

STRYKER

DIRECTIONAL

RECEIVED

November 19, 2019

NOV 22 2019

DISTRICT//ARTESIA/O.C.D.

New Mexico Energy, Minerals and Natural Resources Department
Attn: Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, NM 87505

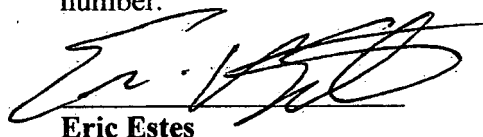
Attn: Bill Bahlberg

Re: Tamaroa Operating, LLC.
Hellcat #002H
Twin Lake; San Andres
Chaves County, New Mexico
API# 30-005-64334

Enclosed please find the original and one (1) copy of the survey performed on the reference well by STRYKER ENERGY DIRECTIONAL SERVICES, L.L.C. Other information required by your office is as follows:

<u>Name & Title</u>	<u>Drainhole No.</u>	<u>Survey Depths</u>	<u>Dates Performed</u>	<u>Type Survey</u>
Keith Broussard	Original Hole	1,674ft. to 7,078ft.	07-07-19 to 07-14-19	MWD Survey

A certified plat on which the bottom-hole location is oriented to both surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.



Eric Estes

Enclosures

CC:

Tamaroa Operating, LLC.
Attn: Geoff Bahlberg
P.O. Box 866937
Plano, Texas 75086

NMEMaNRD\Tamaroa Op, LLC\Hellcat #2H\M191137

STRYKER ENERGY DIRECTIONAL SERVICES, L.L.C.

P.O. Box 1250

Montgomery, TX 77356

Office (936) 582-7296 * Fax (936)-588-4163



November 19, 2019

Survey Certification Report

STATE OF TEXAS

COUNTY OF Montgomery

I, Eric Estes, certify that I am employed by STRYKER ENERGY DIRECTIONAL SERVICES, L.L.C., and that I did on the day(s) of July 7, 2019, through July 14, 2019 conduct or supervise the taking of a SEDS Original Hole MWD Survey from a depth of 1,674feet to a depth of 7,078feet; that I am authorized and qualified to make this report; that this survey was conducted at the request of Tamaroa Operating, LLC., for the Hellcat #002H, well API # 30-005-64334 in Chaves County, New Mexico; and that I have reviewed this report and find that it conforms to the principles as set forth by STRYKER ENERGY DIRECTIONAL SERVICES, L.L.C.

A handwritten signature in black ink, appearing to read "Eric Estes", is written over a horizontal line.

Eric Estes

STRYKER ENERGY DIRECTIONAL SERVICES, L.L.C.

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Wells Operator Data ▾

OCD Permitting

Home > Wells > Well Details

30-005-64334 HELLCAT #002H [325485]

General Well Information

Operator: [328666] Tamaroa Operating, LLC
 Status: New Direction: Horizontal
 Well Type: Oil Multi-Lateral: No
 Work Type: New Mineral Owner: Private
 Surface Owner: Private
 Surface Location: H-25-08S-28E 2310 FNL 990 FEL
 Lat/Long: 33.591915,-104.036304 NAD83
 GL Elevation: 3938
 KB Elevation: Sing/Mult Compl: Single
 DF Elevation: Potash Waiver: False

Quick Links

- [General Well Information](#)
- [History](#)
- [Comments](#)
- [Operator](#)
- [Pits](#)
- [Casing](#)
- [Well Completions](#)
- [Financial Assurance](#)
- [Compliance](#)
- [Complaints, Incidents and Spills](#)
- [Orders](#)
- [Production](#)
- [Transporters](#)
- [Points of Disposition](#)

Associated Images

- [Well Files](#)
- [Well Logs](#)
- [Administrative Orders](#)

New Searches

- [New Well Search](#)

Proposed Formation and/or Notes

Depths

Proposed: 7085 True Vertical Depth: 0
 Measured Vertical Depth: 0 Plugback Measured: 0

Formation Tops

Formation	Top	Producing	Method Obtained
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Event Dates

Initial APD Approval: 05/02/2019
 Most Recent APD Approval: 05/02/2019 Current APD Expiration: 05/02/2021
 APD Cancellation:
 APD Extension Approval:
 Spud: Gas Capture Plan Received:
 Approved Temporary TA Expiration:
 Abandonment:
 Shut In: PNR Expiration:
 Plug and Abandoned Intent Last MIT/BHT:
 Received:
 Well Plugged:
 Site Release:
 Last Inspection:

History

Effective Date	Property	Well Number	Operator	C-101 Work Type	Well Type	Well Status	Apd Cancelled	Plug Date
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**Comments****Operator****General Contact Information**

Company:	[328666] Tamaroa Operating, LLC	Main Phone:	972-867-2575
Address:	PO Box 866937	Main Fax:	972-867-6745
	Plano, TX 750866937		
Country:	U.S.A.		

