

~~WAX~~ 8/15/97
PMX 722

MERRION

Oil & Gas

July 30, 1997

31 1997

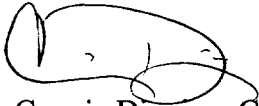
~~Mr. Mike Stogner~~
New Mexico Oil Conservation Division
2040 S. Pacheco
Santa Fe, NM 87505

RE: C-108 Injection Permit Application
Media Entrada Unit #2
Section 15, T19N, R3W
Sandoval County, New Mexico

~~Dear Mr. Stogner~~

Please find enclosed our Application for Authorization to inject into the subject well. We plan to expand our existing secondary recovery waterflood in the Entrada formation. If you require additional information, please contact me at (505) 327-9801, ext. 126.

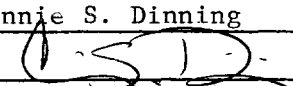
Sincerely



Connie Dinning, Contract Engineer

xc: Well File
Frank Chavez, NMOCD, Aztec, NM
BLM, Albuquerque, NM
Yates Petroleum, Artesia, NM
Rutter & Wilbanks, Midland, TX

APPLICATION FOR AUTHORIZATION TO INJECT

- I. Purpose: ☒ Secondary Recovery ☐ Pressure Maintenance ☐ Disposal ☐ Storage
Application qualifies for administrative approval? ☐ yes ☐ no
- II. Operator: Merrion Oil & Gas Corporation
Address: 610 Reilly Avenue, Farmington, NM 87401
Contact party: Connie S. Dinning Phone: (505) 327-9801 x 126
- 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 ☐ no
If yes, give the Division order number authorizing the project R-5017.
- 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.).
- *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: Connie S. Dinning Title: Consulting Engineer
Signature:  Date: July 30, 1997
- * 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.

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.

APPLICATION FOR AUTHORIZATION TO INJECT SECTION III - WELL DATA

Media Entrada Unit #2, Convert to Water Injection							
A.							
1)	Well : Media Entrada Unit #2			Location: 1650' fsl & 330' fel, Sec 15, T19N, R3W			
				Top Prod Interval:		1621' fsl & 33' fwl	
				TD:		1616' fsl & 472' fwl, sec 14	
2)	Casing:						
	<i>Size</i>	<i>Depth Set</i>	<i>Hole Size</i>	<i>Cement Record</i>			
	10 3/4"	208'	13 3/4"	140 sx			
	7"	5320'	8 3/4"	Original, 350 sx, calc top @ 2,950'			
				Squeeze @ 2,200', 300 sx, circ to surface			
	4 1/2"	4951' - 5345' (MD)		153 sx			
	OPEN HOLE COMPLETION 5239' - 5822' MD (5161' - 5207' TVD)						
3)	Tubing String:						
	148 jts 3 1/2", 9.3#, EUE & jt 2 3/8"						
	Set @ approximately 4620' KB, no internal lining						
4)	Packers: Baker Lok Set (or equivalent), Retrievable Casing Packer, 4 1/2"						
	Set @ 4620' KB						
B.							
1)	Name of Pool/Formation:			Media Entrada			
2)	Injection Interval:			Open hole interval listed above			
3)	Original Purpose of Well:			Oil Producer			
4)	The well was plugged and abandoned then re-entered as a horizontal						
	Entrada producer in January, 1996						
5)	There are no other producing zones in the area. The Dakota, Gallup and Mesa Verde						
	are present as illustrated on the wellbore diagram, but they are not productive.						

Merrion Oil & Gas Corporation
Workover Procedure
July 30, 1997

Well:	Media Entrada #2	Field:	Media Entrada
Location:	1650' fsl & 330' fel (ne se) Sec. 15, T19N, R3W, NMPM Sandoval County, New Mexico	Elevation:	6,807' GL 6,821' KB
		By:	Connie Dinning

Procedure:
Prior to Move In

1. Check to assure there is no pressure on casing.
2. Check wellsite for anchors.
3. Haul in 150 jts. of 3 1/2", yellow band tubing for injection string.
4. Dig small pit, 10' X 10'.
5. Change out wellhead from subpump head.

Pressure Test Casing

1. MIRU workover rig. RIH w/ 4 1/2" Lok-set packer on one jt 2 3/8" tbg, changeover to 3 1/2" tbg and approximately 148 jts 3 1/2" tbg. Set packer @ about 4,620' KB.
2. RU Cementers Inc. to pressure test. Pressure test casing to 300 psi.

Run Injection String

1. Perform injectivity test at 3 BPM, 5 BPM, 6 BPM and 7 BPM. Allow pressure to stabilize for each step, record surface pressure with strip chart recorder.
2. Unset packer, circulate packer fluid.
3. Reset packer, perform mechanical integrity test (record pressure on chart for 30 minutes, witnessed by NMOCD)

Complete Surface Modifications

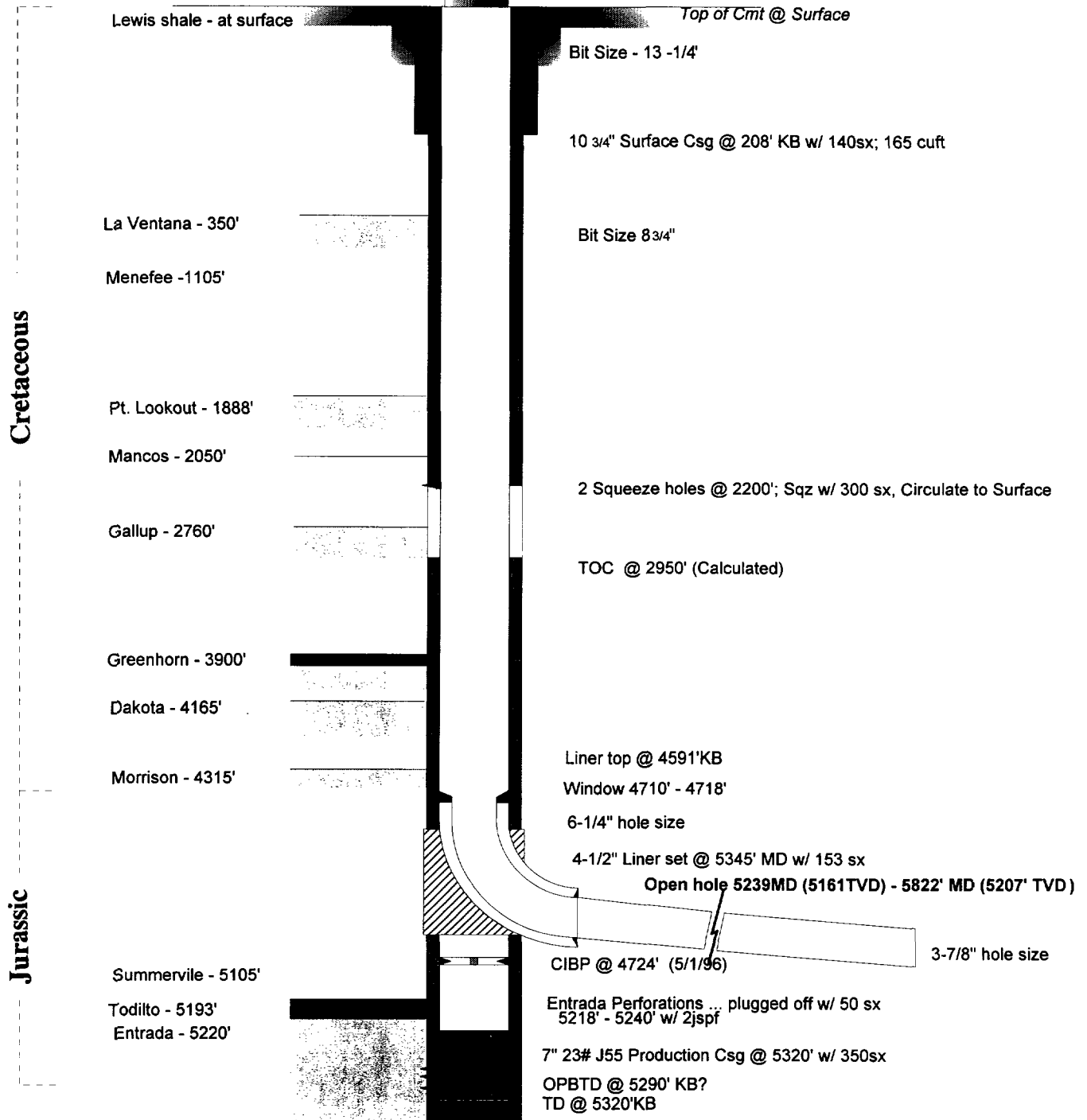
1. Remove old J-100 injection pump and replace with larger pump (details to follow)
2. Tie in MEU #2 to injection pump.

