Exhibits 1 through 42
Complete Set

EXHIBIT 1

INDEX MAP
PAPERS WASH FIELD

MERRION OIL & GAS
CASE NO. 9880
3-7-90

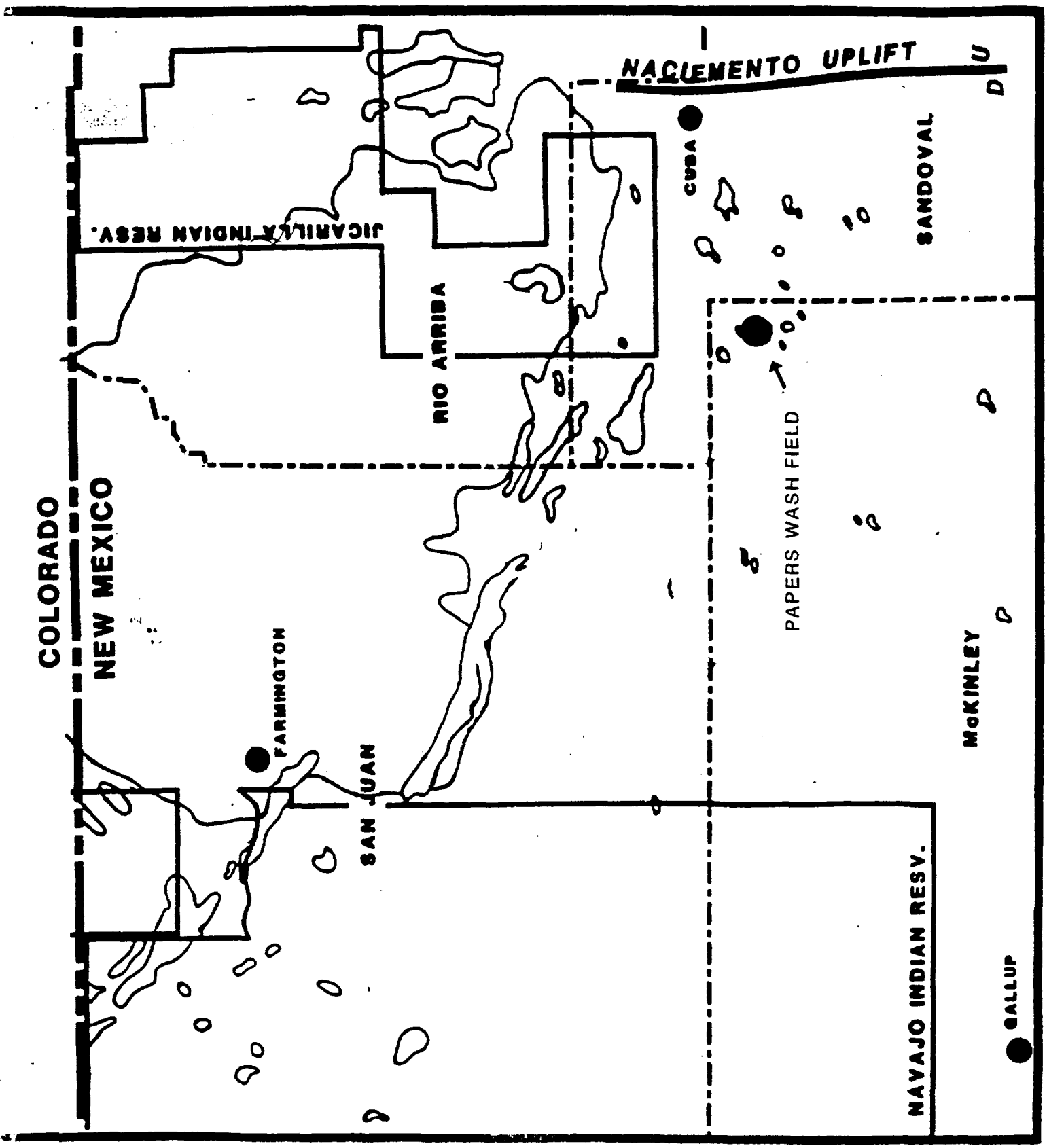
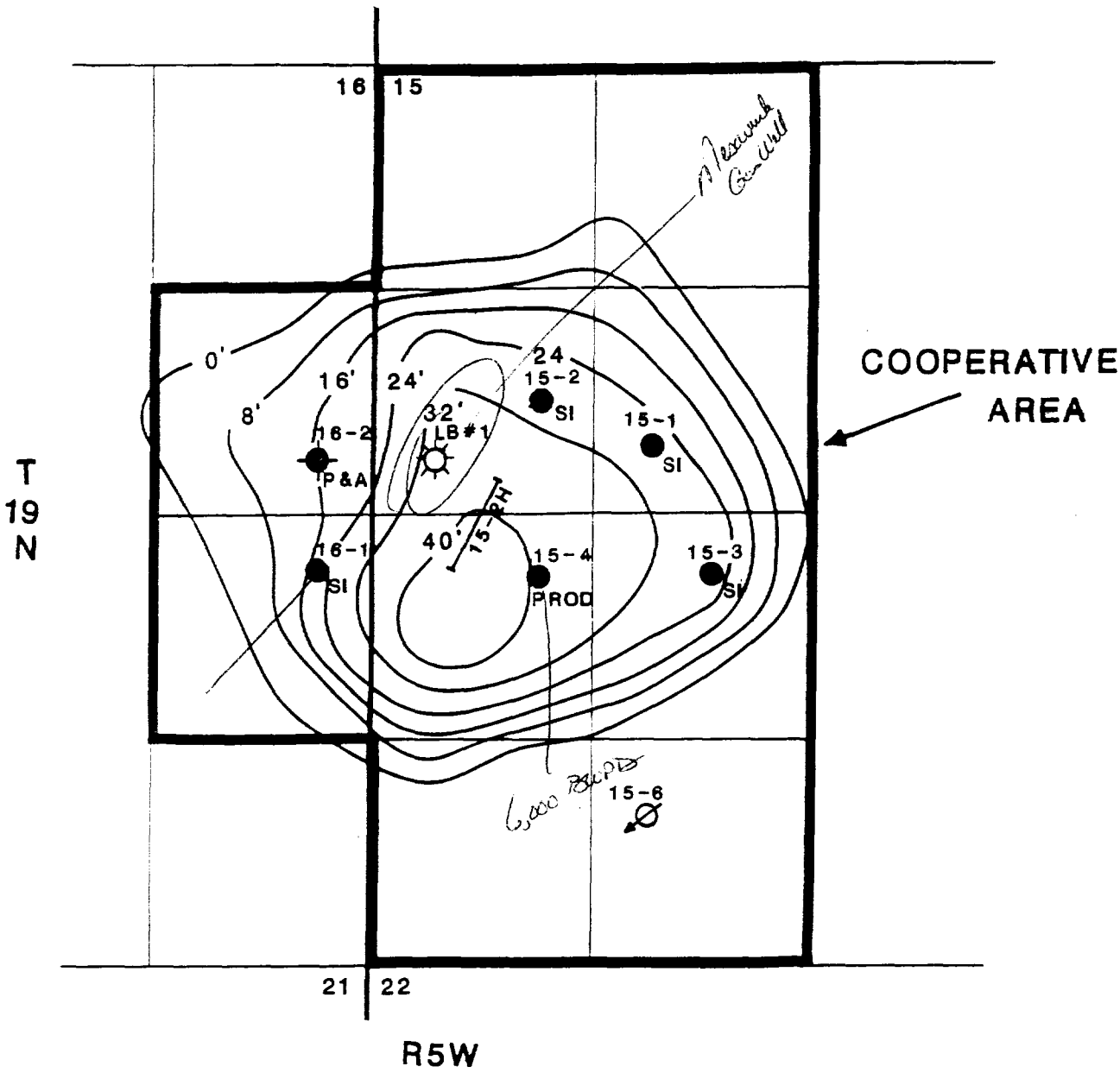


EXHIBIT 2

MC KINLEY COUNTY, NEW MEXICO
ORIGINAL NET PAY - LEASE MAP

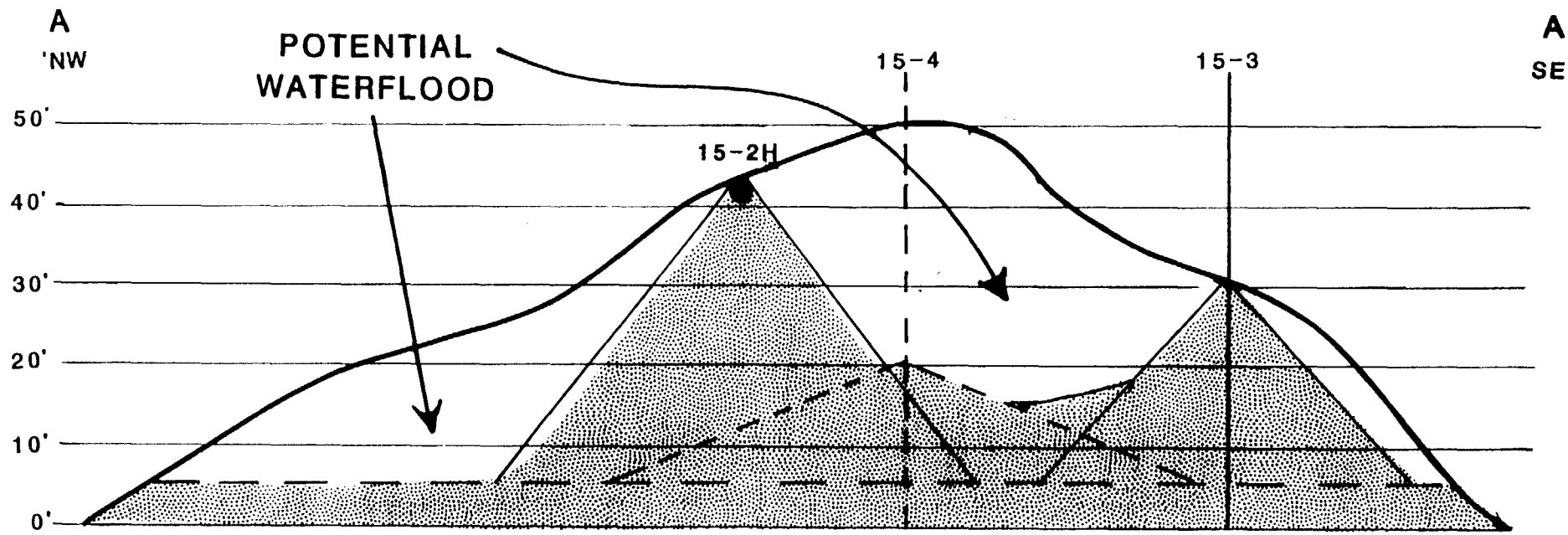
SCALE: 1" =1000'



MERRION OIL & GAS
CASE NO. 9880
3-7-90

EXHIBIT 3

PAPERS WASH FIELD
CROSS SECTION @ 15-2H ENTRY POINT



HORIZONTAL SCALE 1" = 444'

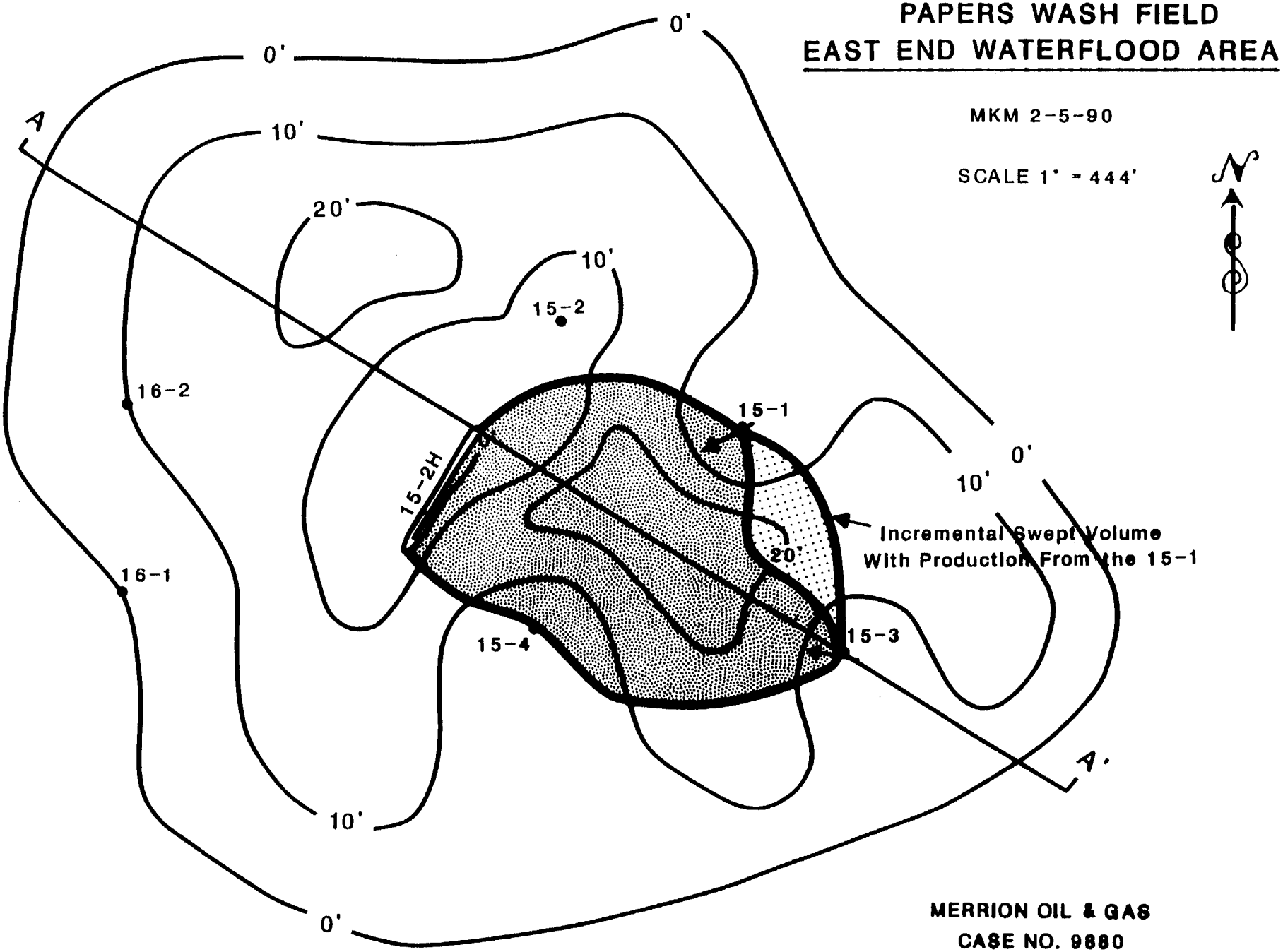
MERRION OIL & GAS
CASE NO. 9880
3-7-90

DR:MEG

EXHIBIT 4
REMAINING NET PAY
PAPERS WASH FIELD
EAST END WATERFLOOD AREA

MKM 2-5-90

SCALE 1" = 444'



MERRION OIL & GAS
CASE NO. 9880
3-7-90

DR: MEG

EXHIBIT 4A

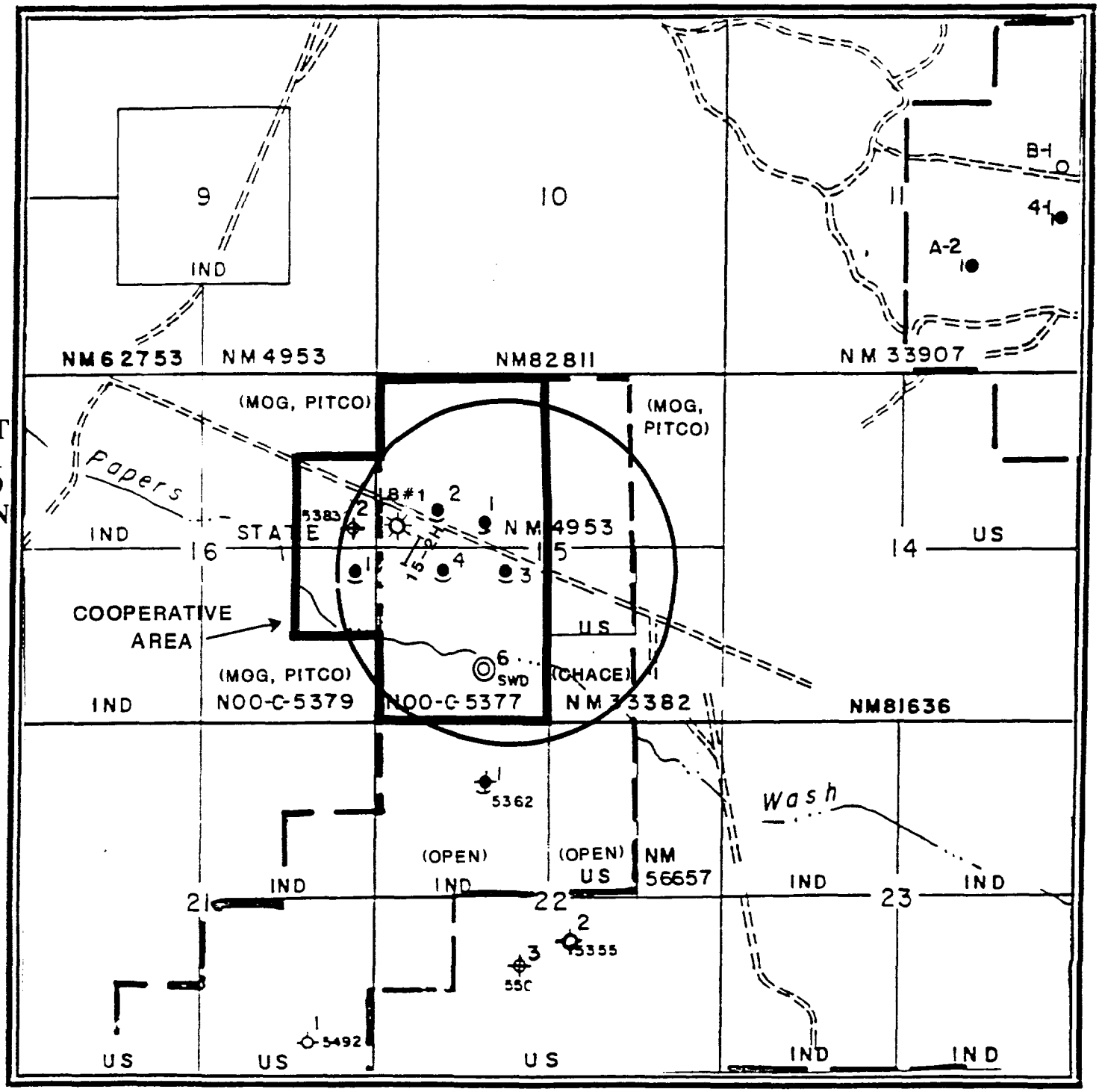
PRIMARY AND SECONDARY RESERVES
PAPERS WASH ENTRADA FIELD

RESERVE CATEGORY	REMAINING RESERVES (MSTB)	FUTURE VALUE AT $21.75/BBL		
		TAXES @ 8.3% (M$)	ROYALTY @ 16.67% (M$)	NET REVENUE (M$)
PRIMARY	92	167	307	1534
SECONDARY				
15-2H HORIZ WELL	170	307	565	2825
WATERFLOOD	130	235	432	2161
TOTAL SECONDARY	300	542	997	4986
GRAND TOTAL	392	708	1304	6520

