

# 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/](http://www.dmr.nd.gov/oilgas/)

28637

July 12, 2019

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

**RE: Chalmers #5300 21-19 10T  
Lot 2 Sec. 19, T.153N., R.100W.  
McKenzie County, North Dakota  
Baker Field  
Well File No. 28637  
STRIPPER WELL DETERMINATION**

Dear Mr. Travis:

Oasis Petroleum North America LLC (Oasis) filed with the North Dakota Industrial Commission – Oil and Gas Division (Commission) on June 12, 2019 an application for a Stripper Well Determination for the above captioned well.

Information contained in the application indicates that the above mentioned well is a stripper well pursuant to statute and rule, and Oasis has elected to designate said well as a stripper well. The well produced from a well depth greater than 10000 feet and was completed after June 30, 2013. During the qualifying period, August 1, 2017 through July 31, 2018, the well produced at a maximum efficient rate or was not capable of exceeding the production threshold. The average daily production from the well was 34.4 barrels of oil per day during this period.

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

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

Sincerely,

  
David J. McCusker  
Petroleum Engineer

Cc: ND Tax Department



# SUNDRY NOTICES AND REPORTS ON WELLS - FORM 4

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

Received

Well File No.  
**28637**

APR 08 2016

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

<input type="checkbox"/> Notice of Intent	Approximate Start Date
<input checked="" type="checkbox"/> Report of Work Done	Date Work Completed <b>March 24, 2016</b>
<input type="checkbox"/> Notice of Intent to Begin a Workover Project that may Qualify for a Tax Exemption Pursuant to NDCC Section 57-51.1-03.	Approximate Start Date

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

Well Name and Number <b>Chalmers 5300 21-19 10T</b>					
Footages <b>2292 F N L</b>	Qtr-Qtr <b>326 F W L</b>	Section <b>LOT2</b>	Township <b>19</b>	Range <b>153 N</b>	Range <b>100 W</b>
Field <b>Baker</b>	Pool <b>Bakken</b>	County <b>McKenzie</b>			

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 03/24/2016 the above referenced well is on pump.

End of Tubing: 2-7/8" L-80 tubing @ 10235'

Pump: 2-1/2" x 2.0" x 24' insert pump @ 9859.52'

Company <b>Oasis Petroleum North America LLC</b>	Telephone Number <b>281 404-9436</b>	
Address <b>1001 Fannin, Suite 1500</b>		
City <b>Houston</b>	State <b>TX</b>	Zip Code <b>77002</b>
Signature 	Printed Name <b>Jennifer Swenson</b>	
Title <b>Regulatory Specialist</b>	Date <b>April 7, 2016</b>	
Email Address <b>jswenson@oasispetroleum.com</b>		

<input checked="" type="checkbox"/> Received	<input type="checkbox"/> Approved
Date <b>4/26/2016</b>	
By 	
Title <b>TAYLOR ROTH</b>	
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.

28637

FEB 12 2016

## ND Oil & Gas Division

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.

PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

Notice of Intent

Approximate Start Date

Report of Work Done

Date Work Completed

July 12, 2015

Notice of Intent to Begin a Workover Project that may Qualify  
for a Tax Exemption Pursuant to NDCC Section 57-51.1-03.

Approximate Start Date

Drilling Prognosis

Spill Report

Redrilling or Repair

Shooting

Casing or Liner

Acidizing

Plug Well

Fracture Treatment

Supplemental History

Change Production Method

Temporarily Abandon

Reclamation

Other

Well is now on pump

### Well Name and Number

**Chalmers 5300 21-19 10T**

Footages	Qtr-Qtr	Section	Township	Range
2292 F N L	326 F W L	LOT2	19	153 N 100 W

Field	Pool	County
Baker	Bakken	McKenzie

### 24-HOUR PRODUCTION RATE

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

Name of Contractor(s)

Address	City	State	Zip Code
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### DETAILS OF WORK

Effective 07/12/2015 the above referenced well is on pump.

End of Tubing: 2-7/8" L-80 tubing @ 10205.07'

Pump: ESP @ 10024.37'

Company <b>Oasis Petroleum North America LLC</b>	Telephone Number <b>281-404-9436</b>	
Address <b>1001 Fannin, Suite 1500</b>		
City <b>Houston</b>	State <b>TX</b>	Zip Code <b>77002</b>
Signature 	Printed Name <b>Jennifer Swenson</b>	
Title <b>Regulatory Specialist</b>	Date <b>February 8, 2016</b>	
Email Address <b>jswenson@oasispetroleum.com</b>		

### FOR STATE USE ONLY

<input checked="" type="checkbox"/> Received	<input type="checkbox"/> Approved
Date <b>3-3-2016</b>	
By <b>Taylor Roth</b>	
Title <b>TAYLOR ROTH</b>	
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.
28637
NDIC CTB No.
To be assigned

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.

PLEASE SUBMIT THE ORIGINAL AND FOUR COPIES.

Well Name and Number <b>CHALMERS 5300 21-19 10T</b>	Qtr-Qtr LOT2	Section 19	Township 153	Range 100	County McKenzie
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Operator <b>Oasis Petroleum North America LLC</b>	Telephone Number <b>(281) 404-9573</b>	Field <b>BAKER</b>
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Address <b>1001 Fannin, Suite 1500</b>	City <b>Houston</b>	State <b>TX</b>	Zip Code <b>77002</b>
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Name of First Purchaser <b>Oasis Petroleum Marketing LLC</b>	Telephone Number <b>(281) 404-9627</b>	% Purchased <b>100%</b>	Date Effective <b>May 1, 2015</b>
Principal Place of Business <b>1001 Fannin, Suite 1500</b>	City <b>Houston</b>	State <b>TX</b>	Zip Code <b>77002</b>
Field Address	City	State	Zip Code
Transporter <b>Hiland Crude, LLC</b>	Telephone Number <b>(580) 616-2058</b>	% Transported <b>75%</b>	Date Effective <b>May 1, 2015</b>
Address <b>P.O. Box 3886</b>	City <b>Enid</b>	State <b>OK</b>	Zip Code <b>73702</b>
The above named producer authorizes the above named purchaser to purchase the percentage of oil stated above which is produced from the lease designated above until further notice. The oil will be transported by the above named transporter.			

Other First Purchasers Purchasing From This Lease	% Purchased	Date Effective
Other First Purchasers Purchasing From This Lease	% Purchased	Date Effective
Other Transporters Transporting From This Lease	% Transported	Date Effective
<b>Power Crude Transport</b>	<b>25%</b>	<b>May 1, 2015</b>
Other Transporters Transporting From This Lease	% Transported	Date Effective
		<b>May 1, 2015</b>
Comments		

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

Above Signature Witnessed By:	Printed Name	Title
Signature 	Printed Name <b>Jeremy Harris</b>	Title <b>Marketing Scheduler</b>

FOR STATE USE ONLY	
Date Approved <b>SEP 18 2015</b>	By 
Title <b>Erie Robertson</b>	

Oil &amp; Gas Production Analyst



# 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.

286337A  
286347A  
28635  
286367A  
286487A  
286377A  
286497A

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 <b>March 14, 2015</b>
<input type="checkbox"/> Notice of Intent to Begin a Workover Project that may Qualify for a Tax Exemption Pursuant to NDCC Section 57-51.1-03.	Approximate Start Date

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

Well Name and Number  
**See below**

Footages	F N L	F E L	Qtr-Qtr LOT2	Section 19	Township 153 N	Range 100 W
Field <b>Baker</b>		Pool <b>Bakken</b>		County <b>McKenzie</b>		

## 24-HOUR PRODUCTION RATE

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

Name of Contractor(s)  
**Neu Construction**

Address <b>602 W. 9th Street</b>	City <b>Fairview</b>	State <b>MT</b>	Zip Code <b>59221</b>
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## DETAILS OF WORK

Oasis Petroleum North America LLC plans to reclaim the reserve pit for the below referenced wells as follows:

Chalmers 5300 21-19 5T (28633)

Chalmers 5300 21-19 6B (28634)

Chalmers 5300 21-19 7T2 (28635)

Chalmers 5300 21-19 8T (28636)

Chalmers 5300 21-19 9B (28648)

Chalmers 5300 21-19 10T (28637)

Chalmers 5300 21-19 11T (28649)

The NDIC field inspector, Rick Dunn (NDIC) was notified on 03/06/2015

The surface owners, Wesley and Barbara Lindvig, 14075 41st Street NW, Alexander, ND 58831, were contacted on 03/06/2015

Spread material out in pit, cut top edge of liner and fold over cuttings, cover entire pit with liner, back fill with clay  
slope and contour well site to ensure proper drainage

Company <b>Oasis Petroleum North America LLC</b>	Telephone Number <b>281-404-9436</b>	
Address <b>1001 Fannin, Suite 1500</b>		
City <b>Houston</b>	State <b>TX</b>	Zip Code <b>77002</b>
Signature 	Printed Name <b>Jennifer Swenson</b>	
Title <b>Regulatory Specialist</b>	Date <b>June 4, 2015</b>	
Email Address <b>jswenson@oasispetroleum.com</b>		

## FOR STATE USE ONLY

<input checked="" type="checkbox"/> Received	<input type="checkbox"/> Approved
Date <b>9-23-15</b>	
By 	
Title 	



**Oasis Petroleum North America, LLC**  
**Chalmers 5300 21-19 10T**  
**2,292' FNL & 327' FWL**  
**Lot 2 Sec. 19, 153N, 100W**  
**Baker / Three Forks**  
**McKenzie County, North Dakota**

**BOTTOM HOLE LOCATION:**  
545.56' S & 9,879.80' E of surface location or approx.  
2,442.44' FSL & 306.57' FEL, NE SE Sec. 20, T153N, R100W

**Prepared for:**

Nathan Gabelman  
Oasis Petroleum North America, LLC  
1001 Fannin Suite 1500  
Houston, TX 77002

**Prepared by:**

Michelle Baker, G. Wayne Peterson,  
Molly Hagstrom, Zachary Moses  
PO Box 80507; Billings, MT 59108  
(406) 259-4124  
[geology@sunburstconsulting.com](mailto:geology@sunburstconsulting.com)  
[www.sunburstconsulting.com](http://www.sunburstconsulting.com)

## **WELL EVALUATION**



**Figure 1. Nabors B22 drilling the Oasis Petroleum North America, LLC - Chalmers 5300 21-19 10T during January-February, 2015 in the Baker Field, McKenzie County, North Dakota.**  
**(G. Wayne Peterson, Sunburst Consulting)**

### **INTRODUCTION**

The **Oasis Petroleum North America, LLC Chalmers 5300 21-19 10T** [Lot 2 Section 19, T153N, R100W] is located approximately 7 miles south of the city of Williston in McKenzie County, North Dakota. The Chalmers 5300 21-19 10T is a horizontal Three Forks well within the Williston Basin consisting of one 9,444' uncased lateral drilled toward the east. The vertical hole was planned to be drilled to approximately 10,341'. The curve would be built at 12 degrees per 100' to land within the Three Forks. This well is a two section lateral which originates in the northwest quarter of section 19, then drilled east to the southeast quarter of section 20. Directional drilling technologies and geosteering techniques were used to land in the Three Forks reservoir and maintain exposure to the ideal target rock.

## OFFSET WELLS

Offset well data used for depth correlation during curve operations are found in the ‘Control Data’ 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. The target landing true vertical depth (TVD) was periodically updated during drilling to ensure accurate landing of the curve.

## GEOLOGY

The Charles Formation [Mississippian Madison Group] was logged 8,537' MD 8,536' TVD (-6,460' SS). Samples in the lower portion of the Charles Formation consisted of a limestone mudstone, which was light brown, light gray brown, off white in color. It was microcrystalline, firm-friable, laminated, with an earthy texture. A trace of intercrystalline porosity, as was *rare spotty light brown oil stain* Occasionally noted was a dolomite mudstone, which was light brown, light gray brown in color. It was microcrystalline, friable-firm, laminated, with an earthy texture. Also noted was a trace of intercrystalline porosity, and *occasional spotty light brown oil stain*. Rarely noted was anhydrite, which was off white and cream in color. It was soft, microcrystalline, and massive with an earthy to amorphous texture. Following connections or periods of non-circulation, gas peaks of 32 to 77 units were noted, as were drilling gas shows of 24 to 103 units.

The Mission Canyon Formation [Mississippian Madison Group] was logged 9,436' MD 9,435' TVD (-7,359' SS). The Mission Canyon Formation consisted of a lime mudstone that was described as light gray, light brown, gray brown, trace dark gray in color. The lime mudstone was predominately friable to firm, with an earthy to rarely crystalline in texture. Some intervals contained a trace of black-brown algal material, a trace of fossil fragments, and traces of disseminated pyrite. Also present was an argillaceous lime mudstone that was described as light gray, occasional medium gray, rare gray tan, rare off white, trace dark gray in color. The argillaceous lime mudstone was predominately firm to friable, crystalline to chalky texture. Some intervals contained a trace of disseminated pyrite. Following connections or periods of non-circulation, gas peaks of 63 to 160 units were noted, as were drilling gas shows of 89 to 294 units. Rare intercrystalline porosity was noted as well as traces to occasional *spotty light brown oil stain* was occasionally observed while logging the Mission Canyon Formation.

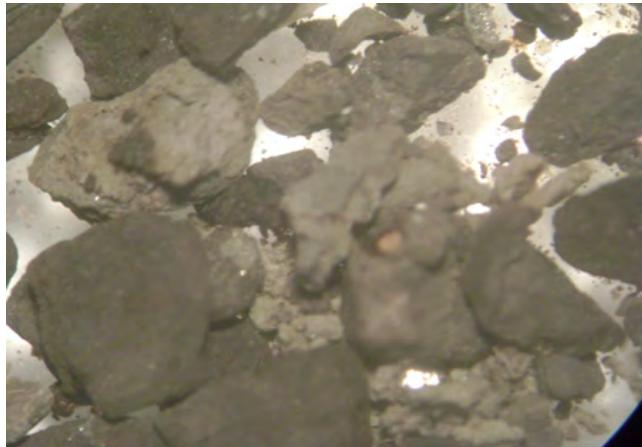


**Figure 2. Limestone with spotty light to medium brown staining from the Mission Canyon Formation.**

The Upper Bakken Shale [Mississippian Bakken Formation] was drilled at 10,777' MD 10,727' TVD (-8,651' SS). Entry into this member was characterized by high gamma, elevated background gas and increased rates of penetration. The black to black gray carbonaceous and *petroliferous* shale was hard with a splintery to smooth texture. Fracture porosity was noted, and trace minerals were observed to include disseminated pyrite and calcite fracture fill. Hydrocarbons evaluated in this interval reached a maximum of 1,472 units.

The Middle Bakken [Mississippian-Devonian Bakken Formation] was drilled at 10,803' MD 10,743' TVD (-8,667' SS). Samples in the Middle Bakken Member were predominantly silty sandstone which was described as light gray brown, light brown, trace light gray in color. It was very fine grained, friable, subround, smooth, moderately sorted, with calcite cement, moderately cemented. A trace of disseminated and nodular pyrite was noted as was fair intergranular porosity. Also noted was *occasional light brown spotty oil stain*. Hydrocarbons evaluated in this interval reached a maximum of 614 units drilling gas, with a survey gas of 750 units, and connection gas of 721 units.

The Lower Bakken Shale [Devonian Bakken Formation] was drilled at 10,880' MD 10,785' TVD (-8,709' SS). Entry into this interval was characterized by high gamma, elevated background gas and increased rates of penetration. The carbonaceous black, black gray shale is *petroliferous*, hard, splintery, smooth and exhibits possible fracture porosity. Trace minerals included disseminated pyrite. Drilling gas in this interval reached a maximum of 1,074 units.



**Figure 3. Black carbonaceous and petroliferous shale from the Lower Member of the Bakken Formation and gray siltstone from the underlying Pronghorn Member.**

The Pronghorn Member [Devonian-Bakken Formation] was reached at 10,906' MD 10,796' TVD (-8,720' SS). Entry into this interval was characterized by lower gamma, and slightly slower penetration rates. Samples from the Pronghorn were siltstone which was dark gray trace gray black, friable to firm, subblocky to subsplit. This siltstone was moderately dolomite cemented and included disseminated and nodular pyrite. Also noted was a trace of *spotty light brown oil stain*. Drilling gas in this interval reached a maximum of 552 units with a connection gas of 529 units.

The Three Forks [Devonian] was reached at 10,956' MD 10,814' TVD (-8,738' SS) which was - 1' low to the Oasis Petroleum NA, LLC Chalmers 5300 21-19 8T. The target zone of the Three Forks was to be drilled in a predominately dolomitic 11 foot zone beginning 16 feet into the Three Forks.

Samples in the Three Forks were predominantly dolomite which was described as light brown, light gray, tan-cream, peach, trace pink in color. It was firm, laminated, with a microsucrosic

texture. Rare disseminated pyrite was noted as was occasional intercrystalline porosity. Also noted was *common spotty to rare even light brown oil stain*. Also observed was light green-light gray green, rare light gray shale that was firm, subblocky, with an earthy texture. Occasional disseminated pyrite was noted as was possible intergranular porosity.



**Figures 4, 5 & 6.** A predominately dolomitic sample low in the preferred drilling zone of the Three Forks (left); a predominately dolomitic sample high in the preferred drilling zone of the Three Forks (middle); and sample of the underlying claystone (right).

### Gas Show

Gas monitoring and fluid gains provided evidence of a hydrocarbon saturated reservoir during the drilling of the Chalmers 5300 21-19 10T. Oil and gas shows at the shakers and in samples were continuously monitored. In the closed mud system, hydrostatic conditions were maintained near balance, this allowed for gas and fluid gains from the well to be evaluated. Gas on the Chalmers 5300 21-19 10T varied according to stratigraphic position and penetration rates which may have reflected increased porosity. During the vertical, connection gas peaks of 35 to 160 units were noted, as were drilling gas shows of 40 to 294 units, against a 10.25-11.45 lb/gal diesel-invert mud weight. Background concentrations in the lateral ranged from 400 to 1,600 units, against a 9.75-9.8 lb/gal saltwater gel drilling fluid. Connection peaks of 1,200 to 2,284 units were observed, coinciding with the best shows. Drilling out of casing at 11,140 MD' yielded a trip/downtime gas of 2,227 units. Trips at 14,466' MD, a short trip to 8,375' MD for a washed pipe at 15,042' MD, and a trip at 17,024' MD yielded trip gas of 2,278 units, and 1,968 units, and 1,077 units respectively. Chromatography of gas revealed typical concentrations of methane, characteristic of Three Forks gas.

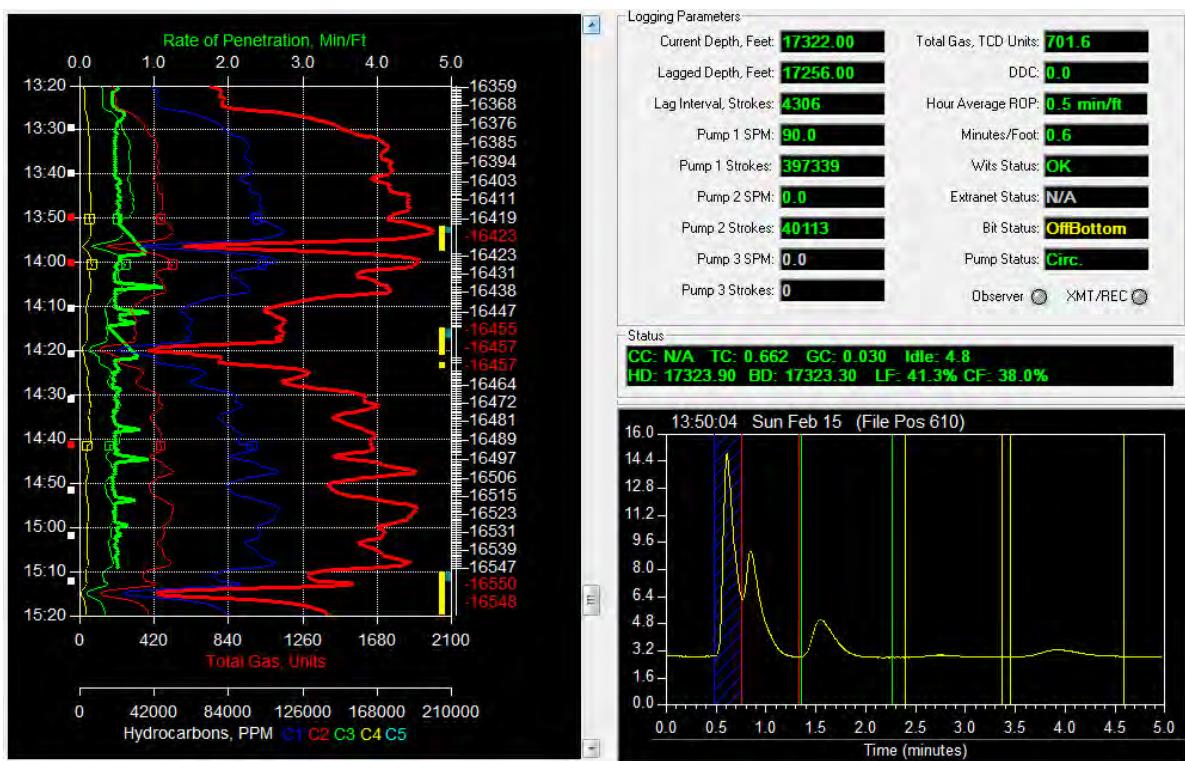


Figure 7. Gas chromatography of a 1,996 unit gas show.

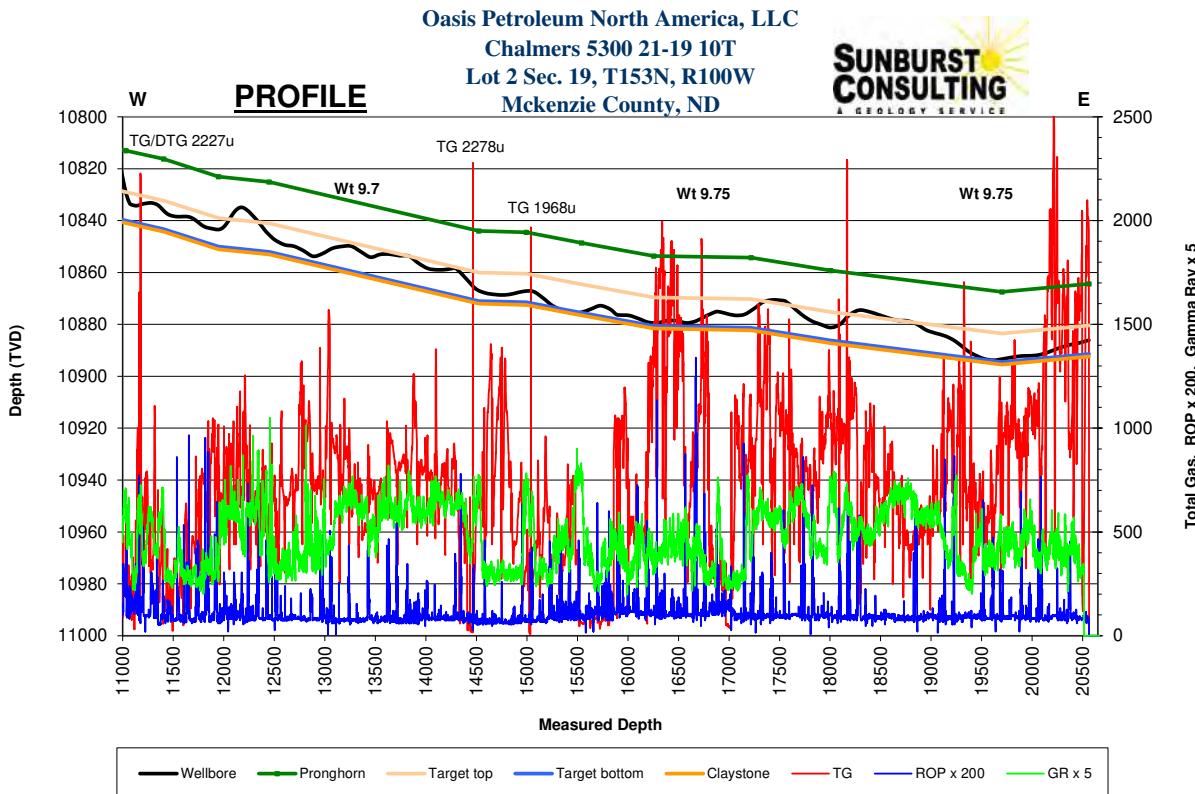


Figure 8. Profile displaying total gas, gamma ray and rate of penetration.

## Geosteering

Ryan Energy Technologies provided personnel and equipment for measurement-while-drilling (MWD) services. The RPM directional drillers, Ryan MWD's, and Sunburst Consulting personnel worked closely together throughout the project to evaluate data and make steering decisions to maximize the amount of borehole in the targeted zones and increase rate of penetration (ROP) of the formation.

The 805' curve first drilled 44' in 1 hour before a MWD failure caused it to be tripped out of the hole and the MWD replaced. The remainder of the curve was drilled in 25 hours with a bottom hole assembly (BHA) consisting of bit #5/re-run #4, a Smith MDI516 PDC bit, attached to a 2.38 degree fixed NOV 7/8 5.0 motor. The curve was successfully landed at 11,140' MD and 10,834' TVD, approximately 20' into the Three Forks Formation. Seven inch diameter 32# HCP-110 casing was set to 11,118' MD.

Geologic structure maps of the Chalmers 5300 21-19 10T and surrounding control wells had estimated formation dip to be approximately 0.5° down to the TD of the lateral. The preferred drilling interval of the Chalmers 5300 21-19 10T consisted of a eleven foot zone located approximately sixteen feet into the Three Forks Formation. Penetration rates, gas shows, gamma ray data, and sample observations were utilized to keep the wellbore in the preferred stratigraphic position in the target zone. Using offset well data provided by Oasis representatives, projected porosity zones were identified in the preferred drilling areas.

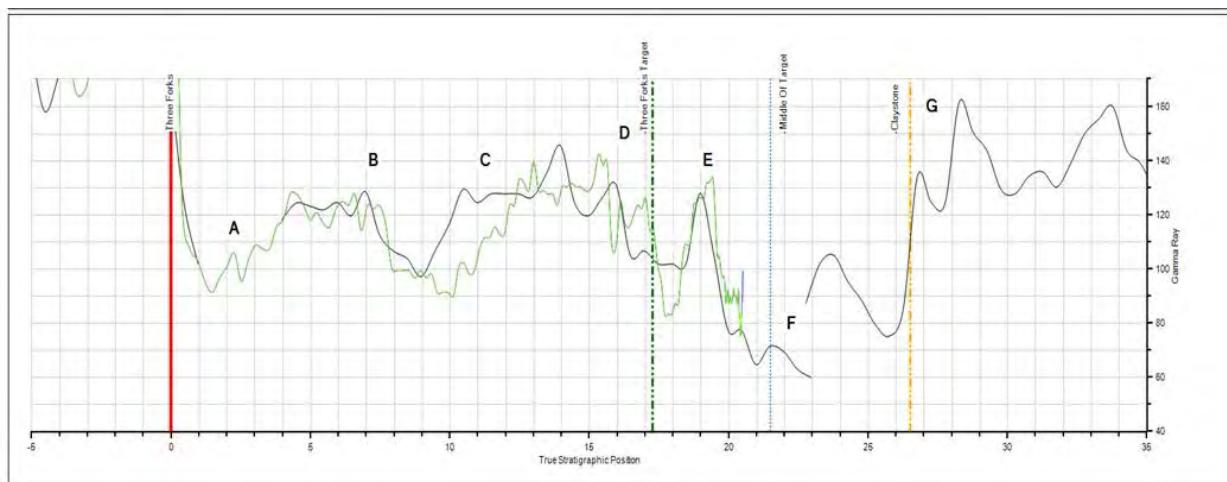


Figure 9. Offset well target definition, Indian Hills Prospect (Oasis).

Steering decisions were made by using target points and letter markers provided by Oasis personnel. The low gamma (F) in the middle to lower portion of the target zone was often utilized to establish the well-bore's position in the target zone. If the well-bore moved toward the bottom of the target zone, the moderate gamma was observed. As the well-bore moved lower in formation, the higher gamma of the underlying claystone (G) was observed, as was the presence of claystone in collected samples. Slides were then utilized to move the well-bore back up into the target zone. In accordance with the drilling plan the well-bore was steered down into the underlying claystone at prescribed intervals in order to definitively establish the well-bore's

position in formation. As the well-bore moved higher, approaching the top of the target zone the high to medium fluctuating gamma between markers (D & E) was noted. Samples in the lower gamma portion of the target zone contained noticeably greater concentrations of the light brown, tan-cream, peach, trace pink dolomite; as the well-bore moved higher in zone the samples tended to have more of the light gray, off white, gray brown dolomite. The TD of 20,562' MD was achieved at 08:25 hours CT February 18, 2015. The well site team worked together to maintain the well bore in the desired target interval for 94% of the lateral, opening 9,444' of potentially productive reservoir rock. The hole was then circulated and reamed for completion.

## SUMMARY

The Chalmers 5300 21-19 10T is a successful well in Oasis Petroleum's horizontal Three Forks development program in Baker Field. The project was drilled from surface casing to TD in 18 days. The TD of 20,562' MD was achieved at 08:25 hours CT February 19, 2015. The well site team worked together to maintain the well bore in the desired target interval for 94% of the lateral, opening 9,444' of potentially productive reservoir rock.

Samples in the Three Forks were predominantly dolomite which was described as light brown, light gray, tan-cream, peach, trace pink in color. It was firm, laminated, with a microsucrosic texture. Rare disseminated pyrite was noted as was occasional intercrystalline porosity. Also noted was *common spotty to rare even light brown oil stain*. Also observed was light green-light gray green, rare light gray shale that was firm, subblocky, with an earthy texture. Occasional disseminated pyrite was noted as was possible intergranular porosity.

Gas on the Chalmers 5300 21-19 10T varied according to stratigraphic position and penetration rates which may have reflected increased porosity. The overall gas and hydrocarbon shows were encouraging and indicate a hydrocarbon rich system in the Three Forks.

The Oasis Petroleum North America, LLC. Chalmers 5300 21-19 10T awaits completion operations to determine its ultimate production potential.

Respectfully submitted,

*G. Wayne Peterson*  
Sunburst Consulting, Inc.  
18 February, 2015

# **WELL DATA SUMMARY**

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

**ADDRESS:** 1001 Fannin Suite 1500  
Houston, TX 77002

**WELL NAME:** Chalmers 5300 21-19 10T

**API #:** 33-053-06022

**WELL FILE #:** 28637

**SURFACE LOCATION:** 2,292' FNL & 327' FWL  
Lot 2 Sec. 19, 153N, 100W

**FIELD/ PROSPECT:** Baker / Three Forks

**COUNTY, STATE** McKenzie County, North Dakota

**BASIN:** Williston

**WELL TYPE:** Three Forks Horizontal

**ELEVATION:** GL: 2,051'  
KB: 2,076'

**SPUD/ RE-ENTRY DATE:** January 14, 2015

**BOTTOM HOLE LOCATION** 545.56' S & 9,879.80' E of surface location or approx.  
2,442.44' FSL & 306.57' FEL, NE SE Sec. 20, T153N, R100W

**CLOSURE COORDINATE** Closure Direction: 93.16°  
Closure Distance: 9,894.85'

**TOTAL DEPTH / DATE:** 20,562' on February 18, 2015  
94% within target interval

**TOTAL DRILLING DAYS:** 18 days

**CONTRACTOR:** Nabors #B22

**PUMPS:** H&H Triplex (stroke length - 12")

<b><u>TOOLPUSHERS:</u></b>	Jessie Tibbets, Mark Rollins
<b><u>FIELD SUPERVISORS:</u></b>	John Gordon, Doug Rakstad
<b><u>CHEMICAL COMPANY:</u></b>	NOV
<b><u>MUD ENGINEER:</u></b>	Joe Vaith, Joe Stander
<b><u>MUD TYPE:</u></b>	Fresh water in surface hole Diesel invert in vertical/curve; Salt water in lateral
<b><u>MUD LOSSES:</u></b>	Invert Mud: 164 bbls, Salt Water: 0 bbls
<b><u>PROSPECT GEOLOGIST:</u></b>	Nathan Gabelman
<b><u>WELLSITE GEOLOGISTS:</u></b>	Michelle Baker, G. Wayne Peterson, Molly Hagstrom, Zachary Moses
<b><u>GEOSTEERING SYSTEM:</u></b>	Sunburst Digital Wellsite Geological System
<b><u>ROCK SAMPLING:</u></b>	30' from 8,240' - 20,562' (TD) 10' spot samples through curve
<b><u>SAMPLE EXAMINATION:</u></b>	Binocular microscope & fluoroscope
<b><u>SAMPLE CUTS:</u></b>	Trichloroethylene (Carbo-Sol)
<b><u>GAS DETECTION:</u></b>	MSI (Mudlogging Systems, Inc.) TGC - total gas with chromatograph Serial Number(s): ML-134
<b><u>ELECTRIC LOGS:</u></b>	n/a
<b><u>DRILL STEM TESTS:</u></b>	n/a
<b><u>DIRECTIONAL DRILLERS:</u></b>	RPM, Inc. John Gordon, Doug Rakstad, Robert Jasper
<b><u>MWD:</u></b>	Ryan Directional Services Mike McCommard, Ronald Maddalena, Brandon Tankersley Jake Creech, Matt Aesoph
<b><u>CASING:</u></b>	Surface: 13 3/8" 54.5# J-55 set to 2,063' Second: 9 5/8" 40# HCL-80 set to 6,097' Intermediate: 7" 29/32# P-110 set to 11,118'

**KEY OFFSET WELLS:**

**Oasis Petroleum North America, LLC**  
**Chalmers 5300 31-19H**  
NW SW Sec. 19 T153N R100W  
McKenzie County, ND

**Oasis Petroleum North America, LLC**  
**Chalmers 5300 21-19 8T**  
Lot 2, Sec. 19, T153N, R100W  
McKenzie County, ND

**Oasis Petroleum North America, LLC**  
**Chalmers 5300 21-19 7T2**  
Lot 2, Sec. 19, T153N, R100W  
McKenzie County, ND

**Oasis Petroleum North America, LLC**  
**Chalmers 5301 44-24 4T2**  
SE SE Sec. 24 T153N R101W  
McKenzie County, ND

**WELL LOCATION PLAT**  
OASIS PETROLEUM NORTH AMERICA, LLC  
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002

SECTION 19, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

2292 FEET FROM NORTH LINE AND 327 FEET FROM WEST LINE

EDGE OF

LAKE

CALCULATED

IN LAKE

FOUND REBAR

W/ 2" AC

LS 2352

AZ 90'00" 00"

2640' (GLO)

1947' (GLO)

2216' (GLO)

AZ 90'00" 00"

1056' (GLO)

IN LAKE

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AZ 90'00" 00"

2640' (GLO)

### SECTION BREAKDOWN

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

SECTIONS 19 & 20, T15N, R100W, S5 P.M., MCKENZIE COUNTY, NORTH DAKOTA

292 FEET FROM NORTH LINE AND 327 FEET FROM WEST LINE

EDGE OF

CALCULATED

IN LAKE

1947' (GLO)

AZ 359'55'00"

1056 (GLO)

AZ 359'56'00"

1320' (GLO)

AZ 359'55'45"

989' (GLO)

AZ 359'55'45"

1320' (GLO)

AZ 359'56'00"

1320' (GLO)

AZ 359'56'00"

1320' (GLO)

AZ 359'55'45"

1320' (GLO)

LOT 1

LOT 2

LOT 3

LOT 4

LOT 5

LOT 6

LOT 7

MISSOURI RIVER  
PER 1891 SURVEY

PER

1891

SURVEY

RE

REV

1

1891

SURVEY



- MONUMENT - RECOVERED
- MONUMENT - NOT RECOVERED

ALL AZIMUTHS ARE BASED ON GPS OBSERVATIONS. THE ORIGINAL SURVEY OF THIS AREA FOR THE GENERAL LAND OFFICE (G.L.O.) WAS 1891. THE CORNERS FOUND ARE AS INDICATED AND ALL OTHERS ARE COMPUTED FROM THOSE CORNERS FOUND AND BASED ON GLO DATA. THE MAPPING ANGLE FOR THIS AREA IS APPROXIMATELY -003°.



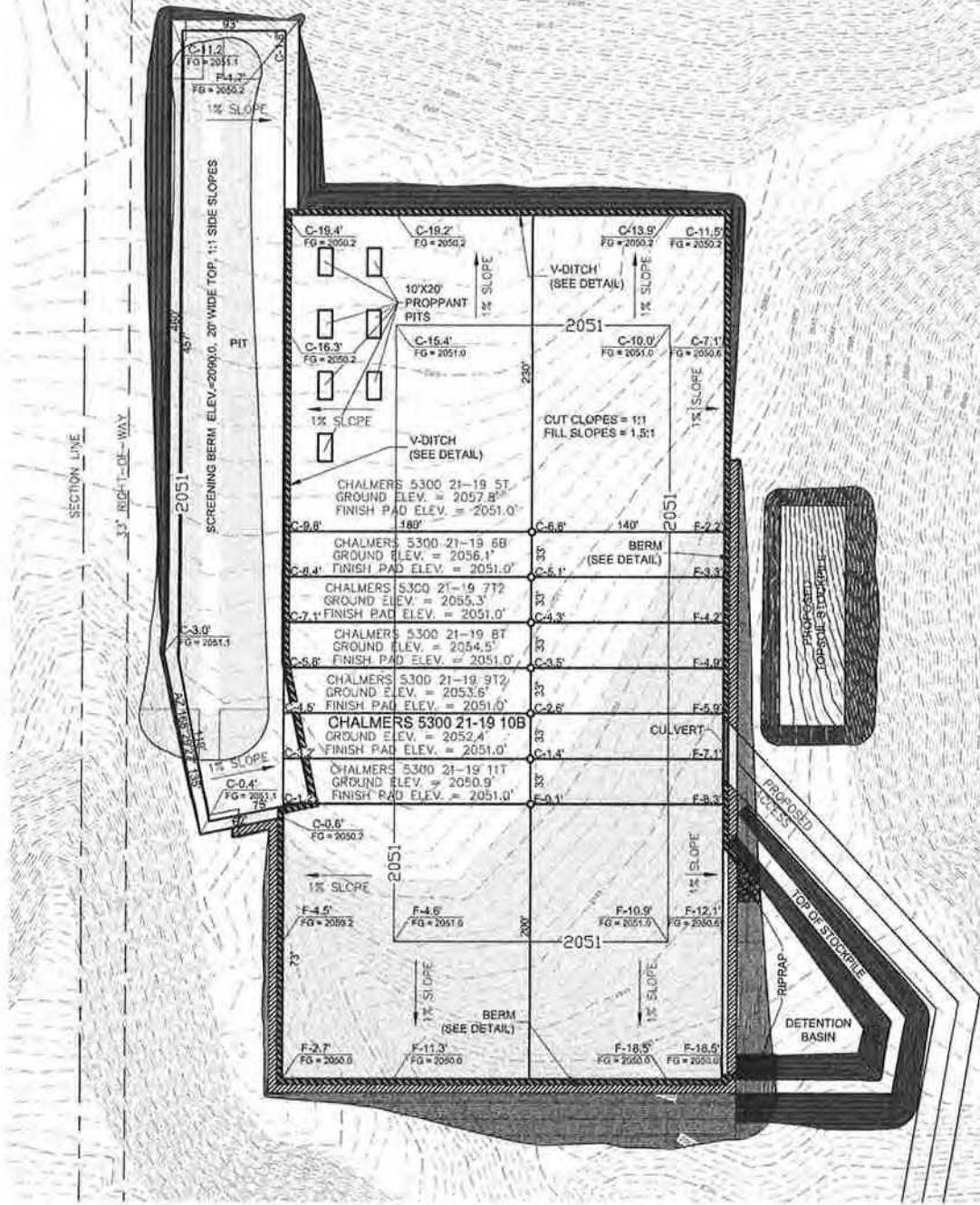
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Interstate Engineering, Inc.  
P.O. Box 648  
425 East Main Street  
Livingston, Montana 59047  
Ph: (406) 433-5617  
Fax: (406) 433-5618  
[www.interstateinc.com](http://www.interstateinc.com)

OASIS PETROLEUM NORTH AMERICA, LLC  
SECTION BREAKDOWN  
SECTIONS 19 & 20, T15N, R100W  
MCKENZIE COUNTY, NORTH DAKOTA  
Drawn By: B.M.H. Checked By: D.O.K. Date: JAN 2014  
Project No.: 51349-262.00  
Other Office: Missoula, MT; Helena, MT; Billings, MT; Great Falls, MT; Spokane, WA

Perf. No.	Date	By	Description
REV 1	1/3/2014	BS	Moved wells on pad
REV 2	4/2/2014	BS	Moved wells on pad/revised pad
REV 3	5/2/2014	BS	Moved wells on pad/REV 2 pad

**PAD LAYOUT**  
 OASIS PETROLEUM NORTH AMERICA, LLC  
 1001 FANNIN, SUITE 1500, HOUSTON, TX 77002  
 "CHALMERS 5300 21-19 10B"  
 2292 FEET FROM NORTH LINE AND 327 FEET FROM WEST LINE  
 SECTION 19, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



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

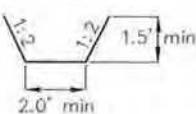
NOTE 2 : Screening berm is to be built after drilling operations are complete.

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0 80  
1" = 80'

**V-DITCH DETAIL**



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

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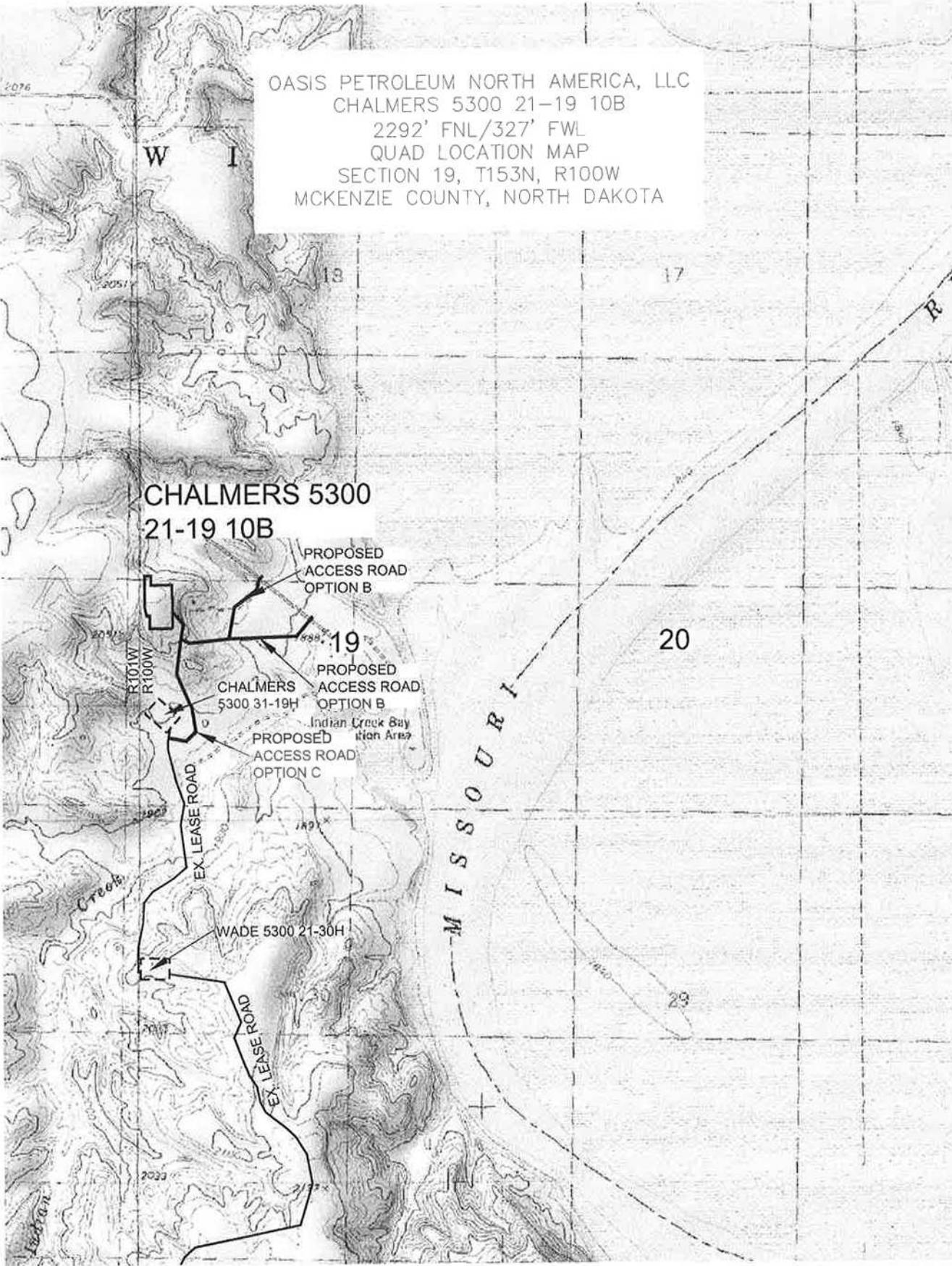
Relationships like trust, principles you hold

Interstate Engineering, Inc.  
 P.O. Box 648  
 425 Main Street  
 Sidney, Montana 59270  
 Ph: (406) 433-5617  
 Fax: (406) 433-5616  
[www.interstateeng.com](http://www.interstateeng.com)  
 One location in Missoula, Montana and Salt Lake City

OASIS PETROLEUM NORTH AMERICA, LLC  
 PAD LAYOUT  
 SECTION 19, T153N, R100W  
 MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: B.H.H. Project No: 513-09-292-05  
 Checked By: D.R.K. Date: JAN 2014

Sheet No.	Date	By	Description
REV 1	3/12/14	AB	MOVE WELLS ON PAD
REV 2	4/22/14	ABH	MOVE WELLS ON PAD/PERMIT PAD
REV 3	5/2/14	BH	MOVE WELLS ON PAD/PERMIT PAD



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**5/8**



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Revision No.	Date	By	Description
REV 1	2/12/14	AJS	Moved wells on pad
REV 2	4/22/14	BWH	Moved wells on pad/revised pad
REV 3	5/2/14	BWH	Moved wells on pad/revised pad

OASIS PETROLEUM NORTH AMERICA, LLC  
QUAD LOCATION MAP  
SECTION 19, T153N, R100W  
MCKENZIE COUNTY, NORTH DAKOTA

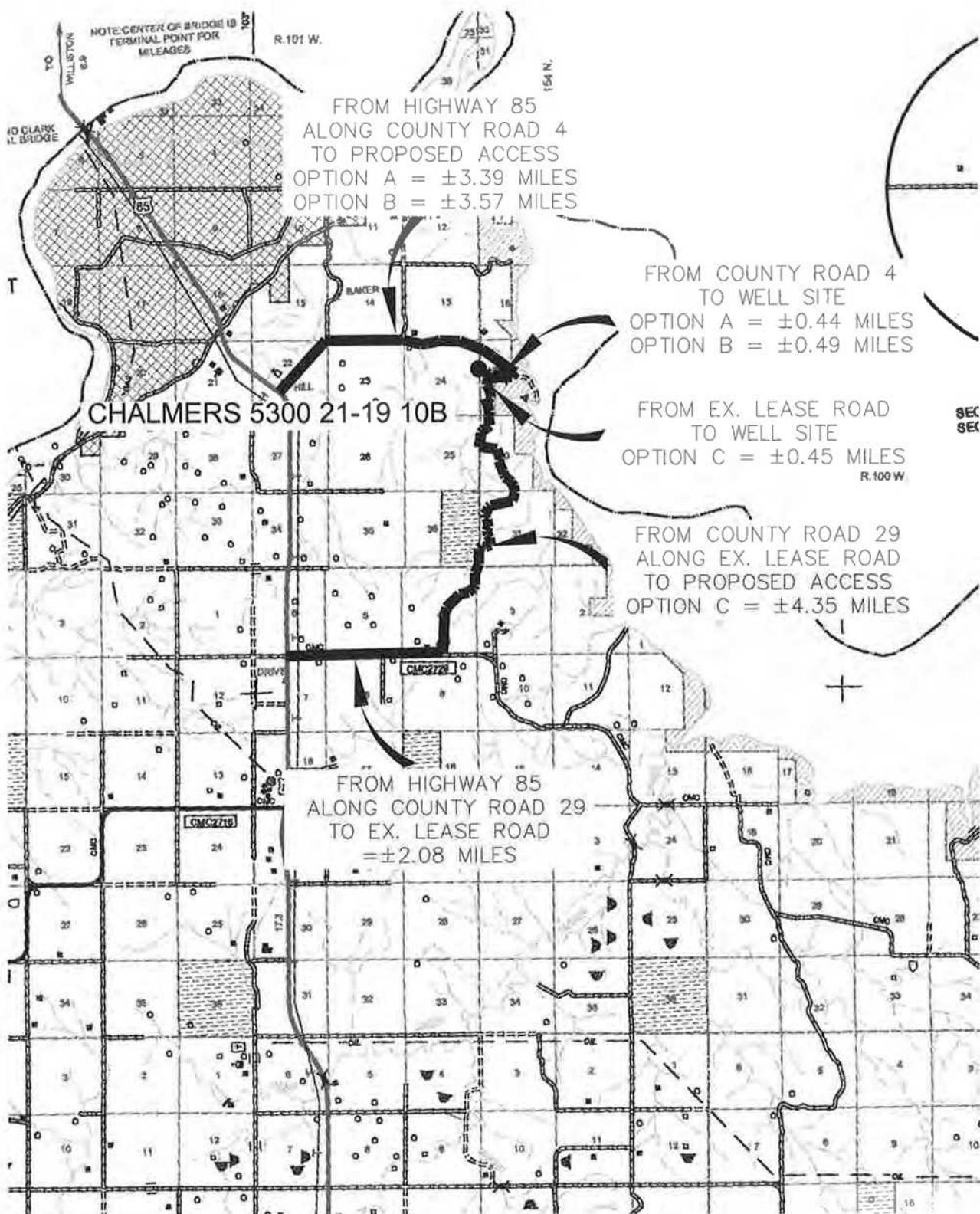
Drawn By: B.H.H. Project No.: S13-09-282-05  
Checked By: D.D.K. Date: JAN, 2014

