

District I

1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-9720

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 277806

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

1. Operator Name and Address SANTO PETROLEUM LLC P.O. Box 1020 Artesia, NM 88210		2. OGRID Number 371496
		3. API Number 30-025-46808
4. Property Code 327075	5. Property Name OCOTILLO SUNRISE	6. Well No. 411H

7. Surface Location

UL - Lot P	Section 10	Township 25S	Range 34E	Lot Idn P	Feet From 754	N/S Line S	Feet From 890	E/W Line E	County Lea
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8. Proposed Bottom Hole Location

UL - Lot O	Section 15	Township 25S	Range 34E	Lot Idn O	Feet From 250	N/S Line S	Feet From 1960	E/W Line E	County Lea
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9. Pool Information

PITCHFORK RANCH;WOLFCAMP, SOUTH	96994
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Additional Well Information

11. Work Type New Well	12. Well Type OIL	13. Cable/Rotary	14. Lease Type Private	15. Ground Level Elevation 3334
16. Multiple N	17. Proposed Depth 17810	18. Formation Wolfcamp	19. Contractor	20. Spud Date 3/6/2020
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	12.25	10.75	40.5	1300	350	0
Int1	9.875	7.625	29.7	11800	2500	0
Prod	6.75	5.5	20	17800	940	7000

Casing/Cement Program: Additional Comments

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22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Annular	5000	3500	Hydril
Pipe	10000	5000	Hydril
Pipe	10000	5000	Hydril
Blind	10000	5000	Hydril

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.

Signature:

Printed Name: Electronically filed by Karen J Leishman

Title: Regulatory manager

Email Address: kleishman@santopetroleum.com

Date: 1/30/2020

Phone: 575-736-3262

OIL CONSERVATION DIVISION

Approved By: Paul F Kautz

Title: Geologist

Approved Date: 2/1/2020 Expiration Date: 2/1/2022

Conditions of Approval Attached

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State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised August 4, 2011

Submit one copy to appropriate
District Office

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code	Pool Name
Property Code	Property Name OCOTILLO SUNRISE	Well Number 411H
OGRID No.	Operator Name SANTO PETROLEUM, LLC	Elevation 3334'

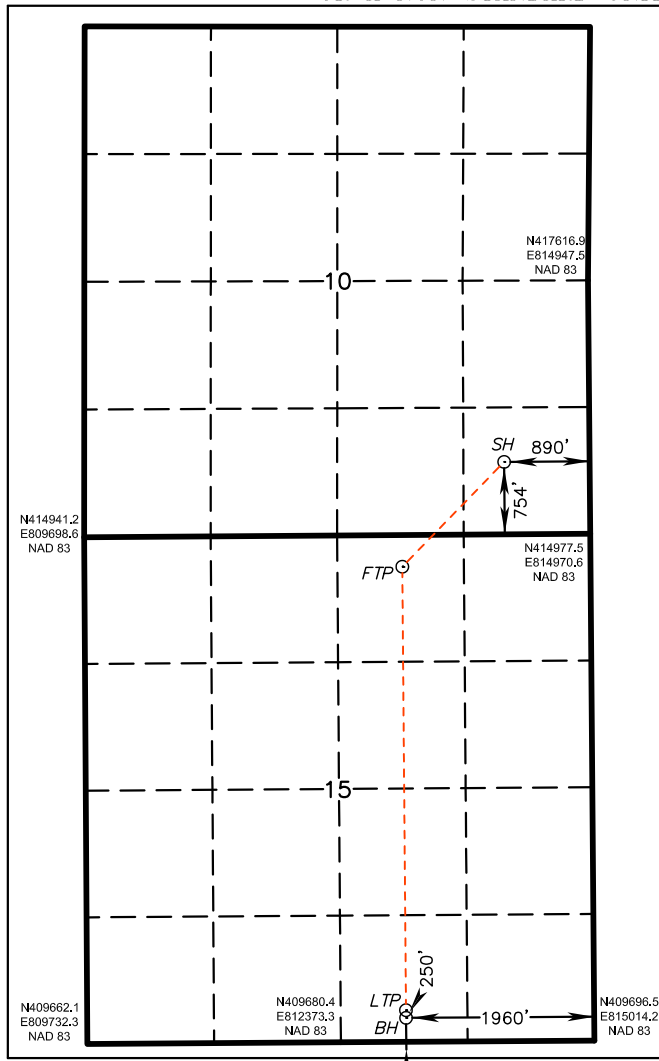
Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	SOUTH/South line	Feet from the	East/West line	County
P	10	25 S	34 E		754	SOUTH	890	EAST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	SOUTH/South line	Feet from the	East/West line	County
O	15	25 S	34 E		250	SOUTH	1960	EAST	LEA
Dedicated Acres	Joint or Infill	Consolidation Code	Order No.						

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



SURFACE LOCATION

Lat - N 32.139841
Long - W 103.452181
NMSPCE- N 415725.3
E 814073.5
(NAD-83)

Lat - N 32.139715°
Long - W 103.451712°
NMSPCE- N 415667.2
E 772887.4
(NAD-27)

FIRST TAKE POINT
330 FNL & 1960 FEL
Lat - N 32.136865°
Long - W 103.455635°
NMSPCE- N 414634.0
E 813013.3
(NAD-83)

Lat - N 32.136739°
Long - W 103.455166°
NMSPCE- N 414575.9
E 771827.1
(NAD-27)

LAST TAKE POINT
330 FSL & 1960 FEL
Lat - N 32.124167°
Long - W 103.455633°
NMSPCE- N 410014.6
E 813051.5
(NAD-83)

Lat - N 32.124042°
Long - W 103.455165°
NMSPCE- N 409956.7
E 771865.1
(NAD-27)

BOTTOM HOLE LOCATION
Lat - N 32.123947°
Long - W 103.455633°
NMSPCE- N 409934.6
E 813052.2
(NAD-83)

Lat - N 32.123822°
Long - W 103.455165°
NMSPCE- N 409876.7
E 771865.8
(NAD-27)

OPERATOR CERTIFICATION

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.

Signature _____ Date _____

Printed Name _____

Email Address _____

SURVEYOR CERTIFICATION

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.

