

Form 3160-3
(June 2015)FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: ☒ DRILL ☐ REENTER 1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other 1c. Type of Completion: ☐ Hydraulic Fracturing ☒ Single Zone ☐ Multiple Zone		5. Lease Serial No. NMNM014155 6. If Indian, Allottee or Tribe Name 7. If Unit or CA Agreement, Name and No. 8. Lease Name and Well No. MARGARITA FEDERAL COM 13 16H [328246]
2. Name of Operator ADVANCE ENERGY PARTNERS HAT MESA LLC [372417]		9. API Well No. 30-025-49188
3a. Address 11490 Westheimer Rd, Suite 950, Houston, TX 77707	3b. Phone No. (include area code) (346) 444-9739	10. Field and Pool, or Exploratory [97895] WC-025 G-08 S213304D; BONE SPRING
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface NENE / 460 FNL / 807 FEL / LAT 32.484914 / LONG -103.622483 At proposed prod. zone SENE / 2540 FNL / 990 FEL / LAT 32.450175 / LONG -103.623119		11. Sec., T. R. M. or Blk. and Survey or Area SEC 13/T21S/R32E/NMP
14. Distance in miles and direction from nearest town or post office* 23 miles		12. County or Parish LEA
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 460 feet		16. No of acres in lease 17. Spacing Unit dedicated to this well 360.0
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 33 feet		20. BLM/BIA Bond No. in file FED: NMB001444
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3907 feet	22. Approximate date work will start* 01/02/2021	23. Estimated duration 90 days
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.
2. A Drilling Plan.
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). | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be requested by the BLM. |
|---|---|

25. Signature (Electronic Submission)	Name (Printed/Typed) BRIAN WOOD / Ph: (346) 444-9739	Date 10/26/2020
Title President		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) Cody Layton / Ph: (575) 234-5959	Date 06/18/2021
Title Assistant Field Manager Lands & Minerals		
Office Carlsbad Field 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.

NGMP Rec 06/30/2021**SL**

(Continued on page 2)

**Approval Date: 06/18/2021**

KZ
07/15/2021

*(Instructions on page 2)

DISTRICT I
1825 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) 748-1263 Fax: (575) 748-9720

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone (505) 334-6176 Fax: (505) 334-6170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone (505) 476-3480 Fax: (505) 476-3482

State of New Mexico
Energy, Minerals and Natural Resources Department

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

Form C-102

Revised August 4, 2011

Submit one copy to appropriate
District Office

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-025-49188	Pool Code 97895	Pool Name WC-025 G-08 S213304D; BONE SPRING
Property Code 328246	Property Name MARGARITA FEDERAL COM 13	Well Number 16H
OGRID No. 372417	Operator Name Advance Energy Partners Hat Mesa, LLC	Elevation 3907'

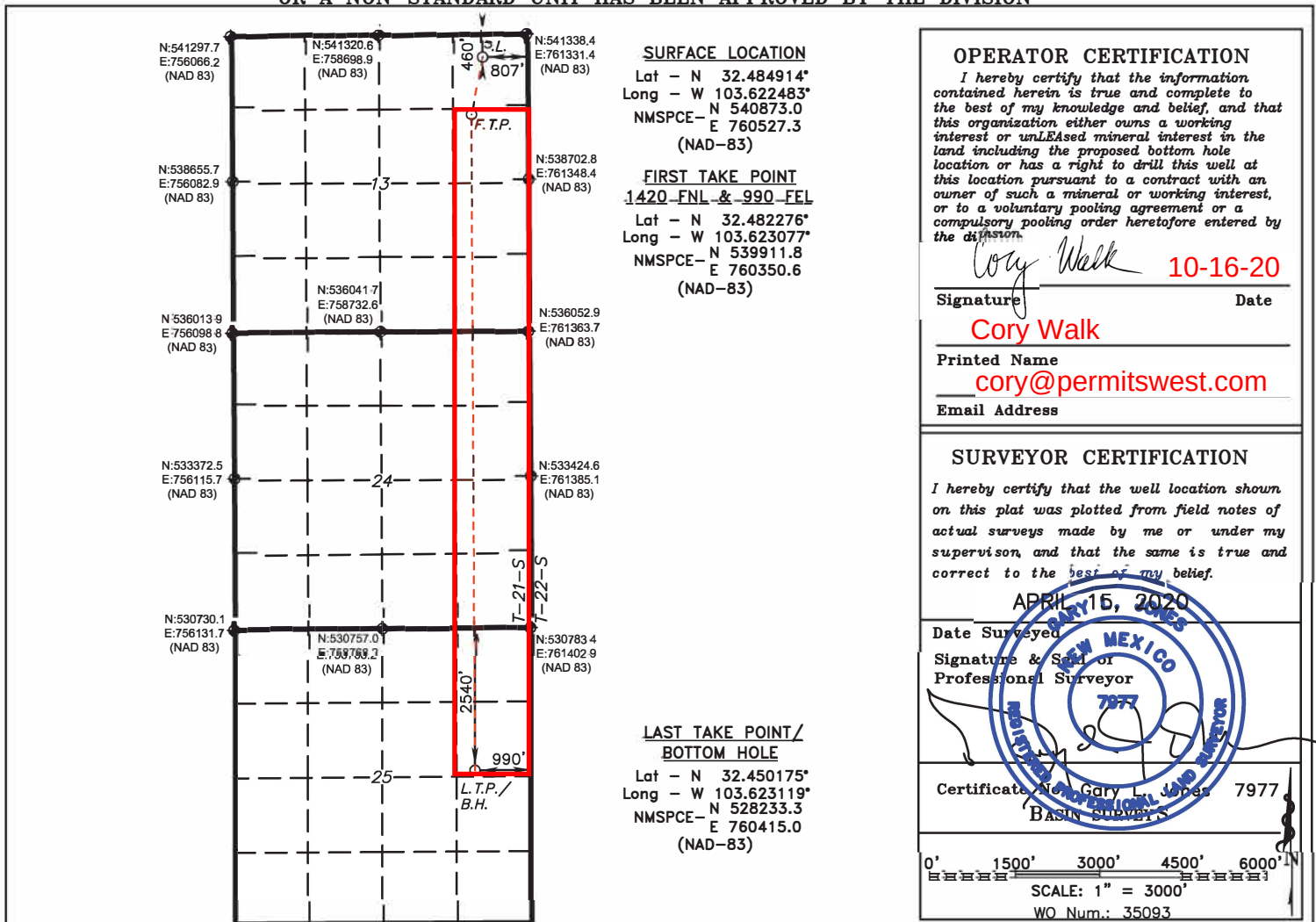
Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	SOUTH/South line	Feet from the	East/West line	County
A	13	21 S	32 E		460	NORTH	807	EAST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	SOUTH/South line	Feet from the	East/West line	County
H	25	21 S	32 E		2540	NORTH	990	EAST	LEA
Dedicated Acres 360	Joint or Infill	Consolidation Code	Order No.						

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



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

Submit Electronically
Via E-permitting

NATURAL GAS MANAGEMENT PLAN

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

Section 1 – Plan Description Effective May 25, 2021

I. Operator: Advance Energy Partners Hat Mesa, LLC **OGRID:** 372417 **Date:** 06/25/2021

II. Type: ☒ Original ☐ Amendment due to ☐ 19.15.27.9.D(6)(a) NMAC ☐ 19.15.27.9.D(6)(b) NMAC ☐ Other.

If Other, please describe: _____

III. Well(s): Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
Margarita Federal Com 13 12H		A-13-21S-32E	460 FNL & 708 FEL	1275	1697	3054
Margarita Federal Com 13 16H	30-025-49188	A-13-21S-32E	460 FNL & 807 FEL	1275	1697	3054
Margarita Federal Com 13 20H		A-13-21S-32E	460 FNL & 675 FEL	1275	1697	3054
Margarita Federal Com 13 24H		A-13-21S-32E	460 FNL & 741 FEL	1275	1697	3054

IV. Central Delivery Point Name: Margarita Federal Com 13 Pad A [See 19.15.27.9(D)(1) NMAC]

V. Anticipated Schedule: Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
Margarita Federal Com 13 12H		10/7/2021	10/12/2021	11/15/2021	1/30/2022	3/2/2022
Margarita Federal Com 13 16H	30-025-49188	10/11/2021	10/15/2021	11/15/2021	1/30/2022	3/2/2022
Margarita Federal Com 13 20H		10/15/2021	10/20/2021	11/15/2021	1/30/2022	3/2/2022
Margarita Federal Com 13 24H		10/19/2021	10/25/2021	11/15/2021	1/30/2022	3/2/2022

VI. Separation Equipment: ☒ Attach a complete description of how Operator will size separation equipment to optimize gas capture.

VII. Operational Practices: ☒ Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

VIII. Best Management Practices: ☒ Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

Section 2 – Enhanced Plan **EFFECTIVE APRIL 1, 2022**

Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.

☐ Operator certifies that it is not required to complete this section because Operator is in compliance with its statewide natural gas capture requirement for the applicable reporting area.

IX. Anticipated Natural Gas Production:

Well	API	Anticipated Average Natural Gas Rate MCF/D	Anticipated Volume of Natural Gas for the First Year MCF

X. Natural Gas Gathering System (NGGS):

Operator	System	ULSTR of Tie-in	Anticipated Gathering Start Date	Available Maximum Daily Capacity of System Segment Tie-in

XI. Map. ☐ Attach an accurate and legible map depicting the location of the well(s), the anticipated pipeline route(s) connecting the production operations to the existing or planned interconnect of the natural gas gathering system(s), and the maximum daily capacity of the segment or portion of the natural gas gathering system(s) to which the well(s) will be connected.

XII. Line Capacity. The natural gas gathering system ☐ will ☐ will not have capacity to gather 100% of the anticipated natural gas production volume from the well prior to the date of first production.

XIII. Line Pressure. Operator ☐ does ☐ does not anticipate that its existing well(s) connected to the same segment, or portion, of the natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new well(s).

☐ Attach Operator's plan to manage production in response to the increased line pressure.

XIV. Confidentiality: ☐ Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for the information provided in Section 2 as provided in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and attaches a full description of the specific information for which confidentiality is asserted and the basis for such assertion.

