10	91.20	10793.93	90.74	5077.28	5077.97	0.64
196	15637.00	88.60	91.10	10794.99	88.85	5171.25	5171.92	1.60
197	15732.00	88.10	89.20	10797.73	88.60	5266.21	5266.87	2.07
198	15827.00	88.10	88.30	10800.88	90.67	5361.13	5361.81	0.95
199	15921.00	89.90	87.40	10802.52	94.20	5455.05	5455.76	2.14
200	16016.00	89.50	87.40	10803.02	98.51	5549.95	5550.70	0.42
201	16111.00	88.90	87.30	10804.34	102.90	5644.84	5645.63	0.64
202	16206.00	91.00	87.60	10804.43	107.13	5739.74	5740.57	2.23
203	16300.00	91.60	86.50	10802.29	111.96	5833.59	5834.47	1.33
204	16395.00	89.90	88.00	10801.05	116.52	5928.47	5929.39	2.39
205	16490.00	89.90	89.40	10801.22	118.68	6023.44	6024.38	1.47
206	16583.00	89.40	90.40	10801.78	118.84	6116.43	6117.37	1.20
207	16678.00	89.50	91.50	10802.70	117.26	6211.42	6212.33	1.16
208	16773.00	90.00	90.70	10803.11	115.44	6306.40	6307.28	0.99
209	16868.00	91.00	90.10	10802.28	114.78	6401.39	6402.26	1.23

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SUNBURST CONSULTING, INC.

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Operator:	Oasis Petroleum North America, LLC	
Well :	Wade Federal 5300 21-30 12T	
County:	McKenzie	State: ND
QQ:	Lot 2	Section: 30
Township:	153	N/S: N
Range:	100	E/W: W
Footages:	1640	FN/SL: N
	270	FE/WL: W

Kick-off:	10/10/2014
Finish:	12/1/2014
Directional Supervision:	
RPM	

Date: 12/12/2014
 Time: 12:36
F9 to re-calculate

Proposed dir: 89.37

Minimum Curvature Method (SPE-3362)

[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		
210	16963.00	90.90	89.60	10800.71	115.03	6496.38	6497.25	0.54
211	17057.00	90.70	88.90	10799.39	116.26	6590.36	6591.24	0.77
212	17151.00	89.40	88.00	10799.31	118.80	6684.32	6685.22	1.68
213	17246.00	90.50	87.80	10799.39	122.28	6779.25	6780.19	1.18
214	17341.00	91.20	88.30	10797.99	125.51	6874.19	6875.15	0.91
215	17436.00	92.00	89.30	10795.33	127.50	6969.13	6970.11	1.35
216	17531.00	91.60	90.50	10792.35	127.67	7064.08	7065.06	1.33
217	17625.00	90.90	90.50	10790.30	126.85	7158.05	7159.01	0.74
218	17720.00	89.90	90.80	10789.63	125.77	7253.04	7253.99	1.10
219	17814.00	89.60	90.90	10790.04	124.37	7347.03	7347.96	0.34
220	17908.00	90.00	90.80	10790.37	122.98	7441.02	7441.92	0.44
221	18003.00	90.80	90.40	10789.71	121.98	7536.01	7536.90	0.94
222	18098.00	89.40	90.70	10789.54	121.07	7631.01	7631.88	1.51
223	18193.00	91.40	90.70	10788.88	119.91	7725.99	7726.84	2.11
224	18288.00	90.00	90.20	10787.72	119.17	7820.98	7821.82	1.56
225	18382.00	88.00	90.10	10789.36	118.92	7914.96	7915.79	2.13
226	18477.00	87.60	90.60	10793.01	118.34	8009.89	8010.70	0.67
227	18572.00	89.70	91.10	10795.25	116.93	8104.84	8105.64	2.27
228	18666.00	89.70	91.10	10795.74	115.13	8198.83	8199.60	0.00
229	18761.00	90.50	91.60	10795.57	112.89	8293.80	8294.54	0.99
230	18856.00	90.80	91.90	10794.49	109.99	8388.75	8389.45	0.45
231	18951.00	88.70	92.40	10794.91	106.42	8483.67	8484.33	2.27
232	19045.00	89.60	92.60	10796.30	102.32	8577.57	8578.18	0.98
233	19140.00	89.80	90.60	10796.80	99.67	8672.53	8673.10	2.12
234	19235.00	90.20	90.20	10796.80	99.01	8767.53	8768.09	0.60
235	19330.00	91.30	89.70	10795.56	99.09	8862.52	8863.07	1.27
236	19424.00	91.30	89.30	10793.42	99.91	8956.49	8957.05	0.43
237	19519.00	89.50	89.40	10792.76	100.99	9051.48	9052.04	1.90
238	19614.00	89.20	89.00	10793.84	102.32	9146.46	9147.03	0.53
239	19709.00	89.50	88.60	10794.92	104.30	9241.43	9242.02	0.53
240	19804.00	90.20	88.20	10795.17	106.96	9336.40	9337.01	0.85
241	19898.00	89.80	87.80	10795.17	110.24	9430.34	9430.98	0.60
242	19993.00	90.00	90.70	10795.33	111.48	9525.32	9525.97	3.06
243	20088.00	90.50	91.30	10794.92	109.82	9620.30	9620.93	0.82
244	20183.00	90.60	91.40	10794.00	107.59	9715.27	9715.87	0.15

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SUNBURST CONSULTING, INC.

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Operator:	Oasis Petroleum North America, LLC	
Well :	Wade Federal 5300 21-30 12T	
County:	McKenzie	State: ND
QQ:	Lot 2	Section: 30
Township:	153	N/S: N
Range:	100	E/W: W
Footages:	1640	FN/SL: N
	270	FE/WL: W

Kick-off:	10/10/2014
Finish:	12/1/2014
Directional Supervision:	RPM

Date: 12/12/2014
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F9 to re-calculate

Proposed dir: 89.37

Minimum Curvature Method (SPE-3362)

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

No.	MD	INC	TRUE			N-S	E-W	SECT	DLS/
			AZM	TVD					100
245	20278.00	91.30	91.40	10792.43	105.26	9810.23	9810.80	0.74	
246	20368.00	90.90	91.30	10790.70	103.14	9900.19	9900.72	0.46	
247	20430.00	90.90	91.30	10789.73	101.74	9962.17	9962.68	0.00	

FORMATION TOPS & STRUCTURAL RELATIONSHIPS

Formation/ Marker	Subject Well:							Offset Wells:			
	Prog. Top	Prog. Datum (MSL)	Driller's Depth Top (MD)	Driller's Depth Top (TVD)	Datum (MSL)	Interval Thickness	Thickness to Target	Dip To Prog.	Dip To Chalmers 5301 44-24 3BR	Dip To Chalmers 5301 44-24 2TR	Dip To Chalmers 5301 44-24 4TR
Elevation: GL: 1,999'	Sub: 25'	KB: 2,024'									
Mowry	4,923'	-2,899'	4,936'	4,936'	-2,912'	432'	5,795'	-13'	-	26'	-
Dakota	5,347'	-3,323'	5,368'	5,368'	-3,344'	511'	5,363'	-21'	-	31'	-
Swift	5,868'	-3,844'	5,879'	5,879'	-3,855'	481'	4,852'	-11'	-	20'	-
Kibbey Lime	8,299'	-6,275'	8,309'	8,308'	-6,284'	165'	2,423'	-9'	16'	12'	14'
Charles	8,441'	-6,417'	8,474'	8,473'	-6,449'	566'	2,258'	-32'	22'	12'	21'
UB	8,982'	-6,958'	9,040'	9,039'	-7,015'	75'	1,692'	-57'	4'	-1'	0'
Base Last Salt	9,115'	-7,091'	9,115'	9,114'	-7,090'	49'	1,617'	1'	13'	4'	9'
Ratcliffe	9,162'	-7,138'	9,164'	9,163'	-7,139'	167'	1,568'	-1'	10'	2'	6'
Mission Canyon	9,331'	-7,307'	9,331'	9,330'	-7,306'	556'	1,401'	1'	17'	12'	14'
Lodgepole	9,881'	-7,857'	9,887'	9,886'	-7,862'	99'	845'	-5'	19'	15'	16'
Lodgepole A	9,969'	-7,945'	9,986'	9,985'	-7,961'	77'	746'	-16'	19'	24'	26'
Lodgepole B	10,046'	-8,022'	10,063'	10,062'	-8,038'	60'	669'	-16'	47'	87'	85'
Lodgepole C	10,107'	-8,083'	10,123'	10,122'	-8,098'	190'	609'	-15'	25'	93'	93'
Lodgepole D	10,316'	-8,292'	10,314'	10,312'	-8,288'	120'	419'	4'	22'	19'	18'
Lodgepole E	10,429'	-8,405'	10,443'	10,432'	-8,408'	95'	299'	-3'	53'	45'	45'
Lodgepole F	10,526'	-8,502'	10,556'	10,527'	-8,503'	85'	204'	-1'	26'	21'	22'
False Bakken	10,612'	-8,588'	10,679'	10,612'	-8,588'	9'	119'	0'	28'	21'	18'
Upper Bakken	10,624'	-8,600'	10,691'	10,621'	-8,597'	17'	110'	3'	27'	20'	20'
Middle Bakken	10,638'	-8,614'	10,722'	10,638'	-8,614'	40'	93'	0'	30'	20'	18'
Lower Bakken	10,674'	-8,650'	10,798'	10,678'	-8,654'	10'	53'	-4'	25'	22'	17'
Pronghorn	10,684'	-8,660'	10,827'	10,688'	-8,664'	20'	43'	-4'	26'	23'	22'
Threeforks	10,698'	-8,674'	10,880'	10,708'	-8,684'	14'	23'	-10'	23'	22'	24'
Top of Target	10,716'	-8,692'	10,935'	10,722'	-8,698'	9'	9'	-6'	27'	26'	28'
Landing Target	10,723'	-8,699'	11,023'	10,731'	-8,707'	-	0'	-8'	27'	26'	28'

CONTROL DATA

Formation/ Zone	Oasis Petroleum North America			Oasis Petroleum North America			Oasis Petroleum North America					
	Chalmers 5301 44-24 2TR	SE SE Section 24, T153N, R101W	McKenzie Co., ND	Chalmers 5301 44-24 2TR	SE SE Section 24, T153N, R101W	McKenzie Co., ND	Chalmers 5301 44-24 2TR	SE SE Section 24, T153N, R101W	McKenzie Co., ND	Chalmers 5301 44-24 2TR	SE SE Section 24, T153N, R101W	McKenzie Co., ND
Operator: Well Name:	Oasis Petroleum North America			Oasis Petroleum North America			Oasis Petroleum North America			Oasis Petroleum North America		
Location:	Chalmers 5301 44-24 3BR	SE SE Section 24, T153N, R101W	McKenzie Co., ND	Chalmers 5301 44-24 2TR	SE SE Section 24, T153N, R101W	McKenzie Co., ND	Chalmers 5301 44-24 2TR	SE SE Section 24, T153N, R101W	McKenzie Co., ND	Chalmers 5301 44-24 2TR	SE SE Section 24, T153N, R101W	McKenzie Co., ND
Elevation:	0.50 mile north of subject well	0.50 mile north of subject well	0.50 mile north of subject well	KB: 1,968'	KB: 1,968'	KB: 1,968'	KB: 1,968'	KB: 1,968'	KB: 1,968'	KB: 1,968'	KB: 1,968'	KB: 1,968'
Mowny	-	-	-	4,906'	-2,938'	437'	5,795'	-	-	-	-	-
Dakota	-	-	-	5,343'	-3,375'	500'	5,358'	-	-	-	-	-
Swift	-	-	-	5,843'	-3,875'	421'	4,858'	-	-	-	-	-
Kibbey Lime	8,268'	-6,300'	171'	2,434'	8,264'	-6,296'	165'	2,437'	8,266'	-6,298'	172'	2,437'
Charles	8,439'	-6,471'	548'	2,263'	8,429'	-6,461'	553'	2,272'	8,438'	-6,470'	545'	2,265'
UB	8,987'	-7,019'	84'	1,715'	8,982'	-7,014'	80'	1,719'	8,983'	-7,015'	84'	1,720'
Base Last Salt	9,071'	-7,103'	46'	1,631'	9,062'	-7,094'	47'	1,639'	9,067'	-7,099'	46'	1,636'
Ratcliffe	9,117'	-7,149'	174'	1,585'	9,109'	-7,141'	177'	1,592'	9,113'	-7,145'	175'	1,590'
Mission Canyon	9,291'	-7,323'	558'	1,411'	9,286'	-7,318'	559'	1,415'	9,288'	-7,320'	558'	1,415'
Lodgepole	9,849'	-7,881'	99'	853'	9,845'	-7,877'	108'	856'	9,846'	-7,878'	109'	857'
Lodgepole A	9,948'	-7,980'	105'	754'	9,953'	-7,985'	140'	748'	9,955'	-7,987'	136'	748'
Lodgepole B	10,053'	-8,085'	38'	649'	10,093'	-8,125'	66'	608'	10,091'	-8,123'	68'	612'
Lodgepole C	10,091'	-8,123'	187'	611'	10,159'	-8,191'	116'	542'	10,159'	-8,191'	115'	544'
Lodgepole D	10,278'	-8,310'	151'	424'	10,275'	-8,307'	146'	426'	10,274'	-8,306'	147'	429'
Lodgepole E	10,429'	-8,461'	68'	273'	10,421'	-8,453'	71'	280'	10,421'	-8,453'	72'	282'
Lodgepole F	10,497'	-8,529'	87'	205'	10,492'	-8,524'	85'	209'	10,493'	-8,525'	81'	210'
False Bakken	10,584'	-8,616'	8'	118'	10,577'	-8,609'	8'	124'	10,574'	-8,606'	11'	129'
Upper Bakken	10,592'	-8,624'	20'	110'	10,585'	-8,617'	17'	116'	10,585'	-8,617'	15'	118'
Middle Bakken	10,612'	-8,644'	35'	90'	10,602'	-8,634'	42'	99'	10,600'	-8,632'	39'	103'
Lower Bakken	10,647'	-8,679'	11'	55'	10,644'	-8,676'	11'	57'	10,639'	-8,671'	15'	64'
Pronghorn	10,658'	-8,690'	17'	44'	10,655'	-8,687'	19'	46'	10,654'	-8,686'	22'	49'
Threeforks	10,675'	-8,707'	18'	27'	10,674'	-8,706'	18'	27'	10,676'	-8,708'	18'	27'
Top of Target	10,693'	-8,725'	9'	10,692'	-8,724'	9'	9	10,694'	-8,726'	9'	9	9
Landing Target	10,702'	-8,734'	0'	10,701'	-8,733'	-	0'	10,703'	-8,735'	-	0'	0

LANDING PROJECTION

Formation/ Zone:	Proposed Top of Target From:		
	Chalmers 5301 44-24 3BR	Chalmers 5301 44-24 2TR	Chalmers 5301 44-24 4T2R
Mowry	-	10,731'	-
Dakota	-	10,726'	-
Swift	-	10,737'	-
Kirbey Lime	10,742'	10,745'	10,745'
Charles	10,736'	10,745'	10,738'
UB	10,754'	10,758'	10,759'
Base Last Salt	10,745'	10,753'	10,750'
Ratcliffe	10,748'	10,755'	10,753'
Mission Canyon	10,741'	10,745'	10,745'
Lodgepole	10,739'	10,742'	10,743'
Lodgepole A	10,739'	10,733'	10,733'
Lodgepole B	10,711'	10,670'	10,674'
Lodgepole C	10,733'	10,664'	10,666'
Lodgepole D	10,736'	10,738'	10,741'
Lodgepole E	10,705'	10,712'	10,714'
Lodgepole F	10,732'	10,736'	10,737'
False Bakken	10,730'	10,736'	10,741'
Upper Bakken	10,731'	10,737'	10,739'
Middle Bakken	10,728'	10,737'	10,741'
Lower Bakken	10,733'	10,735'	10,742'
Pronghorn	10,732'	10,734'	10,737'
Threeforks	10,735'	10,735'	10,735'
Top of Target	10,731'	10,731'	10,731'

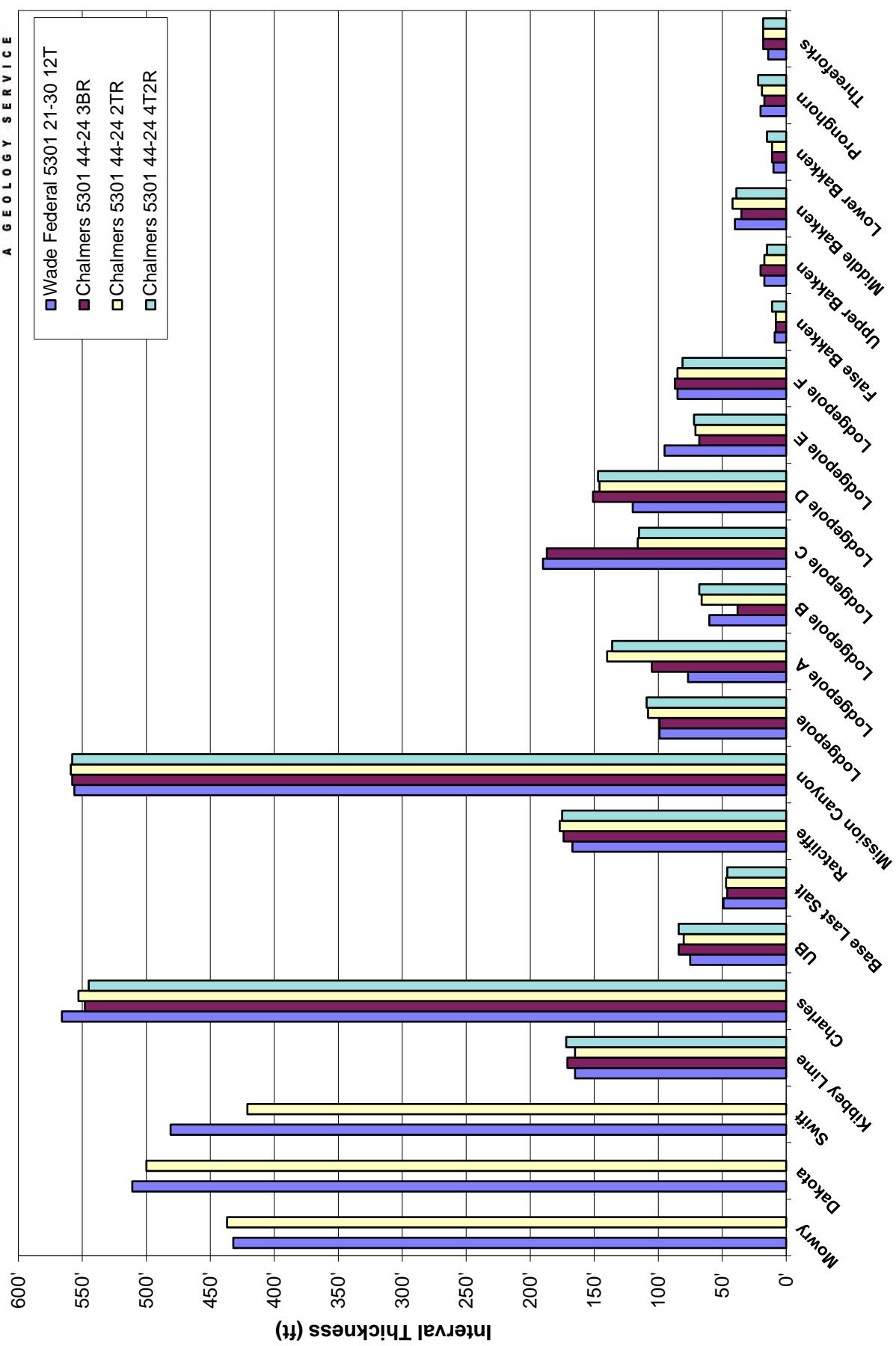
Current Landing Target (26' below the base of the Pronghorn): **10,734'**



A GEOLOGY SERVICE

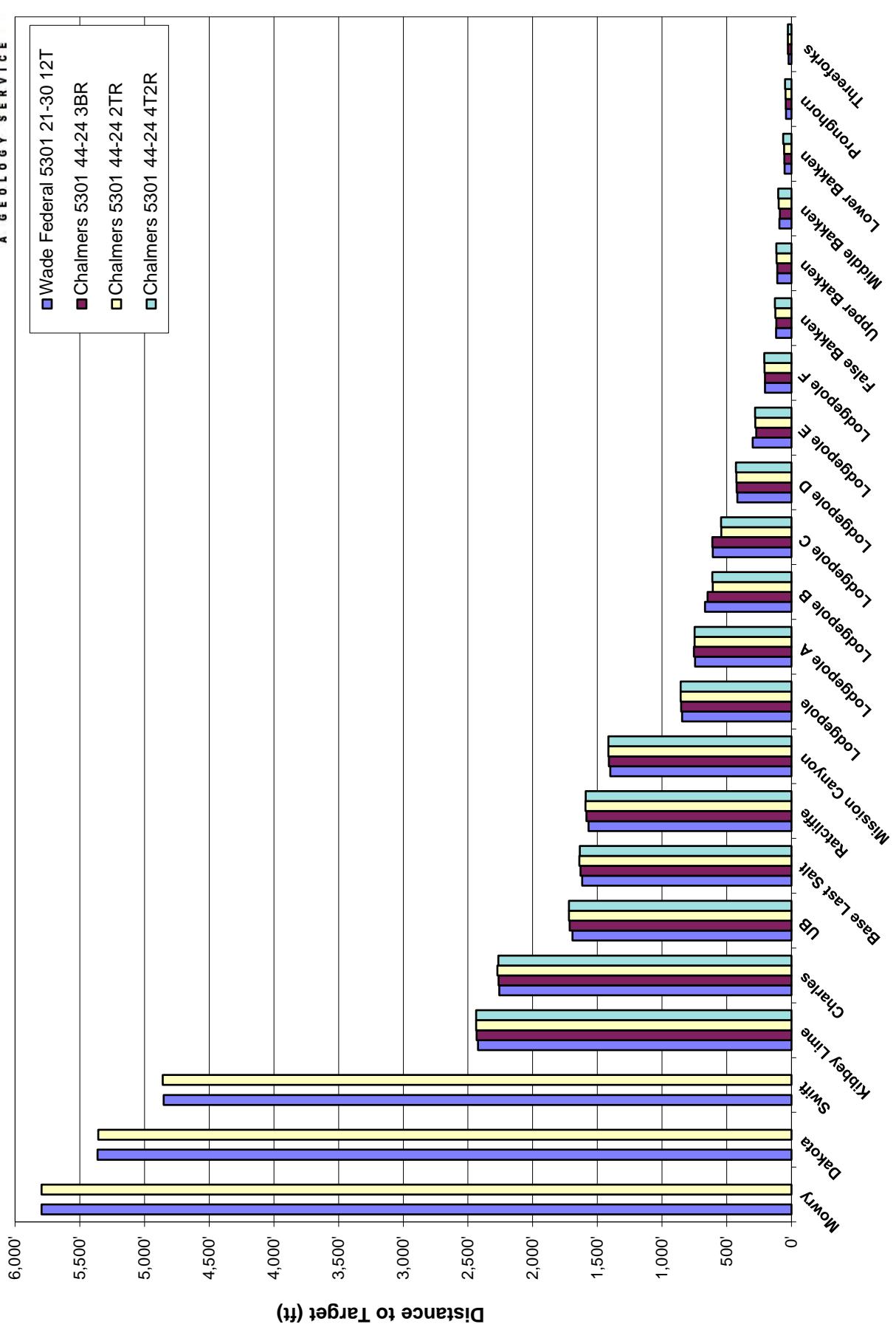
INTERVAL THICKNESS

Oasis Petroleum North America, LLC - Wade Federal 5301 21-30 12T



ISOPACH TO TARGET

Oasis Petroleum North America, LLC - Wade Federal 5301 21-30 12T



LITHOLOGY

Rig crews caught lagged samples in 30' and 10' intervals under the supervision of Sunburst geologists. A detailed list of sampling intervals is included in the well data summary page. Sample or gamma ray marker tops have been inserted in the sample descriptions below for reference. Samples were examined wet and dry under a trinocular microscope. The drilling fluid was diesel-based invert from surface casing to intermediate casing, while salt water drilling fluid was used throughout the lateral. Sample collection began at 4,870' MD.