DECEMBER 10, 2019

Date Surveyed _____
Signature & Seal of Professional Surveyor _____

Certificate No. 7977
BASIN SURVEYS

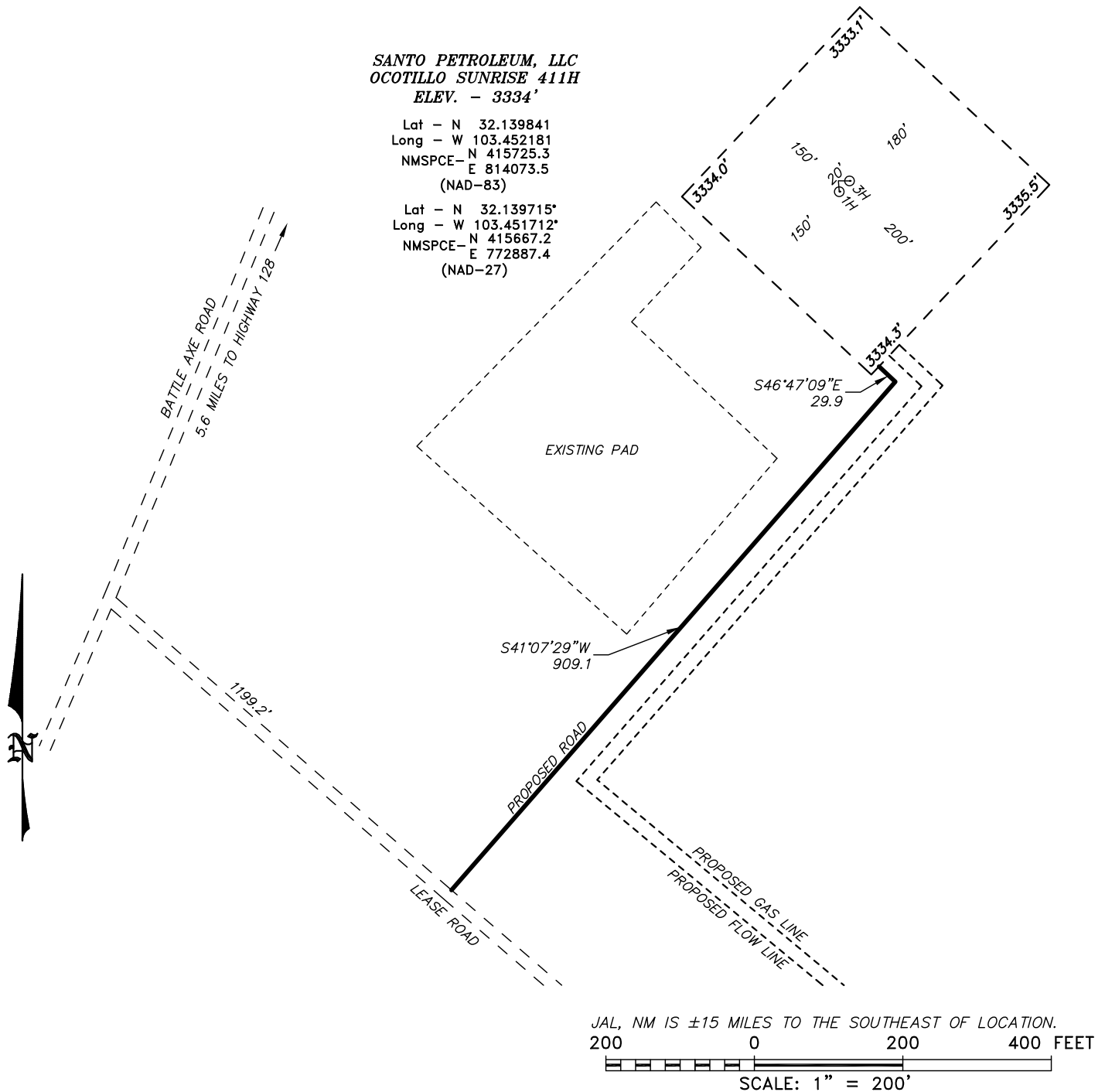
0' 1000' 2000' 3000' 4000' N
SCALE: 1" = 2000'
WO Num.: 34998

SECTION 10, TOWNSHIP 25 SOUTH, RANGE 34 EAST. N.M.P.M., LEA COUNTY, NEW MEXICO.

SANTO PETROLEUM, LLC
OCOTILLO SUNRISE 411H
ELEV. - 3334'

Lat - N 32.139841
 Long - W 103.452181
 NMSPCE - N 415725.3
 E 814073.5
 (NAD-83)

Lat - N 32.139715°
 Long - W 103.451712°
 NMSPCE - N 415667.2
 E 772887.4
 (NAD-27)



SANTO PETROLEUM, LLC

REF: OCOTILLO SUNRISE WCXA 411H / WELL PAD TOPO

THE OCOTILLO SUNRISE 411H LOCATED 754' FROM
 THE SOUTH LINE AND 890' FROM THE EAST LINE OF
 SECTION 10, TOWNSHIP 25 SOUTH, RANGE 34 EAST.

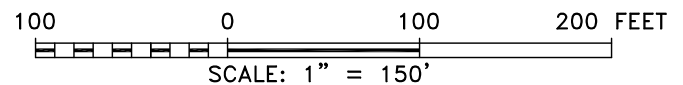
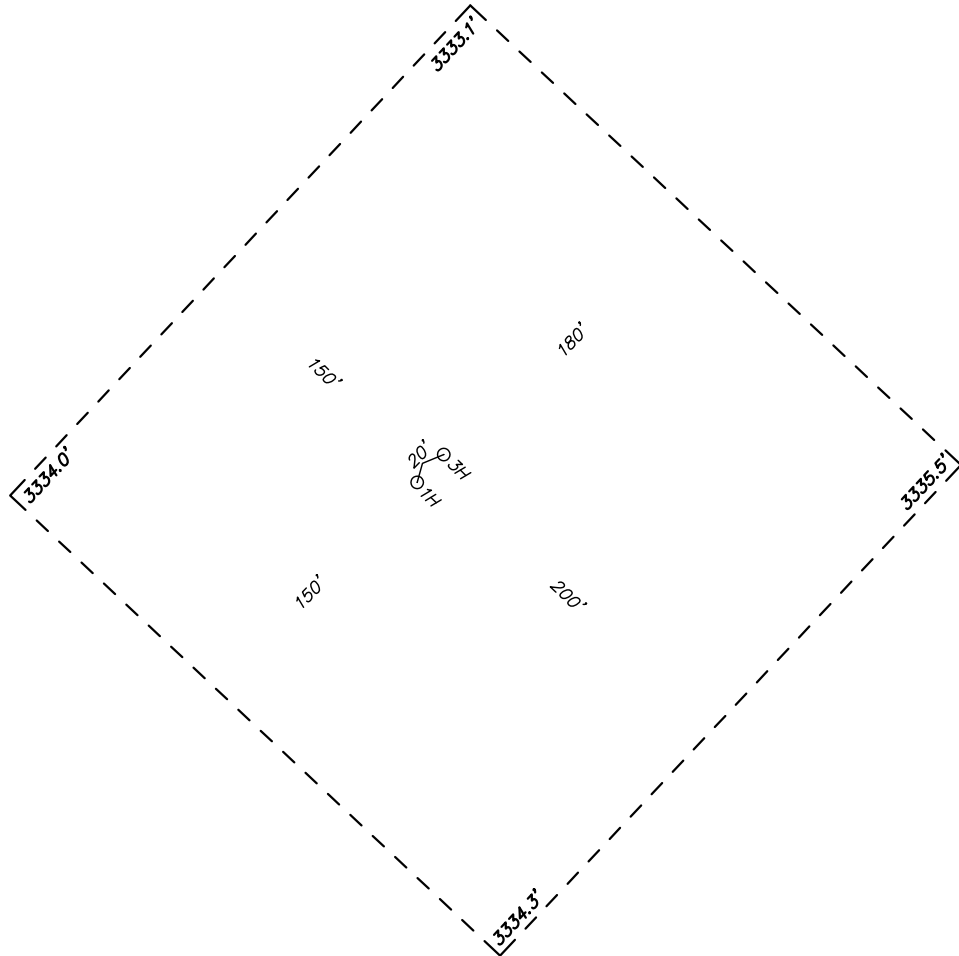
N.M.P.M., LEA COUNTY, NEW MEXICO.

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 in the oilfield

P.O. Box 1786
 1120 N. West County Rd.
 Hobbs, New Mexico 88241

(575) 393-7316 - Office
 (575) 392-2206 - Fax
 basin-surveys.com

SECTION 10, TOWNSHIP 25 SOUTH, RANGE 34 EAST. N.M.P.M.,
LEA COUNTY, NEW MEXICO.



