



1700 Broadway Suite 1450 Denver Colorado 80290
(303) 860-0509 Fax (303) 830-2546

REPORT OF SUB-SURFACE DIRECTIONAL SURVEY

RECEIVED
JAN - 7 1997

OIL CON. DIV.
DIST. 3

Phillips Petroleum
COMPANY

San Juan Unit 29-6 #15
WELL NAME

Rio Arriba County, New Mexico
LOCATION

JOB NUMBER
410-80535

TYPE OF SURVEY
MSS

DATE
November 3, 1996

SURVEYED BY
Max Lund

OFFICE
DENVER



1700 Broadway Suite 1450 Denver Colorado 80290
(303) 860-0509 Fax (303) 830-2546

SURVEY CERTIFICATION SHEET

Phillips Petroleum

Company

Sec-2-T29N-R6W

Lease

410-80535

Job #

San Juan Unit 29-6 #15

Well #

November 3, 1996

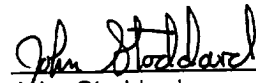
Date

Rio Arriba County, New Mexico

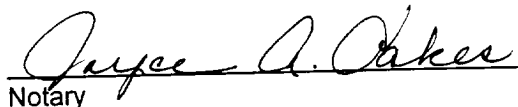
County and State

Surveyed from a depth of 3,400 feet to 3,774 feet MD
Type of Survey MSS
Directional Supervisor/Surveyor Max Lund

The data and calculations for this survey have been checked by me and conform to the standards and procedures set forth by Baker Hughes INTEQ. This report represents a true and correct Directional Survey of this well based on the original data obtained at the well site. Wellbore Coordinates are calculated using minimum curvature.


John Stoddard
Operations Manager

This document has been subscribed and affirmed, or sworn to before me in the county of Denver, state of Colorado, this 12th day of November, 1996.

 My commission expires August 4, 2000
Notary

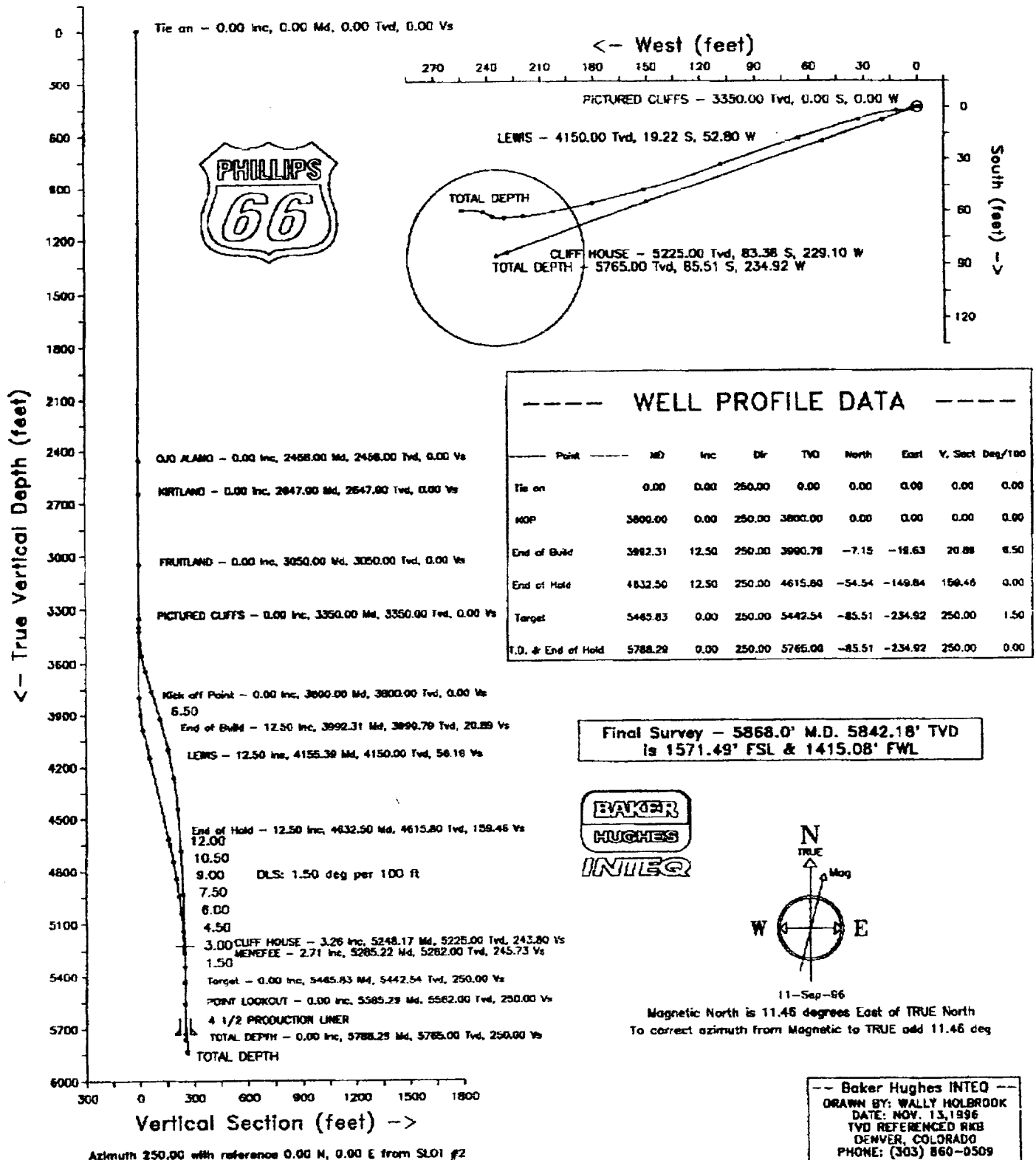
Certification Number: 438
Certification Date: November 12, 1996