# COUNTY ROAD MAP

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

"CHALMERS 5300 21-19 10B"

2292 FEET FROM NORTH LINE AND 327 FEET FROM WEST LINE  
SECTION 19, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



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SCALE: 1" = 2 MILE

6/8

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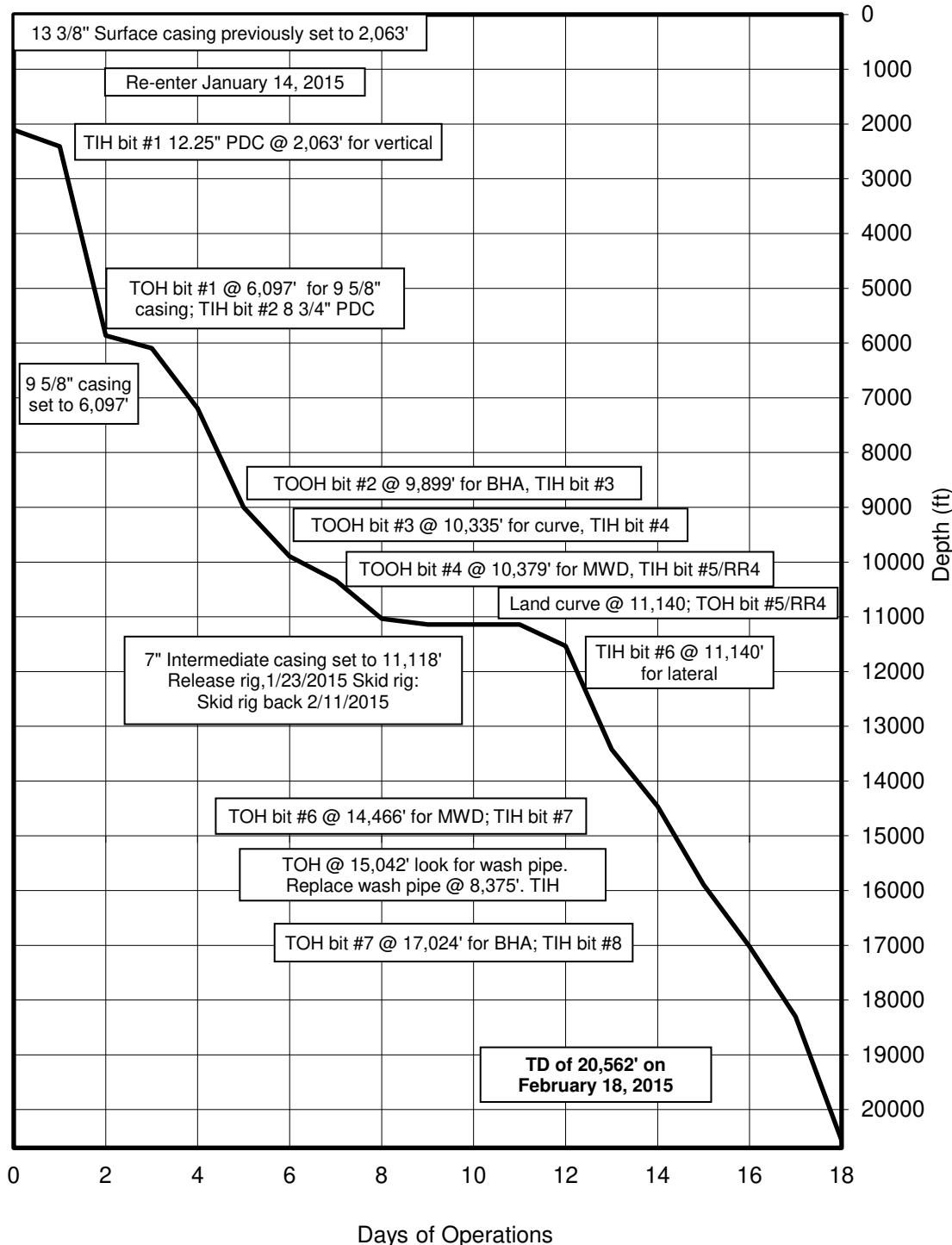
OASIS PETROLEUM NORTH AMERICA, LLC  
COUNTY ROAD MAP  
SECTION 19, T153N, R100W  
MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: B.H.H. Project No.: 513-09-292.05  
Checked By: D.D.K. Date: JAN 2014

Revision No.	Date	By	Description
REV 1	2/12/14	JAR	Moved wells on pad
REV 2	4/22/14	BPH	Moved wells on pad/revised pad
REV 3	5/2/14	BPH	Moved wells on pad/revised pad

# TIME VS DEPTH

Oasis Petroleum North America, LLC  
Chalmers 5300 21-19 10T



# DAILY DRILLING SUMMARY

Day	Date	Depth (ft)	24 Hr Footage	Bit #	WOB (Klbs) RT	RPM (RT)	WOB (Klbs) MM	RPM (MM)	PP	SPM 1	SPM 2	GPM	24 Hr Activity		Formation
0	1/14	2,107'	-	-	-	-	-	-	-	-	-	-	Rig accepted @ 2300 1/14/2015, Nipple up BOPS.		Surface
1	1/15	2,410'	303	1	12	60	-	-	3,250	95	95	669	Install choke line. Rig up cat walk, center stack, cellar grading, angle lifts, Geronimo line, top drive. Test BOPs. Install wear bushing. Service rig. Slip and cut. Pre-job/pre-spud safety meeting. Pick up BHA. TIH. Drill cement: float at 2,063' and shoe at 2,107'. FIT. Rig service. Rotate ahead to 2,410'.		Pierre
2	1/16	5,864'	3,454	1	10	60	-	-	3,100	95	95	669	Drill from 2,410' to 3,904'. Rig service. Drill from 3,904'-5,864'.		Dakota
3	1/17	6,097'	233	1	10	60	-	-	3,200	95	95	669	Drill from 5,864'-6,097'. Circulate and condition. Short trip. Pump dry job. TOH. Lay down BHA. Install and remove wear bushing, install rotating head. Rig up to run casing. Run casing. Service rig. Pick up 3rd party tools. Rig up cementers and hold prejob safety meeting. Primary cementing.		Dakota
4	1/18	7,193'	1,096	2	28	50	10	163	3500	80	80	563	Cement. Rig down cementers. Flush stack. Suck out cellar. Screw out of hanger, drain stack, install pack off, test pack off. Install wear bushing. Service top drive. Pick up BHA. TIH. Install rotating head. Pressure test. TIH. Drill out float. Drilling cement shoe @ 6,097'. Drill 15' formation. FIT test. Service rig. Rotary drilling 6,105'-7,193'.		Dunham Salt
5	1/19	9,000'	1,807	2	28	50	10	163	3500	80	80	563	Rotary drilling from 7,193' to 8,095'. Test BOPs. Service top drive. Function upper rams. Rotary drilling from 8,095 to 9,000'.		Charles
6	1/20	9,899'	899	2	54	60	-	163	3730	80	80	563	Drill and survey from 9,000 to 9,682'. Service top drive. Drill and survey from 9,682' to 9,899'. Circulate and condition, mix and send dry job. TOOH due to slow ROP. Pull rotating head and install trip nipple. Lay down BHA. Pick up BHA (new bit and motor). TIH.		Lodgepole
7	1/21	10,335'	436	3	25	45	-	163	3900	80	80	563	TIH. Slip and cut. Rig service. TH. Ream, washing last 500'. Rotary drilling 9,889'-10,335'. TOOH. Remove rotating head. Install trip nipple. Lay down BHA. Pick up 3rd party Schlumberger logging tools and wire line. Rig up. Hold prejob safety meeting with Schlumberger. Run open hole logs. Lay down 3rd party tools. Rig down Schlumberger. Pick up curve assembly. TIH. Remove trip nipple, install rotating head. Rig		Lodgepole
8	1/22	11,035'	698	4	20	25	30	149	3600	73	73	513	Rotary drilling/trough for 30 min @120. Rotary drilling sliding as needed 10335'-10,380'. Wait on 3rd party tools. Trouble shoot MWD. TOH. Pump dry job. Pull rotating head. Lay down BHA. MWD tool. TIH. Service top drive. Function upper pipes. Rotary drilling sliding as needed 10,380'-10,411'. Service rig. Slide and survey curve, rotating as needed, from 10,411- 11,033'.		Three Forks

# DAILY DRILLING SUMMARY

Day	Date 2015	Depth (0600 Hrs)	24 Hr Footage	Bit #	WOB (Klbs) RT	RPM (RT)	WOB (Klbs) MM	RPM (MM)	PP	SPM 1	SPM 2	GPM	24 Hr Activity		Formation
9	1/23	11,140'	107	5/RR4	20	25	30	149	3600	73	73	513			Three Forks
10	1/24	11,140'	0	-	-	-	-	-	-	-	-	-			Three Forks
11	2/11	11,140'	0	-	-	-	-	-	-	-	-	-			Three Forks
12	2/12	11,535'	395	6	20	50	45	267	3600	96	-	334			Three Forks
13	2/13	13,423'	1,888	6	28	50	40	254	3900	90	-	317			Three Forks
14	2/14	14,465'	1,042	6	25	40	40	254	3950	90	-	317			Three Forks
15	2/15	15,887'	1,422	7	23	40	34	231	3900	82	-	289			Three Forks
16	2/16	17,024'	1,137	7	28	50	65	138	3900	80	-	282			Three Forks
17	2/17	18,300'	1,276	8	25	35	54	148	4000	86	-	303			Three Forks
18	2/18	20,562'	2,262	8	25	40	55	138	2500	80	-	282			Three Forks

## DAILY MUD SUMMARY

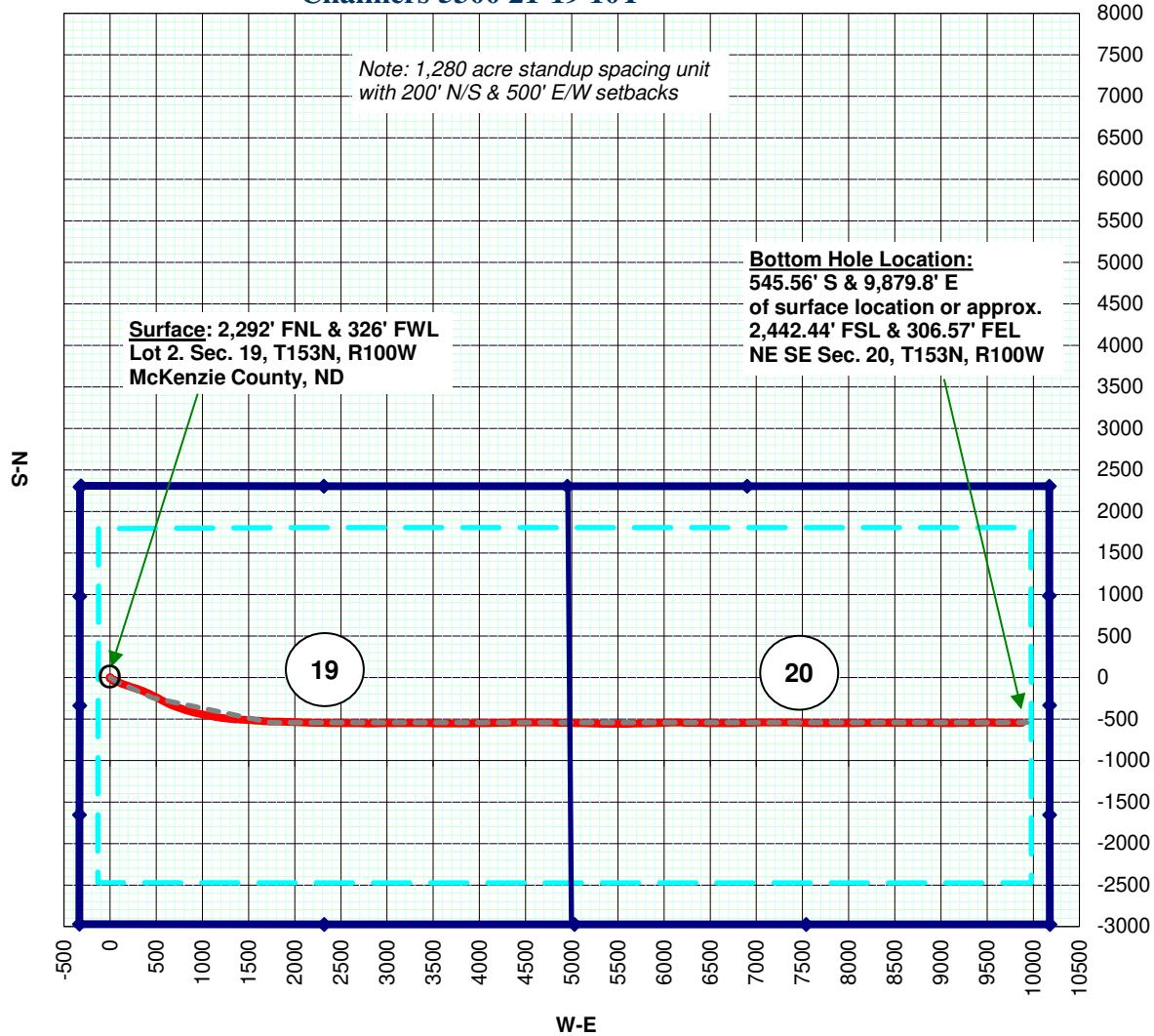
Day	Date	Mud Depth	Drilling Fluid	Mud WT (ppg)	Vis (sec/ qt)	PV (cP)	YP (lbs/ 100 ft <sup>2</sup> )	Gels (lbs/ 100 ft <sup>2</sup> )	600/ 300 (lbs/ 100 ft <sup>2</sup> )	NAP/ H <sub>2</sub> O (ratio)	NAP/ H <sub>2</sub> O (% by vol)	Cake (AP)/ HTHP	Cor. Solids (%)	Alk	pH	Excess Lime (lb/bbl)	Cl <sup>-</sup> (mg/L)	HGS/ LGS (%)	Salinity (ppm)	Electrical Stability	Gain/ Loss (bbls)
0	01/14	2,000'	invert	11	76	15	10	9/11/14	40/25	78.6/21.4	66/18	2	14	2.6	-	3.4	33k	12.4/1.6	232,029	534	-
1	01/15	2,694'	invert	11.5	78	19	13	14/20/22	51/32	72/28	59/23	3	18	0.9	-	1.2	36k	13.7/2.1	205,054	0	-/22
2	01/16	6,100'	invert	11.45	61	16	10	11/18/-	42/26	78.3/21.7	63/17.5	3	19.5	2.4	-	3.1	36k	12.5/4.8	253,184	470	-/27
3	01/17	6,100'	invert	10.6	58	15	11	11/18/-	41/26	78.3/21.7	63/17.5	3	19.5	2.4	-	3.1	36k	13.7/3.7	253,184	520	-/31
4	01/18	7,483'	invert	10.45	48	12	6	9/13/-	30/18	76.7/23.3	66/20	2	14	1.7	-	2.2	36k	9.8/2.0	228,776	450	-/39
5	01/19	9,119'	invert	10.45	48	13	10	10/14/-	36/23	77.4/22.6	65/19	2	16	2.3	-	3	45k	8.3/5.2	264,320	520	/5
6	01/20	9,899'	invert	10.5	54	13	9	10/14/-	35/22	79.8/20.2	67/17	2	13.7	2.1	-	2.7	45k	9.1/4.6	264,320	680	-/8
7	01/21	10,379'	invert	10.25	53	12	10	10/14/-	34/22	79.1/20.9	68/18	2	11.6	2.3	-	3	46k	8.8/2.8	264,320	670	-/3
8	01/22	11,135'	invert	10.35	52	13	12	11/14-	38/25	79.5/20.5	68/17.5	2	12.2	2.3	-	3	45k	9.1/3.1	264,320	675	-/29
9	01/23	11,140'	invert	10.35	52	13	12	11/14-	38/25	79.5/20.5	68/17.5	2	12.2	2.3	-	3	45k	9.1/3.1	264,320	675	-/-
10	01/24	11,140'	invert	10.35	52	13	12	11/14-	38/25	79.5/20.5	68/17.5	2	12.2	2.3	-	3	45k	9.1/3.1	264,320	675	-/-
11	02/11	11,140'	saltwater	9.8	28	2	1	-	5/3	-	0/89.9	-	10.1	-	8.5	-	156k	0.0/0.8	-	-	-/-
12	02/12	12,054'	saltwater	9.8	28	2	1	-	5/3	-	0/89.9	-	10.1	-	8.5	-	156k	0.0/0.8	-	-	-/-
13	02/13	13,423'	saltwater	9.8	28	2	1	-	5/3	-	0/89.9	-	10.1	-	8.5	-	156k	0.0/0.8	-	-	-/-
14	02/14	14,465'	saltwater	9.75	30	2	1	-	5/3	-	0/90.5	-	9.5	-	8	-	142k	-0.6	-	-	-/-
15	02/15	15,042'	saltwater	9.75	30	2	1	-	5/3	-	0/90.5	-	9.5	-	8	-	142k	-0.6	-	-	-/-
16	02/16	17,024'	saltwater	9.75	29	2	1	-	5/3	-	0/90.2	-	9.8	-	8	-	161k	-0.3	-	-	-/-
17	02/17	18,300'	saltwater	9.75	29	2	1	-	5/3	-	0/90.2	-	9.8	-	8	-	161k	-0.3	-	-	-/-
18	02/18	20,343'	saltwater	9.75	29	2	1	-	5/3	-	0/90.2	-	9.75	-	8	-	161k	-0.3	-	-	-/-

## BOTTOM HOLE ASSEMBLY RECORD

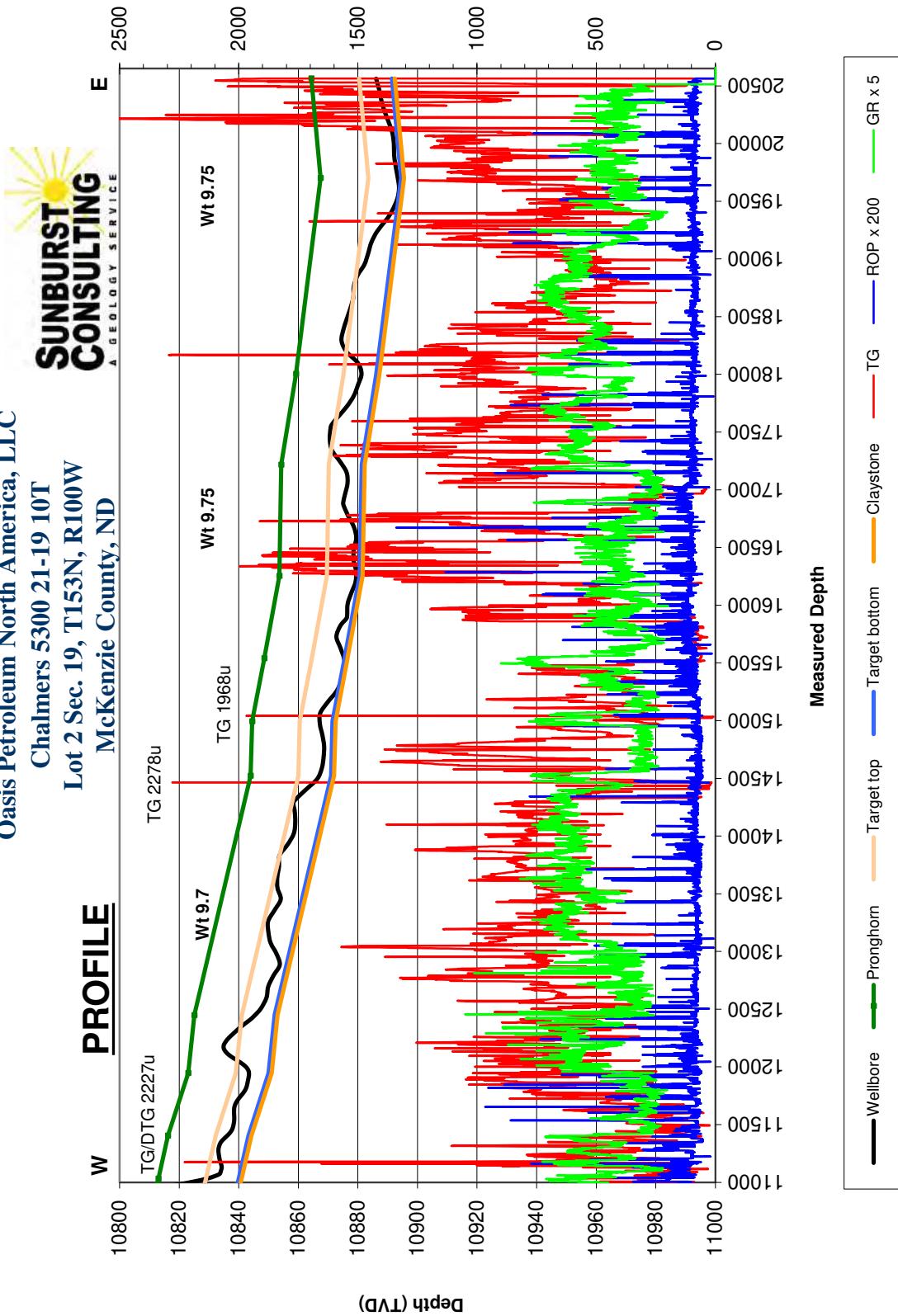
BHA Run	Depth In	Depth Out	Footage	Hours	Accum. Hours	Vert. Dev.	Bit #	Size (In.)	Type	Make	Model	Serial #	Jets	Hours	Motor #	Make	Model	Motor Data			
																		Bend	Hours	Rev/Gal	
1	2,063'	6,097'	4,034'	29	29.00	Vertical	1	12 1/4	PDC	Varel	V619PD	4008019	5x20	29	1	NOV	6/5	5.0	2.12°	29	0.13
2	6,097'	9,899'	3,802'	51	80.00	Vertical	2	8 3/4	PDC	NOV	DSS16M-02	A202740	6x18	51	2	Ryan	6/7	1.50°	51	0.29	
3	9,899'	10,335'	436'	5	85.00	Vertical	3	8 3/4	PDC	Varel	R616PDG2UX	4007475	6x20	5	3	NOV	7/8	5.0	2.38°	5	0.29
4	10,335'	10,379'	44'	1	86.00	Curve	4	8 3/4	PDC	Smith	MD1516	JJ8031	5x16	1	4	NOV	7/8	5.0	2.38°	1	0.29
5	10,379'	11,140'	761'	25	111.00	Curve	5/RR4	8 3/4	PDC	Smith	MD1516	JJ8031	5x16	25	5/RR4	NOV	7/8	5.0	2.38°	25	0.29
6	11,140'	14,466'	3,326'	44	155.00	Lateral	6	6	PDC	Smith	MDZ1613	JJ7637	3x22	44	6	Ryan	6/7	ML 8.0	1.50°	44	0.80
7	14,466'	17,024'	2,558'	35	190.00	Lateral	7	6	PDC	Varel	6-VM613PZ	4008221	6x18	35	7	Ryan	6/7	ML 8.0	1.50°	35	0.80
8	17,024'	20,562'	3,538'	41	231.00	Lateral	8	6	PDC	Smith	Z613	JK1616	3x16 3x22	41	8	Baker	XLP/LS	1.50°	41	0.49	

## PLAN VIEW

Oasis Petroleum North America, LLC  
Chalmers 5300 21-19 10T



Oasis Petroleum North America, LLC  
 Chalmers 5300 21-19 10T  
 Lot 2 Sec. 19, T153N, R100W  
 McKenzie County, ND



# FORMATION MARKERS & DIP ESTIMATES

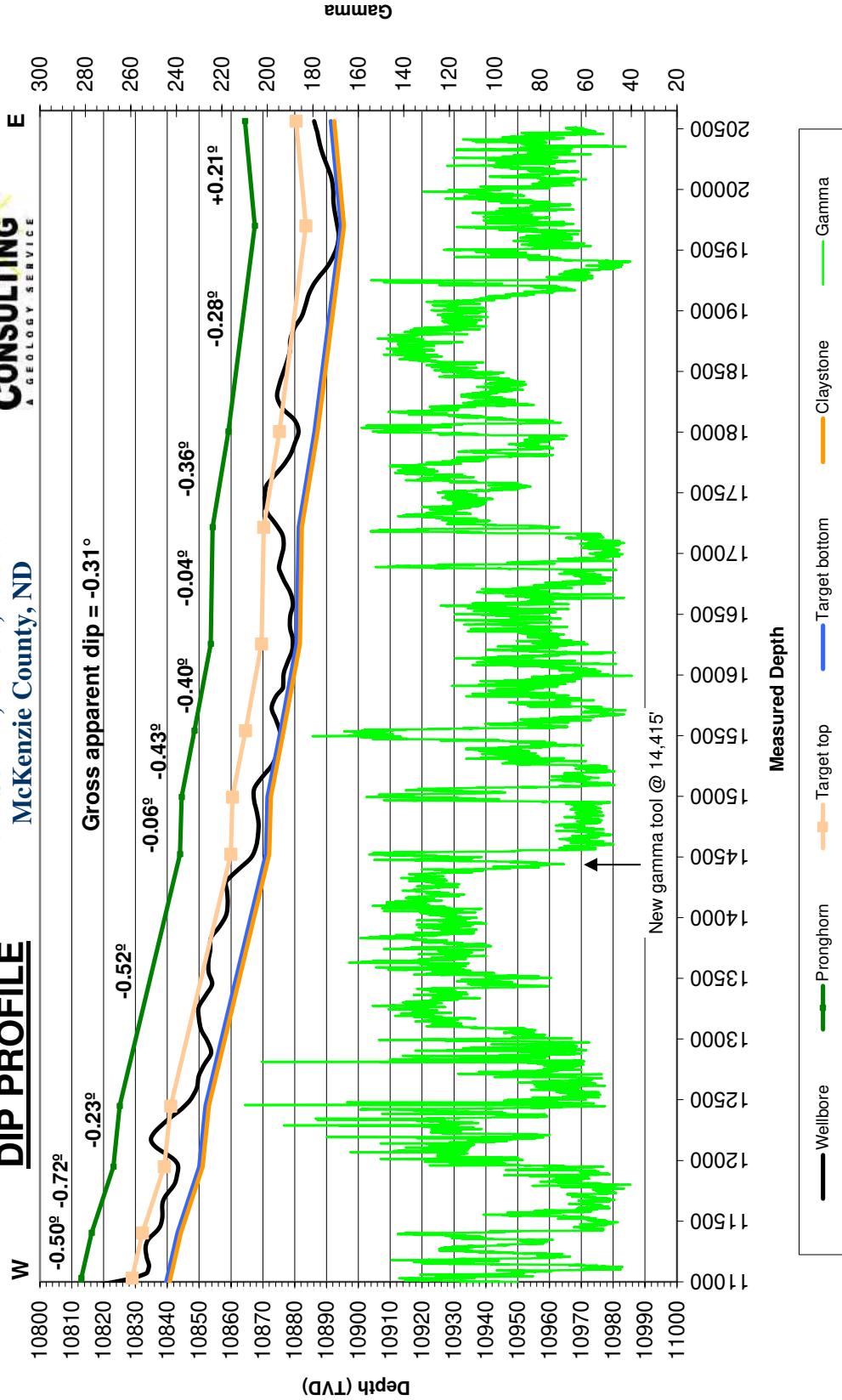
Oasis Petroleum North America, LLC - Chalmers 5300 21-19 10T

Dip Change Points	Marker	MD	TVD	TVD diff.	MD diff.	Dip	Dipping up/down	Type of Marker
Zone entry	11,031'	10829.00						Gamma
E marker	11,403'	10,832.25	3.25	372.00	<b>-0.50</b>	Down	Gamma	
E marker	11,947'	10,839.04	6.79	544.00	<b>-0.72</b>	Down	Gamma	
E marker	12,448'	10,841.05	2.01	501.00	<b>-0.23</b>	Down	Gamma	
E marker	14,522'	10,859.99	18.93	2074.00	<b>-0.52</b>	Down	Gamma	
E marker	14,994'	10,860.48	0.49	472.00	<b>-0.06</b>	Down	Gamma	
Claystone	15,540'	10,864.55	4.07	546.00	<b>-0.43</b>	Down	Gamma	
Base cool marker	16,254'	10,869.60	5.05	714.00	<b>-0.40</b>	Down	Gamma	
E marker	17,217'	10,870.27	0.67	963.00	<b>-0.04</b>	Down	Gamma	
E marker	18,004'	10,875.21	4.95	787.00	<b>-0.36</b>	Down	Gamma	
Base cool marker	19,700'	10,883.50	8.29	1696.00	<b>-0.28</b>	Down	Gamma	
Cool marker between F & E	20,562'	10,880.41	-3.09	862.00	<b>0.21</b>	Up	Gamma	
<b>Gross Dip</b>								
Initial Target Contact	11,031'	10,829.00						
Projected Final Target Contact	20,562'	10,880.41	51.41	9531.00	<b>-0.31</b>	Down	Projection	

Oasis Petroleum North America, LLC  
 Chalmers 5300 21-19 10T  
 Lot 2 Sec. 19, T153N, R100W  
 McKenzie County, ND



## DIP PROFILE



# SUNBURST CONSULTING, INC.

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Operator:	Oasis Petroleum North America, LLC	
Well :	Chalmers 5300 21-19 10T	
County:	McKenzie	State: ND
QQ:	Lot 2	Section: 19
Township:	153	N/S: N
Range:	100	E/W: W
Footages:	2292	FN/SL: N
	327	FE/WL: W

Kick-off:	1/21/2015
Finish:	2/18/2015
Directional Supervision:	Ryan Directional Services

Date: 2/25/2015  
 Time: 14:30  
**F9 to re-calculate**

Proposed dir: 93.13

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	2150.00	1.10	145.70	2149.91	-8.18	-2.64	-2.64	0.43
1	2167.00	1.20	148.60	2166.91	-8.47	-2.46	-1.99	0.68
2	2260.00	1.20	149.80	2259.89	-10.14	-1.46	-0.90	0.03
3	2354.00	1.20	102.40	2353.87	-11.20	0.00	0.61	1.03
4	2447.00	1.20	106.10	2446.85	-11.68	1.89	2.52	0.08
5	2540.00	1.30	49.00	2539.83	-11.26	3.62	4.23	1.29
6	2634.00	1.50	43.70	2633.80	-9.67	5.27	5.79	0.25
7	2727.00	0.90	331.90	2726.78	-8.15	5.77	6.20	1.60
8	2821.00	0.90	328.40	2820.77	-6.87	5.03	5.40	0.06
9	2914.00	1.00	322.80	2913.76	-5.60	4.16	4.46	0.15
10	3007.00	1.00	321.80	3006.75	-4.31	3.17	3.40	0.02
11	3101.00	1.10	323.30	3100.73	-2.94	2.12	2.28	0.11
12	3194.00	1.00	316.60	3193.71	-1.64	1.03	1.12	0.17
13	3287.00	0.40	333.70	3286.71	-0.76	0.33	0.37	0.68
14	3381.00	0.10	292.00	3380.71	-0.43	0.11	0.13	0.35
15	3474.00	0.20	334.60	3473.71	-0.26	-0.04	-0.02	0.15
16	3568.00	0.20	335.70	3567.71	0.04	-0.17	-0.18	0.00
17	3661.00	0.30	327.70	3660.70	0.39	-0.37	-0.39	0.11
18	3754.00	0.20	353.00	3753.70	0.76	-0.52	-0.56	0.16
19	3848.00	0.30	324.40	3847.70	1.12	-0.68	-0.75	0.17
20	3941.00	0.30	334.10	3940.70	1.54	-0.93	-1.02	0.05
21	4034.00	0.30	328.80	4033.70	1.97	-1.17	-1.27	0.03
22	4128.00	0.20	321.70	4127.70	2.31	-1.39	-1.52	0.11
23	4221.00	0.20	314.30	4220.70	2.55	-1.61	-1.75	0.03
24	4314.00	0.20	281.60	4313.70	2.69	-1.89	-2.03	0.12
25	4408.00	0.30	271.20	4407.70	2.73	-2.29	-2.44	0.12
26	4501.00	0.40	277.70	4500.70	2.78	-2.86	-3.01	0.12
27	4594.00	0.50	261.70	4593.69	2.77	-3.58	-3.73	0.17
28	4688.00	0.40	224.40	4687.69	2.47	-4.22	-4.35	0.32
29	4781.00	0.40	225.50	4780.69	2.01	-4.68	-4.78	0.01
30	4875.00	0.40	219.90	4874.69	1.53	-5.12	-5.20	0.04
31	4968.00	0.40	162.40	4967.68	0.97	-5.23	-5.28	0.41
32	5061.00	0.40	160.30	5060.68	0.36	-5.02	-5.03	0.02
33	5155.00	0.30	139.10	5154.68	-0.14	-4.75	-4.74	0.17
34	5248.00	0.40	135.10	5247.68	-0.55	-4.36	-4.33	0.11

# SUNBURST CONSULTING, INC.

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Operator:	Oasis Petroleum North America, LLC	
Well :	Chalmers 5300 21-19 10T	
County:	McKenzie	State: ND
QQ:	Lot 2	Section: 19
Township:	153	N/S: N
Range:	100	E/W: W
Footages:	2292	FN/SL: N
	327	FE/WL: W

Kick-off:	1/21/2015
Finish:	2/18/2015
Directional Supervision:	Ryan Directional Services

Date: 2/25/2015  
 Time: 14:30  
**F9 to re-calculate**

Proposed dir: 93.13

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	5341.00	0.50	134.50	5340.67	-1.07	-3.84	-3.78	0.11
36	5435.00	0.50	123.70	5434.67	-1.58	-3.21	-3.12	0.10
37	5528.00	0.40	136.10	5527.67	-2.04	-2.65	-2.53	0.15
38	5621.00	0.40	148.00	5620.67	-2.55	-2.25	-2.11	0.09
39	5715.00	0.40	163.00	5714.66	-3.14	-1.98	-1.81	0.11
40	5808.00	0.40	166.30	5807.66	-3.77	-1.81	-1.60	0.02
41	5901.00	0.40	175.30	5900.66	-4.41	-1.71	-1.46	0.07
42	5994.00	0.40	171.80	5993.66	-5.05	-1.63	-1.35	0.03
43	6049.00	0.40	156.90	6048.66	-5.42	-1.53	-1.23	0.19
44	6113.00	0.30	154.80	6112.65	-5.77	-1.37	-1.05	0.16
45	6175.00	0.50	152.20	6174.65	-6.16	-1.18	-0.84	0.32
46	6268.00	0.80	122.20	6267.65	-6.86	-0.44	-0.06	0.48
47	6362.00	1.00	141.70	6361.64	-7.86	0.63	1.06	0.39
48	6455.00	1.10	121.00	6454.62	-8.95	1.90	2.38	0.42
49	6548.00	1.00	143.70	6547.61	-10.07	3.14	3.69	0.46
50	6642.00	1.50	120.10	6641.58	-11.35	4.69	5.30	0.75
51	6735.00	1.10	130.70	6734.56	-12.54	6.42	7.10	0.50
52	6828.00	1.30	158.10	6827.54	-14.10	7.49	8.25	0.65
53	6922.00	1.30	161.60	6921.52	-16.10	8.23	9.09	0.08
54	7015.00	1.40	139.00	7014.49	-17.96	9.30	10.27	0.58
55	7109.00	1.30	127.40	7108.46	-19.47	10.90	11.95	0.31
56	7202.00	1.30	102.00	7201.44	-20.33	12.77	13.87	0.61
57	7295.00	1.30	106.90	7294.42	-20.86	14.82	15.93	0.12
58	7388.00	1.20	100.80	7387.39	-21.35	16.78	17.92	0.18
59	7482.00	1.10	111.50	7481.38	-21.86	18.59	19.75	0.25
60	7575.00	1.10	111.10	7574.36	-22.51	20.25	21.45	0.01
61	7669.00	0.90	114.40	7668.34	-23.14	21.77	23.00	0.22
62	7762.00	0.70	81.30	7761.34	-23.36	22.99	24.23	0.53
63	7855.00	0.70	101.60	7854.33	-23.39	24.11	25.35	0.27
64	7948.00	0.70	123.70	7947.32	-23.82	25.14	26.40	0.29
65	8042.00	0.60	137.70	8041.32	-24.50	25.95	27.25	0.20
66	8135.00	0.70	151.90	8134.31	-25.36	26.54	27.89	0.20
67	8229.00	0.50	195.00	8228.31	-26.26	26.71	28.10	0.51
68	8322.00	0.50	189.50	8321.30	-27.06	26.54	27.97	0.05
69	8415.00	0.20	296.50	8414.30	-27.38	26.32	27.78	0.63

# SUNBURST CONSULTING, INC.

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Operator:	Oasis Petroleum North America, LLC	
Well :	Chalmers 5300 21-19 10T	
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QQ:	Lot 2	Section: 19
Township:	153	N/S: N
Range:	100	E/W: W
Footages:	2292	FN/SL: N
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Kick-off:	1/21/2015
Finish:	2/18/2015
Directional Supervision:	Ryan Directional Services

Date: 2/25/2015  
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**F9 to re-calculate**

Proposed dir: 93.13

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	8509.00	0.30	352.60	8508.30	-27.07	26.14	27.58	0.27
71	8602.00	0.30	308.40	8601.30	-26.67	25.92	27.34	0.24
72	8696.00	0.50	122.70	8695.30	-26.74	26.07	27.50	0.85
73	8789.00	0.50	111.20	8788.29	-27.11	26.79	28.23	0.11
74	8882.00	0.80	128.40	8881.29	-27.66	27.68	29.15	0.38
75	8976.00	0.70	129.20	8975.28	-28.43	28.64	30.15	0.11
76	9069.00	0.80	133.00	9068.27	-29.23	29.56	31.11	0.12
77	9162.00	0.70	139.70	9161.26	-30.11	30.40	32.00	0.14
78	9256.00	0.70	156.40	9255.26	-31.07	31.00	32.65	0.22
79	9349.00	0.50	166.50	9348.25	-31.99	31.32	33.02	0.24
80	9442.00	0.70	169.30	9441.25	-32.94	31.52	33.27	0.22
81	9536.00	0.70	174.40	9535.24	-34.07	31.68	33.50	0.07
82	9629.00	0.60	189.80	9628.23	-35.12	31.66	33.53	0.22
83	9723.00	0.70	179.90	9722.23	-36.18	31.57	33.50	0.16
84	9816.00	0.40	53.70	9815.23	-36.55	31.84	33.79	1.06
85	9909.00	1.00	66.30	9908.22	-36.04	32.84	34.76	0.66
86	10002.00	0.80	67.40	10001.21	-35.46	34.18	36.07	0.22
87	10095.00	0.80	48.40	10094.20	-34.78	35.27	37.12	0.28
88	10189.00	0.70	48.20	10188.19	-33.96	36.19	37.99	0.11
89	10282.00	0.90	42.20	10281.18	-33.04	37.10	38.85	0.23
90	10320.00	0.80	57.90	10319.18	-32.68	37.53	39.26	0.66
91	10351.00	3.70	85.80	10350.15	-32.49	38.71	40.42	9.73
92	10382.00	8.00	92.10	10380.98	-32.50	41.86	43.58	14.00
93	10413.00	12.10	96.80	10411.50	-32.96	47.25	48.98	13.48
94	10444.00	16.40	106.00	10441.54	-34.55	54.69	56.49	15.64
95	10475.00	20.10	114.80	10470.98	-38.00	63.73	65.71	14.85
96	10506.00	22.80	121.50	10499.84	-43.37	73.69	75.95	11.75
97	10537.00	22.80	125.60	10528.42	-50.01	83.70	86.30	5.12
98	10568.00	23.80	125.90	10556.89	-57.17	93.65	96.63	3.25
99	10600.00	27.80	120.00	10585.70	-64.69	105.35	108.72	14.84
100	10631.00	32.00	114.10	10612.57	-71.66	119.12	122.85	16.53
101	10662.00	35.20	111.40	10638.39	-78.28	134.94	139.01	11.39
102	10693.00	36.40	112.20	10663.53	-85.02	151.77	156.19	4.15
103	10724.00	39.50	110.70	10687.98	-91.98	169.52	174.29	10.43
104	10755.00	44.40	110.30	10711.03	-99.23	188.92	194.06	15.83

# SUNBURST CONSULTING, INC.

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Operator:	Oasis Petroleum North America, LLC	
Well :	Chalmers 5300 21-19 10T	
County:	McKenzie	State: ND
QQ:	Lot 2	Section: 19
Township:	153	N/S: N
Range:	100	E/W: W
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Kick-off:	1/21/2015
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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	10786.00	48.50	110.70	10732.38	-107.10	209.96	215.50	13.26
106	10818.00	53.40	109.20	10752.53	-115.56	233.32	239.28	15.74
107	10849.00	58.20	108.60	10769.95	-123.86	257.57	263.95	15.57
108	10880.00	62.80	109.90	10785.21	-132.76	283.03	289.86	15.28
109	10911.00	66.70	111.70	10798.44	-142.72	309.23	316.56	13.63
110	10942.00	72.20	112.90	10809.31	-153.74	336.08	343.97	18.11
111	10973.00	76.00	116.50	10817.81	-166.20	363.15	371.68	16.58
112	11004.00	79.40	117.10	10824.41	-179.86	390.18	399.42	11.13
113	11036.00	81.00	117.40	10829.86	-194.29	418.21	428.20	5.08
114	11067.00	86.50	118.60	10833.23	-208.76	445.41	456.14	18.15
115	11080.00	88.80	119.60	10833.76	-215.07	456.76	467.82	19.29
116	11128.00	90.00	119.40	10834.27	-238.71	498.53	510.82	2.53
117	11159.00	90.80	120.60	10834.05	-254.21	525.38	538.47	4.65
118	11191.00	90.70	120.10	10833.63	-270.37	552.99	566.93	1.59
119	11222.00	90.10	119.10	10833.42	-285.69	579.94	594.68	3.76
120	11252.00	90.60	120.20	10833.23	-300.53	606.01	621.52	4.03
121	11283.00	89.60	118.20	10833.18	-315.65	633.07	649.36	7.21
122	11314.00	89.50	116.50	10833.42	-329.89	660.60	677.63	5.49
123	11346.00	88.60	114.30	10833.95	-343.61	689.50	707.24	7.43
124	11376.00	87.50	112.20	10834.97	-355.45	717.05	735.39	7.90
125	11407.00	87.80	110.30	10836.24	-366.67	745.92	764.83	6.20
126	11439.00	88.30	110.00	10837.33	-377.69	775.94	795.41	1.82
127	11470.00	89.40	108.40	10837.96	-387.88	805.21	825.19	6.26
128	11502.00	89.50	108.10	10838.26	-397.90	835.60	856.08	0.99
129	11533.00	89.80	107.20	10838.45	-407.30	865.14	886.09	3.06
130	11565.00	90.10	105.20	10838.48	-416.23	895.87	917.26	6.32
131	11596.00	90.10	105.30	10838.43	-424.38	925.77	947.57	0.32
132	11627.00	89.90	104.30	10838.43	-432.30	955.75	977.92	3.29
133	11658.00	89.50	103.40	10838.59	-439.72	985.84	1008.38	3.18
134	11690.00	88.70	103.40	10839.09	-447.14	1016.97	1039.87	2.50
135	11720.00	88.50	103.10	10839.82	-454.01	1046.16	1069.39	1.20
136	11751.00	88.00	101.50	10840.77	-460.61	1076.43	1099.98	5.41
137	11783.00	88.50	101.70	10841.75	-467.04	1107.77	1131.61	1.68
138	11814.00	89.00	101.50	10842.42	-473.28	1138.13	1162.27	1.74
139	11844.00	89.60	99.70	10842.79	-478.79	1167.61	1192.01	6.32

# SUNBURST CONSULTING, INC.

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Operator:	Oasis Petroleum North America, LLC	
Well :	Chalmers 5300 21-19 10T	
County:	McKenzie	State: ND
QQ:	Lot 2	Section: 19
Township:	153	N/S: N
Range:	100	E/W: W
Footages:	2292	FN/SL: N
	327	FE/WL: W

Kick-off:	1/21/2015
Finish:	2/18/2015
Directional Supervision:	Ryan Directional Services

Date: 2/25/2015  
 Time: 14:30  
**F9 to re-calculate**

Proposed dir: 93.13

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	11875.00	89.50	99.70	10843.03	-484.02	1198.17	1222.81	0.32
141	11906.00	89.60	99.00	10843.28	-489.05	1228.75	1253.62	2.28
142	11937.00	89.80	97.20	10843.44	-493.42	1259.44	1284.50	5.84
143	11968.00	90.90	96.90	10843.25	-497.23	1290.21	1315.43	3.68
144	12000.00	92.10	95.80	10842.41	-500.76	1322.00	1347.37	5.09
145	12032.00	93.30	94.00	10840.91	-503.49	1353.84	1379.32	6.76
146	12063.00	93.60	94.00	10839.04	-505.65	1384.71	1410.26	0.97
147	12095.00	93.20	93.60	10837.14	-507.77	1416.59	1442.20	1.77
148	12126.00	91.80	93.70	10835.79	-509.74	1447.49	1473.17	4.53
149	12158.00	91.10	92.90	10834.98	-511.58	1479.43	1505.15	3.32
150	12189.00	88.90	94.00	10834.98	-513.45	1510.37	1536.15	7.93
151	12221.00	88.60	94.40	10835.68	-515.79	1542.28	1568.14	1.56
152	12253.00	87.70	95.30	10836.71	-518.49	1574.14	1600.11	3.98
153	12284.00	87.60	95.40	10837.98	-521.38	1604.98	1631.06	0.46
154	12316.00	87.60	94.70	10839.32	-524.20	1636.83	1663.01	2.19
155	12347.00	87.30	93.10	10840.70	-526.30	1667.73	1693.98	5.25
156	12379.00	87.00	93.30	10842.29	-528.09	1699.64	1725.94	1.13
157	12410.00	87.20	92.50	10843.86	-529.65	1730.56	1756.90	2.66
158	12442.00	88.00	91.50	10845.20	-530.77	1762.51	1788.86	4.00
159	12505.00	88.00	91.90	10847.40	-532.64	1825.44	1851.80	0.63
160	12600.00	89.70	92.20	10849.31	-536.03	1920.36	1946.76	1.82
161	12695.00	89.60	91.50	10849.89	-539.10	2015.31	2041.74	0.74
162	12790.00	88.30	91.90	10851.63	-541.92	2110.25	2136.69	1.43
163	12884.00	89.10	91.60	10853.76	-544.79	2204.18	2230.64	0.91
164	12979.00	92.20	91.10	10852.68	-547.03	2299.14	2325.57	3.31
165	13074.00	90.20	90.30	10850.69	-548.19	2394.10	2420.46	2.27
166	13169.00	90.70	90.90	10849.95	-549.18	2489.09	2515.37	0.82
167	13263.00	89.40	90.50	10849.87	-550.33	2583.08	2609.28	1.45
168	13358.00	88.00	90.80	10852.02	-551.41	2678.05	2704.16	1.51
169	13453.00	89.50	90.00	10854.09	-552.07	2773.02	2799.03	1.79
170	13548.00	91.80	90.00	10853.02	-552.07	2868.01	2893.88	2.42
171	13642.00	88.30	88.90	10852.93	-551.17	2961.99	2987.67	3.90
172	13737.00	91.00	90.00	10853.51	-550.26	3056.97	3082.46	3.07
173	13832.00	88.80	90.30	10853.68	-550.51	3151.97	3177.32	2.34
174	13927.00	87.90	89.60	10856.41	-550.42	3246.93	3272.14	1.20

# SUNBURST CONSULTING, INC.

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Operator:	Oasis Petroleum North America, LLC	
Well :	Chalmers 5300 21-19 10T	
County:	McKenzie	State: ND
QQ:	Lot 2	Section: 19
Township:	153	N/S: N
Range:	100	E/W: W
Footages:	2292	FN/SL: N
	327	FE/WL: W

Kick-off:	1/21/2015
Finish:	2/18/2015
Directional Supervision:	Ryan Directional Services

Date: 2/25/2015  
 Time: 14:30  
**F9 to re-calculate**

Proposed dir: 93.13

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	14021.00	89.60	90.60	10858.47	-550.59	3340.90	3365.98	2.10
176	14116.00	89.80	90.40	10858.96	-551.42	3435.89	3460.88	0.30
177	14211.00	90.40	90.70	10858.80	-552.33	3530.89	3555.78	0.71
178	14274.00	90.40	91.20	10858.36	-553.37	3593.88	3618.73	0.79
179	14306.00	88.50	91.20	10858.66	-554.04	3625.87	3650.71	5.94
180	14400.00	86.90	90.30	10862.44	-555.27	3719.78	3744.55	1.95
181	14495.00	88.40	89.10	10866.33	-554.77	3814.69	3839.30	2.02
182	14590.00	89.70	88.90	10867.91	-553.12	3909.67	3934.03	1.38
183	14685.00	89.60	88.50	10868.49	-550.96	4004.64	4028.75	0.43
184	14780.00	90.20	88.60	10868.65	-548.56	4099.61	4123.44	0.64
185	14874.00	90.50	88.80	10868.08	-546.43	4193.58	4217.16	0.38
186	14969.00	90.50	88.90	10867.25	-544.52	4288.56	4311.89	0.11
187	15064.00	89.40	89.60	10867.33	-543.28	4383.55	4406.67	1.37
188	15159.00	87.60	89.50	10869.82	-542.53	4478.51	4501.45	1.90
189	15253.00	88.80	89.40	10872.77	-541.63	4572.46	4595.21	1.28
190	15348.00	89.10	91.50	10874.51	-542.37	4667.43	4690.08	2.23
191	15443.00	89.60	90.30	10875.59	-543.87	4762.41	4785.00	1.37
192	15538.00	90.70	91.20	10875.34	-545.11	4857.40	4879.92	1.50
193	15632.00	90.80	90.80	10874.11	-546.75	4951.38	4973.85	0.44
194	15727.00	90.80	91.60	10872.79	-548.74	5046.35	5068.78	0.84
195	15822.00	87.60	91.60	10874.11	-551.39	5141.29	5163.73	3.37
196	15885.00	88.70	91.70	10876.15	-553.20	5204.23	5226.67	1.75
197	15917.00	90.40	90.90	10876.40	-553.93	5236.22	5258.65	5.87
198	16012.00	89.40	91.70	10876.56	-556.08	5331.19	5353.60	1.35
199	16107.00	89.10	91.40	10877.81	-558.65	5426.15	5448.56	0.45
200	16201.00	89.20	89.30	10879.20	-559.23	5520.13	5542.43	2.24
201	16296.00	90.60	88.80	10879.37	-557.65	5615.12	5637.19	1.56
202	16391.00	90.40	88.20	10878.54	-555.17	5710.08	5731.87	0.67
203	16486.00	89.50	88.00	10878.62	-552.02	5805.03	5826.51	0.97
204	16580.00	89.50	87.60	10879.44	-548.41	5898.95	5920.10	0.43
205	16675.00	91.40	87.80	10878.69	-544.60	5993.87	6014.66	2.01
206	16770.00	90.90	90.10	10876.79	-542.86	6088.83	6109.39	2.48
207	16801.00	91.10	90.20	10876.25	-542.94	6119.82	6140.34	0.72
208	16865.00	90.80	90.90	10875.19	-543.55	6183.81	6204.26	1.19
209	16896.00	89.50	91.70	10875.10	-544.25	6214.80	6235.25	4.92

# SUNBURST CONSULTING, INC.

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Operator:	Oasis Petroleum North America, LLC	
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County:	McKenzie	State: ND
QQ:	Lot 2	Section: 19
Township:	153	N/S: N
Range:	100	E/W: W
Footages:	2292	FN/SL: N
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Kick-off:	1/21/2015
Finish:	2/18/2015
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Date: 2/25/2015  
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**F9 to re-calculate**

Proposed dir: 93.13

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	16959.00	89.50	90.20	10875.65	-545.30	6277.79	6298.20	2.38
211	17057.00	89.50	92.00	10876.51	-547.18	6375.76	6396.13	1.84
212	17152.00	90.90	91.60	10876.18	-550.16	6470.71	6491.10	1.53
213	17246.00	91.80	89.30	10873.96	-550.90	6564.68	6584.96	2.63
214	17341.00	91.40	89.10	10871.31	-549.58	6659.63	6679.70	0.47
215	17436.00	89.50	89.10	10870.56	-548.08	6754.61	6774.46	2.00
216	17531.00	90.20	89.40	10870.81	-546.84	6849.60	6869.24	0.80
217	17562.00	88.50	88.90	10871.16	-546.38	6880.60	6900.16	5.72
218	17626.00	88.00	89.30	10873.12	-545.38	6944.56	6963.98	1.00
219	17720.00	88.20	88.40	10876.24	-543.49	7038.49	7057.66	0.98
220	17815.00	88.90	89.10	10878.64	-541.42	7133.43	7152.35	1.04
221	17910.00	89.40	90.30	10880.05	-540.92	7228.42	7247.17	1.37
222	18005.00	89.20	89.60	10881.21	-540.84	7323.41	7342.02	0.77
223	18099.00	92.30	92.50	10879.98	-542.56	7417.36	7435.92	4.52
224	18194.00	92.20	91.80	10876.25	-546.12	7512.22	7530.84	0.74
225	18289.00	89.90	90.90	10874.51	-548.36	7607.17	7625.77	2.60
226	18384.00	89.40	90.20	10875.09	-549.27	7702.17	7720.67	0.91
227	18478.00	89.20	90.30	10876.24	-549.68	7796.16	7814.54	0.24
228	18573.00	89.30	90.30	10877.48	-550.18	7891.15	7909.42	0.11
229	18668.00	89.50	89.20	10878.48	-549.76	7986.14	8004.25	1.18
230	18763.00	90.30	88.50	10878.64	-547.86	8081.12	8098.98	1.12
231	18858.00	88.20	89.30	10879.89	-546.03	8176.09	8193.71	2.37
232	18952.00	89.00	89.60	10882.18	-545.13	8270.06	8287.48	0.91
233	19047.00	89.50	90.60	10883.43	-545.30	8365.05	8382.34	1.18
234	19142.00	89.20	89.90	10884.50	-545.71	8460.04	8477.21	0.80
235	19237.00	88.50	89.70	10886.41	-545.38	8555.02	8572.03	0.77
236	19332.00	88.00	89.70	10889.31	-544.88	8649.97	8666.82	0.53
237	19363.00	88.60	90.20	10890.23	-544.86	8680.96	8697.76	2.52
238	19426.00	88.80	90.20	10891.66	-545.08	8743.94	8760.66	0.32
239	19521.00	89.30	90.70	10893.23	-545.82	8838.93	8855.54	0.74
240	19616.00	90.00	91.30	10893.82	-547.48	8933.91	8950.47	0.97
241	19711.00	90.60	90.60	10893.32	-549.06	9028.89	9045.40	0.97
242	19806.00	90.20	89.00	10892.65	-548.72	9123.89	9140.24	1.74
243	19900.00	90.40	89.30	10892.16	-547.33	9217.87	9234.01	0.38
244	19995.00	89.70	88.70	10892.08	-545.67	9312.86	9328.76	0.97

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# SUNBURST CONSULTING, INC.

