

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD - HOBBS
04/16/2020
RECEIVED

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No.
1b. Type of Well: <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other		6. If Indian, Allottee or Tribe Name
1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		7. If Unit or CA Agreement, Name and No.
2. Name of Operator 325830		8. Lease Name and Well No. 328104
3a. Address	3b. Phone No. (include area code)	9. API Well No. 30-025-47110
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface At proposed prod. zone		10. Field and Pool, or Exploratory [98033]
14. Distance in miles and direction from nearest town or post office*		11. Sec., T. R. M. or Blk. and Survey or Area
		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 acres in lease	17. Spacing Unit dedicated to this well
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
24. Attachments		

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

- | | |
|--|---|
| 1. Well plat certified by a registered surveyor. | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan. | 5. Operator certification. |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be requested by the BLM. |

25. Signature	Name (Printed/Typed)	Date
Title		
Approved by (Signature)	Name (Printed/Typed)	Date
Title	Office	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

GCP Rec 04/16/2020

APPROVED WITH CONDITIONS

Approval Date: 03/06/2020

Kz
04/24/2020

SL

APD ID: 10400046119

Submission Date: 08/20/2019

Highlighted data reflects the most recent changes

Operator Name: ASCENT ENERGY LLC

Well Name: BIG BUCKS FED COM

Well Number: 701H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
518768	PERMIAN	3809	0	0	SANDSTONE	USEABLE WATER	N
518769	RUSTLER	2200	1609	1609	ANHYDRITE	NONE	N
518770	SALADO	2010	1799	1799	SALT	NONE	N
518771	CASTILE	515	3294	3303	ANHYDRITE	NONE	N
518772	YATES	450	3359	3368	OTHER : Carbonates	NATURAL GAS, OIL	N
518773	CAPITAN REEF	36	3773	3782	LIMESTONE	USEABLE WATER	N
518774	BELL CANYON	-1834	5643	5643	SANDSTONE	NATURAL GAS, OIL	N
518775	CHERRY CANYON	-2125	5934	5943	SANDSTONE	NATURAL GAS, OIL	N
518776	BRUSHY CANYON	-3230	7039	7048	SANDSTONE	NATURAL GAS, OIL	N
518777	BONE SPRING	-5045	8854	8863	LIMESTONE	NATURAL GAS, OIL	N
518778	BONE SPRING	-5195	9004	9013	OTHER : Avalon shae	NATURAL GAS, OIL	N
518779	BONE SPRING 1ST	-6050	9859	9868	SANDSTONE	NATURAL GAS, OIL	N
518780	BONE SPRING 2ND	-6305	10114	10123	OTHER : Carbonate	NATURAL GAS, OIL	N
518781	BONE SPRING 2ND	-6610	10419	10428	SANDSTONE	NATURAL GAS, OIL	N
518782	BONE SPRING 3RD	-7130	10939	10948	OTHER : Carbonate	NATURAL GAS, OIL	N
518783	BONE SPRING 3RD	-7565	11374	11385	SANDSTONE	NATURAL GAS, OIL	N
518784	WOLFCAMP	-7845	11654	11751	OTHER : A Carbonate	NATURAL GAS, OIL	Y

Operator Name: ASCENT ENERGY LLC

Well Name: BIG BUCKS FED COM

Well Number: 701H

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M

Rating Depth: 12000

Equipment: Minimum blow out preventer equipment (BOPE) will consist of a single ram, mud cross and double ram type (10,000 psi WP) preventer, and an annular preventer (5000 psi WP). Both units will be hydraulically operated. Ram type will be equipped with blind rams on the bottom and drill pipe rams on the top. Auxiliary equipment: A Kelly cock will be kept in the drill string at all times. A full opening drill pipe stabbing valve (inside BOP) with proper drill pipe connections will always be on the rig floor. Minimum working pressure of the BOP and related BOPE below the surface casing will be 5000-psi.

Requesting Variance? YES

Variance request: Variance is requested to use a speed head (aka, multi-bowl wellhead). Diagram is attached. After running the 13.375" surface casing, a 13.625" BOP/BOPE system with a >5000 psi WP will be installed on the wellhead system. It will be pressure tested to 250-psi low, followed by a test to 5000-psi high. Pressure test will be repeated at least every 30 days as required by Onshore Order 2. Speed head will be installed by the vendor's representative(s). Well head welding will be monitored by the vendor's representative.

Testing Procedure: All BOPE will be tested in accordance with Onshore Order 2. All BOPE will be tested using a conventional test plug not a cup or J packer. Both surface and intermediate casing will be tested as required by Onshore Order 2 to at least 0.22 psi/ft or 1500 psi, whichever is greater. Before drilling out the surface casing: ram type BOP and accessory equipment will be tested to 5000/250 psig annular preventer will be tested to 3500/250 psig surface casing will be tested to 1500 psi for 30 minutes Before drilling out the intermediate casing: ram type BOP and accessory equipment will be tested to 5000/250 psig annular preventer will be tested to 3500/250 psig intermediate casing will be tested to 2000 psi for 30 minutes Intermediate casing will be landed using a mandrel hanger and separate pack off. After installation, the pack off and lower flange will be pressure tested to 5000 psi. A hydraulically operated choke will be installed before drilling out of the intermediate casing shoe. Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each TOOH. These checks will be noted on the daily tour sheets.

Choke Diagram Attachment:

BB_701H_Choke_BOP_20190819164456.pdf

BOP Diagram Attachment:

BB_701H_Choke_BOP_20190819164528.pdf

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	1630	0	1630	3809	2179	1630	J-55	54.5	ST&C	1.125	1.125	DRY	1.6	DRY	1.6
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	3700	0	3690	3808	119	3700	J-55	40	LT&C	1.125	1.125	DRY	1.6	DRY	1.6
3	INTERMEDIATE	8.75	7.625	NEW	API	Y	0	11200	0	11190	3808	-7381	11200	HCP-110	29.7	OTHER - EZGO FJ3	1.125	1.125	DRY	1.6	DRY	1.6

Operator Name: ASCENT ENERGY LLC

Well Name: BIG BUCKS FED COM

Well Number: 701H

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
4	PRODUCTI ON	6.75	5.5	NEW	API	N	0	18127	0	11774	3808	-7965	18127	HCP -110	20	OTHER - EZGO FJ3	1.12 5	1.12 5	DRY	1.6	DRY	1.6

Casing Attachments

Casing ID: 1 **String Type:** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

BB_701H_Casing_Design_Assumptions_20190819164857.pdf

Casing ID: 2 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

BB_701H_Casing_Design_Assumptions_20190819165018.pdf

Operator Name: ASCENT ENERGY LLC

Well Name: BIG BUCKS FED COM

Well Number: 701H

Casing Attachments

Casing ID: 3 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

BB_701H_7.625in_Casing_Spec_20190819165001.pdf

Casing Design Assumptions and Worksheet(s):

BB_701H_7.625in_Casing_Spec_20190819165005.pdf

Casing ID: 4 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

BB_701H_Casing_Design_Assumptions_20190819165042.pdf

BB_701H_5.5in_Casing_Spec_20190819165047.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	1630	885	1.72	13.5	1529	100	Class C	HALCEM system + 4% bentonite
SURFACE	Tail		0	1630	560	1.33	14.8	745	100	Class C	HALCEM system
INTERMEDIATE	Lead		0	3700	735	1.72	12.7	1270	67	Class C	HALCEM system + 4% bentonite
INTERMEDIATE	Tail		0	3700	485	1.33	14.8	646	67	Class C	HALCEM system

Operator Name: ASCENT ENERGY LLC

Well Name: BIG BUCKS FED COM

Well Number: 701H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
INTERMEDIATE	Lead		0	1120 0	660	2.03	12.7	1345	25	Class C	EconoCem HLC + 5% salt + 3% Microbond + 3 lb/sk Kol-seal + 0.3% HR-800
INTERMEDIATE	Tail		0	1120 0	155	1.37	147	212	25	Class C	HALCEM system + 3% Microbond
PRODUCTION	Lead		0	1812 7	165	2.88	11	476	25	NeoCem PL	3% Microbond
PRODUCTION	Tail		0	1812 7	2065	13.2	1.47	3039	25	NeoCem PL	3% Microbond

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 additives (e. g., barite, bentonite, LCM) to maintain mud properties and meet minimum lost circulation and weight increase needs will be on site at all times. Mud program may change due to hole conditions.

Describe the mud monitoring system utilized: An electronic pit volume totalizer (PVT) will be used to monitor volume, flow rate, pump pressure, and stroke rate.

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)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	1630	OTHER : Fresh water	8.4	9.6							
1630	3700	OTHER : Brine water	10	10							
3700	1120 0	OTHER : Fresh water	8.4	8.6							
1120 0	1812 7	OTHER : Cut brine/gel	8.5	9.2							

Operator Name: ASCENT ENERGY LLC

Well Name: BIG BUCKS FED COM

Well Number: 701H

Section 6 - Test, Logging, Coring

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

GR-CCL will be run in cased hole during completion phase of operations.

List of open and cased hole logs run in the well:

GAMMA RAY LOG,

Coring operation description for the well:

No core, drill stem test, or open hole log is planned.

