Form 3160-5 (June 1990)

UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

FORM APPROVED Budget Bureau No. 1004-0135 Expires: March 31, 1993

5. Lease Designation and Serial No.

14-20-603-2033

Describe Proposed or Completed Operations (Clearly, state all pertinent dates, including estimated date of starting any proposed work If well is directionally drilling years who write the part of the source pertinent to this work? Upon approval from the E.P.A; plan to run 23/8" EUE upset tubing with packard. Set packard at 1160" with a 30" tail joint be low packard. (perforations 1200"—1217") Pump annulas full of packard fluid and packard fluid and miles and proposed work If well is directionally drilling with a 30" tail joint be low packard at 1160" with a 30" tail joint Della Composition of the packard fluid and packard fluid and miles are proposed work If well is directionally drilling with a 30" tail joint be low packard at 1160" with a 30" tail joint packard. Set packard at 1160" with a 30" tail joint packard. Della Composition of the packard fluid and packard fluid	•		14-20-603-2033
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SUBMIT IN TRIPLICATE Type of Well	Use "APPLICATION FO	OR PERMIT—" for such proposals	NAVAjo
Type of Well Swill Other	CUDA	IT IN TRIBUTOATE	7. If Unit or CA, Agreement Designation
Swell Gard Other Swell Other		TIN TRIFLICATE	1/1/1/1/20 ">==
Name of Operator Address and Telephone No. Address an	Oil Gas		8. Well Name and No.
Address not Telephone No. Cortez Co 81321, 970-565-8245 Counter 1480 Cortez Co 81321, 970-565-8245 Sec 1: T31 N R 17W CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA TYPE OF SUBMISSION TYPE OF ACTION Non-Routine Financial Counter Report Plugging Back Plugging Back Plugging Back Conversion to Injection Describe Proposed of Completed Operation. Clear, such all periamental facts. In all per services faces mediate and travers and the extend depths for all makers and once periments that was all periamental depths for all makers and once periments that was all periamental depths for all makers and the periamental depths for all makers and once periments to the ward of Completion of Counter to State of Counter to			209
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Location of Well (Footage, Sec. T. R. M. or Survey Description) 1980' FWL + 1980' FSL Sec 1: T31 N R17W San Juan NM. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA TYPE OF SUBMISSION TYPE OF ACTION Abandoment Notice of Intent Now Construction Now	3. Address and Telephone No.	0 0	30045110470051
Sec 1: T31 N R17W CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA TYPE OF SUBMISSION Nowe of Intent Subsequent Report Final Abandonment Notice Pipinging Back Conversion to Indiction Change of Plans New Construction New Constr	Drawer 1480 Cortez	Co 81321, 9/0-565-82	10. Field and Pool, or Exploratory Area
CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA TYPE OF SUBMISSION TYPE OF ACTION Abandomirent Change of Plans New Construction Non-Routine Precuring Plugging Back Non-Routine Precuring Water State-Off Conversion to Injection Casing Repair Water State-Off Conversion to Injection Non-Routine Precuring Conversion to Injection Non-Routine Precuring Non-Routin	1980' FWL + 1980'	FSL	
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Notice of Intent Abandonment Change of Plans New Construction			
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M. I. T. the back side DEGEIVED JAN 0 9 1998 OIL GON. DIV. DISTO 3 Thereby verify that the foregoing is true and offrect Signed AMES Soosley title Alexator (This space for Federal or State office use) Approved by	Pump annula	as full of packar	d fluid and
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Approved by Date	James & Man	sley in Alrator	Date 12/26/97
	(This space for Federal or State office use)	0	
Conditions of approval, if any:		Title	Date

Title 18 U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

W

SIZE

\$ 5/8

Calculated Top of Plug (ft.)

Estimated Cost to Plug Wells

Slurry Wt. (Lb./Gal.)

