WELL DATA

OPERATOR:	Buttes Gas & Oil Co., Oakland, California
PROSPECT:	East Avalo
WELL:	No. 1 J. Nicklas
LOCATION:	NW SE (1980' N/S, 2070' W/E) Section 13, T. 9 N., R. 56 W. Weld County, Colorado
ELEVATION:	4400' GL, 4405' KB
SURFACE CASING:	8-5/8" set at 113' w/90 sx.
SPUD:	5/6/65. Drill out 6:00 P.M.
COMPLETED:	5/12/65 (1:00 P.M.) to total depth. Plugged and abandoned 5/13/65
TOTAL DEPTH:	5750' driller, 5752' Lane-Wells

LOGS:

Sample	4800'	-5750'
Induction-electrolog	113'	-5752'
Minilog	5450'	-5750'
Diplog	5240'	-5750'

CORES: No. 1, D sand 5562' -5579', full recovery
Core barrel jammed
No. 2, D sand 5579' -5610', rec 28½ ft.

TESTS: Test No. 1, top 3' of D sand 5561' -5564', recovered gas to surface, 20' HOCM, 260' oil, and 1455' GCW.

CONTRACTOR: Murfin Drilling Co.
Rig No. 6, Mr. Young, tool pusher

MUD PROGRAM: Plains Mud Co., Mr. Swingle, engineer

FORMATION TOPS

	Depth	Datum
Niobrara	4769'	+364
Carlile	5141	-736
Greenhorn	5268	-863
"bentonite"	5457	
D sand	5562	-1157
base of porosity,"D1" sand	5576	-1171
J Silt	5646	
J sand	5667	-1262
Total Depth	5752	-1347

13-9N-56W

SUMMARY

The No. 1 J. Nicklas was located to test a D sand, bar trend, trending north-northeast across a slight structural nose, which would be accentuated by a build-up of bar sand. A control well, approximately 1 mile southwest, found very slight shows at the top of a 15 foot sand. To be successful the No. 1 Nicklas should have found permeable D sand, 10 or more, above a -1159 datum or at a depth of 5554'.

The erratic J sands were secondary objectives.

Results: The D sand (14') was topped at 5562 (-1157), only two feet higher than the key well. The oil-water contact, noted in the core at 5566 (-1161) would indicate a slightly greater structural advantage above the key well.

Two thin sand stringers in the lower part of the D section (5580-81.5 and 5584.8 -86.6)had good shows of oil but are too thin to be considered commercial. It is doubtful that these stringers could have been detected from samples.

In future tests in the area the two stringers should be watched carefully for any increase in thickness.

The J sands were essentially without shows. Two feet of porosity in the "J1b" bench and the 38' "J2" bench were without shows. A trace of fluorescence in a few tight sand clusters appear to have come from 5688', where a slight SP pip is present.

Electrical log evaluations by Lane-Wells Engineer Taylor are as follows:

	Interval	Porosity	Sw
D sand	5564-68	23%	60%
D sand	5568-74	23%	70%
"J1" sand	5678-80	21%	70%
"J2" sand	5696-5720	23%	80%

HISTORY

5/6/65 Drilling at 1316'. Rig up, drill rat hole, drill 125', 12-1/4" surface hole. Ran 8-5/8" set at 113' (KB) w/90 sx complete at 9:30 AM, good returns. Drill out at 6:00 PM, plug at 95'.

5/7/65 Drilling at 3834'. Trip for Bit No. 2 at 2687', trip for Bit No. 3 at 3710'.

5/8/65 Drilling at 4609'. While making connection at 4330' (4:15 PM) blocks came apart dropping string to bottom, bent Kelly. Repairs, 16 hours. Pull out of hole to check drill string and bit. Trip in w/Bit No. 4. Had to break circulation twice and ream 30' to bottom. Resume drilling at 8:25 PM.

5/9/65 Preparing to core at 5562'. Trip for Bit No. 5 at 5353'. Strap out of hole, 3' down-hole correction. Hit top D sand, 5560', at 9:10 PM, circulate samples at 5562'.

5/10/65 Preparing to cut Core No. 2 at 5579'. Cut Core No. 1 5562'-5579' (full recovery) core barrel jammed. Ran Drill Stem Test No. 1, 5561-64'.

5/11/65 Drilling at 5589' with Bit No. 6. Cut and pulled Core No. 2, 5579-5610, recovered 28.5', out at 11:30 AM.