MERRION OIL AND GAS
CASE NO. 9880
3-7-90

EXHIBIT 5

PAPERS WASH FIELD
AREA OF REVIEW
NAVAJO ALLOTTED 15-3
R 5 W



MERRION OIL & GAS
CASE NO. 9880
3-7-90

EXHIBIT 6

NOTIFICATION

Chace Oil Company, Inc. is the leaseholder of NM-33382, which is within the Area of Review for the Navajo Allotted 15-3. I discussed our proposed waterflood with Frank Welker, the Vice President of Chace Oil Company, Inc., on 3-2-90, and apologized for not giving him a full 21 days notice prior to the State hearing. He said that he considered the telephone call adequate notice and that he had no objections to the waterflood.

I hereby certify that the information above is true and correct to the best of my knowledge and belief.

Name: George F. Sharpe Title: Reservoir Engineer

Signature: GF Sharpe Date: 3-02-90

Merrion Oil and Gas Corporation
Case No. 9880
3-07-90

EXHIBIT 7

FILE: C108
GFS 2-28-90

WELL DATA SUMMARY
NAVAJO ALLOTTED 15-3 AREA OF REVIEW

MERRION OIL & GAS
CASE NO. 9880
3-7-90

WELL:	FEDERAL 15-1	FEDERAL 15-2	FEDERAL 15-2H	LITTLE BLUE FED 1	NAVAJO 15-4	NAVAJO 15-6	NAVAJO 16-1	STATE 16-2
LOCATION:	SESW 15 19N 5W	SWSW 15 19N 5W	SAME	NWSW 15 19N 5W	NWSW 15 19N 5W	SESW 15 19N 5W	NWSW 16 19N 5W	SWNW 16 19N 5W
CURRENT STATUS:	SHUT IN MESAVERDE PRODUCER	REDRILLED AS FEDERAL 15-2H	COMPLETING AS HORIZONTAL ENTRADA PRODUCER	COMPLETING AS MESAVERDE PRODUCER	ACTIVE ENTRADA PRODUCER	ACTIVE GALLUP INJECTOR	ACTIVE ENTRADA PRODUCER	P&A
SPUD DATE:	9-28-76	2-18-77	1-19-90	10-19-89	3-26-77	6-19-77	8-3-77	10-3-77
KB ELEV:	6600	6617	SAME	6605	6642	6565	6603	5690
TD:	5390	5428	6084	2155	5416	5392	5392	5383
PBTD:	1450	4568	UNCEMENTED LNR	2116	5361	5131	5264	5325
SURFACE CASING:								
SIZE	10 3/4"	10 3/4"	SAME	7"	9 5/8"	9 5/8"	9 5/8"	9 5/8"
DEPTH	224'	203'	SAME	100'	209'	204'	211'	205'
SX CMT	200 SX	200 SX	SAME	50 SX	150 SX	200 SX	200 SX	200 SX
TOC	SURFACE	SURFACE	SAME	SURFACE	SURFACE	SURFACE	SURFACE	SURFACE
PRODUCTION CASING:			7" SAME					
SIZE	7"	7"	4 1/2"	4 1/2"	7"	7"	7"	7"
DEPTH	5242'	5426'	5864'	2145'	5406'	5342'	5369'	5373'
SX CMT	600 SX	683 SX	90 SX	300 SX	1015 SX	1100 SX	850 SX	905 SX
TOC	2794'	3290'	?	SURFACE	SURFACE	SURFACE	SURFACE	SURFACE
FORMATION TOPS:								
LEWIS	SURFACE	SURFACE	SURFACE	SURFACE	SURFACE	SURFACE	SURFACE	SURFACE
MESAVERDE	492'	522'	SAME	500'	541'	462'	502'	500'
GALLUP	2928'	2945'	SAME	N/A	2964'	2895'	2930'	2915'
DAKOTA	4140'	4142'	SAME	N/A	4195'	4111'	4162'	4141'
MORRISON	4257'	4260'	SAME	N/A	4314'	4245'	4290'	4261'
ENTRADA	5161'	5182'	5378' MD	N/A	5200'	5160'	5183'	5178'
COMMENTS:	PLUGGED BACK TO MESAVERDE FROM ENTRADA		CEMENT SQZ LINER TOP W/ 50 SX				UNECONOMIC MAY BE SHUT IN	PLAN TO REENTER THIS WELL

EXHIBIT 8

ENTRADA WATER ANALYSIS

Unichem International

707 North Leech P.O.Box 1499

Hobbs, New Mexico 88240

Company : MERRION OIL & GAS
Date : 02-13-1990
Location: Papers Wash - Inj. Tank (on 1-31-90)

	Sample 1
Specific Gravity:	1.003
Total Dissolved Solids:	4210
pH:	7.60
IONIC STRENGTH:	0.085

CATIONS:		me/liter	mg/liter
Calcium	(Ca^{+2})	1.73	34.7
Magnesium	(Mg^{+2})	3.20	38.9
Sodium	(Na^{+1})	55.8	1280
Iron (total)	(Fe^{+2})	0.061	1.70
Barium	(Ba^{+2})	0.003	0.200
Manganese	(Mn^{+2})	0.008	0.210
ANIONS:			
Bicarbonate	(HCO_3^{-1})	6.40	390
Carbonate	(CO_3^{-2})	0	0
Hydroxide	(OH^{-1})	0	0
Sulfate	(SO_4^{-2})	42.7	2050
Chloride	(Cl^{-1})	11.7	413

SCALING INDEX (positive value indicates scale)

Temperature		Calcium Carbonate	Calcium Sulfate
86°F	30°C	-0.07	-11
120°F	49°C	0.83	-11

MERRION OIL & GAS
CASE NO. 9880
3-7-90

EXHIBIT 9

MESAVERDE WATER ANALYSIS

Unichem International

707 North Leech P.O.Box 1499

Hobbs, New Mexico 88240

Company : MERRION OIL & GAS
Date : 01-09-1990
Location: Little Blue Fed #1 (on 12-22-89)

	Sample 1
Specific Gravity:	1.005
Total Dissolved Solids:	7245
pH:	9.10
IONIC STRENGTH:	0.121

CATIONS:		me/liter	mg/liter
Calcium	(Ca^{+2})	0.400	8.00
Magnesium	(Mg^{+2})	2.48	30.1
Sodium	(Na^{+1})	111	2550
Iron (total)	(Fe^{+2})	0.705	19.7
Barium	(Ba^{+2})	0.016	1.10
Manganese	(Mn^{+2})	0.019	0.510
ANIONS:			
Bicarbonate	(HCO_3^{-1})	19.2	1170
Carbonate	(CO_3^{-2})	0	0
Hydroxide	(OH^{-1})	0	0
Sulfate	(SO_4^{-2})	10.1	483
Chloride	(Cl^{-1})	84.6	3000

SCALING INDEX (positive value indicates scale)

Temperature		Calcium Carbonate	Calcium Sulfate
86°F	30°C	1.2	-27
120°F	49°C	2.1	-27

Comments:
This water to be mixed with Media - Entrada #6

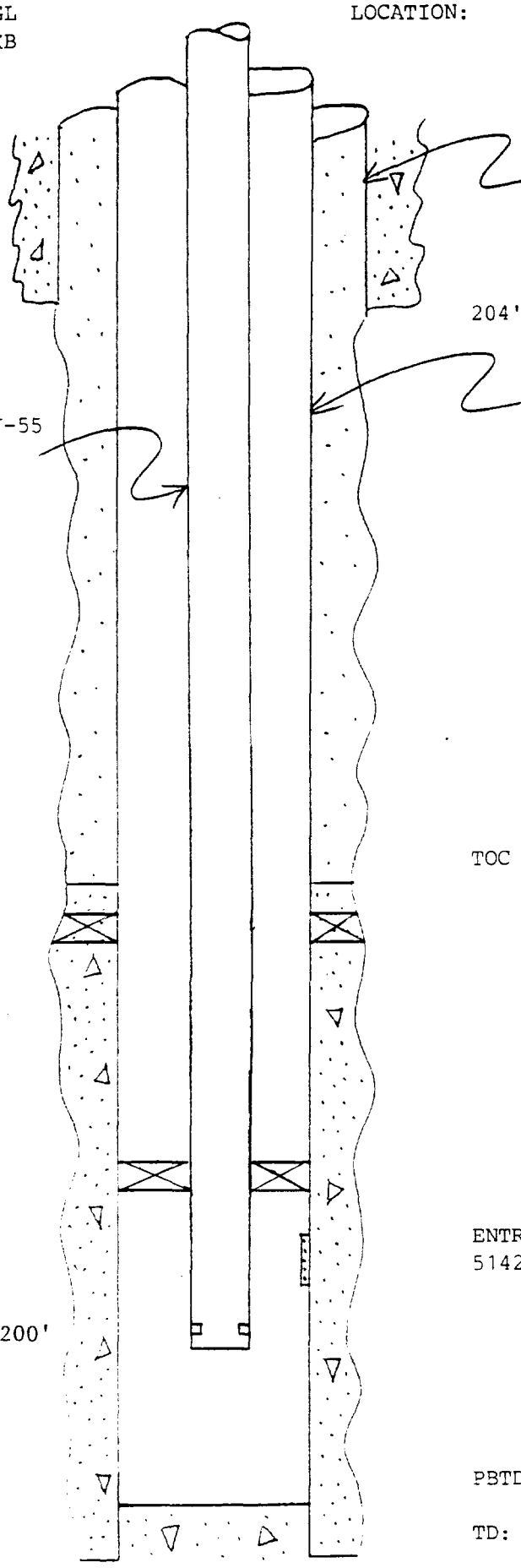
MERRION OIL & GAS
CASE NO. 9880
3-7-90

EXHIBIT 10

NAVAJO ALLOTTED 15 NO. 3
PAPERS WASH FIELD

ELEVATION: 6562' GL
6574' KB

LOCATION: 2310' FSL & 2000' FWL
Sec. 15, T19N, R5W
McKinley County, New Mexico



10-3/4", 32.75 #/ft, K-55
surface casing cmt'd
w/ 200 sx - TOC @ surface

204'

PRODUCTION CASING:
7", 23 #/ft, K-55

3-1/2", 9.3 #/ft, J-55
tubing

Cmt'd w/ 1st stage - 390 sx
65/35 POZ, 100 sx 'B'; 2nd
stage - 370 sx 65/35 POZ,
50 sx 'B' - TOC @ surface

DV Tool @ 2600' KB

TOC @ 2600'

Lynes external csg
packer @ 2722' KB

7" Baker Lockset
Retrievable pkr @
± 5100'

ENTRADA PERFS:
5142' - 48' (2JSPF)

Seating NIpple @ 5200'

PBTD: 5295'

TD: 5343'

MERRION OIL & GAS
Case No. 9880
3-7-90

P 468 910 351

RECEIPT FOR CERTIFIED MAIL
NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Sent to Mr. Frank Chavez	
Street and No. NMOCD 1000 Rio Brazos Road	
P.O. State and ZIP Code Aztec, NM 87410	
Postage	$1.25
Certified Fee	1.75
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$3.00
Postmark or Date 3/01/90	

PS Form 3800, June 1985 U.S.G.P.O. 1989-234-555

P 468 910 352

RECEIPT FOR CERTIFIED MAIL
NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Sent to Mr. Ken Van Wyk (AW-E)	
Street and No. U.S.E.P.A. 1445 Ross Avenue, Region 6	
P.O. State and ZIP Code Dallas, Texas 75202-2733	
Postage	$2.40
Certified Fee	1.75
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$4.15
Postmark or Date 3/01/90	

PS Form 3800, June 1985 U.S.G.P.O. 1989-234-555

P 468 910 348

RECEIPT FOR CERTIFIED MAIL
NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Sent to Mr. Ken Townsend	
Street and No. BLM 1235 La Plata Highway	
P.O. State and ZIP Code Farmington, NM 87401	
Postage	$1.85
Certified Fee	1.75
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$3.60
Postmark or Date 3/01/90	

PS Form 3800, June 1985 U.S.G.P.O. 1989-234-555

P 468 910 350

RECEIPT FOR CERTIFIED MAIL
NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Sent to Mr. Frank Welker	
Street and No. Chase Oil 313 Washington SE	
P.O. State and ZIP Code Albuquerque, NM 87108	
Postage	$1.25
Certified Fee	1.75
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$3.00
Postmark or Date 3/01/90	

PS Form 3800, June 1985 U.S.G.P.O. 1989-234-555

BEFORE EXAMINER CATANACH
OIL CONSERVATION DIVISION
Memorial Gas EXHIBIT NO. 11
CASE NO. 9880

P 468 910 349

RECEIPT FOR CERTIFIED MAIL
NO INSURANCE COVERAGE PROVIDED
NOT FOR INTERNATIONAL MAIL
(See Reverse)

Sent to Mr. Ervin Peshlakai	
Street and No. BIA P. O. Box M	
P.O. State and ZIP Code Window Rock, AZ 86515	
Postage	$1.85
Certified Fee	1.75
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	$3.60
Postmark or Date 3/01/90	

PS Form 3800, June 1985 U.S.G.P.O. 1989-234-555

STATE OF NEW MEXICO
ENERGY AND MINERALS DEPARTMENT

OIL CONSERVATION DIVISION
POST OFFICE BOX 2088
STATE LAND OFFICE BUILDING
SANTA FE, NEW MEXICO 87501

FORM C-108
Revised 7-1-81

Case 9880

APPLICATION FOR AUTHORIZATION TO INJECT

I. Purpose: [X] Secondary Recovery [ ] Pressure Maintenance [ ] Disposal [ ] Storage
Application qualifies for administrative approval? [ ] yes [ ] no

II. Operator: Merrion Oil & Gas Corporation

Address: P. O. Box 840, Farmington, New Mexico 87499

Contact party: George F. Sharpe Phone: (505) 327-9801

III. Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.

IV. Is this an expansion of an existing project? [ ] yes [X] no
If yes, give the Division order number authorizing the project _____.

V. Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.

* VI. Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
2. Whether the system is open or closed;
3. Proposed average and maximum injection pressure;
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and
5. If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).

BEFORE EXAMINER CATANACH
OIL CONSERVATION DIVISION
Merrion Oil & Gas Corporation
EXHIBIT NO. 12
CASE NO. 9880

*VIII. Attach appropriate geological data on the injection zone including appropriate lithologic detail, geological name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such source known to be immediately underlying the injection interval.

IX. Describe the proposed stimulation program, if any.

* X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division they need not be resubmitted.)

* XI. Attach a chemical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.

XII. Applicants for disposal wells must make an affirmative statement that they have examined available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.

XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

XIV. Certification

I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

Name: George F. Sharpe Title Reservoir Engineer

Signature: GF Sharpe Date: Feb. 28, 1990

* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be duplicated and resubmitted. Please show the date and circumstance of the earlier submittal. _____

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate Division district office.

III. WELL DATA

A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:

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

(2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.

(3) A description of the tubing to be used including its size, lining material, and setting depth.

(4) The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

B. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.

(1) The name of the injection formation and, if applicable, the field or pool name.

(2) The injection interval and whether it is perforated or open-hole.

(3) State if the well was drilled for injection or, if not, the original purpose of the well.

(4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.

(5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

(1) The name, address, phone number, and contact party for the applicant;

(2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells:

(3) the formation name and depth with expected maximum injection rates and pressures; and

(4) a notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 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.

