


**Well History Report**

**Chevron SOBC WM Whitefish YT J-70**

**April 30, 1973**

  
**R. C. Richardson P. Eng.**  
**Project Manager**

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One BHC Acoustilog/GR/Caliper	
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SECTION I

Summary of Well Data

(a) Well Name and Number

Chevron SOBC WM Whitefish YT J-70

(b) Permittee, Licensee or Lessee

Western Minerals Ltd.

(c) Name of Operator

Chevron Standard Limited  
400 Fifth Avenue S.W.  
Calgary, Alberta  
T2P 0L7

(d) Location

Unit J, Section 70, Grid 67° 10' N, 137° 15' W.

(e) Coordinates

Latitude 67° 09' 32" N, Longitude 137° 26' 44" W.

(f) Permit or Lease Number

Permit No. 2727

(g) Drilling Contractor

G. P. Drilling Ltd., Rotary Rig #15 (National 55)

(h) Drilling Authority

Drilling authority 646 issued January 11, 1973

(i) Classification

Wildcat

(j) Elevations

Ground elevation 1070' KB GRD. 15.50' KB Elev. 1085'

(k) Spudded

Spudded in 1330 hours January 17, 1973.

(l) Completed Drilling

Completed drilling at 1115 hours April 4, 1973

(m) T.D. and P.B.T.D.

T.D. 6980' P.B.T.D. Surface

(n) Well Status

Dry and permanently abandoned.

(o) Rig Release Date

Rig released at 1800 hours April 10, 1973

(p) Hole Sizes to Total Depth

30" conductor hole from G.L. to 35' G.L.  
24" conductor hole from 35' G.L. to 60' G.L.  
17½" surface hole from 75' KB to 914' KB  
8-3/4" main hole from 914' KB to 6980' KB

(q) Casing

19" O.D. conductor pipe set at 75' KB  
13-3/8" K-55, 54.5# casing set at 908 KB

(r) Engineers

G. G. Moench, A. A. Anderson, H. Herring, L. F. Grumbly

Geologist

O. Gietz

SECTION II

Geological Summary

(a) Formation Tops

<u>Formation</u>	<u>Depth</u>	<u>Elevation</u>
	<u>Logs</u>	K. B. 1087'
Spuds in Eagle Plain Formation	-	
Blackie Sandstone	2866'	-1779'
Upper Albian Shale	3380'	-2293'
Middle Albian Unconformity	4720'	-3633'
Basal Cretaceous (+Barremian)		
Siltstone Unit	5142'	-4055'
Hauterivian Siltstone/Sandstone Unit	6472'	-5385'

Total Depth 6980'

(b) Cored Intervals

<u>Core No.</u>	<u>Interval</u>	<u>Formation</u>	<u>Recovery</u>
1	6714'-6721'	Hauterivian Siltstone/ Sandstone Unit	6.5'

(c) Core Description

Core #1 6714'-6720.5' Cut 7' Rec. 6.5'

Coring Times

6714' - 8 6 6 7 11 10 16

6714'-6720.5' (Description Core #1)

Core #1

Sandstone - light brown-grey, very fine to fine-grained. Subangular, well sorted quartz grains, traces of glauconite, in slightly argillaceous, slightly calcareous matrix.

Few black shale partings and thin beds. Slight cross-bedding, swash and rill marks. Sand appears tight, with dead intergranular oil staining, slow cut and fluorescence in chloroethene, odor of hydrocarbons on fresh fracture surface. Spotty dark brown oil bleeding in lower two feet of core. Trace of oil bleeding from 45° fracture.

6720.5'-6721 Core not recovered.

(d) Sample Descriptions

Surface casing set at 914 KB. Samples start at 1170 to 1180 interval. Lithology from 914 to 1170 appears to be a type of clay - when washed, little or no residue remained.

- 1170-1180 Shale, grey, micromicaceous, soft, noncalcareous. Much light grey, soft clay shale. Traces of silty laminae and streaks.
- 1180-1190 Shale, grey, micromicaceous, noncalcareous, soft. Minor silty shale, silty streaks.
- 1190-1200 Shale, light brown, red and brown, blocky, noncalcareous, soft, micromicaceous in part. Much grey shale, as above.
- 1200-1260 Shale, grey, soft, silty in part, micromicaceous, sub-fissile, noncalcareous.
- 1260-1300 Shale, as above. Minor grey, micaceous siltstone. Trace of pyrite. Trace of chert pebbles.
- 1300-1330 Shale, as above; minor grey, micaceous siltstone. Trace of grey calcite limestone, trace of chert.
- 1330-1370 Shale, grey, soft, noncalcareous, micromicaceous. Minor grey, micaceous siltstone streaks. Trace of plant remains in grey, soft shale. Trace of grey limestone, silty, grading to calcareous, micaceous siltstone.
- 1370-1380 Shale, grey, soft, noncalcareous. Siltstone, as beds and laminae, grey, micromicaceous, argillaceous. Traces of grey, calcite limestone.
- 1380-1430 Shale, grey, soft, noncalcareous. Trace of silty streaks. Trace of grey limestone.
- 1430-1550 Siltstone, grey, S & P, argillaceous, slightly calcareous, soft, blocky. Much grey shale, as above, trace of light grey waxy shale. Trace of chert pebbles.
- 1550-1580 Siltstone, grey, S & P, argillaceous, slightly calcareous. Trace of carbonized plant remains. Minor dark grey and grey shale. Trace of pale grey medium grained quartz sandstone - intergranular porosity, no cut or fluorescence. Trace of chert pebbles, limestone, trace of light grey waxy shale.
- 1580-1600 Siltstone, as above. Minor interbedded grey micromicaceous shale, blocky to sub-fissile, noncalcareous. Trace of dark brown shale, grey waxy shale. Trace of grey limestone, chert pebbles.

