

DATE IN 10.25.11	SUSPENSE 11/30/11	ENGINEER WVT	LOGGED IN 10.25.11	TYPE SWD	APP NO. 1129850921
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ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION  
- Engineering Bureau -  
1220 South St. Francis Drive, Santa Fe, NM 87505



Devon <sup>6137</sup>  
Cotton Draw Unit #89

**ADMINISTRATIVE APPLICATION CHECKLIST** 30-05-31381

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

**Application Acronyms:**

- [NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]
- [DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
- [PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
- [WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
- [SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
- [EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

- [1] **TYPE OF APPLICATION** - Check Those Which Apply for [A]
- [A] Location - Spacing Unit - Simultaneous Dedication  
 NSL  NSP  SD
- Check One Only for [B] or [C]
- [B] Commingling - Storage - Measurement  
 DHC  CTB  PLC  PC  OLS  OLM
- [C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery  
 WFX  PMX  SWD  IPI  EOR  PPR
- [D] Other: Specify \_\_\_\_\_
- [2] **NOTIFICATION REQUIRED TO:** - Check Those Which Apply, or Does Not Apply
- [A]  Working, Royalty or Overriding Royalty Interest Owners
- [B]  Offset Operators, Leaseholders or Surface Owner
- [C]  Application is One Which Requires Published Legal Notice
- [D]  Notification and/or Concurrent Approval by BLM or SLO  
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office
- [E]  For all of the above, Proof of Notification or Publication is Attached, and/or,
- [F]  Waivers are Attached

0-3-255-31E  
Eddy, Fed  
3500  
17100-17400'  
open hole -  
38659

[3] **SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.**

[4] **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

Ronnie Slack	Ronnie Slack	Operations Technician	10/19/11
Print or Type Name	Signature	Title	Date
		Ronnie.Slack@DVN.com	
		e-mail Address	



Devon Energy Corporation  
20 North Broadway  
Oklahoma City, OK 73102-8260

405 235 3611 Phone  
www.devonenergy.com

October 19, 2011

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

RE: Form C-108, Application for Authorization to Inject  
Cotton Draw #89; API 30-015-31381  
Eddy County, NM  
Section 3, T25S, R31E

Dear Santa Fe Oil Conservation Division:

Please find attached Devon Energy Production Company, LP's Form C-108, Application for Authorization to Inject. Devon's application proposes to convert the Cotton Draw 89 to salt water disposal in the Devonian formation.

The original wellbore will be plugged back and sidetracked at 12400'. The well will be drilled to 17400 TD. A 5" liner will be set from 12200' to 17100'. The disposal interval will be the Devonian formation from 17100' to 17400' open hole.

Notice of intent sundries for proposed sidetrack, deepening, and salt water conversion in the Devonian have been filed with the BLM (Carlsbad Office).

The surface land owner and operators with leasehold ownership have been notified with Devon's application to inject via certified mail. A copy of this application has been filed with the OCD-Artesia office.

If you have any questions, please contact Jim Cromer at (405)-228-4464 or myself at (405)-552-4615.

Sincerely,

Ronnie Slack  
Operations Technician

RS/rs  
Enclosure

**APPLICATION FOR AUTHORIZATION TO INJECT**

- I. PURPOSE: \_\_\_\_\_ Secondary Recovery \_\_\_\_\_ Pressure Maintenance  Disposal \_\_\_\_\_ Storage  
Application qualifies for administrative approval?  Yes \_\_\_\_\_ No
- II. OPERATOR: Devon Energy Production Company, LP  
ADDRESS: 20 North Broadway, Suite 1500, Oklahoma City, Oklahoma 73102  
CONTACT PARTY: Ronnie Slack PHONE: 405-552-4615
- III. WELL DATA: Complete the data required on the reverse side of this form for each well proposed for injection.  
Additional sheets may be attached if necessary.
- IV. Is this an expansion of an existing project? \_\_\_\_\_ Yes  No  
If yes, give the Division order number authorizing the project: \_\_\_\_\_
- V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
- VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
- VII. Attach data on the proposed operation, including:
1. Proposed average and maximum daily rate and volume of fluids to be injected;
  2. Whether the system is open or closed;
  3. Proposed average and maximum injection pressure;
  4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
  5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
- \*VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such sources known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any.
- \*X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).
- \*XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
- XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.
- XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

NAME: Ronnie Slack TITLE: Operations Technician  
SIGNATURE: Ronnie Slack DATE: 10/19/11

E-MAIL ADDRESS: Ronnie.Slack@DVN.com

- \* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal: \_\_\_\_\_

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District Office

### III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

- (1) Lease name; Well No.; Location by Section, Township and Range; and footage location within the section.
- (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
- (3) A description of the tubing to be used including its size, lining material, and setting depth.
- (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District Offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

- (1) The name of the injection formation and, if applicable, the field or pool name.
- (2) The injection interval and whether it is perforated or open-hole.
- (3) State if the well was drilled for injection or, if not, the original purpose of the well.
- (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
- (5) Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well, if any.

### XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells;
- (3) The formation name and depth with expected maximum injection rates and pressures; and,
- (4) A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

**NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.**

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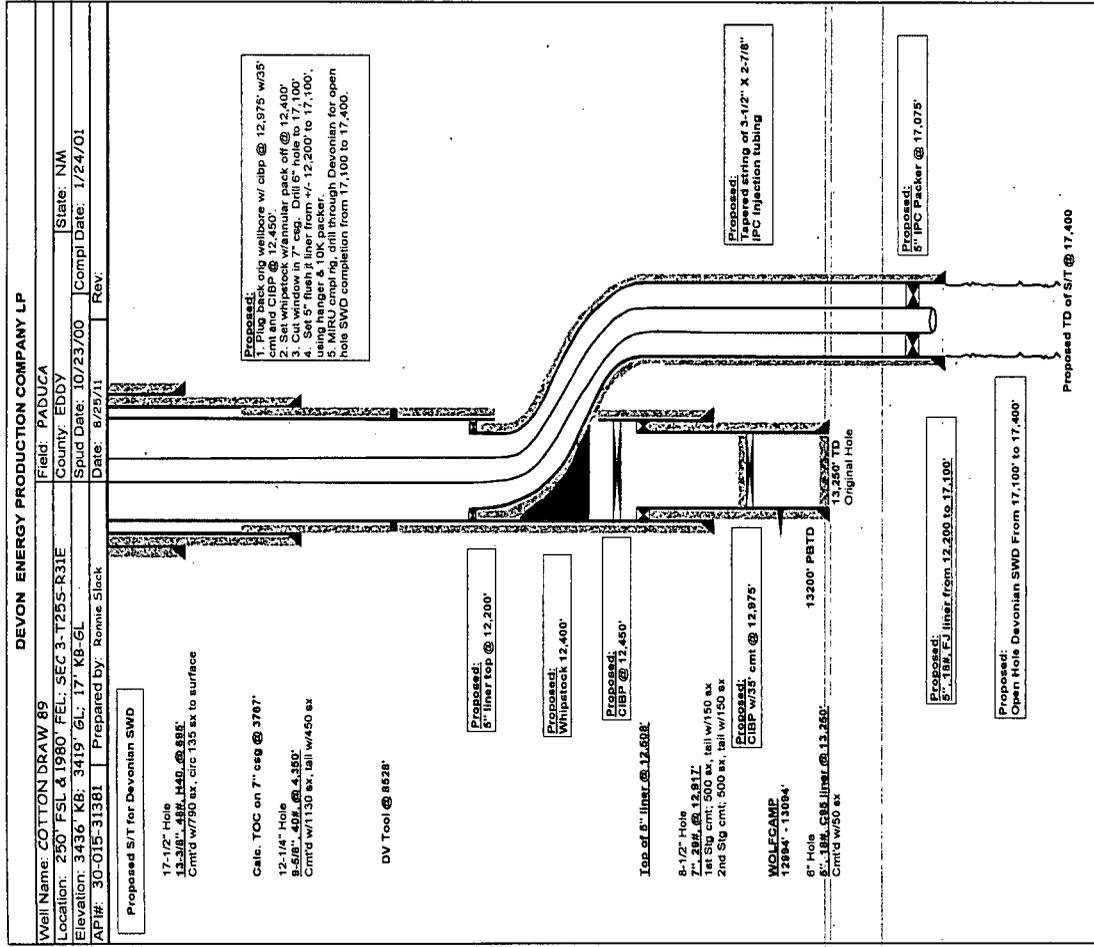
NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

INJECTION WELL DATA SHEET

Side 1

OPERATOR: Devon Energy Production Company, LP  
 WELL NAME & NUMBER: COTTON DRAW #89  
 WELL LOCATION: 250' FSL & 1980' FEL SECTION T25S TOWNSHIP R31E  
 FOOTAGE LOCATION UNIT LETTER RANGE

WELLBORE SCHEMATIC



WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 17-1/2" Casing Size: 13-3/8", 48#, @ 695'  
 Cemented with: 790 sx. or          ft<sup>3</sup>

Top of Cement:          Surface          Method Determined: Circ. cement  
Intermediate Casing

Hole Size: 12-1/4" Casing Size: 9-5/8, 40#, @ 4350'  
 Cemented with: 1580 sx. or          ft<sup>3</sup>

Top of Cement:          Surface          Method Determined: Circ. cement  
Production Casing

Hole Size: 8-1/2" Casing Size: 7", 29#, @ 12917'  
(S/T from 7" @ 12400)  
 Cemented with: 1300 sx. or          ft<sup>3</sup>

Top of Cement: 3767' Method Determined: Calculated  
 Total Depth: 17,400' 5" liner in S/T from 12200 to 17100'

Injection Interval (Open Hole)  
17,100 feet to 17,400'

(Perforated or Open Hole; indicate which)

INJECTION WELL DATA SHEET

Tubing Size: 3-1/2" X 2-7/8" tapered string Lining Material: IPC

Type of Packer: 5" IPC

Packer Setting Depth: +/- 17,075'

Other Type of Tubing/Casing Seal (if applicable): \_\_\_\_\_

Additional Data

1. Is this a new well drilled for injection? Original wellbore is being S/T & drilled to Devonian for SWD

If no, for what purpose was the well originally drilled? Wolfcamp completion

2. Name of the Injection Formation: Devonian formation.

3. Name of Field or Pool (if applicable): Paduca South, Wolfcamp

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used.

Wolfcamp: 12994' - 13094'; (Completion in original wellbore)

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area:

Formation tops: Rustler 660; Salado 1060; Castille 2860; Delaware 4400; Manzaita Mkr 5560; Brushy Canyon 7030; Lower Brushy Canyon 7860; Bone Spring 8360; Wolfcamp 12850; UPS 13375; Strawn 13800; Atoka 13890; Atoka Bank 14220; Morrow 14725; Middle Morrow 15190; Barnett 15780; Mississippian 16470; Woodford 16935; Devonian 17105

**DEVON ENERGY PRODUCTION COMPANY LP**

Well Name: COTTON DRAW 89		Field: PADUCA	
Location: 250' FSL & 1980' FEL; SEC 3-T25S-R31E		County: EDDY	State: NM
Elevation: 3436' KB; 3419' GL; 17' KB-GL		Spud Date: 10/23/00	Compl Date: 1/24/01
API#: 30-015-31381	Prepared by: Ronnie Slack	Date: 8/25/11	Rev:

**Proposed S/T for Devonian SWD**

17-1/2" Hole  
13-3/8", 48#, H40, @ 695'  
 Cmt'd w/790 sx, circ 135 sx to surface

Calc. TOC on 7" csg @ 3767'

12-1/4" Hole  
9-5/8", 40#, @ 4,350'  
 Cmt'd w/1130 sx, tail w/450 sx

DV Tool @ 8528'

**Proposed:**  
 1. Plug back orig wellbore w/ cibp @ 12,975' w/35' cmt and CIBP @ 12,450'.  
 2. Set whipstock w/annular pack off @ 12,400'.  
 3. Cut window in 7" csg. Drill 6" hole to 17,100'.  
 4. Set 5" flush jt liner from +/- 12,200' to 17,100', using hanger & 10K packer.  
 5. MIRU cmpl rig, drill through Devonian for open hole SWD completion from 17,100 to 17,400.