Section 3 - Certifications

Effective May 25, 2021

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal:

☒ Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system; or

☐ Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system.

If Operator checks this box, Operator will select one of the following:

Well Shut-In. ☐ Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or

Venting and Flaring Plan. ☐ Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including:

- (a) power generation on lease;
- (b) power generation for grid;
- (c) compression on lease;
- (d) liquids removal on lease;
- (e) reinjection for underground storage;
- (f) reinjection for temporary storage;
- (g) reinjection for enhanced oil recovery;
- (h) fuel cell production; and
- (i) other alternative beneficial uses approved by the division.

Section 4 - Notices

1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

(a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or

(b) Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.

2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

I certify that, after reasonable inquiry, the statements in and attached to this Natural Gas Management Plan are true and correct to the best of my knowledge and acknowledge that a false statement may be subject to civil and criminal penalties under the Oil and Gas Act.

Signature:

Cory Walk

Printed Name: Cory Walk

Title: Consultant

E-mail Address: cory@permitswest.com

Date: 6/30/2021

Phone: (505) 466-8120

OIL CONSERVATION DIVISION**(Only applicable when submitted as a standalone form)**

Approved By:

Title:

Approval Date:

Conditions of Approval:

Natural Gas Management Plan - Attachment

- VI. Separation equipment will be sized by construction engineering staff based on stated manufacturer daily throughput capacities and anticipated daily production rates to ensure adequate capacity. Closed vent system piping, compression needs, and VRUs will be sized utilizing ProMax modelling software to ensure adequate capacity for anticipated production volumes and conditions.
- VII. Advance Energy Partners Hat Mesa, LLC (AEP) will take the following actions to comply with the regulations listed in 19.15.27.8:
- A. AEP will maximize the recovery of natural gas by minimizing the waste, as defined by 19.15.2 NMAC, of natural gas through venting and flaring. AEP will ensure that well(s) will be connected to a natural gas gathering system with sufficient capacity to transport natural gas. If there is no adequate takeaway for the gas, well(s) will be shut in until the natural gas gathering system is available.
 - B. All drilling operations will be equipped with a rig flare located at least 100' from the nearest surface hole. Rig flare will be utilized to combust any natural gas that is brought to surface during normal drilling operations. In the case of emergency venting or flaring the volumes will be estimated and reported appropriately.
 - C. During completion operations any natural gas brought to surface will be flared. Immediately following the finish of completion operations, all well flowback will be directed to permanent separation equipment. Produced natural gas from separation equipment will be sent to sales. It is not anticipated that gas will not meet pipeline standards. However, if natural gas does not meet gathering pipeline quality specifications, AEP will flare the natural gas for 60 days or until the natural gas meets the pipeline quality specifications, whichever is sooner. AEP will ensure that the flare is sized properly and is equipped with automatic igniter or continuous pilot. The gas sample will be analyzed twice per week and the gas will be routed into a gathering system as soon as pipeline specifications are met.
 - D. Natural gas will not be flared with the exceptions and provisions listed in the 19.15.27.8 D.(1) through (4). If there is no adequate takeaway for the separator gas, well(s) will be shut in until the natural gas gathering system is available with exception of emergency or malfunction situations. Venting and/or flaring volumes will be estimated and reported appropriately.
 - E. AEP will comply with the performance standards requirements and provisions listed in 19.15.27.8 E.(1) through (8). All equipment will be designed and sized to handle maximum anticipated pressures and throughputs to minimize the waste. Production storage tanks constructed after May 25, 2021, will be equipped with automatic gauging system. Flares constructed after May 25, 2021, will be equipped with automatic igniter or continuous pilot. Flares will be located at least 100' from the well and storage tanks unless otherwise approved by the division. AEP will conduct AVO inspections as described in 19.15.27.8 E (5) (a) with frequencies specified in 19.15.27.8 E (5) (b) and (c). All emergencies will be resolved as quickly and safely as feasible to minimize waste.
 - F. The volume of natural gas that is vented or flared as the result of malfunction or emergency during drilling and completions operations will be estimated. The volume of natural gas that is vented, flared, or beneficially used during production operations, will be measured, or estimated. AEP will install equipment to measure

the volume of natural gas flared from existing process piping, or a flowline piped from equipment such as high-pressure separators, heater treaters, or vapor recovery units associated with a well or facility associated with a well authorized by an APD issued after May 25, 2021, that has an average daily production greater than 60 Mcf/day. If metering is not practicable due to circumstances such as low flow rate or low pressure venting and flaring, AEP will estimate the volume of vented or flared natural gas. Measuring equipment will conform to industry standards and will not be designed or equipped with a manifold that allows the diversion of natural gas around the metering element except for the sole purpose of inspecting and servicing the measurement equipment.

- VIII. For maintenance activities involving production equipment and compression, venting will be limited to the depressurization of the subject equipment to ensure safe working conditions. For maintenance of production and compression equipment the associated producing wells will be shut in to eliminate venting. For maintenance of VRUs all gas normally routed to the VRU will be routed to flare to eliminate venting.



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

Drilling Plan Data Report

06/22/2021

APD ID: 10400064254

Submission Date: 10/26/2020

Highlighted data
reflects the most
recent changes

Operator Name: ADVANCE ENERGY PARTNERS HAT MESA LLC

Well Name: MARGARITA FEDERAL COM 13

Well Number: 16H

[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
1098732	QUATERNARY	3907	0	0	OTHER : Caliche	USEABLE WATER	N
1098733	RUSTLER ANHYDRITE	2166	1741	1741	ANHYDRITE	NONE	N
1098734	TANSILL	539	3368	3368	DOLOMITE	NONE	N
1098735	YATES	496	3411	3411	SANDSTONE	NONE	N
1098736	SEVEN RIVERS	292	3615	3615	GYPSUM	NONE	N
1098737	CAPITAN REEF	151	3756	3756	OTHER : None	USEABLE WATER	N
1098738	BELL CANYON	-1794	5701	5701	LIMESTONE	NATURAL GAS, OIL	N
1098739	CHERRY CANYON	-1794	5701	5701	SHALE	NATURAL GAS, OIL	N
1098740	LOWER BRUSHY CANYON 8A	-4732	8639	8651	SANDSTONE	NATURAL GAS, OIL	N
1098741	AVALON SAND	-5156	9063	9077	SHALE	NATURAL GAS, OIL	N
1098742	BONE SPRING 1ST	-6105	10012	10029	SANDSTONE	NATURAL GAS, OIL	N
1098743	BONE SPRING 2ND	-6652	10559	10578	SANDSTONE	NATURAL GAS, OIL	N
1098744	BONE SPRING 3RD	-7663	11570	11653	SANDSTONE	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Operator Name: ADVANCE ENERGY PARTNERS HAT MESA LLC**Well Name:** MARGARITA FEDERAL COM 13**Well Number:** 16H**Pressure Rating (PSI):** 5M**Rating Depth:** 10000**Equipment:** See attached Helmerich & Payne BOP Testing BLM manual for equipment and procedures for a 5000-psi system.**Requesting Variance?** YES

Variance request: Variance is requested to use a co-flex hose between the BOP and choke instead of a steel line. See attached 3" I. D. x 10K test certificate. If this hose is unavailable, then a hose of equal or higher-pressure rating will be used. Variance is requested to use a speed head (aka, multi-bowl wellhead) after setting intermediate 1. Advance has drilled >50 wells in immediate area to depths >5,000' and never encountered any type of flows. This will allow Advance to land the intermediate 1 and use the current proposed wellhead design. Advance will then NU BOPE on the 13.375" and continue using the BOPE to the completion of the well. Variance is requested to use a sacrificial wellhead instead of a diverter. Advance will run surface casing with a sacrificial head so BOPE can be nipped up and tested as required by Onshore Order 2 before drilling out the surface casing. Once the intermediate 1 hole is drilled, cased, and cemented; then the sacrificial wellhead will be cut off and the 13.625" 5K MN-DS WH will be installed. BOPE will then be nipped up and tested as required by Onshore Order 2 before drilling out the intermediate 1 casing.

Testing Procedure: See attached Helmerich & Payne BOP Testing BLM manual for equipment and procedures for a 5000-psi system.**Choke Diagram Attachment:**

Choke_Diagram_20201024105538.pdf

BOP Diagram Attachment:

BOP_Diagram_20201024105552.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	24	20.0	NEW	API	N	0	1766	0	1766	3907	2141	1766	J-55	94	BUTT	1.125	1.125	DRY	1.6	DRY	1.6
2	INTERMEDIATE	17.5	13.375	NEW	API	N	0	3715	0	3715	3907	192	3715	J-55	54.5	BUTT	1.125	1.125	DRY	1.6	DRY	1.6
3	INTERMEDIATE	12.25	9.625	NEW	API	N	0	4000	0	4000	3907	-93	4000	J-55	40	LT&C	1.125	1.125	DRY	1.6	DRY	1.6
4	INTERMEDIATE	12.25	9.625	NEW	API	N	4000	5802	4000	5801	-93	-1894	1802	HCL-80	40	LT&C	1.125	1.125	DRY	1.6	DRY	1.6
5	PRODUCTION	8.75	5.5	NEW	API	N	0	12047	0	11700	3907	-7793	12047	HCP-110	20	OTHER - CDC-HTQ	1.125	1.125	DRY	1.6	DRY	1.6
6	PRODUCTION	8.5	5.5	NEW	API	N	12047	23662	11700	11700	-7793	-7793	11615	HCP-110	20	OTHER - CDC-HTQ	1.125	1.125	DRY	1.6	DRY	1.6

Operator Name: ADVANCE ENERGY PARTNERS HAT MESA LLC**Well Name:** MARGARITA FEDERAL COM 13**Well Number:** 16H**Casing Attachments**

Casing ID: 1 **String Type:** SURFACE**Inspection Document:****Spec Document:****Tapered String Spec:****Casing Design Assumptions and Worksheet(s):**Casing_Design_Assumptions_20201024105625.pdf

Casing ID: 2 **String Type:** INTERMEDIATE**Inspection Document:****Spec Document:****Tapered String Spec:****Casing Design Assumptions and Worksheet(s):**Casing_Design_Assumptions_20201024105701.pdf

