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PI: 1994-02

1991 10/27/91 10:27 AM 10/27/91

1620

W.F.S.'

Line

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1. One of the two suggested roads is the subject of the following problem. Draw a sketch of the plot below.

2. If the above information is different from the information currently on file, please provide (Date and interest and priority)

$$I = \frac{1}{2} \int_{-\infty}^{\infty} dt \int_{-\infty}^{\infty} dx \left[\frac{1}{2} \left(\frac{\partial \phi}{\partial t} \right)^2 + \frac{1}{2} \left(\frac{\partial \phi}{\partial x} \right)^2 + \frac{1}{2} \left(\frac{\partial \phi}{\partial y} \right)^2 + \frac{1}{2} \left(\frac{\partial \phi}{\partial z} \right)^2 + \frac{1}{2} \left(\frac{\partial \phi}{\partial w} \right)^2 + \frac{1}{2} \left(\frac{\partial \phi}{\partial v} \right)^2 + \frac{1}{2} \left(\frac{\partial \phi}{\partial u} \right)^2 + \frac{1}{2} \left(\frac{\partial \phi}{\partial t} \right)^2 + \frac{1}{2} \left(\frac{\partial \phi}{\partial x} \right)^2 + \frac{1}{2} \left(\frac{\partial \phi}{\partial y} \right)^2 + \frac{1}{2} \left(\frac{\partial \phi}{\partial z} \right)^2 + \frac{1}{2} \left(\frac{\partial \phi}{\partial w} \right)^2 + \frac{1}{2} \left(\frac{\partial \phi}{\partial v} \right)^2 + \frac{1}{2} \left(\frac{\partial \phi}{\partial u} \right)^2 \right]$$

☐ Yes ☐ No He is not "just" another doctor.

"...and that the Government of the United States is not bound to pay for the cost of the Government of the United States in the form of necessary."

Figure 1. The effect of the number of trials on the number of correct responses. The number of correct responses was significantly higher for the 10 trials condition than for the 5 trials condition. Error bars represent the standard error of the mean.

7090	7090
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100-443887-100

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OIL DIST.
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12/24/74
Oyster Springs, 1974
January 1975

100-443887-100

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J. P. Leese

2463

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Nita Cowan

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Auto Oil + Gas

Company

MMOCC

Telephone number

City

Per Ernie approved

State

Comments:



United States Department of the Interior
BUREAU OF INDIAN AFFAIRS
ALBUQUERQUE AREA OFFICE
P.O. BOX 8327
ALBUQUERQUE, NEW MEXICO 87108

IN REPLY REFER TO
Environmental
Quality - 305

APR 20 1979

Mr. Ed Cruth
Atlantic Richfield Company
P.O. Box 2197
Farmington, New Mexico 87401

Dear Mr. Cruth:

We have received a copy of an archeological clearance survey report entitled "An Archeological Clearance Survey of Six Proposed Well Locations and Access Roads Conducted for Atlantic Richfield Company," by Mr. Pamela G. Smith, Cultural Resource Management Program, New Mexico State University, San Juan Campus. We have reviewed this report in consultation with the State Historic Preservation Officer. His comments are enclosed.

We note that site SJC-408 may meet criteria of eligibility to the National Register of Historic Places. We further note that if Jicarilla Well #102 is relocated as described in the report, the proposed action will have no effect upon this site. No other significant cultural resources were encountered during the requisite field inspection. Accordingly, archeological clearance is granted for those lands under the jurisdiction of the Jicarilla Apache Tribe under the following stipulations:

- (1) that Well #102 be moved 500 feet to the south of its originally proposed location;
- (2) that all land altering activity be confined to the archeologically surveyed areas; and
- (3) that should subsurface cultural remains be encountered, that land altering be halted and the Area Archeologist be notified.



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OIL CON. DIV.
DIST. 3

If you have any questions regarding this matter, please contact Mr. William C. Allan, Area Archeologist, Environmental Quality Services at 766-3374.

