U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Sundry Print Report

08/30/2022

Well Name: MUSKIE 23-11 FED COM

Well Location: T26S / R34E / SEC 23 / SWNW / 32.029343 / -103.448345

County or Parish/State: LEA / NM

Well Number: 11H

Type of Well: OIL WELL

Allottee or Tribe Name:

Lease Number: NMNM100568

Unit or CA Name:

Unit or CA Number:

US Well Number: 3002549660

Well Status: Drilling Well

Operator: DEVON ENERGY PRODUCTION COMPANY LP

Notice of Intent

Sundry ID: 2686947

Type of Submission: Notice of Intent

Type of Action: Casing

Date Sundry Submitted: 08/12/2022

Time Sundry Submitted: 11:16

Date proposed operation will begin: 08/12/2022

Procedure Description: Devon Energy Production Company, L.P. respectfully requests approval for the casing patch procedure on the subject well. The procedure is attached.

Surface Disturbance

Is any additional surface disturbance proposed?: No

NOI Attachments

Procedure Description

Muskie_23_11_Fed_Com_11H_Cement_Squeeze__Casing_Patch_Delivery_08.11.22_20220812105920.pdf

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Well Status: Drilling Well

Operator: DEVON ENERGY PRODUCTION COMPANY LP

Conditions of Approval

Specialist Review

Workover_or_Vertical_Deepen_COA_20220824161412.pdf

Operator

I certify that the foregoing is true and correct. 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. Electronic submission of Sundry Notices through this system satisfies regulations requiring a

Operator Electronic Signature: CHELSEY GREEN

Signed on: AUG 12, 2022 11:00 AM

Name: DEVON ENERGY PRODUCTION COMPANY LP

Title: Regulatory Compliance Professional

Street Address: 333 West Sheridan Avenue

City: Oklahoma City **State:** OK

Phone: (405) 228-8595

Email address: Chelsey.Green@dvn.com

Field

Representative Name:

Street Address:

City: **State:** **Zip:**

Phone:

Email address:

BLM Point of Contact

BLM POC Name: Jonathon W Shepard

BLM POC Title: Petroleum Engineer

BLM POC Phone: 5752345972

BLM POC Email Address: jshepard@blm.gov

Disposition: Approved

Disposition Date: 08/24/2022

Signature: Jonathon Shepard

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CEMENT SQUEEZE & CASING PATCH PROCEDURE

MUSKIE 23-11 FED COM 11H

Wells

- MUSKIE 23-11 FED COM 11H
  - API: 3002549660
  - XX-144995.01.CMP

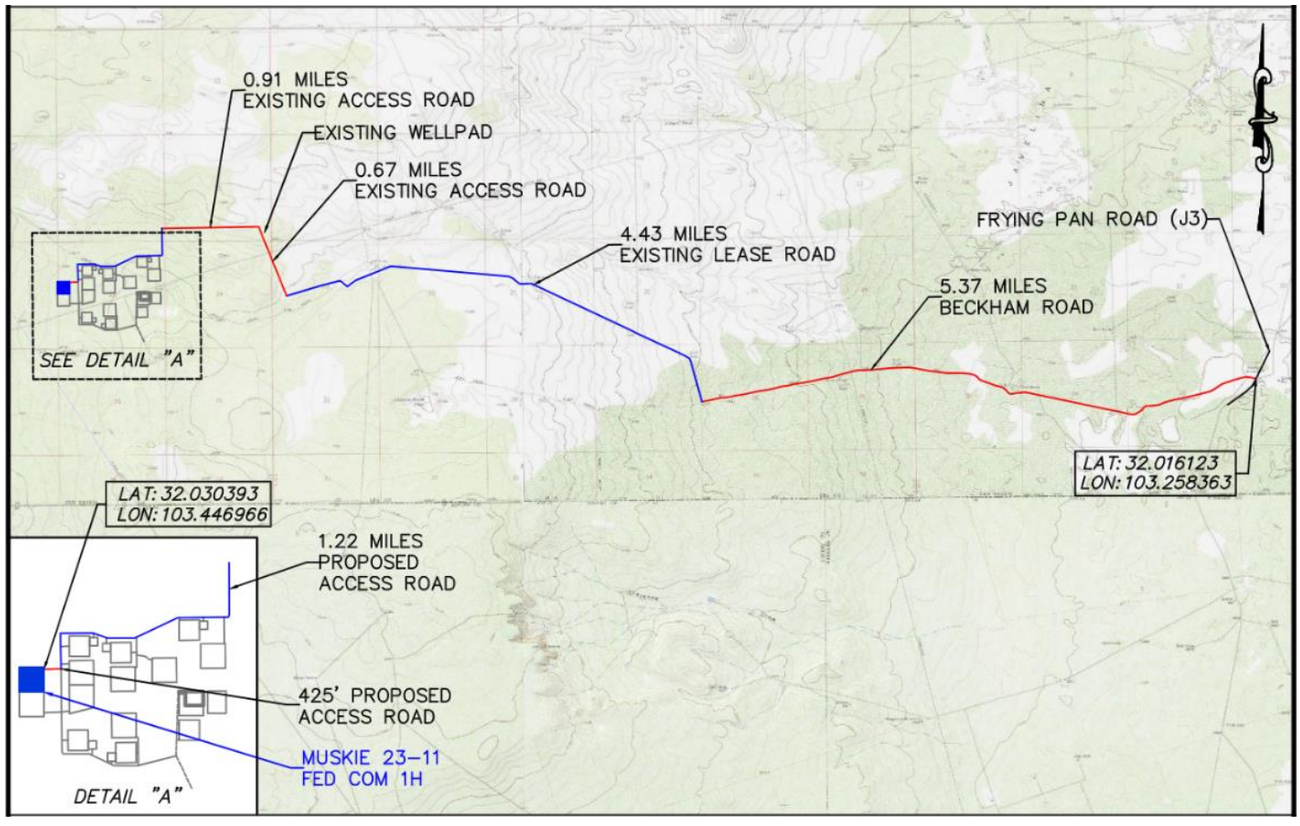
Objective:

- Drill Out original patch system with snubbing unit
- Hunt for holes associated with patch drillout
- Initiate a cement squeeze through the breach
- Pressure test cement squeeze and run a CBL
- Drill out cement left in hole from squeeze
- Set patch over the interval of interest (6950' – 7010')
- Pressure test the patch
- Setup Intermediate casing to monitor pressure for the life of the well

Well Location/Directions:

DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF J–3 (FRYING PAN ROAD) AND BECKHAM ROAD HEAD WEST FOR 5.37 MILES. TURN RIGHT AND CONTINUE NORTH ON AN EXISTING LEASE ROAD FOR 4.43 MILES. TURN RIGHT ONTO AN EXISTING ACCESS ROAD AND HEAD NORTH FOR 0.67 MILES THROUGH AN EXISTING WELLPAD AND THEN TURN LEFT AND HEAD WEST ON THE SAME ACCESS ROAD FOR 0.91 MILES TO THE BEGINNING OF THE PROPOSED PRIMARY ACCESS ROAD. FOLLOW THE PROPOSED PRIMARY ACCESS ROAD SOUTH AND THE WEST FOR 1.22 MILES TO THE BEGINNING OF A PROPOSED ACCESS ROAD. TURN RIGHT AND FOLLOW THE PROPOSED ACCESS ROAD FOR 425' TO THE NORTHEAST CORNER OF THE PROPOSED MUSKIE 23 WELLPAD 3.