FORM C-108
OIL CONSERVATION DIVISION

Application For Authorization to Inject

2/28/90

I. Secondary Recovery Project

II. Merrion Oil & Gas Corporation
P. O. Box 840, Farmington, New Mexico 87499
Contact: George Sharpe (505) 327-9801

III. Well Data Sheet Attached for Navajo 15-3

IV. New Secondary Project

V. Map Attached

VI. Well Data Summary Sheet Attached
BLM Well Completion Reports Attached
Wellbore Schematics Attached

VII. Operating Data:

1) Average injection rate = 3000 BPD
Maximum injection rate = 6000 BPD

2) Closed system = (ie. reinjection of produced water). However, tanks vented to atmosphere.

3) Average injection pressure = 500 psi
Maximum injection pressure = 1000 psi

4) Reinjection of Entrada produced water - TDS = 17800 ppm (95% of total) analysis attached
Injection of Mesaverde water - TDS = 7200 ppm (5% of total) analysis attached

VIII. Geologic Information

Top Entrada: 5143'
Thickness: ±200'
Lithology: ss, grey-white, medium-coarse grained, subround-rounded, friable, porous

Overlying Aquifer: Morrison Formation ± 4700' top. (Although this is not used for drinking water in the area, the TDS is less than 10,000 ppm).

Underlying Aquifer: None

IX. No stimulation planned

X. Existing Well - Logs previously submitted and on file at district office.

XI. No fresh water wells in area.

XII. Extensive seismic data acquired in this field would suggest no fault communication between any stratigraphic horizon.

XIII. Proof of Notice Attached

XIV. Certification - Signed on Original

INJECTION WELL DATA SHEET
Side 1

INJECTION WELL DATA SHEET SIDE 1

OPERATOR	LEASE			
Merrion Oil & Gas Corporation	NOO-C-14-20-5377			
WELL NO. / FOOTAGE LOCATION	SECTION	TOWNSHIP	RANGE	
Navajo Allotted 15-3 2310' FSL & 2000 FWL,	Sec. 15,	T19N,	R5W	

Schematic

Tabular Data

Surface Casing

Size 10-3/4" Cemented with 200 sx.

TOC surface feet determined by displacement

Hole size 15"

Intermediate Casing

Size _____" Cemented with _____ sx.

TOC _____ feet determined by _____

Hole size _____

Long string

Size 7" Cemented with 760 sx.

TOC surface feet determined by displacement

Hole size 8-3/4"

Total depth 5343'

Injection interval

5142' feet to 48 feet perfd

(perforated or open-hole, indicate which)

INJECTION WELL DATA SHEET
Side 2

INJECTION WELL DATA SHEET -- SIDE 2

Tubing size 3.5" lined with plastic lined (material) set in a

Baker Lockset Retrievable (brand and model) packer at 5100 feet

(or describe any other casing-tubing seal).

Other Data

1. Name of the injection formation Entrada

2. Name of Field or Pool (if applicable) Papers Wash Entrada Field

3. Is this a new well drilled for injection? /_/ Yes /X/ No

   If no, for what purpose was the well originally drilled? Production from Entrada

4. Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail (sacks of cement or bridge plug(s) used) No

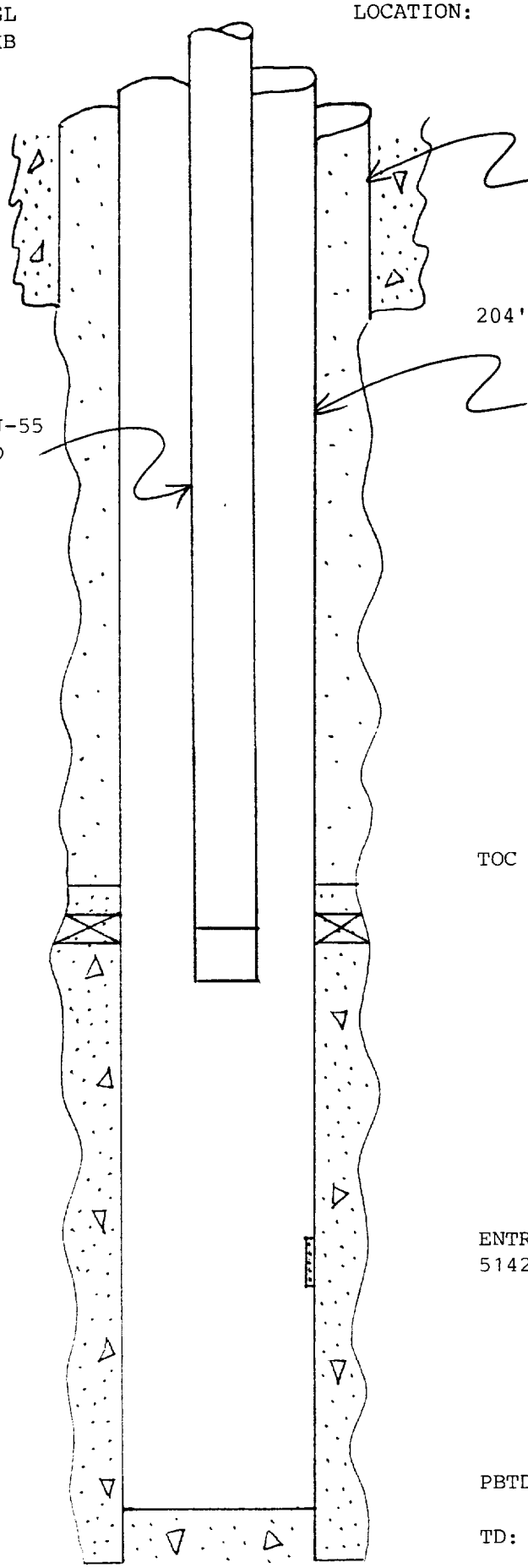
5. Give the depth to and name of any overlying and/or underlying oil or gas zones (pools) in this area.

   Undesignated Mesaverde - Top @ ± 500'

NAVAJO ALLOTTED 15 NO. 3
PAPERS WASH FIELD

ELEVATION: 6562' GL
6574' KB

LOCATION: 2310' FSL & 2000' FWL
Sec. 15, T19N, R5W
McKinley County, New Mexico



10-3/4", 32.75 #/ft, K-55
surface casing cmt'd
w/ 200 sx - TOC @ surface

204'

PRODUCTION CASING:
7", 23 #/ft, K-55

3-1/2", 9.3 #/ft, J-55
tubing @ 2725' MD

REDA G110 BSP
@ 2855' KB

Cmt'd w/ 1st stage - 390 sx
65/35 POZ, 100 sx 'B'; 2nd
stage - 370 sx 65/35 POZ,
50 sx 'B' - TOC @ surface

DV Tool @ 2600' KB

TOC @ 2600'

Lynes external csg
packer @ 2722' KB

ENTRADA PERFS:
5142' - 48' (2JSPF)

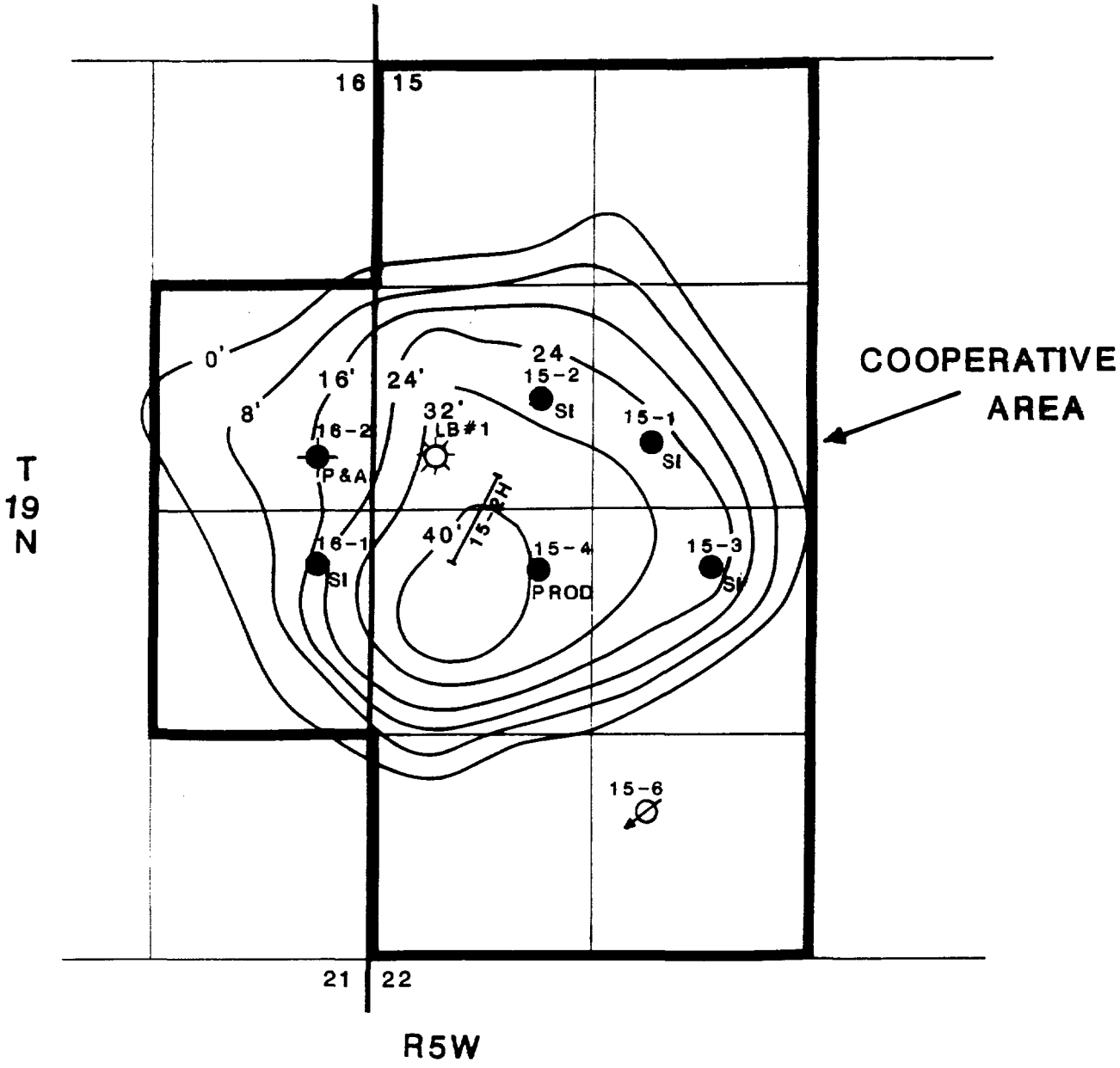
PBTD: 5295'

TD: 5343'

EXHIBIT 2

MC KINLEY COUNTY, NEW MEXICO
ORIGINAL NET PAY - LEASE MAP

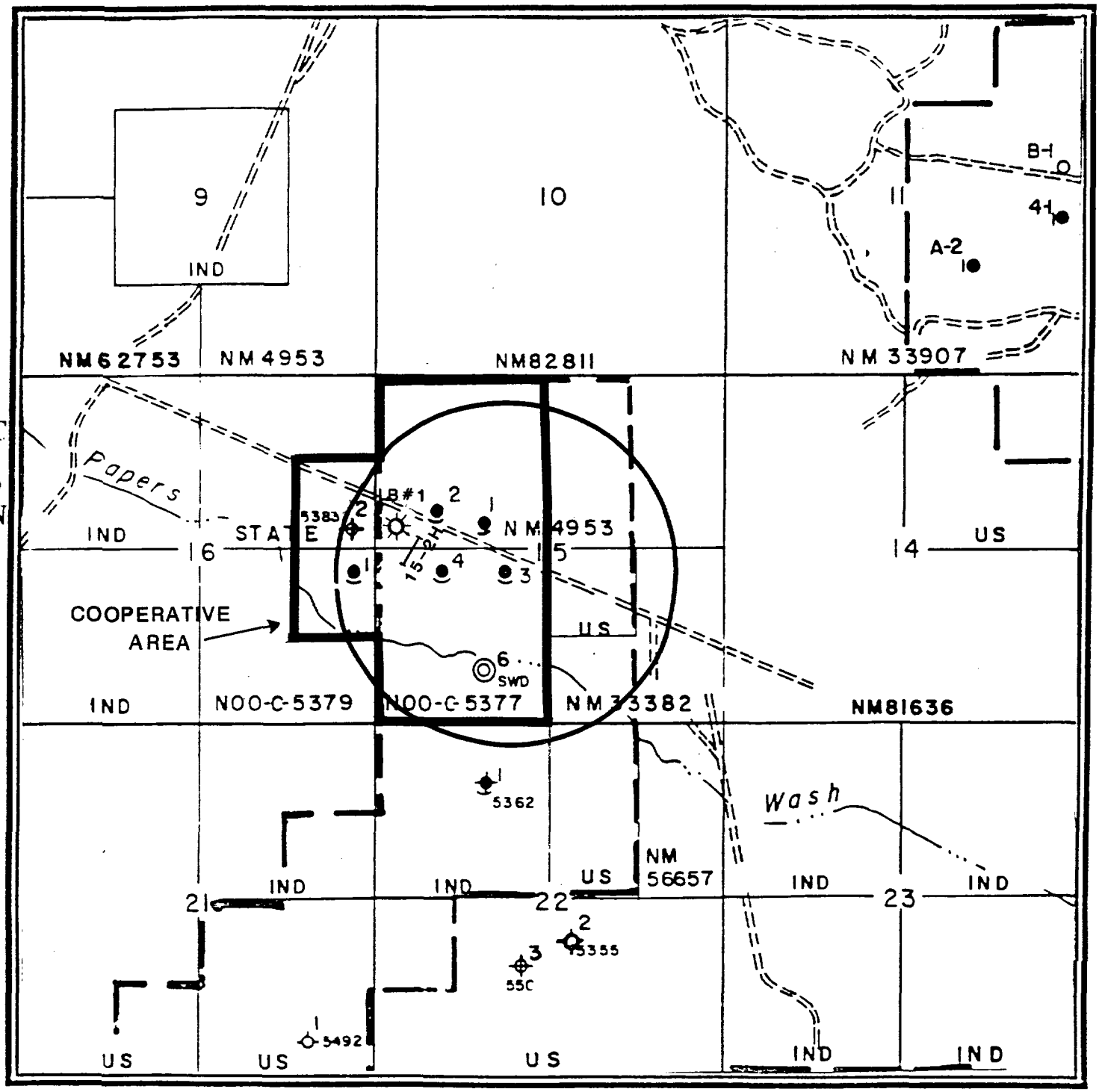
SCALE: 1" -1000'



MERRION OIL & GAS
CASE NO. 9880
3-7-90

EXHIBIT 5

PAPERS WASH FIELD
AREA OF REVIEW
NAVAJO ALLOTED 15-3
R 5 W



MERRION OIL & GAS
CASE NO. 9880
3-7-90

ENTRADA WATER

Unichem International

707 North Leech P.O.Box 1499

Hobbs, New Mexico 88240

Company : MERRION OIL & GAS
Date : 01-09-1990
Location: Media - Entrada #6 (on 9-13-89)

	Sample 1
Specific Gravity:	1.013
Total Dissolved Solids:	17838
pH:	7.50
IONIC STRENGTH:	0.351

CATIONS:		me/liter	mg/liter
Calcium	(Ca^{+2})	14.4	288
Magnesium	(Mg^{+2})	8.80	107
Sodium	(Na^{+1})	256	5890
Iron (total)	(Fe^{+2})	0.014	0.400
Barium	(Ba^{+2})	0.003	0.200
ANIONS:			
Bicarbonate	(HCO_3^{-1})	7.20	439
Carbonate	(CO_3^{-2})	0	0
Hydroxide	(OH^{-1})	0	0
Sulfate	(SO_4^{-2})	116	5550
Chloride	(Cl^{-1})	157	5560

SCALING INDEX (positive value indicates scale)

Temperature		Calcium Carbonate	Calcium Sulfate
86°F	30°C	0.21	-9.4
120°F	49°C	1.1	-9.4

MESAVERDE WATER

Unichem International

707 North Leech P.O.Box 1499

Hobbs, New Mexico 88240

Company : MERRION OIL & GAS
Date : 01-09-1990
Location: Little Blue Fed #1 (on 12-22-89)

	Sample 1
Specific Gravity:	1.005
Total Dissolved Solids:	7245
pH:	9.10
IONIC STRENGTH:	0.121

CATIONS:		me/liter	mg/liter
Calcium	(Ca^{+2})	0.400	8.00
Magnesium	(Mg^{+2})	2.48	30.1
Sodium	(Na^{+1})	111	2550
Iron (total)	(Fe^{+2})	0.705	19.7
Barium	(Ba^{+2})	0.016	1.10
Manganese	(Mn^{+2})	0.019	0.510
ANIONS:			
Bicarbonate	(HCO_3^{-1})	19.2	1170
Carbonate	(CO_3^{-2})	0	0
Hydroxide	(OH^{-1})	0	0
Sulfate	(SO_4^{-2})	10.1	483
Chloride	(Cl^{-1})	84.6	3000

SCALING INDEX (positive value indicates scale)

Temperature		Calcium Carbonate	Calcium Sulfate
86°F	30°C	1.2	-27
120°F	49°C	2.1	-27

