

**STATE OF NEW MEXICO
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT
OIL CONSERVATION DIVISION**

**IN RE APPLICATION FOR PERMIT TO DRILL
CAVEMAN 7-12 WCXY 2H FILED BY SPC RESOURCES, LLC**

EMERGENCY ORDER

The Director of the New Mexico Oil Conservation Division (“Division”) issues this Emergency Order to suspend its approval of the Application for Permit to Drill (“Application to Drill”) for the Caveman 7-12 WCXY 2H well, renamed the Caveman 402H well, filed by SPC Resources, LLC (“SPC”).

FINDINGS OF FACT

1. The Division has jurisdiction over SPC and the subject matter herein.
2. On November 5, 2020, SPC filed the Application to Drill the Caveman 7-12 WCXY 2H well. Exhibit 1.
3. On November 5, 2020, the Division approved the Application to Drill.
4. On March 11, 2021, SPC filed a sundry to rename the well as “Caveman 402H”. Exhibit 2.
5. On June 30, 2021, SPC informed the Division that it intends to commence drilling the Caveman 402H well on or about July 5, 2021.
6. Upon information and belief, SPC intends to complete the well immediately after drilling it.
7. The Division is managing a remediation project for the Carlsbad Brine Well which lies in proximity to the proposed location of drilling and completion for the Caveman 402H well.

8. To date, the state of New Mexico, Eddy County, and the City of Carlsbad have invested approximately \$85 million in the remediation project.

9. Work on the remediation project is ongoing, with the final phase still pending.

10. SPC's intent to drill and complete the Caveman 402H well on its proposed schedule poses a clear and immediate risk of harm to stability of the Carlsbad Brine Cavern and the successful completion of the remediation project.

11. Pursuant to Section 70-2-23 of the Oil and Gas Act, the Division finds that an emergency exists regarding SPC's intent to drill and complete the Caveman 402H well on its proposed schedule that requires the suspension of the Application to Drill without a hearing.

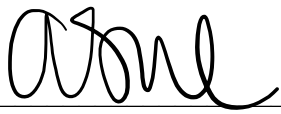
ORDER

12. To protect the Carlsbad Brine Well and the ongoing remediation project and to prevent collateral injury to life, property, environment, public infrastructure, and neighboring properties, the Division hereby ORDERS that SPC's Application to Drill the Caveman 402H well is suspended, and any action by SPC to drill or complete the Caveman 402 well is prohibited.

13. This Emergency Order shall remain in force for fifteen (15) days from the date of signature by the Division Director.

14. The Division retains jurisdiction of this matter for the entry of such further orders as it may deem necessary.

**STATE OF NEW MEXICO
OIL CONSERVATION DIVISION**



**ADRIENNE SANDOVAL
DIRECTOR**

Date: 7/2/2021

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 288270

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

1. Operator Name and Address SPC RESOURCES, LLC P.O. Box 1020 Artesia, NM 88211		2. OGRID Number 372262
		3. API Number 30-015-47629
4. Property Code 329783	5. Property Name CAVEMAN 7 12 WCXY	6. Well No. 002H

7. Surface Location

UL - Lot E	Section 8	Township 22S	Range 27E	Lot Idn E	Feet From 2271	N/S Line N	Feet From 240	E/W Line W	County Eddy
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8. Proposed Bottom Hole Location

UL - Lot E	Section 12	Township 22S	Range 26E	Lot Idn E	Feet From 1650	N/S Line N	Feet From 100	E/W Line W	County Eddy
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9. Pool Information

PURPLE SAGE;WOLFCAMP (GAS)	98220
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Additional Well Information

11. Work Type New Well	12. Well Type GAS	13. Cable/Rotary	14. Lease Type Private	15. Ground Level Elevation 3099
16. Multiple N	17. Proposed Depth 19472	18. Formation Wolfcamp	19. Contractor	20. Spud Date 1/4/2021
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	54.5	425	430	0
Int1	12.25	10.75	40.5	2800	500	0
Prod	8.75	5.5	20	19458	2545	9152
Prod	9.875	5.5	20	9152	2020	0

Casing/Cement Program: Additional Comments

Plan to drill production interval from 1800 to bottom of curve at 9152 with 9-7/8" in order to have 7-5/8" contingency option. After tripping for a bit, we will drill 8.75" open hole in lateral. Then run 5.5" long string and cement with 4565 sxs of cement.

22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
Annular	3000	2000	Shaffer
Pipe	5000	3500	Shaffer
Blind	5000	3500	Shaffer

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:

OIL CONSERVATION DIVISION

Printed Name:	Electronically filed by Lelan J Anders	Approved By:	Kurt Simmons		
Title:	Vice President of Operations	Title:	Petroleum Specialist - A		
Email Address:	landers@santopetroleum.com	Approved Date:	11/5/2020	Expiration Date:	11/5/2022
Date:	11/4/2020	Phone:	713-600-7502	Conditions of Approval Attached	

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State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

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

Form C-102

Revised August 4, 2011

Submit one copy to appropriate
District Office

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number		Pool Code 98220	Pool Name PURPLE SAGE WOLFCAMP GAS POOL
Property Code	Property Name CAVEMAN 7-12 WCXY		Well Number 2H
OGRID No.	Operator Name SPC RESOURCES, LLC		Elevation 3099

Surface Location

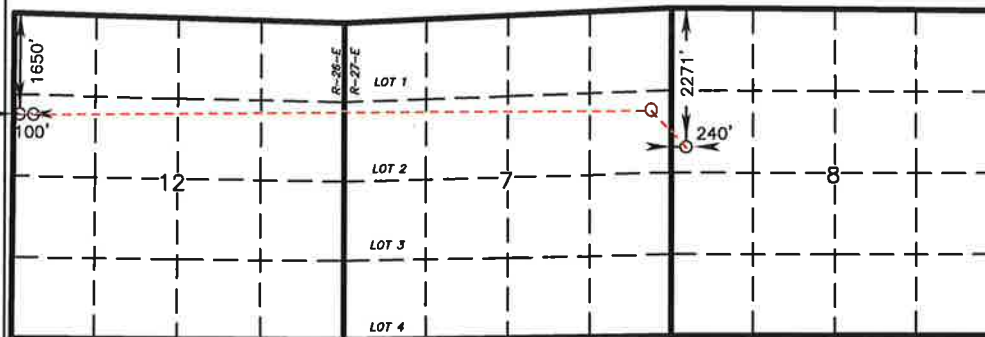
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	SOUTH/South line	Feet from the	East/West line	County
E	8	22 S	27 E		2271	NORTH	240	WEST	EDDY

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
E	12	22 S	26 E		1650	NORTH	100	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
1267.1			

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



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 undivided 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 11/2/2020

Lelan J Anders

Printed Name

LAnders@SantoPetroleum.com

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.

Date Surveyed _____
Signature & Seal of Professional Surveyor

7977
Certification of Professional Land Surveyor

7977
BASIS SURVEYS

0' 2000' 4000' 6000' 8000' N

SCALE: 1" = 4000'

WO Num.: 34729

BOTTOM HOLE LOCATION

Lat - N 32.410061
Long - W 104.254726
NMSPCE - N 512920.2
E 565595.8
(NAD-83)

LAST TAKE POINT

1650 FNL & 330 FWL
Lat - N 32.410039
Long - W 104.253981
NMSPCE - N 512912.4
E 565826.0
(NAD-83)

FIRST TAKE POINT

1650 FNL & 330 FEL
Lat - N 32.410231
Long - W 104.221300
NMSPCE - N 512991.2
E 575910.6
(NAD-83)

SURFACE LOCATION

Lat - N 32.408564
Long - W 104.219452
NMSPCE - N 512385.6
E 576482.0
(NAD-83)

BEFORE THE OIL CONSERVATION DIVISION

Santa Fe, New Mexico

Exhibit No. 2A

Submitted by: SPC Resources, LLC

Hearing Date: September 19, 2019

Case No. 20762

District I

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GAS CAPTURE PLAN

Date: 11/5/2020

☒ Original

Operator & OGRID No.: [372262] SPC RESOURCES, 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, recomplete 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
CAVEMAN 7 12 WCXY #002H	30-015-47629	E-8-22S-27E	2271N 0240W	2500	None	Plan to tie into Enterprise B-4 lateral. Will have 2 stage compressor at CTB on Douglas COM 1 Pad

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 ENTERPRISE FIELD SERVICES L.L.C. and will be connected to ENTERPRISE FIELD SERVICES L.L.C. High Pressure gathering system located in Eddy County, New Mexico. It will require 7300' of pipeline to connect the facility to High Pressure gathering system. SPC RESOURCES, LLC provides (periodically) to ENTERPRISE FIELD SERVICES L.L.C. a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, SPC RESOURCES, LLC and ENTERPRISE FIELD SERVICES L.L.C. have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at ENTERPRISE FIELD SERVICES L.L.C. Processing Plant located in Sec. 31, Twn. 23S, Rng. 28E, Eddy 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 ENTERPRISE FIELD SERVICES L.L.C. system at that time. Based on current information, it is SPC RESOURCES, 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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Oil Conservation Division
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Santa Fe, NM 87505

Form APD Comments

Permit 288270

PERMIT COMMENTS

Operator Name and Address: SPC RESOURCES, LLC [372262] P.O. Box 1020 Artesia, NM 88211		API Number: 30-015-47629
		Well: CAVEMAN 7 12 WCXY #002H
Created By	Comment	Comment Date

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Santa Fe, NM 87505

Form APD Conditions

Permit 288270

PERMIT CONDITIONS OF APPROVAL

Operator Name and Address: SPC RESOURCES, LLC [372262] P.O. Box 1020 Artesia, NM 88211	API Number: 30-015-47629
	Well: CAVEMAN 7 12 WCXY #002H

OCD Reviewer	Condition
kpickford	Will require a directional survey with the C-104
kpickford	Surface casing must be set 25' below top of the salt in order to seal off protectable water
kpickford	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string
kpickford	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system.
kpickford	Will require administrative order for non-standard spacing unit
kpickford	The Operator is to notify NMOCDC 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
kpickford	Cement is required to circulate on both surface and intermediate1 strings of casing



Hydrogen Sulfide Drilling Operations Plan

**SPC Resources, LLC
101 S. 4th Street, Suite B
Artesia, NM 88210
(575) 736-3250**

1. H₂S Safety Instructions to the following:
 - Characteristics of H₂S.
 - Physical effects and hazards.
 - Principal and operation of H₂S detectors, warning system and briefing areas.
 - Evacuation procedures, routes and First Aid.
 - Proper use of safety equipment and life support systems.
 - Essential personnel meeting medical evaluation criteria will receive additional training on the proper use of 30 min pressure demand air packs.
2. H₂S Detection & Alarm Systems:
 - H₂S sensor/detectors to be located on the drilling rig floor, in the base of the sub structure/cellar area, on the mud returns pits by the shale shaker. Additional H₂S monitors may be placed as deemed necessary.
 - An audio alarm system will be installed on the derrick, the floor, and in the doghouse.
3. Windssocks and Wind Streamers:
 - Windssocks at mud pit area should be high enough to be visible.
 - Windssock on the rig floor/top of doghouse should be high enough to be visible.
4. Condition Flags & Signs:
 - Warning sign on access road to location
 - Flags to be displayed on sign at entrance to location
 - i. Green Flag – Normal Safe Operation Condition
 - ii. Yellow Flag – Potential Pressure and Danger
 - iii. Red Flag – Danger (H₂S present in dangerous concentrations) Only H₂S trained personnel admitted on location
5. Well Control Equipment:
 - See attached APD



6. Communications:

- While working under masks, chalkboards will be used for communications
- Hand signals will be used where chalk board is inappropriate
- Two way radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephones will be available at drilling foreman's trailer or living quarters.

7. Drilling Stem Testing:

- No Drill Stem Tests or hole coring is planned at this time.

8. Drilling contractor supervisor will be required to be familiar with the effects H₂S has on tubular goods and other mechanical equipment.9. If H₂S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H₂S scavenger chemicals if necessary.