Central Contact

Name:	Bill Bahlberg	Phone Number:	972-867-2575
Title:	President	Cell Number:	972-740-8969
E-Mail Address:	bill@tamaroadev.com	Fax Number:	972-867-6745

Hobbs Contact

Name:	Phelps White	Phone Number:	575-622-1001
Title:	Consultant	Cell Number:	575-626-7660
E-Mail Address:	pwiv@zianet.com	Fax Number:	

Artesia Contact

Name:	Phelps White	Phone Number:	575-622-1001
Title:	Consultant	Cell Number:	575-626-7660
E-Mail Address:	pwiv@zianet.com	Fax Number:	

Pits

No Pits Found

Casing

No Casing Found

Well Completions**[61570] TWIN LAKE; SAN ANDRES (ASSOC)**

Status:	New, Not Drilled	Last Produced:	
Bottomhole Location:	H-25-08S-28E 2540 FSL	1314 FEL	
Lat/Long:			
Acreage:	320 25-08S-28E Units: A B G H		
	24-08S-28E Units: I J O P		
DHC:		Consolidation Code:	
		Production Method:	





P.O. BOX 866937 PLANO, TX 75086

Stryker Energy Directional Services

Survey Report Landscape



Company:	Tamaroa Operating, LLC.	Local Co-ordinate Reference:	Well Helicat 2H
Project:	Chaves County, N.M. (NAD 27)	TVD Reference:	3943+15 @ 3958.0usft (United Drilling Inc #41)
Site:	Section 25-8S-28E Helicat 2H	MD Reference:	3943+15 @ 3958.0usft (United Drilling Inc #41)
Well:	Helicat 2H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	EDM 5000.15 Single User Db

Survey Program		Date			
		07/16/19			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
82.0	1,617.0	Gyro Surveys (Original Hole)	SRG-GYRO-MS	surface readout gyro multishot	
1,674.0	7,140.0	Stryker Surveys (Original Hole)	MWD+IGRF	OWSG MWD + IGRF or WMM	

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	942,965.80	590,609.30	
82.0	0.19	113.96	82.0	-0.1	0.1	0.1	113.96	0.23	942,965.74	590,609.42	
173.7	0.21	126.96	173.7	-0.2	0.4	0.5	118.74	0.05	942,965.58	590,609.70	
266.2	0.26	108.94	266.2	-0.4	0.7	0.8	117.95	0.10	942,965.41	590,610.03	
358.1	0.50	136.10	358.1	-0.7	1.2	1.4	121.68	0.32	942,965.06	590,610.51	
450.4	0.77	149.26	450.4	-1.6	1.8	2.4	131.01	0.33	942,964.23	590,611.10	
542.7	1.09	153.97	542.7	-2.9	2.5	3.8	139.08	0.36	942,962.91	590,611.81	
635.0	0.87	150.41	634.9	-4.3	3.2	5.4	142.95	0.25	942,961.51	590,612.54	
727.3	0.74	156.94	727.2	-5.4	3.8	6.6	144.98	0.17	942,960.35	590,613.12	
819.6	0.80	156.27	819.5	-6.6	4.3	7.9	148.80	0.07	942,959.22	590,613.61	
914.5	0.69	150.54	914.4	-7.7	4.9	9.1	147.72	0.14	942,958.11	590,614.16	
1,008.0	0.78	150.02	1,007.9	-8.7	5.5	10.3	148.02	0.10	942,957.07	590,614.75	
1,102.0	0.94	132.96	1,101.9	-9.8	6.3	11.7	147.14	0.32	942,955.99	590,615.64	
1,197.6	1.13	118.56	1,197.5	-10.8	7.7	13.3	144.37	0.34	942,955.01	590,617.04	
1,292.0	1.05	124.36	1,291.9	-11.7	9.3	14.9	141.88	0.14	942,954.07	590,618.57	
1,386.0	1.05	128.24	1,385.9	-12.7	10.7	16.6	140.10	0.08	942,953.05	590,619.96	
1,481.0	1.21	125.76	1,480.9	-13.9	12.2	18.4	138.78	0.18	942,951.93	590,621.45	
1,575.0	0.89	131.85	1,574.8	-14.9	13.5	20.1	137.89	0.36	942,950.86	590,622.80	
1,617.0	0.92	130.17	1,616.8	-15.4	14.0	20.8	137.67	0.10	942,950.43	590,623.30	
1,687.0	1.10	223.60	1,686.8	-16.2	14.0	21.4	139.27	2.11	942,949.58	590,623.27	
1,782.0	2.20	285.40	1,781.8	-16.4	11.6	20.1	144.77	2.04	942,949.40	590,620.88	