5/12/65 At total depth, 5750', reached at 1:00 PM. Made trip for Bit No. 7 at 5691'. Logging completed at 6:45 PM. Decision to plug made. Oral plugging instructions obtained from Mr. Rodgers, Colorado Oil and Gas Commission at approx. 10:00 PM.

5/13/65 Hole plugged and abandoned. Plug across base of surface of 15 sxs, 10' sx plug at surface.

[redacted]

MUD PROGRAM

The mud program was satisfactorily handled by Plains Mud Co., Mr. Swingle, engineer. Daily mud-checks were as follows:

Date	Depth	Wt.	vis.	WL.	WC	pH	ppm salt	Solids	Sand
5/9/65	5183	9.4	32	6.8	1/32+	-	nil	low	low
5/10/65	5571	9.8	51	4.9	2/32	9.0	200	low	md
5/11/65	5607	9.7	81	5.0	2/32	8.5	-	-	-
5/12/65	5740	9.9	61	5.2	2/32	8.5	980	low	md

Mud Materials

Date	Gel	Quebracho	Soda Ash	Caustic	Deterg.	Phosphate
5/9/65	46 sx	350#	250#	250#	25 gal	125#
5/10/65	none added					
5/11/65	-	50	25	25		
5/12/65	-	50	-	25		
Total	46 sx	450#	275#	300#	25 gal	125#

BIT RECORD

Bit No.	Ser. No.	Size	Make	Type	Jet	Depth Out	Footage	Time
-	Re-run	12-1/4"	Varel	VH3G	-	125	125	8-5/8 hr.
1	20901	7-7/8	Varel	V3-S	11/16"	2687	2562	12-1/2
2	20909	7-7/8	Varel	V3-S	11/16	3710	1023	8-1/2
3	20906	7-7/8	Varel	V3-S	11/16	4330	620	5-3/4
4	20910	7-7/8	Varel	V3-S	11/16	5353	1023	14-1/4
5	20908	7-7/8	Varel	V3-S	11/16	5564	211	3-3/4
Core No. 1	5539	6-5/8	Hycalog	diamond	-	5581	17	6 (jammed)
Core No. 2	5539	6-5/8	Hycalog	diamond	-	5612	31	7
6	20494	7-7/8	Varel	VH3	11/16	5691	79	10 (bald)
7	20495	7-7/8	Varel	VH3	11/16	5752	61	7-1/2

DEVIATIONS

Depth	Dev.	Depth	Dev.
501	1/2 °	3493	2 °
1006	3/4 °	3710	1-3/4°
1503	1 °	4269	1-1/4°
2001	1-1/8°	4734	1-1/2°
2500	1-1/2°	5353	1-3/4°
2997	1-1/2°	5691	3/4 °

SAMPLE DESCRIPTION
(samples lagged)

