

BC.RECON.

I.C.L. REPORT ON
FIELD RECONNAISSANCE OF
CHISHOLM LAKE PROSPECT

October 25, 1977

OPEN FILE

Bruce D. Vincent
Imperial Oil Limited,
Minerals - Coal,
CALGARY, ALBERTA

780

CHISHOLM LAKE PROSPECT

Introduction

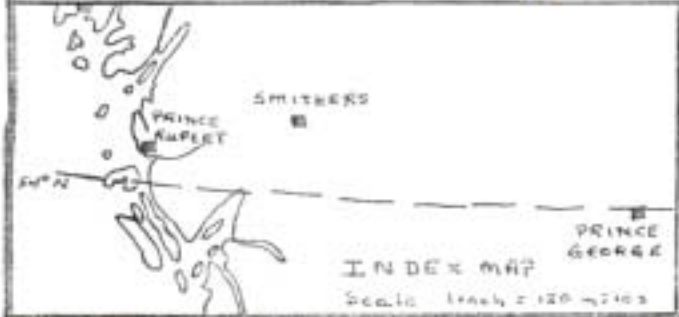
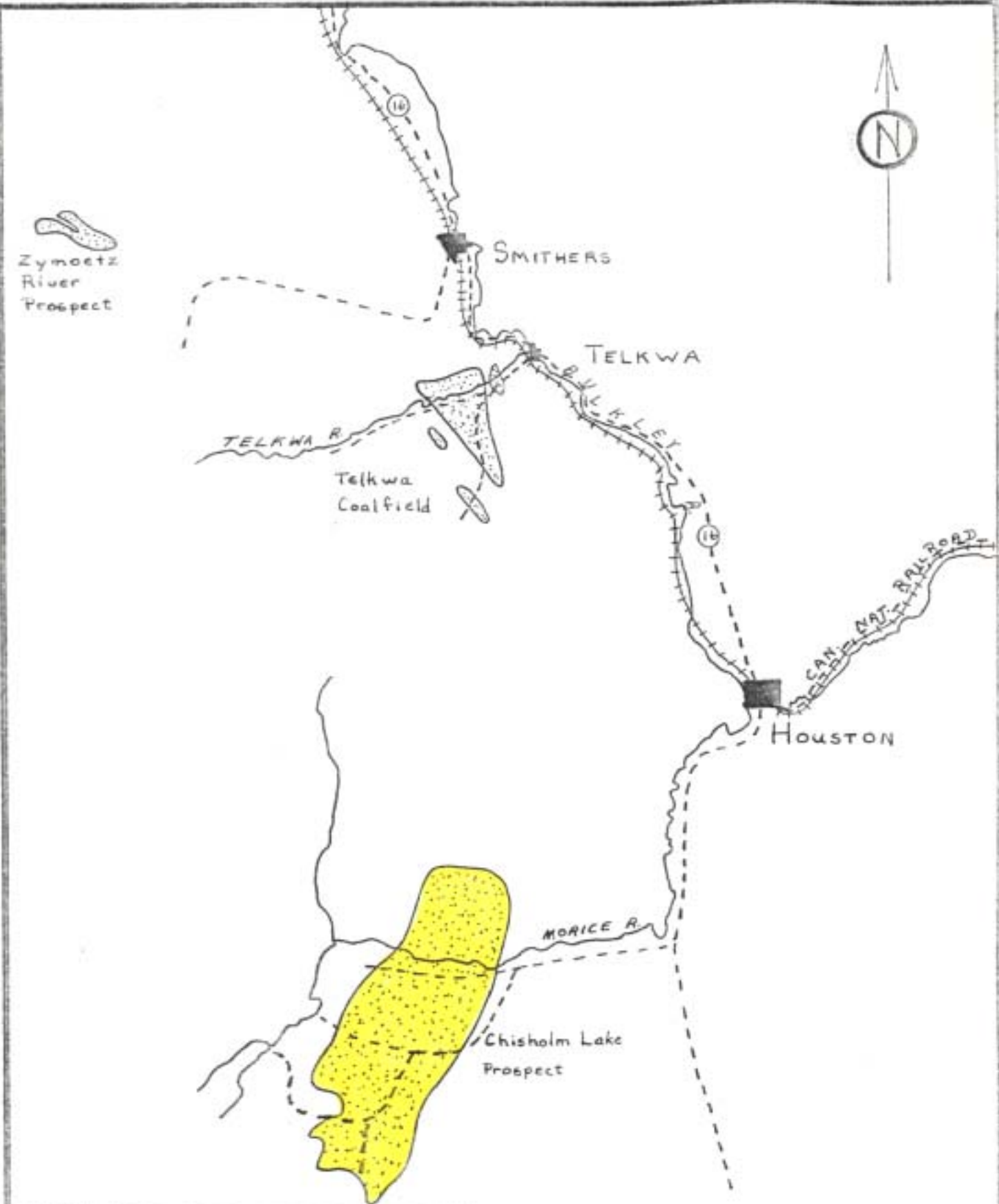
The Chisholm Lake coal prospect was originally selected from a literature survey of British Columbia coal occurrences. The age of the strata, the structural configuration, and the reports of coal prompted a preliminary reconnaissance of the field.

