I.S.N. 134652

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| MAP NO. | ASSESSMENT REPORT | DOCUMENT NO.: | 092012 |
| | PROSPECTUS | MINING DISTRICT: | WHITEHORSE |
| | CONFIDENTIAL X | TYPE OF WORK: | Rotary Drilling |
| 105 D 6, 11 | OPEN FILE | | |

REPORT FILED UNDER: Whitehorse Coal Corporation

DATE PERFORMED: October 22-23, 1985 DATE FILED: November 1985

LOCATION: LAT.: 60°29'N AREA: Mt. Granger

LONG.: 135°14'W VALUE $:

CLAIM NAME & NO.: CL 2989-2991

CEL 301

WORK DONE BY: L.W. Carlyle

WORK DONE FOR: Whitehorse Coal Corporation

| DATE TO GOOD STANDING | | REMARKS: #41 WHITEHORSE COAL |
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REPORT ON

THE 1985 DRILL PROGRAM

WHITEHORSE COAL PROPERTY

WHITEHORSE MINING DISTRICT, YUKON

NTS 105 D/11 & 6

Latitude 60° 29' N; Longitude 135° 14' W

FOR

WHITEHORSE COAL CORPORATION

BY

LARRY W. CARLYLE, F.G.A.C., P. Geol.

Whitehorse, Yukon November, 1985

092012

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SUMMARY

The Whitehorse Coal Property is located in south-central Yukon approximately 17 miles southwest of Whitehorse. The property contains anthracite coal seams in sediments of the Tantalus Formation of Upper Jurassic and Lower Cretaceous age. The Tantalus Formation in this area exists as a graben with Lewes River Group sediments of Upper Triassic age to the southwest and Laberge Group sediments of Lower and Middle Jurassic age to the northeast. The existence of several Cretaceous intrusions near the coal seams suggest that the coal has been thermally upgraded from bituminous coal which is most commonly found within the Formation. The intrusions also suggest that complex folding and faulting may exist. The 1985 program did not gain any further information on these possibilities.

Previous work has demonstrated that coal occurrences exist for approximately 7 miles within the Tantalus Formation in the region. This fact suggests that there is great potential for the development of substantial coal reserves within the Whitehorse Coal property. The 1985 program consisted of 902 feet of reverse circulaton, rotary-percussion drilling and 130 lineal feet of trenching. This drilling was the first ever done on the property; all previous work has consisted of bulldozer trenching and excavation. The only other physical work done on the property was a tunnel about 60 feet long driven in 1906 (J.O. Wheeler, 1961, p.143). This tunnel is believed to have existed at the Fisher Creek Showing, approximately 1/2 mile north of the Main Showing where the 1985 drilling was done (Figure 1). The drilling was done using a truck-mounted Schramm drill, owned and operated by Midnight Sun Drilling Co. Ltd. The trenching and drill road construction was done using a D-7 bulldozer equipped with a ripper (Figure 4).

The 6 holes drilled during the 1985 program investigated the coal seam exposed in the Main Showing over a strike length of 1100 feet. These holes were logged by Roke Oil Enterprises Ltd. of Calgary using several down-the-hole tools. These tools consisted of a gamma ray - neutron radiometric tool, an electrical resistance measurement tool, a bulk density measurement tool and a hole size measurement caliper tool. The Roke Oil Report indicates the coal measures obtained in the holes 2 to 6 are readily correlateable, the coal measures contain less ash from holes 2 to 6 and the cleaner coal bands may contain as little as 15% ash (Oct. 31, 1985). This ash determination is a substantial improvement over previous ash determinations obtained from surface exposures.

The writer concludes that further exploration of the Whitehorse Coal property is definitely worthwhile.

20 1 6

## INTRODUCTION

In October, 1985, the directors of Whitehorse Coal Corporation decided they required a drill program to develop a coal reserve and obtain an ash determination from fresh coal. They obtained the services of the writer to supervise the program. The program lasted from October 22, 1985 to October 26, 1985.

The object of this report is to summarize the information obtained from the program. Of central importance are the 10 profiles on which data have been assembled (Figures 5 to 14). Also of major importance are the Base Plan (Figure 4), Topographic Plan (Figure 3), Baseline Profile (Figure 2) and the Fisher Creek Profiles and Baseline Profile (Figure 15).

## LOCATION, ACCESS AND CLAIMS

The Whitehorse Coal Property is located in south-central Yukon between latitudes 60° 22' and 60° 32' N and longitudes 135° 00' and 135° 19' W. The property is composed of three coal leases and one coal exploration licence.

The property covers the central portion of the Tantalus Formation. The Tantalus Formation is discontinuously exposed from near the headwaters of the Ibex River in the northwest to the eastern side of Mount Bush in the southeast (Figure 1).

Vehicle access to the property is through the Whitehorse Copper Mines Ltd. mine site. A former Whitehorse Copper haulage road is used for 3 miles south of the mine site. A 4-wheel drive road approximately 14 miles long gives access to the portion of the property containing the chief coal showings, called the Main Showing and the Fisher Creek Showing. Other areas of the property are only accessible by helicopter (J. Perry, 1984).

The property consists of three coal leases (No. 2989 - 2991) and one coal exploration licence (No. 301). Each of the coal leases cover an area of 640 acres and the coal exploration licence covers an area of 47,469 acres. The whole property covers 49,389 acres within map sheets 105 D/11 & 6.

The author has not verified the legal status or the accuracy of location of the leases and exploration licence. In conversations with the President of Whitehorse Coal Corporation, Mr. Paul Poggenburg, the writer was assured the leases and licence are in good standing until 1988.

## HISTORY

The history of the Whitehorse Coal property is most completely described by J. Perry (J. Perry, 1984, p. 7-8). The reader is referred to this report.

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135° 00'
Adjoins Map 372A, "Laberge Sheet"
LAKE LABERGE
Upper Laberge
2 A
Scale: One Inch to Four Miles = 1/253,440
Miles
4 2 0 4 8 12
N
WHITEHORSE COAL CORP.
LOCATION & GEOLOGICAL MAP
FIGURE 1
105 D/11 & 6
NOVEMBER, 1985 L.W.C.
MAP 1093 A
WHITEHORSE
SHEET 105 D
Takhini Hotspring
Takhini
RIVER
YUKON
HAECKEL HILL
Croucher Creek
WHITEHORSE
Jackson Lakes
Miles Canyon
Chadburn L.
Canyon
MT. ARKELL
MT. McINTYRE
GOLDEN HORN MTN.
FISHER CREEK SHOWING
MAIN SHOWING
IBEX MTN.
MT. RANGER
DOUBLE MTN.
TWIN MTN.
IDAHO HILL
GILLIAM MTN.
Lower Cretaceous and Upper Jurassic
Tantalus Formation (5)
Arkose, siltstone, conglomerate, argillite, COAL

## REGIONAL GEOLOGY

Coal is only found within the non-marine sediments of the Tantalus Formation in the Whitehorse Coal Corporation property. The Tantalus Formation is of Upper Jurassic and Lower Cretaceous age and occupies a graben between Upper Triassic Lewes River Group sediments on the southwest and Lower and Middle Jurassic Laberge Group sediments on the northeast (J.O. Wheeler, 1961). These sediments have been intruded by Cretaceous Coast Intrusions, possibly resulting in the upgrading of the coal from bituminous to anthracite.

TABLE 1

STRATIGRAPHY OF THE WHITEHORSE COAL PROPERTY

| Period | Group or Formation | Rock Types |
|---|---|---|
| Cretaceous | Coast Intrusions (8) | Granodiorite, granite, quartz monzonite, quartz diorite and allied rocks |
| Lower Cretaceous and Upper Jurassic | Tantalus Formation (5) | Arkose, siltstone conglomerate, argillite, COAL |
| Lower Jurassic and Later | Laberge Group (4) | Greywacke, arkose, quartzite, conglomerate, siltstone, argillite |
| Upper Triassic | Lewes River Group (3) | Greywacke, siltstone, argillite, conglomerate, limestone, limestone breccia, andesite, basalt flows and associated pyroclastic rocks |

The Tantalus Formation consists of clastic sediments composed mainly of conglomerates, arkoses and sandstones with some thin horizons of siltstone, shale and coal. The rounded pebbles which form the conglomerate are cherty and range in size from one inch to two inches. Due to the snow cover and the short duration of the program, the writer did not investigate the geology of the property carefully. A very complete description of the regional geology is included in the J. Perry Report, pages 9 to 12 (J. Perry, 1984).

## 1985 PROGRAM

On October 22, 1985, L. Carlyle and his able assistant, Robert Stirling, went to the property. They established a baseline 1600 feet in length along a bearing of south 65 degrees west through the Main Showing. Suitably marked and flagged lath were placed along the baseline at 100 foot intervals. The lath located at the center of the baseline (8 + 00 W) was given the assumed elevation of 1000 feet. After this assumption was made, the elevations of all the other baseline points were calculated using a clinometer and tape measure (Figure 2).

Cross lines were established every 200 feet along the baseline at 90 degrees to the baseline and marked by suitably marked and flagged lath at 100 foot intervals. Lines 0 + 00 to 12 + 00 W were extended 500 feet north of the baseline. Lines 14 + 00 W and 16 + 00 W were extended 600 feet north of the baseline. Employing the clinometer, the tape measure, and the assumed elevation of the starting point on the baseline, the elevations of various points along the cross lines were calculated. These determinations permitted the drawing of profiles (Figures 5 to 14). The coal seams dip into the hillside, therefore, the profiles will provide information necessary for the estimation of rough stripping ratios if an open pit method is used to remove the coal.

A baseline 200 feet in length along a due west bearing was established on the bulldozer road in front of the Fisher Creek Showing. The intention was to establish two cross lines over the showing at either end of the baseline. The cross lines were not able to be established due to the arrival of the drill and bulldozer on the property. Rough profiles have, however, been drawn (Figure 15) which should permit approximate estimates to be made.

