

District I

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

District II

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

District III

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

District IV

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

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

Form C-101
August 1, 2011

Permit 275765

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

1. Operator Name and Address APACHE CORPORATION 303 Veterans Airpark Ln Midland, TX 79705		2. OGRID Number 873
4. Property Code 326768		3. API Number 30-015-46529
5. Property Name PALMILLO 20 STATE COM		6. Well No. 366H

7. Surface Location

UL - Lot D	Section 21	Township 19S	Range 28E	Lot Idn	Feet From 831	N/S Line N	Feet From 435	E/W Line W	County Eddy
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8. Proposed Bottom Hole Location

UL - Lot D	Section 20	Township 19S	Range 28E	Lot Idn D	Feet From 330	N/S Line N	Feet From 100	E/W Line W	County Eddy
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9. Pool Information

WINCHESTER; BONE SPRING, WEST	97569
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Additional Well Information

11. Work Type New Well	12. Well Type OIL	13. Cable/Rotary	14. Lease Type State	15. Ground Level Elevation 3473
16. Multiple N	17. Proposed Depth 13892	18. Formation Bone Spring	19. Contractor	20. Spud Date 3/14/2020
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

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

21. Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
Surf	17.5	13.375	48	325	235	0
Int1	12.25	9.625	36	3000	625	0
Prod	8.5	5.5	17	13892	938	8824
Prod	8.75	5.5	17	8824	710	2500

Casing/Cement Program: Additional Comments

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22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Annular	3000	1500	
Double Ram	3000	3000	

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I further certify I have complied with 19.15.14.9 (A) NMAC ☒ and/or 19.15.14.9 (B) NMAC ☒ , if applicable.		OIL CONSERVATION DIVISION	
Signature:			
Printed Name:	Electronically filed by Sorina Flores	Approved By:	Raymond Podany
Title:	Supv of Drilling Services	Title:	Geologist
Email Address:	sorina.flores@apachecorp.com	Approved Date:	12/24/2019
Date:	12/17/2019	Expiration Date:	12/24/2021
Phone:	432-818-1167	Conditions of Approval Attached	

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number		² Pool Code		³ Pool Name	
⁴ Property Code		⁵ Property Name PALMILLO 20 STATE COM			⁶ Well Number 366H
⁷ GRID NO.		⁸ Operator Name APACHE CORPORATION			⁹ Elevation 3473'

¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet From the	East/West line	County
D	21	19S	28E		831	NORTH	435	WEST	EDDY

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	20	19S	28E		330	NORTH	100	WEST	EDDY

¹² Dedicated Acres	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.

No allowable will be assigned to this completion until all interest have been consolidated or a non-standard unit has been approved by the division.

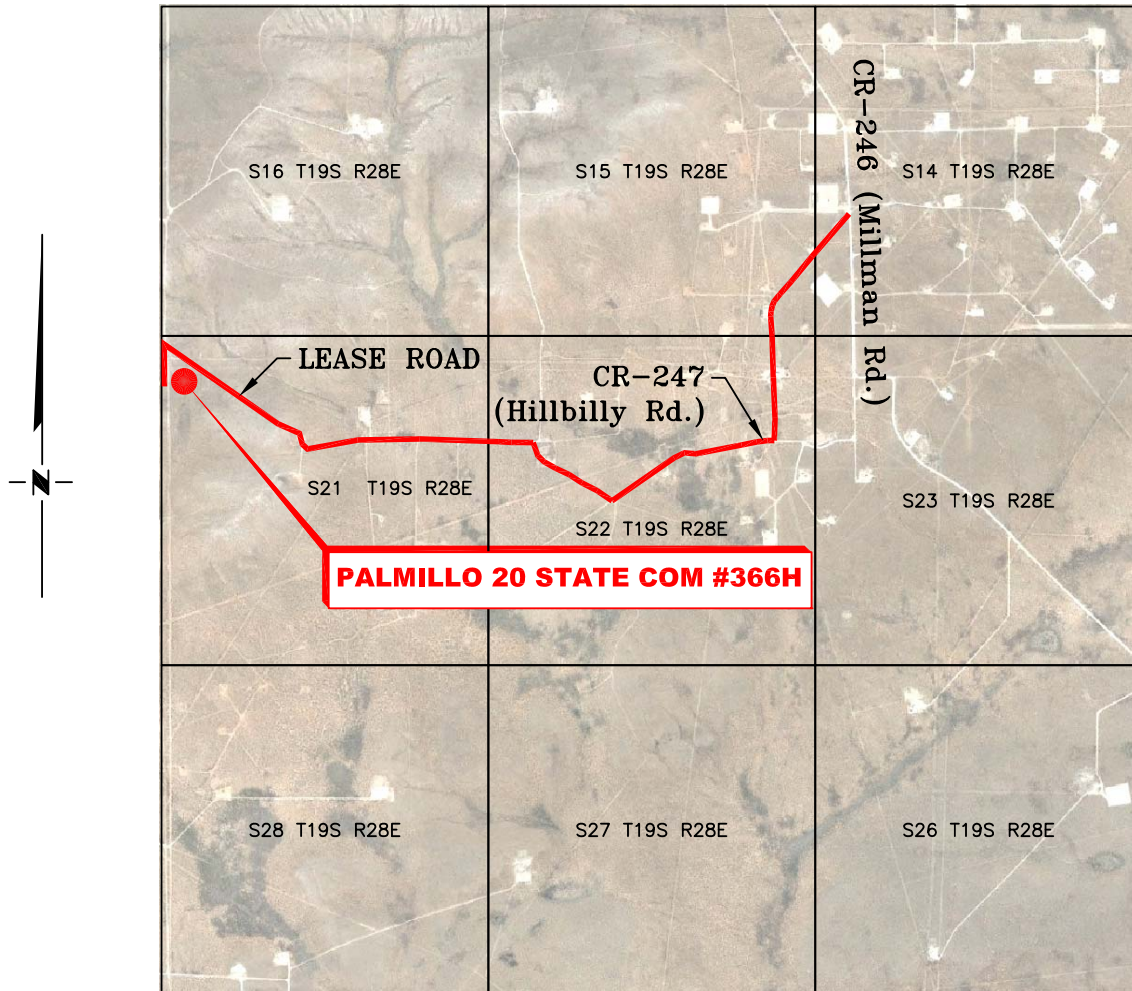
¹⁶ <u>GEODETIC DATA</u> NAD 83 GRID - NM EAST <u>SURFACE LOCATION (S.L.)</u> N: 600603.6 - E: 586028.0 LAT: 32.6510228° N LON: 104.1881296° W <u>PROPOSED PENETRATION POINT/ FIRST TAKE POINT (P.P.P./F.T.P.)</u> 330' FNL & 100' FEL SEC. 20 N: 601099.3 - E: 585494.6 LAT: 32.6523874° N LON: 104.1898606° W <u>LAST TAKE POINT/BOTTOM HOLE (L.T.P./B.H.)</u> N: 601053.0 - E: 580481.9 LAT: 32.6522776° N LON: 104.2061478° W		A: FOUND BRASS CAP "1941" N: 596120.3 E: - 580368.7 B: FOUND BRASS CAP "1941" N: 601382.0 E: - 580382.8 C: FOUND BRASS CAP "1941" N: 601430.2 E: - 585595.5 D: FOUND BRASS CAP "1941" N: 601458.8 E: - 588190.7 E: FOUND BRASS CAP "1941" N: 601487.4 E: - 590787.6 F: FOUND BRASS CAP "1941" N: 598852.6 E: - 590787.1 G: FOUND BRASS CAP "1941" N: 596216.2 E: - 590790.1		H: FOUND BRASS CAP "1941" N: 596193.2 E: - 588185.2 I: FOUND BRASS CAP "1941" N: 596170.1 E: - 585579.6 J: FOUND BRASS CAP "1941" N: 596144.1 E: - 582974.0 K: FOUND BRASS CAP "1941" N: 598801.3 E: - 585587.6 <u>CALCULATED POINTS</u> 1: N: 600066.6 - E: 580379.2 2: N: 601444.5 - E: 586893.1 3: N: 600129.3 - E: 586890.4 4: N: 600115.7 - E: 585591.6		¹⁷ OPERATOR CERTIFICATION <i>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</i> Signature _____ Date _____ Printed Name _____ E-mail Address _____	
¹⁸ SURVEYOR CERTIFICATION <i>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</i> 07-19-2019 Date of Survey Signature and Seal of Professional Surveyor _____ 10034 Certificate Number							

Job No.: LS19070768

SCALE: 1" = 100'
SURVEYED BY: AB/RU
DRAWN BY: JBT
APPROVED BY: JLF
JOB NO.: LS19070768_366F
SHEET: PAD

VICINITY MAP

NOT TO SCALE



*SECTION 21, TWP. 19 SOUTH, RGE. 28 EAST,
N. M. P. M., EDDY COUNTY, NEW MEXICO*

OPERATOR: Apache Corporation
LEASE: Palmillo 20 State Com
WELL NO.: 366H

LOCATION: 831' FNL & 435' FWL
ELEVATION: 3473'

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NO.	REVISION	DATE
JOB NO.: LS19070768		
DWG. NO.: 19070768_366V		



308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: N / A
DATE: 07-19-2019
SURVEYED BY: AB/RU
DRAWN BY: JBT
APPROVED BY: JLF
SHEET: 1 OF 1

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Santa Fe, NM 87505

GAS CAPTURE PLAN

Date: 12/24/2019

☒ Original

Operator & OGRID No.: [873] APACHE CORPORATION

☐ Amended - Reason for
Amendment: _____

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

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

Well(s)/Production Facility – Name of facility

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

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
PALMILLO 20 STATE COM #366H	30-015-46529	D-21-19S-28E	0831N 0435W	1400	Flared	

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to LUCID ENERGY DELAWARE, LLC and will be connected to LUCID ENERGY DELAWARE, LLC Low Pressure gathering system located in Eddy County, New Mexico. It will require 2500' of pipeline to connect the facility to Low Pressure gathering system. APACHE CORPORATION provides (periodically) to LUCID ENERGY DELAWARE, LLC a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, APACHE CORPORATION and LUCID ENERGY DELAWARE, LLC have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at LUCID ENERGY DELAWARE, LLC Processing Plant located in Sec. 28, Twn. 17S, Rng. 32E, Lea County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

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

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

Alternatives to Reduce Flaring

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

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

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Form APD Comments

Permit 275765

PERMIT COMMENTS

Operator Name and Address: APACHE CORPORATION [873] 303 Veterans Airpark Ln Midland, TX 79705	API Number: 30-015-46529
	Well: PALMILLO 20 STATE COM #366H

Created By	Comment	Comment Date
sflores	Apache respectfully request approval to utilize a spudder rig to pre-set surf csg. Detailed operations attached.	12/11/2019
sflores	The gas produced from production facility will be dedicated to DURANGO MIDSTREAM, LLC not LUCID ENERGY. Durango Midstream, LLC not available in pick list provided. Please see correct GCP attached.	12/17/2019

