

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

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT—" for such proposals

SUBMIT IN TRIPLICATE

1. Type of Well <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input checked="" type="checkbox"/> Other	5. Lease Designation and Serial No. NM-077006
2. Name of Operator Mack Energy Corporation	6. If Indian, Allottee or Tribe Name
3. Address and Telephone No. P.O. Box 960, Artesia, NM 88211-0960 (505)748-1288	7. If Unit or CA, Agreement Designation
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec. 24, T19S, R32E Unit 0	8. Well Name and No. Big Circle Fed TB #2
	9. API Well No.
	10. Field and Pool, or Exploratory Area Tonto Yates SR, South
	11. County or Parish, State Lea, NM

12. CHECK APPROPRIATE BOX(s) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Abandonment
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Recompletion
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Plugging Back
	<input type="checkbox"/> Casing Repair
	<input type="checkbox"/> Altering Casing
	<input type="checkbox"/> Other
	<input type="checkbox"/> Change of Plans
	<input type="checkbox"/> New Construction
	<input type="checkbox"/> Non-Routine Fracturing
	<input type="checkbox"/> Water Shut-Off
	<input type="checkbox"/> Conversion to Injection
	<input checked="" type="checkbox"/> Dispose Water

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

See attached NTL-2B.

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14. I hereby certify that the foregoing is true and correct

Signed Crista D. Carter Title Production Clerk Date 11-8-94

(This space for Federal or State office use)

Approved by Orig. Signed by Adewale Salami Title Petroleum Engineer Date 11/9/95
Conditions of approval, if any:

- SEE ATTACHED -

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.

*See Instruction on Reverse Side

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(A) Name(s) of formation(s) producing water on the lease.

Seven Rivers

(B) Amount of water produced from each formation in barrels per day.

2 bbls

(C) A water analysis of produced water from each zone showing at lease the total dissolved solids, ph, and the concentrations of chlorides and sulfates.

Attached

(D) How water is stored on the lease.

Fiberglass tank

(E) How water is moved to disposal facility.

Truck

(F) Operator's name, well name and location, by 1/4 1/4, section, township, and range, of the disposal facility. If the disposal facility is an approved disposal system, the operator's name and the name of the disposal system should suffice.

Mack Energy Corporation Order No. R-8191

FM Robinson Disposal T17S, R29E, Sec. 27 SWNW

(G) For pit approval we need: the pit size and location, evaporation rate for the area compensated for annual rainfall, estimated percolation rate based on the soil characteristics under and adjacent to the pit, and depth and aerial extent of all unseable water aquifers in the area (i.e., less than 10,000 ppm total dissolved solids).

MACK ENERGY CORPORATION

Crisa D. Carter

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(rev. 3/10/94)

BUREAU OF LAND MANAGEMENT
CARLSBAD RESOURCE AREA

Disposal of Produced Water From Federal Wells

Conditions of Approval

Approval of the produced water disposal methodology is subject to the following conditions of approval:

1. This agency be notified of any change in your method or location of disposal.
2. Compliance with all provisions of Onshore Oil and Gas Order No. 7.
3. This agency shall be notified of any spill or discharge as required by NTL-3A.
4. This agency reserves the right to modify or rescind approval whenever it determines continued use of the approved method may adversely affect the surface or subsurface environments.
5. All aboveground structures on the lease shall be painted sandstone brown, Federal Std. 595-20318, or 30318, within 90 days if you have not already done so.
6. Any on lease open top storage tanks or pits shall be covered with a wire screen or plastic/nylon netting to prevent entry by birds and other wildlife.
7. This approval does not constitute right-of-way approval for any off lease activities. If water is transported via a pipeline that extends beyond the lease boundary, then you need to submit within 30 days an application for right-of-way approval to the Realty Section in this office if you have not already done so.

