



Brendan McCalpin  
Production Engineer - Cimarex Energy Co.  
600 N. Marienfeld St.  
Ste. 600  
Midland TX, 79701

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**Date:** May 7, 2019

**To:** Phillip Goetz, EMNRD  
Michael McMillan, EMNRD

**Re:** Proposal for Upsizing Injection String - Freedom 36 State 1

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Cimarex Energy Co. respectfully proposes upsizing the tubing string in its active SWD injection well, the Freedom 36 State SWD 1 (API: 30-015-44489; SWD-1703), located 1300 FSL and 660 FWL, Unit M of Section 36, Township 24 South, Range 26 East, NMPM, Eddy County, New Mexico. The Freedom 36 State SWD 1 is a Devonian injector with a packer set at 12,613' and injecting in an open-hole interval from 12,635' to 13,575'. The authorized maximum wellhead injection pressure is no more than 2,450 psi. This well was authorized for injection, on November 14, 2017, by the Oil Conservation Division.

Cimarex has provided a detailed procedure outlining its plan to replace the existing 4-1/2" injection string with a 5" flush joint injection string without altering the end of tubing depth. Cimarex has also provided a tubular diagram demonstrating the external mechanical recovery of a 5" flush joint injection within 7" 29# casing. Mr. Goetz has informed Cimarex that the location of the well does not show a conflict with any existing or any application for large-volume Devonian disposal wells.

It is with the provided information that Cimarex respectfully requests the Division to support approval of the tubing upsize. Doing so will defer/delay the necessity of additional SWD injection wells for Cimarex in this area and allow Cimarex to continue their prudent and socially responsible operations.

Cimarex Energy Co.



## Freedom 36 State 1 (SWD)

**Lease/Well No.:** Freedom 36 State 1 (SWD)

**API #:** 30-015-44489

**Location:** 1300 FSL & 660 FWL Sec. 36 Twp. 24S Rg: 26E

**GPS Coordinates:** 32.1699688, -104.2529

**County:** Eddy, NM

**Well Type:** Salt Water Disposal

**Status:** Active

**Max. Injection Pressure:** 2,450 psi

### Pertinent Information:

**Datum:** 3,387'                      **K.B.:** 3,413'

**Effective Depths:** T.D.: 13,575'

**Packer Depth:** 12,613'

**Injection Zone:** Devonian (12,635' - 13,575')

### Current Casing Detail

Size	Weight	Grade	Thread	OD	ID	Drift	Capacity	Set Depth
(in.)	(lbs./ft)			(in.)	(in.)	(in.)	(bbl/ft)	(ft.)
7	29	TMK UP Ultra SF	BT&C	7	6.184	6.059	3.71	12635