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Form APD Conditions

Permit 275765

PERMIT CONDITIONS OF APPROVAL

Operator Name and Address: APACHE CORPORATION [873] 303 Veterans Airpark Ln Midland, TX 79705		API Number: 30-015-46529
		Well: PALMILLO 20 STATE COM #366H
OCD Reviewer	Condition	
rpodany	Will require a directional survey with the C-104	
rpodany	Cement is required to circulate on both surface and intermediate1 strings of casing	

5D Plan Report



5D Plan Report

Apache Corporation

Field Name: *Apache NM (Nad 83 NMEZ)*

Site Name: *Palmillo 20 SC 366H,264H,365H,263H*

Well Name: *Palmillo 20 SC 366H*

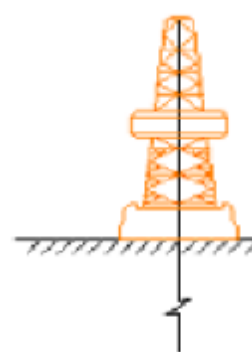
Plan: *P1:V2 (Current plan)*

26 November 2019

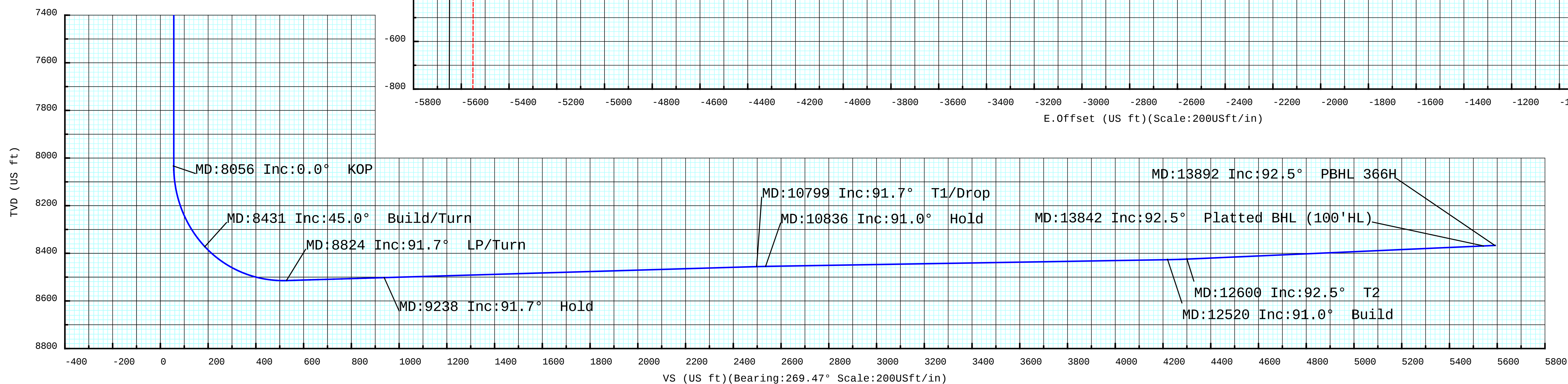
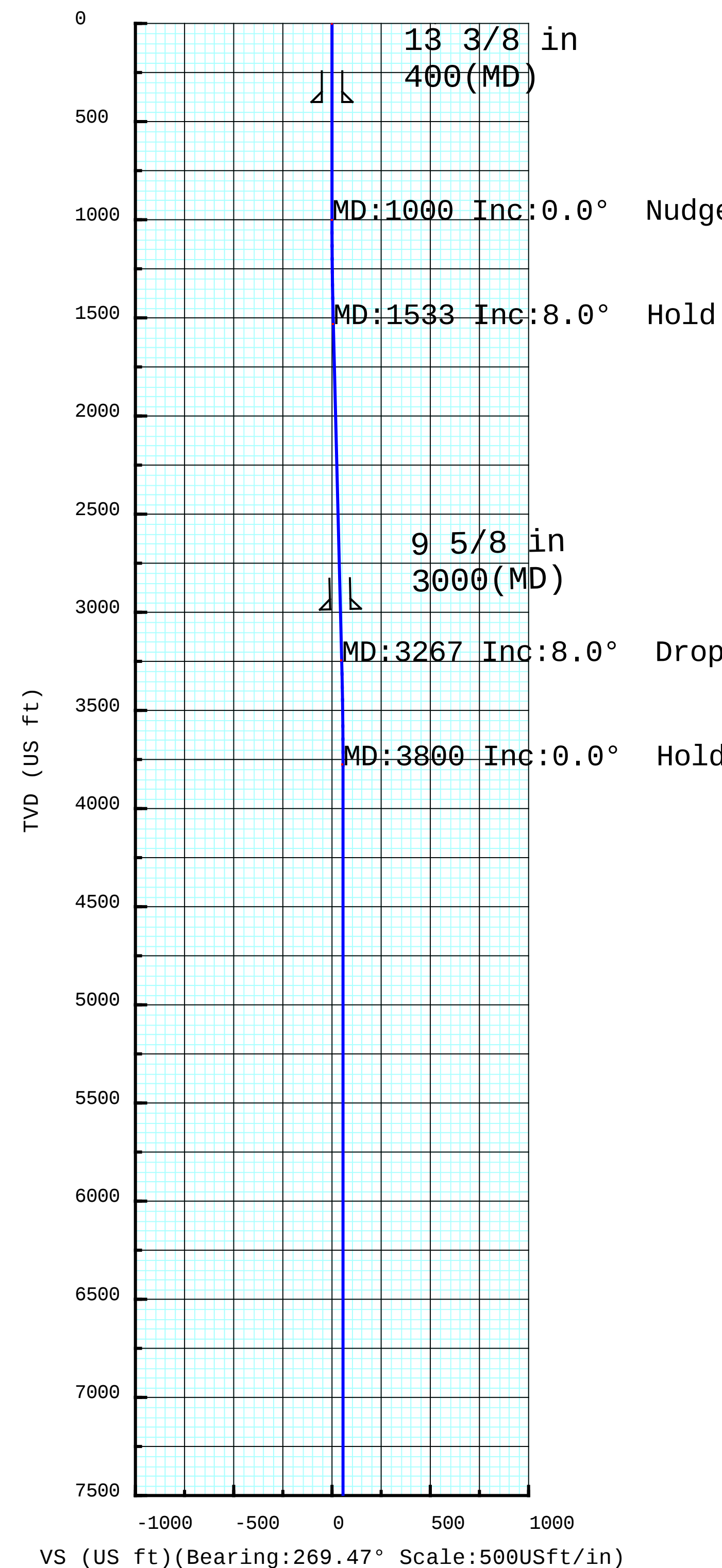




Palmillo 20 SC 366H
Eddy Co, New Mexico



KB: 3499.00'
GL: 3473.00'

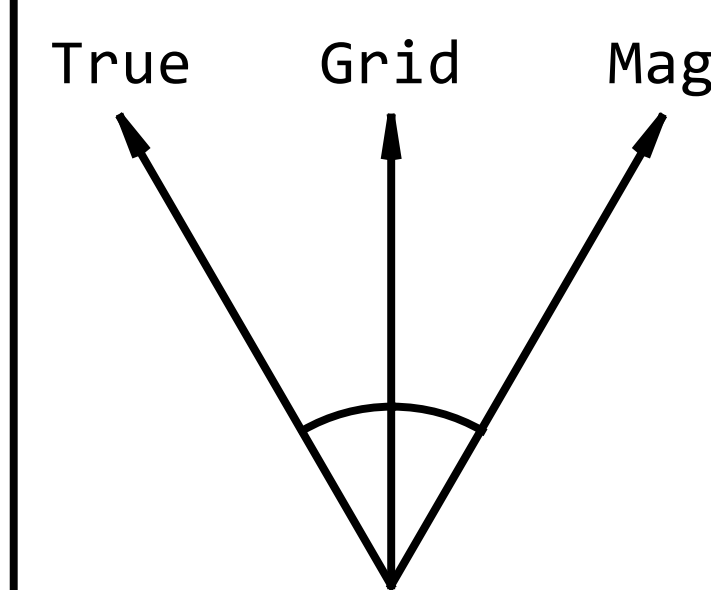


Plan Data for Palmillo 20 SC 366H

Plan Point Information:									
Dogleg Severity Unit: °/100.00ft Position offsets from Slot centre									
MD (USft)	Inc (°)	Az (°)	TVD (USft)	+N/-S (USft)	+E/-W (USft)	Northing (USft)	Easting (USft)	VSec (USft)	DLS Comments (DLSU)
0.00	0.00	0.00	0.00	0.00	-0.00	600603.60	586028.00	0.00	0.00
1000.00	0.00	0.00	1000.00	0.00	-0.00	600603.60	586028.00	0.00	0.00 Nudge
1533.25	8.00	349.23	1531.52	36.51	-6.94	600640.11	586021.06	6.60	1.50 Hold
3266.83	8.00	349.23	3248.23	273.49	-52.00	600877.09	585976.00	49.47	0.00 Drop
3800.08	0.00	0.00	3779.75	310.00	-58.94	600913.60	585969.06	56.07	1.50 Hold
8055.63	0.00	0.00	8035.30	310.00	-58.94	600913.60	585969.06	56.07	0.00 KOP
8430.63	45.00	290.00	8372.92	357.83	-190.35	600961.43	585837.65	187.03	12.00 Build/Turn
8824.43	91.70	281.87	8514.42	451.29	-533.47	601054.89	585494.53	529.27	12.00 LP/Turn
9237.69	91.70	269.47	8502.12	492.01	-943.72	601095.61	585084.28	939.13	3.00 Hold
10799.24	91.70	269.47	8455.80	477.49	-2504.52	601081.09	583523.48	2500.00	0.00 T1/Drop
10836.36	90.96	269.47	8454.94	477.15	-2541.63	601080.75	583486.37	2537.11	2.00 Hold
12520.06	90.96	269.47	8426.81	461.60	-4225.02	601065.20	581802.98	4220.57	0.00 Build
12599.53	92.55	269.47	8424.38	460.87	-4304.45	601064.47	581723.55	4300.00	2.00 T2
13842.46	92.55	269.47	8369.15	449.40	-5546.10	601053.00	580481.90	5541.71	0.00 Platted BHL (100'HL)
13892.46	92.55	269.47	8366.93	448.94	-5596.05	601052.54	580431.95	5591.66	0.00 PBHL 366H

Plan Data for Palmillo 20 SC 366H

Target Set Information:						
Name: Palm20SC366						
Position offsets from Slot centre						
Name	TVD (USft)	Elevation (USft)	+N/-S (USft)	+E/-W (USft)	Northing (USft)	Easting (USft)
NP 366H	8050.30	-4551.30	310.00	-58.94	600913.60	585969.06
FTP 366H	0.00	3499.00	495.70	-533.40	601099.30	585494.60
T1	8455.80	-4956.80	477.49	-2504.52	601081.09	583523.48
T2	8424.38	-4925.38	460.87	-4304.45	601064.47	581723.55
Platted BHL (100'HL)	8369.15	-4870.15	449.40	-5546.10	601053.00	580481.90
PBHL 366H	8366.93	-4867.93	448.94	-5596.05	601052.54	580431.95