4,870-4,900 SHALE: dark-medium gray, firm, sub blocky, earthy, calcareous, trace disseminated pyrite, no visible porosity, no visible oil stain

4,900-4,930 SHALE: dark-medium gray, firm, sub blocky, earthy, calcareous, trace disseminated pyrite, no visible porosity, no visible oil stain

Mowry [4,936' MD, 4,936' TVD (-2,912')]

4,930-4,960 SHALE: dark-medium gray, firm, sub blocky, earthy, calcareous, trace disseminated pyrite, no visible porosity, no visible oil stain

4,960-4,990 SHALE: dark-medium gray, firm, sub blocky, earthy, calcareous, trace disseminated pyrite, no visible porosity, no visible oil stain

4,990-5,020 SHALE: dark-medium gray, firm, sub blocky, earthy, calcareous, trace disseminated pyrite, no visible porosity, no visible oil stain

5,020-5,050 SHALE: dark-medium gray, firm, sub blocky, earthy, calcareous, trace disseminated pyrite, no visible porosity, no visible oil stain

5,050-5,080 SHALE: dark-medium gray, firm, sub blocky, earthy, calcareous, trace disseminated pyrite, no visible porosity, no visible oil stain

5,080-5,110 SHALE: dark-medium gray, firm, sub blocky, earthy, calcareous, trace disseminated pyrite, no visible porosity, no visible oil stain

5,110-5,140 SHALE: dark-medium gray, firm, sub blocky, earthy, calcareous, trace disseminated pyrite, no visible porosity, no visible oil stain

5,140-5,170 SHALE: dark-medium gray, firm, sub blocky, earthy, calcareous, trace disseminated pyrite, no visible porosity, no visible oil stain

5,170-5,200 SHALE: dark-medium gray, firm, sub blocky, earthy, calcareous, trace disseminated pyrite, no visible porosity, no visible oil stain; trace SILTSTONE: light gray-brown, friable-firm, sub rounded, moderately cemented, possible intergranular porosity, no visible oil stain

5,200-5,230 SHALE: dark-medium gray, firm, sub blocky, earthy, calcareous, trace disseminated pyrite, no visible porosity, no visible oil stain; trace SILTSTONE: light gray-brown, friable-firm, sub rounded, moderately cemented, possible intergranular porosity, no visible oil stain

5,230-5,260 SHALE: dark-medium gray, firm, sub blocky, earthy, calcareous, trace disseminated pyrite, no visible porosity, no visible oil stain; trace SILTSTONE: light gray-brown, friable-firm, sub rounded, moderately cemented, possible intergranular porosity, no visible oil stain

5,260-5,290 SHALE: dark-medium gray, firm, sub blocky, earthy, calcareous, trace disseminated pyrite, no visible porosity, no visible oil stain; trace SILTSTONE: light gray-brown, friable-firm, sub rounded, moderately cemented, possible intergranular porosity, no visible oil stain

5,290-5,320 SHALE: dark-medium gray, firm, sub blocky, earthy, calcareous, trace disseminated pyrite, no visible porosity, no visible oil stain

5,320-5,350 SHALE: dark gray, friable-soft, sub euhedral, earthy, calcareous, no visible porosity, no visible oil stain

5,320-5,350 SHALE: dark-medium gray, firm, sub blocky, earthy, calcareous, trace disseminated pyrite, no visible porosity, no visible oil stain

Dakota [5,368' MD, 5,368' TVD (-3,344')]

5,350-5,380 SHALE: dark gray, friable-soft, sub euhedral, earthy, calcareous, no visible porosity, no visible oil stain

5,380-5,410 SHALE: dark gray, friable-soft, sub euhedral, earthy, calcareous, no visible porosity, no visible oil stain

5,410-5,440 SHALE: dark gray, friable-soft, sub euhedral, earthy, calcareous, no visible porosity, no visible oil stain

5,440-5,470 SHALE: brown to gray, friable, earthy, no visible porosity, no visible oil stain; occasional LIMESTONE: packstone, tan to white, fine grained, earthy, sub angular, possible intergranular porosity, no visible oil stain

5,470-5,500 SHALE: brown to gray, friable, earthy, no visible porosity, no visible oil stain; occasional LIMESTONE: packstone, tan to white, fine grained, earthy, sub angular, possible intergranular porosity, no visible oil stain

5,500-5,530 SHALE: dark-medium gray, firm, sub blocky, earthy, calcareous, trace disseminated pyrite, no visible porosity, no visible oil stain

5,530-5,560 SHALE: dark-medium gray, firm, sub blocky, earthy, calcareous, trace disseminated pyrite, no visible porosity, no visible oil stain

5,560-5,590 SHALE: dark-medium gray, firm, sub blocky, earthy, calcareous, trace disseminated pyrite, trace SILTY SANDSTONE: light gray-medium brown, very fine good, friable-firm, sub round, well sorted, moderately cemented, no visible porosity, no visible oil stain

5,590-5,620 SILTY SANDSTONE: light-medium gray, friable, sub angular, earthy, calcareous, trace; Trace LIMESTONE: packstone, white to yellow, fine grained, possible intergranular porosity, no visible oil stain

5,620-5,650 SILTY SANDSTONE: light-medium gray, friable, sub angular, earthy, calcareous, trace; Trace LIMESTONE: packstone, white to yellow, fine grained, possible intergranular porosity, no visible oil stain

5,650-5,680 SILTY SANDSTONE: light-medium gray, friable, sub angular, earthy, calcareous, trace; Trace LIMESTONE: packstone, white to yellow, fine grained, possible intergranular porosity, no visible oil stain

5,680-5,710 SILTY SANDSTONE: light-medium gray, friable, sub angular, earthy, calcareous, trace; Trace LIMESTONE: packstone, white to yellow, fine grained, possible intergranular porosity, no visible oil stain

5,710-5,740 SILTY SANDSTONE: light gray to medium gray, friable, calcareous, fine grained; trace LIMESTONE: packstone white to light yellow, fine grained, friable, possible intergranular porosity, no visible oil stain

5,740-5,770 SILTY SANDSTONE: light gray to medium gray, friable, calcareous, fine grained; trace LIMESTONE: packstone white to light yellow, fine grained, friable, possible intergranular porosity, no visible oil stain

5,770-5,800 SILTY SANDSTONE: light gray to medium gray, friable, calcareous, very fine grained; trace LIMESTONE: packstone white to light yellow, fine grained, friable, possible intergranular porosity, no visible oil stain

5,800-5,830 SILTY SANDSTONE: light gray to medium gray, friable, calcareous, very fine grained; trace LIMESTONE: packstone white to light yellow, fine grained, friable, possible intergranular porosity, no visible oil stain

5,830-5,860 SILTY SANDSTONE: light gray to medium gray, friable to firm, earthy, calcareous, very fine grained; trace LIMESTONE: packstone white to light gray, fine grained, sub angular, friable, possible intergranular porosity, no visible oil stain

Swift [5,879' MD, 5,879' TVD (-3,855')]

5,860-5,890 SILTY SANDSTONE: light gray to medium gray, friable to firm, earthy, calcareous, very fine grained; trace LIMESTONE: packstone white to light gray, fine grained, sub angular, friable, possible intergranular porosity, no visible oil stain

5,890-5,920 SILTY SANDSTONE: light gray to medium gray, friable to firm, earthy, calcareous, very fine grained; trace LIMESTONE: packstone white to light gray, fine grained, sub angular, friable, possible intergranular porosity, no visible oil stain

5,920-5,950 SILTY SANDSTONE: light gray to medium gray, friable to firm, earthy, calcareous, very fine grained; trace LIMESTONE: packstone white to light gray, fine grained, sub angular, friable, possible intergranular porosity, no visible oil stain

5,950-5,980 SILTY SANDSTONE: light gray to medium gray, friable to firm, earthy, calcareous, very fine grained; trace LIMESTONE: packstone white to light gray, fine grained, sub angular, friable, possible intergranular porosity, no visible oil stain

5,980-6,020 SILTY SANDSTONE: light gray-medium brown, very fine good, friable-firm, sub rounded, well sorted, moderately cemented, calcareous, no visible porosity; trace SHALE: orange, firm, blocky, earthy, calcareous, no visible porosity, no visible oil stain

Drilling in the Kibbey Formation

8,200-8,230 SILTSTONE: dark orange-light brown, tan, pink, soft, sub blocky, calcareous cement, poorly cemented; rare ANHYDRITE: off white, soft, amorphous texture; trace SILTY SANDSTONE: tan-off white, very fine grained, sub rounded, moderately sorted, calcareous cement, poorly cemented

8,230-8,260 SILTSTONE: dark orange-light brown, tan, pink, soft, sub blocky, calcareous cement, poorly cemented; rare ANHYDRITE: off white, soft, amorphous texture; trace SILTY SANDSTONE: tan-off white, very fine grained, sub rounded, moderately sorted, calcareous cement, poorly cemented

8,260-8,290 SILTSTONE: dark orange-light brown, tan, pink, soft, sub blocky, calcareous cement, poorly cemented; rare ANHYDRITE: off white, soft, amorphous texture; trace SILTY SANDSTONE: tan-off white, very fine grained, sub rounded, moderately sorted, calcareous cement, poorly cemented

8,290-8,320 SILTSTONE: dark orange-light brown, tan, pink, soft, sub blocky, calcareous cement, poorly cemented; rare ANHYDRITE: off white, soft, amorphous texture; trace SILTY SANDSTONE: tan-off white, very fine grained, sub rounded, moderately sorted, calcareous cement, poorly cemented

Kibbey "Lime" [8,309' MD, 8,308' TVD (-6,284')]

8,320-8,350 SILTSTONE: dark orange-light brown, tan, pink, soft, sub blocky, calcareous cement, poorly cemented; rare ANHYDRITE: off white, soft, amorphous texture; trace SILTY SANDSTONE: tan-off white, very fine grained, sub rounded, moderately sorted, calcareous cement, poorly cemented

8,350-8,380 SILTSTONE: dark orange-light brown, tan pink, soft, sub blocky, calcareous cement, poorly cemented; occasional ANHYDRITE: off white, amorphous texture; trace SILTY SANDSTONE: as above

8,380-8,410 SILTSTONE: dark orange-light brown, tan pink, soft, sub blocky, calcareous cement, poorly cemented; occasional ANHYDRITE: off white, amorphous texture; trace SILTY SANDSTONE: as above

8,410-8,440 SILTSTONE: dark orange-light brown, tan pink, soft, sub blocky, calcareous cement, poorly cemented; occasional ANHYDRITE: off white, amorphous texture; trace SILTY SANDSTONE: as above

8,440-8,470 SILTSTONE: dark orange-light brown, tan pink, soft, sub blocky, calcareous cement, poorly cemented; occasional ANHYDRITE: off white, amorphous texture; trace SILTY SANDSTONE: as above

Charles Salt [8,474' MD, 8,473' TVD (-6,449')]

8,470-8,500 SILTSTONE: dark orange-light brown, tan pink, soft, sub blocky, calcareous cement, poorly cemented; occasional ANHYDRITE: off white, amorphous texture; trace SILTY SANDSTONE: as above

8,500-8,530 SILTSTONE: dark orange-light brown, tan pink, soft, sub blocky, calcareous cement, poorly cemented; occasional ANHYDRITE: off white, amorphous texture; trace SILTY SANDSTONE: as above

8,530-8,560 SALT: translucent, microcrystalline, anhedral, crystalline texture, hard, frosted; occasional LIMESTONE: mudstone, light-medium gray-gray brown, microcrystalline, firm-hard, argillaceous in part, dense, chalky texture, no visible porosity

8,560-8,590 SALT: translucent, microcrystalline, anhedral, crystalline texture, hard, frosted; occasional LIMESTONE: mudstone, light-medium gray-gray brown, microcrystalline, firm-hard, argillaceous in part, dense, chalky texture, no visible porosity

8,590-8,620 SALT: translucent, microcrystalline, anhedral, crystalline texture, hard, frosted; occasional LIMESTONE: mudstone, light-medium gray-gray brown, microcrystalline, firm-hard, argillaceous in part, dense, chalky texture, no visible porosity

8,620-8,650 SALT: translucent, microcrystalline, anhedral, crystalline texture, hard, frosted; occasional LIMESTONE: mudstone, light-medium gray-gray brown, microcrystalline, firm-hard, argillaceous in part, dense, chalky texture, no visible porosity

8,650-8,680 SALT: translucent, microcrystalline, anhedral, crystalline texture, hard, frosted; occasional LIMESTONE: mudstone, light-medium gray-gray brown, microcrystalline, firm-hard, argillaceous in part, dense, chalky texture, no visible porosity

8,680-8,710 SALT: translucent, microcrystalline, anhedral, crystalline texture, hard, frosted; occasional LIMESTONE: mudstone, light-medium gray-gray brown, microcrystalline, firm-hard, argillaceous in part, dense, chalky texture, no visible porosity

8,710-8,740 SALT: translucent, microcrystalline, anhedral, crystalline texture, hard, frosted; occasional LIMESTONE: mudstone, light-medium gray-gray brown, microcrystalline, firm-hard, argillaceous in part, dense, chalky texture, no visible porosity

8,740-8,770 SALT: translucent, microcrystalline, anhedral, crystalline texture, hard, frosted; occasional LIMESTONE: mudstone, light-medium gray-gray brown, microcrystalline, firm-hard, argillaceous in part, dense, chalky texture, no visible porosity

8,770-88,000 SALT: translucent, microcrystalline, anhedral, crystalline texture, hard, frosted; occasional LIMESTONE: mudstone, light-medium gray-gray brown, microcrystalline, firm-hard, argillaceous in part, dense, chalky texture, no visible porosity

8,800-8,830 SALT: translucent, microcrystalline, anhedral, crystalline texture, hard, frosted; occasional LIMESTONE: mudstone, light-medium gray-gray brown, microcrystalline, firm-hard, argillaceous in part, dense, chalky texture, no visible porosity

8,830-8,860 ARGILLACEOUS LIMESTONE: mudstone, cream, tan, light gray, microcrystalline, firm, dense-banded, earthy texture, no visible porosity; occasional SALT: clear-milky, off white, crystalline, hard, euhedral; trace ANHYDRITE: off white, soft, amorphous, no visible porosity

8,860-8,890 ARGILLACEOUS LIMESTONE: mudstone, cream, tan, light gray, microcrystalline, firm, dense-banded, earthy texture, no visible porosity; occasional SALT: clear-milky, off white, crystalline, hard, euhedral; trace ANHYDRITE: off white, soft, amorphous, no visible porosity

8,890-8,920 ARGILLACEOUS LIMESTONE: mudstone, cream, tan, light gray, microcrystalline, firm, dense-banded, earthy texture, no visible porosity; occasional SALT: clear-milky, off white, crystalline, hard, euhedral; trace ANHYDRITE: off white, soft, amorphous, no visible porosity

8,920-8,950 ARGILLACEOUS LIMESTONE: mudstone, cream, tan, light gray, microcrystalline, firm, dense-banded, earthy texture, no visible porosity; occasional SALT: clear-milky, off white, crystalline, hard, euhedral; trace ANHYDRITE: off white, soft, amorphous, no visible porosity

8,950-8,980 ARGILLACEOUS LIMESTONE: mudstone, cream, tan, light gray, microcrystalline, firm, dense-banded, earthy texture, no visible porosity; occasional SALT: clear-milky, off white, crystalline, hard, euhedral; trace ANHYDRITE: off white, soft, amorphous, no visible porosity

8,980-9,010 ARGILLACEOUS LIMESTONE: mudstone, cream, tan, light gray, microcrystalline, firm, dense-banded, earthy texture, no visible porosity; occasional SALT: clear-milky, off white, crystalline, hard, euhedral; trace ANHYDRITE: off white, soft, amorphous, no visible porosity

9,010-9,040 ARGILLACEOUS LIMESTONE: mudstone, cream, tan, light gray, microcrystalline, firm, dense-banded, earthy texture, no visible porosity; occasional SALT: clear-milky, off white, crystalline, hard, euhedral; trace ANHYDRITE: off white, soft, amorphous, no visible porosity

UB [9,040' MD, 9,039' TVD (-7,015')]

9,040-9,070 ARGILLACEOUS LIMESTONE: mudstone, cream, tan, light gray, microcrystalline, firm, dense-banded, earthy texture, no visible porosity; occasional SALT: clear-milky, off white, crystalline, hard, euhedral; trace ANHYDRITE: off white, soft, amorphous, no visible porosity

9,070-9,100 ARGILLACEOUS LIMESTONE: mudstone, cream, tan, light gray, microcrystalline, firm, dense-banded, earthy texture, no visible porosity; occasional SALT: clear-milky, off white, crystalline, hard, euhedral; trace ANHYDRITE: off white, soft, amorphous, no visible porosity

Base Last Salt [9,115' MD, 9,114' TVD (-7,090')]

9,100-9,130 SALT: translucent, microcrystalline, anhedral, crystalline texture, hard, frosted; occasional LIMESTONE: mudstone, light-medium gray-gray brown, microcrystalline, firm-hard, argillaceous in part, dense, chalky texture, no visible porosity

9,130-9,160 ARGILLACEOUS LIMESTONE: mudstone, cream, tan, light gray, microcrystalline, firm, dense-banded, earthy texture, no visible porosity; occasional SALT: clear-milky, off white, crystalline, hard, euhedral; trace ANHYDRITE: off white, soft, amorphous, no visible porosity

Ratcliffe [9,164' MD, 9,163' TVD (-7,139')]

9,160-9,190 ARGILLACEOUS LIMESTONE: mudstone, cream, tan, light gray, microcrystalline, firm, dense-banded, earthy texture, no visible porosity; occasional SALT: clear-milky, off white, crystalline, hard, euhedral; trace ANHYDRITE: off white, soft, amorphous, no visible porosity

9,190-9,220 ARGILLACEOUS LIMESTONE: mudstone, cream, tan, light gray, microcrystalline, firm, dense-banded, earthy texture, no visible porosity; occasional SALT: clear-milky, off white, crystalline, hard, euhedral; trace ANHYDRITE: off white, soft, amorphous, no visible porosity

9,220-9,250 ARGILLACEOUS LIMESTONE: mudstone, cream, tan, light gray, microcrystalline, firm, dense-banded, earthy texture, no visible porosity; occasional SALT: clear-milky, off white, crystalline, hard, euhedral; trace ANHYDRITE: off white, soft, amorphous, no visible porosity

9,250-9,280 ARGILLACEOUS LIMESTONE: mudstone, cream, tan, light gray, microcrystalline, firm, dense-banded, earthy texture, no visible porosity; occasional SALT: clear-milky, off white, crystalline, hard, euhedral; trace ANHYDRITE: off white, soft, amorphous, no visible porosity

9,280-9,310 ARGILLACEOUS LIMESTONE: mudstone, cream, tan, light gray, microcrystalline, firm, dense-banded, earthy texture, no visible porosity; occasional SALT: clear-milky, off white, crystalline, hard, euhedral; trace ANHYDRITE: off white, soft, amorphous, no visible porosity

Mission Canyon [9,331' MD, 9,330' TVD (-7,306')]

9,310-9,340 ARGILLACEOUS LIMESTONE: mudstone, cream, tan, light gray, microcrystalline, firm, dense-banded, earthy texture, no visible porosity; occasional SALT: clear-milky, off white, crystalline, hard, euhedral; trace ANHYDRITE: off white, soft, amorphous, no visible porosity

9,340-9,370 ARGILLACEOUS LIMESTONE: mudstone, cream, tan, light gray, microcrystalline, firm, dense-banded, earthy texture, no visible porosity; occasional SALT: clear-milky, off white, crystalline, hard, euhedral; trace ANHYDRITE: off white, soft, amorphous, no visible porosity

9,370-9,400 ARGILLACEOUS LIMESTONE: mudstone, cream, tan, light gray, microcrystalline, firm, dense-banded, earthy texture, no visible porosity; occasional SALT: clear-milky, off white, crystalline, hard, euhedral; trace ANHYDRITE: off white, soft, amorphous, no visible porosity

9,400-9,430 ARGILLACEOUS LIMESTONE: mudstone, cream, tan, light gray, microcrystalline, firm, dense-banded, earthy texture, no visible porosity; occasional SALT: clear-milky, off white, crystalline, hard, euhedral; trace ANHYDRITE: off white, soft, amorphous, no visible porosity

9,430-9,460 ARGILLACEOUS LIMESTONE: mudstone, cream, tan, light gray, microcrystalline, firm, dense-banded, earthy texture, no visible porosity; occasional SALT: clear-milky, off white, crystalline, hard, euhedral; trace ANHYDRITE: off white, soft, amorphous, no visible porosity

9,460-9,490 ARGILLACEOUS LIMESTONE: mudstone, cream, tan, light gray, microcrystalline, firm, dense-banded, earthy texture, no visible porosity; occasional SALT: clear-milky, off white, crystalline, hard, euhedral; trace ANHYDRITE: off white, soft, amorphous, no visible porosity

9,490-9,520 ARGILLACEOUS LIMESTONE: mudstone, cream, tan, light gray, microcrystalline, firm, dense-banded, earthy texture, no visible porosity; occasional SALT: clear-milky, off white, crystalline, hard, euhedral; trace ANHYDRITE: off white, soft, amorphous, no visible porosity

9,520-9,550 ARGILLACEOUS LIMESTONE: mudstone, light-medium gray brown, tan, microcrystalline, firm-friable, rare Algae material; rare ANHYDRITE: off white, massive, soft, amorphous texture

9,550-9,580 ARGILLACEOUS LIMESTONE: mudstone, light-medium gray brown, tan, microcrystalline, firm-friable, rare Algae material; rare ANHYDRITE: off white, massive, soft, amorphous texture

9,580-9,610 ARGILLACEOUS LIMESTONE: mudstone, light-medium gray brown, tan, microcrystalline, firm-friable, rare Algae material; rare ANHYDRITE: off white, massive, soft, amorphous texture

9,610-9,640 ARGILLACEOUS LIMESTONE: mudstone, light-medium gray brown, tan, microcrystalline, firm-friable, rare Algae material; rare ANHYDRITE: off white, massive, soft, amorphous texture

9,640-9,670 ARGILLACEOUS LIMESTONE: mudstone, light-medium gray brown, tan, microcrystalline, firm-friable, rare Algae material; rare ANHYDRITE: off white, massive, soft, amorphous texture

9,670-9,700 ARGILLACEOUS LIMESTONE: mudstone, light-medium gray brown, tan, microcrystalline, firm-friable, rare Algae material; rare ANHYDRITE: off white, massive, soft, amorphous texture

9,700-9,730 ARGILLACEOUS LIMESTONE: mudstone, light-medium gray brown, tan, microcrystalline, firm-friable, rare Algae material; rare ANHYDRITE: off white, massive, soft, amorphous texture

9,730-9,760 ARGILLACEOUS LIMESTONE: mudstone, light-medium gray brown, tan, microcrystalline, firm-friable, rare Algae material; rare ANHYDRITE: off white, massive, soft, amorphous texture

9,760-9,790 ARGILLACEOUS LIMESTONE: mudstone, light-medium gray brown, tan, microcrystalline, firm-friable, rare Algae material; rare ANHYDRITE: off white, massive, soft, amorphous texture

9,790-9,820 ARGILLACEOUS LIMESTONE: mudstone, light-medium gray brown, tan, microcrystalline, firm-friable, rare Algae material; rare ANHYDRITE: off white, massive, soft, amorphous texture

9,820-9,850 ARGILLACEOUS LIMESTONE: mudstone, light-medium gray brown, tan, microcrystalline, firm-friable, rare Algae material; rare ANHYDRITE: off white, massive, soft, amorphous texture

9,850-9,880 ARGILLACEOUS LIMESTONE: mudstone, light-medium gray brown, tan, microcrystalline, firm-friable, rare Algae material; rare ANHYDRITE: off white, massive, soft, amorphous texture

Lodgepole [9,887' MD, 9,886' TVD (-7,862')]

9,880-9,910 ARGILLACEOUS LIMESTONE: mudstone, light-medium gray brown, tan, microcrystalline, firm-friable, rare Algae material; rare ANHYDRITE: off white, massive, soft, amorphous texture

9,910-9,940 ARGILLACEOUS LIMESTONE: mudstone, light-medium gray brown, tan, microcrystalline, firm-friable, rare Algae material; rare ANHYDRITE: off white, massive, soft, amorphous texture

9,940-9,970 ARGILLACEOUS LIMESTONE: mudstone, light-medium gray, microcrystalline, firm, rare Algae material, rare ANHYDRITE: off white, soft, amorphous

9,970-10,000 ARGILLACEOUS LIMESTONE: mudstone, light-medium gray, microcrystalline, firm, rare Algae material, rare ANHYDRITE: off white, soft, amorphous

10,000-10,030 ARGILLACEOUS LIMESTONE: mudstone, light-medium gray, microcrystalline, firm, rare Algae material, rare ANHYDRITE: off white, soft, amorphous

10,030-10,060 ARGILLACEOUS LIMESTONE: mudstone, light-medium gray, microcrystalline, firm - hard, rare Algae material, rare ANHYDRITE: off white, soft, amorphous

10,060-10,090 ARGILLACEOUS LIMESTONE: mudstone, light-medium gray, microcrystalline, firm - hard, rare Algae material, rare ANHYDRITE: off white, soft, amorphous

10,090-10,120 ARGILLACEOUS LIMESTONE: mudstone, light-medium gray, microcrystalline, firm - hard, rare Algae material, rare ANHYDRITE: off white, soft, amorphous

10,120-10,150 ARGILLACEOUS LIMESTONE: mudstone, light-medium gray, microcrystalline, firm - hard, rare Algae material, rare ANHYDRITE: off white, soft, amorphous

10,150-10,180 ARGILLACEOUS LIMESTONE: mudstone, light-medium gray, microcrystalline, firm - hard, rare Algae material, rare ANHYDRITE: off white, soft, amorphous

10,180-10,210 ARGILLACEOUS LIMESTONE: mudstone, light-medium gray, microcrystalline, firm - hard, rare Algae material, rare ANHYDRITE: off white, soft, amorphous

10,180-10,210 ARGILLACEOUS LIMESTONE: mudstone, medium gray-dark gray, microcrystalline, firm, banded, dense; trace ANHYDRITE: off white, soft, amorphous, trace disseminated pyrite, no visible porosity

10,210-10,240 ARGILLACEOUS LIMESTONE: mudstone, medium gray-dark gray, microcrystalline, firm, banded, dense; trace ANHYDRITE: off white, soft, amorphous, trace disseminated pyrite, no visible porosity

10,240-10,270 ARGILLACEOUS LIMESTONE: mudstone, medium gray-dark gray, microcrystalline, firm, banded, dense; trace ANHYDRITE: off white, soft, amorphous, trace disseminated pyrite, no visible porosity

10,270-10,300 ARGILLACEOUS LIMESTONE: mudstone, medium gray-dark gray, microcrystalline, firm, banded, dense; trace ANHYDRITE: off white, soft, amorphous, trace disseminated pyrite, no visible porosity

10,300-10,330 ARGILLACEOUS LIMESTONE: mudstone, medium gray-dark gray, microcrystalline, firm, banded, dense; trace ANHYDRITE: off white, soft, amorphous, trace disseminated pyrite, no visible porosity

10,330-10,360 ARGILLACEOUS LIMESTONE: mudstone, medium gray-dark gray, microcrystalline, firm, banded, dense; trace ANHYDRITE: off white, soft, amorphous, trace disseminated pyrite, no visible porosity

10,360-10,390 ARGILLACEOUS LIMESTONE: mudstone, medium gray-dark gray, microcrystalline, firm, banded, dense; trace ANHYDRITE: off white, soft, amorphous, trace disseminated pyrite, no visible porosity

10,390-10,420 ARGILLACEOUS LIMESTONE: mudstone, medium gray-dark gray, microcrystalline, firm, banded, dense; trace ANHYDRITE: off white, soft, amorphous, trace disseminated pyrite, no visible porosity

10,420-10,450 ARGILLACEOUS LIMESTONE: mudstone, medium gray-dark gray, microcrystalline, firm, banded, dense; trace ANHYDRITE: off white, soft, amorphous, trace disseminated pyrite, no visible porosity

10,450-10,480 ARGILLACEOUS LIMESTONE: mudstone, medium gray-dark gray, microcrystalline, firm, banded, dense; trace ANHYDRITE: off white, soft, amorphous, trace disseminated pyrite, no visible porosity

10,480-10,510 ARGILLACEOUS LIMESTONE: mudstone, medium gray-dark gray, microcrystalline, firm, banded, dense; trace ANHYDRITE: off white, soft, amorphous, trace disseminated pyrite, no visible porosity

10,510-10,540 ARGILLACEOUS LIMESTONE: mudstone, medium gray-dark gray, microcrystalline, firm, banded, dense; trace ANHYDRITE: off white, soft, amorphous, trace disseminated pyrite, no visible porosity

10,540-10,570 ARGILLACEOUS LIMESTONE: mudstone, medium gray-dark gray, microcrystalline, firm, banded, dense; trace ANHYDRITE: off white, soft, amorphous, trace disseminated pyrite, no visible porosity

10,570-10,600 ARGILLACEOUS LIMESTONE: mudstone, medium gray-dark gray, microcrystalline, firm, banded, dense; trace ANHYDRITE: off white, soft, amorphous, trace disseminated pyrite, no visible porosity

10,600-10,630 ARGILLACEOUS LIMESTONE: mudstone, medium gray-dark gray, microcrystalline, firm, banded, dense; trace ANHYDRITE: off white, soft, amorphous, trace disseminated pyrite, no visible porosity

10,630-10,660 ARGILLACEOUS LIMESTONE: mudstone, medium gray-dark gray, microcrystalline, firm, banded, dense; trace ANHYDRITE: off white, soft, amorphous, trace disseminated pyrite, no visible porosity

False Bakken [10,679' MD, 10,612' TVD (-8,588')]

10,660-10,690 ARGILLACEOUS LIMESTONE: mudstone, medium gray-dark gray, microcrystalline, firm, banded, dense; trace ANHYDRITE: off white, soft, amorphous, trace disseminated pyrite, no visible porosity

Upper Bakken [10,691' MD, 10,621' TVD (-8,597')]

