

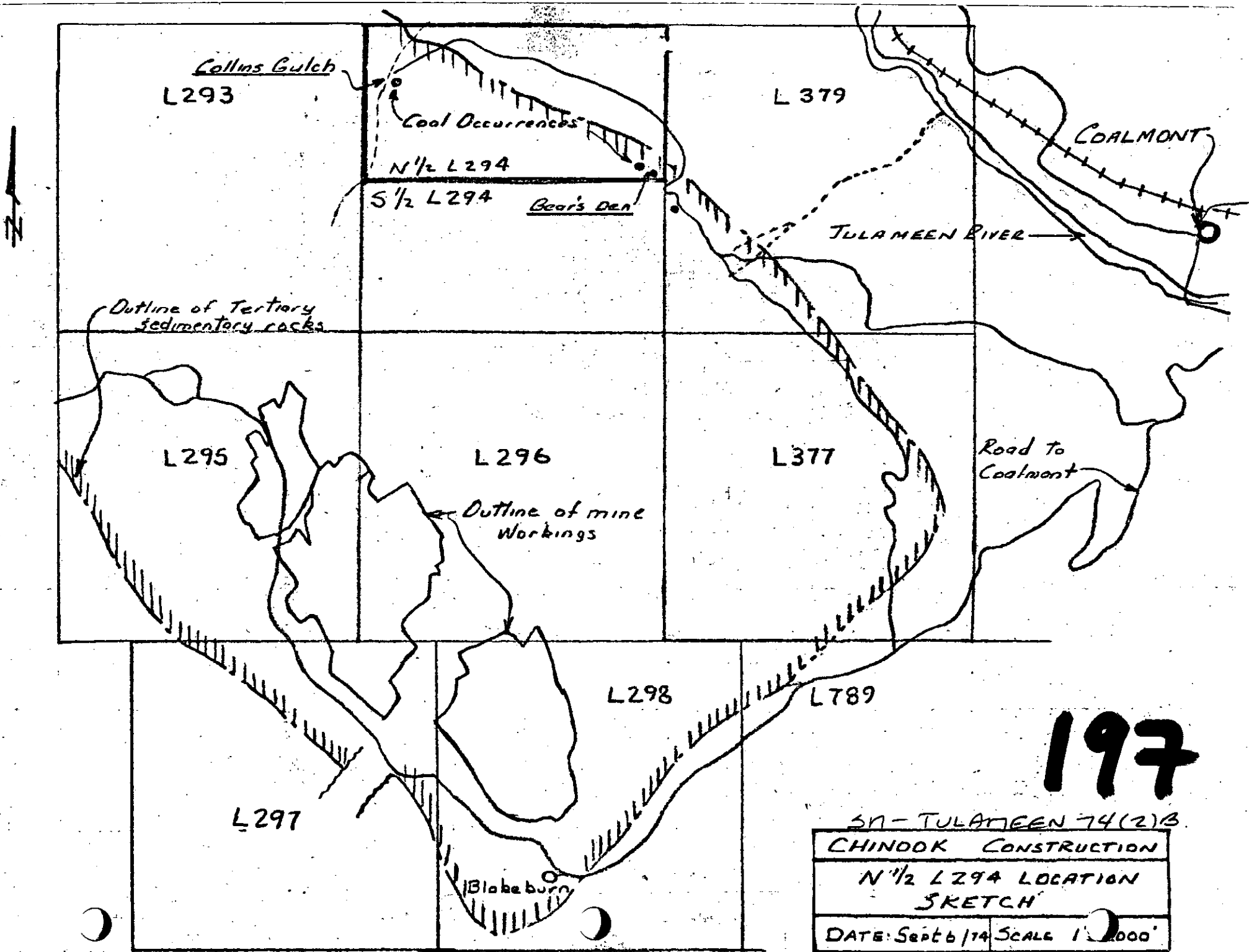
SM-TULAMEEN 74(2)B

00197  
(1)

THE TULAMEEN COALFIELD  
BEAR'S DEN (MAPS)

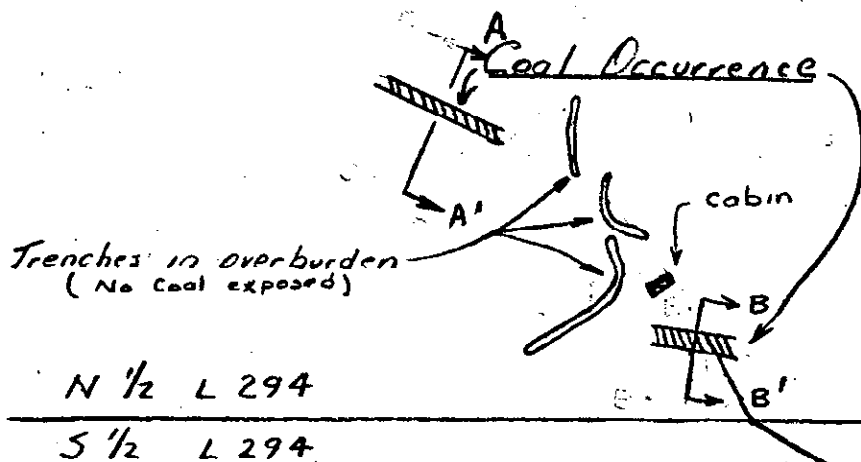
E.M. WILSON, P. ENG.