Merrion Oil & Gas Corporation
Wellbore Schematic
MEDIA ENTRADA UNIT No. 2
Horizontal Wellbore Configuration

Location: THL: 1650' fsl & 330' fel (ne se)
 Sec 15, T19N, R05W
 BHL: 1616' fsl & 472' fwl (nw sw)
 Sec 14, T19N, R3W
 Sandoval Co, New Mexico
 Date: July 30, 1997

Elevation: 6807' GL
 6821' RKB

Prepared by: Connie S. Dinning



WELL DATA:

CUM GAS:
 CUM OIL:
 SPUD: Feb 18, 1972
 RE-COMPLETED: Jan 17, 1996

CURRENT SICP:
 CURRENT SITP:
 LINE PRESSURE:
 OIL TRANSPORTER: Giant

Merrion Oil & Gas Corporation
Wellbore Schematic

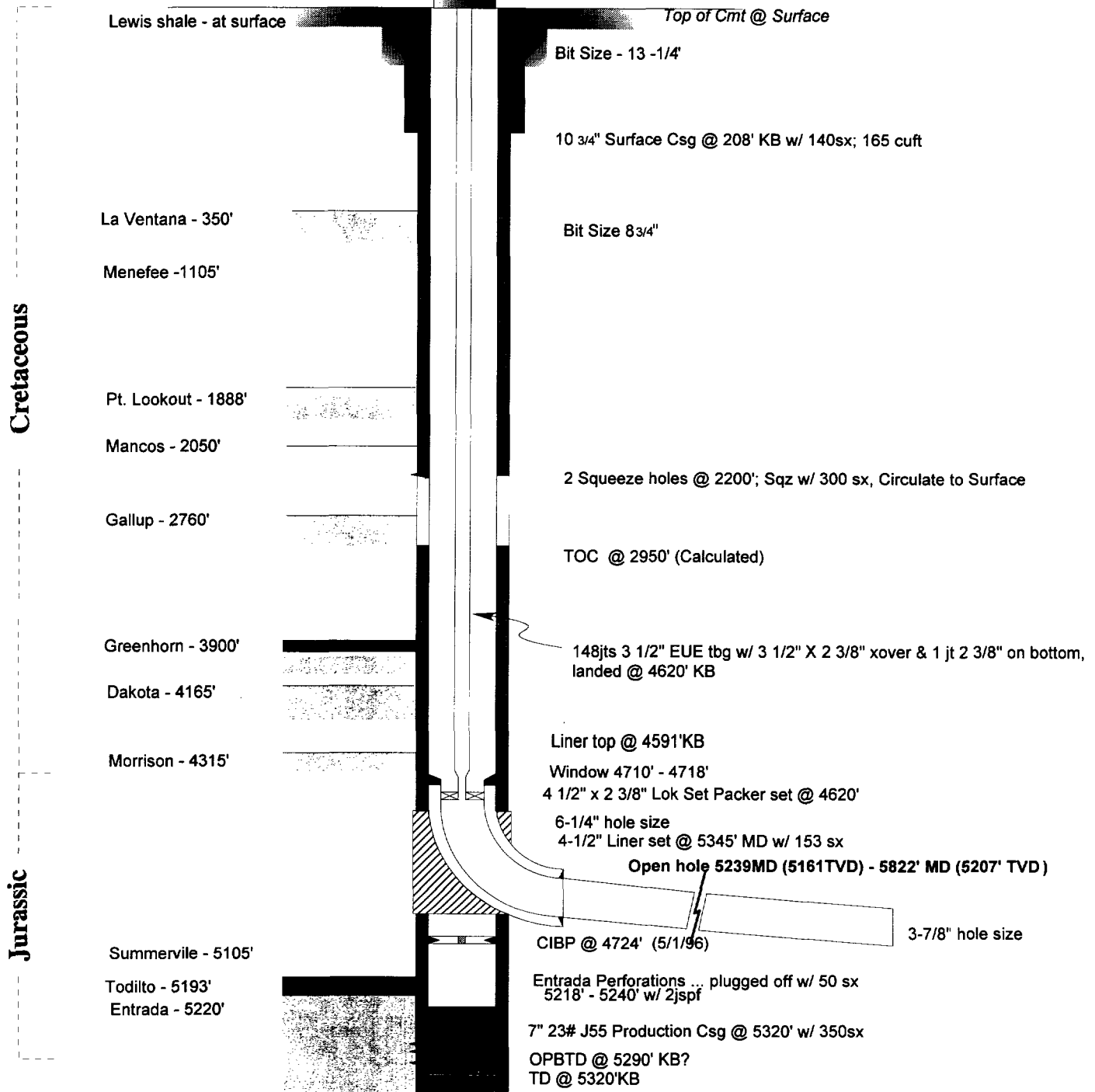
MEDIA ENTRADA UNIT No. 2

Proposed Water Disposal Wellbore Configuration

Location: THL: 1650' fsl & 330' fel (ne se)
Sec 15, T19N, R05W
BHL: 1616' fsl & 472' fwl (nw sw)
Sec 14, T19N, R3W
Sandoval Co, New Mexico
Date: July 30, 1997

Elevation: 6807' GL
6821' RKB

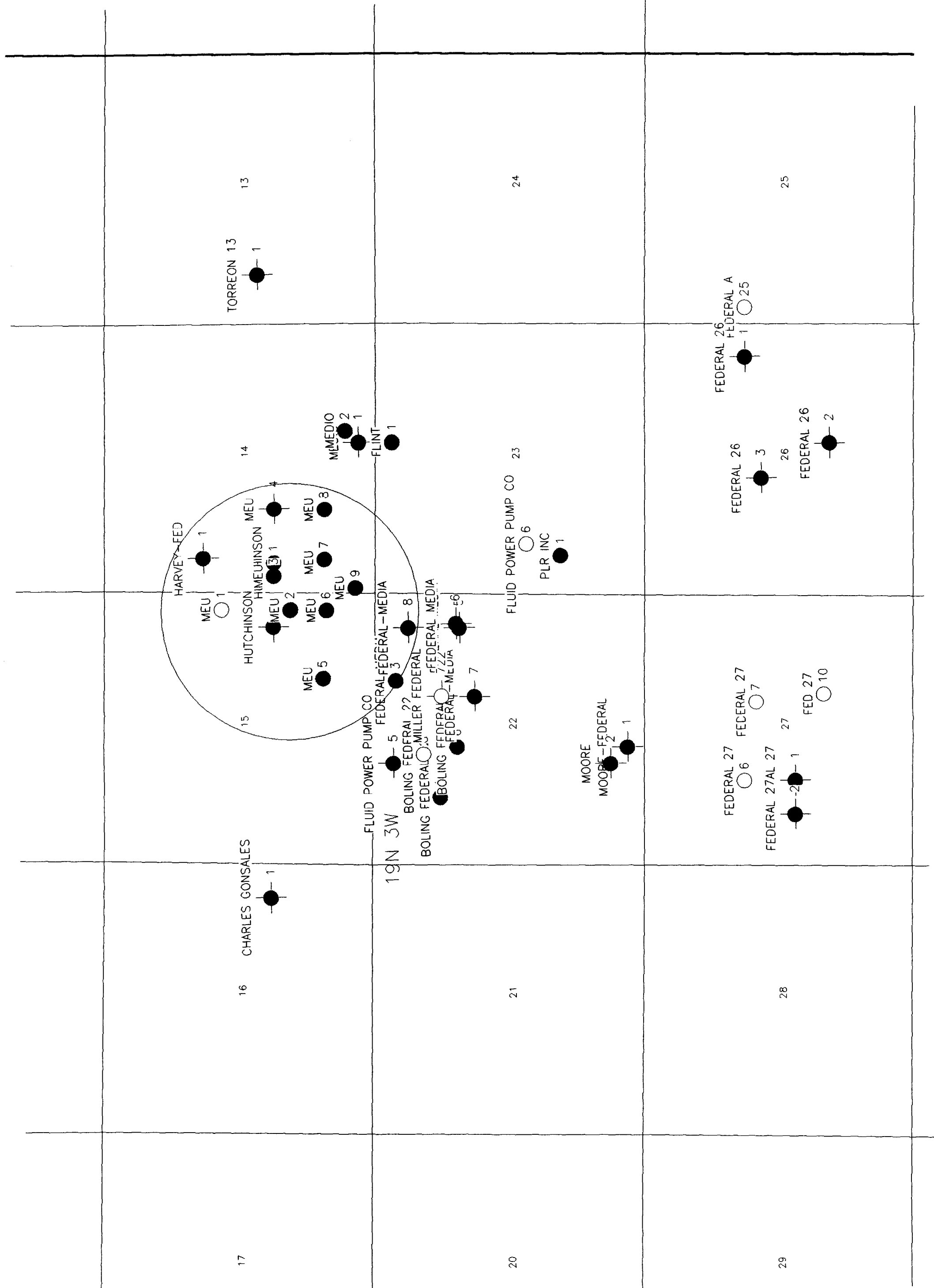
Prepared by: Connie S. Dinning



WELL DATA:

CUM GAS:
CUM OIL:
SPUD: Feb 18, 1972
RE-COMPLETED: Jan 17, 1996

CURRENT SICP:
CURRENT SITP:
LINE PRESSURE:
OIL TRANSPORTER: Giant



APPLICATION FOR AUTHORIZATION TO INJECT, SECTION VI

Media Entrada Unit #2, Convert to Water Injection								
Wells Within Area of Review								
Well Data								
Plugged and Abandoned - 10/30/90								
Well Name	Type	Construction					Spud Date	TD
		Casing Size/Grade	Wt., lb/ft	Depth Se	Hole Size	Cement Record		
Media Entrada Unit #1	SWD	10 3/4"	32.75#	210'	13 3/4"	Surface, 140 sx	11/29/71	5300'
Media Entrada		7"	20&23#	5300'	9 7/8"	310sx, TOC @3484', calc		
Location	Surface: 2310' fnl & 330' f Sec 15, T19N, R3W					P&A: 5212' - 5039'; 33 sx		
	Sandoval County, NM					5212'-4725', 125 sx		
						4725'-600'; 678 sx		
						600'-400'; 100 sx		
						400'-50'; 75sx		
						50'-Surface; 10sx		
						BH squeeze 10 sx		
Completion	Perfs: 5188' - 5214', Stimulate w/ 10,000 gal 15% mud acid & 5000 gal 28% mud acid							
Plugged and Abandoned - 11/2/90								
Well Name	Type	Construction					Spud Date	TD
		Casing Size/Grade	Wt., lb/ft	Depth Se	Hole Size	Cement Record		
Media Entrada Unit #4	Oil	8 5/8"	25#	210'	12 1/4"	Surface, 140 sx	6/30/69	5346'
Media Entrda		5 1/2"	14#	5346'	7 7/8"	548 sx, TOC @ 2214', calc		
						P&A: 5316' - 5060'; 33 sx		
						4501'-4106', 45 sx		
Location	1650' fwl & 1980' fsl, Sec 14, T19N, R3W					2874'-2587'; 25 sx		
	Sandoval County, NM					452'-153'; 35 sx		
						50'-Surface; 15sx		
						BH squeeze; 10 sx		
Completion	Perforated 5214' - 40', 3 spf, & 5280' - 98', 3 spf, Total 132 holes, No Stimulation							

APPLICATION FOR AUTHORIZATION TO INJECT, SECTION VI

Plugged and Abandoned - 10/16/90								
Well Name	Type	Construction					Spud Date	TD
		Casing Size/Grade	Wt., lb/ft	Depth Se	Hole Size	Cement Record		
Media Entrada Unit #5	SWD	10 3/4"	32.75#	236'	13 3/4"	140 sx	3/10/72	5380'
Media Entrada		7"	20&23#	5380'	8 3/4"	300sx, TOC @ 2800', calc		
Location	990' fsl & 1650' fel, Sec 15, T19N, R3W					P&A: 5340' - 5173'; 25 sx		
	Sandoval County, NM					4494'-4316', 25 sx		
						4204'-4096'; 25sx		
						2902'-2724'; 25 sx		
						435'-170'; 47 sx		
						50'-Surface; 13sx		
						BH squeeze; 10 sx		
Completion	Perfs:	5284' - 90', 2 spf, total 12 hole Stimulate w/ 1000 gal 15% MCA						
Plugged and Abandoned - 8/31/91								
Well Name	Type	Construction					Spud Date	TD
		Casing Size/Grade	Wt., lb/ft	Depth Se	Hole Size	Cement Record		
Meda Entrda Unit #8	SWD	8 5/8"	24#	213'	12 1/4"	Surface, 175 sx	5/18/69	5344'
Media Entrada		4 1/2"	9.5#	5344'	7 7/8"	300sx, TOC @ 3744', calc		
Location	990' fsl & 1650' fwl, Sec 14, T19N, R3W					P&A: 5223' - 4760'; 33 sx		
	Sandoval County, NM					4514'-4087', 33 sx		
						2850'-2434'; 33 sx		
						454'- Surface; 50 sx		
						454'- Surface; 35 sx		
						BH squeeze; 35 sx		
Completion	Perfs:	5290' - 92', 3 spf & 5293.5' - 95.5', 4 spf, total 14 holes						
		Stimulate w/ 400 gal Acetic acid/ 500 gal 15% MA						

APPLICATION FOR AUTHORIZATION TO INJECT, SECTION VI

Plugged and Abandoned - 10/19/58								
Well Name	Type	Construction				Cement Record	Spud Date	TD
		Casing Size/Grade	Wt., lb/ft	Depth Se	Hole Size			
Hutchison #1	Oil	10 3/4"	32.8#	452'		550sx to Surface	7/3/53	9684'
		7"		5478'		100sx		
Location	1980' fsl & 660' fwl, Sec 14, T19N, R3W							
		Sandoval County, NM				P&A: 9160'-9075'; 20sx		
Completion	Perfs:	5210'-15', 4 spf, no stimulation				8780'-8710'; 16sx		
						8500'-8400'; 25sx		
						5550'-5300'; 60sx, DOC to 5400'		
						perf 5210'-17', 5240'; sqz 170sx		
						CIBP@ 3395'		
						3351'-55'; 150sx		
						3244'-3210'; 150sx		
						3310'-3163'; 30sx		
						2490'-2428'; 30sx (cut off 7" csg @ 2490')		
						452'- 401'; 25sx		
						12'- Surface; 10sx		
Plugged and Abandoned - 3/11/96								
Well Name	Type	Construction				Cement Record	Spud Date	TD
		Casing Size/Grade	Wt., lb/ft	Depth Se	Hole Size			
Hutchison #2	Oil	9 5/8"	36#	470'		475 sx	10/26/95	5605'
		7"	23#	5200'		500sx		
Location	1984' fsl & 660' fel, Sec 15, T19N, R3W					P&A plugs:	5102'-5060'; 10sx	
		Sandoval County, NM				4280'-4270'; sqz		
Completion	Perfs:	5101'-5102', 4 shots total, stimulate w/ 50 gal MA				3530'-3630'; 25sx		
						848'-838'; sqz		
						810'-760'; 20sx		
						26'-Surface; 10sx		
Plugged and Abandoned - 2/6/78								
Well Name	Type	Construction				Cement Record	Spud Date	TD
		Casing Size/Grade	Wt., lb/ft	Depth Se	Hole Size			
Federal Media 3	Oil	8 5/8"	24#	233'	12 1/4"	175 sx	5/4/69	5341'
		4 1/2"	9.5#	3102'	7 7/8"	350sx		
Location	430' fnl & 1690' fel, Sec 22, T19N, R3W							
		Sandoval County, NM				Open hole plugs:	5342'-5100'; 60sx	
Completion	Drilled to Entrada, plug back to Gallup, no casing through					4445'-4145'; 87 sx		
						P&A plugs:		
						3075' - 2775', 35 sx		
						2300' - 2000', 35 sx		
						Surface Plug, 10 sx		
						BH squeeze; 10sx		

