STATE OF NEW MEXICO

ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

OIL CONSERVATION DIVISION
AZTEC DISTRICT OFFICE

1000 RIO BRAZOS ROAD
AZTEC, NEW MEXICO 87410
(505) 334-6178

Date: 3/19/91

Oil Conservation Division
P.O. Box 2088
Santa Fe, NM 87504-2088

RE: Proposed MC_____
Proposed NSL_____
Proposed WFX_____
Proposed NSP_____
Proposed DHC X
Proposed SWD_____
Proposed PMX_____
Proposed DD_____

Gentlemen:

I have examined the application received on 3/6/91

for the Meridian Hancock #11
OPERATOR LEASE & WELL NO.

P-30-28N-9W and my recommendations are as follows:
UL-S-T-R

Approve

Yours truly,

MERIDIAN OIL

February 22, 1991

Mr William J. LeMay
N. M. Oil Conservation Division
P. O. Box 2088
Santa Fe, N.M. 87501-2088

Re: Hancock #11 MV-CH
1150' FSL; 810' FEL
Section 30, T28N R09W
San Juan County, N. M.

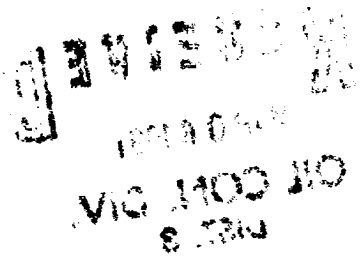
Dear Mr. LeMay:

Meridian Oil Inc. is applying for an administrative downhole commingling order for the referenced well in the Blanco Mesaverde and Otero Chacra fields. The ownership of the zones to be commingled is common. The offset operator to the north and south is Amoco Production company with Meridian Oil having acreage to the east and west. The Bureau of Land Management and this offset operator will receive notification of this proposed downhole commingling.

This well has produced since December 1985 from the Mesaverde interval. With a maximum producing capacity of 30 MCF/D, the well is only a marginal producer. The Mesaverde has trouble producing due to excessive water production. The addition of the Chacra gas to the producing stream could help lift the small amount of Mesaverde liquids (less than 1 BLPD). This would greatly enhance the Mesaverde producing efficiency thus prevent waste of the Mesaverde gas reserves.

Meridian Oil recently completed a study of the Chacra wells in a four township area. It concluded that although substantial gas reserves are present in the Chacra reservoir, they definitely do not provide economic justification to drill. Commingling the Chacra with the Mesaverde in this well will enable the well to produce its Chacra reserves which otherwise would probably be wasted. The eight nearest Chacra wells to the referenced well (within a 1-1/2 mile radius) have an average cumulative of only 184 MMCF with a current average producing rate of only 36 MCF/D. Clearly, Chacra reserves exist in the vicinity of this well, however, the small amount of reserves indicated can not justify drilling operations. The only way to produce these reserves thus prevent waste of Chacra reserves is to utilize an existing wellbore.

Granting this application will be in the best interest



of conservation, the prevention of waste, and the protection of correlative rights.

We plan to commingle this well by pulling the tubing, perforating and stimulating the Chacra, and running a single string of tubing.

The reservoir characteristics of each of the subject zones are such that underground waste would not be caused by the proposed downhole commingling. The fluids from each zone are compatible and no precipitates will be formed to cause damage to either reservoir. See the attached fluid analyses and compatibility tests. The daily production will not exceed the limit of Rule 303c, Section 1a, Part 1.

The shut-in pressure for the Mesaverde and Chacra are 765 psi and 510 psi, respectively.

The District Office in Aztec will be notified anytime the commingled well is shut-in for seven (7) consecutive days.

To allocate the commingled production to each of the zones, Meridian will consult with the District Supervisor of the Aztec District Office of the Division to determine an allocation formula for each of the productive zones. This will be done using flow tests from the Mesaverde and Chacra during recompletion operations.

Included with this letter are plats showing ownership of offsetting leases for both the Mesaverde and Chacra, a copy of the letters to the offset operator and BLM, wellbore diagram, production curve, pertinent data sheet, and a detailed report of fluid compatibility.

