

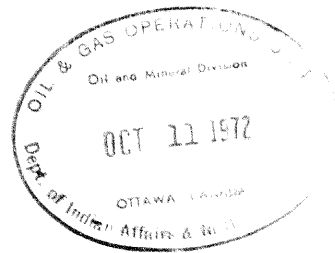
WELL HISTORY REPORT

CHEVRON IMP S CHANCE YT D-63

WELL HISTORY REPORT

CHEVRON SOBC I/P S CHANCE YT D-63

MAY 26, 1972





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

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SECTION I - SUMMARY OF WELL DATA

a) Well Name and Number

Chevron SOBC IIP S Chance YF D-63

b) Permittee, Licensee or Lessee

Imperial Oil Enterprises

c) Name of Operator

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

d) Location

Unit D, Section 63, Grid 66⁰ 00; 137⁰ 30

e) Coordinates

Latitude: 65⁰ 52' 09" N; Longitude: 137⁰ 42' 51" W

f) Permit or Lease Number

Permit No. 6221

g) Drilling Contractor

G. P. Drilling Ltd., Rotary Rig #14

h) Drilling Authority

No. 571, issued January 17, 1972; amended February 10, 1972.

i) Classification

Wildcat

j) Elevations

Ground elevation - 2,300'; K.B. elevation - 2,321'

k) Spudded

20:30 hours, February 21, 1972

l) Completed Drilling

10:00 hours, April 20, 1972

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

T.D. - 6,630'; P.B.T.D. - Surface

n) Well Status

Dry and permanently abandoned

o) Rig Release Date

0400 hours, May 1, 1972

p) Hole Sizes to Total Depth

30" hole from surface to 66' K.B.
12-1/4" hole from 66' to 1,020' K.B.
8-3/4" hole from 1,020' to 6,630' K.B.

q) Casing

19" O.D. conductor pipe set at 66' K.B.
13-3/8" J-55, 54.5" casing set at 1,013.03' K.B.

r) Engineering

L. F. Grumbly
P. Silvers
P. H. Pandachuck
H. J. Bakker
J. Veny

Geologist

Otto Gietz

SECTION II - GEOLOGICAL SUMMARY

a) Formation Tops

<u>Formation</u>	<u>Depth</u> <u>Samples</u>	<u>Logs</u>	<u>Elevation</u> <u>K.B. 2321'</u>
Blackie Sandstone	2000'	2005'	316'
L. Cretaceous Shale	2450'	2274'	74'
M. Albian Unconformity	-	3309'	- 988'
Basal Siltstone	4275'	4334'	-2013'
Permian Shale	4520'	-	-
Permian Sandstone	5400'	5252'	-2931'
Pennsylvanian Siltstone	-	5842'	-3521'
TOTAL DEPTH		6629'	-4308'

b) Cored Interval

<u>Core No.</u>	<u>Interval</u>	<u>Formation</u>	<u>Recovery</u>
1	5436' - 5462'	Permian	22'

c) Core Description

Core #1 5436'-5462' Cut 26' Recovered 22'

Coring Times

5436'	13	32	25	26	15	17	15	16	19	18
	20	16	23	30	23	24	38	37	36	32
	34	37	52	36	31	43	-	5462'		

Core Description

5436 -5447 11.0'	Shale, grey calcareous, silty streaks, trace of pyrite. Argillaceous limestone bands 5440'-5440.5'; 5443'-5443.4' Lower contact is gradational to underlying unit.
5447 -5453.4 6.4'	Sandstone, grey, S&P, fine to medium grained, trace glauconitic, pyritic. Well sorted, sub-round quartz, minor chert grains, very limey matrix. Scattered streaks of chert grit. Fossil fragments, Brachiopods occur. Lower contact gradational to underlying unit.
5453.4-5458 4.6'	Sandstone, grey fine grained, very calcareous, trace of glauconite. Fairly well sorted, sub-rounded quartz, minor chert grains. Interbedded and inter-gradational silty, dark medium grey shale and calcareous, argillaceous siltstone.
5458 -5462 4.0'	Core not recovered.

d) Sample Description

- 50-60 Siltstone, grey, argillaceous, noncalcareous. Trace of light grey fine grained sandstone.
- 60-70 N.S.
- 70-80 Siltstone, grey, argillaceous, noncalcareous, micaceous, grading in part to very fine, argillaceous sandstone.
- 80-90 Siltstone, as above.
- 90-100 As above. Trace of light brown sideritic shale.
- 100-110 As above. Trace of calcareous streaks.
- 110-120 As above. Interbedded grey, blocky shale.
- 120-130 Sandstone and siltstone, grey argillaceous, micaceous, noncalcareous.
Minor dark grey, sub-fissile to blocky shale, interbedded.
Trace of carbonized plant remains.
- 130-140 Shale, dark grey, smooth, noncalcareous, blocky.
Minor sandstone, as above.
- 140-150 Sandstone, grey argillaceous, very fine to fine grained, noncalcareous, micro-micaceous. Sub-angular quartz and chert grains, carbon flecks in argillaceous, silty matrix.
- 150-160 Sandstone, as above.
Much grey and dark grey interbedded shale.
- 160-170 Sandstone, grey, fine to medium grained, much medium to coarse grained sand, argillaceous, noncalcareous. Much interstitial bitumen. Poor to fair porosity in coarser sands, partially to completely infilled with bitumen.
- 170-180 Sandstone, grey, S&P, medium to coarse grained, noncalcareous, friable. Sub-angular, fairly well sorted quartz and chert grains, poorly cemented, few tight argillaceous streaks; trace micaceous. Good inter-granular porosity, no cut. Porosity partly infilled with bitumen.
- 180-190 As above. Calcareous cement.
- 190-200 As above.
- 200-210 Shale, dark grey, blocky noncalcareous, silty streaks.

- 210-220 Siltstone, dark grey, argillaceous, micaceous, noncalcareous.
- 220-230 Sandstone, very fine to fine grained, argillaceous, micaceous, noncalcareous. Quartz, chert grains, carbon flecks.
- 230-240 Shale, dark grey, blocky, non-calcareous, silty streaks.
- 240-250 As above.
- 250-260 As above.
- 260-270 Sandstone, pale grey, medium grained, slightly argillaceous, noncalcareous, gradational from shale and silty shale as above. Sub-angular quartz and chert grains, carbon flecks, in silty, argillaceous matrix, siliceous cement. Streaks of fair porosity, no cut or fluorescence.
- 270-280 Sandstone, as above. Poorly cemented, friable, loose. Much bitumen infilling porosity.
- 280-290 As above.
- 290-300 As above.
- 300-310 As above. Trace of pyrite.
- 310-320 Shale, grey and dark grey, blocky, noncalcareous. Trace of grey-green nodular sideritic shale.
- 320-330 Shale, dark grey, micro-micaceous, noncalcareous, silty streaks.
- 330-340 As above.
- 340-350 As above. Sandy, argillaceous streaks.
- 350-360 As above. Streaks of light grey, S&P, fine grained sandstone.
- 360-370 As above.
- 370-380 As above.
- 380-390 As above.
- 390-400 Shale, as above. Streaks of dark grey, fine grained argillaceous sandstone.
- 400-410 Shale, as above. Minor grey-brown blocky shale.
- 410-420 Shale, dark grey, sub-fissile to blocky, micaceous, noncalcareous, silty in part.
- 420-430 Shale, as above.
Trace to minor light grey, S&P, medium grained quartz-chert sandstone. Traces of porosity, no stain.

