Form 3160-5
(June 2015)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on page 2

5. Lease Serial No.
NMNM101058

6. If Indian, Allottee or Tribe Name
EASTERN NAVAJO

7. If Unit or CA/Agreement, Name and/or No.
NMNM133481X

1. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.
PINON UNIT 306H

2. Name of Operator
JUNIPER RESRC EXPLRN CO LLC
Contact: VANESSA CAMERON
E-Mail: vcameron@seideltech.com

9. API Well No.
30-045-35638-00-X1

3a. Address
3624 OAK LAWN AVE STE 222
DALLAS, TX 75219

3b. Phone No. (include area code)
Ph: 303-945-1049

10. Field and Pool or Exploratory Area
PINON UNIT HZ

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 16 T24N R10W SWSW 1277FSL 0318FWL

11. County or Parish, State
SAN JUAN COUNTY, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other Change to Original APD
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

Juniper Resources Exploration Co. LLC respectfully requests review and approval by the Farmington BLM of the revised NMOCD C-102 form and well plat, drill plan, geoprognosis, directional plan and plan view for the above-referenced well. If additional information is required, please advise. Thank you for your consideration of this request.

OIL CONS. DIV DIST. 3
MAY 02 2017

Please be advised that Item 5 did not provide enough space for the entire company name. It should read Juniper Resources Exploration Co. LLC

BLM'S APPROVAL OR ACCEPTANCE OF THIS ACTION DOES NOT RELIEVE THE LESSEE AND OPERATOR FROM OBTAINING ANY OTHER AUTHORIZATION REQUIRED FOR OPERATIONS ON FEDERAL AND INDIAN LANDS

CONDITIONS OF APPROVAL
Adhere to previously issued stipulations

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #373839 verified by the BLM Well Information System
For JUNIPER RESRC EXPLRN CO LLC, sent to the Farmington
Committed to AFMSS for processing by JACK SAVAGE on 05/02/2017 (17JWS0081SE)

Name *(Printed/Typed)* MATT STRICKLER — Title VICE PRESIDENT-LAND

Signature (Electronic Submission) — Date 04/25/2017

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By JACK SAVAGE — Title PETROLEUM ENGINEER — Date 05/02/2017

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office Farmington

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

NMOCD

18

DISTRICT I
1625 N. French Dr., Hobbs, N.M. 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
DISTRICT II
811 S. First St., Artesia, N.M. 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
DISTRICT III
1000 Rio Brazos Rd., Aztec, N.M. 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, N.M. 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

[1] API Number	[2] Pool Code	[3] Pool Name
30-045-35638	98102	PINON UNIT HZ (OIL)

[4] Property Code	[5] Property Name	[6] Well Number
314246	PINON UNIT	306H

[7] OGRID No.	[8] Operator Name	[9] Elevation
371654	JUNIPER RESOURCES EXPLORATION CO. LLC.	6732

[10] Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	16	24 N	10 W		1277	SOUTH	318	WEST	SAN JUAN

[11] Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	28	24 N	10 W		1229	NORTH	350	EAST	SAN JUAN

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
PENETRATED SPACING UNITS: S/2 SEC 16, ALL OF SEC 21, N/2 SEC 28, T24N, R10W, 1280 ACRES; 8005.44 ACRES - W/2 SEC 4, ALL SEC 5-9S, 25-28 R21; N/2SEC 22 & 26 T24N, R10W - UNDIVIDED UNIT			R-13857A (8005.44 ACRES)

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

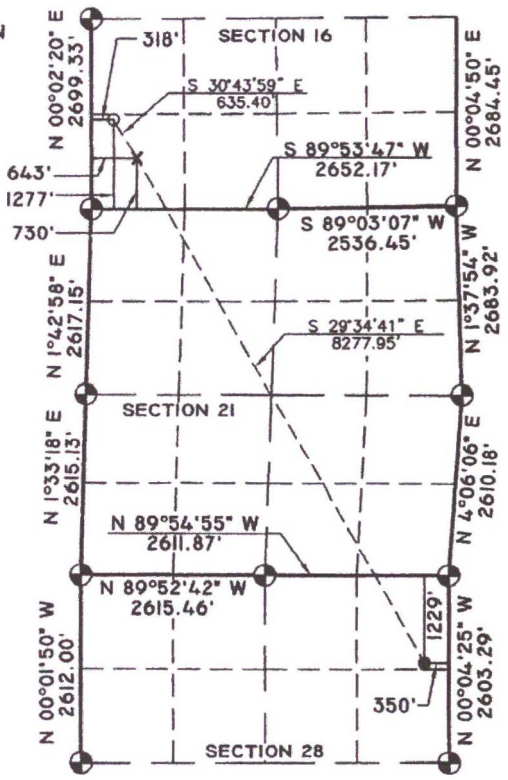
16

LEGEND:
- ○ = SURFACE LOCATION
- ● = BOTTOM HOLE LOCATION
- X = LANDING POINT
- ◓ = FOUND 1932 U.S.G.L.O. BRASS CAP

SURFACE
SEC. 16, T24N, R10W
1277' FSL, 318' FWL
LAT: 36.3094124° N
LONG: 107.9087406° W
NAD 83
LAT: 36.3094014° N
LONG: 107.9081216° W
NAD 27

LANDING POINT
SEC. 16, T24N, R10W
730' FSL, 643' FWL
LAT: 36.3079127° N
LONG: 107.9076371° W
NAD 83
LAT: 36.3079018° N
LONG: 107.9070181° W
NAD 27

BOTTOM HOLE
SEC. 28, T24N, R10W
1229' FNL, 350' FEL
LAT: 36.2881439° N
LONG: 107.8937535° W
NAD 83
LAT: 36.2881327° N
LONG: 107.8931351° W
NAD 27



[17] 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: 5/2/17

Matt Strickler
Printed Name

Matt.Strickler@jrnresources.com
E-mail Address

[18] 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.

3-20-17
Date of Survey

Signature and Seal of Professional Surveyor

MARSHALL W. LINDEEN
NEW MEXICO
17078
4-21-17
PROFESSIONAL SURVEYOR

17078
Certificate Number

OIL CONS. DIV DIST. 3

MAY 05 2017

Sundry Drilling Program

JUNIPER RESOURCES EXPLORATION CO. LLC.
3624 Oak Lawn Avenue
Suite 222
Dallas, TX 75219

PINON UNIT 306H

Surface Location: 1277' FSL & 318' FWL
Section 16, T24N, R10W
Proposed GL Elev = 6734'
Lat. = 36.309412° N
Long. = 107.908740° W
NAD83
San Juan County, New Mexico

Proposed Top of Production Location: 1277' FSL & 318' FWL
Section 16, T24N, R10W
Proposed Bottom Hole Location (7" Casing Landing Pt.): 730' FSL & 643' FWL
Section 16, T24N, R10W
Proposed Bottom Hole Location (Lateral #1): 1229' FNL & 350' FEL
Section 28, T24N, R10W
San Juan County, New Mexico

PREVIOUSLY APPROVED PERMIT AS ENCANA PINION UNIT M16-2410 4H
API NO. 30-045-35638

Drilling program written in compliance with onshore Oil and Gas Order No. 1
(III.D.3, effective May 2007) and Onshore Order No. 2 Dated November 18, 1988