Yours truly,

G. T. Dunn
Regional Production Engineer

PMP:pmp
attachments

cc: Frank Chavez - OCD

MERIDIAN OIL

February 22, 1991

Bureau of Land Management
1235 La Plata Hwy.
Farmington, N. M. 87401

Gentlemen:

Meridian Oil, Inc. is in the process of applying for a downhole commingling order for their Hancock #11 MV well located 1150' FSL 810' FEL, Section 30 T28N R09W, N.M.P.M., San Juan County, New Mexico, in the Blanco Mesaverde and Otero Chacra.

The purpose of this letter is to notify you of such action. If you have no objections to the proposed commingling order, we would appreciate your signing the attached copy of this letter and returning it to this office.

Your prompt attention to this matter would be appreciated.

Yours truly,

G. T. Dunn
Regional Production Engineer

PMP:pmp

The above downhole commingling request is hereby approved:

_____

Date:_____

MERIDIAN OIL

February 22, 1991

Amoco Production Company
Attn: Mr. Larry Emmons
P.O. Box 800
Denver, Colorado 80201

Dear Mr. Emmons:

Meridian Oil, Inc. is in the process of applying for a downhole commingling order for their Hancock #11 MV well located 1150' FSL 810' FEL, Section 30 T28N R09W, N.M.P.M., San Juan County, New Mexico, in the Blanco Mesaverde and Otero Chacra.

The purpose of this letter is to notify you of such action. If you have no objections to the proposed commingling order, we would appreciate your signing the attached copy of this letter and returning it to this office.

Your prompt attention to this matter would be appreciated.

Yours truly,

G. T. Dunn
Regional Production Engineer

PMP:pmp

The above downhole commingling request is hereby approved:

_____

Date:_____

Pertinent Data Sheet - HANCOCK #11 MV

Location: 1150'FSL 810' FEL, SEC. 30 T28N R09W, SAN JUAN COUNTY, N.M.

Field: Blanco Mesaverde

Elevation: 5998'GR
12'KB

TD: 4874'
PBTD: 4859'

DP#: 54256A
GWI: 100.00%
NRI: 71.36%

Completed: 9-27-85

Initial Potential:
AOP=1501 MCF/D; Q=1013 MCF/D; SICP= 996 PSI
Heavy water throughout test

Casing Record:

Hole Size	Csg. Size	Wt. & Grade	Depth Set	Cement	Top/Cmt.
12-1/4"	9-5/8"	32.3# H-40	222'	136 cu ft	CIRC. CMT
8-3/4"	7"	20.0# K-55	2431'	155 sx	700' TS
6-1/4"	4-1/2"	10.5# K-55	2283'-4874'	335 sx	3066' CBL

Tubing Record: 2-3/8" 4.7# J-55 4572'
S.N. @ 4539'

Formation Tops:

Chacra	3018'
Mesaverde	3660'
Menefee	3734'
Point Lookout	4370'

Logging Record: Induction, Density, Temp., CBL, 40-arm caliper.

Stimulation: Perfed lower MV @ 4562', 80', 99', 4604', 26', 46', 52', 60', 74', 83', 4702', 13', 37', 54', 4780', 13' & fraced w/41,180# 20/40 sand in slick water. Perfed Perfed Point Lookout @ 4380', 84', 94', 99', 4407', 12', 17', 22', 27', 39', 45', 50', 61', 65', 78', 93', 4503', 16', 22', 27' & fraced w/ 104,000# 20/40 sand in slick water. Ran 40-arm caliper log to verify perfs @ 4380'-4813'.

Workover History: 3-23-87 Pulled tbg to remove piston & layed down two joints.
4-27-87 Swabbed well in.