- 430-440 Shale, minor sandstone, as above. Trace of ironstone.
- 440-450 Sandstone, pale grey, S&P, fine to medium grained, non-calcareous, silty, argillaceous in part.
Sub-angular quartz and chert grains, carbon flecks, in siliceous silty matrix.
Trace of inter-granular porosity, no stain.
Traces of bitumen infilling.
- 450-460 Sandstone, as above, calcareous, friable.
- 460-470 Sandstone, as above, very friable - loose.
- 470-480 Shale, dark grey, micaceous, noncalcareous, silty streaks.
Much sandstone, as above - caving?
- 480-490 Shale, as above. Silty, sandy streaks.
- 490-500 Shale, as above.
- 500-510 Sandstone, pale grey, S&P, fine to medium grained, non-calcareous, argillaceous, silty, tight.
Sub-angular quartz and chert grains, fairly well sorted, scattered carbon flecks. Trace of pyrite.
- 510-530 As above.
- 530-570 As above. Much loose sand, friable. Trace of bitumen.
- 570-580 Sandstone, as above. Well cemented.
- 580-630 Sandstone, as above, friable, loose grains.
- 630-640 Sandstone, pale grey, medium grained, noncalcareous, sub-angular, fair sorting, quartz, chert grains, silty matrix, siliceous cement. Tight.
- 640-650 N.S.
- 650-630 Sandstone, pale grey S&P, medium grained, noncalcareous, fairly well sorted sub-angular quartz and chert grains, carbon flecks, trace of bitumen.
Poorly cemented, friable, loose sand.
- 680-690 Shale, dark grey silty, micaceous, blocky, noncalcareous.
- 690-710 Sandstone, pale grey S&P, silty, argillaceous, noncalcareous, medium grained sub-angular, fairly well sorted quartz and chert grains. Much shale, as above. Trace of porosity in coarser streaks, no stain.

- 710-730 Shale, dark grey, silty, blocky, noncalcareous. Much grey, fine grained, argillaceous sandstone interbedded.
- 730-790 Shale, grey and dark grey silty in part, blocky, noncalcareous Sandstone streaks. Traces to minor pale grey medium grained sandstone-caving?
- 790-860 Shale, grey and dark grey, blocky, noncalcareous, silty in part. Traces of brown-grey shale and grey-green nodular shale. Trace of ironstone.
- 860-890 Sandstone, brown grey, fine grained, argillaceous, noncalcareous, trace micaceous, trace glauconite, grading in part to sandy shale.
- 890-930 Shale, dark grey, minor grey and brown-grey shale, silty in part, noncalcareous, blocky. Minor sandstone, as above - caving? Trace of ironstone.
- 930-940 Shale, dark grey, silty, blocky, noncalcareous.
- 940-950 N.S.
- 950-960 Shale, dark grey, smooth, blocky, noncalcareous. Minor dark grey, micro-micaceous fissile shale.
- 960-980 Shale, as above. Silty, sandy streaks. Trace of brown, very fine grained sandstone.
- 980-1020 Shale, dark grey, blocky, noncalcareous. Much grey, smooth nodular "plastic" shale or clay. Trace of pyrite.

Surface casing set at 1016' K.B.

- 1020-1060 Shale, dark grey silty, noncalcareous. Trace of pyrite. Trace of coaly fragments.
- 1060-1180 Shale, dark grey, noncalcareous, sub-fissile to blocky. Traces of grey, nodular shale, trace of silty streaks, plant remains.
- 1180-1190 Shale, as above. Much coal fragments.
- 1190-1200 Shale, dark grey, sub-fissile to blocky, noncalcareous.
- 1200-1210 Shale, as above. Traces of plant remains - carbonized. Sandstone, brown, very fine grained, kaolinitic, noncalcareous - appears white when pulverized by bit.
- 1210-1300 Shale, as above. Much black bituminous shale, coal. Sandstone, as above. 30%-40%.

- 1300-1320 Shale, dark grey, noncalcareous, sub-fissile to blocky. Traces of silty shale. Trace of grey, nodular shale, plant remains.
- 1320-1340 Shale, dark grey, sub-fissile to blocky, non-calcareous. Much grey, nodular to blocky shale. Trace of fine brown-grey shaley sandstone streaks.
- 1340-1370 Sandstone, brown-grey, very fine grained, argillaceous, noncalcareous, grading in part to argillaceous siltstone, trace of bitumen or coaly flecks. Tight. No cut or fluorescence. Much dark grey shale-interbedded.
- 1370-1390 Sandstone, as above. Streaks of fine grained argillaceous sandstone, coal flecks; noncalcareous, tight.
- 1390-1420 Sandstone, brown grey and light grey, argillaceous, grading to argillaceous siltstone, kaolinitic, noncalcareous. Oil stained appearance, no cut or fluorescence. Much interbedded dark grey and black shale, sub-fissile, bituminous in part.
- 1420-1440 Sandstone, as above. Much bitumen - pore filler and cement. Tight. No cut or fluorescence. Much dark grey shale, as above.
- 1440-1480 Sandstone, dark brown-grey and light brown-grey, fine to medium grained, faintly calcareous, argillaceous. Poorly sorted, sub-angular quartz and chert grains, argillaceous, siliceous matrix, much carbon material, interstitial bitumen. Trace of glauconite. Minor black, interbedded bituminous shale.
- 1480-1500 Shale, dark grey, sub-fissile to blocky, noncalcareous. Minor light grey S&P fine grained to medium sandstone, as above.
- 1500-1510 Shale, as above. Much grey, blocky shale-caving.
- 1510-1540 Shale, dark grey, sub-fissile to blocky, noncalcareous. Minor dark grey silty shale and argillaceous siltstone. Traces of coaly flecks and streaks. Trace of ironstone.
- 1540-1550 Siltstone, grey and brown-grey, argillaceous, grading in part to silty shale. Trace of calcareous streaks.
- 1550-1570 Sandstone, brown-grey, fine grained, argillaceous, silty, faintly calcareous, carbon flecks, trace of glauconite. Sub-rounded to sub-angular quartz and chert grains. Poor to fair sorting.