1. ESTIMATED TOPS OF GEOLOGICAL MARKERS

Depths are referenced to GL of 6734 ft			
Formation	**TVD (ft)**	**MD (ft)**	**Subsea (ft)**
Nacimiento Fn.	0	0	
Ojo Alamo Ss.	241	241	6,507
Kirtland Shale	365	365	6,383
Fruitland Coal	918	918	5,830
Pictured Cliffs Ss.	1,354	1,354	5,394
Lewis Shale	1,581	1,581	5,167
CliffHouse Ss.	2,096	2,096	4,652
Menefee Fn.	2,692	2,692	4,056
Point Lookout Ss.	3,775	3,775	2,973
Mancos Shale	3,992	3,992	2,756
Mancos A Fn.	4,788	4,788	1,960
Mancos B Fn.	4,815	4,815	1,933
Lateral TD	4,774	13,499	1,974

Note: Geologic markers will be updated based on drilling and geology operations

2. ESTIMATED DEPTHS OF POTENTIAL WATER, OIL, GAS & OTHER MINERAL BEARING ZONES

Depths are referenced to GL of 6734 ft			
Formation	**TVD (ft)**	**MD (ft)**	**Substance**
Nacimiento Fn.	0	0	
Ojo Alamo Ss.	241	241	Water
Kirtland Shale	365	365	
Fruitland Coal	918	918	Water/Gas
Pictured Cliffs Ss.	1,354	1,354	Oil/Gas
Lewis Shale	1,581	1,581	Gas
CliffHouse Ss.	2,096	2,096	Oil/Gas
Menefee Fn.	2,692	2,692	Water/Gas
Point Lookout Ss.	3,775	3,775	Oil/Gas
Mancos Shale	3,992	3,992	Oil/Gas
Mancos A Fn.	4,788	4,788	Oil/Gas
Mancos B Fn.	4,815	4,815	Oil/Gas
Lateral TD	4,774	13,499	Oil/Gas

Possible Aquifers: <220' **Oil Shale:** None Expected. **Oil & Gas:** Primary objective is the Mancos formation

Protection of oil, gas, water, or other mineral bearing formations: Protection shall be accomplished by setting surface casing below base of possible aquifer and cementing surface casing to surface.

Intermediate casing will be set at 4853' TVD and cemented to surface.

3. PRESSURE CONTROL

The Operator's minimum specifications for blowout prevention equipment and diverter systems to be used, including size, pressure rating, configuration and the testing procedure and frequency. Blowout prevention equipment will meet the minimum standards outlined in Order 2 and 43 CFR Part 3160.

a) Pressure control equipment and configuration will be designed to meet 2M psi standards
   a. BHP = 1844 psi (based on offset BHP data of 0.38 psi/ft pressure gradient)
   b. Max Surface pressure = 776 psi (assuming partially evacuated hole w/ 0.22 psi/ft pressure gradient)
b) A 2,000 psi double ram hydraulic BOP will be used (see attached diagram)
c) Function test and visual inspection of the BOP will be conducted every 24 hrs and recorded on IADC log.
d) BOP and accessories testing procedures shall conform to Onshore Order No. 2
e) The annular BOP will be pressure tested to a minimum of 50% of its rated working pressure
f) Blind and Pipe Rams/BOP will be tested against a test plug to 100% of its rated working pressure
g) Pressure tests are required before drilling out from under all casing strings set and cemented in place
h) BOP controls will be installed prior to drilling the surface casing plug and will remain in use until the well is completed or abandoned.
i) BOP controls will be located on the rig floor at a location accessible to the driller. Master controls shall be on the ground at the accumulator and will have the capability to function all preventers.
j) The accumulator system capacity will be sufficient to close all BOPE with a 50% safety factor
k) Kill line, fill line and line to choke manifold will be a minimum of 2-inch
l) Choke manifold will be 3M psi and contain a 2" positive choke, 2" adjustable choke and a pressure gauge.
m) Hand wheels shall be installed on all ram preventers
n) Safety valves and wrenches (with subs for drill string connections) shall be available on the rig floor at all times
o) Inside BOP or float sub will also be available on the rig floor at all times

The New Mexico Oil & Gas Conservation Commission and the BLM will be notified 24 hours in advance of testing of BOPE.

4. CASING AND CEMENTING PROGRAM

The proposed casing and cementing program has been designed to protect and/or isolate all usable water zones, potentially productive zones, lost circulation zones, abnormally pressured zones and any prospectively valuable mineral deposits. Any isolating medium other than cement shall receive approval prior to use. Casing setting depth shall be calculated to position the casing seat opposite a competent formation which will contain the maximum pressure to which it will be exposed during drilling operations.

Included below is the Operator's proposed casing program which includes size, grade, weight, type of threading and coupling and setting depth for each string and its condition. Minimum design criteria and hole sizes are also included herein.

Casing	Depth (MD)	Hole Size	Csg Size	Weight	Grade	Coupling	Condition
Surface	0' - 320'	12 1/4"	9 5/8"	36 ppf	J or K55	STC	New
Intermediate	0' – 5,223'	8 3/4"	7"	23 ppf	J or K55	LTC	New
Production Liner	5,073' - 13,558'	6 1/8"	4 1/2"	11.6 ppf	P-110	LTC	New

Casing String				Casing Strenght Properties			Minimum Design Factors		
Size	Weight	Grade	Coupling	Collapse (psi)	Burst (psi)	Tensile (klbs)	Collapse	Burst	Tension
9 5/8"	36 ppf	J55	STC	2,020	3,520	394	1.125	1.0	1.2
7"	23 ppf	J55	LTC	3,270	4,360	313	1.125	1.0	1.2
4 1/2"	11.6 ppf	P110	LTC	7,560	10,690	279	1.125	1.0	1.2

Casing strings below the conductor casing will be tested to .22 psi per foot of casing string length or 1500 psi, whichever is greater, but not to exceed 70% of the minimum internal yield.

Surface casing shall have a minimum of 1 centralizer per joint on the bottom three (3) joints, starting with the shoe joint for a total of (4) minimum centralizers. Centralizers will be placed 10' above the shoe on the shoe joint, on the 1st, 2nd and 3rd casing collars.

The intermediate casing will be centralized using 1 centralizer the first 6 jts and spaced appropriately through the curve section of the well-bore and then spaced +/- 1 centralizer / 4 jts through the remainder of the cement column, using approximately 40 centralizers.

*Surface casing maybe preset with a preset rig (MOTE).

The proposed cementing program is as follows:

Casing	Depth (MD)	Cement Volume (sacks)	Cement Type & Yield	Designed TOC	Centralizers
Surface	0' - 320'	170 sx (incl. 100% excess)	HalCEM™ System + 2% CaCl + 0.125 lb/sk Poly-E-Flake; 15.8 ppg, 1.174 cu.ft./sk	Surface	1 per joint on bottom 3 joints
Intermediate	0' - 5,223'	Lead: 540 sx Tail: 196 sx (incl. 70% excess)	**Lead:** HalCEM™ System; 12.3 ppg, 1.95 cu. Ft./sk **Tail:** VariCEM™ System + 5 lbs/sk Kol-Seal + 0.125 lbs/sk Poly-E-Flake; 13.5 ppg, 1.30 cu. Ft./sk	Surface	1 per joint on 1st 6 joints + 1 per 4 joints for remainder
Production Liner	5,073' - 13,499'	791 sx (incl. 30% excess)	ExtendaCEM™ System; 13.3 ppg, 1.36 cu. Ft./sk	Liner Top (5,073')	

Actual volumes will be calculated and determined by conditions onsite. All cement slurries will meet or exceed minimum BLM and New Mexico Oil Conservation Division requirements. Slurries used will be the slurries listed above or equivalent slurries depending on service provider selected. Cement yields may change depending on slurries selected.

All waiting on cement times shall be a minimum of 8 hours or adequate to achieve a minimum of 500 psi compressive strength at the casing shoe prior to drilling out.

