3-245 PC
REV. 10-69

AUTHORITY FOR EXPENDITURE

Production and Exploration

DEPARTMENT Production REG./DIV. Casper AFE NO. 12-61-1656

Type: (1) 1. D & E 2. Misc. 3. D & T	Field or Block West Lindrith
Group: (1) 1. Dev. 2. Maint. 3. Expl. 4. Inv.	
(0) O. Onshore 1. Offshore Div. Code 12	TD and Obj.
Date Appr. Lease Code 7155214	Horizon(s) 7825' Dual Gallup - Dakota
Project Title (Limit 30 Spaces)	Land Lease No.
D&E Jicarilla 22 No. 5	Oil Pmt. Name No.
Conoco Int. Ex Oil 1.0000000 In Oil	Date Completed

1) Location, Geological Province (2) Division of Int. (3) Justification

1) NW SW Section 22, T25N, R4W, Rio Arriba County, New Mexico
G.P. San Juan Basin

2) Conoco - 1.0000000

3) Refer to Sensitivity Analysis - Proposed West Lindrith Development, Rio Arriba County, New Mexico (File No. PET-941.34-CF October 5, 1970).

BEFORE EXAMINER UTZ
OIL CO[illegible] [illegible]SION
[illegible] 8
CASE NO. 4462

EXHIBIT 3

Description	Acct. No. FTRE	Mtl. & Depr. Intangibles Gross $	Acct. No. FTRE	Expense Intangibles Gross $
Second Hand Equipment — Warehouse	8			XXXXXXXX
Material Purchased — Dr.	9	28,200		XXXXXXXX
Total Material		28,200		XXXXXXXX
Fuel, Water, Lubricants, Electricity	103		403	2,500
Location Damages, Roads — Bridges	107		407	2,500
Salvage & Dismantling Costs	108		408	
Drilling Contract — Footage	111		411	35,200
Drilling Contract — Daywork	112		412	6,200
Drilling Bits & Reamers		XXXXXXXX	413	
Fishing Tool Expense		XXXXXXXX	414	
Directional Drilling Costs		XXXXXXXX	415	
Mud Materials, Chemicals, & Services		XXXXXXXX	416	5,500
Cement & Cementing Service		XXXXXXXX	417	5,000
Noncontrollable Materials	118	500	418	2,500
Tender Costs and Rentals		XXXXXXXX	419	
Boatel Service	120		420	
Special Drilling Tool Rental		XXXXXXXX	421	1,000
Coring Costs	125		425	
Drill Stem Tests		XXXXXXXX	426	
Perforating		XXXXXXXX	427	2,700
Acidizing, Fracturing, Shooting		XXXXXXXX	428	22,600
Well Surveys, Electrical & Mud Logging		XXXXXXXX	429	1,500
Transportation	131	500	431	2,000
Boats, Barges, Tugs — Cost — Rental	132		432	
Helicopters, Planes — Cost — Rental		XXXXXXXX	433	
Overhead — Partner Operated	136		436	
District Expense		XXXXXXXX	437	400
Company Labor & Supervision	138	200	438	800
Contract Labor	139	4,000	439	1,000
Platforms — Fabrication & Installation	141		441	
Platform Maintenance	142		442	
Keyways — Well Structures		XXXXXXXX	443	
Sales Tax (Controllable Material)		XXXXXXXX	444	900
Miscellaneous Costs	145		445	500
Subtotal — Intangibles		5,200		92,800
Dry or Bottom Hole Contributions Rec.		XXXXXXXX	448	
Total Intangibles		5,200		92,800
Total Cash & Warehouse Outlay		33,400		92,800
Material on Hand	1			XXXXXXXX
Grand Total		33,400		92,800
Grand Total — Mtl. & Depr. Intangibles and Expense Intangibles				126,200

(Use Only For Expl. or Limited Expl. Wells)

Block Number

Gross Ac. Net Ac.