10,690-10,720 ARGILLACEOUS LIMESTONE: mudstone, medium gray-dark gray, microcrystalline, firm, banded, dense; trace ANHYDRITE: off white, soft, amorphous, trace disseminated pyrite, no visible porosity

Middle Bakken [10,722' MD, 10,638' TVD (-8,614')]

10,720-10,750 SHALE: black-very dark brown, firm, blocky, earthy texture, disseminated pyrite, petroliferous, carbonaceous, no visible porosity, abundant brown even oil stain

10,750-10,780 SHALE: black-very dark brown, firm, blocky, earthy texture, disseminated pyrite, petroliferous, carbonaceous, no visible porosity, abundant brown even oil stain

Lower Bakken [10,798' MD, 10,678' TVD (-8,654')]

10,780-10,810 SILTSTONE: medium-gray light gray-brown, sub blocky, calcite cemented, possible intergranular porosity, occasional SILTY SANDSTONE: light gray-tan, sub euhedral, calcite cemented, possible intergranular porosity, trace oil stain, light brown

Pronghorn [10,827' MD, 10,688' TVD (-8,664')]

10,810-10,840 SILTSTONE: medium-gray light gray-brown, sub blocky, calcite cemented, possible intergranular porosity, occasional SILTY SANDSTONE: light gray-tan, sub euhedral, calcite cemented, possible intergranular porosity, trace oil stain, light brown

10,840-10,850 SILTSTONE: medium-gray light gray-brown, sub blocky, calcite cemented, possible intergranular porosity, occasional SILTY SANDSTONE: light gray-tan, sub euhedral, calcite cemented, possible intergranular porosity, trace oil stain, light brown

10,850-10,860 SILTSTONE: medium-gray brown, sub blocky, calcite cemented, possible intergranular porosity, occasional SILTY SANDSTONE: as above

10,860-10,870 SILTSTONE: medium-gray light gray-brown, sub blocky, calcite cemented, possible intergranular porosity, occasional SILTY SANDSTONE: as above

10,870-10,880 SILTSTONE: medium-gray light gray-brown, sub blocky, calcite cemented, possible intergranular porosity, occasional SILTY SANDSTONE: as above; occasional SHALE: black-very dark brown, firm, blocky, earthy texture, disseminated pyrite, petroliferous, carbonaceous, no visible porosity, abundant brown even oil stain

Three Forks [10,880' MD, 10,708' TVD (-8,684')]

10,880-10,890 SILTSTONE: medium-gray light gray-brown, sub blocky, calcite cemented, possible intergranular porosity, occasional SILTY SANDSTONE: as above; occasional SHALE: as above

10,890-10,900 SILTSTONE: as above; rare SHALE: black, firm, blocky, earthy texture, disseminated pyrite, petroliferous, carbonaceous, no visible porosity, abundant brown even oil stain

10,900-10,910 SILTSTONE: as above; occasional SHALE: as above; trace ARGILLACEOUS DOLOMITE: mudstone, medium gray-gray brown, pa green, fine crystalline, sucrosic texture, firm, rare disseminated pyrite, silty in part, sandy in part, possible intercrystalline porosity, trace spotty light brown oil stain

10,910-10,920 ARGILLACEOUS DOLOMITE: mudstone, medium gray-gray brown, pa green, cream-tan, fine crystalline, sucrosic texture, firm-friable, rare disseminated pyrite, silty in part, sandy in part, possible intercrystalline porosity, trace spotty light brown oil stain; occasional SILTSTONE: as above

10,920-10,930 ARGILLACEOUS DOLOMITE: as above; occasional SILTSTONE: as above, trace spotty light brown oil stain

10,930-10,940 ARGILLACEOUS DOLOMITE: mudstone, medium gray-gray brown, pa green, cream-tan, fine crystalline, sucrosic texture, firm-friable, rare disseminated pyrite, silty in part, sandy in part, possible intercrystalline porosity; occasional SILTSTONE: as above, trace spotty light brown oil stain

10,940-10,950 ARGILLACEOUS DOLOMITE: mudstone, medium gray-gray brown, pa green, cream-tan, fine crystalline, sucrosic texture, firm-friable, rare disseminated pyrite, silty in part, sandy in part, possible intercrystalline porosity; occasional SILTSTONE: as above, trace spotty light brown oil stain

10,950-10,960 ARGILLACEOUS DOLOMITE: mudstone, medium gray-gray brown, pa green, cream-tan, fine crystalline, sucrosic texture, firm-friable, rare disseminated pyrite, silty in part, sandy in part, possible intercrystalline porosity; occasional SILTSTONE: as above, trace spotty light brown oil stain

10,960-10,970 DOLOMITE: mudstone, medium gray-gray brown, cream-tan, fine crystalline, sucrosic texture, firm-friable, rare disseminated pyrite, silty in part, sandy in part, possible intercrystalline porosity; occasional SHALE: light-pale green, firm-friable, earthy, light-brown spotty oil stain

10,970-10,980 DOLOMITE: mudstone, medium gray-gray brown, cream-tan, fine crystalline, sucrosic texture, firm-friable, rare disseminated pyrite, silty in part, sandy in part, possible intercrystalline porosity; occasional SHALE: light-pale green, firm-friable, earthy, light-brown spotty oil stain

16,060-16,090 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; occasional DOLOMITE: mudstone, medium gray-gray brown, cream-tan, fine crystalline, sucrosic texture, firm-friable, rare disseminated pyrite, silty in part, sandy in part, possible intercrystalline porosity, trace spotty light brown oil stain, fast weak cloudy pale green cut fluorescence

16,090-16,120 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; occasional DOLOMITE: mudstone, medium gray-gray brown, cream-tan, fine crystalline, sucrosic texture, firm-friable, rare disseminated pyrite, silty in part, sandy in part, possible intercrystalline porosity, trace spotty light brown oil stain, fast weak cloudy pale green cut fluorescence

16,120-16,150 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; occasional DOLOMITE: mudstone, medium gray-gray brown, cream-tan, fine crystalline, sucrosic texture, firm-friable, rare disseminated pyrite, silty in part, sandy in part, possible intercrystalline porosity, trace spotty light brown oil stain, fast weak cloudy pale green cut fluorescence

16,150-16,180 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; occasional DOLOMITE: mudstone, medium gray-gray brown, cream-tan, fine crystalline, sucrosic texture, firm-friable, rare disseminated pyrite, silty in part, sandy in part, possible intercrystalline porosity, trace spotty light brown oil stain, fast weak cloudy pale green cut fluorescence

16,180-16,210 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; occasional DOLOMITE: mudstone, medium gray-gray brown, cream-tan, fine crystalline, sucrosic texture, firm-friable, rare disseminated pyrite, silty in part, sandy in part, possible intercrystalline porosity, trace spotty light brown oil stain, fast weak cloudy pale green cut fluorescence

16,210-16,240 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; occasional DOLOMITE: mudstone, medium gray-gray brown, cream-tan, fine crystalline, sucrosic texture, firm-friable, rare disseminated pyrite, silty in part, sandy in part, possible intercrystalline porosity, trace spotty light brown oil stain, fast weak cloudy pale green cut fluorescence

16,240-16,270 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; occasional DOLOMITE: mudstone, medium gray-gray brown, cream-tan, fine crystalline, sucrosic texture, firm-friable, rare disseminated pyrite, silty in part, sandy in part, possible intercrystalline porosity, trace spotty light brown oil stain, fast weak cloudy pale green cut fluorescence

16,270-16,300 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; trace DOLOMITE: as above, fast weak cloudy pale green cut fluorescence

16,300-16,330 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; trace DOLOMITE: as above, fast weak cloudy pale green cut fluorescence

16,330-16,360 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; trace DOLOMITE: as above, fast weak cloudy pale green cut fluorescence

16,360-16,390 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; trace DOLOMITE: as above, fast weak cloudy pale green cut fluorescence

16,390-16,420 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; trace DOLOMITE: as above, fast weak cloudy pale green cut fluorescence

16,420-16,450 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; trace DOLOMITE: as above, fast weak cloudy pale green cut fluorescence

16,450-16,480 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; trace DOLOMITE: as above, fast weak cloudy pale green cut fluorescence

16,480-16,510 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; trace DOLOMITE: as above, fast weak cloudy pale green cut fluorescence

16,510-16,540 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; trace DOLOMITE: as above, fast weak cloudy pale green cut fluorescence

16,540-16,570 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; trace DOLOMITE: as above, fast weak cloudy pale green cut fluorescence

16,570-16,600 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; trace DOLOMITE: as above, fast weak cloudy pale green cut fluorescence

16,600-16,630 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; trace DOLOMITE: as above, fast weak cloudy pale green cut fluorescence

16,630-16,660 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; trace DOLOMITE: as above, fast weak cloudy pale green cut fluorescence

16,660-16,690 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; trace DOLOMITE: as above, fast weak cloudy pale green cut fluorescence

16,690-16,720 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; trace DOLOMITE: as above, fast weak cloudy pale green cut fluorescence

16,720-16,750 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; trace DOLOMITE: as above, fast weak cloudy pale green cut fluorescence

16,750-16,780 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; trace DOLOMITE: as above, fast weak cloudy pale green cut fluorescence

16,780-16,810 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; trace DOLOMITE: as above, fast weak cloudy pale green cut fluorescence

16,810-16,840 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; trace DOLOMITE: as above, fast weak cloudy pale green cut fluorescence

16,840-16,870 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; trace DOLOMITE: as above, fast weak cloudy pale green cut fluorescence

16,870-16,900 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; trace DOLOMITE: as above, fast weak cloudy pale green cut fluorescence

16,900-16,930 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; trace DOLOMITE: as above, fast weak cloudy pale green cut fluorescence

16,930-16,960 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; trace DOLOMITE: as above, fast weak cloudy pale green cut fluorescence

16,960-16,990 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; trace DOLOMITE: as above, fast weak cloudy pale green cut fluorescence

16,990-17,020 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; trace DOLOMITE: as above, fast weak cloudy pale green cut fluorescence

17,020-17,050 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; trace DOLOMITE: as above, fast weak cloudy pale green cut fluorescence

17,050-17,080 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; trace DOLOMITE: as above, fast weak cloudy pale green cut fluorescence

17,080-17,110 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; trace DOLOMITE: as above, fast weak cloudy pale green cut fluorescence

17,110-17,140 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; trace DOLOMITE: as above, fast weak cloudy pale green cut fluorescence

17,140-17,170 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; trace DOLOMITE: as above, fast weak cloudy pale green cut fluorescence

17,170-17,200 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; trace DOLOMITE: as above, fast weak cloudy pale green cut fluorescence

17,200-17,230 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; trace DOLOMITE: as above, fast weak cloudy pale green cut fluorescence

17,230-17,260 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; trace DOLOMITE: as above, fast weak cloudy pale green cut fluorescence

17,260-17,290 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; trace DOLOMITE: as above, fast weak cloudy pale green cut fluorescence

17,290-17,320 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; trace DOLOMITE: as above, fast weak cloudy pale green cut fluorescence

17,320-17,350 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; trace DOLOMITE: as above, fast weak cloudy pale green cut fluorescence

17,350-17,380 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; rare DOLOMITE: mudstone, medium gray-gray brown, cream-tan, fine crystalline, sucrosic texture, firm-friable, rare disseminated pyrite, silty in part, sandy in part, possible intercrystalline porosity, trace spotty light brown oil stain, fast weak diffuse pale green cut fluorescence

17,380-17,410 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; occasional DOLOMITE: mudstone, medium gray-gray brown, cream-tan, fine crystalline, sucrosic texture, firm-friable, rare disseminated pyrite, silty in part, sandy in part, possible intercrystalline porosity, trace spotty light brown oil stain, fast weak diffuse pale green cut fluorescence

17,410-17,440 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; occasional DOLOMITE: mudstone, medium gray-gray brown, cream-tan, fine crystalline, sucrosic texture, firm-friable, rare disseminated pyrite, silty in part, sandy in part, possible intercrystalline porosity, trace spotty light brown oil stain, fast weak diffuse pale green cut fluorescence

17,440-17,470 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; occasional DOLOMITE: mudstone, medium gray-gray brown, cream-tan, fine crystalline, sucrosic texture, firm-friable, rare disseminated pyrite, silty in part, sandy in part, possible intercrystalline porosity, trace spotty light brown oil stain, fast weak diffuse pale green cut fluorescence

17,470-17,500 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; common DOLOMITE: mudstone, medium gray-gray brown, cream-tan, fine crystalline, sucrosic texture, firm-friable, rare disseminated pyrite, silty in part, sandy in part, possible intercrystalline porosity, trace spotty light brown oil stain, fast weak diffuse pale green cut fluorescence

17,500-17,530 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; common DOLOMITE: mudstone, medium gray-gray brown, cream-tan, fine crystalline, sucrosic texture, firm-friable, rare disseminated pyrite, silty in part, sandy in part, possible intercrystalline porosity, trace spotty light brown oil stain, fast weak diffuse pale green cut fluorescence

17,530-17,560 CLAYSTONE: light gray, medium gray-tan, occasional off white, massive, fine crystalline, dolomitic cement, trace disseminated pyrite; common DOLOMITE: mudstone, medium gray-gray brown, cream-tan, fine crystalline, sucrosic texture, firm-friable, rare disseminated pyrite, silty in part, sandy in part, possible intercrystalline porosity, trace spotty light brown oil stain, fast weak diffuse pale green cut fluorescence

17,560-17,590 DOLOMITE: mudstone, medium gray-gray brown, cream-tan, fine crystalline, sucrosic texture, firm-friable, rare disseminated pyrite, silty in part, sandy in part, possible intercrystalline porosity; occasional CLAYSTONE: as above; rare SHALE: light-pale green, firm-friable, earthy, light-brown spotty oil stain, fast weak diffuse pale green cut fluorescence

17,590-17,620 DOLOMITE: mudstone, medium gray-gray brown, cream-tan, fine crystalline, sucrosic texture, firm-friable, rare disseminated pyrite, silty in part, sandy in part, possible intercrystalline porosity; occasional CLAYSTONE: as above; rare SHALE: light-pale green, firm-friable, earthy, light-brown spotty oil stain, fast weak diffuse pale green cut fluorescence

17,620-17,650 DOLOMITE: mudstone, medium gray-gray brown, cream-tan, fine crystalline, sucrosic texture, firm-friable, rare disseminated pyrite, silty in part, sandy in part, possible intercrystalline porosity; rare SHALE: light-pale green, firm-friable, earthy, light-brown spotty oil stain; trace CLAYSTONE: as above, fast weak diffuse pale green cut fluorescence

20,170-20,200 DOLOMITE: mudstone, medium gray-gray brown, cream-tan, fine crystalline, sucrosic texture, firm-friable, rare disseminated pyrite, silty in part, sandy in part, possible intercrystalline porosity; occasional SHALE: light-pale green, firm-friable, earthy, light-brown spotty oil stain, fast weak cloudy pale green cut fluorescence

20,200-20,230 DOLOMITE: mudstone, medium gray-gray brown, cream-tan, fine crystalline, sucrosic texture, firm-friable, rare disseminated pyrite, silty in part, sandy in part, possible intercrystalline porosity; occasional SHALE: light-pale green, firm-friable, earthy, light-brown spotty oil stain, fast weak cloudy pale green cut fluorescence

20,230-20,260 DOLOMITE: mudstone, medium gray-gray brown, cream-tan, fine crystalline, sucrosic texture, firm-friable, rare disseminated pyrite, silty in part, sandy in part, possible intercrystalline porosity; occasional SHALE: light-pale green, firm-friable, earthy, light-brown spotty oil stain, fast weak cloudy pale green cut fluorescence

20,260-20,290 DOLOMITE: mudstone, medium gray-gray brown, cream-tan, fine crystalline, sucrosic texture, firm-friable, rare disseminated pyrite, silty in part, sandy in part, possible intercrystalline porosity; occasional SHALE: light-pale green, firm-friable, earthy, light-brown spotty oil stain, fast weak cloudy pale green cut fluorescence

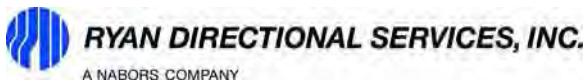
20,290-20,320 DOLOMITE: mudstone, medium gray-gray brown, cream-tan, fine crystalline, sucrosic texture, firm-friable, rare disseminated pyrite, silty in part, sandy in part, possible intercrystalline porosity; occasional SHALE: light-pale green, firm-friable, earthy, light-brown spotty oil stain, fast weak cloudy pale green cut fluorescence

20,320-20,350 DOLOMITE: mudstone, medium gray-gray brown, cream-tan, fine crystalline, sucrosic texture, firm-friable, rare disseminated pyrite, silty in part, sandy in part, possible intercrystalline porosity; occasional SHALE: light-pale green, firm-friable, earthy, light-brown spotty oil stain, fast weak cloudy pale green cut fluorescence

20,350-20,380 DOLOMITE: mudstone, medium gray-gray brown, cream-tan, fine crystalline, sucrosic texture, firm-friable, rare disseminated pyrite, silty in part, sandy in part, possible intercrystalline porosity; occasional SHALE: light-pale green, firm-friable, earthy, light-brown spotty oil stain, fast weak cloudy pale green cut fluorescence

20,380-20,410 DOLOMITE: mudstone, medium gray-gray brown, cream-tan, fine crystalline, sucrosic texture, firm-friable, rare disseminated pyrite, silty in part, sandy in part, possible intercrystalline porosity; occasional SHALE: light-pale green, firm-friable, earthy, light-brown spotty oil stain, fast weak cloudy pale green cut fluorescence

20,410-20,430 DOLOMITE: mudstone, medium gray-gray brown, cream-tan, fine crystalline, sucrosic texture, firm-friable, rare disseminated pyrite, silty in part, sandy in part, possible intercrystalline porosity; occasional SHALE: light-pale green, firm-friable, earthy, light-brown spotty oil stain, fast weak cloudy pale green cut fluorescence



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

Tuesday, December 02, 2014

State of North Dakota

Subject: **Surveys**

Re: **Oasis**
Wade Federal 5300 21-30 12T
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
Ogden, Daniel	MWD Operator	O.H.	11023'	20368'	11/23/14	12/02/14	MWD	20430'
Ogden, Daniel	MWD Operator	O.H.	0'	11023'	09/29/14	10/12/14	MWD	11023'

A certified plat on which the bottom hole location is oriented both to the surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. 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".

Hudson, Douglas
Well Planner

**RYAN DIRECTIONAL SERVICES, INC.**

A NABORS COMPANY

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

Sunday, October 12, 2014

State of North Dakota
County of McKenzie

Subject: **Survey Certification Letter**

Survey Company: **Ryan Directional Services, Inc.**
Job Number: **8120**
Survey Job Type: **Ryan MWD**
Customer: **Oasis Petroleum N.A. LLC**
Well Name: **Wade Federal 5300 21-30 12T**
Rig Name: **Nabors B-25**

Surface: **48° 2' 55.790N, 103° 36' 10.970W**
A.P.I. No: **33-053-06129**
Location: **McKenzie, ND**
RKB Height: **25'**
Distance to Bit: **57'**

<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>
Daniel Ogden	MWD Supervisor	OH	0'	11023'	09/29/14	10/12/14	MWD	110800'

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.



Daniel Ogden
MWD Supervisor
Ryan Directional Services, Inc.



RYAN DIRECTIONAL SERVICES, INC.

A NABORS COMPANY

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

Tuesday, December 02, 2014

State of North Dakota
County of McKenzie

Subject: **Survey Certification Letter**

Survey Company: Ryan Directional Services, Inc.

Job Number: 8273

Surface: 397802.82N, 1209739.10E

Survey Job Type: Ryan MWD

A.P.I. No: 33-053-06129

Customer: Oasis Petroleum N.A. LLC

Location: McKenzie, ND

Well Name: Wade Federal 5300 21-30 12T

RKB Height: 25'

Rig Name: Nabors B-25

Distance to Bit: 62'

<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>
Daniel Ogden	MWD Supervisor	OH	11023'	20368'	11/23/14	12/02/14	MWD	20430'

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.


Daniel Ogden
MWD Supervisor
Ryan Directional Services, Inc.



SURVEY REPORT

Customer: **Oasis Petroleum N.A. LLC**
Well Name: **Wade Federal 5300 21-30 12T**
Rig #: **Nabors B-25**
API #: **33-053-06129**
Calculation Method: **Minimum Curvature Calculation**

MWD Operator: **Daniel Ogden**
Directional Drillers: **RPM**
Survey Corrected To: **True North**
Vertical Section Direction: **89.37**
Total Correction: **8.15**
Temperature Forecasting Model (Chart Only): **Logarithmic**

Survey #	MD	Inc	Azm	Temp	TVD	VS	N/S	E/W	DLS
Tie in to GL at Zero									
Tie In	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1	151	0.30	82.90	69.00	151.00	0.39	0.05	0.39	0.20
2	244	0.40	75.60	69.00	244.00	0.95	0.16	0.95	0.12
3	337	0.30	100.40	71.00	337.00	1.50	0.20	1.50	0.19
4	430	0.50	103.20	73.00	429.99	2.14	0.06	2.14	0.22
5	524	0.40	94.70	73.00	523.99	2.86	-0.06	2.86	0.13
6	615	0.70	65.20	73.00	614.99	3.69	0.15	3.68	0.44
7	707	0.60	48.60	75.00	706.98	4.56	0.70	4.56	0.23
8	799	0.60	75.50	78.00	798.98	5.40	1.14	5.38	0.30
9	891	0.60	83.50	80.00	890.97	6.34	1.32	6.33	0.09
10	983	0.70	63.30	80.00	982.96	7.33	1.62	7.31	0.27
11	1075	1.10	80.70	84.00	1074.95	8.70	2.02	8.68	0.52
12	1167	0.40	84.80	89.00	1166.95	9.90	2.19	9.87	0.76
13	1260	1.00	245.40	91.00	1259.94	9.48	1.88	9.46	1.49
14	1352	0.80	261.40	91.00	1351.93	8.11	1.45	8.09	0.35
15	1444	0.70	276.50	93.00	1443.92	6.92	1.42	6.90	0.24
16	1537	0.90	287.00	93.00	1536.91	5.66	1.70	5.64	0.27
17	1630	0.90	272.10	95.00	1629.90	4.23	1.94	4.21	0.25
18	1723	1.20	258.50	95.00	1722.89	2.54	1.77	2.53	0.42
19	1816	0.40	342.80	95.00	1815.88	1.50	1.88	1.48	1.32
20	1909	0.70	314.80	96.00	1908.87	1.00	2.60	0.98	0.42
21	2002	0.90	280.60	98.00	2001.87	-0.11	3.13	-0.14	0.55
22	2023	0.80	280.10	98.00	2022.86	-0.42	3.19	-0.45	0.48
23	2089	0.90	273.20	80.00	2088.86	-1.39	3.30	-1.42	0.22
24	2182	1.10	50.70	80.00	2181.85	-1.42	3.90	-1.46	2.01
25	2276	1.10	59.10	84.00	2275.83	0.07	4.94	0.01	0.17
26	2369	1.10	65.80	87.00	2368.82	1.65	5.76	1.59	0.14
27	2462	0.60	49.90	89.00	2461.81	2.85	6.44	2.78	0.59
28	2555	0.30	19.70	93.00	2554.80	3.31	6.98	3.23	0.40
29	2648	0.80	150.40	96.00	2647.80	3.71	6.65	3.64	1.10
30	2742	1.00	161.80	98.00	2741.79	4.27	5.30	4.22	0.28
31	2835	1.20	154.80	100.00	2834.77	4.92	3.65	4.88	0.26
32	2928	0.90	157.50	102.00	2927.76	5.60	2.09	5.58	0.33
33	3021	1.10	153.00	104.00	3020.74	6.27	0.62	6.26	0.23
34	3114	1.10	163.90	105.00	3113.72	6.90	-1.03	6.92	0.22
35	3208	0.30	74.10	109.00	3207.72	7.38	-1.83	7.40	1.21
36	3301	0.50	85.40	111.00	3300.72	8.02	-1.73	8.04	0.23
37	3394	0.40	84.60	111.00	3393.71	8.75	-1.67	8.77	0.11
38	3487	0.30	71.90	114.00	3486.71	9.31	-1.56	9.32	0.14
39	3580	0.30	89.00	114.00	3579.71	9.78	-1.48	9.80	0.10
40	3674	0.20	105.00	116.00	3673.71	10.19	-1.52	10.20	0.13
41	3767	0.30	47.30	118.00	3766.71	10.52	-1.40	10.54	0.28
42	3861	0.30	51.30	120.00	3860.71	10.90	-1.08	10.91	0.02
43	3954	1.30	79.60	120.00	3953.70	12.13	-0.74	12.14	1.12
44	4047	1.30	80.80	122.00	4046.67	14.21	-0.38	14.22	0.03
45	4140	1.10	72.10	125.00	4139.65	16.11	0.07	16.11	0.29
46	4233	0.20	136.60	127.00	4232.65	17.07	0.22	17.07	1.11
47	4326	0.30	112.80	131.00	4325.65	17.41	0.01	17.41	0.15
48	4420	0.30	149.10	132.00	4419.64	17.76	-0.30	17.76	0.20
49	4513	0.30	167.00	134.00	4512.64	17.93	-0.74	17.94	0.10
50	4606	0.20	264.80	138.00	4605.64	17.82	-0.99	17.83	0.41
51	4699	0.20	261.50	140.00	4698.64	17.50	-1.03	17.51	0.01
52	4792	0.40	219.50	141.00	4791.64	17.13	-1.31	17.14	0.31
53	4885	0.70	228.60	143.00	4884.64	16.49	-1.93	16.51	0.33
54	4978	0.30	239.90	145.00	4977.63	15.85	-2.43	15.87	0.44
55	5072	0.30	147.90	147.00	5071.63	15.76	-2.76	15.79	0.46
56	5165	0.90	79.10	147.00	5164.63	16.61	-2.83	16.64	0.90
57	5258	1.00	81.50	150.00	5257.61	18.13	-2.57	18.16	0.12
58	5351	1.00	84.30	152.00	5350.60	19.74	-2.37	19.77	0.05
59	5444	0.90	95.40	152.00	5443.59	21.28	-2.36	21.30	0.22
60	5537	0.90	93.80	154.00	5536.58	22.73	-2.48	22.76	0.03



SURVEY REPORT

Customer: **Oasis Petroleum N.A. LLC**
Well Name: **Wade Federal 5300 21-30 12T**
Rig #: **Nabors B-25**
API #: **33-053-06129**
Calculation Method: **Minimum Curvature Calculation**

MWD Operator: **Daniel Ogden**
Directional Drillers: **RPM**
Survey Corrected To: **True North**
Vertical Section Direction: **89.37**
Total Correction: **8.15**
Temperature Forecasting Model (Chart Only): **Logarithmic**

