GEOLOGIC REPORT

ON

DOME PETROLEUM CORP.

DOME-NAVAJO 13-20-5 WELL NO. 1

BY

JOHN G. LARSEN

2J GEO-LOGGING

GRAND JUNCTION, COLORADO

WELL SUMMARY

OPERATOR:	Dome Petroleum Corporation
WELL:	Dome-Navajo 13-20-5 No. 1
LOCATION:	C, SW, NW, Sec 13. T20N R5W
COUNTY:	McKinley
STATE:	New Mexico
FIELD/AREA:	Wildcat
ELEVATION:	K.B. 6775 est.
SPUD DATE:	16 March 1980, 0030 hrs.
COMPLETION DATE:	
OBJECTIVE:	Entrada Sandstone
TOTAL DEPTH:	6220
ENGINEER:	C.D. Moore
GEOLOGIST:	John G. Larsen
CONTRACTOR:	Brinkerhoff - Signal; Rig 67
TOOL PUSHER:	Leon Decker
DRILL COLLARS:	6¼"
DRILL PIPE:	4" FH
HOLE SIZE:	13½", 0' to 240' 8 3/4", 240 to
CASING:	9 5/8", 32.30 lb, SJ + C @ 234'
DRILLING MUD:	Land, Starch, Milchem
MUD ENGINEER:	Jeff Armstrong
MUD LOGGER:	John G. Larsen, 2J Geo-Logging
ELECTRIC LOGGING:	Welex, Engineer, J. Bray
CEMENTING:	
STATUS:	

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Operator: Dome Petroleum Corp. Well: Dome-Navajo 13-20-5 Well No. 1

WELL CHRONOLOGY

Date	Midnight Depth	Footage Drilled	Operations
16 March, 1980	240	240	Drld mse hole, Spud at 12:30 a.m. Drld Srvy, Trip out. RU & r 5 jts 9 5/8", 32.3 lb. SJ+C csg, cmt esg w 200 sx cl B cmt w/2% Ca Cl_2. W.O.C., nip up W.O.B. 5-15 M, RPM 100 SPM 68 PSI 300
17 March	240	0	Cmt no hold, Plld csg, trp in w/bit to circ, tt hle, wshd csg - btm, cmt csg at 234' w 200 s x cl B cmt w 3% Ca Cl_2 W.O.C. nip up, lnstl B.O.P. at 500 psi ok. Trp in, tag cmt 190', Drld cmt.
18 March	1142	902	Drld. Srvy. Drld. trp out, Rg dwn pmp fr rpr, Rg up D-300 pmp, trp in, wshd 30' to btm Drld. rpr rtry chn. Drld Dpth covr on trp 1062 to 964. W.O.B. 5-30 M, RPM 100-90, SPM 68, Psi 1200
19 March	2320	1178	Drld. Wrk on pmp Drld. Srvy. Drld. trp out, slm no chng, trp in, lvl rig, tin trp in, wsh 30' to btm. Drld WOB 30 M, RPM 100, SPM 90 PSI 1200
20 March	2888	568	Drld Srvy Drld W.O. pmp Drld W.O. pmp Drld W.O. pmp Srvy. trp out, tt hle, W.O. pmp trp in rmd tt spt, wsh 45' to btm Drld W.O. pmp W.O.B. 35 M RPM 90 SPM 58 PSI 1150
21 March	3158	270	W.O. pmp, Drld, W.O. cat hd shrt trp out 7 stn, C.O. pmp, trp in hle, Drld, W.O.B. 30 M RPM 65 SPM 65 PSI 1000
22 March	3543	385	Drlg 22 hrs W.O. pmp #1, W.O. cmpnd on pmp, Drlg W.O.B. 30 M RPM 60 SPM 68 PSI 800
23 March	3940	397	Drlg sur ½ @ 3500, Drlg, rs, Drlg, mud air td W.O.B. 30 M RPM 60 SPM 58 PSI 1050
24 March	4260	320	Drlg 21¼ hrs sur 1° C 3980, Drlg, rs, W.O. pmp, Drlg, W.O. pmp p.o. valv, W.O.B. 35 M RPM 60 SPM 70 PSI 1400
25 March	4515	355	Drlg 16½ hrs, rpr pmp lnr gskt & rd pckg B.W. sde, rple lnr gskt bth lnrs, sur 3/4" @ 4496 W.O.B. 35 RPM 60 SPM 68 PSI 1400
26 March	4864	349	Drlg 23¼ hrs, rple bth, lnr gskts on pmp (O.D.S.) Bgn trp out @ 4864, corr to 4872, W.O.B. 35M RPM 60 SPM 68 PSI 1400