PHILLIPS PETROLEUM

Structure : SEC.2-T29N-R6W Well : SAN JUAN UNIT 29-6 #15

Field : RIO ARRIBA COUNTY

Location : NEW MEXICO



PHILLIPS PETROLEUM
SEC.2-T29N-R6W

SAN JUAN UNIT 29-6 #15
SLOT #2
RIO ARriba COUNTY
NEW MEXICO

S U R V E Y L I S T I N G

by
Baker Hughes INTEQ

Your ref : Single Shot Survey
Our ref : svy3771
License :

Date printed : 12-Nov-96
Date created : 5-Nov-96
Last revised : 12-Nov-96

Field is centred on n36 0 0.000,w107 0 0
Structure is centred on n36 44 38.002,w107 25 12

Slot location is n36 44 54.386,w107 24 51.727
Slot Grid coordinates are N 2091957.352, E 622746.247
Slot local coordinates are 1657.00 N 1650.00 E

Projection type: mercator - New Mexico West (3003), Spheroid: Clarke - 1866

Reference North is True North

Measured Depth	Inclin. Degrees	Azimuth Degrees	True Vert Depth	R E C T A N G U L A R C O O R D I N A T E S	Dogleg Deg/100ft	Vert Sect
0.00	0.00	0.00	0.00	0.00 E	0.00	0.00
3400.00	0.00	0.00	3400.00	0.00 E	0.00	0.00
3425.00	0.56	259.50	3425.00	0.12 W	2.24	0.12
3495.00	5.13	254.00	3494.89	3.47 W	6.53	3.58
3558.00	10.00	266.00	3557.33	11.64 W	8.09	11.65
3651.00	17.00	252.50	3647.73	32.69 W	8.21	33.03
3774.00	16.00	251.50	3765.66	65.91 W	0.85	67.94
3941.00	15.50	248.50	3926.39	108.50 W	0.57	113.26
4126.00	13.00	254.50	4105.70	151.56 W	1.57	158.72
4284.00	8.75	256.50	4260.82	180.39 W	2.70	188.39
4469.00	5.25	258.50	4444.42	202.37 W	1.90	210.75
4713.00	3.00	267.50	4687.77	219.69 W	0.96	227.88
4960.00	2.00	261.50	4934.53	230.41 W	0.42	238.27
5207.00	1.25	299.50	5181.44	237.02 W	0.52	244.24
5456.00	1.50	291.50	5430.37	242.41 W	0.13	248.45
5857.00	2.00	263.50	5831.19	254.25 W	0.24	259.18
5868.00	2.00	263.50	5842.18	254.63 W	0.00	259.56
						TOTAL DEPTH

All data is in feet unless otherwise stated.
Coordinates from SLOT #2 and TVD from RKB (6438.00 Ft above mean sea level).
Bottom hole distance is 261.45 on azimuth 256.89 degrees from wellhead.
Vertical section is from wellhead on azimuth 250.00 degrees.
Calculation uses the minimum curvature method.
Presented by Baker Hughes INTEQ

PHILLIPS PETROLEUM
SEC.2-T29N-R6W,SAN JUAN UNIT 29-6 #15
RIO ARriba COUNTY,NEW MEXICO

SURVEY LISTING Page 2
Your ref : Single Shot Survey
Last revised : 12-Nov-96

Comments in wellpath
=====

Comment

Rectangular Coords.