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- 1570-1580 Siltstone, grey and brown-grey, argillaceous, calcareous streaks, grading to silty shale. Much grey and dark grey shale. Trace of ironstone.
- 1580-1590 Sandstone, brown-grey, S&P, slightly calcareous, silty, argillaceous, fine grained, sub-round to sub-angular quartz and chert grains, trace of glauconite, bitumen partings. Much shale, siltstone, ironstone, as above.
- 1590-1600 Shale, dark grey, sub-fissile, micro-micaceous, noncalcareous. Interbedded grey blocky, nodular shale and brown-grey siltstone.
- 1600-1630 Shale as above. Much interbedded brown-grey siltstone, fine grained argillaceous sandstone, trace ironstone. Trace of bituminous partings. Trace of gypsum filled fractures.
- 1630-1650 Shale, dark medium grey, blocky, noncalcareous, silty streaks. Minor dark-grey, sub-fissile shale. Siltstone, grey-brown, argillaceous noncalcareous - 30%.
- 1650-1660 As above. Minor light grey, S&P calcareous, slightly glauconitic fine sandstone.
- 1660-1670 Siltstone, brown, hard, argillaceous, noncalcareous. Much shale, as above.
- 1670-1680 Sandstone, pale grey, S&P, fine grained, slightly calcareous, sub-angular, poor to fair sorted quartz, grey and black chert grains, silty matrix. Much shale, siltstone, as above.
- 1680-1700 Shale, grey and dark grey, dark brown-grey shale. Much brown, sideritic shale, interbedded brown-grey siliceous siltstone.
- 1700-1720 Sandstone, light grey, fine to very fine grained, argillaceous, noncalcareous. Trace of bitumen flecks.
- 1720-1730 Shale, grey and dark medium grey, blocky to sub-fissile noncalcareous. Minor brown and light grey siltstone and very fine sandstone.
- 1730-1740 Sandstone, pale grey, very fine grained, argillaceous, hard, dense, slightly calcareous. Much shale, as above.
- 1740-1750 Shale, dark grey, sub-fissile to blocky, noncalcareous. Trace of ironstone, silty, micaceous streaks.
- 1750-1770 Shale, as above. Minor grey, grey brown fine to very fine grained sandstone, quartzose, argillaceous, noncalcareous.

- 1770-1780 Sandstone, pale grey S&P, fine to medium grained, sub-angular to sub-round quartz and chert grains argillaceous, silty, kaolinitic matrix. Bitumen flecks, partings. Trace of glauconite.
- 1780-1790 Shale, dark grey, sub-fissile to blocky, noncalcareous. Minor grey-brown siltstone, argillaceous, hard, dense. Traces of ironstone.
- 1790-1800 Sandstone, brown-grey, very fine grained, noncalcareous, dense, tight. Sub-angular, quartzose, fair sorted, trace of glauconite, grading to siltstone and argillaceous siltstone. Trace of calcareous streaks.
- 1800-1830 Shale, dark grey, sub-fissile to blocky, noncalcareous micro-micaceous in part. Minor dark grey-brown shale. Traces of ironstone, bitumen, coaly fragments.
- 1830-1840 Shale, as above.
Siltstone, dark brown grey, argillaceous, noncalcareous, hard, grading in part to silty shale.
Trace of pyrite, coaly partings.
- 1840-1850 Shale, dark grey, dark brown grey, blocky, noncalcareous, much dark brown silty shale. Trace of plant remains. Trace of ironstone.
- 1850-1860 Shale, dark grey, sub-fissile, noncalcareous, micro-micaceous. Trace of finely laminated grey silty streaks.
- 1860-1870 Shale, as above. Much grey-brown, blocky shale, trace of pyrite.
- 1870-1910 Shale, as above. Trace of ironstone, pyrite, plant remains. Siltstone, brown, argillaceous, faintly calcareous.
- 1910-1920 Shale, black, sub-fissile to blocky, bituminous in part, noncalcareous, coaly shale. Minor coal. Traces to minor dark brown, argillaceous siltstone.
- 1920-1970 Shale, grey, dark grey and brown-grey, blocky, noncalcareous, minor brown, faintly calcareous, fine grained sandstone and siltstone.
- 1970-2000 Shale, dark grey and black, blocky to sub-fissile, noncalcareous, bituminous in part. Much light brown, faintly calcareous siltstone. Trace of pyrite, ironstone, trace of coal.

- 2000-2010 Sandstone, pale grey, pale brown, fine grained, sub-angular, fairly well sorted quartz grains, minor chert, silty matrix, vitreous appearance in part, noncalcareous, siliceous. Trace of glauconite. Traces to minor light brown silt; much shale as above - caving?
- 2010-2020 Sandstone, pale grey, fine to medium grained, sub-angular, fair sorting of quartz grains, silty, siliceous matrix, noncalcareous, trace glauconitic, vitreous. Traces of coaly partings, plant remains.
- 2020-2030 Sandstone, as above. Trace of intergranular porosity, trace of fluorescence and cut.
- 2030-2040 Sandstone, as above. Much cavings.
- 2040-2050 Sandstone, pale grey, fine grained, well sorted, subangular and sub-rounded quartz grains, silty siliceous matrix, trace of glauconite, mica. Tight.
- 2050-2060 Sandstone, as above. Traces of bitumen partings, bitumen flecks.
- 2060-2070 Sandstone, as above. Minor grey and brown argillaceous siltstone.
- 2070-2080 As above. Interbedded, inter-gradational pale grey sandstone, brown and grey siltstone. Trace of shale-silt laminations.
- 2080-2090 As above.
- 2090-2100 Sandstone, pale grey, very fine to fine grained, siliceous, vitreous, non-calcareous. Trace of glauconite. Sub-angular, well sorted quartz grains, silty matrix.
- 2100-2110 Sandstone, as above. Shale, dark grey, black, sub-fissile to blocky. Streaks and interbeds of dark medium grey silty shale and argillaceous siltstone.
- 2110-2130 sandstone, pale grey, slightly S&P, fine to medium grained, siliceous, silty, vitreous. Sub-angular to sub-round, well sorted quartz grains. Trace of glauconite.
- 2130-2160 Sandstone, as above, interbedded with dark grey shale and brown-grey siltstone. Trace of lamination of silt and shale. Much dark brown-grey argillaceous siltstone, dark grey silty shale.
- 2160-2180 Shale, dark grey, blocky, micro-micaceous, noncalcareous. Trace of silty, grey-brown shale.

