Oil Conservation Div. 2040 Pacheco St. Santa Fe, NM 87505

Case 11784

FORM C-108 Revised 7-1-81

#### APPLICATION FOR AUTHORIZATION TO INJECT

I.	PURPOSE: X Application qualifies for	Secondary Recovery or administrative approval?	Pressure Maintenance Yes XNo	Disposal	Storage
H,	OPERATOR:	LAYTON ENTERPRISES,	INC.		·
	ADDRESS:	3103 79th St.	LUBBOCK, TEXAS	79423	
	CONTACT PARTY:	Donald R. Layton		PHONE: 80	6/745-4638
M.	WELL DATA: Complesheets	ete the data required on the rever may be attached if necessary.	rse side of this form for each	h well processed for injection	n. Additional
IV.	Is this an expansion of If yes, give the Division	an existing project: Yes on order number authorizing the	× No project		
V.	Attach a map that ident circle drawn around ea	tifies all wells and leases within the proposed injection well. The	two miles of any proposed is circle identifies the well'	injection well with a one-hal s area of review.	f mile radius
VI.	Such data shall include	ata on all wells of public record v a description of each well's typ plugged well illustrating all plu	e, construction, date drille	nich penetrate the proposed in d, location, depth, record of	njection zone. I completion,
VΠ.	Attach data on the pro-	posed operation, including:			
	<ol> <li>Whether the system</li> <li>Proposed average at</li> <li>Sources and an apprecinjected produced</li> <li>If injection is for d</li> </ol>	and maximum injection pressure propriate analysis of injection flu water; and isposal purposes into a zone not nalysis of the disposal zone form	id and compatibility with to	the receiving formation if ot or within one mile of the p	roposed well.
viit.	and depth. Give the go waters with total disso	logical data on the injection zon cologic name, and depth to botto lved solids concentrations of 10 on to be immediately underlying	m of all underground sour ,000 mg/1 or less) overlying	ces of drinking water (aquife	ers containing
ıx.	Describe the proposed	stimulation program, if any.			
Χ.	Attach appropriate log resubmitted.)	ging and test data on the well.	(If well logs have been f	iled with the Division, they	need not be
XI.	Attach a chemical anal of any injection or disp	ysis of fresh water from two or cosal well showing location of w	more fresh water wells (if cells and dates samples we	available and producing) wi	thin one mile
XII.	Applicants for disposal data and find no evider source of drinking wat	wells must make an affirmative ace of open faults or any other hyer.	statement that they have exi drologic connection betwe	amined available geologic and en the disposal zone and any	d engineering underground
KIII.	Applicants must compl	ete the "Proof of Notice" section	n on the reverse side of th	is form.	
XIV.	Certification: I hereby knowledge and belief.	certify that the information su	bmitted with this applicati	on is true and correct to th	e best of my
	NAME: Donal	R. Layton	TITLE	President	
	SIGNATURE:	Journald &	Deston	DATE: 5-5-	-97
	If the information req resubmitted. Please she	uired under Sections VI, VIII, ow the date and circumstance of	X, and XI above has be the earlier submittal.	en previously submitted, it	need not be

#### 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 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, PO Box 2088, Santa Fe, NM 87504-2088 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.



May 5, 1997

#### CERTIFIED MAIL

State of New Mexico
Commissioner of Public Lands
Oil, Gas, and Minerals Division
310 Old Santa Fe Trail
P. O. Box 1148
Santa Fe, New Mexico 87504-1148

Devon Energy Corporation 20 North Broadway, Suite 1500 Oklahoma City, OK 73102-8260 Yates Petroleum Corp. 105 South Fourth Street Artesia, New Mexico 88210

Discovery Operating, Inc. 800 N. Marienfeld, Suite 100 Midland, Texas 79701

Re: Application for Injection

Fox A State No. 5
Allison Penn Field
Lea County, New Mexico

#### Gentlemen:

In accordance with the rules of the Oil Conservation Division, attached is a copy of the subject application as notification to you as surface owner or offset leaseholder.

Very truly yours,

LAYTON ENTERPRISES.

Donald R. Layton

President

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Receipt for Certified Mail

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	John Me	<u> </u>

#### FORM C-108 - RESPONSE TO QUESTIONS - SIDE 1:

- VII. 1. 2000-2500 BWPD est. initial rate 1000-1500 BWPD after stabilization
  - 2. Closed System
  - 3. Gravity Pressure
  - 4. See Attached Analyses.

#### VIII. Geological Data

The Bough C Pennsylvania Zone occurs at a depth of 9650 (-5576) with a gross thickness of 25 to 30 feet. It is a stratigraphic trap consisting of a series of algal mounds or mats resting on a gently southwest dipping surface. The zone is comprised of a fine crystalline, tan and gray vuggy limestone carrying late Cisco fossils confirming that it is Pennsylvanian in age. The limited core data indicates net thickness of 10-15 ft., porosity 10-12% and permeability of 200 md. Estimates of original oil in place are 40-65%. The trap is controlled by up-dip porosity pinchout. Barren areas can occur within the field as a result of inter-mound locations.