10. Emergency Contacts:

Emergency Contact Information - Santo Personnel				
Santo Petroleum, LLC	Artesia Office	575-736-3250	Houston	713-600-7500
Key Parties at Santo Petroleum	Title	Office	Mobile	Email
Gary Waldrop	Field Land Manager	575-736-3256	469-261-3446	gwaldrop@santopetroleum.com
Lelan J Anders	VP, Operations	713-600-7502	281-908-1752	landers@santopetroleum.com
Hanson Yates	President	713-600-7503	713-412-2097	hyates@santopetroleum.com

Carlsbad, New Mexico:	
Ambulance	911
State Police	575-885-3137
City Police	575-885-2111
Sheriff's Office	575-887-7551
Fire Department	575-887-3798
Local Emergency Planning Committee	575-887-6544
New Mexico Oil Conservation Division	575-887-6544



Santa Fe, New Mexico:	
New Mexico Emergency Response Commission	505-476-9600
New Mexico Emergency Response Commission (24 hr)	505-827-9126
New Mexico State Emergency Operations Center	505-476-9635
Federal Contacts:	
Carlsbad BLM Office	575-234-5972
National Emergency Response Center (Washington, DC)	800-424-8802
Medical:	
Flight for Life - Lubbock, TX	806-743-9911
AeroCare - Lubbock, TX	806-747-8923
Med Flight Air Ambulance - Albuquerque, NM	505-842-4433
SB Air Med Service - Albuquerque, NM	505-842-4949
Well Control/Other:	
Wild Well Control	281-784-4700
Boots & Coots IWC	800-256-9688
B.J. Services	575-746-3569
Halliburton	575-746-2757



Santo Petroleum

Eddy County, NM (NAD 83 - NME)

Caveman Unit

#402H

Wellbore #1

Plan: PERMIT

Standard Survey Report

03 November, 2020



PRELIMINARY



Company: Santo Petroleum
Project: Eddy County, NM (NAD 83 - NME)
Site: Caveman Unit
Well: #402H
Wellbore: Wellbore #1
Design: PERMIT

WELL DETAILS: #402H

Rig Name:		Est RKB = 25' @ 3124.00usft 3099.00			
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	512385.60	576482.00	32.408564	-104.219452

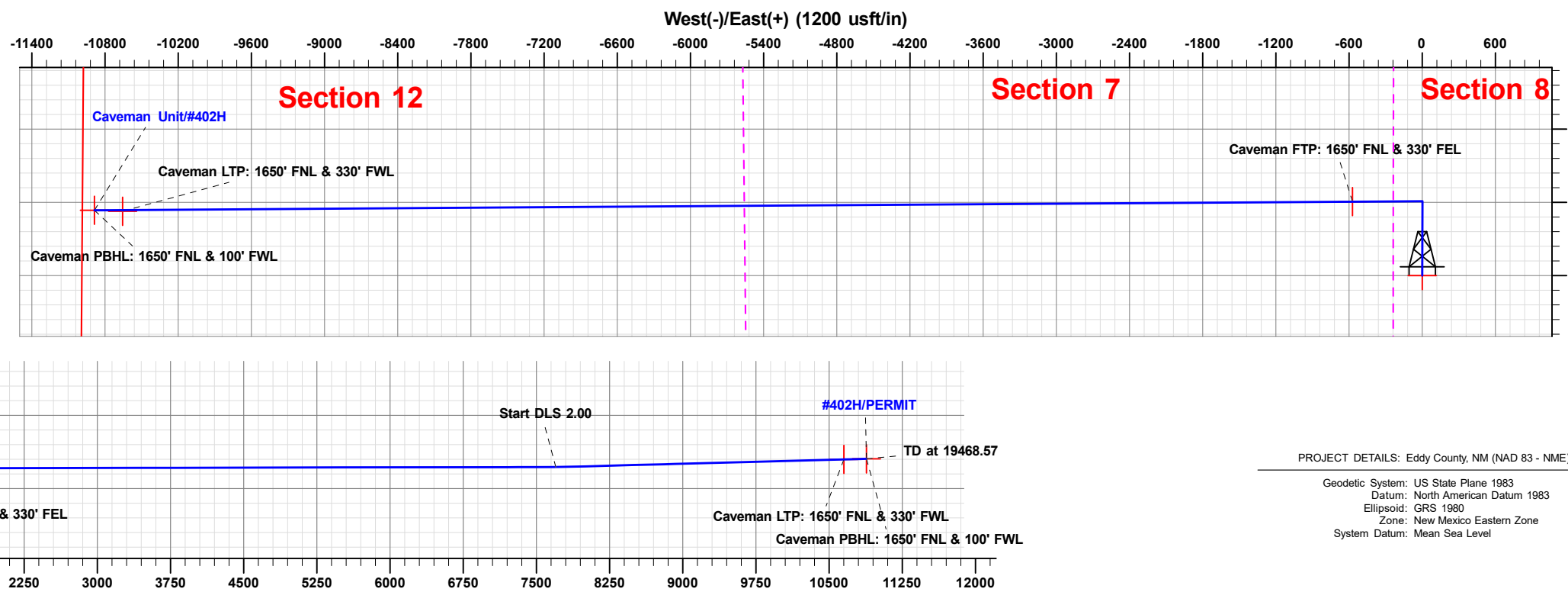
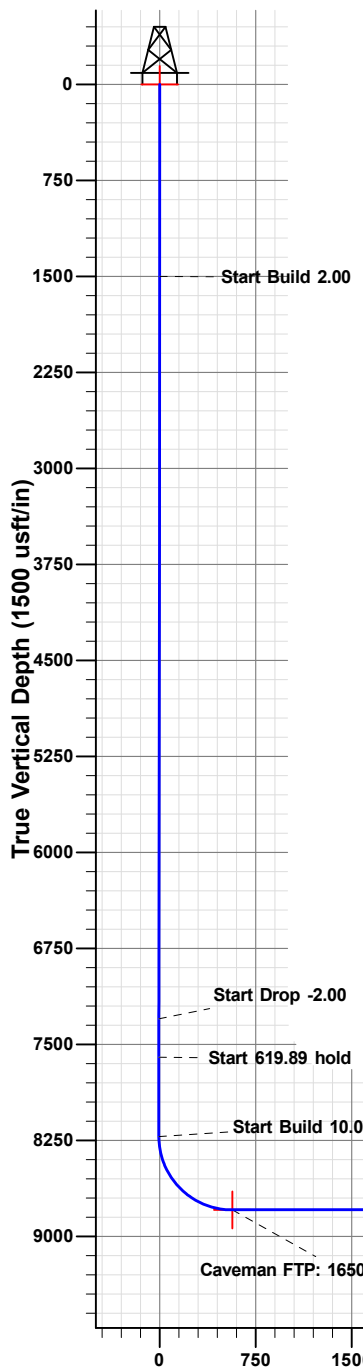


DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Caveman SHL: 2271' FNL & 240' FWL	0.00	0.00	0.00	512385.60	576482.00	32.408564	-104.219452
Caveman PBHL: 1650' FNL & 100' FWL	8694.99	534.60	-10886.20	512920.20	565595.80	32.410060	-104.254726
Caveman LTP: 1650' FNL & 330' FWL	8701.14	526.80	-10656.00	512912.40	565826.00	32.410039	-104.253980
Caveman FTP: 1650' FNL & 330' FEL	8792.85	605.60	-571.40	512991.20	575910.60	32.410230	-104.221301

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	
2	1500.00	0.00	0.00	1500.00	0.00	0.00	0.00	0.000	0.00	
3	1799.99	6.00	0.25	1799.44	15.69	0.07	2.00	0.248	-0.17	
4	7331.41	6.00	0.25	7300.56	593.86	2.58	0.00	0.000	-6.62	
5	7631.40	0.00	269.61	7600.00	609.55	2.64	2.00	180.000	-6.79	
6	8251.29	0.00	269.61	8219.89	609.55	2.64	0.00	0.000	-6.79	
7	9152.39	90.11	269.61	8792.85	605.60	-571.40	10.00	0.000	567.26	Caveman FTP: 1650' FNL & 330' FEL
8	16283.21	90.11	269.61	8779.16	556.52	-7702.04	0.00	0.000	7698.07	
9	16354.21	91.53	269.61	8778.14	556.03	-7773.03	2.00	0.177	7769.06	
10	19238.34	91.53	269.61	8701.14	536.41	-10656.07	0.00	0.000	10652.17	Caveman LTP: 1650' FNL & 330' FWL
11	19468.57	91.53	269.61	8694.99	534.84	-10886.20	0.00	0.000	10882.31	Caveman PBHL: 1650' FNL & 100' FWL



South(-)/North(+) (1200 usft/in)

Vertical Section at 269.61° (1500 usft/in)

PROJECT DETAILS: Eddy County, NM (NAD 83 - NME)

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

Plan: PERMIT (#402H/Wellbore #1)
Created By: Matthew May Date: 20:08, November 03 2020



Survey Report



Company:	Santo Petroleum	Local Co-ordinate Reference:	Well #402H
Project:	Eddy County, NM (NAD 83 - NME)	TVD Reference:	Est RKB = 25' @ 3124.00usft
Site:	Caveman Unit	MD Reference:	Est RKB = 25' @ 3124.00usft
Well:	#402H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	PERMIT	Database:	WBDS_SQL_2

Project	Eddy 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		Caveman Unit			
Site Position:		Northing:	512,385.60 usft	Latitude:	32.408564
From:	Map	Easting:	576,482.00 usft	Longitude:	-104.219452
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.061 °

Well	#402H					
Well Position	+N/-S	0.00 usft	Northing:	512,385.60 usft	Latitude:	32.408564
	+E/-W	0.00 usft	Easting:	576,482.00 usft	Longitude:	-104.219452
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,099.00 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	11/02/20	6.903	60.086	47,633.77449642

Design	PERMIT				
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	269.61	

Survey Tool Program	Date				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	19,468.57	PERMIT (Wellbore #1)	MWD+IGRF	OWSG MWD + IGRF or WMM	

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	



Survey Report



Company:	Santo Petroleum	Local Co-ordinate Reference:	Well #402H
Project:	Eddy County, NM (NAD 83 - NME)	TVD Reference:	Est RKB = 25' @ 3124.00usft
Site:	Caveman Unit	MD Reference:	Est RKB = 25' @ 3124.00usft
Well:	#402H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	PERMIT	Database:	WBDS_SQL_2

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	2.00	0.25	1,599.98	1.75	0.01	-0.02	2.00	2.00	0.00
1,700.00	4.00	0.25	1,699.84	6.98	0.03	-0.08	2.00	2.00	0.00
1,799.99	6.00	0.25	1,799.44	15.69	0.07	-0.17	2.00	2.00	0.00
1,900.00	6.00	0.25	1,898.90	26.15	0.11	-0.29	0.00	0.00	0.00
2,000.00	6.00	0.25	1,998.36	36.60	0.16	-0.41	0.00	0.00	0.00
2,100.00	6.00	0.25	2,097.81	47.05	0.20	-0.52	0.00	0.00	0.00
2,200.00	6.00	0.25	2,197.26	57.50	0.25	-0.64	0.00	0.00	0.00
2,300.00	6.00	0.25	2,296.71	67.96	0.29	-0.76	0.00	0.00	0.00
2,400.00	6.00	0.25	2,396.17	78.41	0.34	-0.87	0.00	0.00	0.00
2,500.00	6.00	0.25	2,495.62	88.86	0.39	-0.99	0.00	0.00	0.00
2,600.00	6.00	0.25	2,595.07	99.31	0.43	-1.11	0.00	0.00	0.00
2,700.00	6.00	0.25	2,694.52	109.77	0.48	-1.22	0.00	0.00	0.00
2,800.00	6.00	0.25	2,793.97	120.22	0.52	-1.34	0.00	0.00	0.00
2,900.00	6.00	0.25	2,893.43	130.67	0.57	-1.46	0.00	0.00	0.00
3,000.00	6.00	0.25	2,992.88	141.12	0.61	-1.57	0.00	0.00	0.00
3,100.00	6.00	0.25	3,092.33	151.57	0.66	-1.69	0.00	0.00	0.00
3,200.00	6.00	0.25	3,191.78	162.03	0.70	-1.81	0.00	0.00	0.00
3,300.00	6.00	0.25	3,291.24	172.48	0.75	-1.92	0.00	0.00	0.00
3,400.00	6.00	0.25	3,390.69	182.93	0.79	-2.04	0.00	0.00	0.00
3,500.00	6.00	0.25	3,490.14	193.38	0.84	-2.15	0.00	0.00	0.00
3,600.00	6.00	0.25	3,589.59	203.84	0.88	-2.27	0.00	0.00	0.00
3,700.00	6.00	0.25	3,689.04	214.29	0.93	-2.39	0.00	0.00	0.00
3,800.00	6.00	0.25	3,788.50	224.74	0.97	-2.50	0.00	0.00	0.00
3,900.00	6.00	0.25	3,887.95	235.19	1.02	-2.62	0.00	0.00	0.00
4,000.00	6.00	0.25	3,987.40	245.65	1.07	-2.74	0.00	0.00	0.00
4,100.00	6.00	0.25	4,086.85	256.10	1.11	-2.85	0.00	0.00	0.00
4,200.00	6.00	0.25	4,186.31	266.55	1.16	-2.97	0.00	0.00	0.00
4,300.00	6.00	0.25	4,285.76	277.00	1.20	-3.09	0.00	0.00	0.00
4,400.00	6.00	0.25	4,385.21	287.46	1.25	-3.20	0.00	0.00	0.00
4,500.00	6.00	0.25	4,484.66	297.91	1.29	-3.32	0.00	0.00	0.00
4,600.00	6.00	0.25	4,584.11	308.36	1.34	-3.44	0.00	0.00	0.00
4,700.00	6.00	0.25	4,683.57	318.81	1.38	-3.55	0.00	0.00	0.00
4,800.00	6.00	0.25	4,783.02	329.27	1.43	-3.67	0.00	0.00	0.00
4,900.00	6.00	0.25	4,882.47	339.72	1.47	-3.79	0.00	0.00	0.00
5,000.00	6.00	0.25	4,981.92	350.17	1.52	-3.90	0.00	0.00	0.00
5,100.00	6.00	0.25	5,081.38	360.62	1.56	-4.02	0.00	0.00	0.00
5,200.00	6.00	0.25	5,180.83	371.08	1.61	-4.13	0.00	0.00	0.00
5,300.00	6.00	0.25	5,280.28	381.53	1.65	-4.25	0.00	0.00	0.00



Survey Report



Company:	Santo Petroleum	Local Co-ordinate Reference:	Well #402H
Project:	Eddy County, NM (NAD 83 - NME)	TVD Reference:	Est RKB = 25' @ 3124.00usft
Site:	Caveman Unit	MD Reference:	Est RKB = 25' @ 3124.00usft
Well:	#402H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	PERMIT	Database:	WBDS_SQL_2