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Chemicals and Services

16010 Barker's Point Lane • Houston, Texas 77079
713 558-5200 • Telex: 4620346 • FAX: 713 589-4737

Reply to: P.O. Box FF
Artesia, New Mexico 88210
(505) 746-3588 Phone
(505) 746-3580 Fax

WATER ANALYSIS REPORT

Company : MACK ENERGY
Address : ARTESIA, NM
Lease : BIG CIRCLE
Well : #2
Sample Pt. : WELLHEAD

Date : 04/13/92
Date Sampled : 04/06/92
Analysis No. : 354

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ANALYSIS		mg/L	* meq/L	
-----		----	-----	
1.	pH	6.0		
2.	H ₂ S	157 PPM		
3.	Specific Gravity	1.030		
4.	Total Dissolved Solids	44899.5		
5.	Suspended Solids	NR		
6.	Dissolved Oxygen	NR		
7.	Dissolved CO ₂	266 PPM		
8.	Oil In Water	NR		
9.	Phenolphthalein Alkalinity (CaCO ₃)			
10.	Methyl Orange Alkalinity (CaCO ₃)	1098.0		
11.	Bicarbonate	HCO ₃ 1339.6	HCO ₃	22.0
12.	Chloride	Cl 25019.7	Cl	705.8
13.	Sulfate	SO ₄ 2100.0	SO ₄	43.7
14.	Calcium	Ca 1891.8	Ca	94.4
15.	Magnesium	Mg 1142.6	Mg	94.0
16.	Sodium (calculated)	Na 13404.6	Na	583.1
17.	Iron	Fe 1.2		
18.	Barium	Ba 0.0		
19.	Strontium	Sr 0.0		
20.	Total Hardness (CaCO ₃)	9428.5		

PROBABLE MINERAL COMPOSITION

*milli equivalents per Liter				Compound	Equiv wt	X meq/L	= mg/L	
94	*Ca	<-----	*HCO3	22	Ca(HCO3)2	81.0	22.0	1780
		/----->			CaSO4	68.1	43.7	2976
94	*Mg	<----->	*SO4	44	CaCl2	55.5	28.7	1593
		<-----/			Mg(HCO3)2	73.2		
583	*Na	----->	*Cl	706	MgSO4	60.2		
					MgCl2	47.6	94.0	4475
Saturation Values Dist. Water 20 C				NaHCO3	84.0			
	CaCO3		13 mg/L	Na2SO4	71.0			
	CaSO4 * 2H2O		2090 mg/L	NaCl	58.4	583.1		34074
	BaSO4		2.4 mg/L					

REMARKS:

----- D. CANADA / FILE

Petrolite Oilfield Chemicals Group

Respectfully submitted,
ROZANNE JOHNSON

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SCALE TENDENCY REPORT

Company	: MACK ENERGY	Date	: 04/13/92
Address	: ARTESIA, NM	Date Sampled	: 04/06/92
Lease	: BIG CIRCLE	Analysis No.	: 354
Well	: #2	Analyst	: ROZANNE JOHNSON
Sample Pt.	: WELLHEAD		

STABILITY INDEX CALCULATIONS
(Stiff-Davis Method)
CaCO3 Scaling Tendency

S.I. =	0.1	at	60 deg. F	or	16 deg. C
S.I. =	0.1	at	80 deg. F	or	27 deg. C
S.I. =	0.2	at	100 deg. F	or	38 deg. C
S.I. =	0.3	at	120 deg. F	or	49 deg. C
S.I. =	0.4	at	140 deg. F	or	60 deg. C

CALCIUM SULFATE SCALING TENDENCY CALCULATIONS
(Skillman-McDonald-Stiff Method)
Calcium Sulfate

S =	3907	at	60 deg. F	or	16 deg C
S =	4138	at	80 deg. F	or	27 deg C
S =	4265	at	100 deg. F	or	38 deg C
S =	4301	at	120 deg. F	or	49 deg C
S =	4315	at	140 deg. F	or	60 deg C

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Respectfully submitted,
ROZANNE JOHNSON

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