Survey #	MD	Inc	Azm	Temp	TVD	VS	N/S	E/W	DLS
61	5630	1.10	106.90	154.00	5629.56	24.31	-2.79	24.34	0.33
62	5722	1.10	115.70	156.00	5721.54	25.94	-3.43	25.98	0.18
63	5815	1.00	115.60	156.00	5814.53	27.47	-4.16	27.52	0.11
64	5908	1.00	116.70	158.00	5907.51	28.92	-4.88	28.98	0.02
65	5964	1.00	113.50	158.00	5963.51	29.80	-5.29	29.86	0.10
66	6024	0.80	144.80	127.00	6023.50	30.52	-5.84	30.58	0.87
67	6086	0.30	343.80	134.00	6085.50	30.72	-6.04	30.79	1.75
68	6180	0.50	347.40	141.00	6179.50	30.57	-5.41	30.63	0.21
69	6273	0.70	307.40	145.00	6272.49	30.04	-4.66	30.09	0.49
70	6366	0.40	300.50	147.00	6365.49	29.31	-4.15	29.36	0.33
71	6460	1.10	11.80	150.00	6459.48	29.22	-3.10	29.26	1.11
72	6553	1.20	14.30	154.00	6552.46	29.67	-1.29	29.68	0.12
73	6646	0.70	357.70	156.00	6645.45	29.90	0.22	29.90	0.61
74	6739	0.40	91.70	156.00	6738.44	30.21	0.78	30.20	0.89
75	6832	0.20	29.80	159.00	6831.44	30.61	0.91	30.61	0.38
76	6925	0.40	253.60	161.00	6924.44	30.38	0.96	30.38	0.60
77	7017	0.50	275.80	161.00	7016.44	29.68	0.91	29.67	0.22
78	7110	1.20	79.90	165.00	7109.43	30.23	1.12	30.22	1.81
79	7203	1.20	83.80	165.00	7202.41	32.16	1.40	32.15	0.09
80	7297	1.60	66.50	168.00	7296.39	34.35	2.03	34.33	0.61
81	7390	1.10	75.70	170.00	7389.36	36.42	2.77	36.39	0.58
82	7483	1.10	67.60	174.00	7482.34	38.11	3.33	38.08	0.17
83	7576	0.90	43.60	176.00	7575.33	39.45	4.20	39.41	0.49
84	7669	0.80	138.70	176.00	7668.32	40.38	4.24	40.34	1.35
85	7763	0.60	110.00	177.00	7762.32	41.27	3.58	41.24	0.42
86	7856	0.30	196.90	179.00	7855.31	41.65	3.18	41.62	0.71
87	7949	0.50	193.60	181.00	7948.31	41.48	2.55	41.46	0.22
88	8042	0.60	227.30	183.00	8041.31	41.02	1.83	41.00	0.36
89	8136	0.70	199.90	183.00	8135.30	40.45	0.95	40.45	0.34
90	8229	0.60	212.20	185.00	8228.30	39.99	0.01	39.99	0.18
91	8322	0.30	139.90	186.00	8321.29	39.88	-0.59	39.89	0.63
92	8415	0.50	154.60	188.00	8414.29	40.21	-1.14	40.22	0.24
93	8508	0.50	148.70	190.00	8507.29	40.58	-1.86	40.61	0.06
94	8602	0.50	193.30	192.00	8601.28	40.69	-2.61	40.72	0.40
95	8695	0.70	191.70	194.00	8694.28	40.47	-3.56	40.52	0.22
96	8788	0.60	205.90	194.00	8787.27	40.14	-4.55	40.19	0.20
97	8881	0.40	169.80	197.00	8880.27	39.97	-5.31	40.03	0.39
98	8975	0.50	75.90	199.00	8974.27	40.43	-5.53	40.49	0.70
99	9068	0.40	98.90	201.00	9067.27	41.14	-5.48	41.20	0.22
100	9161	0.70	59.90	203.00	9160.26	41.95	-5.25	42.02	0.50
101	9254	0.40	112.50	204.00	9253.26	42.75	-5.09	42.81	0.60
102	9348	0.40	27.40	199.00	9347.26	43.20	-4.92	43.26	0.58
103	9441	0.10	358.50	201.00	9440.25	43.36	-4.55	43.41	0.34
104	9534	0.40	91.20	203.00	9533.25	43.68	-4.48	43.73	0.45
105	9627	0.40	86.30	203.00	9626.25	44.33	-4.47	44.38	0.04
106	9720	0.10	176.60	204.00	9719.25	44.66	-4.53	44.71	0.44
107	9813	0.30	285.30	206.00	9812.25	44.42	-4.54	44.48	0.37
108	9906	0.40	17.30	208.00	9905.25	44.29	-4.17	44.34	0.55
109	10000	0.60	313.70	210.00	9999.25	44.04	-3.52	44.08	0.59
110	10093	0.50	350.60	210.00	10092.24	43.63	-2.78	43.66	0.39
111	10156	0.50	287.60	212.00	10155.24	43.33	-2.42	43.36	0.83
112	10174	0.40	323.60	186.00	10173.24	43.22	-2.35	43.24	1.63
113	10205	0.70	37.70	186.00	10204.24	43.27	-2.11	43.30	2.27
114	10236	3.80	66.90	190.00	10235.21	44.34	-1.56	44.36	10.35
115	10266	7.20	68.50	192.00	10265.07	47.01	-0.48	47.02	11.34
116	10297	10.40	72.10	194.00	10295.70	51.50	1.09	51.49	10.47
117	10328	14.80	75.80	195.00	10325.95	58.02	2.92	58.00	14.42
118	10359	18.50	77.20	197.00	10355.64	66.68	4.99	66.63	12.00
119	10391	22.30	77.60	199.00	10385.63	77.59	7.41	77.52	11.88
120	10422	25.80	77.60	201.00	10413.93	89.96	10.13	89.85	11.29



SURVEY REPORT

Customer: **Oasis Petroleum N.A. LLC**
Well Name: **Wade Federal 5300 21-30 12T**
Rig #: **Nabors B-25**
API #: **33-053-06129**
Calculation Method: **Minimum Curvature Calculation**

MWD Operator: **Daniel Ogden**
Directional Drillers: **RPM**
Survey Corrected To: **True North**
Vertical Section Direction: **89.37**
Total Correction: **8.15**
Temperature Forecasting Model (Chart Only): **Logarithmic**

Survey #	MD	Inc	Azm	Temp	TVD	VS	N/S	E/W	DLS
121	10453	28.70	78.40	201.00	10441.49	103.88	13.07	103.74	9.43
122	10484	31.80	78.70	201.00	10468.27	119.21	16.17	119.04	10.01
123	10515	34.80	79.90	203.00	10494.17	135.97	19.32	135.77	9.91
124	10546	37.90	80.70	203.00	10519.14	154.11	22.41	153.88	10.12
125	10577	41.10	81.20	195.00	10543.06	173.62	25.51	173.35	10.37
126	10608	44.70	81.60	192.00	10565.76	194.51	28.67	194.21	11.65
127	10639	48.30	82.30	194.00	10587.10	216.81	31.81	216.47	11.73
128	10670	51.80	82.80	197.00	10607.00	240.40	34.89	240.03	11.36
129	10701	53.90	83.30	199.00	10625.72	264.96	37.88	264.56	6.90
130	10732	56.10	83.90	203.00	10643.50	290.22	40.70	289.79	7.27
131	10763	59.00	84.90	203.00	10660.13	316.28	43.25	315.82	9.74
132	10795	63.30	85.60	204.00	10675.57	344.23	45.57	343.75	13.57
133	10826	67.00	86.40	204.00	10688.59	372.30	47.53	371.80	12.16
134	10857	69.60	86.50	206.00	10700.05	401.07	49.31	400.55	8.39
135	10888	72.90	86.10	208.00	10710.02	430.38	51.21	429.84	10.72
136	10919	76.40	85.10	208.00	10718.22	460.20	53.50	459.64	11.71
137	10950	80.40	84.60	210.00	10724.46	490.47	56.23	489.88	13.00
138	10981	84.60	84.50	210.00	10728.50	521.08	59.15	520.47	13.55
139	11012	87.20	84.10	212.00	10730.72	551.88	62.22	551.23	8.49
140	11023	87.30	83.80	210.00	10731.24	562.82	63.38	562.16	2.87
141	11123	87.70	81.70	217.00	10735.61	662.05	75.98	661.26	2.14
142	11131	87.60	81.70	217.00	10735.94	669.97	77.14	669.17	1.25
143	11224	89.70	81.90	212.00	10738.13	762.13	90.40	761.19	2.27
144	11254	89.50	81.40	208.00	10738.34	791.86	94.75	790.87	1.80
145	11285	89.30	81.70	210.00	10738.66	822.57	99.31	821.53	1.16
146	11317	90.20	84.30	210.00	10738.80	854.37	103.21	853.29	8.60
147	11348	90.10	84.50	208.00	10738.72	885.25	106.23	884.14	0.72
148	11379	90.10	85.10	208.00	10738.66	916.15	109.04	915.01	1.94
149	11409	90.60	88.00	210.00	10738.48	946.11	110.85	944.95	9.81
150	11440	90.50	88.60	208.00	10738.18	977.11	111.77	975.94	1.96
151	11471	90.50	88.90	210.00	10737.91	1008.10	112.44	1006.93	0.97
152	11502	88.20	90.60	212.00	10738.27	1039.10	112.58	1037.92	9.23
153	11595	86.80	91.00	213.00	10742.32	1131.98	111.28	1130.82	1.57
154	11689	87.10	90.60	210.00	10747.32	1225.82	109.97	1224.68	0.53
155	11781	90.40	90.90	213.00	10749.33	1317.75	108.77	1316.64	3.60
156	11873	89.70	90.40	217.00	10749.25	1409.73	107.72	1408.63	0.94
157	11966	88.90	90.20	219.00	10750.39	1502.71	107.24	1501.62	0.89
158	12058	90.30	90.60	217.00	10751.03	1594.69	106.60	1593.62	1.58
159	12152	90.80	89.60	221.00	10750.13	1688.68	106.43	1687.61	1.19
160	12243	90.20	88.70	221.00	10749.33	1779.67	107.78	1778.59	1.19
161	12336	90.20	88.20	222.00	10749.01	1872.66	110.30	1871.56	0.54
162	12429	89.80	88.00	224.00	10749.01	1965.64	113.38	1964.51	0.48
163	12524	89.40	87.30	226.00	10749.67	2060.59	117.28	2059.43	0.85
164	12618	89.60	89.10	224.00	10750.49	2154.56	120.23	2153.37	1.93
165	12713	90.00	88.50	228.00	10750.82	2249.56	122.22	2248.35	0.76
166	12807	89.50	90.30	230.00	10751.23	2343.55	123.20	2342.34	1.99
167	12901	88.60	90.70	231.00	10752.79	2437.52	122.38	2436.32	1.05
168	12995	89.90	90.20	231.00	10754.02	2531.49	121.64	2530.31	1.48
169	13089	90.20	89.90	231.00	10753.94	2625.49	121.56	2624.31	0.45
170	13182	87.90	89.40	233.00	10755.48	2718.47	122.13	2717.29	2.53
171	13276	90.00	90.50	231.00	10757.20	2812.44	122.21	2811.26	2.52
172	13370	91.50	90.40	233.00	10755.97	2906.41	121.47	2905.25	1.60
173	13464	91.40	90.00	235.00	10753.59	3000.37	121.14	2999.22	0.44
174	13557	89.00	90.80	233.00	10753.27	3093.35	120.50	3092.21	2.72
175	13651	88.70	90.90	235.00	10755.16	3187.30	119.10	3186.18	0.34
176	13745	88.50	90.20	237.00	10757.45	3281.25	118.20	3280.15	0.77
177	13839	88.50	90.00	239.00	10759.91	3375.21	118.04	3374.11	0.21
178	13933	87.60	89.10	239.00	10763.11	3469.15	118.77	3468.06	1.35
179	14027	88.60	89.80	237.00	10766.23	3563.10	119.67	3562.00	1.30
180	14122	88.80	89.80	240.00	10768.38	3658.07	120.01	3656.97	0.21



SURVEY REPORT

Customer: **Oasis Petroleum N.A. LLC**
Well Name: **Wade Federal 5300 21-30 12T**
Rig #: **Nabors B-25**
API #: **33-053-06129**
Calculation Method: **Minimum Curvature Calculation**

MWD Operator: **Daniel Ogden**
Directional Drillers: **RPM**
Survey Corrected To: **True North**
Vertical Section Direction: **89.37**
Total Correction: **8.15**
Temperature Forecasting Model (Chart Only): **Logarithmic**

Survey #	MD	Inc	Azm	Temp	TVD	VS	N/S	E/W	DLS
181	14216	89.60	91.10	239.00	10769.70	3752.04	119.27	3750.96	1.62
182	14311	89.50	91.60	240.00	10770.44	3846.98	117.03	3845.93	0.54
183	14406	89.80	91.60	242.00	10771.02	3941.91	114.38	3940.89	0.32
184	14501	87.30	91.00	240.00	10773.43	4036.82	112.22	4035.83	2.71
185	14596	90.00	92.00	239.00	10775.66	4131.71	109.74	4130.76	3.03
186	14690	90.10	91.90	240.00	10775.58	4225.62	106.54	4224.70	0.15
187	14785	89.40	91.10	240.00	10776.00	4320.55	104.05	4319.67	1.12
188	14879	88.90	90.90	240.00	10777.39	4414.50	102.41	4413.64	0.57
189	14974	87.40	90.50	244.00	10780.46	4509.42	101.25	4508.58	1.63
190	15069	88.70	90.80	242.00	10783.69	4604.34	100.17	4603.52	1.40
191	15163	87.60	90.80	244.00	10786.73	4698.26	98.86	4697.46	1.17
192	15258	88.40	91.20	244.00	10790.04	4793.17	97.20	4792.39	0.94
193	15353	88.90	91.60	242.00	10792.28	4888.08	94.88	4887.33	0.67
194	15448	89.50	91.00	246.00	10793.61	4983.02	92.73	4982.30	0.89
195	15543	90.10	91.20	246.00	10793.94	5077.97	90.91	5077.28	0.67
196	15637	88.60	91.10	248.00	10795.00	5171.92	89.02	5171.25	1.60
197	15732	88.10	89.20	246.00	10797.74	5266.86	88.77	5266.21	2.07
198	15827	88.10	88.30	246.00	10800.89	5361.81	90.84	5361.13	0.95
199	15921	89.90	88.10	246.00	10802.53	5455.77	93.79	5455.07	1.93
200	16016	89.50	87.40	248.00	10803.03	5550.73	97.52	5549.99	0.85
201	16111	88.90	87.30	249.00	10804.35	5645.66	101.91	5644.88	0.64
202	16206	91.00	87.60	248.00	10804.44	5740.60	106.14	5739.78	2.23
203	16300	91.60	86.50	251.00	10802.30	5834.50	110.98	5833.63	1.33
204	16395	89.90	88.00	248.00	10801.06	5929.42	115.53	5928.51	2.39
205	16490	89.90	89.40	248.00	10801.23	6024.41	117.69	6023.48	1.47
206	16583	89.40	90.40	249.00	10801.79	6117.40	117.85	6116.48	1.20
207	16678	89.50	91.50	249.00	10802.71	6212.36	116.28	6211.46	1.16
208	16773	90.00	90.70	251.00	10803.12	6307.31	114.45	6306.44	0.99
209	16868	91.00	90.10	252.00	10802.29	6402.29	113.79	6401.43	1.23
210	16963	90.90	89.60	254.00	10800.72	6497.28	114.04	6496.42	0.54
211	17057	90.70	88.90	253.00	10799.40	6591.27	115.27	6590.40	0.77
212	17151	89.40	88.00	255.00	10799.32	6685.25	117.81	6684.36	1.68
213	17246	90.50	87.80	253.00	10799.40	6780.22	121.29	6779.30	1.18
214	17341	91.20	88.30	253.00	10798.00	6875.18	124.52	6874.23	0.91
215	17436	92.00	89.30	253.00	10795.34	6970.14	126.51	6969.17	1.35
216	17531	91.60	90.50	253.00	10792.36	7065.09	126.68	7064.12	1.33
217	17625	90.90	90.50	255.00	10790.31	7159.04	125.86	7158.09	0.74
218	17720	89.90	90.80	257.00	10789.64	7254.02	124.78	7253.08	1.10
219	17814	89.60	90.90	257.00	10790.06	7347.99	123.39	7347.07	0.34
220	17908	90.00	90.80	257.00	10790.38	7441.95	121.99	7441.06	0.44
221	18003	90.80	90.40	257.00	10789.72	7536.93	121.00	7536.05	0.94
222	18098	89.40	90.70	258.00	10789.55	7631.91	120.09	7631.05	1.51
223	18193	91.40	90.70	258.00	10788.89	7726.87	118.93	7726.03	2.11
224	18288	90.00	90.20	258.00	10787.73	7821.85	118.18	7821.02	1.56
225	18382	88.00	90.10	258.00	10789.37	7915.82	117.93	7915.00	2.13
226	18477	87.60	90.60	255.00	10793.02	8010.73	117.35	8009.93	0.67
227	18572	89.70	91.10	257.00	10795.26	8105.67	115.94	8104.88	2.27
228	18666	89.70	91.10	258.00	10795.75	8199.63	114.14	8198.87	0.00
229	18761	90.50	91.60	258.00	10795.58	8294.57	111.90	8293.84	0.99
230	18856	90.80	91.90	258.00	10794.50	8389.48	109.00	8388.79	0.45
231	18951	88.70	92.40	258.00	10794.92	8484.36	105.44	8483.71	2.27
232	19045	89.60	92.60	258.00	10796.31	8578.21	101.34	8577.61	0.98
233	19140	89.80	90.60	258.00	10796.81	8673.13	98.69	8672.57	2.12
234	19235	90.20	90.20	260.00	10796.81	8768.12	98.02	8767.57	0.60
235	19330	91.30	89.70	260.00	10795.57	8863.10	98.10	8862.56	1.27
236	19424	91.30	89.30	260.00	10793.43	8957.08	98.92	8956.53	0.43
237	19519	89.50	89.40	260.00	10792.77	9052.07	100.00	9051.52	1.90
238	19614	89.20	89.00	260.00	10793.85	9147.06	101.33	9146.50	0.53
239	19709	89.50	88.60	262.00	10794.93	9242.05	103.32	9241.47	0.53
240	19804	90.20	88.20	262.00	10795.18	9337.04	105.97	9336.44	0.85

Report #: 1
Date: 12-Oct-14



RYAN DIRECTIONAL SERVICES, INC.
A NABORS COMPANY

Ryan Job # 8120

SURVEY REPORT

Customer: **Oasis Petroleum N.A. LLC**
Well Name: **Wade Federal 5300 21-30 12T**
Rig #: **Nabors B-25**
API #: **33-053-06129**
Calculation Method: **Minimum Curvature Calculation**

MWD Operator: **Daniel Ogden**
Directional Drillers: **RPM**
Survey Corrected To: **True North**
Vertical Section Direction: **89.37**
Total Correction: **8.15**
Temperature Forecasting Model (Chart Only): **Logarithmic**

Survey #	MD	Inc	Azm	Temp	TVD	VS	N/S	E/W	DLS
241	19898	89.80	87.80	262.00	10795.18	9431.01	109.25	9430.38	0.60
242	19993	90.00	90.70	260.00	10795.34	9526.00	110.49	9525.36	3.06
243	20088	90.50	91.30	260.00	10794.93	9620.96	108.84	9620.34	0.82
244	20183	90.60	91.40	262.00	10794.02	9715.90	106.60	9715.31	0.15
245	20278	91.30	91.40	262.00	10792.44	9810.83	104.28	9810.27	0.74
246	20368	90.90	91.30	262.00	10790.71	9900.75	102.16	9900.23	0.46
Projection	20430	90.90	91.30	262.00	10789.74	9962.71	100.75	9962.21	0.00



SUNDRY NOTICES AND REPORTS ON WELLS - FORM

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.
28976

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

<input checked="" type="checkbox"/> Notice of Intent	Approximate Start Date September 14, 2014
<input type="checkbox"/> Report of Work Done	Date Work Completed
<input type="checkbox"/> Notice of Intent to Begin a Workover Project that may Qualify for a Tax Exemption Pursuant to NDCC Section 57-51.1-03.	
Approximate Start Date	

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

Well Name and Number

Wade Federal 5300 21-30 12T

Footages	Qtr-Qtr	Section	Township	Range
1640 F N L	270 F W L	SWNW	30	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
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DETAILS OF WORK

Oasis Petroleum North America LLC requests permission to make the following changes to the above referenced well:

Surface casing changed to 13 3/8"
Contingency 9 5/8" casing added
7" casing changed to all 32#

Attached are revised drill plan, plot and well summary.

Company Oasis Petroleum North America LLC	Telephone Number 281-404-9563	
Address 1001 Fannin, Suite 1500		
City Houston	State TX	Zip Code 77002
Signature <i>Sonja Rolffes</i>	Printed Name Sonja Rolffes	
Title Regulatory Specialist	Date September 4, 2014	
Email Address srolffes@oasispetroleum.com		

FOR STATE USE ONLY	
<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date <i>9-10-2014</i>	
By <i>David Burns</i>	
Title Engineering Tech.	

DRILLING PLAN						
OPERATOR	Oasis Petroleum	COUNTY/STATE	McKenzie Co., ND			
WELL NAME	Wade Federal 5300 21-30H	RIG	B25			
WELL TYPE	Horizontal Three Forks					
LOCATION	SW NW 30-153N-100W	Surface Location (survey plat)	1540' FNL	270' FWL	GROUND ELEV:	1,999'
EST. T.D.	20,618'					Sub Height: 25'
TOTAL LATERAL:	9,528'					KB ELEV: 2,024'
MARKER	TVD	Subsea TVD	LOGS:	Type Interval		
Pierre	NDIC MAP	1,874	150	OH Logs: Request Log waiver based on the Wade Federal 5300 21-30H 600' S of surface location		
Greenhorn		4,521	-2,497	CBL/GPR: Above top of cement/GPR to base of casing		
Mowry		4,923	-2,899	MWD GR: KOP to lateral TD		
Dakota		5,347	-3,323			
Rierdon		6,360	-4,336	DEVIATION: Surf: 3 deg. max., 1 deg / 100'; svry every 500'		
Dunham Salt		6,851	-4,827	Prod: 5 deg. max., 1 deg / 100'; svry every 100'		
Dunham Salt Base		6,901	-4,877			
Pine Salt		7,181	-5,137			
Pine Salt Base		7,179	-5,155			
Opeche Salt		7,249	-5,225			
Opeche Salt Base		7,328	-5,304			
Amsden		7,569	-5,545			
Tyler		7,730	-5,706			
Otter/Base Minnelusa		7,957	-5,933	DSTS: None planned		
Kibbey Lime		8,299	-6,275			
Charles Salt		8,441	-6,417	CORES: None planned		
Base Last Salt		9,115	-7,091			
Mission Canyon		9,331	-7,307			
Lodgepole		9,881	-7,857			
False Bakken		10,612	-8,588			
Upper Bakken Shale		10,624	-8,600	MUDLOGGING: Two-Man: Begin 200' above Kibbey		
Middle Bakken		10,638	-8,614	30' samples in curve and lateral		
Lower Bakken Shale		10,674	-8,650			
Pronghorn		10,684	-8,660			
Threeforks		10,688	-8,674			
Threeforks(Top of Target)		10,716	-8,692			
Threeforks(Base of Target)		10,725	-8,701			
Claystone		10,725	-8,701	BOP: 11" 5000 psi blind, pipe & annular		
Est. Dip Rate:						
Max. Anticipated BHP:	1647	Surface Formation: Glacial till				
MUD:	Interval	Type	WT	Vis	WL	Remarks
Surface:	0'	1,974'	FML/Gel - Lime Sweeps	8.4-9.0	28-32	NC
Intermediate:	1,974' -	10,968'	Invert	9.5-10.4	40-50	30+Ht/Hp
Lateral:	10,968'	20,516'	Salt Water	9.8-10.2	28-32	NC
CASING:	Size	Wt pcf	Hole	Depth	Cement	WOC
Surface:	13-3/8"	54.5#	17-1/2"	1,974'	To Surface	12
Intermediate (Dakota):	9-5/8"	40#	12-1/4"	6,400'	To Surface	24
Intermediate:	7"	32#	8-3/4"	10,968'	4847	Set Casing across Dakota
Production Liner:	4.5"	13.5#	6"	20,516'	TOL @ 10,193'	500' above Dakota
PROBABLE PLUGS, IF REQ'D:						
OTHER:	MD	TVD	FNL/FSL	FEL/FWL	S-T-R	AZI
Surface:	1,974	1,974	1840' FNL	270' FWL	T153N R100W Sec. 30	Survey Company: Build Rate: 12 deg /100'
KOP:	10,243'	10,243'	1640' FNL	320' FWL	T153N R100W Sec. 30	
EOC:	10,968'	10,720'	1565' FNL	787' FWL	T153N R100W Sec. 30	
Casing Point:	10,968'	10,720'	1585' FNL	787' FWL	T153N R100W Sec. 30	
Middle Bakken Lateral TD:	20,516'	10,820'	1530' FNL	200' FEL	T153N R100W Sec. 29	
Comments:						
Request Log waiver based on the Wade Federal 5300 21-30H 600' S of surface location						
No frac string planned						
35 packers and 20 sleeves planned 3.6MM lbs 30% ceramic						
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) 8006-20-6 (Primary Name: Kerosene)						
OASIS PETROLEUM						
Geology: N Gabelman	3/20/2014	Engineering: mg 4.8.14				

Oasis Petroleum
Well Summary
Wade Federal 5300 21-30 12T
Section 30 T153N R100W
McKenzie County, ND

SURFACE CASING AND CEMENT DESIGN

Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Make-up Torque (ft-lbs)		
							Minimum	Optimum	Max
13-3/8"	0' to 1,974'	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 1,974'	13-3/8", 54.5#, J-55, STC, 8rd	1130 / 1.22	2730 / 2.95	514 / 2.66

API Rating & Safety Factor

- a) Based on full casing evacuation with 9 ppg fluid on backside (1,974' setting depth).
- b) Burst pressure based on 9 ppg fluid with no fluid on backside (1,974' setting depth).
- c) Based on string weight in 9 ppg fluid at 1,974' TVD plus 100k# overpull. (Buoyed weight equals 93k 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: **569 sks** (294 bbls) 2.9 yield conventional system with 94 lb/sk cement, .25 lb/sk D130 Lost Circulation Control Agent, 2% CaCl₂, 4% D079 Extender and 2% D053 Expanding Agent.

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

**Oasis Petroleum
Well Summary
Wade Federal 5300 21-30 12T
Section 30 T153N R100W
McKenzie County, ND**

CONTINGENCY SURFACE CASING AND CEMENT DESIGN

									Make-up Torque (ft-lbs)
Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Minimum	Optimum	Max
9-5/8"	0' to 6,400'	40	L-80	LTC	8.835"	8.75"	5,450	7,270	9,090

Interval	Description	Collapse	Burst	Tension
		(psi) a	(psi) b	(1000 lbs) c
0' to 6,400'	9-5/8", 40#, L-80, LTC, 8rd	3090 / 3.71	5750 / 1.24	837 / 3.86

API Rating & Safety Factor

- a) Collapse pressure based on 11.5 ppg fluid on the backside and 9 ppg fluid inside of casing.
- b) Burst pressure calculated from a gas kick coming from the production zone (Bakken Pool) at 9,000 psi and a subsequent breakdown at the 9-5/8" shoe, based on a 13.5#/ft fracture gradient. Backup of 9 ppg fluid.
- c) Yield based on string weight in 10 ppg fluid, (217k lbs buoyed weight) plus 100k lbs overpull.

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

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

Lead Slurry: **592 sks** (210 bbls) Conventional system with 75 lb/sk cement, 0.5 lb/sk lost circulation, 10% expanding agent, 2% extender, 2% CaCl₂, 0.2% anti-foam and 0.4% fluid loss agent.

