

WELL HISTORY REPORT

for

CANOE RIVER EAST CHANCE

YT C - 18

YUKON

Canoe River Exploration Ltd.  
Calgary.



H. W. Meech  
Pres. Canoe River Exploration

April, 1968

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SUMMARY OF WELL DATA

Well Name & Number: Cance River East Chance VT C - 18

Permittee: Western Minerals Ltd.

Operator: Cance River Exploration Ltd.

Location: Unit C, Section 18, Grid 66°10'N 137°15'W  
Latitude 66°07'08.935"N, Longitude 137°18'28.441"W  
66°07'08.935"N 137°18'28.441"W

Co-ordinates: 500' North shot point 3583 - Line 101

Permit Number: 3364

Drilling Contractor: Nabors Drilling Limited, Rig #1 - Oilwell 76

Drilling Authority: #306, Feb. 21, 1968

Classification: Wildcat

Elevation: Ground 1742.8', K.B. 1756.3'

Spudded: Feb. 29, 1968, 12:00 Noon

Completed Drilling: April 3, 1968, 2:30 P.M.

Total Depth: 5040' Schlumberger, 5055' Driller

Well Status: Plugged and Abandoned

Rig Released: April 6, 1968, 6:00 P.M.

Well Size: 20" - surface to 45'; 17 1/2" - 45' to 85';  
12 1/4" - 85' to 815'; 8 5/8" - 815' to T.D.

Mechanical Log Run: I.E.S., B.H.C. Sonic

Casing: Conductor Pipe: Ran 3 jts. x 13 3/8" x 54.5# x J-55 new.  
Landed at 85' KB. Cemented with 90 sack Fondu  
Cement + 10 pails construction cem. & 10 sack  
Fondu from top.

Surface: 26 jts. 9 5/8" x 35# Mann. JS, 8 rnd. Landed at 815'  
K.B. Cemented w/350 sack Fondu + 25 pails Construction  
Cement at top. *Cand*

Universal Well Location Reference - Lat. 66.11861<sup>922</sup>° N., Long. 137.30556<sup>29927</sup>° W.

Unique Well Identifier - 300N186610137150  
C

FORMATION RECORD

<u>MARKER</u>	<u>ELECTROLOG</u>
Upper Cretaceous Blacky Sand	1694' (+62)
Lower Cretaceous New Shale	1976' (-220)
Basal Cretaceous Sand	3040' (-1284)
Palaeozoic	
Permian	3066' (-1310)
Permo-Penn	
Upper Alder	4200' (-2444)
Chance Zone	4823' (-3067)
Chance Sand	4912' (-3156)
Top Porosity	4941' (-3185)

SAMPLE DESCRIPTIONS(Samples logged 1<sup>o</sup>/100 ft.)

<u>Interval</u>	<u>Description</u>
0 - 10	No Sample
10 - 20	Siltstone; white, kaolinitic
20 - 40	Sandstone; light orange brown, ferruginous, carbonaceous, silty, very fine to fine, poor sorted, angular to sub-angular quartz and brown black carbon grains cemented with limonite, tight.
40 - 50	Sandstone; salt and pepper, kaolinitic, carbonaceous, slightly chloritic, very fine to fine, fair sorted, angular quartz and black carbonaceous grains, loosely cemented with kaolin, friable, tight. Common Siltstone; light gray, argillaceous, micaceous.
50 - 60	Siltstone, as above, medium gray. Common Sandstone, as above
60 - 70	Siltstone, as above.
70 - 80	Siltstone, as above. Common Shale; brown gray, silty, micaceous.
80 - 90	Sandstone, as above.
90 - 100	Shale; light brown gray to gray brown, bentonitic, silty, micaceous.
100 - 120	Sandstone, as above.
120 - 150	Sandstone, as above. Common Siltstone, as above.
150 - 160	Shale; light gray brown, silty, micaceous grading to Siltstone; light gray brown, argillaceous, micaceous.
160 - 170	Shale, as above. Common Siltstone and Sandstone, as above.
170 - 190	Shale, as above. Common Siltstone, as above. Common Ironstone.
190 - 200	Shale and Siltstone, as above. Common Shale; very light gray brown to light gray green, micaceous.
200 - 210	Shale and Siltstone, as above. Sandstone; salt and pepper, ferruginous, very fine to fine, loosely cemented with iron oxide, tight, friable.
210 - 230	Shale, as. Common Siltstone; light gray brown, argillaceous. Common Limonite.
230 - 250	Shale, as. Siltstone, as, bentonitic.

<u>Interval</u>	<u>Description</u>
260 - 280	Siltstone; light gray brown, argillaceous, micromicaceous. Common Shale; medium gray brown, silty, micromicaceous. Common Shale; light gray brown to light gray green, micromicaceous. Trace Coal and ironstone.
280 - 290	Siltstone, as above. Shale; light gray brown, silty, micromicaceous, bentonitic.
290 - 300	Siltstone, as above. Shale; light to medium gray brown, silty, micromicaceous. Trace ironstone.
300 - 330	Shale, as above. Common Siltstone, as above. Common Sandstone; salt and pepper, argillaceous, carbonaceous, silty, very fine to fine, well cemented with kaolin, tight. Common Shale; light gray brown to light gray green, micromicaceous.
330 - 340	Sandstone; medium gray brown to salt and pepper, silty, micromicaceous, very fine to fine, fair sorted quartz and brown black carbon grains, well cemented with kaolin, tight.
340 - 360	Sandstone, as above. Common Shale; as above.
360 - 370	No Sample
370 - 390	Sandstone, as above. Common Shale, as above.
390 - 410	No Sample.
410 - 420	Shale; light gray brown, bentonitic, micromicaceous and medium to dark gray brown, silty, micromicaceous. Common Sandstone, as above.
420 - 470	Shale; medium to dark gray brown, silty, micromicaceous. Siltstone; gray brown, argillaceous. Sandstone, as above.
470 - 480	Sandstone; salt and pepper, carbonaceous, slightly chloritic, fine to medium, fair sorted, angular quartz and black carbonaceous grains cemented with kaolin. Poor porosity, no stain or fluorescence.
480 - 490	Shale; very light gray brown, silty, bentonitic. Sandstone, as above, kaolinitic, very friable, tight.
490 - 500	Sandstone, as above, limonitic, well cemented, tight. Common Limonite and Ironstone.
500 - 510	Sandstone, as above with poor porosity. No stain or fluorescence. Siltstone; light gray to brown, argillaceous, micromicaceous.

<u>Interval</u>	<u>Description</u>
510 - 540	Sandstone, as above, very argillaceous, friable, tight. Siltstone; light gray brown, bentonitic, micromicaceous. Shale; light to medium gray brown, silty, micromicaceous, bentonitic
540 - 550	Sandstone, as above, tight.
550 - 560	Sandstone, Siltstone and Shale, as above.
560 - 580	Sandstone, as above, friable, tight.
580 - 590	Shale; medium to dark gray brown, silty, micromicaceous. Siltstone; light to medium gray brown, micromicaceous.
590 - 600	Shale and Siltstone, as above. Common Shale; light to dark gray green, micromicaceous.
600 - 620	Siltstone; medium brown gray, argillaceous, micromicaceous. Common Shale, as above.
620 - 630	Siltstone; light gray brown, bentonitic, sandy, micromicaceous, soft. Common Shale, as above.
630 - 640	Sandstone; gray brown to salt and pepper, carbonaceous, argillaceous, silty, very fine to fine, friable, tight. Common Siltstone; gray brown, sandy, argillaceous, micromicaceous, soft. Common Shale, as above.
640 - 660	Siltstone and Shale, as above. Common Shale; light gray green, micromicaceous.
660 - 670	Sandstone; salt and pepper, carbonaceous, slightly chloritic, fine to medium, fair sorted, angular to subangular quartz, light gray to gray brown chert and occasional white Feldspar grains loosely cemented with kaolin. Fair porosity. No stain or fluorescence.
670 - 690	Siltstone and Shale, as above. Sandstone, as above, kaolinitic, friable, tight.
690 - 710	Shale, light gray brown, bentonitic & light gray brown to light gray green, micromicaceous, firm. Common Sandstone, as above.
710 - 730	Shale; light to medium gray brown, very silty, micromicaceous and light gray green, micromicaceous. Siltstone; light gray to brown, argillaceous. Sandstone, as above, kaolinitic, friable, tight. Common ironstone.
730 - 760	Shale, as above, common bentonitic. Siltstone; light brown, sandy, kaolinitic, soft.