Comments:
This water to be mixed with Media - Entrada #6

FILE: C108
GFS 2-28-90

WELL DATA SUMMARY
NAVAJO ALLOTTED 15-3 AREA OF REVIEW

WELL:	FEDERAL 15-1	FEDERAL 15-2	FEDERAL 15-2H	LITTLE BLUE FED 1	NAVAJO 15-4	NAVAJO 15-6	NAVAJO 16-1	STATE 16-2
LOCATION:	SESW 15 19N 5W	SWSW 15 19N 5W	SAME	NWSW 15 19N 5W	NWSW 15 19N 5W	SESW 15 19N 5W	NWSW 16 19N 5W	SWNW 16 19N 5W
CURRENT STATUS:	SHUT IN MESAVERDE PRODUCER	REDRILLED AS FEDERAL 15-2H	COMPLETING AS HORIZONTAL ENTRADA PRODUCER	COMPLETING AS MESAVERDE PRODUCER	ACTIVE ENTRADA PRODUCER	ACTIVE GALLUP INJECTOR	ACTIVE ENTRADA PRODUCER	P&A
SPUD DATE:	9-28-76	2-18-77	1-19-90	10-19-89	3-26-77	6-19-77	8-3-77	10-3-77
KB ELEV:	6600	6617	SAME	6605	6642	6565	6603	5690
TD:	5390	5428	6084	2155	5416	5392	5392	5383
PBTD:	1450	4568	UNCEMENTED LNR	2116	5361	5131	5264	5325
SURFACE CASING:								
SIZE	10 3/4"	10 3/4"	SAME	7"	9 5/8"	9 5/8"	9 5/8"	9 5/8"
DEPTH	224'	203'	SAME	100'	209'	204'	211'	205'
SX CMT	200 SX	200 SX	SAME	50 SX	150 SX	200 SX	200 SX	200 SX
TOC	SURFACE	SURFACE	SAME	SURFACE	SURFACE	SURFACE	SURFACE	SURFACE
PRODUCTION CASING:			7" SAME					
SIZE	7"	7"	4 1/2"	4 1/2"	7"	7"	7"	7"
DEPTH	5242'	5426'	5864'	2145'	5406'	5342'	5369'	5373'
SX CMT	600 SX	683 SX	90 SX	300 SX	1015 SX	1100 SX	850 SX	905 SX
TOC	2794'	3290'	?	SURFACE	SURFACE	SURFACE	SURFACE	SURFACE
FORMATION TOPS:								
LEWIS	SURFACE	SURFACE	SURFACE	SURFACE	SURFACE	SURFACE	SURFACE	SURFACE
MESAVERDE	492'	522'	SAME	500'	541'	462'	502'	500'
GALLUP	2928'	2945'	SAME	N/A	2964'	2895'	2930'	2915'
DAKOTA	4140'	4142'	SAME	N/A	4195'	4111'	4162'	4141'
MORRISON	4257'	4260'	SAME	N/A	4314'	4245'	4290'	4261'
ENTRADA	5161'	5182'	5378' MD	N/A	5200'	5160'	5183'	5178'
COMMENTS:	PLUGGED BACK TO MESAVERDE FROM ENTRADA		CEMENT SQZ LINER TOP W/ 50 SX				UNECONOMIC MAY BE SHUT IN	PLAN TO REENTER THIS WELL

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE*
(See other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R355.5

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

1a. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] DRY [ ] Other

b. TYPE OF COMPLETION: NEW WELL [X] WORK OVER [ ] DEEP-EN [ ] PLUG BACK [ ] DIFF. RESVR. [ ] Other

2. NAME OF OPERATOR
Dome Petroleum Corporation

3. ADDRESS OF OPERATOR
c/o Minerals Management Inc.
501 Airport Dr., Suite 105, Farmington, N.M. 87401

4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)*
At surface
2210' FNL, 1650' FWL, SEC. 15, T19N, R5W
At top prod. interval reported below
At total depth

5. LEASE DESIGNATION AND SERIAL NO.
NM 4953

6. IF INDIAN, ALLOTTEE OR TRIBE NAME

7. UNIT AGREEMENT NAME
-

8. FARM OR LEASE NAME
Federal 15

9. WELL NO.
1

10. FIELD AND POOL, OR WILDCAT
Wildcat

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA
SEC. 15, T19N, R5W

14. PERMIT NO.

DATE ISSUED

12. COUNTY OR PARISH
McKinley

13. STATE
N.M.

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (Ready to prod.)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
9-28-76	10-14-76	10-31-76	6588' GR 6600' KB	-

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
5390'	5214'	-	→	Yes	

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*
5160'-5169' Entrada

25. WAS DIRECTIONAL SURVEY MADE
No

CONFIDENTIAL

26. TYPE ELECTRIC AND OTHER LOGS RUN
Gamma Ray-Sonic
Dual Induction-Laterolog, Compensated Neutron-Density

27. WAS WELL CORED
No

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
10 3/4"	40.5#	224'	15"	200 sx (circ)	-
7"	23.#	5242'	8 3/4"	600 sx	-

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2 7/8"	3002'	-

RECEIVED
NOV 16 1976
U. S. GEOLOGICAL SURVEY
DURANGO, COLO.

31. PERFORATION RECORD (Interval, size and number)
5160'-5169' w/2 SPF

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED

RECEIVED
NOV 17 1976

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (Flowing, gas lift, pumping—size and type of pump)	WELL STATUS (Producing or shut-in)
11-1-76	Pumping-2 1/2"x2"x16'	Producing

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
11-14-76	24	Open	→	360	TSTM	0	-

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)
-	TSTM	→	360	TSTM	0	33.6°

34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.)
Vented

TEST WITNESSED BY
S.J. Massey

35. LIST OF ATTACHMENTS

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED J. Arnold Snell TITLE Area Manager Minerals Management Inc DATE 11-15-76

*(See Instructions and Spaces for Additional Data on Reverse Side)

1-Filon / 1-Fund / 1-Kat Gas / 1-File

INSTRUCTIC

General: This form is designed for submitting a complete and correct well completion report and log on all types of lands and leases to either a Federal agency or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office. See instructions on items 22 and 24, and 33, below regarding separate reports for separate completions.

If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be listed on this form, see item 35.

Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

Item 18: Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments.

Items 22 and 24: If this well is completed for separate production from more than one interval zone (multiple completion), so state in item 22, and in item 24 show the producing interval, or intervals, top(s), bottom(s) and name(s) (if any) for only the interval reported in item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.

Item 29: *"Sacks Cement":* Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.

Item 33: Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 above.)

37. SUMMARY OF POROUS ZONES:
SHOW ALL IMPORTANT ZONES OF POROSITY AND CONTENTS THEREOF; CORED INTERVALS; AND ALL DRILL-STEM TESTS, INCLUDING DEPTH INTERVAL TESTED, CUSHION USED, TIME TOOL OPEN, FLOWING AND SHUT-IN PRESSURES, AND RECOVERIES

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.
DST #1			
Entrada	5155'	5170'	Preflow 45 min., ISIP 60 min., Tool Open 60 min., FSIP 2 hrs. Recovered 2326' fluid; 2321' oil, 5' mud. IHH 2422 psi IFP 184-425 psi ISIP 2074 psi FFP 447-895 psi FSIP 2103 psi FHH 2378 psi BHT 156° F

38. GEOLOGIC MARKERS

NAME	TOP MEAS. DEPTH	TOP TRUE VERT. DEPTH
Lower Menefee	1134'	
Point Lookout	1994'	
Mancos	2112'	
Gallup	2928'	
Greenhorn	3917'	
Graneros	4004'	
Dakota	4140'	
Morrison	4257'	
Summerville	5089'	
Entrada	5161'	

★ U.S. GOVERNMENT PRINTING OFFICE: 1974 O-780-686/VIII-238

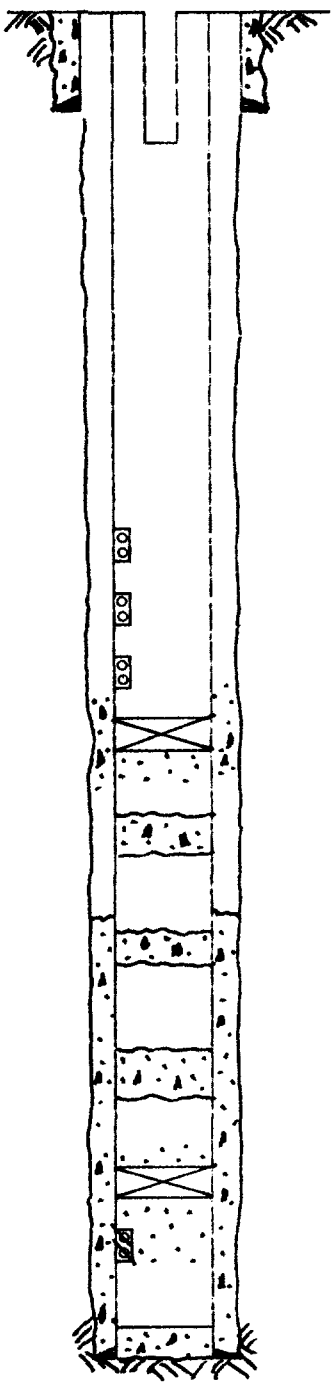
* MERRION OIL & GAS *

WELLBORE SCHEMATIC

Well: Federal 15 No 1
Field: Papers Wash

Location: 2210'FNL & 1650'FWL
Sec. 15, T19N, R6W
Mckinley Co. New Mexico

Elevation: 6,600' KB
6,588' GL



TOC @ Surface
Bit Size - 12 1/4"

10 3/4" 40.5#Surface @ 224' KB w/ 200sx

3.5" Tubing @ 200'+

Tops	Depth
Lewis	Surface
La Ventana	492
Menefee	770
Pt Lookout	1,995
Gallup	2,928
Dakota	4,140
Entrada	5,161

Mesaverde Perfs:
1,274'-80'
1,376'-86'
1,430'-38'

7" Retainer@ 1,450'w/100sx
Sqz Holes (4) @ 1,470'

Cement Plug 1,564'-1,850'

TOC @ 2,794' (cbl)
Cement Plug 2879'-2979' Gallup

Hole size - 8 3/4"

Well Equipment
» 3 1/2" EUE Tbg ≈ 200'

Cement Plug 4,090-4,306' cover Dakota-Morrison

10sx on top of retainer
7" Retainer @ 5,101'KB w/50sx

ENTRADA Perfs: 5,160'-69' 2pf (Sqzd)

7" 23# Casing @ 5,390'KB w/ 600sx
TD @ 5,390' KB

Capacities: 2 7/8" Tbg - 0.00579 Bbl/Ft
7" 23#Csg- 0.0394 Bbl/Ft
Annulus - 0.3172 Bbl/Ft

5/ 8/1989
File: FED151.sch

Form 9-330
(Rev. 5-63)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE* (other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R355.5.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO.: NM 4953

6. IF INDIAN, ALLOTTEE OR TRIBE NAME:

1a. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] DRY [ ] Other

b. TYPE OF COMPLETION: NEW WELL [X] WORK OVER [ ] DEEP-EN [ ] PLUG BACK [ ] DIFF. RESVR. [ ] Other

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Federal 15

2. NAME OF OPERATOR: Dome Petroleum Corporation

9. WELL NO.: 2

3. ADDRESS OF OPERATOR: % Minerals Management Inc., Suite 105, 501 Airport Drive, Farmington, New Mexico 87401

10. FIELD AND POOL, OR WILDCAT: Undesignated Entrada

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements*)*
At surface: 990' FWL, ~~1780'~~ 1980' FNL, SEC. 15, T19N, R5W
At top prod. interval reported below
At total depth

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: SEC. 15, T19N, R5W

14. PERMIT NO. | DATE ISSUED

12. COUNTY OR PARISH: McKinley | 13. STATE: N.M.

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (*Ready to prod.*)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
2-18-77	2-26-77		6604' GR, 6617' KB	6604'

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
5428'	5370'		→	0-5428'	

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: 5183'-5380' Entrada

25. WAS DIRECTIONAL SURVEY MADE: no

RECEIVED
APR 6 1977
Minerals Management Inc.

26. TYPE ELECTRIC AND OTHER LOGS RUN: Dual Induction-Laterolog, CNL-Density

27. WAS WELL CORED: no

28. CASING RECORD (*Report all strings set in well*)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
10 3/4"	32.75	203'	15"	200 sx	
7"	23	5426'	8 3/4"	328 sx & 355 sx	
				2 stage w/DV @ 2785'	

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2 7/8	3030'	

31. PERFORATION RECORD (*Interval, size and number*): 5184'-5192' w/2 SPF

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (*Flowing, gas lift, pumping—size and type of pump*)	WELL STATUS (*Producing or shut-in*)
3-15-77	Flowing	

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
3-16-77	24	Open		276	TSTM	0	---

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)
45	45		276	TSTM	0	32.4

34. DISPOSITION OF GAS (*Sold, used for fuel, vented, etc.*): No gas

TEST WITNESSED BY: W. E. Landry

35. LIST OF ATTACHMENTS: None

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED E. Landry TITLE Area Manager Minerals Management Inc DATE 3-31-77

*(See Instructions and Spaces for Additional Data on Reverse Side)

INSTRUCTIONS

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37. SUMMARY OF POROUS ZONES:
SHOW ALL IMPORTANT ZONES OF POROSITY AND CONTENTS THEREOF; CORED INTERVALS; AND ALL DRILL-STEM TESTS, INCLUDING DEPTH INTERVAL TESTED, CUSHION USED, TIME TOOL OPEN, FLOWING AND SHUT-IN PRESSURES, AND RECOVERIES

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.

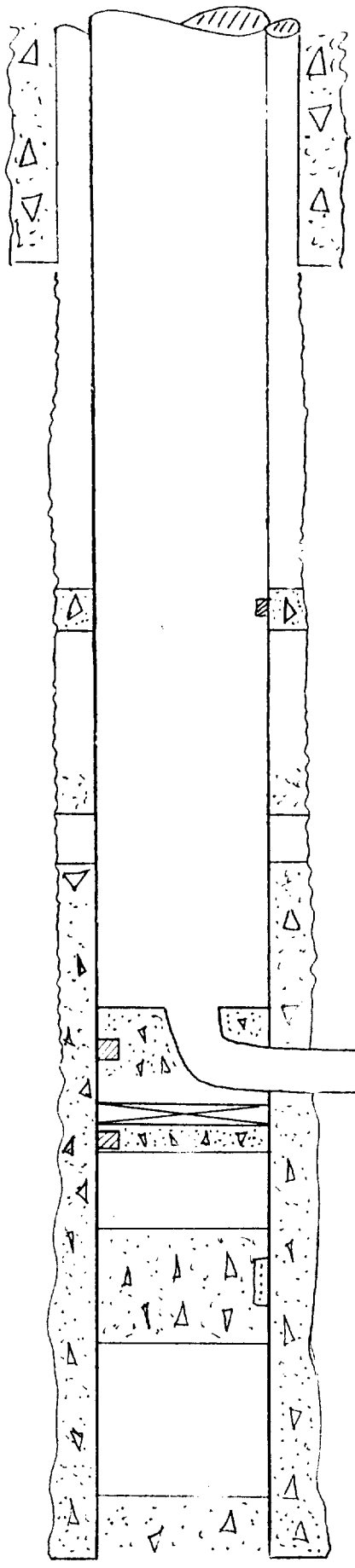
38. GEOLOGIC MARKERS

NAME	TOP	
	MEAS. DEPTH	TRUE VERT. DEPTH
La Ventana	522'	
Pt. Lookout	2025'	
Mancos Shale	2115'	
Gallup	2945'	
Sanostee	3608'	
Greenhorn	3920'	
Graneros	4010'	
Dakota	4142'	
Morrison	4260'	
Summerville	5115'	
Todilto	5151'	
Entrada	5182'	
Carmel	5407'	

U.S. GOVERNMENT PRINTING OFFICE: 1963—O-683636
637-497

FEDERAL 15 NO. 2
PAPERS WASH FIELD
1910' FNL & 990' FWL
Section 15, T19N, R5W
McKinley County, New Mexico

ELEVATION: 6604' GL
6616' KB



10-3/4", 32.75#, H-40 surface csg.
Cmtd with 200 sx Class "B".

203'

7", 23#, K-55 production csg.
Cmtd 1st Stage w/228 sx 65/35 Poz,
50 sx Class "B", 2nd Stage w/305 sx
65/35 Poz, 100 sx Class "A".
(no circulation) (no cement on
bond log)
Squeeze leaky csg 1930'-2020'
w/75 sx
Squeeze perfs 1954-1956' w/50 sx

DV Tool at 2785' KB

TOC at 3290'

4-1/2", 11.6#, K-55 liner @ 4568'
Squeeze cmt liner top w/50 sx

Milled window 4637'-4639'
to kick off horizontal well.