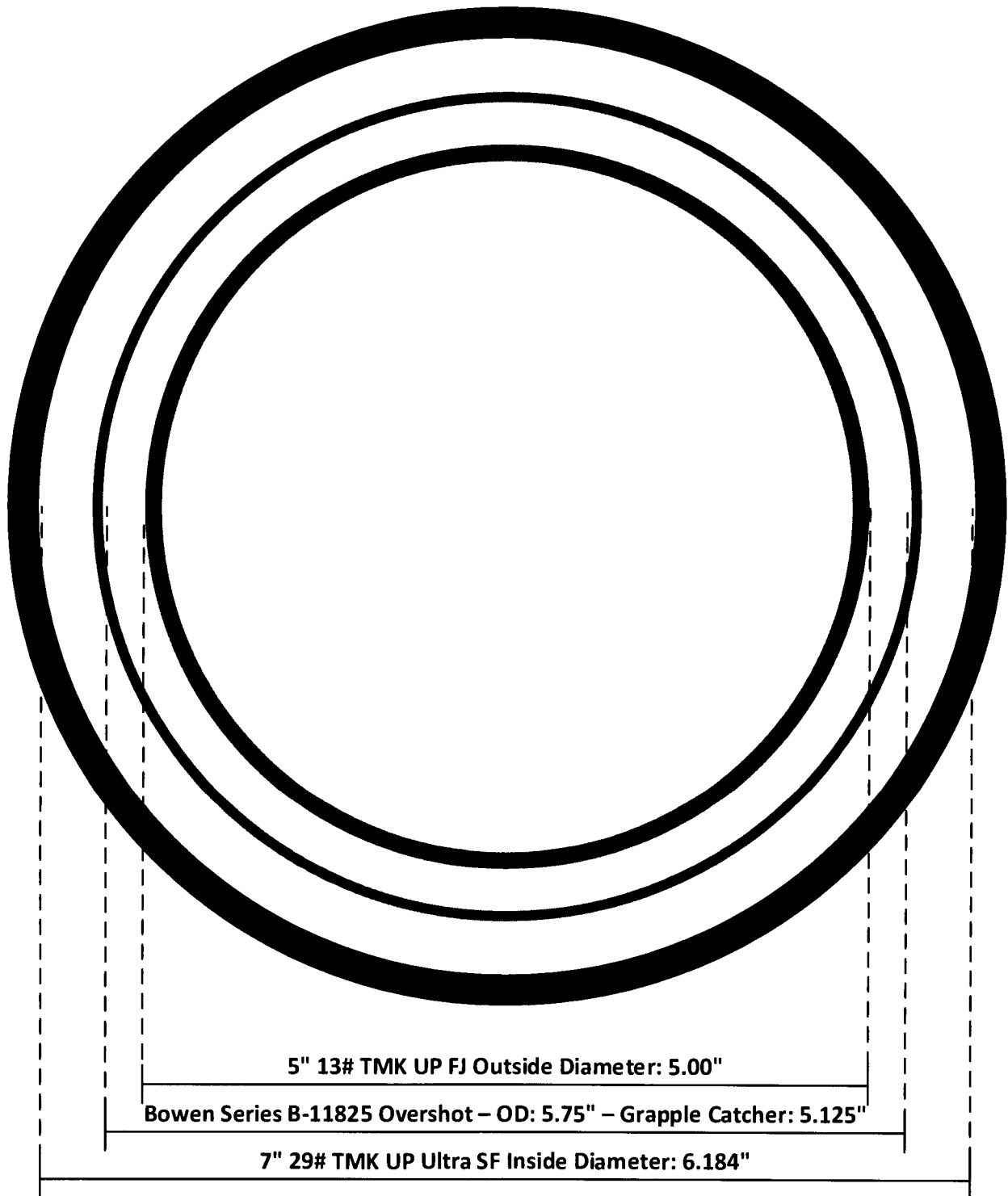
### Current Tubing Detail

Size	Weight	Grade	Thread	OD	ID	Drift	Length	Set Depth
(in.)	(lbs./ft)			(in.)	(in.)	(in.)	(ft.)	(ft.)
4.5	12.6	25cr VAM Tubing	BT&C	4.5	3.958	3.833	6887	6887
4.5	15.1	25cr VAM Tubing	BT&C	4.5	3.826	3.701	5726	12613

### Proposed Tubing Detail

Size	Weight	Grade	Thread	OD	ID	Drift	Length	Set Depth
(in.)	(lbs./ft)			(in.)	(in.)	(in.)	(ft.)	(ft.)
5	13	TMK UP FJ Chrome	Flush	5	4.494	4.369	12613	12613

# **Tubular Diagram Representing External Fishability of 5" 13# Flush Joint in 7" 29# Casing**





## PROCEDURE SHEET – CARLSBAD REGION

(PLEASE COMMENCE WITH WORK PER PROCEDURE)

Procedure Prepared By: Brendan McCalpin      Date Prepared: 3/15/2019  
Procedure Approved By: \_\_\_\_\_ Date Approved \_\_\_\_\_  
Procedure Approved By: \_\_\_\_\_ Date Approved \_\_\_\_\_

**AFE #:**

**Lease/Well No.:** Freedom 36 State SWD

**API #:** 30-015-44489

**Location:** 32.1699688, -104.2529

**County:** Eddy, NM

**Well Type:** Injection

**Status:** Active

**Proposed Work:** Pull existing 4-1/2" 12.6# 25cr VAM Tubing String and Replace with Externally Fishable 5" Flush Joint TMK 140 Chrome Tubing

**Scope:** Set retrievable plug in permanent packer, sting out of packer, pull out of the hole with 4-1/2" 12.6# 25cr VAM Tubing string. Run in the hole with 5" Flush Joint TMK 140 Chrome Tubing to the top of the packer. Circulate packer fluid, sting into packer, perform MIT and verify results.