<u>Interval</u>	<u>Description</u>
760 - 770	Shale; light gray green and dark gray brown, micromicaceous, waxy. Sandstone; salt and pepper, carbonaceous, fine to medium, fair sorted, subangular, loosely cemented with kaolin, friable, poor porosity, no stain or fluorescence.
770 - 800	Shale; light to medium gray brown, silty, micromicaceous and light to dark gray green, micromicaceous, waxy. Trace Sandstone, as above, tight. Siltstone; light gray to dark gray brown, argillaceous, micromicaceous.
800 - 810	Shale; light to medium gray brown, silty, micromicaceous. Common Shale; light gray green, silty, micromicaceous. Sandstone; salt and pepper, carbonaceous, chloritic, fine to medium, fair sorted, angular to subangular quartz and common light gray to amber chert and occasional light green chloritic grains loosely cemented with kaolin. Good porosity. No stain or fluorescence.
810 - 840	Sandstone, as above, very friable to loose. Common ironstone. Trace pyrite and iron oxide.
840 - 910	Shale, medium to dark gray brown, silty micromicaceous. Common Siltstone; gray brown, argillaceous, micromicaceous.
910 - 940	Sandstone; salt and pepper, carbonaceous, fine to medium, fair sorted, angular to subangular quartz and black carbonaceous grains loosely cemented with kaolin. Fair porosity. No stain or fluorescence. Common Shale and Siltstone, as above.
940 - 960	Shale, as above.
960 - 980	Shale, as above. Common Siltstone, as above.
980 - 1000	Shale, gray brown, silty, very micromicaceous, firm.
1000 - 1020	Shale; dark gray brown, very silty, very micromicaceous, grading to Siltstone; brown, argillaceous, micromicaceous. Abundant lesser sand grains; clear to white and amber, subangular, frosted, quartz.
1020 - 1030	Sandstone; salt and pepper, kaolinitic, very fine to medium, poor sorted, angular to subangular quartz and brown black weathered chert grains cemented with kaolin, friable, tight. Shale, as above.
1030 - 1040	Shale; dark brown gray, very silty, very micromicaceous grading to argillaceous siltstone.
1040 - 1050	Shale, as above, bentonitic.

<u>Interval</u>	<u>Description</u>
1050 - 1060	Shale; gray brown, bentonitic, micromicaceous.
1060 - 1070	No Sample.
1070 - 1080	Shale; dark gray brown, very silty, very micromicaceous. Siltstone; medium gray brown, argillaceous, sandy grading to silty sandstone. Common Sandstone; light gray brown, argillaceous, silty, very fine to medium, poor sorted, angular quartz, feldspar and brown black chert grains well cemented with clay, tight. Common Ironstone.
1080 - 1090	Shale; gray brown, silty, micromicaceous, bentonitic. Common Siltstone and Sandstone, as above.
1090 - 1140	Sandstone; salt and pepper, fine to medium grained, fair sorted, angular to subangular, frosted quartz; color to black weathered chert and occasional white to green white chlorite grains well cemented with kaolin. Poor to fair porosity. No stain or fluorescence.
1140 - 1150	Siltstone; brown, argillaceous, sandy, slightly chloritic. Shale, as above.
1150 - 1160	Sandstone, as above, kaolinitic, tight. Shale, as above.
1160 - 1170	Shale; medium to dark gray brown, silty, micromicaceous.
1170 - 1210	Sandstone, as above, fine to medium, tight. Shale, as above. Siltstone; light brown, carbonaceous, sandy.
1210 - 1220	Shale; gray brown, very silty, micromicaceous grading to argillaceous siltstone. Common Ironstone.
1220 - 1230	Shale, as above. Siltstone; light brown, argillaceous.
1230 - 1270	Shale; medium to dark gray brown, very silty, micromicaceous.
1270 - 1280	Sandstone, as above, fine to medium, friable, poor to fair porosity, no stain or fluorescence.
1280 - 1290	Siltstone; light to medium gray brown, sandy, argillaceous. Shale; dark gray brown, silty, micromicaceous. Trace Shale; dark gray to black, bituminous, flaky.
1290 - 1300	Siltstone and Shale, as above. Common Shale; very light green gray, micromicaceous. Common Ironstone.

<u>Interval</u>	<u>Description</u>
1300 - 1320	Siltstone and Shale, as above. Common Sandstone, as above, friable. Poor to fair porosity. No stain or fluorescence. Common ironstone.
1320 - 1350	Shale and Siltstone, as above. Trace ironstone.
1350 - 1360	Shale, as above. Common Siltstone, as above. Common Sandstone; salt and pepper, very fine to fine, fair sorted, subangular to subround, well cemented with kaolin, tight. Trace ironstone.
1360 - 1370	Shale; dark gray brown to very dark brown gray, silty, micaceous. Sandstone; salt and pepper, medium to coarse, fair sorted, angular quartz and brown black chert grains loosely cemented with kaolin. Fair to good apparent porosity. No stain or fluorescence.
1370 - 1380	Shale; medium to dark gray brown, silty, micaceous. Sandstone; light to medium gray brown and salt and pepper, kaolinitic, very fine to medium grained, poor sorted, subangular quartz and brown black chert grains well cemented with kaolin, tight. Trace ironstone.
1380 - 1410	Shale; very dark brown gray, silty, micaceous. Siltstone; light to dark gray brown, argillaceous, sandy. Common Sandstone, as above, argillaceous, tight. Common maroon Shale and Siltstone. Trace ironstone.
1410 - 1430	Shale, as above, medium gray brown to dark brown gray. Common Siltstone and Sandstone, as above. Trace maroon shale and siltstone. Trace light green shale and ironstone.
1430 - 1460	Shale, as above. Common Siltstone and Sandstone, as above. Common ironstone.
1460 - 1470	Shale; dark brown gray to black, silty, micaceous, kaolinitic.
1470 - 1490	Shale; medium gray brown to dark brown gray, silty, micaceous. Siltstone; light gray brown, argillaceous. Common ironstone.
1490 - 1520	Shale; medium to dark brown gray, silty, micaceous. Siltstone; brown, carbonaceous, argillaceous, micaceous, sandy grading to very fine silty sandstone.
1520 - 1540	Shale, as above. Siltstone; dark gray brown, argillaceous, micaceous, grading to silty sandstone.
1540 - 1560	Shale; very dark brown gray to gray black, silty, micaceous, bituminous. Common Siltstone, as above. Trace ironstone.

<u>Interval</u>	<u>Description</u>
1500 - 1570	Shale; gray black, silty, micromicaceous. Siltstone; dark gray brown, argillaceous, carbonaceous, micromicaceous. Common ironstone.
1570 - 1590	Siltstone, as above. Common Shale, as above.
1590 - 1610	Sandstone; gray brown, bituminous, argillaceous, silty, slightly chloritic, very fine to fine, well cemented with kaolin, tight. Common Shale; gray black, bituminous, silty, micromicaceous.
1610 - 1630	Sandstone; light brown to salt and pepper, carbonaceous, chloritic, very fine to medium, poor sorted, well cemented with kaolin, tight. Common Shale; light to dark gray brown, silty, carbonaceous, micromicaceous.
1630 - 1650	Sandstone; salt and pepper, carbonaceous, slightly chloritic, micaceous, very fine to medium, well cemented with kaolin, tight. Shale; very dark brown gray to black, silty, very micaceous, bituminous.
1650 - 1690	Sandstone, as above, tight. Common Shale, as above. Common ironstone and pyrite.
1690 - 1710	Sandstone, as above, kaolinitic, friable, poor porosity. No stain, fluorescence or cut. Common Shale, as above.
1710 - 1720	Sandstone, as above, very friable, tight.
1720 - 1730	Sandstone; medium brown to salt and pepper, slightly chloritic, kaolinitic, very fine to medium, well cemented with kaolin. Very poor porosity. No stain or fluorescence. Shale; medium to dark brown gray, silty, micromicaceous. Some ironstone and pyrite.
1730 - 1740	Shale, as above.
1740 - 1770	Shale and Sandstone, as above. Some ironstone.
1770 - 1790	Sandstone, as above. Common Shale, as above. Common ironstone. Trace pyrite.
1790 - 1800	Sandstone; salt and pepper, quartzose, slightly glauconitic, fine grained, well sorted, subangular to subround quartz and occasional white weathered feldspar and brown black weathered chert grains cemented with kaolin. Fair porosity. No stain, very dull yellow fluorescence, no cut.
1800 - 1820	Sandstone; as above, poor to fair porosity. No stain, dull yellow fluorescence, no cut. Common reddish brown, hematitic Sandstone.

<u>Interval</u>	<u>Description</u>
1820 - 1830	Shale; dark brown gray, carbonaceous, silty, micromicaceous.
1830 - 1840	Shale; gray black, bituminous, silty, micromicaceous.
1840 - 1850	Sandstone; as above. Poor porosity. No stain.
1850 - 1860	Sandstone, as above, very fine to fine, tight. Shale; dark gray brown, silty, micromicaceous.
1860 - 1880	Sandstone, as above, poor porosity, no stain.
1880 - 1890	Shale; gray black, bituminous, silty, micromicaceous.
1890 - 1900	Sandstone; very light brown to salt and pepper, slightly glauconitic, very fine to fine, fair sorted, angular quartz and common very dark gray brown grains and white weathered feldspar grains cemented with kaolin, tight. Common Sandstone; dark gray brown, sideritic, silty, very fine grained, well cemented with kaolin and siderite, tight. Common Shale; very dark brown gray, silty, micromicaceous.
1900 - 1910	Sandstone; very light brown to clear, quartzose, very fine to fine, fair sorted, with poor apparent porosity. No stain, fluorescence or cut, and sandstone as above.
1910 - 1920	Sandstone; dark brown, sideritic, silty, very fine, tight. Common Shale; gray black, silty, micaceous, bituminous.
1920 - 1930	Shale, as above.
1930 - 1940	Sandstone; very light brown, silty, very fine, well cemented with kaolin, tight. Shale; dark brown gray to black, bituminous, micromicaceous, silty.
1940 - 1990	Sandstone, as above. Shale; very dark brown gray to black, silty, micromicaceous, bituminous.
1990 - 2030	Shale; dark gray brown to very dark brown gray, very silty, micromicaceous, bituminous. Common Siltstone; gray brown, argillaceous, micromicaceous.
2030 - 2060	Shale; very dark brown gray to brown black, bituminous, silty, micromicaceous.
2060 - 2120	Shale; dark gray brown to dark brown gray, silty, micromicaceous, blocky to chunky.
2120 - 2130	Shale; dark brown gray to black, silty, micromicaceous, chunky. Common Siltstone; dark brown, argillaceous, soft, friable.