Grid Convergence: 0.08°
Mag Declination: 7.19°
Bearing:
True = Mag + 7.19°
Grid = True - 0.08°
Total Correction: TBD°

Plan Data for Palmillo 20 SC 366H

Field: Apache NM (Nad 83 NMEZ)
Map Unit: USFt
Vertical Reference Datum (VRD): Mean Sea Level
Projected Coordinate System: NAD83 / New Mexico East (ftUS)

Site: Palmillo 20 SC 366H, 264H, 365H, 263H

Unit: USFeet
TVD Reference:

Company Name: Apache Corporation

Position: Northing: 600603.60USft Latitude: 32.651023°

Easting: 586028.00USft Longitude: -104.188130°

North Reference: Grid Grid Convergence: 0.08°

Elevation Above VRD: 3473.00USft

Comment: Eddy Co., NM

Slot: Palmillo 20 SC 366H

Position:

Offset is from Site centre

+N/-S: 0.00USft Northing: 600603.60USft Latitude: 32.651023°

+E/-W: 0.00USft Easting: 586028.00USft Longitude: -104.188130°

Elevation Above VRD: 3473.00USft

Well: Palmillo 20 SC 366H

Type: Main-Well

File Number:

Plan Folder: P1

Plan: P1:V2

Vertical Section: Position offset of origin from Slot centre:

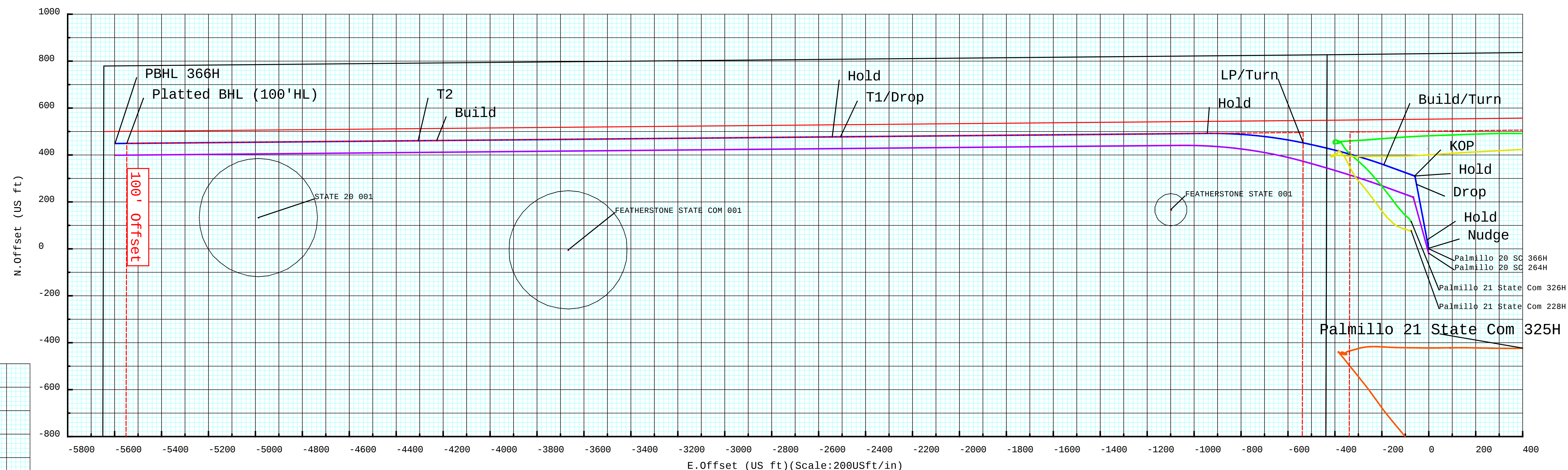
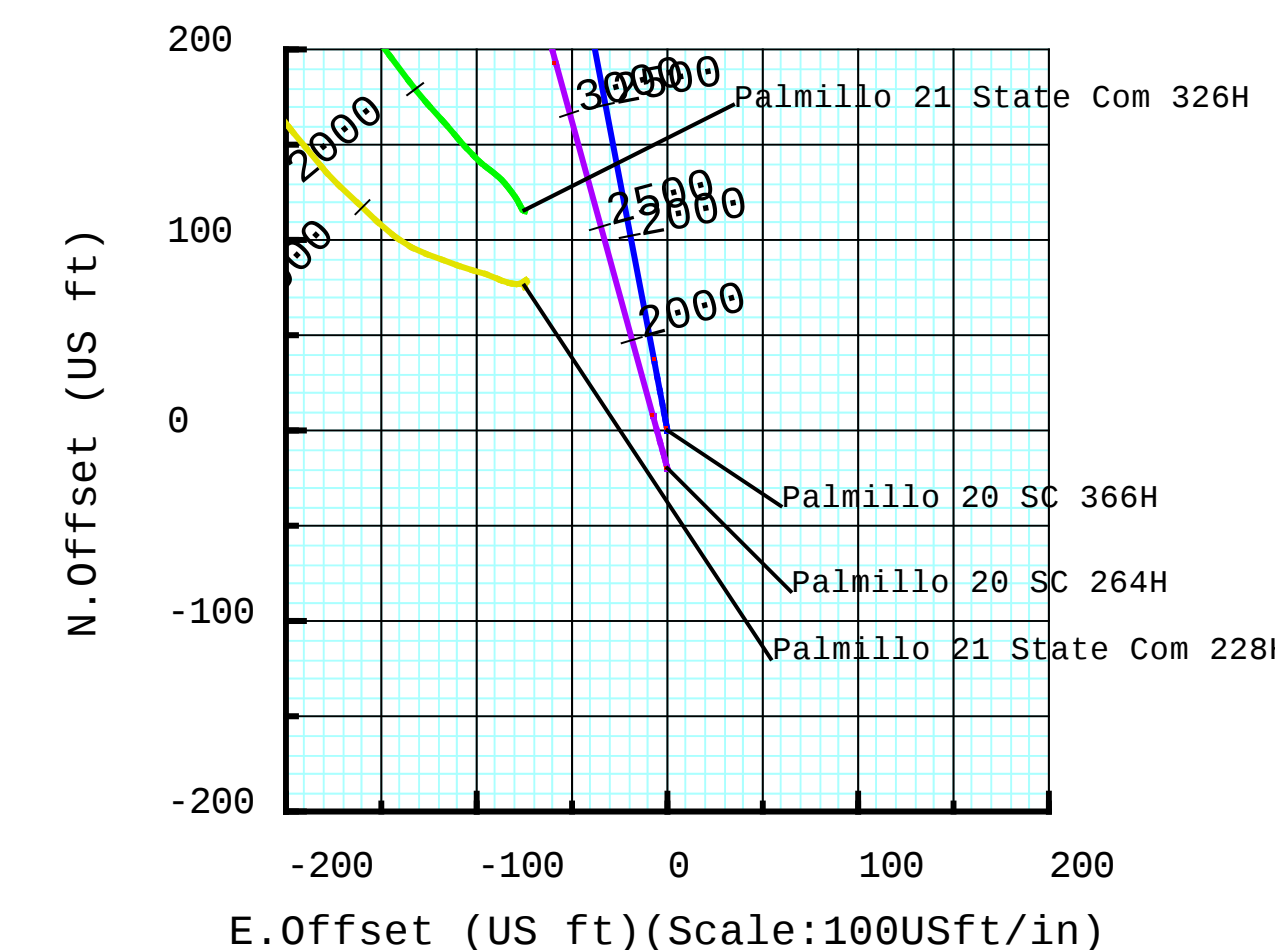
+N/-S: 0.00USft Azimuth: 269.47°

+E/-W: -0.00USft

Magnetic Parameters:

Model: Field Strength: Declination: Dip: Date:

bggm2019 47870(nT) 7.19° 60.40° 2019-12-25



Drawing By: Ty Hardin Date: 25 November 2019
Office Name: Drilling Services - Houston
Address: 12101 Cutten Road
Houston, TX 77066

Phone: +1.713.882.8256

5D Plan Report



Palmillo 20 SC 366H

Field Name: Apache NM (Nad 83 NMEZ)	Map Units: US ft		Company Name: Apache Corporation	
	Vertical Reference Datum (VRD): Mean Sea Level			
	Projected Coordinate System: NAD83 / New Mexico East (ftUS)			
	Comment:			
Site: Palmillo 20 SC 366H,264H,365 H,263H	Units: US ft	North Reference: Grid	Convergence Angle: 0.08	
	Position:	Northing: 600603.60 US ft	Latitude: 32.651022794	
		Easting: 586028.00 US ft	Longitude: -104.188129605	
	Elevation above MSL:3473.00 US ft			
Comment: Eddy Co., NM				
Slot: Palmillo 20 SC 366H	Position (Relative to Site Centre)			
	+N/-S: 0.00 US ft	Northing: 600603.60 US ft	Latitude: 32.651022794	
	+E/-W: 0.00 US ft	Easting: 586028.00 US ft	Longitude: -104.188129605	
	Slot TVD Reference: Ground Elevation			
	Elevation above MSL: 3473.00 US ft			
Comment:				
Well: Palmillo 20 SC 366H	Type:Main well		UWI:	Plan:P1:V2 (Current plan)
	File Number:	Comment:		
	Closure Distance:5614.03US ft		Closure Azimuth:274.59°	
	Vertical Section: Position of Origin (Relative to Slot centre)			
	+N/-S: 0.00 US ft		+E/-W: -0.00 US ft	Az: 269.47°
	Magnetic Parameters:			
	Model: bggm2019	Field Strength: 47870.9nT	Declination: 7.19°	Dip: 60.40°

Drill floor: Plan: P1:V2 (Current plan)**Rig Height (Drill Floor):** 26.00 US ft **Elevation above MSL:** 3499.00 US ft **Inclination:** 0.00° **Azimuth:** 0.00°**Target set: Palm20SC366 Comment:**

Target Name:	Shape:	TVD (US ft)	N. Offset (US ft)	E. Offset (US ft)	Northing (US ft)	Easting (US ft)	C. Pt. Distance (US ft)	Comment
NP 366H	Point	8050.30	310.00	-58.94	600913.60	585969.06	0.24	
FTP 366H	Point	0.00	495.70	-533.40	601099.30	585494.60	728.17	
T1	Point	8455.80	477.49	-2504.52	601081.09	583523.48	0.00	
T2	Point	8424.38	460.87	-4304.45	601064.47	581723.55	0.00	
Platted BHL (100'HL)	Point	8369.15	449.40	-5546.10	601053.00	580481.90	0.00	
PBHL 366H	Point	8366.93	448.94	-5596.05	601052.54	580431.95	0.00	

5D Plan Report

Tie Point:

MD: 0.00USFt **Inclination:** 0.00° **Azimuth:** 0.00° **TVD:** 0.00USFt **North Offset:** 0.00USFt **East Offset:** -0.00USFt

Survey Tool Ranges:

Name	Start MD(USFt)	End MD(USFt)	Source Survey
MWD	0.00	13892.46	Default Tool

Casing Points: (Relative to Slot centre)(TVD relative to Drill Floor)