27 March	5017	153	Drlg 14 hrs, trp, rs, TIH, bit #5, wsh brdg @ 4500, wsh 30' to btm
28 March	5192	175	Drlg 20 3/4, sur 5 @ 5009, rs, sur 4¼ @ 5089, circ fr sur, Drlg, sur 3 3/4 @ 5150
29 March	5356	164	Drlg 23 hrs, rr 3/4, rs ¼, Drlng, swb & rplc lnr gskt, Drlg, rs, Drlg, sur 3½° @ 5366, LCM 10% W.O.B. 40 RPM 65 SPM 68 PSI 1350
30 March	5515	159	Drlg 23 hrs, Drlg, sur 3 1/8 @ 5366, Drlg, rs, Drlg, W.O.B. 40 M RPM 60 SPM 68 PSI 1350
31 March	5798	283	Drlg 20¼, Drlg, rplc cap gskt, stds, Drlg, sur 2½ @ 5550, Drlg, rs, Drlg, W.O.B. 40 RPM 60 SPM 68 PSI 1350
1 April	6003	205	Drlg 22½, Drlg, rplc lnr gskt on bull whl, Drlg, rs, Drlg W.O.B. 40 M RPM 65 SPM 68 PSI 1350
2 April	6120	117	Drlg 18¼ W.O. pmp lnr cp gskt, W.O. pmp #2 lnr cp gskt, Drlg, Circ, P.O.O.H. fr DST #1
3 April	6120	0	Drlg 0, T.O./DST, pck up DST tool, TIH, rplc/brk out tng rig tstr, tst, TOOH, wet DST, ly dwn tool, TIH, drm clcth rpr, civc
4 April	6120		Circ, rpr Drum clutch, T.O.O.H., rpr clth
5 April	6220	100	Drlg 3 3/4, Drlg, circ + cond. mud, T.O.O.H/rn logs, logging W.O.B. 30 M RPM 60 SPM 68 PSI 1100

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BIT RECORD

Operator Dome Petroleum Corp Well Dome-Navajo 13-20-5 No.1

Bit No.	Size	Mfr.	Type	Depth In	Depth Out	Feet	Hours	Ft/Hr
1	13½	HTC	OSC3	0	240	240	4½	53.3
2	8 3/4	HTC	OSC3J	240	2000	1760	22	80.0
3	"	STC	DTJ	2000	2883	883	17½	50.5
4	"	STC	F-2	2883	4856	1973	111	17.7
5	8 3/4	STC	F-3	4856	6220	1364	145.5	9.4

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DEVIATION SURVEYS

Operator Dome Petroleum Corp Well Dome Navajo 13-20-5 No. 1

DEPTH	DEVI-ATION	DEPTH	DEVI-ATION	DEPTH	DEVI-ATION	DEPTH	DEVI-ATION
416	1°						
964	1°						
1549	3/4°						
2000	3/4°						
2502	1°						
2883	1¼°						
3500	½°						
3980	1°						
4496	3/4°						
5026	5°						
5089	4¼°						
5150	3 3/4°						
5366	3½°						
5550	2½°						
6100	½°						

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MUD RECORD

Operator Dome Petroleum Corp Well Dome-Navajo 13-20-5 No. 1

DATE	18 March	19 March	20 March	22 March	23 March	24 March	25 March	26 March	27 March		
DEPTH	1062	2000	2887	3330	3589	4085	4435	4430	4856		
WEIGHT	8.8	9.0	9.3	9.0	9.3	9.5	9.0	9.2	9.2		
MUD GRADIENT	NR	.468	NR	.468	--	.494	.468	.478	--		
FUNNEL VIS	48	30	34	33	45	40	47	46	42		
YIELD POINT	NR	1	3	12	7	7	12	14	5		
GEL STRENGTH	NR	2/3	3/5	8/15	7/16	3/11	3/9	6/16	3/7		
PH	NR	8.0	8.5	8.0	9.0	8.5	9.0	10.5	10.5		
FILTRATE API	NR	19.2	12.0	22.0	10.0	8.8	9.2	9.0	8.6		
CAKE	NR	2/32	2/32	2	2	2	2	2	2		
ALKALINITY FILTRATE	NR	NR	NR	--	.4/1.7	.15/-	.2/-	.6/2.2	.5/2.1		
CHLORIDE PPM	NR	1400	1600	1200	1200	1600	900	900	800		
CALCIUM PPM	NR	180	80	100	0	100	40	20	20		
SAND % CONTENT	NR	0	0	0	0	¼	¼	¼	¼		
SOLIDS % CONTENT	NR	4	4	4	4	5	5	5	5		
OIL % CONTENT	NR	0	0	0	0	0	0	0	0		
WATER % CONTENT	NR	96	96	96	96	95	95	95	95		
% KCL											
PLASTIC VIS	NR	5	7	8	12	12	17	18	12		
LCM						8	4	5	4		