Budget Project No. Hdqts. 1

Remaining Balance (Before This AFE)

Net Recovery

Net Profit

Rate of Return Payout Period

Cash and Warehouse Outlay

Gross Cost 126,200

Conoco Net 126,200

Approvals: Date

Div: For AFE Purposes Only [illegible]

Land: John E. Bowman [illegible]

Geol: [illegible] 10/31/[illegible]

Hdqts:

Final Approval

Distribution:

RAB RLA CES MPL TWS JAB
WCB(3) DLB KWM(2) CAN RJE
BEA(2)

AFE No. 12-61-1656

CD Job No. 1003

DRILLING MEMORANDUM

JICARILLA 22 WELL NO. 5
RIO ARRIBA COUNTY, NEW MEXICO

BEFORE EXAMINER UTZ
OIL CONSERVATION
CASE NO. 4462

Location: C NW SW Section 22, T25N, R4W, Rio Arriba County, New Mexico

Interest: Conoco - 100% W.I.

Elevation: 6990' GL (estimated)

Objectives: Dual complete in Gallup and Dakota.

Total Depth: 7825'

Estimated Tops:

Pictured Cliffs Sand	3372'
Lewis Shale	3404'
Chacra Sand	4209'
Mesaverde Sand	5006'
Mancos Shale	5679'
Gallup Sand	6656'
Greenhorn Lime	7449'
Graneros Shale	7519
Dakota Sand	7539'
T.D.	7825'

Drilling Fluid:

Drill surface hole with water. Drill out from surface with water-gel low solids system to T.D. Do not exceed mud weight of 9.0 #/gal. Maintain water loss between 6-8 cc's and viscosity approximately 40 cp. Add lost circulation material if needed in the Gallup or Mesaverde sections. (Final mud program will be submitted before initiation of well.)

Casing:

Surface 200' - 8 5/8" OD, 24#, J-55, ST&C

Production 100' - 4 1/2" OD, 10.5#, JE-55, BTRC
7600' - 4 1/2" OD, 10.5#, JE-55, ST&C
125' - 4 1/2" OD, 11.6#, JE-55, ST&C

Casing opposite Gallup and Dakota zones to be "RUFF-COTED" (approximately 250' each zone). "RUFF-COTE" should be applied in the shop at temperatures no lower than 65° F. If "RUFF-COTING" is applied on location, ambient temperature should be in excess of 65° F. for a setting time of 8-12 hours.

Copies to: WCB KWM(3) BEA RET RJE LKR File

Casing: (Continued)

Float equipment to consist of a guide shoe and Baker Model "G" No. 109-11 differential fill collar or equivalent located 1 joint above guide shoe. Centralizers to be located 10' and 60' above guide shoe and at 90' intervals thereafter. Scratchers will be required as indicated by Drilling Foreman.

Stage collar and cement basket to be set at approximately 5780 or 100' below Mancos top.

Hole Size: Surface hole to be 12 1/4" to approximately 200'. Remainder to consist of 7 7/8" hole to T.D.

Cement: Surface Pipe

Cement to surface with neat Class "A" containing 2% $CaCl_2$ (70 sacks required for gauged hole).

Slurry Weight	=	15.6 #/gal.
Yield	=	1.18 $ft.^3$/sack
Pipe Capacity	=	0.3576 $ft.^3$/ft.
Annular Capacity	=	0.4127 $ft.^3$/ft.
Compressive Strength	=	555 psi @ 12 Hours and 60° F.

Production String (Cement in 2 stages)

STAGE 1:

Precede 1st stage with 500 gal. mud flush. Cement with 380 sacks 50-50 Poz. A, containing 2% gel, 6 1/4 #/sack Gilsonite, and 1/2% CFR-2 (volume calculated assuming gauged hole + 60% excess to bring cement top 200' above Gallup).

Slurry Weight	=	13.97 #/gal.
Slurry Yield	=	1.32 $ft.^3$/sack

Minimum rate for annular turbulence = 3.7 BPM (use 5-8 BPM).

Compressive Strength	=	24 Hours, 1309 psi 48 Hours, 3015 psi
Water Ratio	=	5.53 gal./sack

Cement: (Continued)

STAGE 2:

Precede 2nd stage with Halco Liteflush.

Cement out of stage collar with 145 sacks Halliburton Liteweight cement containing 1/2% CFR-2.

Liteweight
Slurry Weight = 12.7 #/gal.
Slurry Yield = 1.840 ft.^{3}/sack

Minimum rate for annular turbulence = 1.7 BPM (use 5-8 BPM).