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,400.00	6.00	0.25	5,379.73	391.98	1.70	-4.37	0.00	0.00	0.00
5,500.00	6.00	0.25	5,479.18	402.43	1.74	-4.48	0.00	0.00	0.00
5,600.00	6.00	0.25	5,578.64	412.89	1.79	-4.60	0.00	0.00	0.00
5,700.00	6.00	0.25	5,678.09	423.34	1.84	-4.72	0.00	0.00	0.00
5,800.00	6.00	0.25	5,777.54	433.79	1.88	-4.83	0.00	0.00	0.00
5,900.00	6.00	0.25	5,876.99	444.24	1.93	-4.95	0.00	0.00	0.00
6,000.00	6.00	0.25	5,976.45	454.69	1.97	-5.07	0.00	0.00	0.00
6,100.00	6.00	0.25	6,075.90	465.15	2.02	-5.18	0.00	0.00	0.00
6,200.00	6.00	0.25	6,175.35	475.60	2.06	-5.30	0.00	0.00	0.00
6,300.00	6.00	0.25	6,274.80	486.05	2.11	-5.42	0.00	0.00	0.00
6,400.00	6.00	0.25	6,374.25	496.50	2.15	-5.53	0.00	0.00	0.00
6,500.00	6.00	0.25	6,473.71	506.96	2.20	-5.65	0.00	0.00	0.00
6,600.00	6.00	0.25	6,573.16	517.41	2.24	-5.77	0.00	0.00	0.00
6,700.00	6.00	0.25	6,672.61	527.86	2.29	-5.88	0.00	0.00	0.00
6,800.00	6.00	0.25	6,772.06	538.31	2.33	-6.00	0.00	0.00	0.00
6,900.00	6.00	0.25	6,871.52	548.77	2.38	-6.11	0.00	0.00	0.00
7,000.00	6.00	0.25	6,970.97	559.22	2.42	-6.23	0.00	0.00	0.00
7,100.00	6.00	0.25	7,070.42	569.67	2.47	-6.35	0.00	0.00	0.00
7,200.00	6.00	0.25	7,169.87	580.12	2.52	-6.46	0.00	0.00	0.00
7,300.00	6.00	0.25	7,269.32	590.58	2.56	-6.58	0.00	0.00	0.00
7,331.41	6.00	0.25	7,300.56	593.86	2.58	-6.62	0.00	0.00	0.00
7,400.00	4.63	0.25	7,368.86	600.21	2.60	-6.69	2.00	-2.00	0.00
7,500.00	2.63	0.25	7,468.65	606.54	2.63	-6.76	2.00	-2.00	0.00
7,600.00	0.63	0.25	7,568.61	609.38	2.64	-6.79	2.00	-2.00	0.00
7,631.40	0.00	269.61	7,600.00	609.55	2.64	-6.79	2.00	-2.00	0.00
7,700.00	0.00	0.00	7,668.60	609.55	2.64	-6.79	0.00	0.00	0.00
7,800.00	0.00	0.00	7,768.60	609.55	2.64	-6.79	0.00	0.00	0.00
7,900.00	0.00	0.00	7,868.60	609.55	2.64	-6.79	0.00	0.00	0.00
8,000.00	0.00	0.00	7,968.60	609.55	2.64	-6.79	0.00	0.00	0.00
8,100.00	0.00	0.00	8,068.60	609.55	2.64	-6.79	0.00	0.00	0.00
8,200.00	0.00	0.00	8,168.60	609.55	2.64	-6.79	0.00	0.00	0.00
8,251.29	0.00	269.61	8,219.89	609.55	2.64	-6.79	0.00	0.00	0.00
8,300.00	4.87	269.61	8,268.55	609.54	0.57	-4.72	10.00	10.00	0.00
8,350.00	9.87	269.61	8,318.12	609.49	-5.84	1.69	10.00	10.00	0.00
8,400.00	14.87	269.61	8,366.94	609.42	-16.55	12.40	10.00	10.00	0.00
8,450.00	19.87	269.61	8,414.64	609.32	-31.47	27.32	10.00	10.00	0.00
8,500.00	24.87	269.61	8,460.87	609.19	-50.49	46.35	10.00	10.00	0.00
8,550.00	29.87	269.61	8,505.26	609.03	-73.47	69.33	10.00	10.00	0.00
8,600.00	34.87	269.61	8,547.47	608.84	-100.23	96.09	10.00	10.00	0.00
8,650.00	39.87	269.61	8,587.20	608.63	-130.57	126.43	10.00	10.00	0.00
8,700.00	44.87	269.61	8,624.12	608.40	-164.26	160.11	10.00	10.00	0.00
8,750.00	49.87	269.61	8,657.98	608.15	-201.03	196.89	10.00	10.00	0.00
8,800.00	54.87	269.61	8,688.49	607.88	-240.62	236.48	10.00	10.00	0.00



Survey Report



Company:	Santo Petroleum	Local Co-ordinate Reference:	Well #402H
Project:	Eddy County, NM (NAD 83 - NME)	TVD Reference:	Est RKB = 25' @ 3124.00usft
Site:	Caveman Unit	MD Reference:	Est RKB = 25' @ 3124.00usft
Well:	#402H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	PERMIT	Database:	WBDS_SQL_2

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,850.00	59.87	269.61	8,715.44	607.59	-282.71	278.57	10.00	10.00	0.00
8,900.00	64.87	269.61	8,738.62	607.28	-327.00	322.86	10.00	10.00	0.00
8,950.00	69.87	269.61	8,757.86	606.96	-373.13	368.99	10.00	10.00	0.00
9,000.00	74.87	269.61	8,772.99	606.64	-420.77	416.63	10.00	10.00	0.00
9,050.00	79.87	269.61	8,783.92	606.30	-469.54	465.40	10.00	10.00	0.00
9,100.00	84.87	269.61	8,790.56	605.96	-519.08	514.94	10.00	10.00	0.00
9,152.39	90.11	269.61	8,792.85	605.60	-571.40	567.26	10.00	10.00	0.00
9,200.00	90.11	269.61	8,792.76	605.27	-619.01	614.88	0.00	0.00	0.00
9,300.00	90.11	269.61	8,792.57	604.58	-719.01	714.88	0.00	0.00	0.00
9,400.00	90.11	269.61	8,792.37	603.90	-819.01	814.88	0.00	0.00	0.00
9,500.00	90.11	269.61	8,792.18	603.21	-919.00	914.88	0.00	0.00	0.00
9,600.00	90.11	269.61	8,791.99	602.52	-1,019.00	1,014.88	0.00	0.00	0.00
9,700.00	90.11	269.61	8,791.80	601.83	-1,119.00	1,114.88	0.00	0.00	0.00
9,800.00	90.11	269.61	8,791.61	601.14	-1,219.00	1,214.88	0.00	0.00	0.00
9,900.00	90.11	269.61	8,791.41	600.45	-1,318.99	1,314.87	0.00	0.00	0.00
10,000.00	90.11	269.61	8,791.22	599.77	-1,418.99	1,414.87	0.00	0.00	0.00
10,100.00	90.11	269.61	8,791.03	599.08	-1,518.99	1,514.87	0.00	0.00	0.00
10,200.00	90.11	269.61	8,790.84	598.39	-1,618.98	1,614.87	0.00	0.00	0.00
10,300.00	90.11	269.61	8,790.65	597.70	-1,718.98	1,714.87	0.00	0.00	0.00
10,400.00	90.11	269.61	8,790.45	597.01	-1,818.98	1,814.87	0.00	0.00	0.00
10,500.00	90.11	269.61	8,790.26	596.32	-1,918.98	1,914.87	0.00	0.00	0.00
10,600.00	90.11	269.61	8,790.07	595.64	-2,018.97	2,014.87	0.00	0.00	0.00
10,700.00	90.11	269.61	8,789.88	594.95	-2,118.97	2,114.87	0.00	0.00	0.00
10,800.00	90.11	269.61	8,789.69	594.26	-2,218.97	2,214.87	0.00	0.00	0.00
10,900.00	90.11	269.61	8,789.50	593.57	-2,318.97	2,314.87	0.00	0.00	0.00
11,000.00	90.11	269.61	8,789.30	592.88	-2,418.96	2,414.87	0.00	0.00	0.00
11,100.00	90.11	269.61	8,789.11	592.19	-2,518.96	2,514.87	0.00	0.00	0.00
11,200.00	90.11	269.61	8,788.92	591.51	-2,618.96	2,614.87	0.00	0.00	0.00
11,300.00	90.11	269.61	8,788.73	590.82	-2,718.96	2,714.87	0.00	0.00	0.00
11,400.00	90.11	269.61	8,788.54	590.13	-2,818.95	2,814.87	0.00	0.00	0.00
11,500.00	90.11	269.61	8,788.34	589.44	-2,918.95	2,914.87	0.00	0.00	0.00
11,600.00	90.11	269.61	8,788.15	588.75	-3,018.95	3,014.87	0.00	0.00	0.00
11,700.00	90.11	269.61	8,787.96	588.06	-3,118.95	3,114.87	0.00	0.00	0.00
11,800.00	90.11	269.61	8,787.77	587.38	-3,218.94	3,214.87	0.00	0.00	0.00
11,900.00	90.11	269.61	8,787.58	586.69	-3,318.94	3,314.87	0.00	0.00	0.00
12,000.00	90.11	269.61	8,787.38	586.00	-3,418.94	3,414.87	0.00	0.00	0.00
12,100.00	90.11	269.61	8,787.19	585.31	-3,518.94	3,514.87	0.00	0.00	0.00
12,200.00	90.11	269.61	8,787.00	584.62	-3,618.93	3,614.87	0.00	0.00	0.00
12,300.00	90.11	269.61	8,786.81	583.93	-3,718.93	3,714.87	0.00	0.00	0.00
12,400.00	90.11	269.61	8,786.62	583.25	-3,818.93	3,814.87	0.00	0.00	0.00
12,500.00	90.11	269.61	8,786.42	582.56	-3,918.93	3,914.87	0.00	0.00	0.00
12,600.00	90.11	269.61	8,786.23	581.87	-4,018.92	4,014.87	0.00	0.00	0.00
12,700.00	90.11	269.61	8,786.04	581.18	-4,118.92	4,114.87	0.00	0.00	0.00



Survey Report



Company:	Santo Petroleum	Local Co-ordinate Reference:	Well #402H
Project:	Eddy County, NM (NAD 83 - NME)	TVD Reference:	Est RKB = 25' @ 3124.00usft
Site:	Caveman Unit	MD Reference:	Est RKB = 25' @ 3124.00usft
Well:	#402H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	PERMIT	Database:	WBDS_SQL_2

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
12,800.00	90.11	269.61	8,785.85	580.49	-4,218.92	4,214.87	0.00	0.00	0.00
12,900.00	90.11	269.61	8,785.66	579.80	-4,318.92	4,314.87	0.00	0.00	0.00
13,000.00	90.11	269.61	8,785.46	579.12	-4,418.91	4,414.87	0.00	0.00	0.00
13,100.00	90.11	269.61	8,785.27	578.43	-4,518.91	4,514.87	0.00	0.00	0.00
13,200.00	90.11	269.61	8,785.08	577.74	-4,618.91	4,614.87	0.00	0.00	0.00
13,300.00	90.11	269.61	8,784.89	577.05	-4,718.91	4,714.87	0.00	0.00	0.00
13,400.00	90.11	269.61	8,784.70	576.36	-4,818.90	4,814.87	0.00	0.00	0.00
13,500.00	90.11	269.61	8,784.50	575.67	-4,918.90	4,914.87	0.00	0.00	0.00
13,600.00	90.11	269.61	8,784.31	574.99	-5,018.90	5,014.87	0.00	0.00	0.00
13,700.00	90.11	269.61	8,784.12	574.30	-5,118.90	5,114.87	0.00	0.00	0.00
13,800.00	90.11	269.61	8,783.93	573.61	-5,218.89	5,214.87	0.00	0.00	0.00
13,900.00	90.11	269.61	8,783.74	572.92	-5,318.89	5,314.87	0.00	0.00	0.00
14,000.00	90.11	269.61	8,783.54	572.23	-5,418.89	5,414.87	0.00	0.00	0.00
14,100.00	90.11	269.61	8,783.35	571.54	-5,518.89	5,514.87	0.00	0.00	0.00
14,200.00	90.11	269.61	8,783.16	570.86	-5,618.88	5,614.87	0.00	0.00	0.00
14,300.00	90.11	269.61	8,782.97	570.17	-5,718.88	5,714.87	0.00	0.00	0.00
14,400.00	90.11	269.61	8,782.78	569.48	-5,818.88	5,814.87	0.00	0.00	0.00
14,500.00	90.11	269.61	8,782.58	568.79	-5,918.88	5,914.87	0.00	0.00	0.00
14,600.00	90.11	269.61	8,782.39	568.10	-6,018.87	6,014.87	0.00	0.00	0.00
14,700.00	90.11	269.61	8,782.20	567.42	-6,118.87	6,114.87	0.00	0.00	0.00
14,800.00	90.11	269.61	8,782.01	566.73	-6,218.87	6,214.87	0.00	0.00	0.00
14,900.00	90.11	269.61	8,781.82	566.04	-6,318.87	6,314.87	0.00	0.00	0.00
15,000.00	90.11	269.61	8,781.62	565.35	-6,418.86	6,414.87	0.00	0.00	0.00
15,100.00	90.11	269.61	8,781.43	564.66	-6,518.86	6,514.87	0.00	0.00	0.00
15,200.00	90.11	269.61	8,781.24	563.97	-6,618.86	6,614.87	0.00	0.00	0.00
15,300.00	90.11	269.61	8,781.05	563.29	-6,718.85	6,714.87	0.00	0.00	0.00
15,400.00	90.11	269.61	8,780.86	562.60	-6,818.85	6,814.86	0.00	0.00	0.00
15,500.00	90.11	269.61	8,780.66	561.91	-6,918.85	6,914.86	0.00	0.00	0.00
15,600.00	90.11	269.61	8,780.47	561.22	-7,018.85	7,014.86	0.00	0.00	0.00
15,700.00	90.11	269.61	8,780.28	560.53	-7,118.84	7,114.86	0.00	0.00	0.00
15,800.00	90.11	269.61	8,780.09	559.84	-7,218.84	7,214.86	0.00	0.00	0.00
15,900.00	90.11	269.61	8,779.90	559.16	-7,318.84	7,314.86	0.00	0.00	0.00
16,000.00	90.11	269.61	8,779.70	558.47	-7,418.84	7,414.86	0.00	0.00	0.00
16,100.00	90.11	269.61	8,779.51	557.78	-7,518.83	7,514.86	0.00	0.00	0.00
16,200.00	90.11	269.61	8,779.32	557.09	-7,618.83	7,614.86	0.00	0.00	0.00
16,283.21	90.11	269.61	8,779.16	556.52	-7,702.04	7,698.07	0.00	0.00	0.00
16,300.00	90.45	269.61	8,779.08	556.40	-7,718.83	7,714.86	2.00	2.00	0.01
16,354.21	91.53	269.61	8,778.14	556.03	-7,773.03	7,769.06	2.00	2.00	0.01
16,400.00	91.53	269.61	8,776.92	555.72	-7,818.80	7,814.84	0.00	0.00	0.00
16,500.00	91.53	269.61	8,774.25	555.04	-7,918.76	7,914.80	0.00	0.00	0.00
16,600.00	91.53	269.61	8,771.58	554.36	-8,018.73	8,014.77	0.00	0.00	0.00
16,700.00	91.53	269.61	8,768.91	553.68	-8,118.69	8,114.73	0.00	0.00	0.00
16,800.00	91.53	269.61	8,766.24	553.00	-8,218.65	8,214.70	0.00	0.00	0.00
16,900.00	91.53	269.61	8,763.57	552.32	-8,318.61	8,314.66	0.00	0.00	0.00



