

GEOLOGIC REPORT
ON
DOME PETROLEUM CORP.
DOME-FEDERAL 14-20-2, WELL NO. 1

BY
JOHN G. LARSEN
2J GEO-LOGGING
GRAND JUNCTION, COLORADO



WELL SUMMARY

OPERATOR: Dome Petroleum Corp.
WELL: Dome-Federal 14-20-2 #1
LOCATION: 2310' FSL, 1900 FWL Sec 14, T20N, R2W
COUNTY: Sandoval
STATE: New Mexico
FIELD/AREA: Wildcat
ELEVATION: gl 6767, K.B. 6781
SPUD DATE: 0530 hrs, 24 March, 1980
COMPLETION DATE:
OBJECTIVE: Entrada Sandstone
TOTAL DEPTH: 6172
ENGINEER: C.D. Moore
GEOLOGIST: John G. Larsen
CONTRACTOR: Lama Drilling Co.
TOOL PUSHER: Carl Porter
DRILL COLLARS: 4 - 6½", 17 - 5½"
DRILL PIPE: 3½ IF
HOLE SIZE: 13½ - 240', 8 3/4" 240 - 6172
CASING: 225', 9 5/8", 32.30 lbs.
DRILLING MUD: WesVan Mud & Chemical Co., low solids-non dispersed
MUD ENGINEER: Arnold Vanvoy
MUD LOGGER: John G. Larsen, 2J Geo-Logging
ELECTRIC LOGGING: Schlumberger
CEMENTING:
STATUS:

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WELL CHRONOLOGY

<u>Date</u>	<u>Midnight Depth</u>	<u>Footage Drilled</u>	<u>Operations</u>
24 March, 1980	255	225	Spud, 0530 hrs, Drl rt hle, run casing, emt, w.o.c
25 March	1238	1013	Drlling 21 hrs, trip $\frac{1}{2}$, svr $\frac{1}{2}$, repr $\frac{1}{2}$ (air hose) (mix mud) WOB 40 M, RPM 60, SPM 58, PSI 1600
26 March	2032	794	Drlling 16 hrs; trip for bit #3 $5\frac{1}{2}$ hrs, svrv $\frac{1}{2}$ hrs, rr 1 hrs (change out 4" union on stand pipe) WOB 40, RPM 100, SPM 62, PSI 1700
27 March	2710	678	Drlling 18 hrs, Trip for bit #3, $5\frac{1}{2}$ hrs, rig serv $\frac{1}{2}$ hrs, WOB 40 M, RPM 100, SPM 60, PSI 1500
28 March	3201	491	Drlling 15 hrs; Trips $8\frac{1}{2}$ hrs, tite hole, for bit #4, rig serv $\frac{1}{2}$ hrs, WOB 40, RPM 80, SPM 48, PSI 1600
29 March	3711	510	Drlling $18\frac{1}{2}$ hrs; rig serv $\frac{1}{2}$ hr, 5 hrs trip, WOB 40, RPM 80, SPM 58, PSI 1600
30 March	4016	305	Drlling $23\frac{1}{2}$ hrs, rigs $\frac{1}{2}$ hrs, WOB 40, RPM 80, SPM 58, PSI 1600
31 March	4607	591	Drlling 23 hrs, surv $\frac{1}{2}$, rigs $\frac{1}{2}$ hrs, WOB 45, RPM 55, SPM 58, PSI 1700
1 April	5024	417	Drlling 23 hrs; surv 1 hr, bit torking up WOB 45, RPM 55, SPM 58, PSI 1700
2 April	5215	191	Drlling 15 hrs, rig serv $\frac{1}{2}$ hr, trip for bit #6 8 hrs, circ $\frac{1}{2}$ hr. WOB 45, RPM 55, SPM 58, PSI 1600
3 April	5455	200	Drlling 22 hrs, rig serv 1 hr, svr $\frac{1}{2}$ hr, circ $\frac{1}{2}$ hr, (working on rotary chain 4 hrs) WOB 45, RPM 55, SPM 58, PSI 1600
4 April	5769	314	Drllg $22\frac{1}{2}$ hrs, Drllg, circ rs, Drllg, cur $3/4^0$ @ 5571, Drllg, WOB 45 M, RPM 55, SPM 58, PSI 1600
5 April	5944	175	Drllg $22\frac{1}{2}$, Drllg, rs, Dr llg, Circ, WOB 45 M, RPM 55, SPM 58, PSI 1600
6 April	5933	0	Depth con on strap, air & cond. mud - run dst, sur, 5948 @ $1\frac{1}{4}$, strap out, chg clutch, tby pmp, pich & make up DST, T1H w/DST, W.O. torque converter