**Proposed:**  
 5" liner top @ 12,200'

**Proposed:**  
 Whipstock 12,400'

**Proposed:**  
 CIBP @ 12,450'

Top of 5" liner @ 12,508'

8-1/2" Hole  
7", 29#, @ 12,917'  
 1st Stg cmt; 500 sx, tail w/150 sx  
 2nd Stg cmt; 500 sx, tail w/150 sx

**Proposed:**  
 CIBP w/35' cmt @ 12,975'

**WOLFCAMP**  
 12994' - 13094'

6" Hole  
5", 18#, C95 liner @ 13,250'  
 Cmt'd w/50 sx

13200' PBTD  
 13,250' TD  
 Original Hole

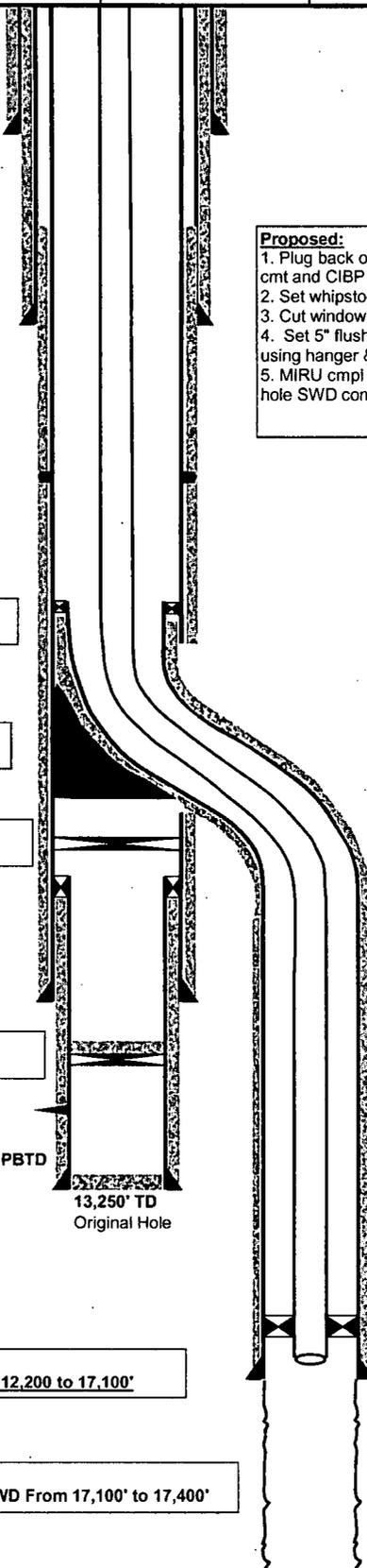
**Proposed:**  
 Tapered string of 3-1/2" X 2-7/8" IPC Injection tubing

**Proposed:**  
 5" IPC Packer @ 17,075'

**Proposed:**  
 5", 18#, FJ liner from 12,200 to 17,100'

**Proposed:**  
 Open Hole Devonian SWD From 17,100' to 17,400'

Proposed TD of S/T @ 17,400



**DEVON ENERGY PRODUCTION COMPANY LP**

Well Name: COTTON DRAW 89		Field: PADUCA	
Location: 250' FSL & 1980' FEL; SEC 3-T25S-R31E		County: EDDY	State: NM
Elevation: 3436' KB; 3419' GL; 17' KB-GL		Spud Date: 10/23/00	Compl Date: 1/24/01
API#: 30-015-31381	Prepared by:	Date: 8/17/10	Rev:

**CURRENT WELLBORE**

17-1/2" Hole  
13-3/8", 48#, H40, @ 695'  
 Cmt'd w/790 sx, circ 135 sx to surface

Calc. TOC on 7" csg @ 3767'

12-1/4" Hole  
9-5/8", 40#, @ 4,350'  
 Cmt'd w/1130 sx, tail w/450 sx, circ 29 sx to surf

DV Tool @ 8528'

Top of 5" liner @ 12,508'

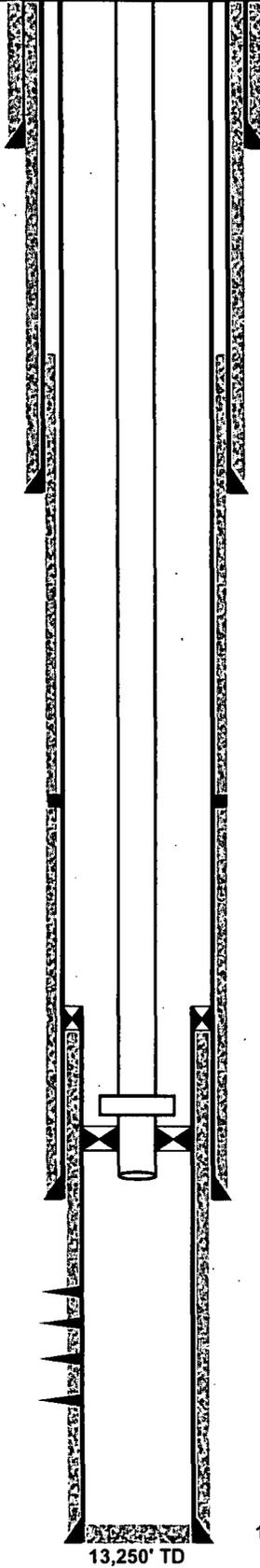
2-7/8" AB MOD, L80, production tubing (6/23/01)

8-1/2" Hole  
7", 29#, @ 12,917'  
 1st Stg cmt; 500 sx, tail w/150 sx, circ 42 sx off DV tool  
 2nd Stg cmt; 500 sx, tail w/150 sx

On/Off w/1.87 profile  
Baker Reliant Packer @ 12,904' (2/11/01)