On October 12, and 13, 1977, the southern portion of the Chisholm Lake prospect was examined with the objective of determining the coal potential of the area.

Location and Access

The original reports of coal seams were from the area of Chisholm Lake, north of the Morice River, about 40 miles west of Houston in north-central British Columbia. See Figure 1. the regional geological map indicated strata of the same age extended for about 13 miles south of the river also.

Good access was available to the southern portion of the prospect by numerous lumbering roads. There is no access to the north other than helicopter and so the reported coal occurrences could not be examined.



LEGEND


- Main access
- ++++ Canadian Nat. Railway line
-  Area of coal-bearing or potentially coal-bearing sediments

FIGURE 1.
 Location of coal prospects, Smithers area, B.C.
 Scale 1" = 8 miles

Geology

The strata has been described as part of the Upper Jurassic - Lower Cretaceous Bowser Assemblage. The outcrop examined consisted primarily of fine to coarse grained, greyish - green, feldspathic or lithic sandstone. These sandstones were massive or exhibited large-scale cross-bedding. They were invariably extremely well-indurated and highly jointed. Evidence of plant remains was rare with a few plant stems and some carbonaceous debris recognized.

One ridge of a boulder conglomerate was found. The conglomerate was a clast-supported, chaotic mixture of porphyritic volcanic clasts with a matrix of sand and clay.

One outcrop of porphyritic rhyolite was examined. It appeared to be interbedded with the sedimentary rocks.

Very limited amounts of finer - grained sediments were seen in the area. That which was seen consisted of brown to black mudstone and carbonaceous shale. No outcrops of coal were seen and no coal bloom was observed. The recessive valleys between the ridges of sandstone appear to be underlain by mudstone. Also there is a thick mantle of glacial debris covering most of the area, especially the valleys.

The orientation of the bedding is generally steeply dipping to the east or southeast. The only variation is at the east end of McBride Lake where there appears to be a broad syncline, the axis of which is oriented northeast - southwest.

There is no direct evidence of major faulting however, the linearity of several of the valleys suggest they may be structurally controlled and follow fault traces. It is also suspected that the eastern edge of the Bowser outcrop may be faulted.

Conclusions

The sedimentary rocks examined on the southern portion of the Chisholm Lake prospect appear to have been deposited in a fluvial system. The conglomerate outcrop suggests deposition in an alluvial fan near a mountain front. The volcanogenic nature of the sandstones and the interbedded rhyolite unit shows active vulcanism in the area during the time of deposition.

This interpretation and the total lack of coal showings in the southern portion of the prospect suggest no economic coal seams will be found in this area. The reports from the area north of the Morice River mentioned two seams, one 4 inches thick, and one 6 inches thick. It is expected that the same conclusion would be reached about the northern portions.

Recommendations

It is concluded that the Chisholm Lake area contains no economic coal reserves. No further consideration of the area should be made.

CHISHOLM LAKE PROSPECT

STATION DESCRIPTIONS

Station Descriptions

Refer to 1:50,000 topo map for locations

Station 1

Dark greenish - grey, medium to fine grained sandstone;
feldspathic, well-sorted; no apparent sedimentary structures.

Bedding (dip direction/dip) 103/83, 105/77

First outcrop on west side of basin. Clear cut to west
exposes only till.

Station 2

Talus along road between stations 1 and 2. Should be o/c
higher on hill.

Station 3

Possible outcrop. Fine to medium grained, green sandstone.
Extremely hard and well indurated.

