

HISTORY OF OIL OR GAS WELL
(Submit in duplicate)

In compliance with rules and regulations adopted pursuant to ORS 520.095 (Chapter 667 OL 1953)

Operator **GULF OIL CORPORATION OF CALIFORNIA** Field **South Albany Prospect**
Well No. **T. J. Porter #1**, Sec. **27**, T. **13S** R. **4W**, Linn Co., W.B. & M.Date **February 4, 1964**
Signed *Paul S. Day*
Title **Paul S. Day, Geologist**
(President, Secretary or Agent)

It is of the greatest importance to have a complete history of the well. Use this form in reporting the history of all important operations at the well, together with the dates thereof, prior to the first production. Include in your report such information as size of hole drilled to cementing or landing depth of casings, number of sacks of cement used in the plugging, number of sacks or number of feet of cement drilled out of casing, depth at which cement plugs started, and depth at which hard cement encountered. If the well was dynamited, give date, size, position and number of shots. If plugs or bridges were put in to test for water, state kind of material used, position and results of pumping or bailing.

- 10/29 Started building location.
- 10/30 Building location.
- 10/31 Building location, dug and cribbed cellar. Elev.: 266.4' ground level.
- 11/1 Building location. Drilled 40' of 36" hole with water well rig.
- 11/2 Building location. 27' of 28" conductor pipe cemented to surface. Base of clay (top of gravel) at 27' from ground level.
- 11/3 Building location.
- 11/4 Waiting on rig.
- 11/5 Finishing location. Rig now loading out of Wash.
- 11/6 Moving in rig. Rain storm with winds.
- 11/7 Rigging up. Rain and wind. Had to shut down during part of night.
- 11/8 Finished rigging up. Mixing mud, prep to drill. Depths now from KB.
- 11/9 Spud in 1:00 a.m. Drilled 17-1/2" hole to 565'. Fast drilling to 540', slightly harder from 540-565. Ditch samples showed waxed gravel to 80', 80-565' is ss, pebbly ss, and some siltstone: fresh, friable, volcanic grain lith, all clayey and probably impermeable. Ran 526' of 13-3/8" casing cemented with 475 sx to surface.
- 11/10 Waiting on cement. Installed BOPE. Tested BOPE w/1200 psi. Ran in, top of cement at 485'. Baroid mud logging unit installed.
- 11/11 Drilled out of casing at 12:30 p.m. Drlg 100'/hr or better. Drilling 12-1/4" hole. Hole started stuffing while at 740'. Largely siltstone, some sandy.
- 11/12 1165' drilling, 50'/hr, no oil or gas shows, siltstone: med gray, friable, no fossils noted but looks marine. 1°00' @ 1000'.
- 11/13 1896' drilling, 1°00' @ 1825', no significant oil or gas shows, siltstone: gray, friable to firm, partly calcareous, some v fine grain clayey ss in few intervals. Drills smooth at about 45'/hr.
- 11/14 2386' drilling, 20-25'/hr, gray clayey siltstone and fine to v coarse clayey ss, crs rounded blk basalt grains common. No gas or oil shows. Few drilling rate breaks like from 25 to 40'/hr, no associated gas, 2°45' @ 2328.
- 11/15 2654' drilling, 15'/hr, siltstone: gray, clayey, some brownish. No oil or gas shows, 2-1/2" @ 2590, ss intervals are very clayey suggesting low permeability.
- 11/16 2835 tripping for new bit, ss and siltstone, no oil or gas shows. 10-15'/hr, formation is harder. 1°00' @ 2684. Logging equipment checked and tested all OK. Forams have been noticed in ditch samples.
- 11/17 3106' drilling, 12'/hr, ss with some siltstone. 270'/24 hrs. No drilling breaks, no oil or gas show. 2°45' @ 3100. Logging equipment checked and tested OK.
- 11/18 3225' drilling, 6'/hr, in crs xln basalt. No oil or gas shows. Basalt in intervals 2680' to 2780' (100'), 3105' to 3115' (10'), 3185' to 3195' (10'), 3200 to present depth. Pump trouble during night. 119'/25 hrs.
- 11/19 3324' drilling, 7'/hr crs xln basalt. 100'/24 hrs, in basalt since 3200', 2°15' @ 3260'. No oil or gas shows.