SEPTEMBER 1974



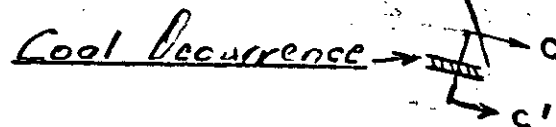
N.B. Section D-D' is located near Northwest corner of L 294 about 5000' from Section B-B'

Bears Den Location



L 379

Road to Coalment  
(6 miles)

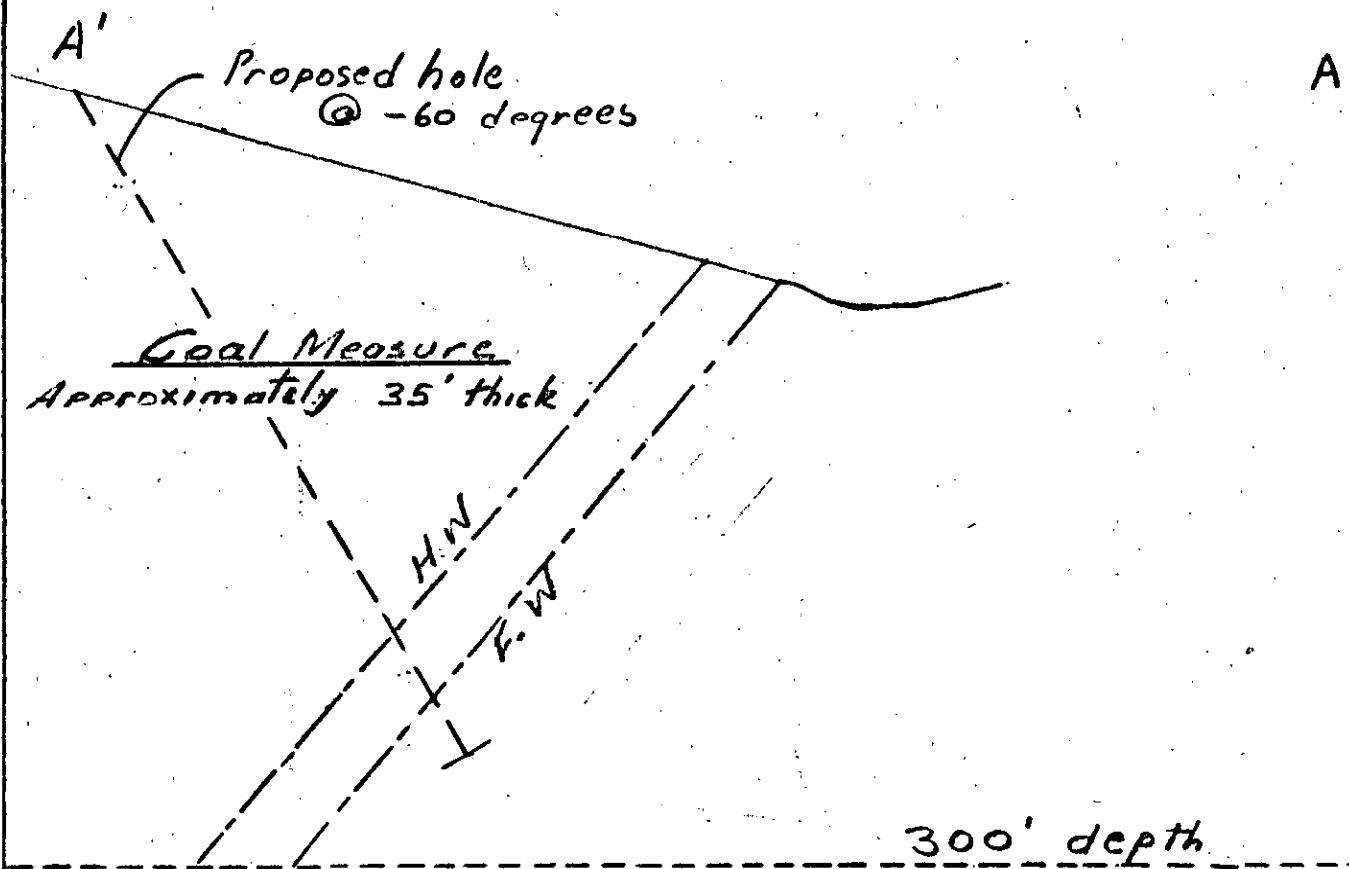


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SM-TULANEEN 74(2)B.