Compressive Strength = 24 Hours, 415 psi
48 Hours, 771 psi

Follow lead slurry with 360 sacks 50-50 Poz. A, 2% gel, 6 1/4 #/sack Gilsonite, 1/2% CFR-2 (volumes calculated for gauged hole with 30% excess to bring cement top 100' above Pictured Cliffs).

Hole Caliper logs will be run over productive intervals.

Volumes will be re-calculated based on actual gauge.

Hole Deviation Requirements:

Well Depth Feet	Max. Distance Between Surveys Feet	Max. Dev. From Vert. Degrees	Max. Allowable Change Of * Angle Between Any Two Surveys Degrees
0-5000	400	5	1 1/2
5000-7000	100	6	1 1/2
7000-T.D.	100	8	2

* (a) Reduce proportionately for survey intervals less than 100 feet, but do not use intervals shorter than 30 feet.

(b) If these limits are exceeded and the distance is more than 100 feet, contractor shall take immediate surveys no more than 100 feet apart. If such immediate surveys show that above limits for any interval have been exceeded, contractor shall correct hole deviation to within limits of above specifications.

Special Services:

Geolograph.

Sampling:

Collect samples at 30' intervals from 3000' to 6200' and every 10' interval from 6200' to T.D. Samples to be taken to Four Corners Sample Cut Company, in Farmington, New Mexico.

Logging: Run FDC-Gamma Ray-Caliper over Chacra, Mesaverde, Gallup and Dakota.

Tests: No cores or DST's.

Remarks: It is very important to keep a constant surveillance of the mud system and maintain mud weights between 8.7 - 9.0 #/gal. throughout the drilling operation, as the Gallup zone can cause severe lost circulation problems. Lost circulation was experienced while drilling 30-4 in Section 31. In addition, because of the natural fractured system in the Gallup, care should be taken to eliminate any surging while running drill pipe and casing.

Drilling Procedure:

1. Drill 12 1/4" hole to approximately 200'.

2. Run 8 5/8" surface casing and cement to surface.

3. WOC 12 hours and nipple up.

4. Drill 7 7/8" hole with water-gel low solids mud as directed.

5. Run log as directed.

6. Run 4 1/2" OD casing with stage collar 100' below Mancos top. Cement 1st stage and slack off 6000-8000# on casing after bumping plug. Open ports on stage collar, break circulation immediately, and circulate mud for 4 hours. Run 2nd stage cement operation as directed.

7. Move off rotary rig and move in completion unit.

8. WOC 18 hours.

9. Run temperature survey to locate cement top.

pce

Prepared by: J. A. Mazza, Production Engineer

APPROVED:

_____
Supervising Production Engineer

_____
Division Drilling Superintendent

_____
Division Manager

P&A PROCEDURE

In the event the subject well is abandoned, it will be necessary to contact the New Mexico Oil Conservation Commission for verbal approval of the work. The people who should be contacted in order of preference, are as follows:

During Working Hours:

NMOCC (Aztec)	505-334-6178
USGS (Durango)	303-247-5144

After Working Hours:

NMOCC	Emery Arnold	505-334-6987
	Al Kendrick	505-325-8300
USGS	Jerry Long	303-247-0028
	Ed Schmidt	303-247-9918

1. After logging and testing, go in hole open-ended and spot plug from top of Dakota to 100' above Dakota top.
2. Pull up and spot 100' plug to Gallup top.
3. Pull up and spot 100' plug across Chacra.
4. Pull up and spot 100' plug across Pictured Cliffs.
5. Pull up and spot plug across Ojo Alamo.
6. Pull up and set plug 50' in and 50' out of 8 5/8".
7. Set 25' plug in surface 8 5/8". Set 10' length of 4" pipe in the surface plug so that 4' of it projects above ground level. The top of the 4' should be capped and a well sign attached.
8. Rig down and move off rig. Clean up location.