Casing ID: 3 **String Type:** INTERMEDIATE**Inspection Document:****Spec Document:****Tapered String Spec:****Casing Design Assumptions and Worksheet(s):**Casing_Design_Assumptions_20201024105735.pdf

Operator Name: ADVANCE ENERGY PARTNERS HAT MESA LLC**Well Name:** MARGARITA FEDERAL COM 13**Well Number:** 16H**Casing Attachments**

Casing ID: 4 **String Type:** INTERMEDIATE**Inspection Document:****Spec Document:****Tapered String Spec:****Casing Design Assumptions and Worksheet(s):**Casing_Design_Assumptions_20201024105756.pdf

Casing ID: 5 **String Type:** PRODUCTION**Inspection Document:****Spec Document:****Tapered String Spec:****Casing Design Assumptions and Worksheet(s):**

Casing_Design_Assumptions_20201024105821.pdf

5.5in_CDC_HTQ_Casing_Spec_20201024105827.pdf

Casing ID: 6 **String Type:** PRODUCTION**Inspection Document:****Spec Document:****Tapered String Spec:****Casing Design Assumptions and Worksheet(s):**

Casing_Design_Assumptions_20201024105859.pdf

5.5in_CDC_HTQ_Casing_Spec_20201024105904.pdf

Operator Name: ADVANCE ENERGY PARTNERS HAT MESA LLC**Well Name:** MARGARITA FEDERAL COM 13**Well Number:** 16H**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	1412	1055	1.99	12.8	2099	50	Class C	2% Gypsum + 2% SMS + 0.25PPS Pol-EFlake + 0.005GPS NoFoam V1A
SURFACE	Tail		1412	1766	365	1.34	14.8	489	20	Class C	1% CaCl2 + 0.005GPS NoFoam V1A
INTERMEDIATE	Lead		0	2972	1670	1.83	12.8	3056	50	DI Poz + C	2% Gel + 5% SALT + 0.25PPS Pol-EFlake + 0.005GPS NoFoam V1A
INTERMEDIATE	Tail		2972	3715	495	1.33	14.8	658	20	Class C	0.005GPS NoFoam V1A
INTERMEDIATE	Lead		0	4641	975	1.83	12.8	1784	50	Di Poz + C	2% Gel + 5% SALT + 0.25PPS Pol-EFlake + 0.005GPS NoFoam V1A
INTERMEDIATE	Tail		4641	5802	345	1.33	14.8	459	20	Class C	0.15% C-20 + 0.005GPS NoFoam
PRODUCTION	Lead		5752	1114 7	1045	1.76	12.8	1839	35	DI Poz + H	3% Gel + 5% SALT + 0.25% SMS + 0.5% C-20 + 0.005GPS NoFoam V1A
PRODUCTION	Tail		1114 7	2366 2	2605	1.33	14.8	3465	20	Class H	0.1% SuspendaCem 6302 + 0.3% C-20 + 0.4% C-47B + 0.005GPS NoFoam

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.

Operator Name: ADVANCE ENERGY PARTNERS HAT MESA LLC**Well Name:** MARGARITA FEDERAL COM 13**Well Number:** 16H**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	1766	OTHER : Fresh Water Spud Mud	8.4	10							
1766	3715	OTHER : Brine Water	10	10.5							
3715	5802	OTHER : Fresh Water	8.4	8.6						1	
5802	1114 7	OTHER : Cut Brine	9	9.2							
1114 7	2366 2	OIL-BASED MUD	9	9.5							

Section 6 - Test, Logging, Coring**List of production tests including testing procedures, equipment and safety measures:**

None

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

OTHER,

Other log type(s):

None

Coring operation description for the well:

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

Section 7 - Pressure**Anticipated Bottom Hole Pressure:** 5780**Anticipated Surface Pressure:** 3206**Anticipated Bottom Hole Temperature(F):** 135**Anticipated abnormal pressures, temperatures, or potential geologic hazards?** NO**Describe:****Contingency Plans geohazards description:****Contingency Plans geohazards attachment:**

Operator Name: ADVANCE ENERGY PARTNERS HAT MESA LLC

Well Name: MARGARITA FEDERAL COM 13

Well Number: 16H

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

Margarita_PadA_H2S_Plan_20201024110621.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Margarita_16H_Horizontal_Plan_20201024110629.pdf

Other proposed operations facets description:

Bow spring centralizers will be installed on the surface (13.5 centralizers), intermediate 1 (25.1), and intermediate 2 (15) casing strings.

Approximately 35 single bow centralizers will be installed on the production casing from 5,702' to 10,947' (TVD). Approximately 31 double bow centralizers will be installed from 10,947' to 12,247'. Approximately 138 solid body centralizers will be installed from 12,247' to TD.

Other proposed operations facets attachment:

Margarita_16H_Drill_Plan_20201024110634.pdf

CoFlex_Certs_20201024110644.pdf

Margarita_16H_Anticollision_Report_20201024110650.pdf

Sacrificial_Wellhead_20201024110659.pdf

Speedhead_Specs_20201024110700.pdf

Other Variance attachment:

Casing_Cementing_Variance_Request_20201024110732.pdf

**WELL DETAILS: Margarita Federal Com 16H**

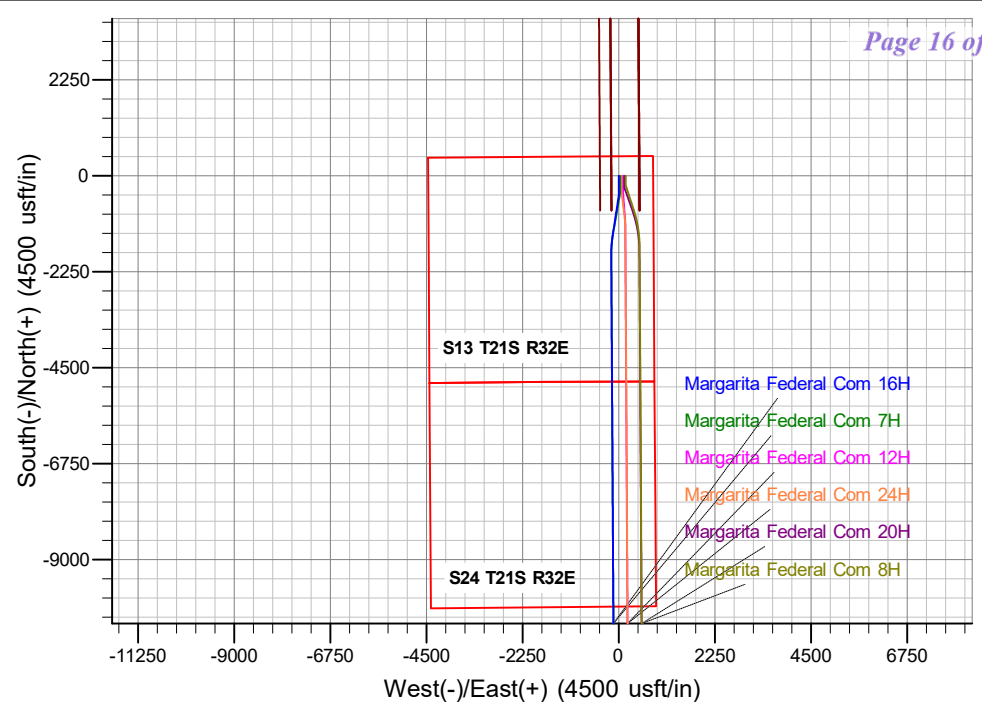
Ground Elev: 3907.0 KB: 3942.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	540872.82	760527.41	32° 29' 5.690 N	103° 37' 20.939 W

PROJECT DETAILS: Hat Mesa

Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: New Mexico Eastern Zone

System Datum: Mean Sea Level

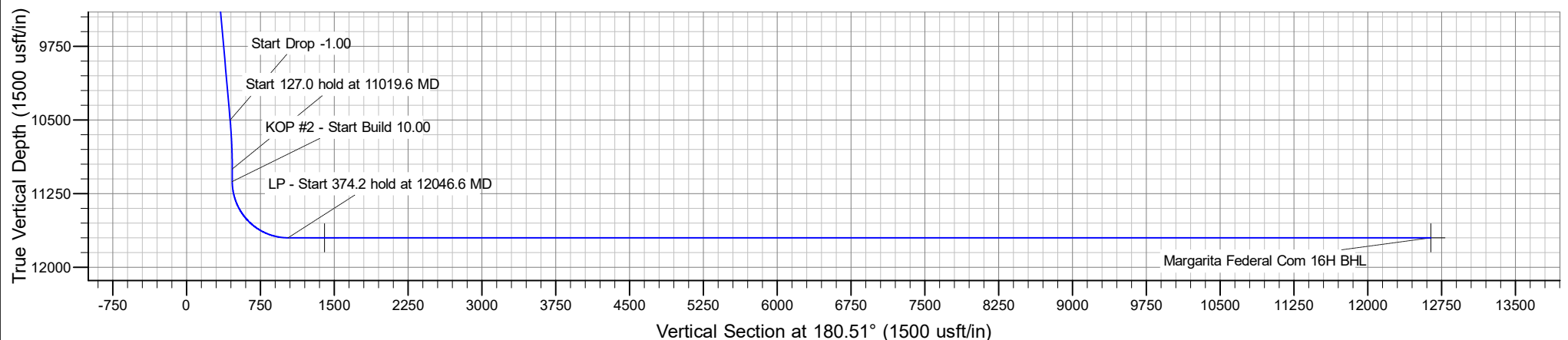
**SECTION DETAILS**

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	5200.0	0.00	0.00	5200.0	0.0	0.0	0.00	0.00	0.0	KOP - Start Build 1.00
3	5699.8	5.00	180.00	5699.2	-21.8	0.0	1.00	180.00	21.8	Start 4820.0 hold at 5699.8 MD
4	10519.8	5.00	180.00	10500.8	-441.7	0.0	0.00	0.00	441.7	Start Drop -1.00
5	11019.6	0.00	0.00	11000.0	-463.5	0.0	1.00	180.00	463.5	Start 127.0 hold at 11019.6 MD
6	11146.6	0.00	0.00	11127.0	-463.5	0.0	0.00	0.00	463.5	KOP #2 - Start Build 10.00
7	12046.6	90.00	188.62	11700.0	-1030.0	-85.9	10.00	188.62	1030.7	LP - Start 374.2 hold at 12046.6 MD
8	12420.9	90.00	188.62	11700.0	-1400.0	-142.0	0.00	0.00	1401.2	Start DLS 2.00 TFO -90.00
9	12868.5	90.00	179.67	11700.0	-1846.0	-174.3	2.00	-90.00	1847.5	Start 10793.8 hold at 12868.5 MD
10	23662.3	90.00	179.67	11700.0	-12639.6	-112.0	0.00	0.00	12640.1	TD at 23662.3



