PROPOSED ADVERTISEMENT

Application of Burk Royalty Co. for approval of a waterflood project and to qualify the project for the recovered oil tax rate pursuant to the Enhanced Oil Recovery Act, Lea County, New Mexico. Applicant seeks approval to institute a waterflood project in the Lynch Yates-Seven Rivers Pool on its Neal Fee Lease, comprising the NE% of Section 35, Township 20 South, Range 34 East, NMPM, by the injection of water at pressures of up to 1500 psi into the Neal Well No. 3, located in Unit A of Section 35. Applicant further seeks to qualify the project for the recovered oil tax rate pursuant to the "New Mexico Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5). The project is located approximately 16 miles west-northwest of Oil Center, New Mexico.

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PROPOSED ADVERTISEMENT

Application of Burk Royalty Co. for approval of a waterflood project and to qualify the project for the recovered oil tax rate pursuant to the Enhanced Oil Recovery Act, Lea County, New Mexico. Applicant seeks approval to institute a waterflood project in the Lynch Yates-Seven Rivers Pool on its Neal Fee Lease, comprising the NE% of Section 35, Township 20 South, Range 34 East, NMPM, by the injection of water at pressures of up to 1500 psi into the Neal Well No. 3, located in Unit A of Applicant further seeks to Section 35. qualify the project for the recovered oil tax rate pursuant to the "New Mexico Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5). The project is located approximately 16 miles west-northwest of Oil Center, New Mexico.

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PROPOSED ADVERTISEMENT

Application of Burk Royalty Co. for approval of a waterflood project and to qualify the project for the recovered oil tax rate pursuant to the Enhanced Oil Recovery Act, Lea County, New Mexico. Applicant seeks approval to institute a waterflood project in the Lynch Yates-Seven Rivers Pool on its Neal Fee Lease, comprising the NE% of Section 35, Township 20 South, Range 34 East, NMPM, by the injection of water at pressures of up to 1500 psi into the Neal Well No. 3, located in Unit A of Applicant further seeks to Section 35. qualify the project for the recovered oil tax rate pursuant to the "New Mexico Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5). The project is located approximately 16 miles west-northwest of Oil Center, New Mexico.

OL ON STRATON DW.

JAMES BRUCE ATTORNEY AT LAW

SS SEP 14 P# 1:12

Case 12262

POST OFFICE BOX 1056 SANTA FE, NEW MEXICO 87504

3304 CAMINO LISA SANTA FE, NEW MEXICO 87501

(505) 982-2043 (505) 982-2151 (FAX)

September 14, 1999

Hand Delivered

Florene Davidson Oil Conservation Division 2040 South Pacheco Street Santa Fe, New Mexico 87505

Dear Florene:

Enclosed are an original and two copies of an application by Burk Royalty Co. for a waterflood project, together with a proposed advertisement. Please set this matter for the October 7, 1999 Examiner hearing. Thank you.

Very truly yours,

pames gruce

cc:

Attorney for Burk Royalty Co.

Hobbs District Office (w/encl.)

BEFORE THE NEW MEXICO OIL CONSERVATION DIVISION

53 SEP 11 PA 1: 12

APPLICATION OF BURK ROYALTY CO. FOR APPROVAL OF A WATERFLOOD PROJECT AND TO QUALIFY THE PROJECT FOR THE RECOVERED OIL TAX RATE, LEA COUNTY, NEW MEXICO.

Case No. 12262

APPLICATION

Burk Royalty Co. ("Burk") applies for an order approving a waterflood project, including approval to inject at pressures of up to 1500 psi, and qualifying the project for the recovered oil tax rate. In support thereof, Burk states:

- 1. Burk is the operator of the Neal Lease, a fee lease covering the NE% of Section 35, Township 20 South, Range 34 East, N.M.P.M., containing 160 acres of land.
- 2. Burk proposes to institute a waterflood project on the subject lease, designated the Neal Lease Waterflood Project. Burk's address is P.O. Box 94903, Wichita Falls, Texas 76308 (Attention: Charles Gibson).
- 3. Burk proposes to inject water into the Yates-Seven Rivers formation (Lynch Yates-Seven Rivers Pool) through the Neal Well No. 3, located 330 feet from the north line and 993 feet from the east line (Unit A) of Section 35. The project area will comprise the NE% of Section 35. A plat outlining the project area, and marking the locations of the initial injection and producing wells, is attached hereto as Exhibit A.
- 4. Burk requests that the Neal Lease Waterflood Project be qualified for the recovered oil tax rate, pursuant to the Enhanced

 $^{^{1}}$ The Neal Well No. 3 was approved for salt water disposal in the Lynch Yates-Seven Rivers Pool by Commission Order No. R-4283.

Oil Recovery Act (L. 1992, Ch. 38) and Division Rule 30. Project data includes:

- (a) Number of initial producing wells: 3.
- (b) Number of initial injection wells: 1.
- (c) Capital cost of additional facilities: \$0.00.
- (d) Estimated total project cost: \$0.00.
- (e) Anticipated injection commencement date: November 1, 1999.
- (f) Type of fluid injected: Produced water.
- (g) Anticipated injection volumes: 750 BWPD maximum.
- 5. A Form C-108 for the injection well and project is attached hereto as Exhibit B.
- 6. Water will be injected at pressures of up to 1500 psi, which is in excess of 0.2 psi/foot of depth, and Burk requests approval thereof.

WHEREFORE, Burk requests that the Division approve the injection application and the Neal Lease Waterflood Project, including permission to inject at pressures of up to 1500 psi, qualify the project as an enhanced oil recovery project, and certify the project for the recovered oil tax rate.

Respectfully submitted,

James Bruce

₽.O. Box 1056

Santa Fe, New Mexico 87504

(505) 982-2043

Attorney for Burk Royalty Co.

VERIFICATION

COUNTY OF Wichita

Charles Gibson, being duly sworn upon his oath, deposes and states that: He is a petroleum engineer employed by Burk Royalty Co., he is familiar with the matters set forth in the foregoing Application, and the statements therein are true and correct to the best of his knowledge.

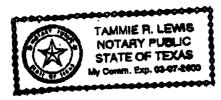
Charles Gibson

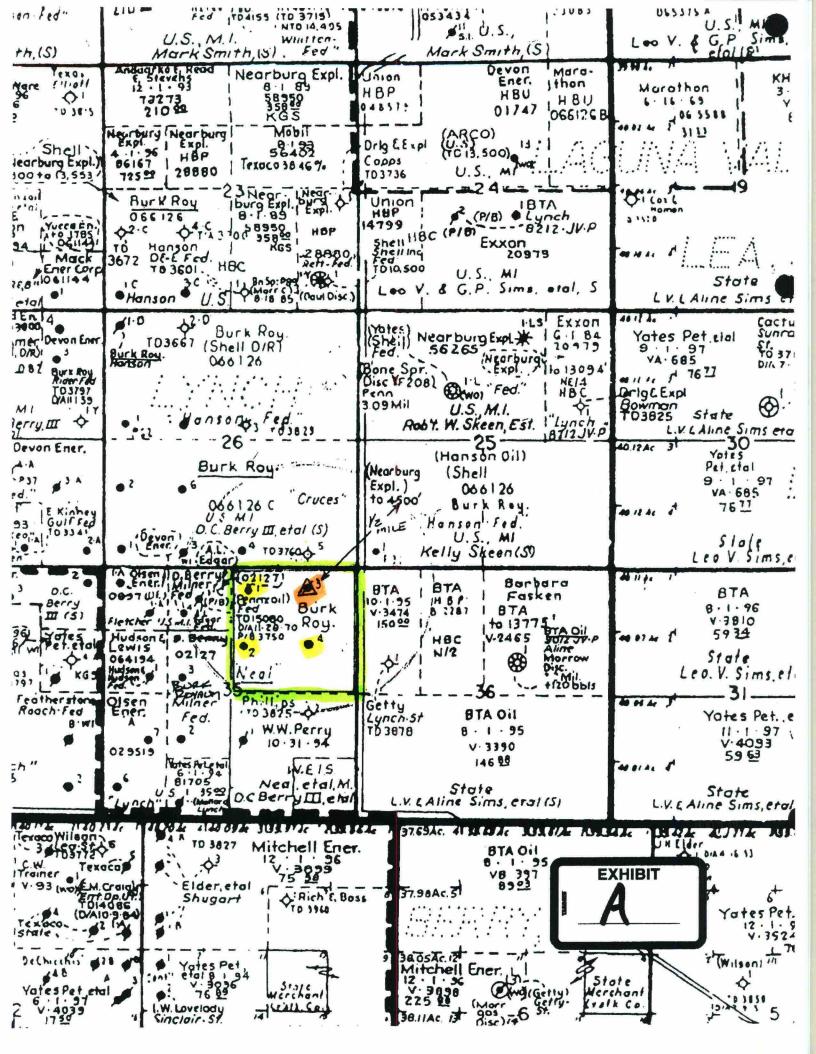
SUBSCRIBED AND SWORN TO before me this 14th day of September, 1999 by Charles Gibson.

Samme Lewis Notary Public

My Commission Expires:

3-7-davo





DIL CONSERVATION DIVISION

FORM C-108 Revised 7-1-81

ropriate Division

ENERG	T AND MINERACE DEFARING	STATE LAND OFFICE BUILDING SANTA FE NEW MEXICO 87501	Noal	#3
APPLICA	ATION FOR AUTHORIZATION TO INJECT	ρ_{c}	se 12262	•
I.	_	y Pressure Mainten	nance 🔲 Disposal	Storage
II.	Operator: Burk Royalty	7 Co.		
	Address: P. O. Box BF	RC, Wichita Falls,	Texas 76307	
	Contact party: Charles Gibs	son	Phone: 940/32	2-5421
111.	Well data: Complete the data r proposed for inject	equired on the reverse ion. Additional sheets		
IV.	Is this an expansion of an exis If yes, give the Division order			·
٧.	Attach a map that identifies al injection well with a one-half well. This circle identifies t	mile radius circle draw	in around each prop	y proposed osed injection
VI.	Attach a tabulation of data on penetrate the proposed injectio well's type, construction, date a schematic of any plugged well	n zone. Such data shal drilled, location, dep	l include a descri th, record of comp	ption of each
VII.	Attach data on the proposed ope	ration, including:		
-	If injection is for dis at or within one mile	pen or closed; ximum injection pressur ate analysis of injecti on if other than reinje posal purposes into a z of the proposed well, mation water (may be me	e; on fluid and compa cted produced wate one not productive attach a chemical	tibility with r; and of oil or gas analysis of
VIII.	Attach appropriate geological d detail, geological name, thickn bottom of all underground sourc total dissolved solids concentrinjection zone as well as any s injection interval.	ess, and depth. Give tes of drinking water (a ations of 10,000 mg/l o	the geologic name, equifers containing or less) overlying	and depth to waters with the proposed
IX.	Describe the proposed stimulati	on program, if any.	1	
· x.	Attach appropriate logging and with the Division they need not		(If well logs hav	e been filed
xI.	Attach a chemical analysis of favailable and producing) within location of wells and dates sam	one mile of any inject	more fresh water w ich or disposal we	ells (if ll showing
XII.	Applicants for disposal wells mexamined available geologic and or any other hydrologic connect source of drinking water.	engineering data and f	ind no evidence of	open faults
XIII.	Applicants must complete the "P	roof of Notice" section	on the reverse si	de of this form.
XIV.	Certification		•	· .
	I hereby certify that the infor to the best of my knowledge and	belief.	•	
	Name: Charles Gibson		Petroleum	Engineer
	Signature:		Pate: 7-7-99	
subm:	he information required under Sec itted, it need not be duplicated he earlier submittal.	tions VI, VIII, and resubmitted.		previously d circumstance

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) tense name; Well No.; location by Section, Township, and Range; and footage location within the section.

 Neal #3, 35-T20S,R34E 330' FNL & 990' FEL
 - (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. 2 3/8" EUE Tubing, plastic coated 3,532'
 - (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used. Totem Tension at 3,532'

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. Yates Formation Lynch Pool
 - (2) The injection interval and whether it is perforated or open-hole. 3,590'-3,610'; 3,703'-3,717' perforated
 - (3) State if the well was drilled for injection or, if not, the original purpose of the well Well was drilled originally as an oil well.

4 75 72

300

- (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.
- N/A
 (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. None above, Seven River below 3,740

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, P. O. Box 2088, Santa Fe, New Mexico 87501 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.