<u>Interval</u>	<u>Description</u>
2130 - 2140	Shale; black, bituminous, silty, micromicaceous.
2140 - 2160	Shale; very dark brown gray, silty, micromicaceous.
2160 - 2220	Shale; gray black, silty, micromicaceous, slightly bituminous.
2220 - 2250	Shale, as above, very dark brown gray to gray black, chunky. Common Sandstone; very light brown, slightly glauconitic, very fine to fine, well cemented with kaolin, tight.
2250 - 2310	Shale, as above, gray black.
2310 - 2320	Shale, as above. Common Sandstone; dark brown gray, silty, glauconitic, argillaceous, bituminous, micromicaceous, very fine to medium, poor sorted, subangular quartz, brown black bituminous grains and occasional dark chert grains, well cemented, tight. Trace Sandstone; white, quartzaceous, very fine to fine, well sorted, loosely cemented with kaolin. Good porosity. No stain or fluorescence. Common finely disseminated pyrite.
2320 - 2370	Shale; dark brown gray, micromicaceous. Sandstone, as above, silty, very fine to fine. Common finely disseminated pyrite.
2370 - 2410	Sandstone, as above, light to medium gray brown. Common Shale, as above.
2410 - 2450	Sandstone, as above.
2450 - 2480	Sandstone, as above, light brown gray grading to siltstone. Shale; very dark gray brown, chunky. Common pyrite. Common ironstone. Trace siderite.
2480 - 2500	Shale; medium to dark gray brown and brown gray, silty, micromicaceous. Siltstone; medium gray brown, argillaceous, sandy, micromicaceous.
2500 - 2510	Shale, as above. Sandstone; light gray to gray brown, argillaceous, silty, micromicaceous, slightly glauconitic, very fine to fine, well cemented with clay, tight, grading to sandy siltstone.
2510 - 2520	Shale, as above. Siltstone; light to medium brown gray, sandy, argillaceous, slightly glauconitic. Trace pyrite and ironstone.
2520 - 2550	Shale; dark brown gray, very silty, micromicaceous and very dark gray brown to brown black, chunky to oolitic. Common pyrite.
2550 - 2560	Shale, as above. Common Siltstone; light to dark gray brown, carbonaceous, chloritic, argillaceous, sandy micromicaceous. Common pyrite.

<u>Interval</u>	<u>Description</u>
2360 - 2560	Shale and Siltstone, as above. Common pyrite.
2560 - 2650	Shale; medium brown gray, silty, micromicaceous. Siltstone, common, as above. Trace pyrite and ironstone.
2650 - 2690	Shale, as above. Trace siltstone, as above. Trace ironstone and pyrite.
2690 - 2690	Shale, as above. Common siltstone, as above. Common pyrite.
2690 - 2730	Shale, as above. Common shale; dark gray brown to brown black, micromicaceous, chunky.
2730 - 2750	Shale, as above. Common ironstone.
2750 - 2760	Shale, as above. Common ironstone and pyrite. Trace black rounded chert pebbles.
2760 - 2800	Shale, as above. Common ironstone.
2800 - 2810	Shale, as above. Trace pyrite and ironstone.
2810 - 2820	Shale, as above. Trace siltstone; light gray to gray brown, argillaceous, glauconitic. Trace ironstone and pyrite. Trace black rounded chert pebbles.
2820 - 2830	Shale; as above. Common sandstone; salt and pepper, carbonaceous, kaolinitic, very fine to fine, well cemented, tight. Common siltstone; gray brown, argillaceous, micromicaceous. Trace limestone; dark gray brown, argillaceous, cryptocrystalline.
2830 - 2890	Shale, as above. Trace ironstone and pyrite. Common shale; brown black, hackly. Common siltstone; gray brown, argillaceous, sandy, slightly glauconitic, micromicaceous.
2890 - 2900	Shale; very dark gray brown to brown black, silty, and dark brown gray to dark gray brown, silty, micromicaceous. Common siltstone; medium to dark gray brown, argillaceous, micromicaceous, glauconitic. Common limestone; dark gray brown, argillaceous, silty, glauconitic, cryptocrystalline, dense. Trace claystone; gray white, silty. Trace pyrite.
2900 - 2920	Siltstone, as above, very glauconitic. Shale, as above. Common claystone; gray white to light blue gray, silty. Common siltstone; white to brown, quartzaceous, slightly glauconitic. Common ironstone. Trace pyrite. Common limestone, as above.

<u>Interval</u>	<u>Description</u>
2920 - 3030	Siltstone; light to medium brown gray, argillaceous, very glauconitic, carbonaceous, micromicaceous. Common Shale; dark gray brown to brown black, silty, micromicaceous.
3030 - 3040	Shale; medium to dark gray brown, silty, micromicaceous. Common Sandstone; clear to light brown, quartzose, fine to medium, fair sorted, subangular quartz and common white weathered feldspar grains cemented with silica. No stain or fluorescence, very pear cut, gassy odor. Quartz grains show secondary quartz outgrowth. Abundant chert pebbles; milky white to light gray and amber to black, well rounded, vitreous. Common pyrobitumen staining.
3040 - 3050	Chert Pebble Conglomerate; composed of dark gray to black, rounded, very coarse chert pebbles in a matrix of dark brown siltstone and dark gray brown shale, tight. Common pyrite and ironstone.
3050 - 3060	Chert Pebble Conglomerate, as above. Sandstone; salt and pepper, calcareous, glauconitic, very fine to fine, poor sorted, subangular to subround quartz and dark chert grains well cemented with calcite, tight.
3060 - 3067	Shale; very dark gray brown, conglomeritic grading to shaly, Chert Pebble Conglomerate. Common Sandstone, as above. Common Limestone; white to light tan, weathered (detrital limestone), silty, microcrystalline, tight.
3067 - 3070	Limestone; light gray to tan, silty, siliceous, cryptocrystalline, dense.
3070 - 3080	Limestone; light gray buff to dark gray brown, argillaceous, silty and very light gray, siliceous, cryptocrystalline, dense. Common white chalky limestone.
3080 - 3130	Limestone; white and buff to dark gray brown, argillaceous, cherty, microfragmental, tight. Common Chert; blue white and amber to dark gray brown, vitreous. Abundant brachiopod and crinoid fragments. Common Calcite vein and fossil cast infilling. Common Shale; very dark brown gray to black, calcareous, micromicaceous, bituminous.
3130 - 3140	Limestone, as above. Common Shale; very dark gray brown to brown black, calcareous, hard. Fossil brachiopods.
3140 - 3150	Limestone, as above, very cherty. Abundant Chert; light blue gray to amber and very dark gray brown, vitreous. Fossil brachiopods.

<u>Interval</u>	<u>Description</u>
3150 - 3170	Limestone, as above, very argillaceous and cherty. Shale, as above, very calcareous. Abundant Chert, as above. Fossil brachiopods and sponge spicules.
3170 - 3200	Limestone; mottled and intermixed, microfragmental, gray white, silty, sandy, chalky and light tan to dark gray brown, siliceous, cherty, cryptocrystalline, dense. Fossil brachiopods, sponge spicules and crinoids. Some floating coarce, well rounded, frosted quartz sand grains.
3200 - 3210	Limestone, as above. Common Shale; brown black to gray black, micromicaceous, platy to chunky. Fossils, as above.
3210 - 3230	Limestone; microfragmental, as above, gray white, chalky and tan to dark gray brown, argillaceous, siliceous, cherty. Common Chert, as above.
3230 - 3240	Limestone, as above, silty, sandy. Common Shale; very dark brown gray to black.
3240 - 3260	Limestone; gray white, silty, chalky and light gray to tan, siliceous, cryptocrystalline, dense. Common Shale; brown black, platy to splintery.
3260 - 3290	Limestone; gray white, chalky and light gray brown to buff, siliceous, cherty, argillaceous in part, cryptocrystalline, dense. Common Chert; clear to amber and dark gray brown, vitreous.
3290 - 3330	Limestone; mottled and intermixed, as above, gray white, chalky and tan to dark gray brown, siliceous, argillaceous, slightly cherty, cryptocrystalline, dense.
3330 - 3340	Limestone; very light gray, silty, very cherty, chalky. Common Limestone; dark gray brown, argillaceous, siliceous, cryptocrystalline, dense.
3340 - 3360	Limestone; very light gray, silty, and tan to dark gray brown, siliceous, argillaceous, cherty, cryptocrystalline, dense. Common Chert; amber to dark gray brown, vitreous. Trace medium grained, loose, rounded quartz sand grains.
3360 - 3370	Limestone; light gray, silty, sandy, chalky and tan to dark gray brown, argillaceous, siliceous, cherty, as above.
3370 - 3400	Limestone; light gray, silty, chalky and buff, siliceous to dark gray brown, argillaceous, cryptocrystalline, siliceous, dense.
3400 - 3440	Limestone; light gray, as above and buff, as above. Trace Shale; brown black, glauconitic.