- 1600-1680 Siltstone, grey, S & P, argillaceous, grading to very silty shale, faintly calcareous. Minor grey and brown-grey shale. Trace of limestone and chert, as above. Traces of pale grey waxy and bentonitic shale. Trace of bitumen?
- 1680-1700 Siltstone, as above. Interbedded grey, blocky to sub-fissile, noncalcareous shale, as above. Trace of chert pebbles, grey calcitic limestone, light grey bentonitic shale.
- 1700-1730 Siltstone, grey, S & P, slightly calcareous, argillaceous. Minor grey shale, as above. Trace of chert pebbles, trace of limestone, traces of light grey and greenish-grey waxy shale.
- 1730-1760 Siltstone, as above. Shale, grey, sub-fissile to blocky, non-calcareous. Trace of Inoceramus sp? Trace of chert pebbles, limestone. Trace of pale grey bentonitic shale. Trace of grey, S & P, medium grained sandstone.
- 1760-1850 Siltstone, grey, S & P, argillaceous, slightly calcareous. Minor interbedded shale, as above. Trace of limestone and chert, as above. Trace of bitumen.
- 1850-1900 Siltstone, grey, S & P, lightly calcareous, argillaceous. Minor grey and dark grey sub-fissile shale. Trace of pyrite, chert pebbles, increase in pale grey, green-grey bentonitic shale. Trace calcitic limestone. Trace Inoceramus fragments.
- 1900-1940 Siltstone, as above, grading in part to fine-grained S & P sandstone. Trace of shale, chert, pyrite, limestone fragments. Inoceramus fragments.
- 1940-1950 Sandstone, grey, S & P, slightly calcareous, grading to siltstone, as above. Trace of pyrite, trace of bitumen, chert fragments, grey and pale grey limestone.
- 1950-1980 Siltstone, grey, S & P, argillaceous, slightly calcareous, grading in part to fine-grained sandstone. Minor interbedded grey, sub-fissile shale. Trace of pale grey and green-grey bentonitic shale. Trace of chert, limestone fragments, pyrite.
- 1980-1990 Siltstone and shale, as above. Minor light brown, brown and grey-brown shale.
- 1990-2000 Sandstone, grey, S & P, slightly calcareous, fine-grained, argillaceous. Much interbedded siltstone and grey, sub-fissile shale. Trace of chert, limestone fragments. Trace of bitumen. Trace of pale grey and pale green bentonitic shale.

- 2000-2030 Siltstone, grey, S & P, faintly calcareous, argillaceous. Much interbedded grey shale and silty shale, noncalcareous, blocky to sub-fissile. Trace of Inoceramus? Plant remains. Trace of chert pebbles, pyrite, limestone.
- 2030-2040 Sandstone, grey, S & P, calcareous, fine-grained, trace of rare glauconite. Much siltstone and shale, as above. Traces of chert pebbles, pyrite, trace of limestone.
- 2040-2060 Siltstone, grey, S & P, argillaceous, slightly calcareous. Much shale, grey, sub-fissile, noncalcareous, silty in part. Trace of brown and grey chert pebbles, trace of pyrite. Trace of calcitic limestone.
- 2060-2070 Shale, grey, sub-fissile to blocky, noncalcareous. Much grey, S & P, siltstone, slightly calcareous, as above. Trace of grey and brown chert. Trace of pyritized worm borings. Trace of Inoceramus fragments.
- 2070-2090 Shale, as above. Siltstone, as above, grading to fine-grained grey, S & P, calcareous sandstone. Traces of chert, as above. Trace of pyrite, trace of calcitic limestone.
- 2090-2130 Interbedded shale, siltstone, as above. Traces of light grey, S & P, medium to coarse grained quartz - chert sandstone, slightly calcareous. Trace of pyrite, chert. Trace of Inoceramus. Trace of calcitic limestone fragments.
- 2130-2170 Siltstone, grey, S & P, grading to fine sandstone, faintly to noncalcareous. Interbedded grey, sub-fissile to fissile shale and silty shale. Much ironstone. Trace of pyrite, chert.
- 2170-2220 Sandstone, grey, S & P, slightly calcareous, argillaceous, grading in part to grey, S & P argillaceous siltstone. Much interbedded grey silty shale and dark grey shale. Traces of ironstone. Trace of chert pebbles, pyrite. Trace of carbonized plant remains.
- 2220-2260 Siltstone, grey, S & P, faintly calcareous, grading to very fine-grained sandstone; argillaceous. Minor interbedded grey, sub-fissile, noncalcareous shale. Trace of light grey, brown and grey chert, trace of ironstone. Trace of pyrite, calcite. Trace of Inoceramus.
- 2260-2270 Sandstone, grey, S & P, slightly to noncalcareous, grading to grey, S & P siltstone. Interbedded grey silty shale and dark grey shale. Trace of pyrite, trace of chert.

- 2270-2310 Shale, grey, sub-fissile, noncalcareous. Minor siltstone, as above. Trace of pyrite, trace of chert. Trace of calcitic limestone.
- 2310-2320 Siltstone, grey, S & P, argillaceous, noncalcareous to very faintly calcareous. Much grey, sub-fissile, noncalcareous shale. Trace Inoceramus fragments.
- 2320-2330 Shale, grey, sub-fissile to blocky, noncalcareous, silty in part. Minor siltstone, as above.
- 2330-2360 Siltstone, grey, S & P, grading in part to fine-grained sandstone, noncalcareous to faintly calcareous. Much shale, as above. Trace of chert.
- 2360-2380 Sandstone, grey, S & P, grading in part to siltstone; fine-grained, noncalcareous, argillaceous. Much interbedded grey and dark grey, sub-fissile, micaceous, noncalcareous shale. Trace of pyrite. Trace of chert grains.
- 2380-2410 Sandstone, fine-grained, grey, S & P, calcareous, argillaceous. Trace of coarser chert grains. Minor grey, sub-fissile, noncalcareous shale. Traces of chert grains.
- 2410-2440 Sandstone, as above. Minor grey shale, as above. Much chert grains and fragments. Trace of pyrite.
- 2440-2490 Shale, grey, sub-fissile, noncalcareous, much silty shale. Minor interbedded grey sandstone, as above. Trace of chert, pyrite.
- 2490-2520 Sandstone, fine-grained, grey, S & P, calcareous. Subangular quartz, grey and black chert grains, fair f. sorting, argillaceous matrix. Much interbedded grey, sub-fissile, noncalcareous shale. Trace of pyrite, chert. Trace of bentonitic shale.
- 2520-2580 Shale, grey, blocky, noncalcareous, silty in part. Minor interbedded sandstone, as above. Trace of well-rounded grey and green-grey chert pebbles. Trace of pyrite.
- 2580-2610 Shale, blocky to sub-fissile, grey and dark grey, noncalcareous, few silty streaks, micromicaceous.
- 2610-2620 Shale, grey, blocky to sub-fissile, noncalcareous. Minor brown silty shale. Interbedded siltstone and fine sandstone, noncalcareous, micromicaceous. Trace of chert and pyrite.
- 2620-2700 Shale, grey, sub-fissile, noncalcareous, micromicaceous. Minor grey siltstone, argillaceous, S & P, noncalcareous. Trace of grey and amber chert, pyrite.