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MUD RECORD

Operator Dome Petroleum Corp Well Dome-Navajo 13-20-5 No.1

DATE	28 March	29 March	30 March	31 March	1 April	2 April	2 April	3 April	5 April		
DEPTH	5130	5326	5427	5759	6002	6075	6120	6120	6120		
WEIGHT	9.2	8.9	9.1	9.1	9.1	9.2	9.1	9.1	9.2		
MUD GRADIENT	.4784	--	--	.4732	--	.4784	--	--	--		
FUNNEL VIS	40	42	42	48	40	65	60	54	54		
YIELD POINT	9	7	4	14	9	15	14	9	8		
GEL STRENGTH	6/24	10/40	6/30	6/26	6/24	10/37	8/18	7/22	8/34		
PH	7.8	10.5	10.0	11.0	11.5	12.0	12.0	12.0	11.5		
FILTRATE API	6.8	8.4	6.8	6.6	9.4	18.2	8.8	8.6	9.8		
CAKE	2	2	2	2	2	3	2	2	2		
ALKALINITY FILTRATE	0/0	.8/1.9	.6/1.8	.75 / 2.3	.95 / 2.7	.75 / 1.9	.6/2.0	.7/-	.85/-		
CHLORIDE PPM	900	8000	8000	1600	1400	1800	1800	1900	2000		
CALCIUM PPM	20	40	40	40	200	150	100	120	100		
SAND % CONTENT	1/4	1.0	1.5	1	1/4	1/4	1/4	1/4	1/4		
SOLIDS % CONTENT	4	4.0	3.5	4	4	4	4	4	4		
OIL % CONTENT	0	Tr	Tr	0	0	0	0	0	0		
WATER % CONTENT	96	87	95	95	96	96	96	96	96		
% KCL											
PLASTIC VIS	13	18	20	22	12	20	17	14	15		
LCM	2	8	8	7	6	5	4	4	4		

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DRILL STEM TEST REPORT

DST No. 1 Successful Yes Failure _____

Operator Dome Petroleum Corp. Date 4/3/80

Well Dome-Navajo 13-20-5 No. 1 Location _____

Formation Entrada Interval 6110 TD 6120

Testing Co. Haliburton Type Test Open hole packer

Cushion None Hole Size 8 3/4" Packer Size 10"

Drill Pipe Size 4"F.H. Capacity 97 Bbls

TEST DATA:

Time Duration (Min.)	Preflow	Initial Shutin	Final Flow	Final Shutin
	15 min	30 min	30 min	60 min

Fluid to Surface Time (Min.)	Gas	Oil	Water	Mud
	--	--	--	--

Flow Data Choke Size Time Pressure Rate

Continue on back or seperate sheet

3/4" hose, 15 min open, open w/good blow after 1 min, F.F. open with bair blow, weakened to weak blow in 4 min, very weak blow at end.

Pressure Data:

	Top Chart @ 6090'	Bottom Chart @ 6115'
IHP	3040.8	3039.6
IFP	1847.3-1887.9	2031.3-2058.5
ISIP	2361.8	2371
FFP	2348.3-2375.4	2357.4-2371
FSIP	2375.4	2384.6
FHP	3040.8	3039.6
Temp.	165° F	165° F

Recovery:

Sample Chamber: Capacity 2000 cc Pressure 0

Recovery 2000 cc water

Resistivity .10 Temperature 70°

Water: PPM Chlorides _____ Nitrates _____

Drill Pipe Recovery 620' mud, 280' mud & sand cut water, 3608' water & sand, B.H.T. 165°

Remarks Rw pit .076 @ 82°, Rw btm smpl .09 @ 80°

CHART PICTURE ON BACK

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OPERATOR: Dome Petroleum Corp. WELL: Dome-Navajo 13-20-5 No. 1

FORMATION TOPS

	gl 6736		kb 6748	
	Drilling Tops	Prognosis	E Log	VS-S
Kpl	2910	2896	2830	
Km	3075	3021	3070	
Kgal	3625	3693	3625	
Kgra	5023	4938	5010	
Kd	5089	5073	5070	
Jm	5201	5192	5165	
Jr	6105	6016	6038	
Je	6112	6090	6108	
Td		6190		
Kgh		---	4755	