Survey Report



Company:	Santo Petroleum	Local Co-ordinate Reference:	Well #402H
Project:	Eddy County, NM (NAD 83 - NME)	TVD Reference:	Est RKB = 25' @ 3124.00usft
Site:	Caveman Unit	MD Reference:	Est RKB = 25' @ 3124.00usft
Well:	#402H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	PERMIT	Database:	WBDS_SQL_2

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
17,000.00	91.53	269.61	8,760.90	551.64	-8,418.57	8,414.62	0.00	0.00	0.00
17,100.00	91.53	269.61	8,758.23	550.96	-8,518.54	8,514.59	0.00	0.00	0.00
17,200.00	91.53	269.61	8,755.56	550.28	-8,618.50	8,614.55	0.00	0.00	0.00
17,300.00	91.53	269.61	8,752.89	549.60	-8,718.46	8,714.52	0.00	0.00	0.00
17,400.00	91.53	269.61	8,750.22	548.92	-8,818.42	8,814.48	0.00	0.00	0.00
17,500.00	91.53	269.61	8,747.55	548.24	-8,918.38	8,914.45	0.00	0.00	0.00
17,600.00	91.53	269.61	8,744.88	547.55	-9,018.35	9,014.41	0.00	0.00	0.00
17,700.00	91.53	269.61	8,742.21	546.87	-9,118.31	9,114.37	0.00	0.00	0.00
17,800.00	91.53	269.61	8,739.54	546.19	-9,218.27	9,214.34	0.00	0.00	0.00
17,900.00	91.53	269.61	8,736.87	545.51	-9,318.23	9,314.30	0.00	0.00	0.00
18,000.00	91.53	269.61	8,734.20	544.83	-9,418.19	9,414.27	0.00	0.00	0.00
18,100.00	91.53	269.61	8,731.53	544.15	-9,518.16	9,514.23	0.00	0.00	0.00
18,200.00	91.53	269.61	8,728.86	543.47	-9,618.12	9,614.20	0.00	0.00	0.00
18,300.00	91.53	269.61	8,726.19	542.79	-9,718.08	9,714.16	0.00	0.00	0.00
18,400.00	91.53	269.61	8,723.52	542.11	-9,818.04	9,814.12	0.00	0.00	0.00
18,500.00	91.53	269.61	8,720.85	541.43	-9,918.00	9,914.09	0.00	0.00	0.00
18,600.00	91.53	269.61	8,718.18	540.75	-10,017.97	10,014.05	0.00	0.00	0.00
18,700.00	91.53	269.61	8,715.51	540.07	-10,117.93	10,114.02	0.00	0.00	0.00
18,800.00	91.53	269.61	8,712.84	539.39	-10,217.89	10,213.98	0.00	0.00	0.00
18,900.00	91.53	269.61	8,710.17	538.71	-10,317.85	10,313.95	0.00	0.00	0.00
19,000.00	91.53	269.61	8,707.50	538.03	-10,417.81	10,413.91	0.00	0.00	0.00
19,100.00	91.53	269.61	8,704.83	537.35	-10,517.78	10,513.88	0.00	0.00	0.00
19,200.00	91.53	269.61	8,702.16	536.67	-10,617.74	10,613.84	0.00	0.00	0.00
19,238.34	91.53	269.61	8,701.14	536.41	-10,656.07	10,652.17	0.00	0.00	0.00
19,300.00	91.53	269.61	8,699.49	535.99	-10,717.70	10,713.80	0.00	0.00	0.00
19,400.00	91.53	269.61	8,696.82	535.31	-10,817.66	10,813.77	0.00	0.00	0.00
19,468.57	91.53	269.61	8,694.99	534.84	-10,886.20	10,882.31	0.00	0.00	0.00



Survey Report



Company:	Santo Petroleum	Local Co-ordinate Reference:	Well #402H
Project:	Eddy County, NM (NAD 83 - NME)	TVD Reference:	Est RKB = 25' @ 3124.00usft
Site:	Caveman Unit	MD Reference:	Est RKB = 25' @ 3124.00usft
Well:	#402H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	PERMIT	Database:	WBDS_SQL_2

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Caveman SHL: 2271' - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	512,385.60	576,482.00	32.408564	-104.219452
Caveman PBHL: 1650' - plan misses target center by 0.24usft at 19468.57usft MD (8694.99 TVD, 534.84 N, -10886.20 E) - Point	0.00	0.00	8,694.99	534.60	-10,886.20	512,920.20	565,595.80	32.410061	-104.254726
Caveman LTP: 1650' - plan misses target center by 9.61usft at 19238.34usft MD (8701.14 TVD, 536.41 N, -10656.07 E) - Point	0.00	0.00	8,701.14	526.80	-10,656.00	512,912.40	565,826.00	32.410039	-104.253980
Caveman FTP: 1650' - plan hits target center - Point	0.00	0.00	8,792.85	605.60	-571.40	512,991.20	575,910.60	32.410230	-104.221302

Checked By: _____ Approved By: _____ Date: _____

SANTO OPERATING LLC

GEOLOGIC WELL PROPOSAL

PROJECT AND PROSPECT					
Project Name:		Caveman		Operator: Santo Operating LLC	
Prospect Name:		Caveman		Geologist: John Weihe	
Lease Name:		Caveman 7-12 WCXY		Well Number: 002H	
Type of Operation:		New Drill		Prognosis Date: 10/11/2019	
Well Profile:		Horizontal		Well Type: Development	
Field Name(s):		Purple Sage Wolfcamp Gas Pool		API:	

WELL DESCRIPTION					
Wolfcamp A-XY; Y Sand Horizontal Development Well					

PROPOSED BOTTOM HOLE LOCATION					
Cnty/Parish:		Eddy		Latitude: N 32.408564	
State:		NM		Longitude: W 104.219452	
Description (include section line & distance & direction from nearest city):				Datum: NAD 83	
South end City of Carlsbad, NM 1650' FNL 100' FWL Section 12 22S 26E					

PROPOSED SURFACE HOLE LOCATION (IF DIFFERENT FROM BHL) (NOTE: INPUT FROM LAND DEPARTMENT REQUIRED)					
SHL (Same as BHL, Different from BHL, or TBD):					
Cnty/Parish:		Eddy		Latitude: N 32.408564	
State:		NM		Longitude: W 104.219452	
Elevation:		3,099		X Coord: 576,482.0	
Description (include section line & distance & direction from nearest city):				Y Coord: 512,385.6	
South end City of Carlsbad, NM 2271' FNL 240' FWL Section 8 22S 27E (or as deemed by L. Anders)					

ANTICIPATED GEOLOGIC MARKERS					
#	Marker*	MD (ft)	TVD (ft)	Subsea (ft)	Comments
1	Option 1: Kelly Bushing	3,124			assume 25' KB from GL
2	Ground Level Elevation	3,099			
3				3,124	
4	Top Salt (John)	456	456	2,668	
5	Base Salt (John)	1150	1,150	1,974	
6	Delaware	1651	1,651	1,473	
	Lamar Limestone	1700	1,700	1,424	
	Base Lamar Limestone	1963	1,963	1,161	
11	BONE SPRING	5146	5,146	-2,022	
18	Top 1st BSPG Sand (John)	6298	6,298	-3,174	
20	Top 2nd Bone Spring Carbonate (John)	6564	6,564	-3,440	
21	Top 2nd Bone Spring Sand (John)	6937	6,937	-3,813	
22	Top 3rd Bone Spring Carbonate (John)	7207	7,207	-4,083	
24	Top 3rd Bone Spring Sand (John)	8339	8,339	-5,215	
29	WOLFCAMP A (John)	per directional plan	8,694	-5,570	
30	Y Sand Top (John)	per directional plan	8,779	-5,655	
31	TOP WINDOW	per directional plan	8,782	-5,658	
32	TARGET	per directional plan	8,794	-5,670	
33	BASE WINDOW	per directional plan	8,806	-5,682	
34					
35					
36	Proposed TD [feet]:				
*All listed geologic markers are formation tops unless otherwise noted.					

DRILLING TARGET(S) (Top to Bottom)					
1	Section Distance 7680' West:	TARGET	Target Lat:	per dir. Plan	Target X: per dir. Plan
	TVD:	8,779	Target Lon:	per dir. Plan	Target Y: per dir. Plan
	Target Window:	+/- 12' TVD			
2	TD Target:	TARGET	Target Lat:	per dir. Plan	Target X: per dir. Plan
	TVD:	8,694	Target Lon:	per dir. Plan	Target Y: per dir. Plan
	Target Window:	+/- 12' TVD			

Comments:					
-----------	--	--	--	--	--

NEARBY WELLS OF INTEREST		
API Number	Well Name	Comments
1		
2		
3		
4		
5		
6		
7		
8		

SANTO OPERATING LLC

GEOLOGIC WELL PROPOSAL

PROJECT AND PROSPECT				
	Project Name:	Caveman	Operator:	Santo Operating LLC
	Prospect Name:	Caveman	Geologist:	John Weihe
	Lease Name:	Caveman 7-12 WCXY	Well Number:	002H
	Type of Operation:	New Drill	Prognosis Date:	10/11/2019
	Well Profile:	Horizontal	Well Type:	Development
	Field Name(s):	Purple Sage Wolfcamp Gas Pool	API:	

9			
10			
11			
12			

ELECTRIC LOGGING			
	Interval	Logging Tool(s)	
	Top (ft)Bottom (ft)		
1	Surface Casing	Intermetiate Casing	Triple Combo or equivalent w/ sonic
2			Triple combo to include: gamma ray spectroscopy
3	Intermediate Casing	TD	LWD gamma ray in build and lateral for geosteering
4			Important to get good LWD Gamma Ray in vertical portion below intermediate
5			to correlate top 3rd Bone Spring Sand
6			
7			
8			

Comments:

OTHER EVALUATION (Mud Logging, DST, Whole Cores, Etc.)			
	Interval	Description	
	Top (ft)Bottom (ft)		
1	Intermediate Csg	TD	Mud Logging
2			
3			
4			
5			

Comments:

ANTICIPATED PORE PRESSURES				
	Interval	Gradient (psi/ft)	Comments	
	Top (ft)Bottom (ft)			
1	surface	Top Bone Spring	0.430	
2	Top Bone Spring	Bone Spring 1 Sand	0.459	
3	Bone Spring 1 Sand	Bone Spring 2 Sand	0.445	
	Bone Spring 2 Sand	Bone Spring 3 Sand	0.490	
	Bone Spring 3 Sand	WCXY	0.502	
4	Lateral	Lateral	0.512	
5				

Comments:

KNOWN ISSUES THAT COULD BE DRILLING OR SAFETY CONCERNS		
	Interval	Description
	Top (ft)Bottom (ft)	
1		
2		
3		
4		
5		

Comments:

Osprey 10 601H, 602H producing 1/2 miles to north west. Fairview 14 produced 25,646 bo from 1995 to present 1 mile due east.

Office
 District I – (575) 393-6161
 1625 N. French Dr., Hobbs, NM 88240
 District II – (575) 748-1283
 811 S. First St., Artesia, NM 88210
 District III – (505) 334-6178
 1000 Rio Brazos Rd., Aztec, NM 87410
 District IV – (505) 476-3460
 1220 S. St. Francis Dr., Santa Fe, NM
 87505

State of New Mexico
 Energy, Minerals and Natural Resources

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

Form C-103
 Revised July 18, 2013

WELL API NO.	
5. Indicate Type of Lease STATE ☐ FEE ☒	
6. State Oil & Gas Lease No.	
7. Lease Name or Unit Agreement Name Caveman 7-12 WCXY	
8. Well Number 2H	
9. OGRID Number 372262	
10. Pool name or Wildcat Purple Sage; Wolfcamp (Gas)	
SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)	
1. Type of Well: Oil Well ☐ Gas Well ☐ Other ☐	
2. Name of Operator SPC Resources, LLC	
3. Address of Operator P.O. Box 1020, Artesia, NM 88211	
4. Well Location Unit Letter <u>E</u> : 2271 feet from the <u>N</u> line and <u>240</u> feet from the <u>W</u> line Section <u>8</u> Township <u>22S</u> Range <u>27E</u> NMPM <u>Eddy</u> County	
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 3099	

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO: PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐ TEMPORARILY ABANDON ☐ CHANGE PLANS ☐ PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐ DOWNHOLE COMMINGLE ☐ CLOSED-LOOP SYSTEM ☐ OTHER: Change Well Name and surface location ☒	SUBSEQUENT REPORT OF: REMEDIAL WORK ☐ ALTERING CASING ☐ COMMENCE DRILLING OPNS. ☐ P AND A ☐ CASING/CEMENT JOB ☐ OTHER: ☐
---	---

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

The purpose of this C-103A is change the well name from Caveman 7-12 WCXY 2H to Caveman 402H.
 Also, we would like to change the surface location from 2271 FNL, 240 FWL, Unit E, Section 8, 22S, 27E, Elevation 3099' To 2420 FNL, 188 FEL, Unit H, Section 7, 22S, 27E, Elevation 3102'.
 I have attached a new C-102, and revised Directional Drilling Plan.