Company: Tamaroa Operating, LLC.
Project: Chaves County, N.M. (NAD 27)
Site: Section 25-8S-28E Hellcat 2H
Well: Hellcat 2H
Wellbore: Original Hole
Design: Original Hole

Local Co-ordinate Reference: Well Hellcat 2H
TVD Reference: 3943+15 @ 3958.0usft (United Drilling Inc #41)
MD Reference: 3943+15 @ 3958.0usft (United Drilling Inc #41)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.15 Single User Db

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
1,873.0	6.70	334.10	1,872.5	-11.2	7.6	13.5	145.82	6.05	942,954.64	590,616.88	
1,965.0	17.30	340.90	1,962.4	6.6	0.7	6.7	6.32	11.60	942,972.45	590,610.04	
2,058.0	25.40	342.70	2,048.9	38.8	-9.7	40.0	345.92	8.74	943,004.61	590,599.56	
2,150.0	30.50	338.00	2,130.2	79.3	-24.4	83.0	342.93	6.03	943,045.13	590,584.94	
2,242.0	34.90	336.00	2,207.6	125.0	-43.8	132.5	340.69	4.92	943,090.84	590,565.48	
2,334.0	38.00	327.50	2,281.6	173.0	-69.8	186.6	338.04	6.43	943,138.82	590,539.53	
2,426.0	41.50	326.10	2,352.3	222.2	-102.0	244.5	335.35	3.93	943,188.02	590,507.31	
2,519.0	47.30	328.90	2,418.8	277.1	-136.9	309.1	333.71	6.58	943,242.90	590,472.44	
2,611.0	56.90	329.50	2,475.2	339.4	-174.0	381.4	332.86	10.45	943,305.20	590,435.33	
2,706.0	58.10	327.70	2,526.3	407.8	-215.7	461.3	332.12	2.04	943,373.58	590,393.58	
2,800.0	65.90	332.90	2,570.4	479.8	-256.7	544.2	331.86	9.62	943,445.65	590,352.63	
2,895.0	73.60	338.00	2,603.3	560.9	-293.6	633.1	332.37	9.54	943,526.67	590,315.73	
2,910.2	75.94	338.77	2,607.3	574.5	-299.0	647.6	332.51	16.16	943,540.30	590,310.33	
FTP Hellcat 2H											
2,989.0	88.10	342.60	2,618.2	648.0	-324.7	724.8	333.39	16.16	943,613.81	590,284.61	
3,084.0	90.70	352.30	2,619.2	740.6	-345.3	817.2	335.00	10.57	943,708.41	590,264.00	
3,178.0	90.20	359.40	2,618.4	834.3	-352.1	905.6	337.12	7.57	943,800.10	590,257.20	
3,276.0	91.10	1.90	2,617.3	932.3	-351.0	996.2	339.37	2.71	943,898.08	590,258.31	
3,368.0	91.50	1.60	2,615.2	1,024.2	-348.2	1,081.8	341.22	0.54	943,990.02	590,261.12	
3,462.0	91.60	1.20	2,612.7	1,118.2	-345.9	1,170.4	342.81	0.44	944,083.95	590,263.42	
3,557.0	90.80	2.60	2,610.7	1,213.1	-342.7	1,260.6	344.22	1.70	944,178.88	590,268.56	
3,651.0	90.70	2.30	2,609.5	1,307.0	-338.7	1,350.2	345.47	0.34	944,272.78	590,270.58	
3,746.0	90.90	2.20	2,608.1	1,401.9	-335.0	1,441.4	346.56	0.24	944,367.70	590,274.31	
3,840.0	89.50	2.60	2,607.8	1,495.8	-331.1	1,532.0	347.52	1.55	944,461.61	590,278.25	
3,935.0	89.80	2.60	2,608.4	1,590.7	-326.7	1,623.9	348.39	0.32	944,556.51	590,282.56	
4,029.0	88.30	2.80	2,610.0	1,684.6	-322.3	1,715.2	349.17	1.61	944,650.39	590,286.98	
4,124.0	88.00	2.40	2,613.0	1,779.4	-318.0	1,807.6	349.87	0.53	944,745.25	590,291.29	