SANTO OPERATING, LLC

REF: OCOTILLO SUNRISE WCXA 411H / WELL PAD TOPO

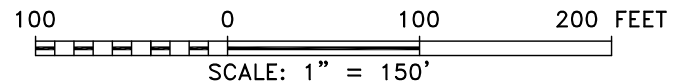
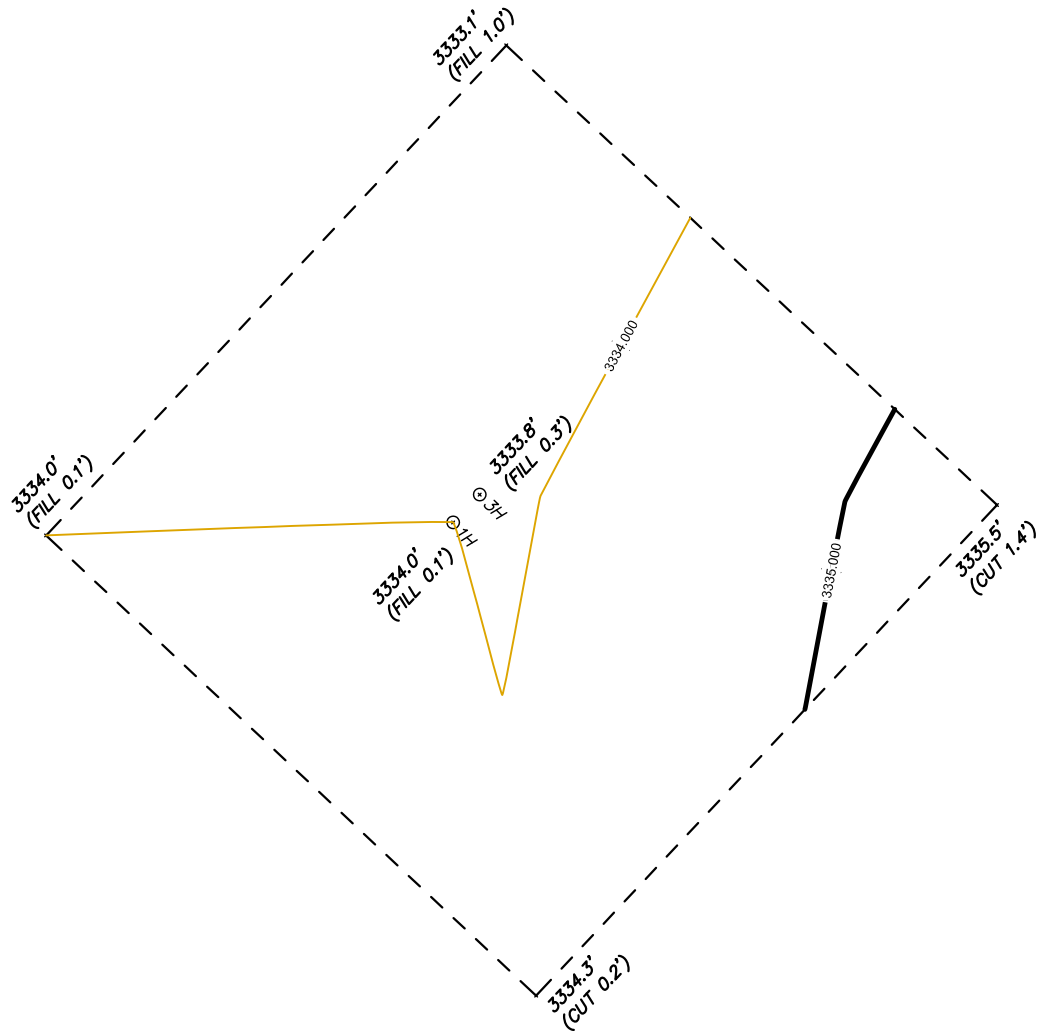
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N.M.P.M., LEA COUNTY, NEW MEXICO.

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Hobbs, New Mexico 88241 basin-surveys.com

SECTION 10, TOWNSHIP 25 SOUTH, RANGE 34 EAST. N.M.P.M.,
LEA COUNTY, NEW MEXICO.



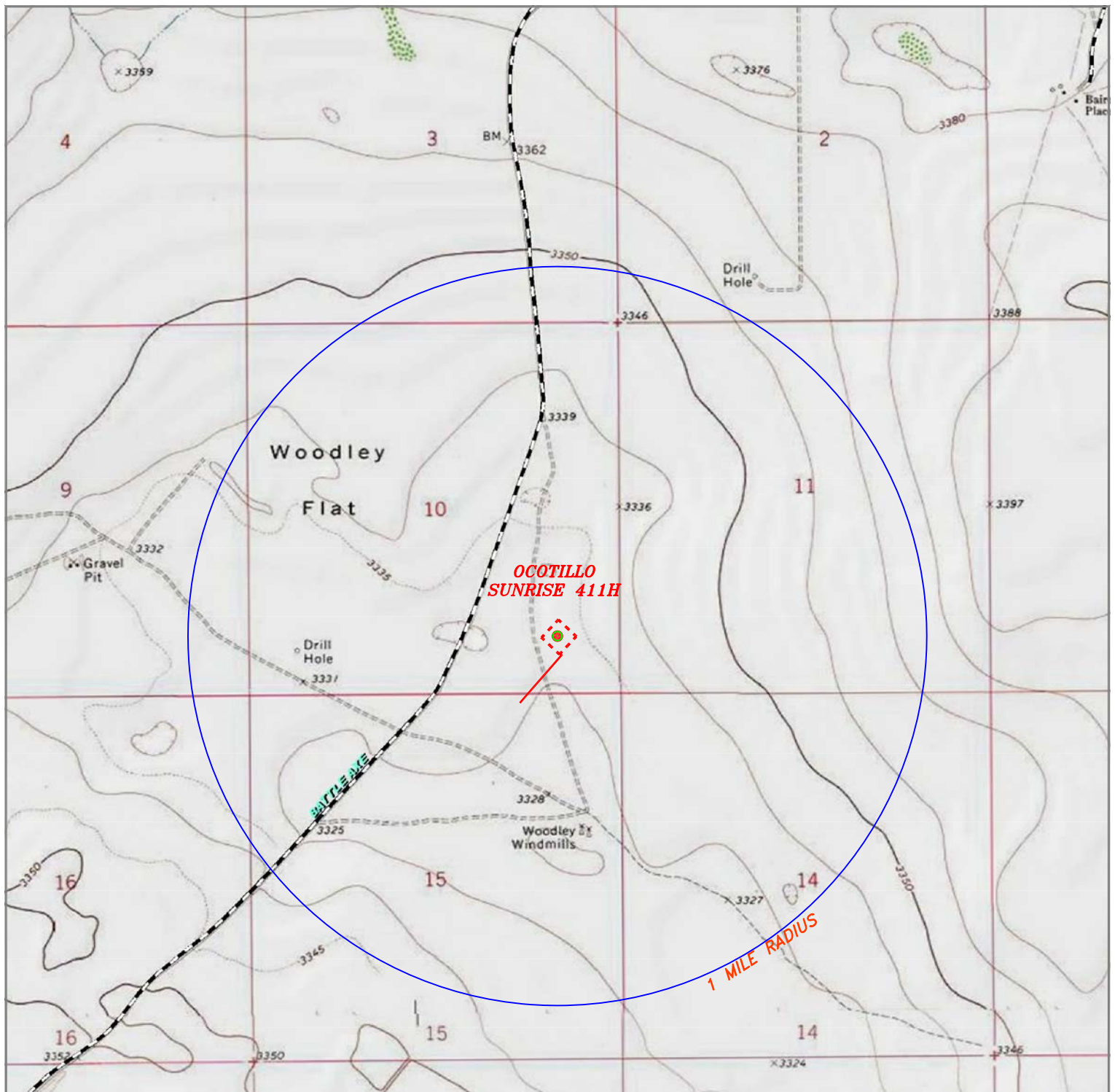
SANTO OPERATING, LLC

REF: OCOTILLO SUNRISE 401H&411H / CUT&FILL

THE OCOTILLO SUNRISE WELL PAD LOCATED IN
SECTION 10, TOWNSHIP 25 SOUTH, RANGE 34 EAST.
N.M.P.M., LEA COUNTY, NEW MEXICO.

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OCOTILLO SUNRISE 411H

Located 754' FSL and 890' FEL
 Section 10, Township 25 South, Range 34 East,
 N.M.P.M., Lea County, New Mexico.