Name	MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)
13 3/8 in	400.00	0.00	0.00	400.00	0.00	-0.00	600603.60	586028.00
9 5/8 in	3000.00	8.00	349.23	2984.00	237.02	-45.06	600840.62	585982.94

Wellpath created using minimum curvature.**Salient Points: (Relative to Slot centre)(TVD relative to Drill Floor)**

MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (°/100US ft)	Comment
0.00	0.00	0.00	0.00	-0.00	0.00	-0.00	600603.60	586028.00	0.00	
1000.00	0.00	0.00	1000.00	-0.00	0.00	-0.00	600603.60	586028.00	0.00	Nudge
1533.25	8.00	349.23	1531.52	6.60	36.51	-6.94	600640.11	586021.06	1.50	Hold
3266.83	8.00	349.23	3248.23	49.47	273.49	-52.00	600877.09	585976.00	0.00	Drop
3800.08	0.00	0.00	3779.75	56.07	310.00	-58.94	600913.60	585969.06	1.50	Hold
8055.63	0.00	0.00	8035.30	56.07	310.00	-58.94	600913.60	585969.06	0.00	KOP
8430.63	45.00	290.00	8372.92	187.03	357.83	-190.35	600961.43	585837.65	12.00	Build/Turn
8824.43	91.70	281.87	8514.42	529.27	451.29	-533.47	601054.89	585494.53	12.00	LP/Turn
9237.69	91.70	269.47	8502.12	939.13	492.01	-943.72	601095.61	585084.28	3.00	Hold
10799.24	91.70	269.47	8455.80	2500.00	477.49	-2504.52	601081.09	583523.48	0.00	T1/Drop
10836.36	90.96	269.47	8454.94	2537.11	477.15	-2541.63	601080.75	583486.37	2.00	Hold
12520.06	90.96	269.47	8426.81	4220.57	461.60	-4225.02	601065.20	581802.98	0.00	Build
12599.53	92.55	269.47	8424.38	4300.00	460.87	-4304.45	601064.47	581723.55	2.00	T2
13842.46	92.55	269.47	8369.15	5541.71	449.40	-5546.10	601053.00	580481.90	0.00	Platted BHL (100'HL)
13892.46	92.55	269.47	8366.93	5591.66	448.94	-5596.05	601052.54	580431.95	0.00	PBHL 366H

Interpolated Points: (Relative to Slot centre)(TVD relative to Drill Floor)

MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (°/100US ft)	Comment
0.00	0.00	0.00	0.00	-0.00	0.00	-0.00	600603.60	586028.00	0.00	
100.00	0.00	0.00	100.00	-0.00	0.00	-0.00	600603.60	586028.00	0.00	
200.00	0.00	0.00	200.00	-0.00	0.00	-0.00	600603.60	586028.00	0.00	
300.00	0.00	0.00	300.00	-0.00	0.00	-0.00	600603.60	586028.00	0.00	
400.00	0.00	0.00	400.00	-0.00	0.00	-0.00	600603.60	586028.00	0.00	13 3/8 in
500.00	0.00	0.00	500.00	-0.00	0.00	-0.00	600603.60	586028.00	0.00	
600.00	0.00	0.00	600.00	-0.00	0.00	-0.00	600603.60	586028.00	0.00	
700.00	0.00	0.00	700.00	-0.00	0.00	-0.00	600603.60	586028.00	0.00	
800.00	0.00	0.00	800.00	-0.00	0.00	-0.00	600603.60	586028.00	0.00	
900.00	0.00	0.00	900.00	-0.00	0.00	-0.00	600603.60	586028.00	0.00	
1000.00	0.00	0.00	1000.00	-0.00	0.00	-0.00	600603.60	586028.00	0.00	Nudge
1100.00	1.50	349.23	1099.99	0.23	1.29	-0.24	600604.89	586027.76	1.50	
1200.00	3.00	349.23	1199.91	0.93	5.14	-0.98	600608.74	586027.02	1.50	
1300.00	4.50	349.23	1299.69	2.09	11.57	-2.20	600615.17	586025.80	1.50	
1400.00	6.00	349.23	1399.27	3.72	20.56	-3.91	600624.16	586024.09	1.50	
1500.00	7.50	349.23	1498.57	5.81	32.10	-6.10	600635.70	586021.90	1.50	
1533.25	8.00	349.23	1531.52	6.60	36.51	-6.94	600640.11	586021.06	1.50	Hold
1600.00	8.00	349.23	1597.62	8.25	45.63	-8.68	600649.23	586019.32	0.00	
1700.00	8.00	349.23	1696.65	10.73	59.30	-11.28	600662.90	586016.72	0.00	
1800.00	8.00	349.23	1795.67	13.20	72.97	-13.87	600676.57	586014.13	0.00	
1900.00	8.00	349.23	1894.70	15.67	86.64	-16.47	600690.24	586011.53	0.00	
2000.00	8.00	349.23	1993.73	18.14	100.31	-19.07	600703.91	586008.93	0.00	
2100.00	8.00	349.23	2092.76	20.62	113.98	-21.67	600717.58	586006.33	0.00	
2200.00	8.00	349.23	2191.78	23.09	127.65	-24.27	600731.25	586003.73	0.00	
2300.00	8.00	349.23	2290.81	25.56	141.32	-26.87	600744.92	586001.13	0.00	

5D Plan Report

Interpolated Points: (Relative to Slot centre)(TVD relative to Drill Floor)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (°/100US ft)	Comment
2400.00	8.00	349.23	2389.84	28.03	154.99	-29.47	600758.59	585998.53	0.00	
2500.00	8.00	349.23	2488.86	30.51	168.67	-32.07	600772.27	585995.93	0.00	
2600.00	8.00	349.23	2587.89	32.98	182.34	-34.67	600785.94	585993.33	0.00	
2700.00	8.00	349.23	2686.92	35.45	196.01	-37.27	600799.61	585990.73	0.00	
2800.00	8.00	349.23	2785.95	37.92	209.68	-39.87	600813.28	585988.13	0.00	
2900.00	8.00	349.23	2884.97	40.40	223.35	-42.46	600826.95	585985.54	0.00	
3000.00	8.00	349.23	2984.00	42.87	237.02	-45.06	600840.62	585982.94	0.00	9 5/8 in
3100.00	8.00	349.23	3083.03	45.34	250.69	-47.66	600854.29	585980.34	0.00	
3200.00	8.00	349.23	3182.05	47.81	264.36	-50.26	600867.96	585977.74	0.00	
3266.83	8.00	349.23	3248.23	49.47	273.49	-52.00	600877.09	585976.00	0.00	Drop
3300.00	7.50	349.23	3281.10	50.26	277.89	-52.83	600881.49	585975.17	1.50	
3400.00	6.00	349.23	3380.40	52.35	289.44	-55.03	600893.04	585972.97	1.50	
3500.00	4.50	349.23	3479.98	53.98	298.43	-56.74	600902.03	585971.26	1.50	
3600.00	3.00	349.23	3579.76	55.14	304.85	-57.96	600908.45	585970.04	1.50	
3700.00	1.50	349.23	3679.68	55.84	308.71	-58.70	600912.31	585969.30	1.50	
3800.00	0.00	349.23	3779.67	56.07	310.00	-58.94	600913.60	585969.06	1.50	
3800.08	0.00	0.00	3779.75	56.07	310.00	-58.94	600913.60	585969.06	1.50	Hold
3900.00	0.00	0.00	3879.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
4000.00	0.00	0.00	3979.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
4100.00	0.00	0.00	4079.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
4200.00	0.00	0.00	4179.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
4300.00	0.00	0.00	4279.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
4400.00	0.00	0.00	4379.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
4500.00	0.00	0.00	4479.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
4600.00	0.00	0.00	4579.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
4700.00	0.00	0.00	4679.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
4800.00	0.00	0.00	4779.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
4900.00	0.00	0.00	4879.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
5000.00	0.00	0.00	4979.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
5100.00	0.00	0.00	5079.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
5200.00	0.00	0.00	5179.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
5300.00	0.00	0.00	5279.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
5400.00	0.00	0.00	5379.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
5500.00	0.00	0.00	5479.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
5600.00	0.00	0.00	5579.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
5700.00	0.00	0.00	5679.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
5800.00	0.00	0.00	5779.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
5900.00	0.00	0.00	5879.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
6000.00	0.00	0.00	5979.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
6100.00	0.00	0.00	6079.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
6200.00	0.00	0.00	6179.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
6300.00	0.00	0.00	6279.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
6400.00	0.00	0.00	6379.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
6500.00	0.00	0.00	6479.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
6600.00	0.00	0.00	6579.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
6700.00	0.00	0.00	6679.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
6800.00	0.00	0.00	6779.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
6900.00	0.00	0.00	6879.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
7000.00	0.00	0.00	6979.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
7100.00	0.00	0.00	7079.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
7200.00	0.00	0.00	7179.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
7300.00	0.00	0.00	7279.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
7400.00	0.00	0.00	7379.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
7500.00	0.00	0.00	7479.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
7600.00	0.00	0.00	7579.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
7700.00	0.00	0.00	7679.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
7800.00	0.00	0.00	7779.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
7900.00	0.00	0.00	7879.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	
8000.00	0.00	0.00	7979.67	56.07	310.00	-58.94	600913.60	585969.06	0.00	