CHINOOK CONSTRUCTION	
LOCATION OF SECTIONS THROUGH COAL	
DATE: Sept 6/74	SCALE: 1" = 500'

Fig 2



DESCRIPTION OF COAL MEASURE  
FROM H.W. TO F.W.

- 3' - Coal, 50% shale
- 3' - shale
- 9' - Coal.
- 1' - shale
- 1' - coal
- 1' - shale
- 8' - Coal - very shaly
- 9' - Obscured, mostly shale.

Coal Measure contains  
about 20' of shaly coal.

Scale 1" = 100'

**1977**

CHINDOK CONSTRUCTION

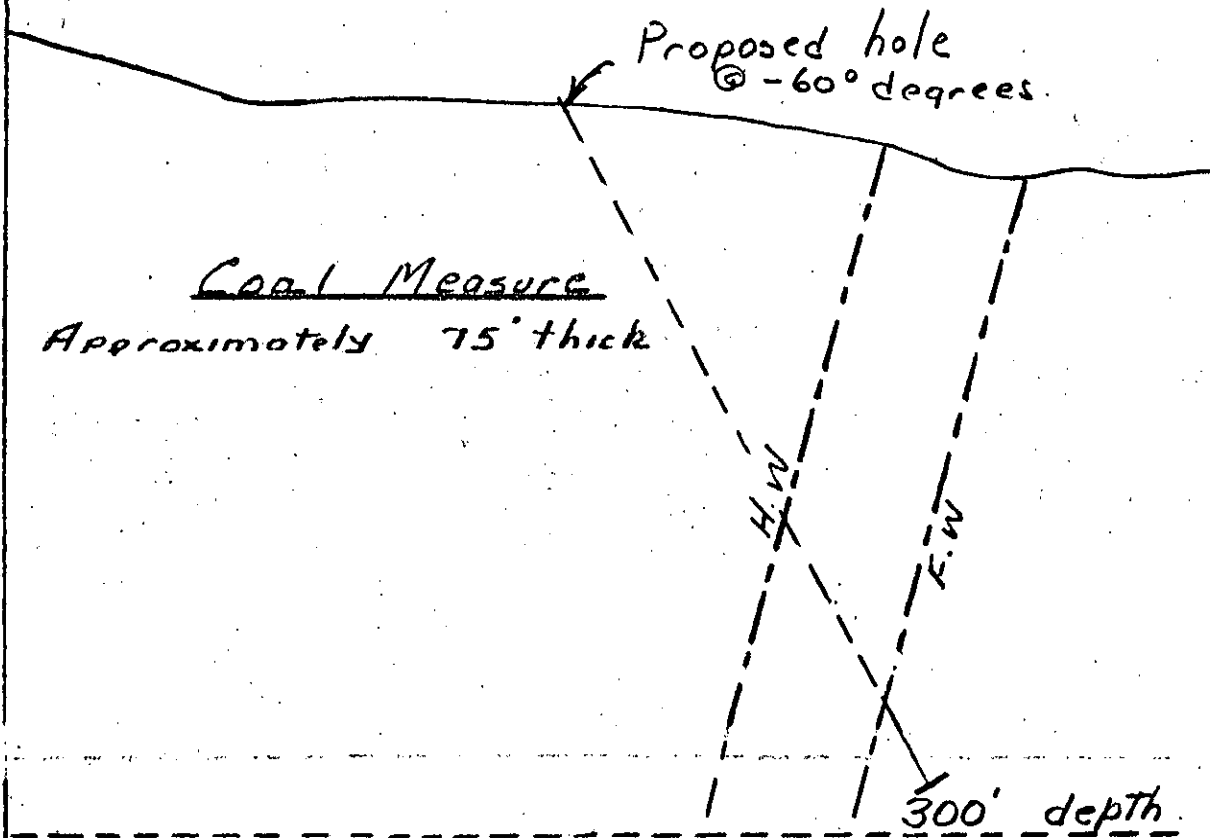
SECTION A-A'

Sept 6, 1974.

SN-TULAREEN 74(2)B

B'

B



Description of Coal Measure

From H.W. to F.W.

- 3' - Clay
- 3' - Coal, shaly
- 1' - clay
- 12' - Coal (includes numerous thin shale partings)
- 6' - overburden
- 2' - Coal (with clay partings)
- 1' - clay
- 25' - Coal & shale (75' coal)
- 22' - Covered.

Coal Measure probably contains about 50' of coal.