Cement circ with 35 sx.
Perfs at 4610' and 4665'
CICR at 4660'

Cement plug 5000'-5195'
with 50 sx

ENTRADA PERFS:
5184'-92' (2 JSPF)

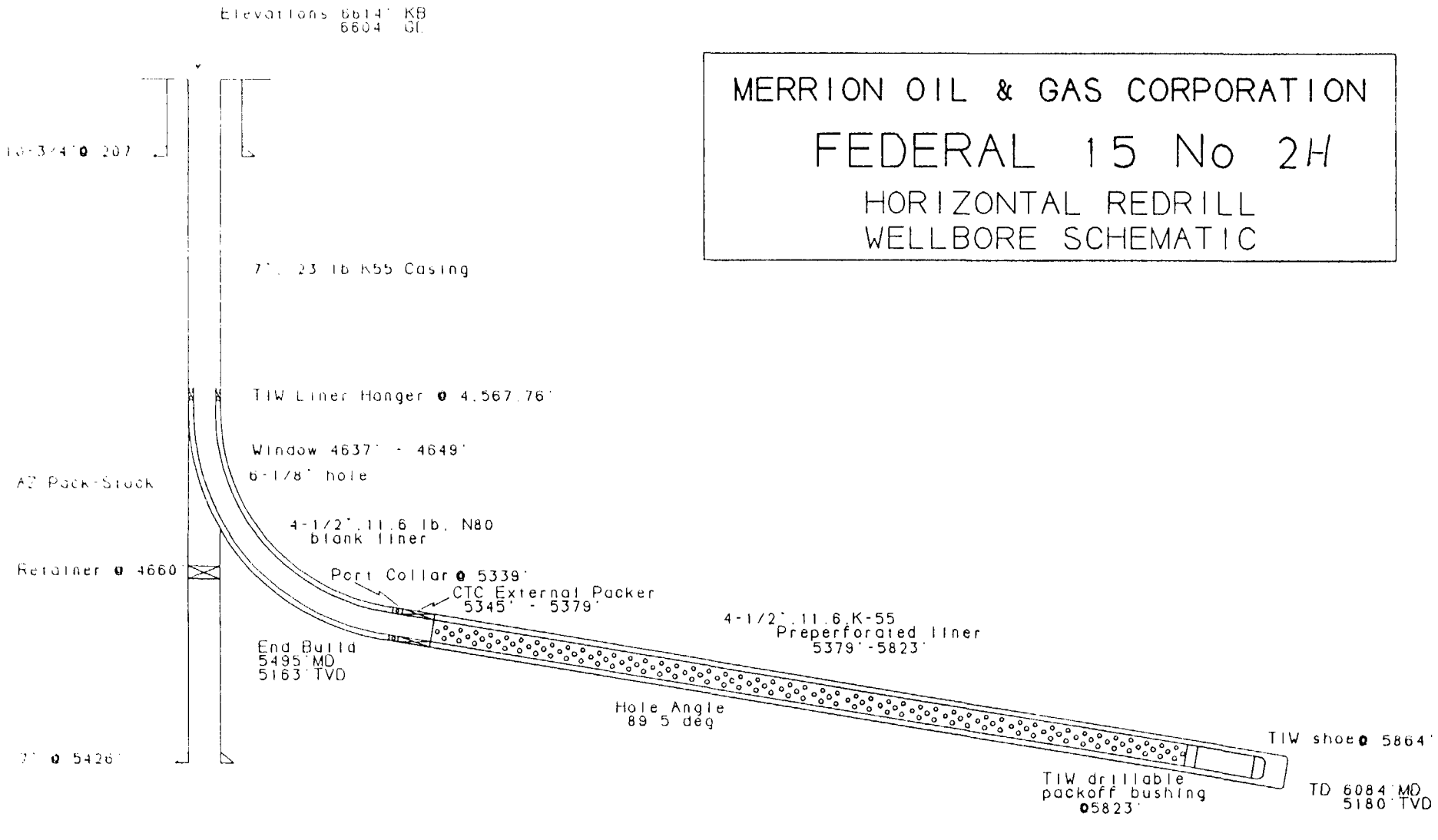
PBTD: 5370'

TD: 5428'

MERRION OIL & GAS CORPORATION

FEDERAL 15 No 2H

HORIZONTAL REDRILL
WELLBORE SCHEMATIC



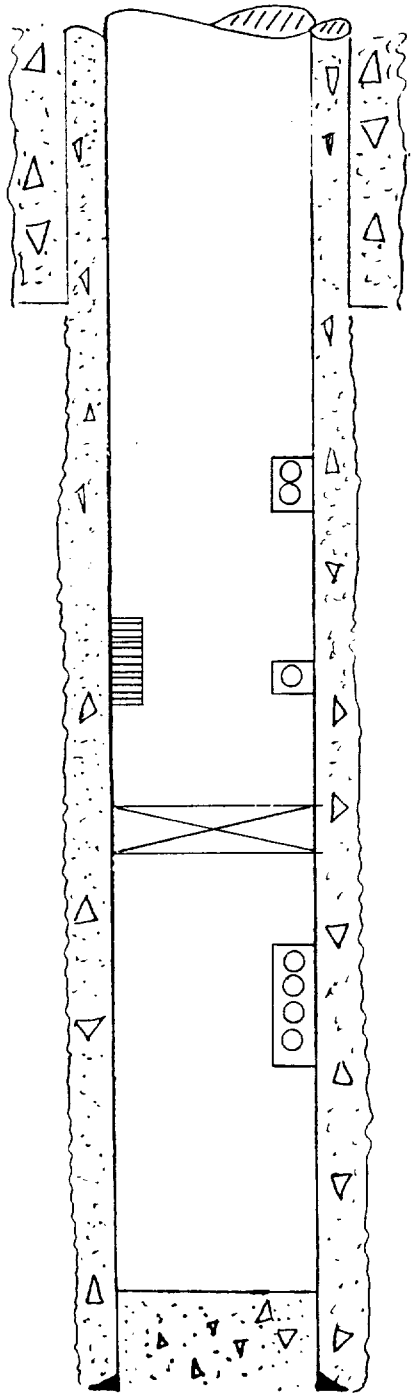
ADB 02/90

WELLBORE SCHEMATIC

LITTLE BLUE FEDERAL NO. 1
2310' FNL & 330' FWL
Section 15, T19N, R5W
McKinley County, New Mexico

DATE: 2/21/90

Elevation: 6601' GL
6605' KB



12-1/4" hole to 100'

7", 23# Csg @ 99.8'
50 sx Class "B" w/2% CaCl

Perf with 3-1/8" csg guns @ 2 SPF

740'-750'
863'-882'

Sqz w/65 sc Class "G"
1345'-62' 1369'-73'
1435'-39' 1486'-94'
1643'-48' 1666'-70'
1861'-65'

Reperf with 3-1/8" csg guns
1666'-70'
Frac w/5000# 20/40 sand

4-1/2" Alpha CIBP @ 1872'

Perf with 3-1/8" csg guns @ 2 SPF
1881'-83' 1887'-90'
1898'-01' 1910'-14'
1943'-45' 1960'-64'
1980'-82' 1993'-98'

4-1/2", 11.6#, K-55 Csg @ 2145'
Cmt to surface w/300 sx Class "B"
PBTD @ 2116'

6-1/4" hole to 2155' TD

Form 9-330
(Rev. 5-63)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE* (See other instructions on reverse side)

Form approved.
Budget Bureau No. 42-R355.5.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO.: N00-C-14-20-5377

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Navajo Allotted

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Navajo Allotted 15

9. WELL NO.: 4

10. FIELD AND POOL, OR WILDCAT: Papers Wash - Entrada

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: SEC. 15, T19N, R5W NMPM

12. COUNTY OR PARISH: McKinley

13. STATE: N.M.

1a. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] DRY [ ] Other

b. TYPE OF COMPLETION: NEW WELL [X] WORK OVER [ ] DEEP-EN [ ] PLUG BACK [ ] DIFF. RESVR. [ ] Other

2. NAME OF OPERATOR: Dome Petroleum Corporation

3. ADDRESS OF OPERATOR: %Minerals Management Inc., Suite 105, 501 Airport Drive, Farmington, New Mexico 87401

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements*)*
At surface: 2310' FSL, 990' FWL, SEC. 15, T19N, R5W
At top prod. interval reported below
At total depth

14. PERMIT NO. | DATE ISSUED

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (*Ready to prod.*)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
3-26-77	4-7-77	4-22-77	6630'GR, 6642'KB	6630'

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
5416'	5361'	---	→	0-5416'	

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: 5200'-5396' - Entrada

25. WAS DIRECTIONAL SURVEY MADE: No

26. TYPE ELECTRIC AND OTHER LOGS RUN: Dual Induction Laterolog, CNL-Density

27. WAS WELL CORED: No

28. CASING RECORD (*Report all strings set in well*)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
9 5/8	36	209	12 1/4	150 sx	---
7	23	5406	8 3/4	1015 (2-stage) DV tool @ 2679'	

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

CONFIDENTIAL

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2 7/8	2989'	---

31. PERFORATION RECORD (*Interval, size and number*): 5200'-5207' with 2 jet shots per foot

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED

RECEIVED
MAY 18 1977
Minerals Management Inc.

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (*Flowing, gas lift, pumping—size and type of pump*)	WELL STATUS (*Producing or shut-in*)
4-22-77	Pumping	Producing

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
4-26-77	24	--	→	277	TSTM	0	--

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)
--	0	→	277	TSTM	0	32.5

34. DISPOSITION OF GAS (*Sold, used for fuel, vented, etc.*)

TEST WITNESSED BY: Rusty Vigil

35. LIST OF ATTACHMENTS

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED S/ E. Leonard TITLE Area Manager Minerals Management Inc DATE 5-16-77

*(See Instructions and Spaces for Additional Data on Reverse Side)

INSTRUCTIONS

General: This form is designed for submitting a complete and correct well completion report and log on all types of lands and leases to either a Federal agency or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office. See instructions on items 22 and 24, and 33, below regarding separate reports for separate completions.

If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be listed on this form, see item 35.

Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

Item 18: Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments.

Items 22 and 24: If this well is completed for separate production from more than one interval zone (multiple completion), so state in item 22, and in item 24 show the producing interval, or intervals, top(s), bottom(s) and name(s) (if any) for only the interval reported in item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.

Item 29: *"Sacks Cement":* Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.

Item 33: Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 above.)

37. SUMMARY OF POROUS ZONES:
SHOW ALL IMPORTANT ZONES OF POROSITY AND CONTENTS THEREOF; CORED INTERVALS; AND ALL DRILL-STEM TESTS, INCLUDING DEPTH INTERVAL TESTED, CUSHION USED, TIME TOOL OPEN, FLOWING AND SHUT-IN PRESSURES, AND RECOVERIES

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.

38. GEOLOGIC MARKERS

NAME	TOP MEAS. DEPTH	TOP TRUE VERT. DEPTH
La Ventana	541'	
Pt. Lookout	2037'	
Mancos	2137'	
Gallup	2964'	
Greenhorn	3960'	
Graneros	4053'	
Dakota	4195'	
Morrison	4314'	
Summerville	5141'	
Todilto	5192'	
Entrada	5200'	
Carmel	5396'	

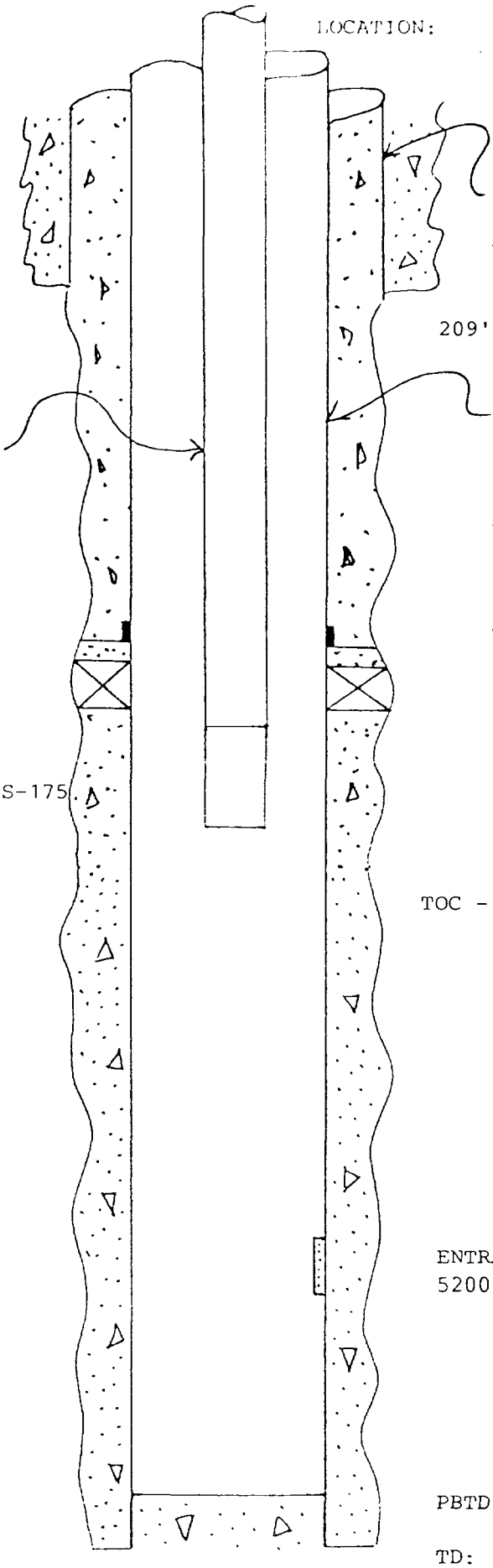
U.S. GOVERNMENT PRINTING OFFICE: 1963—O-683636
837-497

871-233

NAVAJO [illegible] NO. 4
PAD [illegible] FIELD

ELEVATION: 6630' GL
6642' KB

LOCATION: 2310' FSL & 990' FWL
Sec. 15, T19N, R5W
McKinley County, New Mexico



9-5/8", 36 #/ft, K-55
surface casing cmt'd
w/ 150 sx 'B' - TOC @ surface

209'

PRODUCTION CASING:
7", 23 #/ft, K-55

3-1/2", 9.3 #/ft, J-55
tubing @ 3947'

TDC @ surface calc.
(823 ft^3 slurry)

Cmt'd w/ 1st stage - 450 sx
65/35 - 6% gel, 100 sx 'B'
10% salt; 2nd stage - 415 sx
65/35 - 6% gel, 50 sx 'B'
10% salt

DV Tool @ 2679' KB

Lynes external csg
packer @ 2763' KB

Centrilift-Hughes 118/S-175
DSP @ 3947'

TOC - Above DV Tool @ 2,679' calc.
(946 ft^3 slurry)

ENTRADA PERFS:
5200' - 07' (2JSPF)

PBTD: 5361'

TD: 5416'

Form 9-330
(Rev. 5-63)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE* (See instructions on reverse side)

Form approved.
Budget Bureau No. 42-R355.5.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO.: N00-C-14-20-5377

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Navajo Allotted

1a. TYPE OF WELL: OIL WELL ☐ GAS WELL ☐ DRY ☐ Other Water Injection

b. TYPE OF COMPLETION: NEW WELL ☒ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Navajo Allotted 15

2. NAME OF OPERATOR: Dome Petroleum Corporation

9. WELL NO.: 6

3. ADDRESS OF OPERATOR: %Minerals Management Inc., Suite 105, 501 Airport Drive, Farmington, New Mexico 87401

10. FIELD AND POOL, OR WILDCAT: Papers Wash

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements*)*
At surface: 890' FSL, 1650' FWL, SEC. 15, T19N, R5W
At top prod. interval reported below
At total depth

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: SEC. 15, T19N, R5W NMPM

14. PERMIT NO. | DATE ISSUED

12. COUNTY OR PARISH: McKinley | 13. STATE: N.M.

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (*Ready to prod.*)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
6-19-77	6-29-77	8-11-77 (Injection)	6553' GL, 6565' KB	6553'

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
5392'	5131'	--	→	0'-5392'	

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: Gallup, 2895'-3560'

25. WAS DIRECTIONAL SURVEY MADE: No

26. TYPE ELECTRIC AND OTHER LOGS RUN: Dual Induction Laterolog, Compensated Neutron/Formation Density

27. WAS WELL CORED: No

28. CASING RECORD (*Report all strings set in well*)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
9 5/8	36	204	13 1/4	200 sx	--
7	20&23	5342	8 3/4	1100 sx (2 stage)	--
				DV @ 2669	--

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
4 1/2"-9.5#	2855	2855

CONFIDENTIAL

31. PERFORATION RECORD (*Interval, size and number*)
Entrada: 5156-5163 w/2 jet shots/ft.
Gallup: 2925-2982, 3002-3096, 3110-3192 w/1 shot/ft.

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED
5156-5163	100 sx LFL cement to 1000 ps
2925-2982	750 gal 15% HCl
3002-3096	750 gal 15% HCl
3110-3192	750 gal 15% HCl

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (*Flowing, gas lift, pumping—size and type of pump*)	WELL STATUS (*Producing or shut-in*)
	No Production	

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)

RECEIVED
AUG 25 1977

34. DISPOSITION OF GAS (*Sold, used for fuel, vented, etc.*)

TEST WITNESSED BY

35. LIST OF ATTACHMENTS

Minerals Management Inc.

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED [signature] TITLE Area Manager Minerals Management Inc DATE 8-23-77

*(See Instructions and Spaces for Additional Data on Reverse Side)

INSTRUCTIONS

General: This form is designed for submitting a complete and correct well completion report and log on all types of lands and leases to either a Federal agency or a State agency, or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office. See instructions on items 22 and 24, and 33, below regarding separate reports for separate completions..

If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be listed on this form, see item 35.

Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

Item 18: Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments.

Items 22 and 24: If this well is completed for separate production from more than one interval zone (multiple completion), so state in item 22, and in item 24 show the producing interval, or intervals, top(s), bottom(s) and name(s) (if any) for only the interval reported in item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.

Item 29: *"Sacks Cement":* Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.

Item 33: Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 above.)

37. SUMMARY OF POROUS ZONES:
SHOW ALL IMPORTANT ZONES OF POROSITY AND CONTENTS THEREOF; CORED INTERVALS; AND ALL DRILL-STEM TESTS, INCLUDING DEPTH INTERVAL TESTED, CUSHION USED, TIME TOOL OPEN, FLOWING AND SHUT-IN PRESSURES, AND RECOVERIES

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.

