

DATE IN <u>2.7.11</u>	SUSPENSE	ENGINEER <u>TW</u>	LOGGED IN <u>2.7.11</u>	TYPE <u>IPI</u>	APP NO. <u>1103856343</u>
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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



Chevron
Carbon Com SWD #1
30-045-24392

ADMINISTRATIVE APPLICATION CHECKLIST

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 _____

Carbon Com SWD #1
30-045-24392

IPI-392

- [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

SWD-632-A
1462 PSF

[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.

Anthony Zenos
 Print or Type Name

Anthony Zenos
 Signature

Regulatory Specialist
 Title

1 Feb 2011
 Date

azenos@chevron.com
 e-mail Address



1 February 2011

New Mexico Oil Conservation Division
Attn: Mr. Terry Warnell
1220 South St. Francis Drive
Santa Fe, NM 87505

Re: Cardon Com SWD #1
Section 27 T32N R12W
San Juan County, New Mexico
API 30-0-045-24392
Injection permit: SWD – 632 – A

RECEIVED OOD
2011 FEB -7 P 1:43

Dear Mr. Warnell,

Last Monday (24 Jan 11) I believe you had a conversation with my colleague, Jim Micikas, about the Cardon Com SWD #1 located in San Juan County, New Mexico, and operated by Chevron Midcontinent, L.P. On 9 June 2009 the NMOCD approved the inclusion of the Bluff interval as part of the injection interval that already included the Entrada interval. Chevron would now like to ask for authorization to increase injection pressure to 2000 psi based upon the following facts:

- A Step Rate Test was conducted on this well by Cardinal Surveys on 8 Oct 2010 (attached). The well achieved a maximum surface pressure of 1682 psi without achieving the parting pressure (survey was aborted at 1682 psi due to safety concerns about the injection testing equipment).
- Records on the NMOCD website show four analogous offset wells that had pressure increases (IPIs) granted between 2003 and 2010 (exhibit 1). Their pressure limits ranged from 1790 psi to 2400 psi with an average of 2088 psi. The average depth of these four wells is 7081' which is 152' shallower than Chevron's Cardon Com SWD #1. And the closest well to Chevron (same Township and Range) is the Standolind Gas Com #1 which has an injection pressure of 2400 psi

For these reasons, Chevron requests NMOCD approval to increase injection pressure at the Cardon Com SWD #1 to 2000 psi. Thank you for your attention to this matter. If you have any further questions please feel free to contact me at (505) 333-1919, or for technical inquiries feel free to contact Jim Micikas at (505) 333-1913.

With my best regards,

Anthony Zenos
Regulatory Specialist
Chevron Midcontinent, L.P.

Exhibit #1

NMOCD Permitted Injection Pressures

San Juan County, New Mexico

Date IPI	Order #	Well	API	S-T-R	Injection Interval	Top Perf	Pressure limit
6/17/2009	SWD-632-A	Cardon Com SWD #1	30-045-24392	27-32N-12W	Bluff - Entrada	7233	1462
12/21/2010	IPI387	Pathfinder AGI #1	30-045-35172	1-29N-15W	Entrada	6500	2160
1/21/2009	IPI-311	Centerpoint SWD #1	30--45-33464	24-31N-11W	MR-Bluff-Entrada	7200	2000
4/25/2008	IPI-297	Standolind Gas Com #1	30-045-23779	17-32N-12W	Bluff-Entrada	7062	2400
12/5/2003	IPI-216-0	E.E. Elliot SWD #1	30-045-27799	26-30N-9W	Morrison-Bluff-Entrada	7564	1790
Average>						7081'	2088 psi