**WOLFCAMP**  
 12994' - 13094'

6" Hole  
5", 18#, C95 liner @ 13,250'  
 Cmt'd w/50 sx



13200' PBTD

13,250' TD

**Proposed Injection Well: Cotton Draw #89**  
API: NA  
APPLICATION FOR INJECTION  
Form C-108 Section III

**III. Well Data--On Injection Well**

**A. Injection Well Information**

- (1) **Lease** Cotton Draw  
**Well No** #89  
**Location** 250' FSL & 1980' FEL  
**Sec,Twn,Rnge** Sec 3-T25S-R31E  
**Cnty, State** Eddy County, NM
- (2) **Casing** 13-3/8", 48#, H40, @ 695'  
Cmt'd w/790 sx, circ 135 sx to surface  
  
9-5/8", 40#, @ 4350'  
Cmt'd w/ 1130 sx, tail w/450 sx to surface  
  
7", 29#, @ 12917'  
Cmt'd w/1300 sx. Calc. TOC @ 3767'  
  
5", 18#, liner from 12508' to 13250'  
Cmt'd w/50 sx  
  
Proposed:  
1. Set whipstock +/-12400' in 7" casing, side track, drill to 17400' TD.  
2. Set 5", 18#, casing liner from 12200' to 17100'.
- (3) **Injection Tubing** 3-1/2" X 2-7/8" IPC injection tubing
- (4) **Packer** 5" IPC Packer @ +/-17075' (within 100' of Devonian formation)

**B. Other Well Information**

- (1) **Injection Formation:** Devonian  
**Field Name:** Paduca South, Wofcamp
- (2) **Injection Interval:** Open Hole Devonian formation from 17100' to 17400'

(3) **Original Purpose of Wellbore:**

Completed 1/24/01 as Wolfcamp producer. Currently depleted in Wolfcamp. Produced 0 BO, 29 MCF, 0 BW during September 2011

(4) **Other perforated intervals:**

Wolfcamp: 12994' - 13094'. This is the only perforated interval in existing wellbore.

(5) **Give the depth to and the name of the next higher and next lower oil or gas zone in the area of the well if any.**

Formation tops: Rustler 660; Salado 1060; Castille 2860; Delaware 4400; Manzaita Mkr 5560; Brushy Canyon 7030; Lower Brushy Canyon 7860; Bone Spring 8360; Wolfcamp 12850; UPS 13375; Strawn 13800; Atoka 13890; Atoka Bank 14220; Morrow 14725; Middle Morrow 15190; Barnett 15780; Mississippian 16470; Woodford 16935; Devonian 17105.



C108 ITEM VI--Well Tabulation in 1/2 Mile Review Area

Devon Energy Production Company, LP

Proposed Disposal Well: Cotton Draw #89

Operator	Well Name	API NO	County	Surf Location	Sec	Twn	Rnge	Type	Status	Spud Date	Comp Date	TD	PBTD	Comp Zone	Comp Interval-Ft	Casing Program	Cement / TOC
Devon Energy Prod Co LP	Cotton Draw 89 (proposed well for swd)	30-015-31381	Eddy	250 FSL 1980 FEL	3	25S	31E	Gas	Active	10/23/00	1/24/01	13250	13200	Wolfcamp	12994 - 13094 (orig cmpl)	13-3/8", 48#, @ 695' 9-5/8", 40#, @ 4350' 7", 28#, @ 12917' 5", 18# liner 12508-13250' (orig cmpl casings noted above)	790 sx / surf-circ 1580 sx / surf-circ 1300 sx / calc @ 3767 50 sx / liner top
BOPCO, L.P.	Poker Lake Unit 67	30-015-25263	Eddy	1980 FSL 1980 FWL	3	25S	31E	Gas	Active	7/25/85				Morrow Morrow	14894-14898 15032-15552	Note: well will be plugged back from Wolfcamp (see proposed schematic) and S/T @ ~12400 & deepened to Devonian, then set 5" liner from 12400-17100.  20", 94#, @ 718' 13-3/8", 54.5/61/68, @ 4263' 9-5/8", 40/43.5/47 @ 12002' 7", 32# liner, 11791' - 14950' 5", 18# liner, 14917' - 15610'	950 sx / surf-circ. 2400 sx / surf-circ. 700 sx / calc @ 10600' 800 sx / liner top 100 sx / liner top
Devon Energy Prod Co LP	Cotton Draw Unit 134H	30-015-38293	Eddy	200 FSL 330 FWL	2	25S	31E	Oil	Active	12/21/10	3/31/11	16469	16424	Avalon Shale	9000' - 16422'	13-3/8", 48#, H40, @ 656' 9-5/8", 40#, J55, @ 4275' 5-1/2", 20/17#, P110, @ 16469'	647 sx / surf-circ 1650 sx / surf-circ 3085 sx / 4600' (CBL)

**Proposed Injection Well: Cotton Draw #89**  
**APPLICATION FOR INJECTION**  
**Form C-108 Section VII to XIII**

**VII Attach data on the proposed operation, including:**

- (1) Proposed average injection rate: 3000 BWPD  
Proposed maximum injection rate: 5000 BWPD
- (2) The system will be a closed system.
- (3) Proposed average injection pressure: 2450 psi  
Proposed max injection pressure: 3500 psi
- (4) The injection fluid will be produced water from the Bone Spring and Delaware formation that will be injected into the Devonian formation.
- (5) A representative water analysis is submitted for Bone Spring, Delaware, and Devonian formations.

**VIII Geologic Injection Zone Data**

The injection zone is Devonian formation from 17100' to 17400'. The gross injection interval is 300' thick. The Devonian formation is a Permian aged dolomitized limestone. The average depth to fresh water is 300' in this area.

**IX Proposed Stimulation**

Based on injectivity results this interval could be stimulated with ~20000 gals 15% HCl.

**X Log Data**

Logs have previously been submitted to the OCD.

**XI Fresh Water Analysis**

A fresh water analysis attached for the Paduca Delaware Water Well, located in Sec 2-T25S-R31E

**XII Geologic / Engineering Statement**

An examination of this area has determined there are no open faults or other hydrologic connection between the disposal zone and any underground drinking water.

**XIII Proof of Notice**

Proof of notice to surface owner, and public legal notification are attached.