**Cimarex Contacts:**

Paul Stock – Well Work Superintendent – 432-614-7508  
Kim Barton – Production Superintendent – 432-853-4472  
Brendan McCalpin – Production Engineer – 406-498-6647  
Josh Leatherwood – Carlsbad Manager – 432-741-0179  
Terry Ainsworth – Production Foreman – 575-200-0579  
David Shaw - Wellhead Specialist - 918-560-7247  
Kevin LeGrand - Materials Coordinator - 918-699-5714

**Vendor Contacts:**

Nalco Champion - Steven Medvigy - 307-202-3109  
Standard Safety - 432-355-4265  
Peak Packers - Justin Reeves - 575-942-4155

Cimarex Energy Co.



**Pertinent Information:**

Datum: 3,387' K.B.: 3,413'

Effective Depths: T.D.: 13,575'

Packer Depth: 12,613'

Injection Zone: Devonian (12,635' - 13,575')

**Current Casing Detail**

Size	Weight	Grade	Thread	OD	ID	Drift	Capacity	Set Depth
(in.)	(lbs./ft)			(in.)	(in.)	(in.)	(bbl/ft)	(ft.)
7	29	TMK UP Ultra SF	BT&C	7	6.184	6.059	3.71	12635

**Current Tubing Detail**

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(in.)	(lbs./ft)			(in.)	(in.)	(in.)	(ft.)	(ft.)
4.5	12.6	25cr VAM Tubing	BT&C	4.5	3.958	3.833	6887	6887
4.5	15.1	25cr VAM Tubing	BT&C	4.5	3.826	3.701	5713	12613

**Proposed Tubing Detail**

Size	Weight	Grade	Thread	OD	ID	Drift	Length	Set Depth
(in.)	(lbs./ft)			(in.)	(in.)	(in.)	(ft.)	(ft.)
5	13	TMK UP FJ Chrome	Flush	5	4.494	4.369	12613	12613



**SAFETY NOTES:**

**No project or task is to be performed unless it can be done safely without harm to any persons or to the environment.**

**All work must comply with all State and Federal Regulations and with Cimarex Energy Safety and Environmental Policies.**

**All activities should be detailed in the morning reports.**

**Hold daily safety meetings and review all procedures with all contractors prior to performing the work.**

**Insure all contractors are familiar with, and comply with all relevant Cimarex Energy safety/environmental policies (hold pre-job safety meetings).**

**Spills should be prevented during all operations. Utilize a vacuum truck as necessary and all spills will be reported.**

**Verify that all pressurized lines and fittings meet or exceed the maximum anticipated working pressure.**



**Site Preparation - 24-Hour Operations**

1. **Ensure JSA's and Safety Meetings are held every shift rotation**
2. Check guyline anchors 3 days prior to MIRU
3. Turn H-Pumps off; LOTO Power Drives and Valve on Discharge (Contact Terry Ainsworth - 575-200-0579 to perform LOTO)
4. MIRU Pulling Unit - **NOTE: Hookload of 4-1/2" tubing is 175,000 lbs.; ensure rig selection accounts for 175,000 lbs. + over-pull**
5. MIRU the following:
  - a. Safety Trailer
  - b. Light Plants
  - c. Lay Down Machine
  - d. Pipe Racks
  - e. Reverse Unit

**Primary PROCEDURE**

1. Check guy line anchors 3 days prior to rig up
2. MIRU slickline unit
3. MU RIH with 2.779" Profile Plug to BR Profile at 12631'; set plug in profile
4. POOH with slickline
5. Pressure test tubing to ensure profile plug is secure; pressure up on tubing to 500 psi for 30 minutes and observe pressure gauge to ensure plug is holding
6. Following a successful pressure test, bleed off the pressure to the closed-top frac tank
7. MIRU workover unit
8. ND WH; NU BOP
9. Set down on the tubing string and make a ¼ turn right hand rotation to release from the on-off tool
10. POOH, and lay down 12,613' of 4-1/2" 25CR VAMTOP chrome injection string
11. PU RIH with 12,613' of 5" 13# TMK UP Flush Joint chrome injection string and on-off tool
12. Prior to stinging into the packer, circulate 225 bbls of 11.6# CaCl with corrosion inhibitor and biocide down the annulus
13. Once packer fluid is circulated to depth, sting into the packer
14. Perform mandatory H-5 test on casing per NMOCD regulation; ensure to give plenty of notice to NMOCD representative to be able to verify test
15. MU RIH to profile plug at 12,631'; release plug; POOH with slickline
16. ND BOP; NU WH; Notify Production foreman that work is complete

