

District I

1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720

District II

811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720

District III

1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170

District IV

1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

Form C-101
August 1, 2011

Permit 274324

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

1. Operator Name and Address ADVANCE ENERGY PARTNERS HAT MESA, LLC 11490 Westheimer Rd., Ste 950 Houston, TX 77077		2. OGRID Number 372417
4. Property Code 325948		3. API Number 30-025-46491
5. Property Name WOOL HEAD 20 STATE COM		6. Well No. 511H

7. Surface Location

UL - Lot P	Section 20	Township 21S	Range 33E	Lot Idn P	Feet From 350	N/S Line S	Feet From 957	E/W Line E	County Lea
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8. Proposed Bottom Hole Location

UL - Lot I	Section 17	Township 21S	Range 33E	Lot Idn I	Feet From 2540	N/S Line S	Feet From 990	E/W Line E	County Lea
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9. Pool Information

WC-025 G-08 S213304D;BONE SPRING	97895
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Additional Well Information

11. Work Type New Well	12. Well Type OIL	13. Cable/Rotary	14. Lease Type State	15. Ground Level Elevation 3728
16. Multiple N	17. Proposed Depth 18200	18. Formation Bone Spring	19. Contractor	20. Spud Date 11/11/2019
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

☒ We will be using a closed-loop system in lieu of lined pits

21. Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surf	17.5	13.375	54.5	1800	500	0
Int1	12.25	9.625	40	4000	950	0
Int1	12.25	9.625	40	5250	330	4000
Prod	8.5	5.5	20	18200	2200	0

Casing/Cement Program: Additional Comments

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22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Double Ram	5000	5000	

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I further certify I have complied with 19.15.14.9 (A) NMAC ☒ and/or 19.15.14.9 (B) NMAC ☒ if applicable.	OIL CONSERVATION DIVISION	
Signature:		
Printed Name: Electronically filed by David C Harwell	Approved By: Paul F Kautz	
Title: VP Engineering	Title: Geologist	
Email Address: dharwell@advanceenergypartners.com	Approved Date: 11/12/2019	Expiration Date: 11/12/2021
Date: 11/7/2019	Phone: 832-672-4604	Conditions of Approval Attached

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Phone (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV

1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone (505) 476-3480 Fax: (505) 476-3482State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-102

Revised August 4, 2011

Submit one copy to appropriate
District Office

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

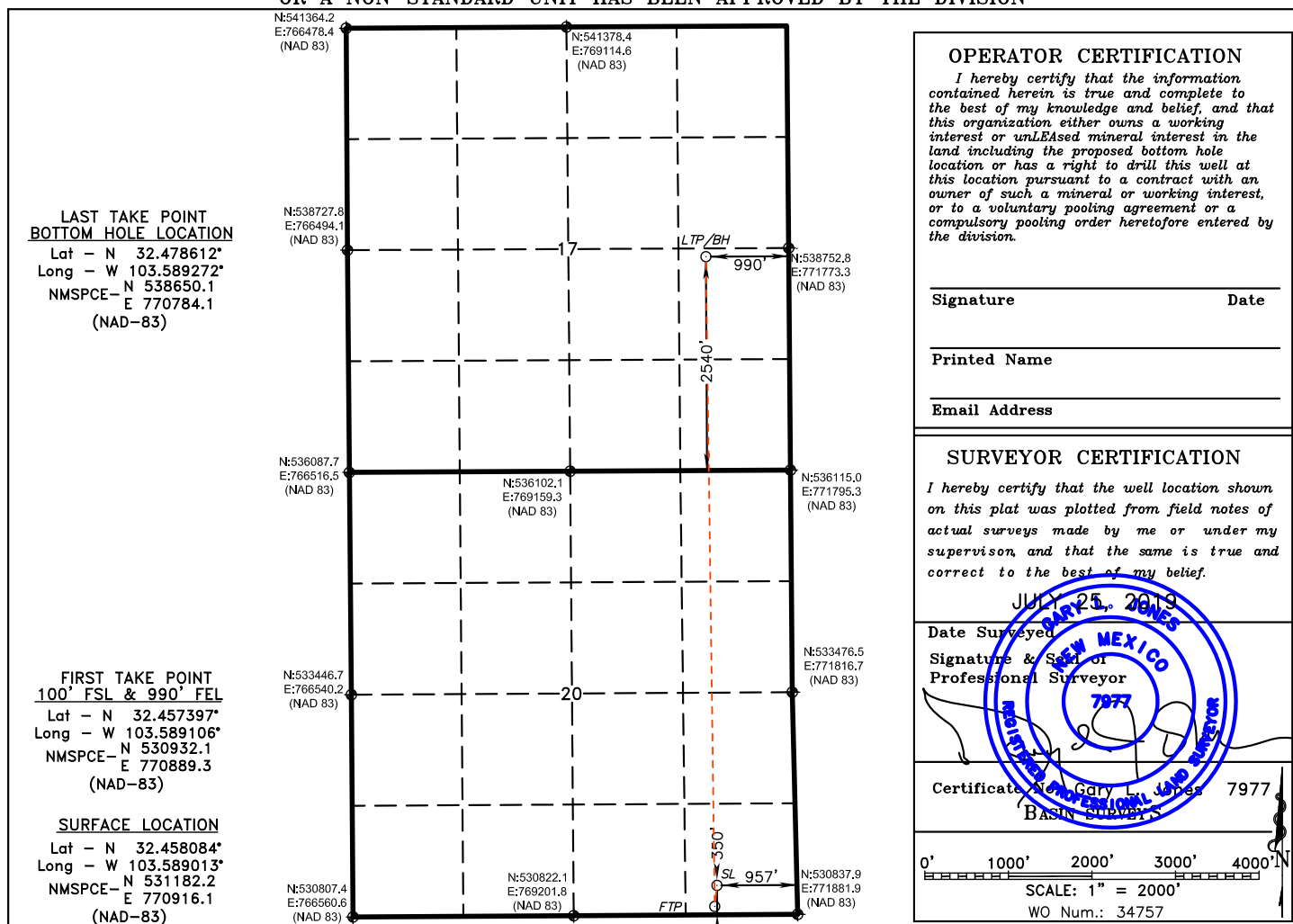
API Number	Pool Code	Pool Name
Property Code	Property Name WOOL HEAD 20 STATE COM	Well Number 511H
OGRID No.	Operator Name ADVANCE ENERGY PARTNERS HAT MESA	Elevation 3728'

