H. W. ADDINGTON & ASSOC.

FEDERAL 3253-14-12

NW/SW Sec. 14-32S-53W

Las Animas County, Colorado

JOSEPH R. CLAIR
Geological Consultant
C.P.G. #713

WELL SUMMARY

Operator:	H. W. Addington & Assoc.
Well:	Federal 3253-14-12
Location:	NW/SW Section 14, Township 32 South, Range 53 West, Las Animas County, Colorado.
Field:	Wildcat.
Elevation:	5650' K.B.
Spudded:	October 20, 1974. Drilled 13 3/4" surface hole to 327' with water well rig.
Completed:	Finished drilling at 1:17 P.M., November 14, 1974.
Casing:	10 joints of new 10 3/4" OD, 40.5# surface casing set at 326.67' K.B. measurement (Signal rig). 7" casing set on ledge at 1147" (Pulled)
Total Depth:	1966' - Driller 1970' - Schlumberger
Cores:	None
Drill Stem Tests:	One. 797' to 850'
Mud Logging:	Monaco Engineering, Inc. - James Mabry, Logging Engineer
Logs:	Drilling Time Log - 360' to 1966' Detailed Sample Log - 330' to 1966' Mud Log - 360' to 1966' Schlumberger Electric Logs: Dual Induction-Laterolog - 1154' to 1970' Compensated Formation Density Log - 1154' to 1970' Sidewall Neutron Porosity Log - 100' to 1970'
Contractor:	Signal Oil Field Services, Inc. - Rig #8 Buck Taylor - Tool Pusher
Equipment:	Mast: Ideco 96' telescoping derrick - 212,000# capacity with 8' wide, 15' long, 10' high substructure with 3' folding wings. Drawworks: Ideco H-37, Drive-in with double drum. Power: One 8V-71 GMC diesel motor - 250 HP through Allis torque converter. Pump: Gardner-Denver FXK - 14" x 5 1/2" Power: Two 671 GMC diesel engines. Drill Collars: 21 - 6" x 2 1/4" x 30' 10 - 4 3/4" x 2 1/4" x 30' Drill Pipe: 3 1/2" IF
Air Equipment:	Ingersoll Rand - 1500 CFM Air Compressor with mixing tank and mist pump.
Status:	Plugged and abandoned - November 15, 1974.

WELL CHRONOLOGY

H. W. ADDINGTON & ASSOC.
FEDERAL 3253-14-12
NW/SW Sec. 14-32S-53W
Las Animas County, Colorado
Elevation: 5650' K.B.

1974

Oct. 20 to Oct. 24	Drilled 13 3/4" surface hole to 327' with water well rig of Camp Drilling Co., Springfield, Colorado using air and air & mist. Ran 10 joints, new 10 3/4" OD, 40.5#, 8 round thread, Range 2, K55 surface casing and set at 326.67' Cemented with 100 sacks of Halcolite plus 2% calbium chloride and 125 sacks Class H cement plus 3% calcium chloride. Plug down 9:15 P.M. October 23, 1974.
Oct. 26	Moving in rotary rig.
Oct. 27	Drilled out from under surface at 5:30 A.M. Drilling @ 350' at 8:00 A.M. Geologist out to well.
Oct. 28	Drilling @ 768' at 8:00 A.M. Had drilling break with gas kick 804-850'. Decision made to run DST #1 from 797' to 850'.
Oct. 29	Got DST charts at 4:30 A.M. Going in hole with Bit #3 at 6:15 A.M. to drill ahead. Drilling @ 896' at 8:00 A.M. Lost circulation @ 1003' at 11:28 A.M.
Oct. 30	Still trying to regain circulation at 8:00 A.M. Decision made to run cement plug. Halliburton arrived at 8:00 P.M. Ran 50 sack cement plug at 785'; let set 8 hours. Went in hole but had no cement. Came out to run another plug. Ran 50 sack cement plug; let set 8 hours.
Oct. 31	Back in hole; still no circulation. Drilled blind 14'. Last 3' dropped through. Decision made to try drilling with air. Balance of day waiting on air equipment.
Nov. 1	Waiting on compressor and equipment.
Nov. 2	Waiting on compressor at 8:00 A.M. Started cleaning up hole with air and mist at 4:15 P.M. Back to drilling with air and mist from 1017' at 11:47 P.M. No geolograph. Keeping 5' time on Kelly.
Nov. 3	Drilling @ 1255' at 7:04 A.M. Trip @ 1705' at 7:32 P.M. Tested Glorietta. Collected gas samples.
Nov. 4	Drilling @ 1770' at 7:00 A.M. Heat exchangers on air compressor froze. Down 3 1/4 hours. Stuck drill pipe on connection @ 1793' at 10:15 A.M. Trying to work loose balance of day.
Nov. 5	Still stuck at 8:00 A.M. Corrected board 1793' = 1829.51' Dialog on location; to back off and go back in with jars in attempt to free string. Free point run. Stuck at 1040'; free at 1030'. Waiting on equipment (drill collars, wash over pipe) for balance of day.

