Form 3160-3 (June 2015)		FORM APPROVED OMB No. 1004-0137 Expires: January 31, 2018				
UNITED STAT				1	y 51, 2010	
DEPARTMENT OF THI BUREAU OF LAND MA				5. Lease Serial No.		
APPLICATION FOR PERMIT TO				6. If Indian, Allotee or T	ribe Name	
1a. Type of work: DRILL	REENTER			7. If Unit or CA Agreem	ent, Name and No.	
1b. Type of Well: Oil Well Gas Well	Other			8. Lease Name and Well	No.	
1c. Type of Completion: Hydraulic Fracturing	Single Zone	Multiple Zone	2			
				[327	<b>[861]</b>	
2. Name of Operator [325830]				9. API Well No. <b>30-</b>	025-48800	
3a. Address	3b. Phone l	No. (include area d	code)	10. Field and Pool, or Ex	xploratory [97895]	
4. Location of Well (Report location clearly and in accordance)	 ce with any State	e requirements.*)		11. Sec., T. R. M. or Blk	. and Survey or Area	
At surface						
At proposed prod. zone						
14. Distance in miles and direction from nearest town or post	office*			12. County or Parish	13. State	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of a	cres in lease	17. Spac	ing Unit dedicated to this v	vell	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Propose	ed Depth	20. BLM	I/BIA Bond No. in file		
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approx	imate date work w	vill start*	23. Estimated duration		
	24. Atta	chments				
The following, completed in accordance with the requirement (as applicable)	ts of Onshore Oi	l and Gas Order N	o. 1, and the	Hydraulic Fracturing rule p	per 43 CFR 3162.3-3	
<ol> <li>Well plat certified by a registered surveyor.</li> <li>A Drilling Plan.</li> <li>A Surface Use Plan (if the location is on National Forest Sy SUPO must be filed with the appropriate Forest Service Of</li> </ol>		Item 20 abov 5. Operator cert	e). tification.	ormation and/or plans as may		
25. Signature	Name	e (Printed/Typed)		Dat	e	
Title						
Approved by (Signature)	Name	e (Printed/Typed)		Dat	e	
Title	Offic	e				
Application approval does not warrant or certify that the appli applicant to conduct operations thereon. Conditions of approval, if any, are attached.	icant holds legal	or equitable title t	to those rights	s in the subject lease which	would entitle the	
Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212 of the United States any false, fictitious or fraudulent statemen					lepartment or agency	
GCP Rec 04/20/2021				1 K7		
	- W	TH COND	ITIONS	05/06/20	21	
SL (Continued on page 2)	OAED MI	III V		*/Instru	ctions on page 2)	
(Commuca on page 2)	100			(111511 U	chons on page 2)	

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#### **INSTRUCTIONS**

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM I: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the wen, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionany drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

ITEM 24: If the proposal will involve hydraulic fracturing operations, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

#### **NOTICES**

The Privacy Act of 1974 and regulation in 43 CFR 2.48( d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160

PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service wen or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

ROUTINE USE: Information from the record and/or the record win be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM conects this information to anow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

**BURDEN HOURS STATEMENT:** Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Conection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

## **Additional Operator Remarks**

#### **Location of Well**

0. SHL: NWNE / 250 FNL / 1935 FEL / TWSP: 21S / RANGE: 33E / SECTION: 19 / LAT: 32.470971 / LONG: -103.609437 ( TVD: 0 feet, MD: 0 feet ) PPP: SWSE / 0 FSL / 1650 FEL / TWSP: 21S / RANGE: 33E / SECTION: 18 / LAT: 32.471694 / LONG: -103.608469 ( TVD: 9315 feet, MD: 9597 feet ) PPP: NWNE / 27 FNL / 1605 FEL / TWSP: 21S / RANGE: 33E / SECTION: 19 / LAT: 32.4715815 / LONG: -103.6083666 ( TVD: 9308 feet, MD: 9561 feet ) BHL: NWNE / 50 FNL / 1650 FEL / TWSP: 21S / RANGE: 33E / SECTION: 18 / LAT: 32.486026 / LONG: -103.608524 ( TVD: 9323 feet, MD: 14822 feet )

#### **BLM Point of Contact**

Name: Gavin Mickwee Title: Land Law Examiner Phone: (575) 234-5972 Email: gmickwee@blm.gov

## **Review and Appeal Rights**

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

<u>District I</u> 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 <u>District III</u> 1000 Rio Brazos Road, Aztec, NM 87410

District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505 Phone: (505) 476-3460 Fax: (505) 476-3462

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

State of New Mexico Energy, Minerals & Natural Resources Department OIL CONSERVATION DIVISION 1220 South St. Francis Dr. Santa Fe, NM 87505

Form C-102 Revised August 1, 2011 Submit one copy to appropriate District Office

■ AMENDED REPORT

## WELL LOCATION AND ACREAGE DEDICATION PLAT

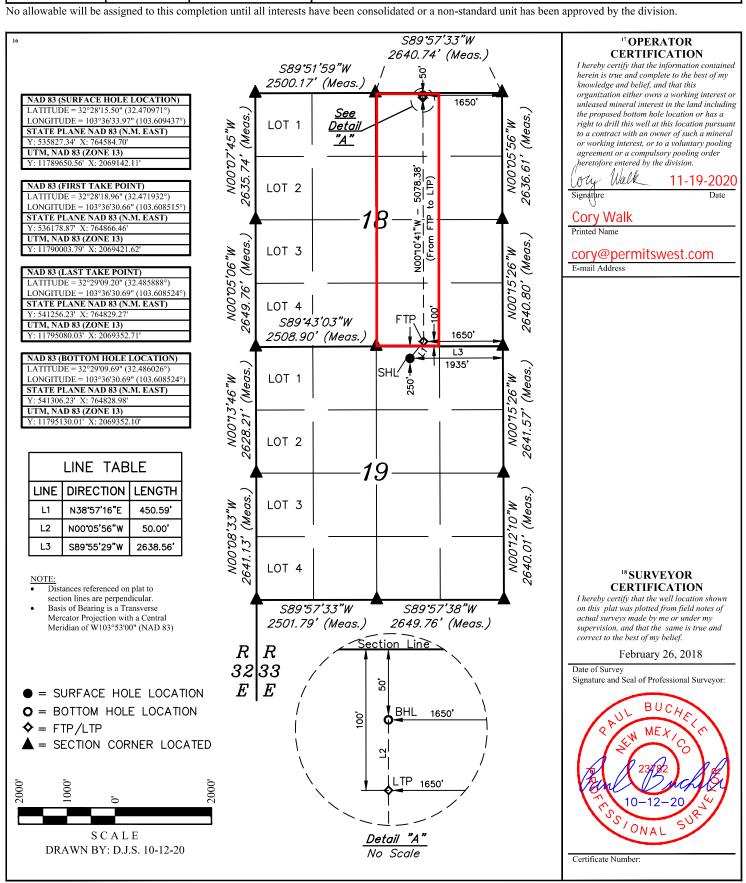
<sup>1</sup> API Number 30-025-48800	•	<sup>2</sup> Pool Code 97895	WC-025 G-08 S213304D; BONE SPRING						
<sup>4</sup> Property Code <b>327861</b>		<sup>5</sup> Pr HORSES	<sup>6</sup> Well Number 302H						
<sup>7</sup> OGRID No. 325830			perator Name ENT ENERGY	<sup>9</sup> Elevation 3808.4'					

#### <sup>10</sup> Surface Location

UL or lot no. B	Section 19	Township 21S	Range 33E	Lot Idn	Feet from the 250	North/South line NORTH	Feet from the 1935	East/West line EAST	County LEA		

## "Bottom Hole Location If Different From Surface

UL or lot no. B	Sect 13	ion 8	Township 21S	Range 33E	Lot Idn	F	eet from the 50	North/South line NORTH	Feet from the 1650	East/West line EAST	County LEA
12 Dedicated Acre 160	es	<sup>13</sup> Jo	oint or Infill	14 Conso	olidation Code		15 Order No.				



District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

Data: 11 10 20

# State of New Mexico Energy, Minerals and Natural Resources Department

Submit Original to Appropriate District Office

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

#### **GAS CAPTURE PLAN**

Date. 11-19-20	
X Original	Operator & OGRID No.: Ascent Energy, LLC (325830)
☐ 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, recomplete 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	SHL (ULSTR)	SHL Footages	Expected MCF/D	Flared or Vented	Comments
Horseshoe Fed Com 301H	30-025-	B-19-21s-33e	250' FNL & 1965' FEL	160	≈30 days	flare until well clean, then connect
Horseshoe Fed Com 302H	30-025- <b>30-025-48800</b>	B-19-21s-33e	250' FNL & 1935' FEL	160	≈30 days	flare until well clean, then connect
Horseshoe Fed Com 401H	30-025-	B-19-21s-33e	300' FNL & 1935' FEL	160	≈30 days	flare until well clean, then connect
Horseshoe Fed Com 501H	30-025-47268	B-19-21s-33e	300' FNL & 2025' FEL	160	≈30 days	flare until well clean, then connect
Horseshoe Fed Com 601H	30-025-47056	B-19-21s-33e	300' FNL & 1995' FEL	160	≈30 days	flare until well clean, then connect
Horseshoe Fed Com 701H	30-025-47058	B-19-21s-33e	300' FNL & 1965' FEL	160	≈30 days	flare until well clean, then connect
Horseshoe Fed Com 703H	30-025-	B-19-21s-33e	250' FNL & 1995' FEL	160	≈30 days	flare until well clean, then connect

#### **Gathering System and Pipeline Notification**

Well will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. Gas produced from this production facility has not yet been dedicated. One possible outlet is a Versado Gas Processors, LLC (159160) line in K-19-21s-33e,  $\approx 3700$ ' southwest of the Horseshoe pad. Operator will provide (periodically) to Gas Transporter a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, Operator and Gas Transporter will have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at Gas Transporter Processing Plant at an as yet undetermined location. 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 <u>Gas Transporter</u> system at that time. Based on current information, it is <u>Operator's</u> belief the system ultimately 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.