Cardon Com SWD #1

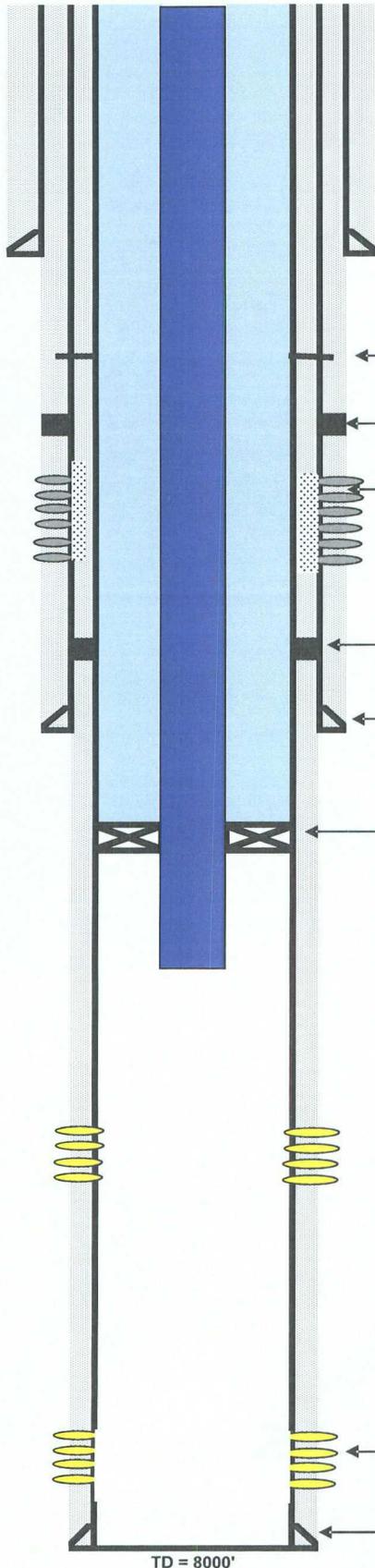
San Juan, New Mexico

API: 30-045-24392
Legals: Sec 27 - T 32N - R 12W
Field: Basin Dakota

KB 12'
KB Elev 5909'
GR Elev 5897'

Geologic Tops:

Fruitland	1440'
PC	1740'
Lewis	1790'
CH	3435'
Menefee	3611'
PLO	4138'
Dakota	6532'



Surface Casing:
9-5/8", 36#, K-55, set @ 294' in 12-1/4" hole
Cmt'd with 250 sks, circulated to surface

*** Tested backside to 350# with state witness (11/20/09)
*** Backside loaded with 160 bbls packer fluid from Baker (11/19)

4 sq holes at 2350' cement w/ 25 sxs micromatrix & 25 sxs CI "G

DV Tool @ 3621' (7")
Cmt'd with 550 sks lead & 150 sks tail, circ to surface

****Note holes are behind liner casing**

Old Mesaverde Perforation Details: All 1 jspf
4216' - 4234' 4287' - 4289' 4410' - 4412'
4246' - 4248' 4301' - 4310' 4420' - 4422'
4264' - 4278' 4347' - 4349' 4492' - 4496'
4383' - 4396'

DV Tool @ 4798' (4.5")
Pumped 325 sks lead & 50 sks tail, 27 bbls returns to surface

Production Casing:
7", 20 #, K-55, Set @ 5099' in 8-3/4" Hole
Cmt'd with 100 sks lead & 150 sks tail

Tubing Details: (11/19/09)
2-3/8" XO to 2-7/8" ULT-FJ (0.7')
1 Jt 2-7/8", 6.4#, L-80, ULT-FJ (28.63')
Pup Jt 2-7/8", 6.4#, L-80, ULT-FJ (7.73')
236 Jts 2-7/8", 6.4#, L-80, ULT-FJ (7211')
2-7/8" ULT-FJ XO to 2-3/8" EUE (0.9')
On-Off Tool with 1.87" X Nipple (1.3')
Wireline Set Baker Hornet Packer (7.15') set @ 7263' ELM
2-3/8", 4.7#, L-80 Pup (8.15')
Model R Nipple with Bottom No-Go (1.67") (0.8')
2-3/8", 4.7#, L-80 Pup (4.15')
Wireline Re-Entry Guide (0.45')
EOT = 7271' (Pipe measurement)

Bluffs Perforations (11/7/09)
4 SPF, 90 degree phasing
7322-32, 7340-60, 7376-86, 7410-30, 7470-73
7476-90, 7530-40, 7562-70, 7578-82, 7588-92
7602-08. 109' and 436 holes.