WT(LB/FT)

NAME AND OFFICIAL TITLE (Please type	or print) SIGNATURE		T
Tamas // //	(operator) Tames &	D-lander	DATE SIGNED 1/5-/98
PA Form 7520-14			

⊕ EPA	United States Environmental Protect Washington, DC 20460					
	Completion Form For Injection Wells					
	Administrative Information	on				
. Permittee Hart Oi	1 & Gas Inc					
ddress (Permenent Meiling Address) (St Drawer 1480	treet, City, and ZIP Codel					
	0.55					
Cortez Co	81321					
· Operator Hart Oil & G	Total					
ddress (Street, City, State and ZIP Cod	del					
Drawer 1480						
Cortez Co S	31321					
. Facility Name		True Name Name				
Many Rocks	Gollup	70-565-8245				
dress (Street, City, State and ZIP Code		1778 200 0570				
Drawer 1480	•					
Cortez, Co. 81	321					
001104, 00,						
Surface Location Description of Inject	tion Well (s) 1980 FSL + 1980	FWL Sect T31N RITW				
ete NM.	County					
Irface Location Description	San	Juan				
· .	21 (
	5W 1/4 of SectionTownship 3/N Ren	ng• 17W				
	t lines of quarter section and drilling unit					
rface pation <u>19<i>80</i>ft. from (N/S)S_Line</u> of	quarter section					
d <u>1980</u> ft. from E/W <u>W</u> Line of Qua	rter section.					
Well Activity	Well Status	Type of Permit				
Class I	Operating	Individual				
V Class II	Modification/Conve	ersion <u>⊬</u> Area : Number of Wells €√\$1⊘n				
Class II Brine Disposal	X_Proposed CONV					
Brine Disposal Enhances Recovery	XFroposed Conton	•				
Brine Disposal	X_Proposed Corror					
Brine Disposal X Enhances Recovery Hydrocerbon Storage	Proposed Control					
Brine Disposal X Enhances Recovery Hydrocarbon Storage Class III		9				
Brine Disposal Enhances Recovery Hydrocarbon Storage Class III Other Lease Number 14-20-603	-2033 Well Number <u>G-20</u>	্র in Attachments for Completion Form.				
Brine Disposal Enhances Recovery Hydrocarbon Storage Class III Other Lease Number 14-20-603	-2033 Well Number <u>G-20</u>					

Name and Official Title (Please type or print) James Woosley Pres.	Signature	Thouse,	Date Signed 1/5/98