Surface Location

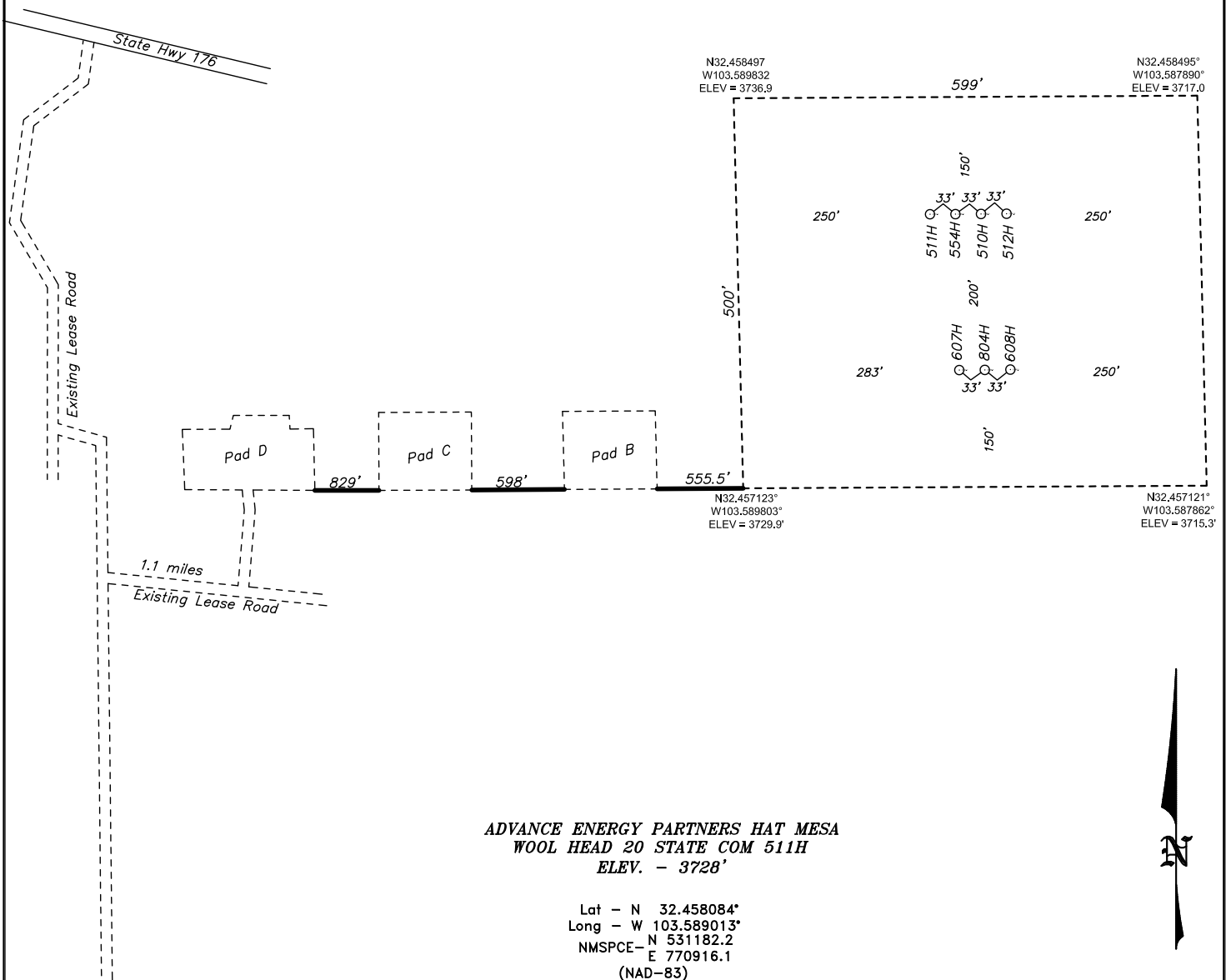
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	SOUTH/South line	Feet from the	East/West line	County
P	20	21 S	33 E		350	SOUTH	957	EAST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	SOUTH/South line	Feet from the	East/West line	County
I	17	21 S	33 E		2540	SOUTH	990	EAST	LEA
Dedicated Acres	Joint or Infill	Consolidation Code	Order No.						

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

**SECTION 20, TOWNSHIP 21 SOUTH, RANGE 33 EAST. N.M.P.M.,
LEA COUNTY, NEW MEXICO.**



DIRECTIONS TO LOCATION:
FROM THE JUNCTION OF STATE 176 AND US
HWY 62/180, EAST FOR ±7 MILES TO LEASE
ROAD. THEN SOUTH ON LEASE ROAD FOR ±4.5
MILES. THEN EASTERLY ON LEASE ROAD FOR 1.5
MILES TO PROPOSED LEASE ROAD.

200 0 200 400 FEET

SCALE: 1" = 200'

ADVANCE ENERGY PARTNERS HAT MESA

REF: WOOL HEAD 20 STATE COM 511H / WELL PAD TOPO

THE WOOL HEAD 20 STATE COM 511H LOCATED 350' FROM
THE SOUTH LINE AND 957' FROM THE EAST LINE OF
SECTION 20, TOWNSHIP 21 SOUTH, RANGE 33 EAST.

N.M.P.M., LEA COUNTY, NEW MEXICO.

**basin
surveys**
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in the oilfield

P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(575) 393-7316 - Office
(575) 392-2206 - Fax
basinsurveys.com