Scale 1" = 100'

CHINOOK CONSTRUCTION

Sept 6, 1974

SECTION B-B'

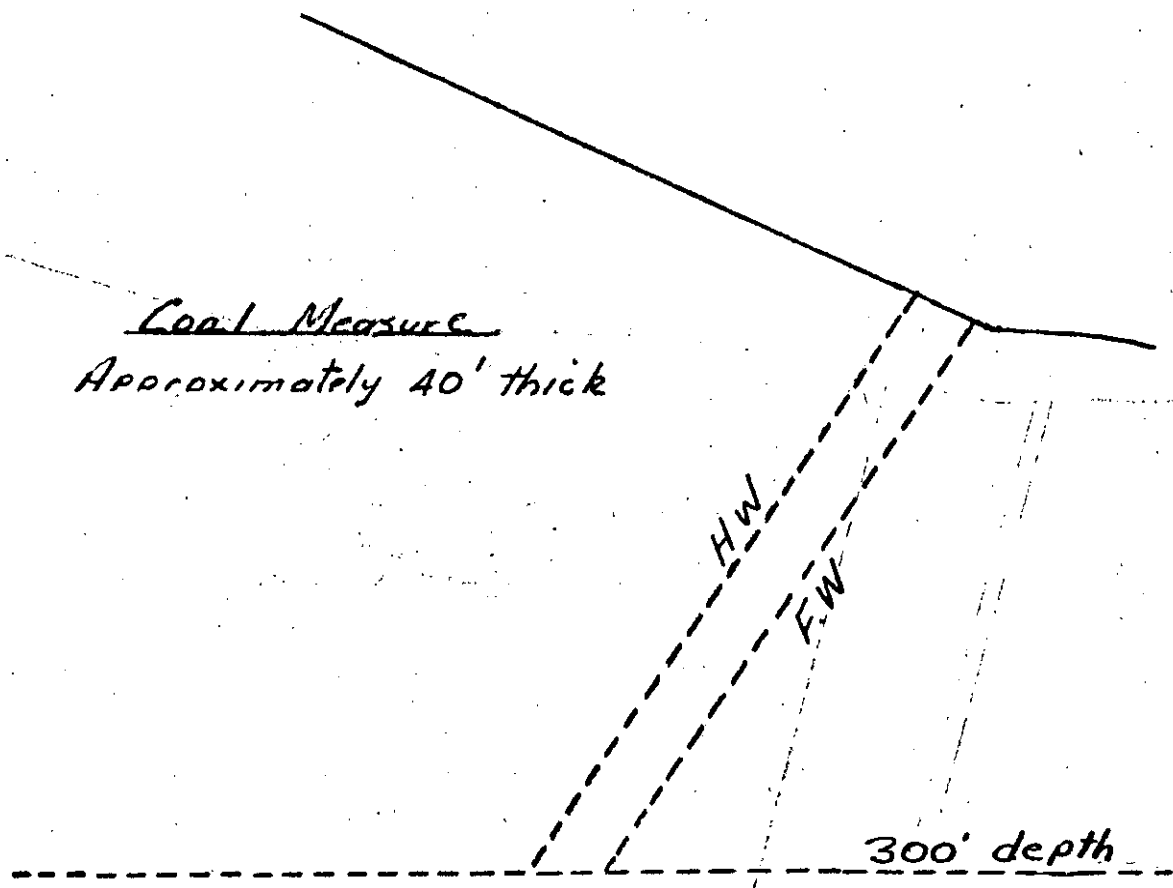
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SM-TULONEENTH(2) Fig 4.

c'

c

Coal Measure  
Approximately 40' thick



DESCRIPTION OF Coal Measure

From H.W. to F.W.

- 3' - Clay
- 12' - Coal: shaly
- 5' - Shale with coal stringers
- 4' - Coal - 50% shale stringers
- 4' - Shale - with some coal
- 11' - Covered by road, appears to be shale

Coal Measure contains  
about 12' of coal.

Scale 1" = 100'

CHINOOK CONSTRUCTION

Sept 6, 1974.