### A - Trenching

Very little trenching was done during the program. The bulldozer would have been an effective tool if it could have been used to trench at 90 degrees to the strike of the coal seams, however, the steepness of the hillside made this impractical. Two short trenches, totalling 130 feet, exposed the coal along its strike at Lines 6 + 00 W and 8 + 00 W (Figure 4). The bulldozer was used to prepare roads and drill sites for the drill. One of the roads prepared for the drill has exposed the coal from the trench on Line 8 + 00 W to Line 12 + 00 W (Figure 4).

The bulldozer was used on October 26, 1985 to construct a new road which removed a bad switchback on the road from the company cabin to the Main Showing.

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B. - Rotary-Percussion Drilling

On October 23, 1985, a truck-mounted Schramm reverse circulation, rotary-percussion drill was brought onto the Whitehorse Coal Corporation property. Six vertical holes totalling 902 feet were drilled before the drill was removed from the property on October 26, 1985. The holes explored the coal seam exposed in the Main Showing for 1100 feet along its strike (Figure 4). The drill proved to be quite efficient, in spite of a few mechanical and freezing problems.

Only coal intersections were sampled. Samples were taken in two foot intervals and the hole number and footage marked on the bag. The individual bags used for taking the samples proved to be fairly difficult to hold around the base of the cyclone. Some loss of coal was experienced between bag changes, when bags slipped from around the base of the cyclone and when water was encountered in the coal which resulted in spillage. It is believed that some error may have resulted because of these problems, however, generally reliable results should be obtained from the samples.

See Appendix I for the drill hole logs. The author was present at the drill as each hole was drilled and kept a rough written log of the rock types and other points of interest as the hole progressed. To determine what rocks were being penetrated as the hole progressed, the author was able to collect handfuls of rock from the base of the cyclone for inspection.

No problem was found in determining when coal was being penetrated because the cuttings instantly turned black and sampling was commenced immediately. Minor coaly streaks associated with other rocks produced cuttings that were black for short intervals and were not sampled.

Conglomerate was found to be the most common rock type. It was easily recognized because the cherty pebbles formed distinctive light to dark grey 1/4 inch pieces when penetrated by the drill. The pebbles frequently had a matrix of sandstone or shale (possibly a siltstone) and was noted.

Sandstone was found alone or associated with the conglomerate. Cuttings were distinctive light to dark brown, fine grained sand.

Shale was the least common rock type. Rocks identified as shale in the field may well be a siltstone. Cuttings from the shale were light grey and very fine grained. Three of the holes bottomed in this rock type.

All holes were stopped 12 to 16 feet after the last coal was penetrated. 902 feet of drilling was completed from the 950 feet proposed. Holes have been drawn on the appropriate profiles.

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During the construction of the drill sites, little overburden was discovered to exist on the hillside. Overburden was generally less than 5 feet thick. The most common rock type found was conglomerate with a sandstone matrix. The conglomerate was usually quite friable probably as a result of weathering. Several narrow bands of shale (possibly a siltstone) exist within the conglomerate. These bands frequently contain minor amounts of coal. In the road to the Hole # 1 drill site, an area of interbanded siltstone and sandstone was found. This strata has a strike of S 79° W, a dip to the northwest of 30°, and a local plunge of 9° to the northeast. This strike and dip are thought to be the same as those of the coal seams. The dip is confirmed on the profiles (Figures 5 to 14). Also in this road, a fault was mapped 30 feet northeast of station 2 + 00 W, 1 + 00 N. This fault has a dip of 19° to the southwest and is thought to have moved the sediments northeast of it down in relationship to those on the southwest (Figure 4). This suggests that the coal intersected in Hole # 1 is a seam which exists above the Seam A intersected in Holes 2 to 6.

C - Electrical Hole Logging

Roke Oil Enterprises Ltd. of Calgary were contracted by Whitehorse Coal Corporation to electrically log all holes drilled during the program. Steven Kalugin, the Roke Oil representative, arrived on the property at the same time as the drill on October 23, 1985. He arrived in a 4-wheel drive suburban truck fully equipped with all instrumentation and tools required to perform his work.

As each hole was completed, the drill crew would fill the hole with water from the tank on their rod truck. They would then move to the next hole and the Roke Oil truck would be brought to the hole. The water placed in the holes quickly drained away, therefore, it was necessary to perform the electrical resistance test as soon as possible. This was the only test which required water in the hole. The resistivity test was followed by gamma ray - neutron, bulk density and hole size tests. Each instrument was lowered into the hole on a winch system and logging was done as the instrument was raised out of the hole at a constant speed. These tests permit correlation of rock types and an estimate of coal purity to be made.

All holes were tested after the drill had been removed. The first hole was an exception since it was tested both with the rods in and out of the hole. This was done because it was feared the holes may collapse when the rods were removed. It was found only minor caving occurred so the remaining holes were logged after the rods were removed. It required 1 1/2 hours to log the first hole with the rods in the hole.

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Roke Oil indicates the coal measures found in holes 2 to 6 are readily correlatable, the coal is cleaner from hole 2 toward hole 6 and the ash content may be as low as 15% in cleaner, narrow coal bands. The bulk density graphs sink to near 1.6 in the cleaner coal bands but a bulk density of 1.8 for an average coal from the Whitehorse Coal property is probably more realistic. The suggested lower ash contents are substantially better than the ash contents obtained from earlier surface sampling - an encouraging fact.

## CONCLUSIONS AND RECOMMENDATIONS

Results obtained from the 1985 drill program have demonstrated continuity in the coal and a decrease in the ash content of the coal from that expected from earlier surface sampling. The coal appears to be getting cleaner as the coal seams are followed toward the north. Further drilling and detailed surface geological mapping in this direction should be given priority.

The surface topography between the Main Showing and the Fisher Creek Showing appears to be getting more gentle, this should allow easier access for bulldozers and drills to carry out additional work. The surface topography is important because it is a major feature in determining the amount of rock which must be removed from the coal if an open cut method of mining is adopted.

It is strongly recommended that detailed surface geological mapping of the entire property be done as part of any future work. Mapping will provide information concerning the influence folding and faulting has on the continuity of the coal within the property. It should also indicate areas of priority for further exploration.

## PROPOSED WORK PROGRAM

1. Detailed surface geological mapping of the entire property.
2. Further trenching and drilling between the Main Showing and the Fisher Creek Showing at a spacing of 200 feet.

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(7) Perry, J.H. (1984) "Report on the Whitehorse Coal Property, Yukon Territory" Report to Whitehorse Coal Corporation

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APPENDIX I

DRILL HOLE LOGS

NOVEMBER, 1985

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## WHITEHORSE COAL CORP.

HOLE # : WC - 85 - 1 DATE: Oct. 23 - 24/85

LOCATION: 0 + 95 W, 1 + 00 N DIP: - 90°

ELEVATION: 1020 ft. LOGGED BY: L.C.

| FOOTAGE | DESCRIPTION | REMARKS |
|---|---|---|
| 0 - 24 | Shale + S.S. | |
| 24 - 66 | Coal | |
| 66 - 74 | Conglomerate | |
| 74 - 76 | Coal | |
| 76 - 78 | Conglomerate | |
| 78 - 86 | Coal | Top Part Dirty |
| 86 - 89 | Coal + Congl. | |
| 89 - 92 | Coal | |
| 92 - 106 | Coal + Congl. | |
| 106 - 112 | Congl. + S.S. | |
| 112 - 118 | Coal + S.S. | |
| 118 - 134 | Conglomerate | |

Congl. = Conglomerate
S.S. = Sandstone

## WHITEHORSE COAL CORP.

HOLE # : WC - 85 - 2 DATE: Oct. 24/85

LOCATION: 4 + 00 W, 1 + 10 N DIP: - 90°

ELEVATION: 1002 ft. LOGGED BY: L.C.

| FOOTAGE | DESCRIPTION | REMARKS |
|---|---|---|
| 0 - 18 | Coal | Samples start 8 ft. |
| 18 - 24 | Coal + Shale | |
| 24 - 28 | Shale | |
| 28 - 33 | Coal + Shale | |
| 33 - 35 | Conglomerate | |
| 35 - 46 | Congl. + Coal | |
| 46 - 61 | Coal | |
| 61 - 63 | Coal + Congl. | |
| 63 - 66 | Conglomerate | |
| 66 - 67 | Coal | |
| 67 - 80 | Shale | Samples stop 74 ft. |

Congl. = Conglomerate

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## WHITEHORSE COAL CORP.