P.O. BOX 866937 PLANO, TX 75086

Stryker Energy Directional Services

Survey Report Landscape



Company: Tamaroa Operating, LLC.
 Project: Chaves County, N.M. (NAD 27).
 Site: Section 25-8S-28E Hellcat 2H
 Well: Hellcat 2H
 Wellbore: Original Hole
 Design: Original Hole

Local Co-ordinate Reference: Well Hellcat 2H
 TVD Reference: 3943+15 @ 3958.0usft (United Drilling Inc #41)
 MD Reference: 3943+15 @ 3958.0usft (United Drilling Inc #41)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM 5000.15 Single User Db

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
4,218.0	88.60	1.10	2,615.8	1,873.4	-315.1	1,899.7	350.45	1.52	944,839.16	590,294.16	
4,313.0	88.30	1.10	2,618.4	1,968.3	-313.3	1,993.1	350.96	0.32	944,934.11	590,295.98	
4,408.0	89.80	1.00	2,620.0	2,063.3	-311.6	2,086.7	351.41	1.58	945,029.08	590,297.72	
4,501.0	89.60	0.60	2,620.4	2,156.3	-310.3	2,178.5	351.81	0.48	945,122.07	590,299.02	
4,598.0	89.70	0.70	2,621.0	2,253.3	-309.2	2,274.4	352.19	0.15	945,219.06	590,300.12	
4,692.0	89.50	0.40	2,621.7	2,347.3	-308.3	2,367.4	352.52	0.38	945,313.05	590,301.03	
4,787.0	91.30	359.90	2,621.0	2,442.2	-308.0	2,461.6	352.81	1.97	945,408.04	590,301.27	
4,882.0	91.20	359.80	2,619.0	2,537.2	-308.3	2,555.9	353.07	0.15	945,503.02	590,301.03	
4,976.0	90.80	359.20	2,617.5	2,631.2	-309.1	2,649.3	353.30	0.90	945,597.00	590,300.21	
5,071.0	90.40	359.50	2,616.7	2,726.2	-310.2	2,743.8	353.51	0.38	945,691.99	590,299.13	
5,166.0	90.20	0.00	2,616.2	2,821.2	-310.6	2,838.2	353.72	0.57	945,786.99	590,298.71	
5,260.0	90.50	0.70	2,615.6	2,915.2	-310.0	2,931.6	353.93	0.81	945,880.99	590,299.29	
5,355.0	89.70	359.60	2,615.4	3,010.2	-309.8	3,026.1	354.12	1.43	945,975.99	590,299.54	
5,450.0	89.50	359.60	2,616.1	3,105.2	-310.4	3,120.7	354.29	0.21	946,070.98	590,298.87	
5,544.0	90.00	359.90	2,616.5	3,199.2	-310.8	3,214.2	354.45	0.62	946,164.98	590,298.46	
5,639.0	89.10	358.80	2,617.2	3,294.2	-311.9	3,308.9	354.59	1.50	946,259.97	590,297.39	
5,702.0	89.50	359.20	2,618.0	3,357.2	-313.0	3,371.7	354.67	0.90	946,322.95	590,296.29	
5,765.0	89.80	359.50	2,618.4	3,420.1	-313.7	3,434.5	354.76	0.67	946,385.95	590,295.57	
5,828.0	90.00	359.70	2,618.5	3,483.1	-314.2	3,497.3	354.85	0.45	946,448.95	590,295.13	
5,891.0	90.30	0.00	2,618.3	3,546.1	-314.3	3,560.0	354.93	0.67	946,511.94	590,294.97	
5,954.0	90.90	0.40	2,617.7	3,609.1	-314.1	3,622.8	355.03	1.14	946,574.94	590,295.19	
6,017.0	89.50	0.00	2,617.5	3,672.1	-313.9	3,685.5	355.11	2.31	946,637.94	590,295.41	
6,080.0	89.80	0.30	2,617.8	3,735.1	-313.7	3,748.3	355.20	0.67	946,700.94	590,295.57	
6,143.0	88.30	359.60	2,618.9	3,798.1	-313.8	3,811.1	355.28	2.63	946,763.93	590,295.52	
6,207.0	87.50	359.30	2,621.2	3,862.1	-314.4	3,874.9	355.35	1.33	946,827.88	590,294.90	
6,269.0	88.60	359.70	2,623.3	3,924.0	-314.9	3,936.7	355.41	1.89	946,889.84	590,294.36	
6,332.0	89.70	0.00	2,624.3	3,987.0	-315.1	3,999.5	355.48	1.81	946,952.83	590,294.20	