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NEAL #3 AREA OF REVIEW

WELL	WELL	DATE			RECORD OF
NAME	TYPE	DRILLED	LOCATION	DEPTH	COMPLETION
Cruces #3	liO	7-18-57	Sec. 26, 330' FSL & 1,655' FWL	3,730'	Attached
Cruces #4	iio	7-15-59	Sec. 26, 330' FSL & 2,316' FEL	3,750	Attached
Cruces #5	D&A	11-7-59	Sec. 26, 330' FSL & 992' FEL	3,760'	1
Hanson Fed #1	D&A	6-23-59	Sec. 25, 330" FSL & FWL	3,863	1
Federal "C" #1	P&A	5-18-74	Sec. 35, 660' FNL & 1,980' FWL	15,080'	Attached
Milner #4	iö	1-26-54	38	3,736'	Attached
Neal #1	liO	4-5-59	Sec. 35, 467' FNL & 2,315' FEL	3,752	Attached
Neal #2	iö	7-15-59	Sec. 35, 1,650' FNL & 2,316' FEL	3,819	Attached
Neal #3	ΙΘ̈́	6-6-9	Sec. 35, 330' FNL & 993' FEL	3,805	Attached
Neal #4	iiO	7-29-59	Sec. 35, 1,650' FNL & 900' FEL	3,822'	Attached
Neal etal #2	D&A	10-28-59	Sec. 35, 2,260' FSL & 992' FEL	3,825	1
Lynch State #1	D&A	10-13-81	Sec. 36, 1,980' FNL & 660' FWL	3,878'	1

NEAL #3 PROPOSED INJECTION WELL OPERATIONS

Proposed Average Daily Rate
 250 barrels water per day

Maximum Daily Rate 750 barrels water per day

- 2. The system is closed.
- 3. Proposed Average Injection Pressure 1000#

Proposed Maximum Injection Pressure 1500#

- 4. The source of injection fluid will be Yates Sand (Neal Lease) and Seven Rivers (Milner Lease). Analysis attached.
- 5. The injection zone is the Yates Sand. The field name is Lynch Field. It is Upper Permian in age. The top of the Yates in the Neal #3 is at 3,590' (136') with a thickness of 34'. There are no underground sources of drinking water below the Yates. Above the Yates, the Quaternary alluvium to a depth of 80' is the only source of groundwater in the area.
- 6. The well is currently classified as disposal. We do not plan to stimulate the well.
- 7. The logs are attached.
- 8. There are no fresh water wells within one mile of the proposed injection well.
- I have examined public records and find no evidence of open faults or any other hydrologic connection between the injection zone and any underground source of drinking water.

H & H Chemical Enterprises

WATER ANALYSIS REPORT

SAMPLE

Oil Co.: Burk Royalty Lease: Cruces Well No.: # 4

Analysis:

Sample Loc. : Wellhead
Date Sampled : 13-September-1994

PROBABLE MINERAL COMPOSITION

Attention

ANALYSIS

1.	Hq			7.320
2.	pH Specific Gravity CaCO ₃ Saturation	60/60	F.	1.045
3.	CaCO ₃ Saturation	Index	e 80	F. +0.933
	•		@ 140	F. +1.853

LOGARITHMIC WATER PATTERN

3.	CaCO ₃ Satura	ation Ind	dex @ 80 F. +	0.933		
D	issolved Gas	ses	6 140 1. 1	MG/L	EQ. WT.	*MEQ/L
4. 5. 6.	Hydrogen Su Carbon Diox Dissolved O	ide	Not D	800 0 etermined		
<u>c</u>	ations					
7. 8. 9. 10.	Calcium Magnesium Sodium Barium	(Ca++) (Mg++) (Na+) (Ba+)	(Calculated)	1,202 790 25,294 etermined	/ 20.1 = / 12.2 = / 23.0 =	59.80 64.75 1,099.74
A	nions				}	
11. 12. 13. 14. 15.	Hydroxyl Carbonate Bicarbonate Sulfate Chloride	(OH ⁻) (CO ₃ ⁻) (HCO ₃) (SO ₄)		0 0 2,055 3,050 39,991	/ 17.0 = / 30.0 = / 61.1 = / 48.8 = / 35.5 =	0.00 0.00 33.63 62.50 1,126.51
16. 17. 18. 19.	Total Dissortion Total Iron Total Hardner Resistivity	lved Soli (Fe) ess As Ca @ 75 F.		72,382 8 6,256 0.139 /cm.	/ 18.2 =	0.44

*meq/L.	COMPOUND	EQ. WT. 3	<pre>X *meq/L :</pre>	= mg/L.
Na William Cl	$Ca(HCO_3)_2$	81.04	33.63	2,726
Ca WHI THE HOOS	CaSO4	68.07	26.17	1,781
Mg	CaCl ₂	55.50	0.00	0
Fe 10000 1000 100 10 1 10 1000 10000 10000	$Mg(HCO_3)_2$	73.17	0.00	0
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ŏη	000 1000 100 10 1 10 100 1000 10000	mg(neo3)2	13.11	0.00	O
00		MgSO4	60.19	36.33	2,187
	Calcium Sulfate Solubility Profile	MgCL ₂	47.62	28.42	1,353
	4364	NaHCO3	84.00	0.00	0
- / 1	2000	NaSO ₄	71.03	. 0.00	0
_	1300	NaCl	58.46	1,098.09	64,194
	4000				• •

Temp *F. 50 *Milli Equivalents per Liter 70 90 110 130 150 170 This water is mildly corrosive due to the pH observed on analysis. The corrosivity is increased by the content of mineral salts, and the presence of H2S, CO2, Oxygen in solution.

H & H Chemical Enterprises

WATER ANALYSIS REPORT

SAMPLE

Oil Co. : Burk Royalty
Lease : Milner Federal
Well No.: # 4 SWD

Analysis:

Sample Loc. : Wellhead

Attention

Date Sampled: 13-September-1994

253.93 14,845

ANALYSIS

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<u>1</u> :	Specific Gravity CaCO ₃ Saturation	60/60	F.	6.980 1.009
3.	CaCO ₃ Saturation	Index	e 80	F. +0.539

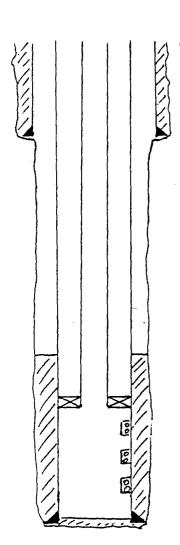
2. Specific Gravity 60/60 F. 1.009 3. CaCO ₃ Saturation Index 6 80 F. +0.	. 539	
Dissolved Gasses	MG/L EQ. WT. *MEQ/L	
4. Hydrogen Sulfide5. Carbon Dioxide6. Dissolved Oxygen	350 300 0.2	
Cations		
7. Calcium (Ca ⁺⁺) 8. Magnesium (Mg ⁺⁺) 9. Sodium (Na ⁺) (Calculated) 10. Barium (Ba ⁺⁺) Not Det	1,202 / 20.1 = 59.80 486 / 12.2 = 39.84 5,860 / 23.0 = 254.78 termined	
Anions	}	
11. Hydroxyl (OH ⁻) 12. Carbonate (CO ₃ ⁻) 13. Bicarbonate (HCO ₃ ⁻) 14. Sulfate (SO ₄ ⁻) 15. Chloride (Cl ⁴)	0 / 17.0 = 0.00 0 / 30.0 = 0.00 952 / 61.1 = 15.58 2,750 / 48.8 = 56.35 9,998 / 35.5 = 281.63	
16. Total Dissolved Solids 17. Total Iron (Fe) 18. Total Hardness As CaCO ₃ 19. Resistivity @ 75 F. (Calculated) O	21,248 1 / 18.2 = 0.03 0.308 /cm.	
LOGARITHMIC WATER PATTERN *meq/L.	PROBABLE MINERAL COMPOSITION COMPOUND EQ. WT. X *meq/L = mg/I	٠.
Na William Filling Cl	Ca(HCO ₃) ₂ 81.04 15.58 1,26	3
Ca	8 CaSO ₄ 68.07 44.22 3,01	.0
Mg Mg HAND HAND SO4	CaCl ₂ 55.50 0.00	0
re 10000 1000 100 10 1 10 1000 10000 10000	$Mg(HCO_3)_2$ 73.17 0.00	0
Calcium Sulfate Solubility Profile	MgSO ₄ 60.19 12.13 73	10
2429	MgCL ₂ 47.62 27.70 1,31	. 9
2563	NaHCO ₃ 84.00 0.00	0
2010	NaSO ₄ 71.03 0.00	0

130 130 170 *Milli Equivalents per Liter 110 This water is slightly corrosive due to the pH observed on analysis. The corrosivity is increased by the content of mineral salts, and the presence of H2S, CO2, Oxygen in solution.

NaCl

58.46

CHARLES 6185



TOP OF CEMENT: SURFACE (CIRCULATED)

8 1/8 "CASIDA CEMENTED @ 190' W/100 SX

TOP OF CEMENT: 3148' (TEMP 'LOG)

23/8" INTERNALLY CONTED TEM, TO 3537'

23/8" x51/2" TENSION PALLER 23532'

5/2" CASING CEMENTED @ 3804" W/200 &K

Form C-101 Revised (12/1/55)

NOTICE OF INTENTION TO DRILL

Notice must be given to the District Office of the Oil Conservation Commission and approval obtained before drilling or recompletion begins. If changes in the proposed plan are considered advisable, a copy of this notice showing such changes will be returned to the sender. Submit this notice in QUINTUPLICATE. One copy will be returned following approval. See additional instructions in Rules and Regulations of the Commission.

If State Land submit 6 Copies Attach Form 6-128 in triplicate to first 3 copies of form 6-101

			20905	NOT REALIZED		7, 4737	
OIL CON	SERVATIO	א כטי	(Place) MMISSION		•	(Date)	
	E, NEW M						
Gentlemen							
You a	ire hereby i	otified	that it is our in	stention to commence th	ac Drilling of a well to be	e known as	
•••••••••	VEUNE	ED TATE	T-CHAIL	(Company	or Operator)	**************************************	•••••••••••••••••••••••••••••••••••••••
<i>[</i>	Neel	<i>,</i> }		***************************************	, Well No	, in	The well i
lanced	975	Ι,	(Lease)	and h		0) 19 0	nit) Tone form the
1					35 , T. 20		
		_			Pool,		
(and Gas Lease is No		
	1 1				wner is Pat		
D	C :	В	x _A -	Address	***************************************	.,	
<u> </u>	<u> </u>	·		We propose to drill we	ll with drilling equipment a	s follows: Rotar	Z
E	F	G	н	844.07***********************************			•••••••••
				The status of plugging	bond is \$10,000	Cactive Bla	nket
L	K	J	I		Alan Dril		

М	N	0	P	W. i. and he are less		Yates	•••••••
<u> </u>				formation at an appro-	this well in theximate depth of	38501	fcct
				**	PROGRAM	1	
We p	ropose to us	e the fo	llowing strings o	f Casing and to cement			
Blac	of Hole		Bise of Casing	Weight per Foot	New or Second Hand	Depth	Sacks Cement
	738		8-5/89	21.#	ji ji	1751	150 ax circ
		_					
	7-7/	150	5-1/24	11.8	N	TD 3850*	&
				<u> </u>	<u> </u>		
	-		-	ivisable we will notify yo	•		
ADD	ITIONAL	INFOR	MATION (If i	recompletion give full d	etails of proposed plan of	work.)	
						4 9 8 9 9 9 9 9 9 9 9 9 9	
	* Fill t	150 27	5 ax or ref	turn cerent to be	ick past the base	or sair ph remi	electic entrel
	C-128 a	ttach	ad 1999 -	ANELS S			
Approved	*****************		77 1931 5	1359 , 19	Sincerely yours,		
Except as	lollows:				BURK ROYA	LTY COPANY (Company or Operator)	
					Ву	Osla O	munt
					Agent		
	· OIL C	ONSER	VATION COM	MISSION	PositionSend C	oniniunications regardi	ng well to
R _v	entre	XI. &	THREE COP	123	Name A. J. M	elan 800 011	& Ges Blag.
S,	IGNED E	1	to p. zekoka Mutriot no	1	Address Michi	te Palle, Taxas	<u> </u>
	D. Nist.	فانتلث	فافت شارات مديد بداريران	/, A			

NEW MEXICO OIL CONSERVATION COMMISSION

FORM C-103 (Rev 3-55)

