APD ID: 10400058010 **Submission Date:** 06/16/2020

Operator Name: ADVANCE ENERGY PARTNERS HAT MESA LLC

Well Name: MARGARITA FEDERAL COM 13 **Well Number:** 9H

Well Type: OIL WELL **Well Work Type:** Drill

OCD – HOBBS
11/18/2020
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Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
758813	QUATERNARY	3917	0	0	OTHER : Caliche	USEABLE WATER	N
758814	RUSTLER ANHYDRITE	2202	1715	1715	ANHYDRITE	NONE	N
758815	TANSILL	624	3293	3293	DOLOMITE	NONE	N
758816	YATES	581	3336	3336	SANDSTONE	NONE	N
758817	SEVEN RIVERS	377	3540	3540	GYPSUM	NONE	N
758818	CAPITAN REEF	236	3681	3681	LIMESTONE	USEABLE WATER	N
758819	CAPITAN REEF	-1675	5592	5592	LIMESTONE, OTHER : Limestone base	USEABLE WATER	N
758820	LOWER BRUSHY CANYON 8A	-4666	8583	8585	SANDSTONE	NATURAL GAS, OIL	N
758821	AVALON SAND	-5121	9038	9040	SHALE	NATURAL GAS, OIL	N
758822	BONE SPRING 1ST	-6008	9925	9928	SANDSTONE	NATURAL GAS, OIL	N
758823	BONE SPRING 2ND	-6529	10446	10450	SANDSTONE	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 5M **Rating Depth:** 13000

Equipment: See attached Helmerich & Payne BOP Testing BLM manual for equipment and procedures.

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 nippled 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 nippled 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.

Choke Diagram Attachment:

Margarita_9H_Choke_20200614164259.pdf

BOP Diagram Attachment:

Margarita_9H_BOP_20200614164330.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	1785	0	1785	0	-1785	1785	J-55	94	BUTT	1.125	1.125	DRY	1.6	DRY	1.6
2	INTERMEDIATE	17.5	13.375	NEW	API	N	0	3600	0	3600	0	-3600	3600	J-55	54.5	BUTT	1.125	99.99	DRY	1.6	DRY	1.6
3	INTERMEDIATE	12.25	9.625	NEW	API	N	0	4000	0	4000	0	-4000	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	5692	4000	5692	-4000	-5692	1692	HCL-80	40	LT&C	1.125	1.125	DRY	1.6	DRY	1.6
5	PRODUCTION	8.75	5.5	NEW	NON API	N	0	9885	0	9882	0	-9882	9885	HCP-110	20	OTHER - CDC-HTQ	1.125	1.125	DRY	1.6	DRY	1.6
6	PRODUCTION	8.5	5.5	NEW	NON API	Y	9885	22594	9882	10900	-9882	-10900	12709	HCP-110	20	OTHER - CDC-HTQ	1.125	1.125	DRY	1.6	DRY	1.6

Casing Attachments

Operator Name: ADVANCE ENERGY PARTNERS HAT MESA LLC

Well Name: MARGARITA FEDERAL COM 13 **Well Number:** 9H

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Margarita_9H_Casing_Design_Assumptions_20200614164847.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Margarita_9H_Casing_Design_Assumptions_20200614164940.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Margarita_9H_Casing_Design_Assumptions_20200614165054.pdf

Operator Name: ADVANCE ENERGY PARTNERS HAT MESA LLC

Well Name: MARGARITA FEDERAL COM 13 **Well Number:** 9H

Casing Attachments

Casing ID: 4 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Margarita_9H_Casing_Design_Assumptions_20200614165202.pdf

Casing ID: 5 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

5.5in_Casing_Spec_USS_CDC_20200614165303.pdf

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Margarita_9H_Casing_Design_Assumptions_20200614165337.pdf

Casing ID: 6 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

5.5in_Casing_Spec_USS_CDC_20200614165436.pdf

Tapered String Spec:

5.5in_Casing_Spec_USS_CDC_20200614165444.pdf

Casing Design Assumptions and Worksheet(s):