38. GEOLOGIC MARKERS

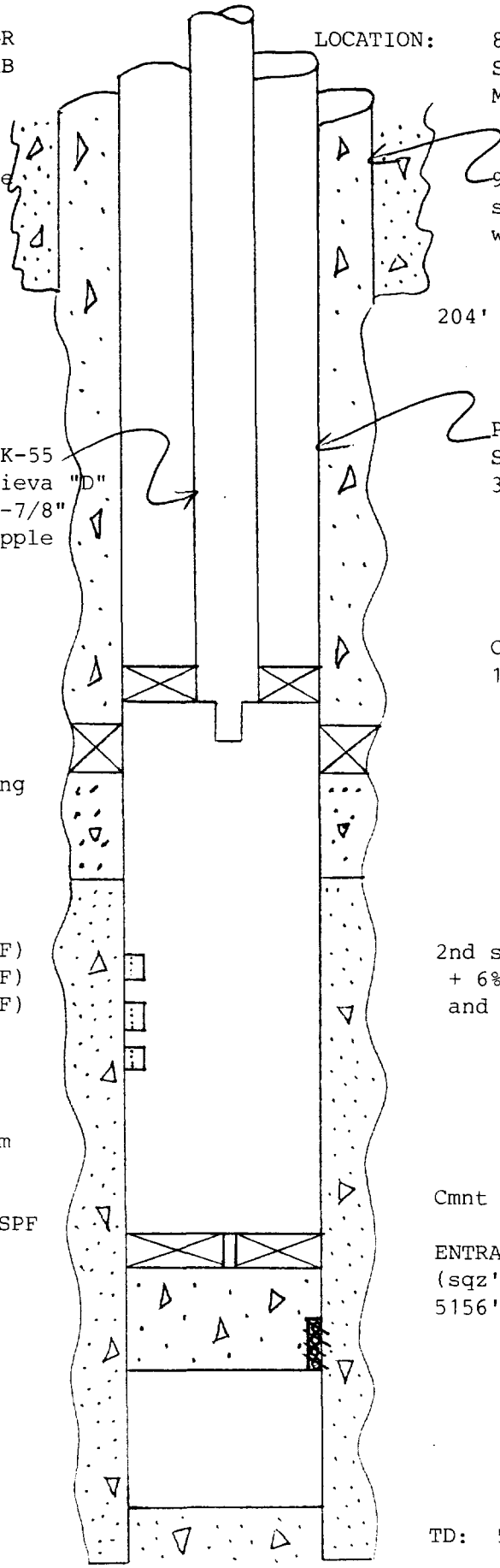
NAME	TOP	
	MEAS. DEPTH	TRUE VERT. DEPTH
La Ventana	462'	
Point Lookout	1956'	
Mancos Shale	2055'	
Mancos Marker	2285'	
Gallup	2895'	
Sanostee	3560'	
Greenhorn	3892'	
Graneros	3976'	
Dakota	4111'	
Morrison	4245'	
Summerville	5097'	
Todilto	5149'	
Entrada	5160'	
Carmel	5376'	

U.S. GOVERNMENT PRINTING OFFICE: 1963—O-683636
837-497

NAVAJO ALLOTTED NO. 15-6
PAPERS WASH FIELD
McKINLEY COUNTY, NM

ELEVATION: 6553' GR
6565' KB

LOCATION: 890' FSL & 1650' FWL
Sec. 15, T19N, R5W
McKinley County, New Mexico



13-1/4" hole

9-5/8", 36 #/ft, K-55 ST&C surface casing cmt'd to surf. w/ 200 sx Cl 'B' + 2% CaCl.

204'

PRODUCTION CASING:
Surf. - 3472': 7", 20 #/ft, K-55
3472' - 5342': 7", 23 #/ft, K-55

4-1/2", 10.5 #/ft, K-55 tubing. Baker Retrieva "D" pkr @ 2560' w/ 8' 2-7/8" pup jt & 2.65" F-nipple on bottom.

DV tool @ 2669'.

Cmt'd as follows:
1st stg: 485 sx 65/35 POZ + 6% gel + 10 #/sx Gilsonite and 100 sx Cl 'B' + 10% salt + 3/4% CFR-2.
TOC above DV Tool

Lynes external casing pkr @ 2756'

GALLUP PERFS:
2925' - 2982' (1JSPF)
3002' - 3096' (1JSPF)
3110' - 3192' (1JSPF)

2nd stg: 475 sx 65/35 POZ + 6% gel + 10 #/sx Gilsonite and 50 sx Cl 'B' + 10% salt.

8-4-81:
Reperfed Gallup from
3110' - 3157',
3030' - 3050', &
2925' - 2955' w/ 1JSPF

Cmnt retainer @ 5131'

ENTRADA PERFS:
(sqz'd w/ 45sx LFL cmt)
5156' - 5163' (2JSPF)

TD: 5342' KB

Form 9-330
(Rev. 5-63)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE* (See instructions on reverse side)

Form approved.
Budget Bureau No. 42-R355.5.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO.: NOO-C-14-20-5379

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Navajo Allotted

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Navajo Allotted 16

9. WELL NO.: 1

10. FIELD AND POOL, OR WILDCAT: Papers Wash Entrada

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: SEC. 16, T19N, R5W NMPM

12. COUNTY OR PARISH: McKinley

13. STATE: N.M.

1a. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] DRY [ ] Other

b. TYPE OF COMPLETION: NEW WELL [X] WORK OVER [ ] DEEP-EN [ ] PLUG BACK [ ] DIFF. RESVR. [ ] Other

2. NAME OF OPERATOR: Dome Petroleum Corporation

3. ADDRESS OF OPERATOR: %Minerals Management Inc., Suite 105, 501 Airport Drive, Farmington, New Mexico 87401

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements*)*
At surface: 2310' FSL, 330' FEL, SEC. 16, T19N, R5W
At top prod. interval reported below
At total depth

14. PERMIT NO. | DATE ISSUED

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (*Ready to prod.*)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
8-3-77		8-27-77	6591' GR, 6603' KB	6591'

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
5392'	5264'		→	All	

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*: 5185'-5190' Entrada

25. WAS DIRECTIONAL SURVEY MADE: No

26. TYPE ELECTRIC AND OTHER LOGS RUN: Dual Induction Laterolog, Compensated Neutron Formation Density

27. WAS WELL CORED: No

28. CASING RECORD (*Report all strings set in well*)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
9 5/8	36	211	13 1/4	200 sx	--
7	20 & 23	5369	8 5/8	850 sx - 2 stage	
				DV at 2706	

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
3 1/2	3036	--

31. PERFORATION RECORD (*Interval, size and number*): 5185'-5190' with 2 jets per foot (10 shots)

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED

CONFIDENTIAL

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (*Flowing, gas lift, pumping—size and type of pump*)	WELL STATUS (*Producing or shut-in*)
8-28-77	Pumping	Producing

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
9-1-77	24	--		520	TSTM	0	--

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)
--	--		520	TSTM	0	--

34. DISPOSITION OF GAS (*Sold, used for fuel, vented, etc.*): None

TEST WITNESSED BY: R. Vigil

35. LIST OF ATTACHMENTS: None

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records

SIGNED [signature] TITLE Area Manager Minerals Management Inc. DATE 11-15-77

*(See Instructions and Spaces for Additional Data on Reverse Side)

INSTRUCTIONS

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Item 29: *"Sacks Cement":* Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.

Item 33: Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 above.)

37. SUMMARY OF POROUS ZONES:
SHOW ALL IMPORTANT ZONES OF POROSITY AND CONTENTS THEREOF; CORED INTERVALS; AND ALL DRILL-STEM TESTS, INCLUDING DEPTH INTERVAL TESTED, CUSHION USED, TIME TOOL OPEN, FLOWING AND SHUT-IN PRESSURES, AND RECOVERIES

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.

38. GEOLOGIC MARKERS

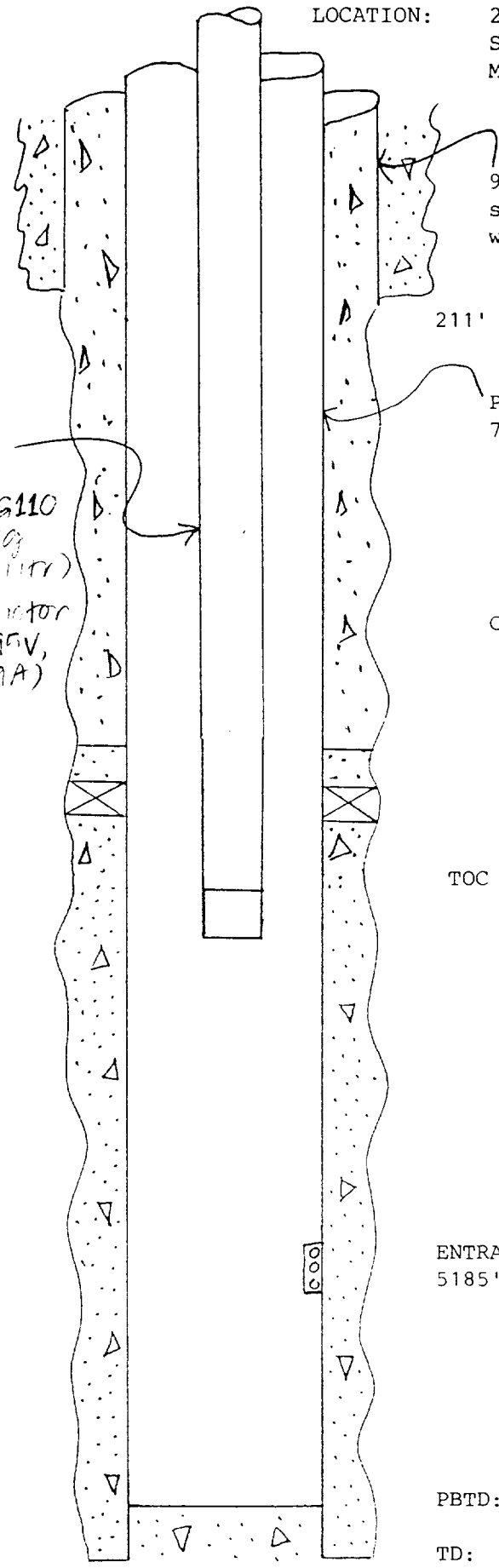
NAME	TOP	
	MEAS. DEPTH	TRUE VERT. DEPTH
La Ventana	502'	
Point Lookout	2000'	
Mancos Shale	2100'	
Mancos Marker	2321'	
Gallup	2930'	
Sanostee	3600'	
Greenhorn	3930'	
Graneros	4020'	
Dakota	4162'	
Morrison	4290'	
Summerville	5097'	
Todilto	5149'	
Entrada	5183'	
Carmel	5364'	

U.S. GOVERNMENT PRINTING OFFICE: 1963—O-683636
837-497

NAVAJO ALLOTTED 16 NO. 1
PAPERS WASH FIELD

ELEVATION: 6591' GL
6603' KB

LOCATION: 2310' FSL & 330' FEL
Sec. 16, T19N, R5W
McKinley County, New Mexico



9-5/8", 36 #/ft, K-55
surface casing cmt'd
w/ 200 sx 'B' - TOC @ surface

211'

PRODUCTION CASING:
7", 20 & 23 #/ft, K-55

3-1/2", 9.3 #/ft, J-55
tubing @ 3155' KB

REDA G59E DSP KEDA G110
3198' KB 86 519
3230' (Bottom of Motor)
120 HP motor
(129 V, 59A)

DV Tool @ 2706' KB

Lynes external csg
packer @ 2798' KB

Cmt'd w/ 1st stage - 330 sx
BJ Lite, 100 sx 'B'; 2nd
stage - 370 sx BJ Lite,
50 sx 'B' - TOC @ surface

TOC - Above DV Tool by calculation
(725 ft^3 slurry)

ENTRADA PERFS:
5185' - 90' (2JSPF)

PBTD: 5264'

TD: 5393'

NEW MEXICO OIL CONSERVATION COMMISSION

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

DISTRIBUTION	
SANTA FE	1
FILE	1
U.S.G.S.	2
LAND OFFICE	1
OPERATOR	1

SEP 1 1978

OIL CONSERVATION COMM. Santa Fe

1a. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] DRY [ ] OTHER

b. TYPE OF COMPLETION: NEW WELL [X] WORK OVER [ ] DEEPEN [ ] PLUG BACK [ ] DIFF. RESVR. [ ] OTHER

State K

State 2-16-19-5

2

Papers Wash-Entrada

2. Name of Operator: Dome Petroleum Corp.

3. Address of Operator: % K&A, Inc. Minerals Management, 501 Airport Dr. Suite 105, Farmington, New Mexico 87401

4. Location of Well: UNIT LETTER H LOCATED 2310 FEET FROM THE North LINE AND 330 FEET FROM THE East LINE OF SEC. 16 TWP. 19N RGE. 5W NMPM

McKinley

15. Date Spudded	16. Date T.D. Reached	17. Date Compl. (Ready to Prod.)	18. Elevations	
10-3-77	10-15-77	TA 6-19-78	5690 KB	5678 GR

20. Total Depth	21. Plug Back T.D.	22. If Multiple Compl., How Many		Rotary Tools	Cable Tools
5383'	5325'	--	→	0-5383'	0

24. Producing Interval(s), of this completion — Top, Bottom, Name: Entrada

Was Directional Survey Made: No

26. Type Electric and Other Logs Run: Dual Induction Laterolog, CNL-Density

Was Well Cored: Yes

28. CASING RECORD (Report all strings set in well)

CASING SIZE	WEIGHT LB./FT.	DEPTH SET	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
9 5/8	36	205	13 1/4	200 sx.	--
7	20 & 23	5373	8 3/4	485 & 420 (2 Stage)	--

29. LINER RECORD / 30. TUBING RECORD

SIZE	TOP	BOTTOM	SACKS CEMENT	SCREEN	SIZE	DEPTH SET	PACKER SET
					2 7/8	4500	--

31. Perforation Record (Interval, size and number):
5161-63, 5170-72, 5179-85, with 2 jet per foot.

5179-81 with 4 jets per foot.

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL	AMOUNT AND KIND MATERIAL USED
5161-63, 5170-72, & 5179-85	Cement w/75 sx. [illegible]
5179-81	Acid w/200 gal. & w/1500 gal. 15% HCL

33. PRODUCTION

Date First Production: 3-15-78 | Production Method: Pumping | Well Status: TA 6-19-78

Date of Test	Hours Tested	Choke Size	Prod'n. For Test Period	Oil — Bbl.	Gas — MCF	Water — Bbl.	Gas-Oil Ratio
6-18-78	24	--	→	0	TSTM	42	--

Flow Tubing Press.	Casing Pressure	Calculated 24-Hour Rate	Oil — Bbl.	Gas — MCF	Water — Bbl.	Oil Gravity
--	0	→	0	TSTM	42	--

Test Witnessed By: Rusty Vigil

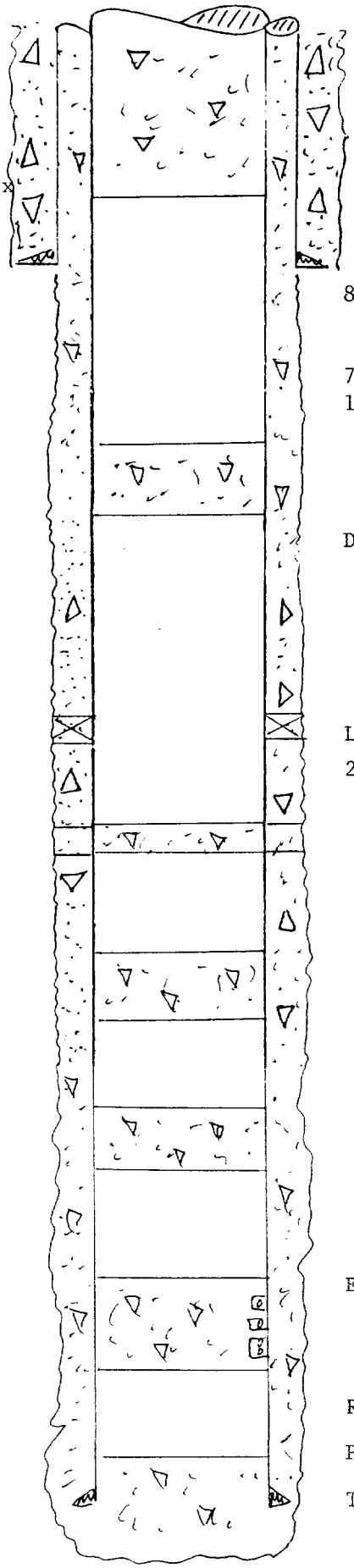
SIGNED [signature] TITLE K&A, Inc. Minerals Management Area Manager DATE 6-21-78

0+3 NMOCC / 1- Dome / 1- Elf Aquitaine / 1- Natl. Gas Pipeline / 1- B.Robinson / 1- [illegible]

ILLEGIBLE

STATE 16-2
PAPERS WASH FIELD
2310' FNL & 330' FEL
Section 16, T19N, R5W
McKinley, New Mexico

ELEVATION: 5676' GL
5690' KB



Cement Plug Surface to 150' w/120 sx

13-3/4" Hole

9-5/8", 36#, K-55 @ 205'
200 sx Class "B" with 2% CaCl

8-3/4" hole

7", K-55, 20# @ 3665', 23# @ 5373'
1st Stage: 385 sx 65/35 Poz, 6% gel, 10#/sx gilsonite (1.53 ft^3/sk) w/100 sx Class "B" w/10% salt (1.23 ft^3/sx)
DV Tool @ 2687'

Cmt plug
1400'-1450' with 10 sx

Lynes Packer at 2729'
2nd Stage: 370 sx 65/35 Poz, 6% gel, 10#/sk gilsonite with 100 sx Class "B" with 10% salt

Cmt Plug
2850'-2900 with 10 sx

Cmt Plug
3110'-3210' with 20 sx

Cmt Plug
4100'-4250' with 35 sx

Cmt Plug
5050'-5315' with 55 sx

Entrada Perfs:
5161'-63'
5170'-72' Squeezed with 75 sx
5179'-85

Reperf 5179'-81'

PBTD: 5325'

TD: 5383'

FAX 505-326-5900

PH. 505-327-9801

MERRION OIL & GAS CORPORATION

610 REILLY AVE. • P. O. BOX 840

FARMINGTON, NEW MEXICO 87499

March 1, 1990

Mr. Ron Van Wyk (6W-S)
U.S. Environmental Protection Agency
Region 6
1445 Ross Avenue
Dallas, Texas 75202-2733

RE: UIC Injection Permit Application
Navajo Allotted 15-3
Papers Wash Field
Section 15, T19N, R5W
McKinley County, New Mexico

Dear Mr. Van Wyk:

We are proposing to convert to injection the Navajo Allotted 15-3 to institute a waterflood in the Papers Wash Entrada Field. A Cooperative Agreement Area has been formed surrounding the reservoir to faciliate a secondary recovery project. Attached is an EPA application for the subject conversion. Please indicate your approval by signing and returning a copy of the application.