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 5033

Anticipated Surface Pressure: 2639

Anticipated Bottom Hole Temperature(F): 165

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

Describe:

Contingency Plans geohazards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

BB_701H_H2S_Plan_20190819165530.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

BB_701H_Horizontal_Plan_20190819165553.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

BB_701H_CoFlex_Certs_20190819165617.pdf

BB_701H_Speedhead_Specs_20190819165625.pdf

BB_701H_Anti_Collision_Report_20190819165638.pdf

BB_701H_Drill_Plan_Revised_20200117160253.pdf

Other Variance attachment:

BB_701H_Casing_Variance_Request_20190819165647.pdf

Drilling Program

1. ESTIMATED TOPS

Formation	TVD	MD	Bearing
Upper Permian sandstone	000'	000'	water
Rustler anhydrite	1609'	1609'	N/A
Salado salt	1799'	1799'	N/A
Castile anhydrite	3294'	3303'	N/A
Yates carbonates	3359'	3368'	hydrocarbons
Capitan Reef limestone	3773'	3782'	water
Bell Canyon sandstone	5644'	5653'	hydrocarbons
Cherry Canyon sandstone	5934'	5943'	hydrocarbons
Brushy Canyon sandstone	7039'	7048'	hydrocarbons
Bone Spring limestone	8854'	8863'	hydrocarbons
Avalon shale of Bone Spring	9004'	9013'	hydrocarbons
1st Bone Spring sandstone	9859'	9868'	hydrocarbons
2 nd Bone Spring carbonate	10114'	10123'	hydrocarbons
2 nd Bone Spring sandstone	10419'	10428'	hydrocarbons
3 rd Bone Spring carbonate	10939'	10948'	hydrocarbons
(KOP	11239'	11249'	hydrocarbons)
3 rd Bone Spring sandstone	11374'	11385'	hydrocarbons
Wolfcamp A carbonate	11654'	11751	hydrocarbons
TD	11774'	18127'	hydrocarbons

2. NOTABLE ZONES

Second Bone Spring sandstone is the goal. Closest water well (CP 00793 POD1) is 0.97 mile northwest. Depth to water was not reported in the 1,000' deep well. Two windmills 1.24 miles south are 160' to 170' deep.

3. PRESSURE CONTROL

Minimum blow out preventer equipment (BOPE) will consist of a single ram, mud cross and double ram type (10,000 psi WP) preventer, and an annular preventer (5000 psi

Ascent Energy, LLC
Big Bucks Fed Com 701H
SHL 125' FSL & 440' FEL Sec. 1
BHL 990' FNL & 365' FEL Sec. 13
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DRILL PLAN PAGE 2

WP). Both units will be hydraulically operated. Ram type will be equipped with blind rams on the bottom and drill pipe rams on the top.

Auxiliary equipment:

A Kelly cock will be kept in the drill string at all times.

A full opening drill pipe stabbing valve (inside BOP) with proper drill pipe connections will always be on the rig floor.

Minimum working pressure of the BOP and related BOPE below the surface casing will be 5000-psi.

All BOPE will be tested in accordance with Onshore Order 2. All BOPE will be tested using a conventional test plug – not a cup or J packer. Both surface and intermediate casing will be tested as required by Onshore Order 2 to at least 0.22 psi/ft or 1500 psi, whichever is greater.

Before drilling out the surface casing:

ram type BOP and accessory equipment will be tested to 5000/250 psig

annular preventer will be tested to 3500/250 psig

surface casing will be tested to 1500 psi for 30 minutes

Before drilling out the intermediate casing:

ram type BOP and accessory equipment will be tested to 5000/250 psig

annular preventer will be tested to 3500/250 psig

intermediate casing will be tested to 2000 psi for 30 minutes

Intermediate casing will be landed using a mandrel hanger and separate pack off. After installation, the pack off and lower flange will be pressure tested to 5000 psi. A hydraulically operated choke will be installed before drilling out of the intermediate casing shoe. Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each TOOH. These checks will be noted on the daily tour sheets.

Variance is requested to use a speed head (aka, multi-bowl wellhead). Diagram is attached. After running the 13.375" surface casing, a 13.625" BOP/BOPE system with a ≥ 5000 psi WP will be installed on the wellhead system. It will be pressure tested to 250-psi low, followed by a test to 5000-psi high. Pressure test will be repeated at least every 30 days as required by Onshore Order 2.

Speed head will be installed by the vendor's representative(s). Well head welding will be monitored by the vendor's representative.

4. CASING & CEMENT

All casing will be API and new. See attached casing assumption worksheet.

Hole O. D.	Set MD	Set TVD	Casing O. D.	Weight (lb/ft)	Grade	Joint	Collapse	Burst	Tension
17.5"	0' - 1630'	0' - 1630'	Surface 13.375"	54.5	J-55	STC	1.125	1.125	1.6
12.25"	0' - 3700'	0' - 3690'	Inter. 1 9.625"	40	J-55	LTC	1.125	1.125	1.6
8.75"	0' - 11200'	0' - 11190'	Inter. 2 7.625"	29.7	HCP-110	EZGO FJ3	1.125	1.125	1.6
6.75"	0' - 18127'	0' - 11774'	Product. 5.5"	20	P-110 EC	EZGO FJ3	1.125	1.125	1.6

Variance is requested to waive centralizer requirements for the 7.625" EZGO flush joint 3 casing. An expansion additive will be used in the cement slurry for the entire length of the 8.75" hole to maximize cement bond and zone isolation.

Variance is also requested to waive centralizers requirements for the 5.5" EZGO flush joint casing. An expansion additive will be used in the cement slurry for the entire length of the 6.75" hole to maximize cement bond and zone isolation.

Name	Type	Sacks	Yield	Cu. Ft.	Weight	Blend
Surface	Lead	885	1.728	1529	13.5	Class C HALCEM system + 4% bentonite
	Tail	560	1.332	745	14.8	Class C HALCEM system
TOC = GL		100% Excess				
Intermediate 1	Lead	735	1.728	1270	12.7	Class C HALCEM system + 4% bentonite
	Tail	485	1.332	646	14.8	Class C HALCEM system
TOC = GL		67% Excess				
Intermediate 2	Lead	660	2.039	1345	12.7	Class C EconoCem HLC + 5% salt + 3% Microbond + 3 lb/sk Kol-seal + 0.3% HR-800
	Tail	155	1.368	212	14.8	Class C HALCEM system + 3%

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						Microbond
TOC = GL		25% Excess				
Production	Lead	165	2.887	476	11.0	NeoCem PL + 3% Microbond
	Tail	2065	1.472	3039	13.2	NeoCem PT + 3% Microbond
TOC = GL		25% Excess				

5. MUD PROGRAM

An electronic pit volume totalizer (PVT) will be used to monitor volume, flow rate, pump pressure, and stroke rate. All necessary additives (e. g., barite, bentonite, LCM) to maintain mud properties and meet minimum lost circulation and weight increase needs will be on site at all times. Mud program may change due to hole conditions. A closed loop system will be used.

Type	Interval (MD)	lb/gal	Viscosity	Fluid Loss
fresh water	0' - 1630'	8.4 - 9.6	34-38	N/C
brine water	1630' - 3700'	10	28-34	N/C
fresh water	3700' - 11200'	8.4 - 8.6	28-34	N/C
OBM	11200' - 18127'	11.0 - 11.3	28-34	N/C

6. CORES, TESTS, & LOGS

No core, drill stem test, or open hole log is planned.

GR-CCL will be run in cased hole during completion phase of operations.

7. DOWN HOLE CONDITIONS

No abnormal pressure or temperature is expected. Maximum expected bottom hole pressure is ≈5033 psig. Expected bottom hole temperature is ≈165° F.

H2S monitoring and detection equipment will be used from surface casing point to TD.

8. OTHER INFORMATION

**Ascent Energy, LLC
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SHL 125' FSL & 440' FEL Sec. 1
BHL 990' FNL & 365' FEL Sec. 13
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DRILL PLAN PAGE 5

Anticipated spud date is upon approval. It is expected it will take \approx 3 months to drill and complete the well.

Variance is requested for the option to contract a surface rig to drill surface hole, set surface casing, and cement the surface casing. If the timing between rigs is such that Ascent would not be able to preset the surface casing, then the primary rig will MIRU and drill the well in its entirety.