- 2700-2720 Shale, grey, sub-fissile, noncalcareous, micromicaceous, silty streaks. Minor sandstone, grey, S & P, micaceous, interbedded with shale. Trace of chert and pyrite.
- 2720-2740 Interbedded shale and sandstone, as above. Increase in chert - grey, brown-grey and rusty red. Trace of pyrite.
- 2740-2750 Shale, grey and dark grey, sub-fissile, noncalcareous, micromicaceous. Trace of grey S & P siltstone, fine sandstone. Trace of brown, grey and rusty red chert.
- 2750-2760 Sandstone, light grey, S & P, trace calcareous to non-calcareous, fine-grained quartz - chert sand. Trace micaceous. Trace of plant remains, carbonaceous partings. Much dark grey, micromicaceous shale, noncalcareous.
- 2760-2790 Sandstone, very fine-grained, grading to silt, grey, finely S & P, noncalcareous, argillaceous. Trace of carbon flecks.
- 2790-2820 Sandstone, grey, argillaceous, noncalcareous, fine-grained. Much grey, sub-fissile shale.
- 2820-2840 Sandstone, fine-grained, light grey, S & P, calc. and grey, argillaceous. Much grey sub-fissile, noncalcareous shale.
- 2840-2860 Shale, grey and dark grey, sub-fissile to fissile, non-calcareous. Minor sandstone, as above. Trace of pyrite, bitumen?
- 2860-2880 Sandstone, fine to medium grained, grey, S & P. Much light grey, S & P, medium to coarse quartz - chert sandstone, very calcareous. Much grey shale, as above.
- 2880-2900 Sandstone, medium grained, grey, S & P, slightly to non-calcareous, argillaceous. Subangular quartz and chert grains in an argillaceous matrix. Much grey and dark grey shale, fissile to sub-fissile. Traces coaly fragments.
- 2900-2910 Sandstone, medium grained, grey, S & P, noncalcareous. Subangular quartz, grey and black chert grains in argillaceous matrix. Trace of carbonized plant remains. Trace of pyrite; much ironstone. Much dark grey, fissile, noncalcareous shale.
- 2910-2920 Sandstone and shale, as above. Much coal.
- 2920-2930 Sandstone, light grey, S & P, fine to medium grained, fairly well sorted. Subangular to subrounded quartz and chert grains, noncalcareous kaolinitic matrix, black shale flecks and carbonized plant remains, coal fragments. Trace Inoceramus. Trace of intergranular porosity. No stain, methane gas kick on detector.

- 2930-2940 Sandstone, as above. Inoceramus fragments. Much shale, grey and dark grey, sub-fissile, noncalcareous, silty in part. Carbonaceous partings, coal fragments.
- 2940-2960 Shale, grey, sub-fissile, noncalcareous, silty in part. Traces of pale grey bentonite. Much sandstone, as above.
- 2960-2970 Shale, grey and dark grey, sub-fissile, noncalcareous, traces of plant remains. Coal.
- 2970-2980 N.S.
- 2980-2990 Sandstone, grey, S & P, fine to medium grained, noncalcareous, kaolinitic, argillaceous. Much dark grey, sub-fissile to to fissile shale, as above.
- 2990-3010 Sandstone, grey, fine-grained to medium grained, very argillaceous, noncalcareous, interbedded with, and grading to, argillaceous grey siltstone; much grey sub-fissile to silty shale. Trace of pyrite.
- 3010-3020 Shale, grey, sub-fissile to fissile, noncalcareous. Minor grey, argillaceous, fine-grained sandstone.
- 3020-3030 Sandstone, grey, S & P, fine-grained, noncalcareous, argillaceous. Minor grey, sub-fissile, noncalcareous shale. Traces of coal, trace of chert.
- 3030-3050 Sandstone, fine to medium grained, grey, S & P, noncalcareous, argillaceous, trace of glauconite. Inoceramus inclusions in the sandstone-chert "grit." Trace of porosity - no stain. Moderate gas kick on recorder.
- 3050-3070 Sandstone, as above, subangular, fair sorted chert and quartz grains, siliceous, kaolinitic matrix, trace of mica, glauconite, trace of bitumen. Much grey, sub-fissile, noncalcareous shale. Trace of ironstone.
- 3070-3090 Shale, grey and dark grey, sub-fissile, noncalcareous. Much fine-grained grey sandstone, as above.
- 3090-3120 Sandstone, grey, S & P, fine to medium grained, noncalcareous, kaolinitic. Subangular quartz, chert and black chert grains, rare glauconite, fair sorting, in a siliceous kaolinitic matrix. Minor grey, sub-fissile shale, as above.
- 3120-3130 Shale, grey and dark grey, sub-fissile, noncalcareous. Sandstone, grey, S & P, fine-grained, slightly calcareous.