- 2180-2190 Shale as above - 70%.
Siltstone, grey-brown, argillaceous - 30%.
- 2190-2200 Sandstone, pale grey, fine grained, well sorted, sub-rounded and sub-angular quartz grains, silty matrix, siliceous cement, noncalcareous, vitreous.
Trace of streaks of poor porosity. Slight cut and fluorescence.
- 2200-2230 Sandstone, pale grey, vitreous, grey, silty, fine grained, siliceous. Sub-round to sub-angular, well sorted quartz grains, silty, siliceous matrix. Tight. Trace of bitumen partings, trace of glauconite.
- 2230-2250 Sandstone, as above. 50%, silty in part. Shale, dark grey, blocky, silty, interbedded with grey siltstone and sandstone. Bitumen partings. Trace of ironstone, pyrite. Trace coal.
- 2250-2280 Sandstone, grey, slightly argillaceous, silty, fine grained, noncalcareous, trace of glauconite. Sub-angular to sub-round, well sorted quartz grains, siliceous silty matrix, grading through to interbedded siltstone and dark grey shale, silty shale.
Trace of porosity, spotty oil stain, faint cut and fluorescence.
- 2280-2290 Shale, dark grey, silty, micaceous in part, noncalcareous. Interbedded grey-brown argillaceous siltstone and very fine sandstone, tight. Trace of lamination.
Trace of ironstone.
- 2290-2300 Sandstone, very fine grained, grey-brown, silty, argillaceous, siliceous, noncalcareous.
Shale, dark grey, blocky, micaceous, noncalcareous, much interbedded brown-grey siltstone. Trace of plant fragments.
- 2300-2340 Siltstone, brown-grey, argillaceous, siliceous.
Shale, dark grey, silty, noncalcareous, blocky.
Trace of plant remains.
- 2340-2370 Interbedded siltstone and shale, as above. Minor grey-brown, fine grained, argillaceous, quartz sandstone streaks. Trace of plant remains.
- 2370-2390 Sandstone, pale grey, fine grained, well sorted sub-angular to sub-round quartz grains, siliceous, silty matrix, vitreous, trace of glauconite. Much interbedded brown-grey argillaceous siltstone and silty shale.
Trace of fluorescence and cut.
- 2390-2400 Sandstone, dark brown-grey, very argillaceous, siliceous, grading to dark grey, sandy and silty shale - 60%.
Shale - 40%, dark grey and black, blocky, micaceous in part, slightly bituminous. Trace of pyrite.

- 2400-2410 Sandstone, brown, vitreous, silty, argillaceous, siliceous. Fine grained sub-angular to sub-round quartz grains, well sorted. Trace of glauconite. Much shale and interbedded siltstone, as above. Trace of porosity, spotty, faint fluorescence and cut.
- 2410-2440 Sandstone, brown, very fine to fine grained, grading to brown siltstone, argillaceous, siliceous, vitreous in part. Much black, sub-fissile shale and silty shale. Trace of ironstone, pyrite.
- 2440-2450 Sandstone, pale grey, fine grained, silty, trace glauconitic. Well sorted, sub-angular and sub-rounded quartz grains, siliceous cement.
- 2450-2460 Sandstone, as above. Much interbedded grey, slightly argillaceous sandstone and siltstone, minor grey shale lamination. Trace of plant remains, pyrite.
- 2460-2470 Siltstone, grey, argillaceous, siliceous. Much grey and dark grey shale laminae, grading in part to silty shale.
- 2470-2490 Shale, dark grey, micro-micaceous, blocky, noncalcareous. Much silty shale, argillaceous siltstone with trace of bitumen partings. Trace of ironstone.
- 2490-2510 Siltstone, brown, argillaceous, noncalcareous. Much shale, silty in part, as above. Trace of pyrite.
- 2510-2550 Shale, dark grey, silty, noncalcareous, blocky. Much brown siltstone, as above. Trace of plant remains, trace bitumen. Trace of ironstone.
- 2550-2560 Shale, as above. 50%.
Siltstone, brown, argillaceous, noncalcareous - 50%.
- 2560-2570 Shale, dark grey, blocky, noncalcareous, silty in part, micro-micaceous. Trace of slightly bituminous shale. Minor brown, argillaceous silty streaks.
- 2570-2590 Shale, dark grey, blocky, noncalcareous, minor micro-micaceous shale. Trace silty streaks; sub-fissile micaceous shale.
- 2590-2600 Shale, as above.
Minor grey-brown silt interbedded.
- 2600-2610 Shale, dark grey to black, micro-micaceous sub-fissile to silty, blocky, slightly bituminous.
Minor interbedded brown-grey siltstone.

- 2610-2620 Siltstone, brown-grey, noncalcareous, vitreous, siliceous. Much shale, grey and dark grey, noncalcareous, silty streaks, grading to siltstone. Traces of ironstone.
- 2620-2630 Shale, dark grey, micro-micaceous, sub-fissile, noncalcareous. Trace of pyrite.
- 2630-2980 Shale, dark grey, sub-fissile to blocky, noncalcareous. Streaks of micro-micaceous shale, trace of ironstone.
- 2980-2990 N.S.
- 2990-3050 Shale, dark grey, sub-fissile to blocky, noncalcareous. Minor micro-micaceous shale. Trace of ironstone.
- 3050-3100 Shale, as above. Trace of brown, polished chert pebbles, scattered grey chert pebbles.
- 3100-3110 Shale, as above. Trace of chert pebbles, grey and brown, rounded, polished. Trace of grey, argillaceous limestone.
- 3110-3160 Shale, dark grey, sub-fissile, micro-micaceous, noncalcareous. Trace of ironstone.
- 3160-3180 Shale, dark grey, micro-micaceous, blocky, noncalcareous, trace of silty streaks. Trace of pyrite, ironstone.
- 3180-3190 Shale, as above. Trace of ironstone with glauconite. Trace of pyrite.
- 3190-3240 Shale, dark grey, micro-micaceous, blocky, noncalcareous. Few silty streaks. Trace of glauconitic ironstone, trace of glauconitic shale. Trace of pyrite.
- 3240-3250 Shale, dark grey, micro-micaceous in part, blocky to sub-fissile, noncalcareous. Few silty streaks. Trace pyrite, trace of ironstone.
- 3250-3310 Shale, as above. Trace of pyrite, glauconite.
- 3310-3320 Siltstone, dark grey, argillaceous, noncalcareous, grading in part to silty shale. Trace of pyrite, glauconite. Much dark grey, sub-fissile shale interbedded. Trace of ironstone.
- 3320-3330 Shale, dark grey, sub-fissile, much dark grey, blocky, silty shale, noncalcareous. Trace of glauconit pyrite.
- 3330-3380 Siltstone, dark grey, minor grey, argillaceous, noncalcareous, grading to very silty shale. Minor dark grey sub-fissile shale. Trace of pyrite. Trace of very fine glauconite. Traces of ironstone, sideritic shale, 3370-30.

- 3380-3390 Siltstone, argillaceous, dark grey, as above.
Much ironstone and sideritic shale, glauconite.
- 3390-3450 Siltstone, dark grey, argillaceous, blocky, noncalcareous.
Trace of very fine glauconite. Trace of pyrite, ironstone.
- 3450-3460 Shale, dark grey, sub-fissile to blocky.
Much siltstone, as above. Trace of pyrite, ironstone.
- 3460-3500 Siltstone, grey, argillaceous, noncalcareous, grading
in part to silty shale. Traces of pyrite, ironstone.
- 3500-3540 Siltstone, grey, argillaceous, noncalcareous, minor
interbedded dark grey shale.
Trace of very fine glauconite. Trace of pyrite, ironstone.
- 3540-3580 Shale, dark grey, blocky, noncalcareous, finely silty, trace
micaceous.
Trace of grey limestone-fossil fragments?
Trace of pyrite, ironstone.
- 3580-3690 Shale, dark grey, sub-fissile, micro-micaceous, noncalcareous.
Traces silty shale.
Trace of ironstone, pyrite.
- 3690-3710 Shale, dark grey, blocky, noncalcareous, much finely silty
shale, micro-micaceous. Much ironstone, trace of pyrite.
- 3710-3740 Shale, dark grey, blocky, silty in part.
Streaks of grey, very fine grained slightly calcareous
sandstone. Trace of ironstone, pyrite.
Trace of glauconite.
- 3740-3800 Shale, dark grey and black, fissile to sub-fissile, micaceous,
noncalcareous.
Trace of silty laminae. Trace of pyrite, ironstone.
Trace of calcite fragments.
- 3800-3810 Shale, as above. Traces of ironstone. Trace of glauconitic
ironstone. Traces of pyrite.
- 3810-3830 Shale, dark grey, sub-fissile, noncalcareous. Trace of
ironstone, pyrite. Trace silty streaks with fine glauconite.
- 3830-3900 Shale, as above. Trace ironstone, pyrite.
- 3900-3930 Shale, as above. Much ironstone. Trace of pyrite.
- 3930-3960 Shale, as above. Much ironstone. Trace of pyrite. Trace
of grey, argillaceous limestone, very rare chert pebbles.