Nov. 6 Drill collars and wash pipe arrived at 7:00 A.M. Working on drawworks motor. Waiting on mechanic. Started into back off at 12:30 P.M. Had two misfires. Finally backed off at 1015'. Out of hole. Starting to pick up overshot and drill collars. Shot broke drill pipe just below pin. Went in hole and hit bridge at 789'. Spent all night trying to work through bridge. No luck. Had dense clay cobbles in overshot.

Nov. 7 Still not able to get through bridge at 8:00 A.M. Decided to try stiff foam; did not hold cobbles back. Switched to mud; no returns. Switched to aereated mud; had returns; worked down to 998' and lost all returns. Worked down dry to top of fish. Came out of hole to pick up overshot.

Nov. 8 Out of hole at 2:30 A.M. Got over fish and caught tool joint and sliver of drill pipe. Out of hole at 8:00 A.M. waiting on longer overshot to be flown in from Liberal. Overshot arrived on location at 11:00 A.M. Made up tools and started back in hole at 12:30 P.M. Hit boulder at 790' but were able to push down hole. Mixed pit of mud. Got circulation and started working down. Got to fish and started jarring at 5:00 P.M. Fish came loose at 6:30 P.M.; stuck again at 12;25; finally got loose.

Nov. 9 Got fish on bank at 5:00 A.M. Decided to run casing before drilling ahead. Started reaming hole to 9 7/8" at 10:00 P.M.

Nov. 10 Tripping out from 800' to check bit at 9:30 A.M. Reamed to 1147' at 5:45 P.M. Started running 7" casing at 11:45 P.M.

Nov. 11 Landed 7" casing on shoulder at 6:30 A.M. Set 10,000# weight on casing and casing torqued up slightly; left weight on string. Preparing to lay down 6" collars and nipple up. Waiting on 4 3/4" collars.

Nov. 12 Drill collars arrived at 2:30 A.M. Started to pick up same and go in hole. Bit would not go through swedge. Had to have lighter weight swedge flown in to Trinidad; arrived at rig at 9:45 A.M. Started in hole at 12:00 noon. Had junk on bottom and much fluid.

Nov. 13 Back to drilling at 3:00 A.M. Drilling @ 1808' at 8:00 A.M. Trip for bit at 9:30 A.M. from 1814'. Back to drilling with air and foam at 4:25 P.M.

Nov. 14 Drilling @ 1949' at 8:00 A.M. Drilled to 1966' TD at 1:17 P.M. Circulated for samples 20 minutes. Waiting on Schlumberger. Schlumberger arrived at 5:30 P.M. Started logging at 7:00 P.M.

Nov. 15 Got logs at 5:00 A.M. Plugged bottom of hole with 50 sack cement plug. Pulled 7" casing. Plugged bottom and top of surface casing per instructio from State Plugging Engineer.

GEOLOGICAL REPORT

H. W. ADDINGTON & ASSOC.
FEDERAL 3253-14-12
NW/SW Sec. 14-32S-53W
Las Animas County, Colorado
Elevation: 5650' K.B.

The Federal 3253-14-12 was spudded on October 20, 1974, and 13 3/4" surface hole was drilled to 327' with the water well rig of Camp Drilling Co., Springfield, Colorado, with air and mist. 10 joints of new 10 3/4" OD, 40.5#, 8 round thread, Range 2, K55 surface casing was landed at 326.67' K.B. measurement (Signal rig). It was cemented with 100 sacks of Halcolite plus 2% calcium chloride and 125 sacks of Class H cement plus 3% calcium chloride. Cement circulated and plug was pumped down at 9:15 P.M., October 23, 1974.

The rotary rig was moved in and drilled out from under surface casing at 5:30 A.M., October 27, 1974.

The following formation tops, corrected to Schlumberger Electric Logs, were picked on the well.

Cretaceous System:				
Dakota	-	At surface		
Jurassic System:				
Morrison	-	238	(+5412)	Behind surface casing.
Wanakah	-	306	(+5344)	" " "
Ocate	-	423	(+5227)	?
Triassic System:				
Dockum	-	531	(+5119)	
Santa Rosa	-	792	(+4858)	?
Permian System	-	913	(+4737)	
Day Creek	-	992	(+4658)	From electric log.
Blaine	-	1198	(+4452)	
Glorietta	-	1272	(+4378)	
Yeso	-	1573	(+4077)	?
Cambrian System:				
Arbuckle Group:				
Emminence	-	1720	(+3930)	?
Bonneterre	-	1898	(+3752)	
Basal Sandstone	-	1931	(+3719)	
Precambrian System:				
Granite	-	1950	(+3700)	
Total Depth	-	1966	Driller	
	-	1970	Schlumberger	

The Federal 3253-14-12 was the third in a ten well series of wildcat tests along the Sierra Grande Uplift. Location of the test was based on subsurface geology.

The top of the Triassic was picked at 530' and is corrected to 531' by electric logs.

At 797' there was a distinct drilling break and in the 800-10' sample there was a dark orange-red sandstone (see Detailed Sample Log). Penetration rate was extremely fast (1/4" to 1" per foot) and from 817' to 835' there was a 6 unit kick on the gas detector. The Chromatograph indicated it was primarily methane with minor parts of propane and butane. It was decided to drill further and then test. Drilling was carried to 850' and from 840-50' there was an 11 unit kick of the same composition. Drill Stem Tester was called and DST #1 was run from 797' to 850'.