Bedding, possible (dip direction/dip) 280/53

Station 4

Sandstone, similar to previous outcrops. Possible large-scale
cross-bedding perpendicular to dip direction. Bedding
(dip-direction/dip) 107/28, 118/23

Station 5

On north side of river, viewed from Station 4. Large outcrop of sandstone with approximately same bedding orientation as Station 4. Underlain by a recessive unit and then another sandstone. In recessive area, evidence of carbonaceous shale or coal bloom.

Station 6

Junction with a logging road.

Photos - Panorama from west to east of area north of Morice River. Taken from top of hill in clear cut area.

Station 7

Junction of Cedric Creek road.

Station 8

End of Cedric Creek road, clear cut area. No outcrop along road or in clear cut.

Station 9

Grey, medium grained sandstone; no obvious sedimentary structure. Outcrop near top of hill. Bedding (dip direction/dip) 115/69

Station 10

Similar sandstone as at station 9. No sign of shales or carbonaceous material. Bedding (dip direction, dip) 123/66
Jointing extremely prominent; at least 2 sets.

Station 11

Along strike from station 9. Green-grey, medium to coarse grained sandstone. A lot of feldspathic (volcanic?) material as clasts. Well indurated, highly jointed. Bedding (dip direction/dip) 124/70

Station 12

Medium to coarse grained sandstone; thinlly bedded; pink and white feldspar clasts; extremely jointed; green grey, weathering grey.

Station 13

Grey-green, fine to medium grained, massive sandstone; well indurated and highly jointed. Bedding (dip direction/dip) 113/55

Station 14

Dark grey, porphyritic rhyolite; aphanitic ground mass

Station 15

In road bank, carbonaceous shale exposed by bulldozer. No

good outcrop. Continues for 0.1 miles. Consists of black to brown mudstone and some carbonaceous shale. Thinly bedded, highly fractured, concretions.

Bedding obscure; suggest 5 to 10 degree dip toward NE.

Photograph

Station 16

Coarse to medium grained sandstone. Green - grey, arkosic; few plant remains.

Bedding (dip direction/dip) 043/22

Station 17

Coarse to medium grained sandstone; brown to grey; large - scale cross-bedding; some carbonaceous material.

Bedding (dip direction/dip) 075/22

Station 18

Thick bedded, grey-green, medium grained sandstone. Plant fragments.

Bedding (dip direction/dip) 094/24

Station 19

Green-brown, medium to coarse grained sandstone; carbonaceous debris; becomes greener towards base.

Bedding (dip direction/dip) 080/16

Station 20

Dark grey to black; mudstone, siltstone, and very fine sandstone; highly fractured. Bedding orientation similar to station 19.

Station 21

Green grey, medium grained sandstone; large-scale tangential cross-bedding. Should be stratigraphically above mudstone of station 19. Bedding (dip direction/dip) 087/24

Station 22

Green, fine-grained sandstone; thick bedded; shale clasts. Apparently dipping very gently to east.

Station 23

North shore of Lamprey Lake.

Grey-green, fine to medium grained sandstone; highly fractured; some veining.

Bedding (dip direction/dip) 300/07

Station 24

Green-grey sandstone. No bedding observed.

Station 25

Dark green sandstone.

Bedding, very approximate (dip direction/dip) 310/10

Station 26

Green, medium grained sandstone.

No bedding seen.

Station 27

Road junction

Station 28

Medium to fine grained sandstone; grey-green, weathering brownish grey.

Large-scale cross-bedding

Bedding (dip direction/dip) 065/26

Station 29

Road junction

Station 30

Medium to fine grained, brownish-grey sandstone. Numerous plant fragments and carbonaceous debris.

Bedding (dip direction/dip) 120/38

Station 31

Sandstone, bedding not obvious.

Station 32

Boulder conglomerate. Pebbles from 1" to 2" in diameter.
Absolutely no imbrication or preferred orientation to clasts.
Sand and clay matrix; clast supported; chaotic.
Bedding not found. May be near vertical, parallel to ridge.
Clasts are well rounded and are mainly porphyritic volcanics.