Azimuths to Grid North
 True North: -0.38°
 Magnetic North: 6.31°

Magnetic Field
 Strength: 47790.4nT
 Dip Angle: 60.26°
 Date: 4/21/2020
 Model: IGRF2015





Advance Energy Partners

Hat Mesa

Margarita Federal Com - Pad A

Margarita Federal Com 16H

Margarita Federal Com 16H

Plan: Margarita Federal Com 16H - Prelim 1

Standard Planning Report

23 April, 2020



Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Margarita Federal Com 16H
Company:	Advance Energy Partners	TVD Reference:	WELL @ 3932.0usft (Original Well Elev)
Project:	Hat Mesa	MD Reference:	WELL @ 3932.0usft (Original Well Elev)
Site:	Margarita Federal Com - Pad A	North Reference:	Grid
Well:	Margarita Federal Com 16H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Margarita Federal Com 16H		
Design:	Margarita Federal Com 16H - Prelim 1		

Project	Hat Mesa, Lea County, NM		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site		Margarita Federal Com - Pad A			
Site Position:		Northing:	540,873.26 usft	Latitude:	32° 29' 5.690 N
From:	Lat/Long	Easting:	760,593.40 usft	Longitude:	103° 37' 20.168 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "		

Well	Margarita Federal Com 16H					
Well Position	+N/-S	0.0 usft	Northing:	540,872.82 usft	Latitude:	32° 29' 5.690 N
	+E/-W	0.0 usft	Easting:	760,527.41 usft	Longitude:	103° 37' 20.939 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,907.0 usft
Grid Convergence:		0.38 °				

Wellbore	Margarita Federal Com 16H				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	4/21/2020	6.69	60.26	47,790.41590528

Design	Margarita Federal Com 16H - Prelim 1				
Audit Notes:					
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	180.51	

Plan Survey Tool Program	Date	4/23/2020			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.0	23,661.9	Margarita Federal Com 16H - Pre	MWD+HRGM	
			OWSG MWD + HRGM		



Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Margarita Federal Com 16H
Company:	Advance Energy Partners	TVD Reference:	WELL @ 3932.0usft (Original Well Elev)
Project:	Hat Mesa	MD Reference:	WELL @ 3932.0usft (Original Well Elev)
Site:	Margarita Federal Com - Pad A	North Reference:	Grid
Well:	Margarita Federal Com 16H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Margarita Federal Com 16H		
Design:	Margarita Federal Com 16H - Prelim 1		

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.00	0.00	0.00	0.00	
5,699.8	5.00	180.00	5,699.2	-21.8	0.0	1.00	1.00	0.00	180.00	
10,519.8	5.00	180.00	10,500.8	-441.7	0.0	0.00	0.00	0.00	0.00	
11,019.6	0.00	0.00	11,000.0	-463.5	0.0	1.00	-1.00	0.00	180.00	
11,146.6	0.00	0.00	11,127.0	-463.5	0.0	0.00	0.00	0.00	0.00	
12,046.6	90.00	188.62	11,700.0	-1,030.0	-85.9	10.00	10.00	0.00	188.62	
12,420.9	90.00	188.62	11,700.0	-1,400.0	-142.0	0.00	0.00	0.00	0.00	Margarita Federal Coi
12,868.5	90.00	179.67	11,700.0	-1,846.0	-174.3	2.00	0.00	-2.00	-90.00	
23,662.3	90.00	179.67	11,700.0	-12,639.6	-112.0	0.00	0.00	0.00	0.00	Margarita Federal Coi



Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Margarita Federal Com 16H
Company:	Advance Energy Partners	TVD Reference:	WELL @ 3932.0usft (Original Well Elev)
Project:	Hat Mesa	MD Reference:	WELL @ 3932.0usft (Original Well Elev)
Site:	Margarita Federal Com - Pad A	North Reference:	Grid
Well:	Margarita Federal Com 16H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Margarita Federal Com 16H		
Design:	Margarita Federal Com 16H - Prelim 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP - Start Build 1.00									



Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Margarita Federal Com 16H
Company:	Advance Energy Partners	TVD Reference:	WELL @ 3932.0usft (Original Well Elev)
Project:	Hat Mesa	MD Reference:	WELL @ 3932.0usft (Original Well Elev)
Site:	Margarita Federal Com - Pad A	North Reference:	Grid
Well:	Margarita Federal Com 16H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Margarita Federal Com 16H		
Design:	Margarita Federal Com 16H - Prelim 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,300.0	1.00	180.00	5,300.0	-0.9	0.0	0.9	1.00	1.00	0.00
5,400.0	2.00	180.00	5,400.0	-3.5	0.0	3.5	1.00	1.00	0.00
5,500.0	3.00	180.00	5,499.9	-7.9	0.0	7.9	1.00	1.00	0.00
5,600.0	4.00	180.00	5,599.7	-14.0	0.0	14.0	1.00	1.00	0.00
5,699.8	5.00	180.00	5,699.2	-21.8	0.0	21.8	1.00	1.00	0.00
Start 4820.0 hold at 5699.8 MD									
5,700.0	5.00	180.00	5,699.4	-21.8	0.0	21.8	0.00	0.00	0.00
5,800.0	5.00	180.00	5,799.0	-30.5	0.0	30.5	0.00	0.00	0.00
5,900.0	5.00	180.00	5,898.6	-39.2	0.0	39.2	0.00	0.00	0.00
6,000.0	5.00	180.00	5,998.2	-47.9	0.0	47.9	0.00	0.00	0.00
6,100.0	5.00	180.00	6,097.8	-56.7	0.0	56.6	0.00	0.00	0.00
6,200.0	5.00	180.00	6,197.5	-65.4	0.0	65.4	0.00	0.00	0.00
6,300.0	5.00	180.00	6,297.1	-74.1	0.0	74.1	0.00	0.00	0.00
6,400.0	5.00	180.00	6,396.7	-82.8	0.0	82.8	0.00	0.00	0.00
6,500.0	5.00	180.00	6,496.3	-91.5	0.0	91.5	0.00	0.00	0.00
6,600.0	5.00	180.00	6,595.9	-100.2	0.0	100.2	0.00	0.00	0.00
6,700.0	5.00	180.00	6,695.6	-108.9	0.0	108.9	0.00	0.00	0.00
6,800.0	5.00	180.00	6,795.2	-117.6	0.0	117.6	0.00	0.00	0.00
6,900.0	5.00	180.00	6,894.8	-126.3	0.0	126.3	0.00	0.00	0.00
7,000.0	5.00	180.00	6,994.4	-135.1	0.0	135.1	0.00	0.00	0.00
7,100.0	5.00	180.00	7,094.0	-143.8	0.0	143.8	0.00	0.00	0.00
7,200.0	5.00	180.00	7,193.7	-152.5	0.0	152.5	0.00	0.00	0.00
7,300.0	5.00	180.00	7,293.3	-161.2	0.0	161.2	0.00	0.00	0.00
7,400.0	5.00	180.00	7,392.9	-169.9	0.0	169.9	0.00	0.00	0.00
7,500.0	5.00	180.00	7,492.5	-178.6	0.0	178.6	0.00	0.00	0.00
7,600.0	5.00	180.00	7,592.1	-187.3	0.0	187.3	0.00	0.00	0.00
7,700.0	5.00	180.00	7,691.8	-196.0	0.0	196.0	0.00	0.00	0.00
7,800.0	5.00	180.00	7,791.4	-204.8	0.0	204.8	0.00	0.00	0.00
7,900.0	5.00	180.00	7,891.0	-213.5	0.0	213.5	0.00	0.00	0.00
8,000.0	5.00	180.00	7,990.6	-222.2	0.0	222.2	0.00	0.00	0.00
8,100.0	5.00	180.00	8,090.2	-230.9	0.0	230.9	0.00	0.00	0.00
8,200.0	5.00	180.00	8,189.9	-239.6	0.0	239.6	0.00	0.00	0.00
8,300.0	5.00	180.00	8,289.5	-248.3	0.0	248.3	0.00	0.00	0.00
8,400.0	5.00	180.00	8,389.1	-257.0	0.0	257.0	0.00	0.00	0.00
8,500.0	5.00	180.00	8,488.7	-265.7	0.0	265.7	0.00	0.00	0.00
8,600.0	5.00	180.00	8,588.3	-274.5	0.0	274.4	0.00	0.00	0.00
8,700.0	5.00	180.00	8,688.0	-283.2	0.0	283.2	0.00	0.00	0.00
8,800.0	5.00	180.00	8,787.6	-291.9	0.0	291.9	0.00	0.00	0.00
8,900.0	5.00	180.00	8,887.2	-300.6	0.0	300.6	0.00	0.00	0.00
9,000.0	5.00	180.00	8,986.8	-309.3	0.0	309.3	0.00	0.00	0.00
9,100.0	5.00	180.00	9,086.4	-318.0	0.0	318.0	0.00	0.00	0.00
9,200.0	5.00	180.00	9,186.1	-326.7	0.0	326.7	0.00	0.00	0.00
9,300.0	5.00	180.00	9,285.7	-335.4	0.0	335.4	0.00	0.00	0.00
9,400.0	5.00	180.00	9,385.3	-344.2	0.0	344.1	0.00	0.00	0.00
9,500.0	5.00	180.00	9,484.9	-352.9	0.0	352.9	0.00	0.00	0.00
9,600.0	5.00	180.00	9,584.5	-361.6	0.0	361.6	0.00	0.00	0.00
9,700.0	5.00	180.00	9,684.2	-370.3	0.0	370.3	0.00	0.00	0.00
9,800.0	5.00	180.00	9,783.8	-379.0	0.0	379.0	0.00	0.00	0.00
9,900.0	5.00	180.00	9,883.4	-387.7	0.0	387.7	0.00	0.00	0.00
10,000.0	5.00	180.00	9,983.0	-396.4	0.0	396.4	0.00	0.00	0.00
10,100.0	5.00	180.00	10,082.6	-405.1	0.0	405.1	0.00	0.00	0.00
10,200.0	5.00	180.00	10,182.3	-413.9	0.0	413.8	0.00	0.00	0.00
10,300.0	5.00	180.00	10,281.9	-422.6	0.0	422.5	0.00	0.00	0.00



Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Margarita Federal Com 16H
Company:	Advance Energy Partners	TVD Reference:	WELL @ 3932.0usft (Original Well Elev)
Project:	Hat Mesa	MD Reference:	WELL @ 3932.0usft (Original Well Elev)
Site:	Margarita Federal Com - Pad A	North Reference:	Grid
Well:	Margarita Federal Com 16H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Margarita Federal Com 16H		
Design:	Margarita Federal Com 16H - Prelim 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,400.0	5.00	180.00	10,381.5	-431.3	0.0	431.3	0.00	0.00	0.00
10,500.0	5.00	180.00	10,481.1	-440.0	0.0	440.0	0.00	0.00	0.00
10,519.8	5.00	180.00	10,500.8	-441.7	0.0	441.7	0.00	0.00	0.00
Start Drop -1.00									
10,600.0	4.20	180.00	10,580.8	-448.1	0.0	448.1	1.00	-1.00	0.00
10,700.0	3.20	180.00	10,680.6	-454.6	0.0	454.6	1.00	-1.00	0.00
10,800.0	2.20	180.00	10,780.5	-459.3	0.0	459.3	1.00	-1.00	0.00
10,900.0	1.20	180.00	10,880.4	-462.3	0.0	462.2	1.00	-1.00	0.00
11,000.0	0.20	180.00	10,980.4	-463.5	0.0	463.4	1.00	-1.00	0.00
11,019.6	0.00	0.00	11,000.0	-463.5	0.0	463.5	1.00	-1.00	-918.62
Start 127.0 hold at 11019.6 MD									
11,100.0	0.00	0.00	11,080.4	-463.5	0.0	463.5	0.00	0.00	0.00
11,146.6	0.00	0.00	11,127.0	-463.5	0.0	463.5	0.00	0.00	0.00
KOP #2 - Start Build 10.00									
11,200.0	5.34	188.62	11,180.3	-466.0	-0.4	465.9	10.00	10.00	0.00
11,300.0	15.34	188.62	11,278.6	-483.7	-3.1	483.7	10.00	10.00	0.00
11,400.0	25.34	188.62	11,372.2	-518.0	-8.3	518.0	10.00	10.00	0.00
11,500.0	35.34	188.62	11,458.4	-567.9	-15.8	568.0	10.00	10.00	0.00
11,600.0	45.34	188.62	11,534.6	-631.8	-25.5	632.0	10.00	10.00	0.00
11,700.0	55.34	188.62	11,598.3	-707.8	-37.0	708.1	10.00	10.00	0.00
11,800.0	65.34	188.62	11,647.7	-793.6	-50.1	794.0	10.00	10.00	0.00
11,900.0	75.34	188.62	11,681.3	-886.6	-64.2	887.1	10.00	10.00	0.00
12,000.0	85.34	188.62	11,698.1	-983.9	-78.9	984.6	10.00	10.00	0.00
12,046.6	90.00	188.62	11,700.0	-1,030.0	-85.9	1,030.7	10.00	10.00	0.00
LP - Start 374.2 hold at 12046.6 MD									
12,100.0	90.00	188.62	11,700.0	-1,082.7	-93.9	1,083.5	0.00	0.00	0.00
12,200.0	90.00	188.62	11,700.0	-1,181.6	-108.9	1,182.5	0.00	0.00	0.00
12,300.0	90.00	188.62	11,700.0	-1,280.5	-123.9	1,281.5	0.00	0.00	0.00
12,400.0	90.00	188.62	11,700.0	-1,379.4	-138.9	1,380.5	0.00	0.00	0.00
12,420.9	90.00	188.62	11,700.0	-1,400.0	-142.0	1,401.2	0.00	0.00	0.00
Start DLS 2.00 TFO -90.00 - Margarita Federal Com 16H LP									
12,500.0	90.00	187.04	11,700.0	-1,478.4	-152.8	1,479.7	2.00	0.00	-2.00
12,600.0	90.00	185.04	11,700.0	-1,577.8	-163.3	1,579.2	2.00	0.00	-2.00
12,700.0	90.00	183.04	11,700.0	-1,677.6	-170.3	1,679.0	2.00	0.00	-2.00
12,800.0	90.00	181.04	11,700.0	-1,777.5	-173.9	1,779.0	2.00	0.00	-2.00
12,868.5	90.00	179.67	11,700.0	-1,846.0	-174.3	1,847.5	2.00	0.00	-2.00
Start 10793.8 hold at 12868.5 MD									
12,900.0	90.00	179.67	11,700.0	-1,877.5	-174.1	1,879.0	0.00	0.00	0.00
13,000.0	90.00	179.67	11,700.0	-1,977.5	-173.6	1,978.9	0.00	0.00	0.00
13,100.0	90.00	179.67	11,700.0	-2,077.5	-173.0	2,078.9	0.00	0.00	0.00
13,200.0	90.00	179.67	11,700.0	-2,177.5	-172.4	2,178.9	0.00	0.00	0.00
13,300.0	90.00	179.67	11,700.0	-2,277.5	-171.8	2,278.9	0.00	0.00	0.00
13,400.0	90.00	179.67	11,700.0	-2,377.5	-171.3	2,378.9	0.00	0.00	0.00
13,500.0	90.00	179.67	11,700.0	-2,477.5	-170.7	2,478.9	0.00	0.00	0.00
13,600.0	90.00	179.67	11,700.0	-2,577.5	-170.1	2,578.9	0.00	0.00	0.00
13,700.0	90.00	179.67	11,700.0	-2,677.5	-169.5	2,678.9	0.00	0.00	0.00
13,800.0	90.00	179.67	11,700.0	-2,777.5	-168.9	2,778.9	0.00	0.00	0.00
13,900.0	90.00	179.67	11,700.0	-2,877.5	-168.4	2,878.9	0.00	0.00	0.00
14,000.0	90.00	179.67	11,700.0	-2,977.5	-167.8	2,978.8	0.00	0.00	0.00
14,100.0	90.00	179.67	11,700.0	-3,077.5	-167.2	3,078.8	0.00	0.00	0.00
14,200.0	90.00	179.67	11,700.0	-3,177.5	-166.6	3,178.8	0.00	0.00	0.00
14,300.0	90.00	179.67	11,700.0	-3,277.5	-166.1	3,278.8	0.00	0.00	0.00
14,400.0	90.00	179.67	11,700.0	-3,377.5	-165.5	3,378.8	0.00	0.00	0.00



Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Margarita Federal Com 16H
Company:	Advance Energy Partners	TVD Reference:	WELL @ 3932.0usft (Original Well Elev)
Project:	Hat Mesa	MD Reference:	WELL @ 3932.0usft (Original Well Elev)
Site:	Margarita Federal Com - Pad A	North Reference:	Grid
Well:	Margarita Federal Com 16H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Margarita Federal Com 16H		
Design:	Margarita Federal Com 16H - Prelim 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
14,500.0	90.00	179.67	11,700.0	-3,477.5	-164.9	3,478.8	0.00	0.00	0.00
14,600.0	90.00	179.67	11,700.0	-3,577.5	-164.3	3,578.8	0.00	0.00	0.00
14,700.0	90.00	179.67	11,700.0	-3,677.5	-163.8	3,678.8	0.00	0.00	0.00
14,800.0	90.00	179.67	11,700.0	-3,777.5	-163.2	3,778.8	0.00	0.00	0.00
14,900.0	90.00	179.67	11,700.0	-3,877.5	-162.6	3,878.7	0.00	0.00	0.00
15,000.0	90.00	179.67	11,700.0	-3,977.5	-162.0	3,978.7	0.00	0.00	0.00
15,100.0	90.00	179.67	11,700.0	-4,077.5	-161.4	4,078.7	0.00	0.00	0.00
15,200.0	90.00	179.67	11,700.0	-4,177.5	-160.9	4,178.7	0.00	0.00	0.00
15,300.0	90.00	179.67	11,700.0	-4,277.5	-160.3	4,278.7	0.00	0.00	0.00
15,400.0	90.00	179.67	11,700.0	-4,377.4	-159.7	4,378.7	0.00	0.00	0.00
15,500.0	90.00	179.67	11,700.0	-4,477.4	-159.1	4,478.7	0.00	0.00	0.00
15,600.0	90.00	179.67	11,700.0	-4,577.4	-158.6	4,578.7	0.00	0.00	0.00
15,700.0	90.00	179.67	11,700.0	-4,677.4	-158.0	4,678.7	0.00	0.00	0.00
15,800.0	90.00	179.67	11,700.0	-4,777.4	-157.4	4,778.6	0.00	0.00	0.00
15,900.0	90.00	179.67	11,700.0	-4,877.4	-156.8	4,878.6	0.00	0.00	0.00
16,000.0	90.00	179.67	11,700.0	-4,977.4	-156.2	4,978.6	0.00	0.00	0.00
16,100.0	90.00	179.67	11,700.0	-5,077.4	-155.7	5,078.6	0.00	0.00	0.00
16,200.0	90.00	179.67	11,700.0	-5,177.4	-155.1	5,178.6	0.00	0.00	0.00
16,300.0	90.00	179.67	11,700.0	-5,277.4	-154.5	5,278.6	0.00	0.00	0.00
16,400.0	90.00	179.67	11,700.0	-5,377.4	-153.9	5,378.6	0.00	0.00	0.00
16,500.0	90.00	179.67	11,700.0	-5,477.4	-153.4	5,478.6	0.00	0.00	0.00
16,600.0	90.00	179.67	11,700.0	-5,577.4	-152.8	5,578.6	0.00	0.00	0.00
16,700.0	90.00	179.67	11,700.0	-5,677.4	-152.2	5,678.6	0.00	0.00	0.00
16,800.0	90.00	179.67	11,700.0	-5,777.4	-151.6	5,778.5	0.00	0.00	0.00
16,900.0	90.00	179.67	11,700.0	-5,877.4	-151.1	5,878.5	0.00	0.00	0.00
17,000.0	90.00	179.67	11,700.0	-5,977.4	-150.5	5,978.5	0.00	0.00	0.00
17,100.0	90.00	179.67	11,700.0	-6,077.4	-149.9	6,078.5	0.00	0.00	0.00
17,200.0	90.00	179.67	11,700.0	-6,177.4	-149.3	6,178.5	0.00	0.00	0.00
17,300.0	90.00	179.67	11,700.0	-6,277.4	-148.7	6,278.5	0.00	0.00	0.00
17,400.0	90.00	179.67	11,700.0	-6,377.4	-148.2	6,378.5	0.00	0.00	0.00
17,500.0	90.00	179.67	11,700.0	-6,477.4	-147.6	6,478.5	0.00	0.00	0.00
17,600.0	90.00	179.67	11,700.0	-6,577.4	-147.0	6,578.5	0.00	0.00	0.00
17,700.0	90.00	179.67	11,700.0	-6,677.4	-146.4	6,678.4	0.00	0.00	0.00
17,800.0	90.00	179.67	11,700.0	-6,777.4	-145.9	6,778.4	0.00	0.00	0.00
17,900.0	90.00	179.67	11,700.0	-6,877.4	-145.3	6,878.4	0.00	0.00	0.00
18,000.0	90.00	179.67	11,700.0	-6,977.4	-144.7	6,978.4	0.00	0.00	0.00
18,100.0	90.00	179.67	11,700.0	-7,077.4	-144.1	7,078.4	0.00	0.00	0.00
18,200.0	90.00	179.67	11,700.0	-7,177.4	-143.5	7,178.4	0.00	0.00	0.00
18,300.0	90.00	179.67	11,700.0	-7,277.4	-143.0	7,278.4	0.00	0.00	0.00
18,400.0	90.00	179.67	11,700.0	-7,377.4	-142.4	7,378.4	0.00	0.00	0.00
18,500.0	90.00	179.67	11,700.0	-7,477.4	-141.8	7,478.4	0.00	0.00	0.00
18,600.0	90.00	179.67	11,700.0	-7,577.4	-141.2	7,578.3	0.00	0.00	0.00
18,700.0	90.00	179.67	11,700.0	-7,677.4	-140.7	7,678.3	0.00	0.00	0.00
18,800.0	90.00	179.67	11,700.0	-7,777.4	-140.1	7,778.3	0.00	0.00	0.00
18,900.0	90.00	179.67	11,700.0	-7,877.4	-139.5	7,878.3	0.00	0.00	0.00
19,000.0	90.00	179.67	11,700.0	-7,977.4	-138.9	7,978.3	0.00	0.00	0.00
19,100.0	90.00	179.67	11,700.0	-8,077.4	-138.4	8,078.3	0.00	0.00	0.00
19,200.0	90.00	179.67	11,700.0	-8,177.4	-137.8	8,178.3	0.00	0.00	0.00
19,300.0	90.00	179.67	11,700.0	-8,277.4	-137.2	8,278.3	0.00	0.00	0.00
19,400.0	90.00	179.67	11,700.0	-8,377.4	-136.6	8,378.3	0.00	0.00	0.00
19,500.0	90.00	179.67	11,700.0	-8,477.4	-136.0	8,478.3	0.00	0.00	0.00
19,600.0	90.00	179.67	11,700.0	-8,577.4	-135.5	8,578.2	0.00	0.00	0.00
19,700.0	90.00	179.67	11,700.0	-8,677.4	-134.9	8,678.2	0.00	0.00	0.00
19,800.0	90.00	179.67	11,700.0	-8,777.4	-134.3	8,778.2	0.00	0.00	0.00



Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Margarita Federal Com 16H
Company:	Advance Energy Partners	TVD Reference:	WELL @ 3932.0usft (Original Well Elev)
Project:	Hat Mesa	MD Reference:	WELL @ 3932.0usft (Original Well Elev)
Site:	Margarita Federal Com - Pad A	North Reference:	Grid
Well:	Margarita Federal Com 16H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Margarita Federal Com 16H		
Design:	Margarita Federal Com 16H - Prelim 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
19,900.0	90.00	179.67	11,700.0	-8,877.4	-133.7	8,878.2	0.00	0.00	0.00
20,000.0	90.00	179.67	11,700.0	-8,977.4	-133.2	8,978.2	0.00	0.00	0.00
20,100.0	90.00	179.67	11,700.0	-9,077.4	-132.6	9,078.2	0.00	0.00	0.00
20,200.0	90.00	179.67	11,700.0	-9,177.4	-132.0	9,178.2	0.00	0.00	0.00
20,300.0	90.00	179.67	11,700.0	-9,277.4	-131.4	9,278.2	0.00	0.00	0.00
20,400.0	90.00	179.67	11,700.0	-9,377.4	-130.8	9,378.2	0.00	0.00	0.00
20,500.0	90.00	179.67	11,700.0	-9,477.4	-130.3	9,478.1	0.00	0.00	0.00
20,600.0	90.00	179.67	11,700.0	-9,577.4	-129.7	9,578.1	0.00	0.00	0.00
20,700.0	90.00	179.67	11,700.0	-9,677.4	-129.1	9,678.1	0.00	0.00	0.00
20,800.0	90.00	179.67	11,700.0	-9,777.4	-128.5	9,778.1	0.00	0.00	0.00
20,900.0	90.00	179.67	11,700.0	-9,877.4	-128.0	9,878.1	0.00	0.00	0.00
21,000.0	90.00	179.67	11,700.0	-9,977.4	-127.4	9,978.1	0.00	0.00	0.00
21,100.0	90.00	179.67	11,700.0	-10,077.4	-126.8	10,078.1	0.00	0.00	0.00
21,200.0	90.00	179.67	11,700.0	-10,177.4	-126.2	10,178.1	0.00	0.00	0.00
21,300.0	90.00	179.67	11,700.0	-10,277.4	-125.7	10,278.1	0.00	0.00	0.00
21,400.0	90.00	179.67	11,700.0	-10,377.3	-125.1	10,378.0	0.00	0.00	0.00
21,500.0	90.00	179.67	11,700.0	-10,477.3	-124.5	10,478.0	0.00	0.00	0.00
21,600.0	90.00	179.67	11,700.0	-10,577.3	-123.9	10,578.0	0.00	0.00	0.00
21,700.0	90.00	179.67	11,700.0	-10,677.3	-123.3	10,678.0	0.00	0.00	0.00
21,800.0	90.00	179.67	11,700.0	-10,777.3	-122.8	10,778.0	0.00	0.00	0.00
21,900.0	90.00	179.67	11,700.0	-10,877.3	-122.2	10,878.0	0.00	0.00	0.00
22,000.0	90.00	179.67	11,700.0	-10,977.3	-121.6	10,978.0	0.00	0.00	0.00
22,100.0	90.00	179.67	11,700.0	-11,077.3	-121.0	11,078.0	0.00	0.00	0.00
22,200.0	90.00	179.67	11,700.0	-11,177.3	-120.5	11,178.0	0.00	0.00	0.00
22,300.0	90.00	179.67	11,700.0	-11,277.3	-119.9	11,278.0	0.00	0.00	0.00
22,400.0	90.00	179.67	11,700.0	-11,377.3	-119.3	11,377.9	0.00	0.00	0.00
22,500.0	90.00	179.67	11,700.0	-11,477.3	-118.7	11,477.9	0.00	0.00	0.00
22,600.0	90.00	179.67	11,700.0	-11,577.3	-118.1	11,577.9	0.00	0.00	0.00
22,700.0	90.00	179.67	11,700.0	-11,677.3	-117.6	11,677.9	0.00	0.00	0.00
22,800.0	90.00	179.67	11,700.0	-11,777.3	-117.0	11,777.9	0.00	0.00	0.00
22,900.0	90.00	179.67	11,700.0	-11,877.3	-116.4	11,877.9	0.00	0.00	0.00
23,000.0	90.00	179.67	11,700.0	-11,977.3	-115.8	11,977.9	0.00	0.00	0.00
23,100.0	90.00	179.67	11,700.0	-12,077.3	-115.3	12,077.9	0.00	0.00	0.00
23,200.0	90.00	179.67	11,700.0	-12,177.3	-114.7	12,177.9	0.00	0.00	0.00
23,300.0	90.00	179.67	11,700.0	-12,277.3	-114.1	12,277.8	0.00	0.00	0.00
23,400.0	90.00	179.67	11,700.0	-12,377.3	-113.5	12,377.8	0.00	0.00	0.00
23,500.0	90.00	179.67	11,700.0	-12,477.3	-112.9	12,477.8	0.00	0.00	0.00
23,600.0	90.00	179.67	11,700.0	-12,577.3	-112.4	12,577.8	0.00	0.00	0.00
23,662.3	90.00	179.67	11,700.0	-12,639.6	-112.0	12,640.1	0.00	0.00	0.00
TD at 23662.3 - Margarita Federal Com 16H BHL									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Margarita Federal Com - plan hits target center	0.00	0.00	11,700.0	-12,639.6	-112.0	528,233.23	760,415.39	32° 27' 0.630 N	103° 37' 23.228 W
- Point									
Margarita Federal Com - plan hits target center	0.00	0.00	11,700.0	-1,400.0	-142.0	539,472.82	760,385.41	32° 28' 51.847 N	103° 37' 22.705 W
- Point									



Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well Margarita Federal Com 16H
Company:	Advance Energy Partners	TVD Reference:	WELL @ 3932.0usft (Original Well Elev)
Project:	Hat Mesa	MD Reference:	WELL @ 3932.0usft (Original Well Elev)
Site:	Margarita Federal Com - Pad A	North Reference:	Grid
Well:	Margarita Federal Com 16H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Margarita Federal Com 16H		
Design:	Margarita Federal Com 16H - Prelim 1		

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
12,046.6	11,700.0	LP	5-1/2	8-3/4