Test tool was opened with no blow, so tool was reset twice to be sure it was open. Then it was discovered that the 1/2" bubble hose valve was plugged. When it was unplugged there was a fair blow which died in 30 seconds and was dead for remainder of 30 minute open flow. Tool was shut in for 60 minutes and test pulled. Recovery was 70' of drilling mud. Pressures were as follows:

Initial & Final Hydrostatic	- 405# & 402#
Flowing Pressure (30")	- 20# - 54#
Final Shut in (60")	- 28#
Bottom Hole Temperature	- 66°

The results were disappointing because this was the first gas kick encountered in the first three tests. Also, the results indicated that the formation was extremely tight (See DST charts).

Drilling proceeded and top of Permian was picked at 913' by drilling time and samples. This is corroborated by electric logs.

There was a sharp drilling break at 995' and at 1003' total returns were lost. Four attempts were made to recover circulation using massive amounts of lost circulation material but without success. Finally it was decided to run a cement plug to regain circulation.

A 50 sack cement plug was spotted by Halliburton at 985' and let set for 8 hours. However, when drill pipe was run in hole there was no cement. A second plug of 50 sacks was then spotted and let set for 8 hours. Again there was no cement and no returns. The well was then drilled blind to 1017', and 3' of this interval litterally dropped through indicating cavernous porosity.

Decision was then made to switch to air drilling and approximately 3 days were lost getting compressor and related equipment. During the setting of cement plugs the geolograph line was torn up, and due to a comedy of errors another line was not available when we were ready to drill ahead with air. 5' drilling time was kept by marking the Kelly.

It was impossible to dry up the hole enough to dust so drilling from 1017' was continued using air and mist. Penetration rates were excellent but sample lag was much greater than I had anticipated.

The first Blaine lithology was found in the 1220-30' sample and top placed at 1215' by drilling time. This is corrected to 1198' by electric logs.

The first good Glorietta was found in the 1310-20' sample and top placed at 1302' on drilling time. However, electric logs correct this to 1272'. Penetration rates were excellent although the sand appeared very tight in the samples (see Detailed Sample Log). There were no kicks of any kind on the gas detector.

The hole bridged at 1600' and there were no samples from 1600-40'. The bridge finally cleaned out, and the 1640-50' sample had a highly dolomitic sandstone conglomerate (see Detailed Sample Log). The top was placed at 1630' on drilling time, and I have tentatively assigned this sequence to the Yeso although the lithology is not typical. The electric logs place the base of the Glorietta at 1573'.

A bit trip was necessary at 1705' so it was decided to attempt to sample the Glorietta while the hole was empty. After being out of the hole for 60 minutes the flow line was plugged and well head packed off. Purged sample bottle #1 at tapline for 15" and shut in; purged sample bottle #2 at tapline for 15" and shut in; gas or air (?) would not burn; volume very low but stream was detectable by feel on face and lips.

The first carbonates were found in the 1730-40' sample. Sample was finely crystalline to crystalline dolomite, and I considered it to be Arbuckle. Top was placed at 1730' by drilling time, corrected to 1720' by electric logs.

Drilling continued and while making a connection at 1790' drill pipe stuck. This resulted in a complicated fishing job and necessitated the running of 7" casing in order to complete the test (see Well Chronology).

Finally drilling continued from 1790' with 6 1/4" hole, and sufficient lithology was present to indicate the Arbuckle was Cambrian (Emminence) in age. The first Bonneterre lithology was in the 1910-20' sample and top put at 1905' by drilling time. This is corrected to 1898' by electric logs.

The first Precambrian was found in the 1940-50' sample and top placed at 1945' by drilling time, corrected to 1950' by electric logs. Drilling was carried to 1966' total depth in order to get top on electric logs. Preparations were then made to run logs.

Schlumberger Dual Induction-Laterolog, Sidewall Neutron Porosity Log, and Compensated Formation Denxity Log were run. Due to the 7" casing, the logs were not definitive above 1156' where Schlumberger found the bottom of the casing. Hence the logs do not give any evaluation of the sand from 792' to 913' in which the show of gas was recorded. The Glorietta again shows the positive gas separation, but because of the sampling of this section it was decided not to do any further testing.

Of particular interest was the presence of Basal Sandstone on the electric logs, although no lithology except abundant loose, angular and subangular, quartz and feldspar along with typical coarse textured granite was observed in the samples.

A 50 sack cement plug was spotted in the bottom of the hole from 1700' to total depth. The 7" casing was pulled, and the top and bottom of the 10 1/4" surface casing were plugged according to instructions from the State Plugging Engineer. Plugging was completed November 15, 1974.

Joseph R. Clair

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DETAILED SAMPLE LOG

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Sample study starts at 330' in Jurassic.