Other Cementing Notes:

- Pea Gravel or other material shall not be used to fill up around the surface casing in the event cement fall back occurs.
- The surface casing shall in all cases be cemented back to surface. In the event cement does not circulate to surface or fall back of the cement column occurs, remedial cementing shall be done to cement the casing back to surface. No more than the top 100' will be remediated with 1" line if fall back occurs. Anything more than 100' will require plan approval to remediate.
- If returns are lost and/or cement is not brought to surface and no fallback occurs, a cement bond log (CBL) will be required to determine the quality of the job prior to drilling ahead (see OO2).
- Top plugs shall be used to reduce contamination of cement by displacement fluid. A bottom plug or other acceptable technique, such as a pre-flush fluid, inner string cement method, etc. shall be utilized to help isolate the cement from contamination by the mud fluid being displaced ahead of the cement slurry.
- Production liner will be cemented.

5. WELL PLAN & DIRECTIONAL PROGRAM

The proposed horizontal well will have a kick off point at 4,217'. Directional plans attached.

Desription	Proposed Depth (TVD/MD)	Formation
Horizontal Lateral TD	4,774' / 13,499'	Mancos

6. DRILLING FLUIDS PROGRAM

Interval (MD)	Hole Section	Hole Size	Type	MW	VIS	FL	PV	YP	PH
0'-320'	Surface	12-1/4"	FW/Gel	8.4-9.0	32-44	NC	8	12	9
320'-4516'	Vertical to KOP	8-3/4"	Potassium Sulfate	9.0-9.5	38-42	6	14	14	9.5
4516'-5223'	Curve	8-3/4"	Potassium Sulfate	9.0-9.6	38-42	6	14	14	9.5
5223'-13499'	Horizontal	6-1/8"	Potassium Sulfate	8.3-9.0	34-40	6	8	8	9.5

Sufficient weighting material will be on hand to weight mud up to 10.5 PPG, if required.

The formula for weight up with barite is listed below:
Sacks of Barite per 100 bbl of mud = 1470 x (W2 – W1) ÷ (35 – W2)

Where; W1 = current mud weight

W2 = new mud weight

Sacks = 1470 x (10.5 – 8.4)/ (35-10.5) = 126 sx * 5 (500bbls minimum) = 630sx

Pason Pit Volume Totalizer (PVT) equipment (or equilvant) will be on each pit to monitor pit levels. A trip tank equipped with a Pason PVT will be used to monitor trip volumes.

A closed-loop system will be used to recover drilling fluid and dry cuttings in both phases of the well and on all hole intervals, including fresh water and oil-based operations. Above-ground tanks will be utilized to hold cuttings and fluids for rig operations. A frac tank will be on location to store fresh water. Waste will be disposed of properly at an EPA-approved hazardous waste facility. Fresh water cuttings will be disposed of as outlined is surface use plane location will be lined in accordance with the Surface Use Plan of Operations.

7. TESTING, LOGGING AND CORING

a) Drill stem testing – none anticipated
b) Coring – none anticipated
c) Mud Logging – Mud loggers will be operational from 3,000' to TD of the horizontal hole.
    a. Gas detecting equipment will be installed and operational and hydrocarbon gas will be monitored for pore pressure changes from base of surface casing to TD.
    b. Visual mud monitoring equipment shall be in place to detect volume changes indicating loss or gain of circulating fluid volume.
d) Logging – see below:

Cased Hole

CBL/CCL/GR will be run as the start of the completion process if cement is not circulated to surface during the cementing of the intermediate casing string. The CBL will confirm the quality of the cement bond and the actual TOC. If either of these two data points were not satisfactory per BLM, State and standard procedure, remedial cement work, if required, will be performed after consultation and approval of a plan from both the BLM and State agencies. The logged interval should extend from at least 50 feet below the KOP, if practical, to 200 feet above the top of cement. In no case shall the cement bond log begin above the KOP.

8. ABNORMAL PRESSURES & HYDROGEN SULFIDE

Normal to subnormal pressure gradient to TD.

MASP and casing design parameters determined using 0.38 psi/ft.

Bottom Hole pressure = 4853' TVD x 0.38 psi/ft = 1844 psi (based on measured offset bottom hole pressures).

Maximum expected BHT @ 4853' TVD: ~152° F

No hydrogen sulfide gas is anticipated, however, if H_2S is encountered, the guidelines in Onshore Order No. 6 will be followed.

9. OTHER FACETS OF PROPOSED OPERATION & ANTICIPATED START DATE

Directional Plans: Horizontal directional well, directional plans attached.

Completion: Completion design will be dependent on open-hole log evaluation from the pilot hole and the actual horizontal section drilled. Generally, the completion will consist of a plug and perf hydraulic fracturing operation consistent with best practices in the same area of the San Juan Basin. The frac job will likely consist of between 30 and 40 stages. Each stage will consist of approximately 330,000 lbs of 20/40 sand and 1,300 bbls of water. Pumping rates will be dependent on surface treating pressures but should be around 50 bpm down 4 ½" casing. All fracturing fluids will be water based and contain nitrogen foam. After the frac job, plugs will be drilled out within 10 days and production tubing will be run. Production tubing is expected to be 2 3/8" or 2 7/8".

Timing: Drilling is estimated to commence in late June, or early July 2017 depending on rig availability. The drilling rig has been identified and timing will depend on current operations for other Operators. It is anticipated that the drilling of this well will take 14-20 days and completion operations will begin within 60 days of rig release depending on fracture treatment schedules with various pumping service companies.

CLOSED-LOOP SYSTEM DESIGN PLAN

The closed-loop system will consist of a series of temporary above-ground storage tanks and/or haul-off bins suitable for holding the cuttings and fluids from drilling operations. The closed- loop system will not entail temporary pits, below-grade storage tanks, below-grade sumps, or drying pads.

Design considerations include:

- The closed-loop system will be signed in accordance with 19.15.17.11 NMAC
- The closed-loop system storage tanks will be of adequate volume to ensure confinement of all fluids and provide sufficient freeboard to prevent uncontrolled releases.
- Topsoil will be salvaged and stored for use in reclamation activities
- The closed-loop system storage tanks will be placed in bermed secondary containment sized to contain a minimum of 110% of the volume of the largest storage tank.

CLOSED-LOOP SYSTEM OPERATING & MAINTENANCE PLAN

The closed-loop system will be operated and maintained to contain liquids and solids; minimize the amount of drilling fluids and cuttings that require disposal; maximize the amount of drilling fluid recycled and reused in the drilling process; isolate drilling wastes from the environment; prevent contamination of fresh water; and protect public health and the environment.

Operation and maintenance considerations include:

- Fluid levels will be maintained to provide sufficient freeboard to prevent over-topping.
- Visual inspections will be conducted on a daily basis to identify any potential leaks and to ensure that the closed-loop system storage tanks have sufficient freeboard to prevent over-topping.
- Only drilling fluids or cuttings intrinsic to, used by, or generated from, drilling operations will be stored in the closed-loop system storage tanks. Hazardous waste, miscellaneous solid waste, and/or debris will not be stored in the storage tanks.
- The OCD District Office will be notified within 48 hours of discovery of a leak in the closed-loop drilling system. If a leak is discovered, all liquid will be removed within 48 hours and the damage repaired.