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
5,200.0	5,200.0	0.0	0.0	KOP - Start Build 1.00
5,699.8	5,699.2	-21.8	0.0	Start 4820.0 hold at 5699.8 MD
10,519.8	10,500.8	-441.7	0.0	Start Drop -1.00
11,019.6	11,000.0	-463.5	0.0	Start 127.0 hold at 11019.6 MD
11,146.6	11,127.0	-463.5	0.0	KOP #2 - Start Build 10.00
12,046.6	11,700.0	-1,030.0	-85.9	LP - Start 374.2 hold at 12046.6 MD
12,420.9	11,700.0	-1,400.0	-142.0	Start DLS 2.00 TFO -90.00
12,868.5	11,700.0	-1,846.0	-174.3	Start 10793.8 hold at 12868.5 MD
23,662.3	11,700.0	-12,639.6	-112.0	TD at 23662.3

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Advance Energy Partners Hat Mesa LLC
LEASE NO.:	NMNM014155
LOCATION:	Section 13, T.21 S., R.32 E., NMPM
COUNTY:	Lea County, New Mexico

WELL NAME & NO.:	Margarita Federal Com 13 10H
SURFACE HOLE FOOTAGE:	1250'/N & 1534'/W
BOTTOM HOLE FOOTAGE:	2540'/N & 1980'/W

WELL NAME & NO.:	Margarita Federal Com 13 11H
SURFACE HOLE FOOTAGE:	1399'/N & 1948'/E
BOTTOM HOLE FOOTAGE:	2540'/N & 1980'/E

WELL NAME & NO.:	Margarita Federal Com 13 12H
SURFACE HOLE FOOTAGE:	460'/N & 708'/E
BOTTOM HOLE FOOTAGE:	2540'/N & 660'/E

WELL NAME & NO.:	Margarita Federal Com 13 14H
SURFACE HOLE FOOTAGE:	1250'/N & 1435'/W
BOTTOM HOLE FOOTAGE:	2540'/N & 1650'/W

WELL NAME & NO.:	Margarita Federal Com 13 15H
SURFACE HOLE FOOTAGE:	1399'/N & 2047'/E
BOTTOM HOLE FOOTAGE:	2540'/N & 2310'/E

WELL NAME & NO.:	Margarita Federal Com 13 16H
SURFACE HOLE FOOTAGE:	460'/N & 807'/E
BOTTOM HOLE FOOTAGE:	2540'/N & 990'/E

COA

H2S	☐ Yes	☒ No	
Potash	☐ None	☐ Secretary	☒ R-111-P
Cave/Karst Potential	☒ Low	☐ Medium	☐ High
Cave/Karst Potential	☐ Critical		
Variance	☐ None	☒ Flex Hose	☐ Other
Wellhead	☐ Conventional	☐ Multibowl	☒ Both
Other	☒ 4 String Area	☒ Capitan Reef	☐ WIPP
Other	☒ Fluid Filled	☐ Cement Squeeze	☐ Pilot Hole
Special Requirements	☐ Water Disposal	☒ 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

Surface casing must be kept fluid filled to meet BLM minimum collapse requirement.

1. The **20** inch surface casing shall be set at approximately **1766 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.

Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.

2. The minimum required fill of cement behind the **13-3/8** inch intermediate casing shall be set at approximately **3375 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, potash or capitan reef.
 - ❖ In R111 Potash Areas 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 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.
3. The minimum required fill of cement behind the **9-5/8** inch intermediate casing shall be set at approximately **5691 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, potash or capitan reef.
Cement excess is less than 25%, more cement might be required.
4. The minimum required fill of cement behind the **5-1/2** inch production casing 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.
Cement excess is less than 25%, more cement might be required.

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.
 - a. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M)** psi.
The operator is approved to use a sacrificial wellhead to drill the 17 ½ inch intermediate hole. Once the intermediate hole is drilled cased and cemented, the sacrificial wellhead will be cut off and the 13 5/8 inch 5K MN-DS multi-bowl wellhead will be installed.
 - b. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **13 3/8** inch intermediate casing shoe shall be **5000 (5M)** psi.
 - i. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the **13 3/8** inch intermediate 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.
 1. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 2. 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.
 3. Manufacturer representative shall install the test plug for the initial BOP test.
 4. 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.
 - ii. 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 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.

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.



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 location 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

Braden Harris, Drilling Manager	Office: (832) 672-4700
	Mobile: (406) 600-3310

Local & County Agencies

Monument Fire Department	911 or (575) 393-4339
Eunice Fire & Ambulance Dept.	(575) 394-3258
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

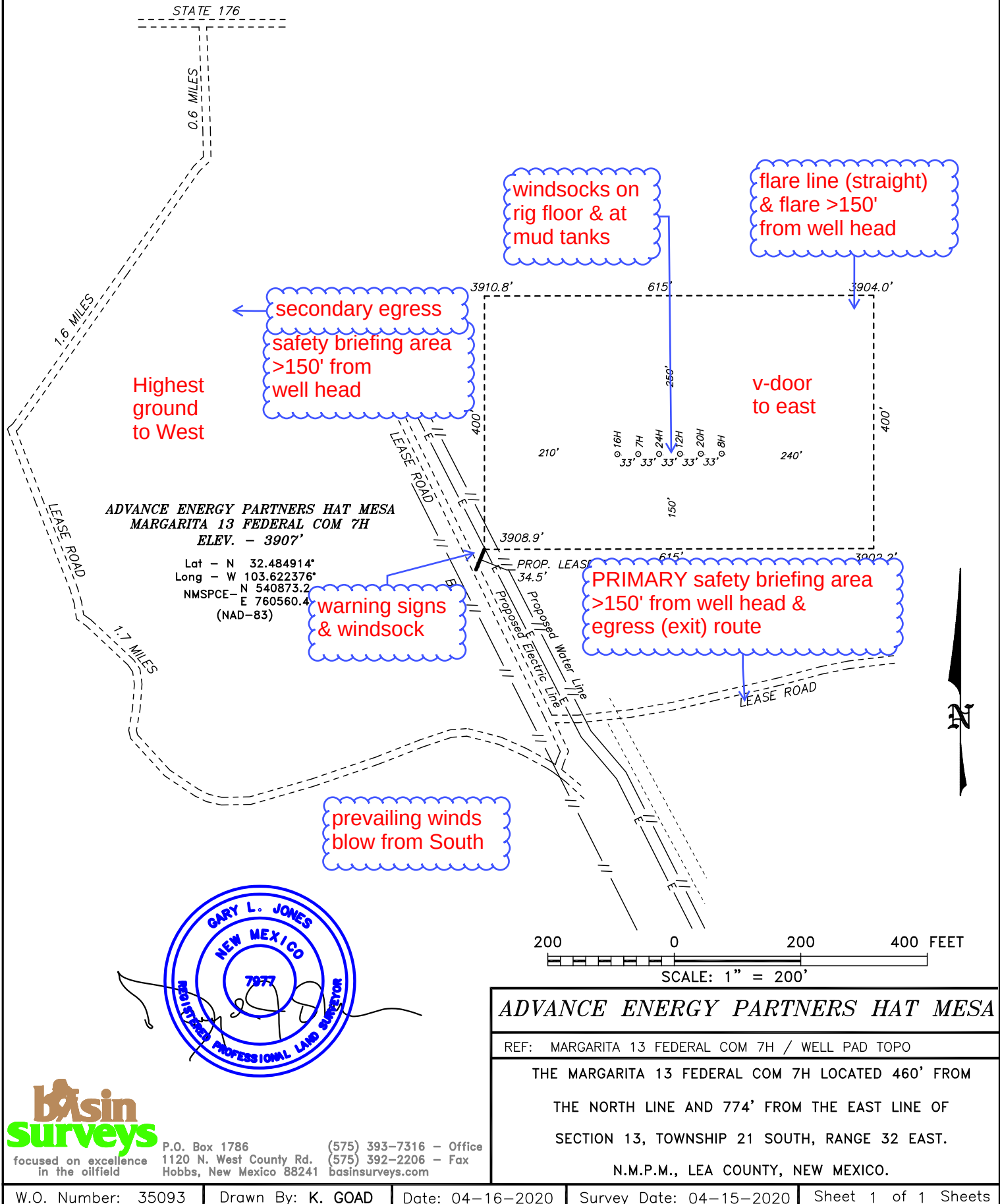
No residents are within 2 miles.

Air Evacuation

Med Flight Air Ambulance (Albuquerque) (800) 842-4431

Lifeguard (Albuquerque) (888) 866-7256

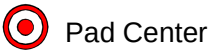
**SECTION 13, TOWNSHIP 21 SOUTH, RANGE 32 EAST. N.M.P.M.,
LEA COUNTY, NEW MEXICO.**