Sincerely yours,


Area Director

Enclosure



P.O. Box 1629

STATE OF NEW MEXICO
EDUCATIONAL FINANCE AND CULTURAL AFFAIRS DEPARTMENT
HISTORIC PRESERVATION PROGRAM

SANTA FE
87503

300
AREA CODE 50
TELEPHONE 827-2

April 6, 1979

Mr. Sidney Mills
Bureau of Indian Affairs
P. O. Box 8327
Albuquerque, New Mexico 87108

ATTENTION: William C. Allan

Dear Mr. Mills:

Thank you for your letter of March 30, 1979 about an archeological clearance of six well locations and access roads conducted for Atlantic Richfield Company. This is to state that in my opinion, site SJC-408 may meet criteria of eligibility to the National Register of Historic Places. Provided, however, that the relocation is carried out as described, the proposed action will have no effect on this site. Further consultation is not required.

Thank you for your continuing cooperation.

Sincerely,

Thomas W. Merlan
State Historic
Preservation Officer

TWM:mk

ENVIRONMENTAL QUALITY SERVICES
RECEIVED APR 11 1979

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BUREAU OF HISTORIC PRESERVATION
SANTA FE, NEW MEXICO
APR 9 1979



An Archaeological Clearance Survey of
Six Proposed Well Locations and Access Roads
Conducted for Atlantic Richfield Company

Pamela G. Smith

Jicarilla Well #102

Chacon Hill #1

Jicarilla Apache "J" #5-3

Jicarilla Apache "J" #5-4

Jicarilla Apache "J" #5-2

Jicarilla Apache "J" #5-1

Report 79-SJC-025
of the
Cultural Resource Management Program
San Juan Campus
New Mexico State University

14 March 1979

Report 79-SJC-025
Permit 404-NM/77-084
78-NM-102

An Archaeological Clearance Survey of
Six Proposed Well Locations and Access Roads
Conducted for Atlantic Richfield Company

Pamela G. Smith
Cultural Resource
Management Program
San Juan Campus
N. M. State University

14 March 1979

An Archaeological Clearance Survey of
Six Proposed Well Locations and Access Roads
Conducted for Atlantic Richfield Company

On March 12, 1979, Pamela G. Smith of the Cultural Resource Management Program, NMSU, San Juan Campus, conducted an archaeological clearance survey at the request of Mr. Ed Cruth from Atlantic Richfield Company. Present during the survey were Messrs. Ed Cruth and Ralph Marker, both from Atlantic Richfield Company; John Keller of the U. S. Geological Survey - Durango, Colorado Office; Gary L. Vicenti of the Jicarilla Apache Tribe Realities Office - Dulce; Jim Hill from Allen Construction Company; and Paul Frazier of Archison Construction Company. Also present for the one proposed well location on Fee Surface/Federal Minerals Land was Mr. Dan Armstrong from the Bureau of Land Management Office.

The proposed wells are on Jicarilla Apache Tribal Lands and Fee Surface/Federal Minerals Lands and were surveyed under Federal Antiquities Permits 404-NM/77-084 and 78-NM-102, respectively.

METHODOLOGY

Each location was surveyed by walking parallel transects, 75 feet apart, over the entire easement. The access roads were inspected by walking the proposed route from existing roads to the wells.

GENERAL RECOMMENDATIONS

Site SJC-438 was found on Jicarilla Well #102 during an archaeological survey which was performed on February 8, 1979. On that date, it was requested that the proposed well be moved. This request was acknowledged and the new location was surveyed.

No cultural resources were found and full archaeological clearance is recommended.

Proposed well: TIJARILLA WELL #102

Land Status: Tijarilla Apache Tribe

Location: The well was to be located 1650 feet from the north and west lines, and is now located 1920 feet from the north line and 1650 feet from the west line of Section 6, Township 24 North, Range 4 West, N.M.P.M., in Rio Arriba County, New Mexico. An area 250 X 300 feet was surveyed. (Figure 1).

Access: Adjacent to existing road.

Terrain: Level slope with northeasterly/easterly/southeasterly drainage, alluvial surface deposits, and sandstone outcrops.

Soil: Clayey sandy loam

Vegetation: Pinon, sage, Eriogonum sp., grama, alkali sacaton, western wheatgrass, rabbitbrush, and juniper.

Cultural Resources: None found.

Recommendations: Clearance is recommended.