CLOSED-LOOP SYSTEM CLOSURE PLAN

The closed-loop system will be closed in accordance with 19.15.17.13 NMAC. Closure considerations include:

- Drilling fluids will be recycled and transferred to other permitted closed-loop systems or returned to the vendor for reuse, as practical.
- Residual fluids will be pulled from the storage tanks, mixed with saw dust or similar absorbent material, and disposed of at Industrial Ecosystem, Inc. waste disposal facilities.
- Remaining cuttings or sludges will be vacuumed from the storage tanks and disposed of at the Envirotech, Inc and/or Industrial Ecosystem, Inc. waste disposal facilities.
- Storage tanks will be removed from the well location during the rig move.
- The well pad will be reclaimed and seeded in accordance with subsections G, Hand I of 19.15.17.13 NMAC.

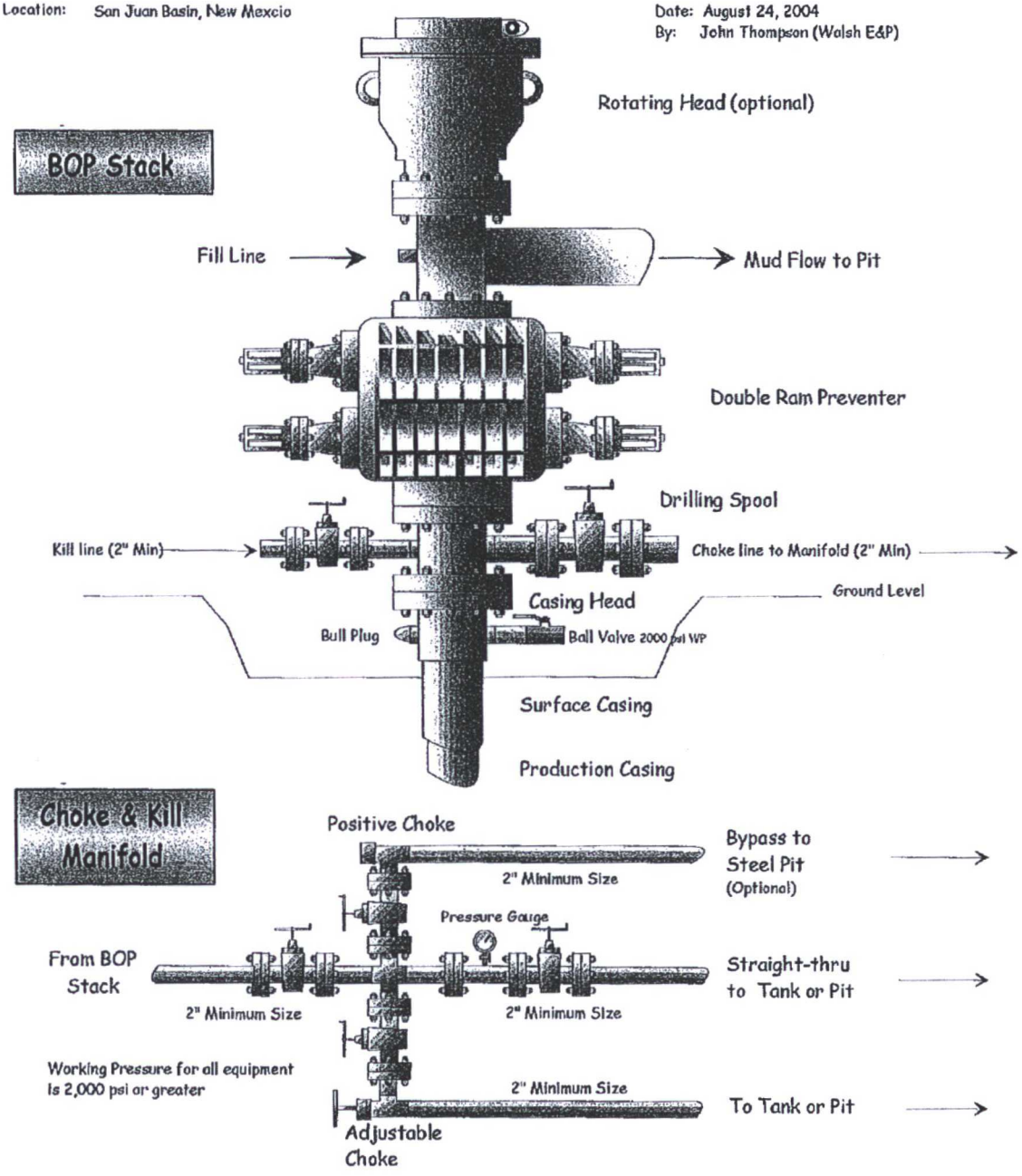
Well Control Equipment Schematic for 2M Service

Attachment to Drilling Technical Program

Exhibit #1
Typical BOP setup

Location: San Juan Basin, New Mexcio

Date: August 24, 2004
By: John Thompson (Walsh E&P)



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Pinon Unit 306H
Company:	Juniper Resources Exploration CO	**TVD Reference:**	14' @ 6748.00usft (TBD)
Project:	NEW MEXICO	**MD Reference:**	14' @ 6748.00usft (TBD)
Site:	S16-T24N-R10W	**North Reference:**	Grid
Well:	Pinon Unit 306H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH / HZ		
Design:	Plan #2		

Project	NEW MEXICO		
Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Western Zone		

Site	S16-T24N-R10W				
Site Position:		**Northing:**	1,931,934.99 usft	**Latitude:**	36.309413
From:	Lat/Long	**Easting:**	2,700,844.73 usft	**Longitude:**	-107.908842
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16"	**Grid Convergence:**	-0.04 °

Well	Pinon Unit 306H					
Well Position	**+N/-S**	0.00 usft	**Northing:**	1,931,934.98 usft	**Latitude:**	36.309413
	+E/-W	0.00 usft	**Easting:**	2,700,874.78 usft	**Longitude:**	-107.908740
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	0.00 usft	**Ground Level:**	6,734.00 usft

Wellbore	OH / HZ			
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	HDGM	4/10/2017	9.10	62.88	49,766

Design	Plan #2			
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	150.31

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	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	
675.02	3.50	44.43	674.91	3.82	3.74	2.00	2.00	0.00	44.43	
827.48	3.50	44.43	827.09	10.46	10.26	0.00	0.00	0.00	0.00	
1,002.50	0.00	0.00	1,002.00	14.28	14.00	2.00	-2.00	0.00	180.00	
4,217.50	0.00	0.00	4,217.00	14.28	14.00	0.00	0.00	0.00	0.00	
5,223.61	90.55	151.90	4,853.59	-552.69	316.73	9.00	9.00	0.00	151.90	
5,302.95	90.55	150.31	4,852.83	-622.14	355.06	2.00	0.00	-2.00	-89.97	
13,499.04	90.55	150.31	4,774.08	-7,742.14	4,414.05	0.00	0.00	0.00	0.00	Pinon Unit 306H PBH