Acidized Perfs (11/8/09)
4000 gals 15% HCL and 510 Bio Balls

Frac'd Bluffs (11/10/09)
103700# of 20/40 Brady Sand
75998 gals of water
Avg rate of 40 bpm, Max psi = 2861#
FG 0.64 psi/ft; ISIP 1570, 5min 1287, 10min 1177, 15min 1104

Entrada Perforations: 90 deg phasing
7780' - 7910': .40" Holes: 4 spf: 520 holes

Liner Casing:
4-1/2", 11.6#, N-80 set @ 7998' in 6-1/4" Hole
1st Stage: cmt'd with 425 sks. Circulated 25 bbls to DV tool

TD = 8000'



Cardinal Surveys Company

8-Oct-10

Chevron Corporation

**Well: Cardon Comm. No. 1
Field; Basin Dakota
County: San Juan, NM**

**SC 58719
File No. 20022**

No Parting Pressure Calculated

**Downhole PSI Tool Ser. No. CSC2601
Surface PSI Gauge Ser. No. 10213
Tool @ 7,600'**

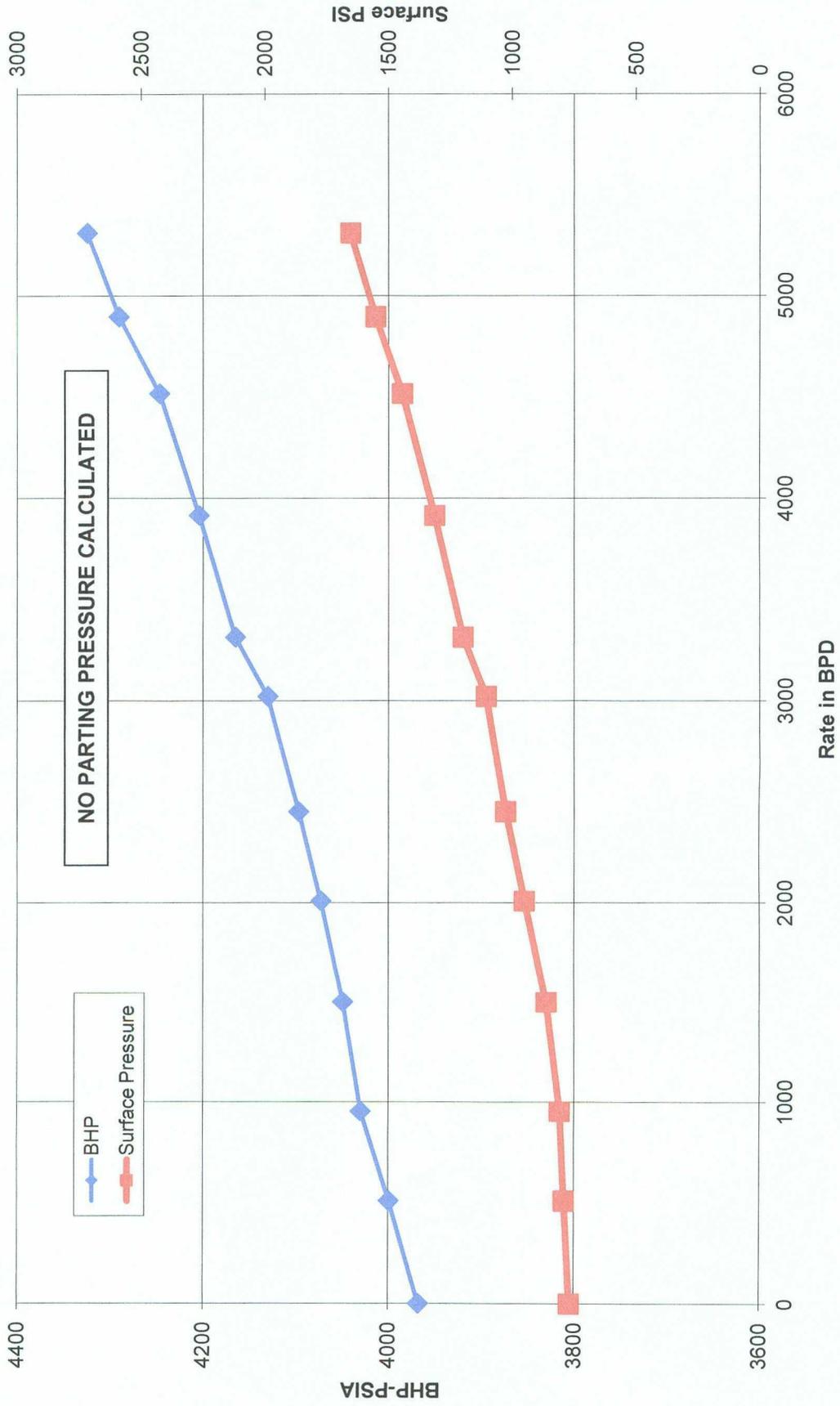
	Start	End	Rate
1	9:56 AM	10:15 AM	0 7,600'
2	10:15 AM	10:45 AM	500
3	10:45 AM	11:15 AM	1000
4	11:15 AM	11:45 AM	1500
5	11:45 AM	12:15 PM	2000
6	12:15 PM	12:45 PM	2500
7	12:45 PM	1:15 PM	3000
8	1:15 PM	1:45 PM	3500
9	1:45 PM	2:15 PM	4000
10	2:15 PM	2:45 PM	4500
11	2:45 PM	3:15 PM	5000
12	3:15 PM	3:45 PM	5500
13	3:45 PM	4:00 PM	0 15 Minute Fall Off
14			
15			
16			
17			
18			