Also, enclosed is a State Form C-108 for conversion of the subject well. If information is required that is not included in the two permit applications, please contact George Sharpe at (505) 327-9801.

Sincerely,

Steven S. Dunn
Operations Manager

GFS/eg

CC: Well File
EPA File
Pat Hegarty
Mike Stogner-NMOCD,Santa Fe,NM
Ken Townsend-BLM,Farmington,NM
Ervin Peshlakai-BIA,Window Rock,AZ
Frank Welker-Chase Oil,Albuquerque,NM

NEW MEXICO UIC
PERMIT APPLICATION

Well # Navajo Allotted 15-3
Permit #
Date Received:
EPA Authorization #

Permit Application Checklist

	Attached	Not Attached	
1.		X	1. BLM Sundry Notice "Notice of Intent" (BLM Form 3160-3), or BLM Application for Permit to Drill (BLM Form 3160-5). (2 copies to EPA)
	Will be submitted upon EPA & State Approval		
2.	X		2. Map using Sections, Township and Range to show the location of wells within 1/2 mile (2,640 ft.) of the proposed well.
3.	x		3. Tabulation of data on wells within 1/2 mile (2,640 ft.) including:
	X		depth
	X		location
			For wells that penetrate the injection nterval, also show:
	X		date drilled
	X (see state application)		record of plugging and/or completion
		X NA	corrective action plan for inadequately completed or plugged wells.
4.	X		4. Injection well schematic drawings of surface and subsurface details showing:
	X		a. total depth and plugback depth,
	X		b. depth to top and bottom of injection interval,
	X		c. depth to top and bottom of casing(s) and cemented interval(s), plus amount of cement.
	X		d. size(s) of casing and tubing and depth of packer, and
	X		e. hole diameter(s)
		NA	f. other perforated intervals,

	Attached	Not Attached	
	X		g. daily drilling report, if available
5.			5. Operating data including:
	a. Avg Rate = 3000 BPD b. Max Rate = 6000 BPD c. Avg Press = 500 psi d. Max Press = 1000 psi e. Frac Grad = 0.65 psi/ft (1300 psi surface) f. Continuous g. Entrada - 95% of volume Mesaverde - 5% of volume Analyses attached		a. maximum and average injection rate, b. maximum and average injection pressure, c. fracture pressure gradient of injection zone, d. whether operation is cyclic or continuous, and e. source and analysis of injected fluids including TDS, chlorides, and additives.
6.	X		6. Geologic data on the injection and confining zones, including: faults, geological name, thickness, porosity, permeability, depth, current reservoir pressure or fluid level, water quality, and lithologic description.
7.	X		7. Depth to base of fresh water (10,000 mg/l).
8.	X		8. Verification of public notice, consisting of a list showing names, addresses, and date that notice of permit application was given or sent to each: a. the surface landowner, b. tenants, c. operator of a producing lease within one-half mile of the well location, and d. affected Tribal Government.
9.	X		9. All available logging and testing data on the well (for existing wells only).
10.	National Oil & Gas Lease Bond	Bond No: 40 S 23025 BCA	10. Proof of adequate financial responsibility.
11.	X		11. Certification form signed by well owner/operator or authorized representative (authorization must be in writing and copy attached).
12.	(YES)	(NO) X	12. Has the applicant declared any part of his submission confidential? [147.2907]

	Attached	Not Attached	
13.	(YES)	(NO) X	13. Is the injection well currently authorized by rule? If yes, EPA Form No. is _____.
14.	(YES)X	(NO)	14. Was applicant required by EPA to apply for a permit.
15.	(YES)X	(NO)	15. The permit applicant is the ~~owner~~/operator. (Circle one)
16.	(YES)	(NO) X	16. Has the applicant requested emergency authorization to inject?
17.	(YES)	(NO) X	17. Plugging and Abandonment Plan, and estimated cost of plan.

ADMINISTRATIVE REVIEW

_____ _____
Signature Date

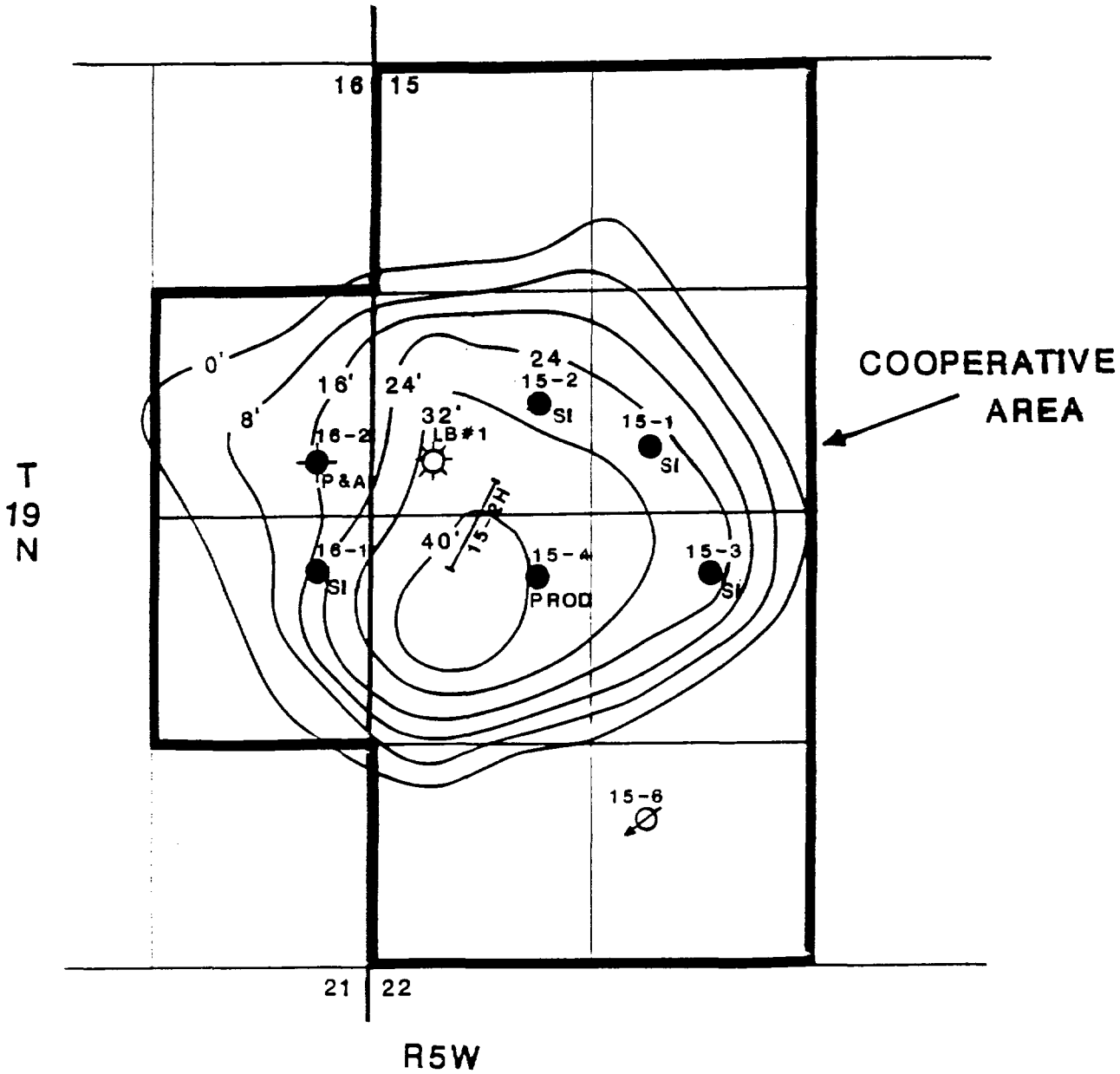
TECHNICAL REVIEW

_____ _____
Signature Date

EXHIBIT 2

MC KINLEY COUNTY, NEW MEXICO
ORIGINAL NET PAY - LEASE MAP

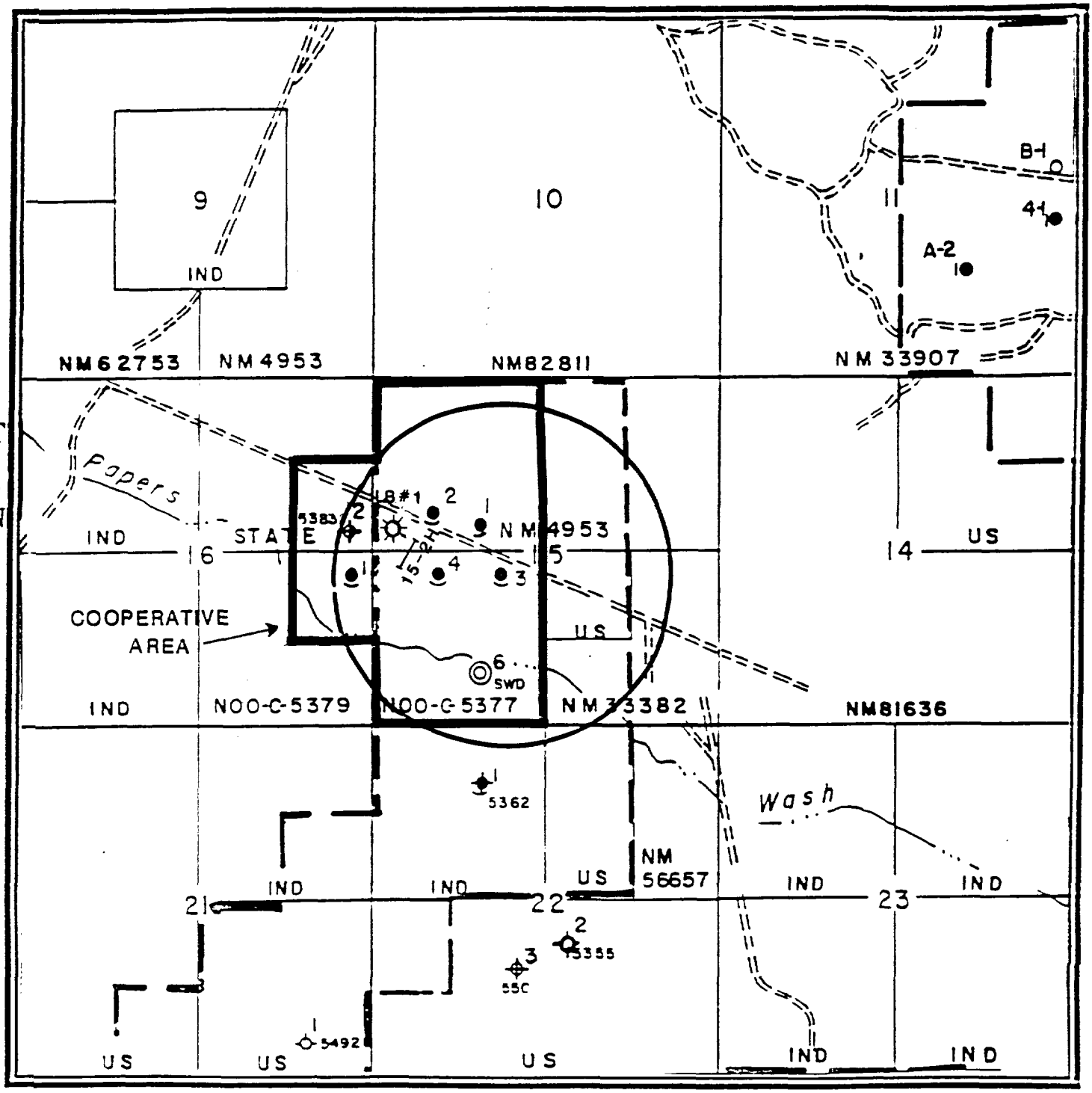
SCALE: 1" =1000'



MERRION OIL & GAS
CASE NO. 9880
3-7-90

EXHIBIT 5

PAPERS WASH FIELD
AREA OF REVIEW
NAVAJO ALLOTED 15-3
R 5 W



MERRION OIL & GAS
CASE NO. 9880
3-7-90

WHICH PENETRATE THE INJECTION ZONE. All depths from KB

Federal
Well Name 15-1 **Company Name** Merrion Oil & Gas Corp. **Date Drilled** 9-28-76 **Depth** 5390

Location 2210' FN L & 1650' FW L; SESW /4, Sec. 15 -T 19N -R 5W **Status** Shut-In

Hole Size	Casing Size	Landed Depth	Cement & Additive Data	Top of Cement	If well is TA or P&A Describe How:
15	10-3/4	224	200 sx Class "B"	Surface	
8-3/4	7	5242	600 sx Class "B"	2794	

Formations Open to Wellbore: Mesaverde

Federal
Well Name 15-2 **Company Name** Merrion Oil & Gas Corp. **Date Drilled** 2-18-77 **Depth** 5428'

Location 1910' FN L & 990' FW L; SWSW /4, Sec. 15 -T 19N -R 5W **Status** Redrilled

Hole Size	Casing Size	Landed Depth	Cement & Additive Data	Top of Cement	If well is TA or P&A Describe How:
15	10-3/4	203	200 sx Class "B"	Surface	Well was plugged back to
8-3/4	7	5426	1st Stge: 228 sx 65/35 Poz, 50 sx Class "B"	3290	4660' and redrilled as horizontal well from 4639'.
			2nd Stge: 305 sx 65/35 Poz, 100 sx Class "A"		(See Federal 15-2H)

Formations Open to Wellbore: None - Redrilled

Federal
Well Name 15-2H **Company Name** Merrion Oil & Gas Corp **Date Drilled** 1-19-90 **Depth** 6084

Location 1910' FN L & 990' FW L; SWSW /4, Sec. 15 -T 19N -R 5W **Status** Completing

Hole Size	Casing Size	Landed Depth	Cement & Additive Data	Top of Cement	If well is TA or P&A Describe How:
15	10-3/4	203	200 sx Class "B"	Surface	
8-3/4	7	5426	278 sx & 405 sx in 2 stages	3290	
6-1/4	4-1/2	5864	90 sx LFL Class "G"	?	-Sqz liner top with 50 sx
					-Planning to sqz Entrada top

Formations Open to Wellbore: Currently completing as Horizontal Entrada Producer

---

Little Blue
Well Name Federal 1 **Company Name** Merrion Oil & Gas Corp. **Date Drilled** 10-19-89 **Depth** 2155

Location 2310' FN L & 330' FW L; NWSW /4, Sec. 15 -T 19N -R 5W **Status** Completi

Hole Size	Casing Size	Landed Depth	Cement & Additive Data	Top of Cement	If well is TA or P&A Describe How:
12-1/4	7	100	50 sx Class "B' with 2%CaCl	Surface	
6-1/4	4-1/2	2116	300 sx Class "B"	Surface	

Formations Open to Wellbore: Mesaverde

TABULATION OF WEI WITHIN ½ MILE OF PROPOSED

WHICH PENETRATE THE INJECTION ZONE. All depths from KB

Navajo Allotted

Well Name 15-4 Company Name Merrion Oil & Gas Corp. Date Drilled 3-26-77 Depth 5416'

Location 2310' F S L & 990' F W L; NWSW /4, Sec. 15 -T 19N -R 5W Status Producing

Hole Size	Casing Size	Landed Depth	Cement & Additive Data	Top of Cement	If well is TA or P&A Describe How:
12-1/4"	9-5/8"	209'	150 sxs Class "B"	Surface'	
8-3/4"	7"	5406'	1st Stge: 450 sx 65/35 Poz & 6% gel with 100 sx Class "B"	Surface'	
			2nd Stage: 415 sx 65/35 Poz & 6% gel with 50 sx Class B		

Formations Open to Wellbore: Entrada

Navajo Allotted

Well Name 15-6 Company Name Merrion Oil & Gas Corp. Date Drilled 6-19-77 Depth 5392'

Location 890' F S L & 1650' F W L; SESW /4, Sec. 15 -T 19N -R 5W Status Injecting

Hole Size	Casing Size	Landed Depth	Cement & Additive Data	Top of Cement	If well is TA or P&A Describe How:
13-1/4"	9-5/8"	204'	200 sx Class "B" w/2% CaCl	Surface'	
8-3/4"	7"	5342'	1st Stge: 485 sx 65/35, 6% gel + 100 sx Class "B"	Surface'	
			2nd Stge: 475 sx 65/35, 6% gel + 50 sx Class "B"		

Formations Open to Wellbore: Gallup

Navajo Allotted

Well Name 16-1 Company Name Merrion Oil & Gas Corp. Date Drilled 8-3-77 Depth 5392'

Location 2310' F S L & 330' F E L; NWSW /4, Sec. 16 -T 19N -R 5W Status Producing

Hole Size	Casing Size	Landed Depth	Cement & Additive Data	Top of Cement	If well is TA or P&A Describe How:
13-1/4"	9-5/8"	211'	200 sx Class "B"	Surface	
8-5/8"	7"	5369'	1st Stge: 330 sx BJ lite +	Surface	
			100 sx Class B; 2nd Stge:		
			370 sx BJ Lite + 50 sx Cl B		

Formations Open to Wellbore: Entrada

Well Name State 16-2 Company Name Merrion Oil & Gas Corp. Date Drilled 10-3-77 Depth 5383

Location 2310' F N L & 330' F E L; SWNW/4, Sec. 16 -T 19N -R 5W Status P&A

Hole Size	Casing Size	Landed Depth	Cement & Additive Data	Top of Cement	If well is TA or P&A Describe How:
13-1/4"	9-5/8"	205'	200 sx Cl B with 2% CaCl	Surface'	Plugs @ 5050'-5315',
8-3/4"	7"	5373'	1st stge: 385 sx 65/35, 6% gel + 100 sx Class "B"	Surface'	4100'-4250', 3110'-3210',
			2nd Stge: 370 sx 65/35, 6% gel + 100 sx Class "B"		2850'-2900', 1400'-1450',
					150'-Surface

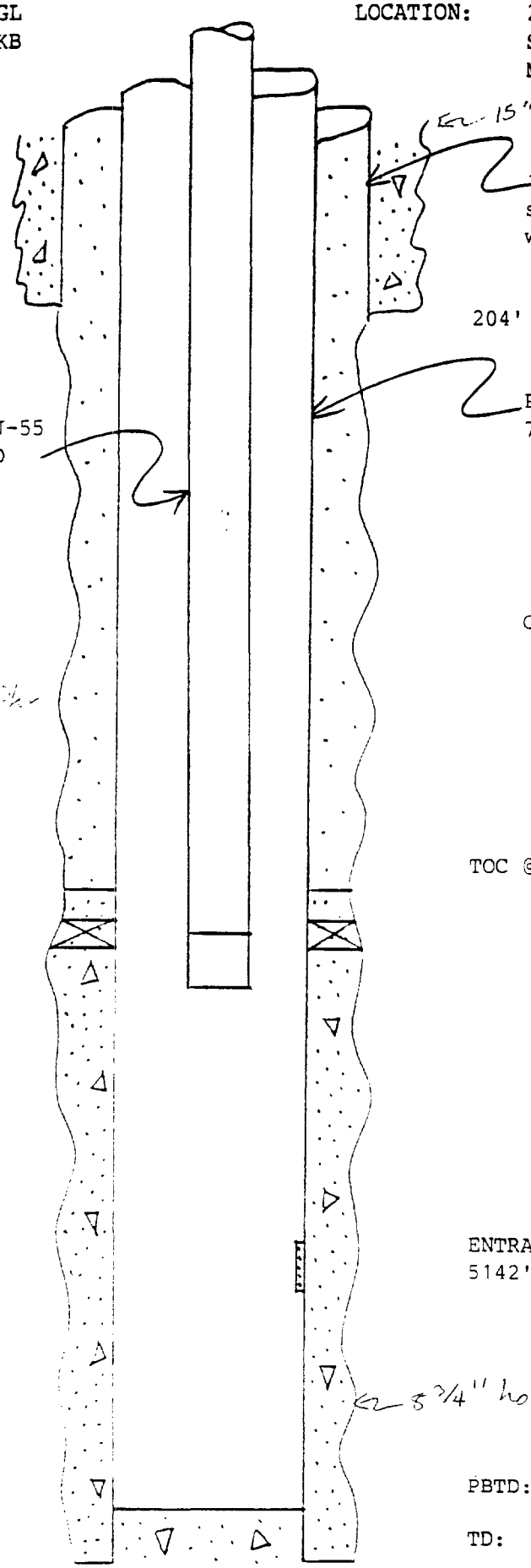
Formations Open to Wellbore: None

NAVAJO ALLOTTED 15 NO. 3
PAPERS WASH FIELD

ELEVATION: 6562' GL
6574' KB

LOCATION: 2310' FSL & 2000' FWL
Sec. 15, T19N, R5W
McKinley County, New Mexico

All depths
From KB



10-3/4", 32.75 #/ft, K-55
surface casing cmt'd
w/ 200 sx - TOC @ surface

PRODUCTION CASING:
7", 23 #/ft, K-55

3-1/2", 9.3 #/ft, J-55
tubing @ 2725' MD

REDA G110 BSP
@ 2855' KB

Will replace [illegible]
3½" [illegible]
w/ [illegible]
@ [illegible]

Cmt'd w/ 1st stage - 390 sx
65/35 POZ, 100 sx 'B'; 2nd
stage - 370 sx 65/35 POZ,
50 sx 'B' - TOC @ surface

DV Tool @ 2600' KB

TOC @ 2600'

Lynes external csg
packer @ 2722' KB

ENTRADA PERFS:
5142' - 48' (2JSPF)

PBTD: 5295'

TD: 5343'

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

(See other instructions on reverse side)

Budget Bureau No. 42-R355.5.

WELL COMPLETION OR RECOMPLETION REPORT AND LOG*

5. LEASE DESIGNATION AND SERIAL NO.: N00-C-14-20-5377

6. IF INDIAN, ALLOTTEE OR TRIBE NAME: Navajo Allotted

1a. TYPE OF WELL: OIL WELL [X] GAS WELL [ ] DRY [ ] Other

b. TYPE OF COMPLETION: NEW WELL [X] WORK OVER [ ] DEEP-EN [ ] PLUG BACK [ ] DIFF. RESVR. [ ] Other

7. UNIT AGREEMENT NAME:

8. FARM OR LEASE NAME: Navajo Allotted 15

2. NAME OF OPERATOR: Dome Petroleum Corporation

9. WELL NO.: 3

3. ADDRESS OF OPERATOR: %Minerals Management Inc., Suite 105, 501 Airport Drive, Farmington, New Mexico - 87401

10. FIELD AND POOL, OR WILDCAT: Papers Wash Entrada

4. LOCATION OF WELL (*Report location clearly and in accordance with any State requirements*)*
At surface: 2310' FSL, 2000' FWL, SEC. 15, T19N, R5W
At top prod. interval reported below
At total depth: 2142' FSL, 1957' FWL

11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA: SEC. 15, T19N, R5W

14. PERMIT NO. | DATE ISSUED

12. COUNTY OR PARISH: McKinley, | 13. STATE: N.M.

15. DATE SPUDDED	16. DATE T.D. REACHED	17. DATE COMPL. (*Ready to prod.*)	18. ELEVATIONS (DF, RKB, RT, GR, ETC.)*	19. ELEV. CASINGHEAD
2-28-77	3-10-77	3-27-77	6562' GR, 6574' KB	6562'

20. TOTAL DEPTH, MD & TVD	21. PLUG, BACK T.D., MD & TVD	22. IF MULTIPLE COMPL., HOW MANY*	23. INTERVALS DRILLED BY	ROTARY TOOLS	CABLE TOOLS
5343'	5295'		→	0'-5343'	

24. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)*
5140', 5326', Entrada

CONFIDENTIAL

25. WAS DIRECTIONAL SURVEY MADE: Yes

26. TYPE ELECTRIC AND OTHER LOGS RUN: Dual Induction-Laterolog, Compensated Neutron Formation Density

27. WAS WELL CORED

28. CASING RECORD (*Report all strings set in well*)

CASING SIZE	WEIGHT, LB./FT.	DEPTH SET (MD)	HOLE SIZE	CEMENTING RECORD	AMOUNT PULLED
10 3/4	40.5	204'	15"	200 sx	---
7	23	5342'	8 3/4"	900 sx (2 stages) DV tool @ 2600'	

29. LINER RECORD

SIZE	TOP (MD)	BOTTOM (MD)	SACKS CEMENT*	SCREEN (MD)

30. TUBING RECORD

SIZE	DEPTH SET (MD)	PACKER SET (MD)
2 7/8	3004	

31. PERFORATION RECORD (*Interval, size and number*)
5142'-5148' with 2 jet shots/ft (12)

32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC.

DEPTH INTERVAL (MD)	AMOUNT AND KIND OF MATERIAL USED

APR 28 1977
U. S. GEOLOGICAL SURVEY

33.* PRODUCTION

DATE FIRST PRODUCTION	PRODUCTION METHOD (*Flowing, gas lift, pumping—size and type of pump*)	WELL STATUS (*Producing or shut-in*)
3-27-77	Pumping	Producing

DATE OF TEST	HOURS TESTED	CHOKE SIZE	PROD'N. FOR TEST PERIOD →	OIL—BBL.	GAS—MCF.	WATER—BBL.	GAS-OIL RATIO
3-28-77	24			380	TSTM	0	

FLOW. TUBING PRESS.	CASING PRESSURE	CALCULATED 24-HOUR RATE →	OIL—BBL.	GAS—MCF.	WATER—BBL.	OIL GRAVITY-API (CORR.)
			380	TSTM	0	32.5

34. DISPOSITION OF GAS (*Sold, used for fuel, vented, etc.*)

TEST WITNESSED BY: W. E. Landry

35. LIST OF ATTACHMENTS

36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records.

SIGNED [signature] TITLE Area Manager Minerals Management Inc DATE 4-27-77

*(See Instructions and Spaces for Additional Data on Reverse Side)

INSTRUCTIONS

General: This form is designed for submitting a complete and correct well completion report and log on all types of lands and leases to either a Federal agency or a State agency or both, pursuant to applicable Federal and/or State laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from, the local Federal and/or State office. See instructions on items 22 and 24, and 33, below regarding separate reports for separate completions.

If not filed prior to the time this summary record is submitted, copies of all currently available logs (drillers, geologists, sample and core analysis, all types electric, etc.), formation and pressure tests, and directional surveys, should be attached hereto, to the extent required by applicable Federal and/or State laws and regulations. All attachments should be listed on this form, see item 35.

Item 4: If there are no applicable State requirements, locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local State or Federal office for specific instructions.

Item 18: Indicate which elevation is used as reference (where not otherwise shown) for depth measurements given in other spaces on this form and in any attachments.

Items 22 and 24: If this well is completed for separate production from more than one interval zone (multiple completion), so state in item 22, and in item 24 show the producing interval, or intervals, top(s), bottom(s) and name(s) (if any) for only the interval reported in item 33. Submit a separate report (page) on this form, adequately identified, for each additional interval to be separately produced, showing the additional data pertinent to such interval.

Item 29: "*Sacks Cement*": Attached supplemental records for this well should show the details of any multiple stage cementing and the location of the cementing tool.

Item 33: Submit a separate completion report on this form for each interval to be separately produced. (See instruction for items 22 and 24 above.)

37. SUMMARY OF POROUS ZONES:
SHOW ALL IMPORTANT ZONES OF POROSITY AND CONTENTS THEREOF; CORED INTERVALS; AND ALL DRILL-STEM TESTS, INCLUDING DEPTH INTERVAL TESTED, CUSHION USED, TIME TOOL OPEN, FLOWING AND SHUT-IN PRESSURES, AND RECOVERIES

FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.
Entrada	5140'	5326'	Oil and water

38. GEOLOGIC MARKERS

NAME	TOP MEAS. DEPTH	TOP TRUE VERT. DEPTH
La Ventana	475'	
Pt. Lookout	1986'	
Mancos	2068'	
Gallup	2903'	
Greenhorn	3910'	
Dakota	4143'	
Morrison	4260'	
Todilto	5105'	
Entrada	5140'	
Carmel	5326'	

U.S. GOVERNMENT PRINTING OFFICE: 1963—O-683636
897-497
871-233

Permit # _____

Well Completion and Operation Data

Type Injection Well: (EOR/SWD/HC Storage) (New/Conversion)

Injection: (Continuous/Cyclic)

Approximate # days operating/year 365
Rate (B/D): Average 3000 Maximum 6000
Wellhead pressure (psi): Average 500 Maximum 1000
Fluid: TDS 17000 Sp. Gr. _____ Analysis included (yes/~~no~~)
Source (formation name): Entrada and Mesaverde
Will anything be added to the water to be injected (yes/~~no~~)
What will those additives be? May add corrosion inhibitor

Geologic Data: (all references to depths are below land surface)

Injection Interval: Top 5142 ; Bottom 5148 ; Effective Thickness 200
Formation name Entrada Lithology Sandstone
Porosity (%) 25 Current Reservoir Pressure _____ Date _____
or Current Fluid Level in Well 607 ft. Date 3-1-88
Permeability (md) 400
Drill Stem Test Included: (~~YES~~) (NO)

Confining Zones: Thickness between injection zone and UDSW 85'
Lithology Anhydrite/Limestone/: Shale
Cumulative shale 45' : thickest shale zone 45' (interval)
Faults: Are there any faults in the area of the well which penetrate the injection interval? (~~Yes~~/No)

Well Data: (all references to depths are below ~~land surface~~ Kelly Bushing)

Surface Elevation: 6574' KB / 6562' GL (KB/GL) Total (Depth/Plugged Back Depth) 5343' TD / 5295' PBTD
Date Drilled or to be drilled 2-28-77
Type logs available on (this well/offset well): (By reference/included _____
Dual Induction-Laterolog, Compensated Neutron Formation Density

Construction:	Size (in)	Depth Interval	Sacks of Cement	Hole Size	Cement Interval	How Determined
Surface Csg.	10-3/4	204'	200	15"	Surface	Circulation
Intermediate Csg.						
Long String Csg.	7"	5342'	1010	8-3/4"	Surface	Circulation
Liner						
Tubing			Packer type and depth			

Other Perforated Intervals None

Depth of base of fresh water: Morrison top at 4260'

ENTRADA WATER

Unichem International

707 North Leech P.O.Box 1499

Hobbs, New Mexico 88240

Company : MERRION OIL & GAS
Date : 01-09-1990
Location: Media - Entrada #6 (on 9-13-89)

	Sample 1
Specific Gravity:	1.013
Total Dissolved Solids:	17838
pH:	7.50
IONIC STRENGTH:	0.351

CATIONS:		me/liter	mg/liter
Calcium	(Ca^{+2})	14.4	288
Magnesium	(Mg^{+2})	8.80	107
Sodium	(Na^{+1})	256	5890
Iron (total)	(Fe^{+2})	0.014	0.400
Barium	(Ba^{+2})	0.003	0.200
ANIONS:			
Bicarbonate	(HCO_3^{-1})	7.20	439
Carbonate	(CO_3^{-2})	0	0
Hydroxide	(OH^{-1})	0	0
Sulfate	(SO_4^{-2})	116	5550
Chloride	(Cl^{-1})	157	5560

SCALING INDEX (positive value indicates scale)

Temperature		Calcium Carbonate	Calcium Sulfate
86°F	30°C	0.21	-9.4
120°F	49°C	1.1	-9.4

MESAVERDE WATER

Unichem International

707 North Leech P.O.Box 1499

Hobbs, New Mexico 88240

Company : MERRION OIL & GAS
Date : 01-09-1990
Location: Little Blue Fed #1 (on 12-22-89)

	Sample 1
Specific Gravity:	1.005
Total Dissolved Solids:	7245
pH:	9.10
IONIC STRENGTH:	0.121

CATIONS:		me/liter	mg/liter
Calcium	(Ca^{+2})	0.400	8.00
Magnesium	(Mg^{+2})	2.48	30.1
Sodium	(Na^{+1})	111	2550
Iron (total)	(Fe^{+2})	0.705	19.7
Barium	(Ba^{+2})	0.016	1.10
Manganese	(Mn^{+2})	0.019	0.510
ANIONS:			
Bicarbonate	(HCO_3^{-1})	19.2	1170
Carbonate	(CO_3^{-2})	0	0
Hydroxide	(OH^{-1})	0	0
Sulfate	(SO_4^{-2})	10.1	483
Chloride	(Cl^{-1})	84.6	3000

SCALING INDEX (positive value indicates scale)

Temperature		Calcium Carbonate	Calcium Sulfate
86°F	30°C	1.2	-27
120°F	49°C	2.1	-27

Comments:
This water to be mixed with Media - Entrada #6

Navajo 15-3 Conversion to Injection

Verification of Public Notice

	Date Sent
Mr. Mike Stogner New Mexico Oil Conservation Division P. O. Box 2088 Santa Fe, New Mexico 87501	3-1-90
Mr. Ken Townsend Bureau of Land Management 1235 La Plata Highway Farmington, New Mexico 87401	3-1-90
Mr. Ervin Peshlakai Bureau of Indian Affairs P. O. Box M Window Rock, Arizona 86515	3-1-90
Mr. Frank Welker Chase Oil 313 Washington SE Albuquerque, New Mexico 87108	3-1-90

Certification

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

[signature]

Name

Petroleum Reservoir Engineer

Title

* If certification is signed by a party other than the injection well owner/operator a written statement of authorization signed by the owner/operator must accompany the application.

STATEMENT OF AUTHORIZATION

I J Gregory Merrion, hereby authorize George F Sharpe
(injection well owner/operator)
to act in my behalf in executing the necessary forms including permit applications, compliance reports, etc., as required under the Environmental Protection Agency Underground Injection Control Program.

Signed (owner/operator)