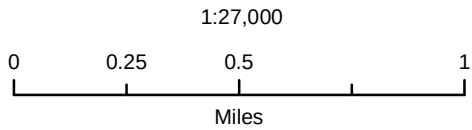
Advance Energy Partners Hat Mesa, LLC

Margarita 13 Federal Com
Pad A
H2S Contingency Plan:
Radius Map

Section 13, Township 21S, Range 32E
Lea County, New Mexico



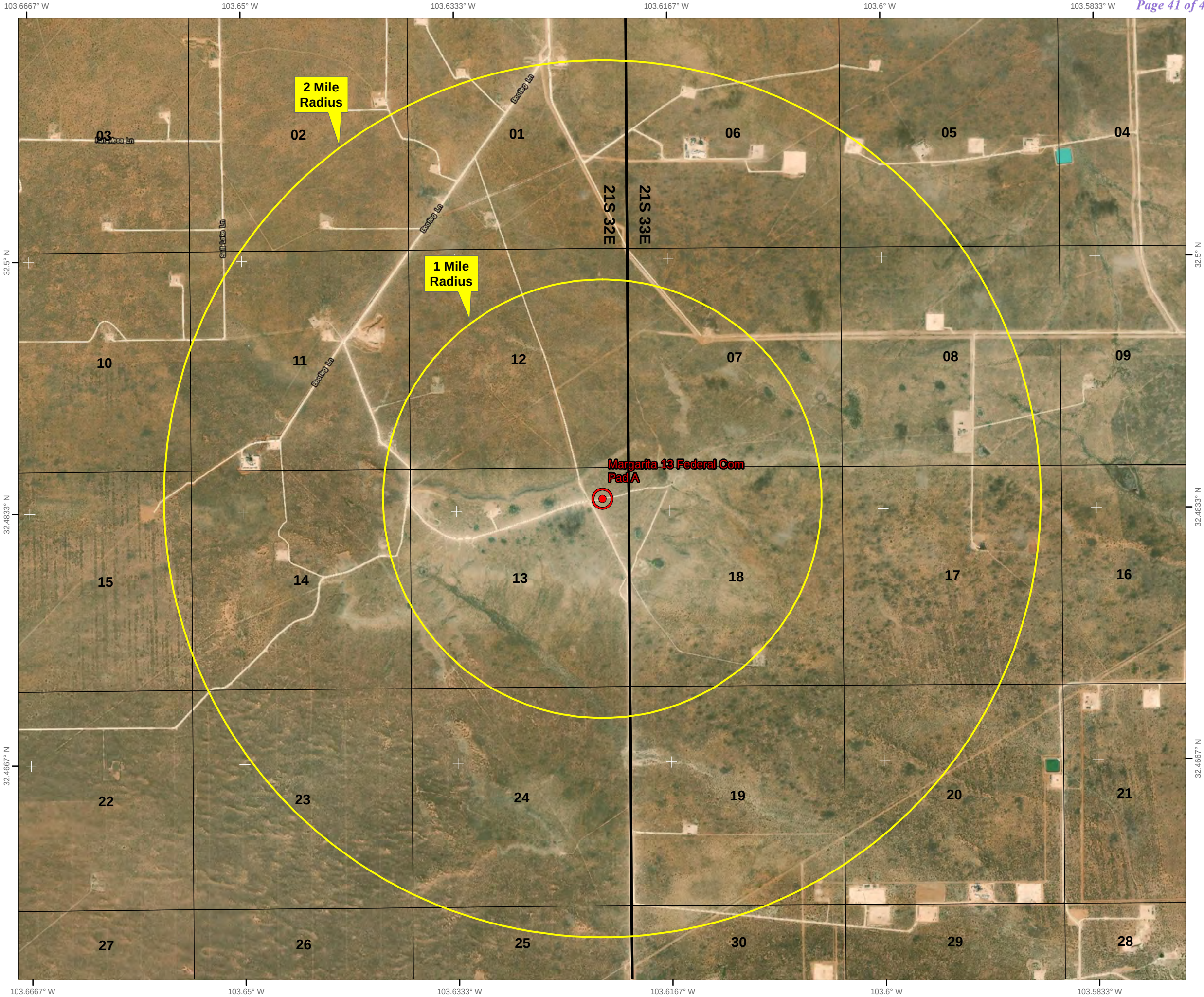
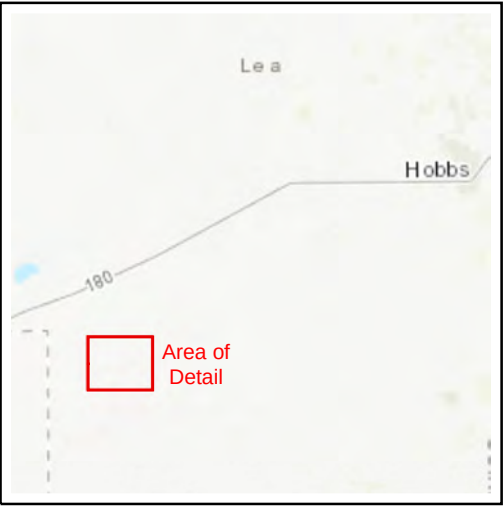
Pad Center

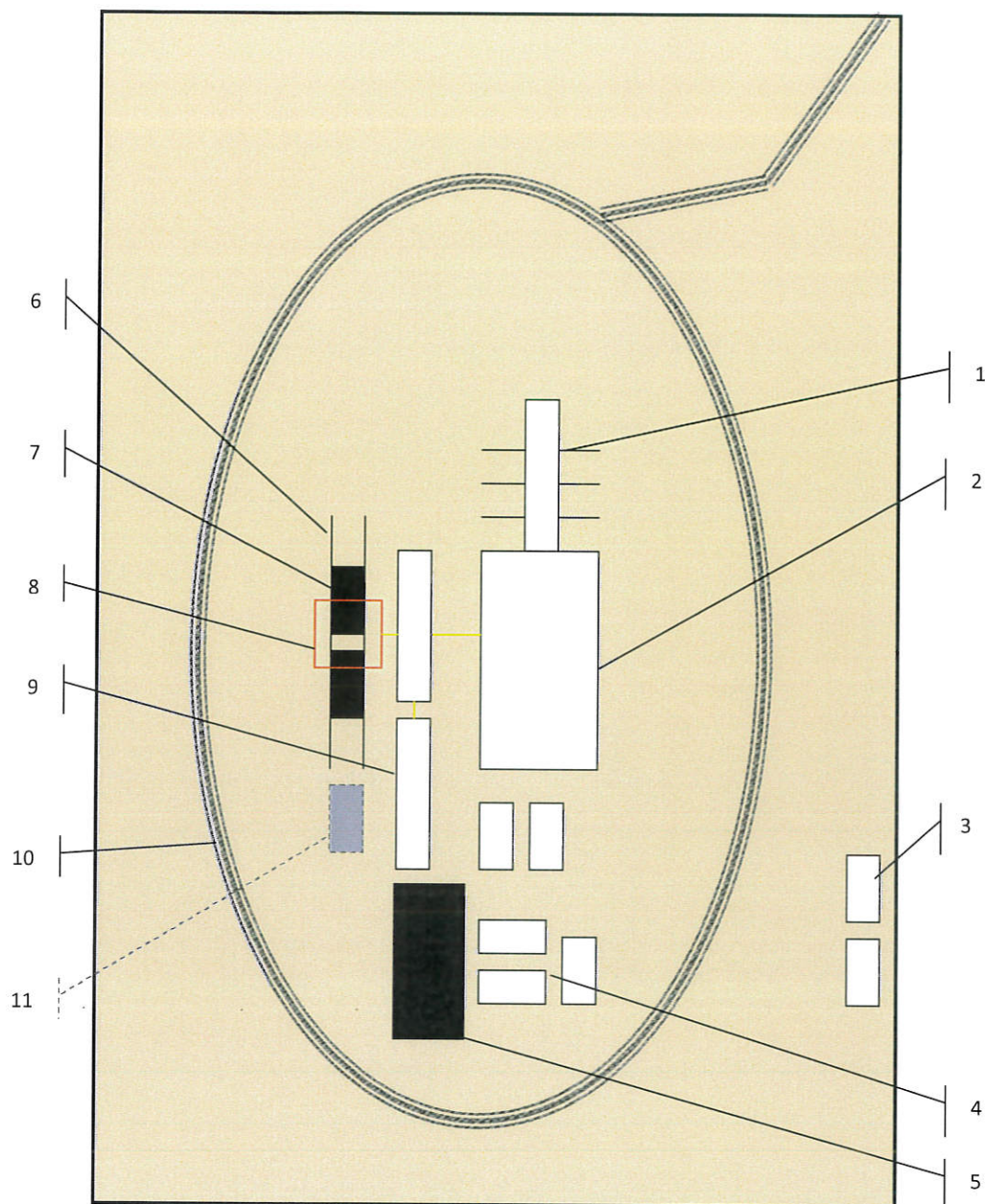


NAD 1983 New Mexico State Plane East
FIPS 3001 Feet



Prepared by Permits West, Inc., October 5, 2020
for Advance Energy Partners Hat Mesa, 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

PERMITS WEST, INC.
 PROVIDING PERMITS for LAND USERS
 37Verano Loop, Santa Fe, New Mexico 87508 (505) 466-8120

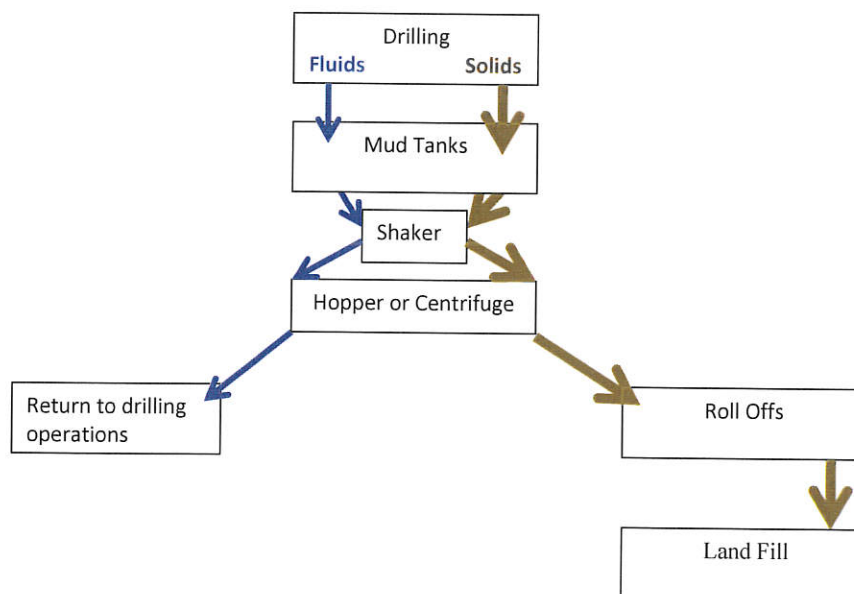


Above: Centrifugal Closed Loop System



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

PERMITS WEST, INC.
 PROVIDING PERMITS for LAND USERS
 37Verano Loop, Santa Fe, New Mexico 87508 (505) 466-8120

District I

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

District II

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

District III

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

District IV

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

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

CONDITIONS

Action 34503

CONDITIONS

Operator: ADVANCE ENERGY PARTNERS HAT MESA, LLC 11490 Westheimer Rd., Ste 950 Houston, TX 77077	OGRID: 372417
	Action Number: 34503
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

CONDITIONS

Created By	Condition	Condition Date
pkautz	Will require a File As Drilled C-102 and a Directional Survey with the C-104	7/15/2021
pkautz	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	7/15/2021