PROPOSED WELL PLAN OUTLINE

WELL NAME: Jicarilla 22-5 COUNTY: Rio Arriba

LOCATION: CNWSW Sec. 22 T25N-R4W STATE: New Mexico

DEPTH	FORMATION TOPS & TYPE	DRILLING PROBLEMS	TYPE OF FORMATION EVALUATION	HOLE SIZE	CASING SIZE	CASING DEPTH	FRACTURE GRADIENT	FORMATION PRESSURE GRADIENT	MUD WEIGHT	MUD TYPE
	WASATCH			12¼	8 5/8"	200'				
	WASATCH Sand & Shale			7 7/8"					8.7-9.0 #/gal	Gel
	ANIMAS OJO ALAMO Fresh Wtr. Sd.									
1000	KIRTLAND Sand & Shale	LOST CIRCULATION								
2000										
3000	Pictured Cliffs Sd. Gas. Prod.		FDC LOG				.7 psi/ft	.27 psi/ft		
	LEWIS SHALE									
4000	Chacra Sand	Gas Productive	FDC LOG				.7 psi/ft	.29 psi/ft		
	LEWIS SHALE									
5000	MESA VERDE SAND & SHALE	GAS PRODUCTION	FDC LOG				.7 psi/ft	.34 psi/ft		
	MANCOS SHALE									
6000										
7000	GALLUP SAND & SHALE	LOST CIRCULATION HOLE WASHOUTS	FDC LOG				.7 psi/ft	.35 psi/ft		
	Greenhorn Lime		FDC LOG							
	DAKOTA SAND & SHALE		FDC LOG	7 7/8"	4½"	7825'	.705 psi/ft	.35 psi/ft		
8000	TD. 7825'									

Date October 7, 1970 Prepared by J. A. Mazza

Approved: _____ _____ K. W. Ritz

Div. Engineer Drilling Supt.

DISTRIBUTION OF ENGINEERING WELL DATA
CASPER DIVISION

WELL NO. 22-5 FIELD WEST LINDRITH COUNTY RIO ARRIBA STATE NEW MEXICO

	PRIMARY LOGS				SECONDARY LOGS (Bond, Correlation, etc.)		CORE ANALYSES		D.S.T.
	Field Print	Final	Sepia	Film	Field	Final	Prelim.	Final	Report
Divn. Mgr. Prod. - W.C.B.	1	1			1	1	1	1	1
Hdq. Mgr. Prod. - R.L.A.	*	1						1	1
Prod. Research Mgr. - F.R.C.		1						1	1
Well Operating Supervisor	1				1				
Division Geologist - BG	1	1					1	1	1
Exploitation Geologist - R.J.E.		1	1		1	1	1	1	1
PES-Form. Eval. Suprv. - D. J. Timko	1								
Rky. Mtn. Well Log Service 1753 Champa St., Denver.***		1							
STATE **									
U.S.G.S. **									
PARTNERS **									
TOTAL									

* - Headquarters needs log field prints only on significant stepouts.
** - Requirements for State, U.S.G.S. and partners will vary by location.
*** - Logs for Rocky Mtn. Well Log Service should be held until we receive a release request from them.

NOTE: Service companies should be advised to send all copies of logs or reports to Division Production Office at 200 North Wolcott.

Revised 9-24-63

COMPLETION MEMORANDUM

JICARILLA 22 WELL NO. 5

Location: NW SW Section 22, T25N, R4W, Rio Arriba County, New Mexico

Elevation: 6990' GL; 7004' KB

Casing: 8 5/8", 24#, J-55 set at 200' KB
100' - 4 1/2" OD, 10.5#, JE-55, BTRC
7600' - 4 1/2" OD, 10.5#, JE-55, ST&C
125' - 4 1/2" OD, 11.6#, JE-55, ST&C

Completion Procedure:

1. After moving out rotary rig, move in completion unit, pick up 2 7/8" tubing and drill out stage collar and pressure test to 1500 psig.

2. Circulate to T.D. and displace hole with 1% KCl water.

3. Pull tubing, move in logging unit, and run Gamma Ray with collar locator. Run Cement Bond log if full returns are not obtained during 1st stage cementing. If poor primary cement job is evident, it will be necessary to squeeze before stimulation. Squeeze volumes and procedures will be determined by engineer.

4. Move in eight (8) 500 barrel frac tanks and install frac head (minimum of 110,000 gal. required for 3 stage stimulation - suggest 140,000 gal. (3,330 bbl.) fluid on location for staging and includes load, flush, and tank bottoms). Perforate and sand frac in accordance to procedure below. Swab well in if necessary.