APPLICATION FOR AUTHORIZATION TO INJECT, SECTION VI

Plugged and Abandoned - 7/3/58								
Well Name	Type	Construction					Spud Date	TD
		Casing Size/Grade	Wt., lb/ft	Depth Se	Hole Size	Cement Record		
Harvey Federal #1	Oil	10 3/4"		478'		500 sx	2/7/54	5292'
Location	1948' fml & 660' fwl, Sec 14, T19N, R3W Sandoval County, NM					P&A plugs: 4480'-4150'; 110 sx 3325'-3150'; 65 sx	5292'-5140'; 80 sx	
Completion	No Production Casing Set					2150'-2050'; 40sx 1450'-1258'; 80 sx 50'- Surface; 25sx		
Operating SWD								
Well Name	Type	Construction					Spud Date	TD
		Casing Size/Grade	Wt., lb/ft	Depth Se	Hole Size	Cement Record		
Meda Entrda Unit #3	SWD	10 3/4"	40.5	217'	15"	Surface, 140 sx	10/10/71	5351'
Media Entrada		7"	20&23#	5340'	8 3/4"	300 sx, TOC @ 3340', calc		
		4 1/2" liner	9.5#	5200'		562sx, plus 100 sx sqz annulus from surface		
Location	1980' fsl & 330' fwl, Sec 14, T19N, R3 Sandoval County, NM							
Completion	Perfs: 5206'-5254', 2 spf, stimulate w/ 500 gal MA Convert to injector 10/11/90, packer set @ 5172' KB on 2 3/8 tbq							
Shut In Producer								
Well Name	Type	Construction					Spud Date	TD
		Casing Size/Grade	Wt., lb/ft	Depth Se	Hole Size	Cement Record		
Meda Entrda Unit #6	Oil (SI)	8 5/8"	24#	208'	12 1/4"	Surface, 175 sx	4/14/69	5283'
Media Entrada		4 1/2"	9.5#	5283'	7 7/8"	300sx. TOC @ 3683'		
						Csg Sqz: 2705'-2342'; 150sx 2065'; 200sx		
Location	940' fsl & 330' fel, Sec 15, T19N, R3W Sandoval County, NM					428'-312'; 300sx		
Completion	Perfs: 5196'-5238', Total 123 holes, stimulate w/ 500 gal MA							
Producing Oil Well								
Well Name	Type	Construction					Spud Date	TD
		Casing Size/Grade	Wt., lb/ft	Depth Se	Hole Size	Cement Record		
Meda Entrda Unit #9	Oil	9 5/8", J-55	36#	262'	12 3/4"	Surface, 150 sx	1/31/97	5424'
Media Entrada		7", J-55/N80	23#	5424'	8 3/4"	1st Stg, 450 sx, TOC @ DV tool, calc DV tool @ 2158' w/ 250 sx, TOC @ 195', cal		
Location	390' fsl & 100' fwl, Sec 14, T19N, R3 Sandoval County, NM							
Completion	Perfs: 5248'-5258', 4 spf, 40 holes total, No Stimulation							

APPLICATION FOR AUTHORIZATION TO INJECT, SECTION VI

Producing Oil Well								
Well Name	Type	Construction					Spud Date	TD
		Casing Size/Grade	Wt., lb/ft	Depth Se	Hole Size	Cement Record		
Federal Medio #1	Oil	8 5/8"	24#	200' KB	9 1/4"	Surface, 150 sx	3/26/69	5310'
Undesignated		4 1/2"	9.5#	5310'	7 7/8"	300 sx		
Mesaverde						Squeeze Mesaverde perfs:		
						1620'-35', 35sx		
Location	990' fsl & 660' fwl, Sec 14, T19N, R3W					1500'-1865'; 80 sx		
		Sandoval County, NM				CICR @ 2049', 100 sx plug across Entrada		
						5 sx on top of retainer. New PBTD @ 2020'		
						Squeeze bad casing @ 2220' & 2390'; 25 sx		
						Squeeze bad casing @ 1870'; CICR 1800'		
						Squeeze bad casing @ 1550'; 30 sx		
Completion	Perforated 1735' - 1745', 2 spf, Frac w/ gelled water, 3000# 20/40 sand							
	Note:	Mesaverde test perfs @ 1890'-1900', 1925'-1950'. Set CIBP @ 1865'						