Spud Date:

Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE [Signature] TITLE VP, Operations DATE

Type or print name Lelan J Anders E-mail address: LAnders@SantoPetroleum.com PHONE: 713-600-7502

For State Use Only

APPROVED BY: John Garcia TITLE Petroleum Specialist DATE 3/12/2021

Conditions of Approval (if any):

New Property ID is 330286

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) 476-3480 Fax: (505) 476-3482State 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☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code 98220	Pool Name PURPLE SAGE WOLFCAMP GAS POOL
Property Code	Property Name CAVEMAN	Well Number 402H
OGRID No.	Operator Name SPC RESOURCES, LLC	Elevation 3102'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	SOUTH/South line	Feet from the	East/West line	County
H	7	22 S	27 E		2420	NORTH	188	EAST	EDDY

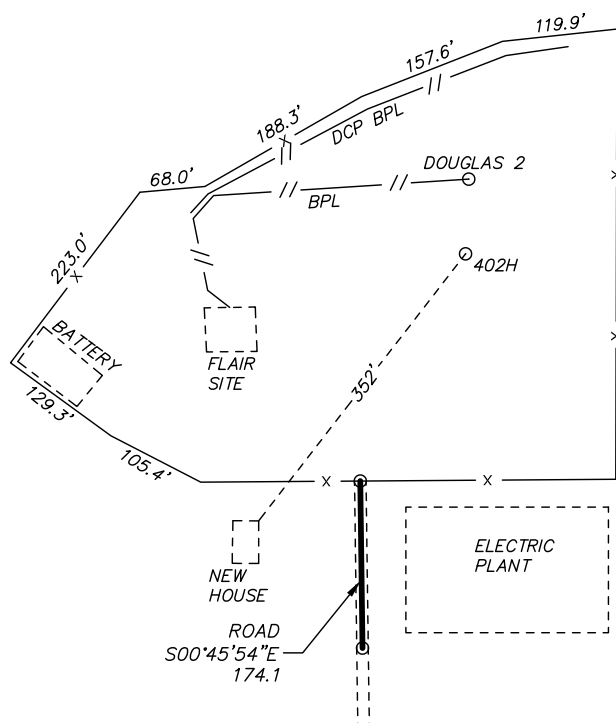
Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	SOUTH/South line	Feet from the	East/West line	County
E	12	22 S	26 E		1650	NORTH	100	WEST	EDDY
Dedicated Acres 1267.10	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

		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.		Date Surveyed _____	
Signature & Seal of Professional Surveyor _____		Certificate No. 7977 BASIN SURVEYS	
BOTTOM HOLE LOCATION Lat - N 32.410061 Long - W 104.254726 NMSPCE - N 512920.2 E 565595.8 (NAD-83)		LAST TAKE POINT 1650 FNL & 330 FWL Lat - N 32.410039 Long - W 104.253981 NMSPCE - N 512912.4 E 565826.0 (NAD-83)	
FIRST TAKE POINT 1650 FNL & 330 FEL Lat - N 32.410231 Long - W 104.221300 NMSPCE - N 512991.2 E 575910.6 (NAD-83)		SURFACE LOCATION Lat - N 32.408132 Long - W 104.220836 NMSPCE - N 512227.9 E 576054.9 (NAD-83)	
SCALE: 1" = 2000' WO Num.: 34729			

SECTION 7, TOWNSHIP 22 SOUTH, RANGE 27 EAST. N.M.P.M.,
LEA COUNTY, NEW MEXICO.



SPC RESOURCES, LLC
CAVEMAN 402H
ELEV. - 3102'

Lat - N 32.408132
Long - W 104.220836
NMSPCE - N 512227.9
E 576054.9
(NAD-83)

CARLSBAD, NM IS ± 1 MILES TO THE NORTHWEST OF LOCATION.

200 0 200 400 FEET



SCALE: 1" = 200'

SPC RESOURCES, LLC

REF: CAVEMAN 402H / WELL PAD TOPO

THE CAVEMAN 402H LOCATED 2420' FROM
THE NORTH LINE AND 188' FROM THE EAST LINE OF
SECTION 7, TOWNSHIP 22 SOUTH, RANGE 27 EAST.

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

basin
surveys
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in the oilfield

P.O. Box 1786 (575) 393-7316 - Office
1120 N. West County Rd. (575) 392-2206 - Fax
Hobbs, New Mexico 88241 basin-surveys.com

W.O. Number: 35040

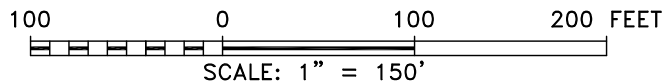
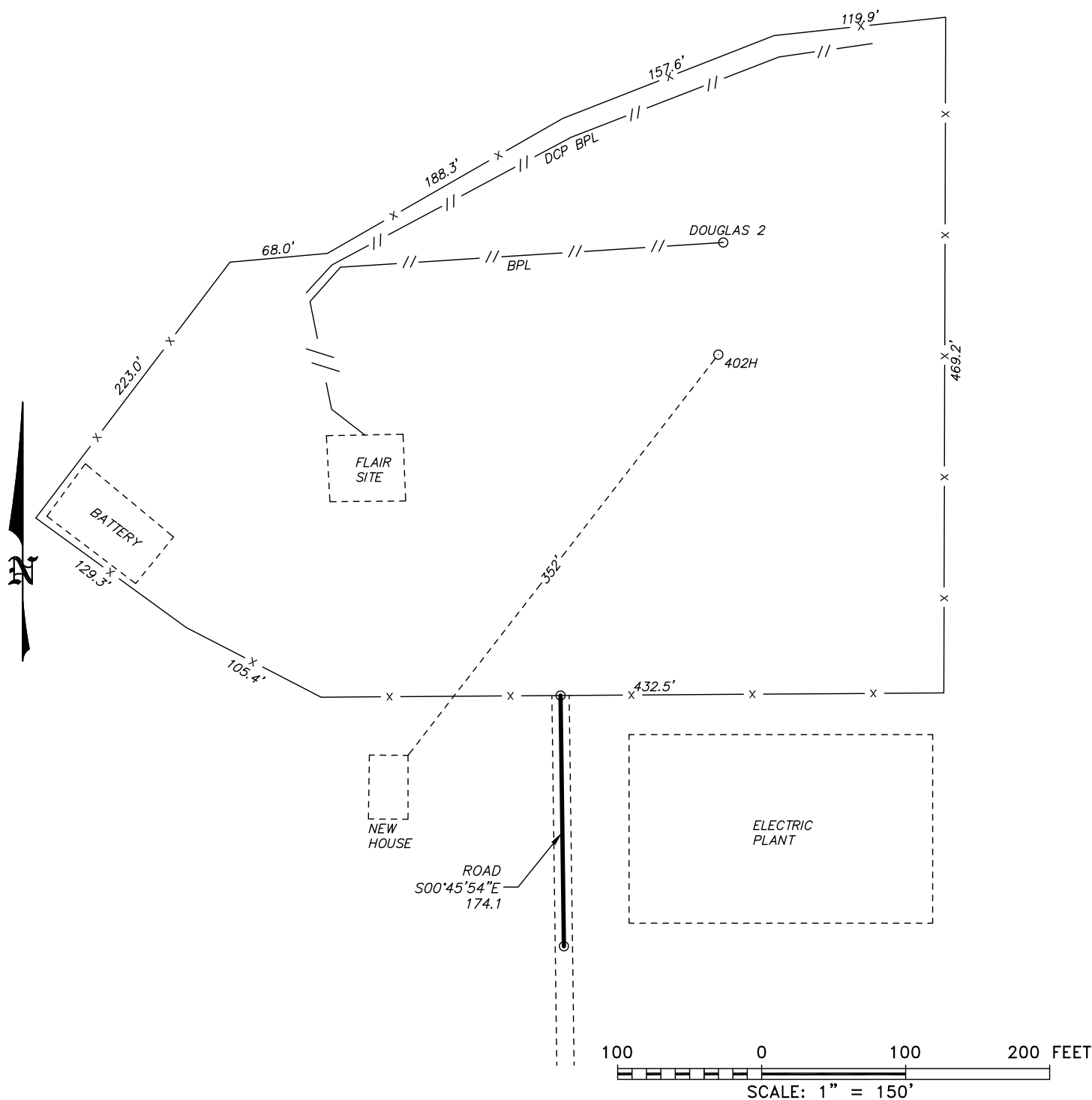
Drawn By: J GOAD

Date: 2-21-2020

Survey Date: 2-13-2020

Sheet 1 of 1 Sheets

SECTION 7, TOWNSHIP 22 SOUTH, RANGE 27 EAST. N.M.P.M., LEA COUNTY, NEW MEXICO.



SPC RESOURCES, LLC

REF: CAVEMAN 402H / WELL PAD TOPO

THE CAVEMAN 402H LOCATED 2420' FROM
THE NORTH LINE AND 188' FROM THE EAST LINE OF
SECTION 7, TOWNSHIP 22 SOUTH, RANGE 27 EAST.
N.M.P.M., EDDY COUNTY, NEW MEXICO.

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surveys
focused on excellence
in the oilfield

P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(575) 393-7316 - Office
(575) 392-2206 - Fax
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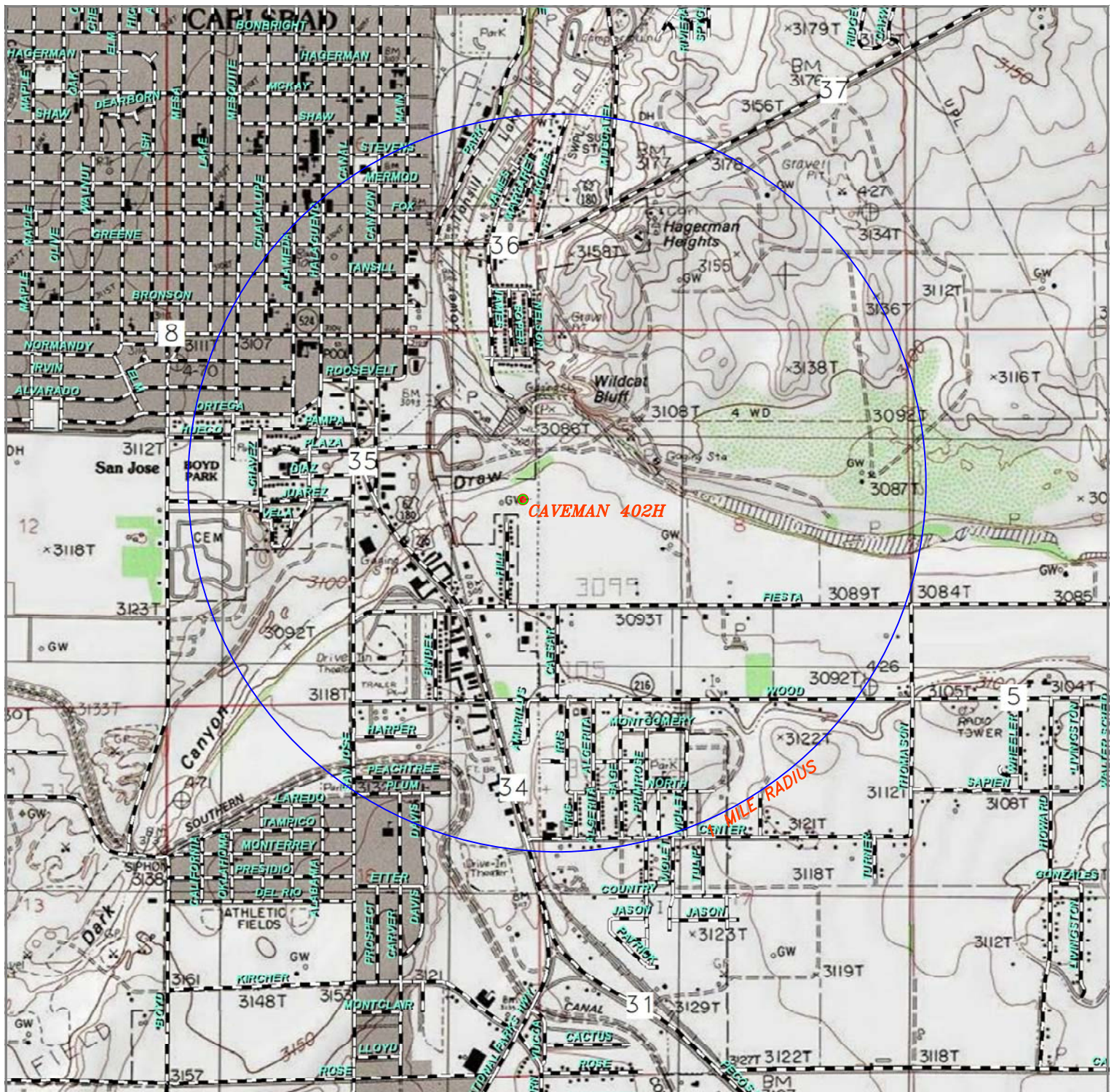
W.O. Number: 35040

Drawn By: J GOAD

Date: 2-21-2020

Survey Date: 2-13-2020

Sheet 1 of 1 Sheets



CAVEMAN 402H

Located 2420' FNL and 188' FEL
 Section 7, Township 22 South, Range 27 East,
 N.M.P.M., Eddy County, New Mexico.