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0' 1000' 2000' 3000' 1500'
 SCALE: 1" = 2000'

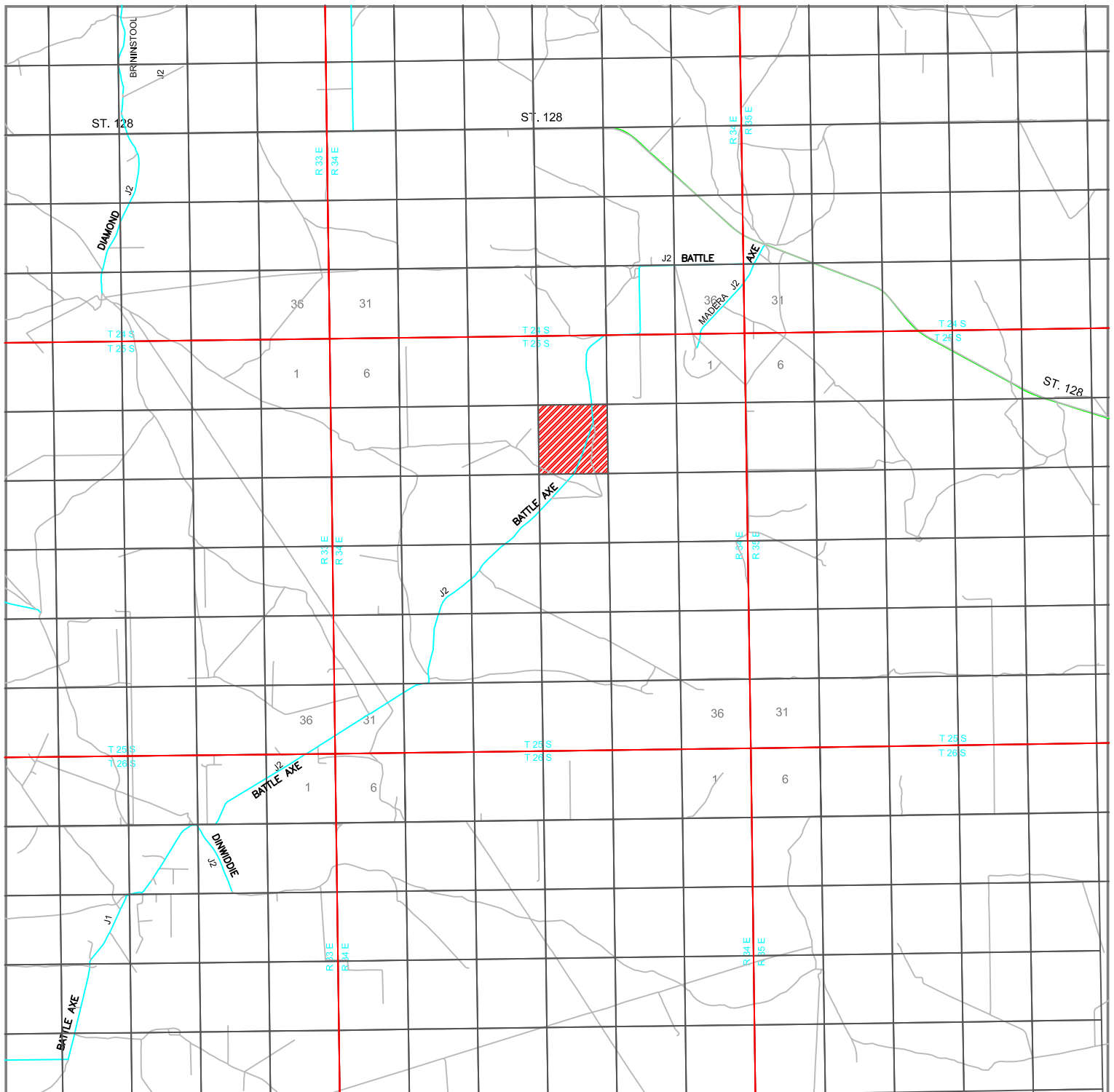
W.O. Number: JG 34998

Survey Date: 12-16-2019

YELLOW TINT - USA LAND
 BLUE TINT - STATE LAND
 NATURAL COLOR - FEE LAND



SANTO
PETROLEUM,
LLC



OCOTILLO SUNRISE 411H

Located 754' FSL and 890' FEL
 Section 10, Township 25 South, Range 34 East,
 N.M.P.M., Lea County, New Mexico.



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0 1 MI 2 MI 3 MI 4 MI

SCALE: 1" = 2 MILES

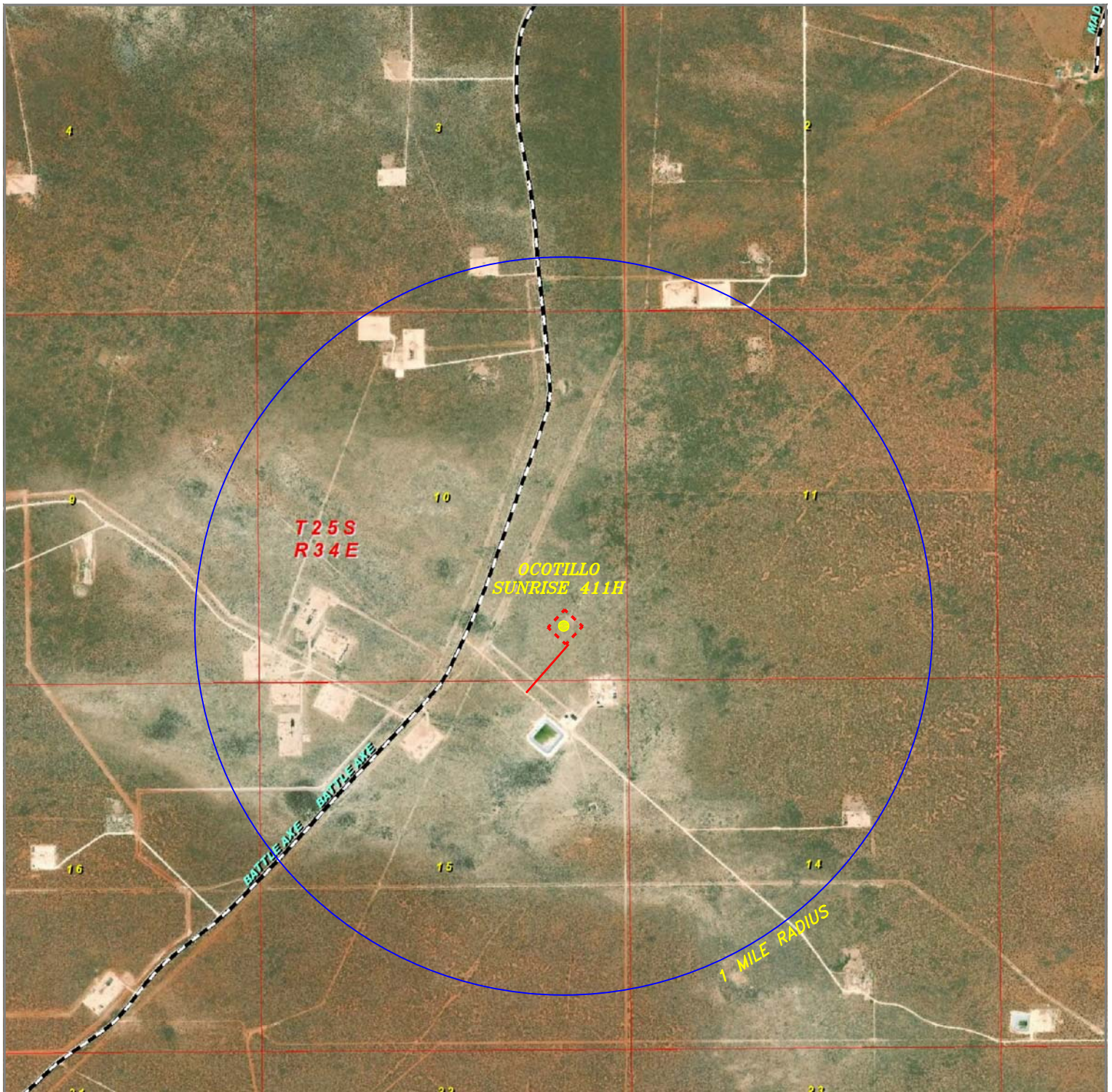
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OCOTILLO SUNRISE 411H

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 Section 10, Township 25 South, Range 34 East,
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Santa Fe, NM 87505

GAS CAPTURE PLAN

Date: 2/1/2020

☒ Original

Operator & OGRID No.: [371496] SANTO PETROLEUM LLC

☐ 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
OCOTILLO SUNRISE #411H	30-025-46808	P-10-25S-34E	0754S 0890E	3500	None	This well is planned to flow through our existing battery that it tied into a Lucid line.