MD TVD

5868.00 5842.18 59.30 S 254.63 W TOTAL DEPTH

Targets associated with this wellpath
=====

Target name

Geographic Location

T.V.D.

Rectangular Coordinates

Revised

CLIFF HOUSE 29-6 #15

5225.00

85.51S

234.92W

16-Aug-96



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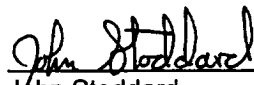
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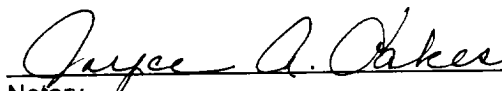
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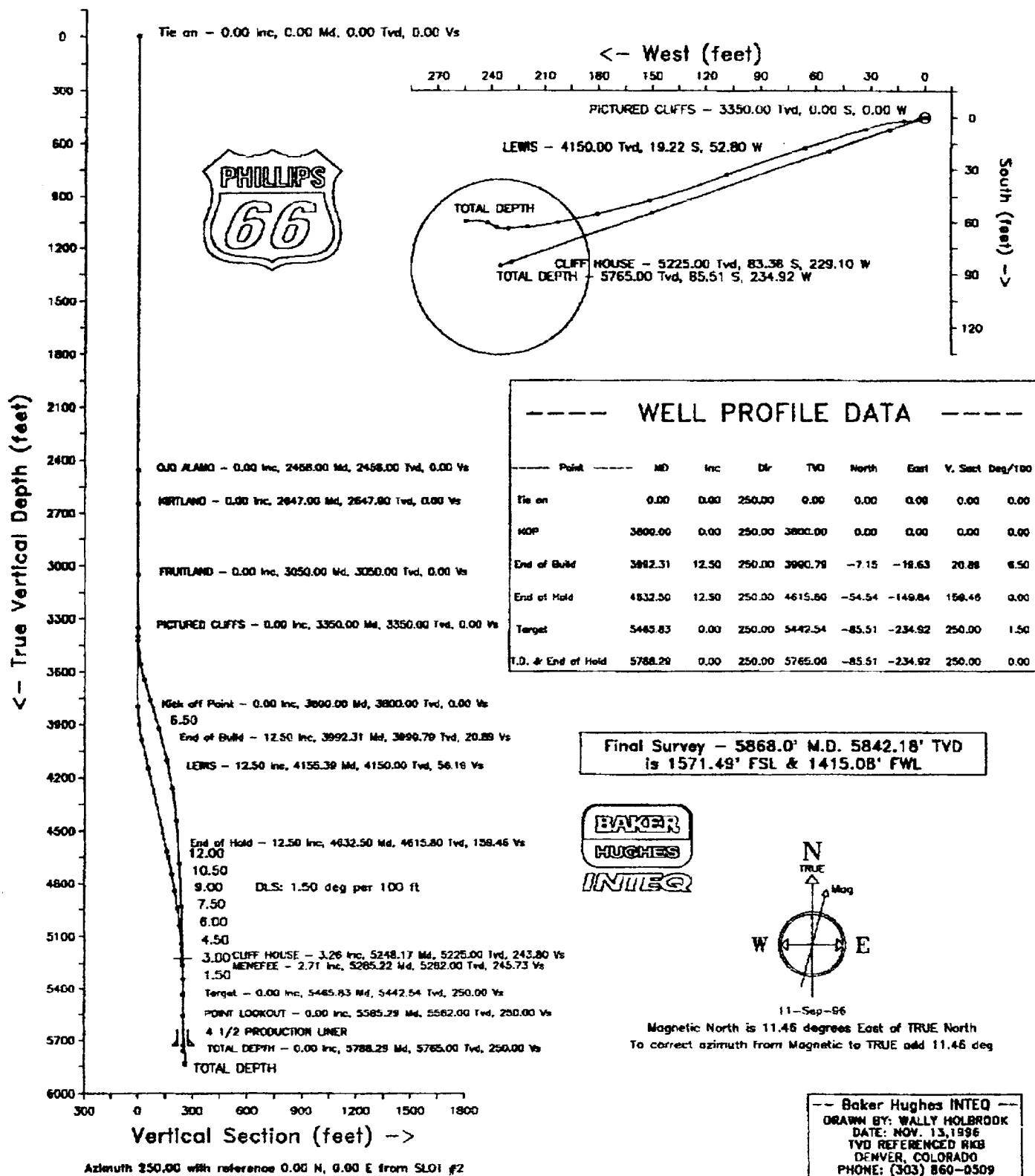
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SEC.2-T29N-R6W

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SLOT #2
RIO ARriba COUNTY
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SEC. 2-T29N-R6W, SAN JUAN UNIT 29-6 #15
RIO ARriba COUNTY, NEW MEXICO

SURVEY LISTING Page 2
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Comments in wellpath

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Comment

Rectangular Coords.