Margarita_9H_Casing_Design_Assumptions_20200614165509.pdf

Section 4 - Cement

Operator Name: ADVANCE ENERGY PARTNERS HAT MESA LLC

Well Name: MARGARITA FEDERAL COM 13 **Well Number:** 9H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	1785	1180	1.8	13.5	2124	50	Class C	4% gel + 5% salt + ¼ pound per sack poly flake + 0.005 gallon per sack No Foam V1A
SURFACE	Tail		0	1785	370	1.34	14.8	495	20	Class C	1% CaCl2 + 0.005 gallon per sack No Foam V1A
INTERMEDIATE	Lead		0	3600	1355	2.19	12.7	2967	50	Class C	6% gel + 5% salt + 0.3% C-20 + ¼ pound per sack poly flake + 0.005 gallon per sack No Foam V1A
INTERMEDIATE	Tail		0	3600	480	1.33	14.8	638	20	Class C	0.005 gallon per sack No Foam V1A
INTERMEDIATE	Lead		0	4000	810	2.19	12.7	1773	50	Class C	6% gel + 5% salt + 0.4% C-20 + 0.005 gallon per sack No Foam V1A
INTERMEDIATE	Tail		0	4000	340	1.33	14.8	452	20	Class C	0.2% C-20 + 0.005 gallon per sack No Foam V1A
INTERMEDIATE	Lead		4000	5692	810	2.19	12.7	1773	50	Class C	6% gel + 5% salt + 0.4% C-20 + 0.005 gallon per sack No Foam V1A
INTERMEDIATE	Tail		4000	5692	340	1.33	14.8	452	20	Class C	0.2% C-20 + 0.005 gallon per sack No Foam V1A
PRODUCTION	Lead		5642	9885	735	2.46	11.8	1808	35	50% B Poz + 50% Class H	50% Class H + 10% gel + 5% salt + 0.05% SuspendaCem 6302 + 0.4% C-20 + 0.005 gallon per sack No Foam V1A
PRODUCTION	Tail		5642	9885	2475	1.33	14.8	3291	20	Class H	0.1% + SuspendaCem 6302 + 0.25% C-20 + 0.4% C-47B + 0.005 gallon per sack No Foam V1A
PRODUCTION	Lead		5642	22594	735	2.46	11.8	1808	35	50% B Poz + 50% Class H	10% gel + 5% salt + 0.05% SuspendaCem 6302 + 0.4% C-20 + 0.005 gallon per sack No Foam V1A
PRODUCTION	Tail		5642	22594	2475	1.33	14.8	3291	20	Class H	0.1% + SuspendaCem 6302 + 0.25% C-20 + 0.4% C-47B + 0.005

Operator Name: ADVANCE ENERGY PARTNERS HAT MESA LLC

Well Name: MARGARITA FEDERAL COM 13 **Well Number:** 9H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
											gallon per sack No Foam V1A

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	1785	OTHER : Fresh water	8.4	10							
1785	3600	OTHER : Brine	10	10.5							
3600	5692	OTHER : Fresh water	8.4	8.6							
5692	9885	OTHER : Cut brine	9	9.2							
9885	22594	OIL-BASED MUD	9	9.5							

Operator Name: ADVANCE ENERGY PARTNERS HAT MESA LLC

Well Name: MARGARITA FEDERAL COM 13 **Well Number:** 9H

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: 5341 **Anticipated Surface Pressure:** 2942

Anticipated Bottom Hole Temperature(F): 135

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

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

Margarita_9H_H2S_Plan_20200615095304.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Margarita_9H_Horizontal_Plan_20200614164551.pdf

Other proposed operations facets description:

Bow spring centralizers will be installed on the surface (13.6 centralizers), intermediate 1 (24.4), and intermediate 2 (15) casing strings.

Approximately 31 single bow centralizers will be installed on the production casing from 5592 to 10129 (TVD). Approximately 31 double bow centralizers will be installed from 10129 to 11429. Approximately 135 solid body centralizers will be installed from 11429 to TD.

Other proposed operations facets attachment:

Margarita_9H_Drill_Plan_20200614164631.pdf

CoFlex_Certs_20200614164651.pdf

Margarita_9H_Anti_Collision_Report_20200614164703.pdf

Margarita_9H_Speedhead_Specs_20200614164713.pdf

Margarita_9H_Sacrificial_Wellhead_20200614164723.pdf

Margarita_13H_Closed_Loop_20200615151446.pdf

Other Variance attachment:

Margarita_9H_Casing_Cementing_Variance_Request_20200614164612.pdf

Advance Energy Partners Hat Mesa, LLC
Margarita Federal Com 13 9H
SHL 1046' FNL & 744' FWL Section 13
BHL 2540' FNL & 660' FWL Section 25
T. 21 S., R. 32 E., Lea County, NM

Drilling Program

1. ESTIMATED TOPS

Formation Name	TVD	MD	Bearing
Quaternary caliche	000'	000'	water
Rustler anhydrite	1715'	1715'	N/A
Tansill dolomite	3293'	3293'	N/A
Yates sandstone	3336'	3336'	N/A
Seven Rivers gypsum	3540'	3540'	N/A
Capitan Reef limestone	3681'	3681'	water
Capitan Reef limestone base	5592'	5592'	water
Lower Brushy Canyon sandstone	8583'	8585'	hydrocarbons
Avalon shale	9038'	9040'	hydrocarbons
1st Bone Spring sandstone	9925'	9928'	hydrocarbons
(KOP	10327'	10330'	hydrocarbons
2nd Bone Spring sandstone	10446'	10450'	hydrocarbons
TD	10900'	22594'	hydrocarbons

2. NOTABLE ZONES

Second Bone Spring sandstone is the goal. Closest water well (CP 00794 PD 1) is 1.05 miles east. Depth to water was not reported in this 160' deep well.