HOLE # : WC - 85 - 3 DATE: Oct. 25/85

LOCATION: 6 + 00 W, 2 + 00 N DIP: - 90°

ELEVATION: 1054 ft. LOGGED BY: L.C.

| FOOTAGE | DESCRIPTION | REMARKS |
|---|---|---|
| 0 - 21 | Congl. + S.S. | |
| 21 - 21.5 | Coal | |
| 21.5 - 44 | Congl. +S.S. | |
| 44 - 68 | Congl. + Minor S.S. | |
| 68 - 68.5 | Coal | |
| 68.5 - 70 | Conglomerate | |
| 70 - 85 | Coal | |
| 85 - 95 | Coal + Congl. | |
| 95 - 101 | Conglomerate | |
| 101 - 104 | Coal + Congl. | |
| 104 - 110 | Coal | |
| 110 - 114 | Coal + Congl. | |
| 114 - 128 | Coal | |
| 128 - 131 | Coal + Congl. | |
| 131 - 134 | Congl. + Minor Coal | Samples stop 134 ft. |
| 134 - 144 | Shale | |

Congl. = Conglomerate
S.S. = Sandstone

## WHITEHORSE COAL CORP.

HOLE # : WC - 85 - 4 DATE: Oct. 25/85

LOCATION: 8 + 00 W, 3 + 18 N DIP: - 90°

ELEVATION: 1089 ft. LOGGED BY: L.C.

| FOOTAGE | DESCRIPTION | REMARKS |
|---|---|---|
| 0 - 40 | Congl. + S.S. | Some Shale |
| 40 - 61 | Congl. + Shale | Trace Coal |
| 61 - 96 | Conglomerate | |
| 96 - 111 | Coal | |
| 111 - 113 | Shale | |
| 113 - 115 | Coal | |
| 115 - 116 | Shale | |
| 116 - 121 | Coal | |
| 121 - 123 | Shale + Congl. | |
| 123 - 125 | Shale + Congl. + Coal | |
| 125 - 134 | Coal | Minor Shale 134 ft. |
| 134 - 139 | Coal | |
| 139 - 141 | Shale + Congl. | |

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HOLE # : WC - 85 - 4 Continued

| | | |
|---|---|---|
| 141 - 143 | Coal | |
| 143 - 151 | Coal + Shale | Water @ 146 ft. |
| 151 - 158 | Coal | |
| 158 - 160 | Coal + Shale | Water @ 160 - 164 ft. |
| 160 - 188 | Coal | Water @ 166 - 170 ft. |
| 188 - 194 | Conglomerate | Water @ 181 - 182.5 ft. |
| 194 - 200 | Congl. + Coal ? | |
| 200 - 206 | Congl. + Shale | Water @ 201 - 206 ft. |
| | | Samples end @ 188 ft. |

Congl. = Conglomerate
S.S. = Sandstone

## WHITEHORSE COAL CORP.

HOLE # : WC - 85 - 5 DATE: Oct. 26/85

LOCATION: 10 + 00 W, 3 + 81 N DIP: - 90°

ELEVATION: 1085 ft. LOGGED BY: L.C.

| FOOTAGE | DESCRIPTION | REMARKS |
|---|---|---|
| 0 - 16 | Congl. + S.S. | |
| 16 - 44 | Conglomerate | 6" Coal @ 42 ft. |
| 44 - 49 | Congl. + S.S. | |
| 49 - 53 | Sandstone | |
| 53 - 58 | Congl. + S.S. | |
| 58 - 61 | Sandstone | |
| 61 - 66 | Congl. + S.S. | |
| 66 - 69 | Sandstone | |
| 69 - 78 | Shale | Some Conglomerate |
| 78 - 90 | Conglomerate | |
| 90 - 92 | Congl. + Shale | |
| 92 - 97 | Coal | Samples 92 - 98 ft. |
| 97 - 104 | Shale | |
| 104 - 114 | Shale + Congl. | |
| 114 - 118 | Conglomerate | |
| 118 - 142 | Coal | |
| 142 - 145 | Shale | |
| 145 - 148 | Coal | |
| 148 - 152 | Shale | |
| 152 - 154 | Coal | |

Last 50 ft. of hole squeezing - hole stopped.

Congl. = Conglomerate
S.S. = Sandstone

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# WHITEHORSE COAL CORP.

HOLE # : WC - 85 - 6 DATE: Oct. 26/85

LOCATION: 12 + 00 W, 4 + 32 N DIP: - 90°

ELEVATION: 1068 ft. LOGGED BY: L.C.

| FOOTAGE | DESCRIPTION | REMARKS |
|---|---|---|
| 0 - 20 | Congl. + S.S. | |
| 20 - 24 | Congl. + Shale | |
| 24 - 27 | Conglomerate | |
| 27 - 32 | Shale + S.S. | |
| 32 - 48 | Congl. + S.S. | |
| 48 - 52 | Sandstone | |
| 52 - 54 | Conglomerate | |
| 54 - 56 | Sandstone | |
| 56 - 58 | Conglomerate | |
| 58 - 59 | Sandstone | |
| 59 - 60 | Conglomerate | |
| 60 - 61 | Sandstone | |
| 61 - 63 | S.S. + Congl. | |
| 63 - 65 | Conglomerate | |
| 65 - 67 | Sandstone | Trace Coal @ 67 ft. |
| 67 - 96 | Conglomerate | Minor Sandstone |
| 96 - 98 | Shale + S.S. | |
| 98 - 103 | Coal / Shale | Samples 100 - 106 ft. |
| 103 - 105 | Coal | |
| 105 - 107 | Shale | |
| 107 - 126 | Congl. + Shale | |
| 126 - 169 | Coal | 1 ft. Shale @ 159 ft. |
| 169 - 176 | Conglomerate | Samples 126 - 170 ft. |
| 176 - 179 | Shale + Congl. | Water @ 164 - 166 ft. |
| 179 - 181 | Congl. + Shale | |
| 181 - 182 | Congl. + S.S. | |
| 182 - 184 | Conglomerate | Water @ 184 ft. |

Congl. = Conglomerate
S.S. = Sandstone

APPENDIX II

COAL RESERVE CALCULATION

November, 1985

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## COAL RESERVE CALCULATION

The author has made an independent coal reserve calculation from the drilling done on the Whitehorse Coal property.

In the calculation of reserves, it was decided to use only major coal seams (seams greater than 4 feet in true width) and of good purity. Rectangular blocks of reasonable size for each coal seam were determined on each profile (Figures 2 to 14). The areas were then assumed to extend a reasonable distance along the strike of the coal seams. This usually was considered to be half the distance between the block under considersation and the holes on either side of it. This only varied when some geological information existed which changed this assumption, such as the fault mentioned earlier. No coal reserves were assumed to exist outside of the holes at either end of the area drilled. Volumes are expressed in cubic feet. The volumes are calculated by multiplying the strike length (Length), by the dip length (Width), then by the true width of the seam (Thickness) as they were measured on the appropriate profile in feet.

The specific gravity of 1.8 was used to calculate the tonnages. Clean anthracite coal may have a specific gravity as low as 1.63 but a good average for the Whitehorse Coal property coal as determined by the Roke Oil tests is 1.8. No analyses have returned from the 1985 program; this assumption seems reasonable to the writer. One cubic foot of water weighs 62.4 lbs., therefore, one cubic foot of this coal would weigh 112 lbs. (62.4 x 1.8). The number of pounds obtained in this manner are divided by 2000 lbs. to obtain tonnage.

On Profile 1 + 00 W, coal seams G & H are assumed to be terminated by the fault to the southwest. These seams were intersected so close to surface, it was assumed the coal extended an equal distance into the hill from the hole as exists from the hole to surface.

On Profile 4 + 00 W, coal seam A was assumed to extend 25 feet into the hill since at least 25 feet of coal have been removed in the excavation of the Main Showing. This seam is, therefore, assumed to have a width of 50 feet. Seam B is narrower so is only assumed to have 1/2 the width of seam A. This demonstrates a common practice used during these reserve calculations. Narrow seams are assumed to have only 1/2 the width of the wide seams, unless geological information exists to make another assumption.

Seam A on Profiles 4 + 00 W to 12 + 00 W is the seam which the Roke Oil tests showed was correlatable. Seam B on Profiles 4 + 00 W to 8 + 00 W and seam C on Profiles 10 + 00 W to 12 + 00 W may be correlatable.

Reserves within the area drilled are estimated to be 200,837 tons. These reserves are considered to be Drill Indicated Reserves. No dilution has been allowed for in the calculation of these reserves. Some amount of dilution will occur if mining of this coal is attempted. The coal dips into the hill; mining by underground methods should be considered.

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These reserves are open and would be increased by additional work.

## ORE TO WASTE RATIO ESTIMATE

**STRIPPING RATIO** is the unit amount of waste that must be removed to recover a unit amount of ore. The unit usually used is one short ton (2000 pounds).

The following estimate is to be considered as preliminary only. Much of the data required for accurate calculation of stripping ratios and pit slopes has not, as yet, been obtained on the Whitehorse Coal Corporation property. Since much of the data is lacking, the author has found it necessary to make many assumptions. These assumptions, although largely based on the author's experience, may prove to be in error when more precise data are collected.

Assumptions made were:

(1) A final pit slope of 50 degrees could be attained in the rocks on the Whitehorse Coal property.
(2) Specific gravity of the coal was assumed to be 1.80.
(3) Rocks on the property are largely conglomerate consisting of 50% chert pebbles and 50% sandstone. Specific gravity of quartz is 2.65. Specific gravity of sandstone is 2.60. The specific gravity of the conglomerate would, therefore, be 2.63. One cubic foot of water weighs 62.4 pounds. One cubic foot of coal would weigh 112 lbs. (62.4 x 1.80) and one cubic foot of conglomerate would weigh 164 lbs. (62.4 x 2.63). Volumes of coal and waste (conglomerate) were measured from the accompanying drawings in square feet then multiplied by one foot along the strike to obtain the number of cubic feet. The number of cubic feet were then multiplied by the numbers of pounds above than divided by 2000 to obtain the number of tons of coal and waste.
(4) Each drawing shows the stripping ratio assumed for the calculations.
(5) For the Main Showing ONLY an average dip of 30 degrees was assumed for the slope of the hill and the dip of the coal.
(6) The average true thickness of the band containing coal in the Main Showing was calculated at 65 feet. The band was also calculated to contain 33% waste, this was considered in doing the calculations.

### MAIN SHOWING

Assuming a stripping ratio of 7.5 to 1, a dip length of 188 feet of the coal band should be mineable. One foot of length along the strike of the coal should liberate 8187.9 cubic feet or 458.5 tons of coal with the removal of 41,530.6 cubic feet or 3405.5 tons of waste. Along the 1100 foot strike length of the coal band drilled in 1985, 504,350 tons of coal should be obtained with the removal of 3,746,050 tons of waste.

Similar calculations were made using a stripping ratio of 10 to 1. 251 feet along the dip length of the coal band would be exposed by using this ratio. One foot of length along the strike of the coal band should liberate 10,974.6 cubic feet or 614.6 tons of coal with the removal of 75,347.4 cubic feet or 6178.5 tons of waste. Along the 1100 foot strike length of the coal band, 676,060 tons of coal should be obtained with the removal of 6,796,350 tons of waste.