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

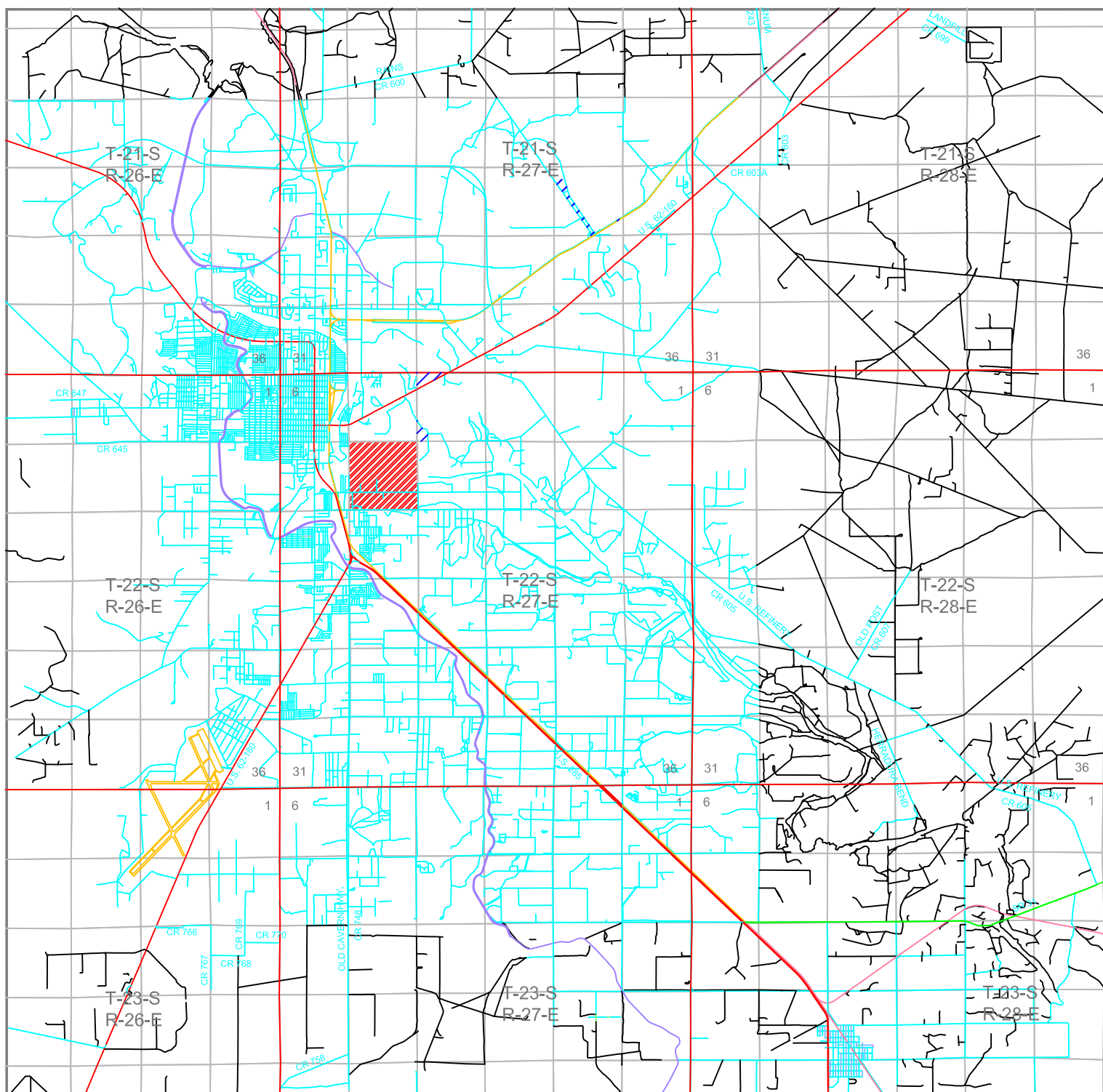
W.O. Number: JG 34729

Survey Date: 7-31-2019

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



SPC
 RESOURCES,
 LLC



CAVEMAN 402H

Located 2420' FNL and 188' FEL
Section 7, Township 22 South, Range 27 East,
N.M.P.M., Eddy County, New Mexico.



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0 1 MI 2 MI 3 MI 4 MI
SCALE: 1" = 2 MILES

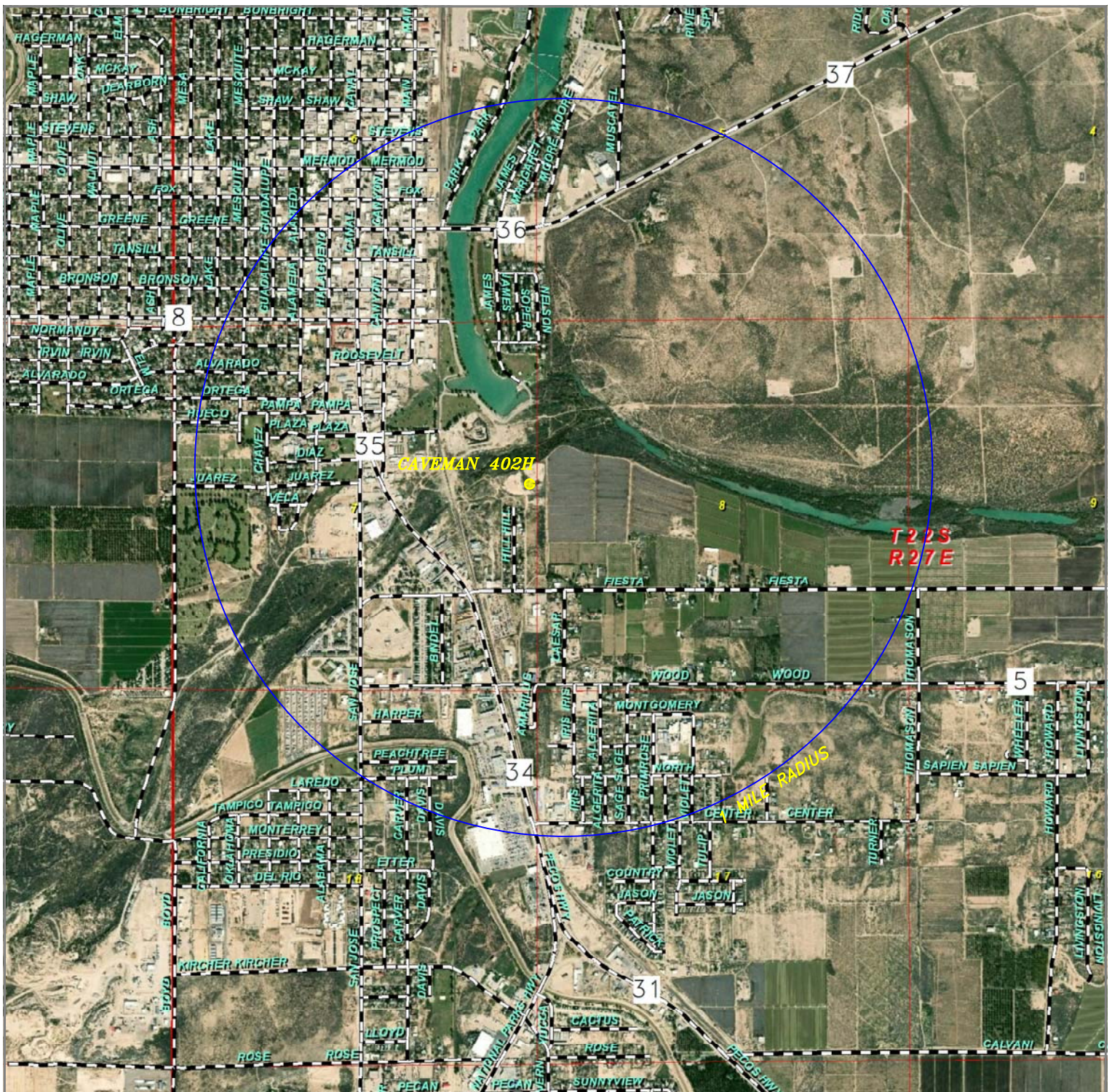
W.O. Number: JG 34729

Survey Date: 7-31-2019

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



SPC
RESOURCES,
LLC



CAVEMAN 402H

Located 2420' FNL and 188' FEL
 Section 7, Township 22 South, Range 27 East,
 N.M.P.M., Eddy County, New Mexico.



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

W.O. Number: JG 34729

Survey Date: 7-31-2019

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



SPC
 RESOURCES,
 LLC



Santo Petroleum

Eddy County, NM (NAD 83 - NME)

Caveman 7-12

#402H

ST01

Plan: ST01: Plan #4

Standard Planning Report

08 March, 2021





Planning Report



Database:	WBDS_SQL_2	Local Co-ordinate Reference:	Well #402H
Company:	Santo Petroleum	TVD Reference:	RKB = 25' @ 3127.00usft
Project:	Eddy County, NM (NAD 83 - NME)	MD Reference:	RKB = 25' @ 3127.00usft
Site:	Caveman 7-12	North Reference:	Grid
Well:	#402H	Survey Calculation Method:	Minimum Curvature
Wellbore:	ST01		
Design:	ST01: Plan #4		

Project	Eddy 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		Caveman 7-12			
Site Position:		Northing:	512,385.60 usft	Latitude:	32.408564
From:	Map	Easting:	576,482.00 usft	Longitude:	-104.219452
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.061

Well	#402H					
Well Position	+N/-S	-157.62 usft	Northing:	512,227.98 usft	Latitude:	32.408132
	+E/-W	-427.02 usft	Easting:	576,054.99 usft	Longitude:	-104.220836
Position Uncertainty	0.00 usft		Wellhead Elevation:		Ground Level:	3,102.00 usft

Wellbore	ST01				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	3/10/2021	6.890	59.979	47,564.95128308

Design	ST01: Plan #4			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	8,272.68
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	269.61

Plan Survey Tool Program	Date	3/8/2021			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	8,272.68	19,220.06	ST01: Plan #4 (ST01)	MWD+IGRF	
				OWSG MWD + IGRF or WM	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
8,272.68	0.00	0.00	8,224.04	765.32	160.09	0.00	0.00	0.00	0.000	
9,173.85	90.12	269.61	8,797.00	761.37	-414.02	10.00	10.00	-10.03	269.606	
16,035.02	90.12	269.61	8,783.00	714.14	-7,275.02	0.00	0.00	0.00	0.000	Caveman #402H Dr
16,093.59	91.29	269.61	8,782.28	713.74	-7,333.58	2.00	2.00	0.00	-0.002	
19,220.06	91.29	269.61	8,712.00	692.22	-10,459.18	0.00	0.00	0.00	0.000	PLAT PBHL: 1650'



Planning Report



Database:	WBDS_SQL_2	Local Co-ordinate Reference:	Well #402H
Company:	Santo Petroleum	TVD Reference:	RKB = 25' @ 3127.00usft
Project:	Eddy County, NM (NAD 83 - NME)	MD Reference:	RKB = 25' @ 3127.00usft
Site:	Caveman 7-12	North Reference:	Grid
Well:	#402H	Survey Calculation Method:	Minimum Curvature
Wellbore:	ST01		
Design:	ST01: Plan #4		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PLAT #402H SHL: 2420' FNL & 188' FEL									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	2.00	11.81	1,599.98	1.71	0.36	-0.37	2.00	2.00	0.00
1,700.00	4.00	11.81	1,699.84	6.83	1.43	-1.48	2.00	2.00	0.00
1,800.00	6.00	11.81	1,799.45	15.36	3.21	-3.32	2.00	2.00	0.00
1,863.06	7.26	11.81	1,862.09	22.49	4.70	-4.86	2.00	2.00	0.00
1,900.00	7.26	11.81	1,898.73	27.06	5.66	-5.84	0.00	0.00	0.00
2,000.00	7.26	11.81	1,997.93	39.43	8.25	-8.52	0.00	0.00	0.00
2,100.00	7.26	11.81	2,097.13	51.80	10.84	-11.19	0.00	0.00	0.00
2,200.00	7.26	11.81	2,196.33	64.17	13.42	-13.86	0.00	0.00	0.00
2,300.00	7.26	11.81	2,295.52	76.55	16.01	-16.53	0.00	0.00	0.00
2,400.00	7.26	11.81	2,394.72	88.92	18.60	-19.20	0.00	0.00	0.00
2,500.00	7.26	11.81	2,493.92	101.29	21.19	-21.88	0.00	0.00	0.00
2,600.00	7.26	11.81	2,593.12	113.66	23.78	-24.55	0.00	0.00	0.00
2,700.00	7.26	11.81	2,692.32	126.03	26.36	-27.22	0.00	0.00	0.00
2,800.00	7.26	11.81	2,791.51	138.40	28.95	-29.89	0.00	0.00	0.00
2,900.00	7.26	11.81	2,890.71	150.78	31.54	-32.56	0.00	0.00	0.00
3,000.00	7.26	11.81	2,989.91	163.15	34.13	-35.24	0.00	0.00	0.00
3,100.00	7.26	11.81	3,089.11	175.52	36.72	-37.91	0.00	0.00	0.00
3,200.00	7.26	11.81	3,188.31	187.89	39.30	-40.58	0.00	0.00	0.00
3,300.00	7.26	11.81	3,287.50	200.26	41.89	-43.25	0.00	0.00	0.00
3,400.00	7.26	11.81	3,386.70	212.63	44.48	-45.93	0.00	0.00	0.00
3,500.00	7.26	11.81	3,485.90	225.01	47.07	-48.60	0.00	0.00	0.00
3,600.00	7.26	11.81	3,585.10	237.38	49.65	-51.27	0.00	0.00	0.00
3,700.00	7.26	11.81	3,684.30	249.75	52.24	-53.94	0.00	0.00	0.00
3,800.00	7.26	11.81	3,783.49	262.12	54.83	-56.61	0.00	0.00	0.00
3,900.00	7.26	11.81	3,882.69	274.49	57.42	-59.29	0.00	0.00	0.00
4,000.00	7.26	11.81	3,981.89	286.86	60.01	-61.96	0.00	0.00	0.00
4,100.00	7.26	11.81	4,081.09	299.24	62.59	-64.63	0.00	0.00	0.00
4,200.00	7.26	11.81	4,180.29	311.61	65.18	-67.30	0.00	0.00	0.00
4,300.00	7.26	11.81	4,279.48	323.98	67.77	-69.97	0.00	0.00	0.00
4,400.00	7.26	11.81	4,378.68	336.35	70.36	-72.65	0.00	0.00	0.00
4,500.00	7.26	11.81	4,477.88	348.72	72.95	-75.32	0.00	0.00	0.00
4,600.00	7.26	11.81	4,577.08	361.09	75.53	-77.99	0.00	0.00	0.00
4,700.00	7.26	11.81	4,676.28	373.47	78.12	-80.66	0.00	0.00	0.00
4,800.00	7.26	11.81	4,775.47	385.84	80.71	-83.33	0.00	0.00	0.00
4,900.00	7.26	11.81	4,874.67	398.21	83.30	-86.01	0.00	0.00	0.00
5,000.00	7.26	11.81	4,973.87	410.58	85.89	-88.68	0.00	0.00	0.00
5,100.00	7.26	11.81	5,073.07	422.95	88.47	-91.35	0.00	0.00	0.00