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SAMPLE DESCRIPTION

Interval		%	Description
240 - 70	CLYST	70%	lt gy, gy, bn, fm
	SS	30%	lt gy - sly stp, vf-fg, ws, r-a, wcem, sly, calc, carb, s/cly-fld, qtz
270 - 300	CL	60%	aa s/mic
	SS	40%	aa wcem uncons
300 - 330	SS	70%	lt tn- lt gy- sly stp, f-vfg, ws, mg, a-r, wcem, cale, s/cly-fld
	CL	30%	aa, 1 tr ls, tr mcxln, dns
330 - 60	CL	70%	aa- grdy to sh
	SS	30%	aa-f-vf + mg, ms, s/mic
360 - 90	CL	80%	aa
	SS	20%	aa
390 - 420	CL	90%	aa-riv cr sh
	SS	10%	aa
	Tr		Ls, bn, gmor, mrly
420 - 50	CL	90%	aa
	SS	10%	aa - sly carb
450 - 80	CL	80%	aa - decr SH
	SS	10%	aa
	LS	10%	lt bn - lt tn, mcxln, dns w/tr ls, bn,amor, mrly
480 - 510	CL	80%	aa
	SS	20%	aa - sly carb
510 - 40	CL	90%	aa - sly carb
	SS	10%	aa
	Tr		LS, aa
540 - 70	SS	100%	lt gy - stp, vf-fg, ws, r-R, s/fros, uncond, pcem, qtz Tr PYR
570 - 600	SS	60%	lt gy - sly stp, f-fg, ws, r-a, wcmt-uncons, sly calc, s/mic
	SH	40%	gy-bn, frm, grdg to clyst
600 - 30	SS	70%	AA
	SH	30%	aa
630 - 60	CLYST	80%	lt gy, mfrm, s/grdg to SH
	SS	20%	lt gy- sly stp, f-vfg, w/s/mg, r-a, mcem, cly-fld
660 - 90	CL	70%	aa
	SS	30%	aa
690 - 720	CL	80%	aa-cmes SH
	SS	20%	aa-pred uncons
720 - 50	SS	90%	aa-mcem, cly-fld
	CL	10	aa
750 - 80	SS	70%	aa
	SH	30%	gy-bn, fm, carb
780 - 810	SS	80%	gy-bngy, f-vfg, ws, a-r, wcem sly cale, cly-fld s/mic
	SH	20%	aa
	Tr SS		lt gy, mic aa
810 - 40	SS	80%	lt gy - sly stp, f-vfg ws, a-r, uncons-wcem, calc + cly-fld wh evn cem
	SH	20%	aa

840 - 70	SH	80%	aa
	SS	20%	aa
870 - 900	SH	70%	aa
	SS	30%	aa-w-mcem
900 -1050	SH	100%	lt gy, mfrm, s/slty
Depth correction, 1062 corrected to 964			
964 - 94	SH	80%	gy-bn gy, frm, slty, sly calc
	SS	20%	gy - lt gy, vfg, ws, a-r, wcem, calc, nvp
994-1024	SH	70%	aa-v slty
	SS	30%	aa
1024-1234	SH	100%	aa
	Trs SS		aa
1234- 94	SH	90%	aa
	SS	10%	aa stp
1294-1384	SH	70%	aa
	SS	30%	aa
1384-1424	SH	60%	aa
	SS	40%	aa
1424- 54	SS	100%	aa
	Tr SH		aa
1454-1514	SS	90%	aa
	SH	10%	aa
1514- 44	SH	60%	bn-gy, frm, w/sh aa
	SS	30%	aa
			Coal 10 blk, shny, brtd
1544- 74	SH	90%	aa
	SS	10%	aa
	Tr Coal		
1574-1604	SH	80%	aa
	SS	10%	aa-pyrtc
			Coal 10
1604-1700	NA		
1700-1870	SH	70%	gy-bn, frm
	SS	20%	lt gy, vt vfg, ws, a-r, wcem, calc, pyrc, cly-fld i.p.
			Coal 10 blk shny brtl
1820-1850	Coal	60%	aa
	SH	30%	aa
	SS	10%	aa
1850-1910	SH	100%	aa
	Trs SS		pyrc, aa, Coal
1910-1940	SH	70%	aa
	SS	30%	aa
	Tr Coal		aa
1940-1970	SH	80%	aa
	SS	20%	aa
1970-2000	SH	70%	aa
	SS	30%	aa
2000-2010	NS		
2010-2040	SH	90%	gy-bn, fm, slty, carb
	SS	10%	lt gy-wh, f-vfg, ws, r-a, wcem, sly, calc, cly-fld
2040-2070	SH	70%	aa
	SS	30%	aa-sli stp, f-vfg, w/s, mg, decr cly-fl, s/lo int gran
2070-2160	SH	80%	aa
	SS	20%	aa
2160-2190	SS	70%	aa-pred cly-fld
	SH	30%	aa