- 3130-3150 Shale, dark grey, sub-fissile, micromicaceous, noncalcareous. Trace of pyrite, ironstone.
- 3150-3160 Shale, as above. Minor grey, S & P, fine-grained sandstone, noncalcareous.
- 3160-3210 Sandstone, grey, S & P, fine to medium grained, argillaceous, noncalcareous. Much shale, as above. Trace of Inoceramus.
- 3210-3220 Shale, grey and dark grey, sub-fissile, noncalcareous. Minor sandstone, as above.
- 3220-3240 Sandstone, medium grained, grey, S & P, noncalcareous. Sub-angular to subround quartz and chert grains in kaolinitic, siliceous matrix. Rare glauconite.
- 3240-3250 Shale, grey and dark grey, blocky to sub-fissile, micromicaceous, noncalcareous. Minor grey, S & P, fine to medium grained sandstone.
- 3250-3260 Sandstone, fine-grained, grey, S & P, noncalcareous, trace glauconite. Fair sorting of quartz and chert grains, sub-angular, kaolinitic, siliceous matrix.
- 3260-3270 Sandstone, as above. Trace of coarse streaks. Shale, grey and dark grey, micaceous, fissile, noncalcareous.
- 3270-3290 Sandstone, fine-grained, grey, S & P, noncalcareous, trace of glauconite. Well sorted, subangular quartz and chert grains, siliceous, kaolinitic matrix.
- 3290-3320 Shale, grey, fissile, micaceous, noncalcareous, few silty streaks. Interbedded grey, S & P, noncalcareous sandstone.
- 3320-3350 Shale, grey, fissile, noncalcareous, and grey, silty, blocky. Minor interbedded grey, S & P, fine-grained argillaceous, noncalcareous sandstone.
- 3350-3360 Shale, as above. Much fine-grained, grey, S & P sandstone, calcareous in part, trace glauconitic.
- 3360-3380 Sandstone, fine-grained, grey, S & P, noncalcareous. Fair sorting, subangular quartz and chert grains, siliceous, kaolinitic matrix, trace of glauconite. Minor shale, as above.
- 3380-3400 Shale, grey, noncalcareous, sub-fissile to blocky. Trace of plant remains. Much sandstone, as above.
- 3400-3410 Shale, grey, noncalcareous, sub-fissile to blocky, micromicaceous. Few silty streaks.

- 3410-3460 Shale, grey and dark grey, blocky to sub-fissile, micromicaceous, noncalcareous. Minor interbedded grey, S & P, fine-grained kaolinitic sandstone, calcareous in part.
- 3460-3560 Shale, grey and dark grey, sub-fissile to blocky, noncalcareous, micromicaceous.
- 3560-3580 Shale, as above. Much grey, finely S & P, argillaceous siltstone, noncalcareous, grading to very fine-grained sandstone.
- 3580-3620 Sandstone, fine-grained, grey, S & P, noncalcareous. Fair to well sorted, subangular quartz, chert grains, trace glauconite, in a siliceous, kaolinitic matrix. Much shale, as above. Trace of ironstone.
- 3620-3650 Shale, grey and dark grey, micromicaceous, noncalcareous, fissile. Minor sandstone, as above.
- 3650-3820 Shale, dark grey, fissile, micromicaceous, noncalcareous. Trace of sandy and silty streaks. Trace of fracture veining.
- 3820-3840 Shale, dark grey, sub-fissile to fissile, noncalcareous, micromicaceous. Scattered silty laminae. Interbedded grey, fine-grained S & P sandstone, argillaceous, noncalcareous. Trace of carbonized plant remains.
- 3840-3930 Shale, grey and dark grey, fissile to sub-fissile, noncalcareous, micromicaceous. Traces of brown-grey, blocky, silty streaks. Trace of pyrite. Trace of lamination. Trace of carbonized plant remains.
- 3930-3940 N.S.
- 3940-3980 Shale, dark grey, fissile to sub-fissile, micromicaceous in part, noncalcareous. Trace of grey silt streaks, traces of brown-grey silty shale. Trace of chert fragments. Trace of pyrite, trace of pale grey bentonite.
- 3980-4020 Shale, dark grey, sub-fissile to blocky, silty, noncalcareous. Traces of grey, very fine sandy streaks. Trace of pyrite, minor grey, argillaceous siltstone. Trace of coaly laminae, trace of chert.
- 4020-4030 Shale, grey, silty, and dark grey, smooth, splintery, micromicaceous in part, noncalcareous.
- 4030-4090 Shale, as above, 70%. Sandstone, grey, fine-grained, argillaceous, noncalcareous to trace calcareous. Trace of pyrite, plant remains.

- 4090-4110 Shale, dark grey, fissile, noncalcareous, micromicaceous. Trace of sandstone, as above. Traces of chert pebbles and fragments, pyrite.
- 4110-4140 Shale, dark grey, fissile, micromicaceous, noncalcareous. Much grey-brown, blocky, silty shale. Minor sandstone, fine-grained, grey, S & P, noncalcareous, argillaceous.
- 4140-4260 Shale, dark grey, micromicaceous, noncalcareous, fissile. Trace of pyrite, plant remains.
- 4260-4570 Shale, dark grey, blocky, noncalcareous, trace micromicaceous. Much dark grey fissile shale.
- 4570-4580 Shale, as above. Trace of grey, fine-grained sandstone, noncalcareous.
- 4580-4590 Shale, dark grey and black, fissile, smooth, noncalcareous. Dark grey shale is micromicaceous. Trace of ironstone.
- 4590-4920 Shale, grey finely micromicaceous, and dark grey, smooth; fissile to sub-fissile. Trace of silty streaks.
- 4920-4950 Shale, dark grey, sub-fissile to fissile, noncalcareous. Much dark medium grey silty textured, blocky shale. Trace of pyrite and ironstone.
- 4950-4990 Shale, dark grey and black, noncalcareous, dark grey, micromicaceous shale. Trace of grey sandstone stringers, trace of silty shale. Trace of ironstone, pyrite. Grey, very fine sandstone streaks are argillaceous, slightly calcareous, finely laminated in part, grading to argillaceous grey siltstone.
- 4990-5150 Shale, dark grey and black, fissile to sub-fissile, noncalcareous, micromicaceous in part. Trace of ironstone, pyrite. Slickensided in part.
- 5150-5160 Shale, dark grey, fissile to sub-fissile, noncalcareous. Traces of grey and dark grey calcareous shale and argillaceous limestone.
- 5160-5170 Shale, grey and dark grey, sub-fissile and fissile, noncalcareous. Trace of silty streaks. Trace of ironstone, pyrite, chert fragments.
- 5170-5180 Shale, grey and dark grey, sub-fissile to fissile, noncalcareous. Traces of silty shale and silty streaks. Trace of glauconite. Minor grey, glauconitic, argillaceous siltstone, faintly calcareous.