330-341	Shale, maroon, pale green, talcy; with some imbedded sand grains.
341-345	Limestone, white, buff, pale purple, gray, very very finely crystalline, very dense; traces of pink, red, white, gray, tan, semiopaque Chert.
345-357	Shale, as above; with imbedded Limestone, as above.
357-362	Shale, maroon, pale green, green, purple, chocolate, fairly hard; talcy Clay; considerable loose sand grains.
362-375	Limestone, white, gray, maroon, very very finely crystalline, very dense; with Chert, as above; with interbedded Shale, as above.
375-393	Shale, maroon, green, purple, talcy, hard; some scattered loose sand grains and traces of Limestone, brown, dark maroon, very finely crystalline, dense traces of Chert.
393-408	Shale, maroon, green, purple, hard; with traces Limestone, dark maroon, pale purple, very finely crystalline, dense, nodular.
408-423	Shale, maroon, green, pale green, pale gray, hard, some very finely sandy; with Limestone, brown, buff, gray, pale purple, very finely crystalline to finely crystalline, dense.
423	Top - OCATE (+5227) ?
423-436	Shale, maroon, pale green, gray, hard, little sandy; with Limestone, varicolored, very finely crystalline to slightly crystalline, dense, some very finely sandy, some nodular.
436-442	Shale, pale gray, pale green, maroon, purple, very hard, some very finely sandy.
442-457	Shale, as above; with Limestone, gray, brown, pale purple, buff, very finely crystalline, dense, little very finely sandy.
457-478	Shale, pale purple, gray, gray-white, hard, very fine to finely sandy; with Limestone, gray, brown, purple, buff, very finely crystalline, dense, little very finely sandy, considerable nodular.
478-500	Limestone, varicolored, very finely crystalline, dense, quite nodular, little very finely sandy; with interbedded Shale, pale purple, purple, gray, very hard; in part sandy Clay and Siltstone to very fine Sandstone, pale purple, pale purple-gray, brown,-gray, pink-gray, very tight, very slightly limey, some shaly.

500-531 Shale, pale gray, pale maroon, pale purple, pale green, very hard, talcy, some very finely sandy; with interbedded Siltstone to very fine Sandstone, pale pink-brown, pink-red, pink-buff, micromicaceous, very tight, slightly limey, some very finely sandy; with little Limestone, gray, buff, brown, pale purple, very finely crystalline, dense, little very finely sandy, considerable nodular (possibly as nodules).

531 Top - TRIASSIC (DOCKUM) (+5119)

531-543 Siltstone to very, very fine Sandstone, brown-red, brick-red, trace brown, micromicaceous, very tight, slightly limey; with little interbedded Shale, dark brown-red, hard.

543-547 Shale, dark brown-red, light red, brick red, hard; with little Limestone, gray to brown, very finely crystalline, dense, nodular.

547-579 Siltstone to very fine Sandstone, red, brown-red, brick red, micromicaceous, tight to friable, slightly limey to limey; with some interbedded Shale, brown-red, dark red, fairly soft (572-579).

579-592 Shale, brown-red, brick red, hard to soft.

592-604 Siltstone to very fine Sandstone, red, brick red, brown, micromicaceous, slightly limey to limey.

604-606 Shale, brown-red, brick red, trace chocolate, little micromicaceous; with Limestone, gray, pale purple, red, very finely crystalline to finely crystalline, dense, nodular.

606-615 Siltstone to Sandstone, red, brown-red, brown, very very fine to very fine, angular, micromicaceous, slightly limey, little shaly.

615-629 Shale, brown-red, dark red, little micromicaceous; trace white Gypsum; with Limestone, gray, buff, pink-buff, very finely crystalline, dense, nodular.

629-645 Siltstone to very fine Sandstone, red, brown-red, brown, pale purple, micromicaceous, tight, slightly limey.

645-665 Shale, brown-red, brick red, hard, some micromicaceous; with little Limestone, varicolored, very finely crystalline, dense, nodular and nodules.

665-678 Siltstone to very fine Sandstone, red, brown-red, brown, trace pale purple, micromicaceous, tight, limey; with little Shale, brown-red, brick red, slightly micromicaceous, hard to soft.

678-691 Siltstone to Sandstone, as above; with more interbedded Shale, dark brown-red.

691-701 Shale, brick red, brown-red, hard; with Limestone, gray, gray-buff, varicolored, finely crystalline, dense, nodular and nodules.

701-729 Siltstone to very fine Sandstone, red, brown-red, dark red, pink-red, micromicaceous, tight to slightly friable, slightly limey to limey.

729-754 Shale, brown-red, brick red, trace chocolate; with Limestone, varicolored, gray, brown, very finely crystalline to finely crystalline, dense, nodular and nodules; some mottled Shales.

754-768 Siltstone to very fine Sandstone, brown-red, brown, gray, pale purple-red, micromicaceous, very tight, slightly limey; with traces of Shale, brown-red, brick red.

768-792 Siltstone to very fine Sandstone, red, brown-red, brown, traces of gray and purple, micromicaceous, tight, very slightly limey; with little Shale, brown-red, brick red, red, dark maroon, chocolate.