7 April	6172	239	Dr1g 1½, W.O. torque conv, Chg 0. torque convert, Test DST #1, T.O.O.H. w/DST, W.O. Daylight, T.O.O.H. & catch smpls, rs, brk dwn & ld. DST tool, T.I.H., circ btm up, Dr1ng, WOB 40, RPM 60, SPM 55, PSI low
8 April	6172		W.O. ins, Dr1g 4½ hrs, cond. mud & circ/run logs, T.O.O.H., rig up lggr & lng

BIT RECORD

Well Dome Federal 14-20-2 #1

[illegible]

27 Geo-Logging

DEVIATION SURVEYS

Operator Dome Petroleum Corp.

Well Dome Federal 14-20-2 #1

[illegible]

MUD RECORD

Well Dome Federal 14-20-2 #1

MUD RECORD

Well Dome Federal 14-20-2 #1

[illegible]

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DRILL STEM TEST REPORT

DST No. 1 Successful Failure
Operator Dome Petroleum Corp. Date 4/6/80
Well Dome Federal 14-20-2 #1 Location
Formation Entrada Interval 5918 TD 5933
Testing Co. Haliburton Type Test Open Hole
Cushion None Hole Size 8 3/4 Packer Size 10 3/4
Drill Pipe Size 3 1/2 IF Capacity 39.05

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 3/4" hose, I.O., moderate blow after 4 min - 15 min.
on back or 30 min. ISIP 30 min F.F., open fair blow after 4 min,
seperate sheet good blow after 20 min, 60 min FSIP

Pressure Data:

	Top Chart @5922	Bottom Chart @5928
IHP	<u>Expired</u>	<u>2864</u>
IFP	<u> </u>	<u>67 - 121</u>
ISIP	<u> </u>	<u>2172</u>
FFP	<u> </u>	<u>134 - 256</u>
FSIP	<u> </u>	<u>2172</u>
FHP	<u> </u>	<u>2701</u>
Temp.	<u> </u>	<u>130</u>

Recovery:

Sample Chamber: Capacity 1200 cc Pressure 0
Recovery 1200 cc oil + o.c. mud
Resistivity Temperature
Water: PPM Chlorides Nitrates

Drill Pipe Recovery 597' fluid, 60' oil, 120' o.c. mud, 417' water, 1% oil

Remarks Rn top oil, no reading, middle 2.7 @ 65°, bottom sample 2.46 @ 55°, Btm hole smplr 2.36 @ 55°, Rn pit 2.42 @ 79°

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FORMATION TOPS

<u>Formation</u>	<u>Prognosis</u>	<u>Drill</u>	<u>E-Log</u>
Point Lookout	2625	2623	2583
Mancos	2850	2835	2755
Gallup	3760	3613	3543
Green Horn	--	4795	4697
Graneros	--	4917	4812
Dakota	5042	5043	4950
Morrison	5185	5183	5113
Todilto	6010	5900	5910
Entrada	6019	5919	5928
Carmel	6283	6143	6140

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SAMPLE DESCRIPTION

Interval

610- 640	SH	100%	lt gy-gy, frm, blk, slty-sndy, carb, wxy ip
640- 70	SH	100%	aa
670- 700	SH	100%	aa - occ calc fil
700- 30	SH	100%	aa - occ clyst
730- 60	SH	100%	aa - v sndy, occ mg uncon qts, tr foss frag
760- 90	SH	100%	aa
790- 820	SH	100%	gy, frm, blk, grny-wxy, sli calc, carb-org frag, occ calct frag, occ cg qt, slty-sndy
820- 50	SH	100%	aa - tr bent
850- 80	SH	80%	aa - foss snals
	SS	20%	clr-wh-sip, ws, a fg, tt, calc, cly, slty, carb
880- 910	SH	60%	aa - vsndy
	SS	40%	aa - vcly
910- 40	SH	60%	aa - calc xtl fil
	SS	40%	aa
940- 70	SH	80%	aa
	SS	20%	aa
970-1000	SH	100%	aa
1000- 30	SH	80%	aa
	SS	20%	aa
1030- 60	SH	100%	aa - tr coal, tv fe stn
1060- 90	SH	70%	aa - vf intrb coal, clyst
	SS	30%	aa
1090-1120	SH	70%	aa
	SS	30%	aa
1120- 50	SH	50%	aa
	SS	50%	aa
1150- 80	SH	50%	aa
	SS	50%	occ cln - vcly, bent
1180-1210	SS	100%	aa - tr pyrt cem, vcly
1210- 40	SH	20%	aa
	SS	80%	aa - ms&p
1240- 70	SH	50%	aa
	SS	50%	aa
1270-1300	SH	50%	aa
	SS	50%	aa
1300- 30	SH	50%	aa
	SS	50%	aa - occ mic
1330- 60	SH	50%	aa - vsndy
	SS	50%	aa - vcly
1360- 90	SH	50%	aa - tr coal, blk, shny, brit
	SS	50%	aa
1390-1420	SH	80%	aa
	SS	20%	aa
1420- 50	SH	50%	aa - tr ambr, sulf
	SS	50%	tr illtrb coal - orgon frag

