depth interval tested, cushion used, time tool open, flowing and shut-in pressurs, and rec	depth interval tested, cushion used, time tool open, flowing and shult-in pressurs, and recoveries):	ring and shut-in pressurs, and	recoveries):	38.	GEOLOGIC MARKERS	
FORMATION	ТОР	BOTTOM	DESCRIPTION, CONTENTS, ETC.	NAME	1	тор
			San Juan 28-7 Unit #226E		. MEAS DEPTH	TRUE VERT. DEPTH
				Ojo Alamo	2423'	
•				Kirtland	2552'	
				Fruitland Fm	2829'	
				Picture Cliffs	3227	
				Lewis	3391'	
				Chacra	4184	
•				Cliffhouse Mesa Verde	4872'	
				Menefee	5025'	
				Point Lookout	5452	
				Mancos	5858	
				Gallup	6638'	
				Greenhorn	7383'	
				Graneros	7442'	
				Paquate	7599'	
•						!  -

(October 1990)

### **UNITED STATES DEPARTMENT OF THE INTERIORINTERIOR**

ee other	FOR API ROVED OMB NO. 1004-0137 Expires: December 31,19
	5. LEASE DESIGNATION AND SERIAL NO

other	
tions	5. LEASE DESIGNATION AND SERIAL NO
(10110	05 070474

	BUF	REA <del>U OF L</del> AN	D MANAGE	MENT		slru	ctions	J. CENGE DEGIG		78474
WELL CO	MPLETIO	N OR RECC	MPLETIC	N REPOI	RT AN	D LO	<b>3</b> *	6. IF INDIAN, AL	LOTTEE	OR TRIBE NAME
la. TYPE OF WELL:			X DRY	OTHER	200		111 1	7. UNIT AGREEM	ENT NAME	3
b. TYPE OF COM		P. [ PLUG F	DIFF.	r <b>∞</b>	חחנ	` 2662 ·	t	1 1 1		
	WORK DEE	P. PLUG BACK	DIFF. RESVR	OTHER		37	ا منعد	B. 'FÁRM OR LEAS		
NAME OF OPERA				Attention: Medi	ssa Vela	asco				ay 2
moco Production	· · · · · · · · · · · · · · · · · · ·			141011				9. API WELL NO.		5-23361
P.O. Box 3092			<i>i</i> .	a = aaa	281-3	66-2548		10 FIELD AND P		
LOCATION OF WELL	. (Report location	clearly and in acc	ordance with any	State requirem	ients)*	<del></del>		В	lanco I	Mesaverde
At surface .	2340' FNL		1450' FEL	***		]		11. SEC., T., R.,	M., OR BI	LOCK. AND SURVEY
At top prod. into	erval reported		Unit G			,		OR AREA	Section	8
At lotal									9N	o Range 8W
At total			14. PERMIT	NO.	DATE	SSUED		12. COUNTY OR		13. STATE
			14. FERWIN	110.	1	05/31/2000	0	San Ji		New Mexico
5. DATE SPUDDED	16. DATE T.D. REA	CHED 17. DATE	COMPL. (Ready	to prod.)	18. ELEVA	TIONS (DF, I				EY. CASINGHEAD
04/05/2079	04/13/20	1	09/15/2000	D		6	404'		Ì	
D. TOTAL DEPTH, MD & 7635	TVD 21. PLUC	7600°	/D 22. IF N	ULTIPLE COMPL., Y MANY		23. INTER	YALS LED BY	ROTARY TOO Rotary	)LS	CABLE TOOLS
PRODUCING INTERV	(AL (C) OF THIS C		POTTOM NAME	(MD AND TVO)	•	<u> </u>			25	WAS DIRECTIONAL SURVEY MADE
	Blanco Mesav		BOTTOM, NAME	(כודו טווה טווון)					ŀ	SURVET MADE
4654' - 5478'	bianco iviesav	erue								NO
5. TYPE ELECTRIC AND	OTHER LOGS RUN								27. WAS	S WELL CORED
			- GR; CDL, Ca	<del></del>			<del></del>			N
8.	T		ASING RECORD		ings set					T
CASING SIZE/GRADE 9 5/8"			SET (ND)	HOLE SIZE	125 S		ENENT,CE	MENTING RECOR	)	AMOUNT PULLED
7"	36# 23#		500°	12 1/4" 8 3/4"	700 \$					<del> </del>
4 1/2"	10.5# & 11.		635'	6 1/4"	550 8				-	<u> </u>
		<del></del>								
9.		LINER RECORD				30.		TUBING RE	CORD	
SIZE	TOP (MD)	BOTTOM (ND)	SACKS CEMEN	IT* SCREEN	(MD)	SIZE		DEPTH SET (A	(D)	PACKER SET (MD)
4 1/2"	3321'	7635'	550 SXS			2 3/8"		7359'		
					···		L			<u> </u>
PERFORATION REC	ORD(Interval, size,	and number)		32.			FRACTU	RE, CEMENT S		
1. 5073'-5165' & 5455'	- 5478' w/2 JSPF,	.340 inch diameter, 22	t shols	<del></del>	'H INTERY/		ļ			MATERIAL USED
2. 5262' - 5415' 3. 4654' - 4842'		.340 inch diameter, 16		5073' 5455'		5165	1	16/30 sand & 70		
5. 4865' - 4958'		.340 inch diameter, 12		4654		5478'	<del>}</del>	16/30 sand & 70	<del></del>	<del></del>
		4				4958'	60,000#	16/30 sand & 70	Juanty F	Oam
3.*				PRODUCTION			<u> </u>			<del></del>
ATE FIRST PRODUCTION	ON PRODU	UCTION METHOD (FIG	owing, gas lift, pu		nd type of	pump)		WELL S	TATUS	(Producing or
				F				sn	ut-IN)	SI
ATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N FOR	Oll. – Bi	3L.	GAS - M		WATER - BBI	,.	GAS-OIL RATIO
09/12/2000	12 hrs.	3/4"		Ti	race	1300	MCF	Trace		مهلان
LOW TUBING PRESS.	CASING PRESSUR 120#	E CALCULATED 24-HOUR RAT	OIL - BBL.	GAS	B - MCF.	j	WATER -	CCEPTE	<b>6,4G</b>	MILITERAL (FORE)
4. DISPOSITION OF GA	S (Sold, used for	fuel, vented, etc.)					TEST WITH	ESSED BY		· onn
TO BE SOLD								nr:	[2:	5 5000
36. I hereby certi	NTS									HILL UNFICH
36. I hereby certi	fy that the fore	going and allach	ed information	is complete a	ind corre	ct as det	ermined	(rolfin avai	lab	ecords
1	YI O E i X XXI			.,		- A!-!		aY_	ستوسد	00/00/0000
SIGNED ~1	N Y X AAA.YXIA	. T. KRKKT [* 1	ያ ያጥነጥ 🚶 📝	, P	ermittin	y Assist	ant	DAT	r	09/29/2000



# Day 2 OF ECOMPLETION SUBSEQUENT REPORT 09/29/00

09/05/00 MIRUSU @ 0900 hrs. NDWH & NU BOP's. TOH W/TBG.