MISCELLANEOUS REPORTS ON WELLS

i I.		(Submit to	appropria	te Distri	ict Off	ice as	per Com	mission R	ule 110	s) 	, , ;	:
Name of Com		Royalty Co)•			Addres	* 800	011 & G	96 BL	g. H	chit	Palls, Tex-
Lease	Feel			Il No.	Unit	Letter	Section 35	Township 20]	Range	&
Date Work Pe	erformed 6/9/59	Pool	. 1	ynch				County				
			THIS IS A	REPORT	OF:	(Cbeck	appropria	ite block)				
Begiani	ng Drilling Op	erations	Casin	ng Test a	nd Cem	ent Job		Other (Explain)	:		
Pluggin	8		Reme	dial Work	: .				**	•		
Ran en	1 set 190*	of 8-5/8*	csg (se			.		· · · · · · · · · · · · · · · · · · ·		sted		
								•.	•	1		
			٠.						•	,		
•						· .						
Witnessed by				Position				Company	!			
		FILL	IN BELO					PORTS O	NLY		<u>:</u>	
DF Elev.		T D				WELL D	ATA	Producing	Interva	1	Com	pletion Date
Tubing Diam	eter	Tubing I	Depth			Oil Strin	ng Diame	ter	C	il String	Depth	
Perforated In	terval(s)											
•	terval					Produci	ng Forma	ttion(s)				
	,			RESUL	TS OF	WORK	OVER					
Test		Oil P							Cubi	GOR c feet/B	ы	Gas Well Potential MCFPD
Before Workover			··					·				
THIS IS A REPORT OF: (Cbeck appropriate black) Seginating Drilling Operations												
	OIL CONS	ERVATION CO	MMISSION			I here to the	best of	pdy knowled	Ber	on given	above رحب	is true and complete
	John 1	v. K	rinss	·n_		ļ						·
	jis	:	7			Positio	on Barrie Re	oyelty C	orbert	7		
Date		• ->:				Compa	ny					

NEW MEXICO OIL CONSERVATION COMMISSION

FORM C-103 (Rev 3-55)

MISCELLANEOUS REPORTS ON WELLSTOND OF HOM DOD

		(S u	bmit to appro	priate Distri	ict Offi	ce as i	per Com	mission Ru	ile 110			
Name of Comp	-	yeliy	Company			Addres		11 & Gae	BJA	er Wieh	Sta	Falls, Tex.
Lease	Ecal			Well No.	Unit	Letter		Township			Range	4
Date Work Per		F	lench loo					County	06			
		-	THIS I	S A REPORT	T OF: (Check	appropria	te block)				
Beginnin	g Drilling Op	erations	(35) C	asing Test a	nd Ceme	ar Job	[Other (E	explain):		
Pluggiag			☐ R	emedial Work	, ,-,2	12-						
Detailed accou	int of work d	one, nati	ire and quantity	of materials	used, a	and resi	ılts obta	ined.				
5-1/2 by ta	a 14f cer sperature	ding 6 sure	et at 1804 ey, Tooted	600# pre	er cec	ecits , to	osanz osted (t return Of	ed p	esi des	e ci	t talt
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Witnessed by	J. Wele	1		Position Dr16) Dupt	; 		Company Secre	!			
			FILL IN BE					PORTS OF	NLY	(·
DF Elev.		TD		PBT	D D	ELL D	ATA	Producing	Interv	a l	Com	pletion Date
Tubing Diamet	er	. 1	ubing Depth		C	il Strin	g Diames	er		Oil String	Depth	
Perforated Inte	eval(s)								l			
							N ±					
Open Hole Inte	rval			•	P	roducia	g Forma	tion(s)				
: ,				RESIII	.TS OF	MUBR	OVER					
	Date of		Oil Productio		Producti			roduction	<u> </u>	GOR		Gas Well Potential
Test	Test		BPD	M	CFPD			P D	Cub	ic feet/Bb		MCFPD
Before Workover								·				
Alter Workover												
	OIL-CONS	ERYATI	ON COMMISSIO	IN /		I here to the	best of r	that the in	ge.		above	is true and complet
Approved by	, Uh		//			Name						
Title	4-11/1	7/	AL IU			Positio						······································
Date		 				Compa		mity Co	open	7		
		ſ•				Compas	•1					·

NEW EXICO OIL CONSERVATION COMN SION Santa Fe, New Mexico

(Form C-104) Ravised 7/1/57

REQUEST FOR (OIL) - (GAS) ALLOWABLE

New Well

This form shall be submitted by the operator before an initial allowable will be assigned to any completed Oil or Gas well. Form C-104 is to be submitted in QUADRUPLICATE to the same District Office to which Form C-101 was sent. The allowable will be assigned effective 7:00 A.M. on date of completion or recompletion, provided this form is filed during calendar month of completion or recompletion. The completion date shall be that date in the case of an oil well when new oil is delivered into the stock tanks. Gas must be reported on 15.025 psia at 60° Fahrenheit.

			Robbs, R. 14. 6/30/59	
TELADE ME	DEDV DI	ייב כדו		(Date)
				No.
Comp	MARY OF ODS	·····A	(Lease) Well No, in	4
				.
Unit Letter		••••	The state of the s	Ро
	Les		County, Date Spudded 67/79 Date Drilling Completed	/38/59
	** : : : :		Elevation 7725 GL Total Depth 9005 PBTD	
i te ase	maicate it	~	Top Oil/Gas Pay Name of Prod. Form.	-
DC	В	A		
				•
F P	- 			
E F	G.	Α	Open Hole Casing Shoe Tubing	J47)
L K	J	I	·	THE Chok
			Natural Prod. Test: bbls.oil, bbls water in hrs,	min. Size
	·		Test After Acid or Fracture Treatment (after recovery of volume of oil equ	al to volume o
MN	0	P		Ch I
		ليسيا		
3301 25	1 8 6 97	OA UL P		Size
ubing Casin	g and Ceme	nting Recor	1	
Size	Feet	Sax		
				t lowed
8-5/8	190	100	Choke SizeMethod of Testing:	
5-1 Ma	228 24	equit.	Acid or Eracture Treatment (Give amounts of materials used, such as acid.)	vater, nil. and
2-44			Hace	vacer, orr, and
	_ 1	#SY)	sand): Casing Tubing Date first new 6.00 FTO	
Sa res	BC JOAN	j	Press. Press. oil run to tanks	····
			Oil Transporter	
: 1	- 1		Same .	
			Gas Transporter	
marks:				
WEARE HEREBY REQUESTING AN ALLOWABLE FOR A WELL KNOWN AS: **BOTALITY CO.*** (Company or Operator) (Lease) (Lease) (Date) (Date) (Date) (Company or Operator) (Lease) (Company or Operator) (Lease) (Lease) (Date) (Date) (Date) (Date) (Company or Operator) (Lease) (Date) (Date)				
T hereby	carrify the	e the info	armation given above is true and complete to the best of my knowledge.	
	•		There's Dates 18 M Change 18 M	
proved	• • • • • • • • • • • • • • • • • • • •		(Company or Operator)	/
			- Chil.	A.
OIL	CONSER	VATION		
S			(Signature)	
: US		Will		
.•		· <i>-//</i>		_
le		.,//		UD4

DRILLER'S LOG NEAL # 3 IN LEA COUNTY, NEW MEXICO 6-26-59

Well Commenced: 6-9-59
Well Completed: 6-18-59

	•
0-331	Surface sand & Shalo
38-2004	Sand, Shale, & Lime
200-6731	Shale
673-12651	Shale & Sand
1265-13501	Shale
1350-1468	Shale & Lime Stks.
11:68-1501	Shale
1501-1651	Shale
1551-13571	Lime & Shale
1857-15621	Shele & Lime Stks.
1562-21731	Shale
2173-21351	Line
2155-22521	Shale
2292-23151	Shale & Lime Stks.
2315-24061	Shale - Potash
2406-2413	Shale - Potash & Lime Stks.
2413-25101	Shale & Potash
2510-25901	Salt, Shale, Potash
2550-2601	Line & Shale
2601-23561	Shale & Selt
2856-25571	Salt & Shale
2557 - 300व।	Shale & Potash
3008-32021	Salt & Lime Stks.
3202-32211	Lime
3221-32251	⊇hale ċ ⊃alt
3225-32301	^u hale
3280-34001	Salt & Shale
3400-3416	Anhydrite
3416-34391	Lime & Anhydrite
3439-35131	Line
3519-35231	Line
3523-35571	Lime
3557-35761	Lime
3576-36061	Sand
36∞-3611!	Coring sand
3611-33051	Coring sand
33051	TD

NO. OF COPIES RECEIVED			Form C-103
DISTRIBUTION			Supersedes Old C-102 and C-103
SANTAFE	NEW MEXICO OIL	CONSERVATION COMMISSION	Effective 1-1-65
FILE			
U.S.G.S.			Sa. Indicate Type of Lease
LAND OFFICE		•	State Fee X
OPERATOR			5. State Oil & Gas Lease No.
USE "APPLICAT	Y NOTICES AND REPORTION FOR PERMIT - " (FORM E-101)	IS ON WELLS PLUG BACK TO A DIFFERENT RESERVOIR. FOR SUCH PROPOSALS.)	
I. OIL GAS WELL WELL	OTHER. Water Dispo	osal	7. Unit Agreement Name
2. Name of Operator Burk Royalty Co.			8. Farm or Lease Name NEAL
3. Address of Operator 800 Oil & Gas Build	ing, Wichita Falls,	Texas 76301	9. Well No.
4. Location of Well			10. Field and Pool, or Wildcat
UNIT LETTER A 3	30 FEET FROM THE NO	orth Line and 990 FEET	Lynch
THE East LINE, SECTION	ON 35 TOWNSHIP	20 RANGE 34	MMPM.
	15. Elevation (Show :	vhether DF, RT, GR, etc.)	12. County
	3729.5 GR		Lea
		cate Nature of Notice, Report o	•
NOTICE OF IN	TENTION TO:	SUBSEQU	JENT REPORT OF:
PERFORM REMEDIAL WORK	PLUG AND ABANDO	REWEDIAL WORK	ALTERING CASING
TEMPORARILY ABANDON	•	COMMENCE DRILLING OPHS.	PLUG AND ABANDONMENT
PULL OR ALTER CASING	CHANGE PLANS	CASING TEST AND CEMENT JOB	
		OTHER	
OTHER	·	_ 🗆 📗	
17. Describe Proposed or Completed Op	perations (Clearly state all pertin	ent details, and give pertinent dates, inc	luding estimated date of starting any proposed
work) SEE RULE 1103.			' }
Permit to use as di Case ∉4679 Order ∉		March 17, 1972.	
Reran 119 joints 2-		own, pulled 119 joints 2 ed tubing with Totem ten ection.	
4-5-74 Started Inje	ction		
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	3		
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	· ·		
18. I hereby certify that the information	shove is true and complete to th	e best of my knowledge and belief.	
SIGNED SOM	Jon N. Bear	Engineer	November 20, 1974
A B B C W C D D W	<u>.</u>	_	

:

CONDITIONS OF APPROVAL, IF ANY:

LANDOWNER AND LEASEHOLD OPERATORS

LANDOWNER

Dan & Ron Berry P. O. Box 67 Eunice, New Mexico 88231 Certified Mail #Z 240 122 239

LEASEHOLD OPERATORS

Shell Western Exploration & Production Box 576 Houston, Texas 77001 Certified Mail #Z 240 122 240

Nearburg Producing Company 1819 North Turner Hobbs, New Mexico 88240 Certified Mail #Z 240 122 241

Phillips Petroleum Company 4001 Penbrook Odessa, Texas 7962 Certified Mail #Z 240 122 242

BTA Oil Producers 104 South Pecos Midland, Texas 79701 Certified Mail #Z 240 122 243

1. 00 5 N 31 DN

BEFORE THE NEW MEXICO OIL CONSERVATION DIVISION 53 SEP 14 FM 1: 12

APPLICATION OF BURK ROYALTY CO. FOR APPROVAL OF A WATERFLOOD PROJECT AND TO QUALIFY THE PROJECT FOR THE RECOVERED OIL TAX RATE, LEA COUNTY, NEW MEXICO.