1450-	80	SH	50%	aa
		SS	50%	aa
1480-1510		SH	20%	aa - plty
		SS	80%	aa - lt grn grns
1510-	40	SH	20%	aa
		SS	80%	aa
1540-	70	SH	20%	aa
		SS	80%	aa
1570-1600		SH	20%	lt gy - gy, frm, blk - occ plty, carb, vslty-sndy
		SS	80%	clr-wh-lt grn-sli arn, ws, a, fg, cly cem, calc, tt, occ pyrt mtrx
1600-	30	SH	20%	aa - occ clstn
		SS	80%	aa
1630-	60	SH	20%	aa - occ vf xtl pyrt
		SS	80%	aa
1660-	90	SH	40%	aa - occ bn, grn
		SS	60%	aa
1690-1700		SH	50%	aa
		SS	50%	aa
1720-	50	SH	60%	aa - tr bent
		SS	40%	aa
1750-	90	SH	60%	aa
		SS	40%	aa - occ ws mg
1790-1820		SH	70%	aa
		SS	30%	aa
1820-	50	SH	20%	aa
		SS	80%	aa
1850-	80	SH	30%	aa
		SS	70%	aa
1880-1910		SH	30%	aa
		SS	70%	aa - v carb
1910-	40	SH	10%	aa
		SS	10%	aa cln, no stn
		Coal	80%	blk, hrd, blk - hckly frac, abn ambr-lt yel, pet-lv, lt bl flor, lt bl cut, slo strm, tr sulf
1940-	70	SH	70%	aa - lt bn clyst
		SS	10%	aa
		Coal	20%	aa
1970-2000		SH	80%	aa
		SS	10%	aa
		Coal	10%	aa
2000-	30	SH	80%	aa
		SS	20%	aa
2030-	60	SH	60%	aa
		SS	40%	aa tr coal
2060-	90	SH	80%	aa tr coal, bent
		SS	20%	aa
2090-2120		SH	20%	aa - vslty
		SS	80%	aa - vcly, vcalc, tr bent
2120-2150		SH	50%	gy-ltgy, frm, blk-blt, slty-sndy, ambr, carb
		SS	50%	clr-wh-gy-occ lt grn, lt rd, w-ms, a, f-mg, lt calc cem & m cln- hvy cly cem, tt, carb, occ pyrt
2150-	80	SH	40%	aa
		SS	60%	aa -fri, uncons, pred mg

4220-4320	NS		
4320- 50	NS.	95%	LCM
4350- 80	SH	90%	lt gy- dk gy, hrd, blk-pty, mic, carb ip, slty- sandy ip, calc
	SS	10%	clr-wh-gy-s+p, ws, a-r, fg, mcm-tt, calc, cly ip
4380-4410	SH	90%	aa
	SS	10%	aa
4410- 40			aa
4440- 70			aa
4470-4500			aa
4500- 30	SH	100%	aa - bentc
4530- 50	SH	90%	aa
	SS	10%	aa
4550- 80	SH	90%	aa
	SS	10%	aa
4580-4610	DS		
4610- 40	DS		
4640-4790	DS		
4790-4930	NS		
4930- 50	SH	80%	dkgy, hrd, blk-pty, mic, carb, slty, pyrtc, sli calc
	SS	20%	clr-wh-lt gy, ws, a-r, fg, wcm, lt cly cem, calc- mrly cly matr, abn wh bent, occ calc frgmts
4950- 80			aa
4900-4010			aa
5010- 40	DS		
5040- 80	NS		
5080-5110	SH	80%	lt gy-gy aa - abn cg, r, qt grns
	SS	20%	aa
5110- 30	SH	80%	aa
	SS	20%	aa
5130- 60			aa
5160- 90	NS		
5190-5210	DS		
5210- 40	DS		
5240- 70	SH	80%	lt gy-dk gy, frm-hrd, blk-pty, mic, calc abn, r, qts grns, pyrt
	SS	20%	clr-wh, ms, r-a, fg, mcm-cly, tt, calc
5270-5300	SH	90%	pred gy- rd bn-lt grn, sft-frm, blk, mic
	SS	10%	aa - occ rd bn chrty
5300- 30	aa	95%	LCM
5330- 90	aa	95%	LCM
5390-5420	SH	50%	aa
	SS	50%	aa
5420- 50	aa		
5450- 80	aa	95%	LCM
5480-5510	SH	30%	aa
	SS	70%	aa
5510- 40	SH	90%	aa
	SS	10%	aa
5540- 70	SH	70%	aa
	SS	30%	aa
5570-5720	Cavings	100%	not represent sample of depth
5720- 50	SH	40%	aa
	SS	60%	aa - occ, r, cg, qts