Station 33

Sandstone, medium grey-green, fine to medium grained.
Large - scale trough cross-bedding. Probably overlain by
siltstone. Bedding (dip direction/dip) 045/30

Station 34

Road junction

Station 35

Green grey, coarse grained sandstone, highly jointed,
slickensides.
Bedding (dip direction/dip) 095/43

Station 36

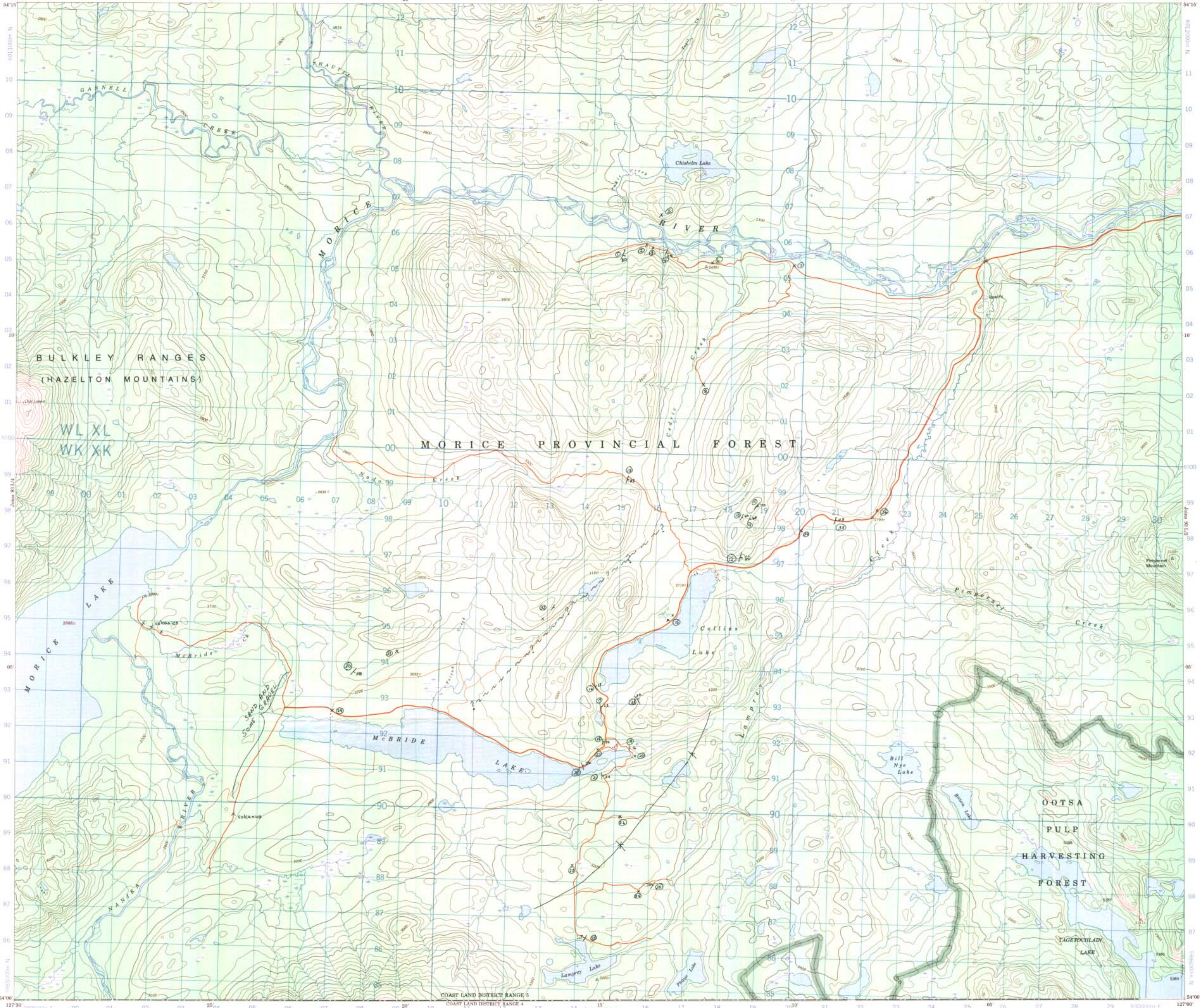
Large outcrops of fine-grained, grey-green sandstone,
some mudstone.