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5868.00 5842.18 59.30 S 254.63 W TOTAL DEPTH

Targets associated with this wellpath

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Geographic Location T.V.D. Rectangular Coordinates Revised

CLIFF HOUSE 29-6 #15 5225.00 85.51S 234.92W 16-Aug-96

Submit 3 Copies
to Appropriate
District Office

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-103
Revised 1-1-89

DISTRICT I
P.O. Box 1980, Hobbs NM 88240

DISTRICT II
P.O. Drawer DD, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

WELL API NO.	30-039-07692
5. Indicate Type of Lease	STATE ☒ FEE ☐
6. State Oil & Gas Lease No.	F-289-31
7. Lease Name or Unit Agreement Name	009257 San Juan 29-6 Unit
8. Well No.	SJ 29-6 Unit #15
9. Pool name or Wildcat	Blanco Mesavaerde 72319
10. Elevation (Show whether DF, RKB, RT, GR, etc.)	

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A
DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT"
(FORM C-101) FOR SUCH PROPOSALS.)

1. Type of Well:

OIL
WELL ☐

GAS
WELL ☒

OTHER

2. Name of Operator

Phillips Petroleum Company

3. Address of Operator

5525 Highway 64, NBU 3004, Farmington, NM 87401

4. Well Location

Unit Letter K : 1657' Feet From The South Line and 1650' Feet From The West Line

Section 2 Township 29N Range 6W NMPM Rio Arriba County

11. Check Appropriate Box to Indicate Nature of Notice, Report, or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐

PLUG AND ABANDON ☐

TEMPORARILY ABANDON ☐

CHANGE PLANS ☐

PULL OR ALTER CASING ☐

OTHER: ☐

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☒

COMMENCE DRILLING OPNS. ☐ PLUG AND ABANDONMENT ☐

CASING TEST AND CEMENT JOB ☒

OTHER: Sidetracked well and stimulated ☒

12. Describe Proposed or Completed Operations (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work) SEE RULE 1103.

The abovementioned well has been sidetracked. See the attached for procedures used to sidetrack and stimulate this well.

RECEIVED
JAN - 7 1997
OIL CON. DIV.
DIST. 3

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

SIGNATURE

Patsy Clugston

TITLE Regulatory Assistant

DATE 1-3-97

TYPE OR PRINT NAME

Patsy Clugston

TELEPHONE NO. 505-599-3454

(This space for State Use)

APPROVED BY ORIGINAL SIGNED BY ERNIE BUSCH

TITLE DEPUTY OIL & GAS INSPECTOR, DIST. #3

DATE

JAN - 9 1997

CONDITIONS OF APPROVAL, IF ANY:

San Juan 29-6 #15
E-289-31; Unit K, 1675 FSL & 1650 FWL
Section 2, T29N, R6W

Procedure used to Sidetrack

10/11/96 - MIRU Big A #18. ND WH & NU BOP. Test - OK. GIH to work stuck tubing. Cut tbg. @ 5025'. GIH w/7" retainer & set @ 5000'. PT to 500 psi - 30 min. - OK. RU BJ to cement. Pumped 20 bbls H₂O ahead, then pumped 29 bbls (138 sx/163 cu ft.) "B" cement 15.6#. Displaced 17.4 bbls. Reversed circ. 40 bbls H₂O. Had ½ bbl returns. RD BJ. PT- 1500 psi - 30 min. - OK. RD & MO Big A #18.

10/18/96 - RU Bluejet wireline. & ran CBL & CCL. Top of DV tool @ 3500', no cement below DV tool. Good cement (80% - 90% bond) from 3499' - 3300'.