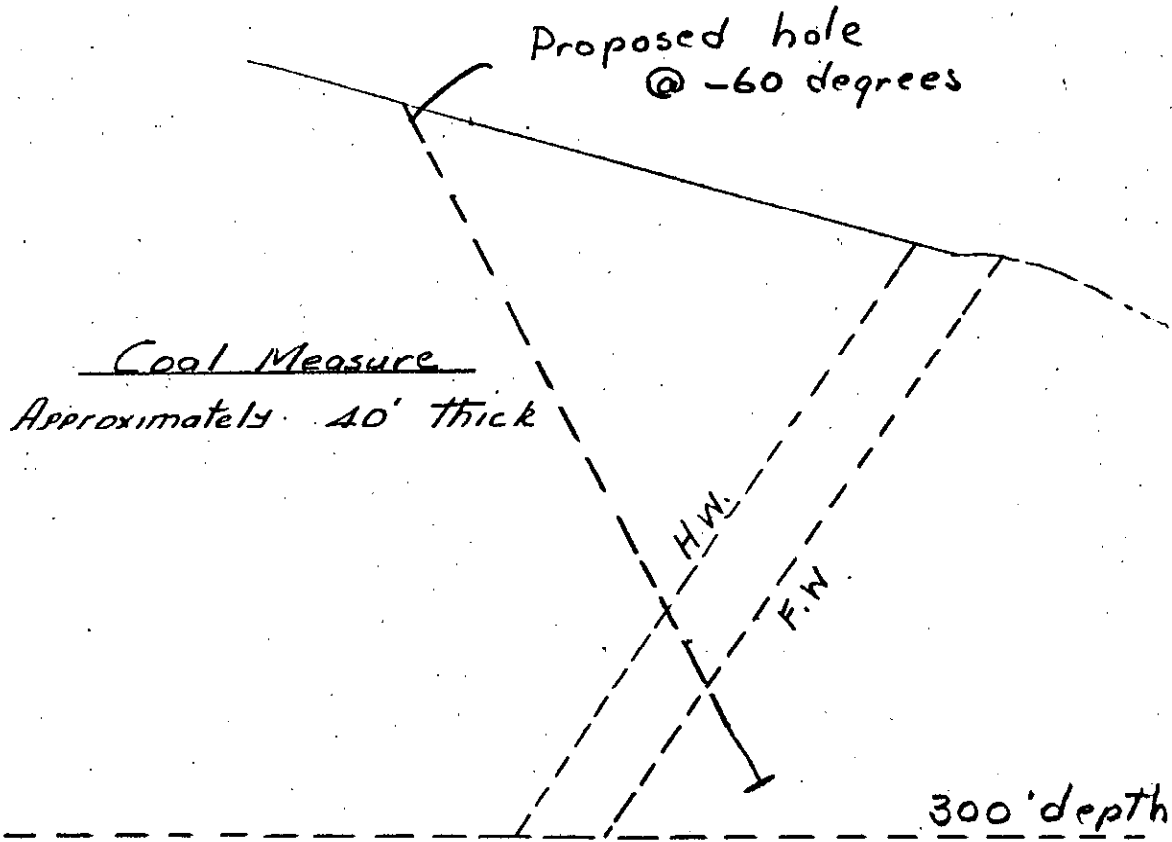
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SECTION C-C'

SN-TULALPEN 74(2)B.

D'

D



Description of Coal Measure

From H.W. to F.W.

- 4' - Coal (Interbedded with white clay bands)
- 30' - Sandstone and clay interbeds trace of Coal laminations
- 6' - Coal (shaly & contains thin white clay stringers).

Coal Measure contains about 6' of coal.

Scale 1" = 100'

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SECTION D-D'