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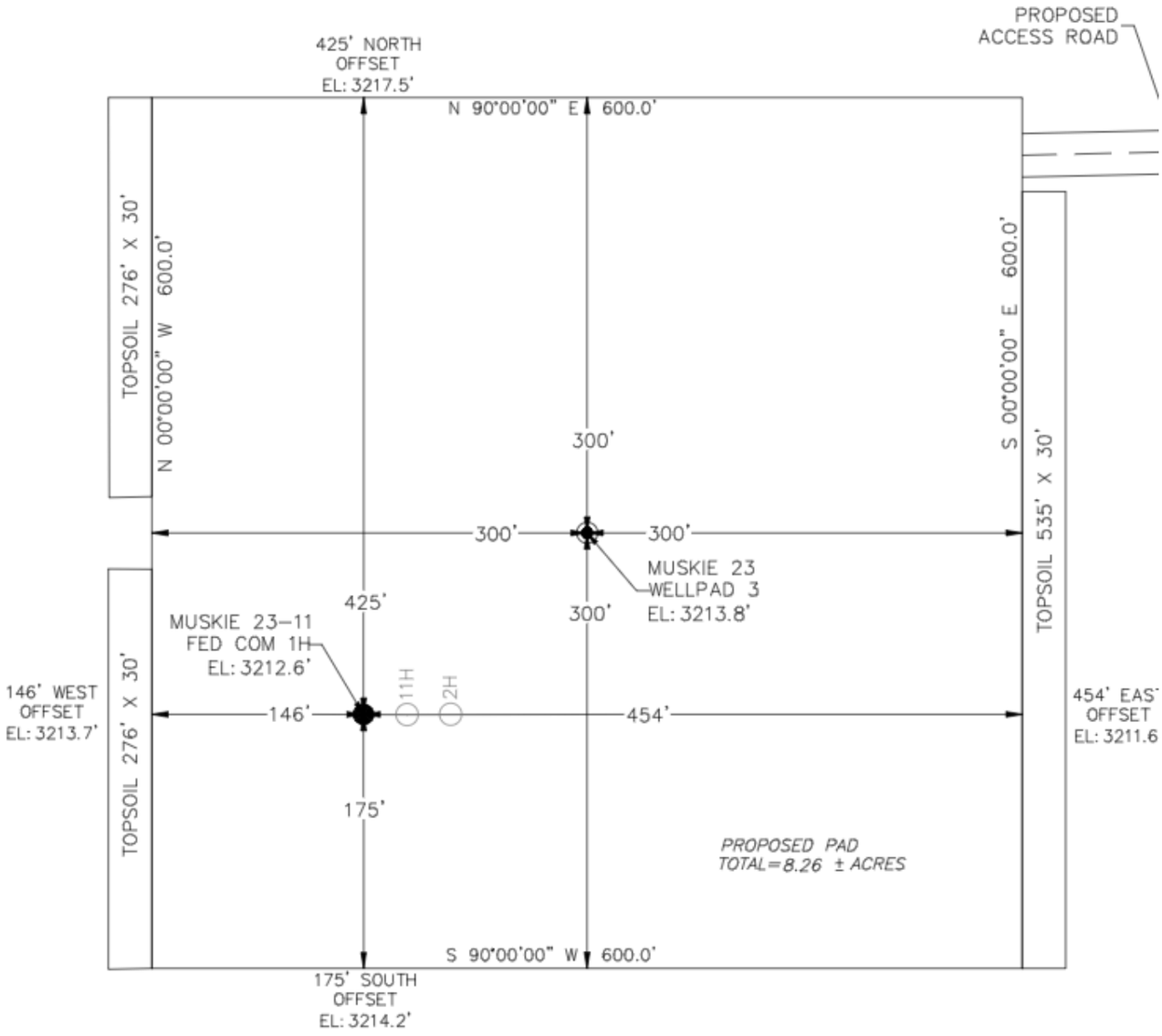

Notes:

- This operational procedure to be used in conjunction with data provided on the Teams page
- 2 String well. (See WBDs for additional info. Including Toe Sleeve burst settings).
- 5 ½" 20# P-110EC DWC/C+ thread Casing
- 7-1/16" 15M Cactus tubing heads & Jet frac stacks
- Well has H2S potential on formation. It should be isolated via bridge plug, but ensure proper H2S alarms are on location
- **ANNULUS PRESSURE MUST BE MONITORED AT ALL TIMES. SHOULD PRESSURE BE OBSERVED, ALERT THE FOREMAN OR ENGINEER IMMEDIATELY**

Safety Information

- Hold PJSM daily discussing safety concerns associated with pressure pumping, H2S, nearest hospital, emergency driver and backup driver, air evacuation and muster point. Discuss job responsibilities. Everyone has **STOP WORK AUTHORITY** if anyone feels like a task is unsafe.
- All employees on site must have Devon safety orientation with the 2021 Devon sticker to verify.
- A safety tailgate meeting will be held prior to all work, discussing potential hazards, job roles & responsibilities.
- It is everyone's responsibility to immediately notify the Devon PIC if anything is unsafe.
- All employees must check in/out upon arrival/leaving the work site with the Devon PIC and/or gate guard.
- Remain clear of all lines and equipment while under pressure.

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Key Stakeholder Contact Information

Name	Position	Cell Number	Email
Tommy Templeton	Operations Foreman	(903) 702-9417	Tommy.Templeton@dvn.com
Cody Snuggs	Operations Foreman	(580) 821-6333	Cody.Snuggs@dvn.com
John Dwyer	Completions Engineer	(262) 271-5895	John.Dwyer@dvn.com
Justin Clyde	Completions Superintendent	(307)680-3587	Justin.Clyde@dvn.com
Jarod Tracy	Completions Supervisor	(817) 366-8169	Jarod.Tracy@dvn.com
Bryan Knopp	Completions Manager	(361)533-4421	bryan.knopp@dvn.com

Well Specific Information

- For Casing information, marker joint location, and toe sleeve locations please reference the **Casing Summary** documents found within the well information packet.
- **Surveys** can also be found within the well information packet.
- **We will be running two CBL logs**

Cement Summary:

11H - CEMENT 5-1/2" PRODUCTION CASING AS FOLLOWS: PUMP 50 BBLS OF TUNED SPACER @ 10 PPG, PUMP 444 BBLS / 480 SKS OF NEOCEM LEAD @ 10.5 PPG WITH ADDITIVES, PUMP 634 BBLS / 2240 SKS NEOCEM TAIL CEMENT @ 13.2 PPG WITH ADDITIVES, CLEAN LINES TO OPEN TOP DROP PLUG AND DISPLACE WITH 529 BBLS OF TREATED BRINE, BUMP PLUG AS CALCULATED, WITH A FCP OF 1000 PSI AT 3 BPM, BUMPED PLUG AT 1500 PSI, HELD FOR 5 MINUTES, RELEASE PRESSURE, FLOATS HELD, BLED BACK 2.5 BBL, PRESSURE BACK UP AND RUPTURE DISC AT 2200 PSI, DISPLACE ADDITIONAL 3 BBLS, RELEASE PRESSURE, FLOATS HELD, 27 BBLS OF CEMENT BACK TO SURFACE.

Standalone Snubbing System BOP Notes:

We will be using a standalone snubbing unit for multiple operations during this job. Each time we rig the standalone unit back up to the well, it is necessary that the BOPs for the standalone unit satisfy the following requirements:

- Primary barrier during rig up/down are plugs, fluid, or other isolation in the well. Primary barrier during operations are the stripper rams or annular ram
- All BOPs and wellhead equipment should have a rated working pressure equal to or greater than the MASP
- The pipe slip capability for the snubbing unit should prevent pipe movement at MASP in all pipe conditions.
- The snubbing lifting system is capable of moving the pipe with MASP in all pipe conditions.
- The work string is isolated from pressure by at least one pressure-tested isolation device (e.g. plug or disc) such that no well pressure is seen at surface through the work string. A second isolation device should be installed for use in case of high pressure.
- The same line is used for bleeding off and choke flow to tanks. The kill line is manifolded to both the snubbing BOPs and lower BOP and routed to a kill manifold located in a safe area away from the well.