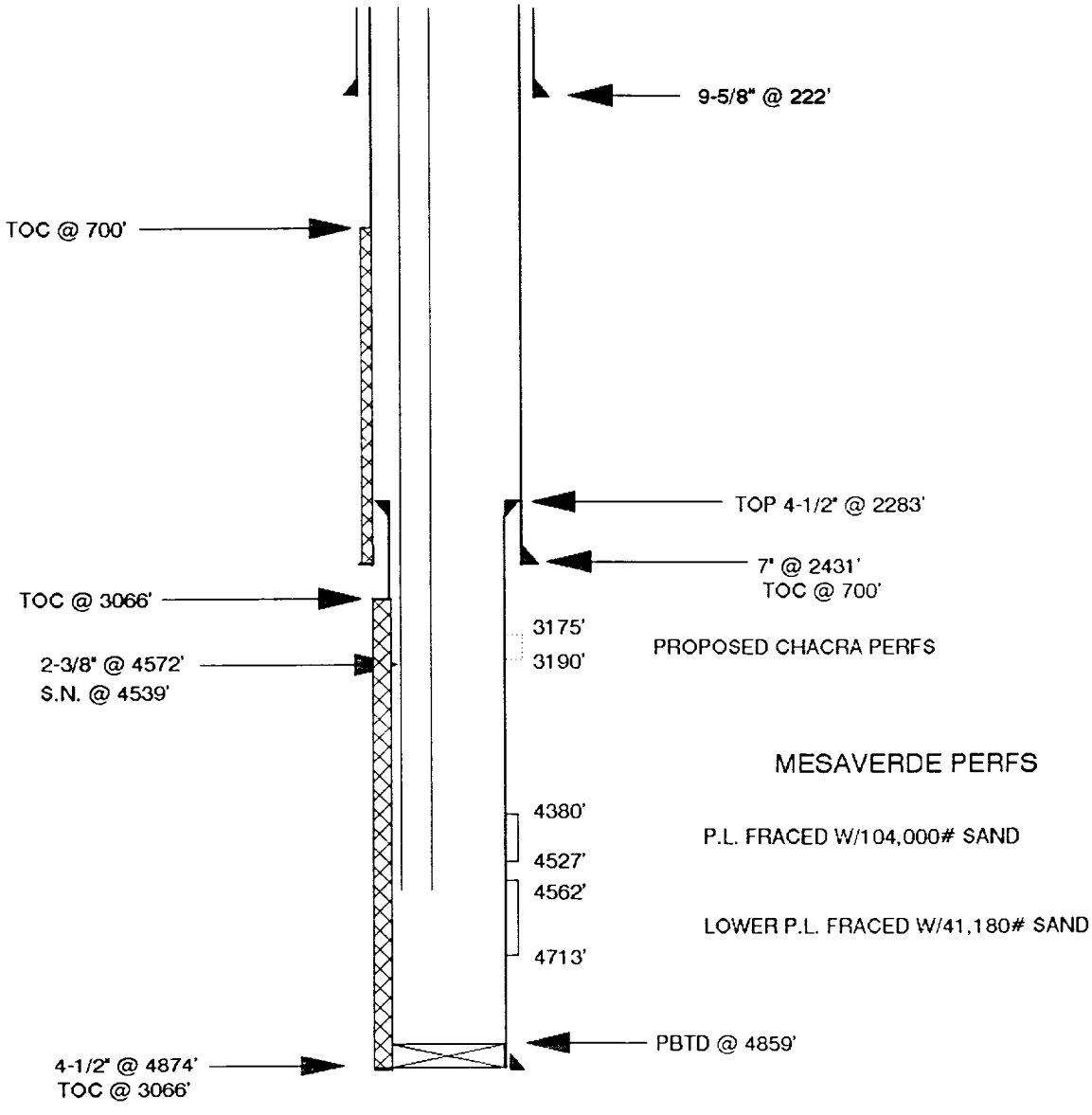
Production History: Well 1st delivered 12-85. Poor production due to excessive water.