<u>Interval</u>	<u>Description</u>
3440 - 3460	Limestone; light gray, as above and buff to dark gray brown, as above, slightly cherty.
3460 - 3510	Limestone, as above. Common black shale.
3510 - 3520	Limestone; very light gray, silty, chalky and buff to dark gray brown, argillaceous, siliceous, slightly cherty, cryptocrystalline, dense.
3520 - 3540	Limestone; mottled and intermixed light gray, chalky and dark gray brown, argillaceous, siliceous, cryptocrystalline, dense. Common Shale; black, micaceous. Trace Chert; clear to amber & dark gray brown, vitreous.
3540 - 3580	Limestone, as above. Shale; black, sooty, bituminous, micaceous. Trace Chert, as above.
3580 - 3585	Limestone, as above, light gray and buff to dark gray brown. Trace Chert, as above.
3585 - 3600	Limestone; mottled and intermixed, light gray, silty, chalky buff to dark gray brown, argillaceous, siliceous, cryptocrystalline, dense. Common Shale; brown black, micaceous, splintery. Trace Chert, as above.
3600 - 3620	Limestone; light gray, silty, sandy, chalky. Common Limestone; buff to dark gray brown, argillaceous, siliceous, cryptocrystalline, dense. Common black Shale; Trace Chert, as above.
3660 - 3670	Limestone, as above. Shale; black, sooty, bituminous, micaceous.
3670 - 3710	Limestone; light gray buff, sandy, soft and buff to dark gray brown, argillaceous, cryptocrystalline, dense. Trace spongioiding. Trace brachiopod fragments and sponge spicules.
3710 - 3750	Limestone; as above with common white calcite in-filled fossil casts, because light gray buff and dark gray brown micro-fragmental limestone in part. Some white calcite vein in-filling. Some clusters of very small calcite in-filled fossil casts similar to amphipora.
3750 - 3770	Limestone; white and buff to dark gray brown, argillaceous, microfragmental, composed of white calcite in-filled fossil casts in a matrix of buff to dark gray brown argillaceous, cryptocrystalline Limestone. Common clusters of white calcite in-filled fossil casts similar to amphipora, as above. Common brachiopod fragments. Trace crinoid fragments.

<u>Interval</u>	<u>Description</u>
3770 - 3795	Limestone, as above, cherty, siliceous. Shale; very dark brown gray to black, bituminous. Trace shale; very dark green gray, splintery. Common Chert; light blue to amber and dark gray brown, vit- reous showing outline of microfossil casts. Common isolated small vugs in the chert, lined or in-filled with pyrobitumen.
3795 - 3800	Limestone, as above. Common Limestone; gray white, chalky. Common Shale, as above.
3800 - 3815	Limestone; light gray, silty, chalky and buff to very dark brown gray, argillaceous, siliceous, cherty, cryptocystal- line, dense. Common Shale; very dark brown gray, calcareous and gray to brown black, bituminous. Common Chert; varicolored - light blue amber and dark gray brown, vitreous (fragmental limestone replacements)
3815 - 3830	Limestone; light gray, silty, chalky and buff to dark brown gray, argillaceous, siliceous, cryptocrystalline, dense.
3830 - 3840	Limestone; light gray, silty, sandy, chalky and dark brown gray, argillaceous, siliceous.
3840 - 3845	Limestone, as above. Shale; very dark brown gray, silty, calcareous, micromicaceous, and black, sooty micromicaceous.
3845 - 3870	Limestone, as above.
3870 - 3875	Limestone; light gray to buff, very silty, hard and dark brown gray, silty, hard grading to calcareous silty in part. Common light gray, silty chalky Limestone.
3875 - 3885	Limestone, as above. Common Shale; brown black, silty, micromicaceous, hard.
3885 - 3905	Shale; very dark gray brown. Common Shale; white speckled, calcareous, silty, micromic- aceous, petroliferous. Common crinoids.
3905 - 3910	Shale, as above grading to shaly Limestone. Common Limestone, as above, cherty. Trace sandstone; salt and pepper, fine to medium, fair sorted, angular to sub- angular quartz, light gray chert and occasional black, carbonaceous grains cemented with kaolin. Fair porosity. No stain or fluorescence. Trace black rounded chert pebbles. Common crinoids.
3910 - 3915	Shale and Limestone, as above. Common crinoids.

<u>Interval</u>	<u>Description</u>
3915 - 3935	Limestone; white and buff to dark gray brown, mottled and interbedded, argillaceous, siliceous, cherty, microfragmental, tight. Common Shale; very dark gray brown to brown black, calcareous, silty, petroliferous. Some black Shale. Abundant Crinoid and Brachiopod fragments. Common clusters of calcite in-filled fossil casts similar to ophiopora.
3935 - 3940	Shale, as above. Common Limestone, as above. Common crinoids.
3940 - 3950	Limestone, as above. Common Limestone, gray brown, marly. Common Shale, as above.
3950 - 3955	Limestone; white, chalky and buff to gray brown, silty, siliceous, slightly cherty. Common Limestone; dark gray brown, siliceous, argillaceous, cryptocrystalline. Common Shale, as above.
3955 - 3975	Limestone; buff, silty, very cherty, crypts to microcrystalline, hard. Abundant Chert; light blue gray, cryptocrystalline, subvitreous.
3975 - 3980	Limestone; buff, siliceous, cherty, cryptocrystalline, hard. Common Limestone; white, chalky to earthy, Chert; light blue gray to amber and dark gray brown, vitreous.
3980 - 3990	Limestone, as above. Common Chert, as above. Trace Shale; black, earthy.
3990 - 4000	Limestone; dark gray brown, siliceous, cherty, argillaceous, cryptocrystalline, very hard and Limestone; light gray buff, marly. Common Shale; brown black, calcareous, silty, bituminous. Common Chert; amber to dark gray brown, vitreous. Common Crinoids.
4000 - 4010	Limestone; dark gray brown, as above. Common marly Limestone, as above. Some Chert, as above. Common white calcite fossil cast and vein in fillings.
4010 - 4020	Shale; very dark gray brown to brown black, white speckled, calcareous, silty, chunky, grading to Limestone; buff to dark gray brown and white mottled, argillaceous, microfragmental, tight. Common light gray buff, marly Limestone, as above.
4020 - 4030	Shale; brown black, bituminous, calcareous. Common Limestone, as above.
4030 - 4040	Limestone, as above. Common Shale, as above. Common Shale; dark gray brown to brown black, calcareous, silty.

<u>Interval</u>	<u>Description</u>
4040 - 4050	Limestone; white, buff and brown black, very cherty, oolitic, argillaceous, micro-fragmental, fractured. Abundant Chert (50%) brown black, subvitreous, cryptocrystalline. Some Shale; brown black, bituminous. Common white chalky Limestone. Abundant erinoids.
4050 - 4060	Limestone; buff to brown black, argillaceous, oolitic, cherty and gray white to very light gray buff, chalky. Common Shale; black, bituminous, oily and micaceous in part. Common Chert, as above. Common Erinoids.
4060 - 4100	Limestone, as above, light buff to dark gray brown. Trace shale, as above. Common white to light gray buff, chalky Limestone.
4100 - 4150	Limestone; gray white, chalky and buff to dark gray brown, argillaceous, slightly cherty, microfragmental. No inter-crystalline porosity. Some fine crystalline calcite vug as fracture lining. May have some fracture or vuggy porosity. No stain or fluorescence. Trace Shale; gray black, waxy, slightly calcareous, micaceous, bituminous in part. Some bitumen staining on surface of limestone due to otyalite or fractures. Trace brown black chert. Abundant erinoids.
4150 - 4200	Limestone; white, chalky and buff to dark gray brown, oolitic, cherty, argillaceous, cryptocrystalline, dense, very hard. Common Chert; light gray and brown mottled to very dark gray brown, vitreous. Trace black shale.
4200 - 4210	Limestone, as above, oily. Some Siltstone; gray brown, argillaceous, micaceous. Trace Shale, as above.
4210 - 4250	Limestone, as above, non-oily. Common Chert, as above. Trace Shale, as above.
4250 - 4320	Limestone; white, chalky and buff, oolitic, cherty, cryptocrystalline, dense, very hard. Common Chert, as above.
4320 - 4340	Limestone, as above, argillaceous in part. Common Shale; very dark gray brown, calcareous and gray black, micaceous. Trace Siltstone; dark gray green, argillaceous, micaceous, pyritic.
4340 - 4370	Limestone; white chalky and buff to dark gray brown, oolitic, argillaceous, cherty, cryptocrystalline, dense, very hard. Common Chert; light gray and buff to dark gray brown, vitreous, cryptocrystalline.
4370 - 4380	Limestone; light buff, oily, oolitic, cherty, cryptocrystalline, dense, hard. Common Limestone; white chalky. Common Chert; light gray and buff mottled, oily, calcareous in part. Common buff spicular Limestone and Chert.