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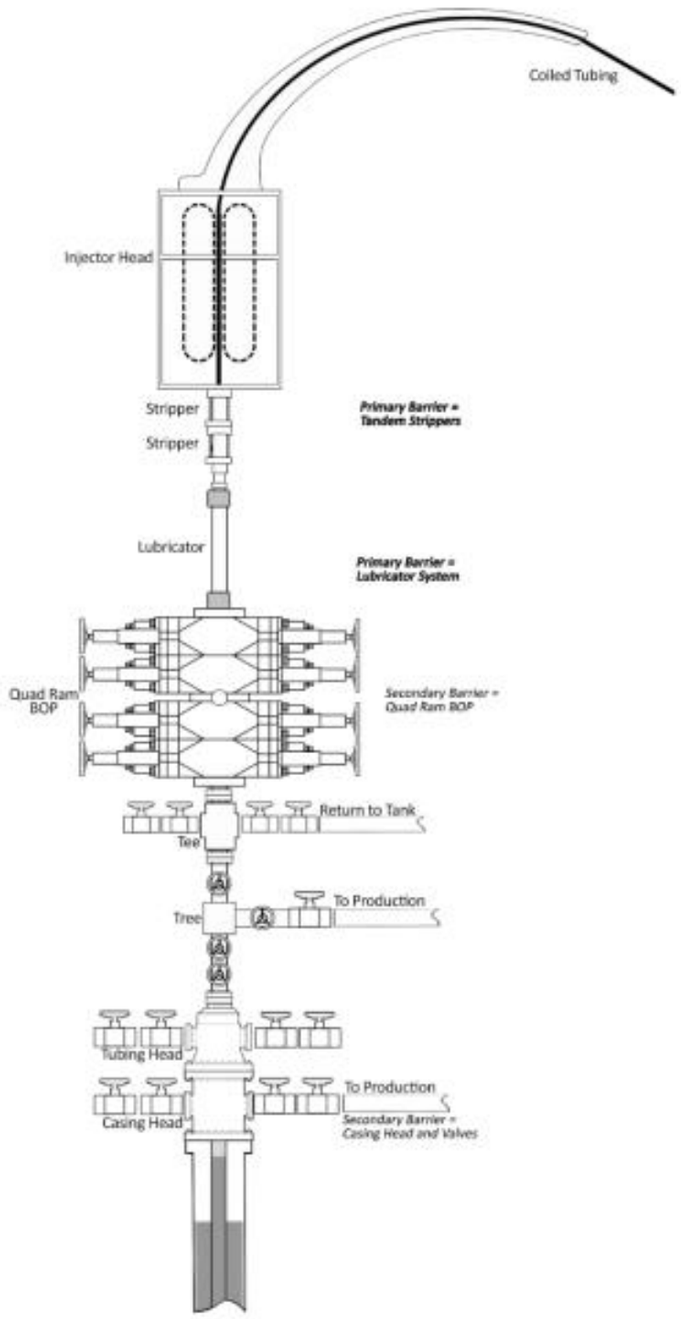
Well Control Tables

Coiled Tubing Operations	
SIMOPS	No
MASP	800 psi (wellhead pressure), MASP < 5,000 psi during patch operations
Maximum Casing Pressure	11,500 psi
Well Class	Class 2 - High Pressure (MASP < 5,000 psi)
Barriers for Rig Up/Rig Down	Two - 7-1/16" 15M Gate Valve (Primary - Upper Master FV, Secondary - Lower Master FV
Critical Well	Yes
H2S Present	Possible
CO2 Concentration	N/A
Hydrate Potential	No
Planned Operation Description	Drill Out Cement Retainer, Set Patch Over Breach
Key or Unique Well Control Risks	N/A
Application of New Technology	None



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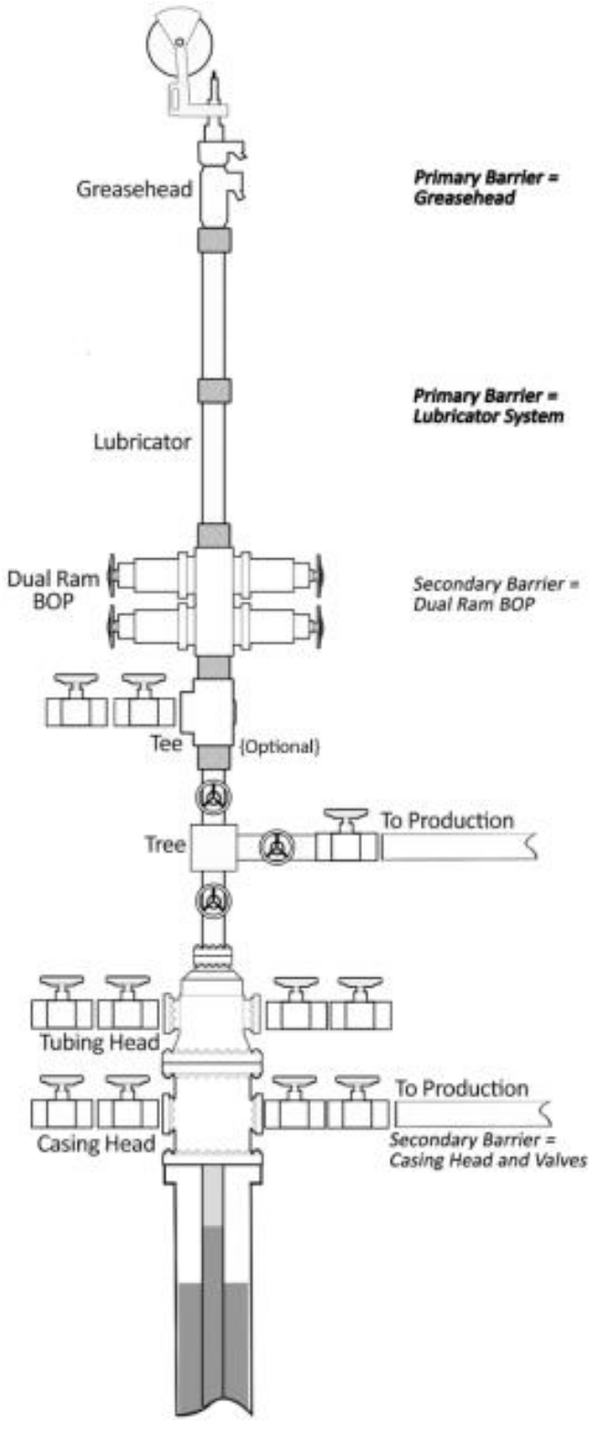
E-line Operations	
Well Name	Muskie 23-11 Fed Com 11H
SIMOPS	NO
MASP	5,000 psi
Max Casing Pressure	5,000 psi
Wellhead Size and Specification	WH 13-5/8" 10M x TH 7-1/16" 15M
Well Class	Class 2 - High Pressure (MASP < 5000 during Ops)
Barriers for Rig Up/Rig Down	Two - 7/16" 15M Gate Valves
Barriers During Operations	Primary: Lubricator/PCE, Secondary: BOP (Dual Ram)
Critical Well	Yes
H2S or CO2	YES (At Formation)
Hydrate Potential	Low
Planned Operation Description	Run CBL, Set Bridge Plug, Set Cement Retainer
Key or Unique Well	None
Application of New Technology	None