**Fresh Water Analysis Report**  
**Paduca Delaware Water Well**  
**SEC 2-T25S-R31E**  
**Lat 32.09' 56.7" Long -103.44' 51.3"**

North Permian Basin Region  
P.O. Box 740  
Sundown, TX 79372-0740  
(806) 229-8121  
Lab Team Leader - Sheila Hernandez  
(432) 495-7240

## Water Analysis Report by Baker Petrolite

Company:	DEVON ENERGY CORPORATION	Sales RDT:	33521.1
Region:	PERMIAN BASIN	Account Manager:	GENE ROGERS (575) 910-1022
Area:	ARTESIA, NM	Sample #:	575022
Lease/Platform:	PADUCA LEASE	Analysis ID #:	113161
Entity (or well #):	FRESH WATER	Analysis Cost:	\$90.00
Formation:	UNKNOWN		
Sample Point:	WELLHEAD		

Summary		Analysis of Sample 575022 @ 75 °F					
Sampling Date:	10/06/11	<b>Anions</b>	mg/l	meq/l	<b>Cations</b>	mg/l	meq/l
Analysis Date:	10/10/11	<b>Chloride:</b>	328.0	9.25	<b>Sodium:</b>	452.1	19.66
Analyst:	SANDRA GOMEZ	<b>Bicarbonate:</b>	24.4	0.4	<b>Magnesium:</b>	120.0	9.87
TDS (mg/l or g/m3):	3720.6	<b>Carbonate:</b>	0.0	0.	<b>Calcium:</b>	531.0	26.5
Density (g/cm3, tonne/m3):	1.004	<b>Sulfate:</b>	2248.0	46.8	<b>Strontium:</b>	7.0	0.16
Anion/Cation Ratio:	1.0000004	Phosphate:			<b>Barium:</b>	0.1	0.
Carbon Dioxide:	20 PPM	Borate:			<b>Iron:</b>	0.5	0.02
Oxygen:		Silicate:			Potassium:	9.5	0.24
Comments:		Hydrogen Sulfide:		0	Aluminum:		
		pH at time of sampling:		7	Chromium:		
		pH at time of analysis:			Copper:		
		pH used in Calculation:		7	Lead:		
					Manganese:	0.025	0.
					Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite CaCO <sub>3</sub>		Gypsum CaSO <sub>4</sub> ·2H <sub>2</sub> O		Anhydrite CaSO <sub>4</sub>		Celestite SrSO <sub>4</sub>		Barite BaSO <sub>4</sub>		CO <sub>2</sub> Press
		Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	
°F	psi											psi
80	0	-0.84	0.00	-0.03	0.00	-0.10	0.00	-0.26	0.00	1.06	0.00	0.03
100	0	-0.72	0.00	-0.04	0.00	-0.04	0.00	-0.26	0.00	0.90	0.00	0.04
120	0	-0.59	0.00	-0.03	0.00	0.04	55.87	-0.24	0.00	0.78	0.00	0.05
140	0	-0.45	0.00	-0.01	0.00	0.15	173.21	-0.21	0.00	0.68	0.00	0.06

- Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.  
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.  
Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.

**Injection Water Analysis Report**  
**Mad Dog 15 #1**  
**SEC 15-T23S-R34E**  
**(Devonian Formation Water)**

North Permian Basin Region  
P.O. Box 740  
Sundown, TX 79372-0740  
(806) 229-8121  
Lab Team Leader - Sheila Hernandez  
(432) 495-7240

## Water Analysis Report by Baker Petrolite

Company:	DEVON ENERGY CORPORATION	Sales RDT:	33517
Region:	PERMIAN BASIN	Account Manager:	FRANK GARDNER (575) 390-5194
Area:	JAL, NM	Sample #:	481511
Lease/Platform:	MAD DOG '15' LEASE	Analysis ID #:	102920
Entity (or well #):	1	Analysis Cost:	\$90.00
Formation:	DEVONIAN		
Sample Point:	WELLHEAD		

Summary		Analysis of Sample 481511 @ 75 F					
		Anions		Cations			
		mg/l	meq/l	mg/l	meq/l		
Sampling Date:	08/24/10	Chloride:	40711.0	1148.31	Sodium:	24262.3	1055.35
Analysis Date:	09/13/10	Bicarbonate:	366.0	6.	Magnesium:	298.0	24.51
Analyst:	LEAH DURAN	Carbonate:	0.0	0.	Calcium:	1833.0	91.47
TDS (mg/l or g/m3):	69356	Sulfate:	1404.0	29.23	Strontium:	55.0	1.26
Density (g/cm3, tonne/m3):	1.051	Phosphate:			Barium:	1.0	0.01
Anion/Cation Ratio:	1	Borate:			Iron:	4.5	0.16
		Silicate:			Potassium:	421.0	10.77
Carbon Dioxide:	20 PPM	Hydrogen Sulfide:		153 PPM	Aluminum:		
Oxygen:	N/A	pH at time of sampling:		8.4	Chromium:		
Comments:		pH at time of analysis:			Copper:		
		pH used in Calculation:		8.4	Lead:		
					Manganese:	0.200	0.01
					Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite CaCO <sub>3</sub>		Gypsum CaSO <sub>4</sub> ·2H <sub>2</sub> O		Anhydrite CaSO <sub>4</sub>		Celestite SrSO <sub>4</sub>		Barite BaSO <sub>4</sub>		CO <sub>2</sub> Press
		Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	
80	0	1.80	51.07	-0.42	0.00	-0.46	0.00	-0.15	0.00	1.22	0.65	0.01
100	0	1.70	54.67	-0.46	0.00	-0.43	0.00	-0.16	0.00	1.04	0.65	0.02
120	0	1.62	58.60	-0.49	0.00	-0.38	0.00	-0.16	0.00	0.89	0.65	0.05
140	0	1.56	62.86	-0.51	0.00	-0.31	0.00	-0.15	0.00	0.76	0.33	0.08

- Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.  
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.  
Note 3: The reported CO<sub>2</sub> pressure is actually the calculated CO<sub>2</sub> fugacity. It is usually nearly the same as the CO<sub>2</sub> partial pressure.