Gallup-Dakota Perforating and Fracturing Procedure

NOTE: The Gallup and Dakota will be perforated in one set-up. The well will then be stimulated in three (3) stages down 2 7/8" tubing using a Baker Retrievable Model "C" bridge plug and full bore cementer. Either Halliburton's MY-T-FRAC-60 or Dowell's WIDE-FRAC (YF6G) will be used as the fluid medium.

1. With hole loaded with 1% KCl perforate Dakota "J", Dakota "D", and Gallup 1 shot per foot as indicated by engineer. Use Schlumberger 3 3/8" Hyperjet - 13.5 gram RDX charge (0.52" x 9.38" penetration in Berea sandstone) or equivalent.

2. Install frac head.

3. Pick up bridge plug and packer on 2 7/8" tubing and set bridge plug below bottom of Dakota "J" perforations. Set packer above top of Dakota "J" perforations.

4. Hook up frac trucks and test lines and fittings to 5000 psi.

5. Sand-frac Dakota "J" down 2 7/8" tubing as follows: (Maximum allowable surface pressure 4000 psi at 10 BPM).

4,300 gal. 1% KCl w/50 #/1,000 gal. ADOMITE AQUA and 10 #/1,000 gal. WG-6
6,000 gal. MY-T-FRAC-60 w/25 #/1,000 gal. ADOMITE AQUA
1,000 gal. MY-T-FRAC-60 w/25 #/1,000 gal. ADOMITE AQUA and 1/2 #/gal. 10-20 sand
2,000 gal. MY-T-FRAC-60 w/25 #/1,000 gal. ADOMITE AQUA and 1 #/gal. 10-20 sand
3,000 gal. MY-T-FRAC-60 w/25 #/1,000 gal. ADOMITE AQUA and 2 #/gal. 10-20 sand
3,000 gal. MY-T-FRAC-60 w/25 #/1,000 gal. ADOMITE AQUA and 3 #/gal. 10-20 sand
4,000 gal. MY-T-FRAC-60 w/25 #/1,000 gal. ADOMITE AQUA in first 2,000 gal. MY-T-FRAC-60 only and 4 #/gal. 10-20 sand

6. Flush with 2,100 gal. 1% KCl water.

7. Release packer, retrieve bridge plug, and set bridge plug between Dakota "J" and "D" perforations. Set packer above Dakota "D" perforations.

8. Sand-frac Dakota "D" using same volumes and procedure as outlined in (5) above. (Maximum allowable surface pressure 4000 psi at 10 BPM.)

9. Flush with 2,100 gal. 1% KCl.

10. Release packer, retrieve bridge plug, and set bridge plug below bottom of Gallup perforations. Set packer above Gallup perforations and frac Gallup down 2 7/8" tubing as follows: (Maximum allowable surface pressure 4000 psi at 10 BPM).

15,000 gal. 1% KCl w/50 #/1,000 gal. ADOMITE AQUA and 10 #/1,000 gal. WG-6
8,000 gal. MY-T-FRAC-60 w/25 #/1,000 gal. ADOMITE AQUA
2,000 gal. MY-T-FRAC-60 w/25 #/1,000 gal. ADOMITE AQUA and 1/2 #/gal. 10-20 sand

10. (Continued)

3,000 gal. MY-T-FRAC-60 w/25 #/1,000 gal. ADOMITE AQUA and 1 #/gal. 10-20 sand
6,000 gal. MY-T-FRAC-60 w/25 #/1,000 gal. ADOMITE AQUA and 2 #/gal. 10-20 sand
6,000 gal. MY-T-FRAC-60 w/25 #/1,000 gal. ADOMITE AQUA and 3 #/gal. 10-20 sand
15,000 gal. MY-T-FRAC-60 w/25 #/1,000 gal. ADOMITE AQUA in first 7,500 gal. MY-T-FRAC-60 only and 4 #/gal. 10-20 sand

11. Flush with 2,000 gal. 1% KCl water.

12. Shut-in well for 12 hours or overnight.

13. Retrieve bridge plug and packer and retrieve 2 7/8" frac string. Pick up 2 3/8" OD producing string containing from the bottom up the following:

(a) 2' sub with pinned collar.

(b) "D" nipple to be set opposite bottom of Dakota perforations.