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Pinon Unit 306H
Company:	Juniper Resources Exploration CO	**TVD Reference:**	14' @ 6748.00usft (TBD)
Project:	NEW MEXICO	**MD Reference:**	14' @ 6748.00usft (TBD)
Site:	S16-T24N-R10W	**North Reference:**	Grid
Well:	Pinon Unit 306H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH / HZ		
Design:	Plan #2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft	Build Rate (°/100u	Comments / Formations
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	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
241.00	0.00	0.00	241.00	0.00	0.00	0.00	0.00	0.00	Ojo Alamo
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	
365.00	0.00	0.00	365.00	0.00	0.00	0.00	0.00	0.00	Kirtland
400.00	0.00	0.00	400.00	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	KOP @ 500'
600.00	2.00	44.43	599.98	1.25	1.22	-0.48	2.00	2.00	
675.02	3.50	44.43	674.91	3.82	3.74	-1.46	2.00	2.00	EOB; INC=3.5°
700.00	3.50	44.43	699.84	4.91	4.81	-1.88	0.00	0.00	
800.00	3.50	44.43	799.66	9.27	9.08	-3.55	0.00	0.00	
827.48	3.50	44.43	827.09	10.46	10.26	-4.01	0.00	0.00	Start Drop -2.00
900.00	2.05	44.43	899.52	12.97	12.72	-4.97	2.00	-2.00	
918.53	1.68	44.43	918.04	13.40	13.14	-5.13	2.00	-2.00	Fruitland
1,000.00	0.05	44.43	999.50	14.28	14.00	-5.47	2.00	-2.00	
1,002.50	0.00	0.00	1,002.00	14.28	14.00	-5.47	2.00	-2.00	EOD; INC=0°
1,100.00	0.00	0.00	1,099.50	14.28	14.00	-5.47	0.00	0.00	
1,200.00	0.00	0.00	1,199.50	14.28	14.00	-5.47	0.00	0.00	
1,300.00	0.00	0.00	1,299.50	14.28	14.00	-5.47	0.00	0.00	
1,354.55	0.00	0.00	1,354.04	14.28	14.00	-5.47	0.00	0.00	Pictured Cliffs
1,400.00	0.00	0.00	1,399.50	14.28	14.00	-5.47	0.00	0.00	
1,500.00	0.00	0.00	1,499.50	14.28	14.00	-5.47	0.00	0.00	
1,581.55	0.00	0.00	1,581.04	14.28	14.00	-5.47	0.00	0.00	Lewis Shale
1,600.00	0.00	0.00	1,599.50	14.28	14.00	-5.47	0.00	0.00	
1,700.00	0.00	0.00	1,699.50	14.28	14.00	-5.47	0.00	0.00	
1,800.00	0.00	0.00	1,799.50	14.28	14.00	-5.47	0.00	0.00	
1,900.00	0.00	0.00	1,899.50	14.28	14.00	-5.47	0.00	0.00	
2,000.00	0.00	0.00	1,999.50	14.28	14.00	-5.47	0.00	0.00	
2,096.55	0.00	0.00	2,096.04	14.28	14.00	-5.47	0.00	0.00	Cliffhouse
2,100.00	0.00	0.00	2,099.50	14.28	14.00	-5.47	0.00	0.00	
2,200.00	0.00	0.00	2,199.50	14.28	14.00	-5.47	0.00	0.00	
2,300.00	0.00	0.00	2,299.50	14.28	14.00	-5.47	0.00	0.00	
2,400.00	0.00	0.00	2,399.50	14.28	14.00	-5.47	0.00	0.00	
2,500.00	0.00	0.00	2,499.50	14.28	14.00	-5.47	0.00	0.00	
2,600.00	0.00	0.00	2,599.50	14.28	14.00	-5.47	0.00	0.00	
2,692.55	0.00	0.00	2,692.04	14.28	14.00	-5.47	0.00	0.00	Menefee
2,700.00	0.00	0.00	2,699.50	14.28	14.00	-5.47	0.00	0.00	
2,800.00	0.00	0.00	2,799.50	14.28	14.00	-5.47	0.00	0.00	
2,900.00	0.00	0.00	2,899.50	14.28	14.00	-5.47	0.00	0.00	
3,000.00	0.00	0.00	2,999.50	14.28	14.00	-5.47	0.00	0.00	
3,100.00	0.00	0.00	3,099.50	14.28	14.00	-5.47	0.00	0.00	
3,200.00	0.00	0.00	3,199.50	14.28	14.00	-5.47	0.00	0.00	
3,300.00	0.00	0.00	3,299.50	14.28	14.00	-5.47	0.00	0.00	
3,400.00	0.00	0.00	3,399.50	14.28	14.00	-5.47	0.00	0.00	
3,500.00	0.00	0.00	3,499.50	14.28	14.00	-5.47	0.00	0.00	
3,600.00	0.00	0.00	3,599.50	14.28	14.00	-5.47	0.00	0.00	
3,700.00	0.00	0.00	3,699.50	14.28	14.00	-5.47	0.00	0.00	
3,775.55	0.00	0.00	3,775.04	14.28	14.00	-5.47	0.00	0.00	Point Lookout
3,800.00	0.00	0.00	3,799.50	14.28	14.00	-5.47	0.00	0.00	
3,900.00	0.00	0.00	3,899.50	14.28	14.00	-5.47	0.00	0.00	
3,992.55	0.00	0.00	3,992.04	14.28	14.00	-5.47	0.00	0.00	Marcos