Case No. 12262

APPLICATION

Burk Royalty Co. ("Burk") applies for an order approving a waterflood project, including approval to inject at pressures of up to 1500 psi, and qualifying the project for the recovered oil tax rate. In support thereof, Burk states:

- 1. Burk is the operator of the Neal Lease, a fee lease covering the NE% of Section 35, Township 20 South, Range 34 East, N.M.P.M., containing 160 acres of land.
- 2. Burk proposes to institute a waterflood project on the subject lease, designated the Neal Lease Waterflood Project. Burk's address is P.O. Box 94903, Wichita Falls, Texas 76308 (Attention: Charles Gibson).
- 3. Burk proposes to inject water into the Yates-Seven Rivers formation (Lynch Yates-Seven Rivers Pool) through the Neal Well No. 3, located 330 feet from the north line and 993 feet from the east line (Unit A) of Section 35. The project area will comprise the NE% of Section 35. A plat outlining the project area, and marking the locations of the initial injection and producing wells, is attached hereto as Exhibit A.
- 4. Burk requests that the Neal Lease Waterflood Project be qualified for the recovered oil tax rate, pursuant to the Enhanced

 $^{^{1}}$ The Neal Well No. 3 was approved for salt water disposal in the Lynch Yates-Seven Rivers Pool by Commission Order No. R-4283.

Oil Recovery Act (L. 1992, Ch. 38) and Division Rule 30. Project data includes:

- (a) Number of initial producing wells: 3.
- (b) Number of initial injection wells: 1.
- (c) Capital cost of additional facilities: \$0.00.
- (d) Estimated total project cost: \$0.00.
- (e) Anticipated injection commencement date: November 1, 1999.
- (f) Type of fluid injected: Produced water.
- (g) Anticipated injection volumes: 750 BWPD maximum.
- 5. A Form C-108 for the injection well and project is attached hereto as Exhibit B.
- 6. Water will be injected at pressures of up to 1500 psi, which is in excess of 0.2 psi/foot of depth, and Burk requests approval thereof.

WHEREFORE, Burk requests that the Division approve the injection application and the Neal Lease Waterflood Project, including permission to inject at pressures of up to 1500 psi, qualify the project as an enhanced oil recovery project, and certify the project for the recovered oil tax rate.

Respectfully submitted,

James Bruce

P.O. Box 1056

Santa Fe, New Mexico 87504

(505) 982-2043

Attorney for Burk Royalty Co.

VERIFICATION

STATE OF TEXAS)
COUNTY OF Wichita

Charles Gibson, being duly sworn upon his oath, deposes and states that: He is a petroleum engineer employed by Burk Royalty Co., he is familiar with the matters set forth in the foregoing Application, and the statements therein are true and correct to the best of his knowledge.

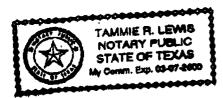
Charles Gibeon

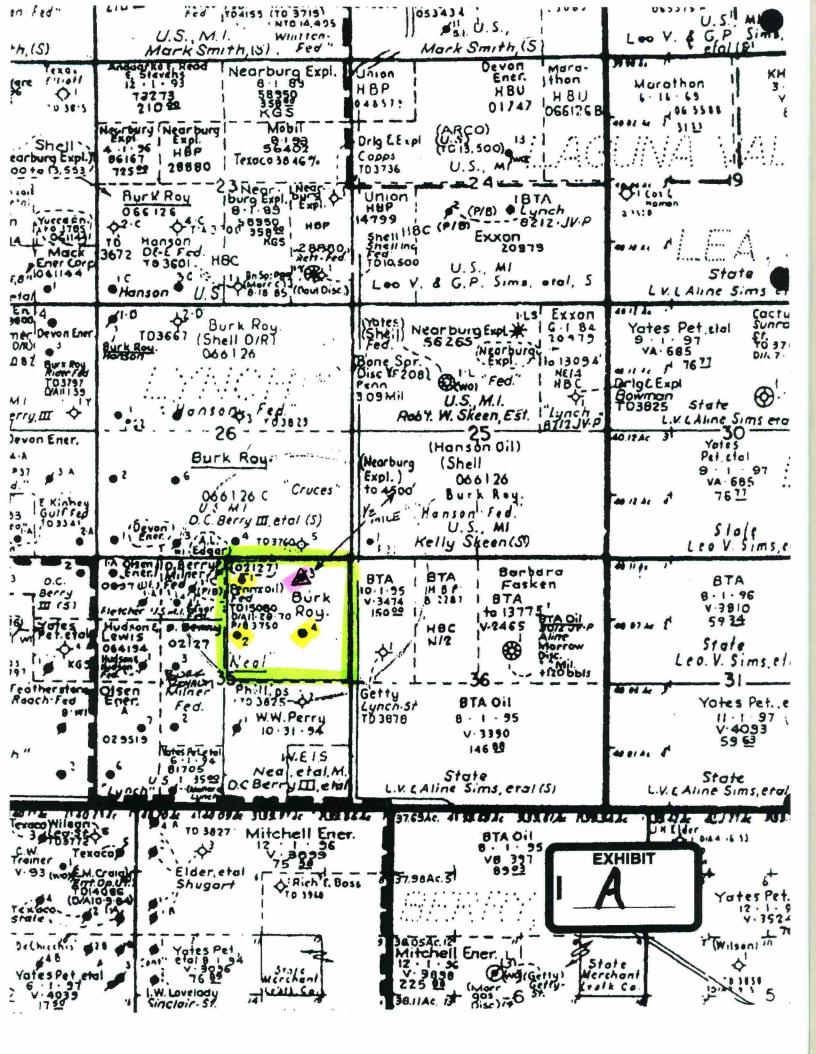
SUBSCRIBED AND SWORN TO before me this / 4Th day of September, 1999 by Charles Gibson.

Damme Lewin Notary Public

My Commission Expires:

3-7-davo





UIL CUNSERVATION DIVISION POST OFFICE BOX 2008 STATE LAND DIFFICE BURDING SANTA FE NEW MEXICO 8/201

FORM C-108 Revised 7-1-81

Neal #3

APPLICA	ATION FOR AUTHORIZATION TO INJECT	Pins	e 12162
I.	Purpose: Secondary Recovery Pressure Mainte Application qualifies for administrative approval?	enance	Disposal Storage
II.	Operator: Burk Royalty Co.		
	Address: P. O. Box BRC, Wichita Falls,	Texas	76307
	Contact party: Charles Gibson	Phone:	940/322-5421
111.	Well data: Complete the data required on the reverse proposed for injection. Additional sheet	side of s may be	this form for each well attached if necessary.
IV.	Is this an expansion of an existing project? year year, give the Division order number authorizing the	s X ne projec] na t
٧.	Attach a map that identifies all wells and leases wit injection well with a one-half mile radius circle drawell. This circle identifies the well's area of revi	unois um	miles of any proposed d each proposed injection
* VI.	Attach a tabulation of data on all wells of public repenetrate the proposed injection zone. Such data shawell's type, construction, date drilled, location, deaschematic of any plugged well illustrating all plug	ll inclu pth, rec	de a description of each ord of completion, and
VII.	Attach data on the proposed operation, including:		
-	 Proposed average and maximum daily rate and verage with the system is open or closed; Proposed average and maximum injection pressured. Sources and an appropriate analysis of injection the receiving formation if other than reinjoints. If injection is for disposal purposes into a at or within one mile of the proposed well, the disposal zone formation water (may be maked the proposed wells, etc.). 	ire; ion flui ected pr zone not attach	d and compatibility with oduced water; and productive of oil or gas a chemical analysis of
*VIII.	Attach appropriate geological data on the injection z detail, geological name, thickness, and depth. Give bottom of all underground sources of drinking water (total dissolved solids concentrations of 10,000 mg/l injection zone as well as any such source known to be injection interval.	the geoleanifers or less)	ogic name, and depth to containing waters with overflying the proposed
IX.	Describe the proposed stimulation program, if any.		
* X.	Attach appropriate logging and test data on the well. with the Division they need not be resubmitted.)	(If we	ll logs have been filed
* XI.	Attach a chemical analysis of fresh water from two or available and producing) within one mile of any injection of wells and dates samples were taken.		
XII.	Applicants for disposal wells must make an affirmative xamined available geologic and engineering data and or any other hydrologic connection between the disposeurce of drinking water.	find no	evidence of open faults
XIII.	Applicants must complete the "Proof of Notice" section	n on the	rever .
XIV.	Certification		1 12
	I hereby certify that the information submitted with to the best of my knowledge and belief.		
			Petroleum Engineer
	Signature:	Date:	/-/-99
submi	he information required under Sections VI, VIII, X, and itted, it need not be duplicated and resubmitted. Plea he earlier submittal.	l XI abov ise show	e has been previously the date and circumstance

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.

 Neal #3, 35-T20S,R34E 330' FNL & 990' FEL
 - (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. 2 3/8" EUE Tubing, plastic coated 3,532'
 - (4) The name, model, and setting depth of the parker used or a description of any other seal system or assembly used. Totem Tension at 3,532

Oivision 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 repected.
 - (1) The name of the injection formation and, if applicable, the field or pool name. Yates Formation Lynch Pool
 - (2) The injection interval and whether it is perforated or open-hole. 3,590'-3,610'; 3,703'-3,717' perforated
 - (3) State if the well was drilled for injection or, if not, the original purpose of the well well was drilled originally as an oil 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.
 - N/A
 (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. None above, Seven River below 3,740'

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, P. O. Box 2088, Santa Fe, New Mexico 87501 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 amplications within 15 days from the date this application was mailed to them.

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NEAL #3 AREA OF REVIEW

WELL	WELL	DATE			RECORD OF
NAME	TYPE	DRILLED	LOCATION	DEPTH	COMPLETION
Cruces #3	oii	7-18-57	Sec. 26, 330' FSL & 1,655' FWL	3,730'	Attached
Cruces #4	iö	7-15-59	Sec. 26, 330' FSL & 2,316' FEL	3,750'	Attached
Cruces #5	D&A	11-7-59	Sec. 26, 330' FSL & 992' FEL	3,760'	;
Hanson Fed #1	D&A	6-23-59	Sec. 25, 330" FSL & FWL	3,863'	1
Federal "C" #1	P&A	5-18-74	Sec. 35, 660' FNL & 1,980' FWL	15,080'	Attached
Milner #4	iö	1-26-54	Sec. 35, 990' FNL & 1,650' FWL	3,736'	Attached
Neal #1	Oil	4-5-59	Sec. 35, 467' FNL & 2,315' FEL	3,752	Attached
Neal #2	Oil	7-15-59	Sec. 35, 1,650' FNL & 2,316' FEL	3,819	Attached
Neal #3	liO	6-6-9	Sec. 35, 330' FNL & 993' FEL	3,805	Attached
Neal #4	Oil	7-29-59	Sec. 35, 1,650' FNL & 900' FEL	3,822'	Attached
Neal etal #2	D&A	10-28-59	Sec. 35, 2,260' FSL & 992' FEL	3,825'	1
Lynch State #1	D&A	10-13-81	Sec. 36, 1,980' FNL & 660' FWL	3,878'	ŝ i

NEAL #3 PROPOSED INJECTION WELL OPERATIONS

Proposed Average Daily Rate
 250 barrels water per day

Maximum Daily Rate
750 barrels water per day

- 2. The system is closed.
- 3. Proposed Average Injection Pressure 1000#

Proposed Maximum Injection Pressure 1500#

- 4. The source of injection fluid will be Yates Sand (Neal Lease) and Seven Rivers (Milner Lease). Analysis attached.
- 5. The injection zone is the Yates Sand. The field name is Lynch Field. It is Upper Permian in age. The top of the Yates in the Neal #3 is at 3,590' (136') with a thickness of 34'. There are no underground sources of drinking water below the Yates. Above the Yates, the Quaternary alluvium to a depth of 80' is the only source of groundwater in the area.
- 6. The well is currently classified as disposal. We do not plan to stimulate the well.
- 7. The logs are attached.
- 8. There are no fresh water wells within one mile of the proposed injection well.
- 9. I have examined public records and find no evidence of open faults or any other hydrologic connection between the injection zone and any underground source of drinking water.

H & H Chemical Enterprises

WATER ANALYSIS REPORT

SAMPLE

Oil Co. : Burk Royalty

Lease : Cruces

Well No.:

Analysis:

Wellhead Sample Loc.

Date Sampled: 13-September-1994

WT.

EQ.