14. Swab well in if necessary and allow to clean up.

15. Install tubing stop and bumper spring one joint above "D" nipple.

16. Install surface intermitter and start well on plunger lift using a cycle frequency of ten-30 minute cycles. Adjust cycle frequency and flow duration depending on well performance.

pce

Prepared by: J. A. Mazza, Production Engineer

DRILLING AND EQUIPPING COSTS
1968, 1969 AND PROPOSED WELLS
GALLUP/DAKOTA COMPLETIONS
WEST LINDRITH FIELD

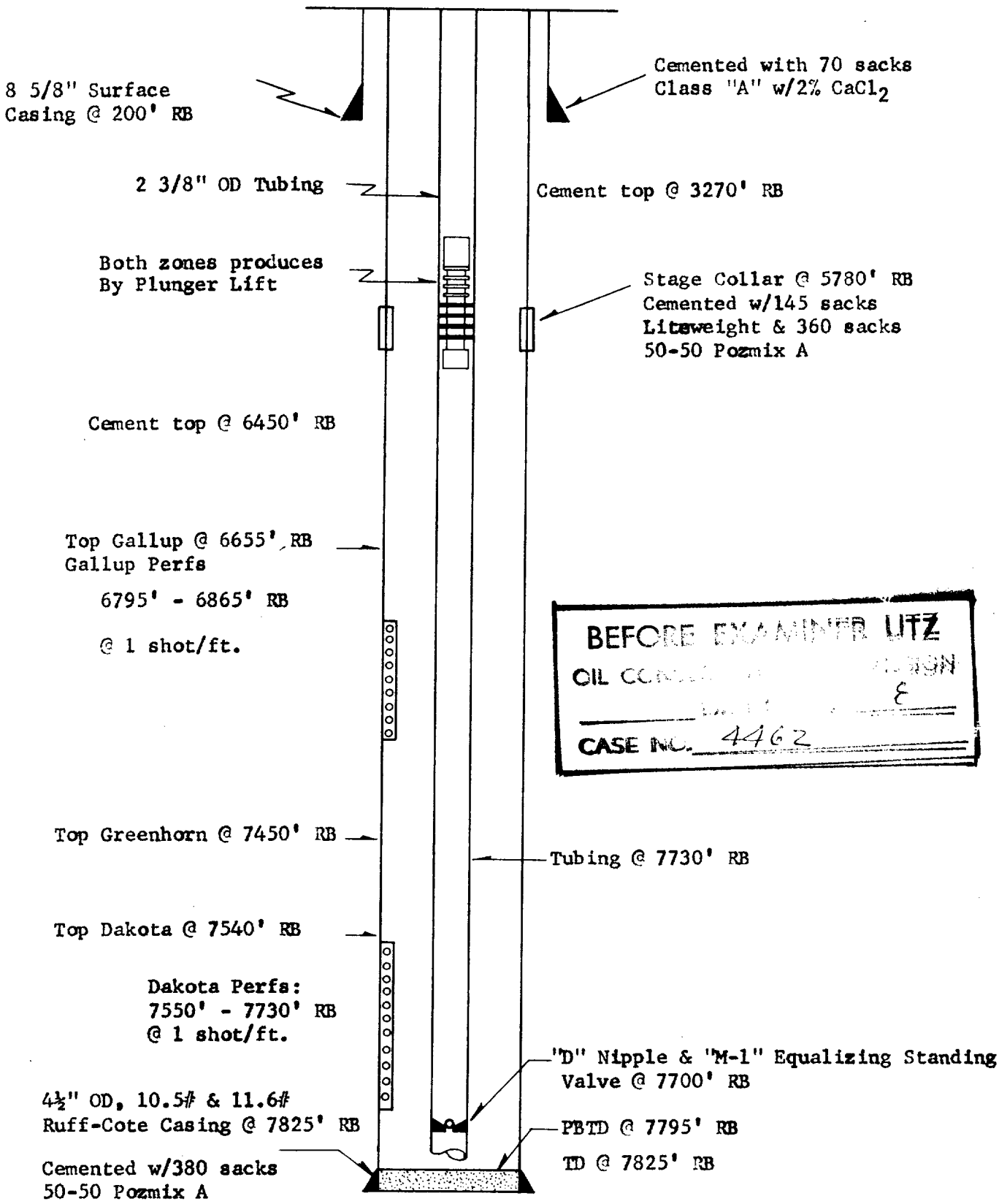
Well No.	Completed	Intangibles,$	Tangibles,$	Total,$
28-4	10-68	82,716.84	23,214.02	105,930.86
28-7	11-68	86,761.43	31,107.71	117,869.14
28-5	12-68	96,036.95	30,657.79	126,694.74
28-6	12-68	97,363.62	30,994.33	128,357.95
28-8	5-69	92,574.78	30,786.30	123,361.08
22-2	7-69	102,408.37	30,139.57	132,547.94
22-3	7-69	92,762.11	37,612.36	130,374.47
22-4	9-69	107,365.53	32,202.69	139,568.22
	Total	757,989.63	246,714.77	1,004,704.40
	Average	94,748.70	30,839.35	125,588.05
	1968 Average	90,719.71	28,993.46	119,713.17
	1969 Average	98,777.70	32,685.23	131,462.93
22-5	1971	92,800	33,400	126,200
28-9	1970	92,400	30,400	122,800
28-10	1971	92,200	33,900	126,100
28-11	1971	91,600	33,500	125,100
	Total	369,000	131,200	500,200
	Average	92,250	32,800	125,050