₽EDV

States Environmental Protection Agency **Underground Injection Control**

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		T/A	С
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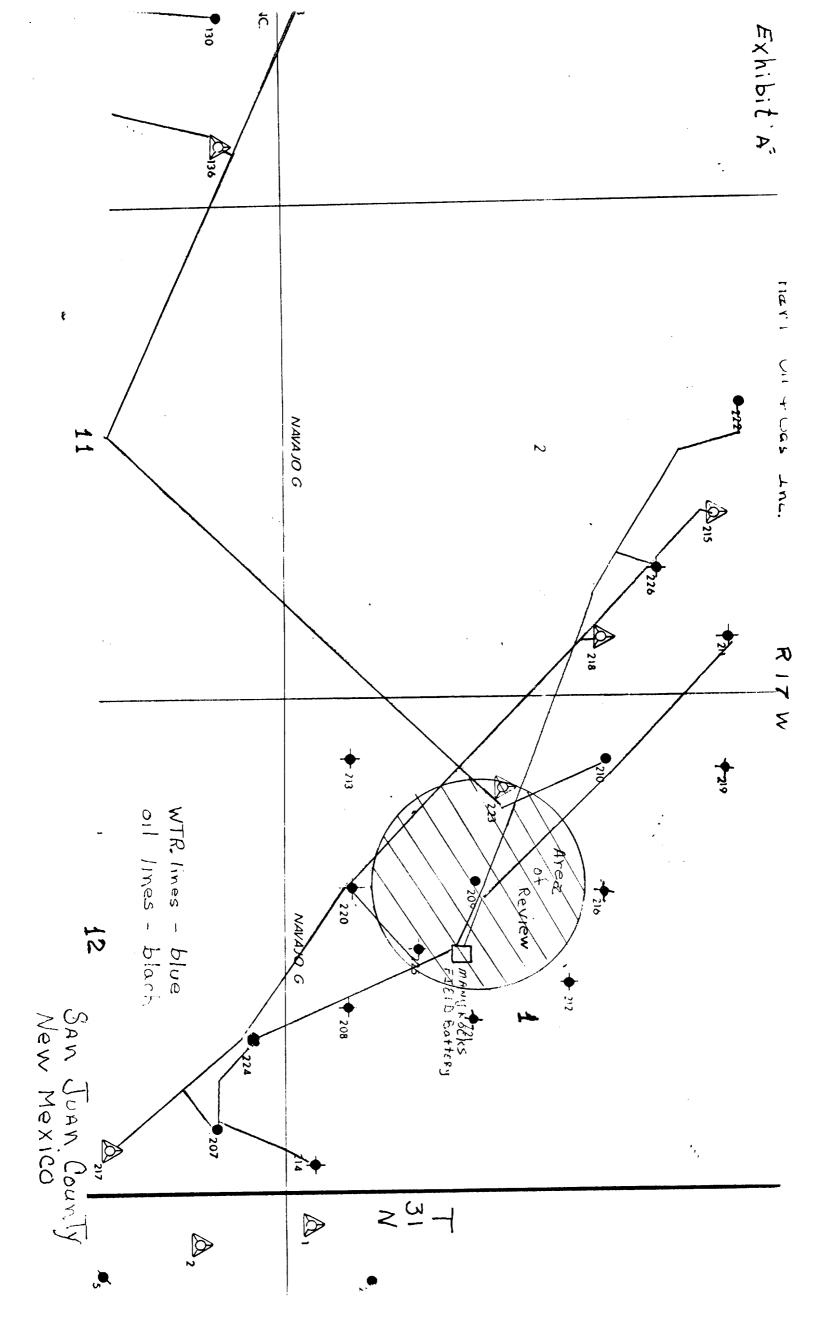
		~~		lected uni		rity of the	Sefe Drinking	U	 			T/A	С
Reed Attached Instructions Before Starting For Official Use Only													
Application ap	proved	mo	ete recei	ved year	Permit	t Number		Well ID)	·	FINDS N	lumber	
													,
Owner Name		١		nd Addres			Operator Nam		I. Operator	_	 		
Street Address	u)er	,	995 80	In	Phone I	Number	Hay T (Street Address PO Dyca	-	+ Gas		<u>C.</u>	Phone Nun	
city ortez			00	Stage		- <u>8245</u> DE 2 1	Corte		<u> </u>	3 '- <i>2</i>	State	565.88 ZIP CODE 8/32	
IV. Commer		ity	\	/. Owner			Legal Contact			VII.	SIC Code		<u> </u>
Yes No				Priv Fed	oral		Owner Operator		1	2			•
(C-7)	7	- 6			VIII.	Well Stat	ue (Mark "x")	44 g	Bir Bay (1914)	i ji ji garajer	A, LONGWAY.		
Operating	mo /O	dey	yeer 60		⊠ B.	Modificet	on/Conversion		c.	Proposec	i		
		<u></u>					fork "x" and ep						
A. Indivi		B. A	voe	Number o	of Existing W	elis Num	ber of Propose	d Wells	1		•	Sallup	
A. Classes(es)	A.	Type(s)	<u>.</u>	f class is	X. Clear a	end Type	of Wall lass rev			er as Aleg		A top 182	
(enter codes(s)	1 .	r codee	1	Class 19	"other" or ty	/рен соd	6 'x,' explain		D. Number (of wells pe	er type (if a	rea permit)	
	XI.	Locatio	on of 1 /	all(e) or A	pproximate (Center of	Field or Project	<u></u>		X	Ladien	ande (Mark '	
Deg Min	9	Longi	tude		ownship and	Renge	Sec Feet From		Feet From 1980	Ī	Y on No	1111	
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certify under ocument and ne information enalties for su	ali attad , I belie	coment eve tha	ts and t the ir	that, ba iformati	ised on my ion is true,	inquiry accurat	of those ind e, and comp	lividua Ilete.	Is immedi I am awai	ately res	ponsible nere are s	for obtain significant	ina 📗
Name and Title	~	Print)	معاو	2 V	ope	rat	or Pro	25.)) B.			de and No.1 8245	
Signature	Signisture D. Dete Signed 1/5/98												

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, DC 20460 COMPLETION REPORT FOR BRINE DISPOSAL, HYDROCARBON STORAGE, OR ENHANCED RECOVERY WELL