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 Lea County, New Mexico. It will require 0' of pipeline to connect the facility to Low Pressure gathering system. SANTO PETROLEUM LLC 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, SANTO PETROLEUM LLC 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. 13, Twn. 24S, Rng. 33E, 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 SANTO PETROLEUM LLC'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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State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

Form APD Comments

Permit 277806

PERMIT COMMENTS

Operator Name and Address: SANTO PETROLEUM LLC [371496] P.O. Box 1020 Artesia, NM 88210		API Number: 30-025-46808
		Well: OCOTILLO SUNRISE #411H

Created By	Comment	Comment Date
landers	This well is planned to be 'batch drilled' with the Ocotillo Sunrise 401H well. EOG has provided us with their offset well directional surveys and we have conducted a thorough anti-collision analysis.	1/30/2020

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

Form APD Conditions

Permit 277806

PERMIT CONDITIONS OF APPROVAL

Operator Name and Address: SANTO PETROLEUM LLC [371496] P.O. Box 1020 Artesia, NM 88210	API Number: 30-025-46808
	Well: OCOTILLO SUNRISE #411H

OCD Reviewer	Condition
pkautz	Will require a directional survey with the C-104
pkautz	1) SURFACE & INTERMEDIATE CASING - Cement must circulate to surface -- 2) PRODUCTION CASING - Cement must tie back into intermediate casing --
pkautz	If cement does not circulate to surface, must run temperature survey or other log to determine top of cement
pkautz	Surface casing must be set 25' below top of Rustler Anhydrite in order to seal off protectable water
pkautz	1)- The Operator is to notify NMOCD by sundry (Form C-103) within ten (10) days of the well being spud 2)- Drilling Sundries Form C-103 (Casing and Cement test are to be submitted within 10 days 3)- Completion Reports & Logs are to be submitted within 45 days 4)- Deviation / Directional Drill Survey are to be filed with or prior to C-104
pkautz	It is the operator's responsibility to monitor cancellation dates of approved APDs. APD's are good for 2 years and may be extended for one year. Only one 1 year extension will be granted if submitted by C-103 before expiration date. After expiration date or after a 1 year extension must submit new APD. If an APD expires and if site construction has occurred, site remediation is required.
pkautz	Stage Tool 1) Must notify OCD Hobbs Office prior to running Stage Tool at 5753703186 2) If using Stage Tool on Surface casing, Stage Tool must be set greater than 350' from surface and a minimum of 200 feet above surface shoe. 3) When using a Stage Tool on Intermediate or Production Casing Stage must be a minimum of 50 feet below previous casing shoe.



Santo Petroleum

Lea County, NM (NAD 83 - NME

Ocotillo Sunrise

#411H

OH

Plan: Plan #3

Standard Plan With Toolface

15 January, 2020



Wellbenders

Standard Plan With Toolface

Company:	Santo Petroleum	Local Co-ordinate Reference:	Well #411H
Project:	Lea County, NM (NAD 83 - NME	TVD Reference:	RKB=25' @ 3359.00usft
Site:	Ocotillo Sunrise	MD Reference:	RKB=25' @ 3359.00usft
Well:	#411H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #3	Database:	WBDS_SQL_2

Project	Lea County, NM (NAD 83 - NME		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Ocotillo Sunrise		
Site Position:		Northing:	415,710.90 usft
From:	Map	Easting:	814,059.70 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in
		Latitude:	32.139801
		Longitude:	-103.452226
		Grid Convergence:	0.469 °

Well		#411H				
Well Position	+N/-S	0.00 usft	Northing:	415,725.30 usft	Latitude:	32.139840
	+E/-W	0.00 usft	Easting:	814,073.50 usft	Longitude:	-103.452181
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,334.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	1/10/2020	6.612	59.970	47,637.39980931

Design	Plan #3			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	179.53

Survey Tool Program	Date	1/15/2020		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	17,807.47	Plan #3 (OH)	MWD+IGRF	OWSG MWD + IGRF or WMM



Wellbenders

Standard Plan With Toolface

Company:	Santo Petroleum	Local Co-ordinate Reference:	Well #411H
Project:	Lea County, NM (NAD 83 - NME	TVD Reference:	RKB=25' @ 3359.00usft
Site:	Ocotillo Sunrise	MD Reference:	RKB=25' @ 3359.00usft
Well:	#411H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #3	Database:	WBDS_SQL_2

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100ft)	Build (°/100ft)	Turn (°/100ft)	TFace (°)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000
2,150.00	0.00	0.00	2,150.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000
2,200.00	1.50	253.92	2,199.99	-0.18	-0.63	0.18	3.00	3.00	0.00	253.915
2,300.00	4.50	253.92	2,299.85	-1.63	-5.66	1.58	3.00	3.00	0.00	0.000
2,381.74	6.95	253.92	2,381.17	-3.89	-13.49	3.78	3.00	3.00	0.00	0.000
2,400.00	6.95	253.92	2,399.30	-4.50	-15.62	4.37	0.00	0.00	0.00	0.000



Wellbenders

Standard Plan With Toolface

Company:	Santo Petroleum	Local Co-ordinate Reference:	Well #411H
Project:	Lea County, NM (NAD 83 - NME	TVD Reference:	RKB=25' @ 3359.00usft
Site:	Ocotillo Sunrise	MD Reference:	RKB=25' @ 3359.00usft
Well:	#411H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #3	Database:	WBDS_SQL_2

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100ft)	Build (°/100ft)	Turn (°/100ft)	TFace (°)
2,500.00	6.95	253.92	2,498.56	-7.86	-27.25	7.63	0.00	0.00	0.00	0.000
2,600.00	6.95	253.92	2,597.83	-11.21	-38.88	10.89	0.00	0.00	0.00	0.000
2,700.00	6.95	253.92	2,697.09	-14.56	-50.51	14.15	0.00	0.00	0.00	0.000
2,800.00	6.95	253.92	2,796.36	-17.92	-62.14	17.41	0.00	0.00	0.00	0.000
2,900.00	6.95	253.92	2,895.62	-21.27	-73.77	20.67	0.00	0.00	0.00	0.000
3,000.00	6.95	253.92	2,994.89	-24.62	-85.40	23.92	0.00	0.00	0.00	0.000
3,100.00	6.95	253.92	3,094.15	-27.98	-97.03	27.18	0.00	0.00	0.00	0.000
3,200.00	6.95	253.92	3,193.42	-31.33	-108.66	30.44	0.00	0.00	0.00	0.000
3,300.00	6.95	253.92	3,292.68	-34.69	-120.29	33.70	0.00	0.00	0.00	0.000
3,400.00	6.95	253.92	3,391.94	-38.04	-131.92	36.96	0.00	0.00	0.00	0.000
3,500.00	6.95	253.92	3,491.21	-41.39	-143.55	40.21	0.00	0.00	0.00	0.000
3,600.00	6.95	253.92	3,590.47	-44.75	-155.18	43.47	0.00	0.00	0.00	0.000
3,700.00	6.95	253.92	3,689.74	-48.10	-166.81	46.73	0.00	0.00	0.00	0.000
3,800.00	6.95	253.92	3,789.00	-51.45	-178.44	49.99	0.00	0.00	0.00	0.000
3,900.00	6.95	253.92	3,888.27	-54.81	-190.07	53.25	0.00	0.00	0.00	0.000
4,000.00	6.95	253.92	3,987.53	-58.16	-201.70	56.50	0.00	0.00	0.00	0.000
4,100.00	6.95	253.92	4,086.80	-61.51	-213.33	59.76	0.00	0.00	0.00	0.000
4,200.00	6.95	253.92	4,186.06	-64.87	-224.96	63.02	0.00	0.00	0.00	0.000
4,300.00	6.95	253.92	4,285.33	-68.22	-236.60	66.28	0.00	0.00	0.00	0.000
4,400.00	6.95	253.92	4,384.59	-71.58	-248.23	69.54	0.00	0.00	0.00	0.000
4,500.00	6.95	253.92	4,483.86	-74.93	-259.86	72.80	0.00	0.00	0.00	0.000
4,600.00	6.95	253.92	4,583.12	-78.28	-271.49	76.05	0.00	0.00	0.00	0.000
4,700.00	6.95	253.92	4,682.39	-81.64	-283.12	79.31	0.00	0.00	0.00	0.000
4,800.00	6.95	253.92	4,781.65	-84.99	-294.75	82.57	0.00	0.00	0.00	0.000
4,900.00	6.95	253.92	4,880.92	-88.34	-306.38	85.83	0.00	0.00	0.00	0.000
5,000.00	6.95	253.92	4,980.18	-91.70	-318.01	89.09	0.00	0.00	0.00	0.000
5,100.00	6.95	253.92	5,079.45	-95.05	-329.64	92.34	0.00	0.00	0.00	0.000