FISHER CREEK SHOWING

The same calculations were done for the Fisher Creek Showing. Using a 7.5 to 1 ratio, one foot along the strike of the coal should liberate 550 cubic feet or 31 tons of coal with the removal of 2856 cubic feet or 234 tons of waste. Along the exposed 200 foot strike length of this showing, 6200 tons of coal should be liberated with the removal of 46,800 tons of waste. 55 feet of the dip length of the coal would be exposed with this ratio.

One foot along the strike of the coal, using a stripping ratio of 10 to 1, should liberate 800 cubic feet or 45 tons of coal with the removal of 5400 cubic feet or 443 tons of waste. Along the 200 foot strike length, 9000 tons of coal should be liberated with the removal of 88,600 tons of waste. 80 feet of the dip length of the coal would be exposed with this ratio.

Respectfully submitted,

Larry W. Carlyle

Larry W. Carlyle
November 20, 1985

GEOLOGICAL ASSOCIATION OF CANADA
L. W. CARLYLE
FELLOW

092012

# COMMERCIAL TESTING & ENGINEERING CO.

1707 FRANKLIN STREET, VANCOUVER, B.C. V5L1P6 • TEL. (604) 255-2688, TELEX 04-508763

DIVISION OF
C T & E TESTING CORPORATION


## WHITEHORSE COAL CO.

### 1.8 Float Analysis

### DRY BASIS

| Sample | % Yield Float | % Ash | % V.M. | % F.C. | % S. | Btu/Lb |
|---|---|---|---|---|---|---|
| 1 (46-48) | 17.5 | 22.05 | 6.82 | 71.13 | 0.62 | 10695 |
| 1 (58-60) | 8.0 | 22.88 | 7.85 | 69.27 | 0.62 | 10450 |
| 1 (82-84) | 11.9 | 22.13 | 8.40 | 69.47 | 0.59 | 10693 |
| 2 (14-16) | 11.9 | 23.60 | 8.07 | 68.33 | 0.62 | 10773 |
| 2 (54-56) | 20.5 | 20.68 | 9.61 | 69.71 | 0.67 | 11196 |
| 3 (70-72) | 23.6 | 23.52 | 7.11 | 69.37 | 0.57 | 10673 |
| 3 (78-80) | 45.5 | 21.40 | 7.60 | 71.00 | 0.62 | 11096 |
| 3 (126-128) | 0.6 | 16.66 | 6.28 | 77.06 | 0.68 | 12005 |
| 4 (96-98) | 42.8 | 24.67 | 6.93 | 68.40 | 0.64 | 10496 |
| 4 (102-104) | 55.6 | 25.96 | 7.05 | 66.99 | 0.52 | 10471 |
| 4 (116-118) | 10.2 | 25.21 | 6.24 | 68.56 | 0.43 | 10412 |
| 4 (183-184) | 1.5 | 21.75 | 5.00 | 73.25 | 0.63 | 11042 |
| 5 (120-122) | 25.6 | 20.78 | 7.29 | 71.93 | 0.56 | 11070 |
| 5 (128-130) | 24.5 | 19.68 | 5.85 | 74.47 | 0.55 | 11203 |
| 5 (136-138) | 58.6 | 24.61 | 7.70 | 67.70 | 0.47 | 10537 |
| 6 (138-140) | 23.0 | 23.64 | 6.17 | 70.19 | 0.42 | 10629 |
| 6 (142-144) | 45.2 | 22.93 | 7.73 | 69.34 | 0.54 | 10678 |

C82015

I, LARRY W. CARLYLE, do ceritfy:

1. That I am a professional geologist with an office at 74 Tamarack Drive, Whitehorse, Yukon, YIA 4Y6.

2. That I hold a B. Sc. degree in geology from the University of British Columbia (1970).

3. That I am a Fellow of the Geological Association of Canada (F - 4355).

4. That I am a Registered Professional Geologist in the Association of Professional Engineers, Geologists, and Geophysicists of the Province of Alberta (41097).

5. That I am a Member of the Canadian Institute of Mining and Metallurgy.

6. That I have practiced my profession as a geologist for the past fourteen years.

7. That the information, conclusions and recommendations in the attached report are based on the program supervised by the author from October 22, 1985 to October 26, 1985 and on research of published and private geological maps and reports.

8. That I hold no interest in the property nor in the shares of Whitehorse Coal Corporation.

Larry W. Carlyle

Larry W. Carlyle

GEOLOGICAL ASSOCIATION OF CANADA
L. W. CARLYLE
FELLOW

# SHEET 105-D-11

LATITUDE 60°30' To 60°45
LONGITUDE 135°00' To 135°30'

**092012 WHITEHORSE**

CANADA
DEPARTMENT OF NORTHERN AFFAIRS AND NATIONAL RESOURCES
NORTHERN ADMINISTRATION BRANCH
RESOURCES DIVISION

SCALE ½ MILE To 1 INCH

FT 0 1000 2000 3000 4000 5000 6000 7000 8000 FT

ISSUED UNDER THE AUTHORITY OF THE MINISTER OF
NORTHERN AFFAIRS AND NATIONAL RESOURCES

Prepared for:
WHITEHORSE COAL CORPORATION

By:
NORECOL ENVIRONMENTAL CONSULTANTS LTD.
Edmonton, Alberta.

## WHITEHORSE COAL CORPORATION EXPLORATION PROGRAM

SHEET 105-D-11
MATCHLINE 135° 60° 30'
MATCHLINE 60° 30'
SHEET 105 D-6

COAL EXPLORATION LICENSE No. 30

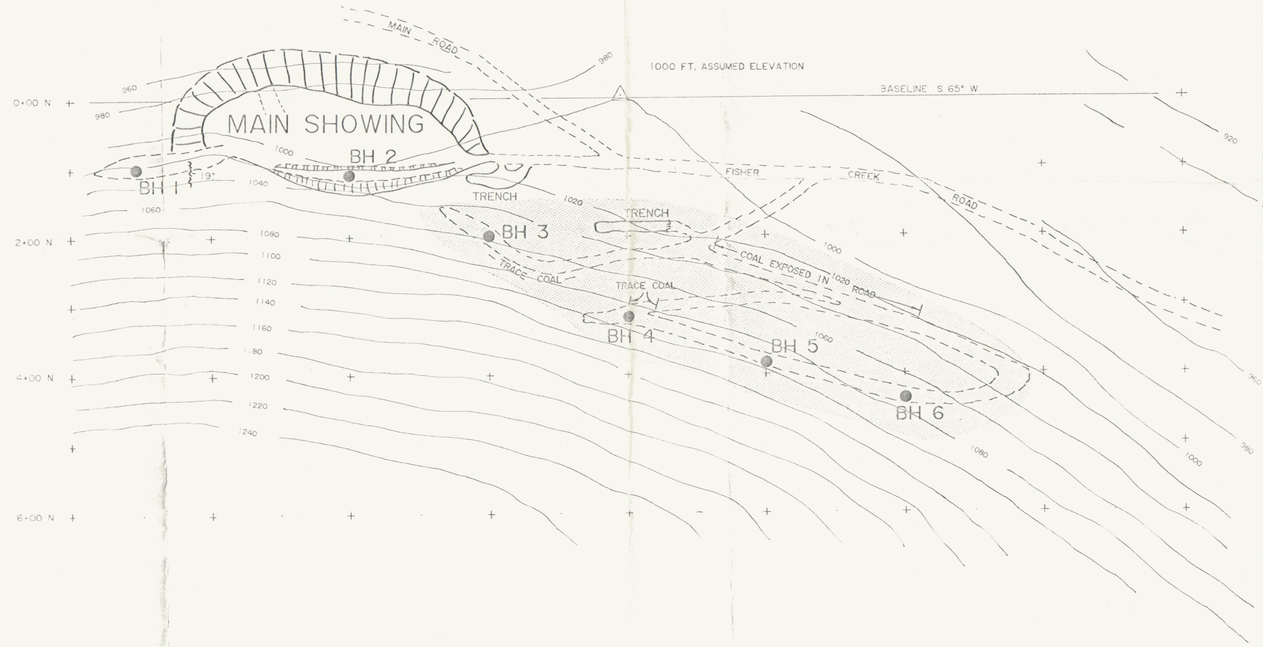
C.M.L. NO. 2990
C.M.L. NO. 2989
OLD CAMPSITE
EAST HILL
WEST HILL
COAL MINE ROAD
COAL LAKE
DOUBLE MTN
PTARMIGAN HILL
BERESFORD HILL
LAKEVIEW MTN
GOAT MTN
TWIN MTN
MT. GRANGER
MT. McINTYRE
FISH LAKE
BONNEVILLE LAKES
WOLF CREEK
FISHER CREEK
COAL CREEK
Dugdale
Horse Creek
WHITEHORSE METRO
GOLDEN HORN MTN.
CITY OF WHITEHORSE

LEGEND:
- Existing Trench
- Exploration Work Completed In Existing Trench
- XXXX Road Cuts / Culverts Installed

REFERENCE:
Map area shown, is portions of Claim Maps 105-D-6 and 105-D-11.

Work In Old Pits:
#1 100' x 30' x 20'
#2 200' x 40' x 6'
#3 30' x 15' x 3'
#4 30' x 15' x 6'
#5 150' x 15' x 6'

COAL EXPLORATION LICENSE




N

NOTES:

BH 4 BOREHOLE No. 4

PROPOSED OVERBURDEN STRIPPING

CONTOUR INTERVAL = 20 FT.


WHITEHORSE COAL CORPORATION

BOX 5478, WHITEHORSE, YUKON Y1A 5H4

TELEPHONE 668-2839


REVISIONS :

| NO. | DATE | ENG. | SUBJECT |
|---|---|---|---|
| 1 | 86 | D.C. | REDRAFT FROM ORIGINAL DRAWINGS BY L.C., NOV. 85 |

092012

PROJECT :
WHITEHORSE COAL CORP.
COAL RESOURCES

DRAWING TITLE :
SITE PLAN

SCALE : 1" = 100'-0"

DATE : APRIL 30, 1986

DESIGN :

DRAWN : D.C.