Planning Report



Database:	WBDS_SQL_2	Local Co-ordinate Reference:	Well #402H
Company:	Santo Petroleum	TVD Reference:	RKB = 25' @ 3127.00usft
Project:	Eddy County, NM (NAD 83 - NME)	MD Reference:	RKB = 25' @ 3127.00usft
Site:	Caveman 7-12	North Reference:	Grid
Well:	#402H	Survey Calculation Method:	Minimum Curvature
Wellbore:	ST01		
Design:	ST01: Plan #4		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,200.00	7.26	11.81	5,172.27	435.32	91.06	-94.02	0.00	0.00	0.00
5,300.00	7.26	11.81	5,271.46	447.70	93.65	-96.69	0.00	0.00	0.00
5,400.00	7.26	11.81	5,370.66	460.07	96.24	-99.37	0.00	0.00	0.00
5,500.00	7.26	11.81	5,469.86	472.44	98.83	-102.04	0.00	0.00	0.00
5,600.00	7.26	11.81	5,569.06	484.81	101.41	-104.71	0.00	0.00	0.00
5,700.00	7.26	11.81	5,668.26	497.18	104.00	-107.38	0.00	0.00	0.00
5,800.00	7.26	11.81	5,767.45	509.55	106.59	-110.05	0.00	0.00	0.00
5,900.00	7.26	11.81	5,866.65	521.93	109.18	-112.73	0.00	0.00	0.00
6,000.00	7.26	11.81	5,965.85	534.30	111.76	-115.40	0.00	0.00	0.00
6,100.00	7.26	11.81	6,065.05	546.67	114.35	-118.07	0.00	0.00	0.00
6,200.00	7.26	11.81	6,164.25	559.04	116.94	-120.74	0.00	0.00	0.00
6,300.00	7.26	11.81	6,263.45	571.41	119.53	-123.42	0.00	0.00	0.00
6,400.00	7.26	11.81	6,362.64	583.78	122.12	-126.09	0.00	0.00	0.00
6,500.00	7.26	11.81	6,461.84	596.16	124.70	-128.76	0.00	0.00	0.00
6,600.00	7.26	11.81	6,561.04	608.53	127.29	-131.43	0.00	0.00	0.00
6,700.00	7.26	11.81	6,660.24	620.90	129.88	-134.10	0.00	0.00	0.00
6,800.00	7.26	11.81	6,759.44	633.27	132.47	-136.78	0.00	0.00	0.00
6,900.00	7.26	11.81	6,858.63	645.64	135.06	-139.45	0.00	0.00	0.00
7,000.00	7.26	11.81	6,957.83	658.01	137.64	-142.12	0.00	0.00	0.00
7,100.00	7.26	11.81	7,057.03	670.39	140.23	-144.79	0.00	0.00	0.00
7,200.00	7.26	11.81	7,156.23	682.76	142.82	-147.46	0.00	0.00	0.00
7,300.00	7.26	11.81	7,255.43	695.13	145.41	-150.14	0.00	0.00	0.00
7,400.00	7.26	11.81	7,354.62	707.50	148.00	-152.81	0.00	0.00	0.00
7,500.00	7.26	11.81	7,453.82	719.87	150.58	-155.48	0.00	0.00	0.00
7,600.00	7.26	11.81	7,553.02	732.24	153.17	-158.15	0.00	0.00	0.00
7,685.57	7.26	11.81	7,637.91	742.83	155.39	-160.44	0.00	0.00	0.00
7,700.00	6.97	11.81	7,652.22	744.58	155.75	-160.82	2.00	-2.00	0.00
7,800.00	4.97	11.81	7,751.67	754.77	157.88	-163.02	2.00	-2.00	0.00
7,900.00	2.97	11.81	7,851.43	761.55	159.30	-164.48	2.00	-2.00	0.00
8,000.00	0.97	11.81	7,951.36	764.92	160.01	-165.21	2.00	-2.00	0.00
8,048.64	0.00	0.00	8,000.00	765.32	160.09	-165.30	2.00	-2.00	0.00
8,100.00	0.00	0.00	8,051.36	765.32	160.09	-165.30	0.00	0.00	0.00
8,200.00	0.00	0.00	8,151.36	765.32	160.09	-165.30	0.00	0.00	0.00
8,272.68	0.00	0.00	8,224.04	765.32	160.09	-165.30	0.00	0.00	0.00
8,300.00	2.73	269.61	8,251.35	765.32	159.44	-164.64	10.00	10.00	0.00
8,350.00	7.73	269.61	8,301.13	765.28	154.88	-160.09	10.00	10.00	0.00
8,391.49	11.88	269.61	8,342.00	765.24	147.82	-153.02	10.00	10.00	0.00
Top 3rd Bone Spring Sand (John)									
8,400.00	12.73	269.61	8,350.32	765.22	146.00	-151.21	10.00	10.00	0.00
8,450.00	17.73	269.61	8,398.54	765.13	132.87	-138.08	10.00	10.00	0.00
8,500.00	22.73	269.61	8,445.44	765.01	115.58	-120.79	10.00	10.00	0.00
8,550.00	27.73	269.61	8,490.66	764.87	94.28	-99.48	10.00	10.00	0.00
8,600.00	32.73	269.61	8,533.85	764.69	69.11	-74.31	10.00	10.00	0.00
8,650.00	37.73	269.61	8,574.67	764.50	40.28	-45.48	10.00	10.00	0.00
8,700.00	42.73	269.61	8,612.83	764.27	7.99	-13.20	10.00	10.00	0.00
8,750.00	47.73	269.61	8,648.03	764.03	-27.49	22.29	10.00	10.00	0.00
8,800.00	52.73	269.61	8,680.01	763.76	-65.91	60.71	10.00	10.00	0.00
8,829.04	55.64	269.61	8,697.00	763.60	-89.46	84.26	10.00	10.00	0.00
WOLFCAMP A (John)									
8,850.00	57.73	269.61	8,708.51	763.48	-106.97	101.77	10.00	10.00	0.00
8,900.00	62.73	269.61	8,733.33	763.18	-150.36	145.16	10.00	10.00	0.00
8,919.52	64.68	269.61	8,741.97	763.06	-167.85	162.66	10.00	10.00	0.00
PLAT FTP:1650' FNL & 330' FEL									



Planning Report



Database:	WBDS_SQL_2	Local Co-ordinate Reference:	Well #402H
Company:	Santo Petroleum	TVD Reference:	RKB = 25' @ 3127.00usft
Project:	Eddy County, NM (NAD 83 - NME)	MD Reference:	RKB = 25' @ 3127.00usft
Site:	Caveman 7-12	North Reference:	Grid
Well:	#402H	Survey Calculation Method:	Minimum Curvature
Wellbore:	ST01		
Design:	ST01: Plan #4		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,950.00	67.73	269.61	8,754.27	762.87	-195.74	190.55	10.00	10.00	0.00
9,000.00	72.73	269.61	8,771.17	762.55	-242.78	237.59	10.00	10.00	0.00
Caveman #402H: Pilot PBHL									
9,041.29	76.86	269.61	8,782.00	762.27	-282.62	277.42	10.00	10.00	0.00
Y Sand Top (John)									
9,050.00	77.73	269.61	8,783.91	762.21	-291.11	285.92	10.00	10.00	0.00
9,055.22	78.25	269.61	8,785.00	762.18	-296.22	291.02	10.00	10.00	0.00
TOP WINDOW									
9,100.00	82.73	269.61	8,792.40	761.88	-340.37	335.18	10.00	10.00	0.00
9,150.00	87.73	269.61	8,796.55	761.53	-390.18	384.99	10.00	10.00	0.00
9,172.36	90.12	269.61	8,797.00	761.38	-412.53	407.34	10.67	10.67	0.00
TARGET LANDING									
9,173.85	90.12	269.61	8,797.00	761.37	-414.02	408.83	0.00	0.00	0.00
PLAN: LP									
9,200.00	90.12	269.61	8,796.94	761.19	-440.17	434.98	0.00	0.00	0.00
9,300.00	90.12	269.61	8,796.74	760.50	-540.17	534.98	0.00	0.00	0.00
9,400.00	90.12	269.61	8,796.54	759.81	-640.17	634.98	0.00	0.00	0.00
9,500.00	90.12	269.61	8,796.33	759.12	-740.17	734.98	0.00	0.00	0.00
9,600.00	90.12	269.61	8,796.13	758.43	-840.16	834.98	0.00	0.00	0.00
9,700.00	90.12	269.61	8,795.92	757.75	-940.16	934.98	0.00	0.00	0.00
9,800.00	90.12	269.61	8,795.72	757.06	-1,040.16	1,034.98	0.00	0.00	0.00
9,900.00	90.12	269.61	8,795.52	756.37	-1,140.16	1,134.98	0.00	0.00	0.00
10,000.00	90.12	269.61	8,795.31	755.68	-1,240.15	1,234.98	0.00	0.00	0.00
10,100.00	90.12	269.61	8,795.11	754.99	-1,340.15	1,334.98	0.00	0.00	0.00
10,200.00	90.12	269.61	8,794.90	754.30	-1,440.15	1,434.98	0.00	0.00	0.00
10,300.00	90.12	269.61	8,794.70	753.62	-1,540.15	1,534.98	0.00	0.00	0.00
10,400.00	90.12	269.61	8,794.50	752.93	-1,640.14	1,634.98	0.00	0.00	0.00
10,500.00	90.12	269.61	8,794.29	752.24	-1,740.14	1,734.98	0.00	0.00	0.00
10,600.00	90.12	269.61	8,794.09	751.55	-1,840.14	1,834.98	0.00	0.00	0.00
10,700.00	90.12	269.61	8,793.88	750.86	-1,940.14	1,934.98	0.00	0.00	0.00
10,800.00	90.12	269.61	8,793.68	750.17	-2,040.13	2,034.98	0.00	0.00	0.00
10,900.00	90.12	269.61	8,793.48	749.49	-2,140.13	2,134.98	0.00	0.00	0.00
11,000.00	90.12	269.61	8,793.27	748.80	-2,240.13	2,234.98	0.00	0.00	0.00
11,100.00	90.12	269.61	8,793.07	748.11	-2,340.13	2,334.98	0.00	0.00	0.00
11,200.00	90.12	269.61	8,792.86	747.42	-2,440.12	2,434.98	0.00	0.00	0.00
11,300.00	90.12	269.61	8,792.66	746.73	-2,540.12	2,534.98	0.00	0.00	0.00
11,400.00	90.12	269.61	8,792.46	746.04	-2,640.12	2,634.98	0.00	0.00	0.00
11,500.00	90.12	269.61	8,792.25	745.36	-2,740.11	2,734.98	0.00	0.00	0.00
11,600.00	90.12	269.61	8,792.05	744.67	-2,840.11	2,834.98	0.00	0.00	0.00
11,700.00	90.12	269.61	8,791.84	743.98	-2,940.11	2,934.98	0.00	0.00	0.00
11,800.00	90.12	269.61	8,791.64	743.29	-3,040.11	3,034.98	0.00	0.00	0.00
11,900.00	90.12	269.61	8,791.44	742.60	-3,140.10	3,134.98	0.00	0.00	0.00
12,000.00	90.12	269.61	8,791.23	741.91	-3,240.10	3,234.98	0.00	0.00	0.00
12,100.00	90.12	269.61	8,791.03	741.23	-3,340.10	3,334.98	0.00	0.00	0.00
12,200.00	90.12	269.61	8,790.82	740.54	-3,440.10	3,434.98	0.00	0.00	0.00
12,300.00	90.12	269.61	8,790.62	739.85	-3,540.09	3,534.98	0.00	0.00	0.00
12,400.00	90.12	269.61	8,790.42	739.16	-3,640.09	3,634.98	0.00	0.00	0.00
12,500.00	90.12	269.61	8,790.21	738.47	-3,740.09	3,734.98	0.00	0.00	0.00
12,600.00	90.12	269.61	8,790.01	737.78	-3,840.09	3,834.98	0.00	0.00	0.00
12,700.00	90.12	269.61	8,789.80	737.10	-3,940.08	3,934.98	0.00	0.00	0.00
12,800.00	90.12	269.61	8,789.60	736.41	-4,040.08	4,034.98	0.00	0.00	0.00
12,900.00	90.12	269.61	8,789.40	735.72	-4,140.08	4,134.98	0.00	0.00	0.00
13,000.00	90.12	269.61	8,789.19	735.03	-4,240.08	4,234.97	0.00	0.00	0.00