The only known freshwater source in the area is a small well located in the SW SE  $\frac{1}{2}$  of Section 2 at a depth of approximately 200 feet, apparently Ogalalla.

- IX. 500 Gal 15% HCl acid wash on each zone
- X. Last production test August 1996
  - 0.2 BOPD 15 BWPD 4 MCFD
- XI. See Attached Analysis.

# IN THE AREA OF REVIEW - PARAGRAPH TI OF C-108

FOR A STATE #1 UNIT F SEC 2, T95, R 36E DRILLED JUNE 1961 (3G: 13% @ 360 W/ 325 SX 8 % @ 9245 w/ 2520 5x 42° @ 9725 w/ 500 5x Penis: 9651-63 PRODUCING LAYTON ENTERPRISES, INC. ONIT H SEC Z, T95, R36E FOX A STATE TO DRILLED MAY 1959 CSG: 1318"@ 360 w/ 400 Sx 858"@ 4166 w/ 1700 Si 5½° @ 9815 w/ 700 s. PERFS; 9644-54 PRODUCING LAYTON ENTERPRISES, INC. UNIT N SEC 2, T95, R36E FOX A STATE #3 DRILLED TULY 1954 (56: 13% @ 450 w/ 350 sx 9 5/8" @ \$200 w/ 3000 s, 5 2° @ 9809 w/ 600 5x PERFS: 9675-89 PRODUCING LAYTON ENTERPRISES, luc. UNIT B SER Z, T95, R36E FOX A STATE #4 DRILLED AUGUST 1958 CSG: 133/8" @ 358 w/ 400 SX

8 %" @ 9109 w) 1700 SX

PBTD 52 @ 5970 W/ 1000 SX

SHUT IN

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UNIT D SEE 2, T95, R36E
COASTAL STATES PROD.
  LEA STATE #2
                      DRILLED NOVEMBER 1961
                       Csc. 13 18 @ 366 w/ 300 Sx
                           8 % @ 4140 w/1590 5x
                             52" @ 9784 W/ 600 SX
                       CEMENT PLUGS! 25 5x @ 9750
                PERFS: 9758-62 25 5x @ 4012
                                  10 3x @ JURFACE
                           PEA APRIL 1967
CARTUS DRILLING
                      UNIT B SEC 2, T95, R 36E
 JUNRAY STATE A#1
                      DRILLED AUGUST 1958
                      Cs6: 13 % @ 358 w/ 400 5x
                            8 %" @ 4104 W/ 1700 Sx
                            52 @ 9890 W/ 500 SX
                      PERES: 9668-78
                      PULLED 6000' OF 52"
                      CEMENT PLUGS: 15 SX @ 9668
                           25 3x @ 6050
                               25 sx@ 4175
                    PEA APRIL 1965 10 SX @ SURFACE
ADA OIL CO.
ADAMS STATE #1
                    UNIT M SEC 2, T95, R36E
                    DRILLED MARCH 1955
                    Csc: 13% @ 357 w/ 350 sx
                        8 % @ 4166 w/ 2000 Sx
                    52" @ 9730 w/ 200 SK.

OPEN HOLE: 9730-60

PULLED $175' 52"
                   BRIDGE PLUG: 9700 W/ 50' CEMENT
                   CEMENT PLUGS: 25 Sx @ $175
                             10 SK @ SURFACE
                       PEA OCTOBER 1962
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MARATHON STATE E 6859 #1

UNIT O SEC 2 795 R36E

DRILLED VULY 1959

CSG: 16"@ 389 w/710 5x

1034"@ 4175 w/ 1900 3x

7"@ 9730 w/ 900 5x

PELFS: 9690-95

PULLED 4750 05 7"

CEMENT PLUGS: 40 5x @ 9700

20 Sx @ \$750

10 Sx @ 4172

10 SX @ BURFAGE

GULF OIL CORP.

PEA VANUARY 1967 UNIT N SEE 35 T85 RS6E

DRILLED DECEMBER 1959

Cs6: 13% @ 394 w/ 450 sx

8 % @ 4249 w/ 2400 sx

52" @ 9810 W/ \$25 Sx

PERFS: 9714-30

PULLED 3450' OF 52"