- 5180-5270 Shale, grey, silty, noncalcareous, blocky, grading in part to very argillaceous lighter grey siltstone, faintly calcareous to noncalcareous, trace of glauconite. Much dark grey fissile, noncalcareous shale. Trace of brown and grey argillaceous limestone.
- 5270-5290 Siltstone, light grey, argillaceous, glauconitic, faintly calcareous. Few shale partings. Minor shale, as above, silty shale.
- 5290-5360 Siltstone, grey, argillaceous, noncalcareous, grading to dark grey shale and silty shale.
- 5360-5400 Shale, dark grey, fissile, noncalcareous. Trace of silty streaks.
- 5400-5430 Siltstone, pale grey, glauconitic, calcareous, argillaceous. Interbedded dark grey, micromicaceous, fissile, noncalcareous shale.
- 5430-5470 Siltstone, pale grey, glauconitic, calcareous, as above, grading to very fine-grained quartz sandstone. Interbedded grey, argillaceous siltstone, silty shale, and dark grey shale.
- 5490-5510 Siltstone, grey glauconitic, calcareous, quartzose. Traces of dark grey silty shale, minor interbedded dark grey shale. Trace of grey and brown limestone.
- 5510-5540 Interbedded pale grey siltstone, minor dark grey shale, as above. Traces of sandy streaks, very fine-grained, grading into pale grey siltstone.
- 5540-5560 Siltstone, pale grey, quartzose, vitreous, slightly glauconitic, slightly calcareous, micromicaceous in part. Minor dark grey and dark brown shale, micromicaceous. Trace of brown, calcareous, argillaceous silt.
- 5560-5570 Siltstone, pale grey, glauconitic, as above, grading to minor pale grey, glauconitic, slightly calcareous, very fine-grained sandstone. Minor dark grey shale and silty shale.
- 5570-5590 Siltstone, pale grey, vitreous, faintly calcareous, glauconitic. Minor interbedded grey and dark grey shale, traces of brown and dark brown, silty, calcareous shale, micromicaceous.
- 5590-5620 Shale, dark grey, sub-fissile, noncalcareous. 50% siltstone, pale grey, slightly calcareous, grading in part to very fine sandstone, trace glauconitic.

- 5620-5650 Shale, dark grey, micromicaceous in part, much grey, silty shale, noncalcareous. Much grey, argillaceous siltstone, noncalcareous.
- 5650-5720 Siltstone, grey, argillaceous, micromicaceous, noncalcareous. Trace of shale partings and lamination. Minor interbedded dark grey sub-fissile, noncalcareous shale.
- 5720-5780 Siltstone, pale grey, slightly calcareous, vitreous, trace glauconitic, grading to grey, argillaceous siltstone. Interbedded dark grey micaceous, noncalcareous fissile shale.
- 5780-5820 Shale, dark grey, fissile, smooth, noncalcareous, grading to and interbedded with dark brown silty blocky shale. Interbedded pale grey and grey siltstone, trace glauconitic, calcareous in part; argillaceous partings.
- 5820-5900 Shale, dark grey, blocky, silty to sub-fissile smooth, micaceous, noncalcareous. Pale grey silty streaks, argillaceous partings and laminae, calcareous in part.
- 5900-5930 Shale, dark grey and black, fissile, micromicaceous, noncalcareous. Much pale grey and grey siltstone, calcareous in part, laminated.
- 5930-5960 Shale, dark grey, sub-fissile to fissile, micromicaceous, noncalcareous. Few silty streaks. Minor pale grey, slightly calcareous silt, laminated.
- 5960-6070 Shale, black, fissile to sub-fissile, micromicaceous in part, noncalcareous. Trace of pale grey laminated silt, slightly calcareous.
- 6070-6290 Shale, dark grey and black, fissile, noncalcareous, micaceous. Trace of silty streaks, slightly calcareous. Pyrite.
- 6290-6470 Shale, dark grey and black, fissile, noncalcareous, micaceous in part. Traces to minor laminated grey silt, blocky, in black shale. Minor pyrite, ironstone. Trace of dark brown-grey argillaceous limestone.
- 6470-6500 Shale, dark grey and black, micromicaceous in part, noncalcareous, fissile. Much dark brown-grey argillaceous siltstone and silty shale, noncalcareous, trace glauconitic.
- 6500-6530 Shale, dark grey and black, blocky to sub-fissile, noncalcareous. Much dark brown silty, blocky shale, trace of glauconite.
- 6530-6540 Siltstone, dark brown-grey, argillaceous, noncalcareous, much interbedded dark grey and black shale, fissile, noncalcareous. Minor grey, argillaceous, glauconitic silt.