5D Plan Report

Interpolated Points: (Relative to Slot centre)(TVD relative to Drill Floor)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (°/100US ft)	Comment
8055.63	0.00	0.00	8035.30	56.07	310.00	-58.94	600913.60	585969.06	0.00	KOP
8100.00	5.32	290.00	8079.61	58.00	310.71	-60.88	600914.31	585967.12	12.00	
8200.00	17.32	290.00	8177.48	76.36	317.41	-79.30	600921.01	585948.70	12.00	
8300.00	29.32	290.00	8269.14	113.37	330.93	-116.43	600934.53	585911.57	12.00	
8400.00	41.32	290.00	8350.58	167.42	350.67	-170.67	600954.27	585857.33	12.00	
8430.63	45.00	290.00	8372.92	187.03	357.83	-190.35	600961.43	585837.65	12.00	Build/Turn
8500.00	53.19	288.01	8418.31	236.42	374.83	-239.90	600978.43	585788.10	12.00	
8600.00	65.03	285.77	8469.56	318.18	399.62	-321.89	601003.22	585706.11	12.00	
8700.00	76.91	283.93	8502.11	409.18	423.75	-413.11	601027.35	585614.89	12.00	
8800.00	88.80	282.27	8514.53	505.43	446.19	-509.58	601049.79	585518.42	12.00	
8824.43	91.70	281.87	8514.42	529.27	451.29	-533.47	601054.89	585494.53	12.00	LP/Turn
8900.00	91.71	279.60	8512.18	603.35	465.36	-607.68	601068.96	585420.32	3.00	
9000.00	91.71	276.60	8509.20	702.16	479.45	-706.62	601083.05	585321.38	3.00	
9100.00	91.71	273.60	8506.21	801.62	488.33	-806.17	601091.93	585221.83	3.00	
9200.00	91.70	270.60	8503.24	901.46	491.99	-906.05	601095.59	585121.95	3.00	
9237.69	91.70	269.47	8502.12	939.13	492.01	-943.72	601095.61	585084.28	3.00	Hold
9300.00	91.70	269.47	8500.27	1001.41	491.43	-1006.00	601095.03	585022.00	0.00	
9400.00	91.70	269.47	8497.30	1101.37	490.50	-1105.95	601094.10	584922.05	0.00	
9500.00	91.70	269.47	8494.34	1201.33	489.57	-1205.91	601093.17	584822.09	0.00	
9600.00	91.70	269.47	8491.37	1301.28	488.64	-1305.86	601092.24	584722.14	0.00	
9700.00	91.70	269.47	8488.40	1401.24	487.71	-1405.81	601091.31	584622.19	0.00	
9800.00	91.70	269.47	8485.44	1501.19	486.78	-1505.76	601090.38	584522.24	0.00	
9900.00	91.70	269.47	8482.47	1601.15	485.85	-1605.71	601089.45	584422.29	0.00	
10000.00	91.70	269.47	8479.51	1701.11	484.92	-1705.66	601088.52	584322.34	0.00	
10100.00	91.70	269.47	8476.54	1801.06	483.99	-1805.62	601087.59	584222.38	0.00	
10200.00	91.70	269.47	8473.57	1901.02	483.06	-1905.57	601086.66	584122.43	0.00	
10300.00	91.70	269.47	8470.61	2000.97	482.13	-2005.52	601085.73	584022.48	0.00	
10400.00	91.70	269.47	8467.64	2100.93	481.20	-2105.47	601084.80	583922.53	0.00	
10500.00	91.70	269.47	8464.68	2200.89	480.27	-2205.42	601083.87	583822.58	0.00	
10600.00	91.70	269.47	8461.71	2300.84	479.34	-2305.37	601082.94	583722.63	0.00	
10700.00	91.70	269.47	8458.74	2400.80	478.41	-2405.33	601082.01	583622.67	0.00	
10799.24	91.70	269.47	8455.80	2500.00	477.49	-2504.52	601081.09	583523.48	0.00	T1/Drop
10800.00	91.68	269.47	8455.78	2500.75	477.48	-2505.28	601081.08	583522.72	2.00	
10836.36	90.96	269.47	8454.94	2537.11	477.15	-2541.63	601080.75	583486.37	2.00	Hold
10900.00	90.96	269.47	8453.88	2600.73	476.56	-2605.25	601080.16	583422.75	0.00	
11000.00	90.96	269.47	8452.21	2700.72	475.64	-2705.24	601079.24	583322.76	0.00	
11100.00	90.96	269.47	8450.53	2800.71	474.71	-2805.22	601078.31	583222.78	0.00	
11200.00	90.96	269.47	8448.86	2900.69	473.79	-2905.20	601077.39	583122.80	0.00	
11300.00	90.96	269.47	8447.19	3000.68	472.87	-3005.18	601076.47	583022.82	0.00	
11400.00	90.96	269.47	8445.52	3100.66	471.94	-3105.16	601075.54	582922.84	0.00	
11500.00	90.96	269.47	8443.85	3200.65	471.02	-3205.14	601074.62	582822.86	0.00	
11600.00	90.96	269.47	8442.18	3300.64	470.10	-3305.13	601073.70	582722.87	0.00	
11700.00	90.96	269.47	8440.51	3400.62	469.17	-3405.11	601072.77	582622.89	0.00	
11800.00	90.96	269.47	8438.84	3500.61	468.25	-3505.09	601071.85	582522.91	0.00	
11900.00	90.96	269.47	8437.17	3600.59	467.33	-3605.07	601070.93	582422.93	0.00	
12000.00	90.96	269.47	8435.50	3700.58	466.40	-3705.05	601070.00	582322.95	0.00	
12100.00	90.96	269.47	8433.83	3800.57	465.48	-3805.04	601069.08	582222.96	0.00	
12200.00	90.96	269.47	8432.16	3900.55	464.56	-3905.02	601068.16	582122.98	0.00	
12300.00	90.96	269.47	8430.49	4000.54	463.63	-4005.00	601067.23	582023.00	0.00	
12400.00	90.96	269.47	8428.82	4100.53	462.71	-4104.98	601066.31	581923.02	0.00	
12500.00	90.96	269.47	8427.14	4200.51	461.79	-4204.96	601065.39	581823.04	0.00	
12520.06	90.96	269.47	8426.81	4220.57	461.60	-4225.02	601065.20	581802.98	0.00	Build
12599.53	92.55	269.47	8424.38	4300.00	460.87	-4304.45	601064.47	581723.55	2.00	T2
12600.00	92.55	269.47	8424.36	4300.47	460.87	-4304.92	601064.47	581723.08	0.00	
12700.00	92.55	269.47	8419.92	4400.37	459.94	-4404.81	601063.54	581623.19	0.00	
12800.00	92.55	269.47	8415.47	4500.27	459.02	-4504.71	601062.62	581523.29	0.00	
12900.00	92.55	269.47	8411.03	4600.17	458.10	-4604.61	601061.70	581423.39	0.00	
13000.00	92.55	269.47	8406.59	4700.07	457.17	-4704.50	601060.77	581323.50	0.00	
13100.00	92.55	269.47	8402.14	4799.97	456.25	-4804.40	601059.85	581223.60	0.00	

5D Plan Report

Interpolated Points: (Relative to Slot centre)(TVD relative to Drill Floor)										
MD (US ft)	Inc (°)	Az (°)	TVD (US ft)	VS (US ft)	N.Offset (US ft)	E.Offset (US ft)	Northing (US ft)	Easting (US ft)	DLS (°/100US ft)	Comment
13200.00	92.55	269.47	8397.70	4899.88	455.33	-4904.30	601058.93	581123.70	0.00	
13300.00	92.55	269.47	8393.25	4999.78	454.41	-5004.19	601058.01	581023.81	0.00	
13400.00	92.55	269.47	8388.81	5099.68	453.48	-5104.09	601057.08	580923.91	0.00	
13500.00	92.55	269.47	8384.37	5199.58	452.56	-5203.99	601056.16	580824.01	0.00	
13600.00	92.55	269.47	8379.92	5299.48	451.64	-5303.89	601055.24	580724.11	0.00	
13700.00	92.55	269.47	8375.48	5399.38	450.71	-5403.78	601054.31	580624.22	0.00	
13800.00	92.55	269.47	8371.04	5499.28	449.79	-5503.68	601053.39	580524.32	0.00	
13842.46	92.55	269.47	8369.15	5541.71	449.40	-5546.10	601053.00	580481.90	0.00	Platted BHL (100'HL)
13892.46	92.55	269.47	8366.93	5591.66	448.94	-5596.05	601052.54	580431.95	0.00	PBHL 366H

5D Anti-Collision Report



5D Anti-Collision Report

Apache Corporation

Field Name: *Apache NM (Nad 83 NMEZ)*

Site Name: *Palmillo 20 SC 366H,264H,365H,263H*

Well Name: *Palmillo 20 SC 366H*

26 November 2019



5D Anti-Collision Report



Palmillo 20 SC 366H

Field Name: Apache NM (Nad 83 NMEZ)	Map Units: US ft		Company Name: Apache Corporation	
	Vertical Reference Datum (VRD): Mean Sea Level			
	Projected Coordinate System: NAD83 / New Mexico East (ftUS)			
	Comment:			
Site: Palmillo 20 SC 366H,264H,365 H,263H	Units: US ft	North Reference: Grid	Convergence Angle: 0.08	
	Position:	Northing: 600603.60 US ft	Latitude: 32.651022794	
		Easting: 586028.00 US ft	Longitude: -104.188129605	
	Elevation above MSL:3473.00 US ft			
Comment: Eddy Co., NM				
Slot: Palmillo 20 SC 366H	Position (Relative to Site Centre)			
	+N/-S: 0.00 US ft	Northing: 600603.60 US ft	Latitude: 32.651022794	
	+E/-W: 0.00 US ft	Easting: 586028.00 US ft	Longitude: -104.188129605	
	Slot TVD Reference: Ground Elevation			
	Elevation above MSL: 3473.00 US ft			
Comment:				
Well: Palmillo 20 SC 366H	Type:Main well		UWI:	Plan:P1:V2
	File Number:	Comment:		
	Closure Distance:5614.03US ft		Closure Azimuth:274.59°	
	Vertical Section: Position of Origin (Relative to Slot centre)			
	+N/-S: 0.00 US ft	+E/-W: -0.00 US ft	Az: 269.47°	
	Magnetic Parameters:			
	Model: bggm2019	Field Strength: 47870.9nT	Declination: 7.19°	Dip: 60.40°
	Date: 25/Dec/2019			
Drill floor: Plan: P1:V2				
Rig Height (Drill Floor): 26.00US ft Elevation above MSL: 3499.00US ft Inclination: 0.00° Azimuth: 0.00°				

5D Anti-Collision Report

Anti-Collision Analysis Criteria

Primary Well	Palmillo 20 SC 366H (p)		
Depth Range	0.00 - 13892.46 US ft	Analysis Interval	100.00US ft
Orientation of Ellipsoid dimensions	Wellbore (High Side, Lateral, Along Hole)	AC Filter Info:	Separation Factor: 5
Separation Factor Method	STANDARD	Uncertainties computed at	2σ
Analysis Method	Vector Separation	Ellipsoid Combination Method	Independent
Surface uncertainty	Not Applied		
Secondary Well Names:	Palmillo 21 State Com 228H (s), Palmillo 21 State Com 326H (s), Palmillo 20 SC 264H (p), STATE 20 001 (s), FEATHERSTONE STATE COM 001 (s), FEATHERSTONE STATE 001 (s), Palmillo 20 SC 365H (p), Palmillo 20 SC 263H (p)		

Report Terminology

Ellipsoid Parameters	
TVD Spread:	Dimension in the TVD Direction.
Ellipse Parameters	
S.Minor, S.Major:	Dimensions of the bounding ellipse in the High Side, Lateral plane.
PHI:	Angle between HS and S.Minor axes.
AC Parameters	
ES:	Distance between the extremities of the primary and secondary uncertainty ellipsoids in the direction Cr-Cr.
CC:	3D closest approach distance from a point on the primary well to the secondary well.
T.Face to Sec:	Angle between the Hi-Side vector of the primary well at the current location and line of closest approach between the two wells.

Survey Tool Ranges:

Name	Start MD(USFt)	End MD(USFt)	Source Survey
MWD	0.00	13892.46	Default Tool

Wellpath created using minimum curvature.