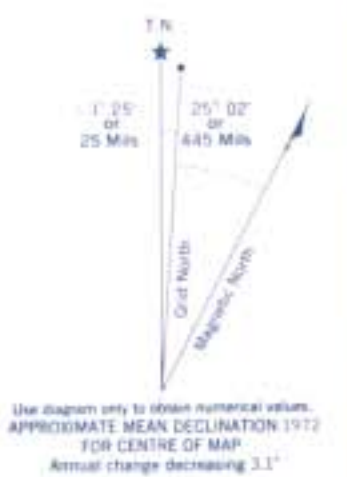
Plate 1. Panorama from west (left) to east (right) from Station 6
looking north across Morice River. Station 5 is clear area on
extreme left. Station 6 is in the middle of a clear cut area
which has been burned.



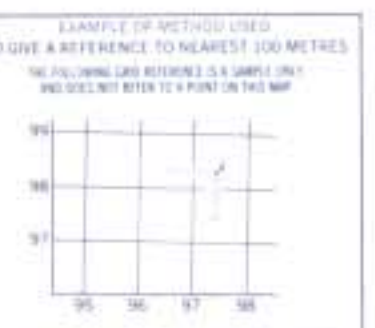
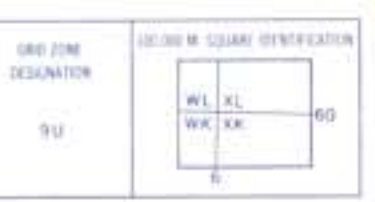
Plate 2. Black to brown carbonaceous
shale exposed at Station 15.



Refer to this map as: 93 L/3 EDITION 1 MCE SERIES A 721



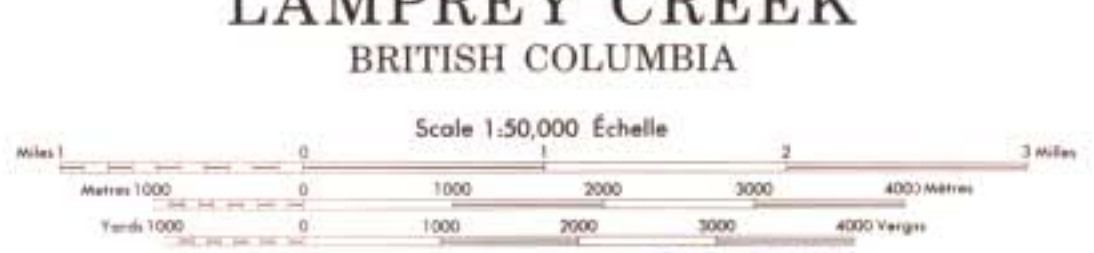
ONE THOUSAND METRE UNIVERSAL TRANSVERSE MERCATOR GRID ZONE 9



REFERENCE POINT	CHURCH	GRID COORDINATES
EASTING	Read number on grid line immediately east of point	91
NORTHING	Read number of square from top line immediately below point	91
EXAMPLE: MILITARY GRID REFERENCE SYSTEM		
Nearest corner grid reference 910000		

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Roads	Boundaries
Route or stabilized surface, all weather	Gravel aggregate, loose season
Route surface, dry weather and unsaturated stream	Gravel, terraces and other loose material
Spill track	Ice bar
Trail or path	Land or no surface



This Provincial Map is equivalent to a standard map in respect of content.

Cette carte provinciale équivaut une carte régulière en ce qui concerne son contenu.

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CHISHOLM LAKE PROSPECT FIELD LOCATIONS OCT/77

B.D. Vincent

Field Notes

Reconnaissance Trip to

Chisholm Lake Prospect and

Telkwa Coal Field.

Oct. /77

Bruce D. Vincent
with R. A. Swaren

Oct. 12

Reference map - 1:50,000 topo
Chisholm Lake prospect, south
of Morice River
- see "Chisholm Lake Report"
Oct/77 by
B.D. Vincent

Canuck Truck Rentals - Esso station in Smithers.

End of road which follows Morice River.

Traveling west to east:

476.35

76.9 Logging road to south

77.8 Up logging road and back to main road.

Hill all tall and ~~to~~ lumber burned.

Station 1 78.25 miles

Dark Grey green, med to fine grained sandstone, feldspathic,
well sorted. No apparent structures.

Bedding ~~ob~~ sure → $\frac{103}{83}$ Dip dir/dip

First outcrop on west side of basin.

Bedding may also be overturned

Station 2 78.5 miles

Severe slope between St. 1 & sta. 2. Must be o/c
higher on hill to south.

Station 3 78.7 miles

Possible o/c Fine → med grained, green sandstone

Possible bedding $\frac{280}{53}$

Extremely hard & well indurated.