<u>Interval</u>	<u>Description</u>
4380 - 4390	<p>Limestone; white, chalky and buff to dark gray brown, argillaceous, siliceous, very cherty, cryptocrySTALLINE, very hard, dense.</p> <p>Common Chert; dark gray brown, cryptocrySTALLINE, vitreous.</p> <p>Common Shale; black, bituminous.</p>
4390 - 4420	<p>Limestone; white, chalky and buff to dark gray brown, argillaceous, siliceous, cryptocrySTALLINE, dense.</p>
4420 - 4430	<p>Limestone; gray white, chalky and buff to dark gray brown, argillaceous, siliceous, cryptocrySTALLINE, dense, stypolitic. Trace Shale; black, bituminous.</p>
4430 - 4440	<p>Limestone; gray white, chalky and buff, siliceous, very cherty, cryptocrySTALLINE, dense, very hard, stypolitic, fractured. Fractures in-filled with calcite.</p> <p>Abundant Chert; light to medium gray brown, subvitreous, cryptocrySTALLINE.</p>
4440 - 4460	<p>Limestone; gray white, chalky and buff to dark gray brown, argillaceous, siliceous, cherty, crypto to microcrySTALLINE, dense, hard.</p> <p>Common Shale; brown black, calcareous, silty, micaceous, bituminous. Common Chert, as above.</p>
4460 - 4470	<p>Limestone, as above, very cherty. Chert, as above (50%)</p>
4470 - 4480	<p>Limestone, as above. Common Limestone; light gray, sandy.</p>
4480 - 4490	<p>Limestone, as above, non-sandy.</p>
4490 - 4510	<p>Sandstone; salt and pepper, very calcareous, very fine to medium, poor sorted, subangular quartz and dark gray to black chert grains well cemented with calcite, tight.</p> <p>Limestone; gray white, chalky and buff, siliceous, cherty, crypto to microcrySTALLINE, dense, very hard.</p> <p>Common Chert, as above.</p>
4510 - 4520	<p>Limestone; gray white, chalky and buff, siliceous, very cherty, cryptocrySTALLINE, dense, very hard.</p> <p>Sand Limestone; very dark brown gray, very sandy and dark gray brown, argillaceous. Sand Shale; black, silty, micaceous, calcareous in part and black, bituminous.</p>
4520 - 4525	<p>Limestone; medium to dark buff, siliceous, slightly cherty, cryptocrySTALLINE, dense, very hard, fractured. Common calcite fracture in-filling.</p> <p>Limestone; gray white, chalky, silty, sandy in part.</p> <p>Common Sandstone; salt and pepper, calcareous, fine to medium, fair sorted, subrounded quartz and dark chert grains well cemented with calcite, tight. Good gassy odor. No stain or fluorescence.</p>

<u>Interval</u>	<u>Description</u>
4525 - 4540	Limestone; buff to dark gray brown, argillaceous, siliceous, siliceous, cherty, cryptocrySTALLine, dense, hard, fractured. Fractures in-filled with calcite. Trace fractures lined with white calcite crystals and stained with pyrobitumen. Common gray white chalky Limestone. Trace sandstone, as above. Common Chert; dark gray brown, cryptocrySTALLine, vitreous.
4540 - 4550	Limestone; dark gray brown, very argillaceous, siliceous, cherty, cryptocrySTALLine, dense, very hard, fractured. Fractures in-filled with calcite. Limestone; very light gray, silty, grading to calcareous siltstone. Common gray white, chalky Limestone. Common Dolomite; buff, siliceous, cryptocrySTALLine, dense.
4550 - 4560	Limestone, as above, commonly silty, very argillaceous in part. Common Dolomite; light to medium buff, siliceous, crypto to microcrySTALLine, dense. Common gray white Limestone, as above. Common Shale; very dark brown gray to black, micromicaceous, silty in part and medium to dark gray brown, calcareous, microfossiliferous (serpoid fragments). Common gray white, silty, chalky Limestone. Common Sandstone; light gray to salt and pepper, calcareous, very fine to fine, tight.
4560 - 4580	Limestone; gray white, chalky and light gray to light buff, silty, dolomitic, siliceous, cherty, cryptocrySTALLine, dense. Dolomite; light buff, siliceous, crypto to microcrySTALLine, dense. Common Chert; light gray to light and dark gray brown, brown speckled, calcareous in part, cryptocrySTALLine, subvitreous.
4580 - 4590	Limestone; gray white, chalky. Dolomite; buff, siliceous, cherty, cryptocrySTALLine, dense. Common Shale; very dark gray to black, micromicaceous.
4590 - 4620	Limestone, as above, silty, and dark gray brown, argillaceous, siliceous, cryptocrySTALLine, dense. Some Shale, as above. Trace Siltstone; light green, argillaceous. Trace Shale; light to dark gray green, silty, micromicaceous.
4620 - 4640	Limestone; buff to dark gray brown, siliceous, argillaceous, cryptocrySTALLine, dense and gray white chalky. Trace coarse crystalline calcite, stained light brown in part, probably vug lining.
4640 - 4650	Limestone, as above. Common Shale; very dark gray to brown black, calcareous, micromicaceous.
4650 - 4660	Limestone, as above, fractured. Fractures in-filled with calcite. Some coarse crystalline calcite, stained with pyrobitumen. Common Shale, as above.

<u>Interval</u>	<u>Description</u>
4480 - 4750	Limestone; buff to dark gray brown, argillaceous, siliceous, cryptocrystalline, dense and gray white, chalky.
4750 - 4790	Limestone; buff to very dark gray brown, argillaceous, siliceous, cryptocrystalline, dense. Common Limestone; gray white, chalky. Common Shale; very dark brown gray to brown black, calcareous, silty, micromicaceous. Common Crinoids.
4790 - 4800	Limestone, as above.
4800 - 4810	Limestone, as above. Common Shale, as above. Common Crinoids.
4810 - 4820	Limestone, as above. Common Limestone; light gray buff, chalky.
4820 - 4830	Limestone, as above, silty, sandy.
4830 - 4840	Limestone, as above. Common Shale, as above. Common Sandstone; salt and pepper, calcareous, fine to coarse, poor sorted, subangular to subrounded quartz and light gray to black chert grains well cemented with calcite, tight.
4840 - 4850	Sandstone, as above. Limestone, as above. Common Limestone; light gray buff, marly.
4850 - 4855	Limestone; light to medium gray buff, silty, microcrystalline to chalky. Common Limestone; dark gray brown, argillaceous, siliceous, cryptocrystalline. Trace Sandstone, as above.
4855 - 4860	Limestone; buff to dark gray brown, siliceous, silty, argillaceous in part, micro to cryptocrystalline, dense. Common Limestone; light gray buff, silty, chalky. Shale; black, sooty, silty, bituminous, very micromicaceous, pyritic, micromicaceous. Some Siltstone; buff, argillaceous and dark gray, calcareous. Trace Sandstone, as above.
4860 - 4865	Limestone, as above.
4865 - 4870	Limestone; gray white to light gray buff, silty, chalky and buff to dark gray brown, siliceous, argillaceous, cryptocrystalline, dense. Common Shale, as above.
4870 - 4880	Limestone, as above.
4880 - 4890	Limestone; gray white to light gray buff, silty, chalky and dark gray brown to brown black, very argillaceous, siliceous, cryptocrystalline, dense. Trace Shale; brown black, calcareous, silty, micromicaceous.

<u>Interval</u>	<u>Description</u>
4890 - 4895	Limestone; buff to dark gray brown, argillaceous, silty, siliceous in part, cryptocrystalline, dense.
4895 - 4910	Sandstone; light gray to dark gray brown, very calcareous, silty, very fine to fine, poor sorted, angular quartz and dark chert grains, well cemented with calcite, tight, grading to sandy limestone.
4910 - 4920	Sandstone; very light gray brown, keelinitic, calcareous, very fine to fine, fair sorted, angular to subangular, tight.
4920 - 4935	Sandstone; light gray to very light brown, calcareous, pyrobituminous in part, very fine to fine grained, fair sorted, subangular quartz and light to very dark gray chert grains well cemented with calcite, tight. Common pyrobitumen in-filling.
4935 - 4940	Sandstone; salt and pepper, fine to medium grained, poor sorted, subangular to subrounded quartz and light to dark gray chert grains well cemented with calcite, tight. Common pyrobitumen staining.
4940 - 4950	Sandstone, salt and pepper, medium to coarse, poor sorted, subrounded to rounded quartz, light to dark gray chert grains and occasional gray white feldspar grains cemented with calcite. Poor porosity. No stain, fluorescence or cut. No odor. Common Sandstone; light brown, calcareous, silty, very fine to fine, well cemented with calcite, tight.
4950 - 4960	Sandstone; salt and pepper, as above, calcareous, tight.
4960 - 4965	Sandstone, as above. Poor porosity. No stain, fluorescence or cut. No odor.
4965 - 4975	Sandstone, as above. Good porosity. Common light brown oil staining, light yellow fluorescence, fair cut, no odor.
4975 - 4985	Limestone; light gray, very sandy, tight and buff to dark gray brown, argillaceous, silty, dense.
4985 - 4990	Sandstone; salt and pepper, calcareous, medium to very coarse, poor sorted, sub angular to rounded, quartz and light to dark gray chert grains and occasional feldspar grains well cemented with calcite, tight.
4990 - 4995	Limestone, as above and Sandstone, as above, tight. Common Siltstone; light brown, calcareous.
4995 - 5000	Sandstone, Siltstone and Limestone, as above.

<u>Interval</u>	<u>Description</u>
5000 - 5010	Sandstone, as above, fine to very coarse, well cemented, tight, and Sandstone; light brown, fine to medium, fair sorted, subangular quartz and light to dark gray chert grains cemented with kaolin, with fair to good porosity. No stain or fluorescence. Trace coarse Sandstone, as above, stained with dead oil and pyrobitumen.
5010 - 5015	Sandstone; salt and pepper, medium to very coarse, poor sorted, subangular to rounded quartz and light to dark gray chert grains and trace feldspar grains cemented with kaolin and calcite. Good porosity. Good light brown oil staining in part. Fair light yellow fluorescence, fair cut. No odor.
5015 - 5025	Sandstone, as above with good porosity and staining. Fair cut and Sandstone; light brown, silty, very fine to fine, well cemented with kaolin, tight. Common Sandstone; very dark gray to black, white speckled in part, kaolinitic, very pyrobituminous, very fine to medium, well cemented with kaolin and pyrobitumen, tight. Common Siltstone; light gray brown, calcareous, kaolinitic. Trace Limestone; dark gray brown, argillaceous, silty.
5025 - 5035	Sandstone; light brown, very fine to fine grained, fair sorted, angular to subangular quartz and light to dark gray chert grains well cemented with kaolin and calcite, with some poor porosity and light brown staining. Some light yellow fluorescence, poor cut.
5035 - 5040	Sandstone, as above. Common Sandstone; light gray, very calcareous, very fine to fine, tight.
5040 - 5050	Sandstone; salt and pepper, calcareous, medium to very coarse, poor sorted, sub rounded to rounded quartz and light to dark gray chert grains well cemented with calcite, tight. Common light brown sandstone, as above, tight.
5050 - 5055	Sandstone; salt and pepper, as above, becoming brown, sideritic. Some Limestone; chocolate brown, sideritic, lithographic, dense.