- 11/20 3501' drilling, base of basalt at 3400, now in basaltic conglomerate, 20'/hr. No oil or gas shows, 1°30' @ 3400'.
- 11/21 3798' drilling, basaltic ss and cgl w/volcanic grain lith, 12-15'/hr. No oil or gas shows.
- 11/21 Additional report: GAS SHOW at 3:30 p.m. from zone 3834 to 3857 (23'). No oil, all methane on chromatograph, 8 unit base, maximum show of 46 units (38 net) at 3450'. Mud wt cut from 75 to 65 lbs/cu ft. Mud filtrate salinity increase from 860 to 1800 ppm. From drilling rate of 16'/hr, in 23' zone, had 6' of aggregate drlg at 24'/hr and 2' at 45'/hr. Logged 20% friable, v fine grain silty ss. Prep to core while waiting for tester.
- 11/22 3877' cored. 8-7/16" diamond core bit, 6-8'/hr, 8 units of gas, 2°30' @ 3818'. Core #1, cut 20' (3857-3877), recovered 16' (80%); conglomerate: altered, rounded, assorted basalt pebbles to 4" max diam in nearly tight volcanic gywacke sandstone matrix, tough to hd. One 2' interval at 3861' not so tight looking. Good indications of 0° to 5° dip. Reamed 8-7/16" hole to 12-1/4", hole sluffing, circulating and building mud weight, 8-10 units of gas in mud.
- 11/23 Circ. and conditioned mud, tester opened 2:15 a.m., Nov. 23. DST #1, 3811-3877 (66'), ISI: 30 min, open for flow: 1 hr 15 min (55 min. fair blow w/no burnable gas, 10 min: flowed muddy saltwater and gas by heads, last 10 min: cleaned up and blew gas decreasing to dead at end of flow period), FSI: 30 min. Gas measured 8000 ppm (1+2) methane on chromatograph. Recovered 3250 ft of slightly muddy saltwater, 13,500 ppm, blew from pipe in heads during first 1/4 of recovery. Upper chart didn't work, bottom chart reads: IH-2117, ISI-2033, IF-552, FF-1402, FSI-1742, FH-2033 psi. Prep to drill ahead. Logging equipment checked and tested OK.
- 11/24 4064' tripping for new bit. Prep to drill ahead. 187'/24 hrs, in conglomerate, 12'/hr. No oil or gas shows. 2°00' @ 4007'. Logging equipment checked and tested OK.
- 11/25 4247' drilling, 10-20'/hr, in conglomerate, sandstone, and siltstone. 183'/24 hrs. No oil shows. Gas show at 4112 to 4120, 4 unit base to 18 unit max=14 unit net, mud weight cut badly from 72 to less than 50 lb/cu ft, gassy and foamy mud, salinity increased from 2300 to 2600 ppm. Circulated out at 4122, built up mud weight. Drilling ahead. Badly cut mud in connection with small gas (methane) reading suggests nitrogen gas, probably with saltwater. 1°30' @ 4156'.
- 11/26 4460' drilling, 10'/hr, in siltstone, 1°30' @ 4343', 213'/24 hrs. No oil shows. Gas increased from 2 units to 40 units at 4412', no drilling breaks, salinity up to 4125 ppm, weighting mud and drilling ahead.
- 11/27 4660' drlg, 10'/hr in siltstone, 200'/24 hrs. No oil shows. Gas shows: (1) at 4502'; 25 to 40 max=15 unit net, 6' zone, all methane, salinity increase 4125 to 4450 ppm, no drilling break, probably coming in uphole; (2) at 4564; 8 to 57 max= 49 unit net, methane only, no drilling break, no salinity increase @ 2750 ppm, 8' zone, did not cut mud; (3) at 4644; 8 to 82 max=74 unit net, all methane, salinity increase from 2725 to 5100 ppm, no drilling break, no lith change, cut mud weight slightly (86-81 lb/cu ft), probably coming from uphole. Increased mud weight. Logging equipment checked and tested OK.
- 11/27 AFTERNOON REPORT. Circulated at 4685, built mud weight to 93 lb/cu ft. Gas and salt water entry apparently stopped. Drilling ahead.