Wellbenders

Standard Plan With Toolface

Company:	Santo Petroleum	Local Co-ordinate Reference:	Well #411H
Project:	Lea County, NM (NAD 83 - NME	TVD Reference:	RKB=25' @ 3359.00usft
Site:	Ocotillo Sunrise	MD Reference:	RKB=25' @ 3359.00usft
Well:	#411H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #3	Database:	WBDS_SQL_2

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100ft)	Build (°/100ft)	Turn (°/100ft)	TFace (°)	
5,200.00	6.95	253.92	5,178.71	-98.40	-341.27	95.60	0.00	0.00	0.00	0.000	
5,300.00	6.95	253.92	5,277.97	-101.76	-352.90	98.86	0.00	0.00	0.00	0.000	
5,400.00	6.95	253.92	5,377.24	-105.11	-364.53	102.12	0.00	0.00	0.00	0.000	
5,500.00	6.95	253.92	5,476.50	-108.47	-376.16	105.38	0.00	0.00	0.00	0.000	
5,600.00	6.95	253.92	5,575.77	-111.82	-387.79	108.63	0.00	0.00	0.00	0.000	
5,700.00	6.95	253.92	5,675.03	-115.17	-399.42	111.89	0.00	0.00	0.00	0.000	
5,800.00	6.95	253.92	5,774.30	-118.53	-411.05	115.15	0.00	0.00	0.00	0.000	
5,900.00	6.95	253.92	5,873.56	-121.88	-422.68	118.41	0.00	0.00	0.00	0.000	
6,000.00	6.95	253.92	5,972.83	-125.23	-434.31	121.67	0.00	0.00	0.00	0.000	
6,100.00	6.95	253.92	6,072.09	-128.59	-445.94	124.93	0.00	0.00	0.00	0.000	
6,200.00	6.95	253.92	6,171.36	-131.94	-457.57	128.18	0.00	0.00	0.00	0.000	
6,300.00	6.95	253.92	6,270.62	-135.29	-469.20	131.44	0.00	0.00	0.00	0.000	
6,400.00	6.95	253.92	6,369.89	-138.65	-480.83	134.70	0.00	0.00	0.00	0.000	
6,500.00	6.95	253.92	6,469.15	-142.00	-492.47	137.96	0.00	0.00	0.00	0.000	
6,600.00	6.95	253.92	6,568.42	-145.36	-504.10	141.22	0.00	0.00	0.00	0.000	
6,700.00	6.95	253.92	6,667.68	-148.71	-515.73	144.47	0.00	0.00	0.00	0.000	
6,800.00	6.95	253.92	6,766.95	-152.06	-527.36	147.73	0.00	0.00	0.00	0.000	
6,900.00	6.95	253.92	6,866.21	-155.42	-538.99	150.99	0.00	0.00	0.00	0.000	
7,000.00	6.95	253.92	6,965.47	-158.77	-550.62	154.25	0.00	0.00	0.00	0.000	
7,100.00	6.95	253.92	7,064.74	-162.12	-562.25	157.51	0.00	0.00	0.00	0.000	
7,200.00	6.95	253.92	7,164.00	-165.48	-573.88	160.76	0.00	0.00	0.00	0.000	
7,300.00	6.95	253.92	7,263.27	-168.83	-585.51	164.02	0.00	0.00	0.00	0.000	
7,400.00	6.95	253.92	7,362.53	-172.18	-597.14	167.28	0.00	0.00	0.00	0.000	
7,500.00	6.95	253.92	7,461.80	-175.54	-608.77	170.54	0.00	0.00	0.00	0.000	
7,600.00	6.95	253.92	7,561.06	-178.89	-620.40	173.80	0.00	0.00	0.00	0.000	
7,700.00	6.95	253.92	7,660.33	-182.25	-632.03	177.05	0.00	0.00	0.00	0.000	
7,800.00	6.95	253.92	7,759.59	-185.60	-643.66	180.31	0.00	0.00	0.00	0.000	



Wellbenders

Standard Plan With Toolface

Company:	Santo Petroleum	Local Co-ordinate Reference:	Well #411H
Project:	Lea County, NM (NAD 83 - NME	TVD Reference:	RKB=25' @ 3359.00usft
Site:	Ocotillo Sunrise	MD Reference:	RKB=25' @ 3359.00usft
Well:	#411H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #3	Database:	WBDS_SQL_2

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100ft)	Build (°/100ft)	Turn (°/100ft)	TFace (°)
7,900.00	6.95	253.92	7,858.86	-188.95	-655.29	183.57	0.00	0.00	0.00	0.000
8,000.00	6.95	253.92	7,958.12	-192.31	-666.92	186.83	0.00	0.00	0.00	0.000
8,100.00	6.95	253.92	8,057.39	-195.66	-678.55	190.09	0.00	0.00	0.00	0.000
8,200.00	6.95	253.92	8,156.65	-199.01	-690.18	193.35	0.00	0.00	0.00	0.000
8,300.00	6.95	253.92	8,255.92	-202.37	-701.81	196.60	0.00	0.00	0.00	0.000
8,400.00	6.95	253.92	8,355.18	-205.72	-713.44	199.86	0.00	0.00	0.00	0.000
8,500.00	6.95	253.92	8,454.45	-209.07	-725.07	203.12	0.00	0.00	0.00	0.000
8,600.00	6.95	253.92	8,553.71	-212.43	-736.70	206.38	0.00	0.00	0.00	0.000
8,700.00	6.95	253.92	8,652.98	-215.78	-748.34	209.64	0.00	0.00	0.00	0.000
8,800.00	6.95	253.92	8,752.24	-219.14	-759.97	212.89	0.00	0.00	0.00	0.000
8,900.00	6.95	253.92	8,851.50	-222.49	-771.60	216.15	0.00	0.00	0.00	0.000
9,000.00	6.95	253.92	8,950.77	-225.84	-783.23	219.41	0.00	0.00	0.00	0.000
9,100.00	6.95	253.92	9,050.03	-229.20	-794.86	222.67	0.00	0.00	0.00	0.000
9,200.00	6.95	253.92	9,149.30	-232.55	-806.49	225.93	0.00	0.00	0.00	0.000
9,300.00	6.95	253.92	9,248.56	-235.90	-818.12	229.18	0.00	0.00	0.00	0.000
9,400.00	6.95	253.92	9,347.83	-239.26	-829.75	232.44	0.00	0.00	0.00	0.000
9,500.00	6.95	253.92	9,447.09	-242.61	-841.38	235.70	0.00	0.00	0.00	0.000
9,600.00	6.95	253.92	9,546.36	-245.96	-853.01	238.96	0.00	0.00	0.00	0.000
9,700.00	6.95	253.92	9,645.62	-249.32	-864.64	242.22	0.00	0.00	0.00	0.000
9,800.00	6.95	253.92	9,744.89	-252.67	-876.27	245.48	0.00	0.00	0.00	0.000
9,900.00	6.95	253.92	9,844.15	-256.03	-887.90	248.73	0.00	0.00	0.00	0.000
10,000.00	6.95	253.92	9,943.42	-259.38	-899.53	251.99	0.00	0.00	0.00	0.000
10,100.00	6.95	253.92	10,042.68	-262.73	-911.16	255.25	0.00	0.00	0.00	0.000
10,200.00	6.95	253.92	10,141.95	-266.09	-922.79	258.51	0.00	0.00	0.00	0.000
10,300.00	6.95	253.92	10,241.21	-269.44	-934.42	261.77	0.00	0.00	0.00	0.000
10,400.00	6.95	253.92	10,340.48	-272.79	-946.05	265.02	0.00	0.00	0.00	0.000
10,500.00	6.95	253.92	10,439.74	-276.15	-957.68	268.28	0.00	0.00	0.00	0.000