2190-2220	SS	100%	aa
	Tr SH		aa
2220-2250	SH	80%	aa
	SS	20%	aa
2250-2280	SH	70%	aa
	SS	30%	aa
2280-2340	SH	70%	aa
	SS	30%	aa + bn gy, vfg, ws, r-a, wcem, cly-fld, tt
2340-2400	SH	80%	aa
	SS	20%	aa
2400-2430	SH	70%	aa
	SS	30%	lt gy-wh-stp, f-vfg, ws, a-r, wcem, cly fld, tt
2430-2460	SH	80%	aa
	SS	20%	aa
2460-2490	SH	70%	aa
	SS	30%	aa
2490-2520	SS	60%	aa
	SH	40%	aa
2520-2580	NS		
2580-2610	SS	60%	lt gy, vfg, ws, r-a, wcem, sly calc, mc, cly-fld, tt
	SH	40%	gy-bn gy, frm, s/sly fssl
2610-2640	NS		
2640-2700	SH	90%	gy-bn gy, frm, slty, sf sly fssl,
	SS	10%	lt gy, fg, ws, r-a, wcem, sly, calc, tt
	Tr Coal		blk, shay, brtl
2700-2730	SH	60%	aa
	SS	30%	wh-lt gy, vfg, ws, r-a, wcem, cyl-fld, tt
	Coal	10%	aa
2730-2760	SH	90%	aa
	SS	10%	aa
	Tr Coal		
2760-2790	SH	50%	aa
	Coal	40%	aa
	SS	10%	aa
2790-2820	Coal	70%	aa
	SH	20%	aa
	SS	10%	aa
2820-2850	SH	70%	aa
	Coal	20%	aa
	SS	10%	aa
2850-2880	SH	60%	aa
	Coal	30%	aa
	SS	10%	aa
2880-2900	NS		
2900-2930	SS	100%	wh-lt gy, vf-fg, w/s/mg, mws, a-r, wcem, sly calc, cly-fld, tt
	Tr SH, Coal		aa
2930-2990	SH	50%	aa
	SS	40%	aa
	Coal	10%	aa
2990-3020	NS		
3020-3080	SS	80%	lt gy, vfg, ws, r-a, wcem, calc carb
	SH	20%	gy, frm, slty, calc, ip carb
	Tr Coal		

3080-3140	SH	70%	aa
	SS	30%	aa
3140-3170	SH	90%	aa
	SS	10%	aa
3170-3200	SH	70%	aa
	SS	30%	aa
3200-3230	SS	60%	lt gy-wh-sly stp, f-vf + mg, ms, a-r, wcem, calc, sly carb, ip cly - fld
	SH	40%	aa Tr pyr
3230-3260	SH	70%	aa
	SS	30%	aa-vfg.
3260-3500	SH	100%	aa
	Trs SS, Coal		aa
3500-3530	SH	60%	aa
	SS	40%	lt gy, vfg, w/s/fg, ws, r-a, wcem, tt
3530-3560	Pr smpl, apry		aa
3560-3590	SS	60%	aa
	SH	40%	aa
3590-3660	SS	70%	aa
	SH	30%	aa
	Tr Coal		
3660-3680	SS	100%	aa
	Trs SH, Coal		aa
3680-3690	SS	80%	aa
	SH	20%	aa
3690-3700	SS	70%	aa
	SH	30%	aa
3700-3710	SH	60%	aa
	SS	40%	aa
3710-3730	SS	70%	aa
	SH	30%	aa
3730-3740	SS	80%	aa
	SH	20%	aa
	Tr Coal		
3740-3770	NS		
3770-3780	SH	40%	gy-lt gy, frm, blky, carb
	SS	60%	clr-wh, ws, a f-vfg, cly cem, sli calc, mic ip
3780-3790	SH	40%	aa
	SS	60%	aa
3790-3800	SH	80%	aa-sft
	SS	20%	aa
3800- 10	SH	70%	dkgy- ltgy, frm, blky, wxy, carb, slty i.p.
	SS	30%	clr-wh, ws, a, fg, tt, lt cly cem, calc, tr carb mat
3810- 20	SH	70%	aa - tr bent
	SS	30%	aa
3820- 30	SH	50%	aa
	SS	50%	aa
3830- 50	SH	50%	aa
3850- 80	SS	50%	aa
3880-3900	SH	50%	aa
	SS	50%	aa
3900- 20	NS		
3920- 40	SH	30%	pred gy, frm, wxy, blky sli-carb, tr coal
	SS	70%	clr-wh-gy-occ sip, ws, a-r, f-vfg, tt, calc, cly ip