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Pinon Unit 306H
Company:	Juniper Resources Exploration CO	**TVD Reference:**	14' @ 6748.00usft (TBD)
Project:	NEW MEXICO	**MD Reference:**	14' @ 6748.00usft (TBD)
Site:	S16-T24N-R10W	**North Reference:**	Grid
Well:	Pinon Unit 306H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH / HZ		
Design:	Plan #2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft	Build Rate (°/100u	Comments / Formations
4,000.00	0.00	0.00	3,999.50	14.28	14.00	-5.47	0.00	0.00	
4,100.00	0.00	0.00	4,099.50	14.28	14.00	-5.47	0.00	0.00	
4,200.00	0.00	0.00	4,199.50	14.28	14.00	-5.47	0.00	0.00	
4,217.50	0.00	0.00	4,217.00	14.28	14.00	-5.47	0.00	0.00	Start Build 9.00
4,300.00	7.42	151.90	4,299.27	9.57	16.51	-0.14	9.00	9.00	
4,400.00	16.42	151.90	4,397.01	-8.64	26.24	20.50	9.00	9.00	
4,500.00	25.42	151.90	4,490.32	-40.11	43.04	56.16	9.00	9.00	
4,600.00	34.42	151.90	4,576.90	-84.07	66.51	105.98	9.00	9.00	
4,700.00	43.42	151.90	4,654.61	-139.44	96.08	168.72	9.00	9.00	
4,800.00	52.42	151.90	4,721.56	-204.85	131.00	242.84	9.00	9.00	
4,900.00	61.42	151.90	4,776.07	-278.69	170.43	326.52	9.00	9.00	
4,919.86	63.21	151.90	4,785.30	-294.20	178.71	344.09	9.00	9.00	Marcos A
4,985.54	69.12	151.90	4,811.83	-347.18	207.00	404.13	9.00	9.00	Marcos B
5,000.00	70.42	151.90	4,816.82	-359.15	213.39	417.69	9.00	9.00	
5,100.00	79.42	151.90	4,842.81	-444.24	258.82	514.11	9.00	9.00	
5,154.82	84.36	151.90	4,850.54	-492.09	284.38	568.34	9.00	9.00	Marcos B Target
5,200.00	88.42	151.90	4,853.38	-531.86	305.61	613.41	9.00	9.00	
5,223.61	90.55	151.90	4,853.59	-552.69	316.73	637.01	9.00	9.00	LP @ 4853' TVD; 90.55°
5,300.00	90.55	150.37	4,852.86	-619.58	353.61	713.39	2.00	0.00	
5,302.95	90.55	150.31	4,852.83	-622.14	355.06	716.33	2.00	0.00	END OF TURN
5,400.00	90.55	150.31	4,851.90	-706.45	403.13	813.38	0.00	0.00	
5,500.00	90.55	150.31	4,850.94	-793.32	452.65	913.38	0.00	0.00	
5,600.00	90.55	150.31	4,849.97	-880.19	502.17	1,013.37	0.00	0.00	
5,700.00	90.55	150.31	4,849.01	-967.07	551.70	1,113.37	0.00	0.00	
5,800.00	90.55	150.31	4,848.05	-1,053.94	601.22	1,213.36	0.00	0.00	
5,900.00	90.55	150.31	4,847.09	-1,140.81	650.74	1,313.36	0.00	0.00	
6,000.00	90.55	150.31	4,846.13	-1,227.68	700.27	1,413.35	0.00	0.00	
6,100.00	90.55	150.31	4,845.17	-1,314.55	749.79	1,513.35	0.00	0.00	
6,200.00	90.55	150.31	4,844.21	-1,401.42	799.31	1,613.34	0.00	0.00	
6,300.00	90.55	150.31	4,843.25	-1,488.29	848.84	1,713.34	0.00	0.00	
6,400.00	90.55	150.31	4,842.29	-1,575.16	898.36	1,813.33	0.00	0.00	
6,500.00	90.55	150.31	4,841.33	-1,662.03	947.89	1,913.33	0.00	0.00	
6,600.00	90.55	150.31	4,840.37	-1,748.90	997.41	2,013.33	0.00	0.00	
6,700.00	90.55	150.31	4,839.41	-1,835.77	1,046.93	2,113.32	0.00	0.00	
6,800.00	90.55	150.31	4,838.44	-1,922.64	1,096.46	2,213.32	0.00	0.00	
6,900.00	90.55	150.31	4,837.48	-2,009.51	1,145.98	2,313.31	0.00	0.00	
7,000.00	90.55	150.31	4,836.52	-2,096.38	1,195.50	2,413.31	0.00	0.00	
7,100.00	90.55	150.31	4,835.56	-2,183.25	1,245.03	2,513.30	0.00	0.00	
7,200.00	90.55	150.31	4,834.60	-2,270.12	1,294.55	2,613.30	0.00	0.00	
7,300.00	90.55	150.31	4,833.64	-2,357.00	1,344.07	2,713.29	0.00	0.00	
7,400.00	90.55	150.31	4,832.68	-2,443.87	1,393.60	2,813.29	0.00	0.00	
7,500.00	90.55	150.31	4,831.72	-2,530.74	1,443.12	2,913.28	0.00	0.00	
7,600.00	90.55	150.31	4,830.76	-2,617.61	1,492.64	3,013.28	0.00	0.00	
7,700.00	90.55	150.31	4,829.80	-2,704.48	1,542.17	3,113.27	0.00	0.00	
7,800.00	90.55	150.31	4,828.84	-2,791.35	1,591.69	3,213.27	0.00	0.00	
7,900.00	90.55	150.31	4,827.88	-2,878.22	1,641.21	3,313.27	0.00	0.00	
8,000.00	90.55	150.31	4,826.92	-2,965.09	1,690.74	3,413.26	0.00	0.00	
8,100.00	90.55	150.31	4,825.95	-3,051.96	1,740.26	3,513.26	0.00	0.00	
8,200.00	90.55	150.31	4,824.99	-3,138.83	1,789.78	3,613.25	0.00	0.00	
8,300.00	90.55	150.31	4,824.03	-3,225.70	1,839.31	3,713.25	0.00	0.00	
8,400.00	90.55	150.31	4,823.07	-3,312.57	1,888.83	3,813.24	0.00	0.00	
8,500.00	90.55	150.31	4,822.11	-3,399.44	1,938.35	3,913.24	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Pinon Unit 306H
Company:	Juniper Resources Exploration CO	**TVD Reference:**	14' @ 6748.00usft (TBD)
Project:	NEW MEXICO	**MD Reference:**	14' @ 6748.00usft (TBD)
Site:	S16-T24N-R10W	**North Reference:**	Grid
Well:	Pinon Unit 306H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH / HZ		
Design:	Plan #2		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft	Build Rate (°/100u	Comments / Formations
8,600.00	90.55	150.31	4,821.15	-3,486.31	1,987.88	4,013.23	0.00	0.00	
8,700.00	90.55	150.31	4,820.19	-3,573.18	2,037.40	4,113.23	0.00	0.00	
8,800.00	90.55	150.31	4,819.23	-3,660.05	2,086.92	4,213.22	0.00	0.00	
8,900.00	90.55	150.31	4,818.27	-3,746.93	2,136.45	4,313.22	0.00	0.00	
9,000.00	90.55	150.31	4,817.31	-3,833.80	2,185.97	4,413.21	0.00	0.00	
9,100.00	90.55	150.31	4,816.35	-3,920.67	2,235.49	4,513.21	0.00	0.00	
9,200.00	90.55	150.31	4,815.39	-4,007.54	2,285.02	4,613.21	0.00	0.00	
9,300.00	90.55	150.31	4,814.42	-4,094.41	2,334.54	4,713.20	0.00	0.00	
9,400.00	90.55	150.31	4,813.46	-4,181.28	2,384.06	4,813.20	0.00	0.00	
9,500.00	90.55	150.31	4,812.50	-4,268.15	2,433.59	4,913.19	0.00	0.00	
9,600.00	90.55	150.31	4,811.54	-4,355.02	2,483.11	5,013.19	0.00	0.00	
9,700.00	90.55	150.31	4,810.58	-4,441.89	2,532.64	5,113.18	0.00	0.00	
9,800.00	90.55	150.31	4,809.62	-4,528.76	2,582.16	5,213.18	0.00	0.00	
9,900.00	90.55	150.31	4,808.66	-4,615.63	2,631.68	5,313.17	0.00	0.00	
10,000.00	90.55	150.31	4,807.70	-4,702.50	2,681.21	5,413.17	0.00	0.00	
10,100.00	90.55	150.31	4,806.74	-4,789.37	2,730.73	5,513.16	0.00	0.00	
10,200.00	90.55	150.31	4,805.78	-4,876.24	2,780.25	5,613.16	0.00	0.00	
10,300.00	90.55	150.31	4,804.82	-4,963.11	2,829.78	5,713.15	0.00	0.00	
10,400.00	90.55	150.31	4,803.86	-5,049.98	2,879.30	5,813.15	0.00	0.00	
10,500.00	90.55	150.31	4,802.89	-5,136.86	2,928.82	5,913.15	0.00	0.00	
10,600.00	90.55	150.31	4,801.93	-5,223.73	2,978.35	6,013.14	0.00	0.00	
10,700.00	90.55	150.31	4,800.97	-5,310.60	3,027.87	6,113.14	0.00	0.00	
10,800.00	90.55	150.31	4,800.01	-5,397.47	3,077.39	6,213.13	0.00	0.00	
10,900.00	90.55	150.31	4,799.05	-5,484.34	3,126.92	6,313.13	0.00	0.00	
11,000.00	90.55	150.31	4,798.09	-5,571.21	3,176.44	6,413.12	0.00	0.00	
11,100.00	90.55	150.31	4,797.13	-5,658.08	3,225.96	6,513.12	0.00	0.00	
11,200.00	90.55	150.31	4,796.17	-5,744.95	3,275.49	6,613.11	0.00	0.00	
11,300.00	90.55	150.31	4,795.21	-5,831.82	3,325.01	6,713.11	0.00	0.00	
11,400.00	90.55	150.31	4,794.25	-5,918.69	3,374.53	6,813.10	0.00	0.00	
11,500.00	90.55	150.31	4,793.29	-6,005.56	3,424.06	6,913.10	0.00	0.00	
11,600.00	90.55	150.31	4,792.33	-6,092.43	3,473.58	7,013.09	0.00	0.00	
11,700.00	90.55	150.31	4,791.37	-6,179.30	3,523.10	7,113.09	0.00	0.00	
11,800.00	90.55	150.31	4,790.40	-6,266.17	3,572.63	7,213.09	0.00	0.00	
11,900.00	90.55	150.31	4,789.44	-6,353.04	3,622.15	7,313.08	0.00	0.00	
12,000.00	90.55	150.31	4,788.48	-6,439.91	3,671.67	7,413.08	0.00	0.00	
12,100.00	90.55	150.31	4,787.52	-6,526.79	3,721.20	7,513.07	0.00	0.00	
12,200.00	90.55	150.31	4,786.56	-6,613.66	3,770.72	7,613.07	0.00	0.00	
12,300.00	90.55	150.31	4,785.60	-6,700.53	3,820.24	7,713.06	0.00	0.00	
12,400.00	90.55	150.31	4,784.64	-6,787.40	3,869.77	7,813.06	0.00	0.00	
12,500.00	90.55	150.31	4,783.68	-6,874.27	3,919.29	7,913.05	0.00	0.00	
12,600.00	90.55	150.31	4,782.72	-6,961.14	3,968.81	8,013.05	0.00	0.00	
12,700.00	90.55	150.31	4,781.76	-7,048.01	4,018.34	8,113.04	0.00	0.00	
12,800.00	90.55	150.31	4,780.80	-7,134.88	4,067.86	8,213.04	0.00	0.00	
12,900.00	90.55	150.31	4,779.84	-7,221.75	4,117.39	8,313.03	0.00	0.00	
13,000.00	90.55	150.31	4,778.87	-7,308.62	4,166.91	8,413.03	0.00	0.00	
13,100.00	90.55	150.31	4,777.91	-7,395.49	4,216.43	8,513.03	0.00	0.00	
13,200.00	90.55	150.31	4,776.95	-7,482.36	4,265.96	8,613.02	0.00	0.00	
13,300.00	90.55	150.31	4,775.99	-7,569.23	4,315.48	8,713.02	0.00	0.00	
13,400.00	90.55	150.31	4,775.03	-7,656.10	4,365.00	8,813.01	0.00	0.00	
13,499.04	90.55	150.31	4,774.08	-7,742.14	4,414.05	8,912.05	0.00	0.00	TD at 13499.04