5750- 80	SH	70%	aa - abn lt grn - lt rd bn clystn
5780-5810	SH	60%	aa
	SS	40%	aa
5810- 40	SH	80%	aa
	SS	20%	aa
5840- 70	SH	60%	pred dk gy, hrd, blkyl-pty, mic, sndy ip
	SS	40%	pred clr, uncon, r, mg, qts
5870-5910	NS		
5910- 20	SH	50%	gy - rd bn - lt grn, frm, blkyl, wxy, mic, bend
	SS	30%	aa
	LS	20%	lt bn-bn, hrd, brit, cryp xln-sgry, tr pet stn, tr anhy, bentc
5920- 33	SS	30%	clr-occ wh, occ lt grn, ws, a-r, vfg, uncons, spty dko stn, tr intrgnlrd dk o, no mjr clmpg
5933-6000	NS		
6000- 30	SS	90%	aa
	SH	10%	dk rd, hrd, wxy
6030-6150	NS		
6150- 72	SS	60%	clr-wh-lt gy- lt grn, ws, a-r, vfg, lt calc cem,
		10% - 15%	V.P.
	SH	40%	gy-rd bn, sft-hrd, blkyl, wxy, sndy ip

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OPERATOR: Dome Petroleum Corp.

WELL; Dome-Federal 14-20-2, No. 1

GEOLOGIC SUMMARY

Geologic and mud logging monitoring began at 225 feet on Dome Federal 14-20-2 #1. The well was spudded in lower Nacimiento with the Ojo Alamo sandstone encountered immediately under surface casing. (Note, change from previous report on Dome Federal 11-20-2 #1).

The Kirtland and Fruitland formations to 2583 feet, consisted of predominantly grey, silty, carbonaceous shales with many plant remains, some fossil remains, amber, and coal seams. No major amount of gas was present throughout the formation nor were there any oil shows.

The Point Lookout sandstone at 2583 was a clear to white, moderately sorted, fine to medium grain clay cemented sandstone of low to nil porosity. No hydrocarbons were observed throughout the Mesa Verde.

The Mancos Formation at 2755 was a grey to dark grey, firm, carbonaceous, silty shale also containing some grey claystones and minor sandstone lenses of very low porosity.

The Gallup sandstone member at 3543 feet was a grey, well cemented very fine grained, tight sandstone with no hydrocarbons noted throughout its interval.

A slight gas increase peaking to 10 units at 4500 feet was observed.

The Greenhorn member at 4697 and the Graneros member at 4812 feet was drilled with no hydrocarbons noted through the interval.

The Dakota formation at 4950 feet was seen to be of clear to grey, medium sorted, fine to occasional coarse grained predominantly tight sandstone. Porosity were low and no shows of hydrocarbons seen.

The Morrison formation at 5113 consisted of variegated shaley and claystone interbedded with and grading to white to grey, fine to coarse grained clayey sandstones.

The Morrison Formation had no gas shows or indications of hydrocarbons.

The Todilto limestone member, at 5910 feet was of light brown to brown, interbedded with anhydrite, gypsum and showed a trace of dark oil staining.

The Entrada member was drilled into at 5928 feet. The sands were clear, well sorted, very fine grained quartz, containing sparse amounts of dark, heavy, oil intragranularly. A D.S.T. of the upper 16 feet of the sands produced 597 feet of fluid of which 60 feet was oil.

The Carmel member at 6140 feet was predominantly of dark red, soft sandy shale.

It is with pleasure that our services have been available to you. If additional information is needed, be free in contacting us.