3940- 60	NS		
3960- 80	SH	50%	pred gy, frm, wxy, blky, carb, occ coal
	SS	50%	aa
3980-4000	SH	50%	aa - occ plty
	SS	50%	aa
4000- 20	SH	50%	aa, tr bent, arag, calct x tl hrs
	SS	50%	aa - occ ms, m-cg.
4020- 40	SH	30%	aa
	SS	70%	aa - abn, uncons, clr-lt grn, r, m-cg, qtz grns
4040- 60	SH	60%	aa
	SS	40%	aa
4060- 80	SH	60%	aa - grdg - clyst
	SS	40%	aa
4080-4100	SH	50%	gy-bn, frm-sli fis, wxy, carb ip, tr coal
	SS	50%	aa
4100- 20	SH	80%	aa
	SS	20%	aa
4120- 40	SH	40%	aa
	SS	60%	aa - lt bn, cly-slty, tr bent
4140- 60	SH	40%	aa
	SS	60%	aa
4160- 80	SH	40%	aa
	SS	60%	aa
4180-4200	SH	60%	gy-sli lt grn, frm, wxy-sli grny, carb,clty
	SS	40%	aa - slty
4200- 20	SH	50%	aa
	SS	50%	aa - drty bn, slty, v cly, cly cem, calc
4220- 40	SH	60%	aa - v slty
	SS	40%	aa
4240- 60	SH	60%	aa
	SS	40%	aa
4260- 80	SH	20%	aa
	SS	80%	aa
4280-4300	SH	80%	aa
	SS	20%	aa
4300- 20	SH	60%	aa - lt grn sndy clyst, tr bent, sh grdg to SS
	SS	40%	aa - ss grdg to sh
4320- 40	SH	60%	aa
	SS	40%	aa
4340- 60	SH	40%	aa - pyrt
4360- 80	NS		
4300-4400	NS		
4400- 20	SH	90%	aa
	SS	10%	aa
4420- 40	SH	80%	aa - carb intrbd coal
	SS	20%	clr - wh-gy-lt grn, ms, a, f-occ mg, tt. cly, slty, calc, grdg - sdy sh
4440- 60	SH	90%	aa - occ calct xtls
4460- 80	SH	100%	aa - lt gy, grn, wxy
4480-4500	SH	90%	aa
	SS	10%	aa
4520- 40	NS		
4540- 60	SH	100%	pred gy
4560- 80	SH	100%	aa
4600- 20	SH	100%	aa - dr gy

4620- 40	SH	100%	aa - fis
4640- 60	SH	100%	aa - bent
4660- 80	SH	100%	pred dk gy aa - gy - bn
4680-4700	SH	90%	dk gy, frn, blky - sli fis, mic, slty ip,
	SS	10%	clr - wh - lt grn, ms, a, vf-fg, wh cly cem, tt, nvp cale, tr arag
4700- 20	SH	90%	aa
	SS	10%	aa
4720- 40	SH	100%	aa tr bent
4740- 60	SH	80%	aa
	SS	20%	aa
4760- 80	SH	80%	aa - tr carb mat
	SS	20%	aa
4780-4800	SH	80%	aa
	SS	20%	aa
4800- 20	SH	80%	aa
	SS	20%	aa
4820- 40	SH	80%	aa
	SS	20%	aa
4840- 60	NS		
4860- 80	SH	80%	gy-dk gy, sft-frm, blky-plty, mic, slty ip, occ lt grn, lt bn clst - bent
	SS	20%	clr-wh-drt bn, ws, a-r, f-vfg, cly-vtt, sli calc-calc carb ip, cale fil rplcmt org frag, nvp
4880- 4900	NS		
4900- 20	SH	60%	aa
	SS	40%	aa
4920- 40	SH	50%	aa-m fig
	SS	50%	aa-f intrb w sh, tt, calc cem
4940- 60	SH	60%	aa
	SS	40%	aa
4960- 80	NS		
4980-5000	SH	70%	aa
	SS	30%	aa - occ clnrt mg, cly cem
5000- 20	SH	80%	aa
	SS	20%	aa
5020- 40	SH	80%	lt gy-dk gy, blky-plty, mic, carb, slty ip, occ cly st
	SS	20%	clr-wh-lt bn, ws, a-r, wcem, tt, cly cem-cly, fld,pyrt ip, grdg - sh, slty ip
5040- 55	SH	80%	aa occ bent
	SS	20%	aa
5055- 65	SH	60%	aa
	SS	40%	aa
5065- 75	SH	70%	aa
	SS	30%	aa
5075- 85	SH	50%	aa
	SS	50%	clr occ lt grn occ gy drty, ws, vf-fg, vlt wh cly, frm + lt, mcln, nvp
5085- 95	SH	50%	aa
	SS	50%	aa occ qt pbls, a-r, clr
5095-5105	SH	80%	aa
	SS	20%	aa
5105- 15	SH	80%	aa
	SS	20%	aa