Wellbenders

Standard Plan With Toolface

Company:	Santo Petroleum	Local Co-ordinate Reference:	Well #411H
Project:	Lea County, NM (NAD 83 - NME	TVD Reference:	RKB=25' @ 3359.00usft
Site:	Ocotillo Sunrise	MD Reference:	RKB=25' @ 3359.00usft
Well:	#411H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #3	Database:	WBDS_SQL_2

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100ft)	Build (°/100ft)	Turn (°/100ft)	TFace (°)
10,600.00	6.95	253.92	10,539.00	-279.50	-969.31	271.54	0.00	0.00	0.00	0.000
10,700.00	6.95	253.92	10,638.27	-282.85	-980.94	274.80	0.00	0.00	0.00	0.000
10,800.00	6.95	253.92	10,737.53	-286.21	-992.57	278.06	0.00	0.00	0.00	0.000
10,900.00	6.95	253.92	10,836.80	-289.56	-1,004.21	281.31	0.00	0.00	0.00	0.000
11,000.00	6.95	253.92	10,936.06	-292.92	-1,015.84	284.57	0.00	0.00	0.00	0.000
11,100.00	6.95	253.92	11,035.33	-296.27	-1,027.47	287.83	0.00	0.00	0.00	0.000
11,200.00	6.95	253.92	11,134.59	-299.62	-1,039.10	291.09	0.00	0.00	0.00	0.000
11,300.00	6.95	253.92	11,233.86	-302.98	-1,050.73	294.35	0.00	0.00	0.00	0.000
11,321.16	6.95	253.92	11,254.86	-303.69	-1,053.19	295.04	0.00	0.00	0.00	0.000
11,400.00	4.59	253.92	11,333.30	-305.88	-1,060.80	297.17	3.00	-3.00	0.00	180.000
11,500.00	1.59	253.92	11,433.14	-307.37	-1,065.98	298.62	3.00	-3.00	0.00	180.000
11,552.90	0.00	179.53	11,486.04	-307.58	-1,066.68	298.82	3.00	-3.00	0.00	-180.000
11,600.00	0.00	0.00	11,533.13	-307.58	-1,066.68	298.82	0.00	0.00	0.00	0.000
11,700.00	0.00	0.00	11,633.13	-307.58	-1,066.68	298.82	0.00	0.00	0.00	0.000
11,800.00	0.00	0.00	11,733.13	-307.58	-1,066.68	298.82	0.00	0.00	0.00	0.000
11,852.90	0.00	179.53	11,786.04	-307.58	-1,066.68	298.82	0.00	0.00	0.00	179.526
11,900.00	3.77	179.53	11,833.10	-309.12	-1,066.67	300.36	8.00	8.00	0.00	179.526
11,950.00	7.77	179.53	11,882.84	-314.15	-1,066.63	305.39	8.00	8.00	0.00	0.000
12,000.00	11.77	179.53	11,932.10	-322.63	-1,066.56	313.87	8.00	8.00	0.00	0.000
12,050.00	15.77	179.53	11,980.66	-334.53	-1,066.46	325.77	8.00	8.00	0.00	0.000
12,100.00	19.77	179.53	12,028.26	-349.78	-1,066.33	341.02	8.00	8.00	0.00	0.000
12,150.00	23.77	179.53	12,074.69	-368.32	-1,066.18	359.56	8.00	8.00	0.00	0.000
12,200.00	27.77	179.53	12,119.71	-390.05	-1,066.00	381.29	8.00	8.00	0.00	0.000
12,250.00	31.77	179.53	12,163.10	-414.87	-1,065.79	406.11	8.00	8.00	0.00	0.000
12,300.00	35.77	179.53	12,204.65	-442.65	-1,065.56	433.90	8.00	8.00	0.00	0.000
12,350.00	39.77	179.53	12,244.17	-473.27	-1,065.31	464.51	8.00	8.00	0.00	0.000
12,400.00	43.77	179.53	12,281.46	-506.57	-1,065.04	497.81	8.00	8.00	0.00	0.000



Wellbenders

Standard Plan With Toolface

Company:	Santo Petroleum	Local Co-ordinate Reference:	Well #411H
Project:	Lea County, NM (NAD 83 - NME	TVD Reference:	RKB=25' @ 3359.00usft
Site:	Ocotillo Sunrise	MD Reference:	RKB=25' @ 3359.00usft
Well:	#411H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #3	Database:	WBDS_SQL_2

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100ft)	Build (°/100ft)	Turn (°/100ft)	TFace (°)
12,415.40	45.00	179.53	12,292.46	-517.34	-1,064.95	508.59	8.00	8.00	0.00	0.000
12,500.00	45.00	179.53	12,352.28	-577.16	-1,064.45	568.41	0.00	0.00	0.00	0.000
12,600.00	45.00	179.53	12,422.99	-647.87	-1,063.87	639.12	0.00	0.00	0.00	0.000
12,665.40	45.00	179.53	12,469.24	-694.11	-1,063.48	685.36	0.00	0.00	0.00	0.000
12,700.00	48.46	179.53	12,492.95	-719.30	-1,063.28	710.55	10.00	10.00	0.00	0.000
12,750.00	53.46	179.53	12,524.43	-758.12	-1,062.96	749.37	10.00	10.00	0.00	0.000
12,800.00	58.46	179.53	12,552.41	-799.54	-1,062.61	790.79	10.00	10.00	0.00	0.000
12,850.00	63.46	179.53	12,576.68	-843.24	-1,062.25	834.49	10.00	10.00	0.00	0.000
12,900.00	68.46	179.53	12,597.04	-888.88	-1,061.87	880.14	10.00	10.00	0.00	0.000
12,950.00	73.46	179.53	12,613.35	-936.13	-1,061.48	927.39	10.00	10.00	0.00	0.000
13,000.00	78.46	179.53	12,625.47	-984.62	-1,061.08	975.88	10.00	10.00	0.00	0.000
13,050.00	83.46	179.53	12,633.33	-1,033.98	-1,060.67	1,025.25	10.00	10.00	0.00	0.000
13,100.00	88.46	179.53	12,636.85	-1,083.84	-1,060.26	1,075.11	10.00	10.00	0.00	0.000
13,107.46	89.21	179.53	12,637.00	-1,091.30	-1,060.20	1,082.57	10.00	10.00	0.00	0.000
13,200.00	89.21	179.53	12,638.28	-1,183.83	-1,059.43	1,175.09	0.00	0.00	0.00	0.000
13,300.00	89.21	179.53	12,639.67	-1,283.81	-1,058.61	1,275.09	0.00	0.00	0.00	0.000
13,400.00	89.21	179.53	12,641.05	-1,383.80	-1,057.78	1,375.08	0.00	0.00	0.00	0.000
13,500.00	89.21	179.53	12,642.44	-1,483.79	-1,056.95	1,475.07	0.00	0.00	0.00	0.000
13,600.00	89.21	179.53	12,643.82	-1,583.77	-1,056.13	1,575.06	0.00	0.00	0.00	0.000
13,700.00	89.21	179.53	12,645.21	-1,683.76	-1,055.30	1,675.05	0.00	0.00	0.00	0.000
13,800.00	89.21	179.53	12,646.59	-1,783.75	-1,054.47	1,775.04	0.00	0.00	0.00	0.000
13,900.00	89.21	179.53	12,647.98	-1,883.73	-1,053.65	1,875.03	0.00	0.00	0.00	0.000
14,000.00	89.21	179.53	12,649.36	-1,983.72	-1,052.82	1,975.02	0.00	0.00	0.00	0.000
14,100.00	89.21	179.53	12,650.75	-2,083.71	-1,051.99	2,075.01	0.00	0.00	0.00	0.000
14,200.00	89.21	179.53	12,652.13	-2,183.69	-1,051.17	2,175.00	0.00	0.00	0.00	0.000
14,300.00	89.21	179.53	12,653.52	-2,283.68	-1,050.34	2,274.99	0.00	0.00	0.00	0.000
14,400.00	89.21	179.53	12,654.91	-2,383.67	-1,049.51	2,374.98	0.00	0.00	0.00	0.000