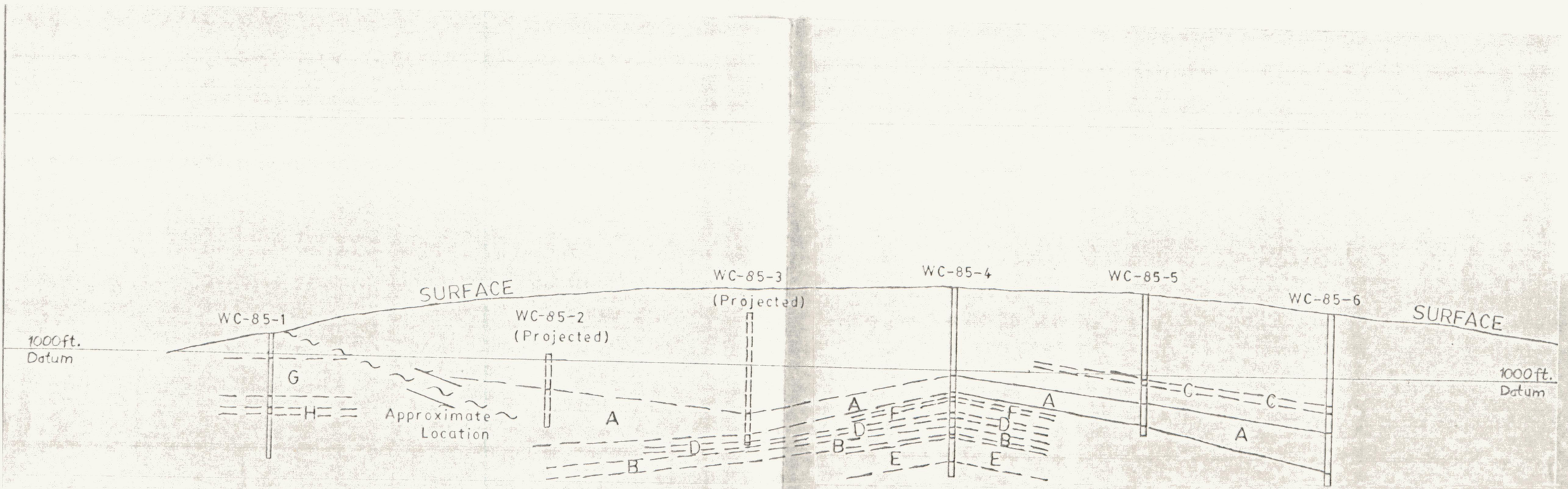
CHECKED :

APPROVED :

| DRAWING NUMBER : | SHEET : |
|---|---|
| 1 | 1 |

UNICAL 15878

Ass. Rep. # 092012.




Coal Seam "A" Correlated by Roke Oil
Inferred Correlation of Coal Seams "B", "C" and "D"

See Profiles 1+00 W to 12+00 W

SECTION LOOKS SOUTHEAST

092012

WHITEHORSE COAL CORPORATION

LONGITUDINAL SECTION THRU
HOLES WC-85-1, WC-85-4, 5 & 6
WHITEHORSE MINING DISTRICT, Y.T.

| | |
|---|---|
| NTS: 105 D 11 & 6 | SCALE: 1:1200 (0, 50, 100) |
| DRWN BY: LC | DATE: JANUARY 1986 |
| APPROVED BY: | DRAWING: |

B. L.

1+00 N

2+00 N

3+00 N

4+00 N

5+00 N

1237

1186

1136

1075

1048

1044

1005

1002

997

994

952

1000 ft.
Datum

MAIN SHOWING

A

B

30°

WC-85-2
80.0 ft.
90°

B. L.

SECTION LOOKS SOUTHWEST

1000 ft.
Datum

LEGEND

1 COAL

2 CONGLOMERATE

3 SANDSTONE

4 SHALE

WHITEHORSE COAL CORPORATION

# PROFILE 4+00 W

WHITEHORSE MINING DISTRICT, Y.T.

| | |
|---|---|
| NTS: 105 D 11 & 6 | SCALE: 1:480 (0 20 40) |
| DRWN BY: LC | DATE: NOVEMBER 1985 |
| APPROVED BY: | DRAWING: 8 |

B. L.

1+00 N

2+00N

3+00N

4+00N

5+00N

1228

1177

1124

Road

Pit
Road

Trench
101

1008

32°

1000 ft.
Datum

Main
Road

975 975

983

A

B

D

WC-85-3
144.0 ft.
90°

B. L.

SECTION 100N SOUTHWEST

1000ft.
Datum

LEGEND

1 COAL

2 CONGLOMERATE

3 SANDSTONE

4 SHALE

WHITEHORSE
COAL
CORPORATION

PROFILE 6+00 W

WHITEHORSE MINE STRIP

| | | | |
|---|---|---|---|
| NTS | 105 G/11 & 6 | SCALE | 1:250 (0, 20, 40) |
| DRAWN BY | LC | DATE | NOVEMBER 1985 |
| APPROVED BY | | DRAWING | 9 |

B. L.

1+00 N

2+00 N

3+00 N

4+00 N

5+00 N

1192

1141

Road

1083

1030

Trench

Road

1006

1002

1001

Road

1000

1000ft.
Datum

1001

30°

A

E

D

B

E

4+2

4+2+1

1+4

2+1

2+4

WC-85-4
206.0 ft.
90°

1000ft.
Datum

B. L.

SECTION LOOKS SOUTHWEST

## LEGEND

1 COAL

2 CONGLOMERATE

3 SANDSTONE

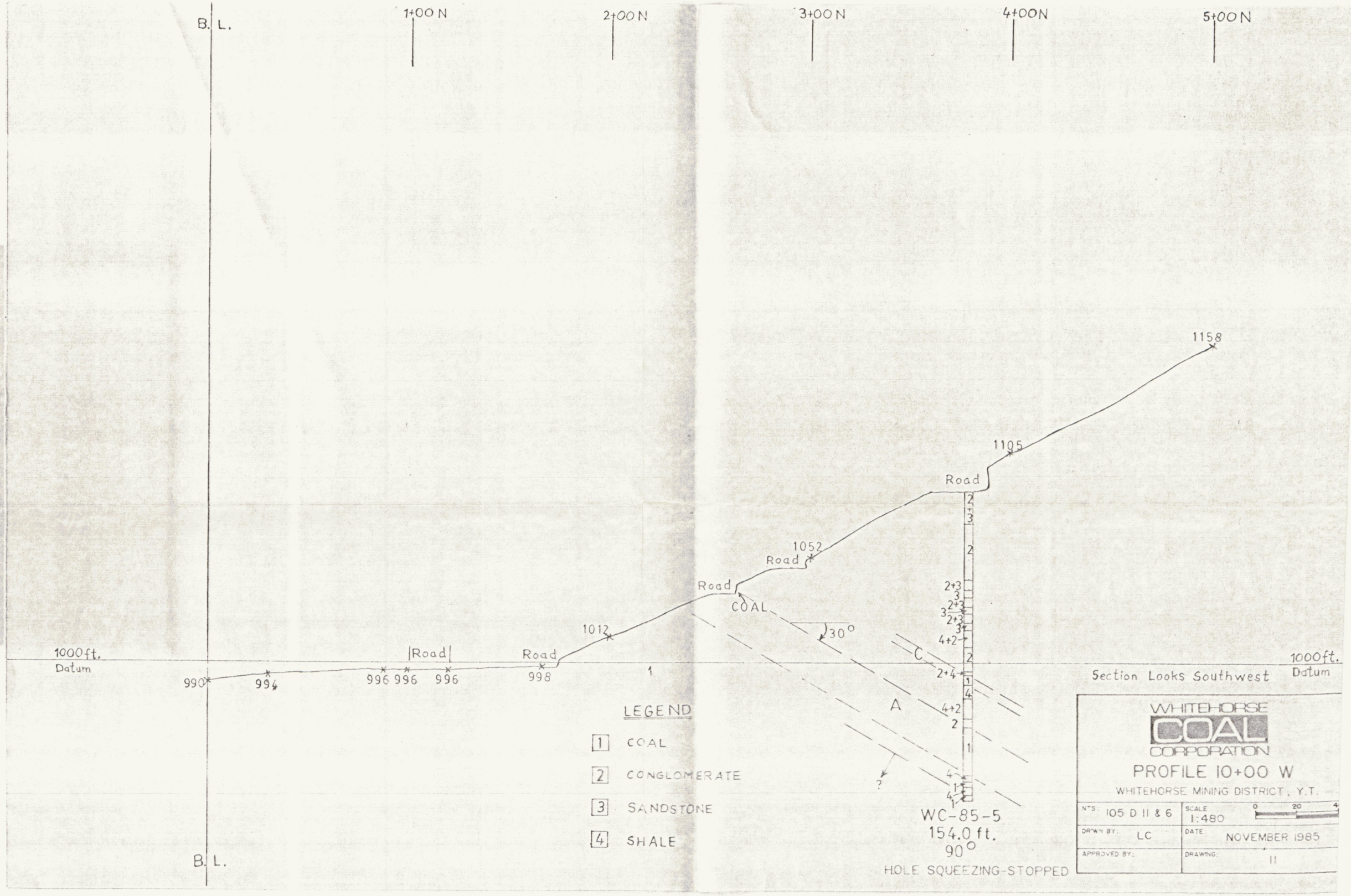
4 SHALE

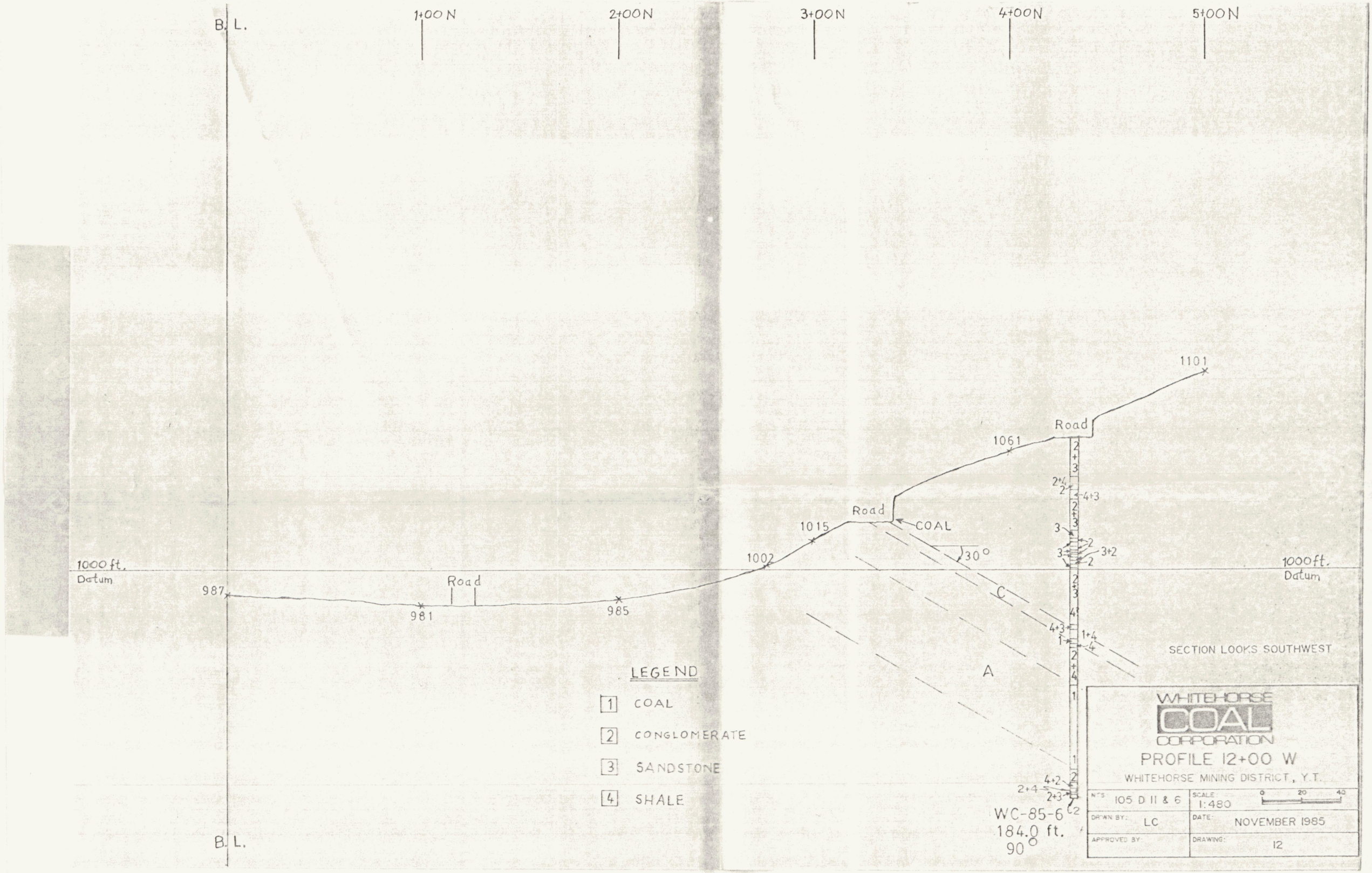
WHITEHORSE COAL CORPORATION

# PROFILE 8+00 W

WHITEHORSE MINING DISTRICT, Y.T.

| | |
|---|---|
| NTS: 105 D 11 & 6 | SCALE: 1:480 (0 20 40) |
| DRAWN BY: LC | DATE: NOVEMBER 1985 |
| APPROVED BY: | DRAWING: 10 |


B. L.
1+00 N
2+00 N
3+00 N
4+00 N
5+00 N
1158
1105
Road
1052
Road
Road
COAL
30°
1012
Road
Road
1000ft.
Datum
990
994
996
996
996
998
1
C
A
2+4
4+2
2
1
4
?
2+3
3
2+2
3
2+3
3
4+2
2
1000ft.
Datum
Section Looks Southwest
LEGEND
1 COAL
2 CONGLOMERATE
3 SANDSTONE
4 SHALE
WC-85-5
154.0 ft.
90°
HOLE SQUEEZING-STOPPED
B. L.
WHITEHORSE COAL CORPORATION
PROFILE 10+00 W
WHITEHORSE MINING DISTRICT, Y.T.
N.T.S. 105 D 11 & 6
SCALE 1:480
0 20 40
DRWN BY: LC
DATE: NOVEMBER 1985
APPROVED BY:
DRAWING: 11


B. L.
1+00 N
2+00 N
3+00 N
4+00 N
5+00 N
1101
Road
1061
Road
1015
COAL
1002
30°
1000 ft.
Datum
987
981
Road
985
C
A
4+3
3+2
1+4
4
SECTION LOOKS SOUTHWEST
LEGEND
1 COAL
2 CONGLOMERATE
3 SANDSTONE
4 SHALE
WC-85-6
184.0 ft.
90°
B. L.
WHITEHORSE COAL CORPORATION
PROFILE 12+00 W
WHITEHORSE MINING DISTRICT, Y.T.
NTS 105 D 11 & 6
SCALE 1:480
0 20 40
DRWN BY: LC
DATE: NOVEMBER 1985
APPROVED BY:
DRAWING: 12

# ROKE

GAMMA RAY
SIDEWALL DENSILOG
092012
CALIPER

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.
LSD
SEC
TWP
RGE
W M

COMPANY WHITEHORSE COAL CORPORATION

WELL W.C. 85-2

LOCATION 109.5'N OF BASELINE 4+00W

FIELD

PROVINCE YUKON TERRITORY

Other Services:
GRN FBL

Permanent Datum GROUND LEVEL Elev.
Log Measured from GROUND LEVEL Above Perm. Datum
Well Depths Measured from GROUND LEVEL

K.B.
CSG
G.L.
5" ENGLISH

| | | | |
|---|---|---|---|
| Run. No. | ONE | | |
| Date | 25 OCT 1985 | | |
| First Reading | 78 FT. | | |
| Last Reading | 00 | | |
| ~~Footage Logged~~ | 78 | | |
| Depth Reached | 79 | | |
| Depth Driller | 80 | | |
| Casing Roke | 00 | | |
| Casing Driller | 00 | | |
| Fluid Type | WATER | | |
| Liquid Level | | | |
| Min. Diam. | 5 1/4 IN. | | |
| | | | |
| | | | |
| | | | |
| | | | |
| Operating Time | 1 HOUR | | |
| Truck No. | 51 | | |

Recorded By KALUGIN Witnessed By CARLYLE

GENERAL

| RUN NO. | DEPTHS FROM | DEPTHS TO | SPEED FT/MIN | GAMMA RAY T.C. SEC. | GAMMA RAY SENS SETTINGS | GAMMA RAY ZERO DIV'L OR R | GAMMA RAY API G.R. UNITS PER LOG DIV. | SIDEWALL DENSILOG T.C. SEC. | SIDEWALL DENSILOG SENS SETTINGS | SIDEWALL DENSILOG ZERO DIV'L OR R | SIDEWALL DENSILOG CPS/ DIV |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 00 | 78 | 14 | 3 | 100 | 0 | 12 | .2 | 5000 | 2.66R | 79.38 |
| 1 | 00 | 77 | 18 | | | | | | | | |

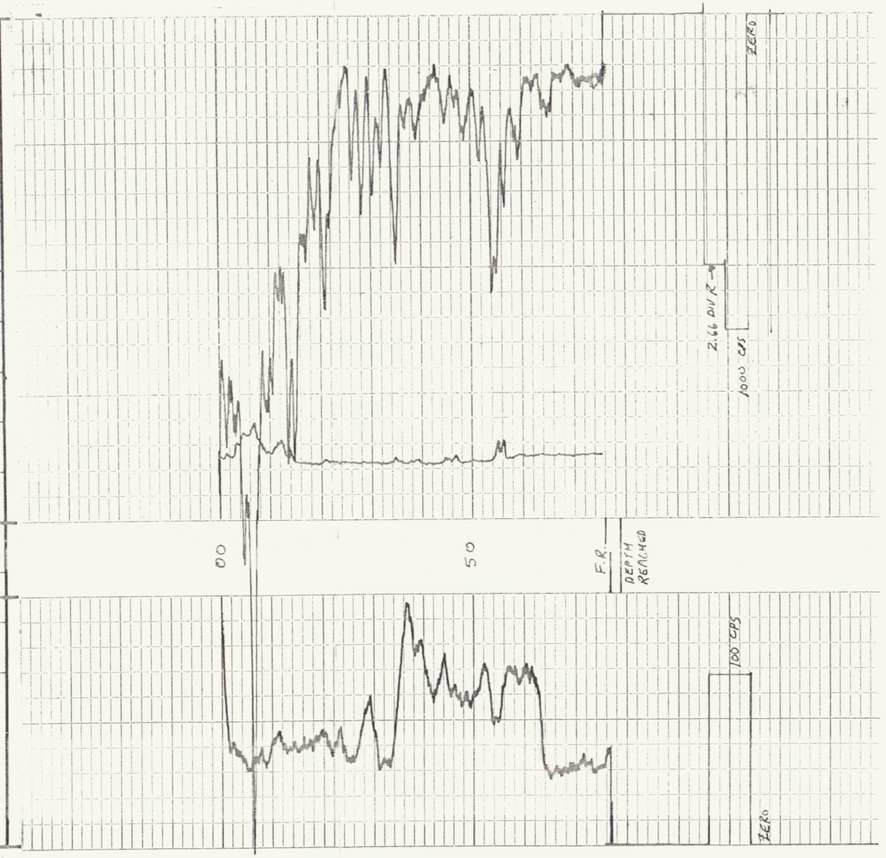
REMARKS GR. = 312
DENS. = 457A
CAL. = 781

CALIPER
DIAMETER - IN
4 5 6

DEPTHS

GAMMA RAY
API
12
120
0

BULK DENSITY
(GRAMS/CC)
2.80 2.70 2.60 2.50 2.40 2.30 2.20 2.10 2.00 1.90 1.80 1.70 1.60 1.50 1.40 1.30 1.20 1.10 1.00



# ROKE

GAMMA RAY
SIDEWALL DENSILOG
092012 CALIPER

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.

COMPANY WHITEHORSE COAL CORPORATION

WELL W.C. 85-3

LOCATION

FIELD

PROVINCE YUKON TERRITORY

Other Services:
GRN, FBL

Permanent Datum GROUND LEVEL Elev.
Log Measured from GROUND LEVEL Above Perm. Datum
All Depths Measured from GROUND LEVEL

K.B.
CSG
G.L.
5" ENGLISH

| | | | |
|---|---|---|---|
| Run No. | ONE | | |
| Date | 25 OCT 1985 | | |
| First Reading | 140 FT. | | |
| Last Reading | 00 | | |
| Footage Logged | 140 | | |
| Depth Reached | 141.5 | | |
| Depth Driller | 144 | | |
| Casing Roke | 00 | | |
| Casing Driller | 00 | | |
| Fluid Type | WATER | | |
| Fluid Level | | | |
| Bit Diam. | 5 1/4 IN | | |
| | | | |
| | | | |
| | | | |
| Operating Time | 1 HOUR | | |
| Truck No. | 51 | | |

Recorded By KALAGIN Witnessed By CARLYLE

GENERAL

| RUN NO. | DEPTHS FROM | DEPTHS TO | SPEED FT/MIN | GAMMA RAY T.C. SEC. | GAMMA RAY SENS SETTINGS | GAMMA RAY ZERO DIV.L OR R | GAMMA RAY API G.R. UNITS PER LOG DIV. | SIDEWALL DENSILOG T.C. SEC. | SIDEWALL DENSILOG SENS SETTINGS | SIDEWALL DENSILOG ZERO DIV.L OR R | SIDEWALL DENSILOG CPS/ DIV |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 00 | 140 | 14 | 3 | 100 | 0 | 12 | .2 | 5000 | 2.66 | 79.38 |
| 1 | 00 | 138.5 | 18 | | | | | | | | |

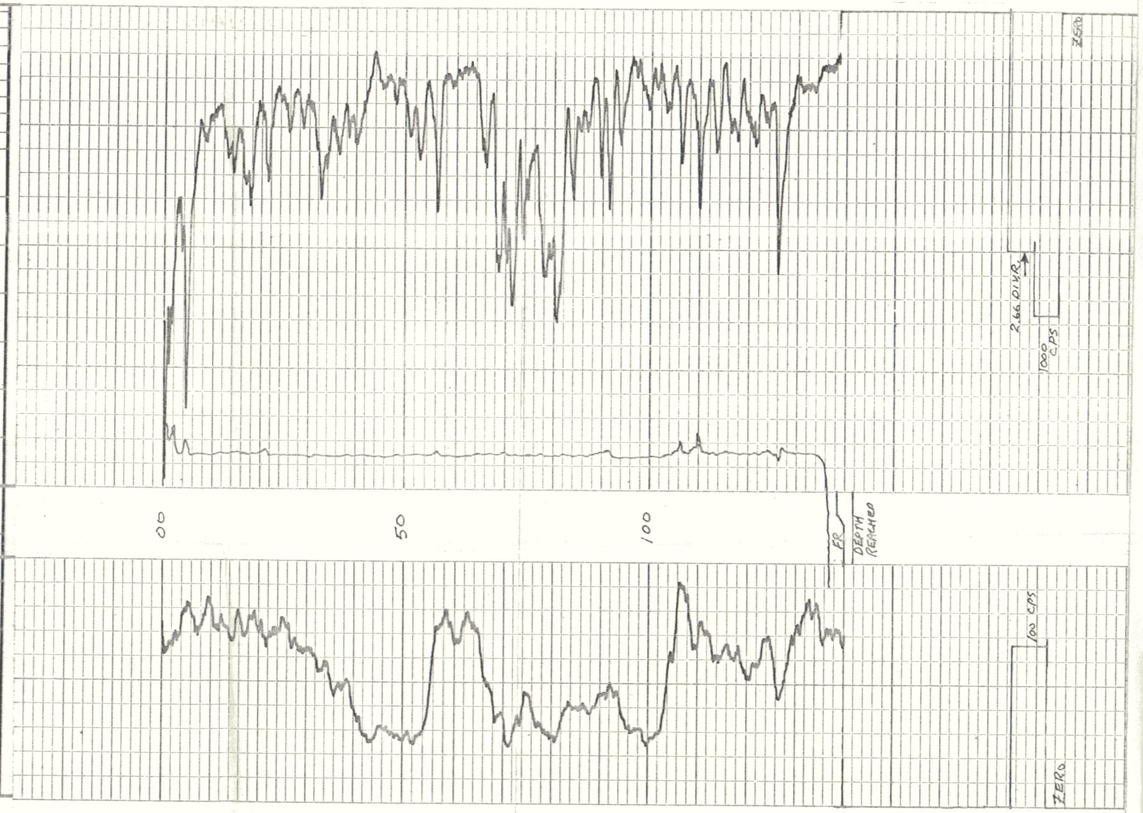
REMARKS GR # 312
DENS # 457 A
CAL # 781

CALIPER
DIAMETER — IN
4 5 6

DEPTHS

GAMMA RAY
API
12
0 120

BULK DENSITY
(GRAMS/CC)
2.80 2.70 2.60 2.50 2.40 2.30 2.20 2.10 2.00 1.90 1.80 1.70 1.60 1.50 1.40 1.30 1.20 1.10 1.00



# ROKE

GAMMA RAY
SIDEWALL DENSILOG
092012 CALIPER

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.
LSD
SEC
TWP
RGE
W M

COMPANY WHITEHORSE COAL CORPORATION

WELL W.C. 85-4

LOCATION

FIELD

PROVINCE YUKON TERRITORY

Other Services:
GRN, FBL

Permanent Datum GROUND LEVEL Elev.
Log Measured from GROUND LEVEL Above Perm. Datum
Well Depths Measured from GROUND LEVEL

K.B.
CSG.
G.L.
5" ENGLISH

| | | | |
|---|---|---|---|
| Run. No. | ONE | | |
| Date | 26 OCT 1985 | | |
| First Reading | 197 | | |
| Last Reading | 00 | | |
| Footage Logged | 197 | | |
| Depth Reached | 197 | | |
| Depth Driller | 206 | | |
| Casing Rcke | 00 | | |
| Casing Driller | 00 | | |
| Fluid Type | WATER | | |
| Liquid Level | | | |
| Min. Diam. | 5 1/4 IN | | |
| | | | |
| | | | |
| | | | |
| Operating Time | 1 HOUR | | |
| Truck No. | 51 | | |

Recorded By KALUGIN Witnessed By CARLYLE

| GENERAL RUN NO. | DEPTHS FROM | DEPTHS TO | SPEED FT/MIN | T.C. SEC. | GAMMA RAY SENS SETTINGS | GAMMA RAY ZERO DIV'L OR R | GAMMA RAY API G.R. UNITS PER LOG DIV. | SIDEWALL DENSILOG T.C. SEC. | SIDEWALL DENSILOG SENS SETTINGS | SIDEWALL DENSILOG ZERO DIV'L OR R | SIDEWALL DENSILOG CPS/DIV |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 00 | 197 | 14 | 3 | 100 | 0 | 12 | .2 | 5000 | 2.66 R | 79.58 |
| 1 | 00 | | 18 | | | | | | | | |

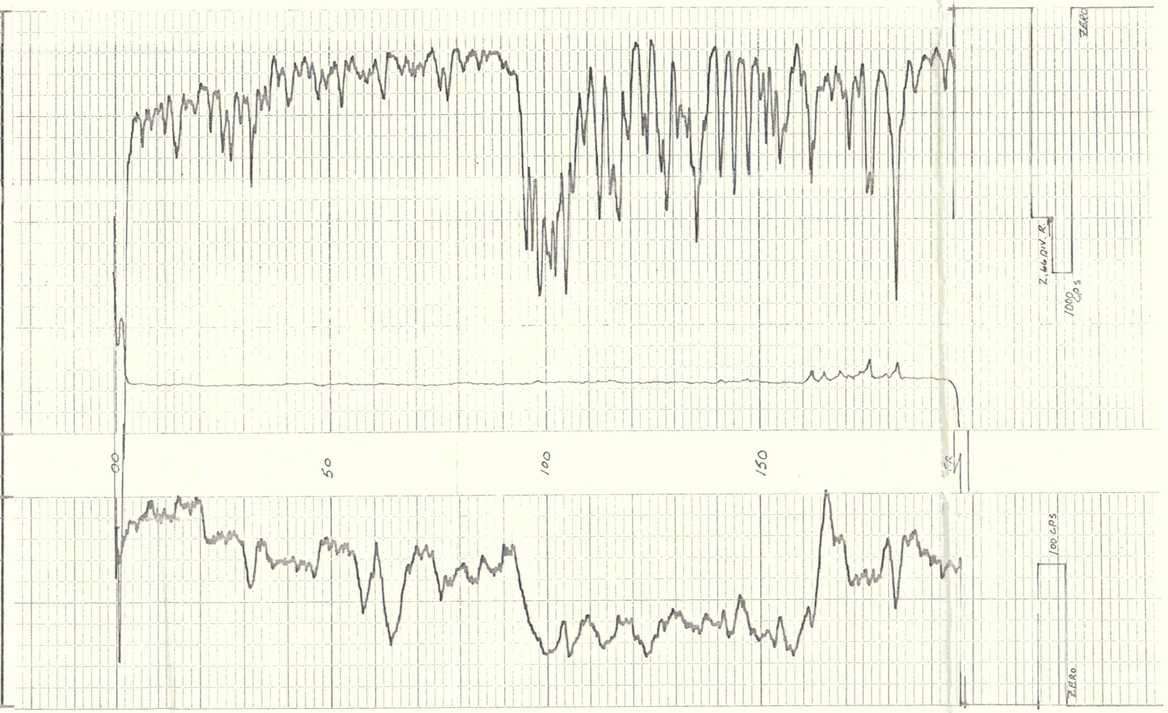
REMARKS GR # 312
DENS # 457 A
CAL # 781

CALIPER
DIAMETER - IN
4 5 6

DEPTHS

GAMMA RAY
API
12
0 120

BULK DENSITY
(GRAMS/CC)
2.80 2.70 2.60 2.50 2.40 2.30 2.20 2.10 2.00 1.90 1.80 1.70 1.60 1.50 1.40 1.30 1.20 1.10 1.00



# ROKE

GAMMA RAY
SIDEWALL DENSILOG
092012 CALIPER

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.
LSD
SEC
TWP
RGE
W M

COMPANY WHITEHORSE COAL CORPORATION

WELL W.C. 85-5

LOCATION

FIELD

PROVINCE YUKON TERRITORY

Other Services:
FDL, GRN

Permanent Datum GROUND LEVEL Elev.
Log Measured from GROUND LEVEL Above Perm. Datum
Well Depths Measured from GROUND LEVEL

K.B.
CSG
G.L.
5" ENGLISH

| | | | |
|---|---|---|---|
| Run. No. | ONE | | |
| Date | 26 OCT 1985 | | |
| First Reading | 143.5 | | |
| Last Reading | 00 | | |
| Footage Logged | 143.5 | | |
| Depth Reached | 145 | | |
| Depth Driller | 154 | | |
| Casing Roke | 00 | | |
| Casing Driller | 00 | | |
| Fluid Type | WATER | | |
| Liquid Level | | | |
| Min. Diam. | 5 1/4 IN | | |
| | | | |
| | | | |
| | | | |
| Operating Time | 1 HOUR | | |
| Truck No. | 51 | | |

Recorded By KALUGIN Witnessed By CARLYLE

GENERAL — RUN NO. | DEPTHS FROM | DEPTHS TO | SPEED FT/MIN | GAMMA RAY T.C. SEC. | GAMMA RAY SENS SETTINGS | GAMMA RAY ZERO DIV. L OR R | GAMMA RAY API G.R. UNITS PER LOG DIV. | SIDEWALL DENSILOG T.C. SEC. | SIDEWALL DENSILOG SENS SETTINGS | SIDEWALL DENSILOG ZERO DIV. L OR R | SIDEWALL DENSILOG CPS/DIV

| RUN NO. | DEPTHS FROM | DEPTHS TO | SPEED FT/MIN | GAMMA RAY T.C. SEC. | GAMMA RAY SENS SETTINGS | GAMMA RAY ZERO DIV. L OR R | GAMMA RAY API G.R. UNITS PER LOG DIV. | SIDEWALL DENSILOG T.C. SEC. | SIDEWALL DENSILOG SENS SETTINGS | SIDEWALL DENSILOG ZERO DIV. L OR R | SIDEWALL DENSILOG CPS/DIV |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 00 | 143.5 | 14 | 3 | 100 | 0 | 12 | .2 | 5000 | 2.66 R | 7938 |
| 1 | 00 | 142 | 18 | | | | | | | | |

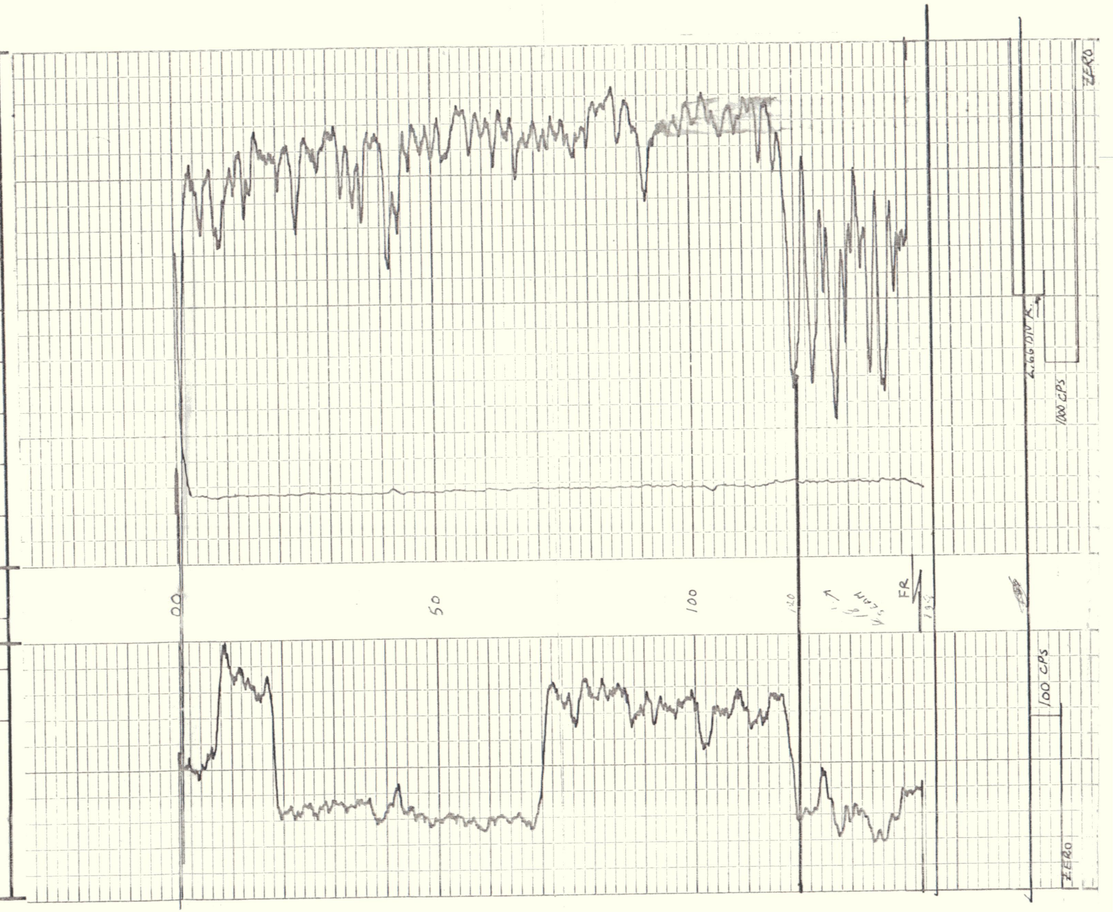
REMARKS: GR # 312, DENS # 4579, CAL # 781

CALIPER DIAMETER - IN

DEPTHS

GAMMA RAY API 0 — 12 — 120

BULK DENSITY (GRAMS/CC)
2.80 2.70 2.60 2.50 2.40 2.30 2.20 2.10 2.00 1.90 1.80 1.70 1.60 1.50 1.40 1.30 1.20 1.10 1.00



# ROKE

GAMMA RAY
SIDEWALL DENSILOG
092012
CALIPER

OIL ENTERPRISES LTD. CALGARY, ALBERTA

FILE NO.
LSD
SEC
TWP
RGE
W ____ M

COMPANY WHITEHORSE COAL CORPORATION

WELL W.C. 85-6

LOCATION

FIELD

PROVINCE YUKON TERRITORY

Other Services:
FBL, ORN

Permanent Datum GROUND LEVEL Elev.
Log Measured from GROUND LEVEL Above Perm. Datum
Well Depths Measured from GROUND LEVEL

K.B.
CSG
G.L.
5" ENGLISH

| | | | |
|---|---|---|---|
| Run. No. | ONE | | |
| Date | 26 OCT. 1985 | | |
| First Reading | 166 FT | | |
| Last Reading | 00 | | |
| Footage Logged | 166 | | |
| Depth Reached | 168 | | |
| Depth Driller | 184 | | |
| Casing Roke | 00 | | |
| Casing Driller | 00 | | |
| Fluid Type | WATER | | |
| Liquid Level | | | |
| Min. Diam. | 5 1/4 IN. | | |
| | | | |
| | | | |
| | | | |
| Operating Time | 1 HOUR | | |
| Truck No. | 51 | | |

Recorded By KALUGIN Witnessed By CARLYLE

| GENERAL RUN NO. | DEPTHS FROM | DEPTHS TO | SPEED FT/MIN | GAMMA RAY T.C. SEC. | GAMMA RAY SENS SETTINGS | GAMMA RAY ZERO DIV'L OR R | GAMMA RAY API G.R. UNITS PER LOG DIV. | SIDEWALL DENSILOG T.C. SEC. | SIDEWALL DENSILOG SENS SETTINGS | SIDEWALL DENSILOG ZERO DIV'L OR R | SIDEWALL DENSILOG CPS/DIV |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 00 | 166 | 14 | 3 | 100 | 0 | 12 | .2 | 5000 | 2.66 R | 79.38 |
| 1 | 00 | 164.5 | 18 | | | | | | | | |

REMARKS GR # 312
DENS # 45-1A
CAL # 181

CALIPER
DIAMETER—CM
5 6

DEPTHS

GAMMA RAY
API
1/2
120
0

BULK DENSITY
(GRAMS/CC)
2.80
2.70
2.60
2.50
2.40
2.30
2.20
2.10
2.00
1.90
1.80
1.70
1.60
1.50
1.40
1.30
1.20
1.10
1.00