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#### **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
  - o Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal On lease
  - o Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines



#### U.S. Department of the Interior **BUREAU OF LAND MANAGEMENT**

# **Drilling Plan Data Report** 04/12/2021

Submission Date: 11/24/2020

Highlighted data reflects the most

recent changes

Well Name: HORSESHOE FED COM Well Number: 302H

**Show Final Text** 

Well Type: OIL WELL

**APD ID:** 10400065576

Well Work Type: Drill

# **Section 1 - Geologic Formations**

Formation			True Vertical	Measured			Producing
ID	Formation Name	Elevation	Depth	Depth	Lithologies	Mineral Resources	Formation
1168023	QUATERNARY	3808	0	0	OTHER : None - Surface		N
1168024	RUSTLER ANHYDRITE	2187	1621	1621	ANHYDRITE	USEABLE WATER	N
1168025	SALADO	1832	1976	1976	SALT	NONE	N
1168026	BASE OF SALT	412	3396	3414	ANHYDRITE, SALT	NONE	N
1168027	TANSILL	259	3549	3570	LIMESTONE	NONE	N
1168028	YATES	89	3719	3744	SANDSTONE, SHALE	NATURAL GAS, OIL	N
1168029	CAPITAN REEF	-236	4044	4076	LIMESTONE	USEABLE WATER	N
1168030	DELAWARE SAND	-1456	5264	5307	SANDSTONE	NATURAL GAS, OIL	N
1168031	CHERRY CANYON	-1962	5770	5813	SANDSTONE	NATURAL GAS, OIL	N
1168032	BRUSHY CANYON	-3341	7149	7192	SANDSTONE	NATURAL GAS, OIL	N
1168033	BONE SPRING LIME	-5078	8886	8930	LIMESTONE, SANDSTONE	NATURAL GAS, OIL	N
1168034	AVALON SAND	-5261	9069	9131	LIMESTONE, SHALE	NATURAL GAS, OIL	N
1168035	BONE SPRING	-5500	9308	9561	LIMESTONE, OTHER, SANDSTONE : Leonard B	NATURAL GAS, OIL	Y

# **Section 2 - Blowout Prevention**

Well Name: HORSESHOE FED COM Well Number: 302H

Pressure Rating (PSI): 5M Rating Depth: 15000

**Equipment:** A 15,000 a 5,000 psi BOP stack consisting of 3 rams with 2 pipe rams, 1 blind ram, and 1 annular preventer will be used below surface casing to TD. See attachments for BOP and choke manifold diagrams. Also present will be an accumulator that meets the requirements of Onshore Order #2 for the pressure rating of the BOP stack. A rotating head will also be installed as needed. BOP will be inspected and operated as recommended in Onshore Order #2. A top drive check valve and sub equipped with a full opening valve sized to fit the drill pipe and collars will be available on the rig floor in the open position. The wellhead will be a multi-bowl speed head.

Requesting Variance? YES

Variance request: Ascent requests a variance to run a multi-bowl speed head for setting the Intermediate 1, Intermediate 2, and Production Strings. Ascent requests a variance to drill this well using a co-flex line between the BOP and choke manifold (instead of the 4" OD steel line). Certification for proposed co-flex hose is attached. The hose is not required by the manufacturer to be anchored. In the event the specific hose is not available, one of equal or higher rating will be used. Ascent requests a variance to have the option of batch drilling this well with other wells on the same pad. In the even the wells are batch drilled, after drilling surface, 1st intermediate, and 2nd intermediate hole sections and cementing 2nd intermediate casing, a 10M dry hole cap with bleed off valve will be installed. The rig will then walk to another well on the pad. When the rig returns to this well and BOPs are installed, the operator will perform a full BOP test. Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. A hydraulically operated choke will be installed prior to drilling out of the intermediate casing shoe. Ascent requests a variance to wave the centralizer requirement for the run 7-5/8" EZGO FJ3 casing inside 8.75" hole. Variance is also requested to wave any centralizer requirements for the 5-1/2" EZGO HT casing the 6-3/4" hole size. Ascent requests approval to possibly utilize a spudder rig to drill and set casing for the surface interval on this well. The spudder rig will be possibly utilized in order to reduce cost and save time. The wellhead will be installed and tested as soon as the surface casing is cut off per the existing COAs. A blind flange with the same pressure rating as the wellhead will be installed on the well. Once the spudder rig is removed, Ascent will secure the wellhead area by placing a guard rail around the cellar. Pressure will be monitored and a means for intervention will be maintained while the drilling rig is not over the well. Spudder rig operations are expected to take 2-3 days per well. Three wells on the pad will have surface casing set by the spudder rig as a part of this operation. The BLM will be notified 24 hours prior to commencing spudder rig operations. Within 90 days of the departure of the spudder rig, drilling operations will recommence on these wells. This rig will have a BOP stack equal or greater to the pressure rating required in the COAs. The BLM will be notified 24 hours before the larger rig moves on the preset wells. Ascent will have supervision on the spudder rig to ensure compliance with all BLM and NMOCD regulations. Testing Procedure: After surface casing is set and the BOP is nippled up, the BOP pressure tests will be made with a third party tester to 250 psi low, 5000 psi high, and the annular preventer will be tested to 2,500 psi. The BOP will be tested in this manner after nipple-up if any break of the stack occurs as wells as every 30 days.

## **Choke Diagram Attachment:**

5M\_BOPE\_Choke\_Diagram\_12.03.2020\_20201204113358.pdf

#### **BOP Diagram Attachment:**

5M\_BOPE\_Choke\_Diagram\_12.03.2020\_20201204113403.pdf

Well Name: HORSESHOE FED COM Well Number: 302H

# **Section 3 - Casing**

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	1646	0	1646	3808	2162	1646	J-55	54.5	ST&C	1.38	2.81	DRY	2.71	DRY	2.71
2	INTERMED IATE	12.2 5	9.625	NEW	API	N	0	3672	0	3649	3809	159	3672	J-55	40	LT&C	1.35	1.63	DRY	1.84	DRY	1.84
3	INTERMED IATE	8.75	7.625	NEW	NON API	N	0	5307	0	5264	3809	-1456	5307	HCP -110		OTHER - EZGO FJ3	3.74	2.44	DRY	2.37	DRY	2.37
4	PRODUCTI ON	6.75	5.5	NEW	NON API	N	0	14822	0	9323	3809	-5515	14822	HCP -110	-	OTHER - EZGO HT	2.63	2.62	DRY	1.74	DRY	1.74

## **Casing Attachments**

Casing ID: 1 String Type: SURFACE

**Inspection Document:** 

**Spec Document:** 

**Tapered String Spec:** 

Casing Design Assumptions and Worksheet(s):

 $HS\_302H\_Casing\_Design\_Assumptions\_20210317101035.pdf$ 

Well Name: HORSESHOE FED COM Well Number: 302H

#### **Casing Attachments**

Casing ID: 2 String

String Type: INTERMEDIATE

**Inspection Document:** 

**Spec Document:** 

**Tapered String Spec:** 

Casing Design Assumptions and Worksheet(s):

HS\_302H\_Casing\_Design\_Assumptions\_20210317101101.pdf

Casing ID: 3 String Type: INTERMEDIATE

**Inspection Document:** 

**Spec Document:** 

7.625\_EZGO\_Casing\_Spec\_20201120153535.pdf

**Tapered String Spec:** 

Casing Design Assumptions and Worksheet(s):

HS\_302H\_Casing\_Design\_Assumptions\_20210317101048.pdf

Casing ID: 4 String Type: PRODUCTION

**Inspection Document:** 

**Spec Document:** 

5.5\_P110\_HC\_EZGO\_HT\_Spec\_Sheet\_20201120153556.pdf

**Tapered String Spec:** 

Casing Design Assumptions and Worksheet(s):

 $HS\_302H\_Casing\_Design\_Assumptions\_20210317101016.pdf$ 

**Section 4 - Cement** 

Well Name: HORSESHOE FED COM Well Number: 302H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	1146	900	1.73	13.5	1551	100	Class C	None
SURFACE	Tail		1146	1646	550	1.33	14.8	695	100	Class C	None
INTERMEDIATE	Lead		0	2672	720	1.73	12.7	1240	100	Class C	None
INTERMEDIATE	Tail		2672	3672	485	1.33	14.8	626	100	Class C	None
INTERMEDIATE	Lead		0	4007	225	2.04	12.7	449	50	Class C	None
INTERMEDIATE	Tail		4007	5307	155	1.37	14.8	196	50	Class C	None
PRODUCTION	Lead		0	5500	195	2.89	11	554	25	TXI Nine Lite Cement	None
PRODUCTION	Tail		5500	1482 2	2005	1.47	13.2	2944	25	35/65 Poz H	None

# **Section 5 - Circulating Medium**

Mud System Type: Closed

Will an air or gas system be Used? NO

Description of the equipment for the circulating system in accordance with Onshore Order #2:

Diagram of the equipment for the circulating system in accordance with Onshore Order #2:

Describe what will be on location to control well or mitigate other conditions: All necessary mud products (e. g., barite, cedar bark) for weight addition and fluid loss control will always be on site. Mud program is subject to change due to hole conditions.

**Describe the mud monitoring system utilized:** Electronic Pason mud monitor system complying with Onshore Order 1 will be used.

# **Circulating Medium Table**

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	ЬН	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characterístics
0	1646	OTHER : Fresh Water	8.4	9.6							

Well Name: HORSESHOE FED COM Well Number: 302H

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	НА	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
1646	3672	OTHER : Brine Water	10	10							
3672	5307	OTHER : Fresh Water	8.4	8.6							
5307	1482 2	OIL-BASED MUD	9	9.5							

# **Section 6 - Test, Logging, Coring**

List of production tests including testing procedures, equipment and safety measures:

Electric Logging Program: No open-hole logs are planned at this time for the pilot hole.

GR will be collected while drilling through the MWD tools from 9.625" casing shoe to TD.

A 2-person mud logging program will be used from 9.625" casing shoe to TD List of open and cased hole logs run in the well:

GAMMA RAY LOG, MUD LOG/GEOLOGICAL LITHOLOGY LOG,

Coring operation description for the well:

No DSTs or cores are planned at this time.