5115- 25	SH	90%	aa
	SS	10%	aa - carb
5125- 65	NS		
5165- 84	SH	80%	aa - occ lt bl, pyrt cly st
5185-5205	SH	50%	aa
	SS	50%	aa
5205-5225	SH	80%	aa
	SS	20%	aa
5225- 40	SH	60%	aa occ fis
	SS	40%	aa abn mg, clr, r, grns, uncon
5240- 65	SH	40%	aa
	SS	60%	aa
5265- 80	NS		
5280- 90	SH	60%	aa
	SS	40%	aa
5290-5300	SH	100%	aa
5300- 10	SH	60%	pred gy-bn-lt bl, trm-hrd, blky, omic, bent, pyrtc
	SS	40%	clr, ms, a-r, f-mg, pred cln, lt cly cem, tt, nvp, abn, uncons clr, r, mg, qt grns
5310- 30	NS		
5330- 50	SH	80%	pred gy - rd- lt grn-lt bl, hrd, blky, occ fis, mic, pyrt, sndy ip, abn bent, wh
	SH	20%	aa
5350- 70	SH	80%	aa
	SS	20%	aa
5370- 90	SH	40%	aa
	SS	60%	aa
5390- 54	NS		
5400- 20	SH	90%	aa
	SS	10%	aa uncon mg qtz
5420- 40	SH	100%	aa abn qtz uncon aa
5440- 60	SH	100%	aa occ ss aa
5460- 80	SH	80%	aa
	SS	20%	aa
5480- 55	SH	60%	aa
	SS	40%	aa hvy cly cem - sndy cly st
5520- 40	SH	100%	aa
5540- 60	SH	80%	aa
	SS	20%	aa
5560- 80	SH	30%	aa
	SS	70%	aa pred clr lt yel sli arm, ms, f-mg, r-a, lt cly cem, nvp - sndy clyst, wh cly
5580-5600	SH	20%	aa
	SS	80%	aa
5600- 20	SH	10%	aa
	SS	90%	aa
5620- 40	SH	20%	lt gy, blk, grn, rds, sft, frm, blky-fis, mic
	SS	80%	clr- wh-lt grn-yel, ms, r-a, f-mg, occ cy, lt-hvy cly cem, tt, bent
5640- 60	SH	20%	aa
	SS	80%	aa
5660- 80	SH	50%	aa
	SS	50%	aa
5680-5700	SH	40%	aa
	SS	60%	aa

5700- 20	SH	50%	aa
	SS	50%	aa
5720- 40	SH	80%	aa
	SS	20%	aa
5740- 60	SH	60%	aa
	SS	40%	aa
5760- 80	SH	60%	aa
	SS	40%	aa - occ sli stp
5780-5800	SH	80%	aa
	SS	20%	aa
5800- 20	SH	50%	aa
	SS	50%	aa
5820- 40	SH	80%	aa
	SS	20%	aa
5840- 80	NS		
5880-5900	SH	100%	aa abn wh bent
5900- 20	SH	60%	aa
	SS	40%	aa
5920- 40	SH	50%	aa
	SS	50%	aa
5940- 60	SH	60%	aa abn bent
	SS	40%	aa
5960- 80	SH	60%	aa
	SS	40%	aa
5980-6000	SH	50%	gy-bn-grn, frm-hrd, blky, plty, mic, bent strgrs
	SS	50%	clr-lt gy-lt bn, m-ws, r-a, fg, cly cem, cly fld
6000- 10	SH	50%	aa
	SS	50%	aa
6010- 20	SH	60%	aa
	SS	40%	aa
6020- 30	SH	80%	aa
	SS	20%	aa - occ cg clr qtz grns
6030- 40	SH	90%	aa
	SS	10%	aa
6040- 50	SH	100%	aa
6050- 60	SH	100%	aa abn bent
6060- 70	SH	100%	aa
6070- 80	SH	100%	aa
6080- 90	SH	100%	aa
6090-6100	SH	100%	aa sudy ip
6100- 10	SH	100%	aa
6110- 20	SH	20%	aa
	ls	40%	lt brn-brn, hrd, brit, crypxln, int-bd w/anhy vlt tr pet, d., n.o.s. n.g.s.
	SS	40%	clr lt gy, ws, a-r, vfg, uncons, cln, n.o.s., n.o.s., n. stn n clmpg
6120- 50	SH	90%	gy-bn brk rd, cft-frm, blky, sndy ip carb ip
	Tr SS		clr wh, a-r, lt cly cem- cly fd, uncon f-mg clr qtz, a-r,grns
	ls	10%	aa
6150- 80			aa
6180-6220			aa