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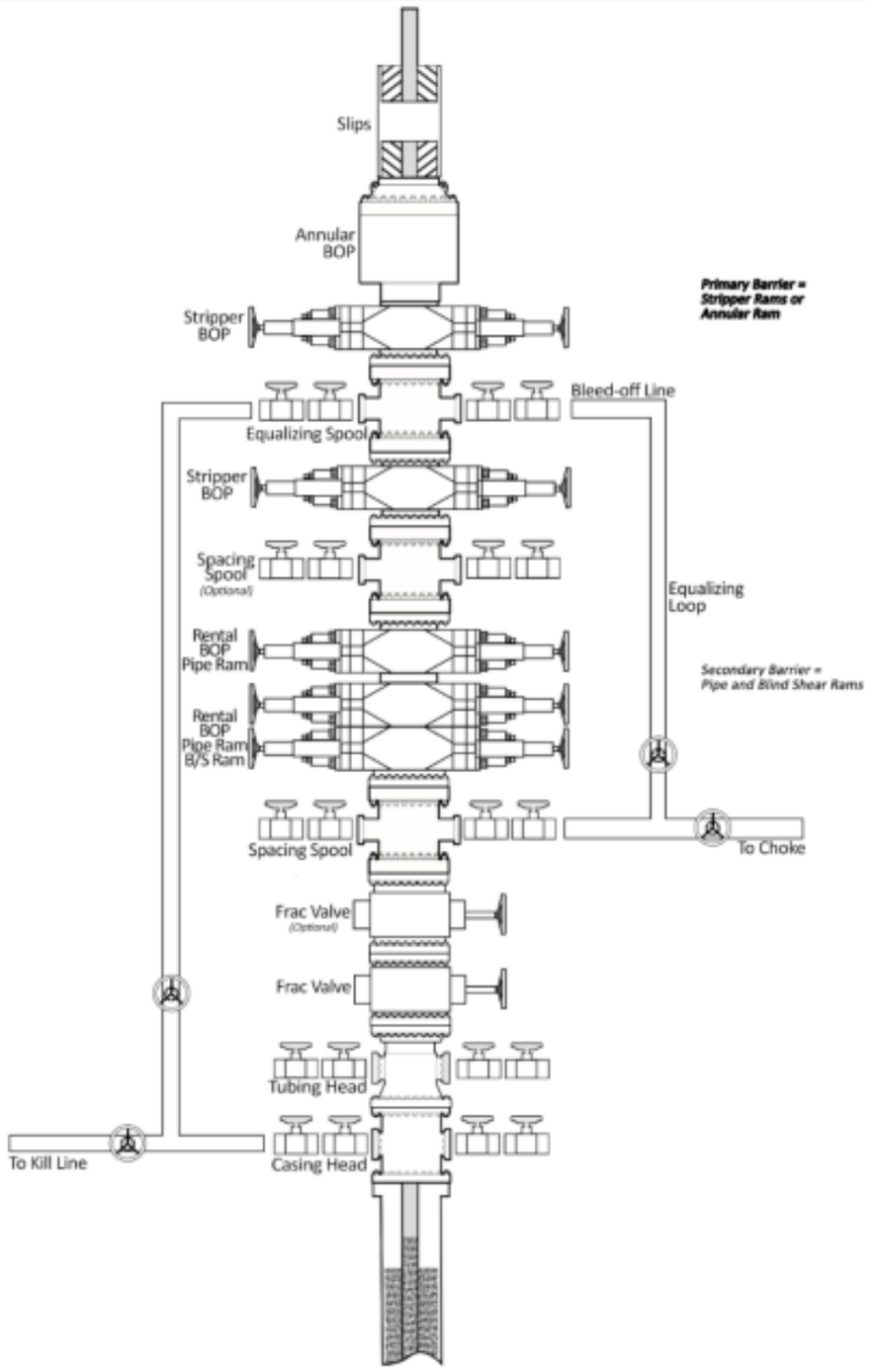
Snubbing Operations	
Well Name	Muskie 23-11 Fed Com 11H
SIMOPS	NO
MASP	5,000 psi
Max Casing Pressure	5,000 psi
Wellhead Size and Specification	WH 13-5/8" 10M x TH 7-1/16" 15M
Well Class	Class 5 - High Pressure (MASP < 5000 during Ops)
Barriers for Rig Up/Rig Down	Two - 7/16" 15M Gate Valves
Barriers During Operations	Primary: 2 Stripper and Pipe RAM, Secondary: BOP (Dual Ram)
Critical Well	Yes
H2S or CO2	YES (At Formation)
Hydrate Potential	Low
Planned Operation Description	Run CBL & Set Bridge Plug
Key or Unique Well	None
Application of New Technology	None



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Gauge Ring, Isolation Plug @ 9,500', & CBL

1 Rig Up Wireline and RIH with Gauge Ring & Bridge Plug

- 1.1 MIRU E-line and pump truck.
- 1.2 NU 5K pack-off/grease head.
  - 1.2.1 If pressure is observed on well, **plan to use 10K lubricator**.
- 1.3 RIH with 4.5" Gauge Ring to 7,500' to ensure casing patch & debris catch plug are sufficiently drilled through.
- 1.4 MU bridge plug to isolate bottom hole perforations.
- 1.5 RIH with CBP and correlate depth to caliper log run
- 1.6 Set the Bridge Plug @ ~ 9,500' or approximately the middle of the casing joint in the area.

Hole Hunt to Ensure Isolation Above and Below Breach

2 MIRU Standalone snubbing unit.

- 2.1 Set 4 8' x 8' anchor blocks 90 degrees apart from each other attached to the platform.
- 2.2 Set rig on platform, raise, & RU
- 2.3 Set catwalks and pipe rack
- 2.4 Determine Power Pack location according to the layout provided below and set down.
- 2.5 Coordinate location of frac tanks for circulation, plug catcher, choke manifold and gas buster.
- 2.6 Drillout Workstring:

3 Circulation Equipment

- 3.1 RU Snubbing Unit pump equipment.
- 3.2 Lay necessary water transfer line.
- 3.3 Set 3-5 clean water working tanks and manifold.
- 3.4 Fill frac tanks with produced water to begin and fresh after; treat water with biocide.
- 3.5 Fluid is recirculated.

4 Flow Back Equipment

- 4.1 RU equipment:
  - 4.1.1 Large bore plug catcher
  - 4.1.2 Dual positive chokes
  - 4.1.3 SandCat
  - 4.1.4 Flowback tanks & Open top tank with gas buster
    - 4.1.4.1 Install 0.25" screens at outlet of gas buster.
- 4.2 RU with 3" line from flow cross on the frac stack.
- 4.3 RU SandCat.
- 4.4 Install panic line to flowback tank with choke in case the plug catcher needs to be bypassed.

5 Wellhead Prep

- 5.1 Close lower manual and hydraulic valve, bleed off any pressure and confirm both valves are holding.
- 5.2 NU 3-1/16" flowcross.
- 5.3 NU snubbing BOPs, lubricator, and injector head.
- 5.4 Snubbing Unit 15M BOP Stack or "combies" from top to bottom:
  - 5.4.1 Blind Rams
  - 5.4.2 Shear Rams
  - 5.4.3 Slip Rams
  - 5.4.4 Pipe Rams
- 5.5 Pressure test BOP stack and lubricator to 250# & 8,500# for 10 min.
- 5.6 Check with construction to coordinate install of the by-pass loop off the tubing head.

6 Real Time Monitoring Equipment

- 6.1 Snubbing Unit
  - 6.1.1 Capture time, depth, pipe weight, pipe heavy/light, WH pressure, pump pressure, pump rate, and coil speed.
- 6.2 Chemicals
  - 6.2.1 Monitor and record all chemical usage and timing of dyed sweeps
  - 6.2.2 Provide Acoustic meter for flowback
  - 6.2.3 Input and record comments in OpsViewer

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6.3 Flowback
- 6.3.1 Record return rates and plug catcher dumps

6.4 Devon PIC
- 6.4.1 Record BHA in Wellview

7 Drilling Parameter Targets

7.1 Pump Rate:
- 7.1.1 4 – 4.5 BPM
- 7.1.2 Motor is rated to 160 GPM max rate.

7.2 Returns Rate:
- 7.2.1 Up to 4.5 BPM
- 7.2.2 Begin with balanced circulation (1 bbl in / 1 bbl out methodology).
- 7.2.3 If gas production and pressures are low enough, consider increasing returns rate to attain higher AV's.

7.3 Weight on Bit:
- 7.3.1 Up to 2,000 lb max (motor in hole)

7.4 Torque:
- 7.4.1 3,900 ft-lb plus torque loss at annular max
- 7.4.2 Obtain torque measurement with annular open prior to drilling out kill plug and record.
- 7.4.3 Obtain torque measurement with annular closed prior to and after drilling out kill plug and record.
- 7.4.4 The difference is the estimated torque loss due to friction in annular before and after introducing well pressure.

8 Hole Hunt BHA Assembly

8.1 Make up Yo-Yo Packer Assembly as directed by BR Oil Tools tool hand
8.2 RIH and set packer assembly ~25' below the breach (7,006')
8.3 Pressure test casing below the packer to 5K psi. Hold pressure for 10 mins and record.
8.4 Pull Packer System up ~50', such that it is ~5' above where the patch system used to be (~6,955')
8.5 Pressure test the annular space to 2,000 psi. Hold pressure for 10 mins and record.
8.6 Identify point of breach to +/- 10 ft.
8.7 Send all relevant information to Cody.Snuggs@dvn.com , John.Dwyer@dvn.com, and Tommy.Templeton@dvn.com.
8.8 If any oddities are observed, first point of contact is Cody Snuggs/Tommy Templeton (depending who is on shift). Second point of contact is John Dwyer.

Cement Squeeze Procedure

9 Rig Up Wireline and RIH with Bridge Plug & Cement Retainer

9.1 MIRU E-line and pump truck.
9.2 NU 5K pack-off/grease head.
- 9.2.1 If pressure is observed on well, **plan to use 10K lubricator**.

9.3 MU bridge plug to isolate bottom hole perforations.
9.4 RIH with CBP and correlate depth to caliper log run
9.5 Set the Bridge Plug @ ~ 7,010' or approximately 10' below the point where the hole hunt procedure identified a breach.
9.6 POOH to surface and make up cement retainer BHA
9.7 Set cement retainer ~6,950' or approx. 10' about the breach identified during the hole hunt procedure

10 RU Standalone Unit Back to Well and Cement Squeeze

10.1 After L/D float sub TIH to top of retainer.
10.2 Establish injection rate @ **3 and 5 bbl/min** with Fresh Water though cement pumps. Read and record pressure for every 0.5 bbl pumped for a total of 3-5 bbls (or until pressures stabilize.)
10.3 **Max Pressure for injection will be ~1,500 psi. Anything larger implies no clear fluid path.**
10.4 Do not exceed 3 BPM and/or a total of 10 bbls pumped while determining injection pressures.
10.5 After establishing injection rates bleed off pressure
10.6 R/U Spinnaker Cementers
10.7 Begin to mix cement to a 16.4# Class H quality.

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10.8 Close Pipe Rams to ensure packer isn't leaking
10.9 Pump cement pill as called out below in the Spinnaker Procedure
10.10 In the event of a pressure out (1,500 psi +), stop pumping, sting out of the retainer, and circulate water bottoms up or until water is clear at the pits.
10.11 Once tubing is clean, continue the rest of the way out of the hole with tubing.
10.12 L/D tubing
10.13 Rig Down Spinnaker cement

Cement Squeeze BHA				
QTY	Description	Gauge	BTM Con.	Top Con.
1	Cement Retainer		2-7/8 PH-6	3-1/2 IF
1	XO Sub		2-7/8 PH-6	CET43
Surface	2.875" PH-6		CET43	CET43

11 Pressure Test Cement

11.1 Wait 24 hours for the cement to pump
11.2 RU 15K Frac Pump to flowcross
11.3 Pressure Test cement 2,500 psi. Hold for 30 mins and record.

Drill Out Cement Retainer and Composite Bridge Plugs

12 Move In and Rig Up Coiled Tubing Unit

12.1 RU 2 5/8" CTU

13 Circulation Equipment

13.1 RU CTU pump equipment.
13.2 Lay necessary water transfer line.
13.3 Set 3-5 clean water working tanks and manifold.
13.4 Fill frac tanks with produced water to begin and fresh after; treat water with biocide.
13.5 Fluid is recirculated.

14 Flow Back Equipment

14.1 RU equipment:
- 14.1.1 Large bore plug catcher
- 14.1.2 Dual positive chokes
- 14.1.3 SandCat
- 14.1.4 Flowback tanks & Open top tank with gas buster
  - 14.1.4.1 Install 0.25" screens at outlet of gas buster.

14.2 RU with 3" line from flow cross on the frac stack.
14.3 RU SandCat
14.4 Install panic line to flowback tank with choke in case the plug catcher needs to be bypassed.

15 Wellhead Prep

15.1 Close lower manual and hydraulic valve, bleed off any pressure and confirm both valves are holding.
15.2 NU flowcross.
15.3 NU CTU BOPs, lubricator, and injector head.
15.4 CTU 10M BOP Stack or "combies" from top to bottom:
- 15.4.1 Blind Rams
- 15.4.2 Shear Rams
- 15.4.3 Slip Rams
- 15.4.4 Pipe Rams

15.5 Pressure test BOP stack and lubricator to 250# & 8,500# for 10 min.
15.6 Check with construction to coordinate install of the by-pass loop off the tubing head.

16 Real Time Monitoring Equipment

16.1 CTU
- 16.1.1 Capture time, depth, pipe weight, pipe heavy/light, WH pressure, pump pressure, pump rate, and coil speed.

16.2 Chemicals
- 16.2.1 Monitor and record all chemical usage and timing of dyed sweeps
- 16.2.2 Provide Acoustic meter for flowback
- 16.2.3 Input and record comments in OpsViewer

16.3 Flowback
- 16.3.1 Record return rates and plug catcher dumps

16.4 Devon PIC
- 16.4.1 Record BHA in Wellview

17 BHA Info

17.1 Measure BHA and record in Wellview/Teams.
17.2 More detailed BHA provided by vendor.
17.3 Ensure bit size is appropriate for casing.

18 Drilling Parameters

18.1 Pump Rate
- 18.1.1 4-5.5 bpm
- 18.1.2 Maintain max possible rates within pressure limitations. The goal would be to clean up well without the use of gel sweeps (we want to maintain turbulence).

18.2 Return Rate
- 18.2.1 1 BBL in/ 1 BBL out

18.3 Differential Pressure:
- 18.3.1 Prior to drilling each plug take the PU/SO measurement and the pump pressure off bottom.
- 18.3.2 Target diff pressure: 100-200 psi

18.4 Running Speeds:
- 18.4.1 Vertical: 180-200 fpm
- 18.4.2 Lateral RIH: ~60 fpm (set limiter to 60 fpm)
- 18.4.3 Lateral POOH: 35 fpm (set limiter to 60 fpm)

18.5 Weight on Bit
- 18.5.1 Attempt to drill with only 1,500 lbs WOB
- 18.5.2 Target drill times of 5-6 mins per plug.

19 Fluid System

19.1 Supply water
- 19.1.1 Use PW with FW backup and treat with biocide.

19.2 Friction Reducer
- 19.2.1 Start FR at 0.1 gal/10 bbl.
- 19.2.2 If viscometer is available, obtain Fann 35 viscosity at a fluid temp of 150 deg F and funnel vis reading on clean fluid and return fluid every hour and when making chemical adjustments. Record all viscosity readings in Wellview and updates.
- 19.2.3 Do not exceed a Fann 35 viscosity reading of 3 cP on pumping fluid.

19.3 Biocide
- 19.3.1 Continuously treat with biocide at a concentration of 0.05 gal/10 bbl.

19.4 Gel Sweeps
- 19.4.1 No gel sweeps except for dyed sweep and/or operational exceptions.

19.5 Pipe on Pipe
- 19.5.1 Provide POP in small doses early in the job to sufficiently coat the pipe. Run in sweeps as needed after circulating 2 bottoms up to confirm the hole is clean.

19.6 Move to next well on the pad
19.7 RDMO CTU after the last well on the pad is DO.

20 Basic Troubleshooting

20.1 Early warning signs of getting stuck: 3-5K lbs over pull
- 20.1.1 Reduced or lost returns
  - 20.1.1.1 If returns are lost do not POOH; leave coil where it is

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Set Casing Patch Over Breach @ 6,950 – 7,010'

21 Rig Up Wireline and RIH with Bridge Plug

- 21.1 RD Standalone Unit
- 21.2 MIRU E-line and pump truck.
- 21.3 NU 5K pack-off/grease head.
  - 21.3.1 If pressure is observed on well, **plan to use 10K lubricator**.
- 21.4 MU BossHog composite bridge plug to wireline for patch depth correlation.
- 21.5 RIH with CBP and correlate depth to caliper log run
- 21.6 Set the Bridge Plug @ ~ 7,050 or approximately 40' below the patch set point.

22 Rig Coil Up

- 22.1 Follow the same protocols as outlined during the cement drill out procedure

23 Prepare For and Execute Patch Run

- 23.1 RD WL Unit
- 23.2 RU CT Unit
  - 23.2.1 Same rig in protocols apply as mentioned for the cement retainer drill out.
- 23.3 Detailed Patch Running Instructions provided by Enventure are included below this bullet point (with amendments made by Devon Engineer). Please carefully read and proceed with care.

Purpose

Safely and successfully install a 4-1/4 x 5-1/2 in. 20 lb/ft ESeal HP Patch to cover up a leak in 5-1/2 in. casing at 6,981' MD. ESeal HP Patch will be set from 6,960' ft MD (top of patch post expansion) to 7,000 ft MD (shoe of patch post expansion). Space out of the patch will be done by tagging the composite bridge lug set at 7,010 ft MD, then picking up 10 ft to expand. Wellbore will have *~800* psi during operations which has to be overcome during expansion initiation and expansion operations. In order to reduce pressure differential to expand the patch, the 13/16 in. ball will be displaced with weighted brine (*10.5* ppg). That would reduce differential pressure to 0 psi. By this way there would be enough pressure rating in CTU to expand patch with.

Scope

This process applies to all operations personnel of Enventure Global Technology, Inc. (EGT) and its global locations.

Responsibility

- **Operations Management -** Responsible for reviewing and ensuring training and implementation of this process for relevant operation installations
- **Operations / Project Managers -** Responsible for adjusting the generic installation procedures as applicable for relevant jobs, communicating the procedure internally and externally, and following the requirements during operations
- **Sales Manager –** Responsible for maintaining client relationships and dispersing customer information and requirements to relevant EGT stakeholders.
- **Engineering –** Provides technical support, such as but not limited to evaluation of customer technical information and development of EGT System Design Specifications.

References

- API Specification Q2
- ISO 9001

Wellbore Schematic with ESeal HP Patch – MAKE SURE ENVENTURE STAFF FILL OUT BEFORE PROCEEDING:

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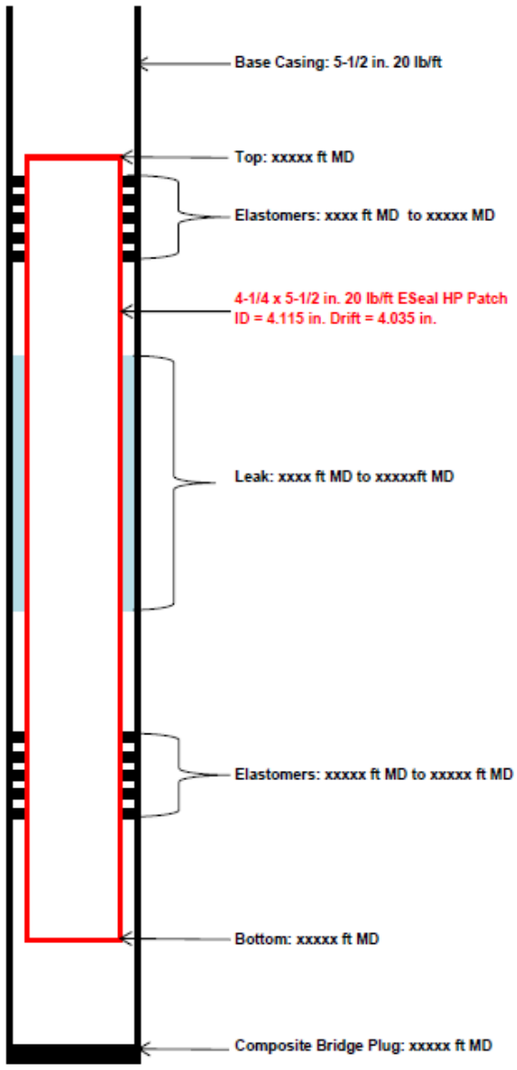

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ENVENTURE **SET® Solid Expandable System** ESeal™ HP LINER

4.250 in. OD 10.70 lb/ft x 5.500 in. OD 20.00 lb/ft ESeal HP Liner

Hibernia Resources

Well Name

Preliminary Design

External Base Casing	
Nominal OD	5.500 in.
Weight	20.00 lb/ft
Nominal ID	4.778 in.
API Drift	4.653 in.
Connection Type	TBC
Connection ID	4.778 in.
Other ID Restriction	4.778 in.

Well Bore Conditions (1)	
SET String Length	40 ft
Wellbore Maximum Dogleg Severity	deg/100 ft
Deviation	0°
Mud Weight	8.5 lb/gal
Bottomhole Temperature (BHT)	150 F

Launcher and Expansion Cone	
Expansion Cone OD	4.135 in.
Launcher OD - Pre Exp	4.545 in.

Connection OD w/ Sleeves	
Set in Base Casing - Pre Exp OD	4.372 in.
Set in Base Casing - Expanded OD	4.678 in.

Anchor Hanger	
Set in Base Casing - Elastomer Thickness	0.150 in.
Pre-Exp Seal OD	4.550 in.
Clad in Base Casing (nominal)	36.6%

RIH Limits	
Max. Running OD	4.550 in.
Max. Pump Rate (unlimited time)	0.8 BPM
Max. Pump Rate (up to 10 hours)	1.5 BPM
Max. Pump Rate (up to 1 hour)	2.3 BPM

SET Liner Pre-Expansion (2)	
SET Liner Grade	EX-110
Connection Type	GIIC-E
Nominal Yield Strength	110,000 psi
Minimum Ultimate Strength	125,000 psi
Nominal OD	4.250 in.
Nominal ID	3.750 in.
API Drift	3.625 in.
Nominal Wall Thickness	0.250 in.
Weight	10.70 lb/ft

SET Liner Post-Expansion (2,3)	
Nominal OD	4.598 in.
Nominal ID	4.115 in.
Drift	4.035 in.
Nominal Wall Thickness	0.241 in.
Nominal Weight	11.25 lb/ft
Internal Yield	10,400 psi
Burst (4)	14,090 psi
Collapse Rating	5,350 psi
Expansion Ratio	9.7%
Pipe Body Yield Strength	324,900 lb

XPC Pre-Expansion Connection Specifications	
Nominal OD (without slv.)	4.250 in.
Nominal ID	3.750 in.
Tension Load Rating	213,400 lb
Compressive Load Rating	213,400 lb
Minimum Parting Load	242,500 lb
Dogleg Severity Rating While Running	38.9 deg/100 ft

XPC Post-Expansion Connection Specifications	
Nominal OD (without slv.)	4.598 in.
Nominal ID	4.115 in.
Tension Load Rating	185,000 lb
Compression Load Rating	145,300 lb
Minimum Parting Load	215,500 lb
Dogleg Severity Rating During Expansion	38.2 deg/100 ft

(1) Changes in wellbore conditions or whipstock configuration require design review

(2) All the published liner ratings and strengths are based on room temperature (75F), and not adjusted for BHT.

(3) Liner ratings are based on standlone liner without any support from base or external parent casing

(4) Hill's Fully-Plastic Burst Limit - Hill, R,. "The Mathematical Theory of Plasticity", Oxford University Press, 1950.

SET Design Sheet; Rev 0.3 Engr: Javier Via Reque Date Created: 17-Jun-2021

Pre-Installation Activities

An Enventure PM (Project Manager), Operations Manager, Sales Manager, third party vendors involved, Devon Energy, and Company Man will perform ESOP (Expand SET on Paper) in Devon's office or teleconference call prior to installation.

	NOTE
	Any deviation from agreed upon installation procedure must be approved and documented by Enventure Operations and the Operator's office. Enventure Lead Project Manager will shut down operations any time a request to change is made by EGT, CO Man, Third-party, or operator's office.

	The request must be discussed, documented, and an educated final decision will be made by operator.

The following items have been discussed and agreed upon to maximize the chances for safe and successful installation:

1. **An Enventure PM (Project Manager), Operations Manager, Sales Manager, third party vendors involved, Devon Energy, and Company Man to perform ESOP (Expand SET on Paper) in Devon's office or teleconference call prior to installation**.

   NOTE: **Any deviation from Agreed upon Installation Procedure must be approved and documented by Enventure Operations and Devon Energy's office. Enventure Lead Project Manager will shut down operations any time a request to change is made by either EGT, CO Man, Third-party, or Devon Energy's office. The request must be discussed, documented, and educated final decision will be made by Devon Energy.**

2. The following items have to be discussed and agreed upon in order to maximize the chances for a safe and successful installation:

   1) Determine exact depth of the area to be covered by the ESeal HP Patch. There is only ~11 ft of sealing coverage per side.

   2) Enventure PM to measure the blank pipe distance between the elastomers. Half of that distance will be the allowable error/discrepancy with tallies/coil tubing allowed. If the error or discrepancy in tallies or coil when tagging composite bridge plug, or logs, is greater than half of the distance of the blank pipe between the elastomers, the patch will be POOH.

   3) Make sure there are no leaks in the base casing below and at least 10 ft above the ESeal HP Patch setting depth (bottom and top of expanded ESeal HP Patch). No other system can be run through and expanded below an installed one. Also in order to install another ESeal HP Patch above a previously installed one, a minimum of 10 ft good pipe is required.

   4) If the leak path has been squeezed with cement, a scraper run must be performed to scrape off any cement sheath in the base casing where the elastomers are to be set.

   5) Verify the ID of base casing at the area where ESeal HP Patch will be set (caliper logs). Elastomer thickness is designed to be cladded in the nominal ID of the new casing – any greater ID caused by milling, corrosion, wear, could cause elastomer not to clad.

   6) Prior to picking up and running the ESeal HP Patch, a dummy/cleanout will be run as the following:

      - 4.650 in. tapered mill
      - 4.650 in. watermelon mill
      - 4.650 in. watermelon mill
      - Mud motor

      NOTE: Pump sweeps **if** milling took place.

3. Previously run caliper logs shall be shared with Enventure Operations. The base casing must be inspected for adequate clearance and all the dimensions must be verified. The OD of the seals is 4.550 in. The OD of the launcher is 4.545 in. Maximum OD of the system running in hole will be **4.550 in.**

4. The expandable liner will be received on location and will be unloaded using the specified Enventure handling procedures to prevent any damage.

   NOTE: Enventure project manager will be on location to witness unloading.

5. All union connections in pumping lines from pump truck (if used) to the tubing tool joints must be 2 in. x 1502 WECO integral, **not threaded**. The requirement on pressure rating for all surface equipment (pumping lines and connections) will be 13,050 psi working pressure. The lines have to be pressure tested to at least 1,000 psi greater than the anticipated highest expansion pressure.

Installation Procedure

	NOTE
	Conduct a safety meeting prior to rigging up and at any change of personnel. Record all attendees on sign-in sheet. STOP Work Authority procedures must be applied any time an unsafe act/operation/confusion is observed. Enventure Operations and Operator's office must be involved immediately.

EQUIPMENT NEEDED:

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Devon Energy:

- Coil Tubing unit
  - Minimum internal differential pressure – 8,500 psi rupture disk (with no pull)
  - Minimum tube body load – 40,000 lb (with no pressure)
  - Minimum ID – 1.000 in. to allow passage of 13/16 in. and 15/16 in. ball (or drop ball at surface – no circulation capabilities while RIH)
  - 13/16 in. and 15/16 in. ball dropping and pumping capability
  - Lubricator (ID to allow 4.550 in. OD of ESeal HP Patch, long enough to swallow Enventure ~45 ft BHA plus hydraulic disconnect, crossover, and adapter)
  - Crane for removal of injector head (to be able to lift Enventure's ~45 ft BHA, crossover, lubricator, and injector head).

NOTE: Pressure and pull will not be applied the same time in normal operations. If a combination of pull and pressure is required in troubleshooting mode, refer to CTU manual on combined loads limitations.

- Coil Tubing hydraulic connect/disconnect (ID to allow the 15/16 in. ball to pass through)
- Crossover from 2-5/8 in. PH6 tubing to Coil Tubing hydraulic connect/disconnect
- Pumping Unit, chiksans, and connection to the Coil Tubing input plumbing
  - Working pressure rating – 10,500 psi
  - Minimum Pump Rate output – 0.500 bpm

Enventure:

- ESeal HP Patch with expansion assembly inside
- Upper Safety Sub – 2-5/8 in. PH6 (B) x ACME (P)
- Two each 13/16 in. and 15/16 in. aluminum balls
- Two each 3 in. foam balls
- One joint of 2-5/8 in. PH6, P-110

Well site:

1. **Conduct a safety meeting prior to rigging up and at any or change of personnel. Record all attendees on sign-in sheet**. **STOP Work Authority procedures must be applied any time an unsafe act/operation/confusion is observed. Enventure Operations and Devon Energy's office must be involved immediately.**
2. Make up 2-5/8 in. PH6 (pin) crossover to top of patch system prior to connecting to coil tubing. Make up 2-5/8 in. collar clamp to tubing stick up out of ESeal HP Patch. Attach nylon strap under collar clamp and attach other end to lubricator.
3. Make up coil connector and hydraulic disconnect sub to the bottom of coil tubing string.
4. Raise injector, with lubricator attached, with crane to a suitable height to enable ESeal HP Patch to be made up in the vertical position.
5. Place two men in bucket truck secured with fall protection to make up ESeal HP Patch to coil tubing.
6. Connect Coil Tubing to the 2-5/8 in. PH6 tubing:
   - Lower ESeal HP Patch attached to the lubricator so the shoe is on the ground and the top of the system is supported by the bucket truck in the vertical position.
   - Turn the bottom of the SET patch to the left at ground level. This will prevent the inner-string from backing out.
   - Torque up the connection with pipe wrenches with torque gauge attached to come along winch.
7. Pick up on coil tubing to draw the ESeal HP Patch into the lubricator.
   NOTE: Verify internal diameter of Lubricator, wellhead, BOP's and maximum OD of the ESeal HP Patch during planning stages.
8. Pick up the entire assembly with a crane and make up lubricator to BOP's.
9. Run in hole at 40 to 60 feet per minute with ESeal HP Patch to the setting depth. While running in the hole maximum pump rate through the system is 1.5 bpm.
10. Tag the composite bridge plug at 7,010 ft MD with 2,000 lbs setdown weight.
11. Pick up xx ft and position ESeal HP Patch at setting depth.
12. Record pickup weight and stretch.
    NOTE: If the coil depth does not match the wireline depth of composite bridge plug, shut down operations, call Enventure's Operations manager and Devon Energy's Engineer in office to discuss options. **If the error or discrepancy of coil depth when tagging composite bridge plug is greater than half of the distance of the blank pipe between the elastomers,**

the patch will be POOH. If the errors, discrepancy is smaller, options will be discussed with Enventure and Devon Energy's office and decisions will be made accordingly.

13. Circulate one coil tubing volume at 1.5 bpm.
14. Insert and pump the 13/16 in. aluminum ball with 1.5 bpm pump rate with xx ppg weighted brine.
15. Land the ball; pressure up to 8,000 psi (expansion should have begun and the lower elastomers should have been set).
16. Pick up 10,000 lb overpull on Coil Tubing to see if elastomers have been set.
    NOTE: If liner is free (expansion has not started), increase pressure by 500 psi (7,500 psi and 8,000 psi).
17. Pressure up to continue expansion; as liner is being expanded, a loss in weight indicator will be noticed. The Coil Tubing Unit Devon Energy will pick up keeping the initial pickup with on weigh indicator, while the pump Devon Energy is pumping at 0.500 bpm.
21. Circulate/reverse circulate as per Devon Energy's requirements.
22. Liner can be low-pressure tested (3,000 psi) at this time or after Coil Tubing has been pulled out of hole.
23. Make up 4.035 in. milling assembly (special made mill) and run in hole to drill out the shoe. The drift of expanded liner is 4.035 in. Mill OD has to be the same as drift of expanded ESeal HP Patch to make sure no debris is left at the shoe. The shoe material is aluminum, ~5.7 in. long.
24. Drillout composite bridge plug @ 7,010', circulate hole clean, and POOH.

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24 Pressure Test Casing Patch

24.1 Wait 24 hours after the completion of patch operations

24.2 Pressure test to 5,000 psi for 30 minutes. Bleed off pressure as necessary.

24.3 Chart pressure test in WV. Include name, sleeve type, date, PIC present.

24.4 Send all relevant information to Cody.Snuggs@dvn.com , John.Dwyer@dvn.com, and Tommy.Templeton@dvn.com.

24.5 If any oddities are observed, first point of contact is Cody Snuggs/Tommy Templeton (depending who is on shift). Second point of contact is John Dwyer.

25 Drill out Composite Bridge Plug @ 7,015' & 10,500'

26 RU Wireline and Run CBL

26.1 Log Calibration

26.1.1 Calibrate logging tool to a tank calibration prior to bringing tools to location.

26.1.2 Make sure that tool is properly centralized for the casing size.

26.1.3 Correlate depth to MWD gamma ray log and marker joint.

26.1.4 Acoustic Impedance = 4-5 MRayls and Avg. Transit Time Values = 8-10 micro-seconds for all 3 wells.

26.2 Logging Operations

26.2.1 Confirm prod casing is full.

26.2.2 Gravity feed full drift GR ahead of Ultrasonic and temperature tool into the curve as deep as possible, making a single run.

26.2.3 Record well head pressure during run.

26.2.4 Log prod casing in curve KOP (or as deep as feasible) to ~500 ft above TOC.

26.2.5 POOH, BD pressure, ND 5K pack-off, and RDMO E-line and pump truck.

26.2.6 Send link of final RCBL in PDF and LAS formats to engineer.

NOTE: Pause operations after CBL run and rig down of WL unit. Confirm with Foreman and Engineer before proceeding into rig up of standalone snubbing unit for hole hunting procedure.

27 Rig In Pressure Gauges to the Intermediate Casing and Monitor for the life of the well

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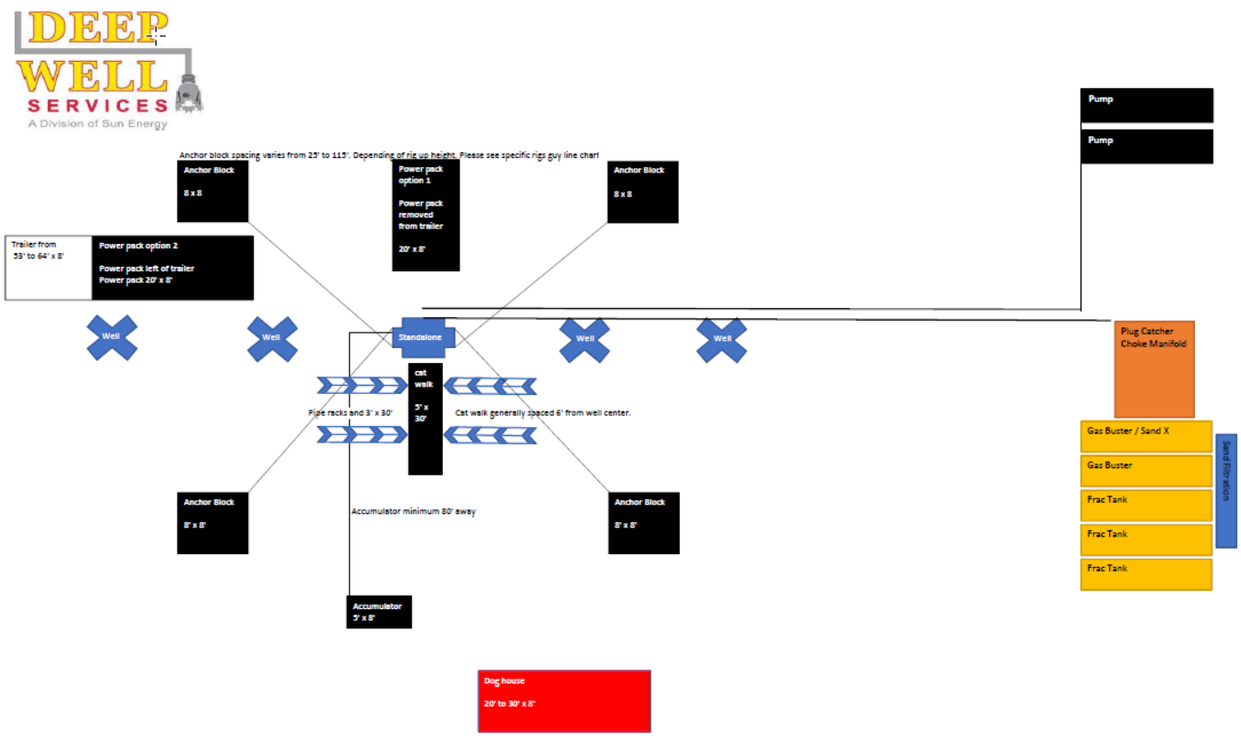
SNUBBING LAYOUT



BUREAU OF LAND MANAGEMENT

Carlsbad Field Office
620 East Greene Street
Carlsbad, New Mexico 88220
575-234-5972

Conditions of Approval for Workover/Deepening of a Well

1. Notification: Contact the appropriate BLM office at least 24 hours prior to the commencing of any operations. For wells in Eddy County, call 575-361-2822. For wells in Lea County, call 575-689-5981

2. Blowout Preventers: A blowout preventer (BOP), as appropriate, shall be installed before commencing any operation. The BOP must be installed and maintained as per API and manufacturer recommendations. The minimum BOP requirement is a 2M system for a well not deeper than 9,100 feet, a 3M system for a well not deeper than 13,600 feet, or a 5M system for a well not deeper than 22,700 feet (all depths are for measured well depth).

3. Cement: Notify BLM if cement fails to circulate.

4. Subsequent Reporting: Within 30 days after work is completed, file a Subsequent Report (Form 3160-5) to BLM. The report should give in detail the manner in which the work was carried out. Show date work was completed. If producing a new zone, submit a Completion Report (Form 3160-4) with the Subsequent Report.

5. Trash: All trash, junk and other waste material shall be contained in trash cages or bins to prevent scattering and will be removed and deposited in an approved sanitary landfill. Burial on site is not permitted.

6. If well location is within the Timing Limitation Stipulation Area for Lesser Prairie-Chicken: From March 1st through June 15th annually, activities will be allowed except between the hours from 3:00 am and 9:00 am. Normal vehicle use on existing roads will not be restricted.

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

CONDITIONS

Action 139449

CONDITIONS

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 139449
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
pkautz	None	8/30/2022