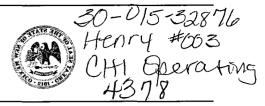
W JONES

DKAA091264976

# RECEINEW MEXICO OIL CONSERVATION DIVISION

- Engineering Bureau - Engineering Bureau - 11220 South St. Francis Drive, Santa Fe, NM 87505



		ADMINISTRATIVE APPLICATION CHECKLIST
	THIS CHECKLIST IS M	ANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE
Ąppli	[DHC-Dowi	
[1]	TYPE OF AP [A]	PLICATION - Check Those Which Apply for [A]  Location - Spacing Unit - Simultaneous Dedication  NSL NSP SD
	Check [B]	One Only for [B] or [C] Commingling - Storage - Measurement  DHC CTB PC CDS CDM
	[C]	Injection - Disposal - Pressure Increase - Enhanced Oil Recovery  WFX PMX SWD IPI BOR PPR
	[D]	Other: Specify
[2]	NOTIFICAT [A]	ION REQUIRED TO: - Check Those Which Apply, or □ Does Not Apply □ Working, Royalty or Overriding Royalty Interest Owners □ 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
[3]		CURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE ATION INDICATED ABOVE.
	oval is <mark>accurate</mark> a	ΓΙΟΝ: I hereby certify that the information submitted with this application for administrative and <b>complete</b> to the best of my knowledge. I also understand that <b>no action</b> will be taken on this quired information and notifications are submitted to the Division.
R Print	Note: DW ASKEU or Type Name	Statement must be completed by an individual with managerial and/or supervisory capacity.    Completed by an individual with managerial and/or supervisory capacity.   Completed by an individual with managerial and/or supervisory capacity.   Completed by an individual with managerial and/or supervisory capacity.   Completed by an individual with managerial and/or supervisory capacity.   Completed by an individual with managerial and/or supervisory capacity.   Completed by an individual with managerial and/or supervisory capacity.   Completed by an individual with managerial and/or supervisory capacity.   Completed by an individual with managerial and/or supervisory capacity.   Completed by an individual with managerial and/or supervisory capacity.   Completed by an individual with managerial and/or supervisory capacity.   Complete
		robura Chienergy in con e-mail Address

	Inje	ection Permit Cl	necklist (7/8/08)			
Case R	SWD WFX	PMX	_ IPI Permit Date	UIC (	Qtr	 -
# Wells 1 Well Name: S		y NO.3			<u>-</u>	
API Num: (30-) 0/5-						
Footages 990 FSL	\$ 1650 FWL	Unit 🖊 See	c <u>22</u> Tsp <u>225</u> F	Rge <b>27</b> F Cou	inty Eddy	
Operator: CHI O	PERATING I	vc.	Contact <u></u>	obin As	Kew	
OGRID: 4378	_RULE 4 <del>0 C</del> ompliance (	Wells) 4/119	(Finan Assur		Mimole	
Operator Address:	10. Box 17	99 mic	Iland, tx	79708	2	
Current Status of Well:						10,4 <b>90</b>
Planned Work to Well:	/		Planned Tu	bing Size/Depth:		_
	Sizes HolePipe	Setting Depths	Cement Sx or Cf	•	nd Determination thod	
Existing Surface	1211	224'	200 SAS			
ExistingIntermediate	05/2	5455'	650 + 600 Sxs			] .
Existing Long String	8314 51/2	15,112,	955 sxs	7000'		
DV Tool		Open Hol	eT	otal Depth	_PBTD	:
Well File Reviewed _ Ye						
Diagrams: Before Convers	ion After Conversio	n Elogs in Ima	ging File: LL, F	oc, CNL		
Intervals:	Depths	Formation	Producing (Yes/No)	•		OCD.
Above (Name and Top)		Wolfcomp				ARTESIA
Above (Name and Top)	9,654	Conyon	10,510-	554		
Injection Interval TOP:	10,512	STrawn	yes acro	PSIN	Max. WHIP	Fee Lund
Injection Interval BOTTOM:	10,600	11			Open Hole (Y/N)	
Below (Name and Top)	,	ATOKA		De	eviated Hole?	
Sensitive Areas: Capitan	Reef	Cliff House	Salt Depths			· fo
Potash Area (R-111-P)		Potash Les	see	Notice	d?	Injecta
For the Water of Decillor		V		· · · · · · · · · · · · · · · · · · ·		105/21-10
Fresh Water: Depths:		(Y/N)Analys	•			
<u>Salt Water</u> : Injection Wate				Analysis		
Injection IntervalWate	r Analysis:	Hydrocarbon P	otential		<del></del>	
	· · · · · · · · · · · · · · · · · · ·	- 11				
Notice: Newspaper(Y/N)_	$\sum$ _Surface Owner $\underline{\mathcal{U}}$	Illiam Wed	Mineral Ow	ner(s)		
RULE 701B(2) Affected Pa	rties:	<u></u>		<u>-</u>	<u></u>	
Area of Review: Adequate	e Map (Y/N) and	Well List (Y/N)				
Active Wells Num						
P&A Wells Num F						
Questions to be Answere						
_ carlst	ond Stran	~~				
~						
_ Devor	· Well i	s agas	produce	<u> </u>		
Required Work on This W			1			
•	/ell:		F	Request Sent	Reply:	-
AOR Repairs Needed:	/ell:		F		Reply: Reply:	_

STATE OF NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

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

FORM C-108 Revised June 10, 2003

#### **APPLICATION FOR AUTHORIZATION TO INJECT**

I.	PURPOSE: Secondary Recovery Pressure Maintenance No Disposal Storage Application qualifies for administrative approval?
II.	OPERATOR: CHI Operating Inc.
	ADDRESS: Post Office Box 1799 Midland TX 79702
	CONTACT PARTY: Robin Askew, Regulatory Clerk PHONE:
Ш.	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 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:
	<ol> <li>Proposed average and maximum daily rate and volume of fluids to be injected;</li> <li>Whether the system is open or closed;</li> <li>Proposed average and maximum injection pressure;</li> <li>Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,</li> <li>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.).</li> </ol>
*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: RODIN ASKEW TITLE: PEGLELATORY CLETK SIGNATURE: LOW WILLIAM DATE: 5-4-09
	SIGNATURE: LOW LIDER DATE: 5-4-09
*	E-MAIL ADDRESS:

#### 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.

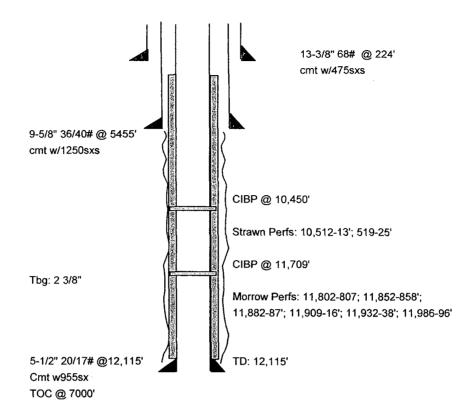
NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

•	•															WELL LO	WELL N.	OPERATOR:
															WELLBORE SCHEMATIC	WELL LOCATION:990 FSL & 1650 FWL	WELL NAME & NUMBER:HENRY #3	OR:CHI OPERATING, INC
(Pe	PERF_10,512		Total Depth:1	Top of Cement:7000'	Cemented with:955	Hole Size: 8 3/4		Top of Cement:SI	Cemented with:	Hole Size:12 1/4_		Top of Cement:SUR	Cemented with:	Hole Size:17 ½ _		N UNIT LETTER		
forated or Open Ho	feet	<u>Injection Interval</u>	12,115'	0'	SX.		Production Casing	SURFACE	1250_sx.		Intermediate Casing	SURFACE	475sx.		WELL CONSTI	22 SECTION		
(Perforated or Open Hole; indicate which)	to10,600	<u>nterval</u>		Method Determined:	or	Casing Size:5 ½	Casing	Method Determined:	or	Casing Size: 9 5/8	e Casing	Method Determined:	or	Casing Size:13 3/8	WELL CONSTRUCTION DATA Surface Casing	TOWNSHIP		
				CBL	ft <sup>3</sup>			CIRC	ft <sup>3</sup>	8		CIRC_	ft³	3/8	<b>,</b> —	27ERANGE		

# INJECTION WELL DATA SHEET

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area:
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. See Schematic
3. Name of Field or Pool (if applicable):CARLSBAD STRAWN
2. Name of the Injection Formation: STRAWN
If no, for what purpose was the well originally drilled?OIL & GAS PRODUCTION
1. Is this a new well drilled for injection? YesXNo
Additional Data
Other Type of Tubing/Casing Seal (if applicable):5 ½ CIBP set @ 10,450'
Packer Setting Depth:was set @ 10,416, pulled and stored
Type of Packer:Arrowset 1-X
Tubing Size: 2 3/8 Lining Material: plastic coated

## Henry #3



## **ATTACHMENT V**

Map that identifies all wells of public record within two miles of each proposed injection well, and the area of review onehalf radius around each proposed injection well.

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DERAL BHP F	D INDIAN DRAW U		S C T S C S C S C S C S C S C S C S C S	Y FEDERAL  O BRANTLEY  EE COM  EY FEDERAL  C.S FEDER  C.S FEDER  PARI  FETET
CSAK FEDERAL	N C	EEBERAL OLD INDIAN DRAW FED OLD INDIAN DRAW FED 24 OLD INDIAN DRAW FTAL 24 RGIS  1. M FERGUSON OLD INDIAN OLD	₹ 5 5 5 1	COURT COURT
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SLASS CO	TRACY IBYON WS	7 6	Merland #5  Merland #5  Merland COM B  GRIAND COM B  HOWARD-HEMLER COM  SPENCER A	<b>↓</b>
<del> </del>		ARK LAND CO	Meriand #5  MERLAND  ABERLAND  ABERLAND  Meriand No. 7  HOWARD-HEMLI  SPENCER A	SALLEN COM Allen #4 Allen #4 Allen #4 LifeN JOELL 6 2
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700	ESPERANZA 24  ETTI 18  18	ALL PARK BASEBALL PARK MERLAND C4  T0  T0  MERLAND C4  T19	L PARK	
<del> </del>		ASSEBALL PARK BASSBALL PARK MERLAN ND MERLAN MERLAN ND MERLAN MER	BASEBALL PARI AND HAGERMAN Merland #3	Mortand No. 8  Mortand No. 8  E JEWEL COM  ALSBAD  COM  COM
J. J.	Z Z		WITC BASS	
S S SNAKEBITE 1SBAD 12 COM	CABLSBADD  SBAD / 13/ COM  S ESPERANZA  ESPERANZA  ESPERANZA	COPOGO © COP	GRACE-ATLANTIC BASEBALL PARK MERLAND ARBRO Sopogo HAGERMAN Thefrand #4 Y OF CARLSBAD CO Merland #3	OF CARLSBAD  OF CARLSBAD  COLLATWORISH OF CARLSBAD  COLLATWORISH OF COLLATWORI
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## **ATTACHMENT VI**

Data on all wells of public record within the area of review. There are no plugged wells that penetrated the proposed injection zone within the area of review.

N O	
COMPLETION	10,510-556' Strawn Gas
PROD CSG	5 1/2" @ 12,032' 715sxs
INT CSG	9 5/8" @ 5505' 2575sxs
SUR CSG	13 3/8" @ 455' 1000sxs
SPUD DATE	5/16/1984
LOCATION	27C-22S-27E
WELL NAME	Devon Energy #1 Weems

#### ATTACHMENT VII

- 1. Proposed average of 500 bbls per day and Maximum of 1000 bbls per day of injected fluids at a rate of one bbl per min.
- 2. System will be closed.
- 3. Average anticipated pressure of 600 psi and maximum of 900 psi.
- 4. Source of produced water is re-injected water from offsetting leases.
- 5. Water analysis is attached.



Gary Womack 1-432-687-2662

# **B J Services Water Analysis**

Artesia

District Laboratory

(505)-746-3140

Date:

10-Feb-04

Test #:

Well #:

Lease: State:

Henry NM

Company: CHI Operating

County;

Eddy Formation: Strawn

Depth:

Source:

injection psis

РН	6.24		Temp (F):	57.7
Specific Gravity	1.085		·	
CATIONS		mg/l	me/l	ppm
Sodium (calc.)		35553	1546.5	32768
Calcium		6336	316.2	5839
Magnesium		753	62.0	694
Barium		< 25		
Potassium		< 10		
Iron		· 230	8.3	212
ANIONS				
Chloride		68400	1929.5	63041
Sulfate		184	3.8	170
Carbonate		< 1	*	
Bicarbonate		342	5.6	315
Total Dissolved Solids	(calc.)	111798		103040
Total Hardness as CaC	CO3	18924	378.1	17441
COMMENTS:	Resistivity	(ohm-metersc	alc.)	0.111885

#### SCALE ANALYSIS:

CaCO3 Factor

2164309 Calcium Carbonate Scale Probability>

CaSO4 Factor

1267160 Calcium Sulfate Scale Probability --->

Probable Remote

Stiff Plot

50 40 10 10 20 60



## **ATTACHMENT VIII**

The proposed injection zone is porous dolomite limestone. There is possible drinking water in the surface sands at a depth of 0-200 feet. There is no known source underlying the injection interval.

# **ATTACHMENT IX**

1) Acidize with 5000 gals 15% NeFe HCL.

# **ATTACHMENT XI**

There is no active fresh water well within one mile of the proposed disposal well.

### **ATTACHMENT XIV**

#### PROOF OF NOTICE

Leasehold operators within one-half mile of the well location are: Santa Fe Energy was provided a copy of our application by certified mail. Proof of notice is enclosed. The surface owner is William A. Weems.

#### PROOF OF PUBLICATION

Proof of publication is from the Artesia Daily Press.

Copies of the application have been sent to:

Devon Energy Corporation 20 North Broadway Oklahoma City, OK 73102-8260 Certified Mail # 7007 0220 0002 4967 2147

William A. Weems 13803 Baytree Sugarland, Texas 77478

7007 0220 0002 4967 2154

## **ATTACHMENT XII**

All available geologic and engineering data have been examined and there is no evidence of open faults or any other hydrologic connection between the disposal zone and source of drinking water.

# **Affidavit of Publication**

NO.	20245
STATE OF NEW MEXICO	
County of Eddy:	
GARY D. SCOTT	being duly
sworn,says: That he is the	PUBLISHER of The
Artesia Daily Press, a daily nev	vspaper of general
circulation, published in English	n at Artesia, said county
and county and state, and that	the here to attached
Le	gal Notice
was published in a regular and	entire issue of the said
Artesia Daily Press,a daily new	spaper duly qualified
for that purpose within the mea	aning of Chapter 167 of
the 1937 Session Laws of the	state of New Mexico for
5 Consecutive week	days on the same
day as follows:	
First Publication	June 12, 2008
Second Publication	June 13, 2008
Third Publication	June 15, 2008
Fourth Publication	June 17, 2008
Fifth Publication	June 18, 2008
Subscribed and sworn to before	e me this
18th Day	June 2008
Limberton A.	compo
Notary Public, Eddy	County, New Mexico
My Commission expires	April 5, 2011

# **Copy of Publication:**

Notice of Application for Fluid Injection Well Permit Chi Operating, Inc., c/o Gary Womack 432-685-5001, P.O. Box 1799, Midland, TX 79702 is applying to the NMOCD for a permit to inject fluid into a formation which is production of oil and gas: The applicant proposes to inject fluid into the Strawn Henry #3. The proposed injection well is located in Section 22, T22S, R27E in the Carlsbad Strawn Field, Eddy Co., NM. Fluid will be injected into strata in the subsurface depth interval from 10,512 -10,600' 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. Published in the Artesia Daily Press, Artesia, N.M. June 12,13,15,17,18, 2008 Legal 20245

## Notice of Application for Fluid Injection Well Permit

Chi Operating, Inc., c/o Gary Womack 432-685-5001, P.O. Box 1799, Midland, TX 79702 is applying to the NMOCD for a permit to inject fluid into a formation which is production of oil and gas. The applicant proposes to inject fluid into the Strawn Henry #3. The proposed injection well is located in Section 22, T22S, R27E in the Carlsbad Strawn Field, Eddy Co., NM. Fluid will be injected into strata in the subsurface depth interval from 10,512 – 10,600'

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.

P.O. BOX 98 MIDLAND, TX. 79702 PHONE (432) 683-4521

#### .....

709 W. INDIANA MIDLAND, TEXAS 79701 FAX (432) 682-8819

(,	RESULT OF WATER	I ANALYSES		309-9		
M. Cara Warran		LABORATORY NO				
Mr. Gary Womack	77. 50500	SAMPLE RECEIVED		-24-09		
212 N. Main, Suite 200, Midland,	TX /9/02	RESULTS REPORTED_	5	-2-09		
COMPANY CHI Energy		LEASEHen	ary #3			
FIELD OR POOL		LEASE				
SECTION BLOCK SURVEY _		EddySTATE		IM		
SOURCE OF SAMPLE AND DATE TAKEN:	COUNTY		·			
NO. 1 Water well - Tidwell & F		eems) 2-23-09				
			Sant of Health			
	filikilig water as recomm	lended by the Texas is	Jept. Of Ficardi.			
NO. 3						
NO. 4				·-··		
REMARKS:						
	CHEMICAL AND PHYSIC	1				
	NO. 1	NO. 2	NO. 3	NO. 4		
Specific Gravity at 60° F.	1.0027					
pH When Sampled						
pH When Received	7.11					
Bicarbonate as HCO,	183					
Supersaturation as CaCO <sub>3</sub>			<u> </u>			
Undersaturation as CaCO <sub>3</sub>						
Total Hardness as CaCO <sub>3</sub>	2,720					
Calcium as Ca	672					
Magnesium as Mg	253					
Sodium and/or Potassium	849					
Sulfate as SO	2,011	300				
Chloride as Cl	1,648	300				
Iron as Fe	14.6	0.30′				
Barium as Ba						
Turbidity, Electric						
Color as Pt						
Total Solids, Calculated	5,615	1,000				
Temperature °F.						
Carbon Dioxide, Calculated						
Dissolved Oxygen,						
Hydrogen Sulfide	0.0					
Resistivity, ohms/m at 77° F.	1.16					
Suspended Oil			*			
Filtrable Solids as mg/l				1		
Volume Fittered, ml		+				
				1		
Nitrate, as N	5.6	10.0				
Tritime, as	Results Reported As Milli	ligrams Per Liter		<u> </u>		
Additional Determinations And Remarks		d certifies the above to	be true and cor	rect to the		
best of his knowledge and belief.						
			**			
	<del></del>		7			

Form No. 3

Greg Ogden, B.S.