Proposed well: ATLANTIC RICHFIELD - CHACON HILL #1

Land Status: Bureau of Land Management

Location: The well is to be located 790 feet from the south line and 1850 feet from the east line of Section 20, Township 24 North, Range 3 West, N.M.P.M., in Rio Arriba County, New Mexico. An area 250 X 300 feet, or 1.72 acres, was surveyed. (Figure 2).

Access: 900 feet long and 20 feet wide, .41 acres, approaching the well from the north/northeast.

Terrain: Level slope with north/northeasterly drainage and alluvial surface deposits.

Soil: Sandy clayey loam.

Vegetation: Sage, sand dropseed, Opuntia sp., Mammillaria sp.,

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

SUBMIT IN DUPLICATE

(See other in-
structions on
reverse side)Form approved
Budget Bureau No. 42-R31

WELL COMPLETION OR RECOMPLETION REPORT AND LOG *

1. TYPE OF WELL: OIL WELL ☒ GAS WELL ☐ DRY ☐ Other _____		5. LEASE DESIGNATION AND SERIAL NO. Jicarilla Contract #111	
b. TYPE OF COMPLETION: NEW WELL ☒ WORK OVER ☐ DEEP-EN ☐ PLUG BACK ☐ DIFF. RESVR. ☐ Other _____		6. IF INDIAN, ALLOTTEE OR TRIBE NAME Jicarilla	
7. NAME OF OPERATOR ARCO Oil and Gas Company Division of Atlantic Richfield Company		7. UNIT AGREEMENT NAME -----	
8. ADDRESS OF OPERATOR Suite 501, 1860 Lincoln Street Denver, Colorado 80295		8. FARM OR LEASE NAME Jicarilla	
9. LOCATION OF WELL (Report location clearly and in accordance with any State requirements)* At surface 1650' FNL & 1650' FWL Section 6 (SE NW) (Unit F) At top prod. Interval reported below At total depth APPROXIMATELY SAME		9. WELL NO. 102	
10. FIELD AND POOL, OR WILDCAT W. Lindrith Gallup/Dakota		11. SEC., T., R., M., OR BLOCK AND SURVEY OR AREA 6-24N-4W	
12. COUNTY OR PARISH Rio Arriba		13. STATE New Mexico	
14. PERMIT NO. 30-039-22006		DATE ISSUED ---	
15. DATE SPUDDED 3-25-79		16. DATE T.D. REACHED 4-7-79	
17. DATE COMPL. (Ready to prod.) 5-7-79		18. ELEVATIONS (DF, RKB, RT, GR, ETC.)* 6847' GR	
19. ELEV. CASINGHEAD ---		20. TOTAL DEPTH, MD & TVD 7472'	
21. PLUG, BACK T.D., MD & TVD 7350'		22. IF MULTIPLE COMPL. HOW MANY* ---	
23. PRODUCING INTERVAL(S), OF THIS COMPLETION—TOP, BOTTOM, NAME (MD AND TVD)* 7238 - 7302'Dakota (RKB Meas.) 6197 - 6475'Gallup (RKB Meas.)		24. INTERVALS PRODUCED BY ROTARY TOOLS ---	
25. TYPE ELECTRIC AND OTHER LOGS RUN DIFL, Spectralog, CDL/CDN/GR, BHC-AL & CBL		26. WAS DIRECTIONAL SURVEY MADE No	
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 8-5/8" OD 24# 327' 12-1/4" 260 sx. None 5-1/2" OD 15.5 & 17# 7411' 7-7/8" 695 sx. None	
29. LINER RECORD Size Top (MD) Bottom (MD) Sacks Cement* Screen (MD) None		30. TUBING RECORD Size Depth Set (MD) Packer Set (MD) 2-3/8"OD 6148' None	
31. PERFORATION RECORD (Interval, size and number) 7380-89' 2 JSPF (Squeezed w/70 sx. cmt.) 7302, 00, 7299, 98, 96, 94, 93, 92, 90, 88, 86, 84, 83, 82, 80, 67, 66, 65, 64, 41, 40, 39 and 7238' (23 shots) (Cont. on reverse)		32. ACID, SHOT, FRACTURE, CEMENT SQUEEZE, ETC. Depth Interval (MD) Amount and Kind of Material Used 7380-89' Sqz'd. w/70 sx. cement 350 gals. 7238-7302' 70,000 gals. trtd. wtr & 90,000# sd 6197-6475' 2,500 gals. 15%HCL. 230,000 gals. trtd. wtr & 215,000# 20/40 sd.	
33. PRODUCTION (cont. on reverse) Date First Production 4-30-79 Production Method Flowing Hours Tested 24 hrs. Choke Size 3/4" Prod'n. for Test Period Oil—BBL. 120 Gas—MCF. 500 Water—BBL. 200 Gas-Oil Ratio 4167:1 Flow, tubing press. 200# Casing pressure 800# Calculated 24-hour rate Oil—BBL. 120 Gas—MCF. 500 Water—BBL. 200-load wtr. Oil Gravity-API (corr.) 44° @ 60° F		34. DISPOSITION OF GAS (Sold, used for fuel, vented, etc.) To be sold when pipeline connected.	
35. LIST OF ATTACHMENTS 2 ea. #26 and Daily Well History		36. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records SIGNED P. J. Pagliasotti TITLE Operations Information Assistant Date May 10, 1979	