09/06/00 TIH & set a CIBP @ 5650'. Load hole w/2% KcL water. Pressure Test CSG to 2500#. Held Ok. SDFN.

09/07/00 RU & Perf 1st Stage as follows w/2 JSPF, .340 inch diameter, total shots fired 22:

5073'	5118'	5150'	5470'
5102'	5128'	5165'	5478'
5108'	5140'	5455'	

Perf 1st Stage as follows w/1 JSPF, .340 inch diameter, total shots fired 18:

5262'	5290'	5322'	5348'	5375'	5388'
5270'	5300'	5324'	5350'	5378'	5402'
5280'	5312'	5334'	5358'	5385'	5415'

09/08/00 RU & Frac 1st Stage w/80,000# of 16/30 Arizona Sand & 70% Foam. RU & TIH w/CIBP & set @ 4985'.

RU & Perf 2<sup>nd</sup> Stage as follows w/1 JSPF, .340 inch diameter, total shots fired 23:

4654'	4686'	4715'	4752'	4804'	4832'
4663'	4690	4725'	4768'	4812'	4840'
4670'	4695'	4732'	4782'	4820'	4842'
4676'	4700'	4742'	4795'	4825'	

RU & Perf 2<sup>nd</sup> Stage as follows w/2 JSPF, .340 inch diameter, total shots fired 12:

4865	4943
4906'	4948
4935'	4958

RU & Frac  $2^{nd}$  Stage w/80,000# of 16/30 Arizona Sand & 70% Foam. RU & Flow back well thru  $\frac{1}{2}$ " choke all night.

09/11/00 Open well up to 3" line. RU & TIH w/ 3 7/8" mill & 2  $\frac{3}{4}$ " TBG & tag fill @ 4820". RU & C/O sand to top of CIBP set @ 4985'. PU above perfs. SDFN.

09/12/00 TIH & tag fill @ 4970'. RU & C/O to top of CIBP @ 4985'. PU above liner top & flowed well all night.

09/13/00 TOH tag fill @ 7524. CIRC hole clean to PBD 7600'. PU above perfs & flowed well through 3" lines. SDFN.

09/14/00 TIH & tag fill @ 7594'.

09/15/00 TIH & Land TBG @ 7357'. ND BOP's & NUWH. Pull TBG plug & ran into hole w/TBG.

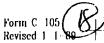
RDMOSU. Rig Release @ 0700 hrs.

Form 3160-4 FOR APPROVED OMB NO. 1004-0137 Expires: December 31, 1991 (October 1990) UNITED STATES SUBMIT IN DUPLICATE ... (Sec ather in-DEPARTMENT OF THE INTERIOR structions on reverse side) S. LEARS DESIGNATION AND BERIAL NO. BUREAU OF LAND MANAGEMENT 6. IF INDIAN, ALLOTTEE OR TRIBE HAME WELL COMPLETION OR RECOMPLETION REPORT AND LOG\* N/A IL TYPE OF WELL: WELL CAN X 7. I'NIT ACRESIENT HAND L TYPE OF COMPLETION: ADD FRUITLAND SAND ZONE N/A WENT WORK BYCK [ 8. FARM OR LEASE NAME, WELL NO 2. NAME OF OPERATOR FEDERAL 8-1 FC TEXAKOMA OIL & GAS CORPORATION 9. API WELL NO. J. ADDRESS AND TELEPHONE NO. 30-045-28927 5400 LBJ FREEWAY, SUITE 500, DALLAS, TX 75240 (972) 701-9106 10. FIELD AND POOL, OR WILDCAT 4. LOCATION OF WELL (Report location elearly and in accordance with any State regularments). FLORA VISTA FRUITLAND SAN At surface 1080' FNL and 1490' FEL, SEC 8 T30N R12W 11. BEC., T., R., M., OR BLOCK AND BUBYET OR AREA At top prod. interval reported below SAME AS ABOVE SEC 8, T30N R12W At total depth SAME AS ABOVE 14. PERSIT NO. DATE ISSUED 12. COUNTY OR PARISH 13. STATE NEW MEXICO SAN JUAN 15. DATE EFUDDED 16. DATE T.D. REACHED 17. DATE CONCL. (Ready to prod.) 18. ELEVATION'S (DF, RKB, RT, GR, ETC.)\* 19. ELEY. CARINGHEAD 12/31/92 10-12-2000 5832' RKB 5816' 1/6/93 21. PLUG, BACK T.D., MD & TYD 22. IF MULTIPLE COMPL., 23. INTERVALS ROTARY TOOLS CABLE TOOLS HOW MARTS DAILLED BY 0'-2150' 21501 2106' 2

24. PRODUCING INTERVAL(8), OF THIS CONFLETION—TOP, BOTTOM, NAME (MD AND TVD)\* WAS DIRECTIONAL BURYRY MADE NO FLORA VISTA FRUITLAND SAND (1749'-1845') 26. TYPE BLECTRIC AND OTHER LOGS BUN 27. WAS WELL COLED DUAL COMPENSATED POROSITY, MICRO-RESISTIVITY, GR-CBL CASING RECORD (Report all strings set in well) CASING SIZE/GRADE WEIGHT, LE./FT. DEPTH BET (MD) HOLE BILE TOP OF CEMENT, CEMENTING RECORD AMOUNT PULLED 12 1/4" 8 5/4"/J SURF 250 sx"B"+2% CaCl<sub>2</sub> 310,25' NONE 24 7 7/8" 4 1/2"/J SURF 390 sx Lite+100sx"B" 11.6 2148 NONE LINER RECORD 30. TUBING RECORD (an) NOTTOR RIZE TOP (MB) BACKS CEMENTS RCREEK (MD) SILE DEPTH BET (MD) PACKER BRT (MD) <u>2\_3/8"</u> 20371 NONE 31. PERFORATION RECORD (Interval, size and number) ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC. 1836-18461, DEPTH INTERVAL (MD) DESU JEISTAM TO GHIM DIA THUOKA 40 HOLES 0.390 EHD, 1789-1798', 1749'-1845' 62,076g.20# Gel w/ 138,000# 0.39 EHD, 36 HOLES 1772-1778', 0.39EHD. 24 HOLES 12/20 Sand 1749-1754+ 0.39 EHD 20 HOLES PRODUCTION DATE FIRST PRODUCTION PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump) WELL BIATUS (Producing or shut-in) 10/13/00 DATE OF TREE PRODUCING FLOWING HOURS TESTED CHOKE AIRE PROD'N. FOR TEST PERIOD OIL-BBL. GAS-NCY. GAS-OIL BATIO 10/15/00 24 NA 0 300 65 NA FLOW, TURING PRIN CASING PRESSURE CALCULATED 011.-- 381. WATER--RBL. OIL GRAFITT-API (CORR.) 24-HOUR BATE 0 300 NA 34. DIRPORTTION OF GAR (Bold, used for fuel, vented, etc.) TEST WITHEBBED BY BRAD SALZMAN 35. LIST OF ATTACMMENTS 36. I bereby certify that the foregoing and attached information is complete and correct as determined from all available records DATE 10-20-00 TITLE DRILLING MANAGER

drill-stem, tests, including depth interval tested, cushion recoveries):		•				
TOP	ď	воттом	DESCRIPTION, CONTENTS, ETC.	NAME	TOP	TR
1700'		1830'	ALTERNATING GRAY SILTSTONE & GRAY TO BLACK SHALES - NO SHOW		WEAS, DEFIN	VERT. I
FRUITLAND SAND 1830'		20361	GRAY TO WHITE, FINE TO VERY FINE GRAINED MINERAL INCLUSIONS, HARD, NO VISIBLE POROSITY, THIN COALS, SLIGHT BUBBLING OF GAS			
2036	<u>.</u>	2056'	BLACK, BANDED, SEMI BRIGHT TO BRIGHT, BLOCKY, RESTNOUS, GOOD GAS SHOW			
CLIFFS 2056'	*	2150'	SANDSTONE - WHITE TO GRAY, SUBEND TO RD, SALT & PEPPER, FINE GRAIN, SOME CLAY FILLED POLOSITY, GAS SHOW @ TOP DECREASING THROUGHOUT			
			•			
·						
, 						
-						
	·			·		
	•					
	_		•			

(211)



State of New Mexico Submit to Appropriate District Office State Lease - 6 Energy, Minerals and Natural Resources WELL APL NO. <u>DISTRICT |</u> P.O. Box 1980, Hobbs, NM 88240 OIL CONSERVATION DIVISION 30-045-30267 P.O.Box 2088 5. Indicate Type of Lease Santa Fe. New Mexico 87504-2088 DISTRICT II P.O. Drawer DD, Artesia, NM 88210 FEE 🗵 6. State Oil & Gas Lease No. DISTRICT III 1000 Rio Brazos Rd., Aztec. NM 67410 WELL COMPLETION OR RECOMPLETION REPORT AND LOGO 2000 la. Type of Well:
OIL WELL 77. Lease Name or Unit Agreement Name GAS WELL DRY OTHER Uptegrove Gas Com 1337.3 b. Type of WORK DEEPEN PLUG BACK Name of Operator Attentio Amoco Production Company Melissa Velasco 3. Address of Operator 9. Pool name or Wildcat P.O. Box 3092 Houston, Texas 77253-3092 Blanco Mesaverde 4. Well Location Line and \_\_\_\_\_\_\_ South Unit Letter O Feet From The Feel From The. Line \* NMPM Township 32N Range 10W San Juan County Section 33 12. Date Compl. (Ready to Prod.) 13. Elevations (DF & RKB, RT,GR,etc.) 10. Date Spudded 11. Date T.D. Reached 14. Elev. Casinghead 58591 07-29-00 08-03-00 10-24-00 18. Intervals Rotary Tools
Drilled By 17. If Multiple Compl. How Many Zones? Cable Tools 15. Total Depth 16. Plug Back T.D. 5224' 5196 YES NO 20. Was Directional Survey Made 19. Producing Interval(s), of this completion - Top, Bottom, Name 4229' - 5070' Blanco Mesaverde 21. Type Electric and Other Logs Run 22. Was Well Cored CASING RECORD (Report all strings set in well) DEPTH SET HOLE SIZE CEMENTING RECORD AMOUNT PULLED CASING SIZE WEIGHT LB./FT. 13 1/2" 260 SXS CLS B 9 5/8 32.3# H-40 146 to Surface N-80J-55 20# & 23# 2104 8 3/4" 311 SXS CLS B Surface 24. LINER RECORD TUBING RECORD SIZE BOTTOM SACKS CEMENT SCREEN SIZE DEPTH SET PACKER SET 4 1/2" 300 SXS 5156 2 3/8" 50061 26. Perforation record (interval, size, and number) ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC. DEPTH INTERVAL AMOUNT AND KIND MATERIAL USED 4741' - 5070' 2 JSPF 0.330 inch diameter, total shots 50 4741 5070 99,500# 20/40 Arizona Sand & Slickwater 4229' - 4657' 2 JSPF 0.330 inch diameter, total shots 46 99,500# 20/40 Arizona Sand & Slickwater 4229' 4657 PRODUCTION Date First Production Production Method (Flowing, gas lift, pumping - Size and type pump) Well Status (Prod. or Shut-in) Date of Test Hours Tested Choke Size Prod'n For Oil - Bbl. Gas - MCF Water - Bbl. Gas - Oil Ralio Chokezsize 24 Oct 2000 13 Test Period Trace 2500 MCF Flow Tubing Press. Casing Pressure Calculated 24-Oil - Bbl. Gas - MCF Water - Bbl Oil Gravity - API - (Corr.) 300# Hour Rate 29. Disposition of Gas (Sold, used for fuel, vented, etc.) Test Witnessed By To Be Sold 30. List Attachments 31. I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief Printed 10-26-200 Melissa Velasco Permitting Assistant . Title \_ Name ... \_Date \_

## **INSTRUCTIONS**

(19!

Northwestern New Mexico

This form is to be filed with the appropriate District Office of the Division not later than 20 days after the co. of any newly-drilled or deepened well. It shall be accompanied by one copy of all electrical and radio-activity run on the well and a summary of all special tests conducted, including drill stem tests. All depths reported shall measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, Items 25 through 29 shall be reported for each zone. The form is to be filed in quintuplicate except on

#### INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

Southeastern New Mexico

T. Salt B. Salt T. Yates T. 7 Rivers T. Queen T. Graybur T. San And	s		T. Canyon T. Strawn T. Atoka T. Miss T. Devonian T. Silurian T. Montoya T. Simpson	T. Kirtland- T. Pictured T. Cliff Hous T'. Menefee T. Point Loc T. Mancos T. Gallup	Frui Cliff se _ okou	tland 1262 's 2680' 4514' 4600' t 4950' 5100'	T. Penn. "B" T. Penn. "C" T. Penn. "D" T. Leadville T. Madison T. Elbert T. McCracken T. Ignacio Otzte
							T. Granite
T. Blinebry	V		T. Gr. Wash	T. Morrison			T
T. Tubb			_ T. Delaware Sand	T. Todilto _			T
T. Drinkar	d		T. Bone Springs	T. Entrada .			<u>T</u>
l. Aba		<del></del>	_ T	T. Wingate			T
I. WOIICAM T. Donn	1p		- I. —————— Т	T Permain			T
T. Cisco (F	Bough	C)	Т.	T. Permam T. Penn "A"			T
0,000 (2		7		SANDS OR ZON			
o. 1. from			lo				to
			lo				to
		LITH	toto	feet		et if necessary	
From	To	Thickness in Feet	Lithology	From	To	Thickness in Feet	Lithology

Form 3160-5 (June 1990)

Subsequent Report

Final Abandonment Notice

#### **UNITED STATES** DEPARTMENT OF THE INTERIOR **BUREAU OF LAND MANAGEMENT**

FORM APPROVED Budget Bureau No. 1004-6 Expires: March 31, 199.

NM-44453

			-	_	-	-	_	
-					_	_		
	16	Indian.	A 11a			~-	Teiba	Man
ι υ.	11	mutan,	All	ш	ᄣ	v	11100	174111

New Construction

Water Shut-Off

Non-Routine Fracturing

Conversion to Injection Dispose Water

(Note: Report results of multiple completion on Well

SUNDRY NOTICES AND REPORTS ON WELLS া ot use this form for proposals to drill or to deepen or reentry**9g ath ির্ভেণি দ্বির্ভিণি দি** 

Use "APPLICATION FOR PE	RMIT—" for such proposals	N/A
SUBMIT IN	TRIPLICATE Sa	7, If Ollit of CA, Agreement Designation
of Well Gas Other  Name of Operator		8. Well Name and No. an Is. (Sh'w.) 7-11
Energy Development Corpora  3. Address and Telephone No.  1000 Louisiana, Suite 2900,		9. API Well No.  30-043-20729  10. Field and Pool, or Exploratory Area
4. Location of Well (Footage, Sec., T., R., M., or Survey Description Surface: NESW 7-20n-2w BHL: Same	ion)	Rio Puerco Mancos II. County or Parish, State Sandoval,
	O INDICATE NATURE OF NOTICE, REPO	RT, OR OTHER DATA
TYPE OF SUBMISSION	TYPE OF ACTION	
Notice of Intent	Abandonment	Change of Plans

Completion or Recompletion Report and Log form.) be Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, sive subsurface locations and measured and true vertical depths for all markers and zones pertinent to this work.)\*

Recompletion

Plugging Back Casing Repair

Altering Casing

Will convert existing oil well to a water dispoal injection well as detailed in attached state application.



cc: BLM(3 + 2 for OCD), Lincon Consultant (505) 466-8120 (1" is space for Federal or State office use) /s/ Patricia M. Hester Lands and Mineral Resources 

#### OIL CONSERVATION DIVISION PO BOX 2088 SANTA FE, NM 87504-2088

## APPLICATION FOR AUTHORIZATION TO INJECT

	XXX _, .
I.	PURPOSE: Secondary Recovery Pressure Maintenance Disposal Surage Application qualifies for administrative approval? Yes XX No
II.	OPERATOR: ENERGY DEVELOPMENT CORPORATION
	ADDRESS: 1000 LOUISIANA, SUITE 2900, HOUSTON, TX. 77002
	CONTACT PARTY: BRIAN WOOD C/O PERMITS WEST, INC. PHONE: 505 468-8120
Ш.	WELL DATA: Complete the data required on the reverse side of this form for each well processed 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:
	<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 treinjected 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 propos attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing line, studies, nearby wells, etc.).</li> </ol>
VIII.	Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, timeness 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/1 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 source of drinking water.
хш.	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 besame my knowledge and belief.
	NAME: BRIAN WOOD CONSUL IN
	SIGNATURE: DATE: 1-24-96
ı	If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need to be resubmitted. Please show the date and circumstance of the earlier submittal.
	$\cdot$

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

DISPOSAL WELL APPLICATION

- I. Purpose is disposal.
- II. Operator is Energy Development Corporation.Address is 1000 Louisiana, Suite 2900, Houston, Tx. 77002.Contact is Brian Wood (Permits West, Inc.). Phone is (505) 466-8120.
- III. A. (1) Lease is BLM oil and gas lease NM-44453, which comprises all of Sections 6-8, T. 20 N., R. & W. When APD was filed, prior to unit formation, lease was known as Johnson 7-11. Well name and number is San Isidro (Shallow) Unit 7-11. Well is at 2074' FSL and 1650' FWL Sec. 7, T. 20 N., R. 2 W.
  - A. (2) Surface casing (9-5/8", 36#, J-55) was set at 595' in a 13-1/2" hole and cemented to the surface (visually observed) with 135 sx (448 cu ft) 65/35 Pozmix and 150 sx (177 cu ft) Class B. Intermediate string (7", 23#, J-55) was set at 3666' KB in a 8-3/4" hole and cemented to 325' (checked by log) with 230 sx (766 cu ft) 65/35 Pozmix and 100 sx (118 cu ft) Class B. Long string (4-1/2", 10.5#, J-55) was set at 4762' KB in a 6" hole and cemented to 3339' (checked by log) with 165 sx (208 cu ft) 50/50 Pozmix.
  - A. (3) Tubing will be ceramic lined 2-7/8" 6.5# injection string set at 2349' (disposal interval is 2438' 2624').
  - A. (4) Model R packer from Baker will be set at 2350'.
  - B. (1) Disposal zone will be Menefee Formation.
  - B. (2) Disposal interval will be 2438' 2624'. It was perforated (0.36") with 2 shots per foot through 6 intervals (2438'-2441', 2516'-2522', 2550'-2562', 2590'-2594', 2600-2604', 2614'-2624') in 1992 during testing for a possible oil well completion (Mancos was completed in 1984, but became sub-marginal and was abandoned).
  - B. (3) Well was drilled in 1984 as a Mancos oil well.
  - B. (4) Mancos was perforated from 4169' to 4290'. During 1992 recompletion into Menefee a CIBP was set at 2667' and 4 perforations at 3160'-3162' were squeezed.
  - B. (5) Top of Mancos is 3112', which is 488' below the lowest Menefee perforation. While neither produce locally, Pt. Lookout top (2940') is



DISPOSAL WELL APPLICATION

316' below the lowest Menefee perforation and the Cliff House top (1632') is 806' above the highest Menefee perforation.

- IV. This is not an expansion of an existing injection project.
- V. A map is attached showing all wells within a half mile (there are none, closest is the 7-3 which is 2765' north and its BHL is 4757' north) and within 2 miles (12 oil + 3 P&A; all 15 wells are within the unit). The same map also shows all leases within a half mile (all Federal and all within the unit) and within two miles (all Federal or state).
- VI. This is the only well within a half mile. Profile is attached.
- VII. 1. Average injection rate = 100 bwpd. Maximum rate = 1000 bwpd.
  - 2. System will be open (trucked to well). Two 300 bbl steel tanks, Gasso 3211 triplex pump with Waukesha CRG 155 engine, and a 20" filter cartridge with two 75 micron filters will be installed.
  - 3. Average injection pressure = 700 psi. Maximum = 2000 psi.
  - 4. Water source will be unit wells producing from Mancos. Analyses of receiving (7-11) and injected waters are attached. A summary follows:

<u>Parameter</u>	Drink. Water Stand.	7-11*	7-3	<u>5-15</u>	12-10
pН	6.5-8.5	7.6-8.0	7.5	7.5	7.3
TDS	500	8790	3243	27356	25495
Bicarbonate	•	630-2020	988	744	598
Chloride	250	1029-3800	1300	16000	15000
Sulfate	250	<300	11	81	3
Calcium	•	58-116	120	1080	120
Magnesium	•	0.1-64	389	98	170
Sodium	•	3062	348	9271	9495
Iron	0.3	1.0	2.6	36	3.6
Barium	1.0	17.0	85	46	105
Total Hardness		200	1900	3100	1000
	<b>*</b>				

\*range of 3 different samples



DISPOSAL WELL APPLICATION

5. Analysis of disposal zone water is attached. Salient points are that the disposal zone water TDS exceeds drinking water standards by over 17 times, chlorides by 4 to 15 times, iron by 3 times, and barium 17 times. The Menefee is a mix of coal, shale, claystone, carbonaceous siltstone, and sandstone layers. Its depositional environment was a marine lagoon. An analysis (S. E. Craigg's 1980 Hydrogeology and water resources of the Chico Arroyo - Torreon Wash Area, McKinley and Sandoval Counties, New Mexico) of Menefee water 20-30 miles southwest of the 7-11 well found TDS increased from southwest to northeast to a high of 10,272. Five unit wells (5-2, 6-16, 11-14, 12-10, 13-11) which penetrated the Menefee and reported what they found, found oil in the Menefee. All five wells are within 2 miles of the 7-11.

VIII. The Menefee consists of coal, shale, claystone, carbonaceous siltstone, and sandstone. Menefee oil pools are found at the Rusty (≈30 mi. W in 22n-7w) and Seven Lakes (≈50 mi. SW in 18n-10w) Fields. It is 627' thick in the 7-11 wellbore. Top is 2312' and bottom is 2939'. Fracture gradient is 0.82 psi/ft.

Two zones (Pictured Cliffs and Cliff House) above the Menefee are water bearing. Local TDS data from these zones is lacking. Basin wide, specific conductance of Pictured Cliffs and Cliff House water ranges from 2000  $\mu$ mhos near outcrops to 30,000  $\mu$ mhos in deeper gas prone areas. Five unit wells (5-2, 6-16, 11-14, 12-10, 13-11) penetrated the Pictured Cliffs and reported what was found there. All five found gas in the Pictured Cliffs. Three unit wells (5-2, 11-14, 12-10) penetrated the Cliff House and reported what was found there. All three found gas in the Cliff House.

The water bearing Pt. Lookout lies immediately below the Menefee. Four unit wells penetrated the Pt. Lookout <u>and</u> reported what was found there. Two (11-14, 12-10) of the four reported they found gas and two (6-16, 13-11) reported they found oil and gas.

IX. Stimulation, if needed, will be acidization.



DISPOSAL WELL APPLICATION

- X. Induction, CDL, GR, Compensated Density, Sidewall Neutron, and CBL logs were run and are on file.
- XI. Based on a field inspection (Dec. 20) and the NM State Engineer's Office record review (Oct. 26), there are no fresh water wells within a mile of the 7-11.
- XII. Geologic and engineering data at the NM Oil Conservation Div. and NM Institute of Mining & Technology have been examined. No evidence of open faults or other hydrologic connection between the Menefee and any underground source of water has been found. An injectivity test was run on 9-28-95 and the Menefee tested at a rate of 720 bwpd and 700 psi.
- XIII. Notice has been sent to the surface owner (BLM Albuquerque District). Energy Development Corporation is the operator of all leases within a half mile since all leases within a half mile are in its San Isidro (Shallow) Unit.



# INJECTION WELL DATA SHEET

	7-20n-2w	SHIP RANGE	Well Construction Data			Cemented with 285 sx.	feet determined by	(448 cf 65/35 Poz + 177 cf Class B)		Cemented with 330 sx.	feet determined by Log	cf 65/35 Poz + 118 cf Class B)		Cemented with 165 sx.	feet determined by Log	(20)	4,775' (PBTD 4620' with CIBP @ 2,667')		2,624'	which)
NM-44453	2074' FSL & 1650' FWL	SECTION TOWNSHIP	Well Cons		Surface Casing	Size 9-5/8" ceme	TOC Surface feet	13-1/2" Hole Size	intermediate Casing	Size 7 " Ceme	TOC 325' feet d	Hole Size 8-3/4" (766 cf 65/	Long String	Size 4-1/2" Ceme	TOC 3,339' feet d	Hole Size 6" (208 cf 50/50 Poz)	Total Depth 4,775' (PBTC	interest relations		(perforated or open-hole; Indicate which)
Development Corporation	(Shallow) Unit 7-11	FOOTAGE LOCATION	C TOC Surface					Perfs at 2438-41', 2516-22',	2600-04', & 2614-24'	CIBP AT 2667 4 Perfs at 3160-67	squeezed			Perfs at 4169', 4174', 4198',	4266', 4280, & 4290'	19' long fish at 4618'		•		
Energy Dev	San Isidro		Schematic	TOC	325'	1					3339					X		TD 4762'		
	OPERATOR -	•				595,	CCC		MENEFEE	MENEFEE	1000	3000			MANCOS	OCCA CTOO	7517 4620			

# INJECTION WELL DATA SHEET

efly as read ween 4 zones	
Tubing Size 2-7/8" 6.5# Ilined with (tyge gf Ingenal coating)  Baker  Other type of tubing / casing seal if applicable	1

# WATER ANALYSIS REPORT

Company : E D C Date : 10-26-95
Address : CUBA, N.M. Date Sampled : 10-25-95
Lease : REO PERCO Analysis No.

Well : INJ. WULL Sample Pt. : SWAB

	analysis		mg/L		• mey'l	
				*****		
1.	pH 8.0					
	H2S N/A					
	Specific Gravity 1					
4	Total Dissolved Solid	la .	<b>\$79</b> 0.	.1		
₹.	Suspended Solids					
ď.	Dissolved Oxygen					
7	Dissolved CO2					
	()il In Water					
n.	Phenolphthalcin Alki	ulimity (6	aCO3)			
7.	. Methyl Orange Alka	limity (	a(()3)			
		*/ (/#### 1101	03 183	an t	1003 30	1.0
	Bierrbonate			-		<b>,</b> , , ,
	, Cluoride	Cl	3800.0			
13	Sulfate	SO4		SO4		
14	Calcium	Cu	80.0	-	4,0	
15	Magneziun		<b>0</b> .1			_
	Sodium (calculated)	1	la 306	52.1	Na 133	.2
	imi	Fe	10			
-	Harium	Bn	170			
	. Strontitum	Sr	0.0			
	. Total Hardness (Cac	203)	2	0.00		

# PROBABLE MINERAL COMPOSITION

William Corrigion and an	***********		
*milli equivalents per Liter	Compound	Equiv wt X	meq/l. = mg/l.
++ ++	**************		
4  °Ca < *HCO3	30); Ca(HCO3	12 81.0 4	.0 324
/>	CnSO4 68.1		
0  °Mg> *804	Ol CaCl2	55 5	
January January	Mg(HCO3)2 7	3.2 0.0	U
133  *Na> *C1	107) Mg9O4	60.2	
+	MgC12 47.	.ti	
Saturation Values Dist. Wa	iter 20 C NaHO	CO3 84 0	26.0 2184
CaCO3 13 mg/1	. Na2504	71.0	
CuSO4 * 2112Q 2090	mg/l. NaCl	58.4 10	17 2 6264
HaNO4 2.4 mg/L			

REMARKS:

Petrolite Oilfield Chemicals Chroup

Respectfully submitted, D. STEWART

### SCALE TENDENCY REPORT

Company BUC

Date 10-26-95

Address : CUBA, N.M.

Date Sampled : 10-25-95
Antlysis No. ;

Leuse : REO PERCO

Well INJ. WELL

Analyst : 1): STEWART

Sample Pt : SWAB

# STABILITY INDEX CALCULATIONS (Still-Davis Method)

CaCO3 Scaling Tendency

8.1. = 1.3 at 80 deg F or 27 deg. C

SI, = 13 at 100 deg. For 38 deg. C

S.I. = 1.3 at 120 deg. F or 49 deg. C

S.I. = 1.4 at 140 deg. F or 60 deg. C

S.I. = 1.4 at 160 deg. For 71 deg. C

CALCRIM SULFATE SCALING TENDENCY CALCULATIONS (Skillman-McDonald-Stiff Method)

Calcium Sulfate

S = 2290 at 80 deg F or 27 deg C

S = 2320 at 100 deg. For 38 deg C

S = 2315 at 120 deg. If or 49 deg C

8 = 2301 at 140 deg. F or 60 deg C

S = 2264 at 160 deg. F or 71 deg C

Petrolite Oilfield Chemiculs Group

Respectfully submitted, 1) STEWART

# HALLIBURTON DISTRICT LABORATORY WATER ANALYSIS DATA SHEET

Analysis Date: 8-11-92			. Re	epon No. ———	
To Veteran Exp	loration				
Cub miles d Bar	,	Plate Base	ived 8-11-92		
Well Number Johnson !- Data for Report	11 100		(2nd Swab) Porma	tion Menefee	·
:		Specific O	raivity -1.001	00)	
:		рН	7.64 7	64	
Aliquot or					
Dilution	lon	Calculation			A
	Fe Log			<del></del>	
•	K ST			<del></del>	NII_N, C
	Na %T		4-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	w	
	Ca		<u></u>		116 1/26
	Ms				64
	CI		<del></del>		1030 1029
	804 Log	<b>;</b>			
	Ç03				
	HÇO3				430
	TDS				
	Rw <u>2.74</u>	ц 75 F			

# NOTICE

This report is based on sound engineering practices, but because of variable well conditions and other information which must be relied upon, Halliburton makes no warranty, express or implied, as to the accuracy of the data or of any calculations or opinions expressed herein. You agree that Halliburton shall not be liable for any loss or damage whether due to negligence or otherwise arising out of or in connection with such data exculations or opinions.

# WATER ANALYSIS DATA SHEET

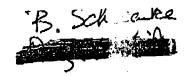
Analysis Date: 8-11-90 —			Report No.	
To Veteran Expl	oration			
Submitted By		Date Recei	ived_8-11-92	·
Wall Number Johnson 7-1 Data for Report	Loc	ation 2560'-2570	(8th Swab) Formation Menefee	
		Specific G	ravity 1.001 1.001	'
		pH	221 7.71	
Aliquot or				
Dilution	lon	Calculation		• 1 •
	Fe Log			NHN_!_L
•	K ŠT			Ni Wil
; :	Na %T			
•	Ça			<u> </u>
•	Mg			- 31 - <del>2</del> /
	Ci			1071 1074
	رم <b>ا</b> 304	1		<u> </u>
	COI			
	нсоз			
<u>:</u>	TDS			49
		•		

# NOTICE

Rw 1.52 at 75 .... F

This report is based on sound engineering practices, but because of variable well conditions and other information which must be relied upon. Halliburton makes no warranty, express or implied, as to the accuracy of the data or of any calculations or opinions expressed herein. You agree that Halliburton shall not be liable for any loss or damage whether due to negligence or otherwise arising out of or in connection with such data calculations or opinions.

# WATER ANALYSIS REPORT



Company Address Lease Well REO PUERCO

Date : 1-13-95
Date Sampled : 1-10-95

Analysis No. :

Sample Pt. : WELLHEAD

	ANALYSIS		mg/L		* meq/L
	**				
1.	pH 7.	5			
2.	H2S 1				
3.		02			
4 .	Total Dissolved Solids		27356.2		•
5.	Suspended Solids				
6.	Dissolved Oxygen				
7.	Dissolved CO2		·		
8.	Oil In Water				
9.	Phenolphthalein Alkalini	ty (CaCO3)			
10.	Methyl Orange Alkalinity				
11.	Bicarbonate	HCO3	744.0	HCO3	12.
12.	Chloride	¢1	16000.0	C1	451.
13.	Sulfate	804	81.0	SQ4	1.
14.	Calcium	Ċa	1080.0	Ca	<b>53</b> (
15.	Magnesium	Mg	<b>9</b> 7.9	Mg	8.
16.	Sodium (calculated)	Na	9271.3	Na	403.
17.	Iron	Fe	36.0		
18.	Barium	Ba	46.0		
19.	Strontium	Sr	0.0		
20.	Total Hardness (CaCO3)		3100.0		

# PROBABLE MINERAL COMPOSITION

*milli e	quivalents per Lit	er	Compound	Equiv wt	X med/r	™ ing/L
+	•	++				
54	*Ca < *HCO3	12	Ca (HCO3) 2	81.0	12.2	988
	/		Ca\$Q4	68.1	1.7	115
8	*Mg> *S04	2!	CaCl2	55.5	40.0	2220
}	</td <td></td> <td>Mg (HCO3) 2</td> <td>73.2</td> <td></td> <td></td>		Mg (HCO3) 2	73.2		
403	*Na> *Cl	451	MgSQ4	60.2		
++	•	**	MgCl2	47.6	8.1	383
S <b>atu</b> rati	on Values Dist. Wa	ter 20 C	NaHCO3	84.0		
Cacc	13	mg/L	Na2S04	71.0		
CaSo		mg/L	NaCl	58.4	403.3	568
Basc		•		• •		, 500

REMARKS:

Retrolite Oilfield Chemicals Group

Respectfully submitted, D. STEWART

# WATER ANALYSIS REPORT

Company : E.D.C.

Address : CUBA, N.M.

Lease : REO PUERCO

Well : 7-3 - FRODUCER

Sample Pt. : SEPARATOR Date : 9-3-93 Date Sampled: 9-1-93 Analysis No. : 1

	analysis		mg/L		* meq ∷
	** ** ** ** ** ** **				
1.	pH 7.5				
2.	H2S 1				
3.	Specific Gravity 1.01				
4.	Total Dissolved Solids		3243.1		
5.	Suspended Solids				
6.	Dissolved Oxygen				
7.	Dissolved CO2		22		
g.	Oil In Water				
9.	Phenolphthalein Alkalinity (	CaCO3)			
	Methyl Orange Alkalinity (Ca	CO31			
10.	Bicarbonate	нсоз	988.0	HCO3	16.2
11.		Cl	1300.0	Cl	36.7
	Chloride	504	11.0	804	0.2
13.	Sulfate	Ca	120.0	Ca	6.0
14.	Calcium		388.7	Mg	32.0
15.	Magnesium	Mg		Na Na	15.1
16.	Sodium (calculated)	Na	347.8	Na	19.1
17.	Iron	fe	2.6		
18.	Barium	Ba	85.0		
	Strontium	Sr	0.0		
20.			1900.0		

# PROBABLE MINERAL COMPOSITION

P	
*milli equivalents per Liter	Compound Equiv wt X meg/L mg/L
6 *Ca' < *HCO3 16 > *SO4 0	Ca(HCO3)2 81.0 6.0 485 CaSO4 68.1 CaCl2 55.5
15 *Na> *C1 37	Mg(HCO3)2 73.2 10.2 747 MgSO4 60.2 0.2 14 MgCl2 47.6 21.5 1026
Saturation Values Dist. Water 20 C CaCO3 13 mg/L CaSO4 * 2H2O 2090 mg/L BaSO4 2.4 mg/L	NaHCO3 84.0 Na2SO4 71.0 NaCl 58.4 15.1 884