4769	TOP NIOBRARA (samples start at 4800')
4765-4775	Shale, gry to brn-gry, sft, bent, calc, occ frag has scat foram spks, w/tr wh bent (yel min fluor)
4775-4800	Shale, lt tn to brn, v calc, num spks, w/tr lt tn spkd Ls, w/tr bent, wh, tn, grn
4800-4860	Shale, gry, fm, sl blky, scat spks, w/tr gry-tn Ls, w/tr bent, pyr.
4860-4920	Shale, brn, v calc, num spks, w/tr pyr, tr bents, inoc, w/tr gry platey shale
4920-4950	Limestone, tn, hd, num spks, w/gry platey shale
4950-5050	Shale, gry, sft, bent, sl gritty, w/tr inoc, tr bent, tn, wh, grn
5050-5080	Shale, gry to brn, scat spks, calc, w/tr pyr, inoc, bent
5080-5141	Limestone, crm to tn, fm, dens, sl sdy, w/tr gry platey shale, occ sl gritty
5141	TOP CARLILE
5141-5268	Shale, gry, fm, slty, w/tr gry sltst, occ sl glauc, occ tr gry to hd Ls.
5268	TOP GREENHORN
5268-5280	Shale, gry to brn-gry, sft, sl platey, w/tr Ls, md-tn, gran
5280-5457	Shale, gry, sl gritty, w/tr gry sltst, w/tr grn-gry micac bent
5457	"bentonite"
5457-5470	Shale as abv w/abund bent, yel, micac, crm, w/tr Ls, gry, amb, gran
5470-5560	Shale, gry, fn slty, w/tr sft brn sltst, w/tr bent, w/tr shell frags 5480-90', shale becomes sl carb below 5535'. NOTE: Depths below adjusted 2' downhole to agree w/log.
5562	TOP D SAND
5562-5564	(Circ 1 hr 30') Sand, gry-tn, fg, sl to friab, poor to fair P&P, tr faint stn, occ cluster w/fair fluor, sm barren.
5564-5581	CORE NO. 1 (full recovery)
Time	31 42, 37, 39, 25, 21 25, 19, 18, 15, 16 11, 8, 9, 5, 5, 5 (barrel jammed)
5564-66.8	Sand, tn, fg ±, sub-rd - sub-ang, fairly clean, friab, fair to gd P&P, fair gassy odor, bldg gas, oil & tr wtr, gd unif fluor, lt cut. Sl tr micro-lens sft blk clay and carb material - dip flat.
5566.8-75.3	Sand, gry, fg+, scat dk grains, tr muscovite, tr carb inclus, w/tr stngr poor P&P, clayey, most is clean, fair to gd P&P, friab, NS, bldg wtr. Vert frac at 5570-72'
5575.3-75.8	Sand, gry, vf-fg, poor sorting, micac layers, coaly strks, sl friab, fair P&P, NS
5575.9-76.3	Shale, blk, w/thin sd lams, gry, vfg, hd silic, to clay-filled, tite - sl tr bldg gas, stain in lam at 5575.9'.
5576.3-77	Sand, gry, hd, clay-filled, tite, NS
5577-80	Shale, blk, interb w/thin sand stngrs, as abv, sl rewkd appear, beds ave flat
5580-81	Sand, tn, fg±, tr dk grns, fairly friab, clean, fair P&P, gassy odor, unif stain, gd unif fluor, fair cut.
5581-5612	CORE NO. 2 (recov. 28.5')
Time	-,10,8,7,10 19,14,6,9,16 15,17,28,25,10 16,13,11,13,12 11,12,10,13,11 12,12,11,12,12 13,12

Sample Description Cont'd

5581-81.5	Sand, as abv, w/carb trash & clay frags, oil shows, as abv.
5581.5-84.8	Shale, blk, carb, w/interb sd, gry, vfg, hd, silic-clayey, pyr, tite, NS
5584.8-85.5	Sand, lt tn, fg, sl friab, scat dk grns, occ grn, tr carb prtgs, fair P&P, lt stain, gd gas odor, gd fluor
5585.5-85.8	Sand as abv w/num blk sh,& carb prtgs, poorer oil shows
5585.8-87.6	Sand, tn, vfg, sl friab, fair to sd P&P, fair to gd stain, gd fluor, grades to sand, sl clay-filled, dirty w/irreg pods blk carb sh, gd to spty oil
5587.6-89.8	Interb thin lams blk shale w/sand, wh, vfg, scat dk grns, clay-filled, carb prtgs, v sl friab, tite, NS
5589.8-92.7	Sand, wh, vfg, to occ fg, hd, clayey, sl silic, w/tr carb shale prtgs, tite, NS, basal contact of sand dips 10°
5592.7-98	Shale, blk w/occ thin hd brn mdst layers. Shale bedding dips 5-10° to 5593.5, then gradually flattens
5598-98.6	Coal, shaley
5598.6-5612	Shale, blk, occ carb, occ thin hd brn mdst layers. Irreg bedding at 5599.9 and at 5603. At 5608' dip steepens to 5° to 10° then approx 5° to 5612
5612	Bottom of CORE NO. 2
5612-5646	Sh, gry, fm, sl blky, tr bent, pyr, occ sl slty
5646	TOP J SILT
5646-5667	Sltst, sft bent, brn-gry w/shale, gry, platey
5667	TOP J INTERVAL
5667-5678	W/tr sand, gry-tn, vf-fg, sl friab, clay-filled, tite, NS
5678-88	Sand, wh, vfg, clay-fill, sl friab to hd silic, tite to poor P&P, NS, in sample lagged to 5685-88 occ cluster sl por sand has sl tr fluor
5688-95	Shale, blk, blky
5695-5737	Sand, gry-tn, fg +, sft, friab, clean to clay-filled, poor to fair P&P, NS. At 5720 to 5740 tr sand, gry, vfg, scat dk grains, poor P&P, NS
5737-5752	Shale, gry, blky, sl bent
5752	TOTAL DEPTH

(Samples filed w/American Stratigraphic Co., Denver, Colorado)