

WELL HISTORY

Reichhold Energy Corporation API No. Section 10-6N-5W, W.B. & M. Columbia County, Oregon

Well Columbia County No. 3

May, 1979

- 22 Taylor Drilling Co. completed rigging up Rig No. 4 Spudded in with 9 7/8" bit at 4:00 P.M. and drilled ahead.
- 130' Clay and basalt
- 23 410' Clay
- Ran 10 joints of 7" 20# K-55 casing equipped with a guide shoe and cemented around shoe at 391' with 150 sacks of class 2 cement treated with 3% CaCl<sub>2</sub>. Had good cement returns at surface. Cement in place at 2:00 P.M. Waiting of cement.
- 24 Unscrewed landing joint and installed 6" 900 screw on casing head. Installed BOP Equipment and tested with 1000 psi. Ran in with 6 1/4" bit to plug at 325'. Drilled out plug, cement below, and shoe and drilled ahead.
- 514' Clay
- 25 1,706' Clay and shale
- 26 2,293' Clay, shale and sand.
- 27 Conditioned hole for test.
- DST No. 1 Ran HOWCO tester with no cushion and set packers at 2275' and 2281' with tail to 2293. Opened tool at 10:50 AM 3/8" bottom hole choke and 3/8" surface choke. Gas to surface in 1 minute. Surface pressure increased to 400 psi in 4 min. Opened for flow and pressure dropped to 195 psi in 10 min. Closed for ISIP at 11:00 AM. Opened for flow at 11:36 AM. Pressure 140 psi at 12:01. Opened to 1/2" bean at 12:01 and pressure dropped to 68 psi at 12:09. Opened bean to 3/4" at 12:09. Pressure dropped to 30 psi at 12:12. Spray of mud and water to surface at 12:13. Flowed well on 3/4" bean with 35 psi press. Estimated rate 725 Mcf/D. Closed for FSIP at 12:33 PM. Pulled loose at 1:33 PM. Recovered 405' at slightly muddy, gassy salt water grading to clear salt water in bottom 180'. Salinities ranged from 5700 ppm at top of rise, 11,300ppm in middle and 13,500 ppm at bottom of rise.

-1-

WELL HISTORY

Reichhold Energy Corporation API No. Section 10-6N-5W, W.B. & M. Columbia County, Oregon

Well Columbia County No. 3

May, 1979

- 27th (Cont.) Pressures (Office readings)
- |      | Top Chart<br>2259' | Bottom Chart<br>2289' |
|------|--------------------|-----------------------|
| IHP  | 1171               | 1179                  |
| IFI  | 326                | 442                   |
| FFI  | 340*               | 389*                  |
| ISIP | 918                | 929                   |
| IF2  | 430                | 563                   |
| FF2  | 233*               | 272*                  |
| FSIP | 887*               | 892*                  |
| FHP  | 1149               | 1159                  |
- \* Pressures not stabilized.
- Ran in with 6 1/4" bit and drilled ahead.
- 2451' Sand
- 28 2932' Sand and basalt
- 29 TD Orig. hole Ran Welx Induction-electric log from 396' - 2927'. Ran Welx Compensated Acoustic Velocity Log from 396'-2929'. Ran Welx Dipmeter.
- Plug No. 1 Hung drill pipe at 2358 and pumped in and equalized 40 sacks of Class 2 cement. Calculated to fill to 2142. Cement in place at 11:45 AM. Ran 3 1/2" drill pipe with bottom 60' equipped with Halliburton scratcher. Scratched hole from 400' to 600'. Circulated hole clean.
- Plug No. 2 Hung drill pipe at 614' and pumped in and equalized 70 sacks of Class 2 cement. Cement in place at 5:20 PM.
- 30 Located top of cement plug at 396' at 1:00 AM. At 6:15 AM, cleaned out cement from 396' to 450'. At 2:00 PM, cleaned out cement to 462'. Ran Dyna Drill with 6 1/4" bit and drilled ahead.
- 558' Clay
- 31 836' Clay
- Laid down Dyna Drill and ran in with drilling assembly and drilled ahead.

-2-

WELL HISTORY

Reichhold Energy Corporation API No. Section 10-6N-5W, W.B. & M. Columbia County, Oregon

Well Columbia County No. 3

June, 1979

- 1 1080' Clay
- 1318' Clay
- Laid down drilling assembly and ran in with Dyna Drill and drilled ahead.
- 1570' Clay
- Laid down Dyna Drill and ran in with drilling assembly and drilled ahead.
- 1577' Clay
- 2 1876' Clay
- 3 2565' Clay and sand
- 4 2992' Sand and basalt
- TD Sp. RD. Ran Welx Induction-electric log from 396' - 2988'. Ran Welx Acoustic Velocity log from 396' to 2989'.
- 5 Ran Welx Dipmeter. Ran 6 1/4" bit to 2600' and circulated and conditioned mud. Ran 65 joints or 2515.43' (incl. equip.) of 4 1/2" 10.5# K ST & C casing equipped with a guide shoe and an insert fill-up valve 77' above shoe. Casing equipped with 8 centralizers on 38' spacing from shoe up and 3 centralizers on 76' spacing.
- 6 Cemented around shoe at 2514' with 150 sacks of Class 2 cement. Used bottom rubber plug and displaced top rubber plug with 224 cu.ft. of water which was 6 cu.ft. over calculated displacement. Bumped plug with 1500 psi. Bled off and check held. Cement in place at 12:45 AM.
- Casing Details
- |           |          |
|-----------|----------|
| Shoe      | .80'     |
| 2 joints  | 77.31'   |
| Insert    | -        |
| 63 joints | 2437.32' |
| On Hook   | 2515.43' |
| Above KB  | 1.43'    |
| Shoe @    | 2514.00' |
- Landed casing and installed tubing spool. Tested secondary seal with 3000 psi. Re-installed BOP equipment. Picked up 2 3/8" tubing and ran to 2427'. Pulled tubing.

-3-

WELL HISTORY

Reichhold Energy Corporation API No. Section 10-6N-5W, W.B. & M. Columbia County, Oregon

Well Columbia County No. 3

June, 1979

- 7 Welx ran cement Bond - Neutron Log from 2416' to 900'. Ran tubing to 2427' and conditioned water in casing with 3% potassium chloride
- Landed 2 3/8" tubing as follows:
- |              |         |
|--------------|---------|
| KB to flange | 11.00   |
| 70 joints    | 2204.47 |
|              | 2215.47 |
- Removed BOP equipment. Installed Xmas tree.
- 8 Welx ran through tubing with 1 11/16" Ceramic jet gun and shot 4 holes per foot in the intervals, 2268 - 2305, 2326 - 2329, 2332 - 2335, 2339 - 2346 and 2353 - 2362.
- Removed water from casing with Nitrogen. Blew well to clean up. Flowed well on 26/64" bean at 3750 Mcf/D rate. Tubing pressure 820 psi, Casing pressure 880 psi. Shut in pressure: Tubing, 950 psi, Casing 920. Well shut in awaiting pipeline connection.

-4-