Merrion Oil & Gas Corporation

Wellbore Schematic

MEU No. 1

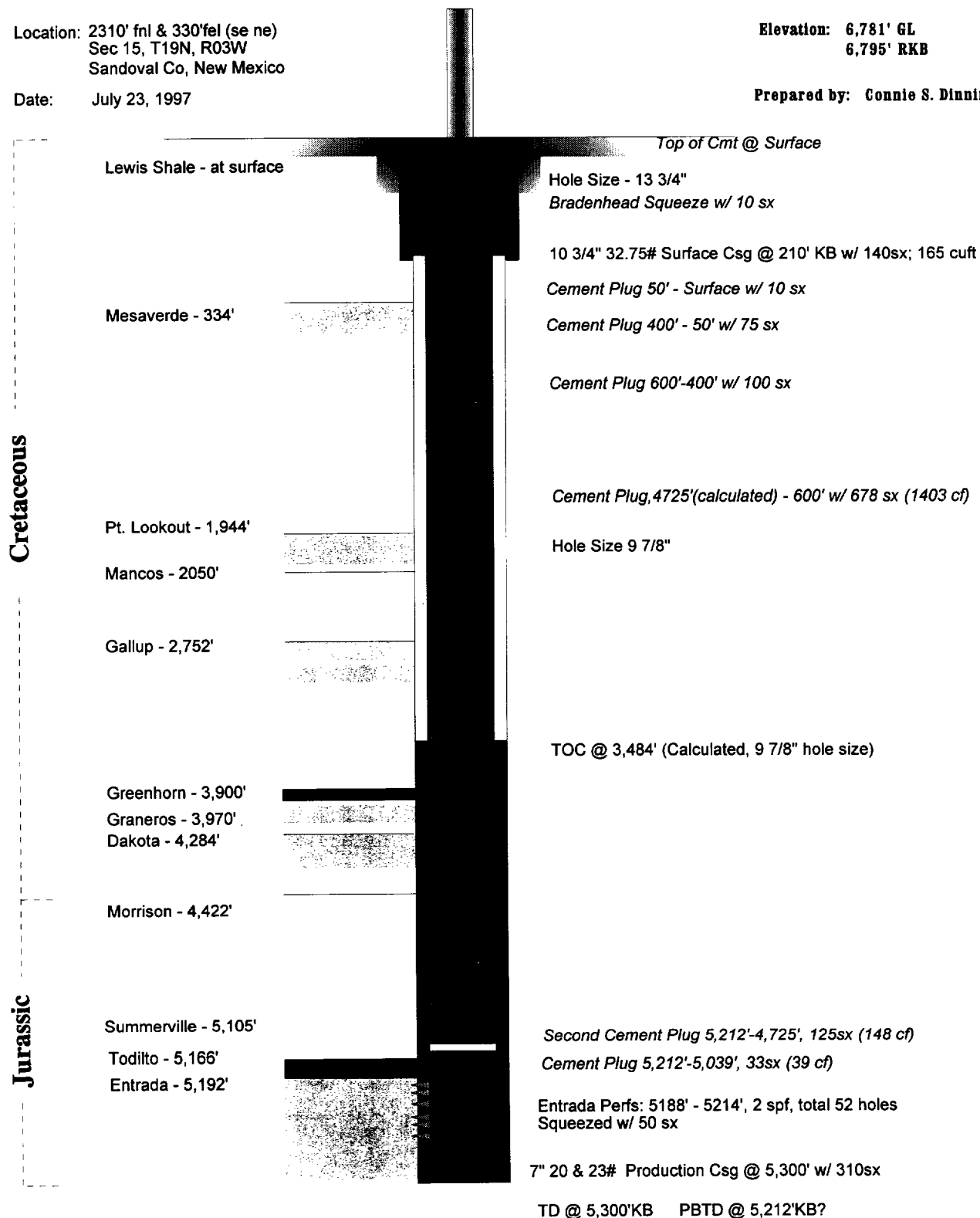
As P&A'd Wellbore Configuration

Location: 2310' fnl & 330'fel (se ne)
Sec 15, T19N, R03W
Sandoval Co, New Mexico

Elevation: 6,781' GL
6,795' RKB

Date: July 23, 1997

Prepared by: Connie S. Dinning



Merrion Oil & Gas Corporation

Wellbore Schematic

MEU No. 4

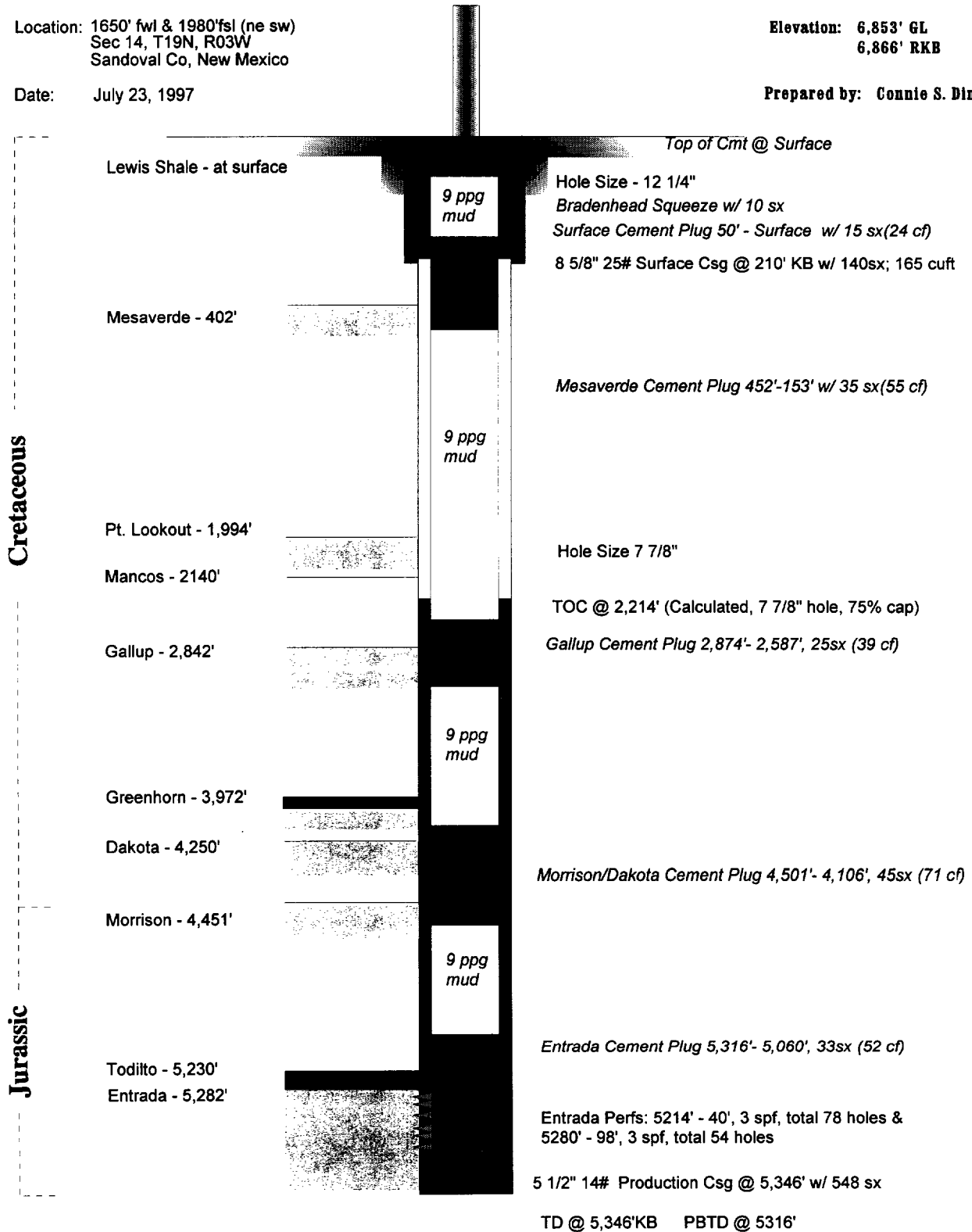
As P&A'd Wellbore Configuration

Location: 1650' fwl & 1980' fsl (ne sw)
Sec 14, T19N, R03W
Sandoval Co, New Mexico

Elevation: 6,853' GL
6,866' RKB

Date: July 23, 1997

Prepared by: Connie S. Dinning



Merrion Oil & Gas Corporation

Wellbore Schematic

MEU No. 5

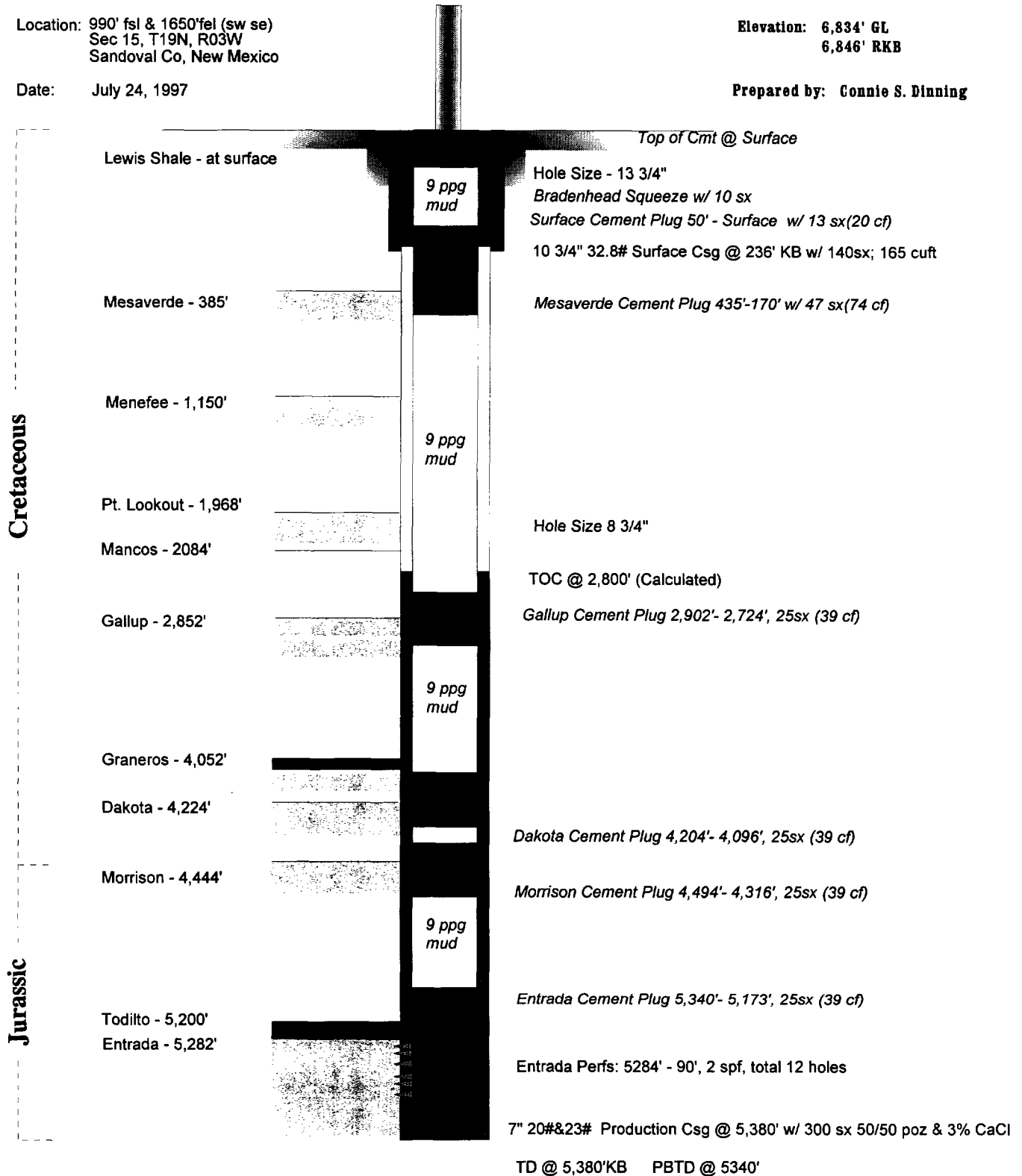
As P&A'd Wellbore Configuration

Location: 990' fsl & 1650' fel (sw se)
Sec 15, T19N, R03W
Sandoval Co, New Mexico