Form Approved
OMB No. 2040-0042
Approval Expires 6-30-98

NAME AND ADDRES	C OF EXICTING DERMITTEE							
Hart O	S OF EXISTING PERMITTEE		NAME AND ADDRESS OF	SURFACE OWNER	-			
Drawer	1480		Ine Ivar	ajo Nation				
			BOX 410					
Covtez	: Co 81321		Montezo	ima Civeek Ut.	84534			
I OCATE WELL AN	D OUTLINE UNIT ON	STATE COUNTY		oma, Creek Ut.	0 // 00			
SECTION PLAT -		INM Say	n Juan	liniection	K-1644			
	- 010 Florico	SURFACE LOCATION C	AECOBIOTION .	1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1	K-2210			
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 		LOCATE WELL IN TWO	DIRECTIONS FROM NEAREST	LINES OF QUARTER SECTION AND DI	RILLING UNIT			
		Surface 1995	^					
l		Location 700 tt. from	m (N/S) <u>S</u> Line of quarter s	ection				
<u> </u>			w W Line of quarter section					
		WELL ACTIVIT	TYPE OF	DEDIALL				
l w	1 ! ! ! .	☐ Brine Dispose			=			
M i i i i				Estimated Fracture				
		Enhanced Rec		of Injection Zone	3100 K2T			
		☐ Hydrocerbon S		1_				
l ————————————————————————————————————		Anticipated Daily Injecti	on Volume (Bbis)	Injection Interval				
		Average	Maximum					
▎ ▐ ┈╬╌╬╸		1 10 - 11	1 1	1				
		120 66		1200 12				
	Ś	Anticipated Daily Injecti		Depth to Bottom of Lowermost Fresh	hwater Formation			
		Average	Maximum	(Foot)				
		860	950	None	•			
Type of Ir	njection Fluid (Check the appropriat	te block(s))	Leese Name	Well Number				
Selt Water	Brackish Water	Fresh Water	Many Rocks	A 11 - Well adminer				
				Gallup G-209				
. Luqu	uid Hydrocerbon	Other	Name of Injection Zone					
			Lower	Gallua SS				
Date Drilling Began	Date Well Cor	moleted	Permeability of Injection Zor		· · · · · · · · · · · · · · · · · · ·			
May 5	1963 May							
		7.1, ,,,,,,		27 ml. averag	e			
Date Drilling Completed		*	Porceity of Injection Zone	Porosity of Injection Zone				
				/ A A				
11/ay 8	. 1963			18%				
Tray 8	CASING AND TUBING		CEMENT	/ <i>8%</i>	F			
OD Size		Depth		ноц				
i lay o	CASING AND TUBING Wt/Ft — Grade — New or Used	Depth / //	Sacks	HOU Class Depth	Bit Diameter			
i lay o	CASING AND TUBING W/Ft — Grade — New or Used 24 J-55 New	Depth 6.44	Sacks 5.2 5,	HOU Cless Depth A = 64-504-600				
Tay b	CASING AND TUBING Wt/Ft — Grade — New or Used	Depth 641	Sacks	HOU Class Depth	Bit Diameter			
Tay b	CASING AND TUBING W/Ft — Grade — New or Used 24 J-55 New	Depth 64'	Sacks 5.2 5,	HOU Cless Depth A = 64-504-600	Bit Diameter			
Tay b	CASING AND TUBING W/Ft — Grade — New or Used 24 J-55 New	Depth 64'	Sacks 5.2 5,	HOU Cless Depth A = 64-504-600	Bit Diameter			
Tay b	CASING AND TUBING W/Ft — Grade — New or Used 24 J-55 New	Depth 64'	Sacks 5.2 5,	HOU Cless Depth A = 64-504-600	Bit Diameter			
Tay b	CASING AND TUBING W/Ft — Grade — New or Used 24 J-55 New	Depth	Sacks 5.2 5,	HOU Cless Depth A = 64-504-600	Bit Diameter			
00 Size 8 5/8 " 4 1/2 "	CASING AND TUBING WUFT - Grade - New or Used 24 J-55 New 9.5 J-55 New	Depth	Sacks 5.2 5,	HOU Cless Depth A = 64-504-600	Bit Diameter			
00 Size 95/8" 41/2"	CASING AND TUBING W/Ft Grade New or Used 24 J-55 NEW 9.5 J-55 NEW INJECTION ZONE STIMULATION	1260	\$ecks 52 7/80 %	HOU Cless Depth A = 64-504-600	Bit Diameter			
00 Size 8 5/8 " 4 1/2 "	CASING AND TUBING W/Ft Grade New or Used 24 J-55 NEW 9.5 J-55 NEW INJECTION ZONE STIMULATION Meterials and Amo	1260	\$ecks	HOU Class Depth A = 64-507-600 A = 1260-770	Bit Diameter 12 1/4 6 1/4			
OD Size	CASING AND TUBING W/Ft Grade New or Used 24 J-55 NEW 9.5 J-55 NEW INJECTION ZONE STIMULATION Meterials and Amo	12.60 ount Used	Sects 52 80 WIF Log Types	HOUL Class Depth A = 64 - SUY - GCR A = 1260 - 770 RE LINE LOGS, LIST EACH TYPE Logged im	Bit Diameter 12 1/4 6 1/4			
00 Size 85/8" 4 1/2"	CASING AND TUBING WVFT Grade New or Used 24 J-55 NEW 9.5 J-55 NEW INJECTION ZONE STIMULATION Meterials and Arm 7000 y/5. CYULE,	041 12.60 0um Used 17500 lbs.	Sects	HOLL Cless Depth A = 64-507-600 A = 1260-770 RE LINE LOGS, LIST EACH TYPE Logged Into 1260-90	Bit Diameter 12 1/4 6 1/4			
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Lab Test No: 17622