Station 4 78.56 mi.

Bedding 107/28, 118/23

Sandstone - similar to previous o/c's.

Possible large scale x-bedding roughly perpendicular to dip direction

Station 5

On north side of river viewed from station 4.

large sandstone outcrop w/ approx. same orientation as

sta. 4. Underlain by a recessive unit. ~~Is a~~ then

another sandstone. In recessive unit possible coal bloom

(dark area w/ no veg.)

Station 6

79.85 Logging road.

PICTURES from top of hill on logging road.

Panorama from west to east of area north of Morise River.

Back to station 6 82.0 miles

Sta 7

Junction of Cedric Creek Road.

Going S. on Cedric Cr. road.

8

§ 7.2 miles
End of road in clear cut area
No o/c along rd. or in clear cut:

Station 9

Bedding 115/69

grey, med. grained sst. o/c ~~on~~ near top of hill
in huge clear cut area.

- no obvious sed. structure

Station 10

Similar sst as in sta. 9. No signs of shales
or carbonaceous material

Bedding orient. 123/66

Jointing extremely prominent, at least 2 sets

Station 11

Along strike w/ station 9.

Bedding 124/70

Green-grey, med-coars. grained sst. A lot of feldspathic
(volcanic?) material as clasts.

Well indurated, highly jointed

Station 12

Bedding 100/60

Med. to coarse grained sst. thin bedding.

Pink & white feldspar grains

Extremely highly jointed green grey, meat grey

Station 13

Grey green, fine to med. grained sandstone.

Massive (no sely structures)

Bedding 113/55

Again highly indurated & jointed.

o/c extends back along strike, Another o/c on ridge to east.

Station 14

Dark grey sphyalite, porphoritic; aphanitic groundmass.

690.1 miles -

Oct. 13 / 77

Junction of Morice Lk + Nado Cr. Roads.

Station 15 690.9 miles.

- in bank of road. Carbonaceous shale. Unkenium of c
pushed up by ~~the~~ dozer.

Continues for 0.1 miles.

Photograph

Consists of black to brown mudstone and some
carbonaceous shale. Thin bedded, highly fractured, concretions.

No bedding orientation possible. Suggest $5 \pm 10^\circ$ dip
toward NE.

691.5

- blocks of carbonaceous siltstone + v. f. sst. Few plant fragments

Station 16 693.0 miles

o/c of coarse to med. grained sst. Green grey, arkosic
Bedding 043/22 Few carbonaceous streaks

Station 17

o/c of crs. - med grained brown to grey sst., lg. scale x-bedding,
some carb. material

Bedding 075/22

Station 18

Bedding 094/24 Thick bedding, grey green med. grained sst.

Plant fragments.

Road junction just N of Sta 18 694.1 miles

Station 19 94.4 miles -

Green-brown (weathered), med. to coarse grained sand.

Bedding 080/16, Carbonaceous debris. Some pieces of
v.f. sand & siltstone as talus.

Sands green toward base of o/c.

Station 20 694.7 miles

Dk grey to black, mudstone, siltstone & v.f. sand.

lg o/c, similar attitude as Sta. 19. Highly fractured.

Station 21 695.4

Grey green, med grained sandstone. Large scale tangential (planar)
cross-bedding. True bedding obscure → 087/24

Should be above mudstone stratigraphically

Station 22 697.2

Green, fine grained sand. Thick bedded. Shale clasts.

Apparently dipping very gently to east.

Station 23

On north edge of Lamprey Lake.

Grey green, fine - med grained sandstone

Bedding 300/01

Highly fractured (pieces few inches square)

Some veining

Station 24

Grey green sandstone. No bedding observed.

Station 25

Bedding (very approx) 310/10

dk. green sst.

Junction of Lamprey Lake road & first road south which
heads east 706.7 mi

Station 26 707.0 miles

Green med. grained sst. No bedding seen.

Station 27 Road junction 707.1

Station 28 717.5 miles

Med to fine grained sandstone; grey-green, weathers to grey
large scale x-bedding

Bedding 065/26

CLEAR CUT ROADS, North of Mc Bride Lake.