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Operator:	Oasis Petroleum North America, LLC	
Well :	Chalmers 5300 21-19 10T	
County:	McKenzie	State: ND
QQ:	Lot 2	Section: 19
Township:	153	N/S: N
Range:	100	E/W: W
Footages:	2292	FN/SL: N
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Kick-off:	1/21/2015
Finish:	2/18/2015
Directional Supervision:	Ryan Directional Services

Date: 2/25/2015

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**F9 to re-calculate**

Proposed dir:

93.13

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		
245	20090.00	90.90	89.60	10891.58	-544.26	9407.84	9423.53	1.58
246	20184.00	90.60	89.90	10890.35	-543.85	9501.84	9517.36	0.45
247	20279.00	91.10	90.80	10888.94	-544.43	9596.82	9612.23	1.08
248	20374.00	90.20	90.30	10887.86	-545.34	9691.81	9707.13	1.08
249	20469.00	90.70	90.10	10887.12	-545.68	9786.81	9802.00	0.57
250	20498.00	90.60	89.90	10886.79	-545.68	9815.80	9830.96	0.77
251	20562.00	90.60	89.90	10886.12	-545.56	9879.80	9894.85	0.00

## DEVIATION SURVEYS

Depth	Inclination	Azimuth
160	0.50	291.60
251	1.10	273.60
344	1.10	265.20
428	0.50	251.80
515	0.40	230.40
599	0.40	181.20
687	0.40	162.50
773	0.70	152.70
860	0.90	158.00
945	0.90	153.00
1035	0.50	157.30
1125	0.20	32.50
1210	0.20	147.40
1301	0.20	201.60
1391	0.20	23.30
1477	0.20	116.10
1567	0.20	183.60
1658	0.20	236.70
1748	0.20	252.20
1838	0.20	251.10
1924	0.20	149.20
2014	0.20	138.60
2102	0.90	148.50

# FORMATION TOPS & STRUCTURAL RELATIONSHIPS

		Subject Well:										Offset Wells:			
Formation/ Zone	Elevation:	Gl.: 2,051'	Sub: 25'	KB: 2,076'	Prog.- Top	Prog. Datum (MSL)	Driller's Depth Top (MD)	Driller's Depth Top (TVD)	Interval Thickness	Thickness to Target Landing	Dip To Prog.	Dip To Chalmers 5300 31-19H	Dip To Chalmers 5300 21-19 8T	Dip To Chalmers 5300 21-19 7T2	Dip To Chalmers 5300 44-24 4T2
Kirby Lime	8,388'	-6,312'	8,387'	8,386'	-6,310'	150'	2,449'	2'	4'	0'	2'	-12'			
Charles Salt	8,534'	-6,458'	8,537'	8,536'	-6,460'	675'	2,299'	-2'	3'	-3'	2'	10'			
Base of Last Salt	9,209'	-7,133'	9,212'	9,211'	-7,135'	224'	1,624'	-2'	-4'	-2'	-2'	-36'			
Mission Canyon	9,429'	-7,353'	9,436'	9,435'	-7,359'	562'	1,400'	-6'	-8'	-5'	-6'	-39'			
Lodgepole	9,993'	-7,917'	9,998'	9,997'	-7,921'	-	838'	-4'	-4'	-5'	-4'	-43'			
LP A	-	-	-	-	-	-	-	-	-	-	-	-			
LP B	-	-	-	-	-	-	-	-	-	-	-	-			
LP Fracture Zone		-	-	-	-	-	-	-	-	-	-	-	-		
LP D	-	-	-	10,405'	10,404'	-8,328'	165'	431'	-	-1'	-3'	-45'			
LP E	-	-	-	10,581'	10,569'	-8,493'	102'	266'	-	-5'	-7'	-31'			
LP F	-	-	-	10,703'	10,671'	-8,595'	46'	164'	-	-4'	-3'	-19'			
False Bakken	10,714'	-8,638'	10,764'	10,717'	-8,641'	2'	118'	-3'	-14'	-4'	-3'	-37'			
Scallion	-	-	10,767'	10,719'	-8,643'	8'	116'	-	-12'	-3'	2'	-36'			
Upper Bakken Shale	10,724'	-8,648'	10,777'	10,727'	-8,651'	16'	108'	-3'	-14'	-4'	3'	-36'			
Middle Bakken	10,740'	-8,664'	10,803'	10,743'	-8,667'	42'	92'	-3'	-13'	-4'	4'	-36'			
Lower Bakken Shale	10,782'	-8,706'	10,880'	10,785'	-8,709'	11'	50'	-3'	-22'	-1'	2'	-38'			
Pronghorn	10,790'	-8,714'	10,906'	10,796'	-8,720'	18'	39'	-6'	-19'	-1'	-6'	-37'			
Three Forks	10,810'	-8,734'	10,956'	10,814'	-8,738'	15'	21'	-4'	-18'	-1'	4'	-39'			
Target Top	10,827'	-8,751'	11,031'	10,829'	-8,753'	6'	6'	-2'	-20'	-2'	-5'	-44'			
Landing Target	10,833'	-8,757'	11,100'	10,835'	-8,759'	3'	0'	-2'	-20'	-2'	-5'	-42'			
Base of Target	10,836'	-8,760'	-	10,838'	-8,762'	1'	-3'	-2'	-19'	-2'	-2'	-41'			
Claystone 1	10,837'	-8,761'	-	10,839'	-8,763'	-	-4'	-2'	-19'	-2'	-2'	-41'			

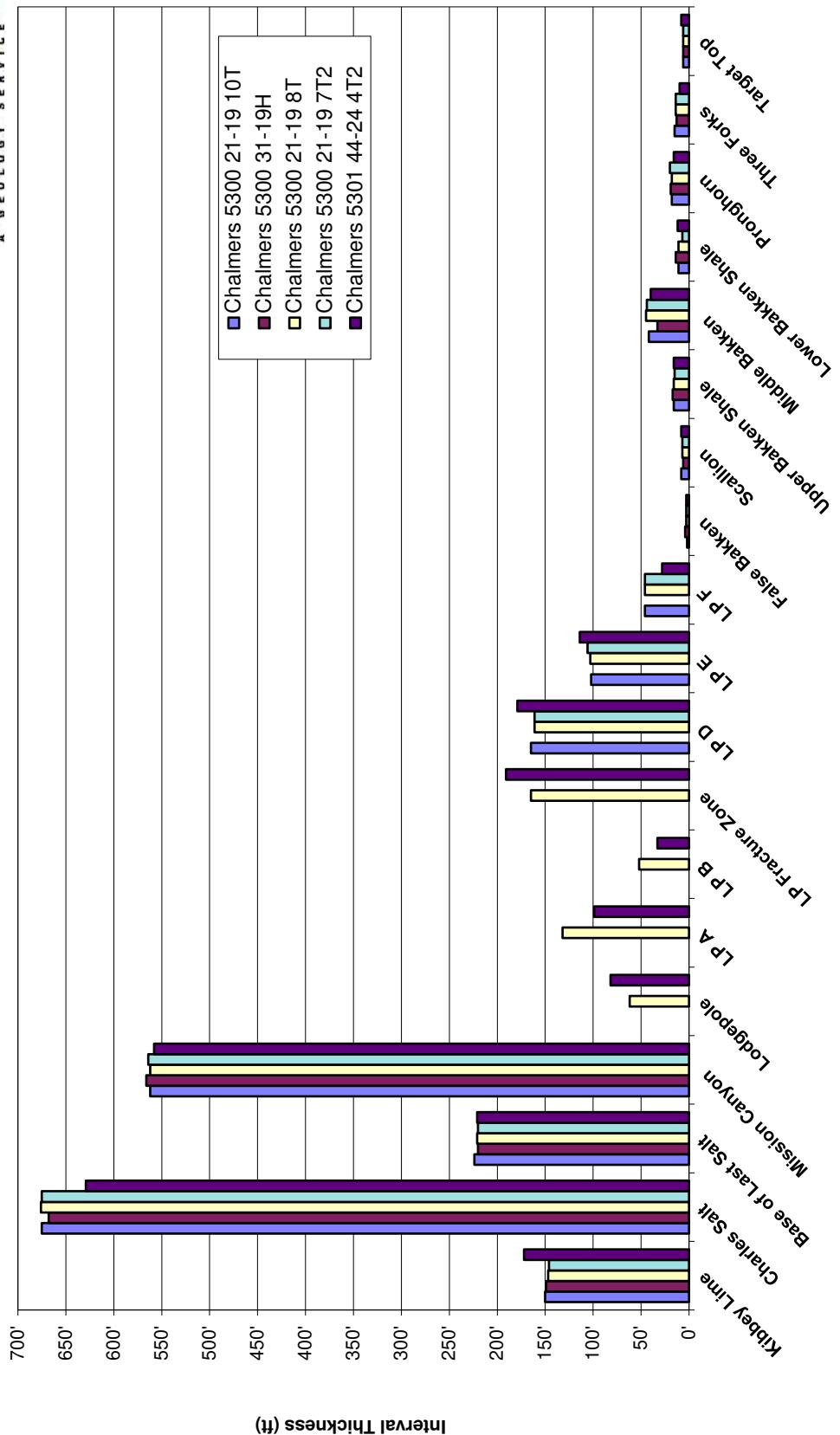
# CONTROL DATA

Operator: Well Name: Location: Elevation:		Oasis Petroleum North America, LLC <b>Chalmers 5300 31-19H</b> NW SW Sec. 19 T153N R100W McKenzie County, ND ~1/4 mile S of subject well KB: 1,929'		Oasis Petroleum North America, LLC <b>Chalmers 5300 21-19 8T</b> Lot 2, Sec. 19, T153N, R100W McKenzie County, ND Shares pad with subject well KB: 2,076'		Oasis Petroleum North America, LLC <b>Chalmers 5300 21-19 7T2</b> SE SE Sec. 24 T153N R101W McKenzie County, ND ~1/2 mile SSW of subject well KB: 1,968'												
Formation/ Zone	E-Log Top	Datum (MSL)	Interval Thickness	Thickness to Target Landing	Interval Thickness	Thickness to Target Landing	E-Log Top	Datum (MSL)	Interval Thickness	Thickness to Target Landing	TVD Top	Datum (MSL)	Interval Thickness	Thickness to Target Landing	TVD Top	Datum (MSL)	Interval Thickness	Thickness to Target Landing
Kibbey Lime	8,243'	-6,314'	149'	2,425'	8,386'	-6,310'	147'	2,447'	8,388'	-6,312'	146'	2,442'	8,266'	-6,298'	172'	2,419'		
Charles Salt	8,392'	-6,463'	668'	2,276'	8,533'	-6,457'	676'	2,300'	8,534'	-6,458'	675'	2,296'	8,438	-6,470'	629'	2,247'		
Base of Last Salt	9,050'	-7,131'	220'	1,608'	9,209'	-7,133'	221'	1,624'	9,209'	-7,133'	220'	1,621'	9,067	-7,099'	221'	1,618'		
Mission Canyon	9,250'	-7,351'	566'	1,388'	9,430'	-7,354'	562'	1,403'	9,429'	-7,353'	564'	1,401'	9,258	-7,320'	558'	1,397'		
Lodgerpole	9,846'	-7,917'	-	822'	9,992'	-7,916'	62'	841'	9,993'	-7,917'	-	837'	9,846	-7,878'	82'	839'		
LP A	-	-	-	-	10,054'	-7,978'	132'	779'	-	-	-	-	9,928	-7,960'	99'	757'		
LP B	-	-	-	-	10,186'	-8,110'	52'	647'	-	-	-	-	10,027	-8,059'	33'	658'		
LP Fracture Zone	-	-	-	-	10,238'	-8,162'	165'	595'	-	-	-	-	10,050'	-8,092'	191'	625'		
LP D	-	-	-	-	10,403'	-8,327'	161'	430'	10,401'	-8,325'	161'	429'	10,251'	-8,283'	179'	434'		
LP E	-	-	-	-	10,564'	-8,488'	103'	269'	10,562'	-8,486'	106'	268'	10,430'	-8,462'	114'	255'		
LP F	-	-	-	-	10,667'	-8,591'	46'	166'	10,668'	-8,592'	46'	162'	10,544'	-8,576'	28'	141'		
False Bakken	10,556'	-8,627'	4'	112'	10,713'	-8,637'	3'	120'	10,714'	-8,638'	3'	116'	10,572'	-8,604'	3'	113'		
Scallion	10,560'	-8,631'	6'	108'	10,716'	-8,640'	7'	117'	10,717'	-8,641'	7'	113'	10,575'	-8,607'	8'	110'		
Upper Bakken Shale	10,566'	-8,637'	17'	102'	10,723'	-8,647'	16'	110'	10,724'	-8,648'	15'	106'	10,583	-8,615'	16'	102'		
Middle Bakken	10,583'	-8,654'	33'	85'	10,739'	-8,663'	45'	94'	10,739'	-8,663'	44'	91'	10,599	-8,631'	40'	86'		
Lower Bakken Shale	10,616'	-8,687'	14'	52'	10,784'	-8,708'	11'	49'	10,783'	-8,707'	7'	47'	10,639	-8,671'	12'	46'		
Pronghorn	10,630'	-8,701'	19'	38'	10,795'	-8,719'	18'	38'	10,790'	-8,714'	20'	40'	10,651	-8,683'	16'	34'		
Three Forks	10,649'	-8,720'	13'	19'	10,813'	-8,737'	14'	20'	10,810'	-8,734'	14'	20'	10,667	-8,699'	10'	18'		
Target Top	10,662'	-8,733'	6'	6'	10,827'	-8,751'	6'	6'	10,824'	-8,748'	6'	6'	10,677	-8,709'	8'	8'		
Landing Target	10,668'	-8,739'	4'	0'	10,833'	-8,757'	3'	0'	10,830'	-8,754'	6'	0'	10,685'	-8,717'	4'	0'		
Base of Target	10,672'	-8,743'	1'	-4'	10,836'	-8,760'	1'	-3'	10,836'	-8,760'	1'	-6'	10,689'	-8,721'	1"	-4"		
Claystone 1	10,673'	-8,744'	-	-5'	10,837'	-8,761'	-	-4'	10,837'	-8,761'	-	-7'	10,690'	-8,722'	-	-5'		



# INTERVAL THICKNESS

Oasis Petroleum North America, LLC - Chalmers 5300 21-19 10T



# LANDING PROJECTION

Formation/Zone:	Proposed Target Landing From:				
	Chalmers 5300 31-19H	Chalmers 5300 21-19 8T	Chalmers 5300 21-19 T72	Chalmers 5301 44-24 4T2	Average of Offset Wells
Kibbey Lime	10,811'	10,833'	10,828'	10,805'	10,819'
Charles Salt	10,812'	10,836'	10,832'	10,783'	10,816'
Base of Last Salt	10,819'	10,835'	10,832'	10,829'	10,829'
Mission Canyon	10,823'	10,838'	10,836'	10,832'	10,832'
Lodgepole	10,819'	10,838'	10,834'	10,836'	10,832'
LP A	-	-	-	-	-
LP B	-	-	-	-	-
LP Fracture Zone	-	-	-	-	-
LP D	-	10,834'	10,833'	10,838'	10,835'
LP E	-	10,838'	10,837'	10,824'	10,833'
LP F	-	10,837'	10,833'	10,812'	10,827'
False Bakken	10,829'	10,837'	10,833'	10,830'	10,832'
Scallion	10,827'	10,836'	10,832'	10,829'	10,831'
Upper Bakken Shale	10,829'	10,837'	10,833'	10,829'	10,832'
Middle Bakken	10,828'	10,837'	10,834'	10,829'	10,832'
Lower Bakken	10,837'	10,834'	10,832'	10,831'	10,834'
Pronghorn	10,834'	10,834'	10,836'	10,830'	10,834'
Three Forks	10,833'	10,834'	10,834'	10,832'	10,833'
Target Top	10,835'	10,835'	10,835'	10,837'	10,836'
Target Landing	10,835'	10,835'	10,835'	10,835'	10,835'

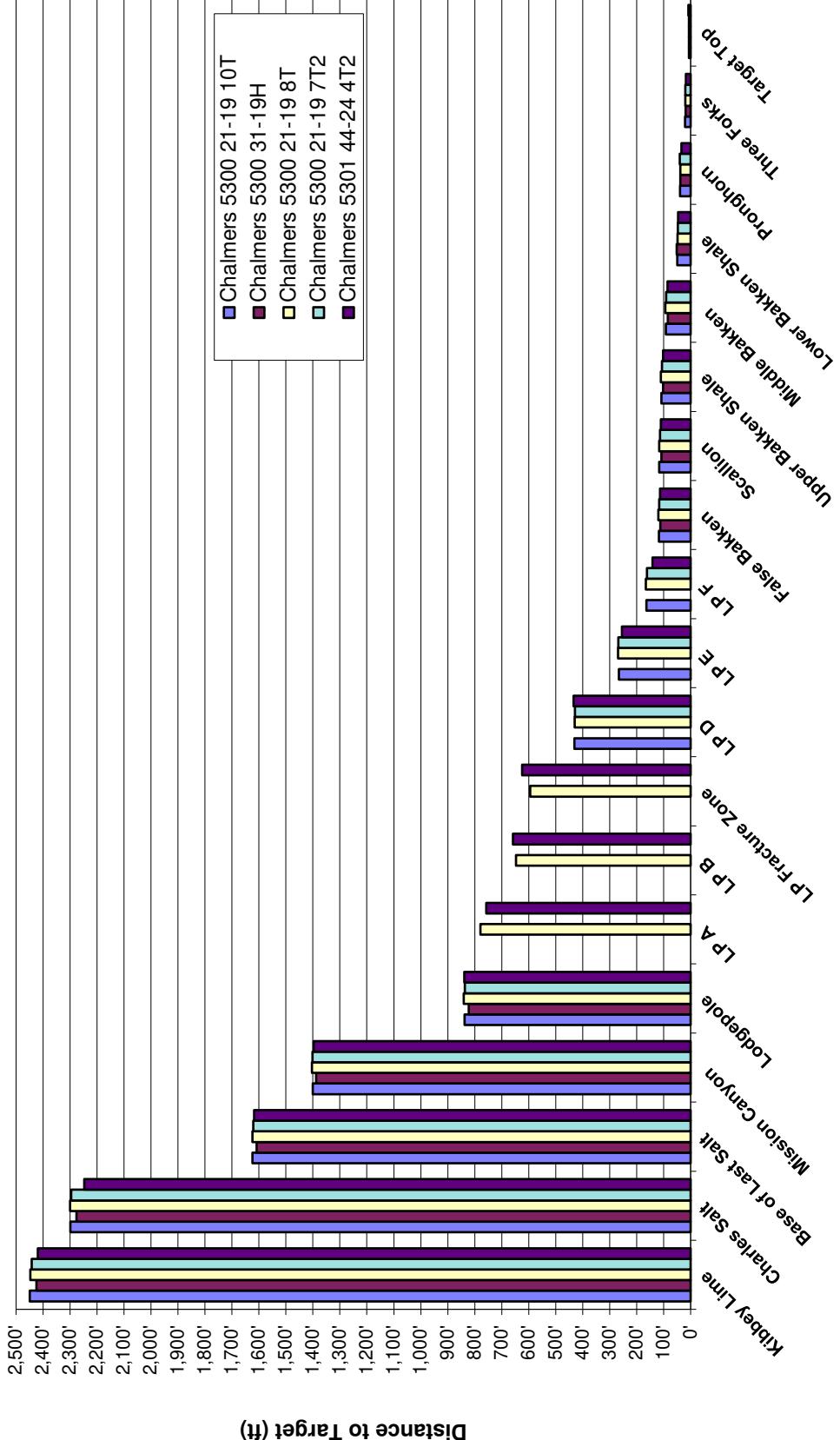
**Current Landing Target (21` into the TF / 6' below Target Top):** 10,835'

Landing targets are subject to change as new formation tops are available



# ISOPACH TO TARGET

Oasis Petroleum North America, LLC - Chalmers 5300 21-19 10T



Distance to Target (ft)

# LITHOLOGY

**Oasis Petroleum North America, LLC**  
**Chalmers 5300 21-19 10T**

*Rig crews caught 30' sample intervals, under the supervision of Sunburst geologists, from 8,240' to the TD of the lateral at 20,562'. Formation tops and lithologic markers have been inserted into the sample descriptions below for reference. Sample descriptions begin in the Kibbey Formation just prior to the Kibbey Lime. Samples were examined wet and dry under a binocular microscope. Sample fluorescent cuts are masked by invert mud through intermediate casing. Quantifiers in order of increasing abundance are trace, rare, occasional, common and abundant.*

**Vertical Log Descriptions:** **MD / TVD (MSL Datum)**

**Drilling in the Kibbey Formation [Mississippian Big Snowy Group]**

8,240-8,270 SILTSTONE: red brown, soft, sub blocky, calcareous cement, poorly cemented, no visible porosity, no visible oil stain; rare ANHYDRITE: milky pink, crystalline, soft, massive, earthy

8,270-8,300 SILTSTONE: red brown, soft, platy, calcareous cement, poorly cemented, no visible porosity, no visible oil stain; trace SILTY SANDSTONE: tan, off white, very fine grained, sub rounded, moderately sorted, calcite cement, poorly cemented

8,300-8,330 SILTSTONE: red brown, soft, platy, calcareous cement, poorly cemented, no visible porosity, no visible oil stain; trace SILTY SANDSTONE: tan, off white, very fine grained, sub rounded, moderately sorted, calcite cement, poorly cemented

8,330-8,360 SILTSTONE: red brown, soft, platy, calcareous cement, poorly cemented, no visible porosity, no visible oil stain; trace SILTY SANDSTONE: tan, very fine grained, sub rounded, moderately sorted, calcite cement, poorly cemented

**Kibbey Lime** **8,387' MD / 8,386' TVD (-6,310')**

8,360-8,390 SILTSTONE: red brown, soft, platy, calcareous cement, poorly cemented, no visible porosity, no visible oil stain; trace SILTY SANDSTONE: tan, very fine grained, sub rounded, moderately sorted, calcite cement, poorly cemented; ANHYDRITE: off white, light gray, soft, amorphous texture

8,390-8,420 LIMESTONE: mudstone, light brown, light gray-gray brown, micro crystalline, firm-hard, argillaceous in part, dense, crystalline-chalky texture, no visible porosity; rare ANHYDRITE: off white, light gray, soft, amorphous texture; trace SILTSTONE: red brown, tan, light orange, soft, sub blocky, calcite cement, poorly cemented

8,420-8,450 SILTSTONE: dark-light brown, tan, light orange, soft, sub blocky, calcite cement, poorly cement; trace SILTY SANDSTONE: tan, very fine grained, sub rounded, moderately sorted, calcite cement, poorly cemented

8,450-8,480 SILTSTONE: dark-light brown, tan, light orange, soft, sub blocky, calcite cement, poorly cement; trace SILTY SANDSTONE: tan, very fine grained, sub rounded, moderately sorted, calcite cement, poorly cemented

8,480-8,510 SILTSTONE: light brown, tan, soft, sub blocky, calcite cement, poorly cement; trace SILTY SANDSTONE: tan, off white, very fine grained, sub rounded, moderately sorted, calcite cement, poorly cemented

***Charles Formation [Mississippian Madison Group]***

***8,537' MD / 8,536' TVD (-6,460')***

8,510-8,540      SALT: clear-translucent, frosted, crystalline, firm, euhedral; trace LIMESTONE: mudstone, off white, gray, rare tan, fine crystalline, firm, laminated, crystalline-chalky texture, no visible porosity, no visible oil stain; trace SILTY SANDSTONE: as above

8,540-8,570      SALT: clear-translucent, frosted, crystalline, firm, euhedral; trace ARGILLACEOUS LIMESTONE: mudstone-wackestone, light-medium brown, tan, rare light-medium gray, rare gray tan, micro crystalline, friable, earthy

8,570-8,600      SALT: clear-translucent, frosted, crystalline, firm, euhedral

8,600-8,630      SALT: clear-translucent, frosted, crystalline, firm, euhedral

8,630-8,660      SALT: clear-translucent, frosted, crystalline, firm, euhedral; trace ARGILLACEOUS LIMESTONE: mudstone-wackestone, light-medium brown, tan, rare light-medium gray, rare gray tan, micro crystalline, friable, earthy

8,660-8,690      SALT: clear-translucent, frosted, crystalline, firm, euhedral, crystalline

8,690-8,720      ANHYDRITE: off white, soft, amorphous texture; occasional ARGILLACEOUS LIMESTONE: mudstone-wackestone, light-medium brown, tan, rare light-medium gray, rare gray tan, micro crystalline, friable, earthy

8,720-8,750      ARGILLACEOUS LIMESTONE: mudstone-wackestone, light-medium brown, tan, rare light-medium gray, rare gray tan, micro crystalline, friable, earthy; rare SALT: clear-translucent, frosted, crystalline, firm, euhedral, crystalline; trace ANHYDRITE: off white, soft, amorphous texture

8,750-8,780      LIMESTONE: mudstone, gray, off white, rare cream-tan, very fine crystalline, firm, laminated, crystalline-chalky texture, possible intercrystalline porosity, no visible oil stain; SALT: clear-translucent, frosted, crystalline, firm, euhedral, crystalline

8,780-8,810      SALT: clear-translucent, frosted, crystalline, firm, euhedral, crystalline; occasional LIMESTONE: mudstone, gray, off white, rare cream, very fine crystalline, firm, laminated, crystalline-chalky texture, possible intercrystalline porosity, no visible oil stain

8,810-8,840      LIMESTONE: mudstone, tan, cream, light brown, very fine crystalline, firm, laminated, crystalline, rare intercrystalline porosity, occasional even-spotty light-medium brown oil stain; trace DOLOMITE: medium-light brown, micro crystalline, firm, crystalline, occasional intercrystalline porosity, common medium-light brown spotty oil stain

8,840-8,870      SALT: clear-translucent, frosted, crystalline, firm, euhedral, crystalline; rare DOLOMITE: medium-light brown, micro crystalline, firm, rare intercrystalline porosity, rare medium-light brown spotty oil stain

8,870-8,900      SALT: clear-translucent, frosted, crystalline, firm, euhedral, crystalline; occasional ANHYDRITE: off white, cream, soft, microcrystalline, anhedral, earthy; rare LIMESTONE: mudstone, tan, cream, light brown, very fine crystalline, firm, laminated, crystalline, rare intercrystalline porosity, occasional spotty light-medium brown oil stain

8,900-8,930      LIMESTONE: mudstone, light brown, light gray, off white, microcrystalline, friable, laminated, earthy, trace intercrystalline porosity, rare even-spotty light-medium brown oil stain; common DOLOMITE: mudstone, light brown, light gray brown, microcrystalline, friable-firm, laminated, earthy, trace intercrystalline

porosity, occasional even-spotty light-medium brown oil stain; trace ANHYDRITE: off white, cream, soft, microcrystalline, anhedral, earthy

8,930-8,960      LIMESTONE: mudstone, light brown, light gray brown, off white, microcrystalline, friable, laminated, earthy, trace intercrystalline porosity, rare even-spotty light-medium brown oil stain; common DOLOMITE: mudstone, light brown, light gray brown, microcrystalline, friable-firm, laminated, earthy, trace intercrystalline porosity, occasional even-spotty light-medium brown oil stain; trace ANHYDRITE: off white, cream, soft, microcrystalline, anhedral, earthy

8,960-8,990      LIMESTONE: mudstone, light brown, light gray brown, off white, microcrystalline, friable, laminated, earthy, trace intercrystalline porosity, rare even-spotty light-medium brown oil stain; common DOLOMITE: mudstone, light brown, light gray brown, microcrystalline, friable-firm, laminated, earthy, trace intercrystalline porosity, occasional even-spotty light-medium brown oil stain; trace ANHYDRITE: off white, cream, soft, microcrystalline, anhedral, earthy

8,990-9,020      SALT: clear-translucent, frosted, crystalline, firm, euhedral; rare DOLOMITE: as above

9,020-9,050      DOLOMITE: mudstone, light brown, light gray brown, microcrystalline, friable-firm, laminated, earthy trace intercrystalline porosity, occasional spotty light-medium brown oil stain; occasional ANHYDRITE: off white, cream-light orange, soft, microcrystalline, anhedral, earthy; rare SALT: as above

9,050-9,080      ANHYDRITE: off white, cream, soft, microcrystalline, massive, earthy-amorphous; occasional LIMESTONE: mudstone, light brown, light gray brown, off white, microcrystalline, friable, laminated, earthy, trace intercrystalline porosity, trace spotty light-medium brown oil stain

9,080-9,110      LIMESTONE: mudstone, light brown, light gray brown, off white, microcrystalline, friable, laminated, earthy, trace intercrystalline porosity, rare spotty light brown oil stain; trace DOLOMITE: mudstone, light brown, light gray brown, microcrystalline, friable-firm, laminated, earthy, possible intercrystalline porosity, trace spotty light brown oil stain

9,110-9,140      LIMESTONE: mudstone, light brown, light gray brown, off white, microcrystalline, friable, laminated, earthy, trace intercrystalline porosity, rare spotty light brown oil stain; occasional DOLOMITE: mudstone, light brown, light gray brown, microcrystalline, friable-firm, laminated, earthy, trace intercrystalline porosity, occasional spotty light brown oil stain; rare ANHYDRITE: off white, cream, soft, microcrystalline, massive, earthy-amorphous

9,140-9,170      DOLOMITE: as above; common LIMESTONE: as above; trace SALT: clear-translucent, rarely frosted, crystalline, firm, euhedral, crystalline

9,170-9,200      SALT: clear-translucent, rarely frosted, crystalline, firm, euhedral, crystalline

**Base Last Salt /Charles Formation/**

**9,212' MD / 9,211' TVD (-7,135')**

9,200-9,230      DOLOMITE: mudstone, light brown, light gray brown, rare light gray, microcrystalline, friable-firm, laminated, earthy, trace intercrystalline porosity, rare spotty light brown oil stain; occasional SALT: as above; trace ANHYDRITE: light pink, off white, cream, soft, microcrystalline, massive, earthy-amorphous

9,230-9,260      DOLOMITE: mudstone, light brown, light gray brown, microcrystalline, friable-firm, laminated, earthy, trace intercrystalline porosity, trace spotty light-medium brown oil stain; trace ANHYDRITE: as above

9,260-9,290      LIMESTONE: mudstone, light brown-brown, light gray brown, microcrystalline, firm, earthy-crystalline texture, possible intercrystalline porosity, trace spotty light brown oil stain; rare ANHYDRITE: off white, cream, soft, microcrystalline, massive, earthy-amorphous; trace DOLOMITE: as above

9,290-9,320 LIMESTONE: mudstone, light brown-brown, gray brown, gray tan, microcrystalline, firm, earthy-crystalline texture, possible intercrystalline porosity, trace spotty light brown oil stain

9,320-9,350 LIMESTONE: mudstone, light gray, light gray brown, rare light brown, firm, earthy-crystalline texture, trace intercrystalline porosity, trace disseminated pyrite, trace spotty light brown oil stain

9,350-9,380 LIMESTONE: mudstone, gray-light gray, gray brown, rare light brown, firm-friable, earthy-crystalline texture, trace intercrystalline porosity, trace disseminated pyrite, no visible oil stain

9,380-9,410 LIMESTONE: mudstone, medium brown, light brown-tan, trace light gray brown, firm-friable, crystalline texture, trace disseminated pyrite, rare fossil fragments, trace oolites, trace vugs, occasional intercrystalline porosity and trace vuggy porosity, occasional light-medium brown spotty visible oil stain; rare ARGILLACEOUS LIMESTONE: mudstone, light gray, firm, earthy-chalky texture, no visible porosity, no visible oil stain

**Mission Canyon Formation [Mississippian Madison Group]            9,436' MD / 9,435' TVD (-7,359')**

9,410-9,440 LIMESTONE: mudstone, medium brown, light brown-tan, trace light gray brown, firm-friable, crystalline texture, trace disseminated pyrite, rare fossil fragments, trace oolites, trace vugs, occasional intercrystalline porosity and trace vuggy porosity, common light-medium brown even-spotty oil stain

9,440-9,470 LIMESTONE: mudstone, medium brown, light brown-tan, trace light gray brown, firm-friable, crystalline texture, trace disseminated pyrite, rare fossil fragments, trace oolites, trace vugs, occasional intercrystalline porosity and trace vuggy porosity, common light-medium brown even-spotty oil stain; rare ARGILLACEOUS LIMESTONE: mudstone, light gray, firm, earthy-chalky texture, no visible porosity, no visible oil stain

9,470-9,500 LIMESTONE: mudstone-wackestone, light gray, light brown, gray brown, trace dark gray, firm-friable, earthy, rare crystalline texture, trace disseminated pyrite, trace fossil fragments, trace spotty light brown oil stain

9,500-9,530 LIMESTONE: mudstone-wackestone, light brown-dark brown, trace gray-tan gray, firm, earthy-crystalline texture, trace disseminated pyrite, trace fossil fragments, occasional intercrystalline porosity, common even dark-medium brown oil stain, rare spotty brown oil stain; trace ARGILLACEOUS LIMESTONE: as above

9,530-9,560 LIMESTONE: mudstone-wackestone, light brown-dark brown, trace gray-tan gray, firm, earthy-crystalline texture, trace disseminated pyrite, trace fossil fragments, occasional intercrystalline porosity, common even dark-medium brown oil stain, rare spotty brown oil stain; trace ARGILLACEOUS LIMESTONE: as above

9,560-9,590 LIMESTONE: mudstone, light gray, light brown, gray brown, trace dark gray, firm-friable, earthy, rarely crystalline texture, trace disseminated pyrite, trace fossil fragments, trace spotty light brown oil stain

9,590-9,620 ARGILLACEOUS LIMESTONE: mudstone, light gray, occasional medium gray, rare gray tan, rare off white, trace dark gray, firm-friable, crystalline-chalky texture, trace disseminated pyrite, trace fossil fragments, trace light brown spotty oil stain

9,620-9,650 LIMESTONE: mudstone, light gray, light brown, gray brown, trace dark gray, firm-friable, earthy, rarely crystalline texture, trace disseminated pyrite, trace fossil fragments, trace spotty light brown oil stain; trace ARGILLACEOUS LIMESTONE: as above

9,650-9,680 LIMESTONE: mudstone, light gray, light brown, gray brown, trace dark gray, firm-friable, earthy, rarely crystalline texture, trace disseminated pyrite, trace fossil fragments, trace spotty light brown oil stain

9,680-9,710 LIMESTONE: mudstone, gray-brown, trace dark gray, firm-friable, earthy, rarely crystalline texture, trace disseminated pyrite, trace fossil fragments, trace spotty light brown oil stain; trace ARGILLACEOUS LIMESTONE: as above

9,710-9,740 LIMESTONE: mudstone, light gray-brown, trace dark gray, firm-friable, earthy, rarely crystalline texture, trace disseminated pyrite, trace fossil fragments, trace spotty light brown oil stain; trace ARGILLACEOUS LIMESTONE: as above

9,740-9,770 LIMESTONE: mudstone, light gray-brown, trace dark gray, firm-friable, earthy, rarely crystalline texture, trace disseminated pyrite, trace fossil fragments, trace intercrystalline porosity, trace spotty light brown oil stain; common ARGILLACEOUS LIMESTONE: mudstone, tan, light gray, firm, earthy-chalky texture, no visible porosity, no visible oil stain

9,770-9,800 LIMESTONE: mudstone, light gray-brown, trace dark gray, firm-friable, earthy, rarely crystalline texture, trace disseminated pyrite, trace fossil fragments, trace intercrystalline porosity, trace spotty light brown oil stain

9,800-9,830 LIMESTONE: mudstone, cream, tan, gray, microcrystalline, friable-firm, dense, massive, trace laminated, occasional Algal laminated, earthy, trace calcite, trace pyrite, trace intercrystalline porosity, trace spotty oil stain; trace DOLOMITE: light brown gray, off white, microcrystalline, fine crystalline, rare intercrystalline porosity, argillaceous in part, trace light brown spotty oil stain

9,830-9,860 LIMESTONE: mudstone, light gray-brown, trace dark gray, firm-friable, earthy, rarely crystalline texture, trace disseminated pyrite, trace fossil fragments, trace intercrystalline porosity, trace spotty light brown oil stain; trace DOLOMITE: light brown gray, off white, microcrystalline, fine crystalline, rare intercrystalline porosity, argillaceous in part, trace light brown spotty oil stain

9,860-9,890 LIMESTONE: mudstone, light gray-brown, trace dark gray, firm-friable, earthy, rarely crystalline texture, trace disseminated pyrite, trace fossil fragments, rare intercrystalline porosity, trace spotty light brown oil stain

9,890-9,920 ARGILLACEOUS LIMESTONE: mudstone, light gray, occasional medium gray, rare gray tan, rare off white, trace dark gray, firm-friable, crystalline-chalky texture, trace disseminated pyrite, no visible porosity, no visible oil stain; LIMESTONE: mudstone, light-gray, rare off white, trace dark gray, trace brown, friable-firm, dense, earthy, possible intercrystalline porosity, trace light brown spotty oil stain

9,920-9,950 LIMESTONE: mudstone, light-gray, rare off white, trace brown, friable-firm, dense, earthy, trace spotty light brown oil stain

9,950-9,980 LIMESTONE: mudstone, light gray-brown, trace dark gray, firm-friable, earthy, rarely crystalline texture, trace disseminated pyrite, trace fossil fragments

**Lodgepole /Mississippian Madison Group**

**9,998' MD / 9,997' TVD (-7,921')**

9,980-10,010 LIMESTONE: mudstone, light gray-brown, trace dark gray, firm-friable, earthy, rarely crystalline texture, trace disseminated pyrite, trace fossil fragments, no visible porosity, no visible oil stain; rare ARGILLACEOUS LIMESTONE: mudstone, light gray, occasional medium gray, rare gray tan, rare off white, trace dark gray, firm-friable, crystalline-chalky texture, trace disseminated pyrite, no visible porosity, no visible oil stain

10,010-10,040 ARGILLACEOUS LIMESTONE: mudstone, light gray, light brown gray, trace medium-dark gray, firm, earthy, trace disseminated pyrite, no visible porosity, no visible oil stain

10,040-10,070 LIMESTONE: mudstone, light gray-gray, gray brown, trace light brown, firm, earthy, rare crystalline texture, trace disseminated pyrite, no visible porosity, no visible oil stain

10,070-10,100 ARGILLACEOUS LIMESTONE: mudstone, light gray-gray, rare gray brown, trace light brown, firm, earthy texture, rare disseminated pyrite, no visible porosity, no visible oil stain

10,100-10,130 ARGILLACEOUS LIMESTONE: mudstone, light gray, light brown gray, trace medium-dark gray, firm, earthy, trace disseminated pyrite, no visible porosity, no visible oil stain

10,130-10,160 ARGILLACEOUS LIMESTONE: mudstone, light gray, light brown gray, trace medium-dark gray, firm, earthy, trace disseminated pyrite, no visible porosity, no visible oil stain

10,160-10,190 ARGILLACEOUS LIMESTONE: mudstone, gray tan, light gray-gray, gray brown, trace light brown, firm, earthy, trace crystalline texture, rare disseminated pyrite, no visible porosity, no visible oil stain

10,190-10,220 ARGILLACEOUS LIMESTONE: mudstone, light gray-gray, gray brown, trace light brown, firm, earthy texture, trace disseminated pyrite, no visible porosity, no visible oil stain

10,220-10,250 ARGILLACEOUS LIMESTONE: mudstone, light gray-gray, gray brown, trace light brown, firm, earthy texture, trace disseminated pyrite, no visible porosity, no visible oil stain

10,250-10,280 ARGILLACEOUS LIMESTONE: mudstone, light gray, gray tan, rare medium-dark gray, firm, earthy texture, rare disseminated pyrite, no visible porosity, no visible oil stain

10,280-10,310 ARGILLACEOUS LIMESTONE: mudstone, light gray, gray tan, rare medium-dark gray, firm, earthy texture, rare disseminated pyrite, no visible porosity, no visible oil stain

10,310-10,335 ARGILLACEOUS LIMESTONE: mudstone, light gray, gray tan, rare medium-dark gray, firm, earthy texture, rare disseminated pyrite, no visible porosity, no visible oil stain

10,335-10,370 ARGILLACEOUS LIMESTONE: mudstone, light gray-gray, gray brown, trace light brown, firm-friable, earthy, rarely crystalline texture, trace disseminated pyrite, no visible porosity, no visible oil stain

10,370-10,400 ARGILLACEOUS LIMESTONE: mudstone, light gray-gray, gray brown, trace light brown, firm-friable, earthy, rarely crystalline texture, trace disseminated pyrite, no visible porosity, no visible oil stain

10,400-10,430 ARGILLACEOUS LIMESTONE: mudstone, light gray-gray, gray brown, trace light brown, firm-friable, earthy, rarely crystalline texture, trace disseminated pyrite, no visible porosity, no visible oil stain

10,430-10,460 ARGILLACEOUS LIMESTONE: mudstone, light gray-gray, gray brown, trace light brown, firm-friable, earthy, rarely crystalline texture, trace disseminated pyrite, no visible porosity, no visible oil stain

10,460-10,490 ARGILLACEOUS LIMESTONE: mudstone, light gray-gray, rare gray brown, firm, earthy, rarely crystalline texture, occasional disseminated pyrite, no visible porosity, no visible oil stain

10,490-10,520 ARGILLACEOUS LIMESTONE: mudstone, light gray-gray, rare gray brown, firm, earthy, rarely crystalline texture, occasional disseminated pyrite, no visible porosity, no visible oil stain

10,520-10,550 ARGILLACEOUS LIMESTONE: mudstone, light gray-gray, rare gray brown, firm, earthy, rarely crystalline texture, occasional disseminated pyrite, no visible porosity, no visible oil stain

10,550-10,580 ARGILLACEOUS LIMESTONE: mudstone, light gray-gray, rare gray brown, firm, earthy, rarely crystalline texture, occasional disseminated pyrite, no visible porosity, no visible oil stain

10,580-10,610 ARGILLACEOUS LIMESTONE: mudstone, light gray-medium gray, rare gray brown-light brown, firm, earthy, rarely crystalline texture, occasional disseminated pyrite, no visible porosity, no visible oil stain

10,610-10,640 ARGILLACEOUS LIMESTONE: mudstone, light gray-medium gray, rare gray brown-light brown, firm, earthy, rarely crystalline texture, occasional disseminated pyrite, no visible porosity, no visible oil stain