Elevation: 6,834' GL
6,846' RKB

Date: July 24, 1997

Prepared by: Connie S. Dinning



Merrion Oil & Gas Corporation

Wellbore Schematic

MEU No. 8

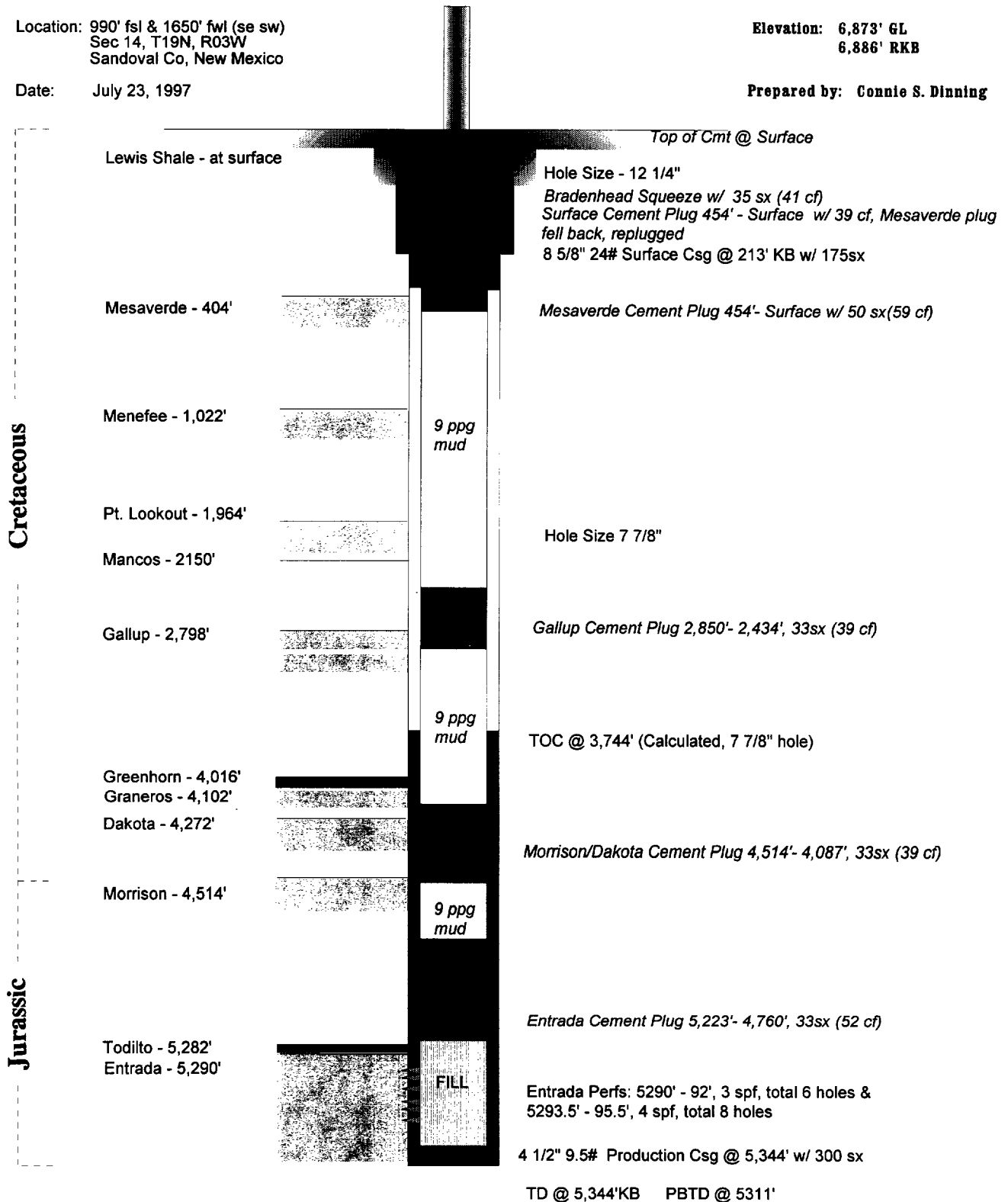
As P&A'd Wellbore Configuration

Location: 990' fsl & 1650' fwl (se sw)
Sec 14, T19N, R03W
Sandoval Co, New Mexico

Elevation: 6,873' GL
6,886' RKB

Date: July 23, 1997

Prepared by: Connie S. Dinning



GF5
5-22-90.

1980' F L 660' FWL
Sec 14, 19N, 3W
Sandoval Co, NM

Mesavende 290'

7" 23" CSQ @ 5478'
Cut w/ 100sx. TUC = 4330'
Cut off @ 2490'

Tocib 3165'

Dakota 4209'

Morrison 4440'

Entrada - 5214' -

10 3/4" 32.8" csq @ 452'
Cont to surf w/ 550 sx

10 sq plug 12'-0'

25 sq ft 452'-401'

30s x plng 2490'-2428'

30sx plus 3310'-3163'

3210-11 Sqz w/ 150sx

3229-44' Gallup Pools

3351-55 592 w/150 sy

CIBP 3375'

TOC 4330'

Entrada Perfs 5210'-17', 5240. Sgs 1170sy

60s x 5550' - 5300'
DOC to 5400'

255x 8500'-8400'

16 sx 8740'-8710'

205x 9160'-9075'

$$TD = 9684'$$

Hutchison Federal #2 Well bore Schematic

GFS
5-22-90

Location

1904' FSL 660' FEL
Sec 15, 19N, 3W
Sandoval Co, NM

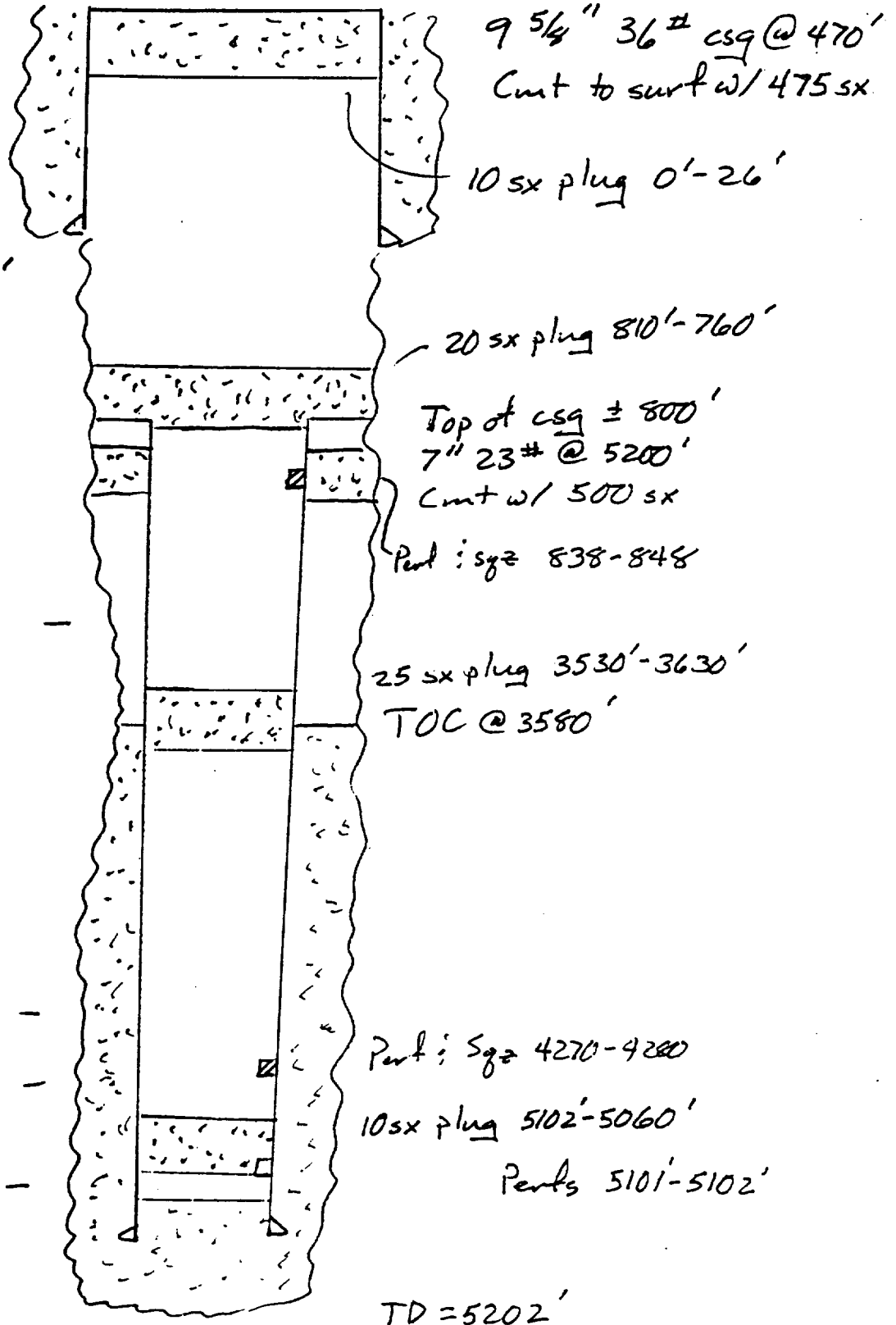
Mesaverde - 340'