Company: Tamaroa Operating, LLC.
Project: Chaves County, N.M. (NAD 27)
Site: Section 25-8S-28E Hellcat 2H
Well: Hellcat 2H
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Local Co-ordinate Reference: Well Hellcat 2H
TVD Reference: 3943+15 @ 3958.0usft (United Drilling Inc #41)
MD Reference: 3943+15 @ 3958.0usft (United Drilling Inc #41)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.15 Single User Db

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
6,395.0	89.30	0.20	2,624.8	4,050.0	-315.0	4,062.3	355.55	0.71	947,015.83	590,294.31
6,459.0	89.50	0.00	2,625.5	4,114.0	-314.9	4,126.1	355.62	0.44	947,079.82	590,294.42
6,521.0	89.80	0.00	2,625.9	4,176.0	-314.9	4,187.9	355.69	0.48	947,141.82	590,294.42
6,584.0	89.90	0.10	2,626.0	4,239.0	-314.8	4,250.7	355.75	0.22	947,204.82	590,294.47
6,647.0	89.60	359.80	2,626.3	4,302.0	-314.9	4,313.5	355.81	0.67	947,267.82	590,294.42
6,710.0	89.60	0.00	2,626.8	4,365.0	-315.0	4,376.4	355.87	0.32	947,330.82	590,294.31
6,773.0	89.90	359.80	2,627.0	4,428.0	-315.1	4,439.2	355.93	0.57	947,393.82	590,294.20
6,837.0	90.60	0.40	2,626.7	4,492.0	-315.0	4,503.0	355.99	1.44	947,457.82	590,294.31
6,899.0	90.30	359.90	2,626.3	4,554.0	-314.8	4,564.9	356.05	0.94	947,519.82	590,294.47
6,963.0	90.50	359.90	2,625.8	4,618.0	-314.9	4,628.7	356.10	0.31	947,583.81	590,294.36
7,026.0	90.50	359.20	2,625.3	4,681.0	-315.4	4,691.6	356.14	1.11	947,646.81	590,293.87
7,078.0	90.70	359.10	2,624.7	4,733.0	-316.2	4,743.6	356.18	0.43	947,698.80	590,293.09
7,140.0	90.70	359.10	2,624.0	4,795.0	-317.2	4,805.5	356.22	0.00	947,760.79	590,292.12
PBHL HellCat 2H										

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/S (usft)	+E/W (usft)	
7,140.0	2,624.0	4,795.0	-317.2	7140' Projected to bit

Checked By: _____ Approved By: _____ Date: _____

GRID CORRECTION: To convert a Magnetic Direction to a Grid Direction, Add 6.89°

GEODETIC ZONE: New Mexico East 3001 3943+15 @ 3958.0usft (United Drilling Inc #41) GROUND ELEVATION: 3943.0											
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot					
0.0	0.0	942965.80	590609.30	33° 35' 30.548 N	104° 2' 8.630 W						
PLAN SECTIONS											
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	
1	1617.0	0.92	130.17	1616.8	-15.4	14.0	0.00	0.00	-16.3		
2	1748.4	0.00	130.17	1748.3	-16.1	14.8	0.70	180.00	-17.0		
3	1759.7	0.00	130.17	1759.5	-16.1	14.8	0.00	130.17	-17.0		
4	2616.8	60.00	331.00	2468.4	341.9	-183.6	7.00	331.00	353.3		
5	2716.8	60.00	331.00	2518.4	417.6	-225.6	0.00	0.00	431.7		
6	3087.8	90.21	359.82	2614.6	758.1	-307.5	11.00	47.54	776.8		
7	7149.7	90.21	359.82	2600.0	4820.0	-320.0	0.00	0.00	4830.6	PBHL HellCat 2H	

SHL: 2310 FNL: 990' FWL
Section 25-8S-28E
PBHL: 2510' FSL: 1310' FEL
Section 24-8S-28E