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Pinon Unit 306H
Company:	Juniper Resources Exploration CO	**TVD Reference:**	14' @ 6748.00usft (TBD)
Project:	NEW MEXICO	**MD Reference:**	14' @ 6748.00usft (TBD)
Site:	S16-T24N-R10W	**North Reference:**	Grid
Well:	Pinon Unit 306H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH / HZ		
Design:	Plan #2		

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
Pinon Unit 306H PBHL - plan hits target center - Point	0.00	0.00	4,774.08	-7,742.14	4,414.05	1,924,192.84	2,705,288.83	36.288153	-107.893742
testing - plan misses target center by 4981.28usft at 13499.04usft MD (4774.08 TVD, -7742.14 N, 4414.05 E) - Point	0.00	360.00	0.00	-9,120.25	4,763.50	1,922,814.73	2,705,638.28	36.284368	-107.892553

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
241.00	241.00	Ojo Alamo		-0.45	150.31
365.00	365.00	Kirtland		-0.45	150.31
918.53	918.00	Fruitland		-0.45	150.31
1,354.55	1,354.00	Pictured Cliffs		-0.45	150.31
1,581.55	1,581.00	Lewis Shale		-0.45	150.31
2,096.55	2,096.00	Cliffhouse		-0.45	150.31
2,692.55	2,692.00	Menefee		-0.45	150.31
3,775.55	3,775.00	Point Lookout		-0.45	150.31
3,992.55	3,992.00	Marcos		-0.45	150.31
4,919.86	4,788.00	Marcos A		-0.45	150.31
4,985.54	4,815.00	Marcos B		-0.45	150.31
5,154.82	4,855.00	Marcos B Target		-0.45	150.31

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
500.00	500.00	0.00	0.00	KOP @ 500'
675.02	674.91	3.82	3.74	EOB; INC=3.5°
827.48	827.09	10.46	10.26	Start Drop -2.00
1,002.50	1,002.00	14.28	14.00	EOD; INC=0°
4,217.50	4,217.00	14.28	14.00	Start Build 9.00
5,223.61	4,853.59	-552.69	316.73	LP @ 4853' TVD; 90.55°
5,302.95	4,852.83	-622.14	355.06	END OF TURN
13,499.04	4,774.08	-7,742.14	4,414.05	TD at 13499.04

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Pinon Unit 306H
Company:	Juniper Resources Exploration CO	**TVD Reference:**	14' @ 6748.00usft (TBD)
Project:	NEW MEXICO	**MD Reference:**	14' @ 6748.00usft (TBD)
Site:	S16-T24N-R10W	**North Reference:**	Grid
Well:	Pinon Unit 306H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH / HZ		
Design:	Plan #2		

Project	NEW MEXICO		
Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Western Zone		

Site	S16-T24N-R10W				
Site Position:		**Northing:**	1,931,934.99 usft	**Latitude:**	36.309413
From:	Lat/Long	**Easting:**	2,700,844.73 usft	**Longitude:**	-107.908842
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16"	**Grid Convergence:**	-0.04 °

Well	Pinon Unit 306H					
Well Position	**+N/-S**	0.00 usft	**Northing:**	1,931,934.98 usft	**Latitude:**	36.309413
	+E/-W	0.00 usft	**Easting:**	2,700,874.78 usft	**Longitude:**	-107.908740
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	0.00 usft	**Ground Level:**	6,734.00 usft

Wellbore	OH / HZ			
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	HDGM	4/10/2017	9.10	62.88	49,766

Design	Plan #2				
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	150.31	

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	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	
675.02	3.50	44.43	674.91	3.82	3.74	2.00	2.00	0.00	44.43	
827.48	3.50	44.43	827.09	10.46	10.26	0.00	0.00	0.00	0.00	
1,002.50	0.00	0.00	1,002.00	14.28	14.00	2.00	-2.00	0.00	180.00	
4,217.50	0.00	0.00	4,217.00	14.28	14.00	0.00	0.00	0.00	0.00	
5,223.61	90.55	151.90	4,853.59	-552.69	316.73	9.00	9.00	0.00	151.90	
5,302.95	90.55	150.31	4,852.83	-622.14	355.06	2.00	0.00	-2.00	-89.97	
13,499.04	90.55	150.31	4,774.08	-7,742.14	4,414.05	0.00	0.00	0.00	0.00	Pinon Unit 306H PBH