- 3960-4000 Shale, dark grey, sub-fissile, noncalcareous. Trace of ironstone, pyrite. Trace of grey, argillaceous limestone.
- 4000-4040 Shale, dark grey, sub-fissile to blocky, noncalcareous, trace of ironstone, pyrite.
- 4040-4070 Shale, as above. Trace of ironstone, pyrite. Trace of dark brown argillaceous limestone.
- 4070-4080 Shale, dark grey, sub-fissile to blocky, noncalcareous, much brown ironstone, trace of pyrite. Trace of grey, argillaceous limestone. Trace of grey chert pebbles, brown chert pebbles.
- 4080-4100 Shale, as above. Trace of grey and brown chert pebbles. Trace of ironstone.
- 4100-4180 Shale, as above. Much ironstone. Trace of grey argillaceous limestone, trace of chert pebbles, pyrite. Scattered glauconitic silty streaks.
- 4180-4210 Shale, dark grey, sub-fissile, micro-micaceous, noncalcareous. Trace of ironstone, pyrite, glauconite. Trace of chert pebbles.
- 4210-4230 Shale, as above. Trace of dark grey-brown argillaceous, silty streaks. Traces of pale grey bentonite. Trace of ironstone, grey argillaceous limestone.
- 4230-4260 Shale, dark grey, sub-fissile to blocky, noncalcareous, scattered silty streaks. Trace of chert pebbles, glauconite. Traces of bentonitic, pale grey shale.
- 4260-4270 Shale, as above. Trace of pale blue-green waxy shale, pale grey bentonitic shale. Scattered silty streaks. Trace of pyrite.
- 4270-4300 Shale, as above. Much glauconitic shale, pyrite.
- 4300-4310 Shale, dark grey, blocky, silty, noncalcareous, glauconitic; dark grey sandy, glauconitic shale; much dark grey, non-calcareous, fissile shale. Trace of pyrite, chert pebbles.
- 4310-4320 Shale, dark grey, silty, glauconitic, noncalcareous. Much dark grey fissile, non-calcareous shale.
- 4320-4330 Shale, as above. Traces of brown grey, argillaceous, glauconitic sand streaks, trace of 'floating' sand grains in dark grey shale.

- 3960-4000 Shale, dark grey, sub-fissile, noncalcareous. Trace of ironstone, pyrite. Trace of grey, argillaceous limestone.
- 4000-4040 Shale, dark grey, sub-fissile to blocky, noncalcareous, trace of ironstone, pyrite.
- 4040-4070 Shale, as above. Trace of ironstone, pyrite. Trace of dark brown argillaceous limestone.
- 4070-4080 Shale, dark grey, sub-fissile to blocky, noncalcareous, much brown ironstone, trace of pyrite. Trace of grey, argillaceous limestone. Trace of grey chert pebbles, brown chert pebbles.
- 4080-4100 Shale, as above. Trace of grey and brown chert pebbles. Trace of ironstone.
- 4100-4180 Shale, as above. Much ironstone. Trace of grey argillaceous limestone, trace of chert pebbles, pyrite. Scattered glauconitic silty streaks.
- 4180-4210 Shale, dark grey, sub-fissile, micro-micaceous, noncalcareous. Trace of ironstone, pyrite, glauconite. Trace of chert pebbles.
- 4210-4230 Shale, as above. Trace of dark grey-brown argillaceous, silty streaks. Traces of pale grey bentonite. Trace of ironstone, grey argillaceous limestone.
- 4230-4260 Shale, dark grey, sub-fissile to blocky, noncalcareous, scattered silty streaks. Trace of chert pebbles, glauconite. Traces of bentonitic, pale grey shale.
- 4260-4270 Shale, as above. Trace of pale blue-green waxy shale, pale grey bentonitic shale. Scattered silty streaks. Trace of pyrite.
- 4270-4300 Shale, as above. Much glauconitic shale, pyrite.
- 4300-4310 Shale, dark grey, blocky, silty, noncalcareous, glauconitic; dark grey sandy, glauconitic shale; much dark grey, non-calcareous, fissile shale. Trace of pyrite, chert pebbles.
- 4310-4320 Shale, dark grey, silty, glauconitic, noncalcareous. Much dark grey fissile, non-calcareous shale.
- 4320-4330 Shale, as above. Traces of brown grey, argillaceous, glauconitic sand streaks, trace of 'floating' sand grains in dark grey shale.

- 4330-4340 Shale, dark grey, blocky, noncalcareous, minor micro-micaceous shale, trace of glauconitic shale. Trace of grey argillaceous limestone, pyrite, bentonite. Scattered silty streaks. Trace of chert grains.
- 4340-4350 Shale, as above. Much dark brown-grey silty shale. Trace of pyrite ironstone.
- 4350-4460 Siltstone, brown-grey, argillaceous, grading to silty shale. Trace of pyrite, ironstone. Traces of slightly calcareous siltstone.
- 4460-4520 Siltstone, brown-grey, as above, faintly calcareous to noncalcareous, argillaceous. Trace of pyrite, ironstone. Much interbedded dark grey, sub-fissile to blocky shale.
- 4520-4530 Siltstone and interbedded dark grey shale, as above. Trace of fossil shell fragments.
- 4530-4540 Siltstone, brown and dark brown, noncalcareous to faintly calcareous, argillaceous, grading to silty shale. Trace of chert grains, pyrite.
- 4540-4610 Siltstone, as above. Trace of fossil shell fragments. Trace of dark brown argillaceous limestone, pyrite. Trace of dark grey-green, blocky shale, 4600-4610. Trace of crinoids - 4600-4610.
- 4610-4780 Shale, dark brown-grey, sub-fissile, noncalcareous, trace of pyrite. Much silty shale. Trace of very argillaceous, dark brown limestone. Trace of fossil shell fragments.
- 4780-4840 Shale, dark grey, dark brown-grey, blocky to sub-fissile, noncalcareous. Trace of silty streaks. Trace of pyrite, fossil fragments. Trace of grey-brown argillaceous limestone.
- 4840-4850 Shale, dark brown-grey, very silty, grading in part to argillaceous siltstone, noncalcareous. Much sub-fissile shale. Traces of pyrite.
- 4850-4900 Shale, dark grey and dark brown-grey, sub-fissile to blocky, noncalcareous. Minor dark brown silty shale. Trace of argillaceous limestone, trace of pyrite. Scattered glauconitic streaks.
- 4960-5250 Shale, dark grey and dark brown-grey, fissile, to blocky and silty, noncalcareous to faintly calcareous. Trace of glauconite and pyrite, ironstone. Trace of fossil fragments. Quartz crystals, 4980-5000 - probably fracture.