**WATER ANALYSIS**  
**Bone Spring Formation**  
**Chimayo 16 ST #1**

North Permian Basin Region  
P.O. Box 740  
Sundown, TX 79372-0740  
(806) 229-8121  
Lab Team Leader - Sheila Hernandez  
(432) 495-7240

## Water Analysis Report by Baker Petrolite

Company:	DEVON ENERGY CORPORATION	Sales RDT:	33521.1
Region:	PERMIAN BASIN	Account Manager:	GENE ROGERS (575) 910-1022
Area:	ARTESIA, NM	Sample #:	492168
Lease/Platform:	CHIMAYO UNIT	Analysis ID #:	100662
Entity (or well #):	16-1	Analysis Cost:	\$90.00
Formation:	Bone Spring		
Sample Point:	HEATER DUMP		

Summary		Analysis of Sample 492168 @ 75 F					
Sampling Date:	05/12/10	Anions	mg/l	meq/l	Cations	mg/l	meq/l
Analysis Date:	05/18/10	Chloride:	142827.0	4028.63	Sodium:	76546.4	3329.58
Analyst:	STACEY SMITH	Bicarbonate:	73.0	1.2	Magnesium:	1589.0	130.72
TDS (mg/l or g/m3):	235300.4	Carbonate:	0.0	0.	Calcium:	10332.0	515.57
Density (g/cm3, tonne/m3):	1.157	Sulfate:	1021.0	21.26	Strontium:	1192.0	27.21
Anion/Cation Ratio:	1	Phosphate:			Barium:	2.5	0.04
Carbon Dioxide:	1400 PPM	Borate:			Iron:	379.0	13.7
Oxygen:		Silicate:			Potassium:	1334.0	34.12
Comments:		Hydrogen Sulfide:		17 PPM	Aluminum:		
		pH at time of sampling:		6.5	Chromium:		
		pH at time of analysis:			Copper:		
		pH used in Calculation:		6.5	Lead:		
					Manganese:	4.500	0.16
					Nickel:		

Conditions		Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Gauge Press.	Calcite CaCO <sub>3</sub>		Gypsum CaSO <sub>4</sub> *2H <sub>2</sub> O		Anhydrite CaSO <sub>4</sub>		Celestite SrSO <sub>4</sub>		Barite BaSO <sub>4</sub>		CO <sub>2</sub> Press
		Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	
F	psi											psi
80	0	0.18	1.40	-0.08	0.00	-0.03	0.00	0.58	321.11	1.00	1.12	0.14
100	0	0.24	1.95	-0.16	0.00	-0.05	0.00	0.55	310.50	0.80	1.12	0.18
120	0	0.30	2.51	-0.23	0.00	-0.04	0.00	0.54	304.91	0.62	1.12	0.21
140	0	0.35	3.35	-0.29	0.00	-0.01	0.00	0.53	303.52	0.47	0.84	0.25

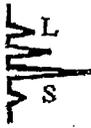
- Note 1: When assessing the severity of the scale problem, both the saturation index (SI) and amount of scale must be considered.  
Note 2: Precipitation of each scale is considered separately. Total scale will be less than the sum of the amounts of the five scales.  
Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.

**WATER ANALYSIS**  
**Delaware Formation**  
**Apache 25 Fed 6**

3821

P. 03

P. 3



Laboratory Services, Inc.  
4016 Fiesta Drive  
Hobbs, New Mexico 88240  
Telephone: (505) 397-3713

**Water Analysis**

**COMPANY** Devon Energy

**SAMPLE** Apache 25-6  
**SAMPLED BY**

**DATE TAKEN**  
**REMARKS**

Barium as Ba	0	
Carbonate alkalinity PPM	0	
Bicarbonate alkalinity PPM	80	
pH at Lab	6.05	
Specific Gravity @ 60°F	1.195	
Magnesium as Mg	59,566	
Total Hardness as CaCO3	102,700	
Chlorides as Cl	192,032	
Sulfate as SO4	200	
Iron as Fe	33	
Potassium	85	
Hydrogen Sulfide	0	
Rw	0.046	@ 23° C
Total Dissolved Solids	295,500	
Calcium as Ca	43,134	
Nitrate	35	

Results reported as Parts per Million unless stated

Langelier Saturation Index 0.65

Analysis by: Vickie Biggs  
Date: 3/5/04

Section XIV--Proof of Notice to Leasehold Operators  
Devon Energy Prod Co LP  
C108 Application For Injection  
Proposed Well: Cotton Draw #89

Proof of Notice to Leasehold Operators within 1/2 mile of Cotton Draw #89

XTO Energy, Inc.  
810 Houston Street  
Fort Worth, TX 76102-6298

Certified receipt No.  
7010 1060 0000 0917 5469

Bass Enterprises Production Company  
201 Main Street  
Suite 2900  
Fort Worth, TX 76102

Certified receipt No.  
7010 1060 0000 0917 5452

A copy of this application has been mailed to the above leasehold operators by certified mail, pertaining to Devon Energy's application for salt water disposal in the Cotton Draw #89.

Date Mailed: 10/19/11

Signature: Ronnie Slack

Date: 10/19/11

Ronnie Slack, Operations Technician  
Devon Energy Production Co., L.P.  
20 N. Broadway, Suite 1500  
Oklahoma City, OK 73102

Section XIV--Proof of Notice to Surface Land Owner  
Devon Energy Prod Co LP  
C108 Application For Injection  
Proposed Well: Cotton Draw #89

Proof of Notice to Surface Land Owner of well location site.

Bureau of Land Management  
Carlsbad Field Office  
620 East Greene Street  
Carlsbad, NM 88220

Certified receipt No.  
7010 1060 0000 0917 5346

A copy of this application has been mailed to the above surface land owner by certified mail, pertaining to Devon Energy's application for salt water disposal in the Cotton Draw #89.