- 6540-6610 Siltstone, grey, argillaceous, noncalcareous, trace glauconitic, grading in part to grey, S & P, fine-grained sandstone. Minor dark grey sub-fissile, micaceous shale. Test of siltstone shows fair fluorescence and cut.
- 6610-6630 Shale, dark grey and black, sub-fissile, noncalcareous. Scattered grey silty laminae.
- 6630-6640 Shale, black, fissile, micromicaceous, noncalcareous. Scattered grey, argillaceous silty streaks.
- 6640-6690 Siltstone, brown, argillaceous, trace glauconitic, faintly calcareous, grading in part to very fine sandstone. Minor shale as above. Trace of ironstone, pyrite, chert grains. Slow cut and fluorescence in chlorothene.
- 6690-6712 Shale, dark grey, sub-fissile, noncalcareous, minor micaceous, fissile shale. Much brown siltstone, as above, trace of very fine-grained sandstone. Trace of ironstone, trace of brown limestone.
- 6712-6714 Sandstone, pale grey and pale brown, fine grained fairly well sorted subangular quartz grains, siliceous matrix. Trace glauconitic. Trace of intergranular porosity, cut and fluorescence.
- Core #1 6714-6721 Rec. 6.5 ft.
- 6721-6730 Sandstone, very fine-grained, brown, dead oil stained, grading to silty sandstone. Few very pale grey streaks. Trace glauconite, slightly calcareous. Much dark grey blocky to sub-fissile shale - cavings in part.
- 6730-6740 Sandstone, very fine-grained, grading to siltstone, brown, slightly calcareous. Few streaks of very pale grey siltstone and very fine-grained sandstone. Trace of glauconite. Much dark grey and black shale, blocky to sub-fissile - cavings? Brown oil stained, faint fluorescence, cut in  $\text{CCl}_4$ .
- 6740-6750 Shale, dark grey, blocky to sub-fissile, noncalcareous, micromicaceous. Few silty laminae. Minor ( 30%) brown, very fine-grained sandstone, as above.
- 6750-6760 Shale, dark grey, sub-fissile, noncalcareous, micromicaceous. Few grey silt laminae.
- 6760-6770 Sandstone, fine to medium grained, light grey, vitreous. Subangular, well sorted quartz grains, traces glauconite, in a slightly calcareous, siliceous matrix. Friable. Fair intergranular porosity, some staining, fair to good cut and fluorescence. Trace of kaolin. Few coarse quartz grains. Much dark grey shale, as above.

- 6770-6810 Sandstone, fine to medium grained, light grey, vitreous, friable. Few coarse grains. Subangular well sorted quartz grains, trace of glauconite and kaolin, in a poorly cemented siliceous, slightly calcareous matrix. Good intergranular porosity, light stain showing fluorescence and cut in  $\text{CCl}_4$ .
- 6810-6820 Sandstone, medium grained, light grey, vitreous, well sorted, subangular quartz grains. Trace of glauconite, kaolin. Much secondary silica as crystal faces on quartz grains. Trace of coarse quartz and chert grains. Friable. Good intergranular porosity, fluorescence and cut.
- 6820-6830 Sandstone, as above - porosity, cut, fluorescence, as above. Much black, micromicaceous, noncalcareous fissile shale. Trace of pyrite, trace of bitumen fragments.
- 6830-6850 Sandstone, medium grained, light grey, vitreous. Well sorted, subangular quartz grains, well developed secondary crystal faces, noncalcareous, trace of glauconite, kaolin. Good intergranular porosity, cut and fluorescence.
- 6850-6880 Shale, dark grey, blocky, noncalcareous, silty in part. Trace of interbedded grey, argillaceous siltstone. Much sandstone, as above. Trace of soft, lignitic shale, plant remains.
- 6880-6920 Sandstone, medium grained, light grey and light brown-grey, slightly argillaceous, quartzose. Well sorted, subangular quartz grains, secondary silica cement, crystal faces. Trace of glauconite. Trace of intergranular argillaceous material and bitumen. Good intergranular porosity, slow cut and fluorescence. Much dark grey shale, as above - cavings.
- 6920-6930 Sandstone, medium grained, brown, vitreous, some intergranular argillaceous material, trace of kaolin, trace of glauconite. Well sorted, subangular quartz grains, siliceous cement, faintly calcareous. Fair intergranular porosity, cut and fluorescence.
- 6930-6950 Sandstone, fine-grained, light brown, vitreous, noncalcareous. Trace of glauconite, kaolin, intergranular argillaceous material, trace of bitumen. Subangular, well sorted quartz grains, siliceous cement. Poor intergranular porosity, cut and fluorescence. Much dark grey, micromicaceous, fissile to blocky, silty shale.
- 6950-6960 Shale, dark grey, noncalcareous. Blocky micromicaceous. Minor silty shale, traces of grey silt laminae. Trace of pyrite. Much cavings. Sample follows reaming to bottom after trip for bit.

6960-6980 Shale, dark grey, noncalcareous, micromicaceous in part.  
Black, silty streaks. Trace of grey siltstone laminae.  
Trace of brown sandy shale.

T.D. 6980

(e) Paleontological Determinations

0-6715 No determinations

6715-6721 In Hauterivian

6740-6925 ?Valanginian to Hauterivian

### SECTION III

#### Engineering Summary

(a) Report of Drillstem Tests

DST #1      6738'-6812' Dual Bottom Hole

Zone:          Johnson Creek

Times:        Pre-Flow 5 mins., initial shut-in 60 mins. Valve open  
60 mins., final shut-in 120 mins.

Recovery:    Good air blow on V.O. remaining steady throughout. Recovered  
250 feet drilling mud and 493 feet mud cut water.

Pressures: IHP - 3588                      FSIP - 3248  
              ISIP - 3248                      FHP - 3569  
              IFP - 201                        BHT - 132<sup>o</sup>F.  
              FFP - 380

Remarks:    Test satisfactory

DST #2      6885'-6980' Dual Bottom Hole

Zone:          Johnson Creek

Remarks:    Misrun. Could not get to bottom.

DST #3      6885'-6980' Dual Bottom Hole

Zone:          Johnson Creek

Times:        Pre-Flow 8 mins., initial shut-in 45 mins., valve open 120  
mins., final shut-in 90 mins.

Recovery:    Fair air blow on V.O. Gas to surface after 90 mins. T.S.T.M.  
recovered 450' of drilling mud, 5790' of brackish water  
slightly gas cut.

Pressures: IHP - 3655                      FSIP - 3170  
              ISIP - 3150                      FHP - 3588  
              IFP - 1347                        BHT - 136<sup>o</sup>F.  
              FFP - 2762

Remarks:    Test satisfactory.