Hart Oil & Gas

Sample Date: 11/18/97

12/1/97 Lab Date In:

Lab Date Out: 12/4/97

Water Analysis

Listed below please find water analysis report from:

Navajo

F-1

1.004 Specific Gravity: Total Dissolved Solids: 5478 7.80 pH:

Conductivity (µmhos):

Ionic Strength:

0.113

========= Cations: mg/l

58 Calcium (Ca++):23 Magnesium (Mg++): Sodium (Na+): 1682 (Fe++): 0.00 Iron Dissolved Iron (Fe++): 0.00 Barium (Ba++): Strontium (Sr):

Manganese Resistivity: 0.19

Anions:

(HCO3-): 390

Bicarbonate Carbonate (CO3--): Hydroxide (OH-): 0 Sulfate (SO4--): 3000 Chloride (Cl-): 324

(Mn++):

Gases:

Carbon Dioxide (CO2):

Hydrogen Sulfide (H2S):

ppm 26.40

5.10

(O2): Oxygen

Scale Index (positive value indicates scale tendency) a blank indicates some tests were not run

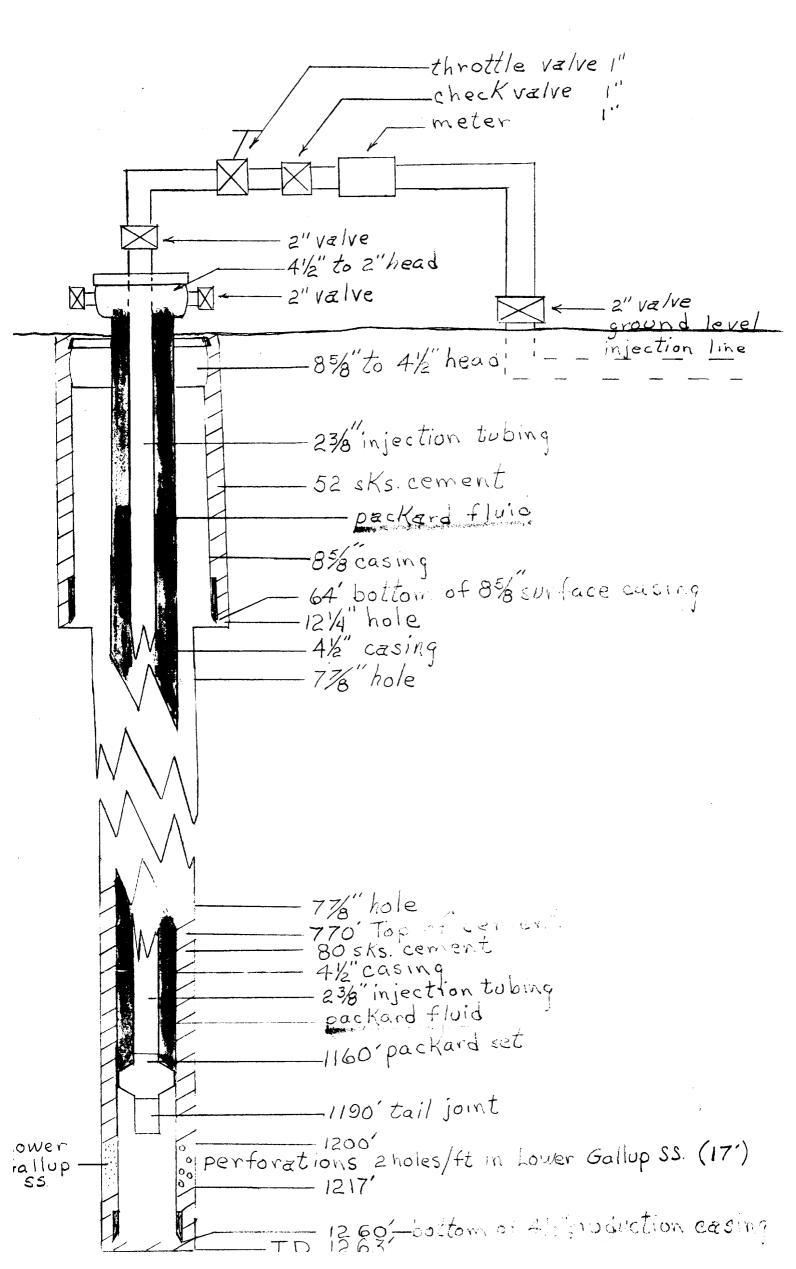
Temperature		CaCO3 SI	CaSO4 SI
86F	30.0C	0.33	-15.11
104F	40.0C	0.66	-15.11
122F	50.0C	0.85	-15.11
140F	60.0C	1.02	-14.74
168F	70.0C	1.27	-13.88
176F	80.0C	1.51	-12.97