BRIDGE PLUG: 9682 W 25 5x

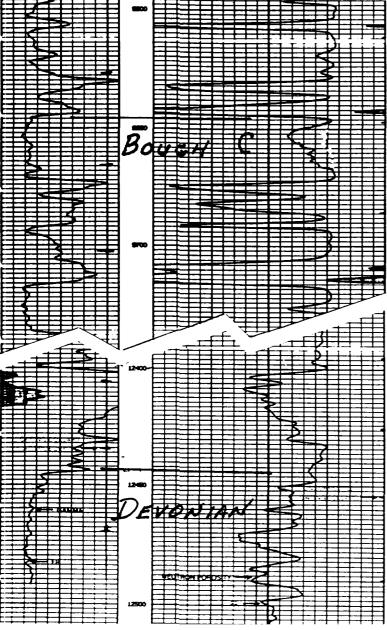
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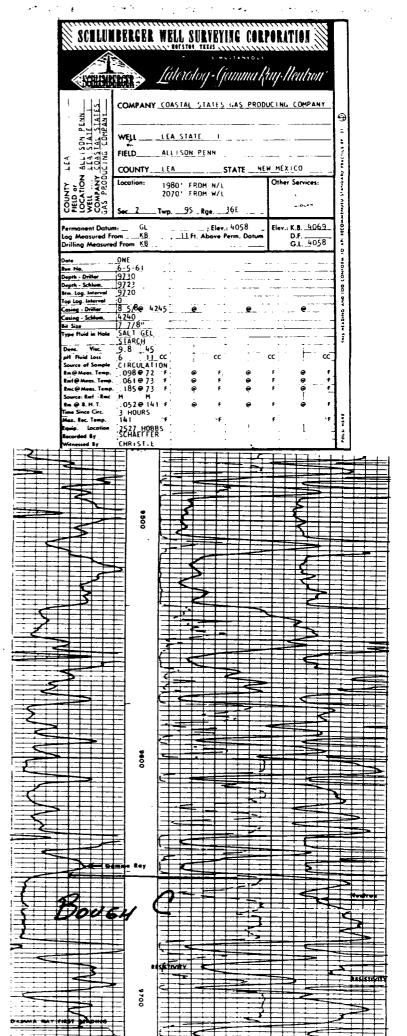
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50 SK @ SURF

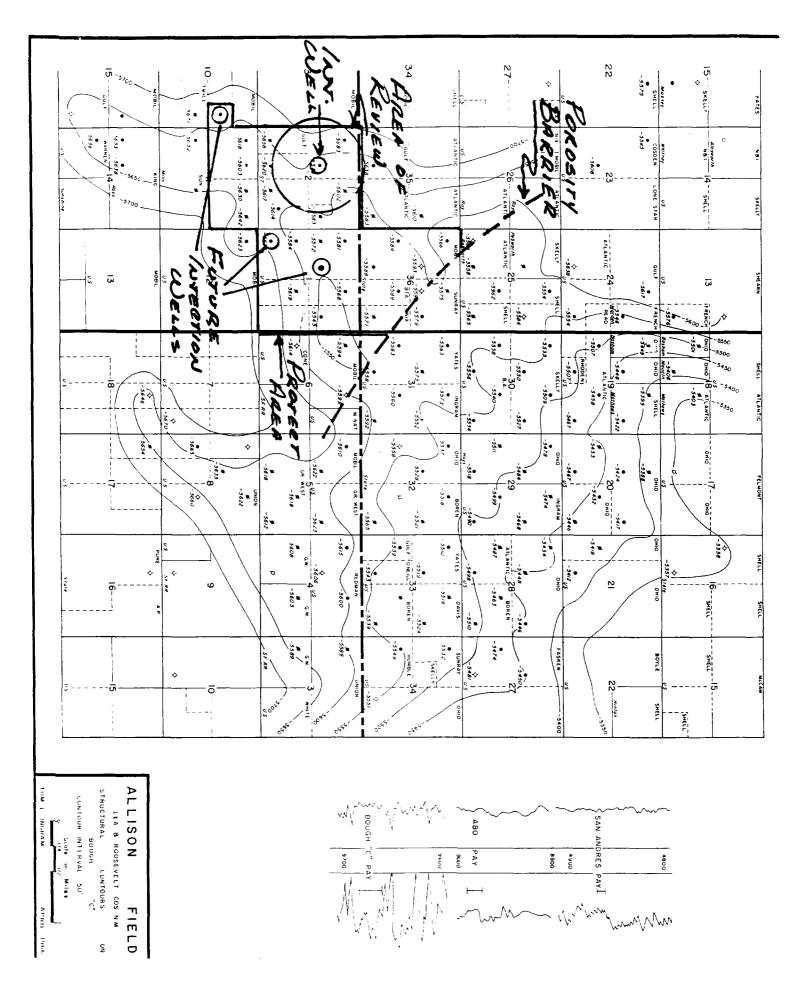
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InterChem

(915) 550-7027 - Odessa, Tx. 79763 WATER ANALYSIS REPORT

#### AMPLE

1 Co. :	Layton Enterp	rises	Sample Loc. :	
Lease :	Fox A		Date Sampled:	29-April-1991
ll No.:	State #1	BOUGH C	Attention :	
alvsis:			Chemical Co. :	Pro-Kem, Inc.

#### MALYSIS

1.	pH Specific Gravity	60/60	F.	5.700 1.068
3.	Specific Gravity CaCO <sub>3</sub> Saturation	Index	@ 80 @ 140	F1.033 F0.108

Not Present t Determined t Determined

#### Cations

Dissolved Gasses

7. 8. 9.	Calcium Magnesium Sodium Barium	(Ca <sup>++</sup> ) (Mg <sup>++</sup> ) (Na <sup>+</sup> ) (Ba <sup>++</sup> )	5,210 1,094 (Calculated) 34,373 Not Determined	/ 20.1 = / 12.2 = / 23.0 =	259.20 89.67 1,494.48
----------------	--	---	---	----------------------------------	-----------------------------

\*MEQ/L

EQ. WT.