## Goetze, Phillip, EMNRD

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**From:** Amithy Crawford <acrawford@cimarex.com>  
**Sent:** Tuesday, June 4, 2019 7:31 AM  
**To:** Goetze, Phillip, EMNRD; McMillan, Michael, EMNRD  
**Cc:** Terri Stathem  
**Subject:** [EXT] RE: Upsize Tubing- Freedom SWD-1703  
**Attachments:** ENMRD Proposal Letter.pdf; Fishability Diagram.pdf; Freedom 36 State 1 (SWD) (API - 30-015-44489).pdf; Procedure - Upsize Tubing.pdf; Approved SWD 1703 Injection Permit Freedom SWD.pdf

Mr. Goetze or Mr. McMillan,

I am just wondering about the status of our Upsize in tubing on the Freedom SWD. Please let me know if you need any additional information.

Thank you!!

**Amithy Crawford**  
600 N. Marienfeld St. Suite 600  
Midland, TX 79701  
Direct Phone: 432-620-1909



**From:** Amithy Crawford  
**Sent:** Wednesday, May 8, 2019 9:17 AM  
**To:** 'Goetze, Phillip, EMNRD' <Phillip.Goetze@state.nm.us>; 'McMillan, Michael, EMNRD' <Michael.McMillan@state.nm.us>  
**Cc:** Terri Stathem <TStathem@cimarex.com>  
**Subject:** Upsize Tubing- Freedom SWD-1703  
**Importance:** High

Mr. Goetze or Mr. McMillan,

Please see attached our proposal letter as well as supporting documents to increase the size of or tubing in the Freedom 36 State SWD (389-015-44489) well. This is a follow up to our previous emails.

Please let me know if you need anything else.

Thank you!

**Amithy Crawford**



600 N. Marienfeld St. Suite 600  
Midland, TX 79701  
Direct Phone: 432-620-1909



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State of New Mexico  
Energy, Minerals and Natural Resources Department

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**Susana Martinez**  
Governor

**Ken McQueen**  
Cabinet Secretary

**Matthias Sayer**  
Deputy Cabinet Secretary

**David R. Catanach, Division Director**  
Oil Conservation Division



Administrative Order SWD-1703  
November 14, 2017

**ADMINISTRATIVE ORDER  
OF THE OIL CONSERVATION DIVISION**

Pursuant to the provisions of Division Rule 19.15.26.8 (B) NMAC, Cimarex Energy Co (the "operator") seeks an administrative order for its proposed Freedom 36 State SWD Well No. 1 ("proposed well") to be located 1300 feet from the South line and 660 feet from the West line, Unit M of Section 36, Township 24 South, Range 26 East, NMPM, Eddy County, New Mexico, for disposal of produced water.

**THE DIVISION DIRECTOR FINDS THAT:**

The application has been duly filed under the provisions of Division Rule 19.15.26.8 (B) NMAC and satisfactory information has been provided that affected parties have been notified and no objections have been received within the prescribed waiting period. The applicant has presented satisfactory evidence that all requirements prescribed in Division Rule 19.15.26.8 NMAC have been met and the operator is in compliance with Division Rule 19.15.5.9 NMAC.

**IT IS THEREFORE ORDERED THAT:**

Cimarex Energy Co (OGRID 215099), is hereby authorized to utilize its Freedom 36 State SWD Well No. 1 (API 30-015-44489) at a location 1300 feet from the South line and 660 feet from the West line, Unit M of Section 36, Township 24 South, Range 26 East, NMPM, Eddy County, for disposal of oil field produced water (UIC Class II only) into the Devonian and Silurian formations through an open-hole interval from approximately 12250 feet to approximately 14250 feet. Disposal shall occur through internally-coated tubing and a packer set within 100 feet of the permitted disposal interval. Injection will occur through internally-coated, 4-1/2-inch or smaller tubing and a packer set within 100 feet of the top of the open-hole interval.