792 Top - SANTA ROSA (+4858) ?

792-850 Sandstone, dark orange, very fine to fine, angular, tight to slightly friable; with much intergranular cement; with abundant fine to medium and trace coarse, subrounded and little rounded, orange and dark orange floating grains.

850-874 Sandstone, dark orange-red, orange-red, orange-brown, very fine, angular to subangular, very tight to quite friable; with fine to medium, subrounded to slightly rounded, dark orange, pale orange and clear floating grains.

874-880 Shale, brown-red, dark brown-red.

880-900 Sandstone, dark orange-red, orange-red, orange-buff, very fine, angular to subangular, very tight to friable; with some fine to medium, subrounded floating grains; little silty; with some Shale, dark brown-red, brown-red, brown, chocolate, hard, probably interbedded, particularly toward base.

900-913 Sandstone, dark orange, orange, orange-red, orange-buff, very fine, angular to subangular, very tight; scattered fine to medium, subrounded to rounded floating grains; with little interbedded Shale, brown-red, dark maroon mottled, brick red, hard.

913 Top - PERMIAN (+4737)

913-934 Siltstone to very fine Sandstone, dark brown-red, brown-red, dark orange-brown, very micromicaceous, very tight; with traces of interbedded Shale, brown-red, dark brown-red, hard.

934-936 Shale, brown-red, dark brown-red, hard.

936-965 Siltstone to very fine Sandstone, dark brown-red, dark red, orange-red, very micromicaceous, very to considerable shaly; with little interbedded Shale, brown-red, chocolate, hard, slightly micromicaceous.

965-970 Shale, dark brown-red, dark red, chocolate, hard, some micromicaceous.

970-976 Siltstone to Sandstone, orange-red, dark orange, orange, brown-red, very very fine to very fine and little fine, angular, tight, very micromicaceous

976-992 Shale, dark red, brown-red, chocolate, hard, some micromicaceous.

992 Top - DAY CREEK (+4658)

992-1006 Dolomite ?

1006-1015 Dolomite ? with Shale ?

1015-1022 Dolomite ?

Note: Lost circulation at 1003 and could not regain it. Interval from 1003 to 1017 drilled blind. Above sequence is from logs. After converting to air drilling there was a trace of red and white, finely crystal line to slightly crystalline, dense Dolomite in the 1017-1020 sample.

1022-1029 Siltstone to very, very fine Sandstone, brown-red, orange-brown, micromicaceous, tight, some shaly.

1029-1035 Shale, brown-red, orange-brown, dark brown-red, little micromicaceous, hard.

1035-1043 Siltstone to very, very fine Sandstone, brown-red, dark brown, orange-brown, micromicaceous, very tight, considerable shaly.

1043-1055 Shale, brown-red, orange-brown, brown, hard to soft; with interbedded Siltstone to Sandstone, as above.

1055-1078 Siltstone to very, very fine Sandstone, brown-red, orange-brown, brown, micromicaceous, tight, considerable shaly; with interbedded Shale, brown-red, dark brown-red, brown, orange-brown, some micromicaceous, hard to soft.

Note: Traces of Dolomite in samples are not in place.

1078-1080 Shale, as above.

1080-1087 Siltstone to very, very fine Sandstone, brown-red, orange-brown, dark orange, dark brown, micromicaceous, tight, considerable shaly.

1087-1091 Shale, brown, brown-red, orange-brown, hard, some micromicaceous.

1091-1107 Siltstone to very, very fine Sandstone, orange-brown, brown-red, brown, dark orange, micromicaceous, very tight, considerable shaly.

1107-1109 Shale, brown-red, brown, dark orange-brown, hard, some micromicaceous; trace white, soft Gypsum.

1109-1130 Siltstone to very, very fine Sandstone, dark orange-brown, dark orange, brown-red, micromicaceous, very tight, considerable shaly; with interbedded Shale, as above.

1130-1144 Siltstone to Sandstone, dark orange-brown, dark orange, very fine, micromicaceous, tight to slightly friable.

1144-1165 Siltstone to Sandstone, as above; with interbedded Shale, dark brown-red, brown, chocolate, orange-brown, hard; traces of white, soft Gypsum.

1165-1166 Shale, as above.

1166-1174 Siltstone to very fine Sandstone, dark orange-brown, dark orange, brown-red, micromicaceous, tight to friable; some white, intergranular Gypsum.

1174-1186 Siltstone to very fine Sandstone, dark orange-brown, orange, brown-red, micromicaceous, tight, some shaly; with interbedded Shale, brown, dark brown-red, orange-brown, hard; traces of white Gypsum and Anhydrite.

1186-1195 Siltstone to Sandstone, as above.

1195-1198 Shale, as above.

1198 Top - BLAINE (+4452)

1198-1216 Anhydrite, white, pink, red, pale purple, crystalline to massive, very dense; trace Dolomite, gray, white, very finely crystalline, dense; trace white, soft Gypsum; little interbedded Shale, brown-red, dark-red, chocolate, fairly hard 1206-1208.

1216-1218 Shale, as above.

1218-1243 Anhydrite, white, pink, light red, crystalline to massive, very dense; with interbedded Dolomite, gray, light gray, gray-buff, very very finely crystalline, very dense, increasing toward bottom.