DRILL STEM TEST SUMMARY

D.S.T. #1: Interval 3035' - 3067' (Basal Cretaceous)  
Prewlow 7', I.S.I. 30', V.O. 65', F.S.I. 90'  
Good initial puff. Gas to surface in 1 1/2', maximum 1.6  
MMCF, decreased to 669 MCF in 60'. No recovery.  
Recorder depth 3047'.  
I.H.P. 1560 psi., I.F.P. 450 psi., I.S.I.P. 1290 psi.  
F.H.P. 1560 psi., F.F.P. 140 psi., F.S.I.P. 1290 psi.

D.S.T. #2: Interval 5000' - 5055 (Chance Sand)  
Prewlow 3', I.S.I. 30', V.O. 60', F.S.I. 30'  
Gas to surface in 1 1/4', mud spray in 19', water spray 25'  
Maximum flow 5.7 MM, surging slightly after 30' steady to  
end of test. Recovered 120' condensate cut sulphurous salt  
water, 200' salt water (28,600 ppm.). Recorder depth 5022'.  
Temp. 108°  
I.H.P. 2520 psi., I.S.I.P. 2120 psi., I.F.P. 1530 psi.  
F.H.P. 2520 psi., F.S.I.P. 1820 psi., F.F.P. 1220 psi.

D.S.T. #3: Interval 4910' - 4980' (Chance Sand)  
Prewlow 5', I.S.I. 45', V.O. 75', F.S.I. 90'  
Gas to surface in 4' at 135 MCF increased to 533 MCF in 25',  
levelled at 361 MCF in 55', steady to end of test.  
Recovered 420' black watery mud. Recorder depth 4973'.  
Temp. 104°  
I.H.P. 2500 psi., I.S.I.P. 2120 psi., I.F.P. 310 psi.  
F.H.P. 2510 psi., F.S.I.P. 2170 psi., F.F.P. 270 psi.

CASING RECORD

Conductor Pipe: Ran 3 jts. of 13 3/8" x 54.5# x J-55 new casing with one centralizer, 17' off bottom. Landed at 85' K.B. Pumped 10 bbls. water ahead. Cemented with 90 sax Fondu Cement, + 10 pails construction cement and 10 sax Fondu from top. Displaced with 12 bbls. water at 10:45 A.M., March 1.

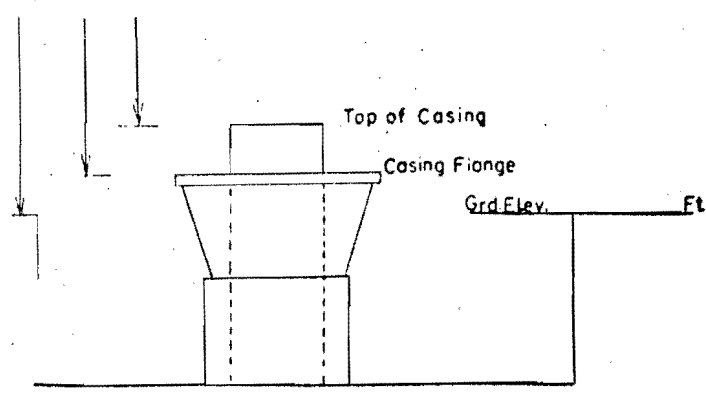
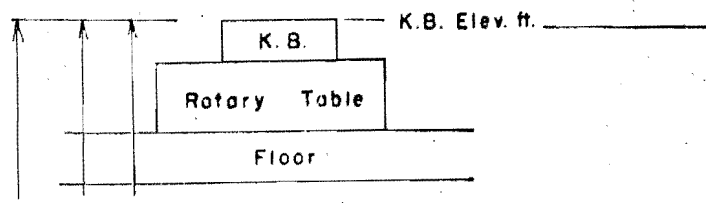
Surface Casing: Ran 26 jts. of 9 5/8" x 36# Mannesman JS, 8 round casing with float shoe on bottom, one centralizer on first and second joint. Landed at 815 K.B. Cemented with 350 sax Fondu Cement (staged last 15 bbls.). Plug down at 5:00 P.M., March 4. Good returns. Cemented from surface with 25 cans construction cements.

### CASING DATA SHEET

COMPANY Canoe River Exploration Ltd. DATE March 1, 1968  
 WELL NAME Canoe River East Chance YT LOCATION C - 18  
 TOTAL DEPTH 85' <sup>C-18</sup> HOLE SIZE 20" to 45'; 17½" to 85'

Size	Wt.	Grade	Rge.	Thread and Collar	No. of Threads	Seamless or E.W.	New or Used	Manuf.	No. of Joints	Footage
13 3/8	54.5	J-55	2		8		New		2	67.70
13 3/8	54.5	J-55	Cut off						1	18.90
										86.60

CENTRALIZERS		SCRATCHERS		Sub Total	86.60
Make	Baker			Cross-over Joint	
Type				Float and Guide Equipment	
Depth	66'			Total Casing Run (A)	
				Minus, Cut-off	
				TOTAL CASING LEFT IN HOLE	
				Plus Distance (K.B. to top of casing)	
				DEPTH CASING LANDED	85'
				Casing left on Rack (B)	Nil
				Total Casing Tallied (A & B)	



FLOAT AND GUIDE EQUIPMENT			
	Make	Type	Depth Set
Shoe	Nil		
Collar	Nil		

REMARKS: (TENSION LEFT IN PIPE, ETC.) \_\_\_\_\_  
Used as Conductor pipe. Casing cut off below table and weld flow line to it.

ENGINEER F. H. Gable  
Wm. Semeniuk  
 SHEET NO. \_\_\_\_\_

Form E-6—1M-12-63-Kal.

### CASING DATA SHEET

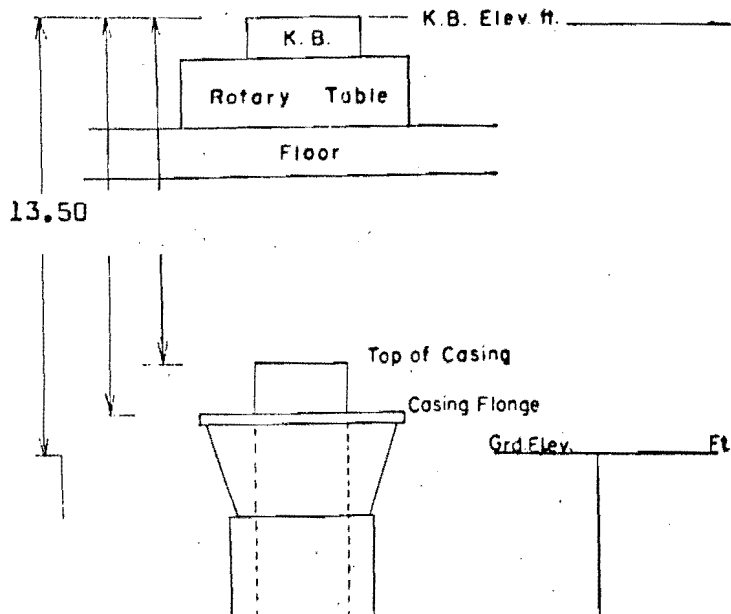
COMPANY Canoe River Exploration Ltd. DATE March 4, 1968

WELL NAME Canoe River East Chance YT C-18 LOCATION YT C - 18

TOTAL DEPTH 815' HOLE SIZE 12 1/4"

Size	Wt.	Grade	Rge.	Thread and Collar	No. of Threads	Seamless or E.W.	New or Used	Manuf.	No. of Joints	Footage
9 5/8	36#	J S	2	ST & C	8	Seamless	New	Man.	29	904.48

CENTRALIZERS		SCRATCHERS		Sub Total
Make	<u>Baker</u>			Cross-over Joint
Type				Float and Guide Equipment
Depth	<u>800</u>	<u>765</u>		Total Casing Run (A)
				Minus, Cut-off <u>Cut off Landing jt.</u>
				TOTAL CASING LEFT IN HOLE
				Plus Distance (K.B. to top of casing)
				DEPTH CASING LANDED
				Casing left on Rack (B)
				Total Casing Tallied (A & B)



FLOAT AND GUIDE EQUIPMENT			
	Make	Type	Depth Set
Shoe	<u>Baker</u>	<u>Float</u>	<u>815.00</u> K.B.
Collar			

REMARKS: (TENSION LEFT IN PIPE, ETC.)