(b) Casing Record

Conductor Pipe

25' of 23" O.D., 18½" I.D. ¼" wall, insulated concentric conductor pipe with 3/4" O.D. cooling coils. 35' of 19" O.D. ¼" wall conductor pipe set at 75' K.B.

Cemented conductor pipe with 200 sax of BJ Coldset cement.

Surface Casing

Ran 28 joints (891.41') of 13-3/8", 54.5#, K-55, 8 Rd., new seamless ST & C casing landed at 907.91' K.B.

Cemented casing with 875 sax type I construction cement plus 3% CaCl<sub>2</sub>. Cement in place at 2035 hours, January 28, 1973. Circulated an estimated 60 sax of cement.

No intermediate or production casing strings were run.

(c) Bit Record

See attached bit record.

(d) Mud Report

The 17½" surface hole was drilled to 216 feet using stable foam. A water flow was hit at this depth and a gel-water was then used to T.D. at 914' K.B. The following materials were used on surface:

Sulfotex Sal	2 Bbls.
Gel	257 Sax
Caustic	6 Sax

The 8-3/4" main hole was drilled to 6980' using a Gel-water-Rapidril system. The following materials were used on the main hole.

Gel	1038 Sax
Wt. Material	370 Sax
Caustic	34 Sax
Rapidril	418 lbs.
CMC	14 Sax
Sawdust	255 Bags.

(e) Deviation Record

70 - 1	2070 - 3/4	3789 - 3	5455 - 3-1/4
100 - 3/4	2173 - 1	3851 - 4	5525 - 2-3/4
140 - 1/2	2236 - 1	3882 - 4	5580 - 3
175 - 1/8	2385 - 1/8	3914 - 3	5645 - 2-1/2
205 - 1	2300 - 1/2	3949 - 3	5763 - 2-1/2
232 - 1/4	2490 - 1-1/2	3977 - 3-1/2	5841 - 2-3/4
293 - 0	2550 - 1-1/2	4009 - 2-3/4	5900 - 2-3/4
353 - 1/4	2610 - 1	4040 - 1-1/2	5960 - 2-3/4
415 - 1/2	2670 - 1	4095 - 2-1/4	6084 - 2-3/4
446 - 1/4	2770 - 1-3/4	4160 - 2	6021 - 2-3/4
507 - 1/4	2800 - 1-1/4	4198 - 2	6163 - 3
567 - 1/4	2860 - 1-1/4	4261 - 2	6215 - 3-1/2
629 - 3/8	2932 - 1-1/4	4315 - 2	6256 - 3
692 - 1/4	2983 - 1-1/2	4380 - 2-1/4	6319 - 3
755 - 1/8	3059 - 7/8	4450 - 2-1/4	6382 - 3
818 - 1/2	3121 - 1-1/4	4514 - 2-3/4	6477 - 3
882 - 1/4	3143 - 1-1/2	4570 - 2-1/2	6541 - 2-3/4
914 - 1/4	3216 - 1-1/2	4630 - 2-3/4	6604 - 3
950 - 3/4	3282 - 1-3/4	4734 - 2-7/8	6667 - 3
1027 - 3/4	3345 - 2	4790 - 3	6714 - 3
1100 - 1/2	3366 - 1-3/4	4863 - 2-3/4	6745 - 2-3/4
1630 - 1/4	3440 - 1-1/2	4950 - 2-3/4	6770 - 2-3/4
1725 - 1	3503 - 2	5015 - 1-7/8	6812 - 2-1/4
1783 - 3/4	3565 - 2-1/8	5052 - 1-7/9	6873 - 3
1857 - 1	3693 - 3	5110 - 1-1/2	6900 - 3
1920 - 7/8	3726 - 3	5164 - 1-7/8	6970 - 3
1983 - 1-1/2	3757 - 2-3/4	5243 - 1	6980 - 3 T.D.
2000 - 1-1/4			

(f) Abandonment Plugs

Plug #1 (6980'-6700') 165 Sax Type I cement  
Plug #2 (5900'-5700') 120 Sax Type I cement  
Plug #3 (3000'-2800') 144 Sax Type I cement + 3% CaCl<sub>2</sub>  
Plug #4 ( 950'-850') 100 Sax Type I cement + 3% CaCl<sub>2</sub>  
Surface Plug 5 Sax Type I cement.

(g) Lost Circulation Zones

Lost circulation at 6721' while coring in 6-3/16" rat hole. Lost approximately 150 Bbls. mud. Mud started to flow back after pulling out of the rat hole. Mixed a total of 35 sax of sawdust and 320 sax of Wt. Material to stabilize the hole.

(h) Report of Blowouts

No blowouts on this well.

SECTION IV

Logs

The following Dresser Atlas logs were run on April 5 - 6, 1973:

BHC Acoustilog/GR/Caliper (6974' - 10')

Dual Induction Focused Log (6975' - 908')

Minilog Caliper (6977' - 908') (6979' - 908')

25 Sidewall Cores were shot and 20 were recovered as follows:

6925	6885	6850
6920	6880	6755
6915	6875	6745
6905	6870	6740
6900	6865	6735
6895	6860	6730
6890	6855	

SECTION V

Analysis

(a) Core Analysis

Core analysis enclosed in back folder.

(b) Water Analysis

Water analysis enclosed in back folder.

(c) Gas Analysis

Gas analysis enclosed in back folder.

(d) Oil Analysis

No oil analysis.

SECTION VI

Completion Summary

(a) Tubing Record

No tubing run.

(b) Perforation Record

No perforations.

(c) Cementation Record

Abandonment Plug #1 (6980'-6700')

Cemented with 165 sax construction cement. Cement in place at 0615 hours April 9, 1973. No feel on plug #1.

Abandonment Plug #2 (5900'-5700')

Cemented with 120 sax construction cement. Cement in place at 0730 hours April 9, 1973. Felt plug #2 at 5660' at 1545 hours, April 9, 1973.