Date Mailed: 10/19/11

Signature: Ronnie Slack

Date: 10/19/11

Ronnie Slack, Operations Technician  
Devon Energy Production Co., L.P.  
20 N. Broadway, Suite 1500  
Oklahoma City, OK 73102

Leasehold Ownership Map  
Cotton Draw 89  
SEC 3-T25S-R31E

Bass

24

35

COTTON DRAW UNIT #153H COTTON DRAW UNIT #1 COTTON D

3  
Devon 50%  
XTO 50%

2

POKER LAKE UNIT #67



Devon 50%  
XTO 50%

COTTON DRAW UNIT #83

COTTON DRAW UNIT #82



25S 31E

COTTON DRAW UNIT #89



COTTON DRAW

Bass

COTTON DRAW 10' FEDERAL COM #

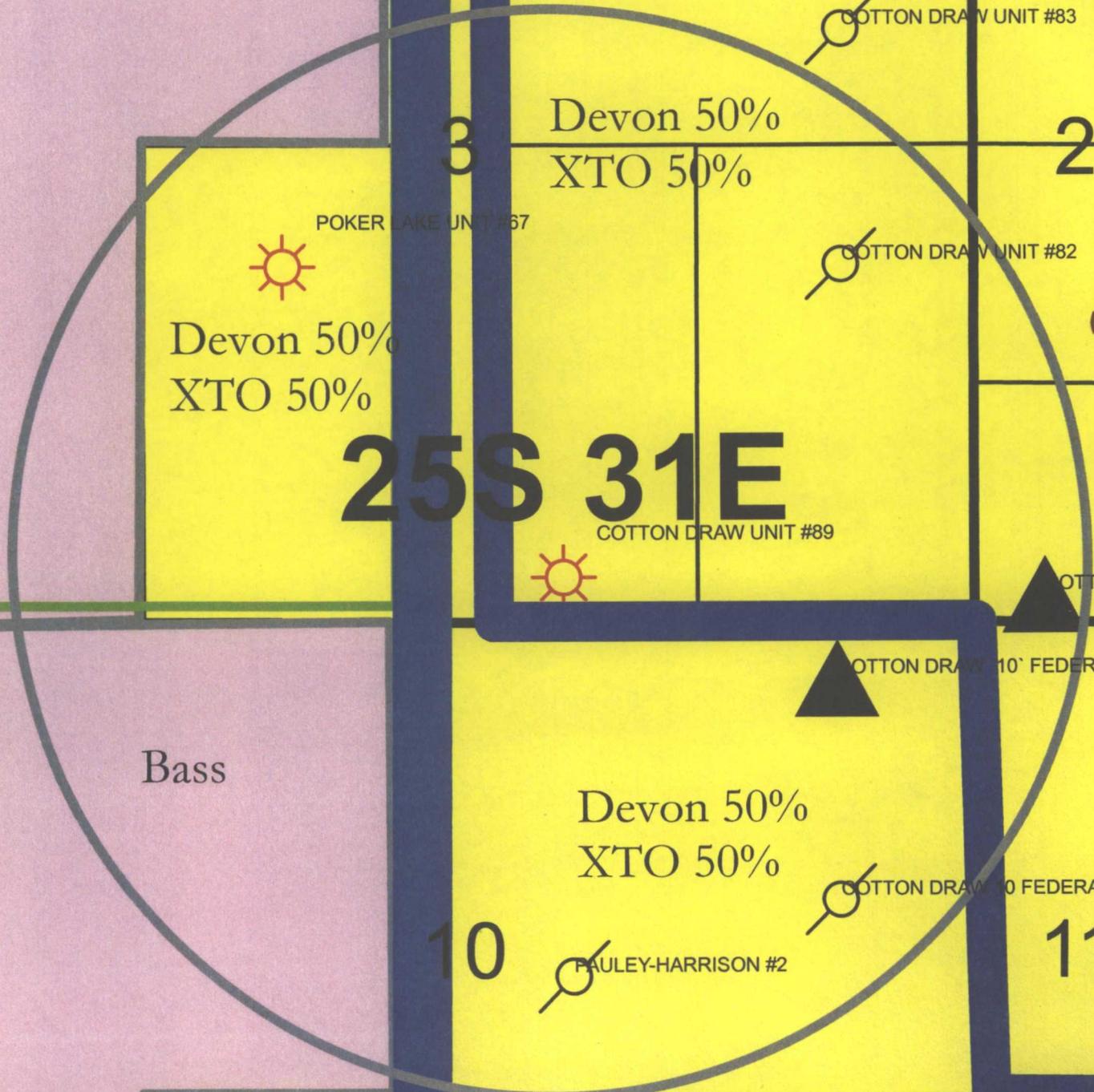
Devon 50%  
XTO 50%

COTTON DRAW 10 FEDERAL COM #

10

PAULEY-HARRISON #2

11



**Affidavit of Publication**

State of New Mexico,  
County of Eddy, ss.

**Kathy McCarroll**, being first duly sworn,  
on oath says:

That she is the Classified Supervisor of the Carlsbad Current-Argus, a newspaper published daily at the City of Carlsbad, in said county of Eddy, state of New Mexico and of general paid circulation in said county; that the same is a duly qualified newspaper under the laws of the State wherein legal notices and advertisements may be published; that the printed notice attached hereto was published in the regular and entire edition of said newspaper and not in supplement thereof on the date as follows, to wit:

September 24 2011

That the cost of publication is **\$54.74** and that payment thereof has been made and will be assessed as court costs.

Kathy McCarroll

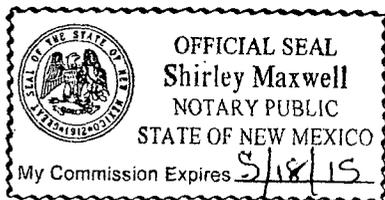
Subscribed and sworn to before me this

24th day of September, 2011

Shirley Maxwell

My commission Expires on May 18, 2015

Notary Public



September 24, 2011  
Legal Notice  
Devon Energy Production Company, P.O. Box 20, North Broadway, Oklahoma City, OK 73102-8260. Has filed form C-108 (Application for Authority to Inject) with the New Mexico Oil Conservation Division seeking administrative approval for an injection well. The proposed well is the Cotton Draw Unit #89, located 250 E. S.L. 1900, F.E. Section 3, Township 25 South, Range 31 East, in Eddy County, New Mexico. Disposal water will be sourced from area wells producing from the Delaware and Bone Springs formations. The disposal water will be injected into the Devonian formation at a depth of 17100' to 17400' at a maximum surface pressure of 3500 psi and a maximum rate of 5000 BWPD. Any interested party who has an objection to this must give notice in writing to the Oil Conservation Division, 1220 South Saint Francis Drive, Santa Fe, New Mexico 87503 within 10 days of this notice. Any interested party with questions or comments may contact Jim Cramer at Devon Energy Corporation, 20 North Broadway, Oklahoma City, OK 73102-8260, or call (405) 228-4464.