Chevron Corporation
Cardon Comm. No. 1
Total Data Chart 8-Oct-10



Chevron Corporation
 Cordon Comm. No. 1
 Step Rate Data 8-Oct-10



Step Rate Test
8-Oct-10



Chevron Corporation
Well: Cardon Comm. No. 1
Field: Basin Dakota
Location: San Juan, NM

	S Time	E Time	D Time Min	Last Rate BPD	Step BPD	BHP		Surf PSIA	Cum BBL	Delta BBL	Avg. BPD	Lower Trend	Upper Trend
						PSIA	PSIA						
1	9:56 AM	10:15 AM	19	0	0	3967.7	769.8	0	0	0	0		
2	10:15 AM	10:45 AM	30	500	500	3999.8	791.8	10.5	504	10.5	504		
3	10:45 AM	11:15 AM	30	1000	500	4030.2	808.5	30.3	950	19.8	950		
4	11:15 AM	11:45 AM	30	1500	500	4049.3	862.7	61.6	1502	31.3	1502		
5	11:45 AM	12:15 PM	30	2000	500	4073	951	103.4	2006	41.8	2006		
6	12:15 PM	12:45 PM	30	2500	500	4097.1	1027.1	154.4	2448	51	2448		
7	12:45 PM	1:15 PM	30	3000	500	4130.4	1105.7	217.3	3019	62.9	3019		
8	1:15 PM	1:45 PM	30	3500	500	4165.3	1198.9	286.3	3312	69	3312		
9	1:45 PM	2:15 PM	30	4000	500	4204.4	1314.5	367.8	3912	81.5	3912		
10	2:15 PM	2:45 PM	30	4500	500	4247	1444.4	461.9	4517	94.1	4517		
11	2:45 PM	3:15 PM	30	5000	500	4290.7	1553	563.9	4896	102	4896		
12	3:15 PM	3:45 PM	30	5500	500	4324.7	1654	674.5	5309	110.6	5309		
13	3:45 PM	4:00 PM	15	0	0	4169.2	1000.5	674.5	0	0	0		
14													
15													
16													