## **Section 7 - Pressure**

Anticipated Bottom Hole Pressure: 5300 Anticipated Surface Pressure: 3248

Anticipated Bottom Hole Temperature(F): 153

Anticipated abnormal pressures, temperatures, or potential geologic hazards? NO

Describe:

Contingency Plans geoharzards description:

**Contingency Plans geohazards attachment:** 

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

HS\_WestPad\_H2S\_Plan\_v2\_020921\_20210212083913.pdf

Well Name: HORSESHOE FED COM Well Number: 302H

# **Section 8 - Other Information**

## Proposed horizontal/directional/multi-lateral plan submission:

HS\_302H\_Horizontal\_Plan\_20201120154130.pdf

#### Other proposed operations facets description:

## Other proposed operations facets attachment:

CoFlex\_Certs\_20201120154252.pdf
HS\_302H\_Anticollision\_Report\_20201120154326.pdf
HS\_302H\_Drill\_Plan\_v2\_20210212083846.pdf
Wellhead\_v2\_20210212083927.pdf

#### Other Variance attachment:

HS\_Surface\_Rig\_Variance\_20201120154632.pdf

# **ASCENT ENERGY**

LEA COUNTY, NEW MEXICO (NAD 83) (GRID) SEC 19 T21S R33E N.M.P.M. (GRID) HORSESHOE FED COM 302H

ORIGINAL WELLBORE 03 November, 2020

Plan: PROPOSAL #1

Project: LEA COUNTY, NEW MEXICO (NAD 83) (GRID)

Site: SEC 19 T21S R33E N.M.P.M. (GRID)

Well: HORSESHOE FED COM 302H

Wellbore: ORIGINAL WELLBORE

Design: PROPOSAL #1

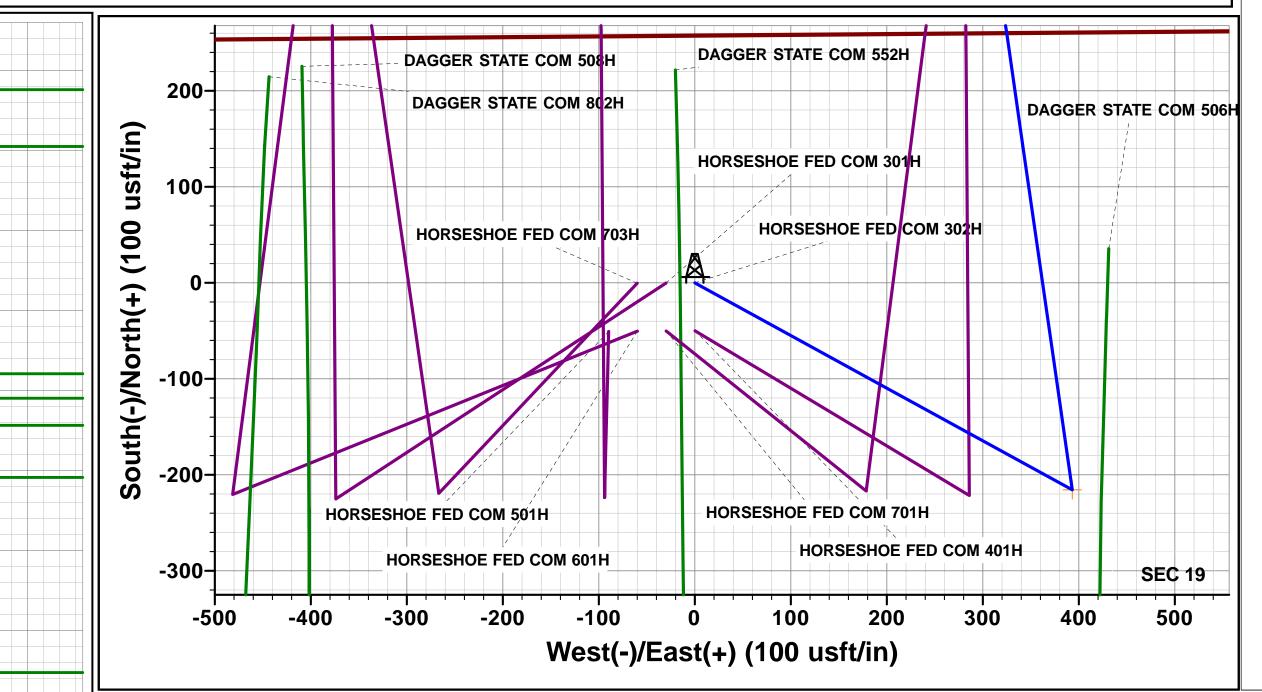
	ANNOTATIONS												
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSect	Dep	Annotation					
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL: 250ft FNL & 1935ft FEL of Sec 19					
2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	0.00	START NUDGE (2°/100ft BUR)					
2800.00	12.00	118.73	2795.62	-30.09	54.90	-30.49	62.60	EOB TO 12° INC					
4354.98	12.00	118.73	4316.63	-185.50	338.39	-187.97	385.90	END OF TANGENT					
4954.98	0.00	0.00	4912.25	-215.59	393.29	-218.47	448.50	EOD TO VERTICAL					
8792.77	0.00	0.00	8750.04	-215.59	393.29	-218.47	448.50	KOP (10°/100ft BUR)					
9692.78	90.00	351.82	9323.00	351.54	311.77	349.25	1021.47	FTP *NEW*: 100ft FSL & 1620ft FEL of Sec 18					
9782.78	90.00	351.82	9323.00	440.63	298.96	438.42	1111.47	END OF TANGENT					
10041.30	90.00	359.58	9323.00	698.23	279.59	696.16	1369.99	EOT TO 359.58° AZ					
4772.28	90.00	359.58	9323.00	5429.07	244.58	5427.13	6100.97	LTP: 100ft FNL & 1650ft FEL of Sec 18					
4775.41	90.00	359.67	9323.00	5432.21	244.56	5430.27	6104.10	EOT TO 359.67° AZ					
4822.28	90.00	359.67	9323.00	5479.08	244.29	5477.14	6150.97	BHL: 50ft FNL & 1650ft FEL of Sec 18					
						WEL	LBORE	TARGET DETAILS (LAT/LONG)					

PROPOSED LOCAL COORDINATES: SHL: 250ft FNL & 1935ft FEL Sec 19 FTP \*NEW\*: 100ft FSL & 1620ft FEL Sec 18 LTP: 100ft FNL & 1650ft FEL Sec 18