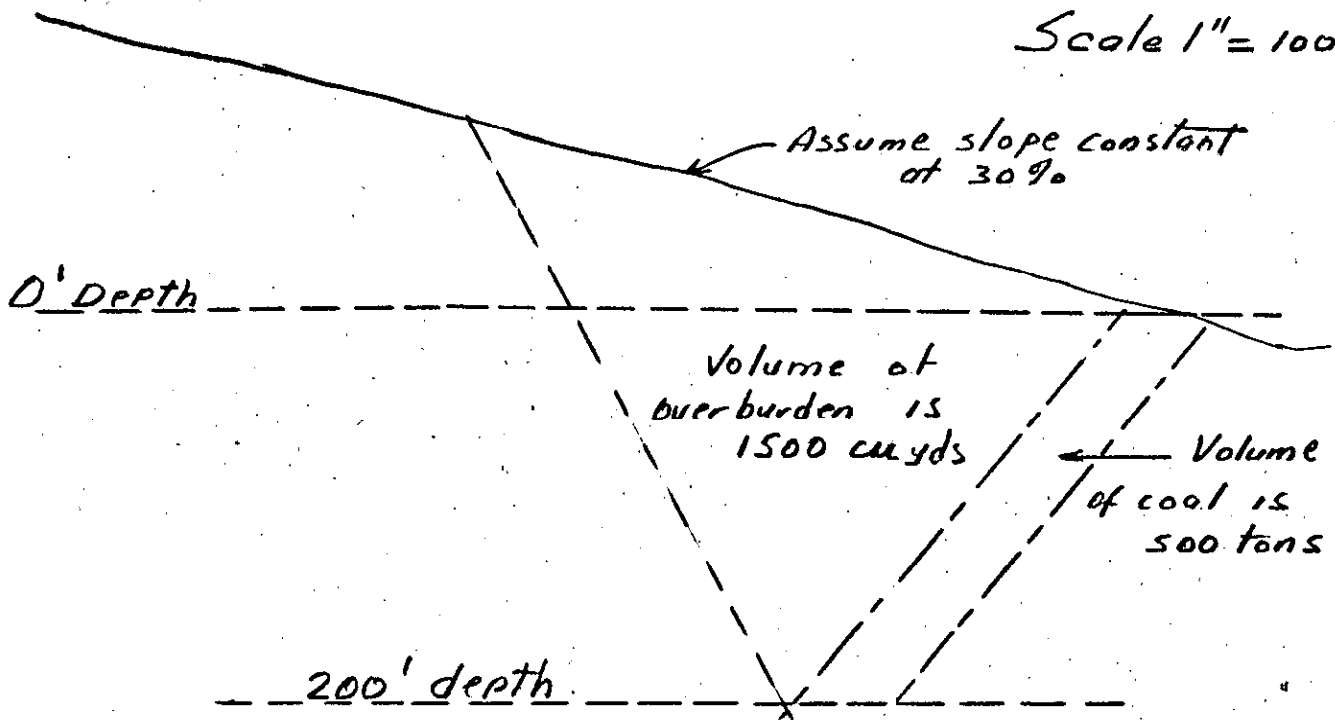
SN-TULATKEEN 74(2)B

CHINDOK CONSTRUCTION

SEPT 6, 1974

TYPICAL SECTION THROUGH  
OPEN PIT

Scale 1" = 100'



ASSUMPTIONS

1. Recoverable coal is 50' and dip is 50° degrees.
2. Hillside slopes at 30 percent grade.
3. Pit wall is 60 degrees.
4. Recoverable depth is 200 ft.
5. Assume strike length of coal is 5000 ft.

Volume of overburden is ± 1500 cu. yds per foot-length  
Volume of coal is ± 500 Tons. per foot-length

$$\text{Stripping ratio} = \frac{1500}{500} = \underline{\underline{3.0:1}}$$

Recoverable Coal

Strike length (5000') x rec. coal per 200' depth (500)  
Rec Coal 5000 x 500 = 2,500,000 tons.