MG/L

#### Anions

	<del></del>			
11. 12. 13. 14. 15.	Hydroxyl (OH <sup>-</sup> ) Carbonate (CO <sub>3</sub> ) Bicarbonate (HCO <sub>3</sub> ) Sulfate (SO <sub>4</sub> ) Chloride (Cl)	0 0 169 450 64,985	/ 17.0 = / 30.0 = / 61.1 = / 48.8 = / 35.5 =	0.00 0.00 2.77 9.22 1,830.56
16. 17. 18.	Total Dissolved Solids Total Iron (Fe) Total Hardness As CaCO <sub>3</sub> Peristivity A 75 F (Calculated)	106,281 39 17,516	/ 18.2 =	2.14

19. Resistivity @ 75 F. (Calculated) 0.083 /cm.

### LOGARITHMIC WATER PATTERN

LOGARITHMIC WATER *meq/L.	PATTERN	PROBABI COMPOUND	E MINERAL EQ. WT. X	COMPOSI *meq/L	
3 HHHH + HHHHH HHHHH + + + + + + + + + +	++++++++++++++++++++++++++++++++++++++	Ca(HCO <sub>3</sub> ) <sub>2</sub>	81.04	2.77	224
а <del>шин ни шин ниш на по</del>	<del>Тиши ниш н</del> соз	CaSO <sub>4</sub>	68.07	9.22	628 -
3 HILL HILL HILL HILL HILL	++++++ SO4	CaCl <sub>2</sub>	55.50	247.22	13,721
	++++++++++++++++++++++++++++++++++++++	$Mg(HCO_3)_2$	73.17	0.00	0
	200 2000 2000	MgSO4	60.19	0.00	0
Calcium Sulfate Solubi	ility Profile	MgCL <sub>2</sub>	47.62	89.67	4,270
2596		NaHCO3	84.00	0.00	0
2474 2486		NaSO <sub>4</sub>	71.03	0.00	0
2430		NaCl	58.46 1	,493.67	87,320

\*Milli Equivalents per Liter 130 156 his water is somewhat corrosive due to the pH observed on analysis. ne corrosivity is increased by the content of mineral salts in solution.

## Olifield Solutions, Inc. 2814 S.C.R. 1257, Midland, Tx. 79706

#### WATER ANALYSIS REPORT

Company: Location: Layton Enterprises

Fox A State #6

DEVONIAN

Sampled By: Analysis Date:

Selesman:

Chem Tech Services, inc.