PMP

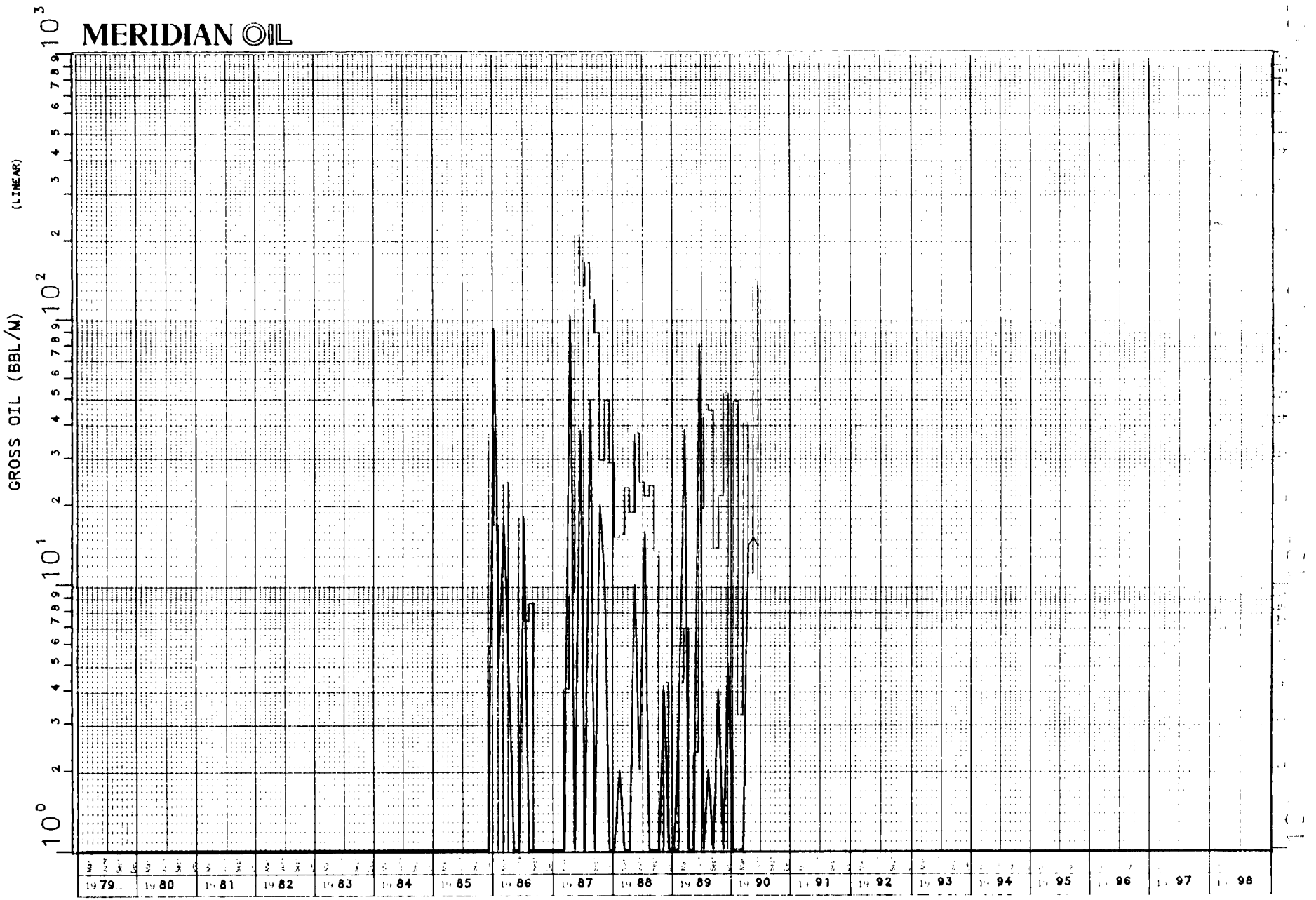
HANCOCK #11 MV-CH

UNIT P SECTION 30 T28N R09W

SAN JUAN COUNTY, NEW MEXICO



PROJECT	:	DWIGHTS NUMBER	: 30428N09W30P00MV
STATE	: NEW MEXICO	LEASE/WELL NAME	: HANCOCK
COUNTY	: SAN JUAN	RESERVOIR	:
LOCATION	: 30P28N 9W	FIELD	: BLANCO MESAVERDE (PRORATED GAS)
PAGE NUMBER	: 0000007-A	OPERATOR	: MERIDIAN OIL INC