1243-1272 Shale, dark red, dark brown-red, chocolate, red, hard.

1272 Top - GLORIETTA (+4378)

1272-1300 Sandstone, gray, light gray, very fine to fine, angular to subangular, very tight, limey; with traces of medium, subrounded floating grains; trace Pyrite.

1300-1323 Sandstone, gray, light gray, very fine to fine;and some medium floating grains, angular to subangular and little subrounded, very tight, limey.

1323-1325 Shale, dark brown-red, dark red, brown, chocolate, hard to soft.

1325-1365 Sandstone, gray, light gray, very fine to fine and little medium, angular to subangular, very tight, limey; few medium and trace coarse, subrounded and rounded floating grains; some pyritic.

1365-1368 Shale, dark red, red, brown-red, chocolate.

1368-1397 Siltstone to Sandstone, gray, light gray, gray-white, very very fine to fine, angular to subangular, very very tight, slightly limey to limey; few medium, subrounded floating grains; trace varicolored grains, some pyritic; with some interbedded Shale, as above.

1397-1424 Sandstone, gray, gray-white, buff, pink-buff, very very fine yo fine, angular to subangular, very tight, slightly limey; with some medium, subrounded to little rounded, floating grains.

1424-1455 Sandstone, gray, gray-white, pale orange-buff, buff, very fine to fine and some medium, angular to subangular and little subrounded, very tight,

slightly limey; few medium and trace coarse, subrounded floating grains; interbedded with Siltstone to very fine Sandstone, dark red-brown, red, micromicaceous, very tight.

1455-1471 Shale, red, dark red, chocolate, brown-red, hard; with interbedded Siltstone to very, very fine Sandstone, dark red-brown, red, brown, micromicaceous, very tight, considerable shaly.

1471-1490 Sandstone, gray-white, gray, pale orange-buff, trace orange, very fine to fine and some medium, angular to subangular and little subrounded, tight, slightly limey; some medium, subrounded floating grains.

1490-1491 Shale, red, dark red, chocolate, fairly hard.

1491-1517 Sandstone, gray-white, buff, pale orange-buff, pink-red, light red, very fine to medium, angular to subangular, very tight, limey; with considerable medium and little coarse, subrounded floating grains; few medium to coarse, subrounded loose grains.

1517-1519 Shale, red, dark red, chocolate, fairly hard.

1519-1532 Sandstone, buff, pink-buff, gray-white, red, very fine to fine and little medium, angular to subangular and little subrounded, very tight, limey.

1532-1538 Shale, red, dark red, chocolate, fairly hard; with interbedded Siltstone to very fine Sandstone, red, dark red, micromicaceous, tight, shaly.

1538-1560 Sandstone, buff, pink, red, gray-white, fine to slightly medium, angular to subangular, very tight; few medium to coarse and very coarse, subangular to subrounded floating grains; few loose grains.

1560-1561 Shale, red, dark red, chocolate, hard.

1561-1573 Sandstone, gray, and varicolored, very fine to fine and little medium, angular to subangular and little subrounded, very tight, slightly limey to limey.

1573 Top - YESO (+4077) ?

1573-1586 Shale, red, dark red, brown-red, chocolate, hard.

1586-1590 Siltstone to very fine Sandstone, orange-brown, dark brown-red, micromicaceous, very tight.

1590-1597 Shale -

1597-1616 ? -

Note: Hole bridged and had no returns 1600 to 1640.

1616-1618 ?

1618-1633 ?

1633-1638 Sandstone conglomerate, red, purple-red, very fine to medium, angular to subangular, very tight, dirty; with abundant dolomitic cement.

1638-1646 Sandstone, orange-red, red, very fine to fine, slightly micromicaceous, very tight, shaly; with interbedded Shale, red, dark red, chocolate, hard.

1646-1654 Sandstone conglomerate, dark red, red, very fine to some medium, angular to subangular, very tight, very dolomitic, very dirty.

1654-1670 Sandstone, orange-red, dark red, purple-red, very fine, micromicaceous, very tight, dirty, shaly, slightly limey to dolomitic; with interbedded Shale, red, chocolate, dark red, brown-red, hard.

1670-1674 Sandstone conglomerate, dark red, red, medium to coarse, angular to slightly subangular, very tight, highly dolomitic, dirty; some varicolored loose quartz grains.

1674-1676 Shale, as above.

1676-1685 Sandstone conglomerate, red, purple-red, medium to coarse, angular to subangular, very tight, very dolomitic, some shaly.

1685-1697 Sandstone, orange-red, red-purple, very fine to fine, angular, micromicaceous, very tight, slightly dolomitic, very dirty, some shaly.

1697-1698 Shale, red, chocolate, dark red, hard.

1698-1720 ? (Had no samples 1705-1730 after trip for bit - forgot to fix sample tra

1720 Top - ARBUCKLE (EMMINENCE ?) (+3930)

1720-1750 Dolomite, gray, buff, light brown, pink, red, finely crystalline to crystalline, dense to trace intercrystalline porosity.

