

Devlan Vintage Tree River C-36 Completion Program

Date: Feb 27, 2003	AFE No:
Type of Program:	Ronning, Bear Rock and Fort Creek Completion
Location:	67° 15' 09.194" N, 131° 51' 38.593" W

Elevations:

KB	136.0 m
CF	132.1 m
PBTD	1857.5 m KB
TD	1878 m KB

Casing Data:

Surface:
35 joints, 244.5 mm, 53.57 kg/m, K-55 ST&C landed at 475 m KB.
Cemented with 32.5 tonnes 0-1-0 G cement plus 5.0 % CaCl_2

Production:
50 joints, 139.7 mm, 20.8 kg/m, J-55 ST&C
95 joints, 139.7 mm, 20.8 kg/m, K-55 ST&C landed at 1872 m KB.
Import Tool Stage Tool set at 1001.5 m KB & ECP set at 1014.75 m KB

Production Cementing:

Stage 1
Cemented with 11.7 tonnes Fill-Lite 2-100 + 0.90% R-3 +1% CaCl_2 lead cement and 14.3 tonnes 0:1:0 G + 0.3% FL-63 + 0.5% CD-31 tail cement

Stage 2
Cemented with 13.34 tonnes Fill-Lite 2-100 + 0.90% R-3 +1% CaCl_2 lead cement and 13.2 tonnes 0:1:0 G + 0.3% FL-63 + 0.5% CD-31 tail cement

Casing Bowl:
StreamFlo Crown H -279 mm x 244 mm x 21mPa WP plus 2 x 50.8 mm LPSO

Wellhead:
See attachment

Tubular Data:

	Production Casing	Workstring	Tubing
Size OD (mm)	139.7		38.1
Weight (kg/m)	20.8		
Grade	K-55		
Drift ID (mm)	124.13		
Capacity (m ³ /m)	0.0127		
Collapse (kPa)	21,152		
Burst (kPa)	29,441		
Tension (kg)	91,000		
Annular volume (m ³ /m)			0.0116

Cores: None**DST's:** None

Objective: To evaluate the Ronning, Bear Rock and Fort Creek formations for potential gas production

Formation	Ronning	Bear Rock	Fort Creek	Fort Creek
Lithology	Dolomite / Limestone	Fractured Dolomite	Fractured Sandstone / Shale	Fractured Sandstone / Shale
Perforations	1650 – 1655 m KB	1409-1411, 1412-1415, 1416 – 1419 m KB	648.5 – 654.5 m KB	626 – 632 m KB
BHP	18,500 kPa max	15,750 kPa max	7500 kPa max	7500 kPa max
BHT	40° C			
H ₂ S	Nil	Nil	Nil	Nil

PROGRAM

1. MIRU coiled tubing rig complete with pump and clean tank.
2. Check surface casing vent and ensure it is left open.
3. Conduct a safety meeting with all testing personnel prior to beginning operations.
4. Install BOP's. Pressure test primary and secondary seals and complete BOP system to 21,000 kPa.
5. RIH with drilling motor with 120.7 mm bit. Tag stage tool at 1001.5 m KB. Drill out stage tool. RIH to PBTD and tag cement.

6. POOH with coiled tubing, motor and bit.
7. Rig up wireline and lubricator.
8. Run a gauge ring and junk basket to PBTD.
9. RIH with a CBL-VDL-CCL-GR and log two passes, one unpressured and one pressured at 7000 kPa over the interval PBTD to 450 m KB. Correlate to the DIL-SP-CNL-LDT-GR-Sonic log run 24/02/2003.
10. RIH with the 38.1 mm coiled tubing with a 120.7 mm bit and scraper on bottom. Work scraper over the interval 1675m to 625 m KB. Pressure test pipe rams and casing to 21,000 kPa as per NEB requirements.

Ronning FM. – Test Interval 1650 – 1655 m KB

11. Run to PBTD and blow well dry with air. Circulate 2.5 m³ water (sufficient to cover guns while perforating) with KCl for freeze depression into well. POH with coiled tubing.
12. Make up lubricator and pressure test to 21,000 kPa. RIH with a 101.6 mm casing gun, loaded with 32 gram charges at 13 spm and 90⁰ phasing. Correlate to the GR CCL log and perforate the Ronning over the interval 1650.0 – 1655.0 m KB.
13. Note the wellhead response during perforating. Rig out wire line.
14. RIH with coiled tubing and blow well dry with air if required.
15. Rig in testers and establish a flow rate with a maximum drawdown of 30% (1 hour).
16. If flow rate is significant, shut in, rig in wire line, and continue as per step 16. If rate is not significant, go to step 19.
17. Hang recorders near interval (wire line attached) and conduct a 12 hour flow test followed by a 12 hour shut-in.
18. Pull recorders. Rig out wire line.
19. RIH with coiled tubing to top of fluid. If fluid inflow occurred, take fluid sample for analysis. Fill hole with water.
20. Rig up to conduct acid squeeze. Hold safety meeting prior to any activity with the acid.
21. Circulate 6 m³ 15% HCl acid across perforations. Pull Coiled Tubing above the acid, close pipe rams and establish a feed rate into the formation. Do not exceed 20,000 kPa surface pressure.
22. Squeeze the acid away as possible. When acid in formation, shut in and allow acid to feed into formation. Monitor pressure on wellhead.
23. Bleed off pressure on well and establish a flow rate with a maximum drawdown of 30% (1 hour).
24. If flow rate is significant, shut in, rig in wire line, and continue as per step 25. If rate is not significant, go to step 27.
25. Hang recorders near interval (wire line attached) and conduct a 12 hour flow test followed by a 12 hour shut-in.
26. Pull recorders. Rig out wire line.