OIL BY MONTH GAS BY MONTH

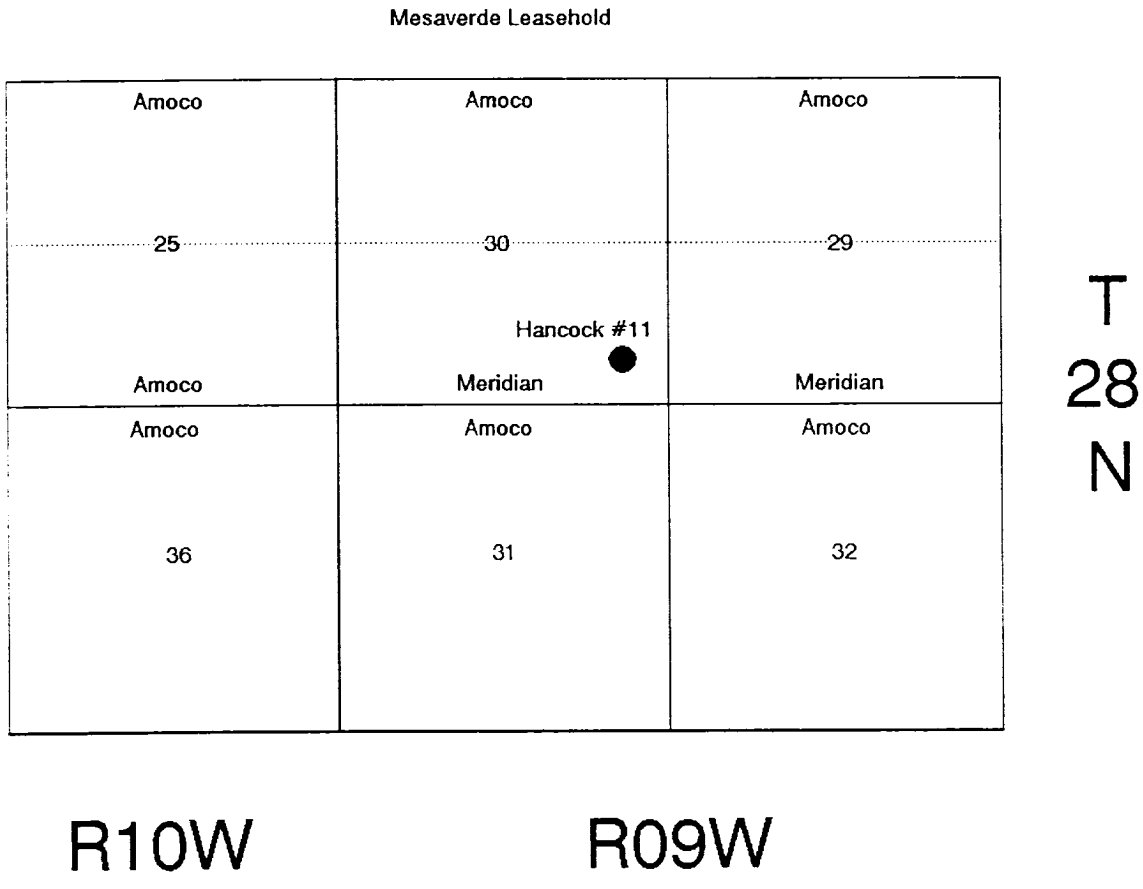
MERIDIAN OIL

Commingle Application for

Chacra - Mesaverde

Hancock #11 CH/MV

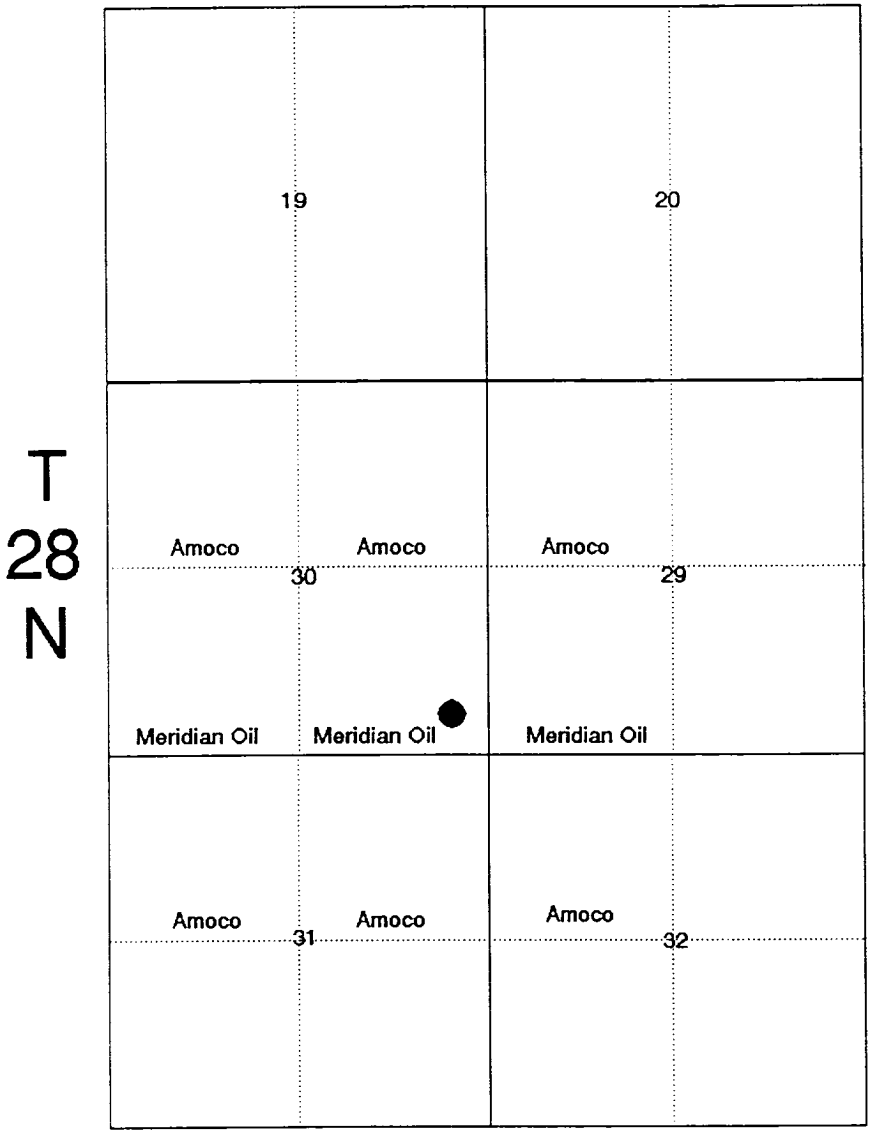
San Juan County, N. M.



MERIDIAN OIL

Commingle Application for
Chacra - Mesaverde
Hancock #11 CH/MV
San Juan County, N. M.

Chacra Leasehold



R09W

MERIDIAN OIL

REID 21 WELL OUT OF THE CHACRA FORMATION LOCATED IN SAN JUAN COUNTY, N.M.

PREPARED BY:
J.M. ROUSH

FEBRUARY 7, 1991
WST-91-S-0014

DOWELL SCHLUMBERGER WESTERN DIVISION TECHNOLOGY CENTER

P. O. Box 5818
Denver, Colorado
(303) 773-8800

DOWELL SCHLUMBERGER
WESTERN DIVISION LABORATORY REPORT

CLIENT: Meridian Oil
LEASE: Unit E.
WELL: Reid 21
LOCATION: San Juan County, N.M.
FORMATION: Chacra
BHT: ± 140°F
DEPTH: 3200'

WELL TYPE: Oil and Gas

SAMPLE TYPE: 1 Water Sample
1 Oil Sample

February 7, 1991
WST-91-S-0014

Distribution: P. Gill, WST
C. Dacar, WST
P. Warembourg, WST
Lab File (2X)

I. Backgound:

The Dowell Schlumberger Western Division Technology Center received a water sample out of the Mesa Verde Formation and an oil sample out of the Chacra Formation for analyses and testing. The laboratory was requested to provide a standard API analysis on both the water sample and the oil and to determine whether or not they may be co-mingled.