*(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				38. GEOLOGIC MARKERS		
FORMATION	TOP	BOTTOM	DESCRIPTION, CONTENTS, ETC.	NAME	MEAN. DEPTH	TRUE VERT. DEPTH
Item 31 (cont.)	6475', 73,	71, 69, 21,	18, 6397, 91, 89, 87, 85, 75, 72, 69,	Pictured Cliffs	2860'	KB
66, 63, 60, 6287, 85, 83,	70, 67, 64,	61, 58, 55, 52, 40, 36, 21, 10, 06 and		Lewis Shale	2945'	KB
6197'. (33 shots)				Chacra	3719'	KB
6560-6563' (6 shots) Squeezed with 48 sx. cement.				Mesaverde	4548'	KB
Item 32 6560-6563' (6 shots) Squeezed with 48 sx. cement.				Upper Mancos	5237'	KB
				Gallup	6137'	KB
				Greenhorn	7011'	KB
				Graneros	7975'	KB
				Dakota	7234'	KB
				Burro Canyon	7333'	KB
				Morrison	7541'	KB
NO CORES OR DRILL STEM TESTS.						

5/1/79	7350	PB - Tstg. Flwg thru separator. CP 950#, FTP 200#. Est gas 980 MCFD pitot meas before going to separator. Est 150 BFPD w/15-20% oil. Conn separator & strd flw thru separator @ 2 a.m. 4/30/79.
5/2/79	7350	PB - Prep to rel completion unit. On 4 hr tst, well flwd @ daily rate of 120 BO, 200 BW & 540 MCF, GOR 4500:1, CP 950#, FTP 200#.
5/3/79	7350	PB - Cont flwg f/tst. On 24 hr tst, flwd 120 BO, est 200 BW & est 500 MCFD. Rel compl unit 8 a.m. 5/2/79.
5/4/79	7350	PB - Prep to flw f/tst.
5/5/79	7350	PB - Flwg f/tst. In 24 hrs flwd 16 BO, 500 MCFG, w/lots frac wtr to pit. Well had 875# SITP & 1375# SICP when opened up.
5/6/79	7350	PB - Flwg f/tst. 24 hrs flwd 32 BO, 540 MCFD gas & lots & lots frac wtr.
5/7/79	7350	PB - On 24 hr tst, flwd 45 BO & 349 MCFD.
5/8/79	7350	PB - COMPLETED OIL WELL, 5/7/79, Dakota & Gallup fm (commingled). Flwd @ rate of 120 BOPD, 500 MCFD & 200 BLWD f/Dakota perms 7302-7238' (OA) & Gallup perms 6475-6197' (OA). CP 800#, TP 200#, 3/4" choke. GOR 4107:1. Est 44° API gvty @ 60°F. LPP 7302'.

4/20/79 7472 TD - Prep to run cased hole logs. Sub on power swivel parted & dropped tbq; top of fish @ bmt of BOP. WO fishing tools. Engaged fish & POH. LD 22 bad jts. Chg'd bit & RIH w/bit & csg scraper to 7366'. Drld FC & cmt to 7396'. Circ'd out clean. Now POH w/cased hole logging.