Tail Slurry: **521 sks** (108 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
Wade Federal 5300 21-30 12T
Section 30 T153N R100W
McKenzie County, ND

INTERMEDIATE CASING AND CEMENT DESIGN

Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Make-up Torque (ft-lbs)		
							Minimum	Optimum	Max
7"	0' – 10,988'	32	HCP-110	LTC	6.094"	6.000"	6730	8970	9870

***Special drift

Interval	Length	Description	Collapse	Burst	Tension
			(psi) a	(psi) b	(1000 lbs) c
0' – 10,988'	10,988'	7", 32#, HCP-110, LTC, 8rd	11820 / 2.12*	12460 / 1.28	897 / 2.25
6,851' – 9,115'	2,264'	7", 32#, HCP-110, LTC, 8rd	11820 / 1.08*	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 10,720' TVD.
- c) Based on string weight in 10 ppg fluid, (298k lbs buoied weight) plus 100k

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

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

Lead Slurry: **229 sks** (92 bbls) 2.21 yield conventional system with 47 lb/sk cement, 37 lb/sk D035 extender, 3.0% KCl, 3.0% D154 extender, 0.3% D208 viscosifier, 0.07% retarder, 0.2% anti-foam, 0.5 lb/sk, D130 LCM.

Tail Slurry: **581 sks** (160 bbls) 1.54 yield conventional system with 94 lb/sk cement, 3.0% KCl, 35.0% Silica, 0.5% retarder, 0.2% fluid loss, 0.2% anti-foam and 0.5 lb/sk LCM.

**Oasis Petroleum
Well Summary
Wade Federal 5300 21-30 12T
Section 30 T153N R100W
McKenzie County, ND**

PRODUCTION LINER

Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Estimated Torque
4-1/2"	10,193' – 20,516'	13.5	P-110	BTC	3.92"	3.795"	4,500

Interval	Description	Collapse	Burst	Tension
		(psi) a	(psi) b	(1000 lbs) c
10,193' – 20,516'	4-1/2", 13.5 lb, P-110, BTC, 8rd	10670 / 1.99	12410 / 1.28	443 / 2.02

API Rating & Safety Factor

- a) Based on full casing evacuation with 9.5 ppg fluid on backside @ 10,820' TVD.
Burst pressure based on 9000 psi treating pressure with 10.2 ppg internal fluid gradient and 9 ppg external
- b) fluid gradient @ 10,820' TVD.
- c) Based on string weight in 9.5 ppg fluid (Buoyed weight: 119k 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)



Azimuths to True North
Magnetic North: 8.15°

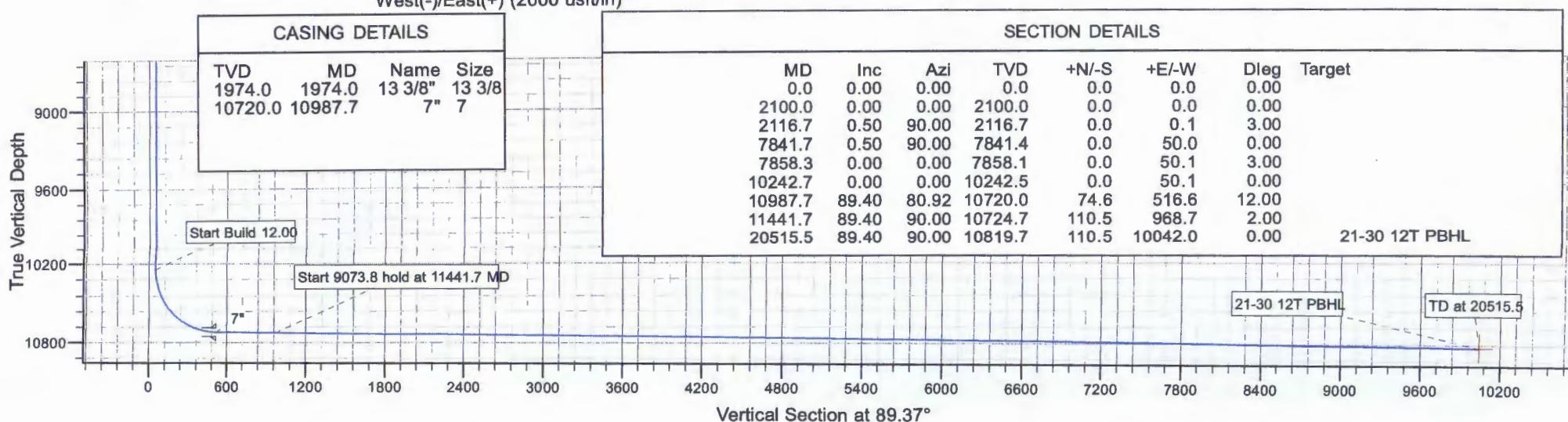
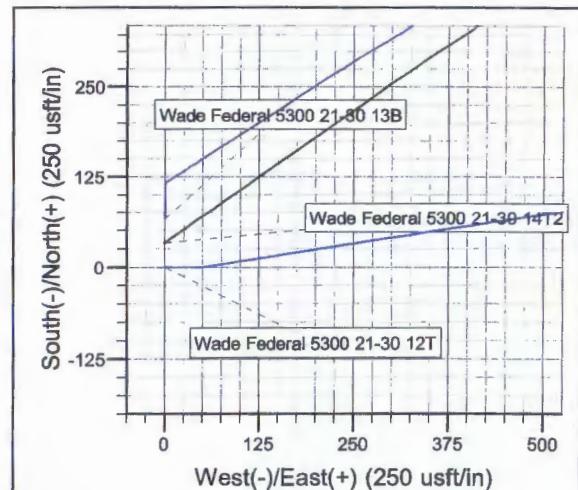
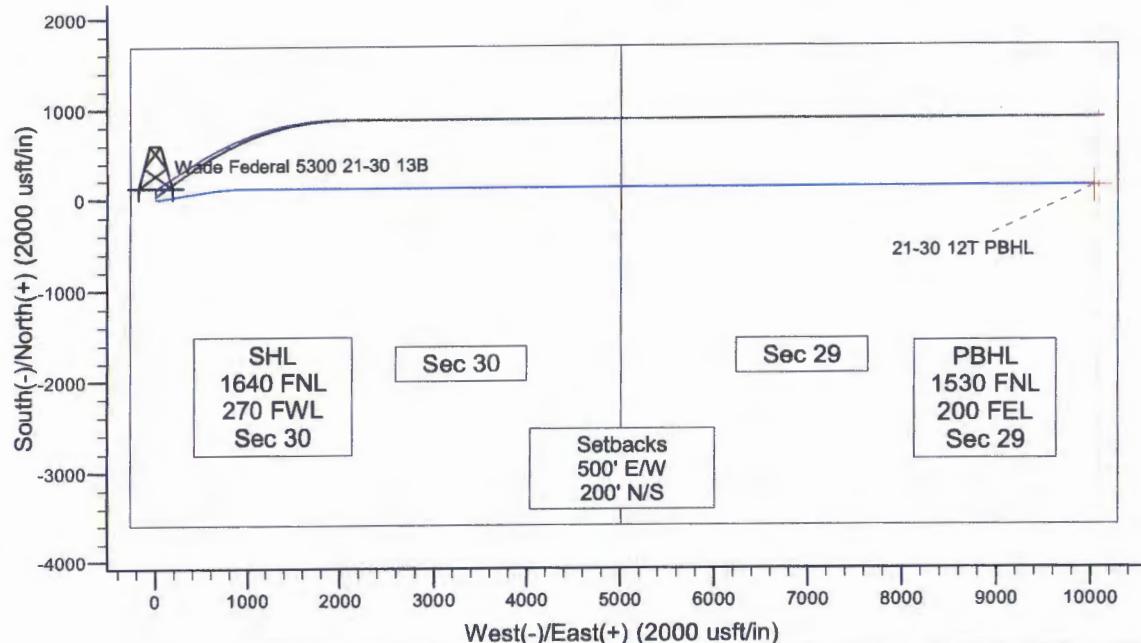
Magnetic Field
Strength: 56473.1nT
Dip Angle: 72.95°
Date: 4/4/2014
Model: IGRF200510



Project: Indian Hills
Site: 153N-100W-29/30
Well: Wade Federal 5300 21-30 12T
Wellbore: Wade Federal 21-30 12T
Design: Design #1

WELL DETAILS: Wade Federal 5300 21-30 12T

Northing 397802.82	Easting 1209739.10	Latitude 48° 2' 55.140 N	Longitude 103° 36' 10.970 W
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Oil and Gas Division

Lynn D. Helms - Director

Bruce E. Hicks - Assistant Director

Department of Mineral Resources

Lynn D. Helms - Director

North Dakota Industrial Commission

www.dmr.nd.gov/oilgas

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

Date: 7/28/2014

RE: CORES AND SAMPLES

Well Name: WADE FEDERAL 5300 21-30 12T Well File No.: 28976
Location: SWNW 30-153-100 County: MCKENZIE
Permit Type: Development - HORIZONTAL
Field: BAKER Target Horizon: THREE FORKS B1

Dear BRANDI TERRY:

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

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

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

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

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

Sincerely

Stephen Fried
Geologist



SUNDRY NOTICES AND REPORTS ON WELLS - FORM 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.
28976

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

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

Well Name and Number Wade Federal 5300 21-30 12T				
Footages 1640 F N L	270 F W L	Qtr-Qtr LOT2	Section 30	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:

#20197

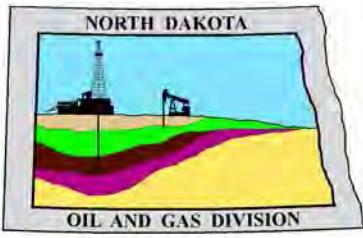
The Oasis Petroleum/Wade Federal 5300 21-30H located within a mile of subject location

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

Company Oasis Petroleum North America LLC	Telephone Number 281-404-9491	
Address 1001 Fannin, Suite 1500		
City Houston	State TX	Zip Code 77002
Signature <i>Brandi Terry</i>	Printed Name Brandi Terry	
Title Regulatory Specialist	Date April 14, 2014	
Email Address bterry@oasispetroleum.com		

FOR STATE USE ONLY

<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date <i>7-25-2014</i>	
By <i>Stephen Fried</i>	
Title Stephen Fried Geologist	



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

July 25, 2014

Brandi Terry
Regulatory Specialist
OASIS PETROLEUM NORTH AMERICA LLC
1001 Fannin Suite 1500
Houston, TX 77002

**RE: HORIZONTAL WELL
WADE FEDERAL 5300 21-30 12T
SWNW Section 30-153N-100W
McKenzie County
Well File # 28976**

Dear Brandi:

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 29 & 30 T153N R100W. **Tool error is not required pursuant to order.**

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. Due to drainage adjacent to the well site, a dike is required surrounding the entire location. OASIS PETRO NO AMER must contact NDIC Field Inspector Richard Dunn at 701-770-3554 prior to location construction.

Drilling pit

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

Form 1 Changes & Hard Lines

Any changes, shortening of casing point or lengthening at Total Depth must have prior approval by the NDIC. The proposed directional plan is at a legal location. Based on the azimuth of the proposed lateral the maximum legal coordinate from the well head is: 10043'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,

Alice Webber
Engineering Tech



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 05 / 01 / 2014	Confidential Status No
Operator OASIS PETROLEUM NORTH AMERICA LLC		Telephone Number 281-404-9491	
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 WADE FEDERAL			Well Number 5300 21-30 12T				
Surface Footages 1640 F N L 270 F W L		Qtr-Qtr SWNW	Section 30	Township 153 N	Range 100 W	County McKenzie	
Longstring Casing Point Footages 1565 F N L 787 F W L		Qtr-Qtr LOT2	Section 30	Township 153 N	Range 100 W	County McKenzie	
Longstring Casing Point Coordinates From Well Head 75 N From WH 517 E From WH		Azimuth 80.9 °	Longstring Total Depth 10988 Feet MD 10720 Feet TVD				
Bottom Hole Footages From Nearest Section Line 1530 F N L 201 F E L		Qtr-Qtr SENE	Section 29	Township 153 N	Range 100 W	County Williams	
Bottom Hole Coordinates From Well Head 110 N From WH 10042 E From WH		KOP Lateral 1 10243 Feet MD	Azimuth Lateral 1 90.0 °	Estimated Total Depth Lateral 1 20516 Feet MD 10820 Feet TVD			
Latitude of Well Head 48 ° 02 ' 55.14 "	Longitude of Well Head -103 ° 36 ' 10.97 "	NAD Reference NAD83		Description of Spacing Unit: Sections 29 & 30 T153N R100W (Subject to NDIC Approval)			
Ground Elevation 1997 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 10513 Feet	South Line of Spacing/Drilling Unit 10522 Feet	East Line of Spacing/Drilling Unit 5082 Feet		West Line of Spacing/Drilling Unit 5236 Feet			
Objective Horizons Three Forks B1						Pierre Shale Top 1874	
Proposed Surface Casing	Size 9 - 5/8 "	Weight 36 Lb./Ft.	Depth 1974 Feet	Cement Volume 586 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 10988 Feet MD 10720 Feet TVD		Cement Volume 810 Sacks	Cement Top 4847 Feet	Top Dakota Sand 5347 Feet
Base Last Charles Salt (If Applicable) 9115 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

04 / 14 / 2014

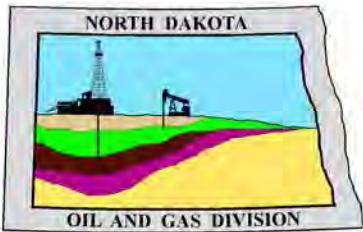
ePermit

Printed Name
Brandi TerryTitle
Regulatory Specialist**FOR STATE USE ONLY**

Permit and File Number 28976	API Number 33 - 053 - 06129
Field BAKER	
Pool BAKKEN	Permit Type DEVELOPMENT

FOR STATE USE ONLY

Date Approved 7 / 25 / 2014
By Alice Webber
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

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,

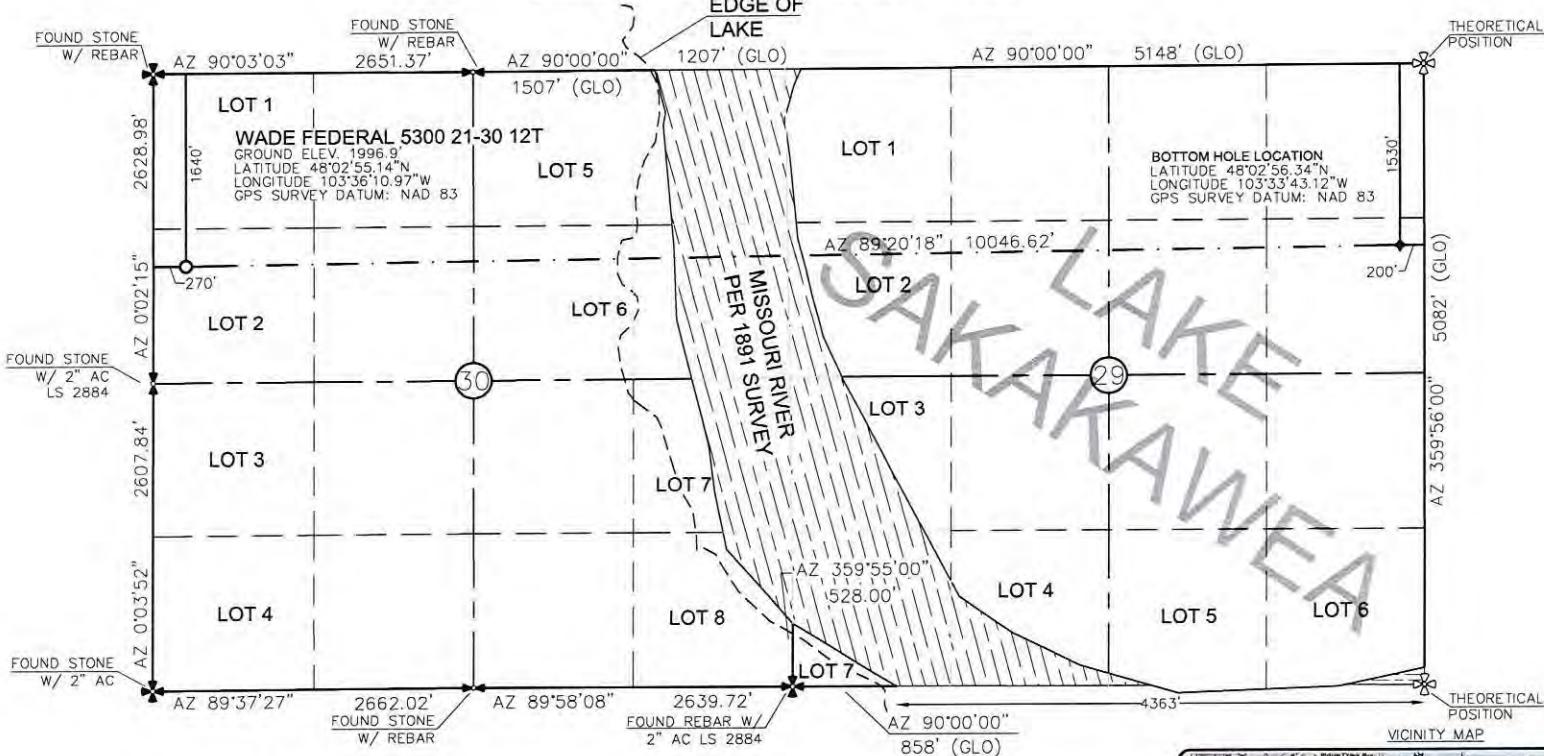
Bruce E. Hicks
Assistant Director

WELL LOCATION PLAT

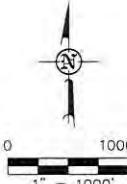
OASIS PETROLEUM NORTH AMERICA, LLC

1001 FANNIN, SUITE 1500, HOUSTON, TX 77002

"WADE FEDERAL 5300 21-30 12T"
1640 FEET FROM NORTH LINE AND 270 FEET FROM WEST LINE
SECTION 30 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 3/19/14 AND THE
ORIGINAL DOCUMENTS ARE STORED AT
THE OFFICES OF INTERSTATE
ENGINEERING, INC.

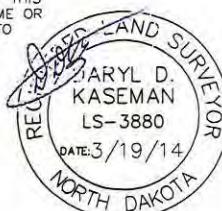


 - MONUMENT - RECOVERED
 - MONUMENT - NOT RECOVERED

STAKED ON 3/17/14
VERTICAL CONTROL DATUM WAS BASED UPON
CONTROL POINT 705 WITH AN ELEVATION OF 2158.3'

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



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OASIS PETROLEUM NORTH AMERICA, LLC	Project No.: 514-06-019-03
WELL LOCATION PLAT	Date: MARS, 2014
SECTION T153N, R100W	
MCKENZIE COUNTY, NORTH DAKOTA	
Drawn By: B.H.H.	
Checked By: D.D.K.	

Interstate Engineering, Inc.
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DRILLING PLAN							
OPERATOR	Oasis Petroleum	COUNTY/STATE	McKenzie Co., ND				
WELL NAME	Wade Federal 5300 21-30 12T	RIG	B25				
WELL TYPE	Horizontal Three Forks						
LOCATION	SW NW 30-153N-100W	Surface Location (survey plat):	1640' FNL	270' FWL	GROUND ELEV:	1,999'	
EST. T.D.	20,516'	TOTAL LATERAL:	9,528'	KB ELEV:	2,024'	Sub Height: 25	
MARKER	TVD	Subsea TVD	LOGS:	Type	Interval		
Pierre	NDIC MAP	1,874	150	OH Logs: Request Log waiver based on the Wade Federal 5300 21-30H 600' S of surface location			
Greenhorn		4,521	-2,497	CBL/GR: Above top of cement/GR to base of casing			
Mowry		4,923	-2,899	MWD GR: KOP to lateral TD			
Dakota		5,347	-3,323				
Rierdon		6,360	-4,336	DEVIATION:	Surf: 3 deg. max., 1 deg / 100'; svny every 500'		
Dunham Salt		6,851	-4,827	Prod:	5 deg. max., 1 deg / 100'; svny every 100'		
Dunham Salt Base		6,901	-4,877				
Pine Salt		7,161	-5,137				
Pine Salt Base		7,179	-5,155				
Opeche Salt		7,249	-5,225				
Opeche Salt Base		7,328	-5,304				
Amsden		7,569	-5,545				
Tyler		7,730	-5,706				
Otter/Base Minnelusa		7,957	-5,933	DSTS:	None planned		
Kibbey Lime		8,299	-6,275				
Charles Salt		8,441	-6,417	CORES:	None planned		
Base Last Salt		9,115	-7,091				
Mission Canyon		9,331	-7,307				
Lodgepole		9,881	-7,857				
False Bakken		10,612	-8,588				
Upper Bakken Shale		10,624	-8,600	MUDLOGGING:	Two-Man: Begin 200' above Kibbey		
Middle Bakken		10,638	-8,614	30' samples in curve and lateral			
Lower Bakken Shale		10,674	-8,650				
Pronghorn		10,684	-8,660				
Threeforks		10,698	-8,674				
Threeforks(Top of Target)		10,716	-8,692				
Threeforks(Base of Target)		10,725	-8,701				
Claystone		10,725	-8,701	BOP:	11" 5000 psi blind, pipe & annular		
Est. Dip Rate:	-0.60						
Max. Anticipated BHP:	4647						
Surface Formation: Glacial till							
MUD:	Interval	Type	WT	Vis	WL	Remarks	
Surface:	0' -	1,974' FW/Gel - Lime Sweeps	8.4-9.0	28-32	NC	Circ Mud Tanks	
Intermediate:	1,974' -	10,988' Invert	9.5-10.4	40-50	30+HtHp	Circ Mud Tanks	
Laterals:	10,988' -	20,516' Salt Water	9.8-10.2	28-32	NC	Circ Mud Tanks	
CASING:	Size	Wt ppf	Hole	Depth	Cement	WOC	Remarks
Surface:	9-5/8"	36#	13-1/2"	1,974'	To Surface	12	100' into Pierre
Intermediate:	7"	29/32#	8-3/4"	10,988'	4847	24	500' above Dakota
Production Liner:	4.5"	11.6#	6"	20,516'	TOL @ 10,193'		50' above KOP
PROBABLE PLUGS, IF REQ'D:							
OTHER:	MD	TVD	FNL/FSL	FEU/FWL	S-T-R	AZI	
Surface:	1,974	1,974	1640' FNL	270' FWL	T153N R100W Sec. 30	Survey Company: Build Rate: 12 deg /100'	
KOP:	10,243'	10,243'	1640' FNL	320' FWL	T153N R100W Sec. 30		
EOC:	10,988'	10,720'	1565' FNL	787' FWL	T153N R100W Sec. 30		
Casing Point:	10,988'	10,720'	1565' FNL	787' FWL	T153N R100W Sec. 30		
Middle Bakken Lateral TD:	20,516'	10,820'	1530' FNL	200' FEL	T153N R100W Sec. 29		
Comments:							
Request Log waiver based on the Wade Federal 5300 21-30H 600' S of surface location							
No frac string planned							
35 packers and 20 sleeves planned 3.6MM lbs 30% ceramic							
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: N. Gabelman	3/20/2014	Engineering: smg 4.8.14					

Oasis Petroleum
Well Summary
Wade Federal 5300 21-30 12T
Section 30 T153N R100W
McKenzie, ND

SURFACE CASING AND CEMENT DESIGN

Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Make-up Torque (ft-lbs)		
							Minimum	Optimum	Max
9-5/8"	0' - 1974'	36	J-55	LTC	8.921"	8.765"	3400	4530	5660

Interval	Description	Collapse	Burst	Tension
		(psi) / a	(psi) / b	(1000 lbs) / c
0' - 1974'	9-5/8", 36#, J-55, LTC, 8rd	2020 / 2.18	3520 / 3.81	453 / 2.80

API Rating & Safety Factor

- a) Based on full casing evacuation with 9 ppg fluid on backside (1974' setting depth).
- b) Burst pressure based on 9 ppg fluid with no fluid on backside (1974' setting depth).
- c) Based on string weight in 9 ppg fluid at 1974' TVD plus 100k# overpull. (Buoyed weight equals 61k lbs.)

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

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

Lead Slurry: **413 sks** (218 bbls), 11.5 lb/gal, 2.97 cu. Ft./sk Varicem Cement with 0.125 il/sk Lost Circulation Additive

Tail Slurry: **173 sks** (62 bbls), 13.0 lb/gal, 2.01 cu.ft./sk Varicem with .125 lb/sk Lost Circulation Agent

Oasis Petroleum
Well Summary
Wade Federal 5300 21-30 12T
Section 30 T153N R100W
McKenzie, ND

INTERMEDIATE CASING AND CEMENT DESIGN

Size	Interval	Weight	Grade	Coupling	I.D.	Drift**	Make-up Torque (ft-lbs)		
							Minimum	Optimum	Max
7"	0' - 10988'	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' - 10988'	10988'	7", 32#, P-110, LTC, 8rd	11820 / 2.12*	12460 / 1.28	897 / 2.25
6851' - 9115'	2264'	7", 32#, HCP-110, LTC, 8rd	11820 / 1.08**	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 10720' 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 CW8
20 bbls Fresh Water

Lead Slurry: **229 sks** (92 bbls), 11.8 ppg, 2.55 cu. ft./sk Econocem Cement with .3% Fe-2 and .25 lb/sk Lost Circulation Additive

Tail Slurry: **581 sks** (160 bbls), 14.0 ppg, 1.55 cu. ft./sk Extendcem System with .2% HR-5 Retarder and .25 lb/sk Lost Circulation Additive

Oasis Petroleum
Well Summary
Wade Federal 5300 21-30 12T
Section 30 T153N R100W
McKenzie, ND

PRODUCTION LINER

Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Make-up Torque (ft-lbs)		
							Minimum	Optimum	Max
4-1/2"	10193' - 20516'	13.5	P-110	BTC	3.920"	3.795"	2270	3020	3780

Interval	Length	Description	Collapse	Burst	Tension
			(psi) a	(psi) b	(1000 lbs) c
10193' - 20516'	10323	4-1/2", 13.5 lb, P-110, BTC	10670 / 1.99	12410 / 1.28	443 / 2.02

API Rating & Safety Factor

- a) Based on full casing evacuation with 9.5 ppg fluid on backside @ 10820' TVD.
- b) Burst pressure based on 9000 psi treating pressure with 10.2 ppg internal fluid gradient and 9 ppg external fluid gradient @ 10820' TVD.
- c) Based on string weight in 9.5 ppg fluid (Buoyed weight: 119k lbs.) plus 100k lbs overpull.