- 5250-5300 Sandstone, grey and pale grey, very fine to fine grained, very calcareous, grading to sandy limestone. Abundant coarse fossil fragments - echinoid spines, brachiopod shells. Traces of glauconite. Interbedded dark grey silty shale, calcareous, with inclusions of fossil fragments. Trace of porosity (few crystals - probably fracture) gas kick at top of zone.
- 5300-5310 Siltstone, dark brown, argillaceous, slightly calcareous, grading in part to very fine, dark brown and brown sandstone. Fossil fragments, glauconite. Minor sandy limestone, fossiliferous, as above.
- 5310-5320 Limestone, sandy and silty, grading to very calcareous very fine grained sandstone and siltstone, brown grey and grey. Much interbedded dark brown siltstone, argillaceous, calcareous. Echinoid spines, brachiopod fragments.
- 5320-5330 Siltstone, very fine sandstone, grey, argillaceous, calcareous. Trace of glauconite. Trace of fossil shell fragments.
- 5330-5340 Siltstone, as above, grading in part to grey, fine grained, very calcareous sandstone. Traces of fossil fragments, shale partings.
- 5340-5350 Siltstone, fine sandstone, as above. Much interbedded blocky, black silty and nonsilty shale.
- 5350-5390 Shale, dark brown and black, blocky, much silty shale, grading to argillaceous siltstone. Scattered streaks of fossiliferous limestone. Minor grey, vitreous calcareous sandstone - sandy limestone.
- 5390-5400 Shale and silty shale, as above. Sandstone, pale grey, fine to medium grained, very limey, grading to sandy limestone. Traces of coarse chert grit streaks. Tight. Sub-round, pale grey and grey quartz, grey and dark grey chert grains, fairly well sorted. Trace of glauconite, pyrite.
- 5400-5410 Sandstone, pale grey, slightly S&P, vitreous, fine to medium grained, sub-round to sub-angular quartz and chert grains, trace glauconite. Very calcareous. Trace of chert grit streaks, tight. Fossil fragments.

- 5250-5300 Sandstone, grey and pale grey, very fine to fine grained, very calcareous, grading to sandy limestone. Abundant coarse fossil fragments - echinoid spines, brachiopod shells. Traces of glauconite. Interbedded dark grey silty shale, calcareous, with inclusions of fossil fragments. Trace of porosity (few crystals - probably fracture) gas kick at top of zone.
- 5300-5310 Siltstone, dark brown, argillaceous, slightly calcareous, grading in part to very fine, dark brown and brown sandstone. Fossil fragments, glauconite. Minor sandy limestone, fossiliferous, as above.
- 5310-5320 Limestone, sandy and silty, grading to very calcareous very fine grained sandstone and siltstone, brown grey and grey. Much interbedded dark brown siltstone, argillaceous, calcareous. Echinoid spines, brachiopod fragments.
- 5320-5330 Siltstone, very fine sandstone, grey, argillaceous, calcareous. Trace of glauconite. Trace of fossil shell fragments.
- 5330-5340 Siltstone, as above, grading in part to grey, fine grained, very calcareous sandstone. Traces of fossil fragments, shale partings.
- 5340-5350 Siltstone, fine sandstone, as above. Much interbedded blocky, black silty and nonsilty shale.
- 5350-5390 Shale, dark brown and black, blocky, much silty shale, grading to argillaceous siltstone. Scattered streaks of fossiliferous limestone. Minor grey, vitreous calcareous sandstone - sandy limestone.
- 5390-5400 Shale and silty shale, as above. Sandstone, pale grey, fine to medium grained, very limey, grading to sandy limestone. Traces of coarse chert grit streaks. Tight. Sub-round, pale grey and grey quartz, grey and dark grey chert grains, fairly well sorted. Trace of glauconite, pyrite.
- 5400-5410 Sandstone, pale grey, slightly S&P, vitreous, fine to medium grained, sub-round to sub-angular quartz and chert grains, trace glauconite. Very calcareous. Trace of chert grit streaks, tight. Fossil fragments.

- 5410-5436 Sandstone, pale grey and grey, S&P, very fine grained, very calcareous, grading in part to sandy limestone. Minor dark grey, argillaceous sandy limestone, dark grey, calcareous, silty shale. Trace of glauconite.
- 5436-5462 Core #1 Recovered 22 feet.
- 5462-5470 Sandstone, grey and pale grey, S&P, trace glauconitic, very calcareous, fine grained to very fine grained. Minor dark grey argillaceous, calcareous sandstone. Much dark grey and black shale - cavings.
- 5470-5480 Sandstone, as above. Trace of fine chert grit. Trace of glauconite. Much dark grey shale, cavings. Trace of brachiopod spines and shells. Trace of pyrite.
- 5480-5500 Siltstone, very calcareous, grey, grading in part to very fine grained grey sandstone, argillaceous. Trace of glauconite, pyrite. Interbedded brown-grey and brown argillaceous limestone and calcareous, dark brown shale.
- 5500-5520 Shale, dark brown-grey, blocky, very calcareous, grading to lighter brown-grey argillaceous limestone. Trace of pyrite. Minor dark grey fissile shale, fossils.
- 5520-5530 Sandstone, grey, S&P, very fine grained to fine grained, very calcareous, grading to sandy limestone. Trace of glauconite, foraminifera, brachiopods. Trace of pyrite. Much dark brown grey calcareous shale and argillaceous limestone, as above.
- 5530-5550 Sandstone, pale grey, S&P, medium grained, sub-angular quartz and chert grains, fairly well sorted in calcareous matrix - grading to sandy limestone.
- 5550-5560 Sandstone, pale grey, S&P, vitreous in part, very calcareous, grading in part to sandy limestone, medium grained. Poor to fairly well sorted, sub-round to sub-angular quartz and chert grains, trace of glauconite and pyrite. Few coarse chert grains.
- 5560-5580 Sandstone, as above, very calcareous, fine to medium grained. Trace of pyrite, glauconite, fossils.
- 5580-5590 Sandstone, as above, much grey, very fine grained calcareous sandstone. Slightly argillaceous.