10/31/96 - MIRU Big A #25. NU BOP & test. OK. GIH w/tapered mill to 3500'. COOH. RU W-2 whipstock. Set DW-1 Packer. Set whipstock @ 3440'. Cut window from 3440'-3456'. Set orientation and drilled & surveyed from 3458' to 5868' (TMD) / 5831' (TVD). Circulated hole clean. POOH. GIH w/4-1/2" 11.6 J-55 & 10.5 J-55 casing and set @ 5864'. Pumped 10 bbls 2% KCl ahead w/10 bbls mud flush, 5 bbls H₂O & 80 bbls (449 cu ft/360 sx) 50:50 POZ cement + 2% gel. Dropped plug. Displaced w/92 bbls H₂O, bumped plug w/1500 psi. ND BOPs. RD & MO Big A #25 (11-8-96).

11/10/96 - RU Bluejet & ran GSL found PBTD @ 5820'. CBL ran - TOC @ 3780' (340' below top of window). RU BJ & load backside & pressured up to 500 psi, bled off to 465 psi in 30 min. and again to 470 psi. Tie in to 4-1/2" casing and pressured up to 1500 psi. Held OK. RD BJ.

Pt Lookout

Perfs - Perf'd Pt. Lookout -w/ 2 spf .35" holes. 5675-5680'; 5660-5665'; 5630-5635'; 5590-5600' = 25 feet = 50 perfs.

Acidize - w/750 gal 15% HCl w/2 gal/1000 I-22 corrosion inhibitor, 5 gal/1000 Ferrotrol - 300L for Iron Control, 5 gal/1000 gal Acetic Anhydride for organic control. Dropped 75 balls. Average rate = 35 bpm & average pressure = 1300 psi. Recovered balls.

Frac - w/199,990 pounds of 20/40 Arizona sand; 641,000 scf N₂; average quality foam - 50 quality; average rate 30 bpm; average pressure - 2900 psi; immediate flowback to force closure; SICP 1400 psi.

Menefee

Perfs- Perf'd Menefee formation w/1spf .35" holes. 5320-5325'; 5352-5357'; 5372-5377'; 5420-5430'; 5435-5445'; 5560-5565'; 5575-5580'; 45 feet = 45 holes.

Acidize - w/2% KCl water contained: 38#/1000 gal. Xcide-207, 1 gal/1000 gal flo-back 20; Total acid pumped 1000 gal, Total 2% KCl pumped - 537 bbls. Total balls 55, 27 recovered. Average rate 10 bpm, average rate - 800 psi. ISIP - 200 psi.

Cliffhouse

Perfs - Perf'd Cliffhouse w/2 spf: 5265'-5285' - 20' = 40 holes.
Acidize - w/750 gal 15% HCl acid w/2 gal/1000 gal I-22 corrosion inhibitor & 60 7/8" balls.
Avg. rate 18 bpm. Avg pressure 80 psi. Recovered 60 balls.
Frac - w/200,000 # 20/40 Arizona sand; 831,000 scf N2; Average quality foam - 50 quality;
Average rate - 40 bpm; Average pressure 2,500 psi.

Lewis Shale

Perfs - Lewis Shale zone @ 1 spf .36" holes: 4455'-4465'; 4435'-4445'; 4415'-4425' 4185'-
4195' 4160'-4170'; 4135'-4145'; total 60 holes.
Acidize- w/75 gal 15% HCl w/2 gal/1000 gal I-22 Corrosion Inhibitor; w/90 7/8" balls.
Average rate 25 bpm; Average pressure 2,150 psi. ISIP 740 psi; Recovered 90 balls.
Frac - w/30# linear gel w/150,000 # 20/40 Arizona sand; Average rate 30 ppm; Average
pressure 1100 psi.

Bluejet perf'd 3 squeeze holes @ 3560' for cement squeeze. MIRU Big A #40. Richard Allred notified Ernie Busch of casing squeeze 12/16/96. No CBL or Temperature Survey required per Ernie Busch. GIH w/4-1/2" squeeze packer to squeeze 4-1/2" annulus to achieve 100' overlap above whipstock. Pumped 30 bbls H₂O ahead. Then pumped 21 bbls (100 sxs/118 cuft) "B" neat cement. Pumped 1 bbl water on top of cement & pressured up to 500 psi. Closed 7" casing valve & hesitate 20 min. Pumped .25 bbls H₂O & pressured up to 250 psi. Released packer & reset @ 3338'. Pumped .25 bbls H₂O & pressured up to 350 psi.

Drilled out cement. Test 4-1/2" casing to 500 psi - 7" to 500 psi. Good test. POOH w/RBP. Clean out each formation w/air down to PBTD 5820'. GIH & w/2-3/8" EUE 8rd 4.7# N-80 & set @ 5664'. "F" Nipple @ 5630'. Packer top @ 4634'. ND BOPs & NU WH & test. OK. RD & released rig & turned over to production.

296#15st.sun