*MEQ/L

2,726

1,781

2,187

0

0.00

Attention

ANALYSIS

1. 2. 3.	pH Specific Gravity CaCO ₃ Saturation	60/60 Index	Fææ	80 140	7.: 1.: F.	320 045 +0.933 +1.853
n. 2			_		- •	

D	issolved Gasses	MG/L
4.	Hydrogen Sulfide	800

Dissolved Oxygen Not Determined

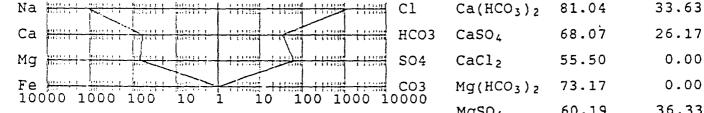
Cations

Anions

	· · · · · · · · · · · · · · · · · · ·
11. Hydroxyl (OH ⁻) 12. Carbonate (CO ₃ ⁻) 13. Bicarbonate (HCO ₃ ⁻) 14. Sulfate (SO ₄ ⁻) 15. Chloride (Cl ⁻)	$\begin{array}{cccccccccccccccccccccccccccccccccccc$
16. Total Dissolved Solids 17. Total Iron (Fe) 18. Total Hardness As Cacco	72,382 8 / 18.2 = 0.44

Total Hardness As CaCO₃ 6,256 Resistivity @ 75 F. (Calculated) 0.139 /cm. ī9.

LOGARITHMIC WATER PATTERN	PROBABLE MINERAL COMPOSITION
*meq/L.	COMPOUND EQ. WT. $X * meq/L = mg/L$.



Calcium Sulfate Solubility Profile

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4538						
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4446		 				
4465						-
4474		 			<u> </u>	
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119504	00.13	00.00	_,
MgCL ₂	47.62	28.42	1,353
NaHCO3	84.00	0.00	0

0.00 NaSO4 71.03 1,098.09 64,194 NaCl 58.46

*Milli Equivalents per Liter This water is mildly corrosive due to the pH observed on analysis. The corrosivity is increased by the content of mineral salts, and the presence

of H2S, CO2, Oxygen in solution.

H & H Chemical Enterprises

WATER ANALYSIS REPORT

*MEQ/L

0.00

0

71.03

NaSO4

EQ. WT.

350

SAMPLE

Oil Co. : Burk Royalty
Lease : Milner Federal
Well No.: # 4 SWD

4. Hydrogen Sulfide

rk Royalty Sample Loc. : Wellhead Date Sampled: 13-September-1994 SWD Attention :

Analysis:

ANALYSIS

1. 2. 3.	Specific Gravity CaCO ₃ Saturation	60/60 Index	Føø.	80 140	6. 1. F.	980 009 +0.539 +1.449	
נַם	issolved Gasses		_			MG/L	

5. 6.	Carboń Dioxi Dissolved Ox	ide tygen		300 0.2		
<u>c</u>	ations					
7. 8. 9. 10.	Calcium Magnesium Sodium Barium	(Ca++) (Mg++) (Na+) (Ba++)	(Calculated) Not Dete	1,202 486 5,860 ermined	/ 20.1 = / 12.2 = / 23.0 =	59.80 39.84 254.78
A	nions	-			}	
11. 12. 13. 14. 15.	Hydroxyl Carbonate Bicarbonate Sulfate Chloride	(OH ⁻) (CO ₃) (HCO ₃) (SO ₄)		0 952 2,750 9,998	/ 17.0 = / 30.0 = / 61.1 = / 48.8 = / 35.5 =	0.00 0.00 15.58 56.35 281.63
16. 17. 18.	Total Disso Total Iron Total Hardne	(Fel		21,248	/ 18.2 =	0.03

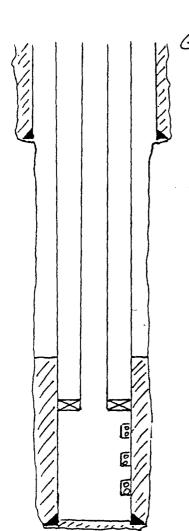
19. Resistivity @ 75 F. (Calculated) 0.308 /cm.

LOGARITHMIC WATER PATTERN PROBABLE MINERAL COMPOSITION

*meq/L.	COMPOUND	EQ. WT. X	$\frac{1}{2} meq/L =$	= mg/L.
Na	Ca(HCO ₃) ₂	81.04	15.58	1,263
Ca Milit Will ACO3	CaSO ₄	68.07	44.22	3,010
Mg	CaCl ₂	55.50	0.00	0
Fe 10000 1000 100 10 1 10 1000 1000 1000	$Mg(HCO_3)_2$	73.17	0.00	0
	MgSO ₄	60.19	12.13	730
Calcium Sulfate Solubility Profile	MgCL ₂	47.62	27.70	1,319
2620 2505	NaHCO3	84.00	0.00	0

2410				N	aCl	58.46	253.93	14,845
This water is The corrosivit of H2S, C	slightly y is inco	corrosi reased b	ve due to the colution.	o the pH ntent of	*Milli observe mineral	Equivale d on anal salts, a	nts per L ysis. nd the pr	iter esence

CHAPLES 618:



TOP OF CEMENT: SURFACE (CIRCULATED)

8 1/8 "CASIDG CEMENTED @ 190 " W/100 SX

TOP OF CAMEUT: 3148'(TEMP (06))

Z3/8" INTERLARLY CONTED TRY TO 3532'

Z3/8" x51/2" TENSION PALLER 03532'

5/2" CASING CEMENTED @ 3804" W/200 &K

NOTICE OF INTENTION TO DRILL

Notice must be given to the District Office of the Oil Conservation Commission and approval obtained before drilling or recompletion begins. If changes in the proposed plan are considered advisable, a copy of this notice showing such changes will be returned to the sender. Submit this notice in QUINTUPLICATE. One copy will be returned following approval. See additional instructions in Rules and Regulations of the Commission.

If State Land submit 6 Copies Attach Form C-128 in triplicate to first 3 copies of form C-101

tions of the	Commissio	n. If State	Land submit 6 Copies At	tach Form C- 128 in to	iplicate to first 3	copies of form C-10
		Hobbi	s Hew Mexico	June	5, 1959	
***************************************	•••••••	(Place)			(Date)	
OIL CON: SANTA FI		ON COMMISSION EXICO				
Gentlemen	:					
You a	re hereby	notified that it is ou	ir intention to commence th	ne Drilling of a well to	e known as	
		`	(Company			•
/	Yeel	<i>.</i>	(Company	Wall No.	<u>.</u> .	The small i
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		"		•••••••••••••••••••••••••••••••••••••••		
			We propose to drill we	ll with drilling equipment	as follows:	K
E	F	G H	The second of all and	bond is \$10,00	Y settes Ris	nicat.
<u> </u>						
L	ĸ	ı l		Alan Dri		
~				Vichita l		
M	N	OP	We intend to complete	this well in the	Yates	
-			formation at an appro	this well in theximate depth of	38501	fcct
				PROGRAM		
We p	ropose to u	se the following strin	igs of Casing and to cement	them as indicated:		
8110	of Hole	Size of Casing	Weight per Foot	New or Second Hand	Depth	Sacks Cement
	33N	8-5/8	9 2M	<u> </u>	175*	150 am circ
			214	9.7	Th seens	**
	7-7/	5-1/2	11.0	N	TD 3850*	
If ch:	anges in the	above plans becom	ne advisable we will notify yo	ou immediately.	<u></u>	
	· -	-	(If recompletion give full d	•	work.)	
				* • •	•	
+	* ¥133 ı	se 275 ax or	return cement to be	ick past the base	of salt by temp	erature survey
				•		
	C-128	ttached j	A 1959 (Sincerely yours,		
Approved. Except as			19	• • • •	ALTY COMPANY	
					(Company or Operator)	
				Ву	Ome O	my
				Position		
		ONSERVATION C			Communications regarding	ng well to & Gas Bldg.
Ву	ORUE:	AL & THREE C		Name		
51	س لفشاها با	A COLLEGE CONTRACTOR		Address	ita Falla, Tama	<u> </u>

ENGINEER DISTRICT No. 1

NEW MEXICO OIL CONSERVATION COMMISSION

FORM C-103 (Rev 3-55)

		MISCE	LLANEOU	S REPOR	TS OF	4 WELLS		. • · ·		
		(Submit to appr	opriate Distric	er Office as	per Com	mission Rul	e 1106)			į
Name of Com		Royalty Co.	· · · · · · · · · · · · · · · · · · ·	Addres	. 800	011 & Ga	Bldg. W	ichita	Palls,	Tex.
Lease	Neal		Well No.	Unit Letter		Township 20	<u> </u>	Range	· · · · · · · · · · · · · · · · · · ·	
Date Work Pe	rformed 6/9/59	Pool	Lynch	- 		County				
		THIS	IS A REPORT	OF: (Check	appropri	ite block)				
Beginnie	ng Drilling Open	ations	Casing Test an	d Cement Job		Other (E:	cplain):		-	
Pluggin	8		Remedial Work							
Detailed acco	ount of work don	e, nature and quanti	ty of materials	used, and res	ults obta	ined.				
	_	of 8-5/8" csg		29# 4/1	00 az	cement of	realated			
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Witnessed by			Position			Company	3			
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Tubing Diame	ter	Tubing Depth		Oil Stri	ng Diame	ter	Oil Stri	ng Depth		
Perforated In	terval(s)									
Open Hole Int	terval			Produci	ng Forma	ttion(s)				
			RESUL	TS OF WORK	OVER					
Test	Date of Test	Oil Product BPD		Production CFPD		roduction PD	GOR Cubic feet/		MCFPI	
Before Workover										, <u>.</u>
After Workover										
	OIL CONSE	RVATION COMMISS	ю	I here to the	best of	y that the inf my knowledge	ormation give	en above i	s tode and	complete
Approved by	Juhn v	v. Run	yan_	Name	_ 4	· · · · · · · · · · · · · · · · · · ·				
Title 2		6		Positi		oyelty Co	oben).	,		
Date		· .		Compa	ıny	·				

NEW MEXICO OIL CONSERVATION COMMISSION

FORM C-103 (Rev 3-55)

			MISCEL	LANEO	US RE	EPOR	10 ST	4 WELLS			000
		(Submi	t to appropr						le 1106)		
Name of Com	T	velty Co	Spens			Addres	MAC A	th A Con	Dian W	4.4.44	U' Or Rads, Tex.
Lease	Fool.		ľ	Vell No.	Unit 1	Letter	Section 35	Township	D	Ran	854
Date Work Pe	rformed 7/59	Pool	Lynch					County	6 8		
			THIS IS	A REPORT	r OF: (Cbeck a	ppropria	te block)			
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	ount of work do			···			olen ebeni				
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Witnessed by	J. Walen	·	· · · · · · · · · · · · · · · · · · ·	Position	Supt			Company	. ' }		
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}			CE IN BEE		INAL W			1001301	1		``
DF Elev.		TD		PBT	D			Producing	Interval	C	ompletion Date
Tubing Diam	ter	Tubin	g Depth		C	Dil Strin	g Diamei	ter	Oil St	ring Dep	och
Perforated In	terval(s)	_ 					· · ·			·····	
Open Hole In	erval	 			F	roducia	g Forma	tion(s)			
				RESUL	TS OF	WORK	OVER			·····	
Test	Date of Test	- Oi	l Production BPD		Producti CFPD			roduction PD	GOI Cubic fee	R r/Bbl	Gas Well Potential MCFPD
Before Workover											
After Workover											
	OIL CONSE	RYATION	COMMISSION			I here to the	best of r	that the inmy knowledge	ze. /	en abo	ve is true and complete
Approved by	a fill	11//	11/1/1			Name	gec:				
Title	7	1111				Positio	n	milty Co	absas.		
Date	, · · · · · · · · · · · · · · · · · · ·					Compan					

NEW EXICO OIL CONSERVATION COMN SION Santa Fe, New Mexico

(Form C-104) Ravised 7/1/57

REQUEST FOR (OIL) - (GAS) ALLOWABLE

New Well

This form shall be submitted by the operator before an initial allowable will be assigned to any completed Oil or Gas well. Form C-104 is to be submitted in QUADRUPLICATE to the same District Office to which Form C-101 was sent. The allowable will be assigned effective 7:00 A.M. on date of completion or recompletion, provided this form is filed during calendar month of completion or recompletion. The completion date shall be that date in the case of an oil well when new oil is delivered into the stock tanks. Cas must be reported on 15.025 psia at 60° Fahrenheit.