3. PRESSURE CONTROL

See attached Helmerich & Payne BOP Testing - BLM manual for equipment and procedures.

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 nippled 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 nippled up and tested as required by Onshore Order 2 before drilling out the intermediate 1 casing.

4. CASING & CEMENT

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

Hole OD	Set MD	Set TVD	Casing OD	Weight (lb/ft)	Grade	Joint	Collapse	Burst	Tension
24"	0' - 1785'	0' - 1785'	Surface 20"	94	J-55	BTC	1.125	1.125	1.6
17.5"	0' - 3600'	0' - 3600'	Interm. 1 13.375"	54.5	J-55	BTC	1.125	1.125	1.6
12.25"	0' - 4000'	0' - 4000'	Interm. 2 9.625"	40	J-55	LTC	1.125	1.125	1.6
12.25"	4000' - 5692'	4000' - 5692'	Interm. 2 9.625"	40	HCL-80	LTC	1.125	1.125	1.6
8.75"	0' – 9885'	0' – 9882'	Product. 5.5"	20	HCP-110	CDC-HTQ	1.125	1.125	1.6
8.5"	9885' - 22594'	9882' – 10900'	Product. 5.5"	20	HCP-110	CDC-HTQ	1.125	1.125	1.6

Bow spring centralizers will be installed on the surface (≈13.6 centralizers), intermediate 1 (≈24.4), and intermediate 2 (≈15) casing strings.

Approximately 31 single bow centralizers will be installed on the production casing from 5592' to 10129' (TVD). Approximately 31 double bow centralizers will be installed from 10129' to 11429'. Approximately 135 solid body centralizers will be installed from 11429' to TD.

Variance is requested for an option to use a surface rig to drill the surface hole and set and cement the surface casing. If time between rigs would not be allow presetting the surface casing, then the primary rig will drill all of the well.

Cement additive names in following table are West Texas Cementers trade names. They, or equivalent, products will be used.

Name	Type	Sacks	Yield	Cu. Ft.	Weight	Blend
Surface	Lead	1180	1.8	2124	13.5	Class C + 4% gel + 5% salt + ¼ pound per sack poly flake + 0.005 gallon per sack No Foam V1A
	Tail	370	1.34	495	14.8	Class C + 1% $CaCl_2$ + 0.005 gallon per sack No Foam V1A
TOC = GL		Lead 50% excess & Tail 20% excess				
1st Intermediate	Lead	1355	2.19	2967	12.7	Class C + 6% gel + 5% salt + 0.3% C-20 + ¼ pound per sack poly flake + 0.005 gallon per sack No Foam V1A
	Tail	480	1.33	638	14.8	Class C + 0.005 gallon per sack No Foam V1A
TOC = GL		Lead 50% excess & Tail 20% excess				
2nd Intermediate	Lead	810	2.19	1773	12.7	Class C + 6% gel + 5% salt + 0.4% C-20 + 0.005 gallon per sack No Foam V1A
	Tail	340	1.33	452	14.8	Class C + 0.2% C-20 + 0.005 gallon per sack No Foam V1A
TOC = GL		Lead 50% excess & Tail 20% excess				
Production	Lead	735	2.46	1808	11.8	50% B Poz + 50% Class H + 10% gel + 5% salt + 0.05% SuspendaCem 6302 + 0.4% C-20 + 0.005 gallon per sack No Foam V1A
	Tail	2475	1.33	3291	14.8	Class H + 0.1% + SuspendaCem 6302 + 0.25% C-20 + 0.4% C-47B + 0.005 gallon per sack No Foam V1A
TOC = 5642'		Lead 35% excess & Tail 20% 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' - 1785'	8.4 – 10.0	32 - 36	N/C
brine	1785' - 3600'	10.0 – 10.5	28 - 32	N/C
fresh water	3600' - 5692'	8.4 – 8.6	28 - 30	N/C
Cut brine	5692' – 9885'	9.0 – 9.2	28 - 30	N/C
OBM	9885' – 22594'	9.0 – 9.5	55 - 65	6 - 8

6. CORES, TESTS, & LOGS

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

7. DOWN HOLE CONDITIONS

No abnormal pressure or temperature is expected. Maximum expected bottom hole pressure is ≈5341 psi. Expected bottom hole temperature is ≈135° F.

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

8. OTHER INFORMATION

Anticipated spud date is upon approval. It is expected it will take ≈3-4 months to drill and complete the well.