N.B. No consideration for weathered coal

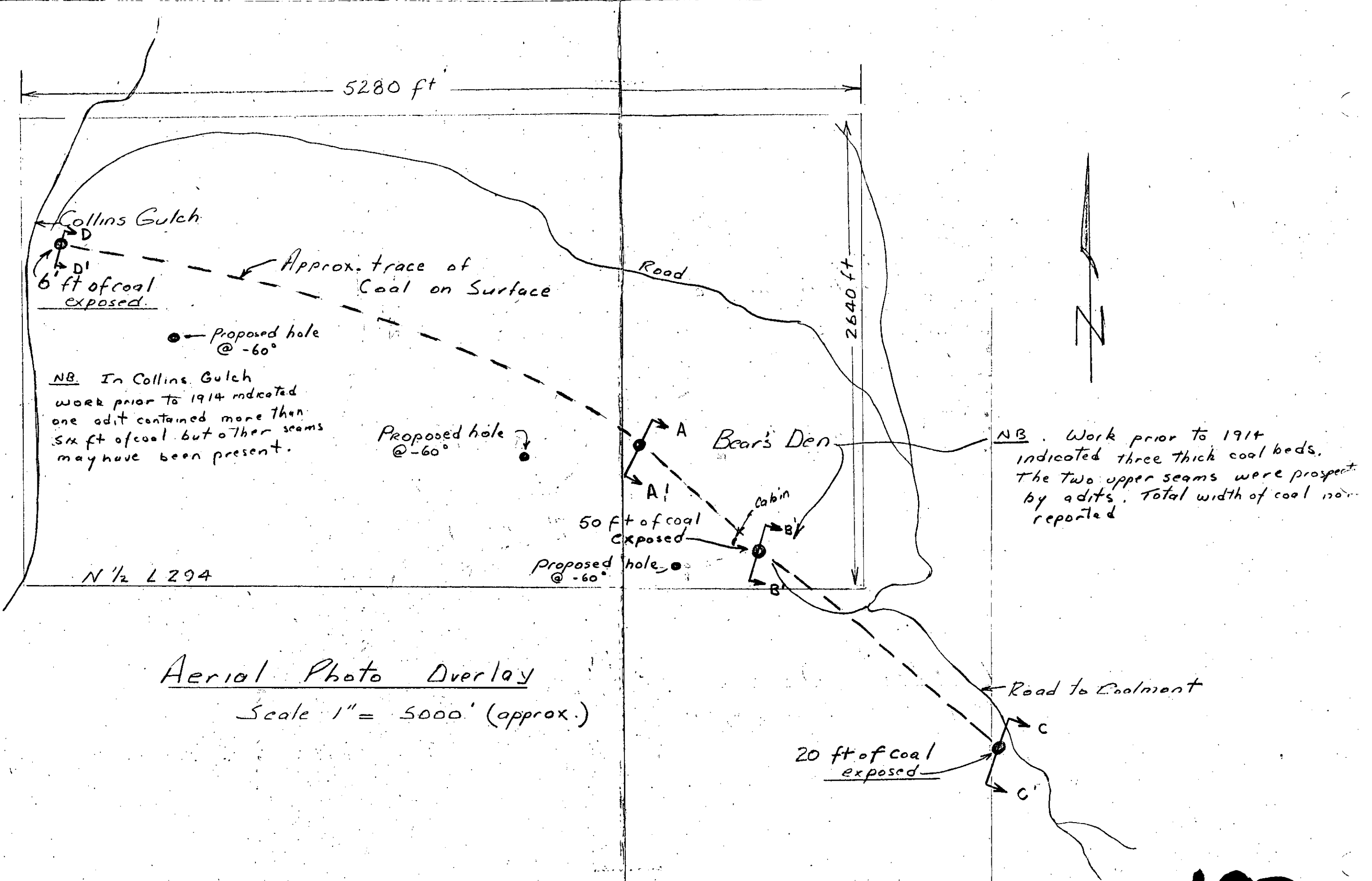
SN-TULAMEEN 74(2)B

CHINOOK CONSTRUCTION  
Sept 6, 1974.

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Fig 7





Collins Gulch  
 D  
 D'  
 6 ft of coal exposed

Approx. trace of Coal on Surface

Proposed hole @ -60°

NB. In Collins Gulch work prior to 1914 indicated one adit contained more than 50 ft of coal but other seams may have been present.

Proposed hole @ -60°

Bear's Den

50 ft of coal exposed

Proposed hole @ -60°

Cabin

NB. Work prior to 1914 indicated three thick coal beds. The two upper seams were prospect by adits. Total width of coal not reported

N 1/2 L 294

Aerial Photo Overlay  
 Scale 1" = 5000' (approx.)

20 ft of coal exposed

Road to Coalment

CHINOOK Construction  
 Sept 6, 1974

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SM-TULAREEN 74(2)B Fig 8

THE TULAMEEN COAL FIELD  
BRITISH COLUMBIA

GEOLOGICAL BRANCH  
ASSESSMENT REPORT

BY

E.M. Wilson  
P. Eng.

00 197 (2)

OPEN FILE

September, 1974

MINING RECORDER  
RECEIVED and RECORDED

JUN 25 1976

M.R. # .....  
VICTORIA, B. C.

Vancouver, B.C.

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### SUMMARY AND RECOMMENDATIONS

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#### PROPERTY

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2. Structure

#### COAL

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- 
- i. Bear's Den Occurrence
    - a. Section A-A'
    - b. Section B-B'
    - c. Section C-C'
  - ii. Collins Gulch - Section D-D'

#### ILLUSTRATIONS (at back of report)

- Fig. 1 - Location sketch
- Fig. 2 - Location of sections through coal
- Fig. 3 - Section A-A'
- Fig. 4 - Section B-B'
- Fig. 5 - Section C-C'
- Fig. 6 - Section D-D'
- Fig. 7 - Typical section through open-pit
- Fig. 8 - Aerial photo overlay

### SUMMARY

At Section B-B' (Fig. 4) the thickness of the coal seam and quality of the coal is excellent. Coal of lesser width is shown in the section on Fig. 3 although it is possible that all the coal present may not have been fully exposed by drilling.

All exposures examined showed the coal seam to dip into the hillside at angles from 55 to 90 degrees while the hillside rose at grades in the order of 30 percent. If coal dip of this order continues down dip it would soon result in a situation where the overburden would prove excessive. However, the dip of coal seams often vary down dip in folded areas and it is very possible that the seam could flatten considerably at depth. This possibility should be investigated by several drill holes.

### RECOMMENDATIONS

Three holes are proposed, the location of which would be determined in the field, to test the coal zone down dip. One hole is designed to test the continuance of the wide zone along Section B-B'. A second hole should test the continuance of the coal zone along Section A-A' while the third hole should test the coal zone in the vicinity of Collins Gulch. Holes 1 and 2 should be drilled first and if results are unsatisfactory it may not be advisable to drill the third hole.

RECOMMENDATIONS (Cont.)

All holes should be drilled about 350 feet along section line from the coal exposures at an angle of minus 60 degrees. This would cut the coal at approximately 200 feet below the surface if the same coal dips continue.

The cost of the proposed percussion drilling is as follows:

- 1500 feet of drilling (3 holes @ 500'/hole) at a cost of \$10.00 per foot which would include all overhead.
- Estimated time is 3 weeks                      \$15,000.00

Further exploration would be dependent upon the success of the first stage which would be gauged by a betterment of coal widths or a flattening of dip.

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P. Eng.



## INTRODUCTION

The Tulameen coalfield is well described in Geological Survey of Canada Paper 52-19, "The Tulameen Coalfield, British Columbia" by W.S. Shaw.