- 11/28 4842' drilling, 7'/hr, siltstone, 182'/24 hrs. No oil or significant gas shows. Slight drop in mud weight of 92 lb/cu ft causes slight increase in mud gas and salinity of 3800 ppm. Logging equipment checked and tested OK.
- 11/29 4925' drilling, 7'/hr, siltstone, 83'/24 hrs. While running new bit, circulated 180' from bottom, mud weight decreased to less than 50 lb/cu ft, gas and salt water cut, built mud weight to 105 lb/cu ft. Much waiting for mud material. Drilling ahead.
- 11/30 4949' running logs. Circulating, conditioning mud, and waiting on mud material. Mud weight at 105 lbs cu ft, hole in good shape. Running IES, G-SL, CDM, ML-C, SWS. Logging equipment checked and tested OK. Drilled 12-1/4" to 4949'.
- 12/1 4949' circulating and conditioning mud, prep to run casing. Schlumberger ram IES, Gamma-Sonic, CDM-caliper from 4949 to 526, and ML from 4800 to 3800. 20 side wall samples taken, recovery on 16. Circulated and conditioned mud after second log run.
- 12/2 4949' standing cemented. Ran 4867' of 9-5/8" casing, cemented with 600 sax. Ran Schlumberger temperature survey in casing.
- 12/3 4949' installing BOPE, prep to pressure test. Top cement at 3100'. High rise of cement indicates no loss, therefore tight formation.
- 12/4 4949' prep to drill. Building mud. Casing tested to 4000 psi.
- 12/5 5043' drilling, siltstone, 12'/hr, 94'/10 hrs, no oil or gas shows except 6 unit net show at 4963' opposite 10 to 14'/hr drlg rate increase. Drilled out of shoe at 9:00 P.M. on Dec. 4. Drilling 8-1/2" hole. Logging equipment checked and tested OK.
- 12/6 5182' drilled, circulating and building mud, in siltstone, some very fine sandy. No oil shows.
Gas show at 5068; 14' interval, 36 unit net show with 2' peak to 80 units, show built up gradually, no drilling break, no significant lith change. Mud weight increased from 89 to 97 lbs/cu ft.
Gas show at 5080'; 120 unit sharp increase in ditch gas (all methane) opposite 10 to 22'/hr drlg rate increase, 5178-5180. Ditch sample showed slight increase in fine sand (interpreted at 40% sd?). Mud weight dropped from 97 to 50 or less, with salinity increase from 3150-3620 ppm. Well started to flow, was shut-in by BOPE. Built mud wt. Pressure of 605 psi in casing at well head. Regained circulation briefly during night (of December 5).
- Sequence of events during gas show at 5178-5180 on 12/5/63:
10:35 P.M. Stopped drlg at 5182', pulled up, circulated, had 22'/hr drlg from 5178-5180, 10'/hr from 5180-82.
10:40 P.M. Circulating, pit level started dropping, mud still flowing over shakers.
11:00 P.M. Circulating, pit level down 10 marks (approx. equal to inches), stopped dropping, leveled off.
11:20 P.M. Circulating, decreased pump strokes from 48 to 32 per min.
11:30 P.M. From 11:00 to 11:30 P.M. pit level stayed at -10 marks. Mud flowing over shakers. Sharp increase in ditch gas (methane) from 4 to 120 units at 11:18 P.M. Lag time of 45 mins. noted.
11:30 P.M. Circulating, pit level started increasing.
11:40 P.M. Stopped circulating, pulled up 40', gas reading 100 units, well flowing mud, appeared thin but not highly gassy, gas bubbling up in casing.
11:48 P.M. Closed hydril and rams. Pit level increased from -10 marks to overflowing (+15 marks) in 18 mins (11:30-11:48 P.M.). Mud wt dropped from 97 to 50 or less lbs/cu ft. Casing pressure built up to 650 psi. Building mud wt in pits. Recommend DST if possible. Lost circ. (and large volume of mud) during morning.
- 12/7 5182' conditioning mud. Built new pit of mud @ 88 lbs cu ft, started circ at 10:00 P.M. (12/6). Circ mud thru system. 40 unit ditch gas from 1000' off bottom. At 2:00 P.M. well started flowing. Shut-in w/ 600 psi.) Ditch gas up to 75 units, increased mud wt and lost circulation. Filled BP with water to equalize pressure.