Abandonment Plug #3 (3000'-2800')

Cemented with 144 sax construction cement plus 3% CaCl<sub>2</sub>. Cement in place at 1730 hours April 9, 1973. Felt Plug #3 at 2750' at 0115 hours April 10, 1973.

Abandonment Plug #4 (950' - 850')

Cemented with 100 sax construction cement plus 3% CaCl<sub>2</sub>. Cement in place at 0220 hours April 10, 1973. Felt plug #4 at 820' at 1030 hours April 10, 1973.

(d) Acidization and Fracturing Records

No acidizing or fracturing operations.

(e) Back Pressure and Production Tests

No back pressure or production tests.

**CHEVRON STANDARD LIMITED  
BIT RECORD**

WELL NAME WHITEFISH YT J-70 CONTRACTOR GP DRILLING RIG No. 15 PUMP No 1 G-700  
 SPUD DATE \_\_\_\_\_ RIG RELEASED \_\_\_\_\_ DRILLING DAYS \_\_\_\_\_ PUMP No 2 G-700

BIT No.	MAKE	SIZE	TYPE	DEPTH		FOOTAGE	TIME	DRLG. RATE	NOZZLE SIZES	JET VEL	WEIGHT M#	RPM	No. 1 PUMP		No. 2 PUMP		PUMP PSI	HHP AT BIT	DP ANN.	DC ANN.	MUD		DULL COND.			DEV.				
				FROM	TO								LINER	SPM	LINER	SPM					WT.	VIS	T	B	G					
1	HW	17 1/2	OSC-1	60	216	156	13 3/4		OPEN	-	5	100		FOAM								-	-							
2	HW	"	OSC-3	216	446	230	22 1/2		2 1/5 1/16	-	10	160	5 1/2	64			725					-	130							
3	"	"	OSC-3	446	758	312	24		2 1/5	-	10	160	"	"			425					-	61							
4	"	"	"	758	914	156	20 3/4		"	-	10	160	"	"			450					.	58							
5	SEC	8 3/4	S-44	914	2000	1086	30		3/10		10 1/5	120	"	54			1700					9.3	35							
6	HW	"	X16	2000	2726	726	40 1/4		"		15	115	"	52			1700					9.3	39	4	7	1				
7	HW	"	X16	2726	2983	257	18 1/4		1 1/2 2/11		15	120	"	64			1350					9.6	41	4	6	1				
8	SEC	"	S-88	2983	3233	250	30		"		25	56	"	"			1450					9.5	39	1	4	1				
9	SEC	"	S-88	3233	3700	467	60 1/2		"		25	56	"	66			1550					9.3	46	1	3	1				
10	SEC	"	S-88	3700	3945	245	37		3/11		12	56	"	"			1400					9.2	49	1	2	1				
11	R	"	SS16	3945	4123	178	21		"		15	120	"	69			1100					9.3	45	4	3	1				
12	SEC	"	S-88	4123	4797	674	58 1/4		"		20	56	"	68			1425					9.2	55	1	2	1				
13	SEC	"	DSS	4797	5052	255	22		"		20	100	"	"			1450					9.4	62	3	1	1				
14	SEC	"	S-86	5052	5371	319	40 1/2		"		25	62	"	63			1400					9.5	65	1	2	1				
15	R	"	STIAG	5371	5594	223	24		"		15	120	"	58			1300					9.5	68	6	6	1				
16	R	"	"	5594	5763	169	21 3/4		"		15	120	"	59			1400					9.4	93	5	2	1				
17	SEC	"	S-88	5763	5915	152	27 1/4		"		18	58	"	58			1300					9.5	73	1	2	1				
18	HW	"	XDV	5915	6084	169	25		"		22	80/130	"	58			1300					9.4	76	5	2	1				
19	SM	"	4JS	6084	6413	329	54 1/2		"		18	60	"	"			1300					9.2	56	1	3	1				
20	SM	"	4JS	6413	6620	207	42		"		"	56	"	"			1300					9.4	68	1	6	1				
21	HW	"	XDV	6620	6714	94	17 3/4		"		22	60	"	60			1350					9.5	85	6	3	0 1/8				
22	WEST	6 3/16	◇	6714	6721	7	1		-		7	60	"	50			1100					9.5	60	GOOD						
23	HW	8 3/4	WDR	6721	CIRC HOLE			AND BUILD MUD WT																						

**CHEVRON STANDARD LIMITED  
BIT RECORD**

PAGE # 2

WELL NAME WHITEFISH YT J-70

CONTRACTOR \_\_\_\_\_

RIG No. \_\_\_\_\_

PUMP No. 1 \_\_\_\_\_

SPUD DATE \_\_\_\_\_

RIG RELEASED \_\_\_\_\_

DRILLING DAYS \_\_\_\_\_

PUMP No. 2 \_\_\_\_\_

BIT No.	MAKE	SIZE	TYPE	DEPTH		FOOTAGE	TIME	DRLG. RATE	NOZZLE SIZES	JET VEL	WEIGHT M #	RPM	No. 1 PUMP		No. 2 PUMP		PUMP PSI	HHP AT BIT	DP ANN.	DC ANN.	MUD		DULL COND.			DEV.
				FROM	TO								LINER	SPM	LINER	SPM					WT.	VIS.	T	B	G	
24	R	8 3/4	SBVG	6721	6749	28	9 3/4		2 1/5 1/4		22	57	5 1/2	57			750				10	105	4	2	1	
25	SEC	"	H-88	6749	6812	63	16 1/2		"		30	48	"	63			850				10.1	120	2	2	1	
26	R	"	FCM	6812	6926	114	27 1/4		3/14		40	55	"	58			900				10.0	103	8	1	0 1/4	
27	R	"	SBVG	6926	6960	34	8 1/2		"		40	57	"	60			950				10.0	155	7	2	1	
28	HW	"	R67X	6960	6960	CLEANED HOLE FOR					6 1/2	HRS.	TRIPPED OUT FOR TOOTH BIT					10.0	155	1	5	1				
29	R	"	SBVG	6960	6980	20	5 1/4		3/14		40	73	5 1/2	56			1000				10.0	185	3	1	1	