Comments:

If you have any questions or require further information, please contact us. Sincerely,

> cc: Clyde Willis Mike Grover

Laboratory Technician



- A. See area of review map (exhibit A) 40 acre spacing
- E. There are no underground sources of drinking water in this area. In fact, no water at all. The first aquifer is the Lower Gallup SS enclosed top and bottom by shale. The Gallup SS is approximately 1200' deep and is the zone from which the hydrocarbons are being produced.

Approximate depths:

surface - 1200' Mancos shale 1200' - 1217' Lower Gallup SS 1217' - 2130' shale

- G. This well (G-209) is in the Many Rocks trend of the Lower Gallup SS. The oil reservoir trends northwest and southeast and is a stratigraphic trap enclosed by shales. In some areas along this trend there are two sand sections that have developed known by either the upper and lower Gallup SS, or by the upper and lower Tocito SS, which are one and the same. However, in the area-of-review including all of sections 1, 2, and 12, which covers this field, there exist only the lower Gallup SS. The average porosity is 15% and the average permeability is 80 md. The average net pay zone is 17.8 ft. The reservoir temperature was 87 degrees (F) when the field was new. The field originally had a gas solution drive, which declined very rapidly, thereby forcing a secondary recovery method to be put into effect and in this area the method was a water flood.
 - 1. Injection zone is the Lower Gallup which is a sandstone with an average porosity of 15% and average permeability of 80 md. The average injection rate into this sand should be 860 to 920 PSI. DECEIVED

 JAN 0 9 1998

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 ENERGY
 - 2. The confining zone is shale above and below.
 - 3. Lower Gallup SS member in the Cretaceous period.
 - 4. Depth 1700' 1710' below ground level.
 - 5. Fracture pressure 2800 to 3000 PSI.
- H. 1.) Average daily rate 90 110 bbls per day maximum rate - 120 - 130 bbls. per day
 - 2.) Average PSI 860 maximum PSI - 950
 - 3.) Packard fluid
 - 5.) Source water will be from a water source well located 990' FNL and 990' FWL. Sec. 10: 31N, 17W San Juan County, NM, producing water from the Dakota and Morrison SS at approximately 2300' deep. This well is 2 1/8 miles west of the proposed injection well. Enclosed is a water analysis taken from this water source well (exhibit B.)

Same and it will be seen to be the reserved to

M. Enclosed (exhibit C)

- Q. See enclosed plugging and abandonment plan on E.P.A. form.
- R. Consent Agreement entered into October 31, 1995 between Hart Oil and Gas, Inc. and Region IX E.P.A.

RE: Escrow account #043201 located at the First National Bank of Farmington, NM, P.O. Box 4540, Farmington, NM 87499-4540

U. Producing oil from a late secondary recovery field