4/21/79 7472 TD - Prep to GIH w/bit & CG 9' cmt. Fin POH w/bit & scraper. RU D-A. Ran CBL w/signature & GRC log. WLFBD 7381', CNL-FDC log = 7389' GRC log. Flt clr not apparent on clr log. Re-ran CBL & signature log & GR correl log. No double kick f/flt clr, but clr @ 7347' opn hole meas. Top 1st stage cmt 5900' CBL. Top 2nd stage 3320' CBL meas. DV tool 3948-50' CBL meas.

4/21/79 7472 TD - Swbg. RIH w/bit & scraper & drld cmt 7381-89-1/2'. Tstd csg to 3000#. Displ'd w/1% KCl & sptd 500 gal 15% MCA. POH. Perf w/2 JSPF 7380-89'. D-A ran CNL-FDC log. Pmpd acid away. FBDP 2500#, 5 BPM @ 2000#. Displ 12 BA into fm. Ran Bkr 5-1/2" retriev pkr, set @ 7349'. Commenced swbg 11 p.m. 4/21/79. Total load 42 bbls; at 6 am 4/22, FL @ 4000'. Est recovery 45 bbls - brakish wtr & acid gas, no show of oil. Cont swbg.

4/22/79 7472 TD - Swbg. RIH w/bit & scraper & drld cmt 7381-89-1/2'. Tstd csg to 3000#. Displ w/1% KCl & sptd 500 gal 15% MCA. POH. Perf w/2 JSPF 7380-89'. D-A ran CNL-FDC log. Pmpd acid away. FBDP 2500#, 5 BPM @ 2000#. Displ 12 BA into fm. Ran Bkr 5-1/2" retriev pkr, set @ 7349'. Commenced swbg 11 p.m. 4/21/79. Total load 42 bbls; at 6 am 4/22, FL @ 4000'. Est recovery 45 bbls - brakish wtr & acid gas, no show of oil. Cont swbg.

4/23/79 7472 TD - Prep to sq Burro Canyon perfs 7380-89'. Contd swb tstg Burro Canyon perfs 7380-89'. At 11:30 am 4/22, well swbd dn. Swb fld dark brown, strong odor. FL standing @ 7300'. Pkr set @ 7349'. Swbd est total of 19 bbls to 6 am 4/23. Fld dark brown, strong odor. No oil or gas show. Approx 50' fld in tbq each swb run.

4/24/79 7472 TD - Prep to tst csg & plug to 4000 psi & spt acid. Rel Bkr retriev pkr. POH. RU D-A. Set Bkr 5-1/2" cmt retainer @ 7350'. RIH w/tbg & stinger. Sq Burro Canyon perfs 7380-89' w/70 sx cmt. Mixed 75 sx C1 "B". Sq'd 70 sx below retainer to 2200#. Stood @ 2200#. Rev'd out 5 sx. POH w/5 stnds. WOC. JC 9 pm 4/23/79.

4/25/79 7472 TD - Cont to flw f/cleanup. Sptd 350 gals 15% MCA. Perf Dakota 7302-7300', 7299', 98', 96', 94', 93', 92', 90', 88', 86', 84', 83', 82', 80', 67', 66', 65', 64', 41', 40', 39', 38', CNL FDC opn hole = 23 jets. Frac as prescribed. ISI 1975#, after 4 hrs 1360#. Bled off press f/6 hrs. Ran & landed 233 jts 2-3/8" tbq @ 7200'. Strt flwg 12:30 am. CP 250#. At 6 am, CP 150#. Flwg 2" stream wtr. Frac report to follow.

4/26/79 7472 TD - Prep to set BP, sq base of Gallup. Flwd Dakota zone to pit f/24 hrs. Flwg est 1" stream of wtr, little oil, CF 500#.

4/27/79 7472 TD - Prep to do isolation cmt sq on Gallup zone. Tstd Dakota interval 7238-7302' OA @ an est'd daily rate of 250 MCF, 8-10 bbls FW/hr w/vy sli tr oil, 0# FTHP, 150-550# varing CF. Circ'd & kill well. POH w/tbg. RU D-A, set Bkr Mod "L" CIBP @ 7185'. Dmp'd 3 sx sd of BP tst to 4000#, held OK. RIH & perf'd 6 holes 6560-6563'. Pmpd 20 BW into perfs. Press 3500#, max rate 3 BPM. Ran Bkr cmt retainer, set @ 6520'. RIH w/20 stnds tbq. Well began to flw. Closed pipe rams & flwd to pit f/30 mins. Flwd died, fin'd in hole w/tbg. Circ 10 bbls Sting into retainer. Press annulus to 3500#, held OK. Pld out of retainer & sptd 6 bbls acid. Sting back into retainer, press 4000#, max rate 3/4 BPM. Wait 30 min, pmpd 10 BW into perfs. Press 4000#, max rate 1 BPM.

Frac Job Breakdown : Frac Dakota perfs 7238-7302' w/1% KCl wtr w/2# friction reducer/1000 gals, 30#/1000 gals fld loss add. Frac'd w/ 20,000 gals pad; 18,000 gals, 1/2# sd/gal, 9,000#; 15,000 gals, 1# sd/gal, 15,000#; 16,000 gals, 1-1/2# sd/gal, 24,000#; 21,000 gals, 2# sd/gal, 42,000#; 7,000 gals flush. Total 70,000 gals & 90,000# sd. Brk dn 2600 psig, ATP 2600 psig, Max TP 2750#, AIR 41 BPM, ISIP 2000#, 5 min S P 1900#, 10 min SIP 1850#, 15 min SIP 1700#, HHP used 2763.

4/28/79 7350 PB - Prep to acidize & frac Gallup fm. Pmpd 5 bbls spacer wtr & mixed 35 sx neat cmt (15.5 ppg) and foll w/5 bbls fresh wtr & displ'd w/1% KCl wtr. Stung into retainer & held 1500# press on annulus while displ'g cmt. W/cmt @ perfs 6560-6563', pmpd 2 SPN @ 3250#. Slowed pmps to 1 BPM w/18 sx cmt out perfs w/2500# pmp press, slowed to 1/4 to 1/2 BPM w/30 sx out perfs w/1500# pmp press. Pmpd @ this rate f/1 bbls (5 sx) w/press incr'g f/1500-2500# desired & final sd press. Pld out of retainer & rev'd out - no cmt during reversing. POH. Waited on cmt 8 hrs. RU D-A & perf'd 33 holes, 1 hole/ft, @ Gallup depths of 6475', 73', 71', 69', 21', 18': 6397', 91', 89', 87', 85', 75', 72', 69', 66', 63', 60', 6287', 85', 83', 70', 67', 64', 61', 58', 55', 52', 40', 36', 21', 10', 06'; & 6197'. (PBD 7350').

4/29/79 7350 PB - Drld sq retainer @ 6535'. RIH w/Bkr pkr on 2-3/8" tbq to 6090'. Set pkr & acidized Gallup perfs 6197-6475' (OA) w/2500 gals 15% HCl acid, balled off @ 4000#. AIR 6 BPM. Rel pkr & POH. Frac'd Gallup perfs dn csg as follows: Specr-headed w/40,000 gals of coiled wtr foll by 30,000 gals w/ 1/2 ppg 20/40 sd, 200,000 gals w/1 ppg 20/40 sd & tailed in w/5,900 gals gelled wtr as pad. AIR 65 BPM, HP 2300#, AP 2700#, ISI @ 15 min SIP both 1000#. Grnd well & flwd 2" stream wtr to pits f/1 hr. RIH w/bit & drld on cmt retainer @ 6520' & then pushed same to 6535'.

4/30/79 7350 PB - Flwg to pit. Fin drld cmt retainer. POH w/tbg & bit. Chg'd bit. RIH w/tbg & bit. Drld CIBP & CG to FBDP 7350'. POH w/tbg & bit. RIH w/195 jts 2-3/8" tbq, set @ 6197'. Well blew in. Flwg 2" stream wtr to pit. No oil show. CP 450#.