Station 29 Road junction 741.7 miles

Station 30 742.7

Med-fine br. grey sst. Numerous plant fragments
(Stems) carb. debris

Bedding 120/38

Station 31

Sst. No obvious bedding

Station 32

Boulder conglomerate. Pebbles from 1" to 12" in diameter
Absolutely no imbrication or preferred orientation to
clasts. Sand & clay matrix. Clast supported cong.

Chaotic mixture:

Bedding not found. MIGHT be ^{near} vertical parallel to ridge
Clasts are moder. to well rounded and are porphyritic
volcanics mainly.

Station 33

Sandstone, med. grey green, fine to med. grained
large scale x-bedding (trough)

Bedding 045/30. Probably overlain by siltstone

Station 34 Rd. junction 68.2

~~Green grey sandstone~~

Sta. 35 69.4 miles

Green grey, crs. sst.

Bedding 095/43.

Highly jointed. slickensides NW/near vertical

Station 36

large outcrops of fine grained grey green sandstone.
Some mudstone.

TELKWA

Oct. 14/77

Telkwa field. See 1:50,000 topo for
stations (in pocket at back)

Station 1

"Coal Mine", north of Telkwa River

Doesn't look like the same rocks we saw at
Chisholm Lake.

Rocks above seam → fine brown sandstones &
claystones. Interfingering with roof of the seam.

Coal. - mainly dull. Becomes brighter
downward. Evidence of sulphur & iron (staining)

Broken into millimeter sized pieces. Clay partings
of up to 3" thick → discontinuous. Base of seam
not exposed. Appears to become harder downward.
~ 4 feet exposed.

Distinctly different from Chisholm Lake rocks.
Suspect is Tertiary strata.

Appears to dip gently to the east. May be the
same seam as o/c's at bridge to the east.
Area has been cleared ~~along~~ between road & river
and evidence of coal seen all along there.

Station 2

On north bank of river viewed from south bank.

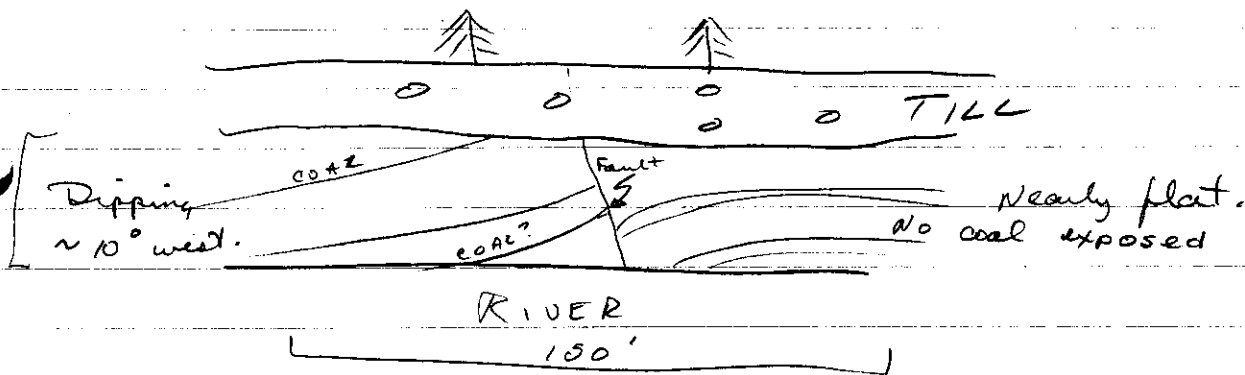
Photograph.

Possibly 2 seams separated by thin bedded claystones & siltstones. Some partings in seams.

Dips $\sim 10-15^\circ$ toward east.

Station 3

3 Photos from west to east.



Possibly 2 seams Top one \sim 3 feet exposed.
lower one \sim 2 feet.

Separated by 20' of sand & claystones. (strat)

Top seam in river bank probably lower than the o/c found in the hillside @ Sta. 1.

Station 4

Bedding (approx) 320/20

Section of coal-bearing beds exposed in north bank of stream, viewed from south side

PHOTO GRAPH

About 200 feet of section exposed looking roughly perpendicular to strike.

COAL - 2 seams exposed. ① Upper one probably one seen at Station 1. ~ 15 feet of coal with numerous partings. ② Lower one ~ 75 feet below, 8' (?) thick.

Between seams, strata distinctively concretionary sandstones and shales.

On south bank, thick bedded, apparently massive sandstones exposed. Lower than lower seam.

Greenish brown, med grained sandstone to pebble conglomerate.