10,640-10,670 ARGILLACEOUS LIMESTONE: mudstone, light gray-medium gray, rare gray brown-light brown, firm, earthy, rarely crystalline texture, occasional disseminated pyrite, no visible porosity, no visible oil stain

10,670-10,700 ARGILLACEOUS LIMESTONE: mudstone, light gray-medium gray, rare gray brown-light brown, firm, earthy, rarely crystalline texture, occasional disseminated pyrite, no visible porosity, no visible oil stain

10,700-10,730 ARGILLACEOUS LIMESTONE: mudstone, light gray-medium gray, rare gray brown-light brown, firm, earthy, rarely crystalline texture, occasional disseminated pyrite, no visible porosity, no visible oil stain

10,730-10,760 ARGILLACEOUS LIMESTONE: mudstone, light gray-medium gray, rare gray brown-light brown, firm, earthy, rarely crystalline texture, occasional disseminated pyrite, no visible porosity, no visible oil stain

**False Bakken Member [Mississippian Madison Group]** **10,764' MD / 10,717' TVD (-8,641')**

10,760-10,790 SHALE: black, black gray, hard, sub blocky-sub platy, earthy, pyritic, carbonaceous, fracture porosity, black oil stain

**Scallion [Mississippian Madison Group]** **10,767' MD / 10,719' TVD (-8,643')**

10,760-10,790 SHALE: black, black gray, hard, sub blocky-sub platy, earthy, pyritic, carbonaceous, fracture porosity, black oil stain

**Upper Bakken Shale [Bakken Formation]** **10,777' MD / 10,727' TVD (-8,651')**

10,760-10,790 SHALE: black, black gray, hard, sub blocky-sub platy, earthy, pyritic, carbonaceous, fracture porosity, black oil stain

**Middle Bakken Member [Bakken Formation]** **10,803' MD / 10,743' TVD (-8,667')**

10,790-10,820 SILTY SANDSTONE: light gray brown, light gray, rare light brown, very fine grained, firm, sub rounded, smooth, moderately sorted, calcite cement, moderately cement, trace disseminated, nodular pyrite, fair intercrystalline porosity, trace light brown spotty oil stain

10,820-18,850 SILTY SANDSTONE: light gray brown, light gray, rare light brown, very fine grained, firm, sub rounded, smooth, moderately sorted, calcite cement, moderately cement, trace disseminated, nodular pyrite, fair intercrystalline porosity, trace light brown spotty oil stain

10,850-10,880 SILTY SANDSTONE: light gray brown, light brown, trace light gray, very fine grained, friable sub rounded, smooth, moderately sorted, calcite cement moderately cemented, trace disseminated and nodular pyrite, fair intercrystalline porosity, occasional light brown spotty oil stain

**Lower Bakken Shale /Bakken Formation]****10,880' MD / 10,785' TVD (-8,709')**

10,880-10,910 SHALE: black, black gray, hard, splintery, smooth, pyritic, carbonaceous, fracture porosity; trace SILTY SANDSTONE: light gray brown, light brown, trace light gray, very fine grained, friable sub rounded, smooth, moderately sorted, calcite cement moderately cemented, trace disseminated and nodular pyrite, fair intercrystalline porosity, occasional light brown spotty oil stain

**Pronghorn /Bakken Formation]****10,906' MD / 10,796' TVD (-8,720')**

10,910-10,940 SILTSTONE: dark gray, trace gray black, friable-firm, sub blocky-sub splintery, moderately dolomite cemented, trace disseminated and nodular pyrite, trace spotty light brown oil stain

**Three Forks First Bench /Three Forks Formation]****10,956' MD / 10,814' TVD (-8,738')**

10,940-10,970 SILTSTONE: dark gray, trace gray black, friable-firm, sub blocky-sub splintery, moderately dolomite cemented, trace disseminated and nodular pyrite, trace spotty light brown oil stain; common DOLOMITE: mudstone, light brown-gray, tan-cream, trace pink, firm, laminated, micro sucrosic, rare disseminated pyrite, possible intercrystalline porosity, trace light brown spotty oil stain

10,970-11,000 DOLOMITE: mudstone, light brown-light brown gray, tan-cream, trace pink, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, trace light brown spotty oil stain; rare SHALE: light green-light gray green, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain

11,000-11,030 DOLOMITE: mudstone, light brown-light brown gray, tan-cream, trace pink, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, trace light brown spotty oil stain; rare SHALE: light green-light gray green, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain

11,030-11,060 DOLOMITE: mudstone, light brown-light brown gray, tan-cream, trace pink, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, trace light brown spotty oil stain; rare SHALE: light green-light gray green, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain

11,060-11,090 DOLOMITE: mudstone, light brown-light brown gray, tan-cream, trace pink, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, trace light brown spotty oil stain; rare SHALE: light green-light gray green, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain

11,090-11,120 DOLOMITE: mudstone, light brown-light brown gray, tan-cream, trace pink, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, trace light brown spotty oil stain; rare SHALE: light green-light gray green, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain

11,120-11,150 DOLOMITE: mudstone, light brown-light brown gray, tan-cream, trace pink, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, trace light brown spotty oil stain; rare SHALE: as above

11,150-11,180 DOLOMITE: mudstone, light brown gray, tan-cream, trace pink, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, trace light brown spotty oil stain; rare SHALE: light green-light gray green, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain

11,180-11,210 DOLOMITE: mudstone, light brown gray, tan-cream, trace pink, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, trace light brown spotty oil stain; rare SHALE: light green-light gray green, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain

11,210-11,240 DOLOMITE: mudstone, light brown gray, tan-cream, trace pink, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, trace light brown spotty oil stain; rare SHALE: light green-light gray green, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain

11,240-11,270 DOLOMITE: mudstone, light brown gray, tan-cream, trace pink, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, trace light brown spotty oil stain; rare SHALE: light green-light gray green, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain

11,270-11,300 DOLOMITE: mudstone, light brown gray, tan-cream, trace pink, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, trace light brown spotty oil stain; rare SHALE: light green-light gray green, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain

11,300-11,330 DOLOMITE: mudstone, light brown gray, tan-cream, trace pink, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, trace light brown spotty oil stain; rare SHALE: light green-light gray green, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain

11,330-11,360 DOLOMITE: mudstone, light brown gray, tan-cream, trace pink, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, trace light brown spotty oil stain; rare SHALE: light green-light gray green, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain

11,360-11,390 DOLOMITE: mudstone, light brown gray, tan-cream, trace pink, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, trace light brown spotty oil stain; rare SHALE: light green-light gray green, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain

11,390-11,420 DOLOMITE: mudstone, light brown gray, tan-cream, rare peach, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, trace light brown spotty oil stain; occasional SHALE: light green-light gray green, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain

11,420-11,450 DOLOMITE: mudstone, light brown gray, tan-cream, rare peach, firm, laminated, micro siccose, rare disseminated pyrite, occasional intercrystalline porosity, trace light brown spotty oil stain; occasional SHALE: light green-light gray green, firm, sub blocky, earthy, rare disseminated pyrite, possible intergranular porosity, no visible oil stain

11,450-11,480 DOLOMITE: mudstone, light brown, common peach, rare tan-cream, firm, laminated, micro-sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, rare light brown spotty oil stain; occasional SHALE: light green-light gray green, firm, sub-blocky, earthy, rare disseminated pyrite, possible intergranular porosity, no visible oil stain

11,480-11,510 DOLOMITE: mudstone, light brown, common peach, rare tan-cream, firm, laminated, micro-sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, rare light brown spotty oil stain; occasional SHALE: light green-light gray green, firm, sub-blocky, earthy, rare disseminated pyrite, possible intergranular porosity, no visible oil stain





12,170-12,200 DOLOMITE: mudstone, light gray, common light brown, occasional peach, trace tan-cream, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, rare light brown spotty oil stain; occasional SHALE: light green-light gray green, rare light gray, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain

12,200-12,230 DOLOMITE: mudstone, light gray, common tan cream, occasional peach, firm, laminated, micro-sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, rare light brown spotty oil stain; rare SHALE: light green-light gray green, rare light gray, firm, sub-blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain

12,230-12,260 DOLOMITE: mudstone, light gray, common tan cream, occasional peach, firm, laminated, micro-sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, rare light brown spotty oil stain; rare SHALE: light green-light gray green, rare light gray, firm, sub-blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain

12,260-12,290 DOLOMITE: mudstone, light gray brown, common tan cream, occasional peach, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, rare light brown spotty oil stain; rare SHALE: light green-light gray green, rare light gray, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain

12,290-12,320 DOLOMITE: mudstone, light gray brown, common tan cream, occasional peach, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, rare light brown spotty oil stain; rare SHALE: light green-light gray green, rare light gray, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain

12,320-12,350 DOLOMITE: mudstone, light gray brown, common tan cream, occasional peach, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, rare light brown spotty oil stain; occasional SHALE: light green-light gray green, rare light gray, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain

12,350-12,380 DOLOMITE: mudstone, light gray brown, common tan cream, occasional peach, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, rare light brown spotty oil stain; occasional SHALE: light green-light gray green, rare light gray, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain

12,380-12,410 DOLOMITE: mudstone, tan-cream, rare peach, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, rare light brown spotty oil stain; rare SHALE: light green-light gray green, rare light gray, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain

12,410-12,440 DOLOMITE: mudstone, tan-cream, rare peach, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, rare light brown spotty oil stain; rare SHALE: light green-light gray green, rare light gray, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain

12,440-12,470 DOLOMITE: mudstone, light gray brown, occasional peach, rare tan-cream, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, rare light brown spotty oil stain; rare SHALE: light green-light gray green, rare light gray, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain

12,470-12,500 DOLOMITE: mudstone, light gray brown, occasional peach, rare tan-cream, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, rare light brown spotty oil stain; rare SHALE: light green-light gray green, rare light gray, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain

12,500-12,530 DOLOMITE: mudstone, light orange brown, occasional peach, rare tan-cream, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, rare light brown spotty oil stain; rare SHALE: light green-light gray green, rare light gray, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain

12,530-12,560 DOLOMITE: mudstone, light orange brown, occasional peach, rare tan-cream, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, rare light brown spotty oil stain; rare SHALE: light green-light gray green, rare light gray, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain

12,560-12,590 DOLOMITE: mudstone, light gray brown, occasional peach, rare tan-cream, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, rare light brown spotty oil stain; rare SHALE: light green-light gray green, rare light gray, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain

12,590-12,620 DOLOMITE: mudstone, light gray brown, occasional peach, rare tan-cream, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, rare light brown spotty oil stain; rare SHALE: light green-light gray green, rare light gray, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain

12,620-12,650 DOLOMITE: mudstone, white-cream, occasional peach, rare light brown gray, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, rare light brown spotty oil stain; rare SHALE: light green-light gray green, rare light gray, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain

12,650-12,680 DOLOMITE: mudstone, white-cream, occasional peach, rare light brown gray, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, rare light brown spotty oil stain; rare SHALE: light green-light gray green, rare light gray, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain

12,680-12,710 DOLOMITE: mudstone, tan-cream, occasional peach, rare light brown gray, trace white, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, rare light brown spotty oil stain; rare SHALE: light green-light gray green, rare light gray, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain

12,710-12,740 DOLOMITE: mudstone, tan-cream, occasional peach, rare light brown gray, trace white, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, rare light brown spotty oil stain; rare SHALE: light green-light gray green, rare light gray, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain

12,740-12,770 DOLOMITE: mudstone, tan-cream, rare light brown gray, trace white, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, rare light brown spotty oil stain; rare SHALE: light green-light gray green, rare light gray, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain

12,770-12,800 DOLOMITE: mudstone, light brown, tan, trace pink, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, common spotty-rare even light brown oil stain; rare SHALE: light green-light gray green, mint green, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain

12,800-12,830 DOLOMITE: mudstone, light brown, tan, trace pink, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, common spotty-rare even light brown oil stain; rare SHALE: light green-light gray green, mint green, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain

















15,470-15,500 CLAYSTONE: light gray, common gray brown, trace off white-white, firm, sub blocky, earthy, common disseminated pyrite, no visible porosity, no visible oil stain

15,500-15,530 CLAYSTONE: light gray, common gray brown, trace off white-white, firm, sub blocky, earthy, common disseminated pyrite, no visible porosity, no visible oil stain

15,530-15,560 CLAYSTONE: light gray, common gray brown, trace off white-white, firm, sub blocky, earthy, common disseminated pyrite, no visible porosity, no visible oil stain

15,560-15,590 DOLOMITE: mudstone, light gray brown, occasional tan cream, occasional peach, rare off white, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, rare light brown spotty oil stain; rare SHALE: light green-light gray green, rare light gray, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain; pale yellow streaming cut

15,590-15,620 DOLOMITE: mudstone, light gray brown, occasional tan cream, occasional peach, rare off white, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, rare light brown spotty oil stain; rare SHALE: light green-light gray green, rare light gray, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain; pale yellow streaming cut

15,620-15,650 DOLOMITE: mudstone, light gray brown, occasional tan cream, occasional peach, rare off white, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, rare light brown spotty oil stain; rare SHALE: light green-light gray green, rare light gray, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain; pale yellow streaming cut

15,650-15,680 DOLOMITE: mudstone, tan-cream, occasional peach, rare light brown gray, trace white, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, rare light brown spotty oil stain; rare SHALE: light green-light gray green, rare light gray, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain; pale yellow streaming cut

15,680-15,710 DOLOMITE: mudstone, tan-cream, occasional peach, rare light brown gray, trace white, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, rare light brown spotty oil stain; rare SHALE: light green-light gray green, rare light gray, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain; pale yellow streaming cut

15,710-15,740 DOLOMITE: mudstone, tan-cream, occasional peach, rare light brown gray, trace white, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, rare light brown spotty oil stain; rare SHALE: light green-light gray green, rare light gray, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain; pale yellow streaming cut

15,740-15,770 DOLOMITE: mudstone, tan-cream, occasional peach, rare light brown gray, trace white, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, rare light brown spotty oil stain; rare SHALE: light green-light gray green, rare light gray, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain; pale yellow streaming cut

15,770-15,800 DOLOMITE: mudstone, tan-cream, occasional peach, rare light brown gray, trace white, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, rare light brown spotty oil stain; rare SHALE: light green-light gray green, rare light gray, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain; pale yellow streaming cut

15,800-15,830 DOLOMITE: mudstone, tan-cream, occasional peach, rare light brown gray, trace white, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, rare light brown spotty oil stain; rare SHALE: light green-light gray green, rare light gray, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain; pale yellow streaming cut





























20,450-20,480 DOLOMITE: mudstone, light gray, light brown-light brown gray, rare cream, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, rare light brown spotty oil stain; rare SHALE: light green-light gray green, rare light gray, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain; pale yellow streaming cut fluorescence

20,480-20,510 DOLOMITE: mudstone, light gray, light brown-light brown gray, rare cream, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, rare light brown spotty oil stain; rare SHALE: light green-light gray green, rare light gray, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain; pale yellow streaming cut fluorescence

20,510-20,540 DOLOMITE: mudstone, light gray, light brown-light brown gray, rare cream, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, rare light brown spotty oil stain; rare SHALE: light green-light gray green, rare light gray, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain; pale yellow streaming cut fluorescence

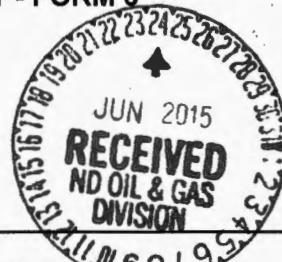
20,540-20,562 DOLOMITE: mudstone, light gray, light brown-light brown gray, rare cream, firm, laminated, micro sucrosic, rare disseminated pyrite, occasional intercrystalline porosity, rare light brown spotty oil stain; rare SHALE: light green-light gray green, rare light gray, firm, sub blocky, earthy, occasional disseminated pyrite, possible intergranular porosity, no visible oil stain; pale yellow streaming cut fluorescence



**WELL COMPLETION OR RECOMPLETION REPORT - FORM 6**

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

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



**Well File No.**

Designate Type of Completion							
<input checked="" type="checkbox"/> Oil Well	<input type="checkbox"/> EOR Well	<input type="checkbox"/> Recompletion	<input type="checkbox"/> Deepened Well	<input type="checkbox"/> Added Horizontal Leg	<input type="checkbox"/> Extended Horizontal Leg		
<input type="checkbox"/> Gas Well	<input type="checkbox"/> SWD Well	<input type="checkbox"/> Water Supply Well	<input type="checkbox"/> Other:				
Well Name and Number <b>Chalmers 5300 21-19 10T</b>				Spacing Unit Description <b>Sec. 19/20 T153N R100W</b>			
Operator <b>Oasis Petroleum North America LLC</b>		Telephone Number <b>(281) 404-9591</b>		Field <b>Baker</b>			
Address <b>1001 Fannin, Suite 1500</b>				Pool <b>Bakken</b>			
City <b>Houston</b>	State <b>TX</b>	Zip Code <b>77002</b>	Permit Type				
<input type="checkbox"/> Wildcat					<input checked="" type="checkbox"/> Development	<input type="checkbox"/> Extension	

### **LOCATION OF WELL**

At Surface 2292 F N L	326 F WL	Qtr-Qtr LOT2	Section 19	Township 153 N	Range 100 W	County McKenzie
Spud Date <u>December 4, 2015</u>	Date TD Reached <u>February 19, 2015</u>	Drilling Contractor and Rig Number <b>Nabors B22</b>		KB Elevation (Ft) <b>2076</b>	Graded Elevation (Ft) <b>2051</b>	

Type of Electric and Other Logs Run (See Instructions)

MWD/GR from KOP to TD; CBL from int. TD to surface

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

#### **PERFORATION & OPEN HOLE INTERVALS**

## **PRODUCTION**

Current Producing Open Hole or Perforated Interval(s), This Completion, Top and Bottom, (MD Ft) <b>Lateral 1- 11118' to 20558'</b>								Name of Zone (If Different from Pool Name)	
Date Well Completed (SEE INSTRUCTIONS) <b>May 16, 2015</b>			Producing Method <b>Flowing</b>		Pumping-Size & Type of Pump			Well Status (Producing or Shut-In) <b>Producing</b>	
Date of Test <b>05/16/2015</b>	Hours Tested <b>24</b>	Choke Size <b>56 /64</b>	Production for Test		Oil (Bbls) <b>1819</b>	Gas (MCF) <b>1546</b>	Water (Bbls) <b>3375</b>	Oil Gravity-API (Corr.) °	Disposition of Gas <b>Sold</b>
Flowing Tubing Pressure (PSI)		Flowing Casing Pressure (PSI) <b>1000</b>		Calculated 24-Hour Rate	Oil (Bbls) <b>1819</b>	Gas (MCF) <b>1546</b>	Water (Bbls) <b>3375</b>	Gas-Oil Ratio <b>850</b>	

## **GEOLOGICAL MARKERS**

#### **PLUG BACK INFORMATION**

CORES CUT

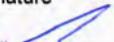
Top (Ft)	Bottom (Ft)	Formation	Top (Ft)	Bottom (Ft)	Formation

Drill Stem Test

**Well Specific Stabilizations**

Date Stimulated <b>04/08/2015</b>	Stimulated Formation <b>Three Forks</b>		Top (Ft) <b>11118</b>	Bottom (Ft) <b>20558</b>	Stimulation Stages <b>36</b>	Volume <b>214367</b>	Volume Units <b>Barrels</b>
Type Treatment <b>Sand Frac</b>	Acid %	Lbs Proppant <b>3828642</b>	Maximum Treatment Pressure (PSI) <b>9063</b>			Maximum Treatment Rate (BBLS/Min) <b>75.0</b>	
Details <b>100 Mesh White: 265265</b> <b>40/70 Ceramic: 1428560</b> <b>30/50 Ceramic: 2134817</b>							
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 <b>jswenson@oasispetroleum.com</b>	Date <b>06/23/2015</b>
Signature 	Printed Name <b>Jennifer Swenson</b>	Title <b>Regulatory Specialist</b>

## Industrial Commission of North Dakota

Well or Facility No

## Oil and Gas Division

**28637**

## Verbal Approval To Purchase and Transport Oil

Tight Hole Yes

**OPERATOR**

Operator <b>OASIS PETROLEUM NORTH AMERICA LL</b>	Representative <b>Todd Hanson</b>	Rep Phone <b>(701) 577-1632</b>
---	--------------------------------------	------------------------------------

**WELL INFORMATION**

Well Name <b>CHALMERS 5300 21-19 10T</b>	Inspector <b>Richard Dunn</b>
Well Location QQ Sec Twp Rng <b>LOT2 19 153 N 100 W</b>	County <b>MCKENZIE</b>
Footages 2292 Feet From the N Line	Field <b>BAKER</b>
327 Feet From the W Line	Pool <b>BAKKEN</b>
Date of First Production Through Permanent Wellhead	<b>5/13/2015 This Is Not The First Sales</b>

**PURCHASER / TRANSPORTER**

Purchaser <b>OASIS PETROLEUM MARKETING LLC</b>	Transporter <b>HOFMANN TRUCKING, LLC</b>
---	---

**TANK BATTERY**

Central Tank Battery Number : 228633-01
---

**SALES INFORMATION This Is Not The First Sales**

ESTIMATED BARRELS TO BE SOLD		ACTUAL BARRELS SOLD		DATE
15000	BBLS	232	BBLS	5/14/2015
	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	<b>5/13/2015</b>
Date Approved	<b>6/17/2015</b>
Approved By	<b>Richard Dunn</b>



# 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.  
**28637**



PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.

PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

<input checked="" type="checkbox"/> Notice of Intent	Approximate Start Date <b>March 31, 2015</b>	<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	<b>Change well status to CONFIDENTIAL</b>

Well Name and Number  
**Chalmers 5300 21-19 10T**

Footages <b>2292 F N L</b>	<b>327</b>	Qtr-Qtr <b>LOT2</b>	Section <b>19</b>	Township <b>153 N</b>	Range <b>100 W</b>
Field <b>Baker</b>	Pool <b>BAKKEN</b>	County <b>McKenzie</b>			

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

**This well has not been completed.**

*OFF CONFIDENTIAL 10/01/15.*

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

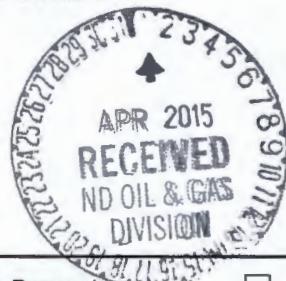
<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date <b>4/08/15</b>	
By 	
Title <b>Engineering Technician</b>	



# 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.  
**28637**



PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.

PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

<input checked="" type="checkbox"/> Notice of Intent	Approximate Start Date <b>March 31, 2015</b>	<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	<b>Waiver from tubing/packer requirement</b>

Well Name and Number

**Chalmers 5300 21-19 10T**

Footages	327	Qtr-Qtr	Section	Township	Range
2292 F N L	326 F W L	LOT2	19	153 N	100 W
Field <b>Baker</b>	Pool <b>Bakken</b>		County <b>McKenzie</b>		

## 24-HOUR PRODUCTION RATE

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

## FOR STATE USE ONLY

<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date <i>Apr 14, 2015</i>	
By <i>JGM/ah</i>	
Title <b>PETROLEUM ENGINEER</b>	



## Directional Survey Certification

**Operator:** Oasis Petroleum LLC    **Well Name:** Chalmers 5300 21-19 10B    **API:** 33-053-06022

**Enseco Job#:** S14009-02    **Job Type:** MWD D&I    **County, State:** McKenzie County, N. Dakota

**Well Surface Hole Location (SHL):** Lot 2 , Sec. 19, T1153N, R100W (2,292' FNL & 326 FWL)

**Latitude:** 48° 03' 40.65 N    **Longitude:** 103° 36' 10.11 W    **Datum:** Nad 83

**Final MWD Report Date:** Dec. 05, 2014    **MWD Survey Run Date:** Dec. 03, 2014 to Dec. 05, 2014

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

**MWD Surveyed from** 00 ft **to** 2,150.0 ft **MD**    **Survey Type:** Positive Pulse D&I MWD    **Sensor to Bit:** 35 ft

**Rig Contractor:** Nabors    **Rig Number:** B22    **RKB Height:** 2,079.0 ft    **GL Elevation:** 2,054.0 ft

**MWD Surveyor Name:** David Hopper

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

Jonathan Hovland, Well Planner

**Enseco Representative Name, Title**

Jonathan Hovland

Signature

**December 9th 2014**

Date Signed

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

**Seal:** \_\_\_\_\_

Notary Public

Commission Expiry



## Enseco Survey Report

09 December, 2014

### Continental Resources

McKenzie County, N. Dakota  
Lot 2 Sec.19 Twp.153N Rge.100W  
Chalmers 5300 21-19 10B  
Job # S14009-02  
API#: 33-053-06022

**Survey: Final Surveys Vertical Section**





## Survey Report



<b>Company:</b>	Continental Resources	<b>Local Co-ordinate Reference:</b>	Well Chalmers 5300 21-19 10B
<b>Project:</b>	McKenzie County, N. Dakota	<b>Ground Level Elevation:</b>	2,054.00usft
<b>Site:</b>	Lot 2 Sec.19 Twp.153N Rge.100W	<b>Wellhead Elevation:</b>	KB 25 @ 2079.00usft (Nabors B22)
<b>Well:</b>	Chalmers 5300 21-19 10B	<b>North Reference:</b>	True
<b>Wellbore:</b>	Job # S14009-02	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Final Surveys Vertical Section	<b>Database:</b>	EDM5000

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

<b>Site</b>	Lot 2 Sec.19 Twp.153N Rge.100W		
<b>Site Position:</b>		<b>Northing:</b>	402,374.71 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,209,981.92 usft
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "

<b>Well</b>	Chalmers 5300 21-19 10B		API#: 33-053-06022
<b>Well Position</b>	+N/-S +E/-W	33.44 usft 0.00 usft	<b>Northing:</b> 402,408.11 usft <b>Easting:</b> 1,209,983.27 usft
<b>Position Uncertainty</b>		0.00 usft	<b>Wellhead Elevation:</b> 2,079.00 usft

<b>Wellbore</b>	Job # S14009-02				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	12/9/2014	8.181	72.957	56,376

<b>Design:</b>	Final Surveys Vertical Section	<b>Survey Error Model:</b>	Standard ISCWSA MWD Tool
<b>Audit Notes:</b>			
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL
<b>Vertical Section:</b>		<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>
		0.00	0.00
			<b>+E/-W (usft)</b>
			0.00
			<b>Direction (°)</b>
			197.87



## Survey Report



<b>Company:</b>	Continental Resources	<b>Local Co-ordinate Reference:</b>	Well Chalmers 5300 21-19 10B
<b>Project:</b>	McKenzie County, N. Dakota	<b>Ground Level Elevation:</b>	2,054.00usft
<b>Site:</b>	Lot 2 Sec.19 Twp.153N Rge.100W	<b>Wellhead Elevation:</b>	KB 25 @ 2079.00usft (Nabors B22)
<b>Well:</b>	Chalmers 5300 21-19 10B	<b>North Reference:</b>	True
<b>Wellbore:</b>	Job # S14009-02	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Final Surveys Vertical Section	<b>Database:</b>	EDM5000

Survey										
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/S (usft)	+E/W (usft)	Vertical Section (usft)	Dogleg Rate (%/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
<b>Tie-in from Surface</b>										
0.00	0.00	0.00	0.00	2,079.00	0.00	0.00	0.00	0.00	0.00	0.00
160.00	0.50	291.60	160.00	1,919.00	0.26	-0.65	-0.05	0.31	0.31	0.00
251.00	1.10	273.60	250.99	1,828.01	0.46	-1.89	0.14	0.71	0.66	-19.78
344.00	1.10	265.20	343.97	1,735.03	0.44	-3.67	0.71	0.17	0.00	-9.03
428.00	0.50	251.80	427.96	1,651.04	0.26	-4.82	1.23	0.74	-0.71	-15.95
515.00	0.40	230.40	514.96	1,564.04	-0.05	-5.42	1.71	0.22	-0.11	-24.60
599.00	0.40	181.20	598.96	1,480.04	-0.53	-5.65	2.24	0.40	0.00	-58.57
687.00	0.40	162.50	686.96	1,392.04	-1.13	-5.56	2.79	0.15	0.00	-21.25
773.00	0.70	152.70	772.95	1,306.05	-1.89	-5.23	3.40	0.36	0.35	-11.40
860.00	0.90	158.00	859.94	1,219.06	-2.99	-4.73	4.30	0.24	0.23	6.09
945.00	0.90	153.00	944.93	1,134.07	-4.21	-4.18	5.29	0.09	0.00	-5.88
1,035.00	0.50	157.30	1,034.93	1,044.07	-5.20	-3.71	6.09	0.45	-0.44	4.78
1,125.00	0.20	32.50	1,124.93	954.07	-5.43	-3.47	6.23	0.71	-0.33	-138.67
1,210.00	0.20	147.40	1,209.93	869.07	-5.43	-3.31	6.18	0.40	0.00	135.18
1,301.00	0.20	201.60	1,300.92	778.08	-5.71	-3.28	6.44	0.20	0.00	59.56
1,391.00	0.20	23.30	1,390.92	688.08	-5.71	-3.28	6.44	0.44	0.00	-198.11
1,477.00	0.20	116.10	1,476.92	602.08	-5.64	-3.09	6.32	0.34	0.00	107.91
1,567.00	0.20	183.60	1,566.92	512.08	-5.87	-2.95	6.49	0.25	0.00	75.00
1,658.00	0.20	236.70	1,657.92	421.08	-6.11	-3.10	6.77	0.20	0.00	58.35
1,748.00	0.20	252.20	1,747.92	331.08	-6.25	-3.38	6.98	0.06	0.00	17.22
1,838.00	0.20	251.10	1,837.92	241.08	-6.35	-3.68	7.17	0.00	0.00	-1.22
1,924.00	0.20	149.20	1,923.92	155.08	-6.52	-3.74	7.36	0.36	0.00	-118.49
2,014.00	0.20	138.60	2,013.92	65.08	-6.78	-3.56	7.54	0.04	0.00	-11.78
2,102.00	0.90	148.50	2,101.92	-22.92	-7.48	-3.09	8.07	0.80	0.80	11.25
<b>Last MWD Survey</b>										
2,150.00	1.10	145.70	2,149.91	-70.91	-8.18	-2.64	8.60	0.43	0.42	-5.83

Survey Annotations										
Local Coordinates										
MD (usft)	TVD (usft)	+N/S (usft)	+E/W (usft)	Comment						
0.00	0.00	0.00	0.00	Tie-in from Surface						
2,150.00	2,149.91	-8.18	-2.64	Last MWD Survey						



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

Friday, March 06, 2015

State of North Dakota

Subject: **Surveys**

Re: **Oasis**  
**Chalmers 5300 21-19 10T**  
**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:

<b>Surveyor Name</b>	<b>Surveyor Title</b>	<b>Borehole Number</b>	<b>Start Depth</b>	<b>End Depth</b>	<b>Start Date</b>	<b>End Date</b>	<b>Type of</b>	<b>TD Straight Line Projection</b>
Mike McCammond	MWD Operator	O.H.	2150'	11080'	01/15/15	01/22/15	MWD	11140'
Matt Aesoph	MWD Operator	O.H.	11080'	20498'	02/11/15	02/18/15	MWD	20562'

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

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

**Douglas Hudson**  
Well Planner

**RYAN DIRECTIONAL SERVICES, INC.**

A NABORS COMPANY

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

Thursday, January 22, 2015

State of North Dakota  
County of McKenzie

Subject: **Survey Certification Letter**

Survey Company: Ryan Directional Services, Inc.

Job Number: 8546

Survey Job Type: Ryan MWD

Customer: Oasis Petroleum

Well Name: Chalmers 5300 21-19 10T

Rig Name: Nabors B-22

Surface: 48 03' 40.65" N / 103 36' 10.11" W

A.P.I. No: 33-053-06022

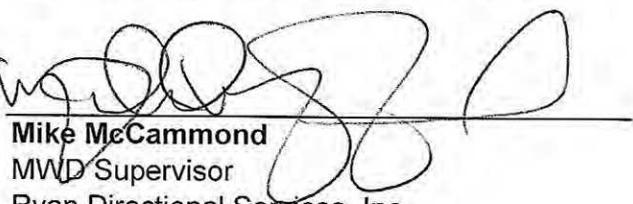
Location: McKenzie, North Dakota

RKB Height: 2076'

Distance to Bit: 60'

<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>
Mike McCommend	MWD Supervisor	OH	2167'	11080'	01/15/15	01/22/15	MWD	11140'

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.



Mike McCommend  
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

Wednesday, February 18, 2015

State of North Dakota  
County of McKenzie County

Subject: **Survey Certification Letter**

Survey Company: Ryan Directional Services, Inc.

Job Number: 8558

Survey Job Type: Ryan MWD

Customer: Oasis Petroleum

Well Name: Chalmers 5300 21-19 10T

Rig Name: Nabors B22

Surface: 48° 03' 40.65" N, 103° 36' 10.11" W

A.P.I. No: 33-053-06022

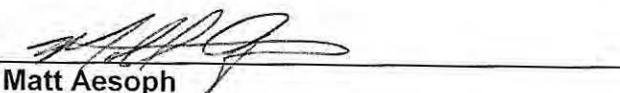
Location: McKenzie County, North Dakota

RKB Height: 25'

Distance to Bit: 64'

<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>
Matt Aesoph	MWD Supervisor	OH	11140'	20498'	02/11/15	02/18/15	MWD	20562'

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.

  
**Matt Aesoph**  
MWD Supervisor  
Ryan Directional Services, Inc.



## SURVEY REPORT

Customer: **Oasis Petroleum**  
 Well Name: **Chalmers 5300 21-19 10T**  
 Rig #: **Nabors B-22**  
 API #: **33-053-06022**  
 Calculation Method: **Minimum Curvature Calculation**

MWD Operator: **McCommand / Maldonaldo**  
 Directional Drillers: **RPM**  
 Survey Corrected To: **True North**  
 Vertical Section Direction: **93.13**  
 Total Correction: **8.17**  
 Temperature Forecasting Model (Chart Only): **Logarithmic**

Survey #	MD	Inc	Azm	Temp	TVD	VS	N/S	E/W	DLS
<b>Tie in to Gyro Surveys</b>									
Tie In	2150	1.10	145.70	0.00	2149.91	-2.64	-8.18	-2.64	0.43
1	2167	1.20	148.60	77.00	2166.91	-1.99	-8.47	-2.46	0.68
2	2260	1.20	149.80	77.00	2259.89	-0.90	-10.14	-1.46	0.03
3	2354	1.20	102.40	86.00	2353.87	0.61	-11.20	0.00	1.03
4	2447	1.20	106.10	89.00	2446.85	2.52	-11.68	1.89	0.08
5	2540	1.30	49.00	95.00	2539.83	4.23	-11.26	3.62	1.29
6	2634	1.50	43.70	91.00	2633.80	5.79	-9.67	5.27	0.25
7	2727	0.90	331.90	98.00	2726.78	6.20	-8.15	5.77	1.60
8	2821	0.90	328.40	104.00	2820.77	5.40	-6.87	5.03	0.06
9	2914	1.00	322.80	107.00	2913.76	4.46	-5.60	4.16	0.15
10	3007	1.00	321.80	111.00	3006.75	3.40	-4.31	3.17	0.02
11	3101	1.10	323.30	114.00	3100.73	2.28	-2.94	2.12	0.11
12	3194	1.00	316.60	116.00	3193.71	1.12	-1.64	1.03	0.17
13	3287	0.40	333.70	122.00	3286.71	0.37	-0.76	0.33	0.68
14	3381	0.10	292.00	123.00	3380.71	0.13	-0.43	0.11	0.35
15	3474	0.20	334.60	125.00	3473.71	-0.02	-0.26	-0.04	0.15
16	3568	0.20	335.70	127.00	3567.71	-0.18	0.04	-0.17	0.00
17	3661	0.30	327.70	129.00	3660.70	-0.39	0.39	-0.37	0.11
18	3754	0.20	353.00	131.00	3753.70	-0.56	0.76	-0.52	0.16
19	3848	0.30	324.40	132.00	3847.70	-0.75	1.12	-0.68	0.17
20	3941	0.30	334.10	134.00	3940.70	-1.02	1.54	-0.93	0.05
21	4034	0.30	328.80	131.00	4033.70	-1.27	1.97	-1.17	0.03
22	4128	0.20	321.70	132.00	4127.70	-1.52	2.31	-1.39	0.11
23	4221	0.20	314.30	134.00	4220.70	-1.75	2.55	-1.61	0.03
24	4314	0.20	281.60	138.00	4313.70	-2.03	2.69	-1.89	0.12
25	4408	0.30	271.20	138.00	4407.70	-2.44	2.73	-2.29	0.12
26	4501	0.40	277.70	141.00	4500.70	-3.01	2.78	-2.86	0.12
27	4594	0.50	261.70	143.00	4593.69	-3.73	2.77	-3.58	0.17
28	4688	0.40	224.40	145.00	4687.69	-4.35	2.47	-4.22	0.32
29	4781	0.40	225.50	147.00	4780.69	-4.78	2.01	-4.68	0.01
30	4875	0.40	219.90	149.00	4874.69	-5.20	1.53	-5.12	0.04
31	4968	0.40	162.40	149.00	4967.68	-5.28	0.97	-5.23	0.41
32	5061	0.40	160.30	150.00	5060.68	-5.03	0.36	-5.02	0.02
33	5155	0.30	139.10	152.00	5154.68	-4.74	-0.14	-4.75	0.17
34	5248	0.40	135.10	149.00	5247.68	-4.33	-0.55	-4.36	0.11
35	5341	0.50	134.50	150.00	5340.67	-3.78	-1.07	-3.84	0.11
36	5435	0.50	123.70	154.00	5434.67	-3.12	-1.58	-3.21	0.10
37	5528	0.40	136.10	156.00	5527.67	-2.53	-2.04	-2.65	0.15
38	5621	0.40	148.00	158.00	5620.67	-2.11	-2.55	-2.25	0.09
39	5715	0.40	163.00	161.00	5714.66	-1.81	-3.14	-1.98	0.11
40	5808	0.40	166.30	161.00	5807.66	-1.60	-3.77	-1.81	0.02
41	5901	0.40	175.30	163.00	5900.66	-1.46	-4.41	-1.71	0.07
42	5994	0.40	171.80	163.00	5993.66	-1.35	-5.05	-1.63	0.03
43	6049	0.40	156.90	163.00	6048.66	-1.23	-5.42	-1.53	0.19
44	6113	0.30	154.80	116.00	6112.65	-1.05	-5.77	-1.37	0.16
45	6175	0.50	152.20	116.00	6174.65	-0.84	-6.16	-1.18	0.32
46	6268	0.80	122.20	123.00	6267.65	-0.06	-6.86	-0.44	0.48
47	6362	1.00	141.70	131.00	6361.64	1.06	-7.86	0.63	0.39
48	6455	1.10	121.00	136.00	6454.62	2.38	-8.95	1.90	0.42
49	6548	1.00	143.70	141.00	6547.61	3.69	-10.07	3.14	0.46
50	6642	1.50	120.10	145.00	6641.58	5.30	-11.35	4.69	0.75
51	6735	1.10	130.70	150.00	6734.56	7.10	-12.54	6.42	0.50
52	6828	1.30	158.10	154.00	6827.54	8.25	-14.10	7.49	0.65
53	6922	1.30	161.60	158.00	6921.52	9.09	-16.10	8.23	0.08
54	7015	1.40	139.00	161.00	7014.49	10.27	-17.96	9.30	0.58
55	7109	1.30	127.40	165.00	7108.46	11.95	-19.47	10.90	0.31
56	7202	1.30	102.00	168.00	7201.44	13.87	-20.33	12.77	0.61
57	7295	1.30	106.90	170.00	7294.42	15.93	-20.86	14.82	0.12
58	7388	1.20	100.80	170.00	7387.39	17.92	-21.35	16.78	0.18
59	7482	1.10	111.50	174.00	7481.38	19.75	-21.86	18.59	0.25
60	7575	1.10	111.10	177.00	7574.36	21.45	-22.51	20.25	0.01
61	7669	0.90	114.40	179.00	7668.34	23.00	-23.14	21.77	0.22
62	7762	0.70	81.30	181.00	7761.34	24.23	-23.36	22.99	0.53
63	7855	0.70	101.60	181.00	7854.33	25.35	-23.39	24.11	0.27
64	7948	0.70	123.70	183.00	7947.32	26.40	-23.82	25.14	0.29
65	8042	0.60	137.70	185.00	8041.32	27.25	-24.50	25.95	0.20

**SURVEY REPORT**

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 Calculation Method: **Minimum Curvature Calculation**

MWD Operator: **McCommand / Maldonaldo**  
 Directional Drillers: **RPM**  
 Survey Corrected To: **True North**  
 Vertical Section Direction: **93.13**  
 Total Correction: **8.17**  
 Temperature Forecasting Model (Chart Only): **Logarithmic**

Survey #	MD	Inc	Azm	Temp	TVD	VS	N/S	E/W	DLS
66	8135	0.70	151.90	186.00	8134.31	27.89	-25.36	26.54	0.20
67	8229	0.50	195.00	188.00	8228.31	28.10	-26.26	26.71	0.51
68	8322	0.50	189.50	190.00	8321.30	27.97	-27.06	26.54	0.05
69	8415	0.20	296.50	190.00	8414.30	27.78	-27.38	26.32	0.63
70	8509	0.30	352.60	194.00	8508.30	27.58	-27.07	26.14	0.27
71	8602	0.30	308.40	194.00	8601.30	27.34	-26.67	25.92	0.24
72	8696	0.50	122.70	194.00	8695.30	27.50	-26.74	26.07	0.85
73	8789	0.50	111.20	195.00	8788.29	28.23	-27.11	26.79	0.11
74	8882	0.80	128.40	197.00	8881.29	29.15	-27.66	27.68	0.38
75	8976	0.70	129.20	199.00	8975.28	30.15	-28.43	28.64	0.11
76	9069	0.80	133.00	201.00	9068.27	31.11	-29.23	29.56	0.12
77	9162	0.70	139.70	201.00	9161.26	32.00	-30.11	30.40	0.14
78	9256	0.70	156.40	204.00	9255.26	32.65	-31.07	31.00	0.22
79	9349	0.50	166.50	204.00	9348.25	33.02	-31.99	31.32	0.24
80	9442	0.70	169.30	206.00	9441.25	33.27	-32.94	31.52	0.22
81	9536	0.70	174.40	208.00	9535.24	33.50	-34.07	31.68	0.07
82	9629	0.60	189.80	210.00	9628.23	33.53	-35.12	31.66	0.22
83	9723	0.70	179.90	204.00	9722.23	33.50	-36.18	31.57	0.16
84	9816	0.40	53.70	210.00	9815.23	33.79	-36.55	31.84	1.06
85	9909	1.00	66.30	188.00	9908.22	34.76	-36.04	32.84	0.66
86	10002	0.80	67.40	192.00	10001.21	36.07	-35.46	34.18	0.22
87	10095	0.80	48.40	195.00	10094.20	37.12	-34.78	35.27	0.28
88	10189	0.70	48.20	194.00	10188.19	37.99	-33.96	36.19	0.11
89	10282	0.90	42.20	197.00	10281.18	38.85	-33.04	37.10	0.23
90	10320	0.80	57.90	197.00	10319.18	39.26	-32.68	37.53	0.66
91	10351	3.70	85.80	186.00	10350.15	40.42	-32.49	38.71	9.73
92	10382	8.00	92.10	185.00	10380.98	43.58	-32.50	41.86	14.00
93	10413	12.10	96.80	185.00	10411.50	48.98	-32.96	47.25	13.48
94	10444	16.40	106.00	186.00	10441.54	56.49	-34.55	54.69	15.64
95	10475	20.10	114.80	188.00	10470.98	65.71	-38.00	63.73	14.85
96	10506	22.80	121.50	190.00	10499.84	75.95	-43.37	73.69	11.75
97	10537	22.80	125.60	194.00	10528.42	86.30	-50.01	83.70	5.12
98	10568	23.80	125.90	194.00	10556.89	96.63	-57.17	93.65	3.25
99	10600	27.80	120.00	192.00	10585.70	108.72	-64.69	105.35	14.84
100	10631	32.00	114.10	194.00	10612.57	122.85	-71.66	119.12	16.53
101	10662	35.20	111.40	194.00	10638.39	139.01	-78.28	134.94	11.39
102	10693	36.40	112.20	194.00	10663.53	156.19	-85.02	151.77	4.15
103	10724	39.50	110.70	195.00	10687.98	174.29	-91.98	169.52	10.43
104	10755	44.40	110.30	195.00	10711.03	194.06	-99.23	188.92	15.83
105	10786	48.50	110.70	195.00	10732.38	215.50	-107.10	209.96	13.26
106	10818	53.40	109.20	197.00	10752.53	239.28	-115.56	233.32	15.74
107	10849	58.20	108.60	197.00	10769.95	263.95	-123.86	257.57	15.57
108	10880	62.80	109.90	197.00	10785.21	289.86	-132.76	283.03	15.28
109	10911	66.70	111.70	197.00	10798.44	316.56	-142.72	309.23	13.63
110	10942	72.20	112.90	197.00	10809.31	343.97	-153.74	336.08	18.11
111	10973	76.00	116.50	199.00	10817.81	371.68	-166.20	363.15	16.58
112	11004	79.40	117.10	199.00	10824.41	399.42	-179.86	390.18	11.13
113	11036	81.00	117.40	199.00	10829.86	428.20	-194.29	418.21	5.08
114	11067	86.50	118.60	201.00	10833.23	456.14	-208.76	445.41	18.15
115	11080	88.80	119.60	201.00	10833.76	467.82	-215.07	456.76	19.29
116	11080	88.80	119.60	201.00	10833.76	467.82	-215.07	456.76	0.00
117	11128	90.00	119.40	219.00	10834.27	510.82	-238.71	498.53	2.53
118	11159	90.80	120.60	215.00	10834.05	538.47	-254.21	525.38	4.65
119	11191	90.70	120.10	215.00	10833.63	566.93	-270.37	552.99	1.59
120	<b>11222</b>	<b>90.10</b>	<b>119.10</b>	<b>213.00</b>	10833.42	594.68	-285.69	579.94	3.76
121	11252	90.60	120.20	213.00	10833.23	621.52	-300.53	606.01	4.03
122	11283	89.60	118.20	212.00	10833.18	649.36	-315.65	633.07	7.21
123	11314	89.50	116.50	213.00	10833.42	677.63	-329.89	660.60	5.49
124	11346	88.60	114.30	213.00	10833.95	707.24	-343.61	689.50	7.43
125	<b>11376</b>	<b>87.50</b>	<b>112.20</b>	<b>215.00</b>	10834.97	735.39	-355.45	717.05	7.90
126	11407	87.80	110.30	217.00	10836.24	764.83	-366.67	745.92	6.20
127	11439	88.30	110.00	217.00	10837.33	795.41	-377.69	775.94	1.82
128	11470	89.40	108.40	217.00	10837.96	825.19	-387.88	805.21	6.26
129	11502	89.50	108.10	221.00	10838.26	856.08	-397.90	835.60	0.99
130	<b>11533</b>	<b>89.80</b>	<b>107.20</b>	<b>221.00</b>	10838.45	886.09	-407.30	865.14	3.06

**SURVEY REPORT**

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MWD Operator: **McCommand / Maldonaldo**  
 Directional Drillers: **RPM**  
 Survey Corrected To: **True North**  
 Vertical Section Direction: **93.13**  
 Total Correction: **8.17**  
 Temperature Forecasting Model (Chart Only): **Logarithmic**

Survey #	MD	Inc	Azm	Temp	TVD	VS	N/S	E/W	DLS
131	11565	90.10	105.20	221.00	10838.48	917.26	-416.23	895.87	6.32
132	11596	90.10	105.30	222.00	10838.43	947.57	-424.38	925.77	0.32
133	11627	89.90	104.30	221.00	10838.43	977.92	-432.30	955.75	3.29
134	11658	89.50	103.40	221.00	10838.59	1008.38	-439.72	985.84	3.18
135	<b>11690</b>	<b>88.70</b>	<b>103.40</b>	<b>222.00</b>	10839.09	1039.87	-447.14	1016.97	2.50
136	11720	88.50	103.10	222.00	10839.82	1069.39	-454.01	1046.16	1.20
137	11751	88.00	101.50	222.00	10840.77	1099.98	-460.61	1076.43	5.41
138	11783	88.50	101.70	224.00	10841.75	1131.61	-467.04	1107.77	1.68
139	11814	89.00	101.50	224.00	10842.42	1162.27	-473.28	1138.13	1.74
140	<b>11844</b>	<b>89.60</b>	<b>99.70</b>	<b>222.00</b>	10842.79	1192.01	-478.79	1167.61	6.32
141	11875	89.50	99.70	226.00	10843.03	1222.81	-484.02	1198.17	0.32
142	11906	89.60	99.00	226.00	10843.28	1253.62	-489.05	1228.75	2.28
143	11937	89.80	97.20	226.00	10843.44	1284.50	-493.42	1259.44	5.84
144	11968	90.90	96.90	228.00	10843.25	1315.43	-497.23	1290.21	3.68
145	<b>12000</b>	<b>92.10</b>	<b>95.80</b>	<b>228.00</b>	10842.41	1347.37	-500.76	1322.00	5.09
146	12032	93.30	94.00	228.00	10840.91	1379.32	-503.49	1353.84	6.76
147	12063	93.60	94.00	226.00	10839.04	1410.26	-505.65	1384.71	0.97
148	12095	93.20	93.60	228.00	10837.14	1442.20	-507.77	1416.59	1.77
149	12126	91.80	93.70	228.00	10835.79	1473.17	-509.74	1447.49	4.53
150	<b>12158</b>	<b>91.10</b>	<b>92.90</b>	<b>230.00</b>	10834.98	1505.15	-511.58	1479.43	3.32
151	12189	88.90	94.00	230.00	10834.98	1536.15	-513.45	1510.37	7.93
152	12221	88.60	94.40	230.00	10835.68	1568.14	-515.79	1542.28	1.56
153	12253	87.70	95.30	231.00	10836.71	1600.11	-518.49	1574.14	3.98
154	12284	87.60	95.40	231.00	10837.98	1631.06	-521.38	1604.98	0.46
155	<b>12316</b>	<b>87.60</b>	<b>94.70</b>	<b>231.00</b>	10839.32	1663.01	-524.20	1636.83	2.19
156	12347	87.30	93.10	233.00	10840.70	1693.98	-526.30	1667.73	5.25
157	12379	87.00	93.30	235.00	10842.29	1725.94	-528.09	1699.64	1.13
158	12410	87.20	92.50	233.00	10843.86	1756.90	-529.65	1730.56	2.66
159	12442	88.00	91.50	235.00	10845.20	1788.86	-530.77	1762.51	4.00
160	<b>12505</b>	<b>88.00</b>	<b>91.90</b>	<b>235.00</b>	10847.40	1851.80	-532.64	1825.44	0.63
161	12600	89.70	92.20	239.00	10849.31	1946.76	-536.03	1920.36	1.82
162	12695	89.60	91.50	240.00	10849.89	2041.74	-539.10	2015.31	0.74
163	12790	88.30	91.90	240.00	10851.63	2136.69	-541.92	2110.25	1.43
164	12884	89.10	91.60	242.00	10853.76	2230.64	-544.79	2204.18	0.91
165	<b>12979</b>	<b>92.20</b>	<b>91.10</b>	<b>242.00</b>	10852.68	2325.57	-547.03	2299.14	3.31
166	13074	90.20	90.30	244.00	10850.69	2420.46	-548.19	2394.10	2.27
167	13169	90.70	90.90	246.00	10849.95	2515.37	-549.18	2489.09	0.82
168	13263	89.40	90.50	246.00	10849.87	2609.28	-550.33	2583.08	1.45
169	13358	88.00	90.80	248.00	10852.02	2704.16	-551.41	2678.05	1.51
170	<b>13453</b>	<b>89.50</b>	<b>90.00</b>	<b>248.00</b>	10854.09	2799.03	-552.07	2773.02	1.79
171	13548	91.80	90.00	249.00	10853.02	2893.88	-552.07	2868.01	2.42
172	13642	88.30	88.90	248.00	10852.93	2987.67	-551.17	2961.99	3.90
173	13737	91.00	90.00	249.00	10853.51	3082.46	-550.26	3056.97	3.07
174	13832	88.80	90.30	249.00	10853.68	3177.32	-550.51	3151.97	2.34
175	<b>13927</b>	<b>87.90</b>	<b>89.60</b>	<b>251.00</b>	10856.41	3272.14	-550.42	3246.93	1.20
176	14021	89.60	90.60	251.00	10858.47	3365.98	-550.59	3340.90	2.10
177	14116	89.80	90.40	253.00	10858.96	3460.88	-551.42	3435.89	0.30
178	14211	90.40	90.70	255.00	10858.80	3555.78	-552.33	3530.89	0.71
179	14274	90.40	91.20	251.00	10858.36	3618.73	-553.37	3593.88	0.79
180	<b>14306</b>	<b>88.50</b>	<b>91.20</b>	<b>251.00</b>	10858.66	3650.71	-554.04	3625.87	5.94
181	14400	86.90	90.30	253.00	10862.44	3744.55	-555.27	3719.78	1.95
182	14495	88.40	89.10	248.00	10866.33	3839.30	-554.77	3814.69	2.02
183	14590	89.70	88.90	249.00	10867.91	3934.03	-553.12	3909.67	1.38
184	14685	89.60	88.50	251.00	10868.49	4028.75	-550.96	4004.64	0.43
185	<b>14780</b>	<b>90.20</b>	<b>88.60</b>	<b>251.00</b>	10868.65	4123.44	-548.56	4099.61	0.64
186	14874	90.50	88.80	253.00	10868.08	4217.16	-546.43	4193.58	0.38
187	14969	90.50	88.90	251.00	10867.25	4311.89	-544.52	4288.56	0.11
188	15064	89.40	89.60	253.00	10867.33	4406.67	-543.28	4383.55	1.37
189	15159	87.60	89.50	255.00	10869.82	4501.45	-542.53	4478.51	1.90
190	<b>15253</b>	<b>88.80</b>	<b>89.40</b>	<b>253.00</b>	10872.77	4595.21	-541.63	4572.46	1.28
191	15348	89.10	91.50	255.00	10874.51	4690.08	-542.37	4667.43	2.23
192	15443	89.60	90.30	255.00	10875.59	4785.00	-543.87	4762.41	1.37
193	15538	90.70	91.20	257.00	10875.34	4879.92	-545.11	4857.40	1.50
194	15632	90.80	90.80	257.00	10874.11	4973.85	-546.75	4951.38	0.44
195	<b>15727</b>	<b>90.80</b>	<b>91.60</b>	<b>258.00</b>	10872.79	5068.78	-548.74	5046.35	0.84

**SURVEY REPORT**

Customer: **Oasis Petroleum**  
 Well Name: **Chalmers 5300 21-19 10T**  
 Rig #: **Nabors B-22**  
 API #: **33-053-06022**  
 Calculation Method: **Minimum Curvature Calculation**

MWD Operator: **McCommand / Maldonaldo**  
 Directional Drillers: **RPM**  
 Survey Corrected To: **True North**  
 Vertical Section Direction: **93.13**  
 Total Correction: **8.17**  
 Temperature Forecasting Model (Chart Only): **Logarithmic**

Survey #	MD	Inc	Azm	Temp	TVD	VS	N/S	E/W	DLS
196	15822	87.60	91.60	258.00	10874.11	5163.73	-551.39	5141.29	3.37
197	15885	88.70	91.70	257.00	10876.15	5226.67	-553.20	5204.23	1.75
198	15917	90.40	90.90	258.00	10876.40	5258.65	-553.93	5236.22	5.87
199	16012	89.40	91.70	260.00	10876.56	5353.60	-556.08	5331.19	1.35
200	<b>16107</b>	<b>89.10</b>	<b>91.40</b>	<b>260.00</b>	10877.81	5448.56	-558.65	5426.15	0.45
201	16201	89.20	89.30	260.00	10879.20	5542.43	-559.23	5520.13	2.24
202	16296	90.60	88.80	260.00	10879.37	5637.19	-557.65	5615.12	1.56
203	16391	90.40	88.20	260.00	10878.54	5731.87	-555.17	5710.08	0.67
204	16486	89.50	88.00	262.00	10878.62	5826.51	-552.02	5805.03	0.97
205	<b>16580</b>	<b>89.50</b>	<b>87.60</b>	<b>262.00</b>	10879.44	5920.10	-548.41	5898.95	0.43
206	16675	91.40	87.80	260.00	10878.69	6014.66	-544.60	5993.87	2.01
207	16770	90.90	90.10	260.00	10876.79	6109.39	-542.86	6088.83	2.48
208	16801	91.10	90.20	260.00	10876.25	6140.34	-542.94	6119.82	0.72
209	16865	90.80	90.90	260.00	10875.19	6204.26	-543.55	6183.81	1.19
210	<b>16896</b>	<b>89.50</b>	<b>91.70</b>	<b>262.00</b>	10875.10	6235.25	-544.25	6214.80	4.92
211	16959	89.50	90.20	262.00	10875.65	6298.20	-545.30	6277.79	2.38
212	17057	89.50	92.00	257.00	10876.51	6396.13	-547.18	6375.76	1.84
213	17152	90.90	91.60	257.00	10876.18	6491.10	-550.16	6470.71	1.53
214	17246	91.80	89.30	257.00	10873.96	6584.96	-550.90	6564.68	2.63
215	<b>17341</b>	<b>91.40</b>	<b>89.10</b>	<b>257.00</b>	10871.31	6679.70	-549.58	6659.63	0.47
216	17436	89.50	89.10	258.00	10870.56	6774.46	-548.08	6754.61	2.00
217	17531	90.20	89.40	257.00	10870.81	6869.24	-546.84	6849.60	0.80
218	17562	88.50	88.90	258.00	10871.16	6900.16	-546.38	6880.60	5.72
219	17626	88.00	89.30	258.00	10873.12	6963.98	-545.38	6944.56	1.00
220	<b>17720</b>	<b>88.20</b>	<b>88.40</b>	<b>257.00</b>	10876.24	7057.66	-543.49	7038.49	0.98
221	17815	88.90	89.10	257.00	10878.64	7152.35	-541.42	7133.43	1.04
222	17910	89.40	90.30	230.00	10880.05	7247.17	-540.92	7228.42	1.37
223	18005	89.20	89.60	260.00	10881.21	7342.02	-540.84	7323.41	0.77
224	18099	92.30	92.50	260.00	10879.98	7435.92	-542.56	7417.36	4.52
225	<b>18194</b>	<b>92.20</b>	<b>91.80</b>	<b>260.00</b>	10876.25	7530.84	-546.12	7512.22	0.74
226	18289	89.90	90.90	258.00	10874.51	7625.77	-548.36	7607.17	2.60
227	18384	89.40	90.20	260.00	10875.09	7720.67	-549.27	7702.17	0.91
228	18478	89.20	90.30	260.00	10876.24	7814.54	-549.68	7796.16	0.24
229	18573	89.30	90.30	262.00	10877.48	7909.42	-550.18	7891.15	0.11
230	<b>18668</b>	<b>89.50</b>	<b>89.20</b>	<b>262.00</b>	10878.48	8004.25	-549.76	7986.14	1.18
231	18763	90.30	88.50	264.00	10878.64	8098.98	-547.86	8081.12	1.12
232	18858	88.20	89.30	262.00	10879.89	8193.71	-546.03	8176.09	2.37
233	18952	89.00	89.60	262.00	10882.18	8287.48	-545.13	8270.06	0.91
234	19047	89.50	90.60	262.00	10883.43	8382.34	-545.30	8365.05	1.18
235	<b>19142</b>	<b>89.20</b>	<b>89.90</b>	<b>260.00</b>	10884.50	8477.21	-545.71	8460.04	0.80
236	19237	88.50	89.70	260.00	10886.41	8572.03	-545.38	8555.02	0.77
237	19332	88.00	89.70	262.00	10889.31	8666.82	-544.88	8649.97	0.53
238	19363	88.60	90.20	262.00	10890.23	8697.76	-544.86	8680.96	2.52
239	19426	88.80	90.20	262.00	10891.66	8760.66	-545.08	8743.94	0.32
240	<b>19521</b>	<b>89.30</b>	<b>90.70</b>	<b>262.00</b>	10893.23	8855.54	-545.82	8838.93	0.74
241	19616	90.00	91.30	262.00	10893.82	8950.47	-547.48	8933.91	0.97
242	19711	90.60	90.60	262.00	10893.32	9045.40	-549.06	9028.89	0.97
243	19806	90.20	89.00	262.00	10892.65	9140.24	-548.72	9123.89	1.74
244	19900	90.40	89.30	262.00	10892.16	9234.01	-547.33	9217.87	0.38
245	<b>19995</b>	<b>89.70</b>	<b>88.70</b>	<b>262.00</b>	10892.08	9328.76	-545.67	9312.86	0.97
246	20090	90.90	89.60	260.00	10891.58	9423.53	-544.26	9407.84	1.58
247	20184	90.60	89.90	262.00	10890.35	9517.36	-543.85	9501.84	0.45
248	20279	91.10	90.80	262.00	10888.94	9612.23	-544.43	9596.82	1.08
249	20374	90.20	90.30	260.00	10887.86	9707.13	-545.34	9691.81	1.08
250	<b>20469</b>	<b>90.70</b>	<b>90.10</b>	<b>262.00</b>	10887.12	9802.00	-545.68	9786.81	0.57
251	20498	90.60	89.90	262.00	10886.79	9830.96	-545.68	9815.80	0.77
Projection	20562	90.60	89.90	262.00	10886.12	9894.85	-545.56	9879.80	0.00



# 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 (08-2006)



Well File No.  
**28637**

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

<input checked="" type="checkbox"/> Notice of Intent	Approximate Start Date <b>December 31, 2014</b>	<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 checked="" type="checkbox"/> Casing or Liner	<input type="checkbox"/> Acidizing
		<input type="checkbox"/> Plug Well	<input type="checkbox"/> Fracture Treatment
		<input type="checkbox"/> Supplemental History	<input type="checkbox"/> Change Production Method
		<input type="checkbox"/> Temporarily Abandon	<input type="checkbox"/> Reclamation
		<input type="checkbox"/> Other	Name and Formation Change

Well Name and Number <b>Chalmers 5300 21-19 10B</b>				
Footages	Qtr-Qtr	Section	Township	Range
<b>2292 F N L</b>	<b>326 F W L</b>	<b>LOT2</b>	<b>19</b>	<b>153 N</b> <b>100 W</b>
Field	Pool	County <b>McKenzie</b>		
	<b>Bakken</b>			

## 24-HOUR PRODUCTION RATE

Before	After
Oil	Bbls
Water	Bbls
Gas	MCF

Name of Contractor(s)			
Address	City	State	Zip Code

## DETAILS OF WORK

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

Name Change: Chalmers 5300 21-19 10T

Formation Change: Three Forks

Surface Hole Location Change: 2292' FNL & 327' FWL (old SHL 2292' FNL & 326' FWL)

*Surface casing changed to 2121' from 2126'*

Casing Depth Change: 2561 FNL & 778 FWL; MD 11086 TVD 10817

Bottom Hole Depth Change: 2336 FSL & 250 FEL; MD 20631 TVD 10884

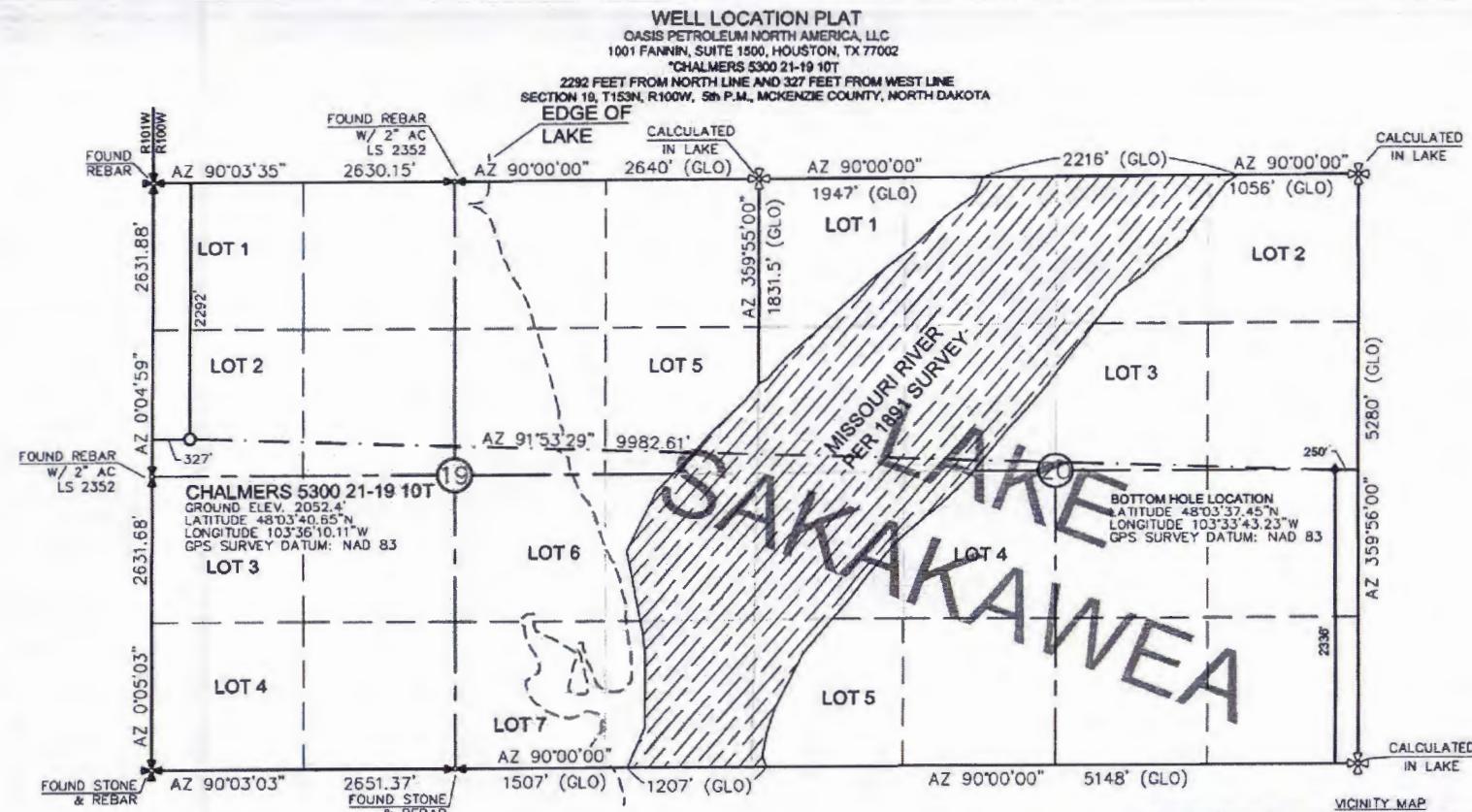
*CC 25.00 1-5-15 KB*

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

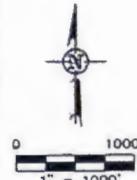
*CC 25.00*

Company <b>Oasis Petroleum North America LLC</b>		Telephone Number <b>281-404-9591</b>
Address <b>1001 Fannin, Suite 1500</b>		
City <b>Houston</b>	State <b>TX</b>	Zip Code <b>77002</b>
Signature <i>Chelsea Covington</i>	Printed Name <b>Chelsea Covington</b>	
Title <b>Regulatory Assistant</b>	Date <b>December 31, 2014</b>	
Email Address <b>ccovington@oasispetroleum.com</b>		

FOR STATE USE ONLY	
<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date <b>1-02-2014</b>	
By <i>David Burns</i>	
Title <b>David Burns</b> <b>Engineering Tech.</b>	

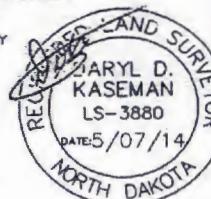


THIS DOCUMENT WAS ORIGINALLY ISSUED  
AND SEALED BY DARYL D. KASEMAN,  
PLS, REGISTRATION NUMBER 3880 ON  
5/07/14 AND THE ORIGINAL  
DOCUMENTS ARE STORED AT THE  
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INC.



- MONUMENT — RECOVERED
- MONUMENT — NOT RECOVERED

DARYL D. KASEMAN LS-3880



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Project No.: 9341	Date: 05/07/14
OASIS PETROLEUM NORTH AMERICA, LLC	
WELL LOCATION PLAT	
SECTION 19, T153N, R100W, 5th P.M.	
MCKENZIE COUNTY, NORTH DAKOTA	
Drawn By: DARYL D. KASEMAN	Checked By: DARYL D. KASEMAN
Interstate Engineering, Inc. 425 East Main Street Sister, Montana 59270 Ph: (406) 431-5617 Fax: (406) 431-5618 www.interstateeng.com One office to serve you from Denver to Seattle	
REED LAND SURVEYOR	
DARYL D. KASEMAN	
LS-3880	
DATE 5/07/14	
NORTH DAKOTA	

DRILLING PLAN															
OPERATOR	Oasis Petroleum			COUNTY/STATE	McKenzie Co., ND										
WELL NAME	Chalmers 5300 21-19 10T			RIG	B 22										
WELL TYPE	Horizontal Three Forks			Surface Location (survey plat):	2292' FNL										
LOCATION	SW NW 19-153N-100W			FWL	327' FWL										
EST. T.D.	20,631'				GROUND ELEV:	2,046'	Sub Height: 25'								
TOTAL LATERAL:	9,545'				KB ELEV:	2,071'									
MARKER		TVD	Subsea TVD	LOGS:	Type	Interval									
Pierre	NDIC MAP	2,021	50	OH Log: Request a Sondry for an Open Hole Log Waiver: Oasis Chalmers 5300 31-19H 1,850' to 8 sec 19 153N 100W											
Greenhorn		4,624	-2553	CBL/GR: Above top of cement/GR to base of casing											
Mowry		5,029	-2958	MWD GR: KOP to lateral TD											
Dakota		5,417	-3346												
Rierdon		6,463	-4392	DEVIATION: Surf: 3 deg. max., 1 deg / 100'; sny every 500'											
Dunham Salt		6,891	-4820	Prod: 5 deg. max., 1 deg / 100'; sny every 100'											
Dunham Salt Base		6,980	-4889												
Pine Salt		7,257	-5186												
Pine Salt Base		7,290	-5219												
Opache Salt		7,351	-5280												
Opache Salt Base		7,426	-5355												
Amsden		7,862	-5591												
Tyler		7,828	-5757												
Otter/Base Minnelusa		8,032	-5961	DST'S: None planned											
Kibbey Lime		8,383	-6312												
Charles Salt		8,529	-6458	CORES: None planned											
Base Last Salt		9,204	-7133												
Mission Canyon		9,424	-7353												
Lodgepole		9,988	-7917												
False Bakken		10,709	-8538	MUDLOGGING: Two-Man: Begin 200' above Kibbey											
Upper Bakken Shale		10,719	-8648	30' samples in curve and lateral											
Middle Bakken		10,735	-8684												
Lower Bakken Shale		10,777	-8706												
Pronghorn		10,785	-8714												
Three Forks		10,805	-8734												
Top of Target		10,822	-8751												
Landing Target		10,828	-8757												
Claystone		10,832	-8761	BOP: 11" 5000 psi blind, pipe & annular											
Est. Dip Rate:	-0.35														
Max. Anticipated BHP:	4073	Surface Formation: Glacial till													
MUD:	Interval	Type	WT	VIS	WL	Remarks									
Surface:	0' -	2,121'	FW	8.4-9.0	28-32	NC	Circ Mud Tanks								
Intermediate:	2,121' -	11,086'	Invert	9.5-10.4	40-50	30+HHp	Circ Mud Tanks								
Laterall:	11,086' -	20,631'	Salt Water	9.8-10.2	28-32	NC	Circ Mud Tanks								
CASING:	Size	WT pcf	Hole	Depth	Cement	WOC	Remarks								
Surface:	13-3/8"	54.5#	17-1/2"	2,121'	To Surface	12	100' into Pierre								
Intermediate: (Dakota)	9-5/8"	40#	12-1/4"	6,463'	To Surface	24	Set Casing across Dakota								
Intermediate:	7"	29/32#	8-3/4"	11,088'	3017	24	1500' above Dakota								
Production Liner:	4.5"	11.6#	6"	20,631'	TOL @ 10,290'	90.0	50' above KOP								
PROBABLE PLUGS, IF REQ'D:															
OTHER:	MD	TVD	FNL/FSL	FEL/FWL	S-T-R	AZI	Build Rate: 12 Deg/100'								
Surface:	2,121	2,121	2292 FNL	327 FWL	SEC. 19 T153N R100W										
KOP:	10,340'	10,340'	2327 FNL	385 FWL	SEC. 19 T153N R100W										
EOC:	11,086'	10,817'	2561 FNL	778 FWL	SEC. 19 T153N R100W	119.8									
Casing Point:	11,086'	10,817'	2561 FNL	778 FWL	SEC. 19 T153N R100W	119.8									
Middle Bakken Lateral TD:	20,631'	10,884'	2338 FSL	230 FEL	SEC. 20 T153N R100W	90.0									
Comments:															
Request a Sondry for an Open Hole Log Waiver: Oasis Chalmers 5300 31-19H 1,850' to 8 sec 19 153N 100W															
No free string planned															
35 packers and 25 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) 68008-20-6 (Primary Name: Kerosene)															
<b>OASIS</b> PETROLEUM															
Geology: N. Gabelman	2/4/2014	Engineering: TR 12/29/14													
Revised Geo: N. Gabelman	12/31/2014	Revised: TR 12/31/14													

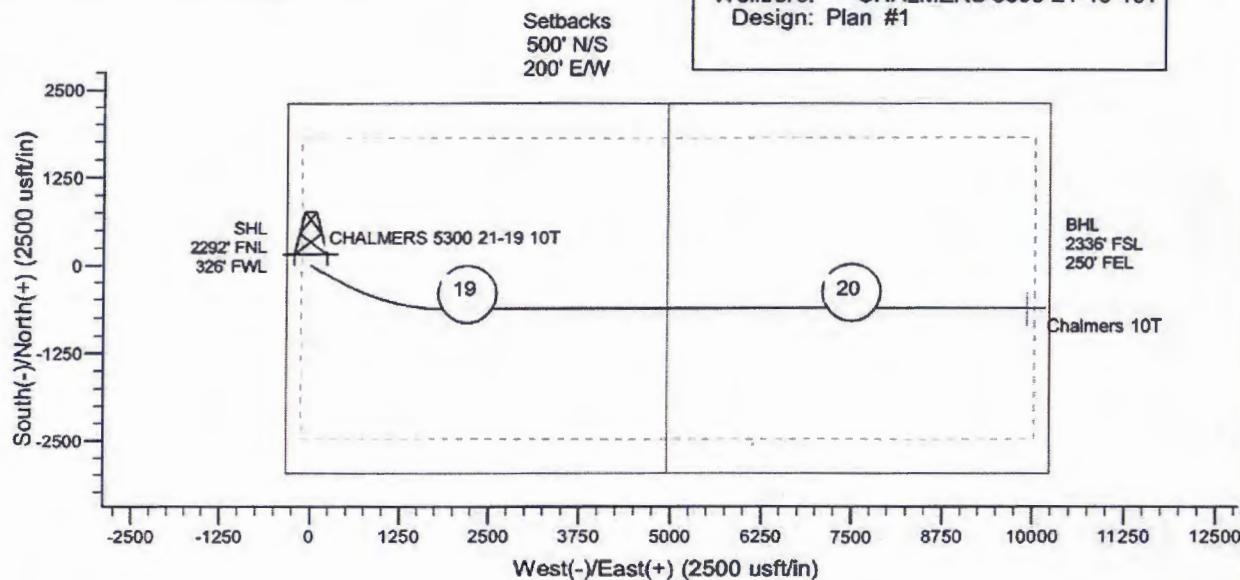


Azimuths to True North  
Magnetic North: 8.31°

Magnetic Field  
Strength: 56462.1 nT  
Dip Angle: 73.00°  
Date: 2/17/2014  
Model: IGRF2010



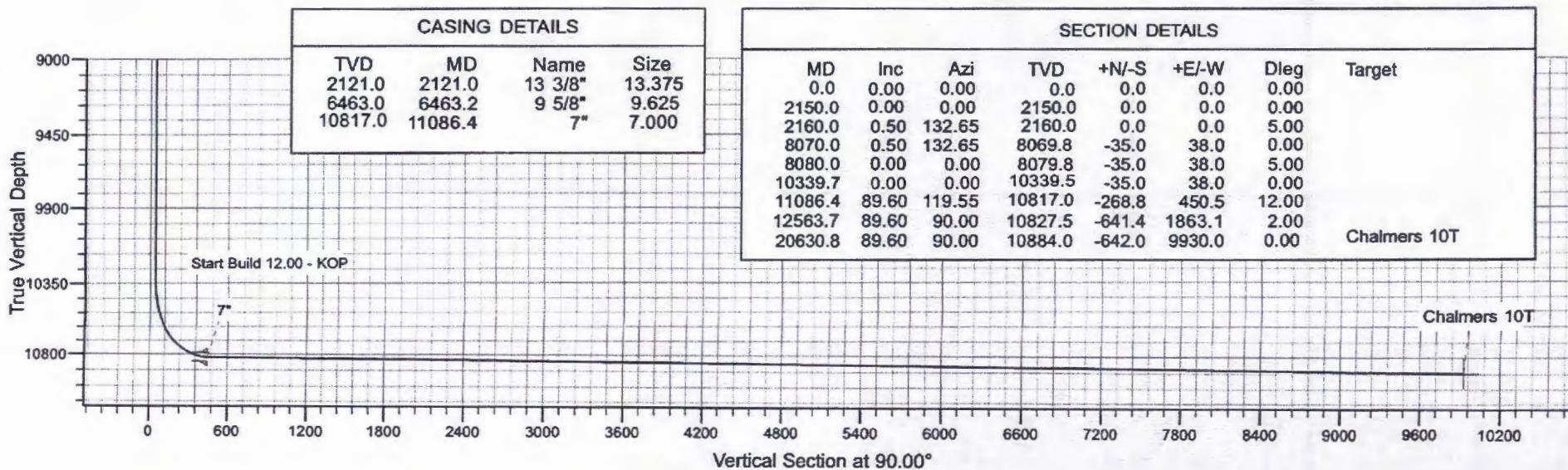
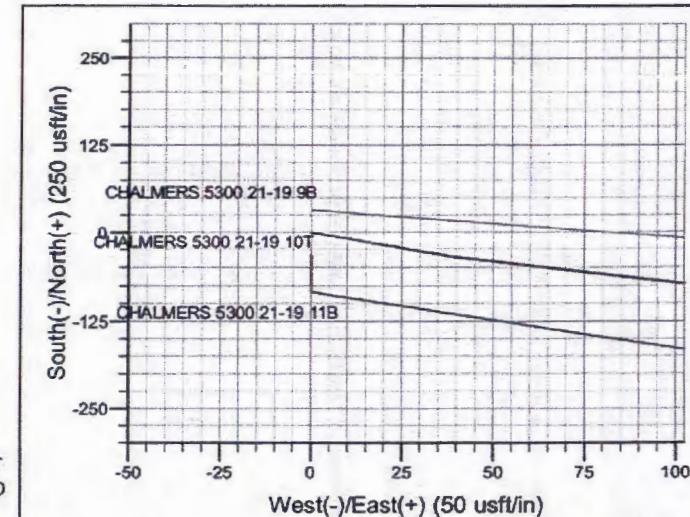
Project: Indian Hills  
Site: 153N-100W-19/20  
Well: CHALMERS 5300 21-19 10T  
Wellbore: CHALMERS 5300 21-19 10T  
Design: Plan #1



SITE DETAILS: 153N-100W-19/20

Well Centre Latitude: 48° 3' 40.650 N  
Longitude: 103° 36' 10.110 W

Positional Uncertainty: 0.0  
Convergence: -2.31  
Local North: True



**Oasis Petroleum  
Well Summary  
Chalmers 5300 21-19 10T  
Section 19 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' - 2121'	54.5	J-55	STC	12.615"	12.459"	4100	5470	6840

Interval	Description	Collapse	Burst	Tension
		(psi) / a	(psi) / b	(1000 lbs) / c
0' - 2121'	13-3/8", 54.5#, J-55, LTC, 8rd	1130 / 1.13	2730 / 1.90	514 / 2.57

**API Rating & Safety Factor**

- a) Collapse based on full casing evacuation with 9 ppg fluid on backside (2121' setting depth).
- b) Burst pressure based on 13 ppg fluid with no fluid on backside (2121' setting depth).
- c) Based on string weight in 9 ppg fluid at 2121' TVD plus 100k# overpull. (Buoyed weight equals 100k lbs.)

Cement volumes are based on 13-3/8" casing set in 17-1/2" hole with 60% excess to circulate cement back to surface.  
Mix and pump the following slurry.

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

**Lead Slurry:            714 sks (369 bbls), 11.5 lb/gal, 2.97 cu. Ft./sk Varicem Cement with 0.125 l/sk Lost Circulation Additive**

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

**Oasis Petroleum  
Well Summary  
Chalmers 5300 21-19 10T  
Section 19 T153N R100W  
McKenzie County, ND**

Contingency INTERMEDIATE CASING AND CEMENT DESIGN

Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Make-up Torque (ft-lbs)		
							Minimum	Optimum	Max
9-5/8"	0' - 6463'	36	HCL-80	LTC	8.835"	8.75"	5450	7270	9090

Interval	Description	Collapse	Burst	Tension
		(psi) / a	(psi) / b	(1000 lbs) / c
0' - 6463'	9-5/8", 36#, J-55, LTC, 8rd	2020 / 2.14	3520 / 1.28	453 / 1.53

API Rating & Safety Factor

- a) Collapse based on full casing evacuation with 10.4 ppg fluid on backside (6463' setting depth).
- b) Burst pressure calculated from a gas kick coming from the production zone (Bakken Pool) at 9,000psi and a subsequent breakdown at the 9-5/8" shoe, based on a 15.2#/ft fracture gradient. Backup of 9 ppg fluid..
- c) Tension based on string weight in 10.4 ppg fluid at 6463' TVD plus 100k# overpull. (Buoyed weight equals 196k lbs.)

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

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

**Lead Slurry:** 565 sks (292 bbls), 2.90 ft<sup>3</sup>/sk, 11.5 lb/gal Conventional system with 94 lb/sk cement, 4% D079 extender, 2% D053 expanding agent, 2% CaCl<sub>2</sub> and 0.250 lb/sk D130 lost circulation control agent.

**Tail Slurry:** 624 sks (129 bbls), 1.16 ft<sup>3</sup>/sk 15.8 lb/gal Conventional system with 94 lb/sk cement, 0.25% CaCl<sub>2</sub>, and 0.250 lb/sk lost circulation control agent

**Oasis Petroleum  
Well Summary  
Chalmers 5300 21-19 10T  
Section 19 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' - 11086'	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' - 8458'	8458'	7", 32#, P-110, LTC, 8rd	11820 / 2.10*	12460 / 1.28	897 / 2.23
5431' - 6683'	1252'	7", 32#, HCP-110, LTC, 8rd	11820 / 1.47**	12460 / 1.32	

**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 10817' TVD.
- c) Based on string weight in 10 ppg fluid, (301k lbs buoyed weight) plus 100k lbs overpull.

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

Mix and pump the following slurry

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

**Lead Slurry:**           **187 sks** (86 bbls), 11.8 ppg, 2.55 cu. ft./sk Econocem Cement with .3% Fe-2 and .25 lb/sk Lost Circulation Additive

**Tail Slurry:**           **574 sks** (168 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**  
**Chalmers 5300 21-19 10T**  
**Section 19 T153N R100W**  
**McKenzie County, ND**

PRODUCTION LINER

Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Make-up Torque (ft-lbs)		
							Minimum	Optimum	Max
4-1/2"	10290' - 20631'	13.5	P-110	BTC	3.920"	3.795"	2270	3020	3780

Interval	Length	Description	Collapse (psi) a	Burst (psi) b	Tension (1000 lbs) c
10290' - 20631'	10341	4-1/2", 13.5 lb, P-110, BTC	10670 / 1.98	12410 / 1.28	443 / 2.01

API Rating & Safety Factor

- a) Based on full casing evacuation with 9.5 ppg fluid on backside @ 10884' TVD.
- b) Burst pressure based on 9000 psi treating pressure with 10.2 ppg internal fluid gradient and 9 ppg external fluid gradient @ 10884' TVD.
- c) Based on string weight in 9.5 ppg fluid (Buoyed weight: 119k lbs.) plus 100k lbs overpull.

## **Oasis**

**Indian Hills**

**153N-100W-19/20**

**CHALMERS 5300 21-19 10T**

**T153N R100W SECTION 19**

**CHALMERS 5300 21-19 10T**

**Plan: Plan #1**

## **Standard Planning Report**

**29 December, 2014**

## Planning Report

<b>Database:</b>	OpenWellsCompass - EDM Prod	<b>Local Co-ordinate Reference:</b>	Well CHALMERS 5300 21-19 10T							
<b>Company:</b>	Oasis	<b>TVD Reference:</b>	WELL @ 2071.0usft (Original Well Elev)							
<b>Project:</b>	Indian Hills	<b>MD Reference:</b>	WELL @ 2071.0usft (Original Well Elev)							
<b>Site:</b>	153N-100W-19/20	<b>North Reference:</b>	True							
<b>Well:</b>	CHALMERS 5300 21-19 10T	<b>Survey Calculation Methods:</b>	Minimum Curvature							
<b>Wellbore:</b>	CHALMERS 5300 21-19 10T									
<b>Design:</b>	Plan #1									
<b>Project:</b>	Indian Hills									
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level							
<b>Geo Datum:</b>	North American Datum 1983									
<b>Map Zone:</b>	North Dakota Northern Zone									
<b>Site:</b>	153N-100W-19/20									
<b>Site Position:</b>		<b>Northing:</b>	402,776.24 usft							
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,209,956.00 usft							
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13.200 in							
			<b>Latitude:</b>							
			48° 3' 44.270 N							
			<b>Longitude:</b>							
			103° 36' 10.700 W							
			<b>Grid Convergence:</b>							
			-2.31 °							
<b>Well:</b>	CHALMERS 5300 21-19 10T									
<b>Well Position</b>	+N-S +E-W	Northing: Easting:	402,408.11 usft 1,209,983.26 usft							
<b>Position Uncertainty</b>	2.0 usft	Wellhead Elevation:	Latitude: Longitude: Ground Level:							
			48° 3' 40.650 N 103° 36' 10.110 W 2,046.0 usft							
<b>Wellbore:</b>	CHALMERS 5300 21-19 10T									
<b>Magnetics</b>	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)					
	IGRF2010	2/17/2014	8.31	73.00	56,462					
<b>Design:</b>	Plan #1									
<b>Audit Notes:</b>										
<b>Version:</b>		<b>Phase:</b>	PROTOTYPE	Tie On Depth:	0.0					
<b>Vertical Section:</b>		<b>Depth From (TVD)</b> (usft)	+N-S (usft)	+E-W (usft)	Direction (°)					
		0.0	0.0	0.0	90.00					
<b>Plan Sections</b>										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00
2,150.0	0.00	0.00	2,150.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00
2,160.0	0.50	132.65	2,160.0	0.0	0.0	5.00	5.00	0.00	0.00	132.65
6,070.0	0.50	132.65	8,069.8	-35.0	38.0	0.00	0.00	0.00	0.00	0.00
8,000.0	0.00	0.00	8,079.8	-35.0	38.0	5.00	-5.00	0.00	0.00	180.00
10,339.7	0.00	0.00	10,339.5	-35.0	38.0	0.00	0.00	0.00	0.00	0.00
11,086.4	89.60	119.55	10,817.0	-288.8	450.5	12.00	12.00	0.00	0.00	119.55
12,583.7	89.60	90.00	10,827.5	-641.4	1,883.1	2.00	0.00	-2.00	-90.11	
20,630.8	89.60	90.00	10,884.0	-642.0	9,930.0	0.00	0.00	0.00	0.00	Chalmers 10T

## Planning Report

Database:	OpenWellsCompass - EDM Prod	Local Co-ordinate Reference:	Well CHALMERS 5300 21-19 10T						
Company:	Oasis	TVD Reference:	WELL @ 2071.0usft (Original Well Elev)						
Project:	Indian Hills	MD Reference:	WELL @ 2071.0usft (Original Well Elev)						
Site:	153N-100W-19/20	North Reference:	True						
Well:	CHALMERS 5300 21-19 10T	Survey Calculation Method:	Minimum Curvature						
Wellbore:	CHALMERS 5300 21-19 10T								
Design:	Plan #1								
<b>Planned Survey</b>									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
2,150.0	0.00	0.00	2,150.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>Start Build 5.00</b>									
2,160.0	0.50	132.65	2,160.0	0.0	0.0	0.0	5.00	5.00	0.00
<b>Start 5682.9 hold at 2160.0 MD</b>									
2,200.0	0.50	132.65	2,200.0	-0.3	0.3	0.3	0.00	0.00	0.00
2,300.0	0.50	132.65	2,300.0	-0.9	0.9	0.9	0.00	0.00	0.00
2,400.0	0.50	132.65	2,400.0	-1.4	1.6	1.6	0.00	0.00	0.00
2,500.0	0.50	132.65	2,500.0	-2.0	2.2	2.2	0.00	0.00	0.00
2,600.0	0.50	132.65	2,600.0	-2.6	2.9	2.9	0.00	0.00	0.00
2,700.0	0.50	132.65	2,700.0	-3.2	3.5	3.5	0.00	0.00	0.00
2,800.0	0.50	132.65	2,800.0	-3.8	4.1	4.1	0.00	0.00	0.00
2,900.0	0.50	132.65	2,900.0	-4.4	4.8	4.8	0.00	0.00	0.00
3,000.0	0.50	132.65	3,000.0	-5.0	5.4	5.4	0.00	0.00	0.00
3,100.0	0.50	132.65	3,100.0	-5.6	6.1	6.1	0.00	0.00	0.00
3,200.0	0.50	132.65	3,200.0	-6.2	6.7	6.7	0.00	0.00	0.00
3,300.0	0.50	132.65	3,300.0	-6.8	7.3	7.3	0.00	0.00	0.00
3,400.0	0.50	132.65	3,400.0	-7.4	8.0	8.0	0.00	0.00	0.00
3,500.0	0.50	132.65	3,499.9	-8.0	8.6	8.6	0.00	0.00	0.00
3,800.0	0.50	132.65	3,599.9	-8.5	9.3	9.3	0.00	0.00	0.00
3,700.0	0.50	132.65	3,699.9	-9.1	9.9	9.9	0.00	0.00	0.00
3,800.0	0.50	132.65	3,799.9	-9.7	10.6	10.6	0.00	0.00	0.00
3,900.0	0.50	132.65	3,899.9	-10.3	11.2	11.2	0.00	0.00	0.00
4,000.0	0.50	132.65	3,999.9	-10.9	11.8	11.8	0.00	0.00	0.00
4,100.0	0.50	132.65	4,099.9	-11.5	12.5	12.5	0.00	0.00	0.00
4,200.0	0.50	132.65	4,199.9	-12.1	13.1	13.1	0.00	0.00	0.00
4,300.0	0.50	132.65	4,299.9	-12.7	13.8	13.8	0.00	0.00	0.00
4,400.0	0.50	132.65	4,399.9	-13.3	14.4	14.4	0.00	0.00	0.00
4,500.0	0.50	132.65	4,499.9	-13.9	15.1	15.1	0.00	0.00	0.00
4,600.0	0.50	132.65	4,599.9	-14.5	15.7	15.7	0.00	0.00	0.00
4,700.0	0.50	132.65	4,699.9	-15.0	16.3	16.3	0.00	0.00	0.00
4,800.0	0.50	132.65	4,799.9	-15.6	17.0	17.0	0.00	0.00	0.00
4,900.0	0.50	132.65	4,899.9	-18.2	17.6	17.6	0.00	0.00	0.00
5,000.0	0.50	132.65	4,999.9	-18.8	18.3	18.3	0.00	0.00	0.00
5,100.0	0.50	132.65	5,099.9	-17.4	18.9	18.9	0.00	0.00	0.00
5,200.0	0.50	132.65	5,199.9	-18.0	19.5	19.5	0.00	0.00	0.00
5,300.0	0.50	132.65	5,299.9	-18.6	20.2	20.2	0.00	0.00	0.00
5,400.0	0.50	132.65	5,399.9	-19.2	20.8	20.8	0.00	0.00	0.00
5,500.0	0.50	132.65	5,499.9	-19.8	21.5	21.5	0.00	0.00	0.00
5,600.0	0.50	132.65	5,599.9	-20.4	22.1	22.1	0.00	0.00	0.00
5,700.0	0.50	132.65	5,699.9	-21.0	22.8	22.8	0.00	0.00	0.00
5,800.0	0.50	132.65	5,799.9	-21.5	23.4	23.4	0.00	0.00	0.00
5,900.0	0.50	132.65	5,899.9	-22.1	24.0	24.0	0.00	0.00	0.00
6,000.0	0.50	132.65	5,999.9	-22.7	24.7	24.7	0.00	0.00	0.00
6,100.0	0.50	132.65	6,099.8	-23.3	25.3	25.3	0.00	0.00	0.00
6,200.0	0.50	132.65	6,199.8	-23.9	26.0	26.0	0.00	0.00	0.00
6,300.0	0.50	132.65	6,299.8	-24.5	26.6	26.6	0.00	0.00	0.00
6,400.0	0.50	132.65	6,399.8	-25.1	27.2	27.2	0.00	0.00	0.00
6,483.2	0.50	132.65	6,483.0	-25.5	27.7	27.7	0.00	0.00	0.00
<b>9 5/8"</b>									
6,500.0	0.50	132.65	6,499.8	-25.7	27.9	27.9	0.00	0.00	0.00
6,600.0	0.50	132.65	6,599.8	-26.3	28.5	28.5	0.00	0.00	0.00
6,700.0	0.50	132.65	6,699.8	-26.9	29.2	29.2	0.00	0.00	0.00
6,800.0	0.50	132.65	6,799.8	-27.5	29.8	29.8	0.00	0.00	0.00
6,900.0	0.50	132.65	6,899.8	-28.1	30.5	30.5	0.00	0.00	0.00
7,000.0	0.50	132.65	6,999.8	-28.6	31.1	31.1	0.00	0.00	0.00

## Planning Report

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Company:	Oasis	TVD Reference:	WELL @ 2071.0usft (Original Well Elev)						
Project:	Indian Hills	MD Reference:	WELL @ 2071.0usft (Original Well Elev)						
Site:	153N-100W-19/20	North Reference:	True						
Well:	CHALMERS 5300 21-19 10T	Survey Calculation Method:	Minimum Curvature						
Wellbore:	CHALMERS 5300 21-19 10T								
Design:	Plan #1								
<b>Planned Survey</b>									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
7,100.0	0.50	132.65	7,099.8	-29.2	31.7	31.7	0.00	0.00	0.00
7,200.0	0.50	132.65	7,199.8	-29.8	32.4	32.4	0.00	0.00	0.00
7,300.0	0.50	132.65	7,299.8	-30.4	33.0	33.0	0.00	0.00	0.00
7,400.0	0.50	132.65	7,399.8	-31.0	33.7	33.7	0.00	0.00	0.00
7,500.0	0.50	132.65	7,499.8	-31.6	34.3	34.3	0.00	0.00	0.00
7,600.0	0.50	132.65	7,599.8	-32.2	35.0	35.0	0.00	0.00	0.00
7,700.0	0.50	132.65	7,699.8	-32.8	35.6	35.6	0.00	0.00	0.00
7,800.0	0.50	132.65	7,799.8	-33.4	36.2	36.2	0.00	0.00	0.00
7,842.8	0.50	132.65	7,842.6	-33.6	36.5	36.5	0.00	0.00	0.00
<b>Start Drop -5.00</b>									
7,852.8	0.50	132.65	7,852.6	-33.7	36.6	36.6	0.00	0.00	0.00
<b>Start 2486.9 hold at 7862.8 MD</b>									
7,900.0	0.50	132.65	7,899.8	-34.0	36.9	36.9	0.00	0.00	0.00
8,000.0	0.50	132.65	7,999.8	-34.6	37.5	37.5	0.00	0.00	0.00
8,070.0	0.50	132.65	8,069.8	-35.0	38.0	38.0	0.00	0.00	0.00
8,080.0	0.00	0.00	8,079.8	-35.0	38.0	38.0	5.00	-5.00	0.00
10,339.7	0.00	0.00	10,339.5	-35.0	38.0	38.0	0.00	0.00	0.00
<b>Start Build 12.00 - KOP</b>									
10,400.0	7.23	119.55	10,399.6	-36.9	41.3	41.3	12.00	12.00	0.00
10,500.0	19.23	119.55	10,496.8	-48.1	61.2	61.2	12.00	12.00	0.00
10,600.0	31.23	119.55	10,587.1	-69.1	98.2	98.2	12.00	12.00	0.00
10,700.0	43.23	119.55	10,686.5	-98.9	150.7	150.7	12.00	12.00	0.00
10,800.0	55.23	119.55	10,731.7	-136.2	216.5	216.5	12.00	12.00	0.00
10,900.0	67.23	119.55	10,779.8	-179.3	292.8	292.8	12.00	12.00	0.00
11,000.0	79.23	119.65	10,808.6	-226.5	375.8	375.8	12.00	12.00	0.00
11,086.4	89.60	119.55	10,817.0	-268.8	450.5	450.5	12.00	12.00	0.00
<b>Start DLS 2.00 TFO -90.10 - EOC -7°</b>									
11,100.0	89.60	119.28	10,817.0	-275.5	462.3	462.3	2.00	0.00	-2.00
11,200.0	89.60	117.28	10,817.7	-322.9	550.4	550.4	2.00	0.00	-2.00
11,300.0	89.59	115.28	10,818.5	-367.2	640.0	640.0	2.00	0.00	-2.00
11,400.0	89.59	113.28	10,819.2	-408.3	731.2	731.2	2.00	0.00	-2.00
11,500.0	89.59	111.28	10,819.9	-446.2	823.7	823.7	2.00	0.00	-2.00
11,600.0	89.59	109.28	10,820.6	-480.8	917.5	917.5	2.00	0.00	-2.00
11,700.0	89.59	107.28	10,821.3	-512.2	1,012.5	1,012.5	2.00	0.00	-2.00
11,800.0	89.59	105.28	10,822.0	-540.2	1,108.4	1,108.4	2.00	0.00	-2.00
11,900.0	89.59	103.28	10,822.8	-564.9	1,205.3	1,205.3	2.00	0.00	-2.00
12,000.0	89.59	101.28	10,823.5	-586.1	1,303.0	1,303.0	2.00	0.00	-2.00
12,100.0	89.59	99.28	10,824.2	-604.0	1,401.4	1,401.4	2.00	0.00	-2.00
12,200.0	89.59	97.28	10,824.9	-618.4	1,500.4	1,500.4	2.00	0.00	-2.00
12,300.0	89.59	95.28	10,825.7	-629.3	1,599.8	1,599.8	2.00	0.00	-2.00
12,400.0	89.59	93.28	10,826.4	-636.8	1,699.5	1,699.5	2.00	0.00	-2.00
12,500.0	89.60	91.28	10,827.1	-640.7	1,799.4	1,799.4	2.00	0.00	-2.00
12,583.7	89.60	90.00	10,827.5	-641.4	1,863.1	1,863.1	2.00	0.00	-2.00
12,590.2	89.60	90.00	10,827.7	-641.4	1,889.6	1,889.6	0.00	0.00	0.00
<b>Start 8045.4 hold at 12590.2 MD</b>									
12,600.0	89.60	90.00	10,827.8	-641.4	1,899.4	1,899.4	0.00	0.00	0.00
12,700.0	89.60	90.00	10,828.5	-641.5	1,999.4	1,999.4	0.00	0.00	0.00
12,800.0	89.60	90.00	10,829.2	-641.5	2,099.4	2,099.4	0.00	0.00	0.00
12,900.0	89.60	90.00	10,829.9	-641.5	2,199.4	2,199.4	0.00	0.00	0.00
13,000.0	89.60	90.00	10,830.6	-641.5	2,299.4	2,299.4	0.00	0.00	0.00
13,100.0	89.60	90.00	10,831.3	-641.5	2,399.4	2,399.4	0.00	0.00	0.00
13,200.0	89.60	90.00	10,832.0	-641.5	2,499.4	2,499.4	0.00	0.00	0.00
13,300.0	89.60	90.00	10,832.7	-641.5	2,599.4	2,599.4	0.00	0.00	0.00
13,400.0	89.60	90.00	10,833.4	-641.5	2,699.4	2,699.4	0.00	0.00	0.00

## Planning Report

<b>Database:</b>	OpenWellsCompass - EDM Prod	<b>Local Co-ordinate Reference:</b>	Well CHALMERS 5300 21-19 10T
<b>Company:</b>	Oasis	<b>TVD Reference:</b>	WELL @ 2071.0usft (Original Well Elev)
<b>Project:</b>	Indian Hills	<b>MD Reference:</b>	WELL @ 2071.0usft (Original Well Elev)
<b>Site:</b>	153N-100W-19/20	<b>North Reference:</b>	True
<b>Well:</b>	CHALMERS 5300 21-19 10T	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	CHALMERS 5300 21-19 10T		
<b>Design:</b>	Plan #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate ('/100ft)	Build Rate ('/100ft)	Turn Rate ('/100ft)	
13,500.0	89.60	90.00	10,834.1	-641.5	2,799.4	2,799.4	0.00	0.00	0.00	0.00
13,600.0	89.60	90.00	10,834.8	-641.5	2,899.4	2,899.4	0.00	0.00	0.00	0.00
13,700.0	89.60	90.00	10,835.5	-641.5	2,999.4	2,999.4	0.00	0.00	0.00	0.00
13,800.0	89.60	90.00	10,836.2	-641.5	3,099.4	3,099.4	0.00	0.00	0.00	0.00
13,900.0	89.60	90.00	10,836.9	-641.5	3,199.4	3,199.4	0.00	0.00	0.00	0.00
14,000.0	89.60	90.00	10,837.6	-641.5	3,299.4	3,299.4	0.00	0.00	0.00	0.00
14,100.0	89.60	90.00	10,838.3	-641.6	3,399.4	3,399.4	0.00	0.00	0.00	0.00
14,200.0	89.60	90.00	10,839.0	-641.6	3,499.4	3,499.4	0.00	0.00	0.00	0.00
14,300.0	89.60	90.00	10,839.7	-641.6	3,599.4	3,599.4	0.00	0.00	0.00	0.00
14,400.0	89.60	90.00	10,840.4	-641.6	3,699.4	3,699.4	0.00	0.00	0.00	0.00
14,500.0	89.60	90.00	10,841.1	-641.6	3,799.4	3,799.4	0.00	0.00	0.00	0.00
14,600.0	89.60	90.00	10,841.8	-641.6	3,899.3	3,899.3	0.00	0.00	0.00	0.00
14,700.0	89.60	90.00	10,842.5	-641.6	3,999.3	3,999.3	0.00	0.00	0.00	0.00
14,800.0	89.60	90.00	10,843.2	-641.6	4,099.3	4,099.3	0.00	0.00	0.00	0.00
14,900.0	89.60	90.00	10,843.9	-641.6	4,199.3	4,199.3	0.00	0.00	0.00	0.00
15,000.0	89.60	90.00	10,844.6	-641.6	4,299.3	4,299.3	0.00	0.00	0.00	0.00
15,100.0	89.60	90.00	10,845.3	-641.6	4,399.3	4,399.3	0.00	0.00	0.00	0.00
15,200.0	89.60	90.00	10,846.0	-641.6	4,499.3	4,499.3	0.00	0.00	0.00	0.00
15,300.0	89.60	90.00	10,846.7	-641.6	4,599.3	4,599.3	0.00	0.00	0.00	0.00
15,400.0	89.60	90.00	10,847.4	-641.6	4,699.3	4,699.3	0.00	0.00	0.00	0.00
15,500.0	89.60	90.00	10,848.1	-641.6	4,799.3	4,799.3	0.00	0.00	0.00	0.00
15,600.0	89.60	90.00	10,848.8	-641.7	4,899.3	4,899.3	0.00	0.00	0.00	0.00
15,700.0	89.60	90.00	10,849.5	-641.7	4,999.3	4,999.3	0.00	0.00	0.00	0.00
16,800.0	89.60	90.00	10,850.2	-641.7	5,099.3	5,099.3	0.00	0.00	0.00	0.00
15,900.0	89.60	90.00	10,850.9	-641.7	5,199.3	5,199.3	0.00	0.00	0.00	0.00
16,000.0	89.60	90.00	10,851.6	-641.7	5,299.3	5,299.3	0.00	0.00	0.00	0.00
16,100.0	89.60	90.00	10,852.3	-641.7	5,399.3	5,399.3	0.00	0.00	0.00	0.00
16,200.0	89.60	90.00	10,853.0	-641.7	5,499.3	5,499.3	0.00	0.00	0.00	0.00
16,300.0	89.60	90.00	10,853.7	-641.7	5,599.3	5,599.3	0.00	0.00	0.00	0.00
16,400.0	89.60	90.00	10,854.4	-641.7	5,699.3	5,699.3	0.00	0.00	0.00	0.00
16,500.0	89.60	90.00	10,855.1	-641.7	5,799.3	5,799.3	0.00	0.00	0.00	0.00
16,600.0	89.60	90.00	10,855.8	-641.7	5,899.3	5,899.3	0.00	0.00	0.00	0.00
16,700.0	89.60	90.00	10,856.5	-641.7	5,999.3	5,999.3	0.00	0.00	0.00	0.00
16,800.0	89.60	90.00	10,857.2	-641.7	6,099.3	6,099.3	0.00	0.00	0.00	0.00
16,900.0	89.60	90.00	10,857.9	-641.7	6,199.3	6,199.3	0.00	0.00	0.00	0.00
17,000.0	89.60	90.00	10,858.6	-641.7	6,299.3	6,299.3	0.00	0.00	0.00	0.00
17,100.0	89.60	90.00	10,859.3	-641.8	6,399.3	6,399.3	0.00	0.00	0.00	0.00
17,200.0	89.60	90.00	10,860.0	-641.8	6,499.3	6,499.3	0.00	0.00	0.00	0.00
17,300.0	89.60	90.00	10,860.7	-641.8	6,599.3	6,599.3	0.00	0.00	0.00	0.00
17,400.0	89.60	90.00	10,861.4	-641.8	6,699.3	6,699.3	0.00	0.00	0.00	0.00
17,500.0	89.60	90.00	10,862.1	-641.8	6,799.3	6,799.3	0.00	0.00	0.00	0.00
17,600.0	89.60	90.00	10,862.8	-641.8	6,899.3	6,899.3	0.00	0.00	0.00	0.00
17,700.0	89.60	90.00	10,863.5	-641.8	6,999.3	6,999.3	0.00	0.00	0.00	0.00
17,800.0	89.60	90.00	10,864.2	-641.8	7,099.3	7,099.3	0.00	0.00	0.00	0.00
17,900.0	89.60	90.00	10,864.9	-641.8	7,199.3	7,199.3	0.00	0.00	0.00	0.00
18,000.0	89.60	90.00	10,865.6	-641.8	7,299.3	7,299.3	0.00	0.00	0.00	0.00
18,100.0	89.60	90.00	10,866.3	-641.8	7,399.3	7,399.3	0.00	0.00	0.00	0.00
18,200.0	89.60	90.00	10,867.0	-641.8	7,499.3	7,499.3	0.00	0.00	0.00	0.00
18,300.0	89.60	90.00	10,867.7	-641.8	7,599.3	7,599.3	0.00	0.00	0.00	0.00
18,400.0	89.60	90.00	10,868.4	-641.8	7,699.3	7,699.3	0.00	0.00	0.00	0.00
18,500.0	89.60	90.00	10,869.1	-641.8	7,799.3	7,799.3	0.00	0.00	0.00	0.00
18,600.0	89.60	90.00	10,869.8	-641.9	7,899.3	7,899.3	0.00	0.00	0.00	0.00
18,700.0	89.60	90.00	10,870.5	-641.9	7,999.2	7,999.2	0.00	0.00	0.00	0.00
18,800.0	89.60	90.00	10,871.2	-641.9	8,099.2	8,099.2	0.00	0.00	0.00	0.00
18,900.0	89.60	90.00	10,871.9	-641.9	8,199.2	8,199.2	0.00	0.00	0.00	0.00

## Planning Report

Database:	OpenWellsCompass - EDM Prod	Local Co-ordinate Reference:	Well CHALMERS 5300 21-19 10T
Company:	Oasis	TVD Reference:	WELL @ 2071.0usft (Original Well Elev)
Project:	Indian Hills	MD Reference:	WELL @ 2071.0usft (Original Well Elev)
Site:	153N-100W-19/20	North Reference:	True
Well:	CHALMERS 5300 21-19 10T	Survey Calculation Method:	Minimum Curvature
Wellbore:	CHALMERS 5300 21-19 10T		
Design:	Plan #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate ('/100ft)	Build Rate ('/100ft)	Turn Rate ('/100ft)	
19,000.0	89.60	90.00	10,872.6	-841.9	8,299.2	8,299.2	0.00	0.00	0.00	
19,100.0	89.60	90.00	10,873.3	-841.9	8,399.2	8,399.2	0.00	0.00	0.00	
19,200.0	89.60	90.00	10,874.0	-841.9	8,499.2	8,499.2	0.00	0.00	0.00	
19,300.0	89.60	90.00	10,874.7	-841.9	8,599.2	8,599.2	0.00	0.00	0.00	
19,400.0	89.60	90.00	10,875.4	-841.9	8,699.2	8,699.2	0.00	0.00	0.00	
19,500.0	89.80	90.00	10,876.1	-841.9	8,799.2	8,799.2	0.00	0.00	0.00	
19,600.0	89.60	90.00	10,876.8	-841.9	8,899.2	8,899.2	0.00	0.00	0.00	
19,700.0	89.60	90.00	10,877.5	-841.9	8,999.2	8,999.2	0.00	0.00	0.00	
19,800.0	89.60	90.00	10,878.2	-841.9	9,099.2	9,099.2	0.00	0.00	0.00	
19,900.0	89.60	90.00	10,878.9	-841.9	9,199.2	9,199.2	0.00	0.00	0.00	
20,000.0	89.60	90.00	10,879.6	-842.0	9,299.2	9,299.2	0.00	0.00	0.00	
20,100.0	89.60	90.00	10,880.3	-842.0	9,399.2	9,399.2	0.00	0.00	0.00	
20,200.0	89.60	90.00	10,881.0	-842.0	9,499.2	9,499.2	0.00	0.00	0.00	
20,300.0	89.60	90.00	10,881.7	-842.0	9,599.2	9,599.2	0.00	0.00	0.00	
20,400.0	89.60	90.00	10,882.4	-842.0	9,699.2	9,699.2	0.00	0.00	0.00	
20,500.0	89.60	90.00	10,883.1	-842.0	9,799.2	9,799.2	0.00	0.00	0.00	
20,600.0	89.60	90.00	10,883.8	-842.0	9,899.2	9,899.2	0.00	0.00	0.00	
20,630.8	89.60	90.00	10,884.0	-842.0	9,930.0	9,930.0	0.00	0.00	0.00	
<b>Chalmers 10T</b>										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N-S (usft)	+E-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
Chalmers 10T - plan hits target center - Point	0.00	0.00	10,884.0	-842.0	9,930.0	401,366.59	1,219,879.34	48° 3' 34.286 N	103° 33' 43.923 W	

Casing Points										
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)						
2,121.0	2,121.0 13 3/8"		13.375	17.500						
6,463.2	6,463.0 9 5/8"		9.625	12.250						
11,088.4	10,817.0 7"		7.000	8.750						

## Planning Report

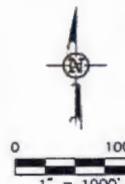
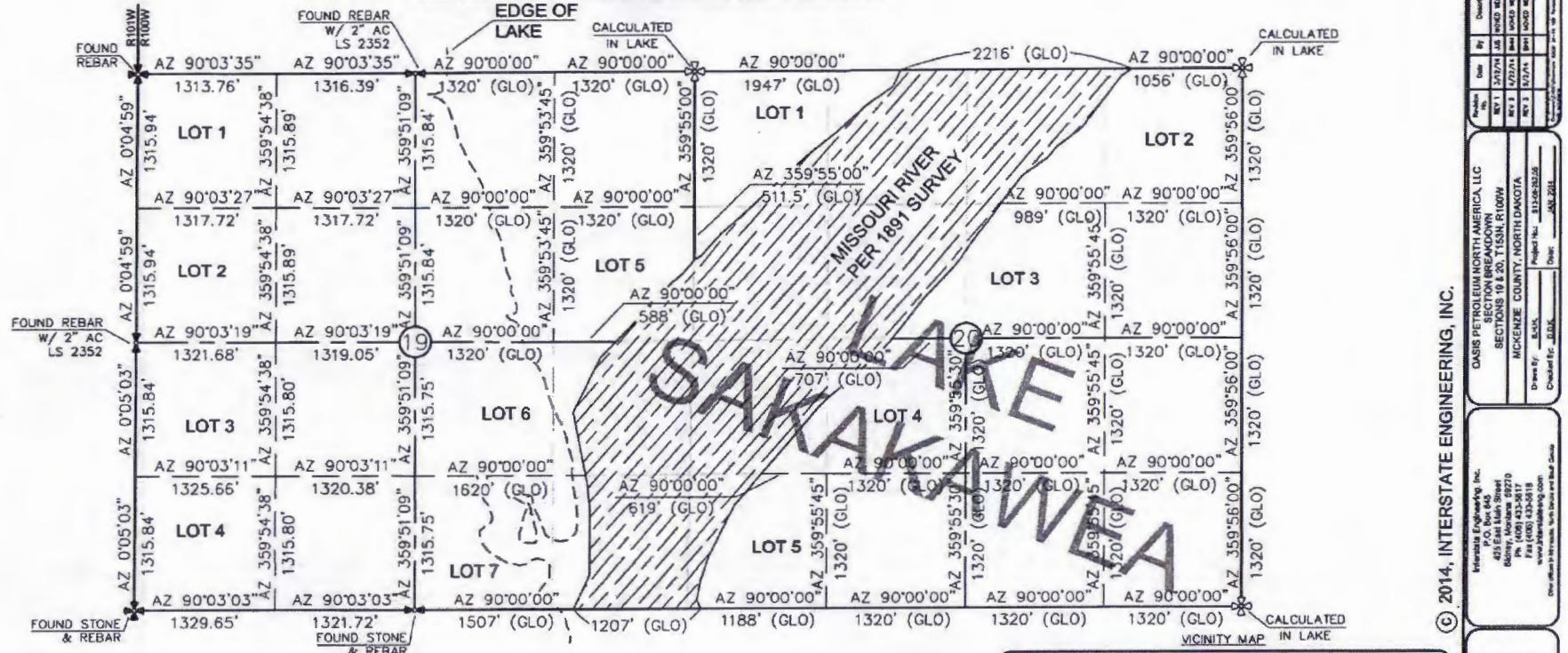
<b>Database:</b>	OpenWellsCompass - EDM Prod	<b>Local Co-ordinate Reference:</b>	Well CHALMERS 5300 21-19 10T
<b>Company:</b>	Oasis	<b>TVD Reference:</b>	WELL @ 2071.0usft (Original Well Elev)
<b>Project:</b>	Indian Hills	<b>MD Reference:</b>	WELL @ 2071.0usft (Original Well Elev)
<b>Site:</b>	153N-100W-19/20	<b>North Reference:</b>	True
<b>Well:</b>	CHALMERS 5300 21-19 10T	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	CHALMERS 5300 21-19 10T		
<b>Design:</b>	Plan #1		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,021.0	2,021.0	Pierre				
4,624.1	4,624.0	Greenhorn				
5,029.1	5,029.0	Mowry				
5,417.1	5,417.0	Dakota				
6,463.2	6,463.0	Rierdon				
6,891.2	6,891.0	Dunham Salt				
6,960.2	6,960.0	Dunham Salt Base				
7,257.2	7,257.0	Pine Salt				
7,290.2	7,290.0	Pine Salt Base				
7,351.2	7,351.0	Opeche Salt				
7,426.2	7,426.0	Opeche Salt Base				
7,662.2	7,662.0	Amsden				
7,828.2	7,828.0	Tyler				
8,032.2	8,032.0	Otter/Base Minnelusa				
8,384.2	8,384.0	Kibbey Lime				
8,534.2	8,534.0	Charles Salt				
9,209.2	9,209.0	Base Last Salt				
9,429.2	9,429.0	Mission Canyon				
9,993.2	9,993.0	Lodgepole				
10,757.5	10,708.0	False Bakken				
10,773.5	10,718.0	Upper Bakken Shale				
10,800.5	10,732.0	Middle Bakken				
10,887.1	10,768.0	Lower Bakken Shale				
10,900.6	10,780.0	Pronghorn				
10,958.3	10,799.0	Threeforks				
11,014.2	10,811.0	Threeforks(Top of Target)				
11,793.2	10,822.0	Threeforks(Base of Target)				
11,793.2	10,822.0	Claystone				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			Comment
		+N-S (usft)	+E-W (usft)		
2,150.0	2,150.0	0.0	0.0		Start Build 5.00
2,160.0	2,160.0	0.0	0.0		Start 5682.9 hold at 2160.0 MD
7,842.8	7,842.6	-33.6	36.5		Start Drop -5.00
7,852.8	7,852.6	-33.7	36.6		Start 2466.9 hold at 7852.8 MD
10,339.7	10,339.5	-35.0	38.0		Start Build 12.00 - KOP
11,086.4	10,817.0	-268.8	450.5		Start DLS 2.00 TFO -90.10 - EOC
12,590.2	10,827.7	-641.4	1,889.8		Start 8045.4 hold at 12590.2 MD
20,635.6					TD at 20835.8

**SECTION BREAKDOWN**  
BASIS PETROLEUM NORTH AMERICA, LLC  
1 FANNIN, SUITE 1500, HOUSTON, TX 77002  
"CHALMERS 5300-21-19-10T"

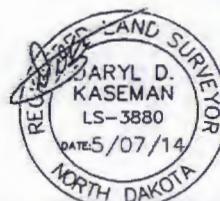
2292 FEET FROM NORTH LINE AND 327 FEET FROM WEST LINE  
SECTIONS 19 & 20, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA.



  - 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 1891. THE CORNERS FOUND ARE AS INDICATED AND ALL OTHERS ARE COMPUTED FROM THOSE CORNERS FOUND AND BASED ON G.L.O. DATA. THE MAPPING ANGLE FOR THIS AREA IS APPROXIMATELY -0°03'.

THIS DOCUMENT WAS ORIGINALLY ISSUED  
AND SEALED BY DARYL D. KASEMAN,  
PLS., REGISTRATION NUMBER 3880 ON  
5/07/14 AND THE ORIGINAL  
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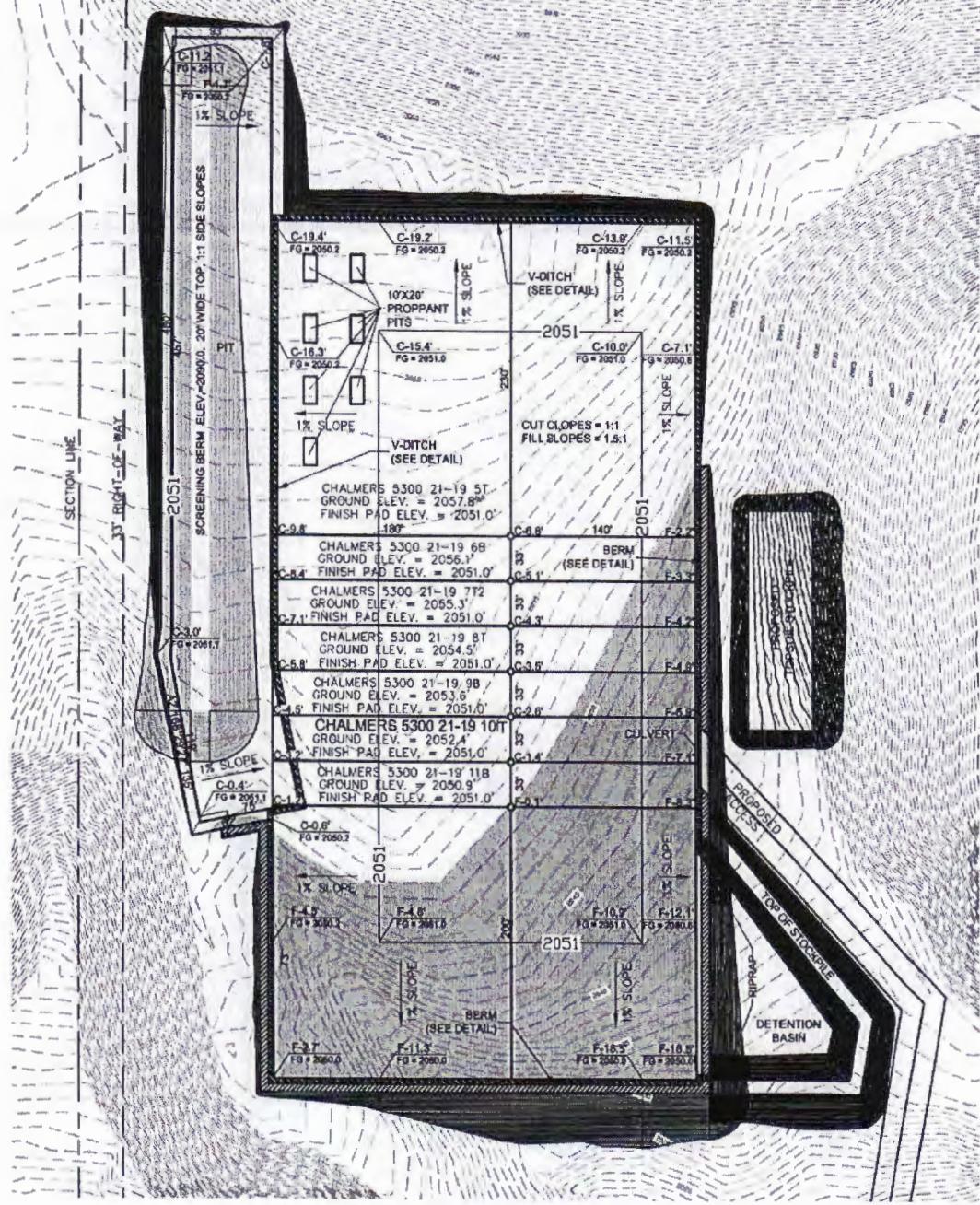


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EWE/WEIER

**PAD LAYOUT**  
 OASIS PETROLEUM NORTH AMERICA, LLC  
 1001 FANNIN, SUITE 1500, HOUSTON, TX 77002  
 \*CHALMERS 5300 21-19 10T  
 2292 FEET FROM NORTH LINE AND 327 FEET FROM WEST LINE  
 SECTION 19, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



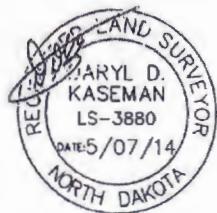
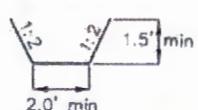
NOTE 1: Pad dimensions shown are to usable area, the v-ditch and berm areas shall be built to the outside of the pad dimensions.

NOTE 2 : Screening berm is to be built after drilling operations are complete.

THIS DOCUMENT WAS ORIGINALLY ISSUED AND SEALED BY DARYL D. KASEMAN, PLS., REGISTRATION NUMBER 3880 ON 5/07/14, AND THE ORIGINAL DOCUMENTS ARE STORED AT THE OFFICES OF INTERSTATE ENGINEERING, INC.

0 80  
1' - 80'

V-DITCH DETAIL



Proposed Contours      - BERM  
 Original Contours      - DITCH

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

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Professional you need, people you trust

Interstate Engineering, Inc.  
 P.O. Box 844  
 425 East Main Street  
 Sidney, Montana 59270  
 Ph: (406) 433-6617  
 Fax: (406) 433-6618  
[www.interstateeng.com](http://www.interstateeng.com)  
 Other offices in Missoula, North Dakota and South Dakota

OASIS PETROLEUM NORTH AMERICA, LLC  
 PAD LAYOUT  
 SECTION 19, T153N, R100W  
 MCKENZIE COUNTY, NORTH DAKOTA  
 Drawn By: B.H.M. Project No.: \$13-06-292-09  
 Checked By: D.D.K. Date: JUL 2014

Project No.	Date	By	Description
REV 1	5/7/14	JHE	Moved wells on pad
REV 2	6/22/14	BBW	Moved wells on pad/revised pad
REV 3	6/2/14	BBW	Moved wells on pad/revised pad

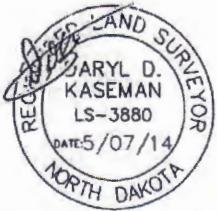
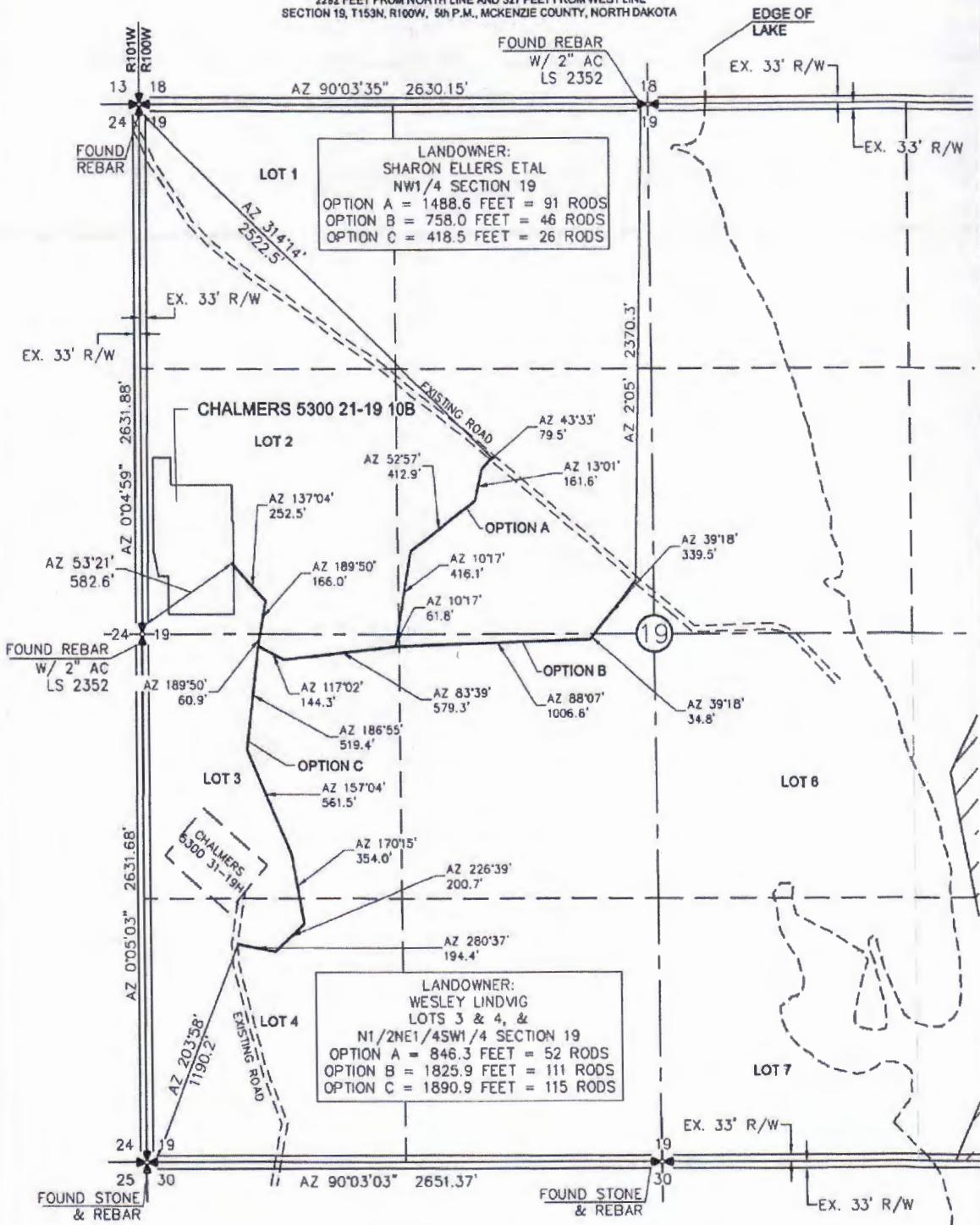
Drawn by Daryl D. Kaseman, LS-3880, dated 5/07/14, revised 6/2/14, checked 6/22/14, signed 6/22/14.

#### **ACCESS APPROACH**

ACCESS APPROACH  
OASIS PETROLEUM NORTH AMERICA, LLC

1001 FANNIN, SUITE 1500, HOUSTON, TX 77002

2292 FEET FROM NORTH LINE AND 327 FEET FROM WEST LINE  
SECTION 19, T153N, R100W, 5<sup>th</sup> P.M., MCKENZIE COUNTY, NORTH DAKOTA



THIS DOCUMENT WAS ORIGINALLY  
ISSUED AND SEALED BY DARYL D.  
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3880 ON 5/07/14 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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Runout No.	Date	By	Description
REV 1	3/17/14	JLS	WAVED WELLS ON PAD
REV 2	4/22/14	BHP	WAVED WELLS ON PAD,REVISED PAD
REV 3	5/2/14	BHP	WAVED WELLS ON PAD,REVISED PAD

### WELL LOCATION SITE QUANTITIES

OASIS PETROLEUM NORTH AMERICA, LLC  
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002  
"CHALMERS 5300 21-19 9B"

2259 FEET FROM NORTH LINE AND 327 FEET FROM WEST LINE  
SECTION 19, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

WELL SITE ELEVATION	2053.6
WELL PAD ELEVATION	2051.0
EXCAVATION	67,041
PLUS PIT	<u>22,050</u>
	89,091
EMBANKMENT	26,714
PLUS SHRINKAGE (25%)	<u>6,679</u>
	33,393
STOCKPILE PIT	22,050
STOCKPILE TOP SOIL (6")	5,434
BERMS	1,007 LF = 326 CY
DITCHES	1,768 LF = 270 CY
SCREENING BERM	27,464 CY
STOCKPILE MATERIAL	694
DISTURBED AREA FROM PAD	6.74 ACRES

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

CUT END SLOPES AT 1:1

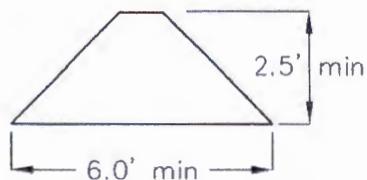
FILL END SLOPES AT 1.5:1

### WELL SITE LOCATION

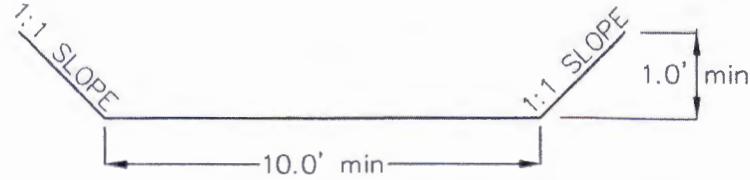
2259' FNL

327' FWL

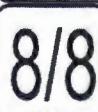
#### BERM DETAIL



#### DITCH DETAIL



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Interstate Engineering, Inc.  
P.O. Box 643  
425 East Main Street  
Sidney, Montana 59270  
Ph (406) 433-5617  
Fax (406) 433-5618  
[www.interstateeng.com](http://www.interstateeng.com)

OASIS PETROLEUM NORTH AMERICA, LLC  
QUANTITIES  
SECTION 19, T153N, R100W  
MCKENZIE COUNTY, NORTH DAKOTA  
Drawn By: B.H.H. Project No.: S13-09-282-04  
Checked By: D.D.K. Date: JAN 2014

Revision No.	Date	By	Description
REV 1	3/12/14	JVS	Moved wells on pad
REV 2	4/22/14	BHH	Moved wells on pad/revised pad
REV 3	5/2/14	BHH	Moved wells on pad/revised pad



# 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.

28637



PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.

PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

<input checked="" type="checkbox"/> Notice of Intent	Approximate Start Date <b>July 29, 2014</b>	<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 checked="" type="checkbox"/> Casing or Liner	<input type="checkbox"/> Acidizing
		<input type="checkbox"/> Plug Well	<input type="checkbox"/> Fracture Treatment
		<input type="checkbox"/> Supplemental History	<input type="checkbox"/> Change Production Method
		<input type="checkbox"/> Temporarily Abandon	<input type="checkbox"/> Reclamation
		<input type="checkbox"/> Other	<u>Change casing</u>

Well Name and Number  
**Chalmers 5300 21-19 10B**

Footages	Qtr-Qtr	Section	Township	Range	
<b>2292 F N L</b>	<b>326 F W L</b>	<b>LOT2</b>	<b>19</b>	<b>153 N</b>	<b>100 W</b>
Field	Pool	County			
	<b>Bakken</b>	<b>McKenzie</b>			

## 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 permission to make the following changes to the above referenced well:

- Surface casing changed to 13 3/8" and depth changed to 2,126'
- Contingency 9 5/8" casing added

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

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

## FOR STATE USE ONLY

<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date <i>8-15-14</i>	
By <i>Hannah Eubank</i>	
Title <b>Petroleum Resource Specialist</b>	

**Oasis Petroleum**  
**Well Summary**  
**Chalmers 5300 21-19 10B**  
**Sec. 19 T153N R100W**  
**McKenzie County, North Dakota**

**SURFACE CASING AND CEMENT DESIGN**

Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Make-up Torque (ft-lbs)		
							Minimum	Optimum	Max
13-3/8"	0' to 2,126'	54.5	J-55	STC	12.615"	12.459"	4,100	5,470	6,840

Interval	Description	Collapse	Burst	Tension	Cost per ft
		(psi) a	(psi) b	(1000 lbs) c	
0' to 2,126'	13-3/8", 54.5#, J-55, STC, 8rd	1130 / 1.14	2730 / 2.74	514 / 2.57	

**API Rating & Safety Factor**

- a) Collapse pressure based on full casing evacuation with 9 ppg fluid on backside (2126' setting depth).
- b) Burst pressure based on 9 ppg fluid with no fluid on backside (2126' setting depth).
- c) Tension based on string weight in 9 ppg fluid at 2126' TVD plus 100k# overpull. (Buoyed weight equals 100k 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:**                **629 sks** (325 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:**                **374 sks** (77 bbls) 1.16 yield conventional system with 94 lb/sk cement, .25 lb/sk Lost Circulation Control Agent, and .25% CaCL2.

**Oasis Petroleum  
Well Summary  
Chalmers 5300 21-19 10B  
Sec. 19 T153N R100W  
McKenzie County, North Dakota**

**INTERMEDIATE CASING AND CEMENT DESIGN**

**Intermediate Casing Design**

Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Make-up Torque (ft-lbs)		
							Minimum	Optimum	Max
9-5/8"	0' - 6000'	40	HCL-80	LTC	8.835"	8.75"**	5,450	7,270	9,090

\*\*Special Drift

Interval	Description	Collapse	Burst	Tension
		(psi) a	(psi) b	(1000 lbs) c
0' - 6000'	9-5/8", 40#, HCL-80, LTC, 8rd	3090 / 3.96*	5750 / 1.23	837 / 2.75

**API Rating & Safety Factor**

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

Cement volumes are estimates based on 9-5/8" casing set in an 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:**      **540 sks** (280 bbls) Conventional system with 75 lb/sk cement, 0.5lb/sk lost circulation, 10% expanding agent, 2% extender, 2% CaCl<sub>2</sub>, 0.2% anti foam, and 0.4% fluid loss

**Tail Slurry:**      **373 sks** (77 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  
Chalmers 5300 21-19 10B  
Sec. 19 T153N R100W  
McKenzie County, North Dakota**

**INTERMEDIATE CASING AND CEMENT DESIGN**

**Intermediate Casing Design**

<b>Size</b>	<b>Interval</b>	<b>Weight</b>	<b>Grade</b>	<b>Coupling</b>	<b>I.D.</b>	<b>Drift</b>	<b>Make-up Torque (ft-lbs)</b>		
							<b>Minimum</b>	<b>Optimum</b>	<b>Max</b>
7"	0' - 6741'	29	P-110	LTC	6.184"	6.059"	5980	7970	8770
7"	6741' - 10272'	32	HCP-110	LTC	6.094"	6.000"**	6730	8970	9870
7"	10272' - 11033'	29	P-110	LTC	6.184"	6.059"	5980	7970	8770

\*\*Special Drift

<b>Interval</b>	<b>Description</b>	<b>Collapse</b>	<b>Burst</b>	<b>Tension</b>
		(psi) a	(psi) b	(1000 lbs) c
0' - 6741'	7", 29#, P-110, LTC, 8rd	8530 / 2.43*	11220 / 1.19	797 / 2.09
6741' - 10272'	7", 32#, HCP-110, LTC, 8rd	11820 / 2.21*	12460 / 1.29	
6741' - 10272'	7", 32#, HCP-110, LTC, 8rd	11820 / 1.28**	12460 / 1.29	
10272' - 11033'	7", 29#, P-110, LTC, 8rd	8530 / 1.51*	11220 / 1.15	

**API Rating & Safety Factor**

- a. \*Assume full casing evacuation with 10 ppg fluid on backside. \*\*Assume full casing evacuation with 1.2 psi/ft equivalent fluid gradient across salt intervals.
- b. Burst pressure based on 9000 psig max press for stimulation plus 10.2 ppg fluid in casing and 9 ppg fluid on backside-to 10,807' TVD.
- c. Based on string weight in 10 ppg fluid, 280k lbs buoyed weight) plus 100k lbs overpull.

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

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

**Lead Slurry:**      **219 sks** (86 bbls) 2.21 yield conventional system with 47 lb/sk cement, 37 lb/sk D035 Extender, 3.0% KCl, 3.0% D154 Extender, 0.3% D208 Viscosifier, 0.07% Retarder, 0.2% Anti Foam, 0.5lb/sk D130 LCM

**Tail Slurry:**      **602 sks** (165 bbls) 1.54 yield conventional system with 94 lb/sk cement, 3.0% KCl, 35.0% Silica, 0.5% Retarder, 0.2% Fluid Loss, 0.2% Anti Foam, 0.5 lb/sk LCM

**Oasis Petroleum  
Well Summary  
Chalmers 5300 21-19 10B  
Sec. 19 T153N R100W  
McKenzie County, North Dakota**

**PRODUCTION LINER**

<b>Size</b>	<b>Interval</b>	<b>Weight</b>	<b>Grade</b>	<b>Coupling</b>	<b>I.D.</b>	<b>Drift</b>	<b>Make-up Torque (ft-lbs)</b>		
							<b>Minimum</b>	<b>Optimum</b>	<b>Max</b>
4-1/2"	10222' - 20516'	11.6	P-110	BTC	4.000"	3.875"	2270	3020	3780

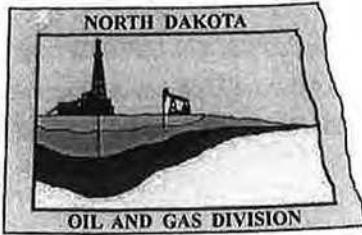
<b>Interval</b>	<b>Description</b>	<b>Collapse</b>	<b>Burst</b>	<b>Tension</b>
		(psi) a	(psi) b	(1000 lbs) c
10222' - 20516'	4-1/2", 11.6 lb, P-110, BTC	7560 / 1.41	10690 / 1.10	385 / 1.90

**API Rating & Safety Factor**

- a) Based on full casing evacuation with 9.5 ppg fluid on backside @ 10807' TVD.
- b) Burst pressure based on 9000 psi treating pressure with 10.2 ppg internal fluid gradient and 9 ppg external fluid gradient @ 10807' TVD.
- c) Based on string weight in 9.5 ppg fluid (Buoyed weight: 102k lbs.) plus 100k lbs overpull.

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

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



# Oil and Gas Division

Lynn D. Helms - Director

Bruce E. Hicks - Assistant Director

**Department of Mineral Resources**

Lynn D. Helms - Director

**North Dakota Industrial Commission**

[www.dmr.nd.gov/oilgas](http://www.dmr.nd.gov/oilgas)

28637

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

Date: 6/23/2014

**RE: CORES AND SAMPLES**

Well Name: **CHALMERS 5300 21-19 10B** Well File No.: **28637**  
Location: **LOT2 19-153-100** County: **MCKENZIE**  
Permit Type: **Development - HORIZONTAL**  
Field: **BAKER** Target Horizon: **BAKKEN**

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 - F

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. 28637

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

<input checked="" type="checkbox"/> Notice of Intent	Approximate Start Date <b>February 24, 2014</b>	<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	<b>Waiver to rule Rule 43-02-03-31</b>

**Well Name and Number**  
**Chalmers 5300 21-19 10B**

Footages			Qtr-Qtr	Section	Township	Range
<b>2292 F N L</b>	<b>326 F W L</b>		<b>LOT2</b>	<b>19</b>	<b>153 N</b>	<b>100 W</b>
Field	Pool	Bakken		County	McKenzie	

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

**Name of Contractor(s)**

**Address**

|City

State

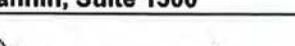
**Zip Code**

#### **DETAILS OF WORK**

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

The Oasis Petroleum/Chalmers 5300 31-19H (NDIC 20407) located within a mile of the subject well.

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

Company <b>Oasis Petroleum North America LLC</b>		Telephone Number <b>281-404-9491</b>
Address <b>1001 Fannin, Suite 1500</b>		
City <b>Houston</b>		State <b>TX</b>
Signature 		Printed Name <b>Brandi Terry</b>
Title <b>Regulatory Specialist</b>		Date <b>March 27, 2014</b>
Email Address <b>bterry@oasispetroleum.com</b>		

FOR STATE USE ONLY	
<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date	6-16-2014
By	<i>Stephen Fried</i>
Title	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.

28637

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.

PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

Notice of Intent

Approximate Start Date

**February 24, 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 Prognosis

Spill Report

Redrilling or Repair

Shooting

Casing or Liner

Acidizing

Plug Well

Fracture Treatment

Supplemental History

Change Production Method

Temporarily Abandon

Reclamation

Other

**Suspension of Drilling**

Well Name and Number

**Chalmers 5300 21-19 10B**

Footages	2292 F N L	326 F WL	Qtr-Qtr <b>LOT2</b>	Section <b>19</b>	Township <b>153 N</b>	Range <b>100 W</b>
Field	Pool <b>Bakken</b>			County	<b>McKenzie</b>	

### 24-HOUR PRODUCTION RATE

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

Name of Contractor(s)

**Advanced Energy Services**

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

### DETAILS OF WORK

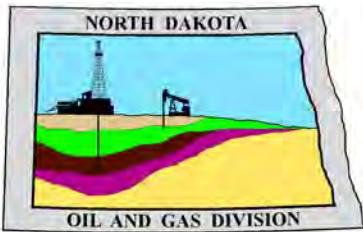
Oasis Petroleum North America LLC requests permission for suspension of drilling for up to 90 days for the referenced well under NDAC 43-02-03-55. Oasis Petroleum North America LLC intends to drill the surface hole with freshwater based drilling mud and set surface casing with a small drilling rig and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

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

Company <b>Oasis Petroleum North America LLC</b>	Telephone Number <b>(281) 404-9491</b>	
Address <b>1001 Fannin, Suite 1500</b>		
City <b>Houston</b>	State <b>TX</b>	Zip Code <b>77002</b>
Signature 	Printed Name <b>Brandi Terry</b>	
Title <b>Regulatory Specialist</b>	Date <b>March 27, 2014</b>	
Email Address <b>bterry@oasispetroleum.com</b>		

### FOR STATE USE ONLY

<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date <b>6/16/14</b>	
By <b>Nathaniel Erbele</b>	
Title <b>Petroleum Resource Specialist</b>	



# 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](http://www.oilgas.nd.gov)

June 16, 2014

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

**RE: HORIZONTAL WELL  
CHALMERS 5300 21-19 10B  
LOT2 Section 19-153N-100W  
McKenzieCounty  
Well File # 28637**

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 19 & 20 T153N R100W.

**PERMIT STIPULATIONS:** Effective June 1, 2014, a covered leak-proof container (with placard) for filter sock disposal must be maintained on the well site beginning when the well is spud, and must remain on-site during clean-out, completion, and flow-back whenever filtration operations are conducted. Due to the proximity of Lake Sakakawea 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: 9972' east.

### Location Construction Commencement (Three Day Waiting Period)

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

### **Permit Fee & Notification**

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

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

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

Thank you for your cooperation.

Sincerely,

Nathaniel Erbele  
Petroleum Resource Specialist



# APPLICATION FOR PERMIT TO DRILL HORIZONTAL WELL - FORM 1H

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

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.

PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

Type of Work <b>New Location</b>	Type of Well <b>Oil &amp; Gas</b>	Approximate Date Work Will Start <b>03 / 01 / 2014</b>	Confidential Status <b>No</b>
Operator <b>OASIS PETROLEUM NORTH AMERICA LLC</b>		Telephone Number <b>281-404-9491</b>	
Address <b>1001 Fannin Suite 1500</b>		City <b>Houston</b>	State <b>TX</b> Zip Code <b>77002</b>

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 <b>CHALMERS</b>				Well Number <b>5300 21-19 10B</b>			
Surface Footages <b>2292 F N L      326 F W L</b>		Qtr-Qtr <b>LOT2</b>	Section <b>19</b>	Township <b>153 N</b>	Range <b>100 W</b>	County <b>McKenzie</b>	
Longstring Casing Point Footages <b>2502 F N L      819 F W L</b>		Qtr-Qtr <b>SWNW</b>	Section <b>19</b>	Township <b>153 N</b>	Range <b>100 W</b>	County <b>McKenzie</b>	
Longstring Casing Point Coordinates From Well Head <b>210 S From WH      493 E From WH</b>		Azimuth <b>111.4 °</b>	Longstring Total Depth <b>11033 Feet MD      10749 Feet TVD</b>				
Bottom Hole Footages From Nearest Section Line <b>2637 F N L      213 F E L</b>		Qtr-Qtr <b>SENE</b>	Section <b>20</b>	Township <b>153 N</b>	Range <b>100 W</b>	County <b>McKenzie</b>	
Bottom Hole Coordinates From Well Head <b>345 S From WH      9959 E From WH</b>		KOP Lateral 1 <b>10272 Feet MD</b>	Azimuth Lateral 1 <b>90.0 °</b>	Estimated Total Depth Lateral 1 <b>20516 Feet MD      10807 Feet TVD</b>			
Latitude of Well Head <b>48 ° 03 ' 40.65 "</b>	Longitude of Well Head <b>-103 ° 36 ' 10.11 "</b>	NAD Reference <b>NAD83</b>		Description of (Subject to NDIC Approval) <b>Spacing Unit: Sections 19 &amp; 20 T153N R100W</b>			
Ground Elevation <b>2052 Feet Above S.L.</b>	Acres in Spacing/Drilling Unit <b>1280</b>	Spacing/Drilling Unit Setback Requirement <b>500 Feet N/S      200 Feet E/W</b>		Industrial Commission Order <b>23752</b>			
North Line of Spacing/Drilling Unit <b>10498 Feet</b>	South Line of Spacing/Drilling Unit <b>10513 Feet</b>	East Line of Spacing/Drilling Unit <b>5280 Feet</b>		West Line of Spacing/Drilling Unit <b>5263 Feet</b>			
Objective Horizons <b>Bakken</b>						Pierre Shale Top <b>2021</b>	
Proposed Surface Casing	Size <b>9 - 5/8 "</b>	Weight <b>36 Lb./Ft.</b>	Depth <b>2150 Feet</b>	Cement Volume <b>632 Sacks</b>	NOTE: Surface hole must be drilled with fresh water and surface casing must be cemented back to surface.		
Proposed Longstring Casing	Size <b>7 - "</b>	Weight(s) <b>29/32 Lb./Ft.</b>	Longstring Total Depth <b>11033 Feet MD      10749 Feet TVD</b>		Cement Volume <b>790 Sacks</b>	Cement Top <b>3917 Feet</b>	Top Dakota Sand <b>5417 Feet</b>
Base Last Charles Salt (If Applicable) <b>9209 Feet</b>	NOTE: Intermediate or longstring casing string must be cemented above the top Dakota Group Sand.						
Proposed Logs <b>Triple Combo: KOP-KibbyGR/Res to BSC GR-To Surf CND thru Dakota</b>							
Drilling Mud Type (Vertical Hole - Below Surface Casing) <b>Invert</b>				Drilling Mud Type (Lateral) <b>Salt Water Gel</b>			
Survey Type in Vertical Portion of Well <b>MWD Every 100 Feet</b>		Survey Frequency: Build Section <b>30 Feet</b>		Survey Frequency: Lateral <b>90 Feet</b>		Survey Contractor <b>Ryan</b>	

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, Plots**

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 <b>N</b>	Range <b>W</b>	County	
Bottom Hole Footages From Nearest Section Line F      L		Qtr-Qtr	Section	Township <b>N</b>	Range <b>W</b>	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 <b>N</b>	Range <b>W</b>	County	
Bottom Hole Footages From Nearest Section Line F      L		Qtr-Qtr	Section	Township <b>N</b>	Range <b>W</b>	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 <b>N</b>	Range <b>W</b>	County	
Bottom Hole Footages From Nearest Section Line F      L		Qtr-Qtr	Section	Township <b>N</b>	Range <b>W</b>	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 <b>N</b>	Range <b>W</b>	County	
Bottom Hole Footages From Nearest Section Line F      L		Qtr-Qtr	Section	Township <b>N</b>	Range <b>W</b>	County	

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

Date

03 / 27 / 2014

ePermit

Printed Name  
**Brandi Terry**

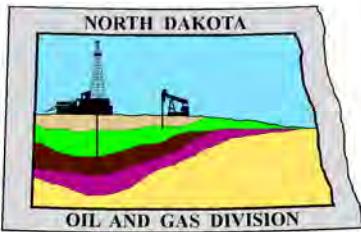
Title

**Regulatory Specialist****FOR STATE USE ONLY**

Permit and File Number <b>28637</b>	API Number <b>33 - 053 - 06022</b>
Field <b>BAKER</b>	
Pool <b>BAKKEN</b>	Permit Type <b>DEVELOPMENT</b>

**FOR STATE USE ONLY**

Date Approved <b>6 / 16 / 2014</b>
By <b>Nathaniel Erbele</b>
Title <b>Petroleum Resource Specialist</b>



# 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](http://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,

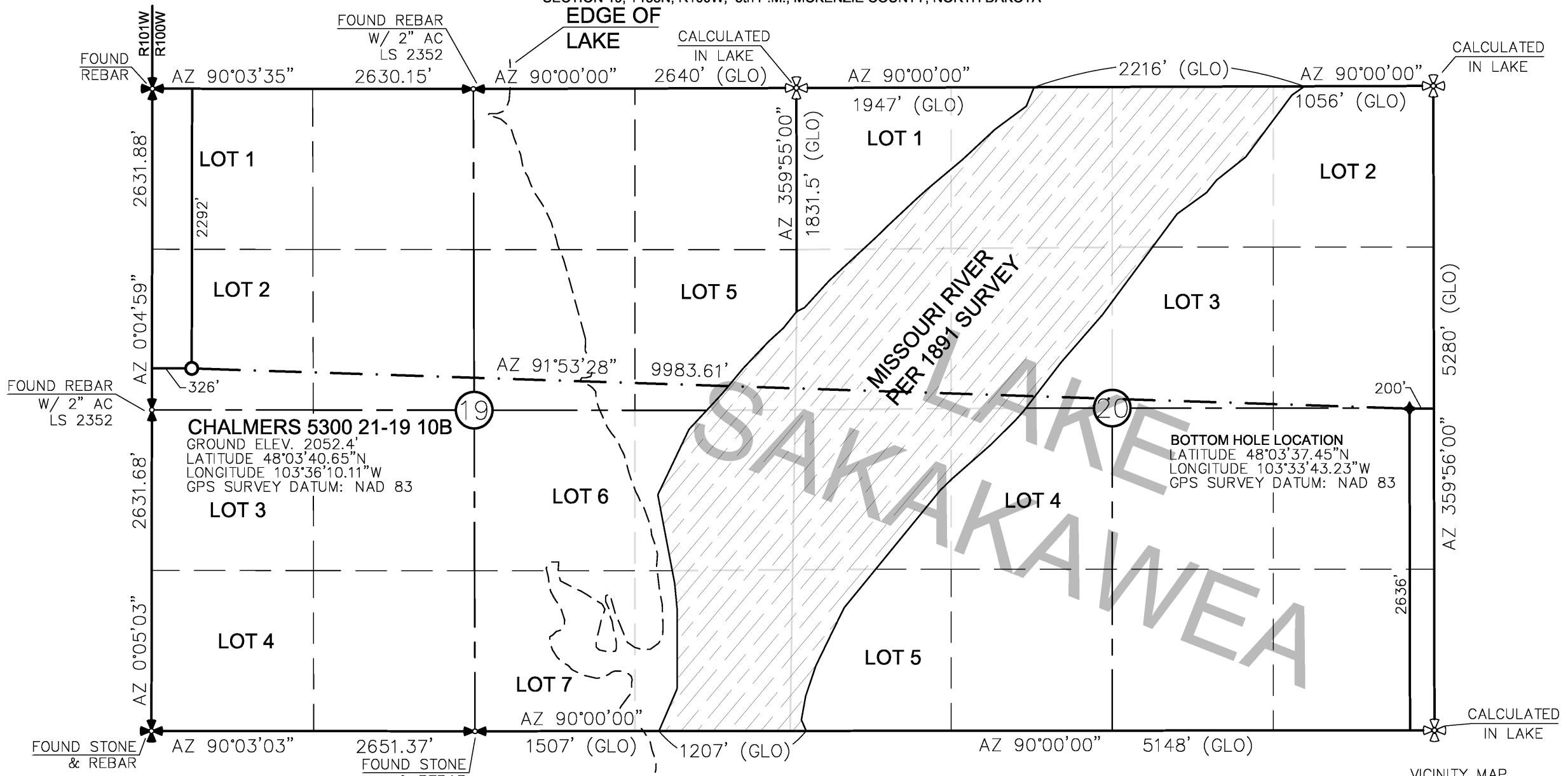
*Bruce E. Hicks*

Assistant Director

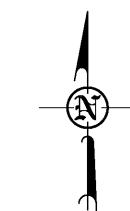
## WELL LOCATION PLAT

OASIS PETROLEUM NORTH AMERICA, LLC  
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002  
"GULFPORT 5000 04-10-16P"

2292 FEET FROM NORTH LINE AND 326 FEET FROM WEST LINE  
SECTION 19, 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  
3/13/14 AND THE ORIGINAL  
DOCUMENTS ARE STORED AT THE  
OFFICES OF INTERSTATE ENGINEERING,  
INC.



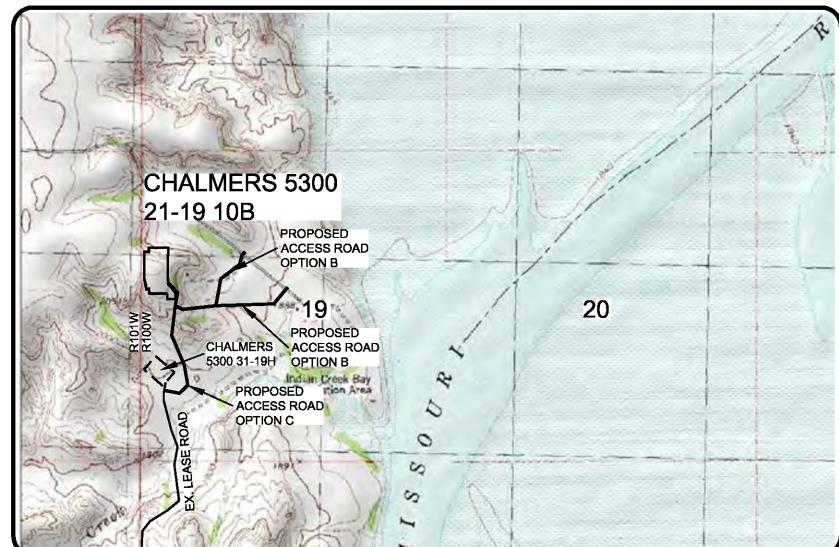
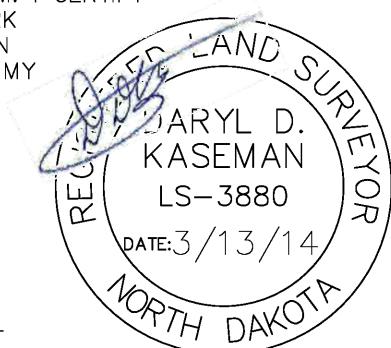
- MONUMENT — RECOVERED
- MONUMENT — NOT RECOVERED

STAKED ON 1/29/14  
VERTICAL CONTROL DATUM WAS BASED UPON  
CONTROL POINT 16 WITH AN ELEVATION OF 2014.2'

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



OASIS BETBOLEUM

REV 1 3/12/14 JJS MOVED WELLS ON PAD

WELL LOCATION PLA SECTION 19, T155N, R100W		Project No.: S13-0922-05
MCKENZIE COUNTY, NORTH DAKOTA		Date: JAN 2014
Drawn By: B.H.H.	Checked By: D.D.K.	

P.O. Box 648  
425 East Main Street  
Sidney, Montana 59270  
Ph (406) 433-5617  
Fax (406) 433-5618  
[www.interstate.com](http://www.interstate.com)  
Other offices in Minnesota, North Dakota and South Dakota



1/8  
SHEET NO

DRILLING PLAN								
OPERATOR	Oasis Petroleum			COUNTY/STATE	McKenzie Co., ND			
WELL NAME	Chalmers 5300 21-19 10B			RIC	B 25			
WELL TYPE	Horizontal Middle Bakken							
LOCATION	SW NW 19-153N-100W	Surface Location (survey plat): 2292' FNL		326' FWL				
EST. T.D.	20,516'			GROUND ELEV:	2,046'	Sub Height: 25'		
TOTAL LATERAL:	9,483'			KB ELEV:	2,071'			
MARKER	TVD	Subsea TVD	LOGS:	Type	Interval			
Pierre	NDIC MAP	2,021	50	OH Logs: Request a Sundry for an Open Hole Log Waiver: Oasis Chalmers 5300 31-19H 1,850' to S sec 19 153N 100W				
Greenhorn		4,624	-2,553	CBL/GR: Above top of cement/GR to base of casing				
Mowry		5,029	-2,958	MWD GR: KOP to lateral TD				
Dakota		5,417	-3,346					
Rierdon		6,463	-4,392	DEVIATION:	Surf: 3 deg. max., 1 deg / 100'; svry every 500' Prod: 5 deg. max., 1 deg / 100'; svry every 100'			
Dunham Salt		6,891	-4,820					
Dunham Salt Base		6,960	-4,889					
Pine Salt		7,257	-5,186					
Pine Salt Base		7,290	-5,219					
Opecche Salt		7,351	-5,280					
Opecche Salt Base		7,426	-5,355					
Amsden		7,662	-5,591					
Tyler		7,828	-5,757					
Otter/Base Minnelusa		8,032	-5,961	DST'S:	None planned			
Kibbey Lime		8,384	-6,313					
Charles Salt		8,534	-6,463	CORES:	None planned			
Base Last Salt		9,209	-7,138					
Mission Canyon		9,429	-7,358					
Lodgepole		9,993	-7,922					
False Bakken		10,706	-8,635					
Upper Bakken Shale		10,716	-8,645	MUDLOGGING:	Two-Man: Begin 200' above Kibbey 30' samples in curve and lateral			
Middle Bakken (Top of Target)		10,743	-8,672					
Middle Bakken (Base of target)		10,754	-8,683					
Lower Bakken Shale		10,766	-8,695					
Threeforks		10,799	-8,728					
				BOP:	11" 5000 psi blind, pipe & annular			
Est. Dip Rate:	-0.35							
Max. Anticipated BHP:	4665			Surface Formation: Glacial till				
MUD:	Interval	Type	WT	Vis	WL	Remarks		
Surface:	0' -	2,150' FW	8.4-9.0	28-32	NC	Circ Mud Tanks		
Intermediate:	2,150' -	11,033' Invert	9.5-10.4	40-50	30+ Ht Hp	Circ Mud Tanks		
Laterals:	11,033' -	20,516' Salt Water	9.8-10.2	28-32	NC	Circ Mud Tanks		
CASING:	Size	Wt pfp	Hole	Depth	Cement	WOC	Remarks	
Surface:	9-5/8"	36#	13-1/2"	2,150'	To Surface	12	100' into Pierre	
Intermediate:	7"	29/32#	8-3/4"	11,033'	3917	24	1500' above Dakota	
Production Liner:	4.5"	11.6#	6"	20,516'	TOL @ 10,222'		50' above KOP	
PROBABLE PLUGS, IF REQ'D:								
OTHER:	MD	TVD	FNL/FSL	FEL/FWL	S-T-R	AZI		
Surface:	2,150	2,150	2292 FNL	326 FWL	SEC. 19 T153N R100W	Survey Company:		
KOP:	10,272'	10,272'	2324 FNL	364 FWL	SEC. 19 T153N R100W	Build Rate: 12 deg / 100'		
EOC:	11,019'	10,749'	2497 FNL	806 FWL	SEC. 19 T153N R100W	111.4		
Casing Point:	11,033'	10,749'	2502 FNL	819 FWL	SEC. 19 T153N R100W	111.4		
Middle Bakken Lateral TD:	20,516'	10,807'	2636 FSL	200 FEL	SEC. 20 T153N R100W	90.0		
Comments:								
Request a Sundry for an Open Hole Log Waiver: Oasis Chalmers 5300 31-19H 1,850' to S sec 19 153N 100W								
No frac string planned								
35 packers and 25 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)								
								
Geology: N. Gabelman	2/4/2014		Engineering: DAD 6/11/14					

**Oasis Petroleum**  
**Well Summary**  
**Chalmers 5300 21-19 10B**  
**Section 19 T153N R100W**  
**McKenzie County, ND**

**SURFACE CASING AND CEMENT DESIGN**

Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Make-up Torque (ft-lbs)		
							Minimum	Optimum	Max
9-5/8"	0' - 2150'	36	J-55	LTC	8.921"	8.765"	3400	4530	5660

Interval	Description	Collapse	Burst	Tension
		(psi) / a	(psi) / b	(1000 lbs) / c
0' - 2150'	9-5/8", 36#, J-55, LTC, 8rd	2020 / 2.00	3520 / 3.49	453 / 2.71

**API Rating & Safety Factor**

- a) Based on full casing evacuation with 9 ppg fluid on backside (2150' setting depth).
- b) Burst pressure based on 9 ppg fluid with no fluid on backside (2150' setting depth).
- c) Based on string weight in 9 ppg fluid at 2150' TVD plus 100k# overpull. (Buoyed weight equals 67k 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:**      **459 sks** (243 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**  
**Chalmers 5300 21-19 10B**  
**Section 19 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' - 6691'	29	P-110	LTC	6.184"	6.059"	5980	7970	8770
7"	6691' - 10272'	32	HCP-110	LTC	6.094"	6.000***	6730	8970	9870
7"	10272' - 11033'	29	P-110	LTC	6.184"	6.059"	5980	7970	8770

\*\*Special Drift 7" 32# to 6.0"

Interval	Length	Description	Collapse (psi) a	Burst		Tension (1000 lbs) c
				(psi) b		
0' - 6691'	6691'	7", 29#, P-110, LTC, 8rd	8530 / 2.45*	11220 / 1.19		797 / 2.09
6691' - 10272'	3581'	7", 32#, HCP-110, LTC, 8rd	11820 / 2.21*	12460 / 1.29		
6691' - 10272'	3581'	7", 32#, HCP-110, LTC, 8rd	11820 / 1.04**	12460 / 1.29		
10272' - 11033'	761'	7", 29#, P-110, LTC, 8rd	8530 / 1.52*	11220 / 1.16		

**API Rating & Safety Factor**

- a) \*Assume full casing evacuation with 10 ppg fluid on backside. \*\*Assume full casing evacuation with 1.2 psi/ft equivalent fluid gradient across salt intervals.
- b) Burst pressure based on 9000 psig max press for stimulation plus 10.2 ppg fluid in casing and 9 ppg fluid on backside-to 10749' TVD.
- c) Based on string weight in 10 ppg fluid, (280k 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:**      **186 sks** (84 bbls), 11.8 ppg, 2.55 cu. ft./sk Econocem Cement with .3% Fe-2 and .25 lb/sk Lost Circulation Additive

**Tail Slurry:**      **604 sks** (167 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**  
**Chalmers 5300 21-19 10B**  
**Section 19 T153N R100W**  
**McKenzie County, ND**

**PRODUCTION LINER**

Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Make-up Torque (ft-lbs)		
							Minimum	Optimum	Max
4-1/2"	10222' - <b>20516</b>	11.6	P-110	BTC	4.000"	3.875"	2270	3020	3780

Interval	Length	Description	Collapse (psi) a	Burst (psi) b	Tension (1000 lbs) c
10222' - <b>20516</b>	<b>10294</b>	4-1/2", 11.6 lb, P-110, BTC	7560 / 1.41	10690 / 1.10	385 / 1.89

**API Rating & Safety Factor**

- a) Based on full casing evacuation with 9.5 ppg fluid on backside @ 10807' TVD.
- b) Burst pressure based on 9000 psi treating pressure with 10.2 ppg internal fluid gradient and 9 ppg external fluid gradient @ 10807' TVD.
- c) Based on string weight in 9.5 ppg fluid (Buoyed weight: 103k lbs.) plus 100k lbs overpull.



Azimuths to True North  
Magnetic North: 8.17°

Magnetic Field  
Strength: 56490.5nT  
Dip Angle: 72.96°  
Date: 2/17/2014  
Model: IGRF200510

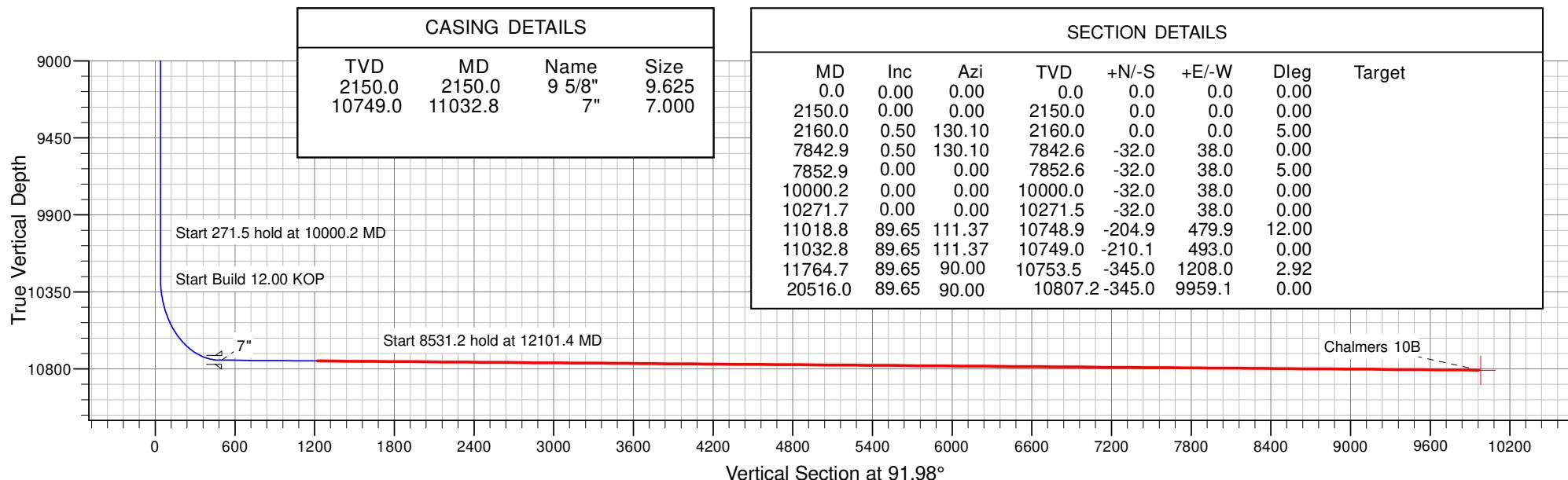
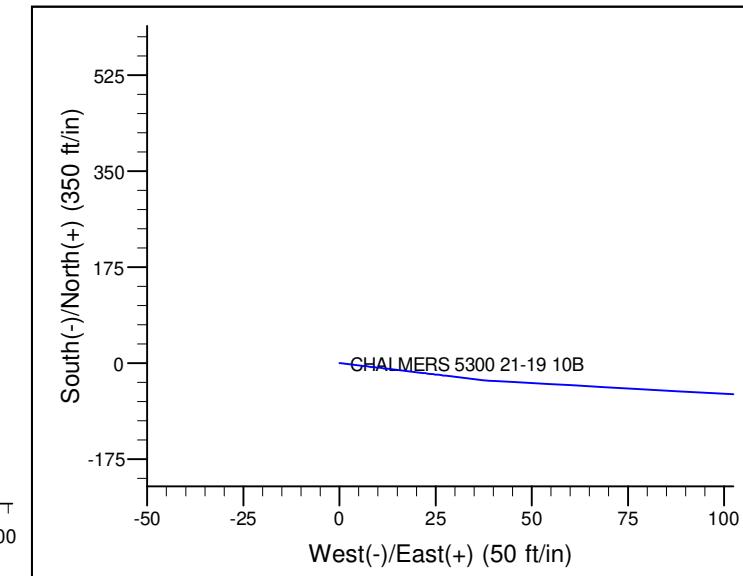
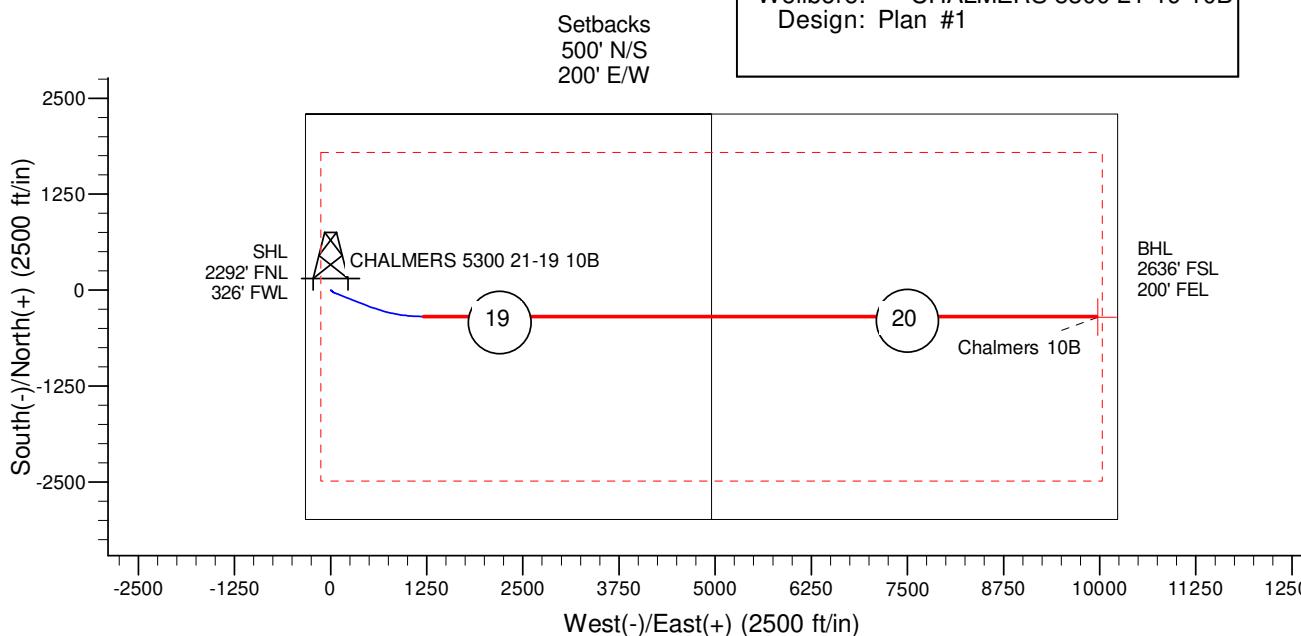


Project: Indian Hills  
Site: 153N-100W-19/20  
Well: CHALMERS 5300 21-19 10B  
Wellbore: CHALMERS 5300 21-19 10B  
Design: Plan #1

SITE DETAILS: 153N-100W-19/20

Well Centre Latitude: 48° 3' 40.650 N  
Longitude: 103° 36' 10.110 W

Positional Uncertainty: 0.0  
Convergence: -2.31  
Local North: True



# **Oasis**

**Indian Hills  
153N-100W-19/20  
CHALMERS 5300 21-19 10B**

**CHALMERS 5300 21-19 10B**

**Plan: Plan #1**

# **Standard Planning Report**

**11 June, 2014**

# Oasis Petroleum

## Planning Report

<b>Database:</b>	OpenWellsCompass - EDM Prod	<b>Local Co-ordinate Reference:</b>	Well CHALMERS 5300 21-19 10B
<b>Company:</b>	Oasis	<b>TVD Reference:</b>	WELL @ 2071.0ft (Original Well Elev)
<b>Project:</b>	Indian Hills	<b>MD Reference:</b>	WELL @ 2071.0ft (Original Well Elev)
<b>Site:</b>	153N-100W-19/20	<b>North Reference:</b>	True
<b>Well:</b>	CHALMERS 5300 21-19 10B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	CHALMERS 5300 21-19 10B		
<b>Design:</b>	Plan #1		

<b>Project</b>	Indian Hills	
<b>Map System:</b>	US State Plane 1983	
<b>Geo Datum:</b>	North American Datum 1983	
<b>Map Zone:</b>	North Dakota Northern Zone	

<b>Site</b>	153N-100W-19/20
<b>Site Position:</b>	<b>Northing:</b> 402,777.74 ft
<b>From:</b> Lat/Long	<b>Easting:</b> 1,209,962.51 ft
<b>Position Uncertainty:</b> 0.0 ft	<b>Slot Radius:</b> 13.200 in

<b>Well</b>	CHALMERS 5300 21-19 10B
<b>Well Position</b>	<b>+N/-S</b> -366.8 ft <b>Northing:</b> 402,409.61 ft <b>Latitude:</b> 48° 3' 44.270 N
	<b>+E/-W</b> 40.1 ft <b>Easting:</b> 1,209,987.78 ft <b>Longitude:</b> 103° 36' 10.700 W
<b>Position Uncertainty</b>	0.0 ft <b>Wellhead Elevation:</b> <b>Ground Level:</b> 2,046.0 ft

<b>Wellbore</b>	CHALMERS 5300 21-19 10B
<b>Magnetics</b>	<b>Model Name</b> IGRF200510 <b>Sample Date</b> 2/17/2014 <b>Declination</b> (°) 8.17 <b>Dip Angle</b> (°) 72.96 <b>Field Strength</b> (nT) 56,490

<b>Design</b>	Plan #1
<b>Audit Notes:</b>	
<b>Version:</b> Phase: PROTOTYPE <b>Tie On Depth:</b> 0.0	
<b>Vertical Section:</b> <b>Depth From (TVD)</b> (ft) <b>+N/-S</b> (ft) <b>+E/-W</b> (ft) <b>Direction</b> (°)	
0.0    0.0    0.0    91.98	

<b>Plan Sections</b>										
<b>Measured Depth</b> (ft)	<b>Inclination</b> (°)	<b>Azimuth</b> (°)	<b>Vertical Depth</b> (ft)	<b>+N/-S</b> (ft)	<b>+E/-W</b> (ft)	<b>Dogleg Rate</b> (/100ft)	<b>Build Rate</b> (/100ft)	<b>Turn Rate</b> (/100ft)	<b>TFO</b> (°)	<b>Target</b>
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00
2,150.0	0.00	0.00	2,150.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00
2,160.0	0.50	130.10	2,160.0	0.0	0.0	5.00	5.00	0.00	130.10	
7,842.9	0.50	130.10	7,842.6	-32.0	38.0	0.00	0.00	0.00	0.00	
7,852.9	0.00	0.00	7,852.6	-32.0	38.0	5.00	-5.00	0.00	180.00	
10,000.2	0.00	0.00	10,000.0	-32.0	38.0	0.00	0.00	0.00	0.00	
10,271.7	0.00	0.00	10,271.5	-32.0	38.0	0.00	0.00	0.00	0.00	
11,018.8	89.65	111.37	10,748.9	-204.9	479.9	12.00	12.00	0.00	111.37	
11,032.8	89.65	111.37	10,749.0	-210.0	493.0	0.00	0.00	0.00	0.00	
11,764.7	89.65	90.00	10,753.5	-345.0	1,208.0	2.92	0.00	-2.92	269.93	
20,516.0	89.65	90.00	10,807.2	-345.0	9,959.1	0.00	0.00	0.00	0.00	

# Oasis Petroleum

## Planning Report

<b>Database:</b>	OpenWellsCompass - EDM Prod	<b>Local Co-ordinate Reference:</b>	Well CHALMERS 5300 21-19 10B
<b>Company:</b>	Oasis	<b>TVD Reference:</b>	WELL @ 2071.0ft (Original Well Elev)
<b>Project:</b>	Indian Hills	<b>MD Reference:</b>	WELL @ 2071.0ft (Original Well Elev)
<b>Site:</b>	153N-100W-19/20	<b>North Reference:</b>	True
<b>Well:</b>	CHALMERS 5300 21-19 10B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	CHALMERS 5300 21-19 10B		
<b>Design:</b>	Plan #1		

### Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate ('/100ft)	Build Rate ('/100ft)	Turn Rate ('/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,021.0	0.00	0.00	2,021.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>Pierre</b>									
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,150.0	0.00	0.00	2,150.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>Start Build 5.00 - 9 5/8"</b>									
2,160.0	0.50	130.10	2,160.0	0.0	0.0	0.0	5.00	5.00	0.00
<b>Start 5682.9 hold at 2160.0 MD</b>									
2,200.0	0.50	130.10	2,200.0	-0.3	0.3	0.3	0.00	0.00	0.00
2,300.0	0.50	130.10	2,300.0	-0.8	1.0	1.0	0.00	0.00	0.00
2,400.0	0.50	130.10	2,400.0	-1.4	1.6	1.7	0.00	0.00	0.00
2,500.0	0.50	130.10	2,500.0	-1.9	2.3	2.4	0.00	0.00	0.00
2,600.0	0.50	130.10	2,600.0	-2.5	3.0	3.1	0.00	0.00	0.00
2,700.0	0.50	130.10	2,700.0	-3.1	3.6	3.7	0.00	0.00	0.00
2,800.0	0.50	130.10	2,800.0	-3.6	4.3	4.4	0.00	0.00	0.00
2,900.0	0.50	130.10	2,900.0	-4.2	5.0	5.1	0.00	0.00	0.00
3,000.0	0.50	130.10	3,000.0	-4.7	5.6	5.8	0.00	0.00	0.00
3,100.0	0.50	130.10	3,100.0	-5.3	6.3	6.5	0.00	0.00	0.00
3,200.0	0.50	130.10	3,200.0	-5.9	7.0	7.2	0.00	0.00	0.00
3,300.0	0.50	130.10	3,300.0	-6.4	7.6	7.9	0.00	0.00	0.00
3,400.0	0.50	130.10	3,400.0	-7.0	8.3	8.5	0.00	0.00	0.00
3,500.0	0.50	130.10	3,499.9	-7.6	9.0	9.2	0.00	0.00	0.00
3,600.0	0.50	130.10	3,599.9	-8.1	9.6	9.9	0.00	0.00	0.00
3,700.0	0.50	130.10	3,699.9	-8.7	10.3	10.6	0.00	0.00	0.00
3,800.0	0.50	130.10	3,799.9	-9.2	11.0	11.3	0.00	0.00	0.00
3,900.0	0.50	130.10	3,899.9	-9.8	11.6	12.0	0.00	0.00	0.00
4,000.0	0.50	130.10	3,999.9	-10.4	12.3	12.7	0.00	0.00	0.00
4,100.0	0.50	130.10	4,099.9	-10.9	13.0	13.4	0.00	0.00	0.00
4,200.0	0.50	130.10	4,199.9	-11.5	13.7	14.0	0.00	0.00	0.00
4,300.0	0.50	130.10	4,299.9	-12.1	14.3	14.7	0.00	0.00	0.00
4,400.0	0.50	130.10	4,399.9	-12.6	15.0	15.4	0.00	0.00	0.00
4,500.0	0.50	130.10	4,499.9	-13.2	15.7	16.1	0.00	0.00	0.00
4,600.0	0.50	130.10	4,599.9	-13.7	16.3	16.8	0.00	0.00	0.00
4,624.1	0.50	130.10	4,624.0	-13.9	16.5	17.0	0.00	0.00	0.00
<b>Greenhorn</b>									

# Oasis Petroleum

## Planning Report

<b>Database:</b>	OpenWellsCompass - EDM Prod	<b>Local Co-ordinate Reference:</b>	Well CHALMERS 5300 21-19 10B
<b>Company:</b>	Oasis	<b>TVD Reference:</b>	WELL @ 2071.0ft (Original Well Elev)
<b>Project:</b>	Indian Hills	<b>MD Reference:</b>	WELL @ 2071.0ft (Original Well Elev)
<b>Site:</b>	153N-100W-19/20	<b>North Reference:</b>	True
<b>Well:</b>	CHALMERS 5300 21-19 10B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	CHALMERS 5300 21-19 10B		
<b>Design:</b>	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/S (ft)	+E/W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,700.0	0.50	130.10	4,699.9	-14.3	17.0	17.5	0.00	0.00	0.00
4,800.0	0.50	130.10	4,799.9	-14.9	17.7	18.2	0.00	0.00	0.00
4,900.0	0.50	130.10	4,899.9	-15.4	18.3	18.8	0.00	0.00	0.00
5,000.0	0.50	130.10	4,999.9	-16.0	19.0	19.5	0.00	0.00	0.00
5,029.1	0.50	130.10	5,029.0	-16.2	19.2	19.7	0.00	0.00	0.00
<b>Mowry</b>									
5,100.0	0.50	130.10	5,099.9	-16.6	19.7	20.2	0.00	0.00	0.00
5,200.0	0.50	130.10	5,199.9	-17.1	20.3	20.9	0.00	0.00	0.00
5,300.0	0.50	130.10	5,299.9	-17.7	21.0	21.6	0.00	0.00	0.00
5,400.0	0.50	130.10	5,399.9	-18.2	21.7	22.3	0.00	0.00	0.00
5,417.1	0.50	130.10	5,417.0	-18.3	21.8	22.4	0.00	0.00	0.00
<b>Dakota</b>									
5,500.0	0.50	130.10	5,499.9	-18.8	22.3	23.0	0.00	0.00	0.00
5,600.0	0.50	130.10	5,599.9	-19.4	23.0	23.7	0.00	0.00	0.00
5,700.0	0.50	130.10	5,699.9	-19.9	23.7	24.3	0.00	0.00	0.00
5,800.0	0.50	130.10	5,799.9	-20.5	24.3	25.0	0.00	0.00	0.00
5,900.0	0.50	130.10	5,899.9	-21.1	25.0	25.7	0.00	0.00	0.00
6,000.0	0.50	130.10	5,999.9	-21.6	25.7	26.4	0.00	0.00	0.00
6,100.0	0.50	130.10	6,099.8	-22.2	26.3	27.1	0.00	0.00	0.00
6,200.0	0.50	130.10	6,199.8	-22.7	27.0	27.8	0.00	0.00	0.00
6,300.0	0.50	130.10	6,299.8	-23.3	27.7	28.5	0.00	0.00	0.00
6,400.0	0.50	130.10	6,399.8	-23.9	28.3	29.1	0.00	0.00	0.00
6,463.2	0.50	130.10	6,463.0	-24.2	28.8	29.6	0.00	0.00	0.00
<b>Rierdon</b>									
6,500.0	0.50	130.10	6,499.8	-24.4	29.0	29.8	0.00	0.00	0.00
6,600.0	0.50	130.10	6,599.8	-25.0	29.7	30.5	0.00	0.00	0.00
6,700.0	0.50	130.10	6,699.8	-25.5	30.3	31.2	0.00	0.00	0.00
6,800.0	0.50	130.10	6,799.8	-26.1	31.0	31.9	0.00	0.00	0.00
6,891.2	0.50	130.10	6,891.0	-26.6	31.6	32.5	0.00	0.00	0.00
<b>Dunham Salt</b>									
6,900.0	0.50	130.10	6,899.8	-26.7	31.7	32.6	0.00	0.00	0.00
6,960.2	0.50	130.10	6,960.0	-27.0	32.1	33.0	0.00	0.00	0.00
<b>Dunham Salt Base</b>									
7,000.0	0.50	130.10	6,999.8	-27.2	32.3	33.3	0.00	0.00	0.00
7,100.0	0.50	130.10	7,099.8	-27.8	33.0	34.0	0.00	0.00	0.00
7,200.0	0.50	130.10	7,199.8	-28.4	33.7	34.6	0.00	0.00	0.00
7,257.2	0.50	130.10	7,257.0	-28.7	34.1	35.0	0.00	0.00	0.00
<b>Pine Salt</b>									
7,290.2	0.50	130.10	7,290.0	-28.9	34.3	35.3	0.00	0.00	0.00
<b>Pine Salt Base</b>									
7,300.0	0.50	130.10	7,299.8	-28.9	34.3	35.3	0.00	0.00	0.00
7,351.2	0.50	130.10	7,351.0	-29.2	34.7	35.7	0.00	0.00	0.00
<b>Opeche Salt</b>									
7,400.0	0.50	130.10	7,399.8	-29.5	35.0	36.0	0.00	0.00	0.00
7,426.2	0.50	130.10	7,426.0	-29.6	35.2	36.2	0.00	0.00	0.00
<b>Opeche Salt Base</b>									
7,500.0	0.50	130.10	7,499.8	-30.0	35.7	36.7	0.00	0.00	0.00
7,600.0	0.50	130.10	7,599.8	-30.6	36.3	37.4	0.00	0.00	0.00
7,662.2	0.50	130.10	7,662.0	-31.0	36.8	37.8	0.00	0.00	0.00
<b>Amsden</b>									
7,700.0	0.50	130.10	7,699.8	-31.2	37.0	38.1	0.00	0.00	0.00
7,800.0	0.50	130.10	7,799.8	-31.7	37.7	38.8	0.00	0.00	0.00
7,828.2	0.50	130.10	7,828.0	-31.9	37.9	39.0	0.00	0.00	0.00
<b>Tyler</b>									

# Oasis Petroleum

## Planning Report

<b>Database:</b>	OpenWellsCompass - EDM Prod	<b>Local Co-ordinate Reference:</b>	Well CHALMERS 5300 21-19 10B
<b>Company:</b>	Oasis	<b>TVD Reference:</b>	WELL @ 2071.0ft (Original Well Elev)
<b>Project:</b>	Indian Hills	<b>MD Reference:</b>	WELL @ 2071.0ft (Original Well Elev)
<b>Site:</b>	153N-100W-19/20	<b>North Reference:</b>	True
<b>Well:</b>	CHALMERS 5300 21-19 10B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	CHALMERS 5300 21-19 10B		
<b>Design:</b>	Plan #1		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate ('/100ft)	Build Rate ('/100ft)	Turn Rate ('/100ft)	
7,842.9	0.50	130.10	7,842.6	-32.0	38.0	39.1	0.00	0.00	0.00	
<b>Start Drop -5.00</b>										
7,852.9	0.00	0.00	7,852.6	-32.0	38.0	39.1	5.00	-5.00	0.00	
<b>Start 2147.4 hold at 7852.9 MD</b>										
7,900.0	0.00	0.00	7,899.8	-32.0	38.0	39.1	0.00	0.00	0.00	
8,000.0	0.00	0.00	7,999.8	-32.0	38.0	39.1	0.00	0.00	0.00	
8,032.2	0.00	0.00	8,032.0	-32.0	38.0	39.1	0.00	0.00	0.00	
<b>Otter/Base Minnelusa</b>										
8,100.0	0.00	0.00	8,099.8	-32.0	38.0	39.1	0.00	0.00	0.00	
8,200.0	0.00	0.00	8,199.8	-32.0	38.0	39.1	0.00	0.00	0.00	
8,300.0	0.00	0.00	8,299.8	-32.0	38.0	39.1	0.00	0.00	0.00	
8,384.2	0.00	0.00	8,384.0	-32.0	38.0	39.1	0.00	0.00	0.00	
<b>Kibbey Lime</b>										
8,400.0	0.00	0.00	8,399.8	-32.0	38.0	39.1	0.00	0.00	0.00	
8,500.0	0.00	0.00	8,499.8	-32.0	38.0	39.1	0.00	0.00	0.00	
8,534.2	0.00	0.00	8,534.0	-32.0	38.0	39.1	0.00	0.00	0.00	
<b>Charles Salt</b>										
8,600.0	0.00	0.00	8,599.8	-32.0	38.0	39.1	0.00	0.00	0.00	
8,700.0	0.00	0.00	8,699.8	-32.0	38.0	39.1	0.00	0.00	0.00	
8,800.0	0.00	0.00	8,799.8	-32.0	38.0	39.1	0.00	0.00	0.00	
8,900.0	0.00	0.00	8,899.8	-32.0	38.0	39.1	0.00	0.00	0.00	
9,000.0	0.00	0.00	8,999.8	-32.0	38.0	39.1	0.00	0.00	0.00	
9,100.0	0.00	0.00	9,099.8	-32.0	38.0	39.1	0.00	0.00	0.00	
9,200.0	0.00	0.00	9,199.8	-32.0	38.0	39.1	0.00	0.00	0.00	
9,209.2	0.00	0.00	9,209.0	-32.0	38.0	39.1	0.00	0.00	0.00	
<b>Base Last Salt</b>										
9,300.0	0.00	0.00	9,299.8	-32.0	38.0	39.1	0.00	0.00	0.00	
9,400.0	0.00	0.00	9,399.8	-32.0	38.0	39.1	0.00	0.00	0.00	
9,429.2	0.00	0.00	9,429.0	-32.0	38.0	39.1	0.00	0.00	0.00	
<b>Mission Canyon</b>										
9,500.0	0.00	0.00	9,499.8	-32.0	38.0	39.1	0.00	0.00	0.00	
9,600.0	0.00	0.00	9,599.8	-32.0	38.0	39.1	0.00	0.00	0.00	
9,700.0	0.00	0.00	9,699.8	-32.0	38.0	39.1	0.00	0.00	0.00	
9,800.0	0.00	0.00	9,799.8	-32.0	38.0	39.1	0.00	0.00	0.00	
9,900.0	0.00	0.00	9,899.8	-32.0	38.0	39.1	0.00	0.00	0.00	
9,993.2	0.00	0.00	9,993.0	-32.0	38.0	39.1	0.00	0.00	0.00	
<b>Lodgepole</b>										
10,000.2	0.00	0.00	10,000.0	-32.0	38.0	39.1	0.00	0.00	0.00	
<b>Start 271.5 hold at 10000.2 MD</b>										
10,100.0	0.00	0.00	10,099.8	-32.0	38.0	39.1	0.00	0.00	0.00	
10,200.0	0.00	0.00	10,199.8	-32.0	38.0	39.1	0.00	0.00	0.00	
10,271.7	0.00	0.00	10,271.5	-32.0	38.0	39.1	0.00	0.00	0.00	
<b>Start Build 12.00 KOP</b>										
10,275.0	0.40	111.37	10,274.8	-32.0	38.0	39.1	12.00	12.00	0.00	
10,300.0	3.40	111.37	10,299.8	-32.3	38.8	39.9	12.00	12.00	0.00	
10,325.0	6.40	111.37	10,324.7	-33.1	40.8	41.9	12.00	12.00	0.00	
10,350.0	9.40	111.37	10,349.4	-34.3	44.0	45.1	12.00	12.00	0.00	
10,375.0	12.40	111.37	10,374.0	-36.1	48.4	49.6	12.00	12.00	0.00	
10,400.0	15.40	111.37	10,398.2	-38.2	54.0	55.3	12.00	12.00	0.00	
10,425.0	18.40	111.37	10,422.2	-40.9	60.7	62.1	12.00	12.00	0.00	
10,450.0	21.40	111.37	10,445.7	-44.0	68.7	70.1	12.00	12.00	0.00	
10,475.0	24.40	111.37	10,468.7	-47.5	77.7	79.3	12.00	12.00	0.00	
10,500.0	27.40	111.37	10,491.2	-51.5	87.9	89.6	12.00	12.00	0.00	
10,525.0	30.40	111.37	10,513.1	-55.9	99.1	101.0	12.00	12.00	0.00	

# Oasis Petroleum

## Planning Report

<b>Database:</b>	OpenWellsCompass - EDM Prod	<b>Local Co-ordinate Reference:</b>	Well CHALMERS 5300 21-19 10B
<b>Company:</b>	Oasis	<b>TVD Reference:</b>	WELL @ 2071.0ft (Original Well Elev)
<b>Project:</b>	Indian Hills	<b>MD Reference:</b>	WELL @ 2071.0ft (Original Well Elev)
<b>Site:</b>	153N-100W-19/20	<b>North Reference:</b>	True
<b>Well:</b>	CHALMERS 5300 21-19 10B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	CHALMERS 5300 21-19 10B		
<b>Design:</b>	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/S (ft)	+E/W (ft)	Vertical Section (ft)	Dogleg Rate ('/100ft)	Build Rate ('/100ft)	Turn Rate ('/100ft)
10,550.0	33.40	111.37	10,534.3	-60.7	111.4	113.5	12.00	12.00	0.00
10,575.0	36.40	111.37	10,554.8	-65.9	124.7	127.0	12.00	12.00	0.00
10,600.0	39.40	111.37	10,574.5	-71.5	139.0	141.4	12.00	12.00	0.00
10,625.0	42.40	111.37	10,593.4	-77.5	154.3	156.9	12.00	12.00	0.00
10,650.0	45.40	111.37	10,611.4	-83.8	170.4	173.2	12.00	12.00	0.00
10,675.0	48.40	111.37	10,628.5	-90.5	187.4	190.4	12.00	12.00	0.00
10,700.0	51.40	111.37	10,644.6	-97.4	205.2	208.5	12.00	12.00	0.00
10,725.0	54.40	111.37	10,659.7	-104.7	223.8	227.3	12.00	12.00	0.00
10,750.0	57.40	111.37	10,673.7	-112.2	243.1	246.8	12.00	12.00	0.00
10,775.0	60.40	111.37	10,686.6	-120.0	263.0	267.0	12.00	12.00	0.00
10,800.0	63.40	111.37	10,698.4	-128.1	283.5	287.8	12.00	12.00	0.00
10,817.7	65.52	111.37	10,706.0	-133.9	298.4	302.8	12.00	12.00	0.00
<b>False Bakken</b>									
10,825.0	66.40	111.37	10,709.0	-136.3	304.6	309.2	12.00	12.00	0.00
10,843.3	68.60	111.37	10,716.0	-142.5	320.4	325.1	12.00	12.00	0.00
<b>Upper Bakken Shale</b>									
10,850.0	69.40	111.37	10,718.4	-144.8	326.2	331.0	12.00	12.00	0.00
10,875.0	72.40	111.37	10,726.6	-153.4	348.2	353.3	12.00	12.00	0.00
10,900.0	75.40	111.37	10,733.5	-162.1	370.5	375.9	12.00	12.00	0.00
10,925.0	78.40	111.37	10,739.2	-171.0	393.2	398.9	12.00	12.00	0.00
10,946.4	80.97	111.37	10,743.0	-178.7	412.8	418.8	12.00	12.00	0.00
<b>Middle Bakken (Top of Target)</b>									
10,950.0	81.40	111.37	10,743.6	-180.0	416.1	422.1	12.00	12.00	0.00
10,975.0	84.40	111.37	10,746.6	-189.0	439.2	445.5	12.00	12.00	0.00
11,000.0	87.40	111.37	10,748.4	-198.1	462.5	469.0	12.00	12.00	0.00
11,018.8	89.65	111.37	10,748.9	-204.9	479.9	486.7	12.00	12.00	0.00
<b>Start 14.0 hold at 11018.8 MD EOC</b>									
11,032.8	89.65	111.37	10,749.0	-210.0	493.0	500.0	0.00	0.00	0.00
<b>Start DLS 2.00 TFO 269.93 - 7"</b>									
11,100.0	89.65	109.41	10,749.4	-233.5	556.0	563.7	2.92	0.00	-2.92
11,200.0	89.65	106.49	10,750.0	-264.3	651.1	659.9	2.92	0.00	-2.92
11,300.0	89.64	103.57	10,750.6	-290.2	747.7	757.3	2.92	0.00	-2.92
11,400.0	89.64	100.65	10,751.3	-311.2	845.4	855.7	2.92	0.00	-2.92
11,500.0	89.64	97.73	10,751.9	-327.1	944.1	954.9	2.92	0.00	-2.92
11,600.0	89.64	94.81	10,752.5	-338.1	1,043.5	1,054.6	2.92	0.00	-2.92
11,700.0	89.65	91.89	10,753.1	-343.9	1,143.3	1,154.6	2.92	0.00	-2.92
11,764.7	89.65	90.00	10,753.5	-345.0	1,208.0	1,219.2	2.92	0.00	-2.92
11,800.0	89.65	90.00	10,753.7	-345.0	1,243.3	1,254.5	0.00	0.00	0.00
11,900.0	89.65	90.00	10,754.4	-345.0	1,343.3	1,354.5	0.00	0.00	0.00
12,000.0	89.65	90.00	10,755.0	-345.0	1,443.3	1,454.4	0.00	0.00	0.00
12,100.0	89.65	90.00	10,755.6	-345.0	1,543.3	1,554.3	0.00	0.00	0.00
12,101.4	89.65	90.00	10,755.6	-345.0	1,544.7	1,555.7	0.00	0.00	0.00
<b>Start 8531.2 hold at 12101.4 MD</b>									
12,200.0	89.65	90.00	10,756.2	-345.0	1,643.3	1,654.3	0.00	0.00	0.00
12,300.0	89.65	90.00	10,756.8	-345.0	1,743.3	1,754.2	0.00	0.00	0.00
12,400.0	89.65	90.00	10,757.4	-345.0	1,843.3	1,854.2	0.00	0.00	0.00
12,500.0	89.65	90.00	10,758.0	-345.0	1,943.3	1,954.1	0.00	0.00	0.00
12,600.0	89.65	90.00	10,758.7	-345.0	2,043.3	2,054.0	0.00	0.00	0.00
12,700.0	89.65	90.00	10,759.3	-345.0	2,143.3	2,154.0	0.00	0.00	0.00
12,800.0	89.65	90.00	10,759.9	-345.0	2,243.3	2,253.9	0.00	0.00	0.00
12,900.0	89.65	90.00	10,760.5	-345.0	2,343.3	2,353.8	0.00	0.00	0.00
13,000.0	89.65	90.00	10,761.1	-345.0	2,443.3	2,453.8	0.00	0.00	0.00
13,100.0	89.65	90.00	10,761.7	-345.0	2,543.3	2,553.7	0.00	0.00	0.00
13,200.0	89.65	90.00	10,762.3	-345.0	2,643.3	2,653.7	0.00	0.00	0.00

# Oasis Petroleum

## Planning Report

<b>Database:</b>	OpenWellsCompass - EDM Prod	<b>Local Co-ordinate Reference:</b>	Well CHALMERS 5300 21-19 10B
<b>Company:</b>	Oasis	<b>TVD Reference:</b>	WELL @ 2071.0ft (Original Well Elev)
<b>Project:</b>	Indian Hills	<b>MD Reference:</b>	WELL @ 2071.0ft (Original Well Elev)
<b>Site:</b>	153N-100W-19/20	<b>North Reference:</b>	True
<b>Well:</b>	CHALMERS 5300 21-19 10B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	CHALMERS 5300 21-19 10B		
<b>Design:</b>	Plan #1		

### Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate ('/100ft)	Build Rate ('/100ft)	Turn Rate ('/100ft)
13,300.0	89.65	90.00	10,762.9	-345.0	2,743.3	2,753.6	0.00	0.00	0.00
13,400.0	89.65	90.00	10,763.6	-345.0	2,843.3	2,853.5	0.00	0.00	0.00
13,500.0	89.65	90.00	10,764.2	-345.0	2,943.3	2,953.5	0.00	0.00	0.00
13,600.0	89.65	90.00	10,764.8	-345.0	3,043.3	3,053.4	0.00	0.00	0.00
13,700.0	89.65	90.00	10,765.4	-345.0	3,143.3	3,153.3	0.00	0.00	0.00
13,800.0	89.65	90.00	10,766.0	-345.0	3,243.3	3,253.3	0.00	0.00	0.00
13,900.0	89.65	90.00	10,766.6	-345.0	3,343.3	3,353.2	0.00	0.00	0.00
14,000.0	89.65	90.00	10,767.2	-345.0	3,443.3	3,453.2	0.00	0.00	0.00
14,100.0	89.65	90.00	10,767.9	-345.0	3,543.3	3,553.1	0.00	0.00	0.00
14,200.0	89.65	90.00	10,768.5	-345.0	3,643.3	3,653.0	0.00	0.00	0.00
14,300.0	89.65	90.00	10,769.1	-345.0	3,743.3	3,753.0	0.00	0.00	0.00
14,400.0	89.65	90.00	10,769.7	-345.0	3,843.3	3,852.9	0.00	0.00	0.00
14,500.0	89.65	90.00	10,770.3	-345.0	3,943.3	3,952.9	0.00	0.00	0.00
14,600.0	89.65	90.00	10,770.9	-345.0	4,043.3	4,052.8	0.00	0.00	0.00
14,700.0	89.65	90.00	10,771.5	-345.0	4,143.3	4,152.7	0.00	0.00	0.00
14,800.0	89.65	90.00	10,772.2	-345.0	4,243.3	4,252.7	0.00	0.00	0.00
14,900.0	89.65	90.00	10,772.8	-345.0	4,343.3	4,352.6	0.00	0.00	0.00
15,000.0	89.65	90.00	10,773.4	-345.0	4,443.3	4,452.5	0.00	0.00	0.00
15,100.0	89.65	90.00	10,774.0	-345.0	4,543.3	4,552.5	0.00	0.00	0.00
15,200.0	89.65	90.00	10,774.6	-345.0	4,643.3	4,652.4	0.00	0.00	0.00
15,300.0	89.65	90.00	10,775.2	-345.0	4,743.3	4,752.4	0.00	0.00	0.00
15,400.0	89.65	90.00	10,775.8	-345.0	4,843.3	4,852.3	0.00	0.00	0.00
15,500.0	89.65	90.00	10,776.4	-345.0	4,943.3	4,952.2	0.00	0.00	0.00
15,600.0	89.65	90.00	10,777.1	-345.0	5,043.3	5,052.2	0.00	0.00	0.00
15,700.0	89.65	90.00	10,777.7	-345.0	5,143.3	5,152.1	0.00	0.00	0.00
15,800.0	89.65	90.00	10,778.3	-345.0	5,243.2	5,252.0	0.00	0.00	0.00
15,900.0	89.65	90.00	10,778.9	-345.0	5,343.2	5,352.0	0.00	0.00	0.00
16,000.0	89.65	90.00	10,779.5	-345.0	5,443.2	5,451.9	0.00	0.00	0.00
16,100.0	89.65	90.00	10,780.1	-345.0	5,543.2	5,551.9	0.00	0.00	0.00
16,200.0	89.65	90.00	10,780.7	-345.0	5,643.2	5,651.8	0.00	0.00	0.00
16,300.0	89.65	90.00	10,781.4	-345.0	5,743.2	5,751.7	0.00	0.00	0.00
16,400.0	89.65	90.00	10,782.0	-345.0	5,843.2	5,851.7	0.00	0.00	0.00
16,500.0	89.65	90.00	10,782.6	-345.0	5,943.2	5,951.6	0.00	0.00	0.00
16,600.0	89.65	90.00	10,783.2	-345.0	6,043.2	6,051.6	0.00	0.00	0.00
16,700.0	89.65	90.00	10,783.8	-345.0	6,143.2	6,151.5	0.00	0.00	0.00
16,800.0	89.65	90.00	10,784.4	-345.0	6,243.2	6,251.4	0.00	0.00	0.00
16,900.0	89.65	90.00	10,785.0	-345.0	6,343.2	6,351.4	0.00	0.00	0.00
17,000.0	89.65	90.00	10,785.6	-345.0	6,443.2	6,451.3	0.00	0.00	0.00
17,100.0	89.65	90.00	10,786.3	-345.0	6,543.2	6,551.2	0.00	0.00	0.00
17,200.0	89.65	90.00	10,786.9	-345.0	6,643.2	6,651.2	0.00	0.00	0.00
17,300.0	89.65	90.00	10,787.5	-345.0	6,743.2	6,751.1	0.00	0.00	0.00
17,400.0	89.65	90.00	10,788.1	-345.0	6,843.2	6,851.1	0.00	0.00	0.00
17,500.0	89.65	90.00	10,788.7	-345.0	6,943.2	6,951.0	0.00	0.00	0.00
17,600.0	89.65	90.00	10,789.3	-345.0	7,043.2	7,050.9	0.00	0.00	0.00
17,700.0	89.65	90.00	10,789.9	-345.0	7,143.2	7,150.9	0.00	0.00	0.00
17,800.0	89.65	90.00	10,790.6	-345.0	7,243.2	7,250.8	0.00	0.00	0.00
17,900.0	89.65	90.00	10,791.2	-345.0	7,343.2	7,350.8	0.00	0.00	0.00
18,000.0	89.65	90.00	10,791.8	-345.0	7,443.2	7,450.7	0.00	0.00	0.00
18,100.0	89.65	90.00	10,792.4	-345.0	7,543.2	7,550.6	0.00	0.00	0.00
18,200.0	89.65	90.00	10,793.0	-345.0	7,643.2	7,650.6	0.00	0.00	0.00
18,300.0	89.65	90.00	10,793.6	-345.0	7,743.2	7,750.5	0.00	0.00	0.00
18,400.0	89.65	90.00	10,794.2	-345.0	7,843.2	7,850.4	0.00	0.00	0.00
18,500.0	89.65	90.00	10,794.8	-345.0	7,943.2	7,950.4	0.00	0.00	0.00
18,600.0	89.65	90.00	10,795.5	-345.0	8,043.2	8,050.3	0.00	0.00	0.00
18,700.0	89.65	90.00	10,796.1	-345.0	8,143.2	8,150.3	0.00	0.00	0.00

# Oasis Petroleum

## Planning Report

<b>Database:</b> OpenWellsCompass - EDM Prod	<b>Local Co-ordinate Reference:</b>	Well CHALMERS 5300 21-19 10B
<b>Company:</b> Oasis	<b>TVD Reference:</b>	WELL @ 2071.0ft (Original Well Elev)
<b>Project:</b> Indian Hills	<b>MD Reference:</b>	WELL @ 2071.0ft (Original Well Elev)
<b>Site:</b> 153N-100W-19/20	<b>North Reference:</b>	True
<b>Well:</b> CHALMERS 5300 21-19 10B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b> CHALMERS 5300 21-19 10B		
<b>Design:</b> Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate ('/100ft)	Build Rate ('/100ft)	Turn Rate ('/100ft)
18,800.0	89.65	90.00	10,796.7	-345.0	8,243.2	8,250.2	0.00	0.00	0.00
18,900.0	89.65	90.00	10,797.3	-345.0	8,343.2	8,350.1	0.00	0.00	0.00
19,000.0	89.65	90.00	10,797.9	-345.0	8,443.2	8,450.1	0.00	0.00	0.00
19,100.0	89.65	90.00	10,798.5	-345.0	8,543.2	8,550.0	0.00	0.00	0.00
19,200.0	89.65	90.00	10,799.1	-345.0	8,643.2	8,649.9	0.00	0.00	0.00
19,300.0	89.65	90.00	10,799.8	-345.0	8,743.2	8,749.9	0.00	0.00	0.00
19,400.0	89.65	90.00	10,800.4	-345.0	8,843.2	8,849.8	0.00	0.00	0.00
19,500.0	89.65	90.00	10,801.0	-345.0	8,943.2	8,949.8	0.00	0.00	0.00
19,600.0	89.65	90.00	10,801.6	-345.0	9,043.2	9,049.7	0.00	0.00	0.00
19,700.0	89.65	90.00	10,802.2	-345.0	9,143.2	9,149.6	0.00	0.00	0.00
19,800.0	89.65	90.00	10,802.8	-345.0	9,243.2	9,249.6	0.00	0.00	0.00
19,900.0	89.65	90.00	10,803.4	-345.0	9,343.2	9,349.5	0.00	0.00	0.00
20,000.0	89.65	90.00	10,804.0	-345.0	9,443.2	9,449.5	0.00	0.00	0.00
20,100.0	89.65	90.00	10,804.7	-345.0	9,543.2	9,549.4	0.00	0.00	0.00
20,200.0	89.65	90.00	10,805.3	-345.0	9,643.2	9,649.3	0.00	0.00	0.00
20,300.0	89.65	90.00	10,805.9	-345.0	9,743.2	9,749.3	0.00	0.00	0.00
20,400.0	89.65	90.00	10,806.5	-345.0	9,843.2	9,849.2	0.00	0.00	0.00
20,500.0	89.65	90.00	10,807.1	-345.0	9,943.2	9,949.1	0.00	0.00	0.00
20,516.0	89.65	90.00	10,807.2	-345.0	9,959.1	9,965.1	0.00	0.00	0.00

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude	
- hit/miss target										
- Shape										
Chalmers 10B	0.00	0.00	10,807.6	-352.3	9,974.9	401,655.73	1,219,940.43	48° 3' 37.147 N	103° 33' 43.260 W	
- plan misses target center by 17.4ft at 20516.0ft MD (10807.2 TVD, -345.0 N, 9959.1 E)										
- Point										

Casing Points									
Measured Depth (ft)	Vertical Depth (ft)	Name				Casing Diameter (in)	Hole Diameter (in)		
2,150.0	2,150.0 9 5/8"					9.625	13.500		
11,032.8	10,749.0 7"					7.000	8.750		

# Oasis Petroleum

## Planning Report

<b>Database:</b>	OpenWellsCompass - EDM Prod	<b>Local Co-ordinate Reference:</b>	Well CHALMERS 5300 21-19 10B
<b>Company:</b>	Oasis	<b>TVD Reference:</b>	WELL @ 2071.0ft (Original Well Elev)
<b>Project:</b>	Indian Hills	<b>MD Reference:</b>	WELL @ 2071.0ft (Original Well Elev)
<b>Site:</b>	153N-100W-19 10B	<b>North Reference:</b>	True
<b>Well:</b>	CHALMERS 5300 21-19 10B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	CHALMERS 5300 21-19 10B		
<b>Design:</b>	Plan #1		

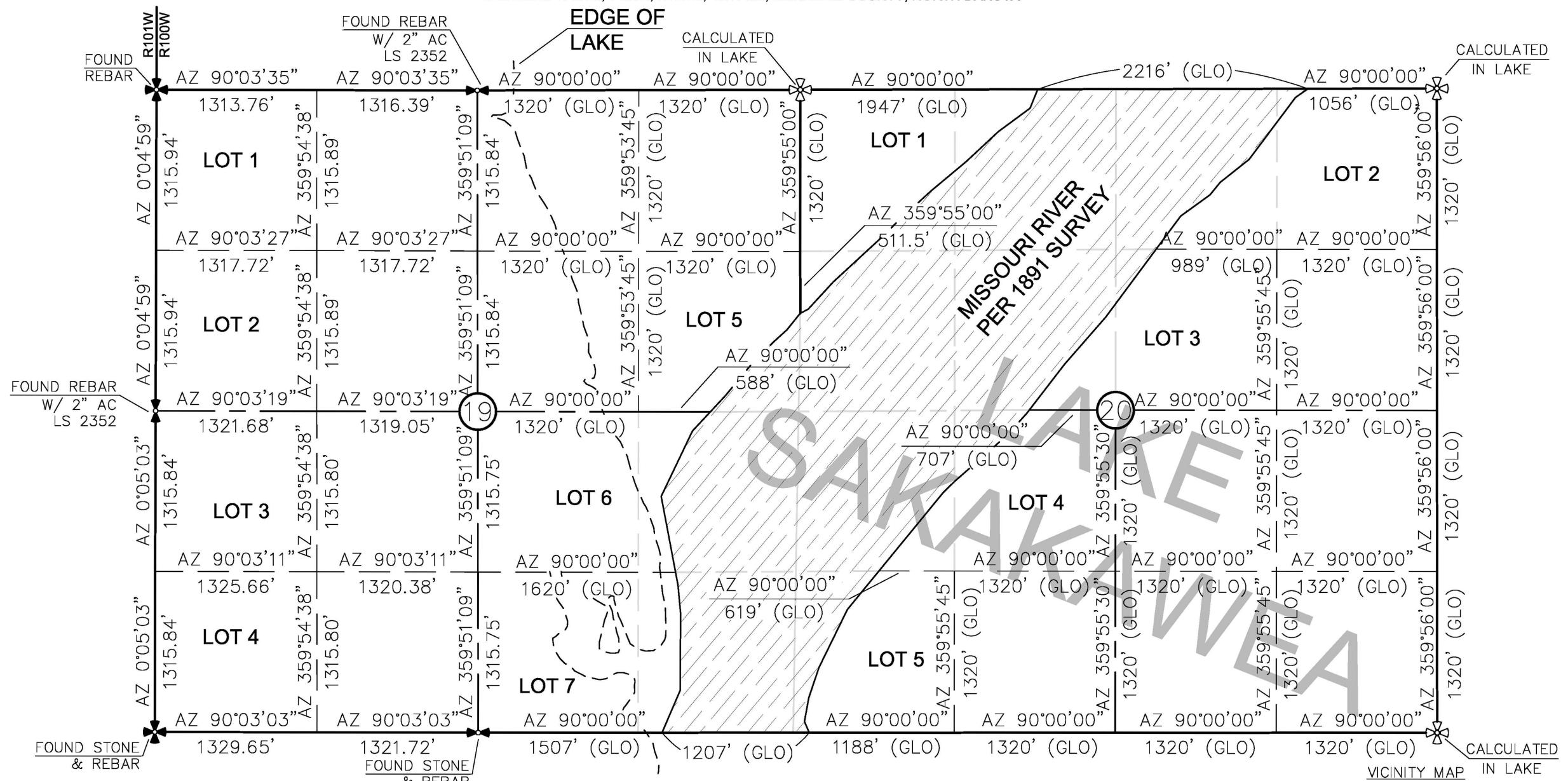
### Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,021.0	2,021.0	Pierre			
4,624.1	4,624.0	Greenhorn			
5,029.1	5,029.0	Mowry			
5,417.1	5,417.0	Dakota			
6,463.2	6,463.0	Rierdon			
6,891.2	6,891.0	Dunham Salt			
6,960.2	6,960.0	Dunham Salt Base			
7,257.2	7,257.0	Pine Salt			
7,290.2	7,290.0	Pine Salt Base			
7,351.2	7,351.0	Opeche Salt			
7,426.2	7,426.0	Opeche Salt Base			
7,662.2	7,662.0	Amsden			
7,828.2	7,828.0	Tyler			
8,032.2	8,032.0	Otter/Base Minnelusa			
8,384.2	8,384.0	Kibbey Lime			
8,534.2	8,534.0	Charles Salt			
9,209.2	9,209.0	Base Last Salt			
9,429.2	9,429.0	Mission Canyon			
9,993.2	9,993.0	Lodgepole			
10,817.7	10,706.0	False Bakken			
10,843.3	10,716.0	Upper Bakken Shale			
10,946.4	10,743.0	Middle Bakken (Top of Target)			

### Plan Annotations

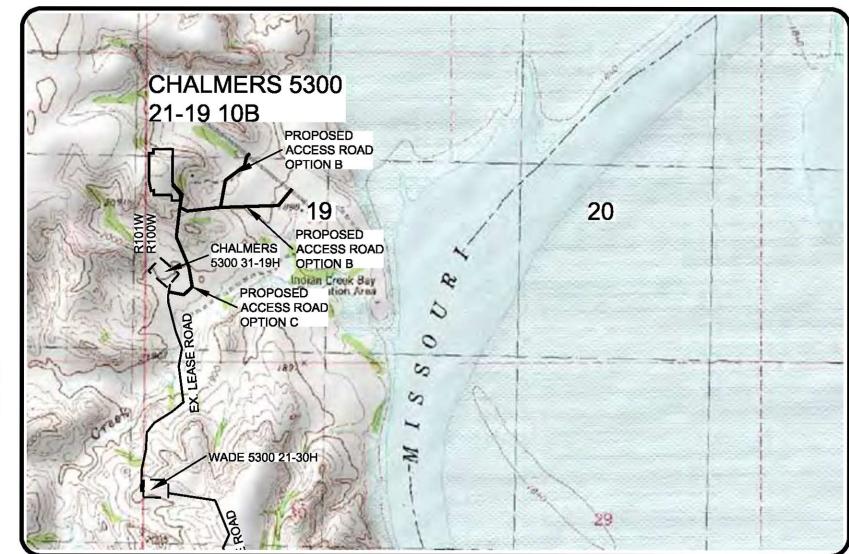
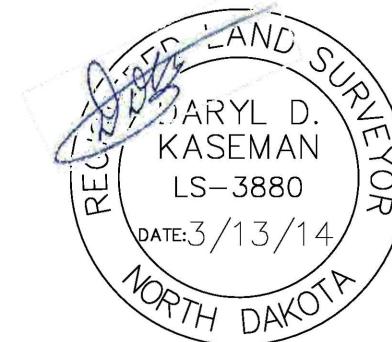
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			Comment
		+N/-S (ft)	+E/-W (ft)		
2,150.0	2,150.0	0.0	0.0	Start Build 5.00	
2,160.0	2,160.0	0.0	0.0	Start 5682.9 hold at 2160.0 MD	
7,842.9	7,842.6	-32.0	38.0	Start Drop -5.00	
7,852.9	7,852.6	-32.0	38.0	Start 2147.4 hold at 7852.9 MD	
10,000.2	10,000.0	-32.0	38.0	Start 271.5 hold at 10000.2 MD	
10,271.7	10,271.5	-32.0	38.0	Start Build 12.00 KOP	
11,018.8	10,748.9	-204.9	479.9	Start 14.0 hold at 11018.8 MD EOC	
11,032.8	10,749.0	-210.0	493.0	Start DLS 2.00 TFO 269.93	
12,101.4	10,755.6	-345.0	1,544.7	Start 8531.2 hold at 12101.4 MD	
20,532.0	10,807.3	-345.0	9,975.2	TD at 20532	

**SECTION BREAKDOWN**  
OASIS PETROLEUM NORTH AMERICA, LLC  
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002  
"CHALMERS 5300 21-19 10B"  
2292 FEET FROM NORTH LINE AND 326 FEET FROM WEST LINE  
SECTIONS 19 & 20, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



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



OASIS BETBOLEUM  
Intertek Encoracion, Inc.

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2/0

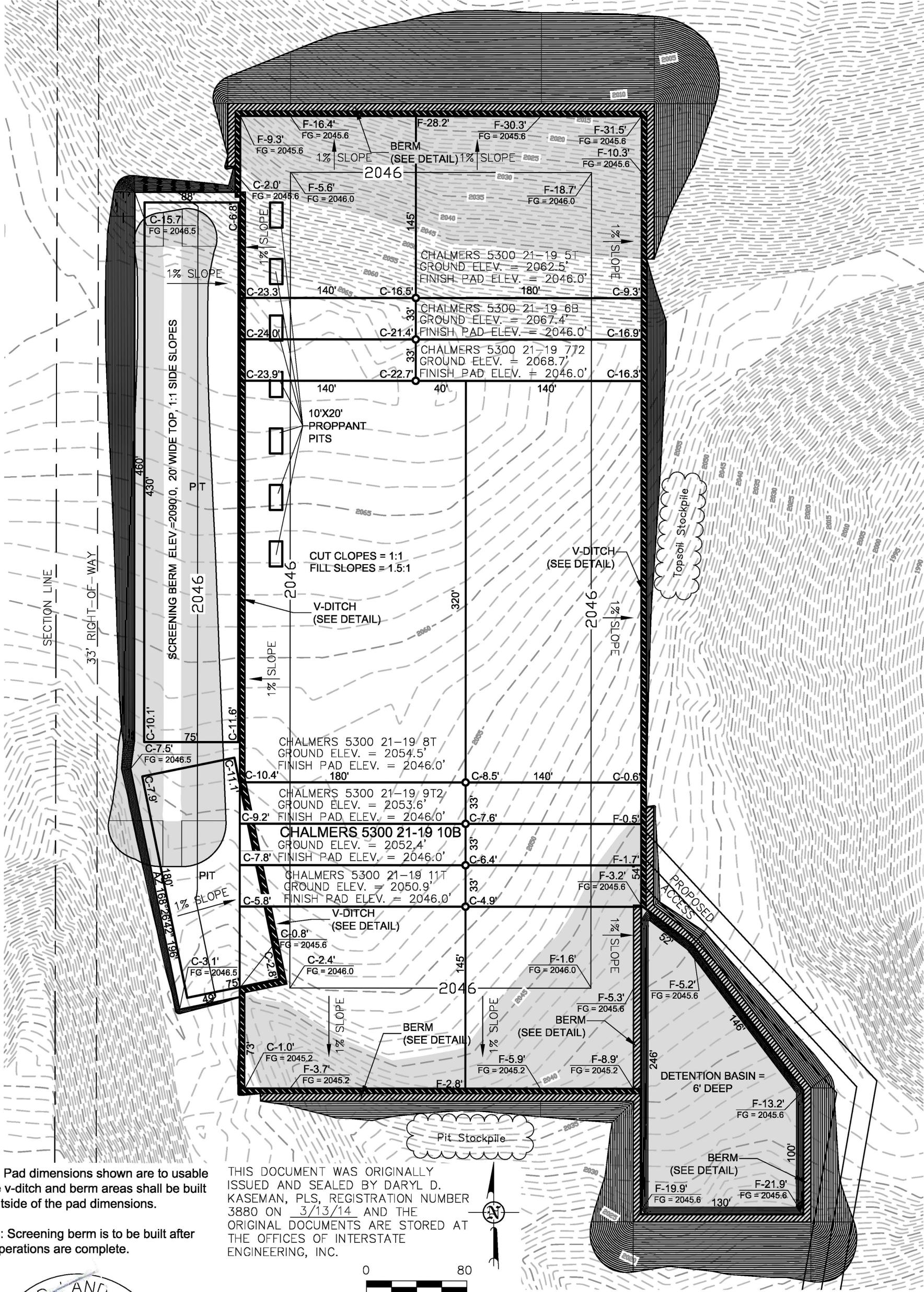
OASIS PETROLEUM NORTH AMERICA, LLC SECTION BREAKDOWN SECTIONS 19 & 20, T153N, R100W		Revision No. REV 1	Date 3/12/14	By J.S.	Description MOVED WELLS ON PAD
MCKENZIE COUNTY, NORTH DAKOTA					
Drawn By: B.H.H.	Project No.: S13-09-282-05				OASIS PETROLEUM CHAMBERS, 10A, Engg - 3/13/2014 2:15 PM Customer Card REvised CHAMBERS, 10A, Engg - 3/13/2014 2:15 PM for Beh. Administer
Checked By: D.D.K.	Date: JAN_2014				

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## PAD LAYOUT

OASIS PETROLEUM NORTH AMERICA, LLC  
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002  
"CHALMERS 5300 21-19 10B"

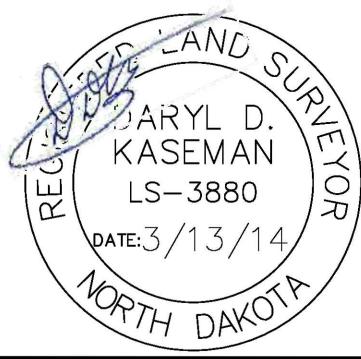
2292 FEET FROM NORTH LINE AND 326 FEET FROM WEST LINE  
SECTION 19, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



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

**NOTE 2 : Screening berm is to be built after drilling operations are complete.**

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**OASIS PETROLEUM NORTH AMERICA, LLC  
PAD LAYOUT  
SECTION 10, T152N, R162W**

## MCKENZIE COUNTY, NORTH DAKOTA

own By: B.H.H. Project No.: S13-09-282.05  
cked By: D.D.K. Date: JAN. 2014

Revision No.	Date	By	Description
REV 1	3/12/14	JJS	MOVED WELLS ON PAD

E:\2013\316-16-V2000\Date Petroleum 6 of 7  
2013-03-12 10:45:00 PM BY JJS

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# WELL LOCATION SITE QUANTITIES

OASIS PETROLEUM NORTH AMERICA, LLC

1001 FANNIN, SUITE 1500, HOUSTON, TX 77002

"CHALMERS 5300 21-19 10B"

2292 FEET FROM NORTH LINE AND 326 FEET FROM WEST LINE  
SECTION 19, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

WELL SITE ELEVATION	2052.4
WELL PAD ELEVATION	2046.0
EXCAVATION	119,687
PLUS PIT	<u>22,050</u>
	141,737
EMBANKMENT	53,703
PLUS SHRINKAGE (30%)	<u>16,111</u>
	69,814
STOCKPILE PIT	22,050
STOCKPILE TOP SOIL (6")	7,335
BERMS	1,373 LF = 445 CY
DITCHES	2,044 LF = 313 CY
DETENTION AREA	4,751 CY
SCREENING BERM	27,464 CY
STOCKPILE MATERIAL	19,693
DISTURBED AREA FROM PAD	9.09 ACRES

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

CUT END SLOPES AT 1:1

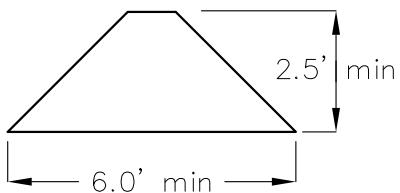
FILL END SLOPES AT 1.5:1

## WELL SITE LOCATION

2292' FNL

326' FWL

### BERM DETAIL



### DITCH DETAIL



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QUANTITIES

SECTION 19, T153N, R100W

MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: B.H.H. Project No.: S13-09-282.05

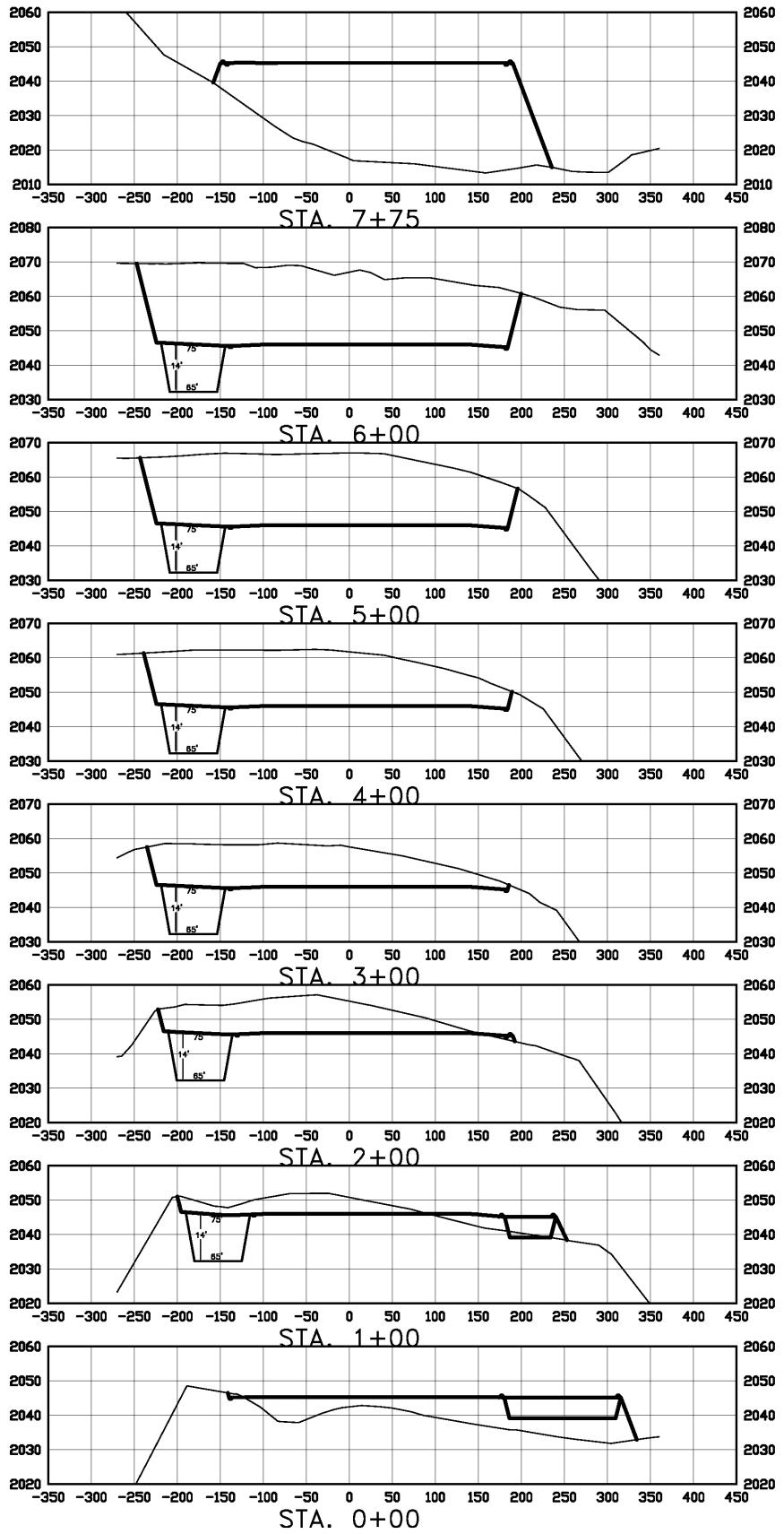
Checked By: D.D.K. Date: JAN. 2014

Revision No.	Date	By	Description
REV 1	3/12/14	JJS	MOVED WELLS ON PAD

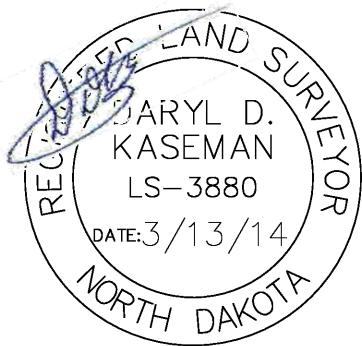
## CROSS SECTIONS

OASIS PETROLEUM NORTH AMERICA, LLC  
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CHAMBERS CO., N.D.  
2292 FEET FROM NORTH LINE AND 326 FEET FROM WEST LINE  
SECTION 19, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



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SCALE  
HORIZ 1"=200'  
VERT 1"=50'

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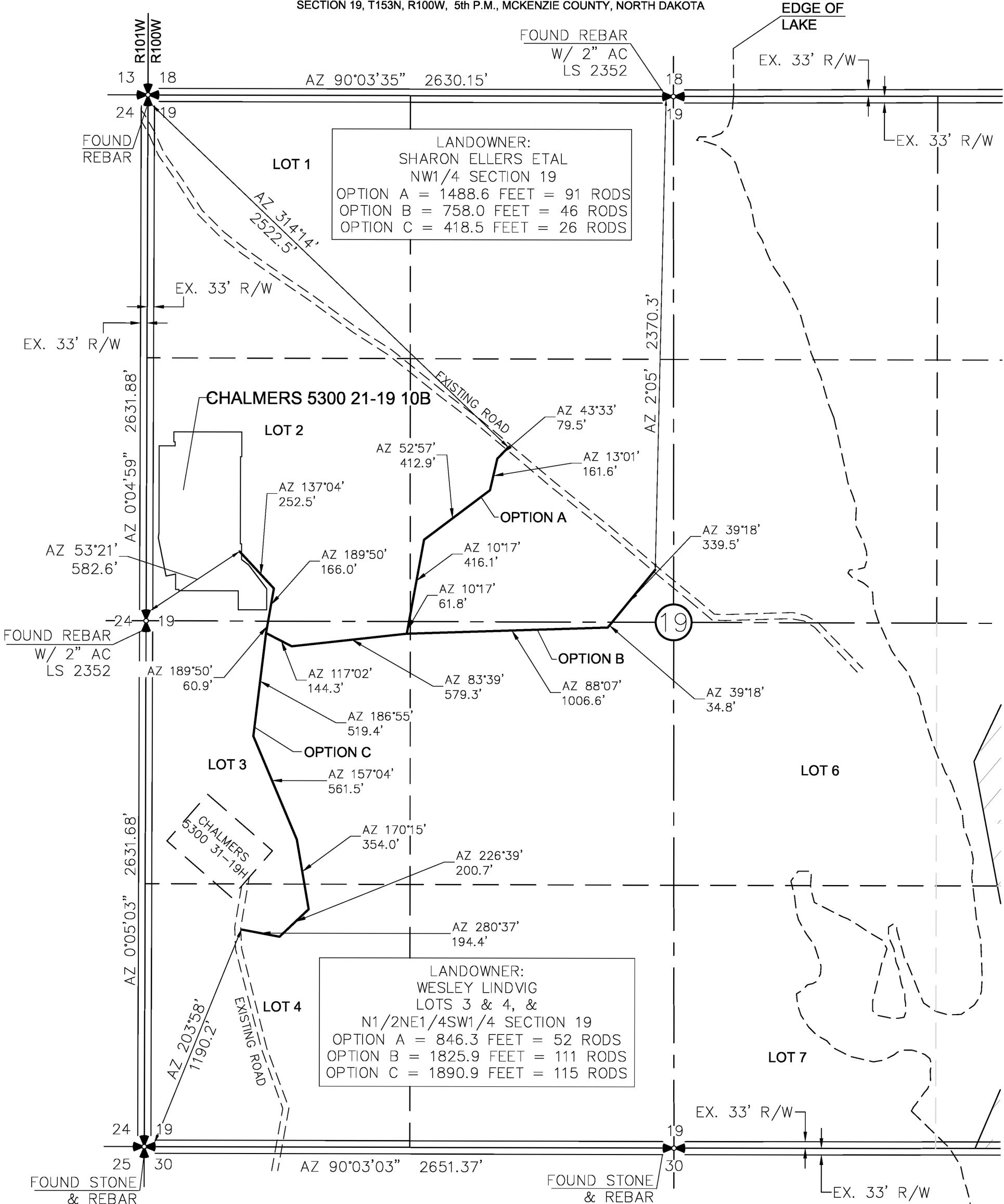
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PAD CROSS SECTIONS  
SECTION 19, T153N, R100W  
MCKENZIE COUNTY, NORTH DAKOTA

Revision No.	Date	By	Description
REV 1	3/12/14	JJS	MOVED WELLS ON PAD

**ACCESS APPROACH**  
 OASIS PETROLEUM NORTH AMERICA, LLC  
 1001 FANNIN, SUITE 1500, HOUSTON, TX 77002  
 "CHALMERS 5300 21-19 10B"

2292 FEET FROM NORTH LINE AND 326 FEET FROM WEST LINE  
 SECTION 19, 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.

0 500  
1" = 500'

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 SECTION 19, T153N, R100W

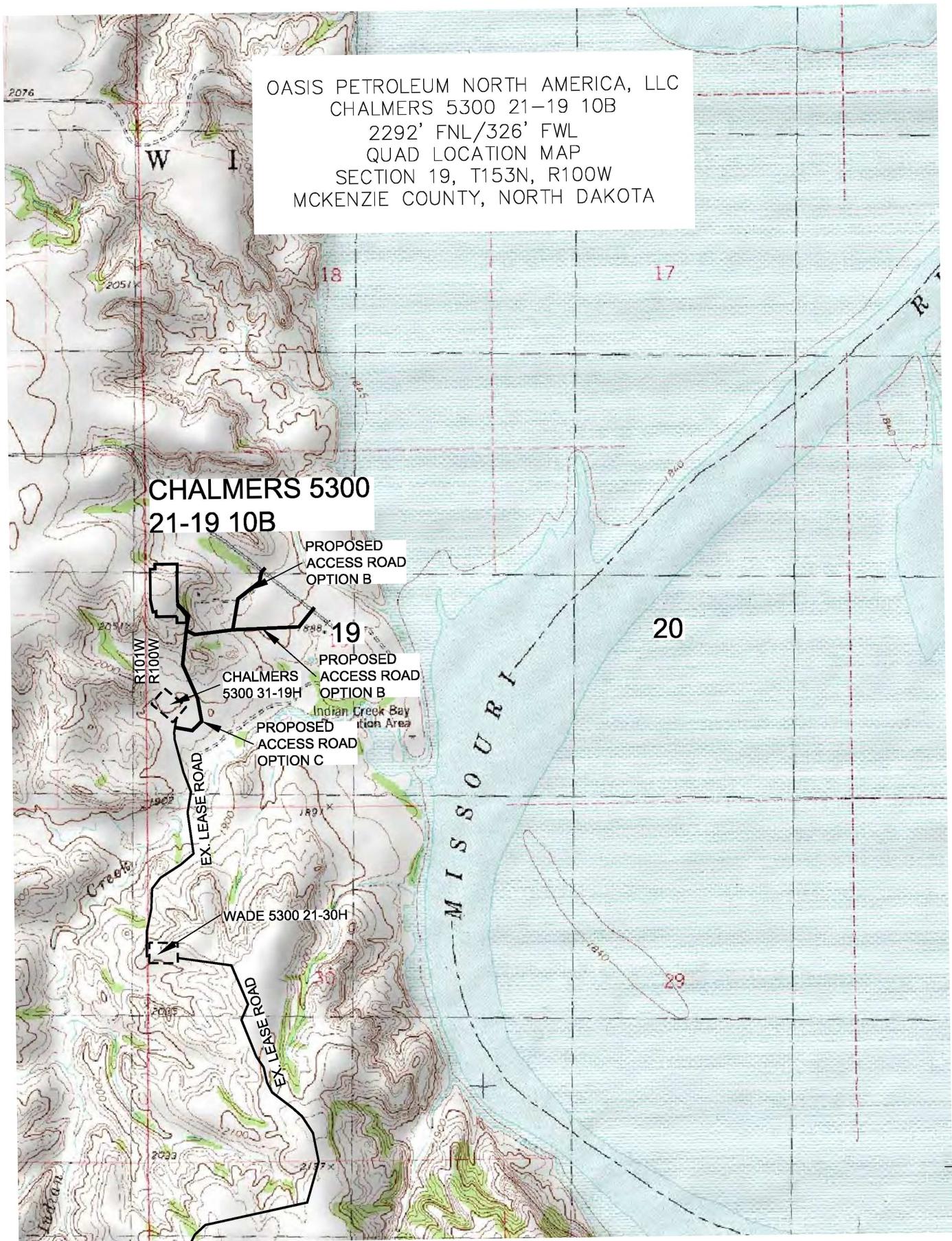
MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: B.H.H. Project No.: S13-09-282.05  
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Revision No.	Date	By	Description
REV 1	3/12/14	JJS	MOVED WELLS ON PAD

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 ACCESS APPROACH  
 SECTION 19, T153N, R100W  
 MCKENZIE COUNTY, NORTH DAKOTA  
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Chalmers 5300 21-19 10B.dwg - 3/13/2014 2:15 PM Josh Schmieder



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QUAD LOCATION MAP  
SECTION 19, T153N, R100W  
MCKENZIE COUNTY, NORTH DAKOTA

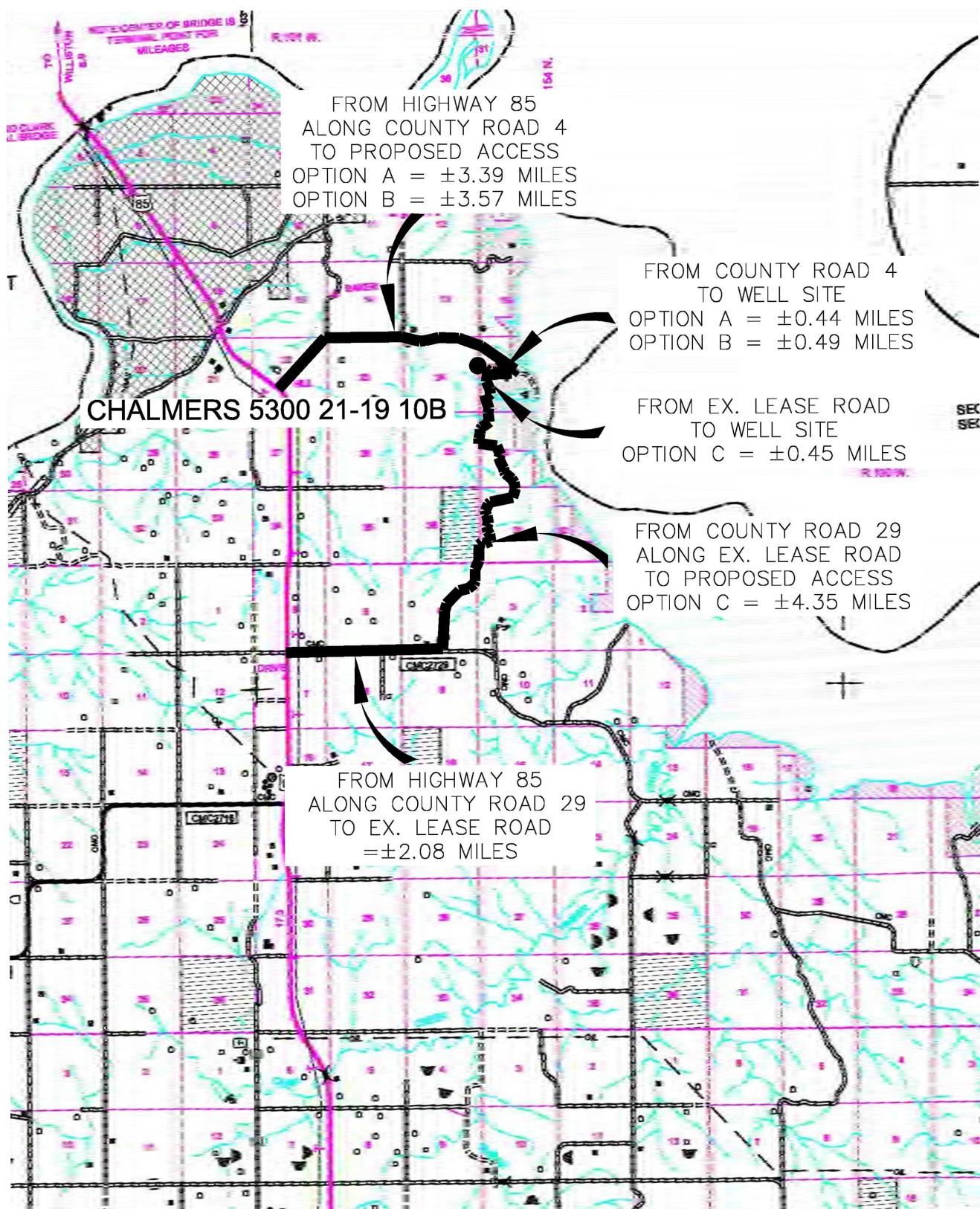
## MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: B.H.H. Project No.: S13-09-282.05

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

Revision No.	Date	By	Description
REV 1	3/12/14	JJS	MOVED WELLS ON PAD

**COUNTY ROAD MAP**  
 OASIS PETROLEUM NORTH AMERICA, LLC  
 1001 FANNIN, SUITE 1500, HOUSTON, TX 77002  
 "CHALMERS 5300 21-19 10B"  
 2292 FEET FROM NORTH LINE AND 326 FEET FROM WEST LINE  
 SECTION 19, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



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OASIS PETROLEUM NORTH AMERICA, LLC  
 COUNTY ROAD MAP  
 SECTION 19, T153N, R100W

MCKENZIE COUNTY, NORTH DAKOTA

Drawn By:	B.H.H.	Project No.:	S13-09-282-05
Checked By:	D.D.K.	Date:	JAN. 2014

Revision No.	Date	By	Description
REV 1	3/12/14	JJS	MOVED WELLS ON PAD



## 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.

April 3, 2014  
McKenzie County  
Aaron Chisolm – address@co.mckenzie.nd.us

Chalmers 5300 21-19 5T Lot 2 Section 19 T153N R100W  
Chalmers 5300 21-19 6B Lot 2 Section 19 T153N R100W  
Chalmers 5300 21-19 7T2 Lot 2 Section 19 T153N R100W  
Chalmers 5300 21-19 8T Lot 2 Section 19 T153N R100W  
Chalmers 5300 21-19 9T2 Lot 2 Section 19 T153N R100W  
Chalmers 5300 21-19 10B Lot 2 Section 19 T153N R100W  
Chalmers 5300 21-19 11T Lot 2 Sections 19 T153N R100W

Chelsea Covington

Chelsea Covington  
Regulatory Assistant  
Oasis Petroleum North America, LLC



June 10, 2014

Re: Un-Occupied Trailer House and Seasonal Cabin.

Brandi,

Just to follow up with past conversations about the dwellings east of our proposed Chalmer 5300 21-19 well site. The white trailer is unlivable, it has no water, power or sewer. The cabin is seasonal at best and has not been used for several years. If I can be of further assistance please advise.

Thank you,

A handwritten signature in blue ink, appearing to read "JD DeMorrett".

JD DeMorrett

Sr. Staff Landman for Oasis Petroleum North America, LLC

PO Box 1126 Williston ND- Office 701-577-1600 Fax 701-577-1692