**May 5, 1997** Diok Tubb

Source: Well Head Date Sampled: April 29, 1997

Chemist: \_

1. pN	A	NALYSIS		mg/L		EQ. W	T.		MEQ/L	
2. Bpecific Gravity 50/80 f. 3. Hydragen Suffice 4. Carbon Dissolved Chygen 5. Dissolved Chygen 6. Hydragen (CD4+) 7. Carbonates (CD3+) 9. Chiloride (CD4-) 10. Suffete (SO4=) 11. Calcium (CA++) 12. Magnesium (Mg++) 12. Magnesium (Mg++) 12. Magnesium (Mg++) 13. Sodium (Mg++) 15. Total iron (Fe) 16. Dissolved Solide 17. Fätarable Bolide 18. Dissolved Solide 19. Total Solide 19. Total Solide 19. Total Solide 19. Total Fibrard (mi) 20. CACO3 Seturation Index 1980 F. 10. 1080 G. 1090 F. 1010 C. 1010 C. 1010 C. 1011 C. 1021 C. 1032 C. 1033 C. 1044 C. 1054 C. 1055 C. 1056 C.	100 <b>00</b>	*				-	-	-	<b>Fee</b> 022 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	======================================
8. Hydragen Surificia		•								
4. Carbon Disadde 5. Dissolved Cxygen Not Detarmined 6. Hydracy (OH-) 7. Carbonate (CO3+) 8. Bicarbonate (HCO3-) 9. Cinoride (CE) 10. Sulfate (8C4=) 10. Sulfate (8C4=) 11. Calcium (CA++) 11. Calcium (CA++) 12.806 / 20.1 = 139.80 12. Magnesium (Mg++) 12.16 / 12.2 = 99.67 13. Sodium (Ne+) 12.16 / 12.2 = 99.67 14. Serium (Be-+) 15. Total fron (Fa) 16. Dissolved Solida 17. Filterable Bolida 10. Suspended Oil 10. Suspended Oil 11. Calcium (III) 12. Calcium (III) 13. Calcium (III) 14. Calcium (III) 15. Total Total Mardness As CacO3 17. Filterable Bolida 10. Oil 18. Calcium (III) 19. Calcium (III) 10. Suspended Oil 10. Calcium (IIII) 10. Calcium (IIII) 10. Calcium (IIII) 10. Calcium (IIIII) 10. Calcium (IIIIIIIII) 10. Calcium (IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	_	· ·								
5. Dissolved Oxygen 6. Hydroxyl (OH-) 7. Carbonate (CO3+) 8. Bicerbonate (HCO3-) 9. Chloride (CF) 10. Sulfete (SC4=) 10. Sulfete (SC4=) 11. Calclum (CA++) 12. Magnesium (Mg++) 12. Magnesium (Mg++) 12. Magnesium (Mg++) 13. Sodium (Ne+) 14. Berium (Be-en) 15. Total Total Hardness As CacO3 16. Total Solide 17. Total Total Hardness As CacO3 12. Volume Filtered (mi) 10. Calclus (mi) 10. Oxide (mi)					0 6	'PM				
6. Hydroxyl (OH+) 7. Carbonate (CO3+) 8. Bicerbonate (HCO3+) 9. Chloride (CI-) 10. Buffets (SO4=) 11. Calcium (CA++) 12. Magnesium (Mg++) 12. Magnesium (Mg++) 13. Sodium (Mg++) 14. Berlium (Be++) 15. Total fron (Fe) 16. Dissolved Solide 17. Filterable Solide 18. Total Solide 19. Total Solide 19					,					
7. Carbonate (CO3+) 8. Bicarbonate (HCO3+) 9. Chloride (CH) 9. Chloride (CH) 9. Sulfets (SO4=) 1.450 / 48.6 = 1.128.61 10. Sulfets (SO4=) 11. Calcium (CA++) 12. 806 / 20.1 = 139.60 12. Magnesium (Mg++) 12.16 / 12.2 = 99.67 13. Sodium (Ne) 12. Magnesium (Mg++) 12.16 / 12.2 = 99.67 13. Sodium (Ne) 12. Magnesium (Ne) 13. Sodium (Ne) 14. Berkium (Se++) 15. Total iron (Fe) 16. Total iron (Fe) 17. Filterable Solide 18. Total Total Mardness As CaCO3 18. Total Total Mardness As CaCO3 19. Total Total Mardness As CaCO3 10. Total Total Mardness As CaCO3 11. Volume Filterad (mi) 10. CACO3 Seturation index 10. Gas F.	_									
8. Bicarbonate (HCO3-) 9. Chlorida (Ch) 10. Sulfate (SO4=) 11. Calcium (CA++) 11. Calcium (CA++) 12. Magnesiam (Mg++) 13. Sodium (Ne+) 14. Berium (Se-+) 15. Total Total Hardness As CaCO3 17. Filterable Bolida 17. Pilterable Bolida 17. Total Total Hardness As CaCO3 18. Total Total Hardness As CaCO3 19. Total Total Hardness As CaCO3 10. Suspended Oil 10. Total Total Hardness As CaCO3 11. Volume Filterad (mi) 10. CaCO3 Seturation (ndex 10. Source of the color		· · · · · · · · · · · · · · · · · · ·		_						