5D Anti-Collision Report

Anti-Collision Summary (TVD relative to Drill Floor)

SF								
Secondary Well Name	Pri MD (US ft)	Pri TVD (US ft)	Sec MD (US ft)	Sec TVD (US ft)	ES (US ft)	CC (US ft)	SF	Risk
STATE 20 001 (s)	13267.19	8394.71	8419.71	8394.71	-67.03	322.34	0.83	SF(Hi)
FEATHERSTONE STATE COM 001 (s)	11933.40	8436.61	8442.61	8436.61	119.99	473.64	1.34	SF(Med)
Palmillo 20 SC 264H (p)	7022.07	7001.74	7017.69	7000.42	55.01	87.06	2.72	
Palmillo 21 State Com 228H (s)	7216.02	7195.69	7365.90	7193.58	63.27	87.19	3.65	
Palmillo 21 State Com 326H (s)	8410.55	8358.43	8450.34	8340.25	93.01	119.86	4.46	
Palmillo 20 SC 365H (p)	13892.46	8366.93	13894.54	8382.27	1280.20	1574.71	5.35	
FEATHERSTONE STATE 001 (s)	2370.31	2360.44	2349.00	2360.00	994.41	1069.34	14.27	
Palmillo 20 SC 263H (p)	13892.10	8366.94	12664.01	7213.10	1879.90	2013.30	15.09	
CC								
Secondary Well Name	Pri MD (US ft)	Pri TVD (US ft)	Sec MD (US ft)	Sec TVD (US ft)	ES (US ft)	CC (US ft)	SF	Risk
Palmillo 20 SC 264H (p)	0.00	0.00	0.00	0.00	18.89	20.00	17.94	CC (Lo)
Palmillo 21 State Com 228H (s)	7213.28	7192.95	7364.69	7193.03	63.27	87.16	3.65	
Palmillo 21 State Com 326H (s)	8422.85	8367.38	8449.28	8339.64	92.77	119.27	4.50	
STATE 20 001 (s)	13285.16	8393.91	8418.91	8393.91	-58.22	321.84	0.85	SF(Hi)
FEATHERSTONE STATE COM 001 (s)	11965.82	8436.07	8442.07	8436.07	125.38	472.53	1.36	SF(Med)
FEATHERSTONE STATE 001 (s)	2399.61	2389.45	2349.00	2360.00	1002.00	1068.94	15.97	
Palmillo 20 SC 365H (p)	50.00	50.00	36.00	50.00	1075.26	1076.47	887.00	
Palmillo 20 SC 263H (p)	50.00	50.00	36.00	50.00	1115.18	1116.40	919.90	

Range Summary**Secondary Well Name: Palmillo 20 SC 264H (p)**

CC		
Start MD (US ft)	End MD (US ft)	Risk
0.00	1200.00	CC (Lo)

Secondary Well Name: STATE 20 001 (s)

SF		
Start MD (US ft)	End MD (US ft)	Risk
12700.00	12900.00	SF (Lo)
13000.00	13100.00	SF (Med)
13200.00	13300.00	SF (Hi)
13400.00	13500.00	SF (Med)
13600.00	13892.46	SF (Lo)

Secondary Well Name: FEATHERSTONE STATE COM 001 (s)

SF		
Start MD (US ft)	End MD (US ft)	Risk
11500.00	11800.00	SF (Lo)
11900.00	12000.00	SF (Med)
12100.00	12400.00	SF (Lo)

Primary Well: Palmillo 20 SC 366H (p)(TVD relative to Drill Floor)(All Azimuth Relative to GRID NORTH)

Pri MD (US ft)	Inc (°)	Az (°)	Pri TVD (US ft)	S.Major (US ft)	S.Minor (US ft)	T.Face to Sec (°)	ES (US ft)	CC (US ft)	SF	Nearest Well	Risk
800.00	0.00	0.00	800.00	1.69	1.69	180.00	15.83	20.00	4.79	Palmillo 20 SC 264H (p)	CC (Lo)
900.00	0.00	0.00	900.00	1.91	1.91	180.00	15.38	20.00	4.33	Palmillo 20 SC 264H (p)	CC (Lo)
1000.00	0.00	0.00	1000.00	2.14	2.14	180.00	14.93	20.00	3.94	Palmillo 20 SC 264H (p)	CC (Lo)

5D Anti-Collision Report

Primary Well: Palmillo 20 SC 366H (p)(TVD relative to Drill Floor)(All Azimuth Relative to GRID NORTH)												
Pri MD (US ft)	Inc (°)	Az (°)	Pri TVD (US ft)	S.Major (US ft)	S.Minor (US ft)	T.Face to Sec (°)	ES (US ft)	CC (US ft)	SF	Nearest Well	Risk	
1100.00	1.50	349.23	1099.99	2.36	2.36	190.11	15.76	21.29	3.85	Palmillo 20 SC 264H (p)	CC (Lo)	
1200.00	3.00	349.23	1199.91	2.58	2.58	188.55	19.19	25.16	4.21	Palmillo 20 SC 264H (p)	CC (Lo)	
1300.00	4.50	349.23	1299.69	2.81	2.81	187.28	23.94	30.36	4.73	Palmillo 20 SC 264H (p)		
3200.00	8.00	349.23	3182.05	8.47	7.30	195.84	61.68	77.08	5.00	Palmillo 20 SC 264H (p)		
3300.00	7.50	349.23	3281.10	8.78	7.53	196.06	63.50	79.39	5.00	Palmillo 20 SC 264H (p)		
4000.00	0.00	0.00	3979.67	10.15	8.82	184.45	71.88	90.27	4.91	Palmillo 20 SC 264H (p)		
4100.00	0.00	0.00	4079.67	10.33	9.03	184.45	71.45	90.27	4.80	Palmillo 20 SC 264H (p)		
4200.00	0.00	0.00	4179.67	10.52	9.25	184.45	71.01	90.27	4.69	Palmillo 20 SC 264H (p)		
4300.00	0.00	0.00	4279.67	10.71	9.46	184.45	70.58	90.27	4.58	Palmillo 20 SC 264H (p)		
4400.00	0.00	0.00	4379.67	10.90	9.68	184.45	70.14	90.27	4.48	Palmillo 20 SC 264H (p)		
4500.00	0.00	0.00	4479.67	11.09	9.90	184.45	69.71	90.27	4.39	Palmillo 20 SC 264H (p)		
4600.00	0.00	0.00	4579.67	11.29	10.11	184.45	69.27	90.27	4.30	Palmillo 20 SC 264H (p)		
4700.00	0.00	0.00	4679.67	11.48	10.33	184.45	68.83	90.27	4.21	Palmillo 20 SC 264H (p)		
4800.00	0.00	0.00	4779.67	11.68	10.55	184.45	68.40	90.27	4.13	Palmillo 20 SC 264H (p)		
4900.00	0.00	0.00	4879.67	11.87	10.77	184.45	67.96	90.27	4.05	Palmillo 20 SC 264H (p)		
5000.00	0.00	0.00	4979.67	12.07	10.99	184.45	67.52	90.27	3.97	Palmillo 20 SC 264H (p)		
5100.00	0.00	0.00	5079.67	12.27	11.21	184.45	67.08	90.27	3.89	Palmillo 20 SC 264H (p)		
5200.00	0.00	0.00	5179.67	12.47	11.42	184.45	66.64	90.27	3.82	Palmillo 20 SC 264H (p)		
5300.00	0.00	0.00	5279.67	12.67	11.64	184.45	66.20	90.27	3.75	Palmillo 20 SC 264H (p)		
5400.00	0.00	0.00	5379.67	12.87	11.86	184.45	65.76	90.27	3.68	Palmillo 20 SC 264H (p)		
5500.00	0.00	0.00	5479.67	13.07	12.08	184.45	65.32	90.27	3.62	Palmillo 20 SC 264H (p)		
5600.00	0.00	0.00	5579.67	13.27	12.30	184.45	64.88	90.27	3.55	Palmillo 20 SC 264H (p)		
5700.00	0.00	0.00	5679.67	13.48	12.52	184.45	64.44	90.27	3.49	Palmillo 20 SC 264H (p)		
5800.00	0.00	0.00	5779.67	13.68	12.74	184.45	63.99	90.27	3.44	Palmillo 20 SC 264H (p)		
5900.00	0.00	0.00	5879.67	13.88	12.96	184.45	63.55	90.27	3.38	Palmillo 20 SC 264H (p)		
6000.00	0.00	0.00	5979.67	14.09	13.18	184.45	63.11	90.27	3.32	Palmillo 20 SC 264H (p)		
6100.00	0.00	0.00	6079.67	14.29	13.40	184.45	62.67	90.27	3.27	Palmillo 20 SC 264H (p)		
6200.00	0.00	0.00	6179.67	14.50	13.63	184.45	62.22	90.27	3.22	Palmillo 20 SC 264H (p)		
6300.00	0.00	0.00	6279.67	14.71	13.85	184.45	61.78	90.27	3.17	Palmillo 20 SC 264H (p)		
6400.00	0.00	0.00	6379.67	14.92	14.07	184.45	61.34	90.27	3.12	Palmillo 20 SC 264H (p)		
6500.00	0.00	0.00	6479.67	15.12	14.29	184.45	60.90	90.27	3.07	Palmillo 20 SC 264H (p)		
6600.00	0.00	0.00	6579.67	15.33	14.51	184.45	60.45	90.27	3.03	Palmillo 20 SC 264H (p)		
6700.00	0.00	0.00	6679.67	15.54	14.73	184.45	60.01	90.27	2.98	Palmillo 20 SC 264H (p)		
6800.00	0.00	0.00	6779.67	15.75	14.95	184.45	59.56	90.27	2.94	Palmillo 20 SC 264H (p)		
6900.00	0.00	0.00	6879.67	15.96	15.17	185.59	58.60	89.81	2.88	Palmillo 20 SC 264H (p)		