*This permit does not allow disposal into formations below the Silurian including the Montoya formation and the Ellenburger formation (lower Ordovician) or lost circulation intervals directly on top and obviously connected to these formations.*

*Prior to commencing disposal, the operator shall submit mudlog and geophysical logs information, to the Division's District geologist and Santa Fe Bureau Engineering office, showing evidence agreeable that only the permitted formation is open for disposal including a summary of depths (picks) for contacts of the formations which the Division shall use to amend this order for a final description of the depth for the injection interval.*

**IT IS FURTHER ORDERED THAT:**

The operator shall take all steps necessary to ensure that the disposed water enters only the approved disposal interval and is not permitted to escape to other formations or onto the surface. The well construction shall be as proposed and described in the application, and if necessary as modified by the District Supervisor.

*The operator shall circulate the cement behind the casing to surface for all surface, intermediate, and production casings.*

*Within two years after commencing disposal, the operator shall conduct an injection survey, consisting of a temperature log or equivalent, over the entire injection interval using representative disposal rates. Copies of the survey results shall be provided to the Division's District II office and Santa Fe Engineering Bureau office.*

After installing tubing, the casing-tubing annulus shall be loaded with an inert fluid and equipped with a pressure gauge or an approved leak detection device in order to determine leakage in the casing, tubing, or packer. The casing shall be pressure tested from the surface to the packer setting depth to assure casing integrity.

The well shall pass an initial mechanical integrity test ("MIT") prior to initially commencing disposal and prior to resuming disposal each time the disposal packer is unseated. All MIT procedures and schedules shall follow the requirements in Division Rule 19.15.26.11(A). NMAC. The Division Director retains the right to require at any time wireline verification of completion and packer setting depths in this well.

The wellhead injection pressure on the well shall be limited to **no more than 2450 psi**. In addition, the disposal well or system shall be equipped with a pressure limiting device in workable condition which shall, at all times, limit surface tubing pressure to the maximum allowable pressure for this well.

The Director of the Division may authorize an increase in tubing pressure upon a proper showing by the operator of said well that such higher pressure will not result in migration of the disposed fluid from the target formations. Such proper showing shall be demonstrated by sufficient evidence including but not limited to an acceptable Step-Rate Test.

The operator shall notify the supervisor of the Division's District office of the date and time of the installation of disposal equipment and of any MIT so that the same may be inspected and witnessed. The operator shall provide written notice of the date of commencement of disposal to the Division's District office. The operator shall submit monthly reports of the disposal operations on Division Form C-115, in accordance with Division Rules 19.15.26.13 and 19.15.7.24 NMAC.

Without limitation on the duties of the operator as provided in Division Rules 19.15.29 and 19.15.30 NMAC, or otherwise, the operator shall immediately notify the Division's District office of any failure of the tubing, casing or packer in the well, or of any leakage or release of water, oil


or gas from around any produced or plugged and abandoned well in the area, and shall take such measures as may be timely and necessary to correct such failure or leakage.

The injection authority granted under this order is not transferable except upon division approval. The Division may require the operator to demonstrate mechanical integrity of any injection or disposal well that will be transferred prior to approving transfer of authority to inject.

The disposal authority granted herein shall terminate two (2) years after the effective date of this order if the operator has not commenced disposal operations into the subject well. One year after the last date of reported disposal into this well, the Division shall consider the well abandoned, and the authority to dispose will terminate *ipso facto*. The Division, upon written request mailed by the operator prior to the termination date, may grant an extension thereof for good cause.

Compliance with this order does not relieve the operator of the obligation to comply with other applicable federal, state or local laws or rules, or to exercise due care for the protection of fresh water, public health and safety and the environment.

Jurisdiction is retained by the Division for the entry of such further orders as may be necessary for the prevention of waste and/or protection of correlative rights or upon failure of the operator to conduct operations (1) to protect fresh or protectable waters or (2) consistent with the requirements in this order, whereupon the Division may, after notice and hearing, terminate the disposal authority granted herein.



**DAVID R. CATANACH**  
Director

DRC/mam

cc: Oil Conservation Division – Artesia District Office  
State Land Office – Oil, Gas, and Minerals Division  
Well File: 30-015-44489