3/26/79	330	WOC & HU BOP. Spud 12-1/4" hole @ 6 pm, 3/25/79. Drld to 330'. RU & ran 7 jts 8-5/8" csg. Landed 2' too high. PCH w/csg, circ'd to CO. Ran 7 jts 8-5/8" 24# K-55 ST&C csg (314'), set @ 327' RKB, FC 1 282', Cent @ 241', 152' & 62'. Cmt'd w/300 sx CI "B" w/2% CaCl + 1/4# Floccole/sx. PD 6 an, 3/26/79. Float held OK. Circ'd 40 sx cmt to pit.
3/27/79	1100	Drig 50'/hr, sh & sd. Press tst csg to 1000' f/15 min, held OK. DO 50' cmt. Making new hole @ 6:30 pm. 1/2" @ 873'. 60 RPM, 20M#. Mud: 8.4#, vis 31, WL 8.9, oil 4%. (B#2).
3/28/79	2100	Drig 55'/hr, sh & sd. 1" @ 2049', 3/4" @ 1375' & 1711'. 60 RPM, 24M#. Mud: 8.6#, vis 31, WL 6.8, oil 7%. B#2, 7-7/8", Sm., DGTB, made 1045' in 21-1/4 hrs. (B#3).
3/29/79	3000	Drig 30'/hr, sd & sh. 1-1/2" @ 2361', 1-3/4" @ 2595' & 2887'. 60 RPM, 35M#. Mud: 8.7#, vis 31, WL 8, oil 7%. B#3, 7-7/8", Sm., DGTB, made 1220' in 20-3/4 hrs. (B#4).
3/30/79	3815	Drig 30'/hr, sd & sh. 1-1/2" @ 3197' & 3630'. 58 RPM, 38M#. Mud: 8.8#, vis 32, WL 7.8, oil 7%. (B#4).
3/31/79	4350	Drig 25'/hr, sd & sh. 1-1/4" @ 3874'. 58 RPM, 40M#. Mud: 8.8#, vis 32, WL 6.4, oil 8%. (B#4).
4/1/79	4815	Drig 25'/hr, Mesaverde fm. 1" @ 4565'. 58 RPM, 40M#. Mud: 8.8#, vis 32, WL 6.4, oil 8%, B#4, 7-7/8", Sm., F-2, made 1970' in 65 hrs. (B#5).
4/2/79	5410	Drig 25'/hr, Mancos. 1" @ 4864' & 5272'. 58 RPM, 40M#. Mud: 8.8#, vis 32, WL 6.2, FC 2/32, oil 8%. (B#5).
4/3/79	6020	Drig @ 20'/hr, Gallup fm. 3/4" @ 5744'. 58 RPM, 40M#. Mud: 9.0#, vis 37, WL 6.4, FC 1/32, Sd-tr, salt 450, Ph 8.0, Pv 3, Yld 2, Gels 1/2, solids 6%, Ca 100, oil 7%. (B#5).
4/4/79	6505	Drig 20'/hr, Gallup. Lost 100 BM @ 6333'. Mixed LCM Pill & regained circ. 3/4" @ 6088'. 58 RPM, 40M#. Mud: 8.8#, vis 42, WL 6, FC 1/32, oil 7%. (B#5).
4/5/79	6895	Drig @ 20'/hr, Gallup. 3/4" @ 6553', 1" @ 6891'. 58 RPM, 40M#. Mud: 8.8#, vis 39, WL 6.0, FC 1/32, Sd-tr, salt 600, Ph 8.0, Pv 10, Yld 11, Gels 5/14, solids 5%, Ca 180, oil 7%. B#5, 7-7/8", Sm., F-2, made 2326' in 96-1/4 hrs. (B#6).
4/6/79	7205	Drig @ 11'/hr, Dakota. Had oil show in pit while drig @ 7080'. No mud volume again. Incr mud wt to 9#/gal. 1/2" @ 7113'. 62 RPM, 35M#. Mud: 9.0#, vis 32, WL 8.0, FC 1/32, Sd-tr, salt 600, Ph 8.0, Pv 8, Yld 8, Gels 4/10, solids 5%, Ca 80, oil 7%. B#6, 7-7/8", Reed, FP-52, made 222' in 9-1/4 hrs. (B#7).
4/7/79	7472	Plg out to log, Morrison fm. Sample top: Morrison 7447'. Reached TD @ 1:45 am 4/7/79. 48 RPM, 38M#. Mud: 8.9#, vis 62, WL 7.8, FC 1/32, Sd-tr, salt 500, Ph 8, Pv 12, Yld 10, Gels 6/12, solids 6%, Ca 80, oil 8%. B#7, 7-7/8", Sm., F-45, made 359' in 28-3/4 hrs.