1750-1774 Dolomite, buff, brown, traces of gray, pink, red, very finely crystalline to crystalline; dense to trace intercrystalline porosity; trace very fine, angular to subangular.

1774-1795 Dolomite, buff to brown, traces of pink and red, very finely crystalline to slightly crystalline, and trace crystalline, very dense.

Note: I do not believe the loose sand grains in the sample are in place. Stuck drill pipe at 1793 while making connection. After lengthy fishing job it was finally necessary to ream upper hole and run 7" casing in order to finish hole. Drilling was continued below 1793 with 6 1/4" and 6 1/8" bits. Also had junk in hole.

1795-1816 Dolomite, buff, pink, tan, very finely crystalline to slightly crystalline dense; traces of imbedded sand grains; traces of Chert, gray, white, light gray, opaque to semitranslucent.

1816-1866 Dolomite, buff, gray, pink, pale purple, red, very finely crystalline to finely crystalline, very dense, some silty to very, very finely sandy, slightly argillaceous toward bottom.

1866-1898 Dolomite, gray, buff, tan, pale purple, traces purple-red and red, very finely crystalline to crystalline, very dense to traces of crystal vug porosity, some silty to very finely sandy.

1898 Top - BONNETERRE (+3752)

1898-1919 Dolomite, buff, brown, red, dark red, finely crystalline to crystalline, dense to trace crystal filled vugs, slightly to very glauconitic and some finely sandy.

1919-1931 Dolomite, buff, brown, dark red, finely crystalline to very crystalline, very dense to trace vug porosity, more very glauconitic, most finely sandy with trace imbedded subrounded sand grains.

1931 Top - BASAL SAND (+3719)

1931-1950 Note: Log indicates sand but only loose quartz, feldspar and granite fragments were found in samples.

1950 Top - PRE-CAMBRIAN GRANITE (+3700)

1950-1966 Granite, orange-red, pink-red, medium to very coarse textured; considerabl white, siliceous Clay flakes and trace weathered Feldspar.

1966 Total depth - Driller.
1970 Total depth - Schlumberger.

Samples described:

Joseph R. Clair

JOSEPH R. CLAIR
(on well)

DRILLING TIME LOG

H. W. ADDINGTON & ASSOC.
FEDERAL 3253-14-12
NW/SW Sec. 14-32S-53W
Las Animas County, Colorado
Elevation: 5650' K.B.

360-380	1-2-1-1-1-1-2-1-1-1	2-1-1-1/2-1 1/2-2-1/2-1/2-1/2-1/2	
380-400	1-1-2-1-1/2-1/2-1-1-x-x	1-1-1-1-1-1-1-1-1-1	x = No time. Geol. corr.
400-420	1-1-1-1-1-1-1-1-1-1	1-1-1-1-1-1-1-1-1-1	
420-440	1-1-1-1-1-1-1-1-1-1	1-1-1-1-1-1-1-1-1-1	
440-460	1-1-1-1-1/2-1/2-1/2-1/2-1-1	1-1-1-1-2-2-2-2-2-2	
460-480	2-2-2-2-2-2-2-2-2-2	2-2-2-2-1-1-1-1-1-1	
480-500	2-2-2-2-2-2-2-2-2-2	2-2-2-2-2-2-2-2-2-2	
500-520	2-2-2-1-1-2-2-2-2-2	2-2-2-2-2-2-3-2-2-2	
520-540	1-1-2-1-2-2-2-2-2-2	3-2-1-2-2-3-3-3-2-2	
540-560	2-2-3-2-2-2-2-3-2-3	2-2-2-2-2-2-2-2-2-1	Trip at 541 for
560-580	1-1-1-1-1-2-1-1-1-2	1-2-1-2-1-2-2-3-1-2	Bit #2. M4NJ.
580-600	2-1-2-2-2-2-3-3-2-2	1-2-2-1-1-4-3-2-2-2	
600-620	2-2-2-1-2-1-2-2-1-2	2-2-2-1-2-x-x-x-x-x	x = No time.
620-640	x-x-x-x-x-1-1-1-2-2	1-2-1-2-2-2-3-2-1-1	Chart ran o
640-660	1-1/2-1/2-1/2-1/2-1/2-1/2-1/2-1/2-1/2-1/2	1/2-1/2-1-1-2-2-1-2-1-1	
660-680	1-1-1-2-2-2-2-2-1-2	2-8-1-1-1/2-1/2-1-1 1/2-1 1/2-2	
680-700	1-1-1-2-1-1-1-1-1-2	1-2-2-2-2-1-2-2-2-2	
700-720	1-1-1-2-2-2-1/2-1/2-1/2-1-1/2	1/2-1/2-1/2-1-1-4-1-1-1-2	
720-740	5-2-1-2-3-2-2-3-2-1	1-3-4-6-7-7-7-7-7-8	
740-760	10-12-3-1 1/2-2-2-2-2-2-2	2 1/2-3-3-4-4 1/2-4-4 1/2-3-5-4	
760-780	3-3-4-4-3-4-4-4-4-2	3-x-x-4-2-2-2-2-2-3	x = No time.
780-800	2-2-3-2-2-3-3-2-4-4	5-4-3-2-4-3-4-2-2-2	Geol. corr.
800-820	2-2-1-2-1-1-1-1-1-1	1-1-1-1-1-1-1-3/4-3/4-3/4	
820-840	3/4-3/4-3/4-3/4-3/4-3/4-3/4-3/4-3/4-3/4	3/4-3/4-3/4-1-1-1/4-1/4-1/4-1/4-1/4	Cir. sples @ 83 Gas kick.
840-860	1/4-1/2-1/2-1/2-1/2-1/2-1/2-1/2-1/2-1/2-1	1/2-1/2-1/2-1/2-1/2-1/2-1/2-1/2-3/4-3/4-3/4	Cir. sples. Ran DST #1. 797-850
860-880	1-1-1-1-1/2-1/2-1/2-1/2-1/2-3/4-3/4-3/4	3/4-3/4-1-1-1-1-1/2-1/2-1-1	
880-900	1/2-1/2-1-1-1-1-1-1-1-1	1/2-1/2-1/2-1/2-1/2-1-1-1 1/2-1 1/2-1 1/2	
900-920	1-1-1-1-1-1-1-1-1-1	1-1-1-2-1-2-2-1-2-2	
920-940	1-2-2-1-1-1-2-2-2-2	2-2-2-3-2-2-2-2-1-1	
940-960	1-1-1-1-1-1-1/2-1/2-1-1	1-1-1-1-1-2-1-2-1-1	
960-980	1-2-2-1-3-1-1-2-2-1	2-1-2-1-2-2-2-1-2-2	
180-1000	2-1-2-2-1-2-2-1-1-2	1 1/2-2 1/2-2-2-2-1/4-1/2-1/4-1/4-1/2	