Planning Report



Database:	WBDS_SQL_2	Local Co-ordinate Reference:	Well #402H
Company:	Santo Petroleum	TVD Reference:	RKB = 25' @ 3127.00usft
Project:	Eddy County, NM (NAD 83 - NME)	MD Reference:	RKB = 25' @ 3127.00usft
Site:	Caveman 7-12	North Reference:	Grid
Well:	#402H	Survey Calculation Method:	Minimum Curvature
Wellbore:	ST01		
Design:	ST01: Plan #4		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
13,100.00	90.12	269.61	8,788.99	734.34	-4,340.07	4,334.97	0.00	0.00	0.00
13,200.00	90.12	269.61	8,788.78	733.65	-4,440.07	4,434.97	0.00	0.00	0.00
13,300.00	90.12	269.61	8,788.58	732.97	-4,540.07	4,534.97	0.00	0.00	0.00
13,400.00	90.12	269.61	8,788.38	732.28	-4,640.07	4,634.97	0.00	0.00	0.00
13,500.00	90.12	269.61	8,788.17	731.59	-4,740.06	4,734.97	0.00	0.00	0.00
13,600.00	90.12	269.61	8,787.97	730.90	-4,840.06	4,834.97	0.00	0.00	0.00
13,700.00	90.12	269.61	8,787.76	730.21	-4,940.06	4,934.97	0.00	0.00	0.00
13,800.00	90.12	269.61	8,787.56	729.52	-5,040.06	5,034.97	0.00	0.00	0.00
13,900.00	90.12	269.61	8,787.36	728.84	-5,140.05	5,134.97	0.00	0.00	0.00
14,000.00	90.12	269.61	8,787.15	728.15	-5,240.05	5,234.97	0.00	0.00	0.00
14,100.00	90.12	269.61	8,786.95	727.46	-5,340.05	5,334.97	0.00	0.00	0.00
14,200.00	90.12	269.61	8,786.74	726.77	-5,440.05	5,434.97	0.00	0.00	0.00
14,300.00	90.12	269.61	8,786.54	726.08	-5,540.04	5,534.97	0.00	0.00	0.00
14,400.00	90.12	269.61	8,786.34	725.39	-5,640.04	5,634.97	0.00	0.00	0.00
14,500.00	90.12	269.61	8,786.13	724.71	-5,740.04	5,734.97	0.00	0.00	0.00
14,600.00	90.12	269.61	8,785.93	724.02	-5,840.04	5,834.97	0.00	0.00	0.00
14,700.00	90.12	269.61	8,785.72	723.33	-5,940.03	5,934.97	0.00	0.00	0.00
14,800.00	90.12	269.61	8,785.52	722.64	-6,040.03	6,034.97	0.00	0.00	0.00
14,900.00	90.12	269.61	8,785.32	721.95	-6,140.03	6,134.97	0.00	0.00	0.00
15,000.00	90.12	269.61	8,785.11	721.26	-6,240.02	6,234.97	0.00	0.00	0.00
15,100.00	90.12	269.61	8,784.91	720.58	-6,340.02	6,334.97	0.00	0.00	0.00
15,200.00	90.12	269.61	8,784.70	719.89	-6,440.02	6,434.97	0.00	0.00	0.00
15,300.00	90.12	269.61	8,784.50	719.20	-6,540.02	6,534.97	0.00	0.00	0.00
15,400.00	90.12	269.61	8,784.30	718.51	-6,640.01	6,634.97	0.00	0.00	0.00
15,500.00	90.12	269.61	8,784.09	717.82	-6,740.01	6,734.97	0.00	0.00	0.00
15,600.00	90.12	269.61	8,783.89	717.13	-6,840.01	6,834.97	0.00	0.00	0.00
15,700.00	90.12	269.61	8,783.68	716.45	-6,940.01	6,934.97	0.00	0.00	0.00
15,800.00	90.12	269.61	8,783.48	715.76	-7,040.00	7,034.97	0.00	0.00	0.00
15,900.00	90.12	269.61	8,783.28	715.07	-7,140.00	7,134.97	0.00	0.00	0.00
16,000.00	90.12	269.61	8,783.07	714.38	-7,240.00	7,234.97	0.00	0.00	0.00
16,035.02	90.12	269.61	8,783.00	714.14	-7,275.02	7,269.99	0.00	0.00	0.00
Caveman #402H Deflection Point									
16,093.59	91.29	269.61	8,782.28	713.74	-7,333.58	7,328.55	2.00	2.00	0.00
16,100.00	91.29	269.61	8,782.14	713.69	-7,339.99	7,334.96	0.00	0.00	0.00
16,200.00	91.29	269.61	8,779.89	713.00	-7,439.96	7,434.94	0.00	0.00	0.00
16,300.00	91.29	269.61	8,777.64	712.32	-7,539.93	7,534.91	0.00	0.00	0.00
16,400.00	91.29	269.61	8,775.39	711.63	-7,639.91	7,634.89	0.00	0.00	0.00
16,500.00	91.29	269.61	8,773.15	710.94	-7,739.88	7,734.86	0.00	0.00	0.00
16,600.00	91.29	269.61	8,770.90	710.25	-7,839.85	7,834.84	0.00	0.00	0.00
16,700.00	91.29	269.61	8,768.65	709.56	-7,939.82	7,934.81	0.00	0.00	0.00
16,800.00	91.29	269.61	8,766.40	708.88	-8,039.80	8,034.78	0.00	0.00	0.00
16,900.00	91.29	269.61	8,764.15	708.19	-8,139.77	8,134.76	0.00	0.00	0.00
17,000.00	91.29	269.61	8,761.91	707.50	-8,239.74	8,234.73	0.00	0.00	0.00
17,100.00	91.29	269.61	8,759.66	706.81	-8,339.71	8,334.71	0.00	0.00	0.00
17,200.00	91.29	269.61	8,757.41	706.12	-8,439.69	8,434.68	0.00	0.00	0.00
17,300.00	91.29	269.61	8,755.16	705.43	-8,539.66	8,534.66	0.00	0.00	0.00
17,400.00	91.29	269.61	8,752.91	704.75	-8,639.63	8,634.63	0.00	0.00	0.00
17,500.00	91.29	269.61	8,750.67	704.06	-8,739.60	8,734.61	0.00	0.00	0.00
17,600.00	91.29	269.61	8,748.42	703.37	-8,839.58	8,834.58	0.00	0.00	0.00
17,700.00	91.29	269.61	8,746.17	702.68	-8,939.55	8,934.56	0.00	0.00	0.00
17,800.00	91.29	269.61	8,743.92	701.99	-9,039.52	9,034.53	0.00	0.00	0.00
17,900.00	91.29	269.61	8,741.67	701.31	-9,139.49	9,134.51	0.00	0.00	0.00
18,000.00	91.29	269.61	8,739.43	700.62	-9,239.46	9,234.48	0.00	0.00	0.00
18,100.00	91.29	269.61	8,737.18	699.93	-9,339.44	9,334.46	0.00	0.00	0.00



Planning Report



Database:	WBDS_SQL_2	Local Co-ordinate Reference:	Well #402H
Company:	Santo Petroleum	TVD Reference:	RKB = 25' @ 3127.00usft
Project:	Eddy County, NM (NAD 83 - NME)	MD Reference:	RKB = 25' @ 3127.00usft
Site:	Caveman 7-12	North Reference:	Grid
Well:	#402H	Survey Calculation Method:	Minimum Curvature
Wellbore:	ST01		
Design:	ST01: Plan #4		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
18,200.00	91.29	269.61	8,734.93	699.24	-9,439.41	9,434.43	0.00	0.00	0.00
18,300.00	91.29	269.61	8,732.68	698.55	-9,539.38	9,534.41	0.00	0.00	0.00
18,400.00	91.29	269.61	8,730.43	697.86	-9,639.35	9,634.38	0.00	0.00	0.00
18,500.00	91.29	269.61	8,728.19	697.18	-9,739.33	9,734.36	0.00	0.00	0.00
18,600.00	91.29	269.61	8,725.94	696.49	-9,839.30	9,834.33	0.00	0.00	0.00
18,700.00	91.29	269.61	8,723.69	695.80	-9,939.27	9,934.30	0.00	0.00	0.00
18,800.00	91.29	269.61	8,721.44	695.11	-10,039.24	10,034.28	0.00	0.00	0.00
18,900.00	91.29	269.61	8,719.19	694.42	-10,139.22	10,134.25	0.00	0.00	0.00
18,989.86	91.29	269.61	8,717.17	693.80	-10,229.05	10,224.09	0.00	0.00	0.00
PLAT LTP:1650' FNL & 330' FWL									
19,000.00	91.29	269.61	8,716.95	693.73	-10,239.19	10,234.23	0.00	0.00	0.00
19,100.00	91.29	269.61	8,714.70	693.05	-10,339.16	10,334.20	0.00	0.00	0.00
19,200.00	91.29	269.61	8,712.45	692.36	-10,439.13	10,434.18	0.00	0.00	0.00
19,220.06	91.29	269.61	8,712.00	692.22	-10,459.18	10,454.23	0.00	0.00	0.00
PLAT PBHL: 1650' FNL & 100' FWL									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PLAT #402H SHL: 24' - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	512,227.98	576,054.99	32.408132	-104.220836
PLAT PBHL: 1650' FN - plan hits target center - Point	0.00	0.00	8,712.00	692.22	-10,459.18	512,920.20	565,595.80	32.410061	-104.254726
PLAT LTP:1650' FNL - plan misses target center by 9.38usft at 18989.86usft MD (8717.17 TVD, 693.80 N, -10229.05 E) - Point	0.00	0.00	8,717.18	684.42	-10,228.98	512,912.40	565,826.00	32.410039	-104.253980
Caveman #402H Defl - plan hits target center - Point	0.00	0.00	8,783.00	714.14	-7,275.02	512,942.12	568,779.96	32.410114	-104.244408
PLAT FTP:1650' FNL - plan misses target center by 56.03usft at 8919.52usft MD (8741.97 TVD, 763.06 N, -167.85 E) - Point	0.00	0.00	8,792.85	763.22	-144.38	512,991.20	575,910.60	32.410230	-104.221302
PLAN: LP - plan misses target center by 0.01usft at 9173.85usft MD (8797.00 TVD, 761.37 N, -414.02 E) - Point	0.00	0.00	8,797.00	761.37	-414.02	512,989.35	575,640.97	32.410226	-104.222175
Caveman #402H: Pilo - plan misses target center by 1198.57usft at 9000.00usft MD (8771.17 TVD, 762.55 N, -242.78 E) - Point	0.00	0.00	9,900.00	765.32	160.09	512,993.30	576,215.08	32.410235	-104.220315



Planning Report



Database:	WBDS_SQL_2	Local Co-ordinate Reference:	Well #402H
Company:	Santo Petroleum	TVD Reference:	RKB = 25' @ 3127.00usft
Project:	Eddy County, NM (NAD 83 - NME)	MD Reference:	RKB = 25' @ 3127.00usft
Site:	Caveman 7-12	North Reference:	Grid
Well:	#402H	Survey Calculation Method:	Minimum Curvature
Wellbore:	ST01		
Design:	ST01: Plan #4		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
459.00	459.00	Top Salt (John)				
1,153.00	1,153.00	Base Salt (John)				
1,654.07	1,654.00	Delaware				
1,703.17	1,703.00	Lamar Limestone				
1,967.81	1,966.00	Base Lamar Limestone				
5,176.55	5,149.00	BONE SPRING				
6,337.86	6,301.00	Top 1st BSPG Sand (John)				
6,606.01	6,567.00	Top 2nd Bone Spring Carbonate (Jo				
6,982.03	6,940.00	Top 2nd Bone Spring Sand (John)				
7,254.21	7,210.00	Top 3rd Bone Spring Carbonate (Jol				
8,391.49	8,342.00	Top 3rd Bone Spring Sand (John)				
8,829.04	8,697.00	WOLFCAMP A (John)				
9,041.29	8,782.00	Y Sand Top (John)				
9,055.22	8,785.00	TOP WINDOW				
9,172.36	8,797.00	TARGET LANDING				

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

COMMENTS

Action 20470

COMMENTS

Operator:			OGRID:	Action Number:	Action Type:
SPC RESOURCES, LLC P.O. Box 1020 Artesia, NM88211			372262	20470	C-103A
Created By		Comment		Comment Date	
kpickford		KP GEO Review 3/12/2021		03/12/2021	

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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

CONDITIONS

Action 20470

CONDITIONS OF APPROVAL

Operator:	SPC RESOURCES, LLC	P.O. Box 1020	Artesia, NM88211	OGRID:	372262	Action Number:	20470	Action Type:	C-103A
OCD Reviewer	Condition								
jagarcia	New Property ID is 330286								

District I
1625 N. French Dr., Hobbs, NM 88240
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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

CONDITIONS

Action 144101

CONDITIONS

Operator: SPC RESOURCES, LLC P.O. Box 1020 Artesia, NM 88211	OGRID: 372262
	Action Number: 144101
	Action Type: [C-103] NOI General Sundry (C-103X)

CONDITIONS

Created By	Condition	Condition Date
pgoetze	None	9/16/2022