II. Lab Testing and Results:

a) Water Analysis

The sample of water received in the lab had an obvious presence of iron that had precipitated out because the sample appeared orange in color. This water is from the Hancock #11 MV Lease with the API Water Analysis shown in Table I.

b) Oil Analysis

The oil sample that was received in the lab was from Meridian's Reid #21 E Chacra well which produces out of the Les Hapner Field. The sample had separated out into two phases, oil and water and appeared grayish-green in color. The sample was centrifuged to determine the percent oil, water and solids present. The API oil analysis results obtained are provided in Table II and shows that the oil had 0.5% solids present. The solids were removed and analyzed by X-ray Fluorescence Spectrometry and by Powder X-ray Diffraction. The elemental and mineralogic compositions are provided in Tables III- IV and suggest the solids to be composed mainly of iron in varying forms, as carbonates, oxides and compounds.

c) Emulsion Tendencies

Only the oil phase that was separated when centrifuged was used for the compatibility test by mixing it at a 1:1 ratio with the Mesa Verde formation water. This test is observed visually by noting the breakout with time. The oil & water

SAMPLE WAS HEATED TO ± 140°F. WHEN AT TEMPERATURE THE SAMPLE WAS THEN SHAKEN VIGOROUSLY FOR ONE MINUTE AND BREAKOUT WAS OBSERVED WITH TIME, WHICH WAS 100% AT ONE MINUTE.

THESE TWO FLUIDS DO NOT APPEAR TO HAVE INCOMPATIBLE TENDENCIES OR TO EMULSIFY WHEN ADDED AT A 1:1 RATIO.

THERE WERE NO SIGNS OF A PRECIPITATE FORMING UPON MIXING OF THE TWO FLUIDS NOR WERE THERE ANY OTHER ADVERSE PROBLEMS NOTED. IF AN EMULSION IS SUSPECTED A NON-EMULSIFYING AGENT MAY BE ENCORPORATED INTO THE WATER PHASE AS A PRECAUTIONARY MEASURE.

TABLE I

API WATER ANALYSIS

Description	
DISSOLVED SOLIDS	
Cations	**mg/L**
Sodium, Na (calc.)	22,973
Calcium, Ca	400
Magnesium, Mg	153
Anions	
Chloride, Cl	37,041
Sulfate, SO_4	12
Carbonate, CO_3	0
Bicarbonate, HCO_3	380
Total Dissolved Solids (calc.)	60,962
Iron, Fe (total)	1,396
pH	5.80
Specific Gravity	1.045

TABLE II

API OIL ANALYSIS

PERCENT OIL	85
PERCENT WATER	15
PERCENT SOLIDS	0.5
API GRAVITY CORRECTED 60/60°F = 56°	
PERCENT ASPHALTENES	0
PERCENT PARAFFINS	0

TABLE III

X-RAY FLUORESCENCE SPECTROMETRY

SEMI-QUANTITATIVE

ELEMENTAL ANALYSIS
(WT. %)

MAJOR		MINOR	LOW	TRACE
30-40	20-30	10-20	6-10	1-5	0.5-1%
IRON	NONE	NONE	SODIUM CALCIUM	MAGNESIUM SILICON SULFUR POTASSIUM CHLORINE	ALUMINUM

TABLE IV

MINERALOGY OF SOLIDS
DETERMINED BY

POWDER X-RAY DIFFRACTION

MAJOR >60%	TRACE <5%
SIDERITE AMORPHOUS IRON OXIDES AND IRON COMPOUNDS	QUARTZ