2J GEO-LOGGING

OPERATOR: Dome Petroleum Corp WELL: Dome-Navajo 13-20-5 No. 1

GEOLOGIC SUMMARY

The mud logging and geologic coverage on Domes-Navajo 13-20-5 #1 well began at 240½ under surface casing, in the lower Nacimiento Formations. The formation consisted of light grey and brown clayey shales and claystones, being carbonaceous and calcareous.

The Ojo Alamo, Kirtland and Fruitland formation was present to a depth of 2830'. The Ojo Alamo was a light grey very fine grained slightly calcareous and carbonaceous sandstone. The underlying Kirtland Formation was seen to be of grey shales, sandy shales grading to claystones and light grey, slightly salt and pepper well sorted fine grained sandstones.

The Fruitland formation to about 1830' contained numerous coal seams and some gas a small increase at about 1750 feet. The shales of the formation were grey and grey brown, firm, silty and carbonaceous. Coals were hard, black, shiny, brittle, containing occasional pyrite inclusions. No shows of gas or oil were seen.

No gas shows were encountered in the vicinity of the Clacra at about 1925 ft. although a small amount of trip gas, 30 units, was noted at 2000 feet. Sands of the Clacra were a light grey to white, fine to very fine grain, well sorted and well cemented and clay filled inpart.

Minor coal seams above the Point Lookout member at 2830 feet contributed to gas fluctuations in the lower Mesa Verde Formation from 2660 - 2850 feet. Equipment problems in the logging unit prevented monitoring of gas in the interval 2885 - 2805. The sandstone of the Point Lookout member were a white to light grey, tight, well cemented slightly calcareous, well sorted fine grained sandstone.

The grey, firm, silty, calcareous shales of the Mancos Formation was topped at 3070 feet. The Gallup member sandstones were of light grey color, fine and very fine grained, well sorted, tight and well cemented.

Equipment malfunctioning in the mud logging unit prevented gas monitoring through the zone 3620 - 3715 in which the Gallup top was 3625 feet. No indications of large amounts of gas was noted when the equipment became operational.

From about 4500 feet to T.D. tight hole problems necessitated the adding of diesel oil to help slick the hole and the addition of anti-foaming chemicals to combat the effects of fermenting organic L.C.M. material. These steps combined to raise the background gas observed intermittantly.

The Greenhorn member at 4755 was a clear to white to dirty brown, well sorted light clayey sandstone. No hydrocarbons noted.

The Graneros member at 5010 was seen to be a very shaley sandstone, being of clear to white to dirty brown well sorted grains, very tight clay cemented, carbonaceous sandstone which was finely interbedded with grey and dark grey, firm shales. No gas or oil shows in the Graneros.

The Dakota sands at 5070 were colored clear - light brown, subangular, well sorted, very fine to fine grain, moderately clean and light with no visible porosity and no indications of hydrocarbons.

The Morrison Formation at 5165 feet was of predominately grey to red brown to varigated shale containing abundant clear subrounded fine to medium grained quartz grains. Sandstones had predominately clear to frosted subrounded moderately sorted fine to medium quartz grains with light to heavy white clay cement. No gas or oil shows noted in the formation.

The Todilto member, top at 6038 was a light brown to brown hard, with limestone, which was inbedded with anhydrites, gypsum. The limestone was very lightly petroliferous.

The Entrada member was encountered at 6108 feet and was a clear, well sorted, very fine grain, unconsolidated clean sandstone with no oil shows or stain. A DET of the upper Entrada recovered 4508 feet of sandy water and mud.

It was our pleasure to be of service to you on this well and are available for comment at any time.