1000-1003	1/4-1/2-1/2-		
	Lost circulation. Drilled blind.		
1003-1017	Converted to air. Had no geolograph. 5' drilling time kept on Kelly.		
1017-1100	6" for 3' -6-7-3-2-3-5-8	11-6-6-6-6-8-8-8-7-9	
1100-1200	4-3-8-7-6-6-6-7-6-7	8-16-6-7-9-7-13-15-16-12	20,000# on Bit.
1200-1300	11-12-10-14-14-12-12-4-4-6	4-5-19-12-7-5-x-x-x-x-2	25,000# on Bit.
1300-1400	4-4-5-4-5-5-4-3-3-2	3-5-5-5-5-4-4-4-4-4	at 1230'. 1298-
1400-1500	2-4-2-2-2-2-2-2-3-4	5-6-5-2-2-3-2-2-2-3	1300, 2". x = No
1500-1600	2-4-2-1-3-3-5-3-3-5	4-4-3-2-2-6-4-6-2-5	time. Geol. off.
1600-1700	6-11-4-7-8-9-7-4-4-5	5-7-6-5-14-7-10-14-12-12	
1700-1793	7-5-5-5-5-5-10-20-15-10	8-16-14-16-x-13-10-16-	Conn. at 1790.
			Stuck drill pipe.
	One foot time from 1790.		Note: Corrected
			board, 1793 =
1790-1800	14-16-15-16-15-14-15-15-14-11		1829.51.
1800-1820	9-8-12-16-16-9-12-10-10-12	12-19-18-20-18-7-7-6-7-7	Trip @ 1814.
1820-1840	9-8-9-9-10-4-7-6-5-5	5-8-7-7-6-6-10-8-13-8	Bit #6. J-33.
1840-1860	7-7-6-6-6-7-7-7-8-6	6-8-8-7-6-5-7-8-6-7	
1860-1880	8-8-12-7-5-6-5-5-9-3	5-4-7-4-3-4-3-4-5-4	
1880-1900	4-4-5-5-6-5-5-6-5-5	2-3-3-3-5-4-4-3-3-8	
1900-1920	5-7-7-5-5-6-6-7-8-6	8-6-6-3-3-7-4-6-9-5	
1920-1940	5-7-6-5-1-4-10-6-6-8	7-8-6-8-6-6-5-8-6-6	
1940-1960	8-8-8-7-8-11-13-13-14-14	14-22-35-16-13-13-15-14-15-13	
1960-1966	18-15-17-16-5-9		
1966	Total depth - Driller.		
1970	Total depth - Schlumberger.		

BIT RECORD

H. W. ADDINGTON & ASSOC.
FEDERAL 3253-14-12
NW/SW Sec. 14-32S-53W
Las Animas County, Colorado
Elevation: 5650' K.B.

Run No.	Size	Make	Type	Jet Size 1	2	3	Depth out	Feet	Hours
1	7 7/8	Sec.	M4NJ	12/32	12/32	12/32	541	215	9 1/2
2	7 7/8	Sec.	M4NJ	18/32	13/32	16/32	850	309	10 1/2
3	7 7/8	Sec.	M4NJ	18/32	18/32	16/32	1705	855	22
4	7 7/8	HTC	J-33	18/32	18/32	18/32	1790	85	4
5	6 1/4	Smith	L4N		open		1814	24	7
6	6 1/8	HTC	J-33		open		1966	152	19 1/4