Station 4A

Bowser Assemblage strata - volcanics & sediments
Drastically different from coal-bearing sediments.
Much darker, higher dips, highly fractured.
Obviously much older.

No obvious indication of the location
or type of contact ~~is~~ between Bowser strata
and coal-bearing sed.

Buckley Valley Collieries

8A Remains of open pit on top of hill, has been centred. The whole seam was not removed, base of seam exposed in one location.

low overburden ratio still left.

Distinct concretionary shales & sandstones just below this seam.

Lower seam exposed in ^{opposite} river bank (east side)

8B Very delapidated coal tipples. PHOTO (2)

8C Developing underground operation in lower seam.

Adit ~12' high & 10' wide at entrance. Unknown depth.

PHOTO Seam 18-20' thick, numerous ~~thin~~ thin partings, looks dirty, banded (bright & dull), evidence of sulphur leaching out.

~~The~~ Adit does not include top 4-5 feet, using it for roof support.

STATION 5

On hillside along road, not marked on road, roughly drawn in.

Old workings (unknown type) in upper seam.

Maximum of 50-100' of overburden.

Station 6

Cliff section showing one seam ~ 70' from top. Seams to pinch out. Some minor faulting (< 10' displacement). Sandstones pinch out and split.

Over coal is a red colored unit.

PHOTOGRAPH from opposite hillside.

Station 7

Vertically dipping strata of coal bearing group about 1/4 mile \uparrow upstream from 6.

Talus covers slope so unsure if is a contact w/ older rocks, or fault, or?

PHOTOGRAPH from opposite hillside.

Talkwa

O.C. 16/77

Station 9

① o/c of carb. shale & fine sst.

Bedding 025/10

② Few hundred feet down stream.

o/c of lower seam - looks clean, banded.

Gradational lower contact w/ fine brown sandstone. Only top exposed. (~ 5')

Bedding 030/14

Station 10

Very thinly bedded dk grey, carb. shale & siltstone

Bedding: 065/08

Continue on opposite side of bend.

Station 11

Photo. 2 seams. just below

elevation of pits. At base

carb shale o/c at Sta. 10

Station 12

on west side

Bedding 088/25

Dk grey shales & ~ 8" of coal

East side coal and/or carb shale

12A - remains of bridge & old workings(?)

12B - 150' of till

Station 13

Bedding 155/15 (?)

① Sandstone, coarse granit to pebble cong. Fines upward

Intensively x-bedded, lg scale troughs. Brown. Very similar to rocks at station 7 on S bank of Talkwa

Swamp near base of formation.

Station 13A

Two cliff sections of 100 to 120 feet of
till.

Station 14

Bedding 275 / 32

Carb. shales & siltstone.

Station 15

- access road to new power line. Till
exposed all the way up the hill. Vertical
climb of road, 200 feet (from topo).

Station 2

reoccupied

Bedding (at o/c)

045/23

Coal grading up to carb shale



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Roads:
solid or dashed surface at weather
level surface, dry weather and
unimproved streets,
cart track,
trail or portage.
Rivers:
solid or dashed line with
arrow, average size at
waterfalls, rapids,
debris,
barrier to portage.

COAST LAND DISTRICT RANGE 5
COAST LAND DISTRICT RANGE 4
Joint 93 E/14
True North 24° 48' E

LAMPREY CREEK BRITISH COLUMBIA

Scale 1:50,000 Échelle
Miles 0 1 2 3
Metres 1000 2000 3000 4000
Yards 1000 2000 3000 4000

This Provincial Map is equivalent to a standard
map of accuracy of contour
Some names on this map are not yet official.
Corrections or additions are invited by the
Survey and Mapping Branch.
CONTOUR INTERVAL 100 FEET
Elevations on Spot Above Mean Sea Level
North American Datum 1927
Transverse Mercator Projection
© 1974
Cette carte provinciale équivaut à une carte régionale
de précision de contour
Certains noms inscrits sur cette carte ne sont
pas encore officiels. La Direction des cartes et
de la cartographie salue tout avis public et
sugère des corrections et additions.
ESPACEMENT DES COURBES 100 PIEDS
Élévation en pieds au-dessus du niveau moyen de la mer
Système de référence géodésique nord-américain, 1927
Projection transverse de Mercator

780

CHISHOLM LAKE

Oct./77

Grid North 1° E