5D Anti-Collision Report

Primary Well: Palmillo 20 SC 366H (p)(TVD relative to Drill Floor)(All Azimuth Relative to GRID NORTH)											
Pri MD (US ft)	Inc (°)	Az (°)	Pri TVD (US ft)	S.Major (US ft)	S.Minor (US ft)	T.Face to Sec (°)	ES (US ft)	CC (US ft)	SF	Nearest Well	Risk
7000.00	0.00	0.00	6979.67	16.17	15.40	198.08	55.12	87.02	2.73	Palmillo 20 SC 264H (p)	
7100.00	0.00	0.00	7079.67	16.38	15.62	219.81	62.32	93.91	2.97	Palmillo 20 SC 264H (p)	
7200.00	0.00	0.00	7179.67	16.59	15.84	354.13	64.42	87.97	3.74	Palmillo 21 State Com 228H (s)	
8400.00	41.32	290.00	8350.58	19.12	16.21	71.04	94.27	121.26	4.49	Palmillo 21 State Com 326H (s)	
10700.00	91.70	269.47	8458.74	66.47	20.41	265.46	1074.49	1351.01	4.89	FEATHERST ONE STATE COM 001 (s)	
10800.00	91.68	269.47	8455.78	69.12	21.02	265.85	981.14	1257.85	4.55	FEATHERST ONE STATE COM 001 (s)	
10900.00	90.96	269.47	8453.88	71.77	21.65	267.84	888.78	1165.80	4.21	FEATHERST ONE STATE COM 001 (s)	
11000.00	90.96	269.47	8452.21	74.43	22.27	268.04	797.72	1075.16	3.88	FEATHERST ONE STATE COM 001 (s)	
11100.00	90.96	269.47	8450.53	77.10	22.91	268.25	708.32	986.33	3.55	FEATHERST ONE STATE COM 001 (s)	
11200.00	90.96	269.47	8448.86	79.77	23.54	268.45	621.03	899.84	3.23	FEATHERST ONE STATE COM 001 (s)	
11300.00	90.96	269.47	8447.19	82.45	24.19	268.65	536.49	816.44	2.92	FEATHERST ONE STATE COM 001 (s)	
11400.00	90.96	269.47	8445.52	85.14	24.83	268.85	455.51	737.17	2.62	FEATHERST ONE STATE COM 001 (s)	
11500.00	90.96	269.47	8443.85	87.83	25.49	269.06	379.15	663.53	2.33	FEATHERST ONE STATE COM 001 (s)	SF(Lo)
11600.00	90.96	269.47	8442.18	90.52	26.14	269.26	308.58	597.60	2.07	FEATHERST ONE STATE COM 001 (s)	SF(Lo)
11700.00	90.96	269.47	8440.51	93.22	26.80	269.46	244.43	542.18	1.82	FEATHERST ONE STATE COM 001 (s)	SF(Lo)
11800.00	90.96	269.47	8438.84	95.92	27.47	269.66	184.46	500.79	1.58	FEATHERST ONE STATE COM 001 (s)	SF(Lo)
11900.00	90.96	269.47	8437.17	98.63	28.14	269.87	127.31	477.10	1.36	FEATHERST ONE STATE COM 001 (s)	SF(Med)
11933.40	90.96	269.47	8436.61	99.53	28.36	269.93	119.99	473.64	1.34	FEATHERST ONE STATE COM 001 (s)	SF(Med)
12000.00	90.96	269.47	8435.50	101.33	28.81	270.07	139.31	473.76	1.42	FEATHERST ONE STATE COM 001 (s)	SF(Med)
12100.00	90.96	269.47	8433.83	104.04	29.48	270.27	186.53	491.18	1.61	FEATHERST ONE STATE COM 001 (s)	SF(Lo)
12200.00	90.96	269.47	8432.16	106.75	30.16	270.47	236.30	527.33	1.81	FEATHERST ONE STATE COM 001 (s)	SF(Lo)

5D Anti-Collision Report

Primary Well: Palmillo 20 SC 366H (p)(TVD relative to Drill Floor)(All Azimuth Relative to GRID NORTH)												
Pri MD (US ft)	Inc (°)	Az (°)	Pri TVD (US ft)	S.Major (US ft)	S.Minor (US ft)	T.Face to Sec (°)	ES (US ft)	CC (US ft)	SF	Nearest Well	Risk	
12300.00	90.96	269.47	8430.49	109.47	30.84	270.68	294.24	578.69	2.03	FEATHERST ONE STATE COM 001 (s)	SF(Lo)	
12400.00	90.96	269.47	8428.82	112.19	31.52	270.88	360.74	641.62	2.28	FEATHERST ONE STATE COM 001 (s)	SF(Lo)	
12500.00	90.96	269.47	8427.14	114.91	32.20	271.08	434.30	713.07	2.56	FEATHERST ONE STATE COM 001 (s)		
12600.00	92.55	269.47	8424.36	117.63	32.87	264.60	479.20	756.39	2.73	STATE 20 001 (s)		
12700.00	92.55	269.47	8419.92	120.35	33.56	265.39	389.40	667.34	2.40	STATE 20 001 (s)	SF(Lo)	
12800.00	92.55	269.47	8415.47	123.07	34.25	266.17	302.62	581.82	2.08	STATE 20 001 (s)	SF(Lo)	
12900.00	92.55	269.47	8411.03	125.79	34.94	266.96	220.18	501.65	1.78	STATE 20 001 (s)	SF(Lo)	
13000.00	92.55	269.47	8406.59	128.51	35.63	267.75	143.77	429.82	1.50	STATE 20 001 (s)	SF(Med)	
13100.00	92.55	269.47	8402.14	131.24	36.32	268.54	73.97	371.22	1.25	STATE 20 001 (s)	SF(Med)	
13200.00	92.55	269.47	8397.70	133.97	37.02	269.33	-3.20	332.90	0.99	STATE 20 001 (s)	SF(Hi)	
13267.19	92.55	269.47	8394.71	135.80	37.49	269.86	-67.03	322.34	0.83	STATE 20 001 (s)	SF(Hi)	
13300.00	92.55	269.47	8393.25	136.69	37.71	270.12	-42.94	322.18	0.88	STATE 20 001 (s)	SF(Hi)	
13400.00	92.55	269.47	8388.81	139.42	38.41	270.91	39.19	341.67	1.13	STATE 20 001 (s)	SF(Med)	
13500.00	92.55	269.47	8384.37	142.15	39.11	271.70	100.44	386.82	1.35	STATE 20 001 (s)	SF(Med)	
13600.00	92.55	269.47	8379.92	144.88	39.81	272.49	169.57	449.99	1.60	STATE 20 001 (s)	SF(Lo)	
13700.00	92.55	269.47	8375.48	147.61	40.51	273.27	247.08	524.70	1.89	STATE 20 001 (s)	SF(Lo)	
13800.00	92.55	269.47	8371.04	150.35	41.22	274.06	330.62	606.71	2.20	STATE 20 001 (s)	SF(Lo)	
13892.46	92.55	269.47	8366.93	152.87	41.87	274.79	411.55	686.76	2.50	STATE 20 001 (s)	SF(Lo)	
Secondary Well: Palmillo 21 State Com 228H (s)(TVD relative to Drill Floor)(All Azimuth Relative to GRID NORTH)												
Pri MD (US ft)	Sec MD (US ft)	Sec TVD (US ft)	Pri TVD (US ft)	Inc (°)	Az (°)	S.Major (US ft)	S.Minor (US ft)	T.Face to Sec (°)	ES (US ft)	CC (US ft)	SF	Risk
7200.00	7358.71	7190.28	7179.67	62.41	87.77	8.53	7.41	354.13	64.42	87.97	3.74	
Secondary Well: Palmillo 21 State Com 326H (s)(TVD relative to Drill Floor)(All Azimuth Relative to GRID NORTH)												
Pri MD (US ft)	Sec MD (US ft)	Sec TVD (US ft)	Pri TVD (US ft)	Inc (°)	Az (°)	S.Major (US ft)	S.Minor (US ft)	T.Face to Sec (°)	ES (US ft)	CC (US ft)	SF	Risk
8400.00	8451.04	8340.65	8350.58	54.68	85.85	9.85	7.95	71.04	94.27	121.26	4.49	
Secondary Well: Palmillo 20 SC 264H (p)(TVD relative to Drill Floor)(All Azimuth Relative to GRID NORTH)												
Pri MD (US ft)	Sec MD (US ft)	Sec TVD (US ft)	Pri TVD (US ft)	Inc (°)	Az (°)	S.Major (US ft)	S.Minor (US ft)	T.Face to Sec (°)	ES (US ft)	CC (US ft)	SF	Risk
800.00	800.00	800.00	800.00	0.00	0.00	1.69	1.69	180.00	15.83	20.00	4.79	CC (Lo)
900.00	900.00	900.00	900.00	0.00	0.00	1.91	1.91	180.00	15.38	20.00	4.33	CC (Lo)
1000.00	1000.00	1000.00	1000.00	0.00	0.00	2.14	2.14	180.00	14.93	20.00	3.94	CC (Lo)
1100.00	1099.99	1099.99	1099.99	0.00	0.00	2.36	2.36	190.11	15.76	21.29	3.85	CC (Lo)
1200.00	1199.91	1199.91	1199.91	0.00	0.00	2.58	2.58	188.55	19.19	25.16	4.21	CC (Lo)
1300.00	1300.48	1300.47	1299.69	1.51	344.64	2.81	2.81	187.28	23.94	30.36	4.73	
3200.00	3203.48	3190.86	3182.05	7.00	344.64	7.99	7.22	195.84	61.68	77.08	5.00	
3300.00	3302.28	3288.98	3281.10	6.09	344.64	8.26	7.44	196.06	63.50	79.39	5.00	
4000.00	3993.74	3979.67	3979.67	0.00	0.00	9.60	8.74	184.45	71.88	90.27	4.91	
4100.00	4093.74	4079.67	4079.67	0.00	0.00	9.80	8.96	184.45	71.45	90.27	4.80	
4200.00	4193.74	4179.67	4179.67	0.00	0.00	10.00	9.18	184.45	71.01	90.27	4.69	