Azimuths to True North
Magnetic North: 8.15°

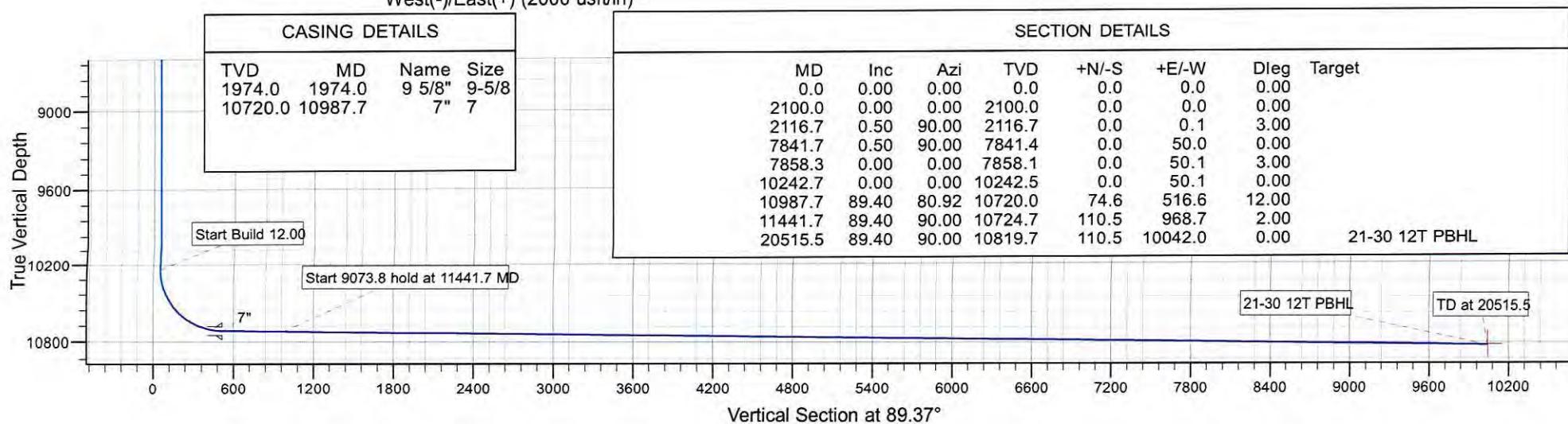
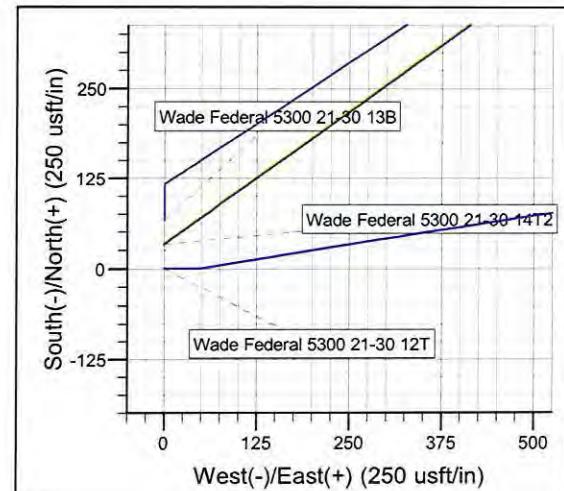
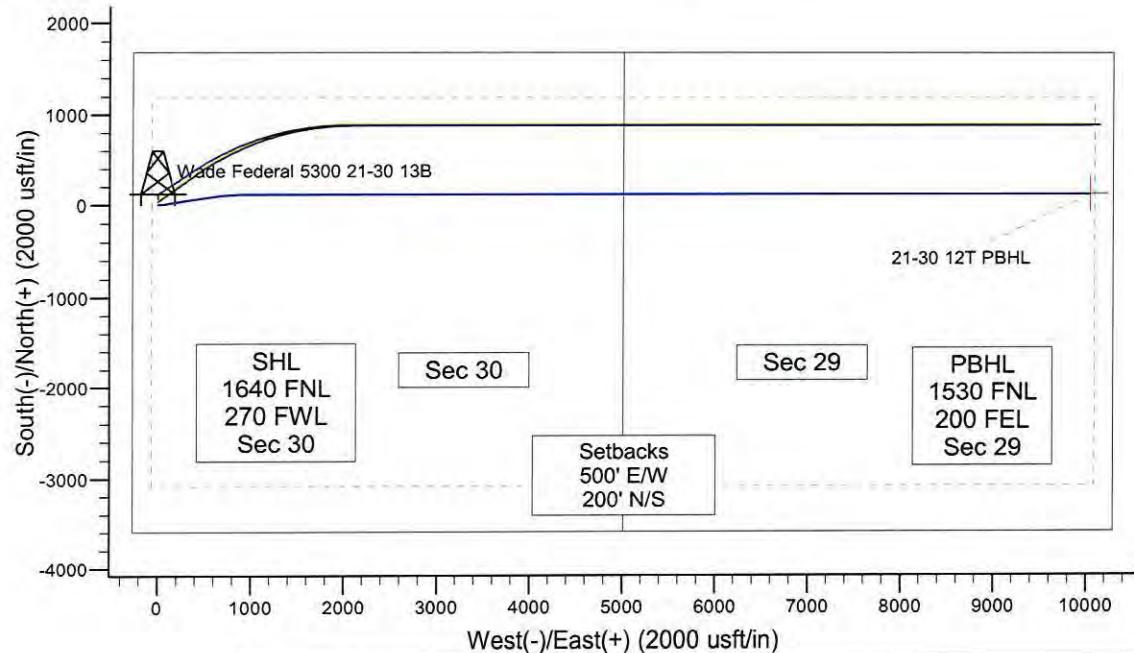
Magnetic Field
Strength: 56473.1nT
Dip Angle: 72.95°
Date: 4/4/2014
Model: IGRF200510



Project: Indian Hills
Site: 153N-100W-29/30
Well: Wade Federal 5300 21-30 12T
Wellbore: Wade Federal 21-30 12T
Design: Design #1

WELL DETAILS: Wade Federal 5300 21-30 12T

Northing 397802.82	Easting 1209739.10	Latitude 48° 2' 55.140 N	Longitude 103° 36' 10.970 W
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Oasis Petroleum

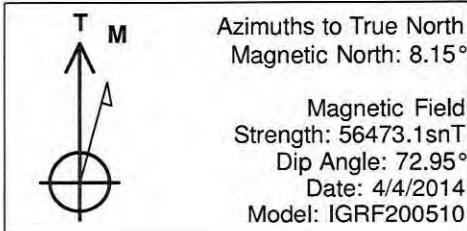
**Indian Hills
153N-100W-29/30
Wade Federal 5300 21-30 12T**

Wade Federal 21-30 12T

Plan: Design #1

Standard Planning Report

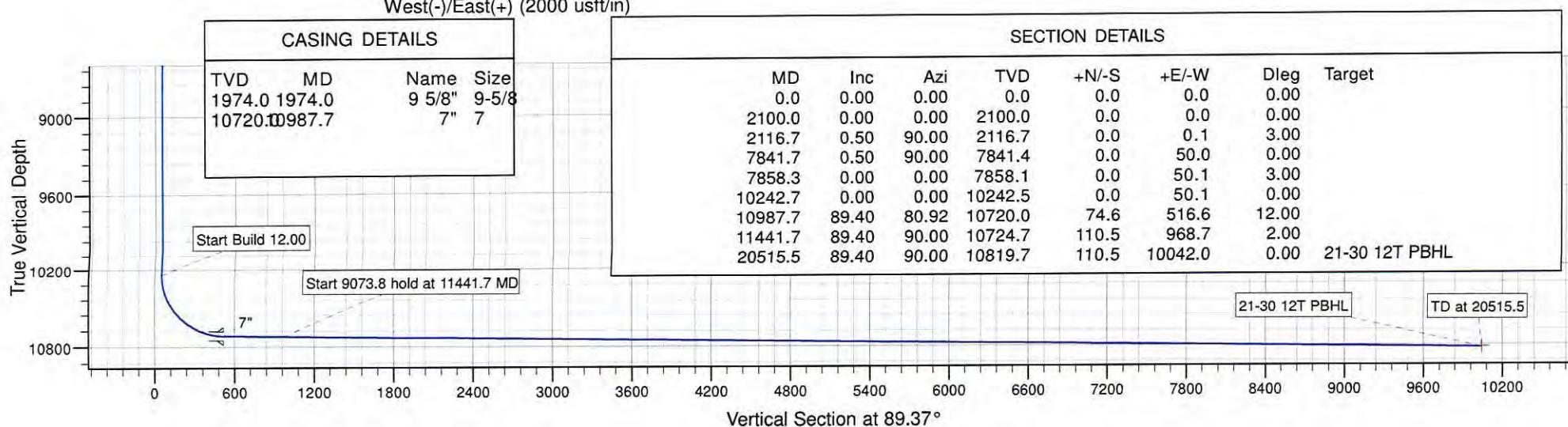
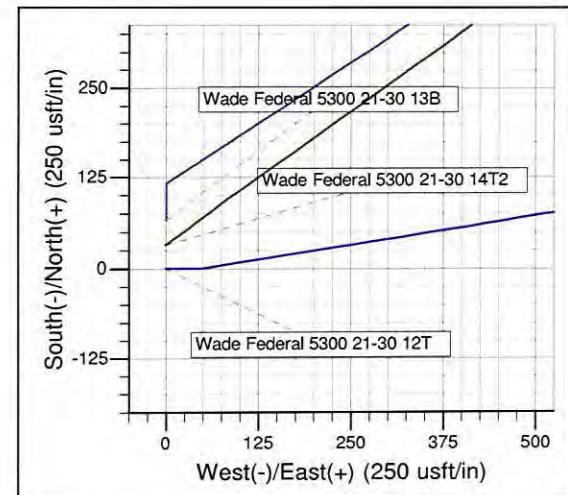
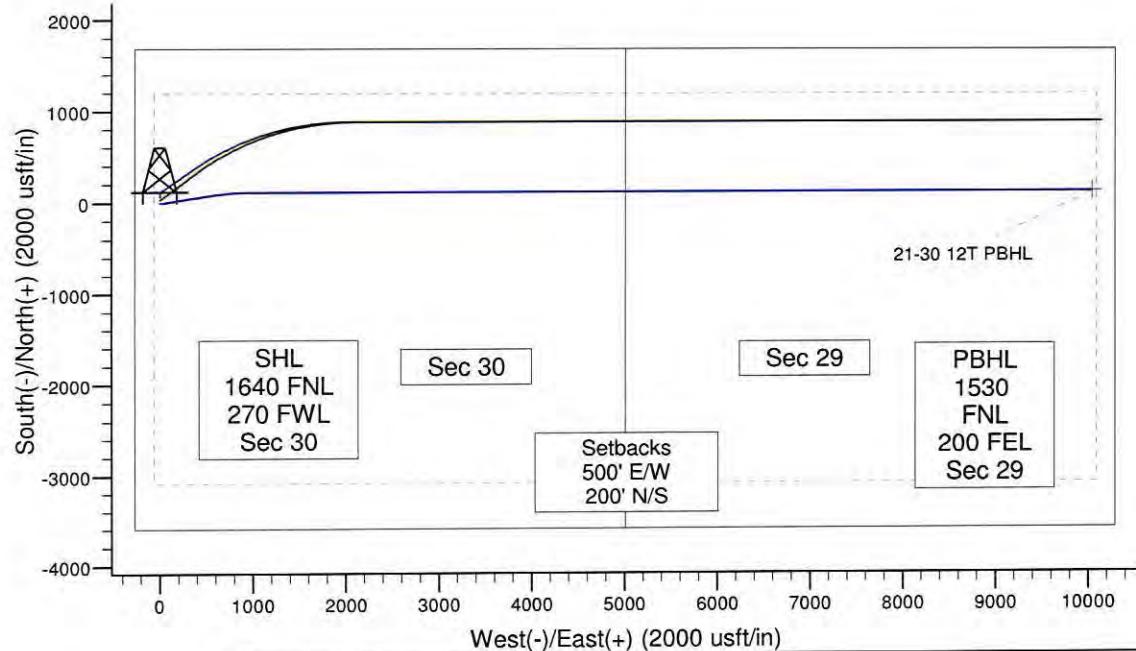
07 April, 2014



Project: Indian Hills
Site: 153N-100W-29/30
Well: Wade Federal 5300 21-30 12T
Wellbore: Wade Federal 21-30 12T
Design: Design #1

WELL DETAILS: Wade Federal 5300 21-30 12T

Northing 397802.82	Easting 1209739.10	Latitude 48° 2' 55.140 N	Longitude 103° 36' 10.970 W
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Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Wade Federal 5300 21-30 12T
Company:	Oasis Petroleum	TVD Reference:	WELL @ 2024.0usft (Original Well Elev)
Project:	Indian Hills	MD Reference:	WELL @ 2024.0usft (Original Well Elev)
Site:	153N-100W-29/30	North Reference:	True
Well:	Wade Federal 5300 21-30 12T	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wade Federal 21-30 12T		
Design:	Design #1		

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

Site	153N-100W-29/30		
Site Position:		Northing:	395,519.95 usft
From:	Lat/Long	Easting:	1,209,617.13 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
			Latitude: 48° 2' 32.580 N
			Longitude: 103° 36' 11.410 W
			Grid Convergence: -2.31 °

Well	Wade Federal 5300 21-30 12T				
Well Position	+N/S 2,285.9 usft	Northing: 397,802.82 usft	Latitude: 48° 2' 55.140 N		
	+E/W 29.9 usft	Easting: 1,209,739.10 usft	Longitude: 103° 36' 10.970 W		
Position Uncertainty	2.0 usft	Wellhead Elevation: 1,999.0 usft	Ground Level:		

Wellbore	Wade Federal 21-30 12T				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	4/4/2014	8.15	72.95	56,473

Design	Design #1				
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	89.37

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 (°)
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.00	0.00	0.00	0.00
2,116.7	0.50	90.00	2,116.7	0.0	0.1	3.00	3.00	0.00	90.00
7,841.7	0.50	90.00	7,841.4	0.0	50.0	0.00	0.00	0.00	0.00
7,858.3	0.00	0.00	7,858.1	0.0	50.1	3.00	-3.00	0.00	180.00
10,242.7	0.00	0.00	10,242.5	0.0	50.1	0.00	0.00	0.00	0.00
10,987.7	89.40	80.92	10,720.0	74.6	516.6	12.00	12.00	0.00	80.92
11,441.7	89.40	90.00	10,724.7	110.5	968.7	2.00	0.00	2.00	90.05
20,515.5	89.40	90.00	10,819.7	110.5	10,042.0	0.00	0.00	0.00	21-30 12T PBHL

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Wade Federal 5300 21-30 12T
Company:	Oasis Petroleum	TVD Reference:	WELL @ 2024.0usft (Original Well Elev)
Project:	Indian Hills	MD Reference:	WELL @ 2024.0usft (Original Well Elev)
Site:	153N-100W-29/30	North Reference:	True
Well:	Wade Federal 5300 21-30 12T	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wade Federal 21-30 12T		
Design:	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/S (usft)	+E/W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,116.7	0.50	90.00	2,116.7	0.0	0.1	0.1	3.00	3.00	0.00
2,200.0	0.50	90.00	2,200.0	0.0	0.8	0.8	0.00	0.00	0.00
2,300.0	0.50	90.00	2,300.0	0.0	1.7	1.7	0.00	0.00	0.00
2,400.0	0.50	90.00	2,400.0	0.0	2.5	2.5	0.00	0.00	0.00
2,500.0	0.50	90.00	2,500.0	0.0	3.4	3.4	0.00	0.00	0.00
2,600.0	0.50	90.00	2,600.0	0.0	4.3	4.3	0.00	0.00	0.00
2,700.0	0.50	90.00	2,700.0	0.0	5.2	5.2	0.00	0.00	0.00
2,800.0	0.50	90.00	2,800.0	0.0	6.0	6.0	0.00	0.00	0.00
2,900.0	0.50	90.00	2,900.0	0.0	6.9	6.9	0.00	0.00	0.00
3,000.0	0.50	90.00	3,000.0	0.0	7.8	7.8	0.00	0.00	0.00
3,100.0	0.50	90.00	3,100.0	0.0	8.7	8.7	0.00	0.00	0.00
3,200.0	0.50	90.00	3,200.0	0.0	9.5	9.5	0.00	0.00	0.00
3,300.0	0.50	90.00	3,300.0	0.0	10.4	10.4	0.00	0.00	0.00
3,400.0	0.50	90.00	3,400.0	0.0	11.3	11.3	0.00	0.00	0.00
3,500.0	0.50	90.00	3,499.9	0.0	12.1	12.1	0.00	0.00	0.00
3,600.0	0.50	90.00	3,599.9	0.0	13.0	13.0	0.00	0.00	0.00
3,700.0	0.50	90.00	3,699.9	0.0	13.9	13.9	0.00	0.00	0.00
3,800.0	0.50	90.00	3,799.9	0.0	14.8	14.8	0.00	0.00	0.00
3,900.0	0.50	90.00	3,899.9	0.0	15.6	15.6	0.00	0.00	0.00
4,000.0	0.50	90.00	3,999.9	0.0	16.5	16.5	0.00	0.00	0.00
4,100.0	0.50	90.00	4,099.9	0.0	17.4	17.4	0.00	0.00	0.00
4,200.0	0.50	90.00	4,199.9	0.0	18.3	18.3	0.00	0.00	0.00
4,300.0	0.50	90.00	4,299.9	0.0	19.1	19.1	0.00	0.00	0.00
4,400.0	0.50	90.00	4,399.9	0.0	20.0	20.0	0.00	0.00	0.00
4,500.0	0.50	90.00	4,499.9	0.0	20.9	20.9	0.00	0.00	0.00
4,521.1	0.50	90.00	4,521.0	0.0	21.1	21.1	0.00	0.00	0.00
Greenhorn									
4,600.0	0.50	90.00	4,599.9	0.0	21.7	21.7	0.00	0.00	0.00
4,700.0	0.50	90.00	4,699.9	0.0	22.6	22.6	0.00	0.00	0.00
4,800.0	0.50	90.00	4,799.9	0.0	23.5	23.5	0.00	0.00	0.00
4,900.0	0.50	90.00	4,899.9	0.0	24.4	24.4	0.00	0.00	0.00
4,923.1	0.50	90.00	4,923.0	0.0	24.6	24.6	0.00	0.00	0.00
Mowry									
5,000.0	0.50	90.00	4,999.9	0.0	25.2	25.2	0.00	0.00	0.00
5,100.0	0.50	90.00	5,099.9	0.0	26.1	26.1	0.00	0.00	0.00
5,200.0	0.50	90.00	5,199.9	0.0	27.0	27.0	0.00	0.00	0.00
5,300.0	0.50	90.00	5,299.9	0.0	27.9	27.9	0.00	0.00	0.00
5,347.1	0.50	90.00	5,347.0	0.0	28.3	28.3	0.00	0.00	0.00
Dakota									
5,400.0	0.50	90.00	5,399.9	0.0	28.7	28.7	0.00	0.00	0.00
5,500.0	0.50	90.00	5,499.9	0.0	29.6	29.6	0.00	0.00	0.00
5,600.0	0.50	90.00	5,599.9	0.0	30.5	30.5	0.00	0.00	0.00
5,700.0	0.50	90.00	5,699.9	0.0	31.3	31.3	0.00	0.00	0.00
5,800.0	0.50	90.00	5,799.9	0.0	32.2	32.2	0.00	0.00	0.00
5,900.0	0.50	90.00	5,899.9	0.0	33.1	33.1	0.00	0.00	0.00
6,000.0	0.50	90.00	5,999.9	0.0	34.0	34.0	0.00	0.00	0.00
6,100.0	0.50	90.00	6,099.8	0.0	34.8	34.8	0.00	0.00	0.00
6,200.0	0.50	90.00	6,199.8	0.0	35.7	35.7	0.00	0.00	0.00
6,300.0	0.50	90.00	6,299.8	0.0	36.6	36.6	0.00	0.00	0.00
6,360.2	0.50	90.00	6,360.0	0.0	37.1	37.1	0.00	0.00	0.00
Rierdon									
6,400.0	0.50	90.00	6,399.8	0.0	37.5	37.4	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Wade Federal 5300 21-30 12T
Company:	Oasis Petroleum	TVD Reference:	WELL @ 2024.0usft (Original Well Elev)
Project:	Indian Hills	MD Reference:	WELL @ 2024.0usft (Original Well Elev)
Site:	153N-100W-29/30	North Reference:	True
Well:	Wade Federal 5300 21-30 12T	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wade Federal 21-30 12T		
Design:	Design #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/S (usft)	+E/W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
6,500.0	0.50	90.00	6,499.8	0.0	38.3	38.3	0.00	0.00	0.00	0.00
6,600.0	0.50	90.00	6,599.8	0.0	39.2	39.2	0.00	0.00	0.00	0.00
6,700.0	0.50	90.00	6,699.8	0.0	40.1	40.1	0.00	0.00	0.00	0.00
6,800.0	0.50	90.00	6,799.8	0.0	40.9	40.9	0.00	0.00	0.00	0.00
6,851.2	0.50	90.00	6,851.0	0.0	41.4	41.4	0.00	0.00	0.00	0.00
Dunham Salt										
6,900.0	0.50	90.00	6,899.8	0.0	41.8	41.8	0.00	0.00	0.00	0.00
6,901.2	0.50	90.00	6,901.0	0.0	41.8	41.8	0.00	0.00	0.00	0.00
Dunham Salt Base										
7,000.0	0.50	90.00	6,999.8	0.0	42.7	42.7	0.00	0.00	0.00	0.00
7,100.0	0.50	90.00	7,099.8	0.0	43.6	43.6	0.00	0.00	0.00	0.00
7,161.2	0.50	90.00	7,161.0	0.0	44.1	44.1	0.00	0.00	0.00	0.00
Pine Salt										
7,179.2	0.50	90.00	7,179.0	0.0	44.3	44.2	0.00	0.00	0.00	0.00
Pine Salt Base										
7,200.0	0.50	90.00	7,199.8	0.0	44.4	44.4	0.00	0.00	0.00	0.00
7,249.2	0.50	90.00	7,249.0	0.0	44.9	44.9	0.00	0.00	0.00	0.00
Opeche Salt										
7,300.0	0.50	90.00	7,299.8	0.0	45.3	45.3	0.00	0.00	0.00	0.00
7,328.2	0.50	90.00	7,328.0	0.0	45.6	45.5	0.00	0.00	0.00	0.00
Opeche Salt Base										
7,400.0	0.50	90.00	7,399.8	0.0	46.2	46.2	0.00	0.00	0.00	0.00
7,500.0	0.50	90.00	7,499.8	0.0	47.1	47.0	0.00	0.00	0.00	0.00
7,569.2	0.50	90.00	7,569.0	0.0	47.7	47.7	0.00	0.00	0.00	0.00
Amsden										
7,600.0	0.50	90.00	7,599.8	0.0	47.9	47.9	0.00	0.00	0.00	0.00
7,700.0	0.50	90.00	7,699.8	0.0	48.8	48.8	0.00	0.00	0.00	0.00
7,730.2	0.50	90.00	7,730.0	0.0	49.1	49.1	0.00	0.00	0.00	0.00
Tyler										
7,800.0	0.50	90.00	7,799.8	0.0	49.7	49.7	0.00	0.00	0.00	0.00
7,841.7	0.50	90.00	7,841.4	0.0	50.0	50.0	0.00	0.00	0.00	0.00
7,858.3	0.00	0.00	7,858.1	0.0	50.1	50.1	3.00	-3.00	0.00	0.00
7,900.0	0.00	0.00	7,899.8	0.0	50.1	50.1	0.00	0.00	0.00	0.00
7,957.2	0.00	0.00	7,957.0	0.0	50.1	50.1	0.00	0.00	0.00	0.00
Otter/Base Minnelusa										
8,000.0	0.00	0.00	7,999.8	0.0	50.1	50.1	0.00	0.00	0.00	0.00
8,100.0	0.00	0.00	8,099.8	0.0	50.1	50.1	0.00	0.00	0.00	0.00
8,200.0	0.00	0.00	8,199.8	0.0	50.1	50.1	0.00	0.00	0.00	0.00
8,299.2	0.00	0.00	8,299.0	0.0	50.1	50.1	0.00	0.00	0.00	0.00
Kibbey Lime										
8,300.0	0.00	0.00	8,299.8	0.0	50.1	50.1	0.00	0.00	0.00	0.00
8,400.0	0.00	0.00	8,399.8	0.0	50.1	50.1	0.00	0.00	0.00	0.00
8,441.2	0.00	0.00	8,441.0	0.0	50.1	50.1	0.00	0.00	0.00	0.00
Charles Salt										
8,500.0	0.00	0.00	8,499.8	0.0	50.1	50.1	0.00	0.00	0.00	0.00
8,600.0	0.00	0.00	8,599.8	0.0	50.1	50.1	0.00	0.00	0.00	0.00
8,700.0	0.00	0.00	8,699.8	0.0	50.1	50.1	0.00	0.00	0.00	0.00
8,800.0	0.00	0.00	8,799.8	0.0	50.1	50.1	0.00	0.00	0.00	0.00
8,900.0	0.00	0.00	8,899.8	0.0	50.1	50.1	0.00	0.00	0.00	0.00
9,000.0	0.00	0.00	8,999.8	0.0	50.1	50.1	0.00	0.00	0.00	0.00
9,100.0	0.00	0.00	9,099.8	0.0	50.1	50.1	0.00	0.00	0.00	0.00
9,115.2	0.00	0.00	9,115.0	0.0	50.1	50.1	0.00	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Wade Federal 5300 21-30 12T
Company:	Oasis Petroleum	TVD Reference:	WELL @ 2024.0usft (Original Well Elev)
Project:	Indian Hills	MD Reference:	WELL @ 2024.0usft (Original Well Elev)
Site:	153N-100W-29/30	North Reference:	True
Well:	Wade Federal 5300 21-30 12T	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wade Federal 21-30 12T		
Design:	Design #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/S (usft)	+E/W (usft)	Vertical Section (usft)	Dogleg Rate (/100usft)	Build Rate (/100usft)	Turn Rate (/100usft)	
Base Last Salt										
9,200.0	0.00	0.00	9,199.8	0.0	50.1	50.1	0.00	0.00	0.00	0.00
9,300.0	0.00	0.00	9,299.8	0.0	50.1	50.1	0.00	0.00	0.00	0.00
9,331.2	0.00	0.00	9,331.0	0.0	50.1	50.1	0.00	0.00	0.00	0.00
Mission Canyon										
9,400.0	0.00	0.00	9,399.8	0.0	50.1	50.1	0.00	0.00	0.00	0.00
9,500.0	0.00	0.00	9,499.8	0.0	50.1	50.1	0.00	0.00	0.00	0.00
9,600.0	0.00	0.00	9,599.8	0.0	50.1	50.1	0.00	0.00	0.00	0.00
9,700.0	0.00	0.00	9,699.8	0.0	50.1	50.1	0.00	0.00	0.00	0.00
9,800.0	0.00	0.00	9,799.8	0.0	50.1	50.1	0.00	0.00	0.00	0.00
9,881.2	0.00	0.00	9,881.0	0.0	50.1	50.1	0.00	0.00	0.00	0.00
Lodgepole										
9,900.0	0.00	0.00	9,899.8	0.0	50.1	50.1	0.00	0.00	0.00	0.00
10,000.0	0.00	0.00	9,999.8	0.0	50.1	50.1	0.00	0.00	0.00	0.00
10,100.0	0.00	0.00	10,099.8	0.0	50.1	50.1	0.00	0.00	0.00	0.00
10,200.0	0.00	0.00	10,199.8	0.0	50.1	50.1	0.00	0.00	0.00	0.00
10,242.7	0.00	0.00	10,242.5	0.0	50.1	50.1	0.00	0.00	0.00	0.00
10,250.0	0.87	80.92	10,249.8	0.0	50.2	50.2	12.00	12.00	0.00	0.00
10,275.0	3.87	80.92	10,274.8	0.2	51.2	51.2	12.00	12.00	0.00	0.00
10,300.0	6.87	80.92	10,299.6	0.5	53.5	53.5	12.00	12.00	0.00	0.00
10,325.0	9.87	80.92	10,324.4	1.1	57.1	57.1	12.00	12.00	0.00	0.00
10,350.0	12.87	80.92	10,348.9	1.9	62.0	62.0	12.00	12.00	0.00	0.00
10,375.0	15.87	80.92	10,373.1	2.9	68.1	68.1	12.00	12.00	0.00	0.00
10,400.0	18.87	80.92	10,397.0	4.1	75.5	75.5	12.00	12.00	0.00	0.00
10,425.0	21.87	80.92	10,420.4	5.4	84.0	84.1	12.00	12.00	0.00	0.00
10,450.0	24.87	80.92	10,443.3	7.0	93.8	93.9	12.00	12.00	0.00	0.00
10,475.0	27.87	80.92	10,465.7	8.7	104.8	104.9	12.00	12.00	0.00	0.00
10,500.0	30.87	80.92	10,487.5	10.7	116.9	117.0	12.00	12.00	0.00	0.00
10,525.0	33.87	80.92	10,508.6	12.8	130.1	130.3	12.00	12.00	0.00	0.00
10,550.0	36.87	80.92	10,529.0	15.1	144.4	144.6	12.00	12.00	0.00	0.00
10,575.0	39.87	80.92	10,548.6	17.5	159.7	159.9	12.00	12.00	0.00	0.00
10,600.0	42.87	80.92	10,587.4	20.1	176.0	176.3	12.00	12.00	0.00	0.00
10,625.0	45.87	80.92	10,585.2	22.9	193.3	193.6	12.00	12.00	0.00	0.00
10,650.0	48.87	80.92	10,602.2	25.8	211.5	211.7	12.00	12.00	0.00	0.00
10,665.2	50.70	80.92	10,612.0	27.6	223.0	223.3	12.00	12.00	0.00	0.00
False Bakken										
10,675.0	51.87	80.92	10,618.1	28.8	230.5	230.8	12.00	12.00	0.00	0.00
10,684.7	53.03	80.92	10,624.0	30.0	238.1	238.4	12.00	12.00	0.00	0.00
Upper Bakken Shale										
10,700.0	54.87	80.92	10,633.0	32.0	250.3	250.6	12.00	12.00	0.00	0.00
10,708.8	55.92	80.92	10,638.0	33.1	257.4	257.8	12.00	12.00	0.00	0.00
Middle Bakken										
10,725.0	57.87	80.92	10,646.9	35.3	270.8	271.2	12.00	12.00	0.00	0.00
10,750.0	60.87	80.92	10,659.6	38.7	292.1	292.5	12.00	12.00	0.00	0.00
10,775.0	63.87	80.92	10,671.2	42.2	314.0	314.4	12.00	12.00	0.00	0.00
10,781.5	64.65	80.92	10,674.0	43.1	319.7	320.2	12.00	12.00	0.00	0.00
Lower Bakken Shale										
10,800.0	66.87	80.92	10,681.6	45.8	336.4	336.9	12.00	12.00	0.00	0.00
10,806.2	67.61	80.92	10,684.0	46.7	342.0	342.5	12.00	12.00	0.00	0.00
Pronghorn										
10,825.0	69.87	80.92	10,690.8	49.4	359.3	359.9	12.00	12.00	0.00	0.00
10,847.3	72.55	80.92	10,698.0	52.8	380.2	380.7	12.00	12.00	0.00	0.00
Threeforks										