AR	E HER	EBY R	EOUESTI	(Place) (Date) NG AN ALLOWABLE FOR A WELL KNOWN AS:
			-	, Well No. 3. , in. 105 1/4 105
	(Compan	y or Ope	rator)	(Lease)
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		: '	•	County. Date Spudded 7777 Date Drilling Completed 7879 Elevation 7786 Ch. Total Depth 3805 PBTD
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	C	В	A	Name of Prod. Form.
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	F	G.	H	Open Hole Casing Shoe Tubing
				OIL WELL TEST -
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	1	-		Test After Acid or Fracture Treatment (after recovery of volume of cil equal to volume of
	N	0	P	load oil used):bbls.oil,bbls water inhrs,min. Size
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DRILLER'S LOG NEAL # 3 IN LEA COUNTY, NEW MUXICO 6-26-59

Well Commenced: 6-9-59 Well Completed: 6-18-59

0-331 Surface sand & Shalo 38-2004 Sand, Shale, & Lime 200-6731 Shale 673-12651 Shale & Sand 1265-13501 Shale 1350-1468 Shale & Mine Stks. 11:68-1501 Shale Shale 1501-1651' 1551-1357 Lime & Shale 1857-15621 Shele & Line Stks. 1562-21731 Shale 2173-21851 Line 2135-22521 Shale 2292-23151 Shale & Lime Stas. 2315-24061 Shale - Potash 2406-24131 Shale - Potash & Line Stks. 2413-25101 Shale & Potash 2510-25901 Salt, Shale, Potash 2550-26011 Lime & Shale 2601-23561 Shale & Selt 2856-25571 Salt & Shale 2557-30031 Shale & Potash 3008-32021 Salt & Lime Stks. 3202-3221' Lime 3221-32251 shale & salt 3225-32301 Shale 3280-31001 Salt & Shale 3400-34161 Anhydrite 3415-34391 Lime & Anhydrite 3439-35131 Line 3519-35231 Line 3523-35571 Lime 3557-35761 Lime 3575-36061 Sand 3606-3611' Coring sand 3611-3305* Coring sand 3305" TD

NO. OF COPIES RECEIVED			Form C-103	
DISTRIBUTION			Supersedes Old C-102 and C-103	
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OPERATOR	<u>J</u>		5. State Oil & Gas Lea	ise No.
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2. Name of Operator			8. Farm or Lease Name	e
Burk Royalty Co.			NEAL	
3. Address of Operator 800 011 & Gas Build	ing, Wichita Falls, Tex	as 76301	9. Well No.	
4. Location of Well			10. Field and Pool, or	Wildcat
UNIT LETTER A 3	30 FEET FROM THE North	LINE AND 990 FEET FR	Lynch	m
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17. Describe Proposed or Completed C	perations (Clearly state all pertinent de	tails, and give pertinent dates, includ	ing estimated date of starti	ng any proposed
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Case #4679 Order		C. 27, 23721		
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18. I hereby certify that the information	above is true and complete to the best	of my knowledge and belief.		
SIGNED SOM	Jon R. Bear	Engineer	Novembe	er 20, 1974
	TITLE			
\	<u> </u>			

CONDITIONS OF APPROVAL, IF ANY:

LANDOWNER AND LEASEHOLD OPERATORS

LANDOWNER

Dan & Ron Berry
P. O. Box 67
Eunice, New Mexico 88231
Certified Mail #Z 240 122 239

LEASEHOLD OPERATORS

Shell Western Exploration & Production Box 576 Houston, Texas 77001 Certified Mail #Z 240 122 240

Nearburg Producing Company 1819 North Turner Hobbs, New Mexico 88240 Certified Mail #Z 240 122 241

Phillips Petroleum Company 4001 Penbrook Odessa, Texas 7962 Certified Mail #Z 240 122 242

BTA Oil Producers 104 South Pecos Midland, Texas 79701 Certified Mail #Z 240 122 243 BEFORE THE NEW MEXICO OIL CONSERVATION DIVISION

90 SEP 14 PH 1:12

APPLICATION OF BURK ROYALTY CO. FOR APPROVAL OF A WATERFLOOD PROJECT AND TO QUALIFY THE PROJECT FOR THE RECOVERED OIL TAX RATE, LEA COUNTY, NEW MEXICO.

Case No. 12-62

APPLICATION

Burk Royalty Co. ("Burk") applies for an order approving a waterflood project, including approval to inject at pressures of up to 1500 psi, and qualifying the project for the recovered oil tax rate. In support thereof, Burk states:

- 1. Burk is the operator of the Neal Lease, a fee lease covering the NE% of Section 35, Township 20 South, Range 34 East, N.M.P.M., containing 160 acres of land.
- 2. Burk proposes to institute a waterflood project on the subject lease, designated the Neal Lease Waterflood Project. Burk's address is P.O. Box 94903, Wichita Falls, Texas 76308 (Attention: Charles Gibson).
- 3. Burk proposes to inject water into the Yates-Seven Rivers formation (Lynch Yates-Seven Rivers Pool) through the Neal Well No. 3, located 330 feet from the north line and 993 feet from the east line (Unit A) of Section 35. The project area will comprise the NE% of Section 35. A plat outlining the project area, and marking the locations of the initial injection and producing wells, is attached hereto as Exhibit A.
- 4. Burk requests that the Neal Lease Waterflood Project be qualified for the recovered oil tax rate, pursuant to the Enhanced

¹The Neal Well No. 3 was approved for salt water disposal in the Lynch Yates-Seven Rivers Pool by Commission Order No. R-4283.

Oil Recovery Act (L. 1992, Ch. 38) and Division Rule 30. Project data includes:

- (a) Number of initial producing wells: 3.
- (b) Number of initial injection wells: 1.
- (c) Capital cost of additional facilities: \$0.00.
- (d) Estimated total project cost: \$0.00.
- (e) Anticipated injection commencement date: November 1, 1999.
- (f) Type of fluid injected: Produced water.
- (g) Anticipated injection volumes: 750 BWPD maximum.
- 5. A Form C-108 for the injection well and project is attached hereto as Exhibit B.
- 6. Water will be injected at pressures of up to 1500 psi, which is in excess of 0.2 psi/foot of depth, and Burk requests approval thereof.

WHEREFORE, Burk requests that the Division approve the injection application and the Neal Lease Waterflood Project, including permission to inject at pressures of up to 1500 psi, qualify the project as an enhanced oil recovery project, and certify the project for the recovered oil tax rate.

Respectfully submitted,

James Bruce

Pl.O. Box 1056

Santa Fe, New Mexico 87504

(505) 982-2043

Attorney for Burk Royalty Co.

VERIFICATION

COUNTY OF Wichita

Charles Gibson, being duly sworn upon his oath, deposes and states that: He is a petroleum engineer employed by Burk Royalty Co., he is familiar with the matters set forth in the foregoing Application, and the statements therein are true and correct to the best of his knowledge.

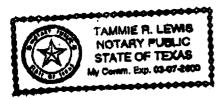
Charles Gibson

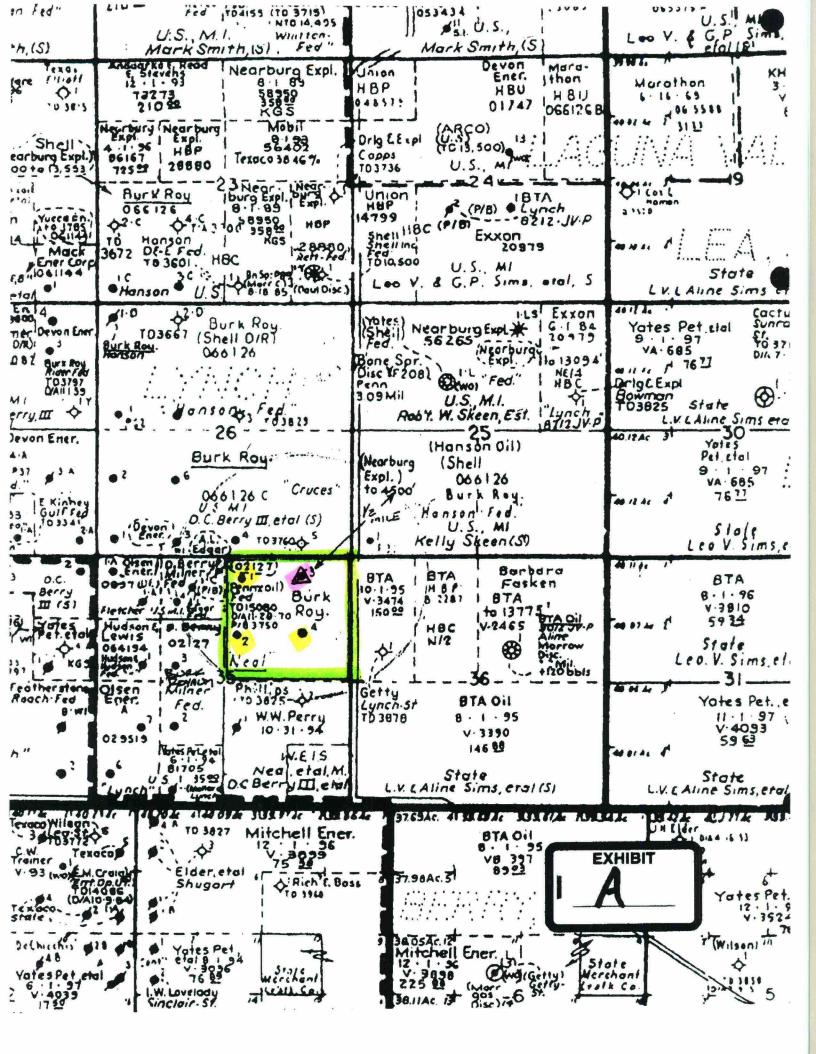
SUBSCRIBED AND SWORN TO before me this / 4th day of September, 1999 by Charles Gibson.

Jamme Leun Notary Public

My Commission Expires:

3-7-doco





UIL CUNSERVATION DIVISION POST OFFCE BOX 2018 STATE LAND OFFCE BUILDING SANTA FE NEW MEXICO 87501

FORM C-108 Revised 7-1-81 Neal #3

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APPI	TEATION	FOR	AUTHORIZATION	111	INTELL

I.	Purpose: Applicat		Recovery s for admin	Pressure istrative app	Maintenance roval?	☐ Dispos.]yes ☐ no	ol UStorage
II.	Operator:	Burk	Royalty C	٥.		-,	
	Address:	P. O.	Box BRC,	Wichita Fa	alls, Tex	as 76307	
	Contact par	ty: Charl	es Gibson		Phor	ne: 940/3	322-5421
III.	Well data:	Complete the proposed for	ne data requ or injection	ired on the ro	everse side sheets may	of this form	n for each well if necessary.
IV.	Is this an If yes, giv	expansion of e the Divisi	an existin on order nu	g project? πber authoriz:	yes ing the proj	⊠ no ject	•
٧.	injection w	ell with a c	ne-half mil	ells and lease e radius circ well's area o	le drawn ard	wo miles of a ound each pro	any proposed opposed injection
VI.	penetrate t well's type	he proposed , constructi	injection ze on, date dr	one. Such dat	ta shall ind on, depth, m	clude a descr record of cor	rea of review whic ription of each apletion, and
VII.	Attach data	on the prop	osed operat.	ion, including	g :		
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IX.	Describe th	e proposed s	timulation p	orogram, if an	ny.	,	
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XI.	available a	nd producing) within on	n water from to e mile of any s were taken.			
XII.	examined av	ailable geol	ogic and end connection	make an affingineering data between the o	a and find r	no evidence d	of open faults
III.	Applicants	must complet	e the "Proo	f of Notice" :	section on t	he rev	rm.
XIV.	Certificati	on		••			2
		rtify that t of my knowl		ion submitted	with this a		rec
	Name:	Charles	Gibson	/	Title		m Engineer
	Signature:			//~	Date:	7-7-99	

III. WELL DATA

- 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. Neal #3, 35-T20S,R34E 330' FNL & 990' FEL
 - (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.
 - A description of the tubing to be used including its size, lining material, and setting depth. 2 3/8" EUE Tubing, plastic coated 3.532'
 - (4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used. Totem Tension at 3,532'

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.

- 8. 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. Yates Formation Lynch Pool
 - (2)
 - The injection interval and whether it is perforated or open-hole. 3,590'-3.610'; 3,703'-3,717' perforated State if the well was drilled for injection or, if not, the original purpose of the well was drilled originally as an oil well. (3)
 - Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
 - N/A

 (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. None above, Seven River below 3,740'

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;
- 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
- a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. O. Box 2088, Santa Fe, New Mexico 87501 within 15

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.