The coal-bearing rocks of the Tulameen coalfield underlie a northwest trending oval-shaped area of about 6 square miles south of Tulameen River between the villages of Coalmont and Tulameen. Coalmont, on the Tulameen River, is about 12 miles west of Princeton by road and rail.

All production from the coalfield during the period 1919 to 1940 was obtained along the south and southwest flank of the oval-shaped area from 4 or 5 underground mines and amounted to 2,364,561 tons. Production from a small open-pit operation after 1940 to supply coal requirements at Princeton amounted to approximately 225,000 tons. There has been no production from the northeastern flank of the coal basin.

## PROPERTY

The coal-bearing formation are covered by mile-square lots numbered L's 293, 294, 295, 296, 296, 298, 377, 379 and 389. The north half of L294 is owned by Mr. T. Stout of Princeton and the examination of coal occurrences on this lot was the reason for the visit to the area. The remainder of the lots are thought to be owned by or under option to Imperial Metals and Power.

## GEOLOGY

### 1. Stratigraphy

A thick series of metamorphosed rocks (Nicola group) of Upper Triassic age, consisting of lava, argillite and schist form the basement rocks of the area. A series of Tertiary rocks, which contain the coal measures overlie the Nicola group. The coal measures are located within a fine-grained sedimentary sequence about 460 feet thick, some 400 feet above the base of the Tertiary formation. About 1900 feet of mainly sandstone and conglomerate overlie the fine-grained sedimentary sequence and is capped by remnants of dark brown to black lavas.

### 2. Structure

The coal-bearing formations occupy an oval northwesterly trending basin. The beds along the southwestern flank dip gently northeast at between 20 and 25 degrees whereas those on the northeast flank dip steeply to the southwest at angles ranging from 55 to vertical. Around the northwest end of the basin the beds bend smoothly while at the southeast extremity they are turned up sharply.

COAL

1. Southwest Margin of the Coalfield

The coal beds of the Tulameen coalfield occur in the narrow zone of fine-grained sedimentary rocks in the Tertiary formation. Coal has been mined only along the southwestern margin of the basin. Individual coal beds range from a few inches to more than 30 feet in thickness, totalling in all about 80 feet of coal.

<sup>2A.m</sup>  
The rank of the coal is high volatile C bituminous (A.S.T.M. classification). Freshly exposed the coal is black with bright to dull lustre. Banding is generally evident, and individual coal beds vary greatly in ash content from top to bottom and laterally. Recorded analysis on mined coal indicate an ash content from 4 to 16 percent; moisture, from 2 to 5% and sulphur about 0.3 percent. The thermal content averages about 11,800 B.T.U. and the coal is agglomerating.

2. Northeast Margin of the Coalfield

According to government reports underground exploration work was carried out prior to 1914 in the northeast area in what is now L294. Part of the work was carried out close to the west side of the north half of L294 at a locality known as Collins Gulch and other work was done near the southeast corner of the block in an area known as Bear's Den. At that time it was considered inadvisable to attempt to mine the coal because of the unfavourable location and the tendency of the badly crushed coal to crumble to dust after exposure to air.



i. Bear's Den Occurrence

Recent bulldozing near the southeast corner of the north half of L294 disclosed coal in several trenches as shown in sections on figures 3, 4, 5 and 6.

a. Section A-A'

About 1500 feet northwest from the southeast corner of the lot a coal measure about 35 feet thick contains perhaps 20 feet of shaly coal. The coal strikes about 110-115 degrees and dips at 60 degrees to the southwest. The slope rises uniformly above the coal at a 30 percent grade.

b. Section B-B'

Approximately 500 feet west of the east lot boundary and about 200 feet north of the south boundary trenching discloses a coal measure about 75 feet wide containing at least 50 feet of coal. Measured dips vary from 75 degrees to the southwest at the hangingwall through vertical to about 75 degrees to the northeast close to the footwall. Since this occurrence is close to the south boundary of the lot the southerly dip of the coal would soon carry the coal beyond the lot limits. The strike of the seam measured 100-110 degrees. The first 400 feet of slope above the coal rises only about 30 feet but thereafter rises at a grade of about 30 percent.

The coal appears to be of good quality but is badly shattered and disintegrates to a fine powder.

c. Section C-C'

About 1200 feet beyond the southeast corner of L294 is probably the same seam exposed in a recent trench. The coal measure contains about 12 feet of shaly coal which strikes about 110-115 degrees and dips at 55 degrees to the southwest. The slope rises uniformly at almost a 50 percent grade above the coal.

ii. Collins Gulch

Recent bulldozing has exposed a seam of shaly coal about 6 feet thick, as shown in Section D-D', that strikes about 155 degrees and dips about 55 degrees to the southwest. It is possible that the main occurrence has not yet been uncovered. The slope rises uniformly at about 30 percent above the coal.

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