#### REMARKS: ------

Petrolite Oilfield Chemicals Group

Respectfully submitted, D. STEWART

The second secon

Company : E.D.C. Date : 9-3-93
Address : CUBA, N.M. Date Sampled : 9-1-93
Lease : REO PUERCO Analysis No. : 1

Lease : REO PUERCO
Well : 12-10 ProduceR

Sample Pt. : SEPARATOR

	ANALYSIS		mg/L		* me 😘 🤳
1.	pH 7.3				
2.	H2S 2				
3.	Specific Gravity 1.01				
4.	Total Dissolved Solids		25494.9		
5.	Suspended Solids				
6.	Dissolved Oxygen				. 1
7.	Dissolved CO2		66		<b>\</b>
8.	Oil In Water				. 1
9.	Phenolphthalein Alkalinity	(CaCO3)			11
10.	Methyl Orange Alkalinity (				
11.	Bicarbonate	нсоз	598.0	НСОЗ	9.6
12.	Chloride	Cl	15000.0	Cl	423.1
13.		\$04.	3.0	804	0
14.	Calcium	Ca	120.0	Ca	6 -
			170.1	Mg	14
15.	Magnesium	Mg			
16.	Sodium (calculated)	Na	9495.2	Na	413
17.	Iroņ	Fe	3.6		
18.		Ba	105.0		
19.	Strontium	Sr	0.0		
20.	Total Hardness (CaCO3)		1000.0		•

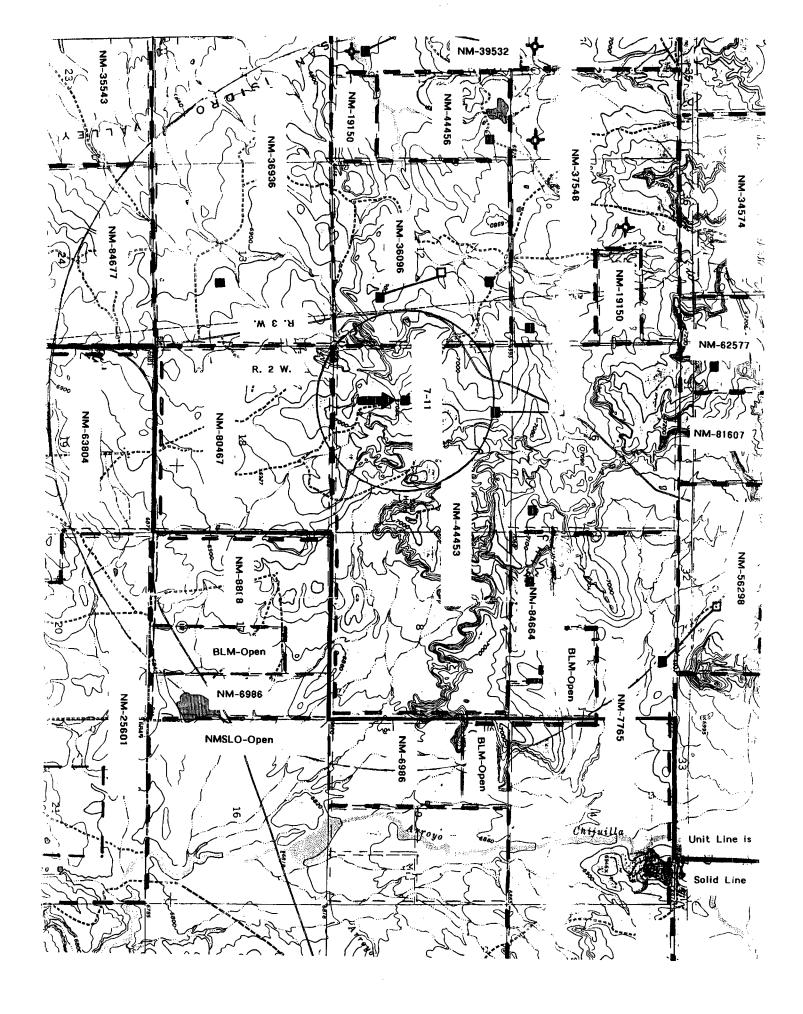
## PROBABLE MINERAL COMPOSITION

*milli e	quivalents per Lite	r	Compound	Equiv wt	X meq/L	mg/
6	*Ca < *HCO3	10	Ca (HCO3) 2 CaSO4	81:0 68:1	6.0	485
413	*Mg> *504 <br *Na> *Cl	423	CaCl2 Mg(HCO3)2 MgSO4	55.5 73.2 60.2	3.8	279
+	.on Values Dist. Wat	++	MgCl2 NaHCO3	47.6 84.0	10.1	482
Caco Caso Baso	04 * 2H2O 2090 m	g/L g/L g/L	Na2SO4 NaCl	71.0 58.4	413.0	24136

# REMARKS:

Petrolite Oilfield Chemicals Group

Respectfully sub ted, D. STEWART





(Position)

# NEW MEXICO ENERGY, MINERALS & NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
AZTEG DISTRICT OFFICE
1000 RIO BRAZOS ROAD
AZTEC NM 87410
(906) 334-6179 FAX: (806) 334-6170
http://www.nd.edu/olstrict/lit/3distric.htm

# MECHANICAL INTEGRITY TEST REPORT

Date of Test Q-17-02 Ope	erator Pride Energy API#30-043-20729
Property Name San - Iside	Well # 7-11 Location: Unit K Sec 7 Twn 20 Rge 2
Land Type:  State Federal_K_ Private Indian	Well Type:  Water Injection  Salt Water Disposal_X  Gas Injection  Producing Oil/Gas  Pressure observation
Temporarily Abandoned Well (Y/N):	TA Expires: TA Expires:
Casing Pres Bradenhead Pres Tubing Pres Int. Casing Pres Pressured annulus up to psi. for	Tbg. SI Pres. Tbg. Inj. Pres.  Tbg. Inj. Pres.  Tbg. SEP 2002  OL COME DAY  Tog. Inj. Pres.  The control of the
REMARKS:	perator will die out + contact oco for
test - Unable to inspec	
Mu-phy kill Switch was	
	Anthony Morates will send me a key + I will
follow up to determine	proper kill Sethia + operation.
By John Carpl-Con	exultant Witness Duc Worth (NMOCD)
(Operator Representative)	(NMOCD)
	REVISED 11-17-98