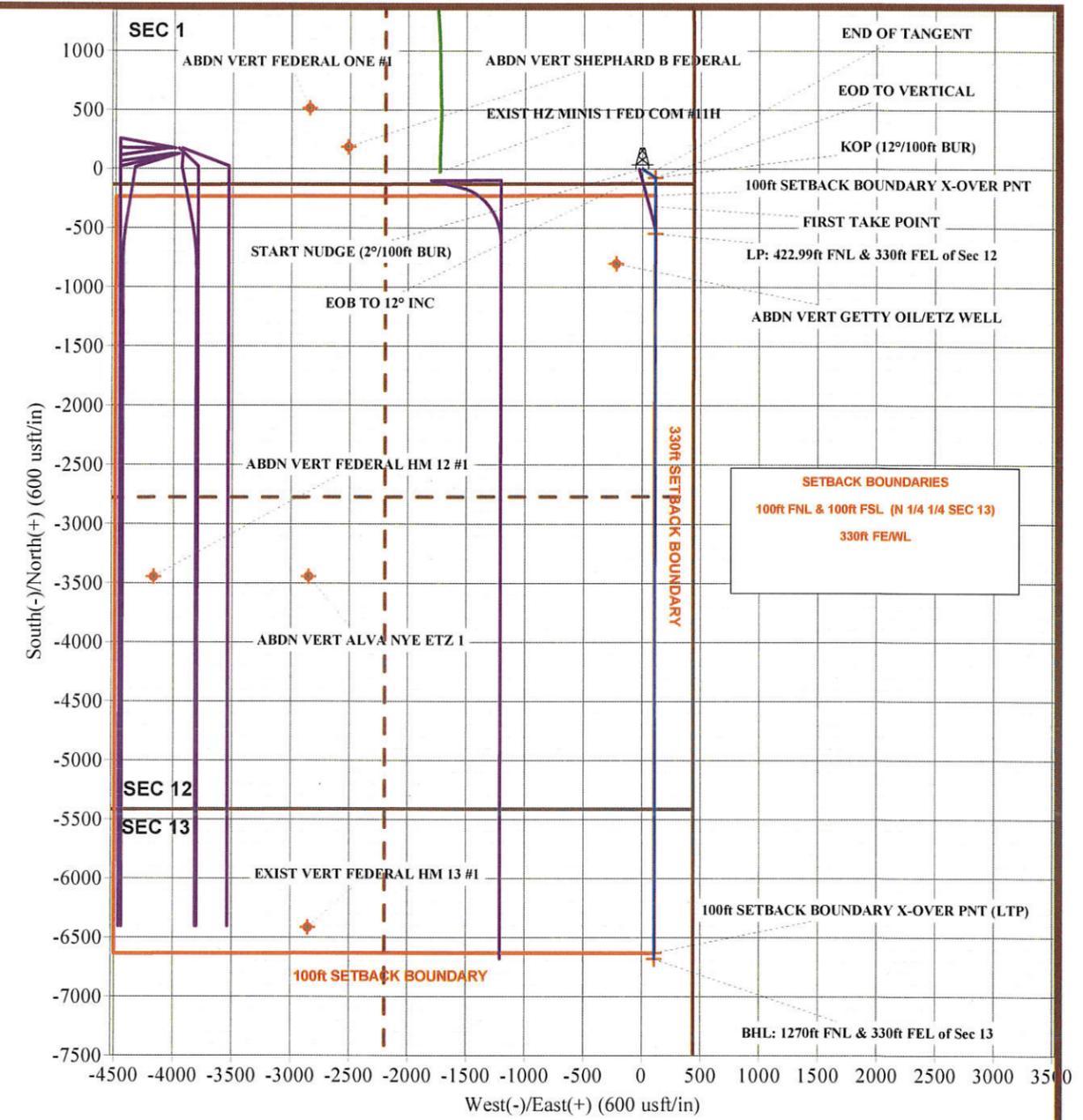
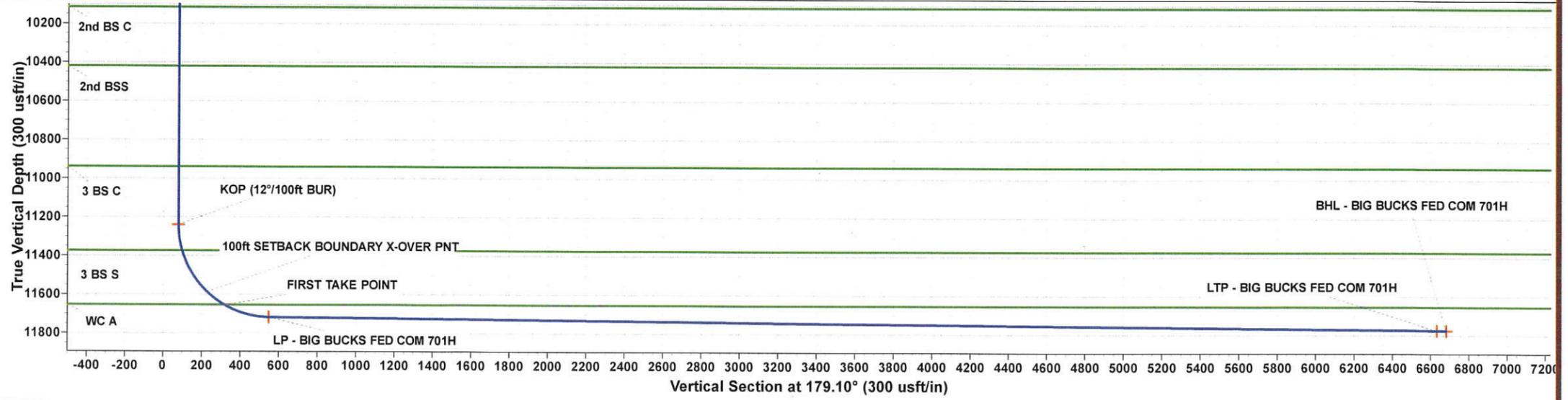
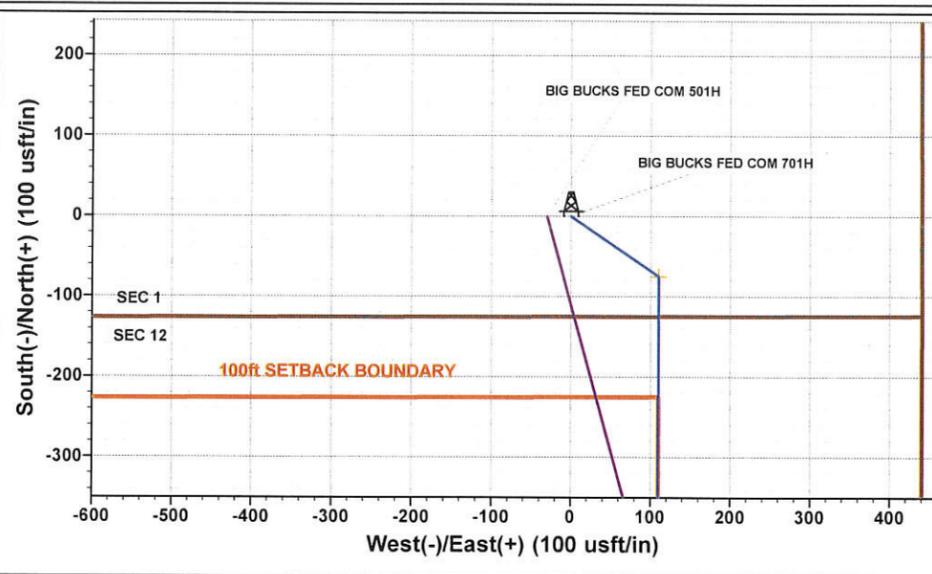
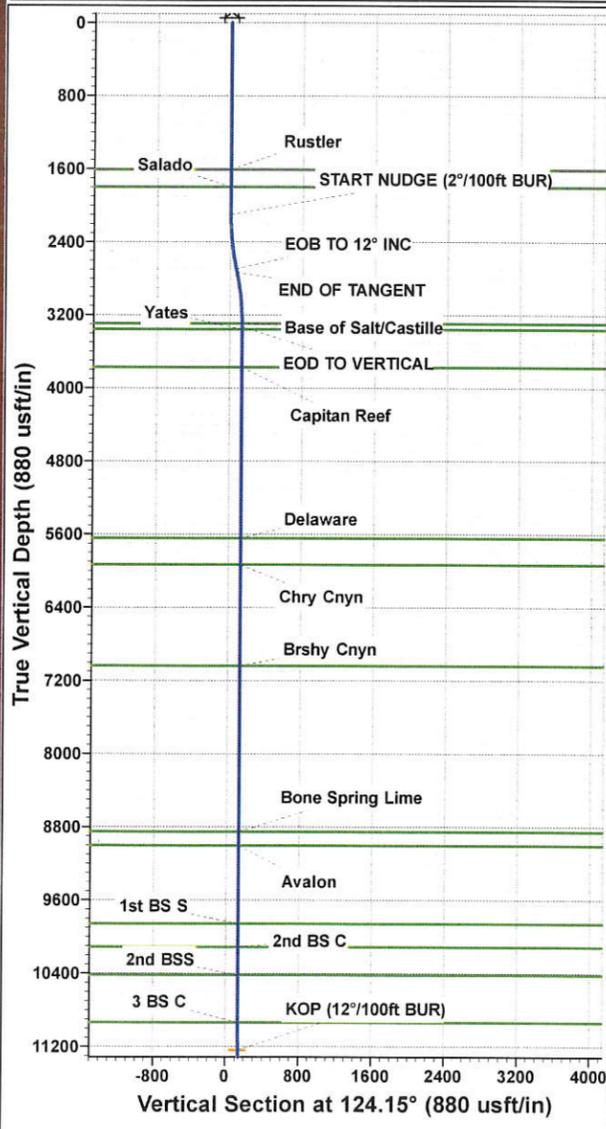


Project: LEA COUNTY, NEW MEXICO (NAD 83)
 Site: SEC. 1 T21S R32E N.M.PM.
 Well: BIG BUCKS FED COM 701H
 Wellbore: ORIGINAL WELLBORE
 Design: PROPOSAL #1

ANNOTATIONS									
TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Dep	Annotation	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL: 125ft FSL & 440ft FEL of Sec 1	
2100.00	2100.00	0.00	0.00	0.00	0.00	0.00	0.00	START NUDDGE (2°/100ft BUR)	
2695.62	2700.00	12.00	124.15	-35.14	51.81	35.95	62.60	EOB TO 12° INC	
2733.22	2738.44	12.00	124.15	-39.63	58.42	40.54	70.59	END OF TANGENT	
3328.84	3338.44	0.00	0.00	-74.77	110.23	76.49	133.20	EOD TO VERTICAL	
11239.26	11248.85	0.00	0.00	-74.77	110.23	76.49	133.20	KOP (12°/100ft BUR)	
11586.73	11638.00	46.70	180.05	-224.77	110.10	226.47	283.31	100ft SETBACK BOUNDARY X-OVER PNT	
11654.70	11752.77	60.47	180.05	-316.90	110.02	318.59	375.36	FIRST TAKE POINT	
11716.70	11994.38	89.46	180.05	-547.76	109.82	549.42	606.19	LP: 422.99ft FNL & 330ft FEL of Sec 12	
11773.70	18077.07	89.46	180.04	-6630.19	105.00	6631.02	6688.61	100ft SETBACK BOUNDARY X-OVER PNT (LTP)	
11774.17	18127.07	89.46	180.05	-6680.18	104.96	6681.00	6738.61	BHL: 1270ft FNL & 330ft FEL of Sec 13	

PROPOSED LOCAL COORDINATES:
 SHL: 12ft FSL & 440ft FEL Sec 1
 LP: 422.99ft FNL & 330ft FEL Sec 12
 BHL: 1270ft FNL & 330ft FEL Sec 13

WELLBORE TARGET DETAILS (LAT/LONG)						
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	
KOP - BIG BUCKS FED COM 701H	11239.26	-74.77	110.23	32.500834	-103.620897	
LP - BIG BUCKS FED COM 701H	11716.70	-547.76	109.82	32.499534	-103.620899	
LTP - BIG BUCKS FED COM 701H	11773.70	-6630.19	105.00	32.482816	-103.620914	
BHL - BIG BUCKS FED COM 701H	11774.17	-6680.18	104.96	32.482679	-103.620914	



Planning Report



Database:	Database 1	Local Co-ordinate Reference:	Well BIG BUCKS FED COM 701H
Company:	ASCENT ENERGY	TVD Reference:	KB 25' @ 3833.70usft (Original Well Elev)
Project:	LEA COUNTY, NEW MEXICO (NAD 83)	MD Reference:	KB 25' @ 3833.70usft (Original Well Elev)
Site:	SEC. 1 T21S R32E N.M.PM.	North Reference:	True
Well:	BIG BUCKS FED COM 701H	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Project	LEA COUNTY, NEW MEXICO (NAD 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		Using geodetic scale factor