9. Chloride (CI-) 39,991 / 38.6 = 1,126.51 10. Bulfate (8O4=) 11. Calcium (CA++) 12. Magnesium (Mg++) 12. Magnesium (Mg++) 12. Magnesium (Mg++) 12. 28.06 / 20.1 = 139,60 12. Magnesium (Mg++) 12.16 / 12.2 = 96,67 13. Sodium (Mg++) 15. Total Iron (Fe) 15. Total Iron (Fe) 16. Dissolved Solide 17. Filtarable Bolide 18. Total Solide 19. Total Folide 19. Total Folide 19. Total Folide 19. Total Folide 10. Suspended Oil 21. Volume Filtared (ml) 22. Pesietivity @ 76 F. (paticulated) 23. CACGS Seturation Index 280 F0.4191 29.0 F0.1091 21. Q80 F0.4191 29.100 F0.1091 21. Q80 F0.4191 29.100 F0.1091 21. Q80 F0.4509 22. Caccium Suffate 23. Gaccium Suffate 24. Calcium Suffate 25. Caccium Suffate 26.00 F0.000 27. Total Folide 28.00 F0.4509 28.00 F0.4509 29.100 F0.1091 29.100 F0.1091 20. Suspended Oil 20. Suspended Oil 21. Volume Filtared (ml) 22. Pesietivity @ 76 F. (paticulated) 23. CACGS Seturation Index 29.00 F0.4191 29.100 F0.4191 29.10				_						
10. Sulfate (SO4=)  1,450 / 48.6 = 29.71  11. Calcium (CA++) 12. Magnesium (Mg++) 12.16 / 12.2 = 99.67 12. Sodium (Ne+) 12.16 / 12.2 = 99.67 13. Sodium (Ne+) 15. Total (Fe)  16. Dissolved Solide 17. Filterable Bolide 10. O  18. Total Total Hardness As CaCO3 12.011 20. Suspended Oil 10. Total Solids 10. Total Solids 10. Suspended Oil 10. O  21. Volume Filterad (ml)  22. Resistivity @ 78 F. (calculated)  23. CACO3 Seturation Index 10. O  24. OACO3 Seturation Index 10. OAPOUND 10. OAP	_									
11. Calcium (CA++)  12. Magnesium (Mg++)  12. Magnesium (Mg++)  13. Sodium (Ne+)  13. Sodium (Ne+)  14. Berium (Be++)  15. Total fron (Fe)  16. Dissolved Solide  17. Filterable Solide  18. Total Farable Solide  19. Total Foolide  10. Total Farable Solide  10. Total Total Hardness As CaCO3  20. Suspended Oil  21. Volume Filtered (mi)  22. Resistivity @ 78 F. (paloulated)  23. CACO3 Seturation Index  280 F.								=	1.126.51	
11. Calcium (CA++) 12. Magnesium (Mg++) 12. Sodium (Ne+) 12. Sodium (Ne+) 13. Sodium (Ne+) 14. Berium (Ne+) 15. Totel fron (Fe) 16. Dissolved Solide 17. Filterable Bolide 18. Totel Solide 19. Totel Total Hardness As CaCO3 12.011 20. Suspended Oil 21. Volume Filterad (mi) 22. Resistivity ★ 76 F. (paloulated) 23. CACO3 Seturation Index 26. Berium (Ne+) 27. PROSABLE MINERAL COMPOSITION 27. CACO3 Seturation (midex 28. CACO3 Seturation (midex 29. CACO3 Seturation (midex 20. CAC	10.	<b>3Ullate (504=)</b>		1,450	) /	48	8	=	29.71	
12. Sodium (Ne+) 14. Serium (Se++) 15. Total Iron (Fe)  16. Dissolved Solide 17. Fitterable Bolide 18. Total Bolids 19. Total Hardness As CaCO3 10. Total Hardness As CaCO3 11. Total Hardness As CaCO3 12. Volume Fittered (ml) 19. CACO3 Seturation Index 19. CACO3 Seturation Index 19. CACO3 Seturation Index 19. O 1509 1	11.	Calcium (CA++)		2,806	1	20	1			
14. Serium (Be∞) 15. Total Iron (Fe) 2.00  18. Dissolved Solide 17. Filterable Bolids 18. Total Solids 19. Total Harriness As CaCO3 20. Suspended Oil 21. Volume Filtered (ml) 22. Resistivity ② 75 F. (calculated) 23. CACO3 Seturation Index 24. ②80 F0.4191 25. Q100 F. 0.1609 26. 0.1509 27. Q160 F. 0.5109 28. Q160 F. 0.5509 29. Q160 F. 0.509 20. Suspended Oil 20. CACO3 Seturation Index 20. CACO3 Seturation Index 21. CACO3 Seturation Index 22. Resistivity ② 75 F. (calculated) 23. CACO3 Seturation Index 24. Calcium Sulfate 25. 0.509 26. (HCO3)2 27. Seturation Sulfate 27. Seturation Sulfate 28. Seturation Index 29. Seturation Index 29. Seturation Index 20. Seturation Index 21. Seturation Index 22. Resistivity ② 75 F. (calculated) 23. CACO3 Seturation Index 24. Calcium Sulfate 25. Seturation Index 26. Seturation Index 27. Seturation Index 28. Seturation Index 29. Seturation Index 2	12.	Magnesium (Mg++)		1,216	, /	12	2		99.67	
14. Serium (Be++) 15. Total Iron (Fe) 2.00  18. Dissolved Solide 17. Filterable Bolide 18. Total Solide 19. Total Hardness As CaCO3 20. Suspended Oil 21. Volume Filtered (ml) 22. Plesietivity ② 75 F. (osloulated) 23. CACO3 Seturation Index 26. ②80 F. O.1991 21. O.190 OMPOUND 22. OMPOUND 23. CACO3 Seturation Index 26. O.190 OMPOUND 27. O.190 OMPOUND 28. O.190 OMPOUND 29. O.190 OMPOUND 29	13.	Sodium (Ne+)		21,267	' 1	23	٥	•	925.54	