Tocito 3162' -

Dakota 4174' -

Morrison 4432' -

Entrada 5199' -



Merrion Oil & Gas Corporation

Wellbore Schematic

Federal Media No. 3

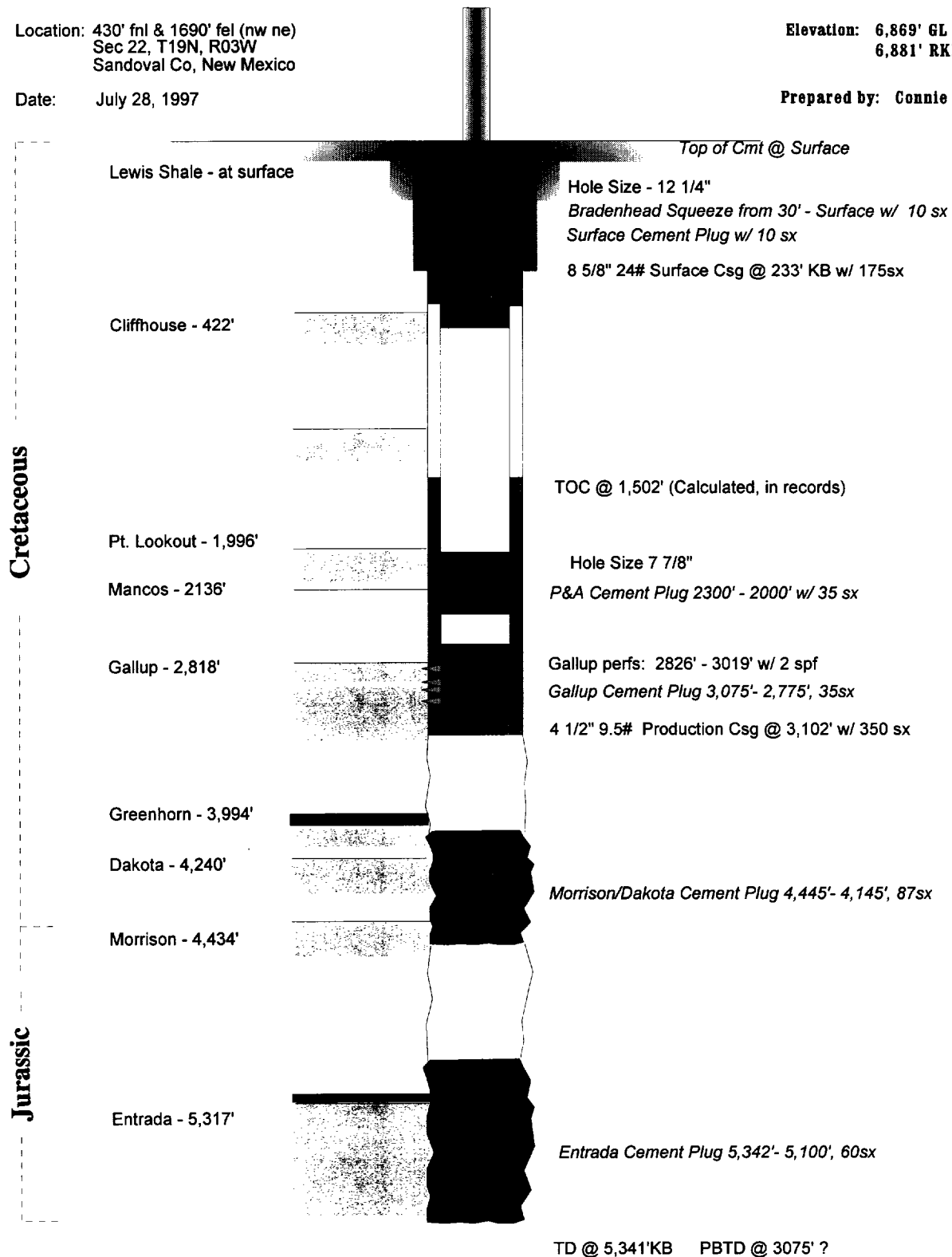
As P&A'd Wellbore Configuration

Location: 430' fnl & 1690' fel (nw ne)
Sec 22, T19N, R03W
Sandoval Co, New Mexico

Elevation: 6,869' GL
6,881' RKB

Date: July 28, 1997

Prepared by: Connie S. Dinning

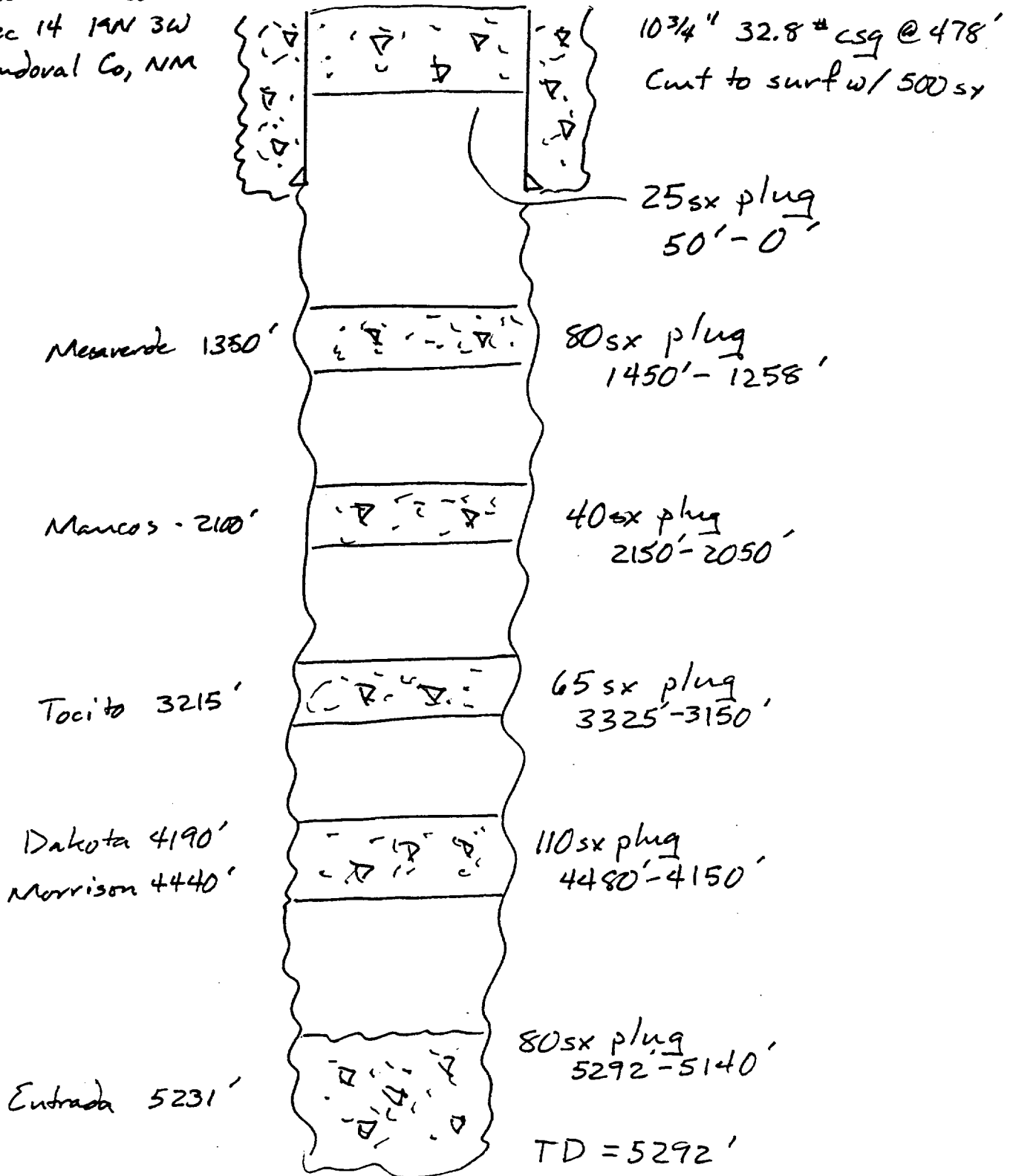


Harvey Federal #1 Wellbore Schematic

GFS
5-22-90

Location:

1980' FNL 660' FNL
Sec 14 14N 3W
Sandoval Co, NM



APPLICATION FOR AUTHORIZATION TO INJECT

Media Entrada Unit #1, Convert to Water Injection							
VII. Operational Data							
1)	Ave Rate:	3-4 BPM	Daily Rate:	5000 BPD			
2)	Open System						
3)	Ave. Pressure:	1,200 psi	Max Pressure:	1,500 psi			
<i>Please note, the maximum pressure is due to anticipated tubing friction at higher rates.</i>							
4)	Reinjected produced water from same formation						
5)	Water Analysis Attached						
VIII. Geological Data							
	Injection Zone:	Entrada Sandstone (Eolian Dune Sand)					
	Thickness:	approx. = 250'					
	Top:	5220'					
Overlaying this formation is a 10' layer of limestone and a 15' layer of anhydrite.							
According to engineering and geological review, there is one formation in the area of review which contains water with < 10,000 ppm TDS.							
IX. Stimulation Program							
The well will not be stimulated initially. However if injection volumes and pressures are not satisfactory, a fracture program may be proposed.							
X. Logging and Test Data							
All logs are on file with the OCD office in Aztec							
XI. Fresh Water Analysis							
There is a fresh water well on lease which produces from the Mesaverde. A water analysis is attached.							
XII. Engineering and Geology Review to Protect Fresh Water							
The top of the Menefee water zone in this well is at 1,105' and it is approximately 780' thick. The top of the Entrada, the proposed injection zone, is at 5,220'. There is good cement outside casing and the 700' thick Mancos shale is in the 3,100' interval which separates the Entrada from the Menefee.							

ANALYSIS NO. 53-38-90

FORM 43-1

FIELD RECEIPT NO. _____

API WATER ANALYSIS REPORT FORM

Company <u>Merrion Oil & Gas</u>		Sample No.	Date Sampled <u>08-31-90</u>
Field	Legal Description	County or Parish	State
Lease or Unit <u>Media Entrada Unit</u>	Well <u>#7</u>	Depth <u>1735-1745'</u>	Formation <u>Monefco</u>
Type of Water (Produced, Supply, etc.)		Sampling Point	Sampled By

DISSOLVED SOLIDS

IONS	mg/l	me/l
Sodium, Na (calc.)	<u>758</u>	<u>32.97</u>
Calcium, Ca	<u>3</u>	<u>.15</u>
Magnesium, Mg	<u>2</u>	<u>.15</u>
Sulfate, SO ₄	<u>—</u>	<u>—</u>
Potassium, K ⁺	<u>5</u>	<u>.13</u>

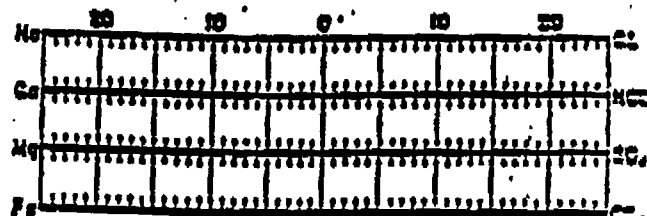
OTHER PROPERTIES

pH	<u>9.15</u>
Specific Gravity, 60/60 F.	<u>1.003</u>
Resistivity (ohm-meters) <u>76 F.</u>	<u>3.5</u>
Total hardness	<u>15</u>

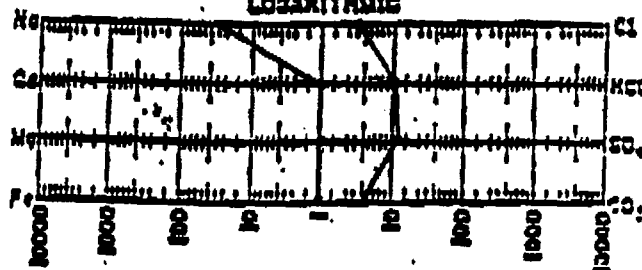
Chloride, Cl	<u>151</u>	<u>4.25</u>
Sulfate, SO ₄	<u>620</u>	<u>12.91</u>
Carbonate, CO ₃	<u>168</u>	<u>5.60</u>
Bicarbonate, HCO ₃	<u>649</u>	<u>10.64</u>
Free OH	<u>0</u>	<u>0</u>

WATER PATTERNS — me/l

STANDARD



LOGARITHMIC

Total Dissolved Solids (calc.) 2356Total Fe (total) #, # 0,0 ppm
H₂S as H₂S neg

FINDINGS & RECOMMENDATIONS:

34.15 °API @ 60 °F → Oil Gravity.

ANALYST: Lee

Specific Gravity = .854 @ 60 °F

THE WESTERN COMPANY OF
NORTH AMERICA, FARMINGTON, N.
(505) 327-6222

Please refer any questions to: BRIAN AULT District Engineer

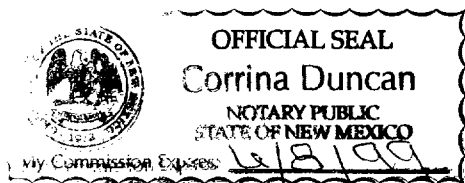
PUBLIC NOTICE

Merrion Oil & Gas
610 Realty Ave.
Farmington, NM 87401
Attn: Connie Dinning

Merrion Oil & Gas proposes to convert a previously producing oil well to a water disposal well to take produced water from the Media Entrada field.
Injection Well Location: 1850' fs1 & 330' fs1, Sec. 15, T19N, R3W, Sandoval County, NM.
Injection Formation: Entrada
Depth of Injection Zone: 5,220'
Maximum Pressure: 2,000 psi
Maximum Rate: 5,000 barrels per day
Interested parties must file objections or requests for hearing with the Oil Conservation Division, 2040 S. Pacheco St., Santa Fe, New Mexico 87505 within 15 days of this notice.
Journal: July 12, 1997

STATE OF NEW MEXICO
County of Bernalillo **SS**

Bill Tafoya, being duly sworn, declares and says that he is Classified Advertising Manager of **The Albuquerque Journal**, and that this newspaper is duly qualified to publish legal notices or advertisements within the meaning of Section 3, Chapter 167, Session Laws of 1937, and that payment therefore has been made of assessed as court cost; that the notice, copy of which is hereto attached, was published in said paper in the regular daily edition, for One times, the first publication being on the 18 day of July, 1997 and the subsequent consecutive publications on _____, 1997.



Corrina Duncan

Bill Tafoya

Sworn and subscribed to before me, a Notary Public, in and for the County of Bernalillo and State of New Mexico, this day of July, 1997

PRICE 6.53

Statement to come at end of month.

ACCOUNT NUMBER 081535

MERRION

Oil & Gas

July 30, 1997

Rutter & Wilbanks
P.O. Box 3186
Midland, TX 79702

RE: C-108 Injection Permit Application
Media Entrada Unit #2
Section 15, T19N, R3W
Sandoval County, New Mexico

Gentlemen

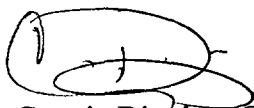
We are planning to convert the subject well to injection to expand the waterflood in the Media Entrada Unit. Attached is a copy of the state permit application.

The well is located adjacent to your lease or leases in the location listed above. We are therefore required by the state to notify you of our plans. Objections or requests for hearing should be filed within 30 days to:

NM Oil Conservation Commission
2040 S. Pacheco
Santa Fe, NM 87501

If you require additional information, please contact me at (505) 327-9801, ext. 126.

Sincerely



Connie Dinning, Contract Engineer

xc: Unit File
Crystal Williams
Mike Stogner, NMOCD

MERRION

Oil & Gas

July 30, 1997

Yates Petroleum
104 S. 4th Street
Artesia, NM 88210

RE: C-108 Injection Permit Application
Media Entrada Unit #2
Section 15, T19N, R3W
Sandoval County, New Mexico

Gentlemen

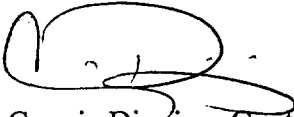
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