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Sinclair - St.
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NEAL #3 AREA OF REVIEW

WFI	WEII	DATE			RECORD OF
NAME	TYPE	DRILLED	LOCATION	DEPTH	COMPLETION
Cruces #3	ΙΘ	7-18-57	Sec. 26, 330' FSL & 1,655' FWL	3,730'	Attached
Cruces #4	Oii	7-15-59	Sec. 26, 330' FSL & 2,316' FEL	3,750'	Attached
Cruces #5	D&A	11-7-59	Sec. 26, 330' FSL & 992' FEL	3,760'	i
Hanson Fed #1	D&A	6-23-59	Sec. 25, 330" FSL & FWL	3,863'	ŀ
Federal "C" #1	P&A	5-18-74	Sec. 35, 660' FNL & 1,980' FWL	15,080'	Attached
Milner #4	Oil	1-26-54	Sec. 35, 990' FNL & 1,650' FWL		Attached
Neal #1	Oil	4-5-59	Sec. 35, 467' FNL & 2,315' FEL	3,752	Attached
Neal #2	Oil	7-15-59	Sec. 35, 1,650' FNL & 2,316' FEL		Attached
Neal #3	Oil	6-6-9	Sec. 35, 330' FNL & 993' FEL		Attached
Neal #4	Oil	7-29-59	Sec. 35, 1,650' FNL & 900' FEL		Attached
Neal etal #2	D&A	10-28-59	Sec. 35, 2,260' FSL & 992' FEL	3,825'	1
Lynch State #1	D&A	10-13-81	Sec. 36, 1,980' FNL & 660' FWL	3,878'	!

NEAL #3 PROPOSED INJECTION WELL OPERATIONS

Proposed Average Daily Rate
 250 barrels water per day

Maximum Daily Rate
750 barrels water per day

- 2. The system is closed.
- 3. Proposed Average Injection Pressure 1000#

Proposed Maximum Injection Pressure 1500#

- 4. The source of injection fluid will be Yates Sand (Neal Lease) and Seven Rivers (Milner Lease). Analysis attached.
- 5. The injection zone is the Yates Sand. The field name is Lynch Field. It is Upper Permian in age. The top of the Yates in the Neal #3 is at 3,590' (136') with a thickness of 34'. There are no underground sources of drinking water below the Yates. Above the Yates, the Quaternary alluvium to a depth of 80' is the only source of groundwater in the area.
- 6. The well is currently classified as disposal. We do not plan to stimulate the well.
- 7. The logs are attached.
- 8. There are no fresh water wells within one mile of the proposed injection well.
- 9. I have examined public records and find no evidence of open faults or any other hydrologic connection between the injection zone and any underground source of drinking water.

H & H Chemical Enterprises

WATER ANALYSIS REPORT

SAMPLE

Oil Co.: Burk Royalty
Lease: Cruces
Well No.: # 4

Analysis:

Sample Loc. : Wellhead

Date Sampled: 13-September-1994

Attention

ANALYSIS

2.	Specific Gravity	60/60	F.	7.320 1.045
3.	Specific Gravity CaCO ₃ Saturation	Index	e 80	F. +0.933 F. +1.853

D	issolved Gas:	ses	ě 140 ř	. +1.8		F	eg. Wi	٠.	*MEQ/L	
_	Hydrogen Su Carbon Diox Dissolved O	 lfide ide	No	t Dete	800 0 ermined			<u>-</u>		
<u></u>	Cations									
7. 8. 9. 10.	Calcium Magnesium Sodium Barium	(Ca ⁺⁺) (Mg ⁺⁺) (Na ⁺) (Ba ⁺⁺)	(Calculate No	d) t Dete	1,202 790 25,294 ermined	//	20.1 12.2 23.0	=======================================	59.80 64.75 1,099.74	
A	nions							}		
11. 12. 13. 14. 15.	Hydroxyl Carbonate Bicarbonate Sulfate Chloride	(OH ⁻) (CO ₃) (HCO ₃) (SO ₄)			0 0 2,055 3,050 39,991	1/1//	17.0 30.0 61.1 48.8 35.5	= = = =	0.00 0.00 33.63 62.50 1,126.51	
16. 17. 18. 19.	Total Disso Total Iron Total Hardne Resistivity	(Fe)		d) 0.	72,382 8 6,256 139 /cm.	/	18.2	=	0.44	
	LOGARITHMIC *me	WATER P eq/L.	ATTERN		PROB COMPOUND	ABI	E MIE	ERAI	L COMPOSIT X *meq/L =	ION mg/L.
Na 🏣	7221 1231 1231 	1 17:15:11	!!! - !!! 	Cl	Ca(HCO3) 2	81.0	4	33.63	2,726
Ca :::::::		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	111111111111111111111111111111111111111	нсоз	CaSO ₄		68.0	ל	26.17	1,781
мд			2 1111 11111	S04	CaCl ₂		55.5	0	0.00	0
Fe Property				C03	Mg(HCO ₃) 2	73.1	7	0.00	0
	.000 100 10	1 10	100 1000 1	0000	MgSO4		60.1	9	36.33	2,187
Cal	cium Sulfate	Solubil	ity Profile		MgCL ₂		47.6	2	28.42	1,353
4564					NaHCO ₃		84.0	0	0.00	0
4494					NaSO4		71.0	3	. 0.00	0
4448		•								

58.46 1,098.09 64,194 NaCl *Milli Equivalents per Liter This water is mildly corrosive due to the pH observed on analysis. The corrosivity is increased by the content of mineral salts, and the presence of H2S, CO2, Oxygen in solution.

H & H Chemical Enterprises

WATER ANALYSIS REPORT

SAMPLE

2585

Oil Co. : Burk Royalty

Lease : Milner Federal

Dissolved Gasses

Well No.: # 4 SWD Analysis:

Sample Loc. Date Sampled:

MG/L

Wellhead 13-September-1994

*MEQ/L

EQ. WT.

Attention

ANALYSIS

pH Specific Gravity 60/60 F. CaCO₃ Saturation Index & 6.980 80 F. 140 F.

4. 5. 6.	Hydrogen Sul Carbon Dioxi Dissolved Ox	ide		350 300 0.2			
<u>C</u>	ations						
7. 8. 9. 10.	Calcium Magnesium Sodium Barium	(Ca ⁺⁺) (Mg ⁺⁺) (Na ⁺) (Ba ⁺⁺)	(Calculated)	1,202 486 5,860 etermined	/ 20 / 12 / 23	0.1 = 2.2 = 3.0 =	59.80 39.84 254.78
A	nions	-				1	
11. 12. 13. 14. 15.	Hydroxyl Carbonate Bicarbonate Sulfate Chloride	(OH ⁻) (CO ₃) (HCO ₃) (SO ₄)		0 0 952 2,750 9,998	/ 17 / 30 / 48 / 35	7.0 = 7 0.0 = 1.1 = 8.8 = 8.5 = 9	0.00 0.00 15.58 56.35 281.63
16. 17. 18. 19.	Total Dissol Total Iron Total Hardne	(Fe) ess As Ca	3CO2	21,248 1 5,004	/ 18	3.2 =	0.03
17.	Resistivity	e /5 r.	(Calculated)	0.308 /cm.		1.4	•

LOGARITHMIC WATER PATTERN *meq/L.

Ca HCO3 Mg Fe 10000 1000 100 10 Calcium Sulfate Solubility Profile

WEST SQUARCE CONTRACTOR STORTS

COMPOUND	EQ. WT.	$X \times med \setminus T =$	mg/L.
Ca(HCO ₃) ₂	81.04	15.58	1,263
CaSO4	68.07	44.22	3,010
CaCl ₂	55.50	0.00	0
$Mg(HCO_3)_2$	73.17	0.00	0
Maso,	60.19	12.13	730

PROBABLE MINERAL COMPOSITION

mg5U4 47.62 MqCL₂ NaHCO₃ 84.00 71.03 NaSO4 58.46 NaCl

1,319 27.70 0 0.00 0.00

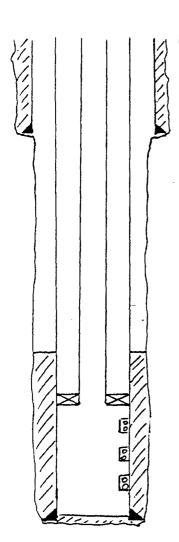
14,845

253.93

*Milli Equivalents per Liter

136 120 This water is slightly corrosive due to the pH observed on analysis. The corrosivity is increased by the content of mineral salts, and the presence of H2S, CO2, Oxygen in solution.

CHARLES GIRS



TOP OF CEMENT: SURFACE (CIRCULATED)

8 1/8 "CASING CEMENTED @ 190' W/100 SX

TOP OF CEMENT: 3148'(TEMP (06))
23/8" INTERNALLY CONTENT TRG TO 3532'
23/8" x51/2" TENSION PALLER 03532'

5/2" CASING CEMENTED @ 3804" W/200 &K

Form C-101 Revised (12/1/55)

NOTICE OF INTENTION TO DRILL

Notice must be given to the District Office of the Oil Conservation Commission and approval obtained before drilling or recompletion begins. If changes in the proposed plan are considered advisable, a copy of this notice showing such changes will be returned to the sender. Submit this notice in QUINTUPLICATE. One copy will be returned following approval. See additional instructions in Rules and Regulations of the Commission.

If State Land submit 6 Copies Attach Form G-128 in triplicate to first 3 copies of form C-101

• • • • • • • • • • • • • • • • • • • •			Hobbs	New Mexico	June	5, 1959	
	SERVATION, NEW M	ON COMMI	(ISSION			(Date)	
intlemen:							
You as	re hereby i	notified that	it 15 our i	ntention to commence th	c Drilling of a well to !	re known se	
		<u> </u>		(Company			***************************************
	Keel						70h
1				***************************************			
:atcd				icetà			
				line of Section.		_	
HVE LO	CATION	FROM SEC	TION, LIN		Pool,		
				If State Land the Oil a	nd Gas Lease is No wner is	antad Kas	
a	c	В	A -				•
			•	Address		Rotar	
					ll with drilling equipment		
E	F	G	H		bond is \$10,00		
	· .			the status of plugging	Dond is		
L	к	ı	ı	Drilling Contractor	Alan Dri		
M	N	0	P	We intend to complete		Yates	***************************************
		<u></u>		formation at an appro-	this well in the	38501	fcct
				CASING	PROGRAM	•	
We pr	opose to us	se the follow	ing strings	of Casing and to cement t	hem as indicated:		· · · · · · · · · · · · · · · · · · ·
Bise	of Hole	Size	of Casing	Weight per Foot	New or Second Hand	Depth	Sacks Cement
	778		8-5/89	214	題	175*	150 ax circ
				·			
·	7-7/	150	5-1/24	11.5	Ħ	TD 3850*	*
· · · · · · · · · · · · · · · · · · ·		<u> </u>	•				
If cha	inges in the	above plan	s become a	dvisable we will notify yo	u immediately.		
ADDI	TIONAL	INFORMA'	TION (If	recompletion give full de	etails of proposed plan of	work.)	
*	Will t	275 s	x or re	turn coment to be	ick past the base	of salt by tem	erature survey
						•	
DDMMd	C-128 a	ittached	JUH 8	1959, 19	Sincerely yours,		
xcept as	follows:			17	BUHK ROY	ALTY COMPANY	
						(Company or Operator)	
					Ву	Orma O	brug
	6-1 =				Position		
		ONSERVAT				Communications regards	ng well to
······································	ORIO	AL & TH	nas Uli		Name		
51	ENGIN	TEEN DIS	IDICI N	0. 1	Address	ite Falls, Torre	<u> </u>
	ENGIN	EER DIS	rricy n	o. 1	Address	A US ESTATE . ASS.	