If it is necessary to complete with a packer between the Gallup and Dakota formations, drilling and equipping costs will be:

Average	93,050	35,500	128,550
	800	2700	3,500

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT 9
CASE NO. 4462

PROPOSED
DOWNHOLE COMMINGLING INSTALLATION
(all depths estimated)



BEFORE EXAMINER UTZ
OIL CONSERVATION DIVISION
EXHIBIT NO. 8
CASE NO. 4462

Centralizers Located 10' and 60' above casing.
Setting depth and 90' thereafter to 6600' RB
Also one centralizer 30' above and 30' below
stage collar.

CONTINENTAL OIL COMPANY
PRODUCTION DEPARTMENT
Casper, Wyoming

WEST LINDRITH
EXHIBIT "8"

Proposed Downhole Commingling Installation—Jicarilla 22-5

County: Rio Arriba State: New Mexico

Engineer: J.A. Mazza Draftsman: B.S. Date: 8-24-70
Scale = No Scale Well Status Posted to:

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 8
CASE NO. 4462

R. 4 W.

NORTHWEST PRODUCTION — NORTHWEST 218 N. CAMPBELL EL PASO, TEXAS — HUMBLE OIL P.O. BOX 1287 ROSWELL N. MEXICO — HUMBLE

CONOCO OPERATES GALLUP & DAKOTA PROD., EL PASO OPERATES PICTURED CLIFFS. P.O. Box 990 Farmington, N. Mexico

CONOCO OPERATES GALLUP & DAKOTA; HUMBLE & AZTEC O.&G. OPERATE PICTURED CLIFFS.

JICARILLA - 20

JICARILLA - 22

JICARILLA - 28

JICARILLA - 30

HUMBLE; & AZTEC 2000 First Nat'l Bank Dallas, Texas

CONOCO;

EL PASO

NORTHWEST PROD. OPERATES PICTURED CLIFFS & BROOKS HALL GALLUP, GRANEROS, & DAKOTA

NORTHWEST & BROOKS HALL PRODUCTION

T 25 N

T 24 N

— LEGEND —

- ●G GALLUP PRODUCING WELL
- ●D DAKOTA PRODUCING WELL
- ✸G-C GALLUP (Oil) - CHACRA (Gas) DUAL
- ✸G-D GALLUP (Oil) - DAKOTA (Oil) DUAL
- ☼ GAS PRODUCING WELL (PICTURED CLIFFS)
- SHUT-IN WELL
- ◉ DUAL GALLUP - GRANEROS
- ▣ GALLUP (Oil) - DAKOTA (Oil) - Seperate Strings of Casing.

WEST LINDRITH BLOCK

JICARILLA APACHE LEASES

Rio Arriba County, New Mexico

EXHIBIT "B" 8

Engineer J.A. Mazza Drawn by N.F.D. 12-12-67
1-69
8-70

PRODUCTION DEPARTMENT
CONTINENTAL OIL COMPANY