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
OMB No. 1004-0137  
Expires: July 31, 2010

**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.**

5. Lease Serial No.  
NM 046525

6. If Indian, Allottee or Tribe Name

**SUBMIT IN TRIPLICATE - Other instructions on page 2.**

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

1. Type of Well

Oil Well  Gas Well  Other

8. Well Name and No.  
Cotton Draw 89

2. Name of Operator  
Devon Energy Production Company, L.P.

9. API Well No.  
30-015-31381

3a. Address  
20 N. Broadway, Oklahoma City, OK 73102-8260

3b. Phone No. (include area code)  
405-552-4615

10. Field and Pool or Exploratory Area  
Paduca South, Wolfcamp

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)  
250 FSL & 1980 FEL; SEC 3 T25S-R31E

11. Country or Parish, State  
Eddy, NM

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

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input type="checkbox"/> Other _____
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input checked="" type="checkbox"/> 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.)

Note: Devon is filing C108 application to convert the Cotton Draw 89 to SWD in the Devonian formation. This well was originally drilled as a vertical producer in the Wolfcamp. A notice of intent sundry to plug back and S/T to the Devonian formation was filed on 8/23/11. Devon is waiting on BLM sundry approval to S/T well and deepen to Devonian formation. This notice of intent is for SWD conversion after drilling.

**PROPOSED SWD CONVERSION**

1. Wait on OCD C108 and BLM sundry approvals.
2. MIRU. Clean out wellbore to TD after drilling. Establish injection into proposed Devonian open hole formation interval from 17100' to 17400'.
3. Stimulate Devonian formation if necessary.
4. Run mixed string of 3-1/2" X 2-7/8" IPC injection tubing. Set 5" IPC packer within 100' of formation for injection. Circulate wellbore with inhibited packer fluid.
5. Run MIT test and chart results. File MIT with OCD.
6. Turn well to injection.

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

Name (Printed/Typed)

Ronnie Slack

Title Operations Technician

Signature

*Ronnie Slack*

Date

10/4/11

**THIS SPACE FOR FEDERAL OR STATE OFFICE USE**

Approved by

Title

Date

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

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.

Injection Permit Checklist (1/15/2010)

WFX PMX SWD (1307) Permit Date 11/10/11 UIC Qtr (O/N/D)

# Wells 1 Well Name(s): COTTON DRAW #89

API Num: 30-015-31391 Spud Date: 10/23/00 New/Old: N (UIC primacy March 7, 1982)

Footages 250 FSL / 180 FEL Unit 0 Sec 3 Tsp 25 S Rge 31 E County EDDY

General Location: 6 mi West of Mesquite Road CDU SWD

Operator: Devco Energy Production Company, LP Contact RONNIE SLACK / TIM CROMER

OGRID: 6137 RULE 5.9 Compliance (Wells) 4/1607 (Finan Assur) OK IS 5.9 OK? OK

Well File Reviewed Current Status: STILL ACTIVE WAIT CAMP FOR WELL (2MCF/D) WH?

Planned Work to Well: PLUG BACK, SIDETRACK, Deepen, Liner, Drill out open hole

Diagrams: Before Conversion  After Conversion  Elogs in Imaging File:

Well Details:	Sizes		Setting Depths	Stage Tool	Cement Sx or Cf	Determination Method
	Hole.....	Pipe				
New <input type="checkbox"/> Existing <input checked="" type="checkbox"/> Surface	17 1/2	13 3/8	695	—	790	CIRC
New <input type="checkbox"/> Existing <input checked="" type="checkbox"/> Interim	12 1/4	9 5/8	4350	—	1580	CIRC
New <input type="checkbox"/> Existing <input checked="" type="checkbox"/> LongSt	8 1/2	7"	12917	8528	1300	3767' calc
New <input checked="" type="checkbox"/> Existing <input type="checkbox"/> Liner	6"	5"	12200 - 17100	—	?	?
New <input checked="" type="checkbox"/> Existing <input type="checkbox"/> OpenHole	<5"		17100 - 17400			

Depths/Formations:

Depths, FT	Formation	tops?
16470	MISS	<input checked="" type="checkbox"/>
16935	WOODFORD	<input checked="" type="checkbox"/>
17105	DEV	<input checked="" type="checkbox"/>

Formation(s) Above			
<b>APPROX</b> Injection TOP:	17100	Dev	Max. PSI 3,420 Open Hole <input checked="" type="checkbox"/> Perfs <input type="checkbox"/>
Injection BOTTOM:	17400	Dev.	Tubing Size <u>3 1/2 x 2 1/8"</u> Packer Depth <u>17,075'</u>
Formation(s) Below			

17100  
4200

Capitan Reef?  (Potash?  Noticed?  ) [WIPP?  Noticed?  ] Salado Top/Bot  Cliff House?

Fresh Water: Depths: \_\_\_\_\_ Formation \_\_\_\_\_ Wells? yes Analysis?  Affirmative Statement

Disposal Fluid Analysis? Sources: Bone SPRING

Disposal Interval: Analysis?  Production Potential/Testing: (OK)

Notice: Newspaper Date 9/24/11 Surface Owner BLM (10/19/11) Mineral Owner(s) \_\_\_\_\_

RULE 26.7(A) Affected Persons: BOPCO / X TO /

AOR: Maps?  Well List?  Producing in Interval? NO Wellbore Diagrams? \_\_\_\_\_

.....Active Wells  Repairs? \_\_\_\_\_ Which Wells? \_\_\_\_\_

.....P&A Wells  Repairs? \_\_\_\_\_ Which Wells? \_\_\_\_\_

Issues: \_\_\_\_\_ Request Sent \_\_\_\_\_ Reply: \_\_\_\_\_