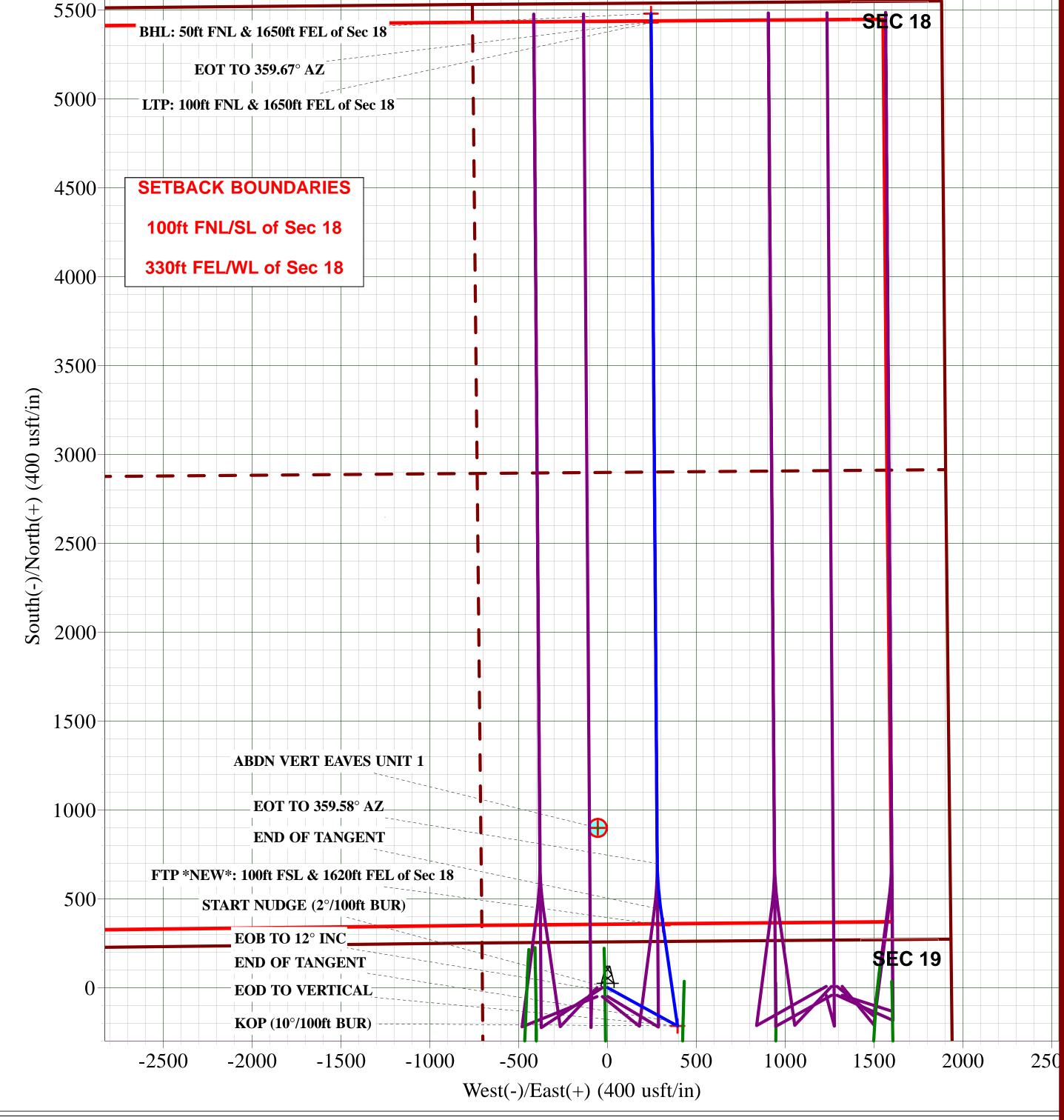
BHL: 50ft FNL & 1650ft FEL of Sec 18

**EOT TO 359.58° AZ** 

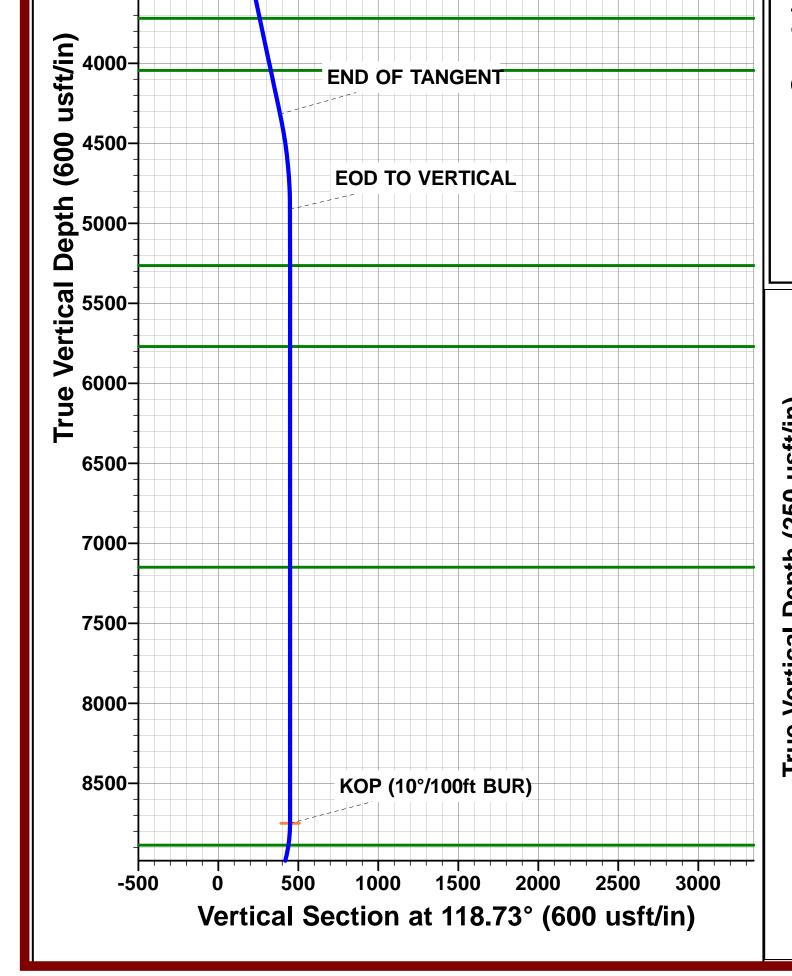
+N/-S +E/-W Latitude Longitude TVD -103.608166 8750.04 -215.59 393.29 32.470371 5479.08 -103.608524 9323.00 244.29 32.486026 9323.00 351.54 311.77 32.471932 -103.608418 -103.608524 9323.00 5429.07 244.58 32.485888



END OF TANGENT



EOT TO 359.67° AZ





2250 2500 2750 3000

Vertical Section at 359.58° (250 usft/in)

3250 3500 3750 4000

Database: Database 1

Company: ASCENT ENERGY

Project: LEA COUNTY, NEW MEXICO (NAD 83)

(GRID)

Site: SEC 19 T21S R33E N.M.P.M. (GRID)

Well: HORSESHOE FED COM 302H

Wellbore: ORIGINAL WELLBORE Design: PROPOSAL #1

Local Co-ordinate Reference:

TVD Reference: MD Reference:

North Reference:

**Survey Calculation Method:** 

Well HORSESHOE FED COM 302H

KB 25' @ 3833.00usft KB 25' @ 3833.00usft

Grid

Minimum Curvature

LEA COUNTY, NEW MEXICO (NAD 83) (GRID) **Project** 

Map System: Geo Datum:

Map Zone:

US State Plane 1983 North American Datum 1983

New Mexico Eastern Zone

System Datum: Mean Sea Level

Using geodetic scale factor

SEC 19 T21S R33E N.M.P.M. (GRID) Site

Site Position: Northing: 535,784.18 usft Latitude: 32.470829 Easting: 765,814.78 usft Longitude: -103.605449 From: Map **Position Uncertainty:** 0.00 usft Slot Radius: 1.10ft **Grid Convergence:** 0.39°

Well HORSESHOE FED COM 302H

**Well Position** 43.16 usft +N/-S Northing: 535,827.34 usft Latitude: 32.470971

+E/-W -1,230.12 usft Easting: 764,584.70 usft Longitude: -103.609437 **Position Uncertainty** 0.00 usft Wellhead Elevation: usft Ground Level: 3,808.00 usft

Wellbore **ORIGINAL WELLBORE** 

Magnetics Declination **Dip Angle** Field Strength **Model Name Sample Date** (°) (°) (nT) 47,697.94128056 IGRF2020 2020-11-01 6.65 60.14

Design PROPOSAL#1

**Audit Notes:** 

Version: Phase: **PROTOTYPE** Tie On Depth: 0.00

Depth From (TVD) Vertical Section: +N/-S +E/-W Direction (usft) (usft) (usft) (°) 0.00 0.00 0.00 359.58

Plan Section	ns										
MD (usft)	Inc (°)	Azi (°)	Vertical Depth	SS (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usf	Build Rate (°/100usf	Turn Rate (°/100usf	TFO (°)	Target
0.00	0.00	0.00	0.00	-3,833.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,200.00	0.00	0.00	2,200.00	-1,633.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,800.00	12.00	118.73	2,795.62	-1,037.38	-30.09	54.90	2.00	2.00	0.00	118.73	
4,354.98	12.00	118.73	4,316.63	483.63	-185.50	338.39	0.00	0.00	0.00	0.00	
4,954.98	0.00	0.00	4,912.25	1,079.25	-215.59	393.29	2.00	-2.00	0.00	180.00	
8,792.77	0.00	0.00	8,750.04	4,917.04	-215.59	393.29	0.00	0.00	0.00	0.00	KOP - HORSESHO
9,692.78	90.00	351.82	9,323.00	5,490.00	351.54	311.77	10.00	10.00	-0.91	351.82	FTP *NEW* - HORS
9,782.78	90.00	351.82	9,323.00	5,490.00	440.63	298.96	0.00	0.00	0.00	0.00	
10,041.30	90.00	359.58	9,323.00	5,490.00	698.23	279.59	3.00	0.00	3.00	90.00	
14,772.28	90.00	359.58	9,323.00	5,490.00	5,429.07	244.58	0.00	0.00	0.00	0.00	LTP - HORSESHOE
14,775.41	90.00	359.67	9,323.00	5,490.00	5,432.21	244.56	3.00	0.00	3.00	90.00	
14,822.28	90.00	359.67	9,323.00	5,490.00	5,479.08	244.29	0.00	0.00	0.00	0.00	BHL - HORSESHO

Database: Database 1

Company: ASCENT ENERGY

Project: LEA COUNTY, NEW MEXICO (NAD 83)

(GRID)

Site: SEC 19 T21S R33E N.M.P.M. (GRID)

Well: HORSESHOE FED COM 302H
Wellbore: ORIGINAL WELLBORE

Design: PROPOSAL #1

**Local Co-ordinate Reference:** 

TVD Reference:
MD Reference:

North Reference:

**Survey Calculation Method:** 

Well HORSESHOE FED COM 302H

KB 25' @ 3833.00usft KB 25' @ 3833.00usft

Grid

Planned Surve	ey									
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)
					(usit)	(usit)	(33.2.3)	,	,	,
0.00	0.00	. 1935ft FEL o	0.00	3,833.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	3,733.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	3,633.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	3,533.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	3,433.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	3,333.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	3,233.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	3,133.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	3,033.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	2,933.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	2,833.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	2,733.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	2,633.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	2,533.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	2,433.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	2,333.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	2,233.00	0.00	0.00	0.00	0.00	0.00	0.00
RUST		0.00	4 604 00	2 242 22	0.00	0.00	0.00	0.00	0.00	0.00
<b>1,621.00</b> 1,700.00	<b>0.00</b> 0.00	<b>0.00</b> 0.00	<b>1,621.00</b> 1,700.00	<b>2,212.00</b> 2,133.00	<b>0.00</b> 0.00	<b>0.00</b> 0.00	<b>0.00</b> 0.00	<b>0.00</b> 0.00	<b>0.00</b> 0.00	<b>0.00</b> 0.00
1,800.00	0.00	0.00	1,700.00	2,133.00	0.00	0.00	0.00	0.00	0.00	0.00
				-						
1,900.00	0.00	0.00	1,900.00	1,933.00	0.00	0.00	0.00	0.00	0.00	0.00
SALA		0.00	4.070.00	4.057.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>1,976.00</b> 2,000.00	<b>0.00</b> 0.00	<b>0.00</b> 0.00	<b>1,976.00</b> 2,000.00	<b>1,857.00</b> 1,833.00	<b>0.00</b> 0.00	<b>0.00</b> 0.00	<b>0.00</b> 0.00	<b>0.00</b> 0.00	<b>0.00</b> 0.00	<b>0.00</b> 0.00
2,100.00	0.00	0.00	2,100.00	1,733.00	0.00	0.00	0.00	0.00	0.00	0.00
		2°/100ft BUR)	,	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	1,633.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	2.00	118.73	2,299.98	1,533.02	-0.84	1.53	-0.85	2.00	2.00	0.00
2,400.00	4.00	118.73	2,399.84	1,433.16	-3.35	6.12	-3.40	2.00	2.00	0.00
2,500.00	6.00	118.73	2,499.45	1,333.55	-7.54	13.76	-7.64	2.00	2.00	0.00
2,600.00	8.00	118.73	2,598.70	1,234.30	-13.40	24.45	-13.58	2.00	2.00	0.00
2,700.00	10.00	118.73	2,697.47	1,135.53	-20.92	38.16	-21.20	2.00	2.00	0.00
EOB T	O 12° INC									
2,800.00	12.00	118.73	2,795.62	1,037.38	-30.09	54.90	-30.49	2.00	2.00	0.00
2,900.00	12.00	118.73	2,893.44	939.56	-40.09	73.13	-40.62	0.00	0.00	0.00
3,000.00	12.00	118.73	2,991.25	841.75	-50.08	91.36	-50.75	0.00	0.00	0.00
3,100.00	12.00	118.73	3,089.07	743.93	-60.07	109.59	-60.88	0.00	0.00	0.00
3,200.00	12.00	118.73	3,186.88	646.12	-70.07	127.82	-71.00	0.00	0.00	0.00
3,300.00	12.00	118.73	3,284.70	548.30	-80.06	146.05	-81.13	0.00	0.00	0.00
3,400.00	12.00	118.73	3,382.51	450.49	-90.06	164.29	-91.26	0.00	0.00	0.00
	SALADO S			,		,				
3,413.79	12.00	118.73	3,396.00	<b>437.00</b>	<b>-91.43</b>	166.80	<b>-92.65</b>	0.00	0.00	0.00
3,500.00	12.00	118.73	3,480.33	352.67	-100.05	182.52	-101.39	0.00	0.00	0.00
TANSI 3,570.21	12.00	118.73	3,549.00	284.00	-107.07	195.32	-108.50	0.00	0.00	0.00
3,600.00	12.00	118.73	3,578.14	254.86	-110.04	200.75	-111.51	0.00	0.00	0.00
3,700.00	12.00	118.73	3,675.96	157.04	-120.04	218.98	-121.64	0.00	0.00	0.00
YATES 3,744.01	12.00	118.73	3,719.00	114.00	-124.44	227.00	-126.10	0.00	0.00	0.00
3,800.00	12.00	118.73	<b>3,719.00</b> 3,773.77	59.23	-124.44 -130.03	237.21	-12 <b>6.</b> 10 -131.77	0.00	0.00	0.00
0,000.00	12.00	110.70	0,110.11	00.20	100.00	201.21	101.77	0.00	0.00	0.00

Database: Database 1

Company: ASCENT ENERGY

Project: LEA COUNTY, NEW MEXICO (NAD 83)

(GRID)

Site: SEC 19 T21S R33E N.M.P.M. (GRID)
Well: HORSESHOE FED COM 302H

Wellbore: ORIGINAL WELLBORE

Design: PROPOSAL #1

**Local Co-ordinate Reference:** 

TVD Reference: MD Reference:

North Reference:

**Survey Calculation Method:** 

Well HORSESHOE FED COM 302H

KB 25' @ 3833.00usft KB 25' @ 3833.00usft

Grid

Planned Surve	ey 💮									
										_
MD		A _*	TVD	SS	N/ 0	<b>-</b> /\*/	Vertical Section	Dogleg Rate	Build Rate	Turn Rate
(usft)	Inc (°)	Azi (°)	(usft)	(usft)	+N/-S (usft)	+E/-W (usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)
3,900.00	12.00	118.73	3,871.59	-38.59	-140.03	255.44	-141.90	0.00	0.00	0.00
4,000.00	12.00	118.73	3,969.40	-136.40	-150.02	273.68	-152.02	0.00	0.00	0.00
CAPIT	AN REEF T	ОР								
4,076.27	12.00	118.73	4,044.00	-211.00	-157.64	287.58	-159.75	0.00	0.00	0.00
4,100.00 4,200.00	12.00 12.00	118.73 118.73	4,067.22 4,165.03	-234.22 -332.03	-160.01 -170.01	291.91 310.14	-162.15 -172.28	0.00 0.00	0.00 0.00	0.00 0.00
4,300.00	12.00	118.73	4,165.03	-332.03 -429.84	-170.01	310.14	-172.28 -182.40	0.00	0.00	0.00
	F TANGEN		,							
4,354.98	12.00	118.73	4,316.63	-483.63	-185.50	338.39	-187.97	0.00	0.00	0.00
4,400.00	11.10	118.73	4,360.73	-527.73	-189.83	346.30	-192.36	2.00	-2.00	0.00
4,500.00	9.10	118.73	4,459.18	-626.18	-198.26	361.67	-200.91	2.00	-2.00	0.00
4,600.00	7.10	118.73	4,558.17	-725.17	-205.03	374.03	-207.77	2.00	-2.00	0.00
4,700.00	5.10	118.73	4,657.60	-824.60	-210.14	383.35	-212.94	2.00	-2.00	0.00
4,800.00	3.10	118.73	4,757.34	-924.34	-213.58	389.61	-216.43	2.00	-2.00	0.00
4,900.00	1.10	118.73	4,857.27	-1,024.27	-215.34	392.83	-218.21	2.00	-2.00	0.00
4,954.98	O VERTICA 0.00	0.00	4,912.25	-1,079.25	-215.59	393.29	-218.47	2.00	-2.00	-215.94
5,000.00	0.00	0.00	4,957.27	-1,07 <b>9.23</b> -1,124.27	-215.59	393.29	-218.47	0.00	0.00	0.00
5,100.00	0.00	0.00	5,057.27	-1,224.27	-215.59	393.29	-218.47	0.00	0.00	0.00
5,200.00	0.00	0.00	5,157.27	-1,324.27	-215.59	393.29	-218.47	0.00	0.00	0.00
5,300.00	0.00	0.00	5,257.27	-1,424.27	-215.59	393.29	-218.47	0.00	0.00	0.00
	ELAWARE									
5,306.73	0.00	0.00	5,264.00	-1,431.00	-215.59	393.29	-218.47	0.00	0.00	0.00
5,400.00 5,500.00	0.00 0.00	0.00 0.00	5,357.27 5,457.27	-1,524.27 -1,624.27	-215.59 -215.59	393.29 393.29	-218.47 -218.47	0.00 0.00	0.00 0.00	0.00 0.00
			•	•						
5,600.00 5,700.00	0.00 0.00	0.00 0.00	5,557.27 5,657.27	-1,724.27 -1,824.27	-215.59 -215.59	393.29 393.29	-218.47 -218.47	0.00 0.00	0.00 0.00	0.00 0.00
5,800.00	0.00	0.00	5,757.27	-1,924.27	-215.59	393.29	-218.47	0.00	0.00	0.00
CHER	RY CANYO	N								
5,812.73	0.00	0.00	5,770.00	-1,937.00	-215.59	393.29	-218.47	0.00	0.00	0.00
5,900.00	0.00	0.00	5,857.27	-2,024.27	-215.59	393.29	-218.47	0.00	0.00	0.00
6,000.00	0.00	0.00	5,957.27	-2,124.27	-215.59	393.29	-218.47	0.00	0.00	0.00
6,100.00 6,200.00	0.00 0.00	0.00 0.00	6,057.27 6,157.27	-2,224.27 -2.324.27	-215.59 -215.59	393.29 393.29	-218.47 -218.47	0.00 0.00	0.00 0.00	0.00 0.00
6,300.00	0.00	0.00	6,257.27	-2,424.27	-215.59	393.29	-218.47	0.00	0.00	0.00
6,400.00	0.00	0.00	6,357.27	-2,524.27	-215.59	393.29	-218.47	0.00	0.00	0.00
6,500.00	0.00	0.00	6,457.27	-2,624.27	-215.59	393.29	-218.47	0.00	0.00	0.00
6,600.00	0.00	0.00	6,557.27	-2,724.27	-215.59	393.29	-218.47	0.00	0.00	0.00
6,700.00	0.00	0.00	6,657.27	-2,824.27	-215.59	393.29	-218.47	0.00	0.00	0.00
6,800.00	0.00	0.00	6,757.27	-2,924.27	-215.59	393.29	-218.47	0.00	0.00	0.00
6,900.00	0.00	0.00	6,857.27	-3,024.27	-215.59	393.29	-218.47	0.00	0.00	0.00
7,000.00	0.00	0.00	6,957.27	-3,124.27	-215.59	393.29	-218.47	0.00	0.00	0.00
7,100.00	0.00 HY CANYO	0.00	7,057.27	-3,224.27	-215.59	393.29	-218.47	0.00	0.00	0.00
7,191.73	0.00	0.00	7,149.00	-3,316.00	-215.59	393.29	-218.47	0.00	0.00	0.00
7,200.00	0.00	0.00	7,157.27	-3,324.27	-215.59	393.29	-218.47	0.00	0.00	0.00
7,300.00	0.00	0.00	7,257.27	-3,424.27	-215.59	393.29	-218.47	0.00	0.00	0.00
7,400.00	0.00	0.00	7,357.27	-3,524.27	-215.59	393.29	-218.47	0.00	0.00	0.00
7,500.00	0.00	0.00	7,457.27	-3,624.27	-215.59	393.29	-218.47	0.00	0.00	0.00
7,600.00 7,700.00	0.00 0.00	0.00 0.00	7,557.27 7,657.27	-3,724.27 -3,824.27	-215.59 -215.59	393.29 393.29	-218.47 -218.47	0.00 0.00	0.00 0.00	0.00 0.00
7,700.00	0.00	0.00	7,057.27 7,757.27	-3,824.27 -3,924.27	-215.59 -215.59	393.29 393.29	-218.47 -218.47	0.00	0.00	0.00
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Database: Database 1

Company: ASCENT ENERGY

Project: LEA COUNTY, NEW MEXICO (NAD 83)

(GRID)

Site: SEC 19 T21S R33E N.M.P.M. (GRID)
Well: HORSESHOE FED COM 302H

Wellbore: ORIGINAL WELLBORE

Design: PROPOSAL #1

**Local Co-ordinate Reference:** 

TVD Reference:
MD Reference:

North Reference:

**Survey Calculation Method:** 

Well HORSESHOE FED COM 302H

KB 25' @ 3833.00usft KB 25' @ 3833.00usft

Grid

PI	anned Survey	/									
								Vertical	Dogleg	Build	Turn
	MD (voft)	Inc	Azi	TVD	SS (voft)	+N/-S	+E/-W	Section	Rate	Rate	Rate
	(usft)	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)
	7,900.00	0.00	0.00	7,857.27	-4,024.27	-215.59	393.29	-218.47	0.00	0.00	0.00
	8,000.00	0.00	0.00	7,957.27	-4,124.27	-215.59	393.29	-218.47	0.00	0.00	0.00
	8,100.00	0.00	0.00	8,057.27	-4,224.27	-215.59	393.29	-218.47	0.00	0.00	0.00
	8,200.00	0.00	0.00	8,157.27	-4,324.27	-215.59	393.29	-218.47	0.00	0.00	0.00
	8,300.00	0.00	0.00	8,257.27	-4,424.27	-215.59	393.29	-218.47	0.00	0.00	0.00
	8,400.00	0.00	0.00	8,357.27	-4,524.27	-215.59	393.29	-218.47	0.00	0.00	0.00
	8,500.00	0.00	0.00	8,457.27	-4,624.27	-215.59	393.29	-218.47	0.00	0.00	0.00
	8,600.00	0.00	0.00	8,557.27	-4,724.27	-215.59	393.29	-218.47	0.00	0.00	0.00
	8,700.00	0.00	0.00	8,657.27	-4,824.27	-215.59	393.29	-218.47	0.00	0.00	0.00
	•	0°/100ft	•	0.750.04	4.047.04	245 50	202.20	249.47	0.00	0.00	0.00
	8,792.77	0.00	0.00	8,750.04	-4,917.04	-215.59	393.29	-218.47	0.00	0.00	0.00
	8,800.00	0.72	351.82	8,757.27	-4,924.27	-215.54	393.28	-218.42	10.00	10.00	0.00
	8,900.00	10.72	351.82	8,856.64	-5,023.64	-205.69	391.87	-208.55	10.00	10.00	0.00
	BSPG I		254.00	0 006 00	E 052 00	100.00	200.00	202.25	10.00	40.00	0.00
	<b>8,930.04</b> 9,000.00	<b>13.73</b> 20.72		<b>8,886.00</b> 8,952.78	<b>-5,053.00</b> -5,119.78	<b>-199.39</b> -178.90	<b>390.96</b> 388.02	<b>-202.25</b> -181.74	<b>10.00</b> 10.00	<b>10.00</b> 10.00	<b>0.00</b> 0.00
	9,100.00	30.72		9,042.75	-5,119.76 -5,209.75	-176.90	381.85	-101.74	10.00	10.00	0.00
	·	30.72	331.02	9,042.73	-3,209.73	-133.99	301.03	-130.73	10.00	10.00	0.00
	AVLN										
	9,131.05	33.83		9,069.00	<i>-5,236.00</i>	-119.59	379.49	-122.37	10.00	10.00	0.00
	9,200.00	40.72		9,123.84	-5,290.84	-78.28 7.50	373.55	-81.01	10.00	10.00	0.00
	9,300.00 9,400.00	50.72 60.72		9,193.56 9,249.81	-5,360.56 -5,416.81	-7.50 74.19	363.38 351.64	-10.16 71.61	10.00 10.00	10.00 10.00	0.00 0.00
	9,500.00	70.72		9,290.87	-5,457.87	164.30	338.68	161.82	10.00	10.00	0.00
	•		001.02	0,200.07	0,407.07	104.00	000.00	101.02	10.00	10.00	0.00
	LEONA		254.02	0.200.00	E 47E 00	222.62	220.20	220.40	40.00	40.00	0.00
	<b>9,561.38</b> 9,600.00	<b>76.86</b> 80.72		<b>9,308.00</b> 9,315.50	<b>-5,475.00</b> -5,482.50	<b>222.62</b> 260.11	<b>330.30</b> 324.91	<b>220.19</b> 257.72	<b>10.00</b> 10.00	<b>10.00</b> 10.00	<b>0.00</b> 0.00
	,		00ft FSL & 1620f	,	•	200.11	324.91	231.12	10.00	10.00	0.00
	9,692.78	90.00		9,323.00	-5,490.00	351.54	311.77	349.25	10.00	10.00	0.00
	9,700.00	90.00		9,323.00	-5,490.00	358.69	310.74	356.40	0.00	0.00	0.00
	END O	F TANG	ENT								
	9,782.78	90.00	351.82	9,323.00	-5,490.00	440.63	298.96	438.42	0.00	0.00	0.00
	9,800.00	90.00	352.34	9,323.00	-5,490.00	457.68	296.59	455.50	3.00	0.00	3.00
	9,900.00	90.00	355.34	9,323.00	-5,490.00	557.09	285.86	554.98	3.00	0.00	3.00
	10,000.00	90.00	358.34	9,323.00	-5,490.00	656.93	280.34	654.86	3.00	0.00	3.00
	EOT TO	359.58									
	10,041.30	90.00		9,323.00	-5,490.00	698.23	279.59	696.16	3.00	0.00	3.00
	10,100.00	90.00	359.58	9,323.00	-5,490.00	756.92	279.15	754.85	0.00	0.00	0.00
	10,200.00	90.00	359.58	9,323.00	-5,490.00	856.92	278.41	854.85	0.00	0.00	0.00
	10,300.00	90.00		9,323.00	-5,490.00	956.92	277.67	954.85	0.00	0.00	0.00
	10,400.00	90.00		9,323.00	-5,490.00	1,056.91	276.93	1,054.85	0.00	0.00	0.00
	10,500.00	90.00		9,323.00	-5,490.00	1,156.91	276.19	1,154.85	0.00	0.00	0.00
	10,600.00	90.00	359.58	9,323.00	-5,490.00	1,256.91	275.45	1,254.85	0.00	0.00	0.00
	10,700.00	90.00		9,323.00	-5,490.00	1,356.90	274.71	1,354.85	0.00	0.00	0.00
	10,800.00	90.00		9,323.00	-5,490.00	1,456.90	273.97	1,454.85	0.00	0.00	0.00
	10,900.00	90.00		9,323.00	-5,490.00	1,556.90	273.23	1,554.85	0.00	0.00	0.00
	11,000.00	90.00		9,323.00	-5,490.00 5,400.00	1,656.90	272.49	1,654.85	0.00	0.00	0.00
	11,100.00	90.00		9,323.00	-5,490.00	1,756.89	271.75	1,754.85	0.00	0.00	0.00
	11,200.00	90.00		9,323.00	-5,490.00	1,856.89	271.01	1,854.85	0.00	0.00	0.00
	11,300.00	90.00		9,323.00	-5,490.00	1,956.89	270.27	1,954.85	0.00	0.00	0.00
	11,400.00 11,500.00	90.00		9,323.00 9,323.00	-5,490.00 -5,490.00	2,056.89 2,156.88	269.53 268.79	2,054.85 2,154.85	0.00 0.00	0.00 0.00	0.00 0.00
	11,600.00	90.00		9,323.00	-5,490.00 -5,490.00	2,156.88	268.79 268.05	2,154.85 2,254.85	0.00	0.00	0.00
	. 1,000.00	55.00	555.56	0,020.00	0,400.00	2,200.00	200.00	2,207.00	0.00	0.00	0.00

Database: Database 1

Company: ASCENT ENERGY

Project: LEA COUNTY, NEW MEXICO (NAD 83)

(GRID)

Site: SEC 19 T21S R33E N.M.P.M. (GRID)

Well: HORSESHOE FED COM 302H
Wellbore: ORIGINAL WELLBORE

Design: PROPOSAL #1

**Local Co-ordinate Reference:** 

TVD Reference:
MD Reference:

North Reference:

**Survey Calculation Method:** 

Well HORSESHOE FED COM 302H

KB 25' @ 3833.00usft KB 25' @ 3833.00usft

Grid

Planned Surve	ey									
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)
11,700.00	90.00	359.58	9,323.00	-5,490.00	2,356.88	267.31	2,354.85	0.00	0.00	0.00
11,800.00	90.00	359.58	9,323.00	-5,490.00	2,456.87	266.57	2,454.85	0.00	0.00	0.00
11,900.00	90.00	359.58	9,323.00	-5,490.00	2,556.87	265.83	2,554.85	0.00	0.00	0.00
12,000.00	90.00	359.58	9,323.00	-5,490.00	2,656.87	265.09	2,654.85	0.00	0.00	0.00
12,100.00	90.00	359.58	9,323.00	-5,490.00	2,756.87	264.35	2,754.85	0.00	0.00	0.00
12,200.00	90.00	359.58	9,323.00	-5,490.00	2,856.86	263.61	2,854.85	0.00	0.00	0.00
12,300.00	90.00	359.58	9,323.00	-5,490.00	2,956.86	262.87	2,954.85	0.00	0.00	0.00
12,400.00	90.00	359.58	9,323.00	-5,490.00	3,056.86	262.13	3,054.85	0.00	0.00	0.00
12,500.00	90.00	359.58	9,323.00	-5,490.00	3,156.86	261.39	3,154.85	0.00	0.00	0.00
12,600.00	90.00	359.58	9,323.00	-5,490.00	3,256.85	260.65	3,254.85	0.00	0.00	0.00
12,700.00	90.00	359.58	9,323.00	-5,490.00	3,356.85	259.91	3,354.85	0.00	0.00	0.00
12,800.00	90.00	359.58	9,323.00	-5,490.00	3,456.85	259.17	3,454.85	0.00	0.00	0.00
12,900.00	90.00	359.58	9,323.00	-5,490.00	3,556.84	258.43	3,554.85	0.00	0.00	0.00
13,000.00	90.00	359.58	9,323.00	-5,490.00	3,656.84	257.69	3,654.85	0.00	0.00	0.00
13,100.00	90.00	359.58	9,323.00	-5,490.00	3,756.84	256.95	3,754.85	0.00	0.00	0.00
13,200.00	90.00	359.58	9,323.00	-5,490.00	3,856.84	256.21	3,854.85	0.00	0.00	0.00
13,300.00	90.00	359.58	9,323.00	-5,490.00	3,956.83	255.47	3,954.85	0.00	0.00	0.00
13,400.00	90.00	359.58	9,323.00	-5,490.00	4,056.83	254.73	4,054.85	0.00	0.00	0.00
13,500.00	90.00	359.58	9,323.00	-5,490.00	4,156.83	253.99	4,154.85	0.00	0.00	0.00
13,600.00	90.00	359.58	9,323.00	-5,490.00	4,256.83	253.25	4,254.85	0.00	0.00	0.00
13,700.00	90.00	359.58	9,323.00	-5,490.00	4,356.82	252.51	4,354.85	0.00	0.00	0.00
13,800.00	90.00	359.58	9,323.00	-5,490.00	4,456.82	251.77	4,454.85	0.00	0.00	0.00
13,900.00	90.00	359.58	9,323.00	-5,490.00	4,556.82	251.03	4,554.85	0.00	0.00	0.00
14,000.00	90.00	359.58	9,323.00	-5,490.00	4,656.81	250.29	4,654.85	0.00	0.00	0.00
14,100.00	90.00	359.58	9,323.00	-5,490.00	4,756.81	249.55	4,754.85	0.00	0.00	0.00
14,200.00	90.00	359.58	9,323.00	-5,490.00	4,856.81	248.81	4,854.85	0.00	0.00	0.00
14,300.00	90.00	359.58	9,323.00	-5,490.00	4,956.81	248.07	4,954.85	0.00	0.00	0.00
14,400.00	90.00	359.58	9,323.00	-5,490.00	5,056.80	247.33	5,054.85	0.00	0.00	0.00
14,500.00	90.00	359.58	9,323.00	-5,490.00	5,156.80	246.59	5,154.85	0.00	0.00	0.00
14,600.00	90.00	359.58	9,323.00	-5,490.00	5,256.80	245.85	5,254.85	0.00	0.00	0.00
14,700.00	90.00	359.58	9,323.00	-5,490.00	5,356.80	245.11	5,354.85	0.00	0.00	0.00
		1650ft FEL o								
14,772.28	90.00	359.58	9,323.00	-5,490.00	5,429.07	244.58	5,427.13	0.00	0.00	0.00
	O 359.67° A		0.000.00	F 400 00	E 400.04	04450	F 400.07	2.00	0.00	2.22
<b>14,775.41</b> 14.800.00	<b>90.00</b> 90.00	<b>359.67</b> 359.67	<b>9,323.00</b> 9,323.00	<b>-5,490.00</b> -5,490.00	<b>5,432.21</b> 5,456.79	<b>244.56</b> 244.42	<b>5,430.27</b> 5,454.85	<b>3.00</b> 0.00	<b>0.00</b> 0.00	<b>3.00</b> 0.00
,		359.67 1650ft FEL of	,	-5,430.00	5,450.73	Z77.4Z	5,454.05	0.00	0.00	0.00
14,822.28	90.00	359.67	9,323.00	-5,490.00	5,479.08	244.29	5,477.14	0.00	0.00	0.00
,			2,020.00		2,		<i>z</i> ,			

Database: Database 1

Company: ASCENT ENERGY

Project: LEA COUNTY, NEW MEXICO (NAD 83)

(GRID)

Site: SEC 19 T21S R33E N.M.P.M. (GRID)

Well: HORSESHOE FED COM 302H
Wellbore: ORIGINAL WELLBORE

Design: PROPOSAL #1

**Local Co-ordinate Reference:** 

TVD Reference:
MD Reference:

North Reference:

**Survey Calculation Method:** 

Well HORSESHOE FED COM 302H

KB 25' @ 3833.00usft KB 25' @ 3833.00usft

Grid

Formations						
	MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
	1,621.00	1,621.00	RUSTLER		0.00	
	1,976.00	1,976.00	SALADO		0.00	
	3,413.79	3,396.00	BASE SALADO SALTS		0.00	
	3,570.21	3,549.00	TANSIL		0.00	
	3,744.01	3,719.00	YATES		0.00	
	4,076.27	4,044.00	CAPITAN REEF TOP		0.00	
	5,306.73	5,264.00	TOP DELAWARE SAND		0.00	
	5,812.73	5,770.00	CHERRY CANYON		0.00	
	7,191.73	7,149.00	BRUSHY CANYON		0.00	
	8,930.04	8,886.00	BSPG LIME		0.00	
	9,131.05	9,069.00	AVLN		0.00	
	9,561.38	9,308.00	LEONARD B		0.00	

Plan Annotations				
MD (usft)	TVD (usft)	Local Co +N/-S (usft)	ordinates +E/-W (usft)	Comment
0.00	0.00	0.00	0.00	SHL: 250ft FNL & 1935ft FEL of Sec 19
2,200.00	2,200.00	0.00	0.00	START NUDGE (2°/100ft BUR)
2,800.00	2,795.62	-30.09	54.90	EOB TO 12° INC
4,354.98	4,316.63	-185.50	338.39	END OF TANGENT
4,954.98	4,912.25	-215.59	393.29	EOD TO VERTICAL
8,792.77	8,750.04	-215.59	393.29	KOP (10°/100ft BUR)
9,692.78	9,323.00	351.54	311.77	FTP *NEW*: 100ft FSL & 1620ft FEL of Sec 18
9,782.78	9,323.00	440.63	298.96	END OF TANGENT
10,041.30	9,323.00	698.23	279.59	EOT TO 359.58° AZ
14,772.28	9,323.00	5,429.07	244.58	LTP: 100ft FNL & 1650ft FEL of Sec 18
14,775.41	9,323.00	5,432.21	244.56	EOT TO 359.67° AZ
14,822.28	9,323.00	5,479.08	244.29	BHL: 50ft FNL & 1650ft FEL of Sec 18

# PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME: Ascent Energy LLC

LEASE NO.: NMNM129263

**WELL NAME & NO.:** Horseshoe Federal Com 302H

**SURFACE HOLE FOOTAGE:** 250'/N & 1935'/E **BOTTOM HOLE FOOTAGE** 50'/N & 1650'/E

**LOCATION:** | Section 19, T.21 S., R.33 E., NMPM

**COUNTY:** Lea County, New Mexico

COA

H2S	O Yes	• No	
Potash	O None	Secretary	© R-111-P
Cave/Karst Potential	• Low	O Medium	O High
Cave/Karst Potential	Critical		
Variance	O None	Flex Hose	Other
Wellhead	Conventional	• Multibowl	O Both
Other	✓ 4 String Area		□WIPP
Other	☐ Fluid Filled	☐ Cement Squeeze	☐ Pilot Hole
Special Requirements	☐ Water Disposal	<b>☑</b> COM	□ Unit

#### A. HYDROGEN SULFIDE

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

#### **B. CASING**

- 1. The 13-3/8 inch surface casing shall be set at approximately 1,680 feet (a minimum of 25 feet (Lea County) into the Rustler Anhydrite and above the salt) and cemented to the surface.
  - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

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- b. Wait on cement (WOC) time for a primary cement job will be a minimum of **24 hours in the Potash Area** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
- c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
- d. If cement falls back, remedial cementing will be done prior to drilling out that string.
- 2. The minimum required fill of cement behind the **9-5/8 inch** intermediate 1 casing and shall be set at approximately **3,649 feet** is:
  - Cement to surface. If cement does not circulate see B.1.a, c-d above.

Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

- ❖ In <u>R111 Potash Areas</u> if cement does not circulate to surface on the first two salt protection casing strings, the cement on the 3rd casing string must come to surface.
- ❖ In <u>Capitan Reef Areas</u> if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.
- ❖ Special Capitan Reef requirements. If lost circulation (50% or greater) occurs below the Base of the Salt, the operator shall do the following:
  (Use this for 3 string wells in the Capitan Reef, if 4 string well ensure FW based mud used across the capitan interval)
  - Switch to fresh water mud to protect the Capitan Reef and use fresh water mud until setting the intermediate casing. The appropriate BLM office is to be notified for a PET to witness the switch to fresh water.
  - Daily drilling reports from the Base of the Salt to the setting of the intermediate casing are to be submitted to the BLM CFO engineering staff via e-mail by 0800 hours each morning. Any lost circulation encountered is to be recorded on these drilling reports. The daily drilling report should show mud volume per shift/tour. Failure to submit these reports will result in an Incidence of Non-Compliance being issued for failure to comply with the Conditions of Approval. If not already planned, the operator shall run a caliper survey for the intermediate well bore and submit to the appropriate BLM office.
- 3. The minimum required fill of cement behind the **7-5/8 inch** intermediate 2 casing is:
  - Cement to surface. If cement does not circulate see B.1.a, c-d above.

Page 2 of 9 HORSESHOE FEDERAL COM #302H Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, potash or capitan reef.

THE INTERMEDIATE 2 CASING HAS AN EXCESS OF 19%. ADDITIONAL CEMENT MAY BE NEEDED.

- 4. The minimum required fill of cement behind the **5-1/2 inch** production casing with a tie-back into the previous casing to the surface is:
  - Cement should tie-back at least **50 feet** on top of Capitan Reef top **or 200 feet** into the previous casing, whichever is greater. If cement does not circulate see B.1.a, c-d above.

Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst, potash or capitan reef.

#### C. PRESSURE CONTROL

- 1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'
- 2. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface, intermediate 1, and intermediate 2 casing shoe shall be **5000 (5M) psi**.
  - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
  - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
  - c. Manufacturer representative shall install the test plug for the initial BOP test.
  - d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
  - e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

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## D. SPECIAL REQUIREMENT (S)

#### **Communitization Agreement**

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

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# GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)
  - Eddy County
    Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575)
    361-2822
  - Lea County
     Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575)
     393-3612
- 1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
  - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
  - b. When the operator proposes to set surface casing with Spudder Rig
    - Notify the BLM when moving in and removing the Spudder Rig.
    - Notify the BLM when moving in the 2<sup>nd</sup> Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
    - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
- 2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
- 3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

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#### A. CASING

- 1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
- 2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.
- 3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.
- 4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
- 5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
- 6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
- 7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
- 8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

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#### B. PRESSURE CONTROL

- 1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
- 2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
- 3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
- 4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
  - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
  - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
  - c. Manufacturer representative shall install the test plug for the initial BOP test.
  - d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
  - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
- 5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
  - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including

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- lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
- b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).
- c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
- d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- e. The results of the test shall be reported to the appropriate BLM office.
- f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

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## C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

#### D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

YJ (03/19/2021)

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**Approval Date: 04/12/2021** 



- a. All personnel will be trained in  $H_2S$  working conditions as required by Onshore Order 6 before drilling out of the surface casing.
- b. Two briefing areas will be established. Each briefing area will be  $\geq 150$ ' from the wellhead, perpendicular from one another, and easily entered and exited. See H<sub>2</sub>S page 5 for more details.
- c. H<sub>2</sub>S Safety Equipment/Systems:
  - i. Well Control Equipment
  - Flare line will be  $\geq 150$ ' from the wellhead and ignited by a flare gun.
  - Beware of SO<sub>2</sub> created by flaring.
  - Choke manifold will have a remotely operated choke.
  - Mud gas separator
  - ii. Protective Equipment for Personnel
  - Every person on site will wear a personal  $H_2S$  and  $SO_2$  monitor at all times while on site. Monitors will not be worn on hard hats. Monitors will be worn on the front of the waist or chest.
  - One self-contained breathing apparatus (SCBA) 30-minute rescue pack will be at each briefing area. Two 30-minute SCBA packs will be stored in the safety trailer.
  - Four work/escape packs will be on the rig floor. Each pack will have a sufficiently long hose to allow unimpaired work activity.
  - Four emergency escape packs will be in the doghouse for emergency evacuation.
  - Hand signals will be used when wearing protective breathing apparatus.
  - Stokes litter or stretcher
  - Two full OSHA compliant body harnesses
  - A 100' long x 5/8" OSHA compliant rope
  - One 20-pound ABC fire extinguisher
  - iii. H<sub>2</sub>S Detection & Monitoring Equipment
  - Every person on site will wear a personal  $H_2S$  and  $SO_2$  monitor at all times while on site. Monitors will not be worn on hard hats. Monitors will be worn on the front of the waist or chest.

- A stationary detector with three sensors will be in the doghouse.
- Sensors will be installed on the rig floor, bell nipple, and at the end of the flow line or where drilling fluids are discharged.
- Visual alarm will be triggered at 10 ppm.
- Audible alarm will be triggered at 10 ppm.
- Calibration will occur at least every 30 days. Gas sample tubes will be kept in the safety trailer.

## iv. Visual Warning System

- A color-coded  $H_2S$  condition sign will be set at each pad entrance.
- Color-coded condition flag will be installed to indicate current H<sub>2</sub>S conditions.
- Two wind socks will be installed that will be visible from all sides.

## v. Mud Program

- A water based mud with a pH of  $\geq 10$  will be maintained to control corrosion,  $H_2S$  gas returns to the surface, and minimize sulfide stress cracking and embrittlement.
- Drilling mud containing  $H_2S$  gas will be degassed at an optimum location for the rig configuration.
- This gas will be piped into the flare system.
- Enough mud additives will be on site to scavenge and/or neutralize  $H_2S$  where formation pressures are unknown.

# vi. Metallurgy

- All equipment that has the potential to be exposed to H<sub>2</sub>S will be suitable for H<sub>2</sub>S service.
- Equipment that will meet these metallurgical standards include the drill string, casing, wellhead, BOP assembly, casing head and spool, rotating head, kill lines, choke, choke manifold and lines, valves, mud-gas separators, DST tools, test units, tubing, flanges, and other related equipment (elastomer packings and seals).

#### vii. Communication from well site

- Cell phones and/or two-way radios will be used to communicate from the well site.
- d. A remote-controlled choke, mud-gas separator, and a rotating head will be installed before drilling or testing any formation expected to contain  $H_2S$ .

Compan	y Personne	el to	be	Notified

Dean Gimbel,	Vice President C	Completions	Office: (	720)	710-8995

Mobile: (303) 945-1323

Matt Ward, Chief Operations Officer Mobile: (303) 506-6647

Ascent Emergency Contact Number (303) 281-9951

# Local & County Agencies

511 01 (010) 050 100	Monument Fire Department	911 or (575	) 393-4339
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Hobbs Fire Marshal (575) 391-8185

Lea County Sheriff (Lovington) 911 or (575) 396-3611

Lea County Emergency Management (Lovington) (575) 396-8602

Lea Regional Medical Center Hospital (Hobbs) (575) 492-5000

# State Agencies

(515) 552 5555	NM State Police (Hobbs)	(575) 392-5588
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NM Oil Conservation (Hobbs) (575) 370-3186

NM Oil Conservation (Santa Fe) (505) 476-3440

NM Dept. of Transportation (Roswell) (575) 637-7201

# Federal Agencies

(373) 234-3372	BLM	Carlsbad Field Office	(575) 234-5972
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BLM Hobbs Field Station (575) 393-3612

National Response Center (800) 424-8802

US EPA Region 6 (Dallas) (800) 887-6063

(214) 665-6444

# **Veterinarians**

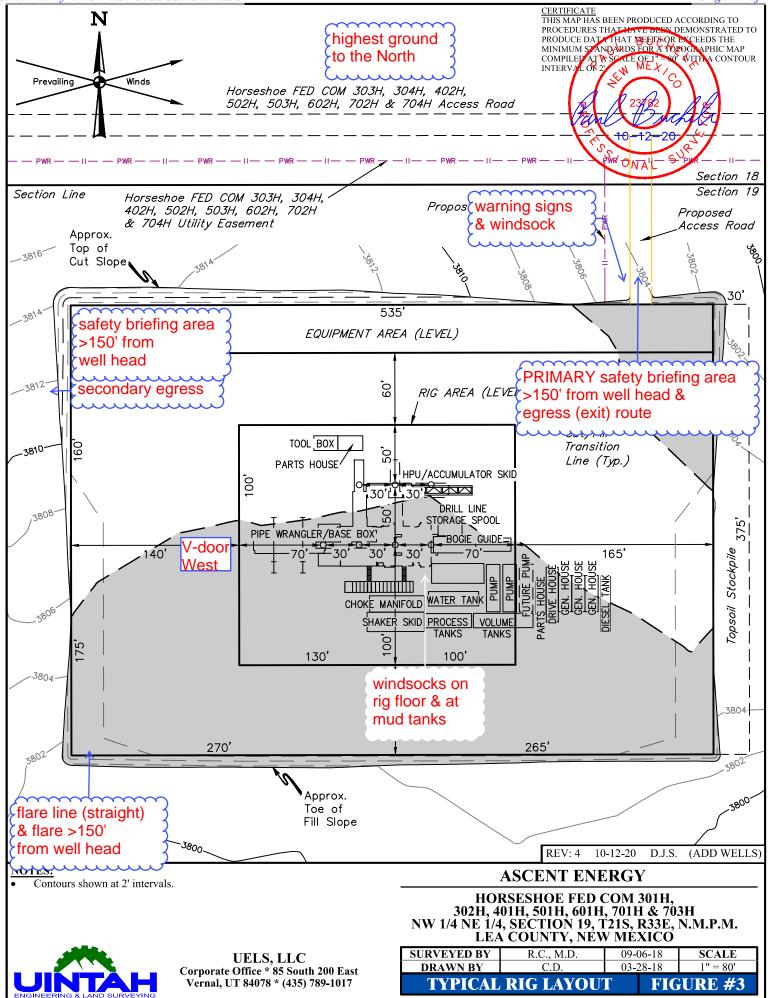
Dal Paso Animal Hospital (Hobbs)	(575) 397-2286
Hobbs Animal Clinic & Pet Care (Hobbs)	(575) 392-5563
Great Plains Veterinary Clinic & Hospital (Hobbs)	(575) 392-5513

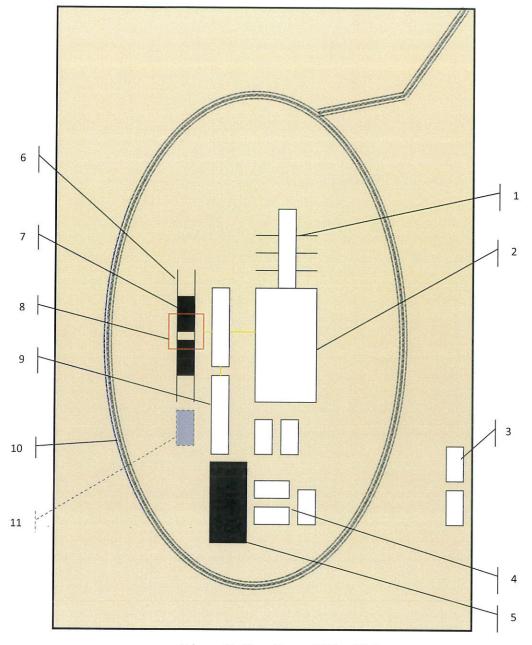
# Residents within 2 miles

No residents are within 2 miles.

# Air Evacuation

Med Flight Air Ambulance (Albuquerque)	(800) 842-4431
Lifeguard (Albuquerque)	(888) 866-7256





Schematic Closed Loop Drilling Rig\*

- 1. Pipe Rack
- 2. Drill Rig
- 3. House Trailers/ Offices
- 4. Generator/Fuel/Storage
- 5. Overflow-Frac Tank
- 6. Skids
- 7. Roll Offs
- 8. Hopper or Centrifuge
- 9. Mud Tanks
- 10. Loop Drive
- 11. Generator (only for use with centrifuge)

\*Not drawn to scale: Closed loop system requires at least 30 feet beyond mud tanks. Ideally 60 feet would be available





Above: Centrifugal Closed Loop System



Closed Loop Drilling System: Mud tanks to right (1)

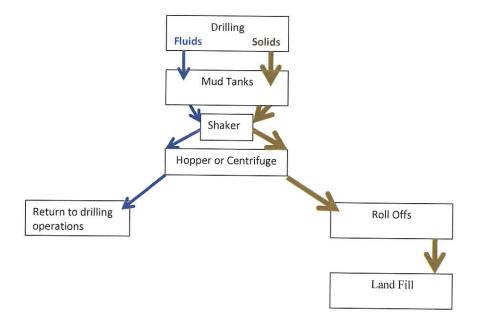
Hopper in air to settle out solids (2)

Water return pipe (3)

Shaker between hopper and mud tanks (4)

Roll offs on skids (5)

#### Flow Chart for Drilling Fluids and Solids



Photos Courtesy of Gandy Corporation Oil Field Service



<u>District I</u> 1625 N. French Dr., Hobbs, NM 88240 Phone:(575) 393-6161 Fax:(575) 393-0720

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 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** 

CONDITIONS

Action 24792

#### **CONDITIONS OF APPROVAL**

Operator:			OGRID:	Action Number:	Action Type:
ASCENT	ENERGY, LLC.	1125 17th St	325830	24792	FORM 3160-3
Suite 410	Denver, CO80202				

OCD Reviewer	Condition
pkautz	Will require a File As Drilled C-102 and a Directional Survey with the C-104
1 .	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string