4/8/79	7472	TD - POH to log, Morrison fm. Attempt to run DIL, bridges @ 650', 960', 1014', 1210', 1335', 1385' & stopped. WIH w/bit w/no bridges. Attempt DIL 2nd time w/o stdn off shoe & ran to 2375' & stopped. Unable to get thru. Tried CNL & stopped @ 2375'. WIH w/bit to TD w/no bridges or tite hole. Cond mud & strt POH to attempt to log. Mud: 9.0#, vis 58, WL 5.8, FC 1/32, Sd .2%, salt 200, Ph 8, Pv 19, Yld 19, Gels 5/19, solids 7%, Ca 80, oil 7%. Reran B#7 to clean out
4/9/79	7472	TD - WO logging panel. Fin trip to CO bridges. D-A ran DIL-SP (WLTD 7455'). Ran FDC-CNL GR @ 7450' 3 times due to malfunction of density tool. Ran Spectra log. WO logging panel f/ITT (intergrated travel time). Had no trouble RIH w/logging tools. Mud: 9.0#, vis 58, WL 5.8, FC 1/32, Sd .2%, salt 200, Ph 8.0, Pv 19, Yld 19, Gels 5/19, solids 6%, Ca 80, oil 7%.
4/10/79	7473	TD - Circ'g csg @ 7411', prep to cmt 1st stage, Morrison fm. Ran Sonic GR log 7450-300'; FDC-CNL 7450-6050', 5350-3600', 3050-2650'; Spectra log 7445-6150', 3680-3882'; DIL 300-7455'. RIH & circ'd. LD DP & DCs. Ran 5-1/2" 33 jts 17# K-55 ST&C csg (1376'); 154 jts 15.5# K-55 ST&C (6038'), landed csg @ 7411'. DV tool @ 3951', FC @ 7365'. Mud: 9.0#, vis 45.
4/11/79	7472	TD - Tearing dn rig. Cmt'd 5-1/2" csg, 187 jts (7414'), w/FC @ 7366'; scratcher @ 7360', 7350' & 7340'; 13 ctrlzrs; cmt bskt on jts below cirs @ 3996' & 4037'. Cmt'd 1st stage w/305 sx 50/50 Poz w/4% gel, 6-1/4# gilsonite/sx, 3/4% CFR-2, 1/4% HR-4, foll by 85 sx CI "B" neat cmt. Displ'd w/80 BW & 94 bbls mud. Bmpd plug w/1200 psi. FPP 800 psi, initial rate 7 BPM, flwg to 4 BPM. Flt held. Had full returns while cmt'g. Recip csg while displ'g 1st half of cmt volume. Opnc DV tool & circ'd. WOC 3 hrs. Cmt'd 2nd stage w/305 sx 50/50 Poz 4% gel, 6-1/4# gilsonite/sx, 3/4% CFR-2, 1/4% HR-4 foll by 50 sx CI "B" neat cmt. Displ'd w/ 94 BW. Bmpd plug w/1500#. Tool closed & held. FPP 800#, injection rate 7 BPM, slowing to 5 BPM. Had full returns and hole remained full after cmt'g. Fin cmtg 12:30 pm 4/10/79, landed csg in slips as cmt'd w/70M#. RR 4 pm 4/10/79. Mud: 8.6#, vis 42.
4/12/79	7472	TD - WO weather to MORT - too muddy.
4/13/79	7472	TD - WO weather to MORT - too muddy.
4/14/79	7472	TD - Moving out rig. Strtd move out 4/13/79.
4/15/79	7472	TD - WO completion. Fin MORT.
4/16/79	7472	TD - WO completion.
4/16-18/79	7472	TD - WO completion.
4/19/79	7472	TD - WO power swivel replacement. MI & RU Aztec Well Serv rig #157. Instl'd tbg head & BOP. Unload & meas 2-3/8" EUE csg. PD bit & csg scraper. Tagged cmt w/tbg @ 3900'. Drld DV tool @ 3951'. Cent to PD tbg. Fin cmt @ 7366'. Power Swivel trouble.