- 5590-5600 Sandstone, pale grey, S&P, fine to medium grained, very calcareous, grading to very sandy limestone. Sub-angular to sub-rounded quartz and chert grains, very calcareous matrix, siliceous cement. Trace of glauconite, pyrite. Trace of fossil fragments, dark brown argillaceous streaks.
- 5600-5610 Sandstone, light grey, S&P, vitreous, very calcareous. Fine grained, fairly well sorted quartz and chert grains, sub-round to sub-angular, siliceous cement, traces argillaceous. Scattered coarse chert grains. Trace of glauconite, trace of pyrite. Minor dark brown-grey and dark grey noncalcareous, blocky shale - caving?
- 5610-5620 As above. Much cavings - trip sample. Traces of fossil fragments.
- 5620-5630 Sandstone, pale grey, S&P, fine to medium grained, very calcareous, grading to streaks of fossiliferous sandy limestone. Trace of glauconite, scattered chert grit. Much dark grey and dark brown, blocky shale - cavings.
- 5630-5640 Limestone, pale grey and grey, sandy, slightly argillaceous, fragmental. Trace of glauconite. Minor grey and pale grey calcareous sandstone, as above. Much interbedded dark grey fossiliferous, silty shale.
- 5640-5660 Sandstone, pale grey, much grey, argillaceous sandstone, fine grained, very calcareous, grading in part to pale grey sandy limestone, abundant fossil fragments. Trace of glauconite, brachiopods, minor dark brown, silty, slightly calcareous blocky shale interbedded.
- 5660-5690 Sandstone, fine grained, grey, very calcareous, argillaceous, grading to sandy, calcareous shale, trace of glauconite. Much interbedded dark brown very calcareous, argillaceous, blocky, silty shale. Much brown, micro-crystalline, argillaceous, fossiliferous limestone.
- 5690-5700 Siltstone, dark brown-grey, argillaceous, calcareous, grading to calcareous, silty shale. Much dark brown, dense, sandy limestone, argillaceous. Trace of spicules, brachiopods, trace of glauconite. Much dark grey, blocky, noncalcareous shale, streaks of glauconitic shale.
- 5700-5710 Shale, dark brown, calcareous, blocky, silty, sandy in part. Interbedded brown, argillaceous limestone and grey, sandy limestone, streaks of fossil fragments.

- 5710-5800 Siltstone, dark brown-grey, argillaceous, very calcareous, glauconitic streaks, grading to minor, interbedded dark brown, faintly calcareous, blocky shale. Minor grey, S&P, very calcareous fine to very fine grained sandstone. Trace of pyrite, fossil fragments.
- 5800-5830 Siltstone, dark brown-grey, moderately calcareous, argillaceous, blocky, grading to dark brown-grey silty shale. Trace of brachiopods. Pyrite, glauconite.
- 5830-5840 Sandstone, pale grey, S&P, fine to medium grained, calcareous, siliceous cement. Fair sorted, sub-angular quartz and chert grains, trace of glauconite, pyrite. Tight, no shows. Trace of chert grit.
- 5840-5860 Sandstone, as above. Trace of Ostracods. Much brown-grey and dark brown argillaceous siltstone, calcareous, as above. Pyrite, glauconite.
- 5860-5870 Siltstone, dark brown-grey, calcareous, argillaceous, grading to dark brown-grey blocky noncalcareous shale. Minor pale grey argillaceous, silty limestone, earthy - crystalline textured. Calcite - filled fractures. Brachiopods.
- 5870-5930 Siltstone, dark brown-grey, calcareous, argillaceous. Trace of pyrite. Minor dark grey blocky shale, non-calcareous. Trace of brachiopods, fossiliferous limestone.
- 5930-6000 Siltstone, dark brown grey, very calcareous, argillaceous, glauconitic streaks, trace of pyrite. Interbedded dark grey blocky calcareous silty shale. Brachiopod fragments. Much calcite vein infilling, 5980-6000.
- 6000-6020 Siltstone, dark brown, argillaceous, siliceous in part, calcareous, hard. Trace of glauconite, pyrite. Interbedded dark brown-grey silty, blocky shale, slightly calcareous. Brachiopods.
- 6020-6050 Siltstone, dark brown-grey, argillaceous, calcareous, trace of glauconite and pyrite, grading to very silty and silty shale. Traces of brachiopods.
- 6050-6060 Shale, dark brown, blocky, silty, calcareous. Trace of brachiopod fragments.
- 6060-6080 Shale, dark grey and brown-grey, blocky, noncalcareous. Trace of calcite filled fractures. Minor interbedded brown siltstone, calcareous, trace glauconitic, argillaceous. Fossil fragments. Trace of ironstone, pyrite, chert pebbles.

- 6080-6110 Shale, dark brown-grey, blocky, silty, noncalcareous, to slightly calcareous, grading to minor dark brown argillaceous, calcareous siltstone.
Trace of fossil fragments. Trace of glauconite.
Streaks of fossiliferous limestone - Ostracods.
- 6110-6120 Shale, dark brown-grey, very calcareous, grading to argillaceous limestone, silty, few sandy streaks. Much dark brown, silty, slightly calcareous shale.
Trace of brachiopod fragments, pyrite.
- 6120-6150 Siltstone, brown and dark brown, very calcareous, grading to silty limestone, argillaceous, trace of brown chert.
Much interbedded dark grey shale, silty, calcareous in part.
- 6150-6160 Siltstone, as above, grading in part to silty, argillaceous limestone.
Much interbedded dark grey and dark brown silty shale, as above. Much calcite veining, fractures.
- 6160-6210 Shale, dark grey and dark brown grey, calcareous, blocky, silty in part.
Minor interbedded dark brown argillaceous siltstone, calcareous.
Much coarse calcite vein infilling. Fractures.
- 6210-6230 Shale, dark medium grey, brown silty, blocky, calcareous.
Trace of fossil fragments, pyrite.
- 6230-6390 Shale, as above, silty, blocky, calcareous, grading in part to very argillaceous siltstone.
Traces of brachiopods. Trace of pyrite.
- 6390-6400 Shale, as above.
Minor dark brown, argillaceous limestone, silty in part.
- 6400-6450 Shale, dark grey brown, silty, calcareous, grading in part to grey-brown argillaceous, calcareous siltstone, interbedded silty brown limestone.
Trace of glauconite, pyrite.
- 6450-6540 Shale, dark grey brown, silty, calcareous, blocky.
Trace of glauconite, pyrite.
- 6540-6580 Shale, dark grey brown, silty, as above. Trace of pyrite.
Trace of grey, argillaceous limestone streaks.
- 6580-6600 Shale, dark brown-grey, slightly silty, blocky, calcareous.
Trace of black fissile, non-calcareous shale. Scattered argillaceous silty streaks, calcareous.
Trace of fossil fragments.

6600-6630 Shale, dark brown-grey, blocky, calcareous, silty.
Minor interbedded brown, argillaceous, calcareous siltstone,
trace of glauconite.
Streaks of grey-brown limestone, silty, slightly argillaceous.
Trace of fossil shell fragments.