Wellbenders

Standard Plan With Toolface

Company:	Santo Petroleum	Local Co-ordinate Reference:	Well #411H
Project:	Lea County, NM (NAD 83 - NME	TVD Reference:	RKB=25' @ 3359.00usft
Site:	Ocotillo Sunrise	MD Reference:	RKB=25' @ 3359.00usft
Well:	#411H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #3	Database:	WBDS_SQL_2

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100ft)	Build (°/100ft)	Turn (°/100ft)	TFace (°)
14,500.00	89.21	179.53	12,656.29	-2,483.66	-1,048.69	2,474.97	0.00	0.00	0.00	0.000
14,600.00	89.21	179.53	12,657.68	-2,583.64	-1,047.86	2,574.96	0.00	0.00	0.00	0.000
14,700.00	89.21	179.53	12,659.06	-2,683.63	-1,047.03	2,674.95	0.00	0.00	0.00	0.000
14,800.00	89.21	179.53	12,660.45	-2,783.62	-1,046.21	2,774.94	0.00	0.00	0.00	0.000
14,900.00	89.21	179.53	12,661.83	-2,883.60	-1,045.38	2,874.93	0.00	0.00	0.00	0.000
15,000.00	89.21	179.53	12,663.22	-2,983.59	-1,044.55	2,974.92	0.00	0.00	0.00	0.000
15,100.00	89.21	179.53	12,664.60	-3,083.58	-1,043.72	3,074.91	0.00	0.00	0.00	0.000
15,200.00	89.21	179.53	12,665.99	-3,183.56	-1,042.90	3,174.90	0.00	0.00	0.00	0.000
15,300.00	89.21	179.53	12,667.37	-3,283.55	-1,042.07	3,274.89	0.00	0.00	0.00	0.000
15,400.00	89.21	179.53	12,668.76	-3,383.54	-1,041.24	3,374.88	0.00	0.00	0.00	0.000
15,500.00	89.21	179.53	12,670.14	-3,483.53	-1,040.42	3,474.87	0.00	0.00	0.00	0.000
15,600.00	89.21	179.53	12,671.53	-3,583.51	-1,039.59	3,574.86	0.00	0.00	0.00	0.000
15,700.00	89.21	179.53	12,672.91	-3,683.50	-1,038.76	3,674.85	0.00	0.00	0.00	0.000
15,800.00	89.21	179.53	12,674.30	-3,783.49	-1,037.94	3,774.85	0.00	0.00	0.00	0.000
15,900.00	89.21	179.53	12,675.68	-3,883.47	-1,037.11	3,874.84	0.00	0.00	0.00	0.000
16,000.00	89.21	179.53	12,677.07	-3,983.46	-1,036.28	3,974.83	0.00	0.00	0.00	0.000
16,100.00	89.21	179.53	12,678.46	-4,083.45	-1,035.46	4,074.82	0.00	0.00	0.00	0.000
16,200.00	89.21	179.53	12,679.84	-4,183.43	-1,034.63	4,174.81	0.00	0.00	0.00	0.000
16,300.00	89.21	179.53	12,681.23	-4,283.42	-1,033.80	4,274.80	0.00	0.00	0.00	0.000
16,400.00	89.21	179.53	12,682.61	-4,383.41	-1,032.98	4,374.79	0.00	0.00	0.00	0.000
16,500.00	89.21	179.53	12,684.00	-4,483.40	-1,032.15	4,474.78	0.00	0.00	0.00	0.000
16,600.00	89.21	179.53	12,685.38	-4,583.38	-1,031.32	4,574.77	0.00	0.00	0.00	0.000
16,700.00	89.21	179.53	12,686.77	-4,683.37	-1,030.50	4,674.76	0.00	0.00	0.00	0.000
16,800.00	89.21	179.53	12,688.15	-4,783.36	-1,029.67	4,774.75	0.00	0.00	0.00	0.000
16,900.00	89.21	179.53	12,689.54	-4,883.34	-1,028.84	4,874.74	0.00	0.00	0.00	0.000
17,000.00	89.21	179.53	12,690.92	-4,983.33	-1,028.01	4,974.73	0.00	0.00	0.00	0.000
17,100.00	89.21	179.53	12,692.31	-5,083.32	-1,027.19	5,074.72	0.00	0.00	0.00	0.000



Wellbenders

Standard Plan With Toolface

Company:	Santo Petroleum	Local Co-ordinate Reference:	Well #411H
Project:	Lea County, NM (NAD 83 - NME	TVD Reference:	RKB=25' @ 3359.00usft
Site:	Ocotillo Sunrise	MD Reference:	RKB=25' @ 3359.00usft
Well:	#411H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #3	Database:	WBDS_SQL_2

Planned Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100ft)	Build (°/100ft)	Turn (°/100ft)	TFace (°)
17,200.00	89.21	179.53	12,693.69	-5,183.30	-1,026.36	5,174.71	0.00	0.00	0.00	0.000
17,300.00	89.21	179.53	12,695.08	-5,283.29	-1,025.53	5,274.70	0.00	0.00	0.00	0.000
17,400.00	89.21	179.53	12,696.46	-5,383.28	-1,024.71	5,374.69	0.00	0.00	0.00	0.000
17,500.00	89.21	179.53	12,697.85	-5,483.27	-1,023.88	5,474.68	0.00	0.00	0.00	0.000
17,600.00	89.21	179.53	12,699.23	-5,583.25	-1,023.05	5,574.67	0.00	0.00	0.00	0.000
17,700.00	89.21	179.53	12,700.62	-5,683.24	-1,022.23	5,674.66	0.00	0.00	0.00	0.000
17,727.46	89.21	179.53	12,701.00	-5,710.70	-1,022.00	5,702.12	0.00	0.00	0.00	0.000
17,807.47	89.21	179.53	12,702.11	-5,790.70	-1,021.34	5,782.13	0.00	0.00	0.00	0.000

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,050.00	1,050.00	10 3/4"	10.750	14.750	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
919.00	919.00	Rustler		0.000		
9,344.77	9,293.00	Bone Springs		0.000		
12,587.28	12,414.00	Wolfcamp		0.000		
16,211.53	12,680.00	Top of Window		0.000		
1,347.00	1,347.00	T. Salt		0.000		
5,158.99	5,138.00	B. Salt		0.000		
8,026.07	7,984.00	Brushy Canyon		0.000		

Checked By: _____ Approved By: _____ Date: _____