15. Total iron (Fe)  16. Dissolved Solide 17. Filterable Bolide 18. Total Solide 18. Total Solide 19. Total Hardness As CaCO3 112.011 19. Total Hardness As CaCO3 112.011 20. Suspended Oil 21. Volume Filterad (mi) 22. Resistivity @ 75 F. (calculated) 23. CACO3 Seturation Index 24. Q80 F.	14.	Serium (Se++)		Not Detarmined			-			
17. Filterable Bolide 18. Total Total Hardness As CaCO3 19. Total Total Hardness As CaCO3 20. Suspended Oil 21. Volume Filterad (mi) 22. Resistivity ₫ 75 F. (calculated) 23. CACO3 Seturation Index 24. ⊕80 F.	15.	Total Iron (Fe)		2.00	}					
17. Filterable Bolide 18. Total Total Hardness As CaCO3 19. Total Total Hardness As CaCO3 20. Suspended Oil 21. Volume Filterad (mi) 22. Resistivity ₫ 75 F. (calculated) 23. CACO3 Seturation Index 24. ⊕80 F.	16.	Dissolved Solide		67 276	<b>.</b>					
16. Total Solids  17.275  18. Total Total Hardness As CaCO3 20. Suspended Oil 0 21. Volume Filtered (mil) 0  22. Resistivity № 75 F. (calculated) 0,117 /cm.  23. CACO3 Seturation Index  ②80 F0.4191 ②100 F0.1091 PROSASLE MINERAL COMPOSITION ②120 F0.1699 OMPOUND EQ. WT. X MEQ/L ≈ mg/L ②140 F. 0.5109 ②180 F. 0.8509 Ca(HCO3)2 \$1.04 \$.59 \$98 CaSO4 68.07 29.71 2.022  24. Calcium Sulfate 3.651 mg/L GAC12 55.50 101.30 5,622 solvbility ② 90 F. Mg(HCO3)2 73.17 0.00 0 MgSO4 60.19 0.00 0 MgSO4 80.19 0.00 0 NaSO4 71.03 0.00 0 0	-									
20. Suspended Oii 0 21. Volume Fittered (ml) 0  22. Resistivity @ 75 F. (paloulated) 0,117 /cm.  23. CAC03 Saturation index	16.									
20. Suspended Oil 0 21. Volume Filtered (ml) 0  22. Resistivity @ 75 F. (paloulated) 0,117 /cm.  23. CAC03 Seturation Index	19.	Total Total Hardness As CeCO3		12.011						
21. Volume Filtered (ml) 0  22. Resistivity @ 76 F. (paloulated) 0,117 /cm.  23. CAC03 Seturation Index	20.	Suspended Oil								
23. CAC03 Seturation Index	21.	Volume Filtered (ml)								
### #################################	22.	Resistivity @ 75 F. (paloulated)		0,117	/¢/	m.				
### PROBABLE MINERAL COMPOSITION  #### COMPOUND EQ, WT. X MEQ/L * mg/L  #### Calcium Sulfate 3,651 mg/L  ##### Calcium Sulfate 3,651 mg/L  ###################################	23.	CAC03 Seturation Index								
### Composition of the image of		<b>* ⊘</b> 80 F.	-0.4191							
### ### ##############################		<b>@</b> 100 F.	-0.1091	Probable Mi	NE	ral con	PO	BITIC	N	
### Calcium Sulfate 3.651 mg/L CaC12 55.50 101.30 5.622 colubility @ 90 F. ###################################		<b>@</b> 120 F.	0.1509	COMPOUND	ŧ	Q, WT.	)	. 1	MEQ/L	≈ mg/L
CaSQ4 68.07 29.71 2.022 24. Celcium Sulfete 3.651 mg/L CoC12 55.50 101.30 5.622 solubliky @ 90 F. Mg(HCO3)2 73.17 0.00 0 Mg\$O4 60.19 0.00 0 MgCL2 47.62 99.67 4,746 NaHCO3 84.00 0.00 0 Na\$O4 71.03 0.00 0		@140 F.	0.5109	· · · · · ·			•- •	—		111144444
24. Calcium Sulfete 3,651 mg/L C4C12 55.50 101.30 5,622 solubliky @ 90 F. Mg(HCO3)2 73.17 0.00 0 Mg\$O4 60.19 0.00 0 MgCL2 47.62 96.67 4,746 NaHCO3 84.00 0.00 0 Na\$O4 71.03 0.00 0		@160 F.	0.8509	C#(HCO3)2		81.0	4		5.59	695
### ##################################				ÇaSQ4		68.0	7		29.71	2,022
MgSO4     60.19     0.00     0       MgCL2     47.62     98.67     4,746       NeHGOS     84.00     0.00     0       NaSO4     71.03     0.00     0	24.	Calcium Sulfate	3,651 mg/L	CeC12		55.5	0		101.30	5,622
MgSO4     60.19     0.00     0       MgCL2     47.62     98.67     4,746       NeHGOS     84.00     0.00     0       NaSO4     71.03     0.00     0		solubliky @ 90 F.	_	Mg(HCO3)2		73.1	7		0.00	0
MgCL2     47.82     98.67     4,748       NeHGOS     84.00     0.00     0       NaSO4     71.03     0.00     0				Mg\$04		60.1	9		9.00	0
NaHGO3 84.00 0.00 0 NaSO4 71.03 0.00 0									99.67	4,748
· · · · · · · · · · · · · · · · · · ·				_					0.00	=
·				NaSO4		71.0	3		0.00	0
				NeCl		58.4	đ		928.64	64,107