T.D. 6630'

e) Paleontological Determinations

Surface to 3,625'	Upper Albian
3,780' to 4,293'	?Upper Barremian?-Middle Albian
4,393' to least 5,389'	Lower Permian (cf. Leonardian)
5,747' to 6,597'	Late Pennsylvanian to Early Permian

SECTION III - ENGINEERING SUMMARY

a) Reports of Drillstem Tests (Service Reports in Attached Envelope)

DST #1 - 5,378' - 5,885' - Dual Straddle Bypass

Zone: Chance Sandstone

Times: No ISI FSI 120 mins.
V.O. 120 mins.

Pressures: IFP 2747 psi FFP 2623 psi
ISIP None FSIP 1665 psi
IFP 228 psi FFP 480 psi

Recovery: 726' thick, slightly gas cut drilling fluid
280' fresh water cut drilling fluid
G.T.S. in 60 mins. T.S.T.M. 4' flare

Remarks: No BHT
Test Satisfactory

DST #2 - 5,402' - 5,617' - Dual Straddle Bypass

Zone: Chance Sandstone

Times: Preflow 5 mins. V.O. 300 mins.
ISI 30 mins. FSI 30 mins.

Pressures: IFP 2703 psi FFP 2631 psi
ISIP 1873 psi FSIP 1208 psi
IFP 292 psi FFP 554 psi
Preflow 437 psi

Recovery: 90' drilling fluid
270' gas pocket
1105' gas cut drilling fluid
G.T.S. in 23 mins. T.S.T.M. 4' flare

Remarks: BHT 112° F
Test Satisfactory

b) Casing Record

Conductor Pipe: 25' of 23" O.D., 18½" I.D., insulated double-walled conductor pipe with 3/4" O.D. cooling coils.
21' of 18" O.D., 13½" I.D. conductor pipe set at 66' K.B.
Conductor pipe cemented with 200 sax B.J. cold set cement.

Surface Casing: Ran 31 joints (006.10⁰) of 13-3/8", 54.5#, 3 rd., new seamless ST50 casing, landed at 1,013.20' K.B. Cemented casing with 1,070 sax of Type I cement plus 3% CaCl₂. Cement in place 10.20 a.m. February 20, 1972.

c) Bit Record

See attached bit record sheet.

d) Mud Report

Surface Hole: The 17 1/2" surface hole was drilled from 66' K.B. to 1,020' K.B. using stable foam. The hole was then displaced to mud. The following materials were used on surface:

Sulfotex Sai (Stable foam)	8 drums
Gel	110 sax
Caustic	6 sax
Plaster	5 sax
Fibertex	10 sax

Main Hole: The 8-3/4" main hole was drilled to 6,630' using an MC Polymer mud system. The following materials were used on the main hole:

Gel	640 sax
Caustic	36 sax
Plaster	20 sax
Kelzan	31 sax
Chrome Alum	25 sax
CMC Reg.	40 sax
Dowicide "B"	5 kegs
Weight Mat.	10 sax

e) Deviation Record

220 - 1/4 ^o	619 - 7/16 ^o	1319 - 1 ^o	3122 - 3-1/4 ^o	5171 - 2-7/8 ^o
252 - 1/4 ^o	650 - 1/2 ^o	1444 - 1-1/4 ^o	3310 - 3-3/4 ^o	5297 - 2 ^o
270 - 1/8 ^o	713 - 7/8 ^o	1634 - 1-3/4 ^o	3453 - 3 ^o	5391 - 1-1/4 ^o
300 - 1/4 ^o	744 - 1/2 ^o	1760 - 1-1/2 ^o	3601 - 3 ^o	5436 - 1-3/4 ^o
340 - 1/8 ^o	800 - 3/4 ^o	1823 - 2 ^o	3900 - 2-1/2 ^o	5611 - 1-1/2 ^o
370 - 1/8 ^o	830 - 3/4 ^o	1993 - 2-1/2 ^o	4120 - 3-3/4 ^o	5860 - 2 ^o
400 - 1/4 ^o	870 - 1/2 ^o	2037 - 2-3/4 ^o	4256 - 3-1/2 ^o	5885 - 1-3/4 ^o
433 - 1/8 ^o	902 - 3/4 ^o	2230 - 2-1/2 ^o	4332 - 3-1/4 ^o	6110 - 2 ^o
464 - 1/4 ^o	934 - 3/4 ^o	2430 - 3-1/4 ^o	4540 - 2 ^o	6302 - 2-7/8 ^o
490 - 3/8 ^o	966 - 7/8 ^o	2586 - 3 ^o	4730 - 2-3/4 ^o	6630 - 2 ^o - T.D.
520 - 1/2 ^o	1020 - 7/8 ^o	2598 - 3-1/4 ^o	4833 - 3 ^o	
556 - 1/2 ^o	1120 - 1 ^o	2800 - 2-7/8 ^o	5076 - 2-1/4 ^o	

f) Abandonment Plugs

Plug #1 (6,030' - 6,530') 65 sax Type I cement
Plug #2 (4,470' - 4,600') 100 sax Type I cement
Plug #3 (1,050' - 2,320') 240 sax Type I cement + 3% CaCl₂
Plug #4 (950' - 1,050') 95 sax Type I cement + 3% CaCl₂
Plug #5 Surface Plug 5 sax Type I cement

g) Lost Circulation Zones

Lost approximately 200 bbls. of mud while displacing surface hole to mud.

h) Report of Blowouts

No kicks or blowouts on this well.

SECTION IV - LOGS

The following Schlumberger Logs were run on April 24-25, 1972:

Dual Induction Laterolog (6,630' to 1,014')
BHC Sonic/Gamma Ray/Caliper (6,630' to 1,014')
Formation Density Log (6,630' to 5,200')
Sidewall Neutron Porosity Log (6,630' to 5,200')

Ran Century Geophysical Velocity Survey.

Ran Sidewall Cores - 21 shots.

SECTION V - ANALYSIS

a) Core Analysis

No core analysis.

b) Water Analysis

No water analysis.

c) Gas Analysis

921-2711 - Gas Analyses
No gas analysis.

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 (6,000' - 6,500')

Cemented with 65 sax Type I cement. Cement in place at 8:30 a.m.
April 29, 1972. No feel on Plug #1.

Abandonment Plug #2 (4,600' - 4,470')

Cemented with 100 sax Type I cement. Cement in place at 10:00 a.m.
April 29, 1972. Felt Plug #2 at 4,475' at 7:00 p.m., April 29, 1972.

Abandonment Plug #3 (2,320' - 1,050')

Cemented with 240 sax Type I cement plus 3% CaCl₂. Cement in place at
8:50 p.m., April 29, 1972. Felt Plug #3 at 1,315' at 5:00 a.m.
April 30, 1972.

Abandonment Plug #4 (1,050' - 050')

Cemented with 95 sax Type I cement plus 3% CaCl₂. Cement in place at
8:45 a.m., April 30, 1972. Felt Plug #4 at 903' at 7:00 p.m.,
April 30, 1972.

Abandonment Plug #5 (Top of Surface Casing)

Cemented with 5 sax Type I cement. Welded on steel plate and well sign.

d) Acidization and Fracturing Record

No acidizing or fracturing operations.

e) Back Pressure and Production Tests

No back pressure or production tests.