W.O. Number: 34757

Drawn By: K. GOAD

Date: 07-26-2019

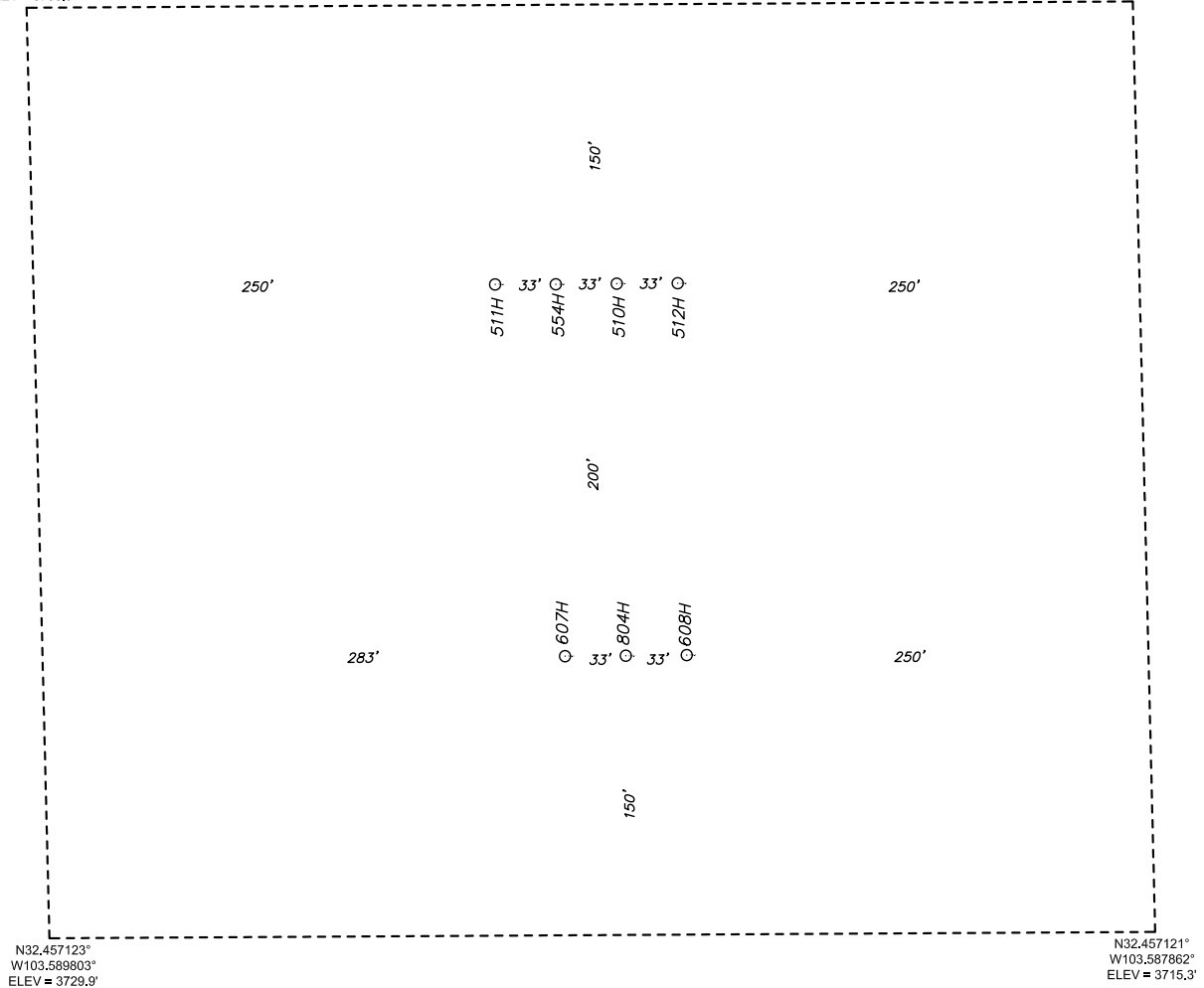
Survey Date: 07-25-2019

Sheet 1 of 1 Sheets

**SECTION 20, TOWNSHIP 21 SOUTH, RANGE 33 EAST. N.M.P.M.,
LEA COUNTY,
NEW MEXICO.**

N32.458497
W103.589832
ELEV = 3736.9

N32.458495°
W103.587890°
ELEV = 3717.0



100 0 100 200 FEET

SCALE: 1" = 100'

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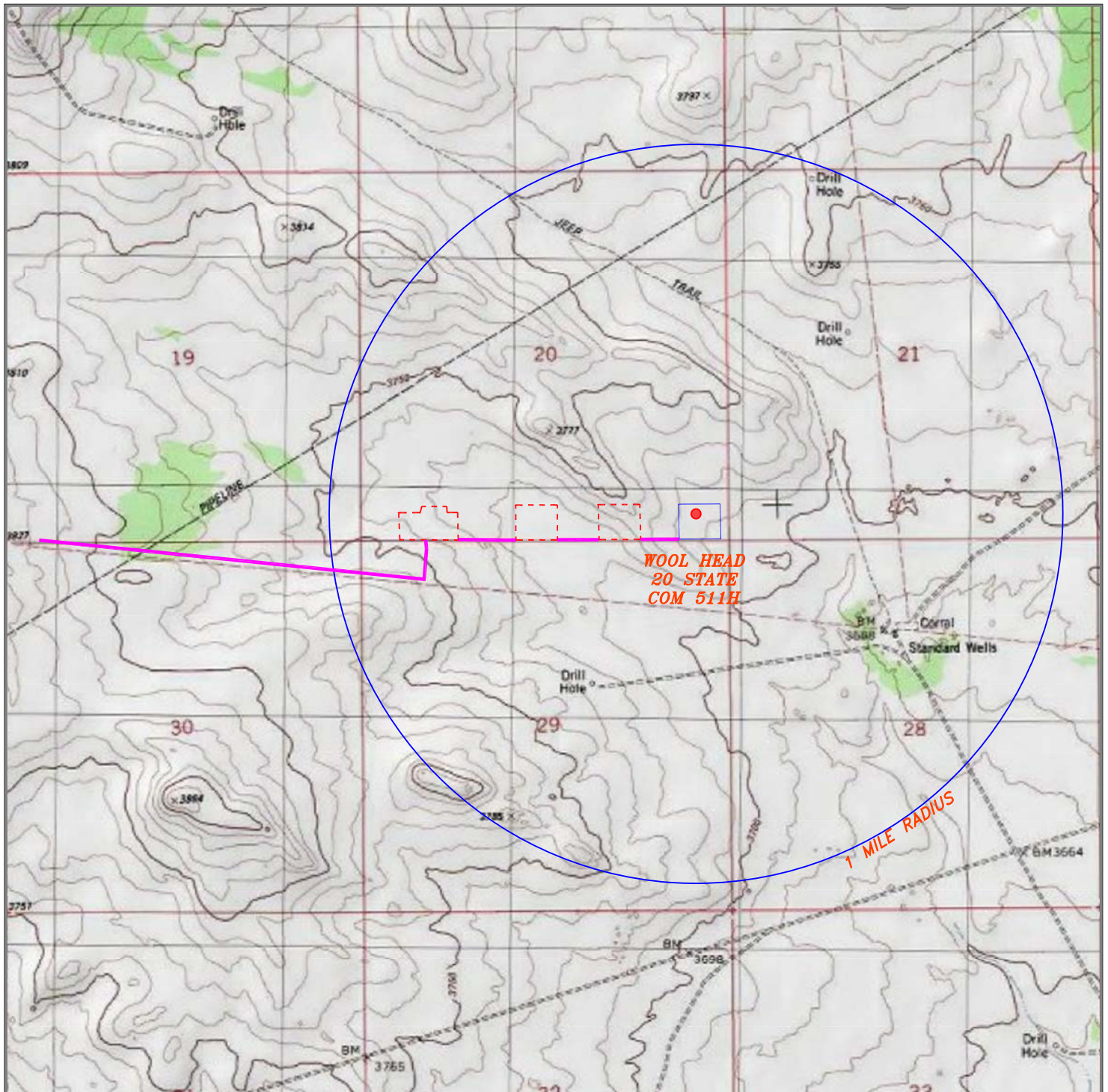
W.O. Number: 34757

Drawn By: K. GOAD

Date: 07-26-2019

Survey Date: 07-25-2019

Sheet 1 of 1 Sheets



WOOL HEAD 20 STATE COM 511H

Located 350' FSL and 957' FEL
 Section 20, Township 21 South, Range 33 East,
 N.M.P.M., Lea County, New Mexico.



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0' 1000' 2000' 3000' 4000'
 SCALE: 1" = 2000'

W.O. Number: KJG 34757

Survey Date: 07-26-2019

YELLOW TINT - USA LAND
 BLUE TINT - STATE LAND
 NATURAL COLOR - FEE LAND



**ADVANCE
 ENERGY
 PARTNERS
 HAT MESA**



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 Section 20, Township 21 South, Range 33 East,
 N.M.P.M., Lea County, New Mexico.



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0' 1000' 2000' 3000' 4000'
 SCALE: 1" = 2000'

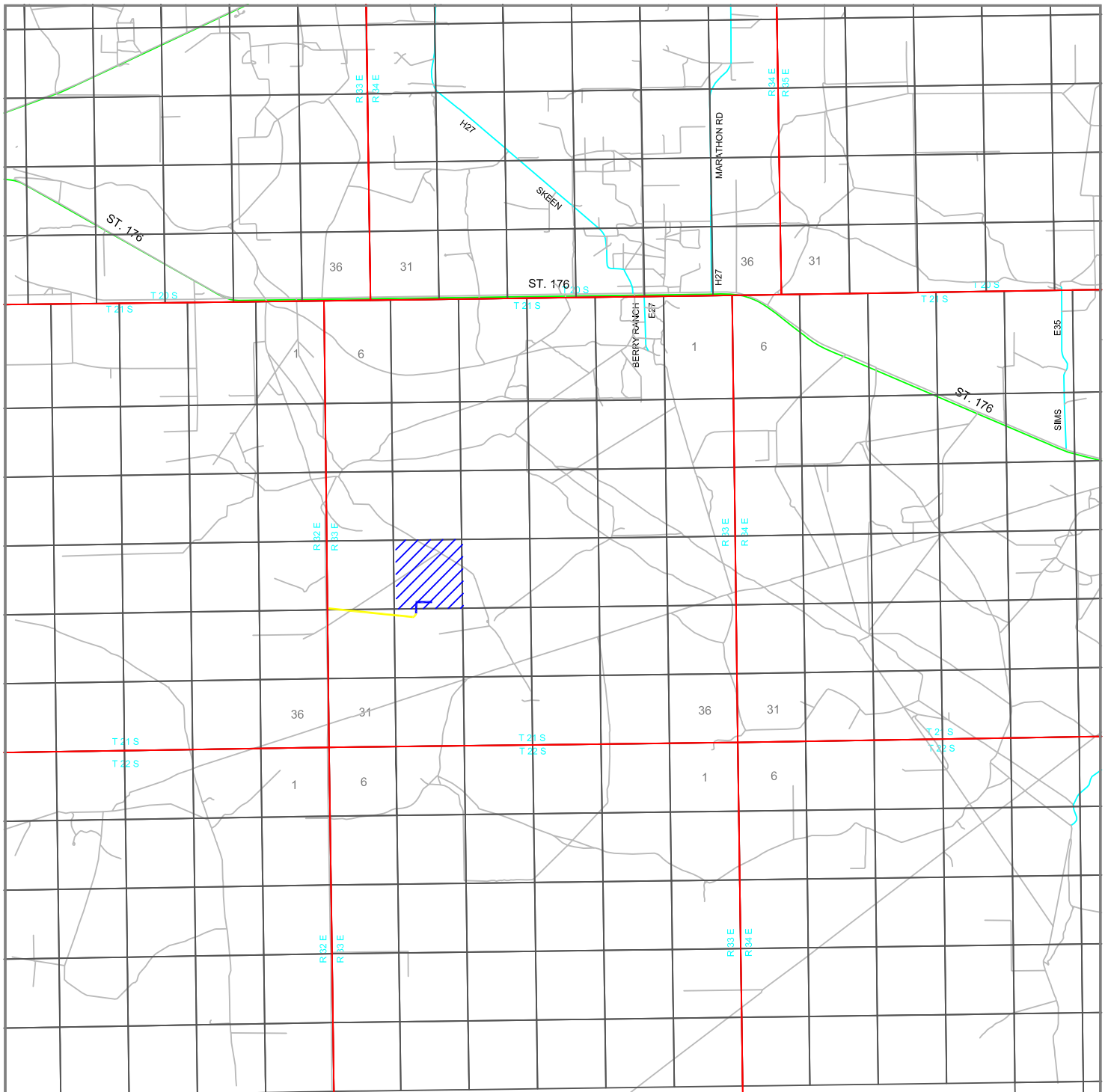
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YELLOW TINT - USA LAND
 BLUE TINT - STATE LAND
 NATURAL COLOR - FEE LAND



**ADVANCE
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WOOL HEAD 20 STATE COM 511H

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 Section 20, Township 21 South, Range 33 East,
 N.M.P.M., Lea County, New Mexico.



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0 1 MI 2 MI 3 MI 4 MI
 SCALE: 1" = 2 MILES

W.O. Number: KJG 34757

Survey Date: 07-26-2019

YELLOW TINT - USA LAND
 BLUE TINT - STATE LAND
 NATURAL COLOR - FEE LAND



**ADVANCE
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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

GAS CAPTURE PLAN

Date: 11/12/2019

☒ Original

Operator & OGRID No.: [372417] ADVANCE ENERGY PARTNERS HAT MESA, LLC

☐ Amended - Reason for
Amendment: _____

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomple to new zone, re-frac) activity.

Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).

Well(s)/Production Facility – Name of facility

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
WOOL HEAD 20 STATE COM #511H	30-025-46491	P-20-21S-33E	0350S 0957E	1000	Flared	

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to TARGA MIDSTREAM SERVICES LLC and will be connected to TARGA MIDSTREAM SERVICES LLC Low Pressure gathering system located in Lea County, New Mexico. It will require 1500' of pipeline to connect the facility to Low Pressure gathering system. ADVANCE ENERGY PARTNERS HAT MESA, LLC provides (periodically) to TARGA MIDSTREAM SERVICES LLC a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, ADVANCE ENERGY PARTNERS HAT MESA, LLC and TARGA MIDSTREAM SERVICES LLC have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at TARGA MIDSTREAM SERVICES LLC Processing Plant located in Sec. 36, Twn. 19S, Rng. 36E, Lea County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on TARGA MIDSTREAM SERVICES LLC system at that time. Based on current information, it is ADVANCE ENERGY PARTNERS HAT MESA, LLC's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
 - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
 - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
 - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

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Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

Form APD Comments

Permit 274324

PERMIT COMMENTS

Operator Name and Address: ADVANCE ENERGY PARTNERS HAT MESA, LLC [372417] 11490 Westheimer Rd., Ste 950 Houston, TX 77077		API Number: 30-025-46491
		Well: WOOL HEAD 20 STATE COM #511H

Created By	Comment	Comment Date
pkautz	Letter of inquiry concerning potash LMR and buffer zone sent to BLM & SLO 11/08/2019	11/8/2019
pkautz	Received letter of inquiry concerning potash LMR and buffer zone from SLO. Outside LMR & buffer zone. 11/08/2019	11/8/2019

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Santa Fe, NM 87505

Form APD Conditions

Permit 274324

PERMIT CONDITIONS OF APPROVAL

Operator Name and Address: ADVANCE ENERGY PARTNERS HAT MESA, LLC [372417] 11490 Westheimer Rd., Ste 950 Houston, TX 77077	API Number: 30-025-46491
	Well: WOOL HEAD 20 STATE COM #511H

OCD Reviewer	Condition
pkautz	Will require a directional survey with the C-104
pkautz	Potash Area - Three String Casing Program - In accordance with R-111-P all strings shall be cemented to surface. Salt Protection String - If the cement fails to reach the surface or the bottom of the cellar, where required, the top of the cement shall be located by a temperature or other survey and additional cementing shall be done until the cement is brought to the surface.
pkautz	If cement does not circulate to surface, must run temperature survey or other log to determine top of cement
pkautz	Surface casing must be set 25' below top of Rustler Anhydrite in order to seal off protectable water
pkautz	1)- The Operator is to notify NMOCD by sundry (Form C-103) within ten (10) days of the well being spud 2)- Drilling Sundries Form C-103 (Casing and Cement test are to be submitted within 10 days 3)- Completion Reports & Logs are to be submitted within 45 days 4)- Deviation / Directional Drill Survey are to be filed with or prior to C-104
pkautz	It is the operator's responsibility to monitor cancellation dates of approved APDs. APD's are good for 2 years and may be extended for one year. Only one 1 year extension will be granted if submitted by C-103 before expiration date. After expiration date or after a 1 year extension must submit new APD. If an APD expires and if site construction has occurred, site remediation is required.
pkautz	Stage Tool 1) Must notify OCD Hobbs Office prior to running Stage Tool at 5753703186 2) If using Stage Tool on Surface casing, Stage Tool must be set greater than 350' from surface and a minimum of 200 feet above surface shoe. 3) When using a Stage Tool on Intermediate or Production Casing Stage must be a minimum of 50 feet below previous casing shoe.



Advance Energy Partners

**Lea County, NM (NAD 83 NME)
(Wool Head)Sec20_T-21-S_R-33-E
Wool Head 20 State Com #511H**

OWB

Plan: Plan 0.1

Standard Planning Report

06 November, 2019





Microsoft
Planning Report



Database:	EDM 10_13	Local Co-ordinate Reference:	Well Wool Head 20 State Com #511H
Company:	Advance Energy Partners	TVD Reference:	KB @ 3754.5usft (H&P 466)
Project:	Lea County, NM (NAD 83 NME)	MD Reference:	KB @ 3754.5usft (H&P 466)
Site:	(Wool Head)Sec20_T-21-S_R-33-E	North Reference:	Grid
Well:	Wool Head 20 State Com #511H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	Plan 0.1		

Project	Lea County, NM (NAD 83 NME)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	(Wool Head)Sec20_T-21-S_R-33-E		
Site Position:		Northing:	531,182.60 usft
From:	Map	Easting:	770,949.20 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 27' 29.104 N
		Longitude:	103° 35' 20.061 W
		Grid Convergence:	0.40 °

Well	Wool Head 20 State Com #511H		
Well Position	+N/-S	-0.4 usft	Northing: 531,182.20 usft
	+E/-W	-33.1 usft	Easting: 770,916.10 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	Latitude: 32° 27' 29.102 N
			Longitude: 103° 35' 20.448 W
			Ground Level: 3,728.0 usft

Wellbore	OWB		
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	11/06/2019	6.72	60.24	47,826.50508108

Design	Plan 0.1		
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Audit Notes:				
Version:		Phase:	PLAN	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	358.99

Plan Survey Tool Program	Date	11/06/2019		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	18,414.0 Plan 0.1 (OWB)	MWD	
			OWSG MWD - Standard	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
5,400.0	0.00	0.00	5,400.0	0.0	0.0	0.00	0.00	0.00	0.00	
5,899.9	5.00	186.16	5,899.3	-21.7	-2.3	1.00	1.00	0.00	186.16	
8,285.5	5.00	186.16	8,275.7	-228.3	-24.7	0.00	0.00	0.00	0.00	
8,785.3	0.00	0.00	8,775.0	-250.0	-27.0	1.00	-1.00	0.00	180.00	
10,422.8	0.00	0.00	10,412.5	-250.0	-27.0	0.00	0.00	0.00	0.00	
11,172.8	90.00	359.22	10,890.0	227.4	-33.5	12.00	12.00	-0.10	359.22	
18,414.0	90.00	359.22	10,890.0	7,467.9	-132.0	0.00	0.00	0.00	0.00	LTP/PBHL (Wool H



Microsoft
Planning Report



Database:	EDM 10_13	Local Co-ordinate Reference:	Well Wool Head 20 State Com #511H
Company:	Advance Energy Partners	TVD Reference:	KB @ 3754.5usft (H&P 466)
Project:	Lea County, NM (NAD 83 NME)	MD Reference:	KB @ 3754.5usft (H&P 466)
Site:	(Wool Head)Sec20_T-21-S_R-33-E	North Reference:	Grid
Well:	Wool Head 20 State Com #511H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	Plan 0.1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
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
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00
5,300.0	0.00	0.00	5,300.0	0.0	0.0	0.0	0.00	0.00	0.00



Microsoft
Planning Report



Database:	EDM 10_13	Local Co-ordinate Reference:	Well Wool Head 20 State Com #511H
Company:	Advance Energy Partners	TVD Reference:	KB @ 3754.5usft (H&P 466)
Project:	Lea County, NM (NAD 83 NME)	MD Reference:	KB @ 3754.5usft (H&P 466)
Site:	(Wool Head)Sec20_T-21-S_R-33-E	North Reference:	Grid
Well:	Wool Head 20 State Com #511H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	Plan 0.1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,400.0	0.00	0.00	5,400.0	0.0	0.0	0.0	0.00	0.00	0.00
NUDGE- Build 1.00									
5,500.0	1.00	186.16	5,500.0	-0.9	-0.1	-0.9	1.00	1.00	0.00
5,600.0	2.00	186.16	5,600.0	-3.5	-0.4	-3.5	1.00	1.00	0.00
5,700.0	3.00	186.16	5,699.9	-7.8	-0.8	-7.8	1.00	1.00	0.00
5,800.0	4.00	186.16	5,799.7	-13.9	-1.5	-13.8	1.00	1.00	0.00
5,899.9	5.00	186.16	5,899.3	-21.7	-2.3	-21.6	1.00	1.00	0.00
HOLD- 2385.6 hold at 5899.9 MD									
6,000.0	5.00	186.16	5,999.0	-30.3	-3.3	-30.3	0.00	0.00	0.00
6,100.0	5.00	186.16	6,098.6	-39.0	-4.2	-38.9	0.00	0.00	0.00
6,200.0	5.00	186.16	6,198.2	-47.7	-5.1	-47.6	0.00	0.00	0.00
6,300.0	5.00	186.16	6,297.8	-56.3	-6.1	-56.2	0.00	0.00	0.00
6,400.0	5.00	186.16	6,397.5	-65.0	-7.0	-64.9	0.00	0.00	0.00
6,500.0	5.00	186.16	6,497.1	-73.7	-8.0	-73.5	0.00	0.00	0.00
6,600.0	5.00	186.16	6,596.7	-82.3	-8.9	-82.1	0.00	0.00	0.00
6,700.0	5.00	186.16	6,696.3	-91.0	-9.8	-90.8	0.00	0.00	0.00
6,800.0	5.00	186.16	6,795.9	-99.6	-10.8	-99.4	0.00	0.00	0.00
6,900.0	5.00	186.16	6,895.6	-108.3	-11.7	-108.1	0.00	0.00	0.00
7,000.0	5.00	186.16	6,995.2	-117.0	-12.6	-116.7	0.00	0.00	0.00
7,100.0	5.00	186.16	7,094.8	-125.6	-13.6	-125.4	0.00	0.00	0.00
7,200.0	5.00	186.16	7,194.4	-134.3	-14.5	-134.0	0.00	0.00	0.00
7,300.0	5.00	186.16	7,294.0	-143.0	-15.4	-142.7	0.00	0.00	0.00
7,400.0	5.00	186.16	7,393.7	-151.6	-16.4	-151.3	0.00	0.00	0.00
7,500.0	5.00	186.16	7,493.3	-160.3	-17.3	-160.0	0.00	0.00	0.00
7,600.0	5.00	186.16	7,592.9	-169.0	-18.2	-168.6	0.00	0.00	0.00
7,700.0	5.00	186.16	7,692.5	-177.6	-19.2	-177.2	0.00	0.00	0.00
7,800.0	5.00	186.16	7,792.1	-186.3	-20.1	-185.9	0.00	0.00	0.00
7,900.0	5.00	186.16	7,891.8	-194.9	-21.1	-194.5	0.00	0.00	0.00
8,000.0	5.00	186.16	7,991.4	-203.6	-22.0	-203.2	0.00	0.00	0.00
8,100.0	5.00	186.16	8,091.0	-212.3	-22.9	-211.8	0.00	0.00	0.00
8,200.0	5.00	186.16	8,190.6	-220.9	-23.9	-220.5	0.00	0.00	0.00
8,285.5	5.00	186.16	8,275.7	-228.3	-24.7	-227.9	0.00	0.00	0.00
DROP- Drop -1.00									
8,300.0	4.85	186.16	8,290.2	-229.6	-24.8	-229.1	1.00	-1.00	0.00
8,400.0	3.85	186.16	8,389.9	-237.1	-25.6	-236.6	1.00	-1.00	0.00
8,500.0	2.85	186.16	8,489.8	-242.9	-26.2	-242.4	1.00	-1.00	0.00
8,600.0	1.85	186.16	8,589.7	-247.0	-26.7	-246.5	1.00	-1.00	0.00
8,700.0	0.85	186.16	8,689.7	-249.4	-26.9	-248.9	1.00	-1.00	0.00
8,785.3	0.00	0.00	8,775.0	-250.0	-27.0	-249.5	1.00	-1.00	0.00
HOLD- 1637.5 hold at 8785.3 MD									
8,800.0	0.00	0.00	8,789.7	-250.0	-27.0	-249.5	0.00	0.00	0.00
8,900.0	0.00	0.00	8,889.7	-250.0	-27.0	-249.5	0.00	0.00	0.00
9,000.0	0.00	0.00	8,989.7	-250.0	-27.0	-249.5	0.00	0.00	0.00
9,100.0	0.00	0.00	9,089.7	-250.0	-27.0	-249.5	0.00	0.00	0.00
9,200.0	0.00	0.00	9,189.7	-250.0	-27.0	-249.5	0.00	0.00	0.00
9,300.0	0.00	0.00	9,289.7	-250.0	-27.0	-249.5	0.00	0.00	0.00
9,400.0	0.00	0.00	9,389.7	-250.0	-27.0	-249.5	0.00	0.00	0.00
9,500.0	0.00	0.00	9,489.7	-250.0	-27.0	-249.5	0.00	0.00	0.00
9,600.0	0.00	0.00	9,589.7	-250.0	-27.0	-249.5	0.00	0.00	0.00
9,700.0	0.00	0.00	9,689.7	-250.0	-27.0	-249.5	0.00	0.00	0.00
9,800.0	0.00	0.00	9,789.7	-250.0	-27.0	-249.5	0.00	0.00	0.00
9,900.0	0.00	0.00	9,889.7	-250.0	-27.0	-249.5	0.00	0.00	0.00
10,000.0	0.00	0.00	9,989.7	-250.0	-27.0	-249.5	0.00	0.00	0.00



Microsoft
Planning Report



Database:	EDM 10_13	Local Co-ordinate Reference:	Well Wool Head 20 State Com #511H
Company:	Advance Energy Partners	TVD Reference:	KB @ 3754.5usft (H&P 466)
Project:	Lea County, NM (NAD 83 NME)	MD Reference:	KB @ 3754.5usft (H&P 466)
Site:	(Wool Head)Sec20_T-21-S_R-33-E	North Reference:	Grid
Well:	Wool Head 20 State Com #511H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	Plan 0.1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,100.0	0.00	0.00	10,089.7	-250.0	-27.0	-249.5	0.00	0.00	0.00
10,200.0	0.00	0.00	10,189.7	-250.0	-27.0	-249.5	0.00	0.00	0.00
10,300.0	0.00	0.00	10,289.7	-250.0	-27.0	-249.5	0.00	0.00	0.00
10,400.0	0.00	0.00	10,389.7	-250.0	-27.0	-249.5	0.00	0.00	0.00
10,422.8	0.00	0.00	10,412.5	-250.0	-27.0	-249.5	0.00	0.00	0.00
KOP- DLS 12.00 TFO 359.22									
10,425.0	0.26	359.22	10,414.7	-250.0	-27.0	-249.5	12.00	12.00	0.00
10,450.0	3.26	359.22	10,439.6	-249.2	-27.0	-248.7	12.00	12.00	0.00
10,475.0	6.26	359.22	10,464.6	-247.2	-27.0	-246.6	12.00	12.00	0.00
10,500.0	9.26	359.22	10,489.3	-243.8	-27.1	-243.3	12.00	12.00	0.00
10,525.0	12.26	359.22	10,513.9	-239.1	-27.1	-238.6	12.00	12.00	0.00
10,550.0	15.26	359.22	10,538.2	-233.2	-27.2	-232.7	12.00	12.00	0.00
10,575.0	18.26	359.22	10,562.1	-226.0	-27.3	-225.4	12.00	12.00	0.00
10,600.0	21.26	359.22	10,585.6	-217.5	-27.4	-217.0	12.00	12.00	0.00
10,625.0	24.26	359.22	10,608.7	-207.8	-27.6	-207.3	12.00	12.00	0.00
10,650.0	27.26	359.22	10,631.2	-197.0	-27.7	-196.5	12.00	12.00	0.00
10,675.0	30.26	359.22	10,653.1	-185.0	-27.9	-184.4	12.00	12.00	0.00
10,700.0	33.26	359.22	10,674.4	-171.8	-28.1	-171.3	12.00	12.00	0.00
10,725.0	36.26	359.22	10,694.9	-157.5	-28.3	-157.0	12.00	12.00	0.00
10,750.0	39.26	359.22	10,714.7	-142.2	-28.5	-141.7	12.00	12.00	0.00
10,775.0	42.26	359.22	10,733.6	-125.9	-28.7	-125.4	12.00	12.00	0.00
10,800.0	45.26	359.22	10,751.6	-108.6	-28.9	-108.1	12.00	12.00	0.00
10,825.0	48.26	359.22	10,768.8	-90.4	-29.2	-89.9	12.00	12.00	0.00
10,850.0	51.26	359.22	10,784.9	-71.3	-29.4	-70.8	12.00	12.00	0.00
10,875.0	54.26	359.22	10,800.0	-51.5	-29.7	-50.9	12.00	12.00	0.00
10,900.0	57.26	359.22	10,814.1	-30.8	-30.0	-30.3	12.00	12.00	0.00
10,925.0	60.26	359.22	10,827.1	-9.4	-30.3	-8.9	12.00	12.00	0.00
10,950.0	63.26	359.22	10,838.9	12.6	-30.6	13.1	12.00	12.00	0.00
10,975.0	66.26	359.22	10,849.6	35.2	-30.9	35.8	12.00	12.00	0.00
11,000.0	69.26	359.22	10,859.0	58.3	-31.2	58.9	12.00	12.00	0.00
11,025.0	72.26	359.22	10,867.3	81.9	-31.5	82.5	12.00	12.00	0.00
11,050.0	75.26	359.22	10,874.2	105.9	-31.8	106.5	12.00	12.00	0.00
11,075.0	78.26	359.22	10,880.0	130.3	-32.2	130.8	12.00	12.00	0.00
11,100.0	81.26	359.22	10,884.4	154.9	-32.5	155.4	12.00	12.00	0.00
11,125.0	84.26	359.22	10,887.6	179.7	-32.8	180.2	12.00	12.00	0.00
11,150.0	87.26	359.22	10,889.4	204.6	-33.2	205.1	12.00	12.00	0.00
11,172.8	90.00	359.22	10,890.0	227.4	-33.5	228.0	12.00	12.00	0.00
EOC- 7241.2 hold at 11172.8 MD									
11,200.0	90.00	359.22	10,890.0	254.6	-33.9	255.1	0.00	0.00	0.00
11,300.0	90.00	359.22	10,890.0	354.6	-35.2	355.1	0.00	0.00	0.00
11,400.0	90.00	359.22	10,890.0	454.6	-36.6	455.1	0.00	0.00	0.00
11,500.0	90.00	359.22	10,890.0	554.5	-37.9	555.1	0.00	0.00	0.00
11,600.0	90.00	359.22	10,890.0	654.5	-39.3	655.1	0.00	0.00	0.00
11,700.0	90.00	359.22	10,890.0	754.5	-40.7	755.1	0.00	0.00	0.00
11,800.0	90.00	359.22	10,890.0	854.5	-42.0	855.1	0.00	0.00	0.00
11,900.0	90.00	359.22	10,890.0	954.5	-43.4	955.1	0.00	0.00	0.00
12,000.0	90.00	359.22	10,890.0	1,054.5	-44.7	1,055.1	0.00	0.00	0.00
12,100.0	90.00	359.22	10,890.0	1,154.5	-46.1	1,155.1	0.00	0.00	0.00
12,200.0	90.00	359.22	10,890.0	1,254.5	-47.5	1,255.1	0.00	0.00	0.00
12,300.0	90.00	359.22	10,890.0	1,354.5	-48.8	1,355.1	0.00	0.00	0.00
12,400.0	90.00	359.22	10,890.0	1,454.5	-50.2	1,455.1	0.00	0.00	0.00
12,500.0	90.00	359.22	10,890.0	1,554.5	-51.5	1,555.1	0.00	0.00	0.00
12,600.0	90.00	359.22	10,890.0	1,654.4	-52.9	1,655.1	0.00	0.00	0.00
12,700.0	90.00	359.22	10,890.0	1,754.4	-54.3	1,755.1	0.00	0.00	0.00



Microsoft
Planning Report



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Company:	Advance Energy Partners	TVD Reference:	KB @ 3754.5usft (H&P 466)
Project:	Lea County, NM (NAD 83 NME)	MD Reference:	KB @ 3754.5usft (H&P 466)
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Well:	Wool Head 20 State Com #511H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	Plan 0.1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,800.0	90.00	359.22	10,890.0	1,854.4	-55.6	1,855.1	0.00	0.00	0.00
12,900.0	90.00	359.22	10,890.0	1,954.4	-57.0	1,955.1	0.00	0.00	0.00
13,000.0	90.00	359.22	10,890.0	2,054.4	-58.4	2,055.1	0.00	0.00	0.00
13,100.0	90.00	359.22	10,890.0	2,154.4	-59.7	2,155.1	0.00	0.00	0.00
13,200.0	90.00	359.22	10,890.0	2,254.4	-61.1	2,255.1	0.00	0.00	0.00
13,300.0	90.00	359.22	10,890.0	2,354.4	-62.4	2,355.1	0.00	0.00	0.00
13,400.0	90.00	359.22	10,890.0	2,454.4	-63.8	2,455.1	0.00	0.00	0.00
13,500.0	90.00	359.22	10,890.0	2,554.4	-65.2	2,555.1	0.00	0.00	0.00
13,600.0	90.00	359.22	10,890.0	2,654.4	-66.5	2,655.1	0.00	0.00	0.00
13,700.0	90.00	359.22	10,890.0	2,754.3	-67.9	2,755.1	0.00	0.00	0.00
13,800.0	90.00	359.22	10,890.0	2,854.3	-69.2	2,855.1	0.00	0.00	0.00
13,900.0	90.00	359.22	10,890.0	2,954.3	-70.6	2,955.1	0.00	0.00	0.00
14,000.0	90.00	359.22	10,890.0	3,054.3	-72.0	3,055.1	0.00	0.00	0.00
14,100.0	90.00	359.22	10,890.0	3,154.3	-73.3	3,155.1	0.00	0.00	0.00
14,200.0	90.00	359.22	10,890.0	3,254.3	-74.7	3,255.1	0.00	0.00	0.00
14,300.0	90.00	359.22	10,890.0	3,354.3	-76.0	3,355.1	0.00	0.00	0.00
14,400.0	90.00	359.22	10,890.0	3,454.3	-77.4	3,455.1	0.00	0.00	0.00
14,500.0	90.00	359.22	10,890.0	3,554.3	-78.8	3,555.1	0.00	0.00	0.00
14,600.0	90.00	359.22	10,890.0	3,654.3	-80.1	3,655.1	0.00	0.00	0.00
14,700.0	90.00	359.22	10,890.0	3,754.3	-81.5	3,755.1	0.00	0.00	0.00
14,800.0	90.00	359.22	10,890.0	3,854.2	-82.8	3,855.1	0.00	0.00	0.00
14,900.0	90.00	359.22	10,890.0	3,954.2	-84.2	3,955.1	0.00	0.00	0.00
15,000.0	90.00	359.22	10,890.0	4,054.2	-85.6	4,055.1	0.00	0.00	0.00
15,100.0	90.00	359.22	10,890.0	4,154.2	-86.9	4,155.1	0.00	0.00	0.00
15,200.0	90.00	359.22	10,890.0	4,254.2	-88.3	4,255.1	0.00	0.00	0.00
15,300.0	90.00	359.22	10,890.0	4,354.2	-89.6	4,355.1	0.00	0.00	0.00
15,400.0	90.00	359.22	10,890.0	4,454.2	-91.0	4,455.1	0.00	0.00	0.00
15,500.0	90.00	359.22	10,890.0	4,554.2	-92.4	4,555.1	0.00	0.00	0.00
15,600.0	90.00	359.22	10,890.0	4,654.2	-93.7	4,655.1	0.00	0.00	0.00
15,700.0	90.00	359.22	10,890.0	4,754.2	-95.1	4,755.1	0.00	0.00	0.00
15,800.0	90.00	359.22	10,890.0	4,854.2	-96.4	4,855.1	0.00	0.00	0.00
15,900.0	90.00	359.22	10,890.0	4,954.1	-97.8	4,955.1	0.00	0.00	0.00
16,000.0	90.00	359.22	10,890.0	5,054.1	-99.2	5,055.1	0.00	0.00	0.00
16,100.0	90.00	359.22	10,890.0	5,154.1	-100.5	5,155.1	0.00	0.00	0.00
16,200.0	90.00	359.22	10,890.0	5,254.1	-101.9	5,255.1	0.00	0.00	0.00
16,300.0	90.00	359.22	10,890.0	5,354.1	-103.2	5,355.1	0.00	0.00	0.00
16,400.0	90.00	359.22	10,890.0	5,454.1	-104.6	5,455.1	0.00	0.00	0.00
16,500.0	90.00	359.22	10,890.0	5,554.1	-106.0	5,555.1	0.00	0.00	0.00
16,600.0	90.00	359.22	10,890.0	5,654.1	-107.3	5,655.1	0.00	0.00	0.00
16,700.0	90.00	359.22	10,890.0	5,754.1	-108.7	5,755.1	0.00	0.00	0.00
16,800.0	90.00	359.22	10,890.0	5,854.1	-110.0	5,855.1	0.00	0.00	0.00
16,900.0	90.00	359.22	10,890.0	5,954.0	-111.4	5,955.1	0.00	0.00	0.00
17,000.0	90.00	359.22	10,890.0	6,054.0	-112.8	6,055.1	0.00	0.00	0.00
17,100.0	90.00	359.22	10,890.0	6,154.0	-114.1	6,155.1	0.00	0.00	0.00
17,200.0	90.00	359.22	10,890.0	6,254.0	-115.5	6,255.1	0.00	0.00	0.00
17,300.0	90.00	359.22	10,890.0	6,354.0	-116.8	6,355.1	0.00	0.00	0.00
17,400.0	90.00	359.22	10,890.0	6,454.0	-118.2	6,455.1	0.00	0.00	0.00
17,500.0	90.00	359.22	10,890.0	6,554.0	-119.6	6,555.1	0.00	0.00	0.00
17,600.0	90.00	359.22	10,890.0	6,654.0	-120.9	6,655.1	0.00	0.00	0.00
17,700.0	90.00	359.22	10,890.0	6,754.0	-122.3	6,755.1	0.00	0.00	0.00
17,800.0	90.00	359.22	10,890.0	6,854.0	-123.6	6,855.1	0.00	0.00	0.00
17,900.0	90.00	359.22	10,890.0	6,954.0	-125.0	6,955.1	0.00	0.00	0.00
18,000.0	90.00	359.22	10,890.0	7,053.9	-126.4	7,055.1	0.00	0.00	0.00
18,100.0	90.00	359.22	10,890.0	7,153.9	-127.7	7,155.1	0.00	0.00	0.00



Microsoft
Planning Report



Database:	EDM 10_13	Local Co-ordinate Reference:	Well Wool Head 20 State Com #511H
Company:	Advance Energy Partners	TVD Reference:	KB @ 3754.5usft (H&P 466)
Project:	Lea County, NM (NAD 83 NME)	MD Reference:	KB @ 3754.5usft (H&P 466)
Site:	(Wool Head)Sec20_T-21-S_R-33-E	North Reference:	Grid
Well:	Wool Head 20 State Com #511H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OWB		
Design:	Plan 0.1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
18,200.0	90.00	359.22	10,890.0	7,253.9	-129.1	7,255.1	0.00	0.00	0.00
18,300.0	90.00	359.22	10,890.0	7,353.9	-130.4	7,355.1	0.00	0.00	0.00
18,400.0	90.00	359.22	10,890.0	7,453.9	-131.8	7,455.1	0.00	0.00	0.00
18,414.0	90.00	359.22	10,890.0	7,467.9	-132.0	7,469.1	0.00	0.00	0.00
TD at 18414.0									

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
LTP/PBHL (Wool Hea	0.00	0.00	10,890.0	7,467.9	-132.0	538,650.10	770,784.10	32° 28' 43.005 N	103° 35' 21.381 W
- plan hits target center									
- Point									
FTP (Wool Head 20 S	0.00	0.00	10,890.0	-250.1	-26.8	530,932.10	770,889.30	32° 27' 26.629 N	103° 35' 20.781 W
- plan misses target center by 197.9usft at 10800.0usft MD (10751.6 TVD, -108.6 N, -28.9 E)									
- Point									

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5,400.0	5,400.0	0.0	0.0	NUDGE- Build 1.00
5,899.9	5,899.3	-21.7	-2.3	HOLD- 2385.6 hold at 5899.9 MD
8,285.5	8,275.7	-228.3	-24.7	DROP- Drop -1.00
8,785.3	8,775.0	-250.0	-27.0	HOLD- 1637.5 hold at 8785.3 MD
10,422.8	10,412.5	-250.0	-27.0	KOP- DLS 12.00 TFO 359.22
11,172.8	10,890.0	227.4	-33.5	EOC- 7241.2 hold at 11172.8 MD
18,414.0	10,890.0	7,467.9	-132.0	TD at 18414.0