27. RIH with coiled tubing to top of fluid. If fluid inflow occurred, take fluid sample for analysis. Fill hole with water.
28. Squeeze all produced water back into the test zone. POOH with coiled tubing.
29. Set drillable bridge plug at approximately 1635 meters. Ensure that bridge plug is set in centre of joint at least one joint above any perforated joint. Pressure test bridge plug to 7000 kPa for 10 minutes.
30. Dump bail 8 linear meters of cement on top of the bridge plug.

Bear Rock FM. – Test Interval 1409 – 1419 m KB

This test is contingent upon the results of the Ronning Test

31. Make up lubricator and pressure test to 21,000 kPa. RIH with a 3 meter 101.6 mm casing gun, loaded with 32 gram charges at 13 spm and 90° phasing. Correlate to the GR CCL log and perforate the Bear Rock over the intervals 1409 – 1411 m, 1412 – 1415 m, 1416 – 1419 m. Three (3) runs with 3 meter guns will be required for these perforations.
32. Note the wellhead response during perforating. Rig out wire line.
33. RIH with coiled tubing and blow well dry with air if required.
34. Rig in testers and establish a flow rate with a maximum drawdown of 30% (1 hour).
35. If flow rate is significant, shut in, rig in wire line, and continue as per step 36. If rate is not significant, go to step 38.
36. Hang recorders near interval (wire line attached) and conduct a 12 hour flow test followed by a 12 hour shut-in.
37. Pull recorders. Rig out wire line.
38. RIH with coiled tubing to top of fluid. Fill hole with water.
39. Squeeze all produced water back into the test zone. POOH with coiled tubing.
40. Set drillable bridge plug at approximately 1390 meters. Ensure that bridge plug is set in centre of joint at least one joint above any perforated joint. Pressure test bridge plug to 7000 kPa for 10 minutes.
41. Dump bail 8 linear meters of cement on top of the bridge plug.

Fort Creek FM #1 – Test Interval 648.5 – 654.5 m KB

42. RIH with coiled tubing and blow well dry with air. POH with CTU.
43. Make up lubricator and pressure test to 21,000 kPa. RIH with a 101.6 mm casing gun, loaded with 32 gram charges at 13 spm and 90° phasing. Correlate to the GR CCL log and perforate the Fort Creek over the interval 648.5 to 654.5 m.
44. Note the wellhead response during perforating. Rig out wire line.

45. Rig in testers and establish a flow rate with a maximum drawdown of 30% (1 hour).
46. If flow rate is significant, shut in, rig in wire line, and continue as per step 47. If rate is not significant, go to step 49.
47. Hang recorders near interval (wire line attached) and conduct a 12 hour flow test followed by a 12 hour shut-in.
48. Pull recorders. Rig out wire line.
49. RIH with coiled tubing to top of fluid. Fill hole with water.
50. Squeeze all produced water back into the test zone. POOH with coiled tubing.
51. Set drillable bridge plug at approximately 640 meters. Ensure that bridge plug is set in centre of joint at least one joint above any perforated joint if possible. Pressure test bridge plug to 7000 kPa for 10 minutes.

Fort Creek #2 – Test Interval 626 - 632 m KB

52. RIH to 600 m with coiled tubing. Blow wellbore above 600 m dry with air.
53. Make up lubricator and pressure test to 14000 kPa. RIH with a 101.6 mm casing gun, loaded with 32 gram charges at 13 spm and 90° phasing. Correlate to the GR CCL log and perforate the Fort Creek over the interval 626 - 632 m KB.
54. Note the wellhead response during perforating. Rig out wire line.
55. RIH with coiled tubing and blow well dry with air if required.
56. Rig in testers and establish a flow rate with a maximum drawdown of 30% (1 hour).
57. If flow rate is significant, shut in, rig in wire line, and continue as per step 58. If rate is not significant, go to step 60.
58. Hang recorders near interval (wireline attached) and conduct a 12 hour flow test followed by a 12 hour shut-in.
59. Pull recorders. Rig out wire line.
60. RIH with coiled tubing to top of fluid. Fill hole with water.
61. Squeeze all produced water back into the test zone. POOH with coiled tubing.
62. Set drillable bridge plug at approximately 615 meters. Ensure that bridge plug is set in centre of joint at least one joint above any perforated joint. Pressure test bridge plug to 7000 kPa for 10 minutes.
63. Dump bail 30 linear meters of cement on top of the bridge plug.
64. Set a 10 meter cement plug at surface.
65. Rig out coiled tubing rig and all test equipment and prepare to demobilize all testing equipment south.

Supervisory Personnel

		Office	Cellular	Residence
Devlan	Mark Algar	(403) 213-6576	(403) 818-5456	(403) 239-7803
Project Manager	Ed Fercho	(403) 263-0752	(403) 860-6318	(403) 873-1480
Engineering	Lorne Hammer	(403) 263-0752	(403) 813-0718	(403) 242-3487
Field Supervisor	Rick Slater	(403) 204-1209	(403) 204-1210	Fax (403) 204-1186

2 7/8" EUE 3000#
GATE VALVE

7 1/16" 3000#

2" LP 3000# BALL
VALVE

11" 3000#

9 5/8"

5 1/2"

DEVLAN EXPLORATION
VINTAGE TREE
RIVER C-36

DWN.

C.D.

01.14.03

CHK.

APPR.

BY: DATE



EDMONTON, AB.
CANADA

DRAWING No.
CWH-034