intersect #DIV/0!
BHP PSI #DIV/0!
BPD PSIA



New Mexico Energy, Minerals and Natural Resources Department

Bill Richardson
Governor

Joanna Prukop
Cabinet Secretary
Reese Fullerton
Deputy Cabinet Secretary

Mark Fesmire
Division Director
Oil Conservation Division



Administrative Order SWD-632-A
June 17, 2009

Alan W. Bohling
Chevron Midcontinent, L.P.
15 Smith Road
Midland, TX 79705

**ADMINISTRATIVE ORDER
OF THE OIL CONSERVATION DIVISION**

Under the provisions of Division Rule 26.8B., Chevron Midcontinent, L.P. seeks an administrative order to utilize its Cardon Com SWD Well No. 1 (API 30-045-24392) located 1120 feet from the North line and 1050 feet from the East line, Unit A of Section 27, Township 32 North, Range 13 West, NMPM, San Juan County, New Mexico, for produced water disposal purposes.

THE DIVISION DIRECTOR FINDS THAT:

The application has been duly filed under the provisions of Division Rule 26.8B. Satisfactory information has been provided that affected parties as defined in Rule 26.8B.(2) were previously notified and no objections have been received within the prescribed waiting period. The applicant has presented satisfactory evidence that all requirements prescribed in Rule 26.8 will be met and the operator is in compliance with Division Rule 5.9.

IT IS THEREFORE ORDERED THAT:

The applicant Chevron Midcontinent, L.P., is hereby authorized to utilize its Cardon Com SWD Well No. 1 (API 30-045-24392) located 1120 feet from the North line and 1050 feet from the East line, Unit A of Section 27, Township 32 North, Range 13 West, NMPM, San Juan County, New Mexico, for disposal of produced water into the **Bluff** and Entrada formations from 7310 feet to 7910 feet through 2-7/8 inch or smaller diameter, plastic-lined tubing set within 100 feet of the disposal interval.

IT IS FURTHER ORDERED THAT:

The operator shall take all steps necessary to ensure that the disposed water enters only the proposed disposal interval and is not permitted to escape to other formations or onto the surface.



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 wellhead pressure on the well shall be limited to **no more than 1462 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 formation. Such proper showing shall be demonstrated by an acceptable Step-Rate-Test.

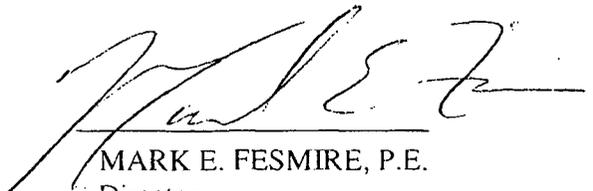
The operator shall notify the supervisor of the Division's district III office in Aztec of the date and time of the installation of disposal equipment and of any mechanical integrity test so that the same may be inspected and witnessed. The operator shall provide written notice of the date of commencement of disposal to the Division's district III office. The operator shall submit monthly reports of the disposal operations on Division Form C-115, in accordance with Division Rules 26.13 and 7.24.

Without limitation on the duties of the operator as provided in Division Rules 30 and 29, 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.

In accordance with Division Rule No 26.12.C., the disposal authority granted herein shall terminate one year after the effective date of this order if the operator has not commenced injection operations into the subject well, provided however, the Division, upon written request, mailed by the operator prior to the termination date, may grant an extension thereof for good cause. One year after disposal into the well has ceased, the authority to dispose will terminate *ipso facto*.

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.



MARK E. FESMIRE, P.E.
Director

MEF/wvjj

cc: Oil Conservation Division – Aztec