Planning Report

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Project:	Indian Hills	MD Reference:	WELL @ 2024.0usft (Original Well Elev)
Site:	153N-100W-29/30	North Reference:	True
Well:	Wade Federal 5300 21-30 12T	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wade Federal 21-30 12T		
Design:	Design #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/S (usft)	+E/W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
10,850.0	72.87	80.92	10,698.8	53.2	382.7	383.3	12.00	12.00	0.00	
10,875.0	75.87	80.92	10,705.5	57.0	406.5	407.1	12.00	12.00	0.00	
10,900.0	78.87	80.92	10,711.0	60.8	430.6	431.2	12.00	12.00	0.00	
10,925.0	81.87	80.92	10,715.2	64.7	454.9	455.6	12.00	12.00	0.00	
10,931.0	82.60	80.92	10,716.0	65.6	460.8	461.5	12.00	12.00	0.00	
Threeforks(Top of Target)										
10,950.0	84.87	80.92	10,718.1	68.6	479.4	480.2	12.00	12.00	0.00	
10,975.0	87.87	80.92	10,719.7	72.6	504.1	504.8	12.00	12.00	0.00	
10,987.7	89.40	80.92	10,720.0	74.6	516.6	517.4	12.00	12.00	0.00	
11,000.0	89.40	81.17	10,720.1	76.5	528.8	529.6	2.00	0.00	2.00	
11,100.0	89.40	83.17	10,721.1	90.1	627.8	628.8	2.00	0.00	2.00	
11,200.0	89.40	85.17	10,722.2	100.3	727.3	728.4	2.00	0.00	2.00	
11,300.0	89.40	87.17	10,723.2	107.0	827.1	828.2	2.00	0.00	2.00	
11,400.0	89.40	89.17	10,724.3	110.2	927.0	928.2	2.00	0.00	2.00	
11,441.7	89.40	90.00	10,724.7	110.5	968.7	969.9	2.00	0.00	2.00	
11,468.7	89.40	90.00	10,725.0	110.5	995.7	996.8	0.00	0.00	0.00	
Threeforks(Base of Target) - Claystone										
11,500.0	89.40	90.00	10,725.3	110.5	1,027.0	1,028.1	0.00	0.00	0.00	
11,600.0	89.40	90.00	10,726.4	110.5	1,127.0	1,128.1	0.00	0.00	0.00	
11,700.0	89.40	90.00	10,727.4	110.5	1,227.0	1,228.1	0.00	0.00	0.00	
11,800.0	89.40	90.00	10,728.5	110.5	1,327.0	1,328.1	0.00	0.00	0.00	
11,900.0	89.40	90.00	10,729.5	110.5	1,427.0	1,428.1	0.00	0.00	0.00	
12,000.0	89.40	90.00	10,730.6	110.5	1,527.0	1,528.1	0.00	0.00	0.00	
12,100.0	89.40	90.00	10,731.6	110.5	1,627.0	1,628.1	0.00	0.00	0.00	
12,200.0	89.40	90.00	10,732.7	110.5	1,727.0	1,728.1	0.00	0.00	0.00	
12,300.0	89.40	90.00	10,733.7	110.5	1,826.9	1,828.1	0.00	0.00	0.00	
12,400.0	89.40	90.00	10,734.8	110.5	1,926.9	1,928.0	0.00	0.00	0.00	
12,500.0	89.40	90.00	10,735.8	110.5	2,026.9	2,028.0	0.00	0.00	0.00	
12,600.0	89.40	90.00	10,736.8	110.5	2,126.9	2,128.0	0.00	0.00	0.00	
12,700.0	89.40	90.00	10,737.9	110.5	2,226.9	2,228.0	0.00	0.00	0.00	
12,800.0	89.40	90.00	10,738.9	110.5	2,326.9	2,328.0	0.00	0.00	0.00	
12,900.0	89.40	90.00	10,740.0	110.5	2,426.9	2,428.0	0.00	0.00	0.00	
13,000.0	89.40	90.00	10,741.0	110.5	2,526.9	2,528.0	0.00	0.00	0.00	
13,100.0	89.40	90.00	10,742.1	110.5	2,626.9	2,628.0	0.00	0.00	0.00	
13,200.0	89.40	90.00	10,743.1	110.5	2,726.9	2,727.9	0.00	0.00	0.00	
13,300.0	89.40	90.00	10,744.2	110.5	2,826.9	2,827.9	0.00	0.00	0.00	
13,400.0	89.40	90.00	10,745.2	110.5	2,926.9	2,927.9	0.00	0.00	0.00	
13,500.0	89.40	90.00	10,746.3	110.5	3,026.9	3,027.9	0.00	0.00	0.00	
13,600.0	89.40	90.00	10,747.3	110.5	3,126.9	3,127.9	0.00	0.00	0.00	
13,700.0	89.40	90.00	10,748.4	110.5	3,226.9	3,227.9	0.00	0.00	0.00	
13,800.0	89.40	90.00	10,749.4	110.5	3,326.9	3,327.9	0.00	0.00	0.00	
13,900.0	89.40	90.00	10,750.5	110.5	3,426.9	3,427.9	0.00	0.00	0.00	
14,000.0	89.40	90.00	10,751.5	110.5	3,526.9	3,527.9	0.00	0.00	0.00	
14,100.0	89.40	90.00	10,752.6	110.5	3,626.8	3,627.8	0.00	0.00	0.00	
14,200.0	89.40	90.00	10,753.6	110.5	3,726.8	3,727.8	0.00	0.00	0.00	
14,300.0	89.40	90.00	10,754.6	110.5	3,826.8	3,827.8	0.00	0.00	0.00	
14,400.0	89.40	90.00	10,755.7	110.5	3,926.8	3,927.8	0.00	0.00	0.00	
14,500.0	89.40	90.00	10,756.7	110.5	4,026.8	4,027.8	0.00	0.00	0.00	
14,600.0	89.40	90.00	10,757.8	110.5	4,126.8	4,127.8	0.00	0.00	0.00	
14,700.0	89.40	90.00	10,758.8	110.5	4,226.8	4,227.8	0.00	0.00	0.00	
14,800.0	89.40	90.00	10,759.9	110.5	4,326.8	4,327.8	0.00	0.00	0.00	
14,900.0	89.40	90.00	10,760.9	110.5	4,426.8	4,427.8	0.00	0.00	0.00	
15,000.0	89.40	90.00	10,762.0	110.5	4,526.8	4,527.7	0.00	0.00	0.00	
15,100.0	89.40	90.00	10,763.0	110.5	4,626.8	4,627.7	0.00	0.00	0.00	

Planning Report

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Project:	Indian Hills	MD Reference:	WELL @ 2024.0usft (Original Well Elev)
Site:	153N-100W-29/30	North Reference:	True
Well:	Wade Federal 5300 21-30 12T	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wade Federal 21-30 12T		
Design:	Design #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/S (usft)	+E/W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
15,200.0	89.40	90.00	10,764.1	110.5	4,726.8	4,727.7	0.00	0.00	0.00	0.00
15,300.0	89.40	90.00	10,765.1	110.5	4,826.8	4,827.7	0.00	0.00	0.00	0.00
15,400.0	89.40	90.00	10,766.2	110.5	4,926.8	4,927.7	0.00	0.00	0.00	0.00
15,500.0	89.40	90.00	10,767.2	110.5	5,026.8	5,027.7	0.00	0.00	0.00	0.00
15,600.0	89.40	90.00	10,768.3	110.5	5,126.8	5,127.7	0.00	0.00	0.00	0.00
15,700.0	89.40	90.00	10,769.3	110.5	5,226.8	5,227.7	0.00	0.00	0.00	0.00
15,800.0	89.40	90.00	10,770.4	110.5	5,326.8	5,327.6	0.00	0.00	0.00	0.00
15,900.0	89.40	90.00	10,771.4	110.5	5,426.7	5,427.6	0.00	0.00	0.00	0.00
16,000.0	89.40	90.00	10,772.5	110.5	5,526.7	5,527.6	0.00	0.00	0.00	0.00
16,100.0	89.40	90.00	10,773.5	110.5	5,626.7	5,627.6	0.00	0.00	0.00	0.00
16,200.0	89.40	90.00	10,774.5	110.5	5,726.7	5,727.6	0.00	0.00	0.00	0.00
16,300.0	89.40	90.00	10,775.6	110.5	5,826.7	5,827.6	0.00	0.00	0.00	0.00
16,400.0	89.40	90.00	10,776.6	110.5	5,926.7	5,927.6	0.00	0.00	0.00	0.00
16,500.0	89.40	90.00	10,777.7	110.5	6,026.7	6,027.6	0.00	0.00	0.00	0.00
16,600.0	89.40	90.00	10,778.7	110.5	6,126.7	6,127.6	0.00	0.00	0.00	0.00
16,700.0	89.40	90.00	10,779.8	110.5	6,226.7	6,227.5	0.00	0.00	0.00	0.00
16,800.0	89.40	90.00	10,780.8	110.5	6,326.7	6,327.5	0.00	0.00	0.00	0.00
16,900.0	89.40	90.00	10,781.9	110.5	6,426.7	6,427.5	0.00	0.00	0.00	0.00
17,000.0	89.40	90.00	10,782.9	110.5	6,526.7	6,527.5	0.00	0.00	0.00	0.00
17,100.0	89.40	90.00	10,784.0	110.5	6,626.7	6,627.5	0.00	0.00	0.00	0.00
17,200.0	89.40	90.00	10,785.0	110.5	6,726.7	6,727.5	0.00	0.00	0.00	0.00
17,300.0	89.40	90.00	10,786.1	110.5	6,826.7	6,827.5	0.00	0.00	0.00	0.00
17,400.0	89.40	90.00	10,787.1	110.5	6,926.7	6,927.5	0.00	0.00	0.00	0.00
17,500.0	89.40	90.00	10,788.2	110.5	7,026.7	7,027.5	0.00	0.00	0.00	0.00
17,600.0	89.40	90.00	10,789.2	110.5	7,126.7	7,127.4	0.00	0.00	0.00	0.00
17,700.0	89.40	90.00	10,790.3	110.5	7,226.6	7,227.4	0.00	0.00	0.00	0.00
17,800.0	89.40	90.00	10,791.3	110.5	7,326.6	7,327.4	0.00	0.00	0.00	0.00
17,900.0	89.40	90.00	10,792.3	110.5	7,426.6	7,427.4	0.00	0.00	0.00	0.00
18,000.0	89.40	90.00	10,793.4	110.5	7,526.6	7,527.4	0.00	0.00	0.00	0.00
18,100.0	89.40	90.00	10,794.4	110.5	7,626.6	7,627.4	0.00	0.00	0.00	0.00
18,200.0	89.40	90.00	10,795.5	110.5	7,726.6	7,727.4	0.00	0.00	0.00	0.00
18,300.0	89.40	90.00	10,796.5	110.5	7,826.6	7,827.4	0.00	0.00	0.00	0.00
18,400.0	89.40	90.00	10,797.6	110.5	7,926.6	7,927.3	0.00	0.00	0.00	0.00
18,500.0	89.40	90.00	10,798.6	110.5	8,026.6	8,027.3	0.00	0.00	0.00	0.00
18,600.0	89.40	90.00	10,799.7	110.5	8,126.6	8,127.3	0.00	0.00	0.00	0.00
18,700.0	89.40	90.00	10,800.7	110.5	8,226.6	8,227.3	0.00	0.00	0.00	0.00
18,800.0	89.40	90.00	10,801.8	110.5	8,326.6	8,327.3	0.00	0.00	0.00	0.00
18,900.0	89.40	90.00	10,802.8	110.5	8,426.6	8,427.3	0.00	0.00	0.00	0.00
19,000.0	89.40	90.00	10,803.9	110.5	8,526.6	8,527.3	0.00	0.00	0.00	0.00
19,100.0	89.40	90.00	10,804.9	110.5	8,626.6	8,627.3	0.00	0.00	0.00	0.00
19,200.0	89.40	90.00	10,806.0	110.5	8,726.6	8,727.3	0.00	0.00	0.00	0.00
19,300.0	89.40	90.00	10,807.0	110.5	8,826.6	8,827.2	0.00	0.00	0.00	0.00
19,400.0	89.40	90.00	10,808.1	110.5	8,926.6	8,927.2	0.00	0.00	0.00	0.00
19,500.0	89.40	90.00	10,809.1	110.5	9,026.6	9,027.2	0.00	0.00	0.00	0.00
19,600.0	89.40	90.00	10,810.1	110.5	9,126.5	9,127.2	0.00	0.00	0.00	0.00
19,700.0	89.40	90.00	10,811.2	110.5	9,226.5	9,227.2	0.00	0.00	0.00	0.00
19,800.0	89.40	90.00	10,812.2	110.5	9,326.5	9,327.2	0.00	0.00	0.00	0.00
19,900.0	89.40	90.00	10,813.3	110.5	9,426.5	9,427.2	0.00	0.00	0.00	0.00
20,000.0	89.40	90.00	10,814.3	110.5	9,526.5	9,527.2	0.00	0.00	0.00	0.00
20,100.0	89.40	90.00	10,815.4	110.5	9,626.5	9,627.2	0.00	0.00	0.00	0.00
20,200.0	89.40	90.00	10,816.4	110.5	9,726.5	9,727.1	0.00	0.00	0.00	0.00
20,300.0	89.40	90.00	10,817.5	110.5	9,826.5	9,827.1	0.00	0.00	0.00	0.00
20,400.0	89.40	90.00	10,818.5	110.5	9,926.5	9,927.1	0.00	0.00	0.00	0.00
20,500.0	89.40	90.00	10,819.6	110.5	10,026.5	10,027.1	0.00	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Wade Federal 5300 21-30 12T
Company:	Oasis Petroleum	TVD Reference:	WELL @ 2024.0usft (Original Well Elev)
Project:	Indian Hills	MD Reference:	WELL @ 2024.0usft (Original Well Elev)
Site:	153N-100W-29/30	North Reference:	True
Well:	Wade Federal 5300 21-30 12T	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wade Federal 21-30 12T		
Design:	Design #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/S (usft)	+E/W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
20,515.5	89.40	90.00	10,819.7	110.5	10,042.0	10,042.6	0.00	0.00	0.00	
21-30 12T PBHL										

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
21-30 12T PBHL	0.00	0.00	10,819.7	110.0	10,042.0	397,508.13	1,219,777.38	48° 2' 56.199 N	103° 33' 43.164 W	
	- plan misses target center by 0.5usft at 20515.5usft MD (10819.7 TVD, 110.5 N, 10042.0 E)									
	- Point									

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,874.0	1,874.0	Pierre		0.00	
4,521.1	4,521.0	Greenhorn		0.00	
4,923.1	4,923.0	Mowry		0.00	
5,347.1	5,347.0	Dakota		0.00	
6,360.2	6,360.0	Rierdon		0.00	
6,851.2	6,851.0	Dunham Salt		0.00	
6,901.2	6,901.0	Dunham Salt Base		0.00	
7,161.2	7,161.0	Pine Salt		0.00	
7,179.2	7,179.0	Pine Salt Base		0.00	
7,249.2	7,249.0	Opeche Salt		0.00	
7,328.2	7,328.0	Opeche Salt Base		0.00	
7,569.2	7,569.0	Amsden		0.00	
7,730.2	7,730.0	Tyler		0.00	
7,957.2	7,957.0	Otter/Base Minnelusa		0.00	
8,299.2	8,299.0	Kibbey Lime		0.00	
8,441.2	8,441.0	Charles Salt		0.00	
9,115.2	9,115.0	Base Last Salt		0.00	
9,331.2	9,331.0	Mission Canyon		0.00	
9,881.2	9,881.0	Lodgepole		0.00	
10,665.2	10,612.0	False Bakken		0.00	
10,684.7	10,624.0	Upper Bakken Shale		0.00	
10,708.8	10,638.0	Middle Bakken		0.00	
10,781.5	10,674.0	Lower Bakken Shale		0.00	
10,806.2	10,684.0	Pronghorn		0.00	
10,847.3	10,698.0	Threeforks		0.00	
10,931.0	10,716.0	Threeforks(Top of Target)		0.00	
11,468.7	10,725.0	Threeforks(Base of Target)		0.00	
11,468.7	10,725.0	Claystone		0.00	

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Sheet No. 1 of 1

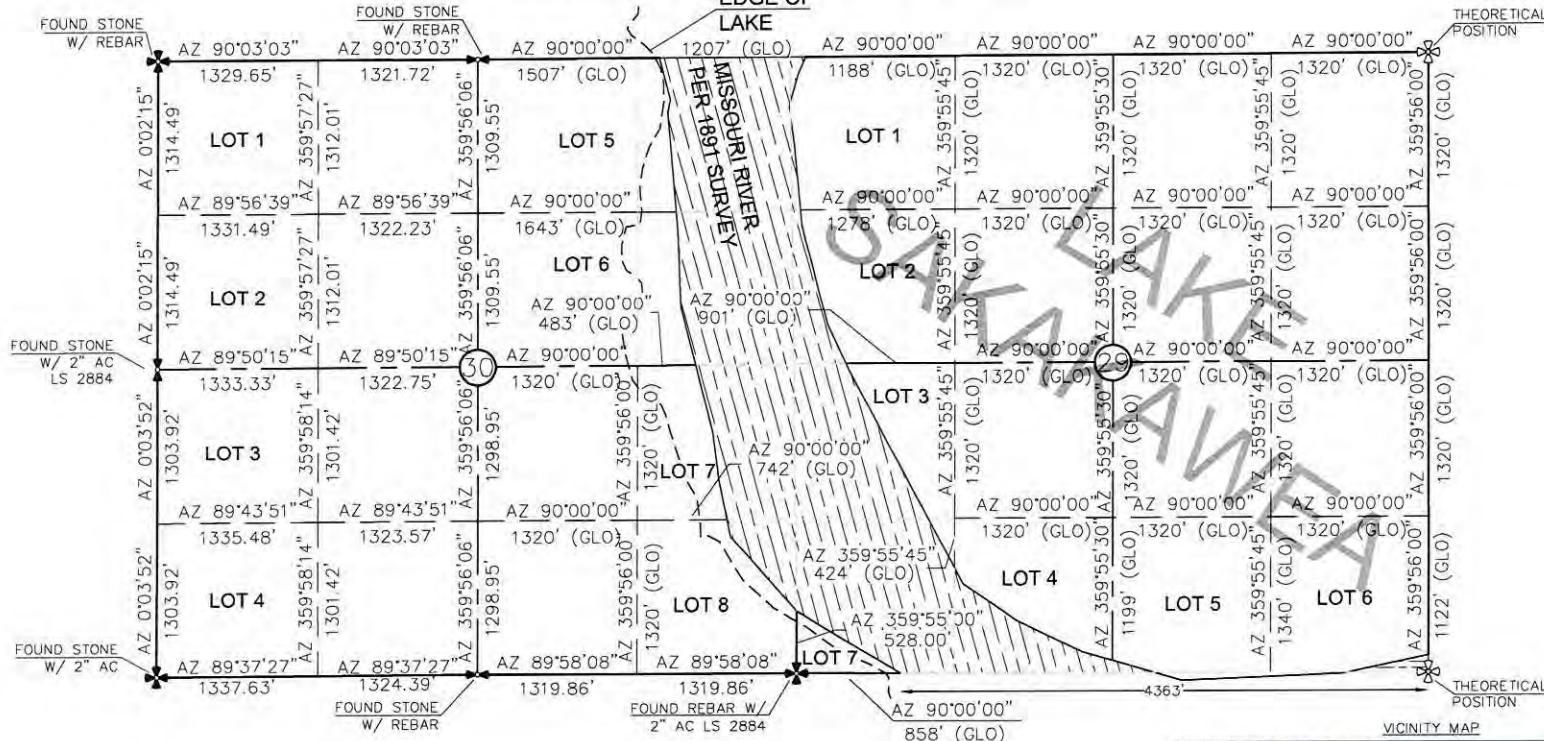
Section No.	Date	By	Description

Section No.	Date	By	Description
1	5/6/2014	MAS	OASIS PETROLEUM NORTH AMERICA, LLC WELL LOCATION PLAT SECTION 30 T153N R100W MCKENZIE COUNTY, NORTH DAKOTA
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SECTION BREAKDOWN
ASIS PETROLEUM NORTH AMERICA, LLC
FANNIN, SUITE 1500, HOUSTON, TX 77002
[MADE FEDERAL 5200-21-20-127]

"WADE FEDERAL 5300 21-30-12T"
1640 FEET FROM NORTH LINE AND 270 FEET FROM WEST LINE
SECTIONS 29 & 30, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

1640 FEET FROM NORTH LINE AND 270 FEET FROM WEST LINE
SECTIONS 29 & 30, 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 3/19/14 AND THE
ORIGINAL DOCUMENTS ARE STORED AT
THE OFFICES OF INTERSTATE
ENGINEERING, INC.



 - MONUMENT - RECOVERED
 - MONUMENT - NOT RECOVERED

ALL AZIMUTHS ARE BASED ON G.P.S. OBSERVATIONS. THE ORIGINAL SURVEY OF THIS AREA FOR THE GENERAL LAND OFFICE (G.L.O.) WAS 1897. 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 '003°.