NEW MEXICO OIL CONSERVATION COMMISSION

FORM C-103 (Rev 3-55)

MISCELLANEOUS REPORTS ON WELLS

		(Submit to a	ppropriate Distr	ict Offic	e as per	Com	mission Ru	/e 1106)	-1 1			
Name of Company Buck Royalty Co.					Address	800	011 & Ge	e Bldg	, Wichit	Michita Palls, Tex.		
Lease	Seal		Well No.	Unit L		ction 5	Township 20		Range	<u>.</u> 35		
Date Work Pe	tformed 6/9/59	Pool .	Lynch				County					
		T	HIS IS A REPORT	T OF: (C	beck appi	ropria	te block)					
Beginning Drilling Operations Casing Test and Cem						[Other SE	xplain):	4.			
Pluggia	8	C	Remedial Work	.								
Detailed acco	ount of work do	one, nature and qu	antity of materials	used, ar	nd results	obtai	ined.					
	_	of 8-5/8" c	eselinases) Ba) 29 /	≈\ 300	8 2 (lrollat	ed			
·												
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		٠.	•					,		-		
							· -					
Witnessed by			Position				Company	1				
[FILL	N BELOW FOR				PORTS ON	ILY '	· · · · · · · · · · · · · · · · · · ·	<u> </u>		
DF Elev.		TD	PBT		ELL DAT	<u> </u>	Producing	Interval	Cor	mpletion Date		
Tubing Diame	ter	Tubing Dep	oth	Oi	il String D	iame	tet	Oil	String Dept	h		
Perforated In	terval(s)	<u>L</u>							·			
						Producing Formation(s)						
			RESUL	TS OF	WORKOV	ΕR						
Test	Date of Test			Productio CFPD	on Wa		roduction PD	G (Cubic fo	O R eet/Bbl	Gas Well Potential MCFPD		
Before Workover												
After Workover												
OIL CONSERVATION COMMISSION						I hereby certify that the information given above is the and complete to the best of my knowledge.						
Approved by John W. Kunsan					Name							
Title					Position Agent Burk Royalty Company							
Date					Company							

NEW MEXICO OIL CONSERVATION COMMISSION

FORM C-103 (Rev 3-55)

MISCELLANEOUS REPORTS ON WELL'S THOU (Submit to appropriate District Office as per Commission Rule 1106) hn 10:05 Name of Company Address 800 011 è Ges Blog. Michita Falls, Tex-Burk Royalty Company Section Township 20 Lease Well No. Unit Letter Eaal Date Work Performed Pool County Los Lerach THIS IS A REPORT OF: (Check appropriate block) Beginning Drilling Operations Casing Test and Cement Job Remedial Work Plugging Detailed account of work done, nature and quantity of materials used, and results obtained. 5-1/2" 14 casing set at 3804" w/200 am occast, commant returned past base of salt by temperature survey, Tosted 600s pressure, tested 05 Witnessed by Position Company A. J. Whelen Drls Supt Seems FILL IN BELOW FOR REMEDIAL WORK REPORTS ONLY ORIGINAL WELL DATA TD PBTD DF Elev. Producing Interval Completion Date Tubing Diameter Tubing Depth Oil String Diameter Oil String Depth Perforated Interval(s) Open Hole Interval Producing Formation(s) RESULTS OF WORKOVER Water Production BPD Gas Production MCFPD Oil Production GOR Gas Well Potential Date of Test MCFPD BPD Cubic feet/Bbl Before Workover After Workover I hereby certify that the information given above is true and complete to the best of my karawledge. Name Approved **Agesc**≎ Position Burk Royalty Company Date

REQUEST FOR (OIL) - (GAS) ALLOWABLE

New Well

This form shall be submitted by the operator before an initial allowable will be assigned to any completed Oil or Gas well. Form C-104 is to be submitted in QUADRUPLICATE to the same District Office to which Form C-101 was sent. The allowable will be assigned effective 7:00 A.M. on date of completion or recompletion, provided this form is filed during calendar month of completion or recompletion. The completion date shall be that date in the case of an oil well when new oil is delivered into the stock tanks. Gas must be reported on 15.025 psia at 60° Fahrenheit.

_/		•		Robbs, H. 14. 6/30/59 (Place) (Date)
~/ A D '	E UFD	FRY RF	OUESTI	(Place) (ING AN ALLOWABLE FOR A WELL KNOWN AS:
racer	DOVAT!	er en	QUESTI Man	Well No. 3 in 15
V256	(Compa	лу or Oper	rator)	(Lesse) , Well No
• • • • • • • • • • • •		, Sec	35	T. 20 , R. 34 , NMPM., Lynch
Unit	Letter			
· • • • • • • • • • • • • • • • • • • •		Les		County. Date Spudded. 9777 Date Drilling Completed 6/28/39
P	lease in	idicate lo	cation:	Elevation Total Depth PBTD
D	C	ТВ	A	Top Oil/Gas Pay Name of Prod. Form.
		"	*	PRODUCING INTERVAL -
				Perforations 3703-3714 w/ 86 shote
E	F	G.	H	Depth Depth Depth
]		1		
L	K	J	ī	OIL WELL TEST
- [_	}]	Natural Prod. Test: bbls.oil, bbls water in hrs, min.
l		<u> </u>		Test After Acid or Fracture Treatment (after recovery of volume of oil equal to volu
M	N	0	P	Chok load oil used):bbls.oil,bbls water inhrs,min. Size
				GAS WELL TEST -
222	19 44	H & 9%	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	
بجد	N 88	A = AV	. 12 8	Natural Prod. Test: MCF/Day; Hours flowed Choke Size
bing,	Casing	and Cemen	ting Recor	
Size		Feet	SAX	Test After Acid or Fracture Treatment: MCF/Day; Hours flowed
4 (5/3	190	100	Choke Size Method of Testing:
	79	170	200	Short Size me thos of restrig.
		- 1	3804	Acid or Fracture Treatment (Give amounts of materials used, such as acid, water, oil
5-3	1/2 4	set at	-	
5-1	V2 *		423 0	sand):
-	7		4300	sand): Casing Tubing Date first new
-	7		/200	sand): Casing Tubing Date first new
-	7		√200	Sand): Casing 704 Tubing Date first new 6/22/59 Press. oil run to tanks Cil Transporter Co.
-	7		√300	sand): Casing Tubing Date first new
Su	te: a		√200	Sand): Casing Tubing Date first new 6/26/59 Press. Press. oil run to tanks Cil Transporter
Su	te: a		-/200 	Sand): Casing Tubing Date first new 6/26/59 Press. Press. oil run to tanks Cil Transporter
Su	te: a		4200	Sand): Casing Tubing Date first new 6/26/59 Press. Press. oil run to tanks Cil Transporter
narks	th: a	a 3693	7.02.00	Sand): Casing Tubing Date first new 6/26/59 Press. Press. oil run to tanks Gil Transporter Gas Transporter
marks	the a	ertify that	t the infor	Sand): Casing Tubing Date first new oil run to tanks Oil Transporter Gas Transporter Grant Date first new oil run to tanks Ormation given above is true and complete to the best of my knowledge.
marks	th: a	ertify that	t the infor	Sand): Casing Tubing Date first new oil run to tanks Oil Transporter Gas Transporter Grmation given above is true and complete to the best of my knowledge.
marks I he	ter a	ertify that	t the infor	Sand): Casing Tubing Date first new oil run to tanks Oil Transporter Gas Transporter Grantion given above is true and complete to the best of my knowledge. Purk Royalty Company or Operator)
marks I he	ter a	ertify that	t the infor	Sand): Casing Tubing Date first new oil run to tanks Gil Transporter Gas Transporter Texas Sew Oxido Tipe Line Co. Ormation given above is true and complete to the best of my knowledge. Purk Resulty Company
marks I he	ter a	ertify that	t the infor	Sand): Casing Tubing Date first new oil run to tanks Gil Transporter Gas Transporter Gas Transporter Transporter Gas Transporter Transporter
marks I he	ter a	ertify that	t the infor	Sand): Casing Tubing Date first new oil run to tanks Gil Transporter Gas Transporter Gas Transporter Time Company or Operator) COMMISSION By: (Signature)
marks I he	ter a	ertify that	t the infor	Sand): Casing Tubing Date first new oil run to tanks Gil Transporter Gas Transporter Gas Transporter Transporter Gas Transporter Transporter

DRILLER'S LOG NEAL # 3 IN LEA COUNTY, NEW MEXICO 6-26-59

Well Commenced: 6-9-59 Well Completed: 6-18-59

0-331 Surface sand & Shale 38-2004 Sand, Shale, & Lime 200-6731 Shale 673-12651 Shale & Sand 1265-13501 Shale 1350-14681 Shale & Lime Stks. 11:68-1501 Shale 1501-1651 Shale 1551-13571 Lime & Shale 1857-19621 Shale & Line Stks. 1562-21731 Shale 2173-21351 Lime 2155-22521 Shale 2292-23151 Shale & Lime Stks. 2315-24061 Shale - Potash 2406-24131 Shale - Potash & Lime Stks. 2413-25101 Shale & Potash 2510-25901 Salt, Shale, Potash 2550-26011 Line & Shale 2601-23561 Shale & Salt 2856-25571 Balt & Shale 2957-30081 Shale & Potash 3008-32021 Salt & Lime Stks. 3202-32211 Line 3221-32251 hale & balt 3225-32301 bale Salt & Shale 3280-34001 3400-34161 Anhydrite 3415-34391 Lime & Anhydrite 3439-35131 Lire 3519-35231 Line 3523-35571 Lime 3557-35761 Lime 3575-36061 Sand 3606-36111 Coring sand 3611-33051 Coring sand 33051 TD

NO. OF COPIES RECEIVED	1				Form C -103			
DISTRIBUTION					Supersedes Old			
SANTA FE	NEW MEXICO	OIL CONS	ERVATION COMMISSION		C-102 and C-103 Effective 1-1-65			
FILE]	_	- · · · · · · · · · · · · · · · · · · ·			-		
U.S.G.S.				Şa.	Indicate Type	of Lease		
LAND OFFICE	1		•		State	Fee	. X	
OPERATOR	•			5. 5	State Oll & Gas	s Lease No.		
	•							
SUNDS	RY NOTICES AND REPO	ORTS ON	WELLS JACK TO A DIFFERENT RESERVOIR.				III	
1. OIL GAS	OTHER. Water Di		A PROPOSACS.)	7.	Unit Agreement	t Name	<i>-7777</i>	
2. Name of Operator	OTHER. MALEL DI	sposar		8	Farm or Lease	Name		
Burk Royalty Co.					NEAL			
3. Address of Operator		_	26000	9. '	Well No.			
800 Oil & Gas Build	ing, Wichita Fall	s, Texa	s 76301		3			
4. Location of Well UNIT LETTER A	330 FEET FROM THE	North	LINE AND FEE	İ	Field and Pool	ol, or Wildcat		
					MINI	777777	7777	
THE East LINE, SECT	ON TOWNSHE	20		_ HMPM.				
	15. Elevation (Sh		DF, RT, GR, etc.)	12.	County	11111	<i>HH</i>	
	3729.5	CR			Lea		11111	
16. Check	Appropriate Box To Ir	ndicate N	lature of Notice, Report	or Orber	Data			
	NTENTION TO:	idicate 1			PORT OF:			
	PLUG AND A8			T	*			
PERFORM REMEDIAL WORK	PLUG AND AS	**************************************	REMEDIAL WORK	#		ING CASING	님	
PULL OR ALTER CASING	CHANGE PLAN		CASING TEST AND CEMENT JOB	-	PLUG A	MHCCHAEL UN	.NT	
Poet of Acted Casting	CHANGE FEAR	.,	OTHER	السيد				
OTHER	j		01722					
17. Describe Proposed or Completed O work) SEE RULE 1103.	perations (Clearly state all p	ertinent det	ails, and give pertinent dates, in	cluding esti	nated date of s	tarting any p	roposed	
Permit to use as di Case #4679 Order		ed Marc	in 17, 1972.					
				F				
	-3/8 EUE plastic c	oated t	pulled 119 joints 2 ubing with Totem te on.					
<u>-</u>	• •				~			
4-5-74 Started Inje	ection							
	•							
	-	•						
	;	1						
	;	}						
		· ·						
	·							
10 Thanks are the second		1						
18. I hereby certify that the information	n above is true and complete i	to the best (or my knowledge and belief.					
SIGNED SOM	Jon E. Bear	TITLE	Engineer		Nove	mber 20,	, 197	
	 	,			 	······································		
\		\$						
APPROVED BY		TITLE			DATE			

CONDITIONS OF APPROVAL, IF ANY:

LANDOWNER AND LEASEHOLD OPERATORS

LANDOWNER

Dan & Ron Berry
P. O. Box 67
Eunice, New Mexico 88231
Certified Mail #Z 240 122 239

LEASEHOLD OPERATORS

Shell Western Exploration & Production Box 576 Houston, Texas 77001 Certified Mail #Z 240 122 240

Nearburg Producing Company 1819 North Turner Hobbs, New Mexico 88240 Certified Mail #Z 240 122 241

Phillips Petroleum Company 4001 Penbrook Odessa, Texas 7962 Certified Mail #Z 240 122 242

BTA Oil Producers 104 South Pecos Midland, Texas 79701 Certified Mail #Z 240 122 243