2180-2210	SH	50%	aa
	SS	50%	aa
2210- 40	SH	50%	aa - lt bn clyst
	SS	50%	aa - intrb w coal
2240- 70	SH	40%	aa
	SS	60%	aa
2270-2540	NS		
2540- 70	SH	40%	gy, frm, blk-pty, mic, slty, carb, occ clyst, lt bn, hrd, shny, tr coal bk, hrd, hckly
	SS	60%	cl-wh-arn, ms, a, f-mg, cly fld, tt, calc, carb
2570-2600	SH	40%	pred lt gy, carb
	SS	60%	aa, occ pyrt fld, frm-fri
2600- 30	SH	40%	aa, gy-blk, vcarb, abn lt bn clystaa
	SS	60%	aa
2630- 60	NS		
2660- 90	SH	40%	aa
	SS	60%	aa, tr coal
2690-2720	SH	40%	aa
	SS	50%	aa
	Coal	10%	blk, hrd, shny, hckly-blk
2720- 50	SH	60%	aa - pred lt gy, v slty
	SS	40%	aa, abn pyrt fld, v slty grdg - sh
2750- 80	SH	50%	aa abn carb org frags, grdg - sltst - ss
	SS	50%	aa
2780-2810	SH	50%	aa
	SS	50%	aa
2810- 40	SH	80%	aa - v slty
	SS	20%	aa
2840- 70	SH	50%	aa tr coal, abn lt bn clyst aa
	SS	50%	aa tr fn bd pyrt
2870-2900	SH	60%	aa
	SS	30%	aa
	Coal	10%	aa
2900- 30	NS		
2930- 60	SH	60%	gy, frm-hrd, blk, mic, carb, slty
	SS	40%	cl-wh-gy, ws, r-a, vf-fg, wcem, lt cly cem, carb ip, calc, slty-vcly, occ cln, tt, pyrt ip
2960- 90	SH	80%	aa
	SS	20%	aa
2990-3020	SH	80%	aa
	SS	20%	aa
3020- 50	SH	90%	aa tr ambr amglds
3050- 80	SH	80%	aa tr bent
	SS	20%	aa
3080-3110	SH	80%	aa
	SS	20%	aa
3110- 40	SH	80%	aa
	SS	20%	aa
3140- 70	SH	70%	aa
	SS	30%	aa
3170-3200	SH	60%	aa w/tr ambr
	SS	40%	aa w/tr ambr
3200- 30	SH	80%	aa w tr coal w/ambr, arag
	SS	20%	aa

3230-	60	SH	80%	aa - abn carb, calct xl hrs 1-2 mm
		SS	20%	aa
3260-	90	SH	80%	aa, blkly - plty
		SS	20%	aa
3290-3320		SH	80%	aa
		SS	20%	aa
3320-	50	NS		
3350-	80	SH	60%	aa
		SS	40%	aa
3380-3410		SH	60%	aa - occ lt bn clyst, lt gy, tr bent
		SS	40%	
3410-	40	SH	80%	aa
		SS	20%	aa
3440-	70	SH	80%	aa occ mrly, carb, ambr, arag
		SS	20%	aa
3470-3500		SH	60%	aa
		SS	40%	aa
3500-	30	SH	80%	aa tr coal
		SS	20%	aa
3530-	60	SH	80%	aa
		SS	20%	aa
3560-	90	SH	80%	aa
		SS	20%	aa
3590-3620		NS		
3620-	50	SH	80%	aa
		SS	50%	aa
3650-	80	SH	80%	aa
		SS	20%	aa
3680-3710		NS		
3710-	40	SH	50%	aa
		SS	50%	aa
3740-	70	SH	80%	aa
		SS	20%	aa
3770-3800		SH	50%	v pyrt
		SS	50%	
3800-	30	SH	50%	aa
		SS	50%	aa
3830-	60	SH	80%	aa
		SS	20%	aa
3860-	90	SH	50%	aa
		SS	50%	occ lt grn min grn (henlandite?)
3890-3920		SH	80%	aa
		SS	20%	aa
3920-	50	SH	80%	aa
		SS	20%	aa
3950-	80	SH	50%	ltg-gy, frm-hrd, blkly-occ plty, slty, mic, fnly intrbd
				coal-carb, sndy ip
		SS	50%	clr-wh-sli stp-occ grn grns, ws, r-a, f-vfg, lt cly
				cem, calc, tt
3980-4010		SH	80%	aa
		SS	20%	aa
4010-4100		DS (desilter)		to be abbrev. by D.S. (desilter sample)
4100-	60	NS		
4160-	90	NS	95%	LCM
4190-4220		NS	95%	LCM