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OASIS PETROLEUM NORTH AMERICA, LLC	
SECTION BREAKDOWN	
SECTIONS 29 & 30, T155N, R100W	
MCKENZIE COUNTY, NORTH DAKOTA	
Drawn By:	E.I.H.
Checked By:	D.D.K.
Project No.:	51-45-012-0000
Date:	MAR 2014

Interstate Engineering, Inc.
 P.O. Box 648
 425 East Main Street
 Sidney, Montana 59270
 Ph. (406) 433-5617
 Fax (406) 433-5618
www.interstateberg.com
 One Office in Missoula, Montana, and Six Sales Offices
 Canada



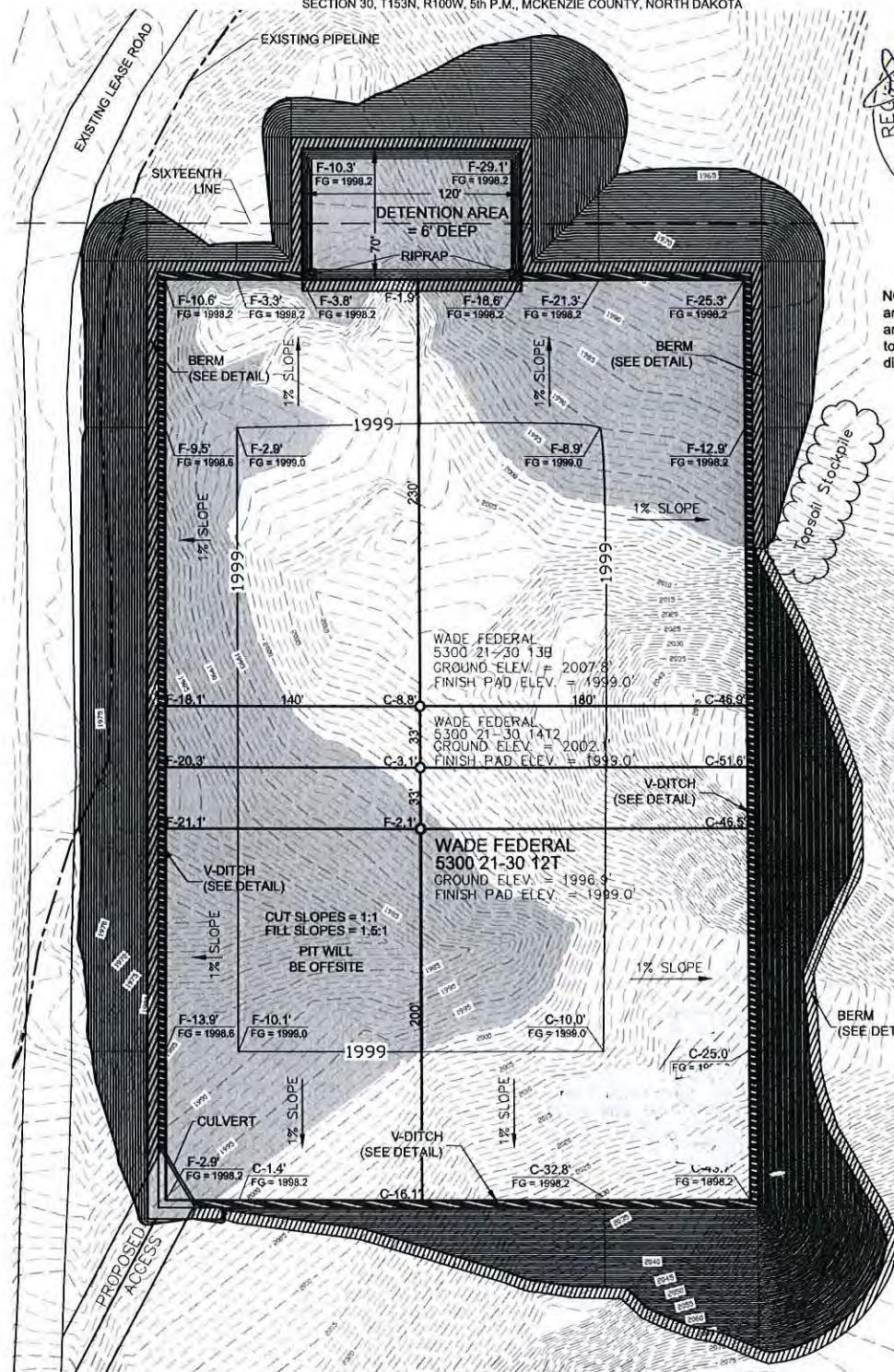
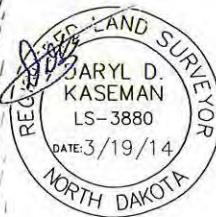
2/8

PAD LAYOUT

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

"WADE FEDERAL 5300 21-30 12T"

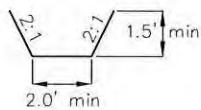
1640 FEET FROM NORTH LINE AND 270 FEET FROM WEST LINE
SECTION 30, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



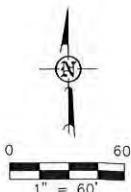
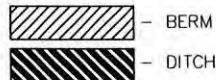
NOTE: Pad dimensions shown are to usable area, the v-ditch and berm areas shall be built to the outside of the pad dimensions.

THIS DOCUMENT WAS ORIGINALLY ISSUED AND
SEALED BY DARYL D. KASEMAN, PLS.
REGISTRATION NUMBER 3880 ON 3/19/14
AND THE ORIGINAL DOCUMENTS ARE STORED
AT THE OFFICES OF INTERSTATE ENGINEERING,
INC.

V-DITCH DETAIL



Proposed Contours
Original Contours



© 2014, INTERSTATE ENGINEERING, INC. NOTE: All utilities shown are preliminary only, a complete utilities location is recommended before construction.

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SHEET NO.

Interstate Engineering, Inc.
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Fax: (406) 433-5618
www.Interstateeng.com

Other offices in Montana, North Dakota and South Dakota

OASIS PETROLEUM NORTH AMERICA, LLC
PAD LAYOUT
SECTION 30, T153N, R100W
MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: B.H.L. Project No.: S14-03-019.03

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

Revision No.	Date	By	Description

WELL LOCATION SITE QUANTITIES
 OASIS PETROLEUM NORTH AMERICA, LLC
 1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
 "WADE FEDERAL 5300 21-30 12T"
 1640 FEET FROM NORTH LINE AND 270 FEET FROM WEST LINE
 SECTION 30, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

WELL SITE ELEVATION	1996.9
WELL PAD ELEVATION	1999.0
EXCAVATION	65,093
PLUS PIT	0
	<hr/>
	65,093
EMBANKMENT	49,762
PLUS SHRINKAGE (25%)	<hr/> 12,441
	<hr/> 62,203
STOCKPILE PIT	0
STOCKPILE TOP SOIL (6")	4,561
BERMS	2,074 LF = 671 CY
DITCHES	1,461 LF = 223 CY
DETENTION AREA	1,377 CY
ADDITIONAL MATERIAL NEEDED	666
DISTURBED AREA FROM PAD	5.65 ACRES

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

CUT END SLOPES AT 1:1

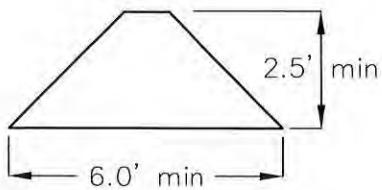
FILL END SLOPES AT 1.5:1

WELL SITE LOCATION

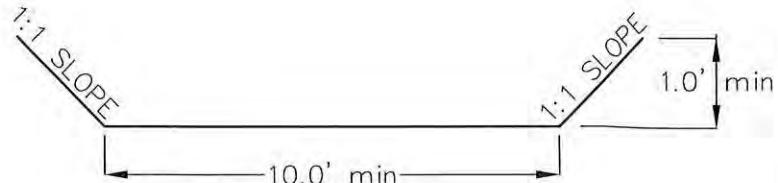
1640' FNL

270' FWL

BERM DETAIL



DITCH DETAIL



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SHEET NO.

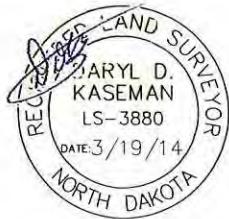
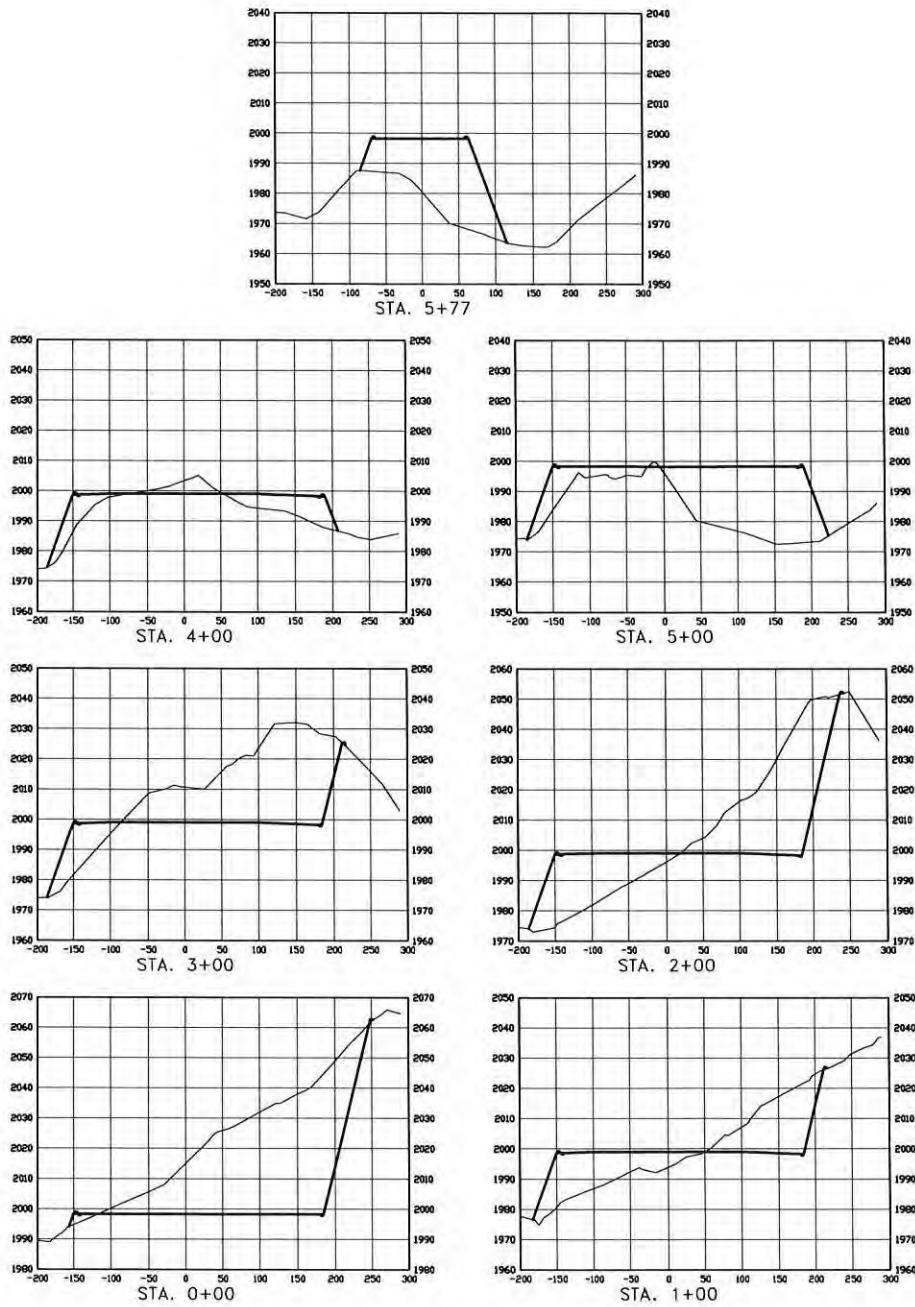
Interstate Engineering, Inc.
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www.Interstateeng.com
Other offices in Minnesota, North Dakota and South Dakota

OASIS PETROLEUM NORTH AMERICA, LLC
 QUANTITIES
 SECTION 30, T153N, R100W
 MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: B.H.H. Project No.: S14-09-019.03
 Checked By: D.D.K. Date: MAR 2014

Revision No.	Date	By	Description

CROSS SECTIONS
 OASIS PETROLEUM NORTH AMERICA, LLC
 1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
 "WADE FEDERAL 5300 21-30 127"
 1640 FEET FROM NORTH LINE AND 270 FEET FROM WEST LINE
 SECTION 30, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



THIS DOCUMENT WAS ORIGINALLY
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 KASEMAN, PLS, REGISTRATION NUMBER
 3880 ON 3/19/14 AND THE
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SCALE
 HORIZ 1"=160'
 VERT 1'=40'

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SHEET NO.

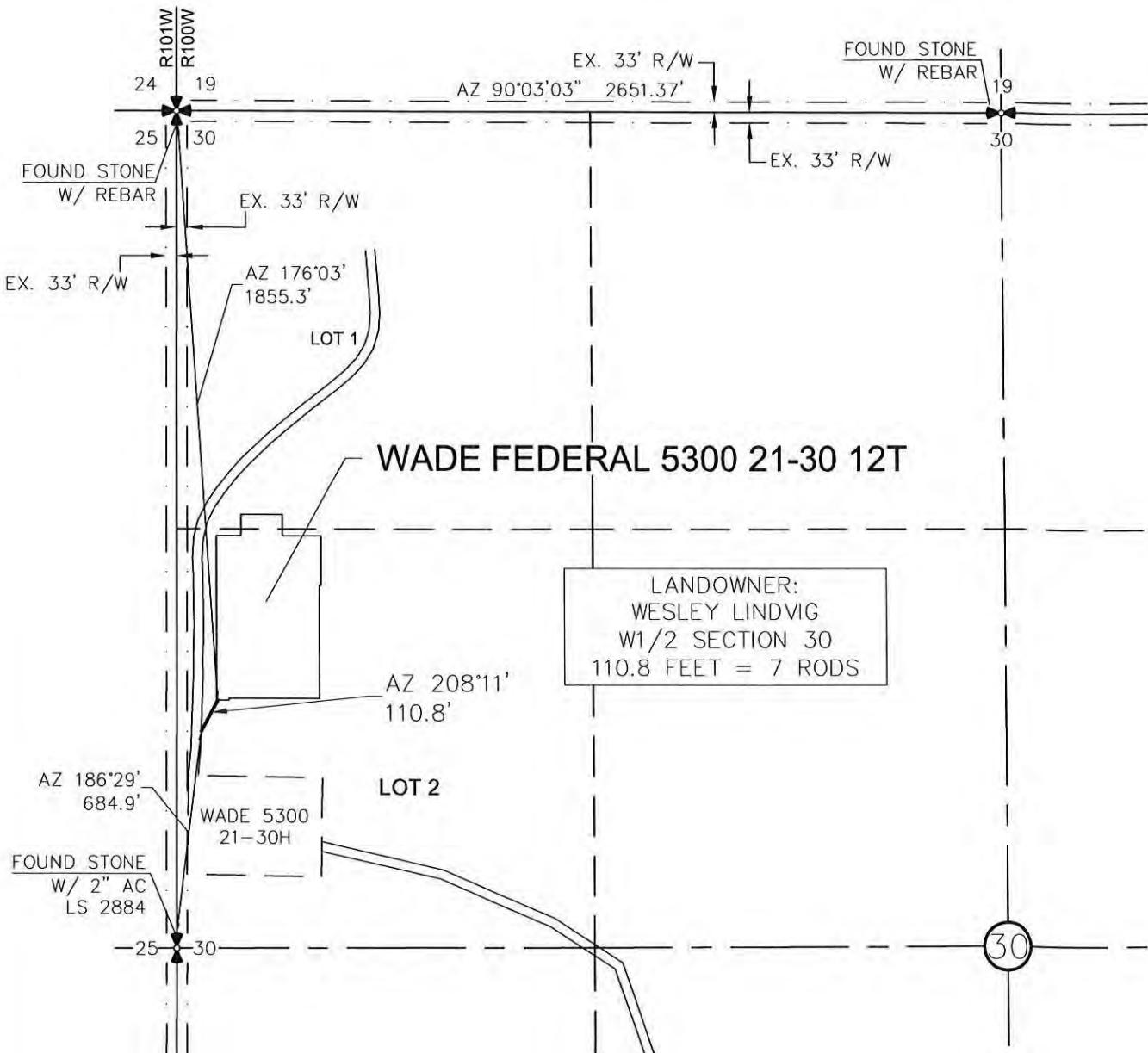
Interstate Engineering, Inc.
 P.O. Box 648
 425 East Main Street
 Sidney, Montana 59270
 Ph (406) 433-5617
 Fax (406) 433-5618
www.interstateengineering.com
 Other offices in Montana, ND, California and South Dakota

OASIS PETROLEUM NORTH AMERICA, LLC
 CROSS SECTIONS
 SECTION 30, T153N, R100W
 MCKENZIE COUNTY, NORTH DAKOTA

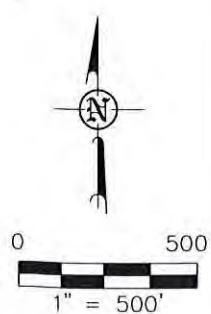
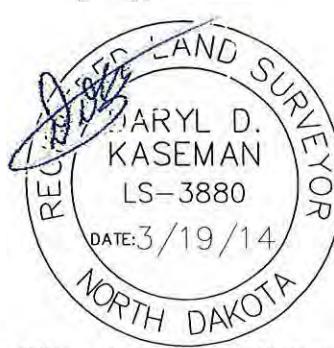
Drawn By: B.H. Project No.: SI4-09-019.03
 Checked By: D.N.K. Date: MAR 2014

Revision No.	Date	By	Description

ACCESS APPROACH
 OASIS PETROLEUM NORTH AMERICA, LLC
 1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
 "WADE FEDERAL 5300 21-30 12T"
 1640 FEET FROM NORTH LINE AND 270 FEET FROM WEST LINE
 SECTION 30, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



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

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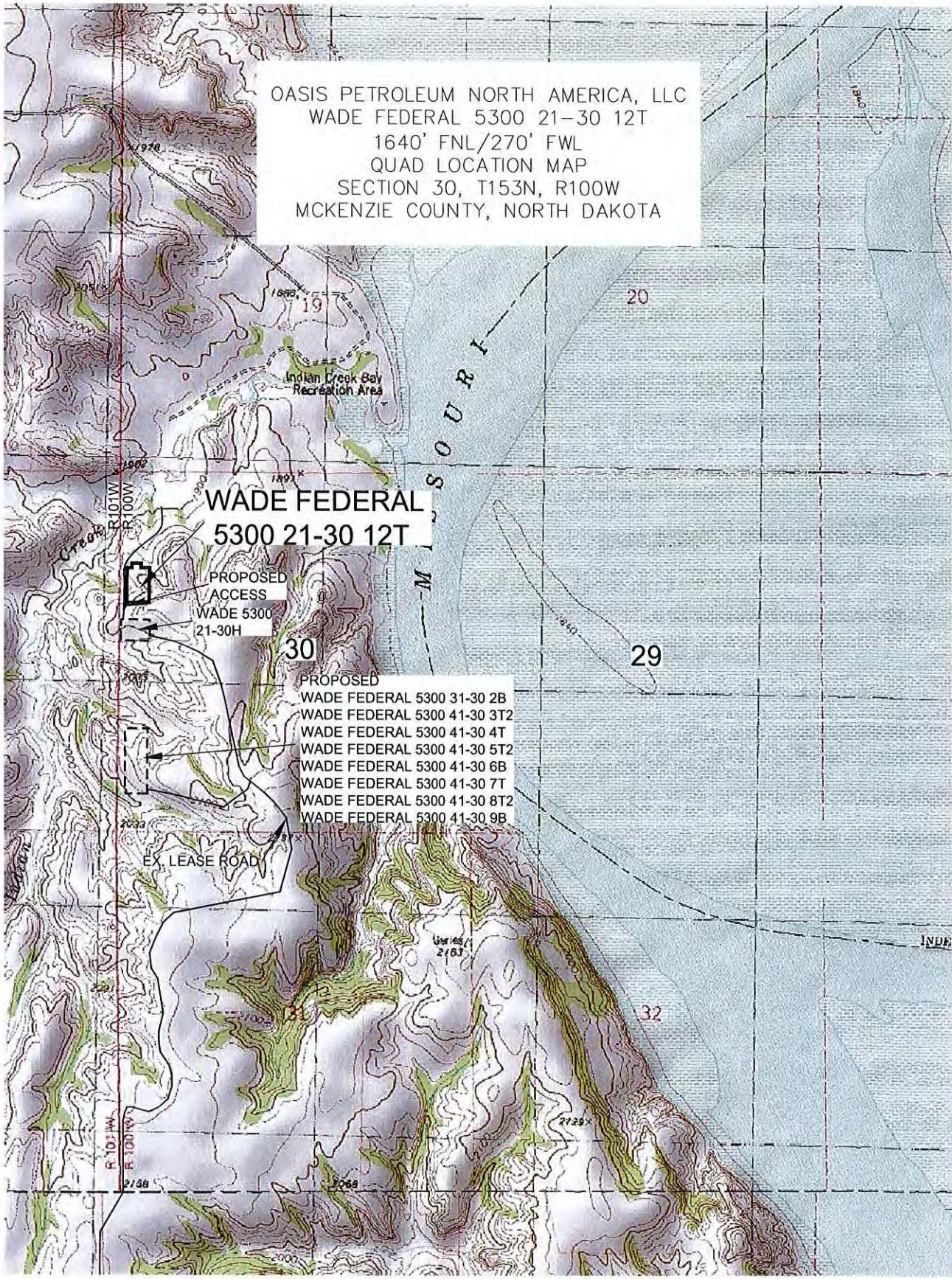


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Revision No.	Date	By	Description
			OASIS PETROLEUM NORTH AMERICA, LLC
			ACCESS APPROACH
			SECTION 30, T153N, R100W
			MCKENZIE COUNTY, NORTH DAKOTA
Drawn By: B.H.H.	Project No.: S14-09-019.03		
Checked By: D.D.K.	Date: MAR, 2014		



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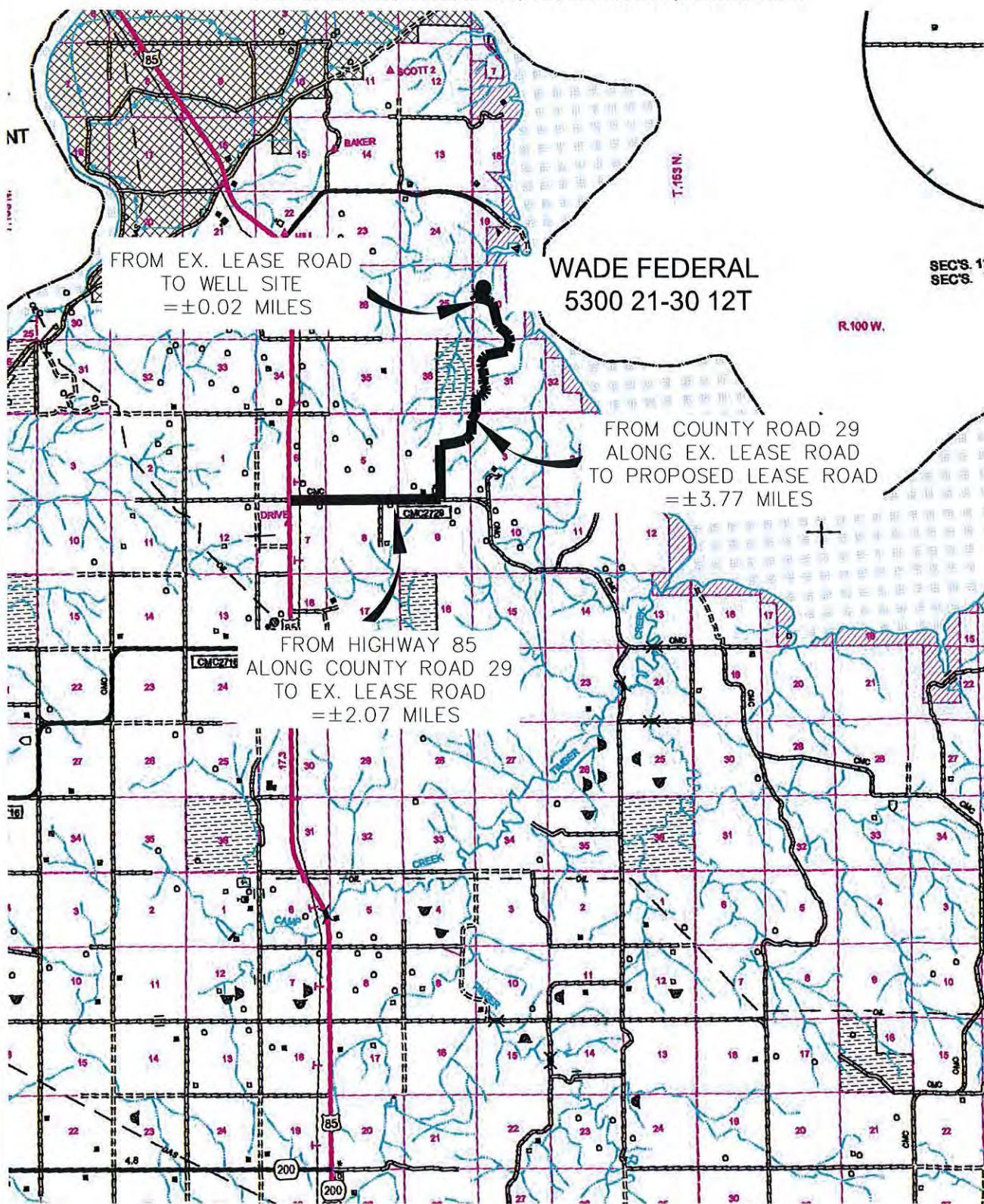
OASIS PETROLEUM NORTH AMERICA, LLC
QUAD LOCATION MAP
SECTION 30, T153N, R100W
MCKENZIE COUNTY, NORTH DAKOTA

COUNTY ROAD MAP

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

"WADE FEDERAL 5300 21-30 12T"

1640 FEET FROM NORTH LINE AND 270 FEET FROM WEST LINE
SECTION 30, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



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SCALE: 1" = 2 MILE

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OASIS PETROLEUM NORTH AMERICA, LLC
COUNTY ROAD MAP
SECTION 30, T153N, R100W
MCKENZIE COUNTY, NORTH DAKOTA

Drawn By:	B.H.H.	Project No.:	S14-09-019.03
Checked By:	D.D.K.	Date:	MAR, 2014

Revision No.	Date	By	Description



STATEMENT

This statement is being sent in order to comply with NDAC 43-02-03-16 (Application for permit to drill and recomplete) which states (in part that) "confirmation that a legal street address has been requested for the well site, and well facility if separate from the well site, and the proposed road access to the nearest existing public road". On the date noted below a legal street address was requested from the appropriate county office.

McKenzie County

Aaron Chisholm – GIS Specialist for McKenzie County

Wade Federal 5300 21-30 12T – 153N-100W-29/30 – 06/04/2014

Wade Federal 5300 21-30 13B – 153N-100W-29/30 – 06/04/2014

Wade Federal 5300 21-30 14T2 – 153N-100W-29/30 – 06/04/2014

A handwritten signature in blue ink, appearing to read "Lauri M. Stanfield". It is written over a horizontal line.

Lauri M. Stanfield

Regulatory Specialist

Oasis Petroleum North America, LLC

From: [Burk, Ashley N.](#)
To: [Webber, Alice D.](#)
Subject: FW: Wade Federal 5300 21-30 Pad
Date: Friday, July 25, 2014 1:17:57 PM

From: Michael Kukuk [mailto:mkukuk@oasispetroleum.com]
Sent: Friday, July 25, 2014 12:59 PM
To: Burk, Ashley N.
Subject: RE: Wade Federal 5300 21-30 Pad

Hi Ashley,

I was able to confirm that the cuttings will be hauled to the Indian Hills Waste Disposal.

Thank you,
Michael

From: Burk, Ashley N. [<mailto:anburk@nd.gov>]
Sent: Friday, July 25, 2014 9:46 AM
To: Michael Kukuk
Subject: RE: Wade Federal 5300 21-30 Pad

Michael,

Just realized that since there is not cuttings pit, we need to know what facility you will be hauling the cuttings to for all three wells.

Thanks and have a great Friday!

Ashley

From: Michael Kukuk [<mailto:mkukuk@oasispetroleum.com>]
Sent: Thursday, July 24, 2014 4:56 PM
To: Burk, Ashley N.
Subject: RE: Wade Federal 5300 21-30 Pad

Hi Ashley,

Thank you for the update on the Wade Federals. We will address this ASAP –

Best,
Michael

From: Burk, Ashley N. [<mailto:anburk@nd.gov>]
Sent: Thursday, July 24, 2014 2:57 PM
To: Michael Kukuk
Subject: Wade Federal 5300 21-30 Pad

Michael,

It is my understanding that you just called looking to get the Wade Federal well pad issued ASAP, however we have two issues with this well pad.

I talked to Brandi this morning about the 14T2 well. Right now you have the surface casing at 1974', and we need that to be modified so that it is at least 1980'.

For the 13B well, the bottom hole location violates the 200' setback. According to the drilling plan, it is located 10,142' from the wellhead (the other two wells are 10,042'), which would therefore put it at 101' from the east line. I left Brandi a voicemail about this issue a few minutes ago.

The sooner we get these, the sooner we can get your permit.

Feel free to contact me with any questions regarding these issues.

Thanks,

Ashley N. Burk
Permitting Technician
NDIC, Dept. Mineral Resources
Oil and Gas Division
(701) 328-8093
anburk@nd.gov



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