Site	SEC. 1 T21S R32E N.M.PM.				
Site Position:		Northing:	546,845.25 usft	Latitude:	32.501395
From:	Lat/Long	Easting:	756,934.17 usft	Longitude:	-103.634008
Position Uncertainty:	0.00 usft	Slot Radius:	1.10ft	Grid Convergence:	0.38 °

Well	BIG BUCKS FED COM 701H					
Well Position	+N/-S	-129.13 usft	Northing:	546,741.92 usft	Latitude:	32.501039
	+E/-W	3,932.19 usft	Easting:	760,866.98 usft	Longitude:	-103.621255
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,808.70 usft

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/06/2019	6.78	60.28	47,890

Design	PROPOSAL #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	179.10

Plan Sections											
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	-3,833.70	0.00	0.00	0.00	0.00	0.00	0.00	
2,100.00	0.00	0.00	2,100.00	-1,733.70	0.00	0.00	0.00	0.00	0.00	0.00	
2,700.00	12.00	124.15	2,695.62	-1,138.08	-35.14	51.81	2.00	2.00	0.00	124.15	
2,738.44	12.00	124.15	2,733.22	-1,100.48	-39.63	58.42	0.00	0.00	0.00	0.00	
3,338.44	0.00	0.00	3,328.84	-504.86	-74.77	110.23	2.00	-2.00	0.00	180.00	
11,248.85	0.00	0.00	11,239.26	7,405.56	-74.77	110.23	0.00	0.00	0.00	0.00	KOP - BIG BUCKS
11,994.38	89.46	180.05	11,716.70	7,883.00	-547.76	109.82	12.00	12.00	-24.14	180.05	LP - BIG BUCKS FI
18,077.07	89.46	180.04	11,773.70	7,940.00	-6,630.19	105.00	0.00	0.00	0.00	-95.59	LTP - BIG BUCKS I
18,127.07	89.46	180.05	11,774.17	7,940.47	-6,680.18	104.96	0.01	-0.01	0.01	121.94	BHL - BIG BUCKS



Database:	Database 1	Local Co-ordinate Reference:	Well BIG BUCKS FED COM 701H
Company:	ASCENT ENERGY	TVD Reference:	KB 25' @ 3833.70usft (Original Well Elev)
Project:	LEA COUNTY, NEW MEXICO (NAD 83)	MD Reference:	KB 25' @ 3833.70usft (Original Well Elev)
Site:	SEC. 1 T21S R32E N.M.PM.	North Reference:	True
Well:	BIG BUCKS FED COM 701H	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
SHL: 125ft FSL & 440ft FEL of Sec 1										
0.00	0.00	0.00	0.00	3,833.70	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	3,733.70	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	3,633.70	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	3,533.70	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	3,433.70	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	3,333.70	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	3,233.70	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	3,133.70	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	3,033.70	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	2,933.70	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	2,833.70	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	2,733.70	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	2,633.70	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	2,533.70	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	2,433.70	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	2,333.70	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	2,233.70	0.00	0.00	0.00	0.00	0.00	0.00
Rustler										
1,608.70	0.00	0.00	1,608.70	2,225.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	2,133.70	0.00	0.00	0.00	0.00	0.00	0.00
Salado										
1,798.70	0.00	0.00	1,798.70	2,035.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	2,033.70	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	1,933.70	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	1,833.70	0.00	0.00	0.00	0.00	0.00	0.00
START NUDGE (2°/100ft BUR)										
2,100.00	0.00	0.00	2,100.00	1,733.70	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	2.00	124.15	2,199.98	1,633.72	-0.98	1.44	1.00	2.00	2.00	0.00
2,300.00	4.00	124.15	2,299.84	1,533.86	-3.92	5.78	4.01	2.00	2.00	0.00
2,400.00	6.00	124.15	2,399.45	1,434.25	-8.81	12.99	9.01	2.00	2.00	0.00
2,500.00	8.00	124.15	2,498.70	1,335.00	-15.65	23.07	16.01	2.00	2.00	0.00
2,600.00	10.00	124.15	2,597.47	1,236.23	-24.43	36.02	24.99	2.00	2.00	0.00
EOB TO 12° INC										
2,700.00	12.00	124.15	2,695.62	1,138.08	-35.14	51.81	35.95	2.00	2.00	0.00
END OF TANGENT										
2,738.44	12.00	124.15	2,733.22	1,100.48	-39.63	58.42	40.54	0.00	0.00	0.00
2,800.00	10.77	124.15	2,793.57	1,040.13	-46.45	68.48	47.52	2.00	-2.00	0.00
2,900.00	8.77	124.15	2,892.12	941.58	-55.97	82.52	57.26	2.00	-2.00	0.00
3,000.00	6.77	124.15	2,991.19	842.51	-63.56	93.71	65.03	2.00	-2.00	0.00
3,100.00	4.77	124.15	3,090.68	743.02	-69.20	102.02	70.80	2.00	-2.00	0.00
3,200.00	2.77	124.15	3,190.46	643.24	-72.89	107.46	74.57	2.00	-2.00	0.00
3,300.00	0.77	124.15	3,290.41	543.29	-74.63	110.02	76.34	2.00	-2.00	0.00
Base of Salt/Castille										
3,303.29	0.70	124.15	3,293.70	540.00	-74.65	110.05	76.37	2.00	-2.00	0.00
EOD TO VERTICAL										
3,338.44	0.00	0.00	3,328.84	504.86	-74.77	110.23	76.49	2.00	-2.00	-353.28
Yates										
3,368.29	0.00	0.00	3,358.70	475.00	-74.77	110.23	76.49	0.00	0.00	0.00
3,400.00	0.00	0.00	3,390.41	443.29	-74.77	110.23	76.49	0.00	0.00	0.00
3,500.00	0.00	0.00	3,490.41	343.29	-74.77	110.23	76.49	0.00	0.00	0.00
3,600.00	0.00	0.00	3,590.41	243.29	-74.77	110.23	76.49	0.00	0.00	0.00
3,700.00	0.00	0.00	3,690.41	143.29	-74.77	110.23	76.49	0.00	0.00	0.00

Planning Report



Database:	Database 1	Local Co-ordinate Reference:	Well BIG BUCKS FED COM 701H
Company:	ASCENT ENERGY	TVD Reference:	KB 25' @ 3833.70usft (Original Well Elev)
Project:	LEA COUNTY, NEW MEXICO (NAD 83)	MD Reference:	KB 25' @ 3833.70usft (Original Well Elev)
Site:	SEC. 1 T21S R32E N.M.PM.	North Reference:	True
Well:	BIG BUCKS FED COM 701H	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Planned Survey										
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
Capitan Reef										
3,782.29	0.00	0.00	3,772.70	61.00	-74.77	110.23	76.49	0.00	0.00	0.00
3,800.00	0.00	0.00	3,790.41	43.29	-74.77	110.23	76.49	0.00	0.00	0.00
3,900.00	0.00	0.00	3,890.41	-56.71	-74.77	110.23	76.49	0.00	0.00	0.00
4,000.00	0.00	0.00	3,990.41	-156.71	-74.77	110.23	76.49	0.00	0.00	0.00
4,100.00	0.00	0.00	4,090.41	-256.71	-74.77	110.23	76.49	0.00	0.00	0.00
4,200.00	0.00	0.00	4,190.41	-356.71	-74.77	110.23	76.49	0.00	0.00	0.00
4,300.00	0.00	0.00	4,290.41	-456.71	-74.77	110.23	76.49	0.00	0.00	0.00
4,400.00	0.00	0.00	4,390.41	-556.71	-74.77	110.23	76.49	0.00	0.00	0.00
4,500.00	0.00	0.00	4,490.41	-656.71	-74.77	110.23	76.49	0.00	0.00	0.00
4,600.00	0.00	0.00	4,590.41	-756.71	-74.77	110.23	76.49	0.00	0.00	0.00
4,700.00	0.00	0.00	4,690.41	-856.71	-74.77	110.23	76.49	0.00	0.00	0.00
4,800.00	0.00	0.00	4,790.41	-956.71	-74.77	110.23	76.49	0.00	0.00	0.00
4,900.00	0.00	0.00	4,890.41	-1,056.71	-74.77	110.23	76.49	0.00	0.00	0.00
5,000.00	0.00	0.00	4,990.41	-1,156.71	-74.77	110.23	76.49	0.00	0.00	0.00
5,100.00	0.00	0.00	5,090.41	-1,256.71	-74.77	110.23	76.49	0.00	0.00	0.00
5,200.00	0.00	0.00	5,190.41	-1,356.71	-74.77	110.23	76.49	0.00	0.00	0.00
5,300.00	0.00	0.00	5,290.41	-1,456.71	-74.77	110.23	76.49	0.00	0.00	0.00
5,400.00	0.00	0.00	5,390.41	-1,556.71	-74.77	110.23	76.49	0.00	0.00	0.00
5,500.00	0.00	0.00	5,490.41	-1,656.71	-74.77	110.23	76.49	0.00	0.00	0.00
5,600.00	0.00	0.00	5,590.41	-1,756.71	-74.77	110.23	76.49	0.00	0.00	0.00
Delaware										
5,653.29	0.00	0.00	5,643.70	-1,810.00	-74.77	110.23	76.49	0.00	0.00	0.00
5,700.00	0.00	0.00	5,690.41	-1,856.71	-74.77	110.23	76.49	0.00	0.00	0.00
5,800.00	0.00	0.00	5,790.41	-1,956.71	-74.77	110.23	76.49	0.00	0.00	0.00
5,900.00	0.00	0.00	5,890.41	-2,056.71	-74.77	110.23	76.49	0.00	0.00	0.00
Chry Cnyn										
5,943.29	0.00	0.00	5,933.70	-2,100.00	-74.77	110.23	76.49	0.00	0.00	0.00
6,000.00	0.00	0.00	5,990.41	-2,156.71	-74.77	110.23	76.49	0.00	0.00	0.00
6,100.00	0.00	0.00	6,090.41	-2,256.71	-74.77	110.23	76.49	0.00	0.00	0.00
6,200.00	0.00	0.00	6,190.41	-2,356.71	-74.77	110.23	76.49	0.00	0.00	0.00
6,300.00	0.00	0.00	6,290.41	-2,456.71	-74.77	110.23	76.49	0.00	0.00	0.00
6,400.00	0.00	0.00	6,390.41	-2,556.71	-74.77	110.23	76.49	0.00	0.00	0.00
6,500.00	0.00	0.00	6,490.41	-2,656.71	-74.77	110.23	76.49	0.00	0.00	0.00
6,600.00	0.00	0.00	6,590.41	-2,756.71	-74.77	110.23	76.49	0.00	0.00	0.00
6,700.00	0.00	0.00	6,690.41	-2,856.71	-74.77	110.23	76.49	0.00	0.00	0.00
6,800.00	0.00	0.00	6,790.41	-2,956.71	-74.77	110.23	76.49	0.00	0.00	0.00
6,900.00	0.00	0.00	6,890.41	-3,056.71	-74.77	110.23	76.49	0.00	0.00	0.00
7,000.00	0.00	0.00	6,990.41	-3,156.71	-74.77	110.23	76.49	0.00	0.00	0.00
Brshy Cnyn										
7,048.29	0.00	0.00	7,038.70	-3,205.00	-74.77	110.23	76.49	0.00	0.00	0.00
7,100.00	0.00	0.00	7,090.41	-3,256.71	-74.77	110.23	76.49	0.00	0.00	0.00
7,200.00	0.00	0.00	7,190.41	-3,356.71	-74.77	110.23	76.49	0.00	0.00	0.00
7,300.00	0.00	0.00	7,290.41	-3,456.71	-74.77	110.23	76.49	0.00	0.00	0.00
7,400.00	0.00	0.00	7,390.41	-3,556.71	-74.77	110.23	76.49	0.00	0.00	0.00
7,500.00	0.00	0.00	7,490.41	-3,656.71	-74.77	110.23	76.49	0.00	0.00	0.00
7,600.00	0.00	0.00	7,590.41	-3,756.71	-74.77	110.23	76.49	0.00	0.00	0.00
7,700.00	0.00	0.00	7,690.41	-3,856.71	-74.77	110.23	76.49	0.00	0.00	0.00
7,800.00	0.00	0.00	7,790.41	-3,956.71	-74.77	110.23	76.49	0.00	0.00	0.00
7,900.00	0.00	0.00	7,890.41	-4,056.71	-74.77	110.23	76.49	0.00	0.00	0.00
8,000.00	0.00	0.00	7,990.41	-4,156.71	-74.77	110.23	76.49	0.00	0.00	0.00
8,100.00	0.00	0.00	8,090.41	-4,256.71	-74.77	110.23	76.49	0.00	0.00	0.00
8,200.00	0.00	0.00	8,190.41	-4,356.71	-74.77	110.23	76.49	0.00	0.00	0.00