5D Anti-Collision Report

Secondary Well: Palmillo 20 SC 264H (p)(TVD relative to Drill Floor)(All Azimuth Relative to GRID NORTH)												
Pri MD (US ft)	Sec MD (US ft)	Sec TVD (US ft)	Pri TVD (US ft)	Inc (°)	Az (°)	S.Major (US ft)	S.Minor (US ft)	T.Face to Sec (°)	ES (US ft)	CC (US ft)	SF	Risk
4300.00	4293.74	4279.67	4279.67	0.00	0.00	10.20	9.40	184.45	70.58	90.27	4.58	
4400.00	4393.74	4379.67	4379.67	0.00	0.00	10.40	9.62	184.45	70.14	90.27	4.48	
4500.00	4493.74	4479.67	4479.67	0.00	0.00	10.60	9.84	184.45	69.71	90.27	4.39	
4600.00	4593.74	4579.67	4579.67	0.00	0.00	10.80	10.06	184.45	69.27	90.27	4.30	
4700.00	4693.74	4679.67	4679.67	0.00	0.00	11.01	10.28	184.45	68.83	90.27	4.21	
4800.00	4793.74	4779.67	4779.67	0.00	0.00	11.21	10.50	184.45	68.40	90.27	4.13	
4900.00	4893.74	4879.67	4879.67	0.00	0.00	11.42	10.72	184.45	67.96	90.27	4.05	
5000.00	4993.74	4979.67	4979.67	0.00	0.00	11.63	10.94	184.45	67.52	90.27	3.97	
5100.00	5093.74	5079.67	5079.67	0.00	0.00	11.83	11.16	184.45	67.08	90.27	3.89	
5200.00	5193.74	5179.67	5179.67	0.00	0.00	12.04	11.38	184.45	66.64	90.27	3.82	
5300.00	5293.74	5279.67	5279.67	0.00	0.00	12.25	11.61	184.45	66.20	90.27	3.75	
5400.00	5393.74	5379.67	5379.67	0.00	0.00	12.46	11.83	184.45	65.76	90.27	3.68	
5500.00	5493.74	5479.67	5479.67	0.00	0.00	12.67	12.05	184.45	65.32	90.27	3.62	
5600.00	5593.74	5579.67	5579.67	0.00	0.00	12.88	12.27	184.45	64.88	90.27	3.55	
5700.00	5693.74	5679.67	5679.67	0.00	0.00	13.09	12.49	184.45	64.44	90.27	3.49	
5800.00	5793.74	5779.67	5779.67	0.00	0.00	13.30	12.71	184.45	63.99	90.27	3.44	
5900.00	5893.74	5879.67	5879.67	0.00	0.00	13.51	12.93	184.45	63.55	90.27	3.38	
6000.00	5993.74	5979.67	5979.67	0.00	0.00	13.72	13.16	184.45	63.11	90.27	3.32	
6100.00	6093.74	6079.67	6079.67	0.00	0.00	13.93	13.38	184.45	62.67	90.27	3.27	
6200.00	6193.74	6179.67	6179.67	0.00	0.00	14.15	13.60	184.45	62.22	90.27	3.22	
6300.00	6293.74	6279.67	6279.67	0.00	0.00	14.36	13.82	184.45	61.78	90.27	3.17	
6400.00	6393.74	6379.67	6379.67	0.00	0.00	14.57	14.05	184.45	61.34	90.27	3.12	
6500.00	6493.74	6479.67	6479.67	0.00	0.00	14.79	14.27	184.45	60.90	90.27	3.07	
6600.00	6593.74	6579.67	6579.67	0.00	0.00	15.00	14.49	184.45	60.45	90.27	3.03	
6700.00	6693.74	6679.67	6679.67	0.00	0.00	15.22	14.71	184.45	60.01	90.27	2.98	
6800.00	6793.74	6779.67	6779.67	0.00	0.00	15.43	14.94	184.45	59.56	90.27	2.94	
6900.00	6895.77	6881.65	6879.67	5.05	290.00	15.63	15.17	185.59	58.60	89.81	2.88	
7000.00	6996.77	6980.57	6979.67	17.17	290.00	15.72	15.17	198.08	55.12	87.02	2.73	
7100.00	7086.23	7063.08	7079.67	27.91	290.00	15.97	14.71	219.81	62.32	93.91	2.97	
7200.00	7161.00	7126.15	7179.67	36.88	290.00	16.30	14.05	239.36	96.25	124.57	4.40	
Secondary Well: STATE 20 001 (s)(TVD relative to Drill Floor)(All Azimuth Relative to GRID NORTH)												
Pri MD (US ft)	Sec MD (US ft)	Sec TVD (US ft)	Pri TVD (US ft)	Inc (°)	Az (°)	S.Major (US ft)	S.Minor (US ft)	T.Face to Sec (°)	ES (US ft)	CC (US ft)	SF	Risk
12000.00	8460.50	8435.50	8435.50	0.00	0.00	253.97	253.97	266.19	1048.54	1324.10	4.81	
12100.00	8458.83	8433.83	8433.83	0.00	0.00	253.92	253.92	266.48	951.68	1227.35	4.45	
12200.00	8457.16	8432.16	8432.16	0.00	0.00	253.87	253.87	266.78	855.35	1131.17	4.10	
12300.00	8455.49	8430.49	8430.49	0.00	0.00	253.82	253.82	267.07	759.68	1035.71	3.75	
12400.00	8453.82	8428.82	8428.82	0.00	0.00	253.77	253.77	267.37	664.89	941.18	3.41	
12500.00	8452.14	8427.14	8427.14	0.00	0.00	253.71	253.71	267.67	571.24	847.92	3.06	
12600.00	8449.36	8424.36	8424.36	0.00	0.00	253.63	253.63	264.60	479.20	756.39	2.73	
12700.00	8444.92	8419.92	8419.92	0.00	0.00	253.50	253.50	265.39	389.40	667.34	2.40	SF(Lo)
12800.00	8440.47	8415.47	8415.47	0.00	0.00	253.36	253.36	266.17	302.62	581.82	2.08	SF(Lo)
12900.00	8436.03	8411.03	8411.03	0.00	0.00	253.23	253.23	266.96	220.18	501.65	1.78	SF(Lo)
13000.00	8431.59	8406.59	8406.59	0.00	0.00	253.09	253.09	267.75	143.77	429.82	1.50	SF(Med)
13100.00	8427.14	8402.14	8402.14	0.00	0.00	252.96	252.96	268.54	73.97	371.22	1.25	SF(Med)
13200.00	8422.70	8397.70	8397.70	0.00	0.00	252.82	252.82	269.33	-3.20	332.90	0.99	SF(Hi)
13267.19	8419.71	8394.71	8394.71	0.00	0.00	252.73	252.73	269.86	-67.03	322.34	0.83	SF(Hi)
13300.00	8418.25	8393.25	8393.25	0.00	0.00	252.69	252.69	270.12	-42.94	322.18	0.88	SF(Hi)
13400.00	8413.81	8388.81	8388.81	0.00	0.00	252.55	252.55	270.91	39.19	341.67	1.13	SF(Med)
13500.00	8409.37	8384.37	8384.37	0.00	0.00	252.42	252.42	271.70	100.44	386.82	1.35	SF(Med)
13600.00	8404.92	8379.92	8379.92	0.00	0.00	252.28	252.28	272.49	169.57	449.99	1.60	SF(Lo)
13700.00	8400.48	8375.48	8375.48	0.00	0.00	252.15	252.15	273.27	247.08	524.70	1.89	SF(Lo)
13800.00	8396.04	8371.04	8371.04	0.00	0.00	252.01	252.01	274.06	330.62	606.71	2.20	SF(Lo)
13892.46	8391.93	8366.93	8366.93	0.00	0.00	251.89	251.89	274.79	411.55	686.76	2.50	SF(Lo)

5D Anti-Collision Report

Secondary Well: FEATHERSTONE STATE COM 001 (s)(TVD relative to Drill Floor)(All Azimuth Relative to GRID NORTH)												
Pri MD (US ft)	Sec MD (US ft)	Sec TVD (US ft)	Pri TVD (US ft)	Inc (°)	Az (°)	S.Major (US ft)	S.Minor (US ft)	T.Face to Sec (°)	ES (US ft)	CC (US ft)	SF	Risk
10700.00	8464.74	8458.74	8458.74	0.00	0.00	254.08	254.08	265.46	1074.49	1351.01	4.89	
10800.00	8461.78	8455.78	8455.78	0.00	0.00	253.99	253.99	265.85	981.14	1257.85	4.55	
10900.00	8459.88	8453.88	8453.88	0.00	0.00	253.93	253.93	267.84	888.78	1165.80	4.21	
11000.00	8458.21	8452.21	8452.21	0.00	0.00	253.88	253.88	268.04	797.72	1075.16	3.88	
11100.00	8456.53	8450.53	8450.53	0.00	0.00	253.83	253.83	268.25	708.32	986.33	3.55	
11200.00	8454.86	8448.86	8448.86	0.00	0.00	253.78	253.78	268.45	621.03	899.84	3.23	
11300.00	8453.19	8447.19	8447.19	0.00	0.00	253.73	253.73	268.65	536.49	816.44	2.92	
11400.00	8451.52	8445.52	8445.52	0.00	0.00	253.68	253.68	268.85	455.51	737.17	2.62	
11500.00	8449.85	8443.85	8443.85	0.00	0.00	253.63	253.63	269.06	379.15	663.53	2.33	SF(Lo)
11600.00	8448.18	8442.18	8442.18	0.00	0.00	253.58	253.58	269.26	308.58	597.60	2.07	SF(Lo)
11700.00	8446.51	8440.51	8440.51	0.00	0.00	253.53	253.53	269.46	244.43	542.18	1.82	SF(Lo)
11800.00	8444.84	8438.84	8438.84	0.00	0.00	253.48	253.48	269.66	184.46	500.79	1.58	SF(Lo)
11900.00	8443.17	8437.17	8437.17	0.00	0.00	253.42	253.42	269.87	127.31	477.10	1.36	SF(Med)
11933.40	8442.61	8436.61	8436.61	0.00	0.00	253.41	253.41	269.93	119.99	473.64	1.34	SF(Med)
12000.00	8441.50	8435.50	8435.50	0.00	0.00	253.37	253.37	270.07	139.31	473.76	1.42	SF(Med)
12100.00	8439.83	8433.83	8433.83	0.00	0.00	253.32	253.32	270.27	186.53	491.18	1.61	SF(Lo)
12200.00	8438.16	8432.16	8432.16	0.00	0.00	253.27	253.27	270.47	236.30	527.33	1.81	SF(Lo)
12300.00	8436.49	8430.49	8430.49	0.00	0.00	253.22	253.22	270.68	294.24	578.69	2.03	SF(Lo)
12400.00	8434.82	8428.82	8428.82	0.00	0.00	253.17	253.17	270.88	360.74	641.62	2.28	SF(Lo)
12500.00	8433.14	8427.14	8427.14	0.00	0.00	253.12	253.12	271.08	434.30	713.07	2.56	
12600.00	8430.36	8424.36	8424.36	0.00	0.00	253.04	253.04	273.41	513.31	790.71	2.85	
12700.00	8425.92	8419.92	8419.92	0.00	0.00	252.90	252.90	273.95	596.43	872.86	3.16	
12800.00	8421.47	8415.47	8415.47	0.00	0.00	252.77	252.77	274.48	682.66	958.38	3.48	
12900.00	8417.03	8411.03	8411.03	0.00	0.00	252.63	252.63	275.02	771.27	1046.45	3.80	
13000.00	8412.59	8406.59	8406.59	0.00	0.00	252.50	252.50	275.55	861.72	1136.49	4.14	
13100.00	8408.14	8402.14	8402.14	0.00	0.00	252.36	252.36	276.08	953.61	1228.05	4.47	
13200.00	8403.70	8397.70	8397.70	0.00	0.00	252.23	252.23	276.62	1046.66	1320.81	4.82	

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

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

Submit Original
to Appropriate
District Office

GAS CAPTURE PLAN

☒ Original Operator: Apache Corporation OGRID No: 873 Date: __12/11/19__
☐ Amended Date: _____
Reason for Amendment: _____

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

Note: A C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule 19.15.18.12.A

Well(s)/Production Facility – Name of facility

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

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
Palmillo 20 State Com 263H		Sec 20 T19S R28E	1945' FNL & 370' FWL	1400	Flared	Flared only in emergency
Palmillo 20 State Com 365H		Sec 20 T19S R28E	1905' FNL & 370' FWL	1400	Flared	Flared only in emergency
Palmillo 20 State Com 366H		Sec 20 T19S R28E	831' FNL & 435' FWL	1400	Flared	Flare only in emergency
Palmillo 20 State Com 264H		Sec 20 T19S R28E	851' FNL & 435' FWL	1400	Flared	Flared only in emergency

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete if gas transporter system is in place. The gas produced from production facility is dedicated to **DURANGO MIDSTREAM, LLC** and will be connected to **DURANGO's LOW** pressure gathering system located in **EDDY** County, New Mexico. It will require **2500** ft of pipeline to connect the facility to **LOW** pressure gathering system. Apache Corporation provides (periodically) to **DURANGO MIDSTREAM, LLC** a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, Apache Corporation and **DURANGO MIDSTREAM, LLC** have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at **DURANGO's MALJAMAR** Processing Plant located in **Sec. 28, Twp 17S, Rng 32E, LEA County**, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

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

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

Alternatives to Reduce Flaring

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

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

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GAS CAPTURE PLAN

☒ Original Operator: Apache Corporation OGRID No: 873 Date: __12/11/19__
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Reason for Amendment: _____

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