- 12/8 5182' circulating and conditioning mud. Made trip and removed jets from bit. Lost circulation material can now be added.
- 12/9 5192' drilled, possibly will cement zone at 5180, possibly drill ahead. Drilled 5182-92 with light wt on bit at 2 ft/hr, no samples over shaker. 110 lbs/cu ft mud wt. Mud in good shape. Zone at 5180 now plugged with lost circulation material.
- 12/10 5192' drilled. Prep to cement. Logging equipment checked and tested OK.
- 12/11 5192' drilled. Placed cement plug across casing shoe at 4867'. Standing cemented.
- 12/12 5192' drilled. Feeling for cement. First plug did not come up in casing. Placed second plug across shoe. Drilled cement to 4903'.
- 12/13 5192' drilled. DST #2, purpose is to test cement job on 9-5/8" casing: packer at 4836', perforated tail to 4903', open hole from casing shoe at 4867' to 4903' (36'). Open 30 minutes, faint but to be heard in 1 minute. 4836' of water cushion back-shuttled to surface. Recovered some water cushion and rat hole mud in collars above tool. No fluid entry from formation.
- 12/14 5320' drilling. Siltstone: light gray, clayey, 16 1/2'/hr, some slow as 10'/hr. No oil or gas shows. No drilling breaks. 1°15' @ 5195'. Drilled solid cement to 5165', cement and mud to 5192'. 110 lbs/cu ft mud, sal. 4200 ppm. Logging equipment checked and tested OK. 128'/24 hrs.
- 12/15 5490' tripping for new bit, in siltstone. 170'/24 hrs. Slight lith change at 5450' (light brown and yellowish gray siltstone common). No sand. No oil or gas shows. Mud: 111 lbs/cu ft, 3800 ppm sal.
- 12/16 5598' drilling. Siltstone to 5536, 10-15'/hr. 5536-5598: basalt; dark gray (N3), hard, fine to medium xln, some variation of xln size and texture. Some secondary minerals (zeolites?), slightly chloritized, av. 6'/hr. Sharp contact and lack of volcanics suggests an intrusive. 1°15' @ 5518'. No oil or gas shows. 108'/24 hrs.
- 12/17 5752' drilling, in siltstone. Basalt to 5680, light brown (beige shale) to 5700. Light to dark gray siltstone from 5700. 154'/24 hrs. Basalt (5536 to 5680=144') has sharp contacts and no associated volcanics suggesting an intrusive.
- 12/18 5910' drilling, dark gray silty shale, 6-8'/hr, trace of lignite at 5845. 158 ft/24 hrs. No oil or gas shows. Logging equipment checked and tested OK.
- 12/19 6030' drilling, silty shale, 8'/hr to 4'/hr with dull bit. 120 ft/24 hrs. 1°30' @ 5970. Forams noted in ditch samples.
- 12/20 6168' pulling core #2. Cored 6165-6168, bit stopped drilling. 1°45' @ 6165. No oil or gas shows. 138 ft/24 hrs. Core #2: 6165-6168, cut 3', rec. 1', silty claystone: brown-black, shaley, tough to hard, micromicaceous, laminations indicate 35° dip. Lost core bit and 2' stabilized sub in hole. Prep to fish.
- 12/21 6168' fishing for core bit and sub. Resumed drilling 8:00 P.M. on 12/21/63. No oil or gas shows.
- 12/22 6220' drilling, silty shale, as above, occasional light gray fine sandy interval, no oil or gas shows, 4 to 8 ft/hr.
- 12/23 6340' drilling, silty shale, as above, 7'/hr, no oil or gas shows, 120 ft/24 hrs. 1°30' @ 6306. Logging equipment checked and tested OK.
- 12/24 6490' drilling, siltstone and some light gray fine clayey sandstone, 5'/hr. 150 ft/24 hrs. No oil or gas shows. Logging equipment checked and tested OK. Marine shale.
- 12/25 6614' drilling, siltstone, as above, up to 10'/hr, 124'/24 hrs. No oil or gas shows.
- 12/26 6765' drilling, sandy siltstone, 10'/hr, 1°45' @ 6737. 151 ft/24 hrs. No oil or gas shows. Logging equipment checked and tested OK.