#### Oiffield Bolutions, Inc. 2614 S.C.R. 1257, Midland, Tx. 79706

#### **WATER ANALYSIS REPORT**

Сотрыну:

Layton Enterprises

Location: Source; Fox A State Fresh Water Wwil Sampled By:

Analysis Date: Salesmen: Chem Tech Services, Inc.

May 5, 1997 Dick Tubb

Date Sampled: April 29, 1997

۸ ا	NALYSIS	******	mg/L			EQ. WT.		MEQ/L			
1.	рН	***********		###### 6.83			<b>4</b> 44	Mazzzero			
2.	Specific Gravity 60/60 f.			1.004							
3.	Hydrogen Suffice				PPM						
4.	Carbon Dioxide		Not Determined	•							
5.	Dissalved Oxygen		Not Determined								
6.	Hydraxy! (OH-)			٥	1	17.0	· <b>E</b>		0.00		
7.	Carbonale (CQSe)			ŏ	ì	30.0			0.00		
8.	Bicarboneta (HCO3-)			269		61.1			4.40		
9.	Chioride (CI-)			1,700	-	35.5			47.89		
10.	Sulfate (SO4=)			450		48.8	=		9.22		
11,	Caldum (CA++)			180	1	20.1			8.96		
12.	Magnesium (Mg++)		•	12	1	12.2			0.98		
13.	Sodium (Ns+)			1.186	1	23.0	=		61.57		
14.	Serium (Ba++)		Not Determined	.,					V 1141		
15.	Total Iron (Fe)			0.00							
18.	Dissolved Solids			3,797							
17.	Filterable Solids			0.00							
18.	Total Bolids			3.797							
10.	Total Total Hardness As CaCO3			<b>50</b> 0							
20.	Suspended Oil			0							
21.	Volume Filtered (ml)			0							
<b>22</b> .	Resistivity @ 75 F. (calculated)			2.248	/cm.						
23.	CACO3 Seturation Index		• ,								
	<b>@80</b> F.	1.7276	•								
	@100 F.	1.9776	PROBAS	LÉ MI	VERA	_ COMP	DBI.	TION			
	<b>@</b> 120 F.	2.2376	COMPOUND		EQ.	WT.	X	MEQ/L	=	mg/L	
	<b>⊘</b> 140 F.	2.4276			444400 4						
	@160 F.	2.6376	Cs(HCQ3)2			81.04			4.40		357
			CaBDA			68.07			4.55		310
24.	Çalçım Sulfate	2,030 mg/L	CaC12			<b>5</b> 5.60			0.00		(
	solubility 🙆 90 F.		Mg(MCO3)2			73.17			0.00		(
			MgSQ4			60.19			0.98		51
			MgCL2			47.62			0.00		(
			NeHGO3			84.00			0.00		(
	•		NeBO4			71.03			3.68		26
			N#C!			58.46			47.89		2.800

•		ON WELL DATA SHEET		
AVTON	ENTERFRISES INC. 2310 FNL 2070 F FOOTAGE LOCATION	For	"" 5-2-6	
OPERATOR	270.1270.1020	LEASE	H ZIAIE	
5	2310 FAIL 2070 F	W 2	95	36 E
WELL NO.	FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE
		LEA CO	UNTY, NEW ,	MEXICO
			, .	
<u>Sch</u>	hematic		Tabular Data	
		urface Casing		
		ize	" Cemented wi	th <u>350</u> sx.
		OC SURFACE	feet determined b	y CIROULATION
	1	ole size /	_	·
	111 11 N 12/8 (W. 270	ntermediate Casing	=	
			" Cemented wi	_
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		feet determined b	y. CIRQUEATION
		ole size	11"	
	[ ]	ong string		
	-		" Cemented wi	th 2600 sx
			feet determined by	
	MI IMN	ole size		CHULULATION
i i				
<i>\{</i>	TUBING- CASING HAULUS LOADED	otal depth	12,511	
<i>\</i>	WITH WHIBITED I	njection interval		
Ę	PARKER FLUID	9698 fee	t to <i>9658</i> -hole, indicate which	feet
E	PACKER	Deriorated or open	-noie, indicate which	1)
	@ 9600			
	BOUGH C" PE,	UN ZONE		
<u> </u>	PERFS: 9648	- 66		
		•		
	DEVONIAN ZO.	NE		
8	PERFS: 12450	-60, 70-78,	84-92	
	5 2 0 12 5/1	•		
Tubing size	e 27 lined wi	th RICE ENGR.	FIBERGLASS Duo-	LINE set in a
RA	KER LOK-SET (PLAST	(m:	eterial)	
(b)	rand and model)	packet	r at	feet
(or descri	be any other casing-tubing se	eal).		
Other Data		<i>•</i>	. " (0)	
1. Name o	f the injection formation	BOUGH	C (TENN)	
2. Name o	f Field or Pool (if applicabl	e) PLLISON	1 YENN	
3. Is this	s a new well drilled for inje	ection? / Tyes	∕Z∕ No	
	for what purpose was the wel			107/01/
<b>.</b> ,	, and a property of the control of t			
A Non At	o well even here conferred	n any other/	0)2   ist 011	n fonckad data en e
4. Has the	e well ever been perforated i ve plugging detail (sacks of	cement or bridge p	olug(s) used)	riorated intervals
SAN	ANDRES 4165-66, 59	.300 sx, 5300	0-01, SQZ 150 SX	BOUGH D
-	-76 SQZ 300 Sx; Mo.	•		
5. Give t	he depth to and name of any o		,	
	rea.		- 3-0	., ,
	8950 - 000			

4800 - SAN ANDRES