JUNIPER RESOURCES

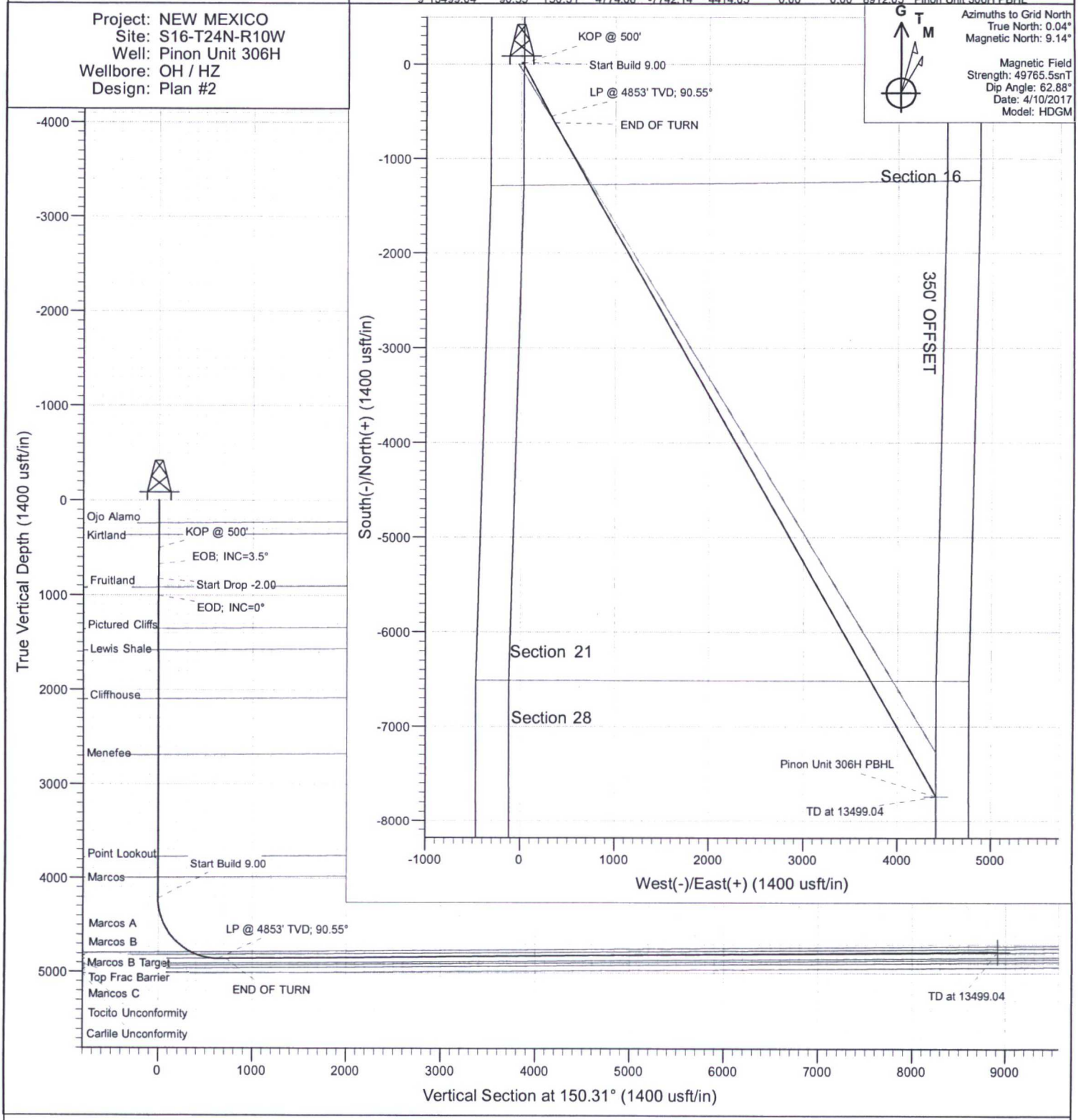
Project: NEW MEXICO
Site: S16-T24N-R10W
Well: Pinon Unit 306H
Wellbore: OH / HZ
Design: Plan #2

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	0.00	0.00	
2	500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	
3	675.02	3.50	44.43	674.91	3.82	3.74	2.00	44.43	-1.46	
4	827.48	3.50	44.43	827.09	10.46	10.26	0.00	0.00	-4.01	
5	1002.50	0.00	0.00	1002.00	14.28	14.00	2.00	180.00	-5.47	
6	4217.50	0.00	0.00	4217.00	14.28	14.00	0.00	0.00	-5.47	
7	5223.61	90.55	151.90	4853.59	-552.69	316.73	9.00	151.90	637.01	
8	5302.95	90.55	150.31	4852.83	-622.14	355.06	2.00	-89.97	716.33	
9	13499.04	90.55	150.31	4774.08	-7742.14	4414.05	0.00	0.00	8912.05	Pinon Unit 306H PBHL

Azimuths to Grid North
True North: 0.04°
Magnetic North: 9.14°

Magnetic Field
Strength: 49765.5snT
Dip Angle: 62.88°
Date: 4/10/2017
Model: HDGM



CATHEDRAL

WELL DETAILS: Pinon Unit 306H

+N/-S	+E/-W	Northing	Ground Level: Easting	6734.00 Latitude	Longitude
0.00	0.00	1931934.98	2700874.78	36.309413	-107.908740

Company: Juniper Resources Exploration CO Date: 3/28/2017

Well No.: Pinon Unit 306H **Lease No.: NMNM 133481X** **API: 30045356380000**

Wireline Logging Co.: NA

Surf Loc: 1277 FSL 318 FWL Sec 16, 24N10W **BHL:** 1229' FNL 350 FEL, Sec 28, 24N10W **Operations Geologist:** Steve Thibodeaux

Initial Perf: 650 FSL 580 FWL,Sec 16, 24N10W **Final perf:** 5032 FSL 377 FEL, Sec 28, 24N10W **Email:** steve.thibodeaux@jnpresources.com

Phone: Office - 970-828-4450

County: San Juan **State: NM** Cell - 970-769-0689

Field: Pinon Unit HZ (oil) - Mancos A/B Horizontal objective

Elevation: GL: 6734 KB: 6748

Wellsite Supervisors: TBD

VP Drilling: TBD

Rig Number: TBD

Field Prints of all logs left on location: 2

Final Prints of all wireline and mudlogs 4

Wireline CD with .las curves NA

Mail logs/cd's ASAP to: Sabina Kraushaar c/o Juniper Resources, LLC 900 Main Ave, Suite 201 Durango, CO 81301

Preliminary Formation Picks:	Tops TVD	Subsea	Zones	H2O	Oil	Gas	Remarks
Nacimiento	Surface						
Ojo Alamo	241	6507		X			
Kirtland	365	6383					
Fruitland	918	5830		X		X	
Pictured Cliffs	1354	5394			X	X	
Lewis Shale	1581	5167				X	
CliffHouse	2096	4652			X	X	
Menefee	2692	4056		X	X	X	
Point Lookout	3775	2973			X	X	**NOTES on HZ Drilling:**
Mancos	3992	2756			X	X	**Allowed ~700' to build curve from surface location to initial perf**
Mancos A	4788	1960			X	X	**Lateral Section is drilled at S32degE (148deg) orientation**
Mancos B	4815	1933			X	X	**Lateral drilled ~85' updip from first perf to TD at 10.8' rise per 1000'**
Mancos B Horizontal Target	**4855**	**1893**	**~40 below B Top**		X	X	**BHL (TD) to be 50' past final perf**
Top Frac Barrier	4909	1839			X	X	
Mancos C (bttm frac barrier)	4929	1819			X	X	
Tocito Unconformity	4960	1788		X	X	X	
Carlile Unconformity (top Gllp SS)	5012	1736			X	X	

Fluid in Hole: TBD

Bit Size: TBD **Correlation Logs:** Monument 1, SENE 17, 24N10W

Casing: TBD Rodeo Rosie 1, NENE 22, 24N10W

TBD

Logging Programs: **Mudlog: 2 man Coverage from Point Lookout to TD**

Mudloggers to catch 30' samples

Digital Daily report and logs to: sabina.kraushaar@jnpresources.com; steve.thibodeaux@jnpresources.com; matt.strickler@jnpresources.com; justin.davis@jnpresources.com; ian.delahunty@jnpresources.com

Wireline: NA

TOOLS: Depths: Presentations:

GRWD Horizonal Lateral

CONTACTS:

Drilling Engineer	Wireline	Wellsite Supervisors	Mudloggers: Softrock
TBD	NA	TBD	Ron Horton/ Dan McGinn
			email: softrockgeological@hotmal.com
		Rig Phone: TBD	office: 970-247-8868
			Ron's cell: 505-320-8275

Special wireline instructions: NA

NOTE: See Juniper requirements for mudlog and wireline copies on top of prog

NOTE: See Below for NMOCD or BLM wireline and mudlog copy requirements (tight hole status)

TBD