- 12/27 6915' drilling, sandy silty shale, 8'/hr. No oil or gas shows. 150 ft/24 hrs, 2°45' @ 6885. Increased weight on bit to 45,000 lbs. Drill string wt is 155,000 lbs, 27 drill collars wt is 62,000 lbs.
- 12/28 7046' drilling, silty shale, 7'/hr, 131 ft/24 hrs, 4°10' @ 6996. Reduced wt on bit to 35,000 lbs. No oil or gas shows. Logging equipment checked and tested OK.
- 12/29 7146' cored. Cored 7126-7146, Core #3 recovered 20'; altered basalt: possibly in part submarine pyroclastic, gray-black, some reddish black, altered, in part sheared, highly veined with calcite and zeolites, hard to part crumbly when dry. 20' average dip on questionable bedding. Lith. change at 7080 from marine silty shale and silty fine sandstone to altered basalt and possible pyroclastics.
- 12/30 7258' drilling, altered basalt, 6'/hr, no oil or gas shows, 118'/24 hrs.
- 12/31 7374 drilling, altered basalt with few intervals of reddish gray, sandy siltstone. 5-8 ft/hr, 116 ft/24 hrs, no oil or gas shows. 2°30' @ 7286. Logging equipment checked and tested OK.
- 1/1/64 7507' running new bit, prep to drill. Basalt to 7380, red siltstone from 7380 to 7480. 2°15' @ 7374. No oil or gas shows. In Siletz River Volcanics. Red siltstone is fair sorted, probably deposited in water, possibly marine, some fine basaltic sandy. 133'/24 hrs.
- 1/2 7630' drilling, basalt, 10-6'/hr, no oil or gas shows, 123'/24 hrs. Logging equipment checked and tested OK.
- 1/3 7816' drilling, basalt and some gray volcanic siltstone, 8-10'/hr, 186'/24 hrs, 2°00' @ 7722, no oil or gas shows.
- 1/4 7975' drilling, basalt with some gray volcanic siltstone, 160'/24 hrs, no oil or gas shows. Logging equipment checked and tested OK.
- 1/5 8113' cored, in basalt. Core #4 8091-8113, cut 22', rec. 22'; basalt: greenish black, fine to coarse crystalline, altered, hard to rotten and crumbly, sheared in part and much zeolite veined. No regular orientation to veins or shears. Blobs and patches of dissimilar texture suggest brecciation. Probably a submarine extrusive. Typical Siletz River Volcanics.
- 1/6 8113' cored. Running Schlumberger; IES, Micro-caliper, Sonic, C Dip M. United Geophysical velocity crew drilling shot holes.
- 1/7 8230' drilling, basalt with a little gray volcanic siltstone, 5-10'/hr, no oil or gas shows, 65 min lag time at 8200, logging equipment checked and tested OK. Stopped drilling at noon, 8253'. Ran velocity survey, approximately 6 hrs, 14 shots in 4 holes, good records, no cross feed and good breaks.
- 1/8 8312' drilling, basalt, 6-10'/hr, no oil or gas shows, 82'/24 hrs.
- 1/9 8440' drilling, basalt, solid since 8330, 6'/hr. Bit locked at 8470. 8470' is total depth. Prep to plug and abandon. Will not E-log bottom part of hole. 8-1/2" hole from 4949' to 8470'.
- 1/10 8470' Total Depth. Ran in with open end drill pipe to 4969, pumped in 110 sax common cement. Displaced same with 24 cu ft of water and 344 cu ft of mud. Pulled out of hole and waited on cement for 8-1/2 hours. Ran in, located top of cement at 4737, witnessed by Vern C. Newton, Oregon State Dept. of Geol & Min Ind. Laid down drill pipe, removed well head equipment, cemented from 50' to surface inside 9-5/8" and in 13-3/8" 9-5/8" annulus. Casing left in hole: 4867' of 9-5/8" and 526' of 13-3/8". Baroid logging unit released midnight on Jan. 9, 1964. Rig released late on Jan. 10, 1964.

Spud Nov. 9, abandon Jan. 10 = 62 days. 43 bits, 4 cores, and 2 drillstem tests.