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ENGINEER Wm. Semeniuk

DIT RECORD

<u>DIT#</u>	<u>SIZE</u>	<u>MAKE &amp; TYPE</u>	<u>DEPTH</u>		<u>HOURS</u> <u>RUN</u>	<u>DILL CONC.</u>			<u>WT.</u>		<u>RP</u>
			<u>DIT</u>	<u>FOOTAGE</u>		<u>T</u>	<u>O</u>	<u>C</u>	<u>(1000.0) RPA</u>	<u>PP</u>	
1	17 1/2	MO GSC-3 (RR)	85	41	12	1	2	1			
2	8 5/8	MO GSCIC-J	039	754	17	1	2	1	25	150	1100
3	12 1/4	Pilot Reamer	016	730	15 3/4	2	2	1	25	190	800
4	8 5/8	MO GSCIC-J(RR)	Drilled out cement								
5	8 5/8	MO GSCIC-J	1524	685	17 1/2	3	2	1	50	150	400
6	"	MO XIG-J	1853	320	15 3/4	3	3	1	40	90	500
7	"	MO GSC-J	2070	217	21 1/2	3	2	1	45	65	500
8	"	MO GSV-J	2070	400	24	3	2	1	45	65	500
9	"	MO XIG	2348	370	27 1/2	2	1	1	45	65	500
10	"	MO XIG	3057	219	15 3/4	3	2	1	45	65	500
11	"	Road VAC	3185	19	6 1/4	3	2	1	45	65	600
12	"	MO X55R	3322	236	68 1/4	2	4	1	45	45	800
13	"	MO X55R	3304	402	87 1/4	2	1	1	45	45	800
14	"	MO X55R	4204	400	87 1/2	2	1	1	45	45	500
15	"	MO X55R	4850	335	93 1/2	3	2	1	45	45	900
16	"	MO X55R	4850	299	85 1/2	4	4	0	45	45	950
17	"	MO RC7RJ	5085	197	44 1/2	1	1	1	45	45	1000

DRILLING FLUID SUPPLIES

<u>Additives</u>	<u>Amount</u>	<u>Additives</u>	<u>Amount</u>
Gel	81,100 lbs.	Sachant	25 can
Caustic	2,500 "	Fibertex	205 "
Lime	50 "	Collophane	24 "
Paltex	6,500 "	Calcut Shello	15 "
CNC	1,000 "	Nico	2 "
Seltex	3,000 "	DT-10	22 1/2 gal.
Caroid	15,000 "	PO <sup>2</sup> Free	25 "
Carbonax	500 "	Quick Vic	5 "
Siccil Fuel	50 bbls.	Dofenn	5 "

DEVIATION RECORD

<u>DATE</u>	<u>DEPTH</u>	<u>DEGREE</u>	<u>DATE</u>	<u>DEPTH</u>	<u>DEGREE</u>
Mar. 1	30	1/4	Mar. 10	2070	1/4
"	60	1/4	" 11	2320	1/2
" 3	90	1/4	"	2470	1/2
"	120	1/0	" 12	2720	1/2
"	150	1/0	" 13	2040	1
"	200	1/4	" 10	3322	1
"	250	1/2	" 22	3703	1 1/4
"	400	1/4	" 23	4214	2
"	550	1/4	" 30	4859	2 1/2
" 4	704	1/4	Apr. 2	4856	3
"	850	1/4	" 4	5055	3
" 7	1000	1/4			
"	1300	1/2			
" 8	1520	1/2			
" 9	1770	1/2			

ABANDONMENT PLUGS

- Plug #1: 4775' - 5055' (Chance Sand)  
105 sack, displaced with 71 bbls. water.  
Plug down at 7:00 P.M., April 5, 1968
- Plug #2: 2950' - 3150' (Top Permo-Penn)  
95 sack +2% CaCl<sub>2</sub>. Displaced with 44 bbl. water.  
Plug down at 8:00 P.M. Felt at 2920' at 4:00 A.M., April 6.
- Plug #3: 765' - 865' (Surface Casing)  
50 sack +2% CaCl<sub>2</sub>. Displaced with 12 bbl. water.  
Plug down at 8:30 A.M., April 6. Felt at 753' at 4:30 P.M.
- Surface: Placed 5 bags of cement in top of casing and welded on a steel plate

Lost Circulation Zones

Circulation was lost at a depth of 561' and 929' in sands of the Upper Cretaceous. The lithology consists of a calc and porous, carbonaceous, fine to medium grained, fair sorted, kaolin cemented sand with fair to good apparent porosity. Other porous sands are also present in the intervals 820' to 840', 1090' to 1120', and three thin beds between 1250' and 1400'. The mud tanks dropped 3" in the upper sand and 150 bbls. was lost at 929'. The upper sand was cased off with the surface casing. The lower zone, at 929', plus, probably some of the other sands in this section continued to take mud slowly throughout most of the duration of the well - especially after a trip for a bit. This made it necessary to carry lost circulation material in the mud system and by-pass the choker for the duration of the well. With the lost circulation material in the system, no great amount of mud was lost - just a gradual seepage. There was no evidence of any new lost circulation zones below 1500'.

LOGS

(See Attachment)

<u>Date Run</u>	<u>Type</u>	<u>Scale &amp; Interval</u>	
Apr. 3, 1968	I. E. S.	2"	5036' to 812'
		5"	5036' to 1690'
Apr. 3, 1968	B. H. C. Sonic	2"	5040' to 812'
		5"	5040' to 1690'

ANALYSIS

Summary of Lab Reports

(a) Core Analysis - Oil

(b) Water Analysis (See Appendix)

<u>Lab File No.</u>	<u>From</u>	<u>To</u>	<u>Source</u>	<u>Remarks</u>
CGM-2-2937	5000	- 5056	DST #2	Top of Tool

(c) Gas Analysis (See Appendix)

<u>Lab File No.</u>	<u>From</u>	<u>To</u>	<u>Source</u>	<u>Remarks</u>
CGM-2-2937	3035	- 3067	DST #1	Basal Cretaceous
"	4810	- 4900	DST #3	Chanco Sandstone
"	5000	- 5056	DST #2	Chanco Sandstone

(d) Oil Analysis - Oil

Form E-4-1M-12-63-Kal.

# CEMENTING REPORT

DATE March 1, 1968

COMPANY Canoe River Exploration Ltd.

FIELD .....

WELL NAME Canoe River East Chance YI C - 18

LOCATION C - 18

Depth 85'

Hole Size 20" to 45"; 17½" to 85"

Casing being Cemented Size 13 3/8"  
Conductor Pipe

Wt. 54.5#

Grade J-55

Thread 8

Make .....

Collars ST & C

No. Joints delivered .....

No. joints left in hole .....

Thd's off tally delivered .....

Thd's off tally left in hole 86.60

Thd's on tally delivered .....

Thd's off tally left in hole .....

Kelly Bushing elevation .....

Depth Shoe below Kelly Bushing .....

Time started running casing 7:30 A.M.

Time casing in hole 9:30 A.M.

Time started circulating Nil

Time started cementing 9:30 A.M.

No. sacks mixed 90

Made .....

Type Fondu

Calcium Chloride added Nil

Aquagel added Nil

Avg. slurry weight 14.8

Time cement in pipe .....

Type of plug used Nil

Plug pumped down by Cementer

Time plug down .....

Bumped plug with ..... psi.

Cement returns Nil

gals. Pressure left on head ..... psi.

Cementing Co. B.J.

Cementer D. Bilida

Make well head .....

Size .....

Remarks Pumped 10 bbls. water ahead, cement with 90 sax, displace with 12 bbls. water.

No returns. Cement from top with 10 pails construction cement & 10 sax Fondu

Engineer F. H. Gable

Wm. Semeniuk

SHEET No. ....

# CEMENTING REPORT

DATE March 4, 1968

COMPANY Canoe River Exploration Ltd.

FIELD .....

WELL NAME Canoe River East Chance YT C - 18

LOCATION YT C - 18

Depth 815'

Hole Size 12 1/2"

Casing being Cemented Size 9 5/8"

Wt. 36#

Grade J S

Thread 8

Make Man.

Collars ST. & C

No. Joints delivered 29

No. joints left in hole 26

Thd's off tally delivered 904.48

Thd's off tally left in hole 801.50

Thd's on tally delivered .....

Thd's off tally left in hole .....

Kelly Bushing elevation .....

Depth Shoe below Kelly Bushing 815

Time started running casing 10:00 A.M.

Time casing in hole 2:15 P.M.

Time started circulating 2:15 P.M.

Time started cementing 3:30 P.M.

No. sacks mixed 350

Made .....

Type Fondu

Calcium Chloride added Nil

Aquagel added Nil

Avg. slurry weight 14.8

Time cement in pipe .....

Type of plug used Rubber

Plug pumped down by Cementer

Time plug down 5:00 P.M.

Bumped plug with Nil psi.

Cement returns 20 bbls.

gals. Pressure left on head Nil psi.

Cementing Co. B.J.

Cementer Bilida

Make well head Cameron

Size 10", 900

Remarks Stage displacement as soon as good returns due to cement drop. After plug down cement dropped. Cemented from surface with 25 pails construction cement.

Engineer Wm. Semeniuk

SHEET No. ....