Planning Report



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Site:	SEC. 1 T21S R32E N.M.PM.	North Reference:	True
Well:	BIG BUCKS FED COM 701H	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Planned Survey										
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,300.00	0.00	0.00	8,290.41	-4,456.71	-74.77	110.23	76.49	0.00	0.00	0.00
8,400.00	0.00	0.00	8,390.41	-4,556.71	-74.77	110.23	76.49	0.00	0.00	0.00
8,500.00	0.00	0.00	8,490.41	-4,656.71	-74.77	110.23	76.49	0.00	0.00	0.00
8,600.00	0.00	0.00	8,590.41	-4,756.71	-74.77	110.23	76.49	0.00	0.00	0.00
8,700.00	0.00	0.00	8,690.41	-4,856.71	-74.77	110.23	76.49	0.00	0.00	0.00
8,800.00	0.00	0.00	8,790.41	-4,956.71	-74.77	110.23	76.49	0.00	0.00	0.00
Bone Spring Lime										
8,863.29	0.00	0.00	8,853.70	-5,020.00	-74.77	110.23	76.49	0.00	0.00	0.00
8,900.00	0.00	0.00	8,890.41	-5,056.71	-74.77	110.23	76.49	0.00	0.00	0.00
9,000.00	0.00	0.00	8,990.41	-5,156.71	-74.77	110.23	76.49	0.00	0.00	0.00
Avalon										
9,013.29	0.00	0.00	9,003.70	-5,170.00	-74.77	110.23	76.49	0.00	0.00	0.00
9,100.00	0.00	0.00	9,090.41	-5,256.71	-74.77	110.23	76.49	0.00	0.00	0.00
9,200.00	0.00	0.00	9,190.41	-5,356.71	-74.77	110.23	76.49	0.00	0.00	0.00
9,300.00	0.00	0.00	9,290.41	-5,456.71	-74.77	110.23	76.49	0.00	0.00	0.00
9,400.00	0.00	0.00	9,390.41	-5,556.71	-74.77	110.23	76.49	0.00	0.00	0.00
9,500.00	0.00	0.00	9,490.41	-5,656.71	-74.77	110.23	76.49	0.00	0.00	0.00
9,600.00	0.00	0.00	9,590.41	-5,756.71	-74.77	110.23	76.49	0.00	0.00	0.00
9,700.00	0.00	0.00	9,690.41	-5,856.71	-74.77	110.23	76.49	0.00	0.00	0.00
9,800.00	0.00	0.00	9,790.41	-5,956.71	-74.77	110.23	76.49	0.00	0.00	0.00
1st BS S										
9,868.29	0.00	0.00	9,858.70	-6,025.00	-74.77	110.23	76.49	0.00	0.00	0.00
9,900.00	0.00	0.00	9,890.41	-6,056.71	-74.77	110.23	76.49	0.00	0.00	0.00
10,000.00	0.00	0.00	9,990.41	-6,156.71	-74.77	110.23	76.49	0.00	0.00	0.00
10,100.00	0.00	0.00	10,090.41	-6,256.71	-74.77	110.23	76.49	0.00	0.00	0.00
2nd BS C										
10,123.29	0.00	0.00	10,113.70	-6,280.00	-74.77	110.23	76.49	0.00	0.00	0.00
10,200.00	0.00	0.00	10,190.41	-6,356.71	-74.77	110.23	76.49	0.00	0.00	0.00
10,300.00	0.00	0.00	10,290.41	-6,456.71	-74.77	110.23	76.49	0.00	0.00	0.00
10,400.00	0.00	0.00	10,390.41	-6,556.71	-74.77	110.23	76.49	0.00	0.00	0.00
2nd BSS										
10,428.29	0.00	0.00	10,418.70	-6,585.00	-74.77	110.23	76.49	0.00	0.00	0.00
10,500.00	0.00	0.00	10,490.41	-6,656.71	-74.77	110.23	76.49	0.00	0.00	0.00
10,600.00	0.00	0.00	10,590.41	-6,756.71	-74.77	110.23	76.49	0.00	0.00	0.00
10,700.00	0.00	0.00	10,690.41	-6,856.71	-74.77	110.23	76.49	0.00	0.00	0.00
10,800.00	0.00	0.00	10,790.41	-6,956.71	-74.77	110.23	76.49	0.00	0.00	0.00
10,900.00	0.00	0.00	10,890.41	-7,056.71	-74.77	110.23	76.49	0.00	0.00	0.00
3 BS C										
10,948.29	0.00	0.00	10,938.70	-7,105.00	-74.77	110.23	76.49	0.00	0.00	0.00
11,000.00	0.00	0.00	10,990.41	-7,156.71	-74.77	110.23	76.49	0.00	0.00	0.00
11,100.00	0.00	0.00	11,090.41	-7,256.71	-74.77	110.23	76.49	0.00	0.00	0.00
11,200.00	0.00	0.00	11,190.41	-7,356.71	-74.77	110.23	76.49	0.00	0.00	0.00
KOP (12°/100ft BUR)										
11,248.85	0.00	0.00	11,239.26	-7,405.56	-74.77	110.23	76.49	0.00	0.00	0.00
11,300.00	6.14	180.05	11,290.31	-7,456.61	-77.51	110.23	79.23	12.00	12.00	0.00
3 BS S										
11,385.14	16.35	180.05	11,373.70	-7,540.00	-94.09	110.21	95.81	12.00	12.00	0.00
11,400.00	18.14	180.05	11,387.89	-7,554.19	-98.49	110.21	100.21	12.00	12.00	0.00
11,500.00	30.14	180.05	11,478.98	-7,645.28	-139.31	110.17	141.03	12.00	12.00	0.00
11,600.00	42.14	180.05	11,559.60	-7,725.90	-198.18	110.12	199.88	12.00	12.00	0.00
100ft SETBACK BOUNDARY X-OVER PNT										
11,638.00	46.70	180.05	11,586.73	-7,753.03	-224.77	110.10	226.47	12.00	12.00	0.00
11,700.00	54.14	180.05	11,626.21	-7,792.51	-272.52	110.06	274.21	12.00	12.00	0.00

Planning Report



Database:	Database 1	Local Co-ordinate Reference:	Well BIG BUCKS FED COM 701H
Company:	ASCENT ENERGY	TVD Reference:	KB 25' @ 3833.70usft (Original Well Elev)
Project:	LEA COUNTY, NEW MEXICO (NAD 83)	MD Reference:	KB 25' @ 3833.70usft (Original Well Elev)
Site:	SEC. 1 T21S R32E N.M.PM.	North Reference:	True
Well:	BIG BUCKS FED COM 701H	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Planned Survey										
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
WC A										
11,750.75	60.23	180.05	11,653.70	-7,820.00	-315.15	110.02	316.84	12.00	12.00	0.00
FIRST TAKE POINT										
11,752.77	60.47	180.05	11,654.70	-7,821.00	-316.90	110.02	318.59	12.00	12.00	0.00
11,800.00	66.14	180.05	11,675.91	-7,842.21	-359.08	109.98	360.77	12.00	12.00	0.00
11,900.00	78.14	180.05	11,706.53	-7,872.83	-454.09	109.90	455.76	12.00	12.00	0.00
LP: 422.99ft FNL & 330ft FEL of Sec 12										
11,994.38	89.46	180.05	11,716.70	-7,883.00	-547.76	109.82	549.42	12.00	12.00	0.00
12,000.00	89.46	180.05	11,716.75	-7,883.05	-553.38	109.82	555.04	0.00	0.00	0.00
12,100.00	89.46	180.05	11,717.69	-7,883.99	-653.38	109.73	655.02	0.00	0.00	0.00
12,200.00	89.46	180.05	11,718.63	-7,884.93	-753.37	109.64	755.00	0.00	0.00	0.00
12,300.00	89.46	180.05	11,719.56	-7,885.86	-853.37	109.56	854.99	0.00	0.00	0.00
12,400.00	89.46	180.05	11,720.50	-7,886.80	-953.37	109.47	954.97	0.00	0.00	0.00
12,500.00	89.46	180.05	11,721.43	-7,887.73	-1,053.36	109.38	1,054.95	0.00	0.00	0.00
12,600.00	89.46	180.05	11,722.37	-7,888.67	-1,153.36	109.30	1,154.93	0.00	0.00	0.00
12,700.00	89.46	180.05	11,723.31	-7,889.61	-1,253.35	109.21	1,254.91	0.00	0.00	0.00
12,800.00	89.46	180.05	11,724.24	-7,890.54	-1,353.35	109.13	1,354.90	0.00	0.00	0.00
12,900.00	89.46	180.05	11,725.18	-7,891.48	-1,453.34	109.04	1,454.88	0.00	0.00	0.00
13,000.00	89.46	180.05	11,726.12	-7,892.42	-1,553.34	108.96	1,554.86	0.00	0.00	0.00
13,100.00	89.46	180.05	11,727.05	-7,893.35	-1,653.33	108.88	1,654.84	0.00	0.00	0.00
13,200.00	89.46	180.05	11,727.99	-7,894.29	-1,753.33	108.79	1,754.82	0.00	0.00	0.00
13,300.00	89.46	180.05	11,728.93	-7,895.23	-1,853.33	108.71	1,854.80	0.00	0.00	0.00
13,400.00	89.46	180.05	11,729.86	-7,896.16	-1,953.32	108.63	1,954.79	0.00	0.00	0.00
13,500.00	89.46	180.05	11,730.80	-7,897.10	-2,053.32	108.54	2,054.77	0.00	0.00	0.00
13,600.00	89.46	180.05	11,731.74	-7,898.04	-2,153.31	108.46	2,154.75	0.00	0.00	0.00
13,700.00	89.46	180.05	11,732.67	-7,898.97	-2,253.31	108.38	2,254.73	0.00	0.00	0.00
13,800.00	89.46	180.05	11,733.61	-7,899.91	-2,353.30	108.29	2,354.71	0.00	0.00	0.00
13,900.00	89.46	180.05	11,734.55	-7,900.85	-2,453.30	108.21	2,454.70	0.00	0.00	0.00
14,000.00	89.46	180.05	11,735.48	-7,901.78	-2,553.29	108.13	2,554.68	0.00	0.00	0.00
14,100.00	89.46	180.05	11,736.42	-7,902.72	-2,653.29	108.05	2,654.66	0.00	0.00	0.00
14,200.00	89.46	180.05	11,737.36	-7,903.66	-2,753.29	107.97	2,754.64	0.00	0.00	0.00
14,300.00	89.46	180.05	11,738.30	-7,904.60	-2,853.28	107.89	2,854.62	0.00	0.00	0.00
14,400.00	89.46	180.05	11,739.23	-7,905.53	-2,953.28	107.81	2,954.61	0.00	0.00	0.00
14,500.00	89.46	180.05	11,740.17	-7,906.47	-3,053.27	107.72	3,054.59	0.00	0.00	0.00
14,600.00	89.46	180.05	11,741.11	-7,907.41	-3,153.27	107.64	3,154.57	0.00	0.00	0.00
14,700.00	89.46	180.05	11,742.04	-7,908.34	-3,253.26	107.56	3,254.55	0.00	0.00	0.00
14,800.00	89.46	180.05	11,742.98	-7,909.28	-3,353.26	107.48	3,354.53	0.00	0.00	0.00
14,900.00	89.46	180.05	11,743.92	-7,910.22	-3,453.25	107.40	3,454.52	0.00	0.00	0.00
15,000.00	89.46	180.05	11,744.85	-7,911.15	-3,553.25	107.32	3,554.50	0.00	0.00	0.00
15,100.00	89.46	180.05	11,745.79	-7,912.09	-3,653.25	107.25	3,654.48	0.00	0.00	0.00
15,200.00	89.46	180.05	11,746.73	-7,913.03	-3,753.24	107.17	3,754.46	0.00	0.00	0.00
15,300.00	89.46	180.05	11,747.67	-7,913.97	-3,853.24	107.09	3,854.44	0.00	0.00	0.00
15,400.00	89.46	180.04	11,748.60	-7,914.90	-3,953.23	107.01	3,954.43	0.00	0.00	0.00
15,500.00	89.46	180.04	11,749.54	-7,915.84	-4,053.23	106.93	4,054.41	0.00	0.00	0.00
15,600.00	89.46	180.04	11,750.48	-7,916.78	-4,153.22	106.85	4,154.39	0.00	0.00	0.00
15,700.00	89.46	180.04	11,751.41	-7,917.71	-4,253.22	106.78	4,254.37	0.00	0.00	0.00
15,800.00	89.46	180.04	11,752.35	-7,918.65	-4,353.22	106.70	4,354.35	0.00	0.00	0.00
15,900.00	89.46	180.04	11,753.29	-7,919.59	-4,453.21	106.62	4,454.34	0.00	0.00	0.00
16,000.00	89.46	180.04	11,754.23	-7,920.53	-4,553.21	106.54	4,554.32	0.00	0.00	0.00
16,100.00	89.46	180.04	11,755.16	-7,921.46	-4,653.20	106.47	4,654.30	0.00	0.00	0.00
16,200.00	89.46	180.04	11,756.10	-7,922.40	-4,753.20	106.39	4,754.28	0.00	0.00	0.00
16,300.00	89.46	180.04	11,757.04	-7,923.34	-4,853.19	106.31	4,854.26	0.00	0.00	0.00
16,400.00	89.46	180.04	11,757.98	-7,924.28	-4,953.19	106.24	4,954.25	0.00	0.00	0.00

Planning Report



Database:	Database 1	Local Co-ordinate Reference:	Well BIG BUCKS FED COM 701H
Company:	ASCENT ENERGY	TVD Reference:	KB 25' @ 3833.70usft (Original Well Elev)
Project:	LEA COUNTY, NEW MEXICO (NAD 83)	MD Reference:	KB 25' @ 3833.70usft (Original Well Elev)
Site:	SEC. 1 T21S R32E N.M.PM.	North Reference:	True
Well:	BIG BUCKS FED COM 701H	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Planned Survey										
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
16,500.00	89.46	180.04	11,758.91	-7,925.21	-5,053.18	106.16	5,054.23	0.00	0.00	0.00
16,600.00	89.46	180.04	11,759.85	-7,926.15	-5,153.18	106.09	5,154.21	0.00	0.00	0.00
16,700.00	89.46	180.04	11,760.79	-7,927.09	-5,253.18	106.01	5,254.19	0.00	0.00	0.00
16,800.00	89.46	180.04	11,761.73	-7,928.03	-5,353.17	105.94	5,354.17	0.00	0.00	0.00
16,900.00	89.46	180.04	11,762.66	-7,928.96	-5,453.17	105.86	5,454.16	0.00	0.00	0.00
17,000.00	89.46	180.04	11,763.60	-7,929.90	-5,553.16	105.79	5,554.14	0.00	0.00	0.00
17,100.00	89.46	180.04	11,764.54	-7,930.84	-5,653.16	105.71	5,654.12	0.00	0.00	0.00
17,200.00	89.46	180.04	11,765.48	-7,931.78	-5,753.15	105.64	5,754.10	0.00	0.00	0.00
17,300.00	89.46	180.04	11,766.41	-7,932.71	-5,853.15	105.56	5,854.08	0.00	0.00	0.00
17,400.00	89.46	180.04	11,767.35	-7,933.65	-5,953.14	105.49	5,954.07	0.00	0.00	0.00
17,500.00	89.46	180.04	11,768.29	-7,934.59	-6,053.14	105.42	6,054.05	0.00	0.00	0.00
17,600.00	89.46	180.04	11,769.23	-7,935.53	-6,153.14	105.34	6,154.03	0.00	0.00	0.00
17,700.00	89.46	180.04	11,770.16	-7,936.46	-6,253.13	105.27	6,254.01	0.00	0.00	0.00
17,800.00	89.46	180.04	11,771.10	-7,937.40	-6,353.13	105.20	6,354.00	0.00	0.00	0.00
17,900.00	89.46	180.04	11,772.04	-7,938.34	-6,453.12	105.13	6,453.98	0.00	0.00	0.00
18,000.00	89.46	180.04	11,772.98	-7,939.28	-6,553.12	105.05	6,553.96	0.00	0.00	0.00
100ft SETBACK BOUNDARY X-OVER PNT (LTP)										
18,077.07	89.46	180.04	11,773.70	-7,940.00	-6,630.19	105.00	6,631.02	0.00	0.00	0.00
18,100.00	89.46	180.04	11,773.92	-7,940.22	-6,653.11	104.98	6,653.94	0.01	-0.01	0.01
BHL: 1270ft FNL & 330ft FEL of Sec 13										
18,127.07	89.46	180.05	11,774.17	-7,940.47	-6,680.18	104.96	6,681.00	0.01	-0.01	0.01

Formations						
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,608.70	1,608.70	Rustler		0.00		
1,798.70	1,798.70	Salado		0.00		
3,303.29	3,293.70	Base of Salt/Castille		0.00		
3,368.29	3,358.70	Yates		0.00		
3,782.29	3,772.70	Capitan Reef		0.00		
5,653.29	5,643.70	Delaware		0.00		
5,943.29	5,933.70	Chry Cnyn		0.00		
7,048.29	7,038.70	Brshy Cnyn		0.00		
8,863.29	8,853.70	Bone Spring Lime		0.00		
9,013.29	9,003.70	Avalon		0.00		
9,868.29	9,858.70	1st BS S		0.00		
10,123.29	10,113.70	2nd BS C		0.00		
10,428.29	10,418.70	2nd BSS		0.00		
10,948.29	10,938.70	3 BS C		0.00		
11,385.14	11,373.70	3 BS S		0.00		
11,750.75	11,653.70	WC A		0.00		

Planning Report



Database:	Database 1	Local Co-ordinate Reference:	Well BIG BUCKS FED COM 701H
Company:	ASCENT ENERGY	TVD Reference:	KB 25' @ 3833.70usft (Original Well Elev)
Project:	LEA COUNTY, NEW MEXICO (NAD 83)	MD Reference:	KB 25' @ 3833.70usft (Original Well Elev)
Site:	SEC. 1 T21S R32E N.M.PM.	North Reference:	True
Well:	BIG BUCKS FED COM 701H	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Plan Annotations				
MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
0.00	0.00	0.00	0.00	SHL: 125ft FSL & 440ft FEL of Sec 1
2,100.00	2,100.00	0.00	0.00	START NUDGE (2°/100ft BUR)
2,700.00	2,695.62	-35.14	51.81	EOB TO 12° INC
2,738.44	2,733.22	-39.63	58.42	END OF TANGENT
3,338.44	3,328.84	-74.77	110.23	EOD TO VERTICAL
11,248.85	11,239.26	-74.77	110.23	KOP (12°/100ft BUR)
11,638.00	11,586.73	-224.77	110.10	100ft SETBACK BOUNDARY X-OVER PNT
11,752.77	11,654.70	-316.90	110.02	FIRST TAKE POINT
11,994.38	11,716.70	-547.76	109.82	LP: 422.99ft FNL & 330ft FEL of Sec 12
18,077.07	11,773.70	-6,630.19	105.00	100ft SETBACK BOUNDARY X-OVER PNT (LTP)
18,127.07	11,774.17	-6,680.18	104.96	BHL: 1270ft FNL & 330ft FEL of Sec 13

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	ASCENT ENERGY LLC
LEASE NO.:	NMNM092187
WELL NAME & NO.:	BIG BUCKS FED COM 701H
SURFACE HOLE FOOTAGE:	125'/S & 440'/E
BOTTOM HOLE FOOTAGE:	1220'/N & 330'/E
LOCATION:	Section 1, T.21 S., R.32 E., NMP
COUNTY:	Lea County, New Mexico

COA

H2S	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Potash	<input type="radio"/> None	<input type="radio"/> Secretary	<input checked="" type="radio"/> R-111-P
Cave/Karst Potential	<input checked="" type="radio"/> Low	<input type="radio"/> Medium	<input type="radio"/> High
Cave/Karst Potential	<input type="radio"/> Critical		
Variance	<input type="radio"/> None	<input checked="" type="radio"/> Flex Hose	<input type="radio"/> Other
Wellhead	<input type="radio"/> Conventional	<input checked="" type="radio"/> Multibowl	<input type="radio"/> Both
Other	<input checked="" type="checkbox"/> 4 String Area	<input checked="" type="checkbox"/> Capitan Reef	<input checked="" type="checkbox"/> WIPP
Other	<input type="checkbox"/> Fluid Filled	<input type="checkbox"/> Cement Squeeze	<input type="checkbox"/> Pilot Hole
Special Requirements	<input type="checkbox"/> Water Disposal	<input checked="" type="checkbox"/> COM	<input type="checkbox"/> Unit

A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Bone Spring** formation. As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

B. CASING

Casing Design:

1. The 13-3/8 inch surface casing shall be set at approximately **1665** 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.
- 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 **9-5/8** inch intermediate casing shall be set at approximately **3800** feet. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

Option 1 (Single Stage):

- 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.

Option 2:

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

- a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
 - b. Second stage above DV tool:
 - Cement to surface. If cement does not circulate, contact the appropriate BLM office.
Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.
- ❖ In **R111 Potash Areas** if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.
 - ❖ In **WIPP Areas** cement must come to surface on the first three casing strings.
 - ❖ In **Capitan Reef Areas** 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:

- 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 casing is:

Option 1 (Single Stage):

- 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.

Option 2:

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

- c. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
 - d. Second stage above DV tool:
 - 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.
4. The minimum required fill of cement behind the **5-1/2** inch production casing is:

Option 1 (Single Stage):

- Cement should tie-back at least **50 feet** on top of Capitan Reef top. 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.

Option 2:

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

- a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
- b. Second stage above DV tool:
 - Cement should tie-back at least **50 feet** on top of Capitan Reef top. 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.

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 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.

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, 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.

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 2nd 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.

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 integrity 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 integrity 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.

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

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.

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.

NMK10152019



H₂S Drilling Operations Plan

- a. All personnel will be trained in H₂S 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 H₂S page 5 for more details.
- c. H₂S Safety Equipment/Systems:
 - i. Well Control Equipment
 - Flare line will be $\geq 150'$ from the wellhead and ignited by a flare gun.
 - Beware of SO₂ 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 H₂S and SO₂ 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. H₂S Detection & Monitoring Equipment
 - Every person on site will wear a personal H₂S and SO₂ 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 H₂S condition sign will be set at each pad entrance.
 - Color-coded condition flag will be installed to indicate current H₂S 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 ≥ 10 will be maintained to control corrosion, H₂S gas returns to the surface, and minimize sulfide stress cracking and embrittlement.
 - Drilling mud containing H₂S 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 H₂S where formation pressures are unknown.

- vi. Metallurgy
 - All equipment that has the potential to be exposed to H₂S will be suitable for H₂S 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 H₂S.

Company Personnel to be Notified

Dean Gimbel, Vice President Completions	Office: (720) 710-8995 Mobile: (303) 945-1323
Gema Volek, Drilling Manager	Mobile: (785) 312-2092
Matt Ward, Chief Operations Officer	Mobile: (303) 506-6647
Ascent Emergency Contact Number	(303) 281-9951

Local & County Agencies

Monument Fire Department	911 or (575) 393-4339
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

NM State Police (Hobbs)	(575) 392-5588
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

BLM Carlsbad Field Office	(575) 234-5972
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

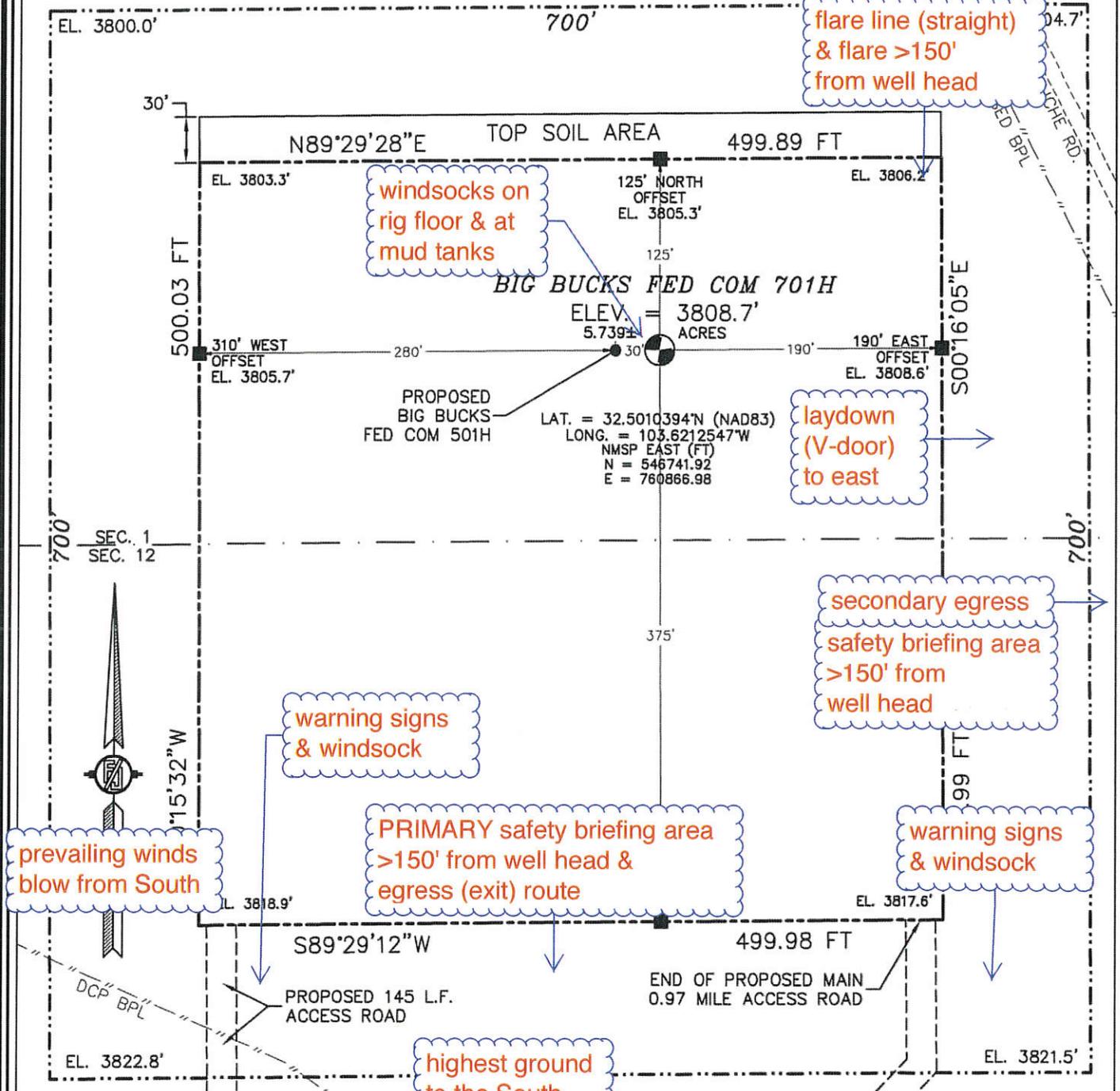
Residents within 2 miles

No residents are within 2 miles.

Air Evacuation

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

SECTION 1, TOWNSHIP 21 SOUTH, RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO
SITE MAP



prevailing winds blow from South

warning signs & windsock

PRIMARY safety briefing area >150' from well head & egress (exit) route

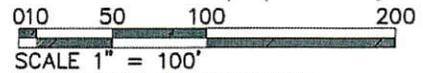
highest ground to the South

laydown (V-door) to east

secondary egress safety briefing area >150' from well head

warning signs & windsock

flare line (straight) & flare >150' from well head



DIRECTIONS TO LOCATION
FROM U.S. HWY 62-180 AND STATE ROAD 176 GO EAST ON STATE ROAD 176 6.4 MILES, TURN RIGHT ON CALICHE ROAD AND GO SOUTH 0.6 MILE, BEND RIGHT AND GO SOUTHWEST 1.05 MILES TO A ROAD SURVEY, AND FOLLOW FLAGS SOUTHEAST 0.2 MILE, THEN EAST 0.9 MILE TO A "T" INTERSECTION, THEN NORTH 145' TO THE SOUTHWEST PAD CORNER FOR THIS LOCATION.

ASCENT ENERGY, LLC
BIG BUCKS FED COM 701H
LOCATED 125 FT. FROM THE SOUTH LINE
AND 440 FT. FROM THE EAST LINE OF
SECTION 1, TOWNSHIP 21 SOUTH,
RANGE 32 EAST, N.M.P.M.
LEA COUNTY, STATE OF NEW MEXICO

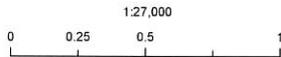
JUNE 7, 2019 SURVEY NO. 6027

Ascent Energy, LLC

Big Bucks Fed Com Pad
H₂S Contingency Plan:
2 Mile Radius Map

Section 1, Township 21S, Range 32E
Lea County, New Mexico

 Surface Hole Location



1:27,000

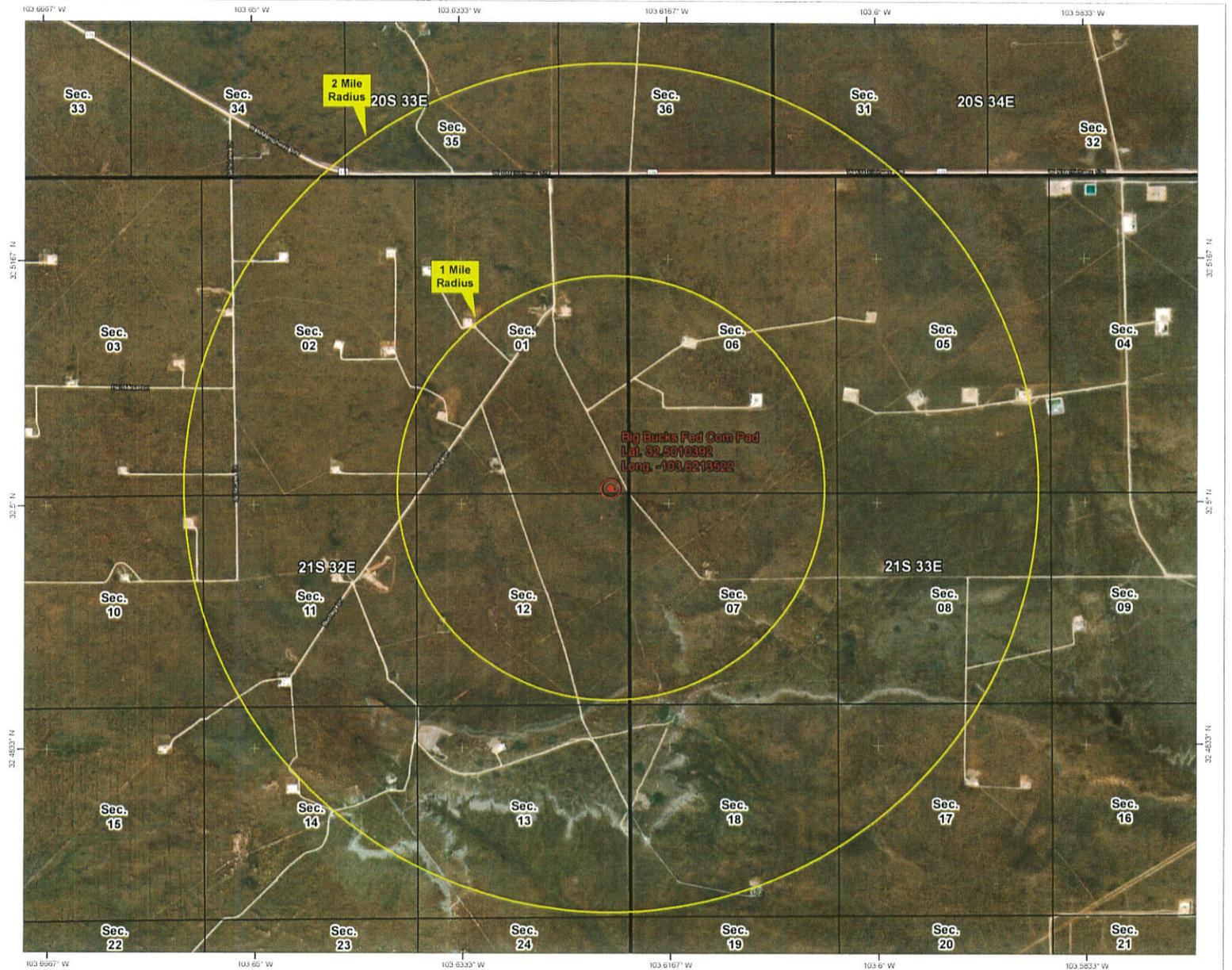
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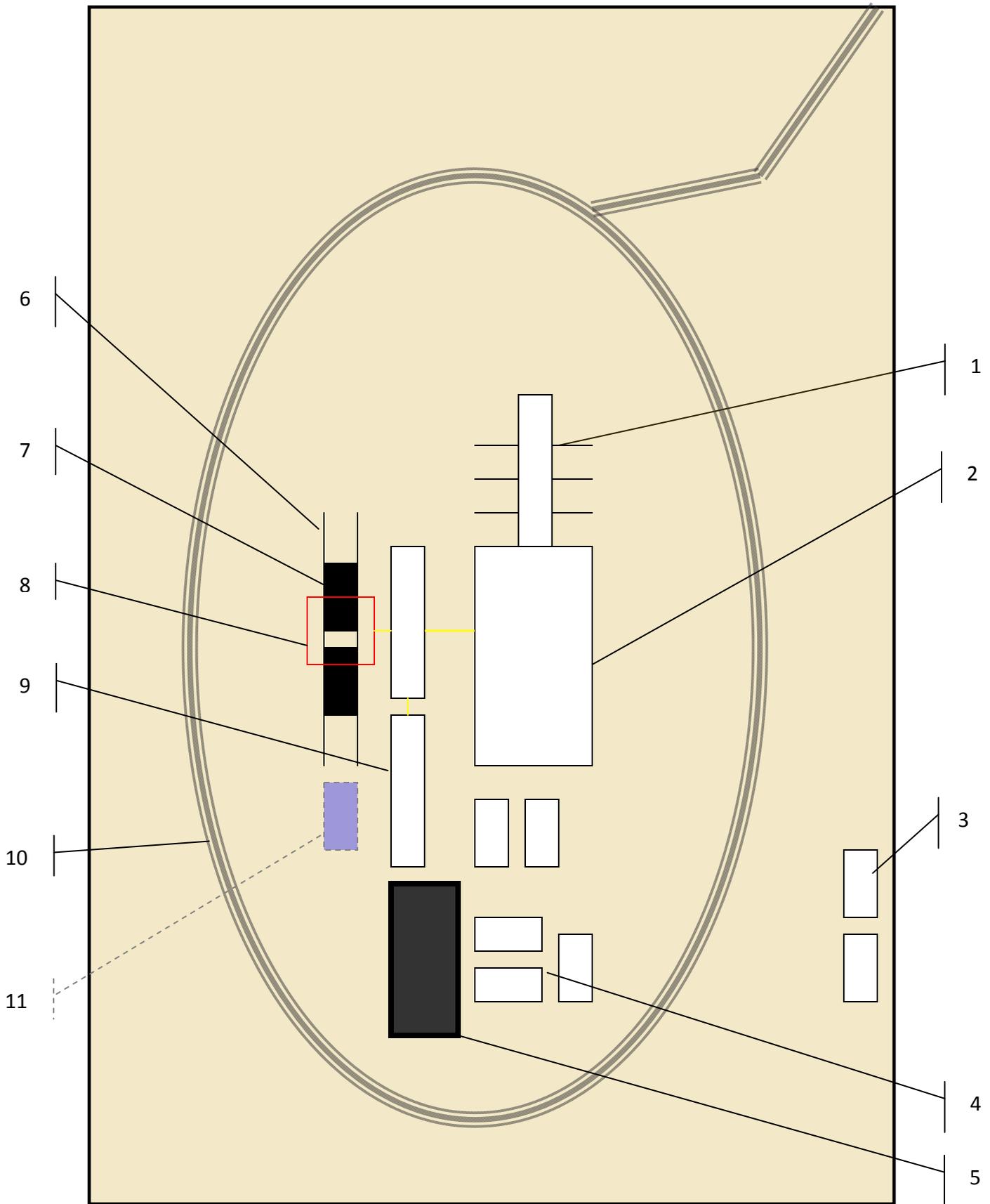


NAD 1983 New Mexico State Plane East
FIPS 3001 Feet



Prepared by Permits West, Inc., June 17, 2019
for Ascent Energy LLC





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