**CORE LABORATORIES-CANADA LTD.**  
 PETROLEUM RESERVOIR ENGINEERING  
 CALGARY, ALBERTA  
**GAS ANALYSIS**



Company Western Minerals Limited Page 1 of 3  
 Well Canoe River East Chance YTC-18 File CBH-2-2937  
 Field Wildcat, Yukon Territories Analysts J.L.K.  
 Location 66 07'08.935" N.L.; 137 17'57.422" W.L. Date April 19/68

**SAMPLING CONDITIONS**

Formation Basal Cretaceous Depths 3035' 3067' Elev: - 1739' Grd.  
 Sampled from DST #1 By \_\_\_\_\_ of \_\_\_\_\_  
 Date Sampled Apr. 4/68 Date Received Apr. 8/68 Date Analyzed Apr. 16/68  
 Pressure \_\_\_\_\_ psig Temperature \_\_\_\_\_ °F Atmospheric Temp. \_\_\_\_\_ °F

DST Recovery or Flowrate 1.6 MMCF Gas

Method of Analysis CHROMATOGRAPH

COMPONENT	MOL %	Pressure in Container 23 psig, 78°F when received in laboratory	
		U.S. GPM at 14.696 and 60°F.	Imp. GPM at 14.65 and 60°F.
HELIUM	0.01		
NITROGEN	0.44		
CARBON DIOXIDE	1.83		
HYDROGEN SULFIDE			
METHANE	88.05		
ETHANE	5.85		
PROPANE	2.25	0.619	0.514
ISOBUTANE	0.35	0.114	0.095
N-BUTANE	0.63	0.198	0.164
ISOPENTANE	0.21	0.077	0.064
N-PENTANE	0.17	0.061	0.051
HEXANES	0.12	0.049	0.041
HEPTANES PLUS	0.09	0.041	0.034
<b>TOTAL</b>	<b>100.00</b>	<b>1.159</b>	<b>0.963</b>
	Actual Pentanes + Vapor pressure (Calculated) of actual Pentanes +	0.228	0.190

12.9 Psia @ 100°F

Hydrogen Sulphide—Grains per 100 cu. ft.

Gross Heating Value B.T.U. per SCF

1112.3  
psia & 60°F at 14.696

1108.9  
psia & 60°F at 14.65

Specific Gravity—Measured

Calculated

0.650

REMARKS:



**CORE LABORATORIES-CANADA LTD.**  
 PETROLEUM RESERVOIR ENGINEERING  
 CALGARY, ALBERTA  
**GAS ANALYSIS**



Company Western Minerals Limited Page 2 of 3  
 Well Chance River East Chance YT C-18 File CBH-2-2937  
 Field Wildcat, Yukon Territories Analysts J.L.K.  
 Location 66° 07' 08.935" N.L.; 137° 17' 57.422" W.L. Date April 19/68

**SAMPLING CONDITIONS**

Formation Chance Sandstone Depths 5000'-5055' Elev: - 1739' Grd.  
 Sampled from DST #2 By \_\_\_\_\_ of \_\_\_\_\_  
 Date Sampled Apr. 7/68 Date Received Apr. 11/68 Date Analyzed Apr. 16/68  
 Pressure \_\_\_\_\_ psig Temperature \_\_\_\_\_ °F. Atmospheric Temp. \_\_\_\_\_ °F.

Gas @ 5.7 MMCF/D

DST Recovery or Flowrate 120' Condensate Cut Slightly Salt Water, 200' Salt Water  
 Method of Analysis CHROMATOGRAPH

COMPONENT	MOL %	Pressure in Container _____ psig	
		when received in laboratory	
HELIUM	0.00		
NITROGEN	14.92		
CARBON DIOXIDE	4.78		
HYDROGEN SULFIDE		U.S. GPM at 14.696	Imp. GPM at 14.65
METHANE	70.84	and 60°F.	and 60°F.
ETHANE	5.95		
PROPANE	2.14	0.589	0.429
ISOBUTANE	0.27	0.088	0.073
N-BUTANE	0.50	0.158	0.131
ISOPENTANE	0.16	0.058	0.048
N-PENTANE	0.14	0.051	0.042
HEXANES	0.14	0.057	0.047
HEPTANES PLUS	0.16	0.074	0.061
<b>TOTAL</b>	100.00	1.075	0.891
	Actual Pentanes +	0.240	0.198
	Vapor pressure (Calculated) of actual Pentanes +	10.4 Psia @ 100°F	

Hydrogen Sulphide—Grains per 100 cu. ft. \_\_\_\_\_  
 Gross Heating Value B.T.U. per SCF \_\_\_\_\_  
 Specific Gravity—Measured \_\_\_\_\_ Calculated 0.736

REMARKS:



**CORE LABORATORIES-CANADA LTD.**  
 PETROLEUM RESERVOIR ENGINEERING  
 EDMONTON CALGARY REGINA  
**WATER ANALYSIS**



File CBH-2-2937 Page 3 of 3

Company Western Minerals Limited  
 Well Name Cane River East Chance YTC-118 Sample No. \_\_\_\_\_  
 Formation Chance Depth 5000' - 5055'  
 Location 66° 07' 08.935" N, L. Field Wildcat Province Yukon Territories  
137° 17' 57.422" W, L.  
 Date Sampled Apr. 5/68 Date Analyzed Apr. 15/68 Analyst M.B.  
 Sampled From DST #2 (Top of Tool) By \_\_\_\_\_  
 Recovery 120| Condensate, 200| Salt Water Elevation Grd. - 1739'

**Constituents:**

1. Total Solids 30,457 mg/liter      2. pH 8.00      3. Sp.Gr. 1.0204 @60°F.  
 4. Resistivity 0.25 Ohm-meters @ 77 °F      5. H<sub>2</sub>S Present

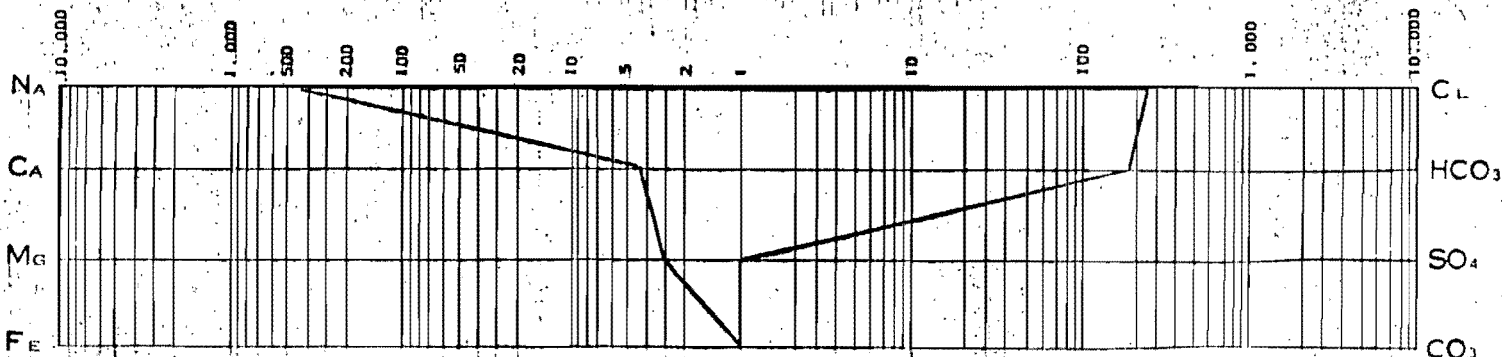
**MILLIGRAMS PER LITER**

NA & K	CA	Mg	FE	BA	CL	HCO <sub>3</sub>	SO <sub>4</sub>	CO <sub>3</sub>	OH
9,918	86	36	Abs.	Abs.	8,771	11,600	46	-	-

**MEQ PER LITER**

431.2	4.3	3.0	Abs.	Abs.	247.3	190.2	1.0	-	-
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**LOGARITHMIC PATTERN MEQ PER LITER**





**CORE LABORATORIES-CANADA LTD.**  
 PETROLEUM RESERVOIR ENGINEERING  
 CALGARY, ALBERTA  
 GAS ANALYSIS



Company Western Minerals Limited Page \_\_\_\_\_  
 Well Canoe River East Chance YTC-18 File CBH-2-2937  
 Field Wildcat, Yukon Territories Analysts J.L.K.  
 Location 66°07'08.935" N.L.; 137°17'57.452" W.L. Date April 23/68

**SAMPLING CONDITIONS**

Formation Chance Sandstone Depths 4910'-4980' Elev: - 1739' Grd.  
 Sampled from DST #3 By \_\_\_\_\_ of \_\_\_\_\_  
 Date Sampled Apr. 6/68 Date Received Apr. 18/68 Date Analyzed Apr. 22/68  
 Pressure \_\_\_\_\_ psig Temperature \_\_\_\_\_ °F. Atmospheric Temp. \_\_\_\_\_ °F.

DST Recovery or Flowrate Gas @ 533 MCF/D. 420' Black Watery Mud  
 Method of Analysis CHROMATOGRAPH

COMPONENT	MOL %	Pressure in Container 20 psig @ 75°F when received in laboratory	
HELIUM	0.07		
NITROGEN	10.92		
CARBON DIOXIDE	18.14		
HYDROGEN SULFIDE		U.S. GPM at 14.696	Imp. GPM at 14.65
METHANE	31.25	and 60°F.	and 60°F.
ETHANE	25.13		
PROPANE	9.46	2.602	2.160
ISOBUTANE	1.18	0.386	0.320
N-BUTANE	2.14	0.674	0.559
ISOPENTANE	0.64	0.234	0.194
N-PENTANE	0.57	0.206	0.171
HEXANES	0.32	0.131	0.109
HEPTANES PLUS	0.18	0.083	0.069
<b>TOTAL</b>	<b>100.00</b>	<b>4.316</b>	<b>3.582</b>
	Actual Pentanes +	0.654	0.543

Vapor pressure (Calculated) of actual Pentanes + 13.9 Psia @ 100°F

Hydrogen Sulphide—Grains per 100 cu. ft. \_\_\_\_\_  
 Gross Heating Value B.T.U. per SCF 1192.8 at 14.696 1189.1 at 14.65  
 psia & 60°F psia & 60°F  
 Specific Gravity—Measured \_\_\_\_\_ Calculated 1.072

REMARKS: