District E. and south of Iron River, Mich: [specimens] 41704-41764. No. 343 Aug-Sept. 1901

Bayley, William Shirley, 1861-1943
[s.l.]: [s.n.], Aug-Sept. 1901

U. S. GEOLOGICAL SURVEY

FIELD SECTION BOOK

9-891

LAKE SUPERIOR DIVISION.

INSTRUCTIONS.

1. Ordinarily at least two pages of this book will be devoted to one section. On the left-hand page, place a map of as much of the section as has *actually been seen*. Denote rivers, lakes, marshes, etc., by the usual topographical signs. Denote the ledges of rock, when no structure is made out, by cross-hatching, making the cross-hatching cover as nearly as possible the areas occupied by the exposures. If the rock is a massive one, but still more or less plainly bedded, use the same sign with a dip arrow and number attached, showing the direction and amount of the dip. Denote a shaly or other very plainly bedded ledge by right parallel lines, and a ledge having a secondary structure by wavy parallel lines running in the direction of the strike, with dip arrow and number attached as before. The greatest care must be taken to avoid confusing slaty or schistose structure with bedding, and in all cases where there is the least doubt about the true bedding direction, indicate it by a query. To each exposure on the face of the map attach the number of the specimen representing it. In mapping the section count each of the spaces between the blue lines as 100 paces, and twenty of these spaces to one mile, or 2,000 paces. Usually the southeast corner will be placed at the bottom of the page, or at the first black line above the bottom of the page, and at the right-hand side. If, however, for any reason, it is desirable to show portions of an adjoining section, the southeast corner may be shifted up, or the map may be turned around and the north placed at the left-hand side of the page. The ruling of the left-hand pages is also arranged so that, if desirable, a larger or a smaller scale can be used, eight inches, two inches, one inch, or one-half inch to the mile. With the two-inch scale, the squares outlined in black represent sections, and those in red, quarter sections and "forties," while the space between the blue lines is 200 paces.

2. On the right-hand page place the notes descriptive of the exposures. Begin in each case with the number of the specimen, placing the number on the left-hand side of the red line, after which give in order on the right of the same red line the position of the ledges as reckoned in paces from the southeast corner of the section and the dip and strike when observable, the latter always being expressed from the north; for instance 4025, 250 *N.*, 300 *W.*, *Strike*, *N.* 78° *E.*, *Dip* 50° *S.* Then follow with a full description of the ledge. When topographical maps are used for locations this paragraph applies only in part.

3. Collect a specimen from every ledge, or wherever there is a change of rock on any one ledge, taking care to get fresh material, unless for a special purpose the weathered surface is desired. In case of trips made on foot or in canoes, for long distances, neighboring ledges, unquestionably of one kind of rock, need not be specimened. The position and extent of the ledges not specimened should be marked on the map, with notes that each is of a rock identical with specimen so-and-so. Under the same conditions small-sized specimens, trimmed to a uniform size of 2 x 2½ x ¾ inches will be allowed, but in all other cases *large-sized specimens*, trimmed to a size of 3 x 4 x 1 inches, must be selected, in accordance with section 3, chapter IV, p. 44, Regulations of the U. S. Geological Survey. Specimens should not be placed together without protection in the collecting bag, as the fresh surfaces, important in determining the character of rocks, are thus destroyed. They should be damaged by no temporary mark, but the numbers should be at once marked in at least two places upon the inclosing paper or cloth bags. Specimens may be permanently marked in camp by painting the numbers upon them in white upon a black background, using Silver White and Ivory Black oil tubes for color, with turpentine as a diluent.

4. On the last twenty-five pages of the book give, as may seem desirable, a general account of the examination of the region mapped in the previous pages, correlation of observations, sketches, cross sections, etc.

5. Forward this note book as soon as filled as registered mail matter to C. R. Van Hise, U. S. Geologist, Madison, Wis.

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U.S.
GEOLOGICAL SURVEY
FIELD BOOK #343

W.S. Bayley
FLORENCE DISTRICT

1901

Field Notes

of

W. S. Bayley

Aug- Sept. 1901

District E. and South of

Iron River

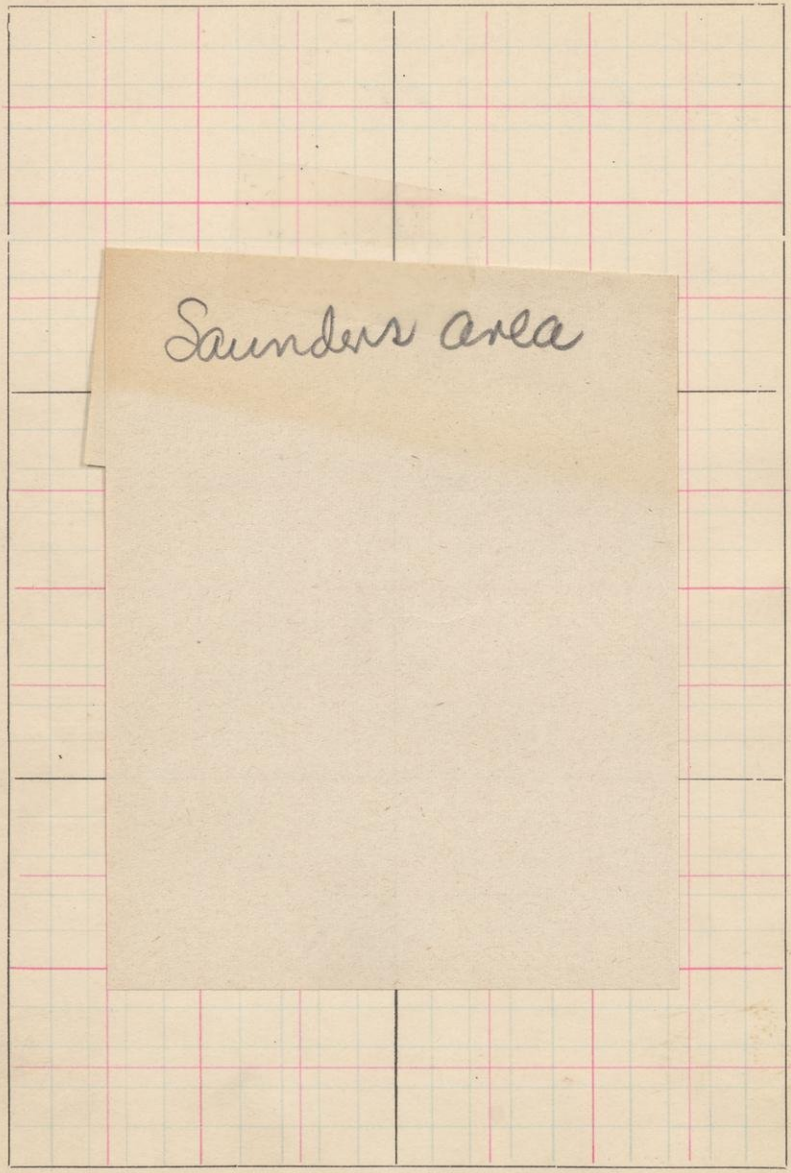
Mich

Specimens 41704 - 41764

John Williams, Iron River

Compassman

S. T. R.



Went from Saunders Dam to the Saunders dam. The rock forms a cliff of about 200 feet in length along the river on the South side of the dam. It is an almost precipitous face of pink marble and chert. Both rocks are brecciated and neither shows distinct bedding. If there is any the dip is 75° - 80° S. The base of the cliff is a little more calcareous than the top which is more cherty. At top of the cliff it is an almost pure chert. There has been evidence of sliding since the blocks that have fallen from cliff one can find many sharp faces. Could however, not measure any in the cliff. The marble is shattered into big pieces which are imbedded in chert. Went up several ravines to study rock in contact with the marble but could find nothing.

From the cliff went to the Jumbo Exploration in
There is plenty of rock thrown out in

the Dump of pits. Wherever it was seen it seemed like the same character - a ferruginous impregnation of a chert slate.

41704

Abt 200-250 paces W of this is a small ledge of greenstone in the river. It looks like a schistose amygdaloid, but a little further up stream (in a direction 140 S of W) it is mine massive, though spotted.

41705

41706

41707 Again further up it is schistose,

41708 then it becomes more slaty and then again a mine massive, gray-

41709 wacke like place occurs.

A little further up stream, i.e. 375 due W. of Junior Shaft, is a tunnel into the bank. Here the

41710 rock is a quite massive, dense chloritic rock. Could find no slate. Think the explorations are in some ferruginized greenstone tuff.

At one of the Eastern pits, however,

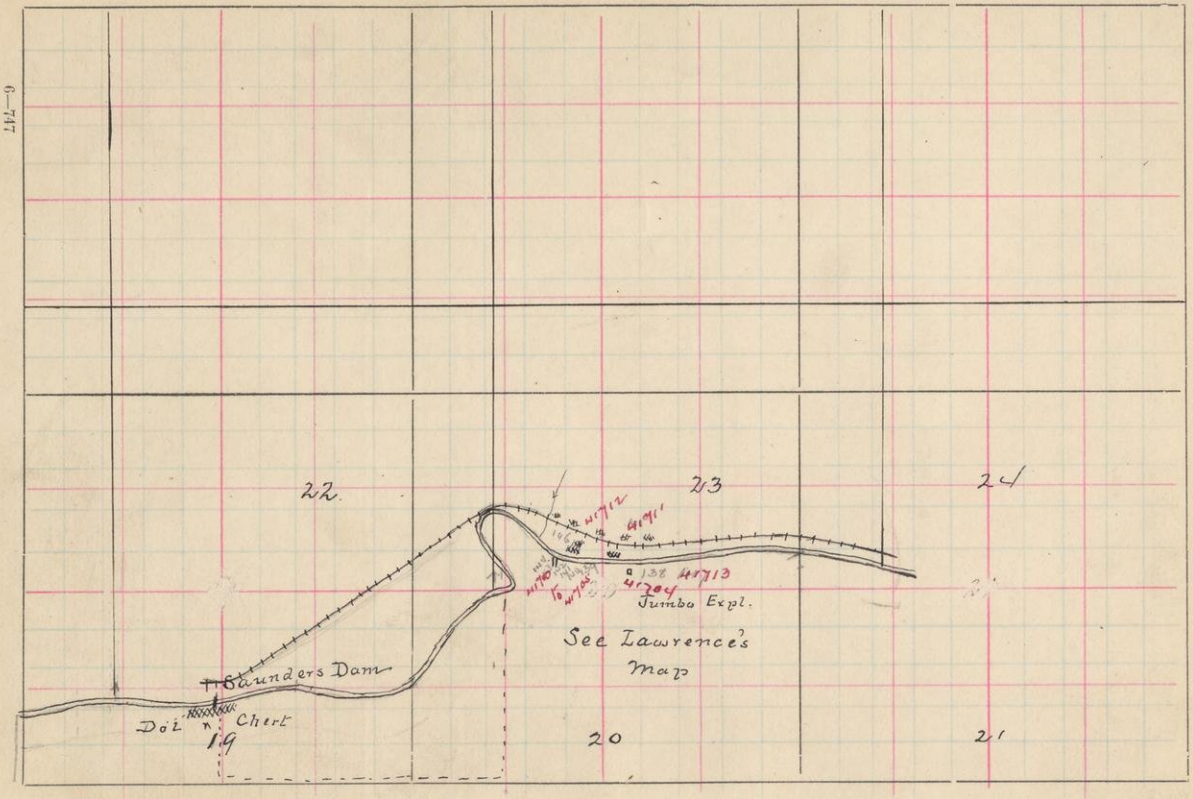
41713 the main rock there was not in dump. Seems like a gray slate

S. 22-23-24
19-20-21

T. 42
41

R. 34
16

6-747



Crossed the river and located the drift from the North side as 300 E & W Sec line Sec 23.

On this side of the river opposite Jumbo Explorations are 6 ledges of greenstone schist and Ellipsoidal greenstone along the railroad track - the westernmost being a little North of the track and 328 E of W Sec line Sec 23. Others are located as indicated

The two on the South side of the track are mont as located on topographic maps. These are plainly ellipsoidal greenstones with amygdaloidal cavities.

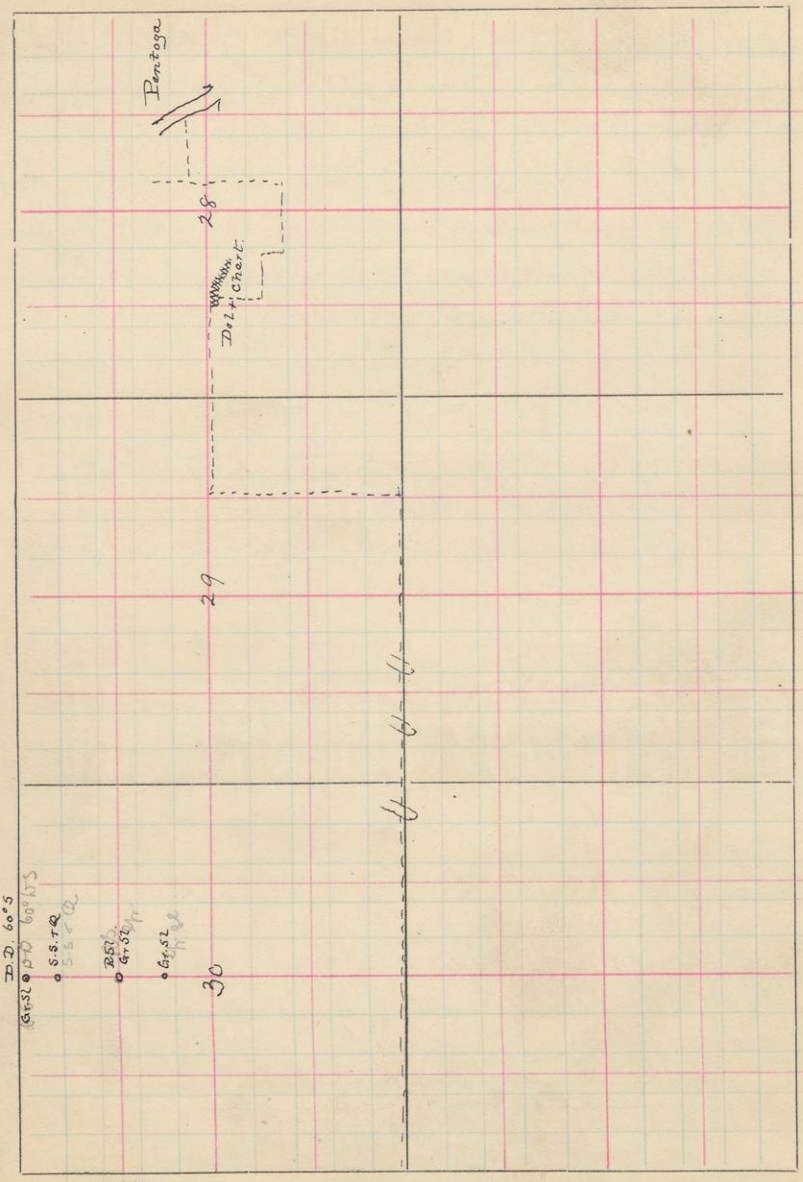
H-711 Ellipsoidal greenstone containing quartz(?) grains. ½ of R.R track

H-712 Ellipsoidal greenstone, best Exposure S of R.R. track.

Could not find any slate at 26003

The Penobscot Co put down some drill holes on top of ledge at the Dam and between this point and Jumbo but found only limestone

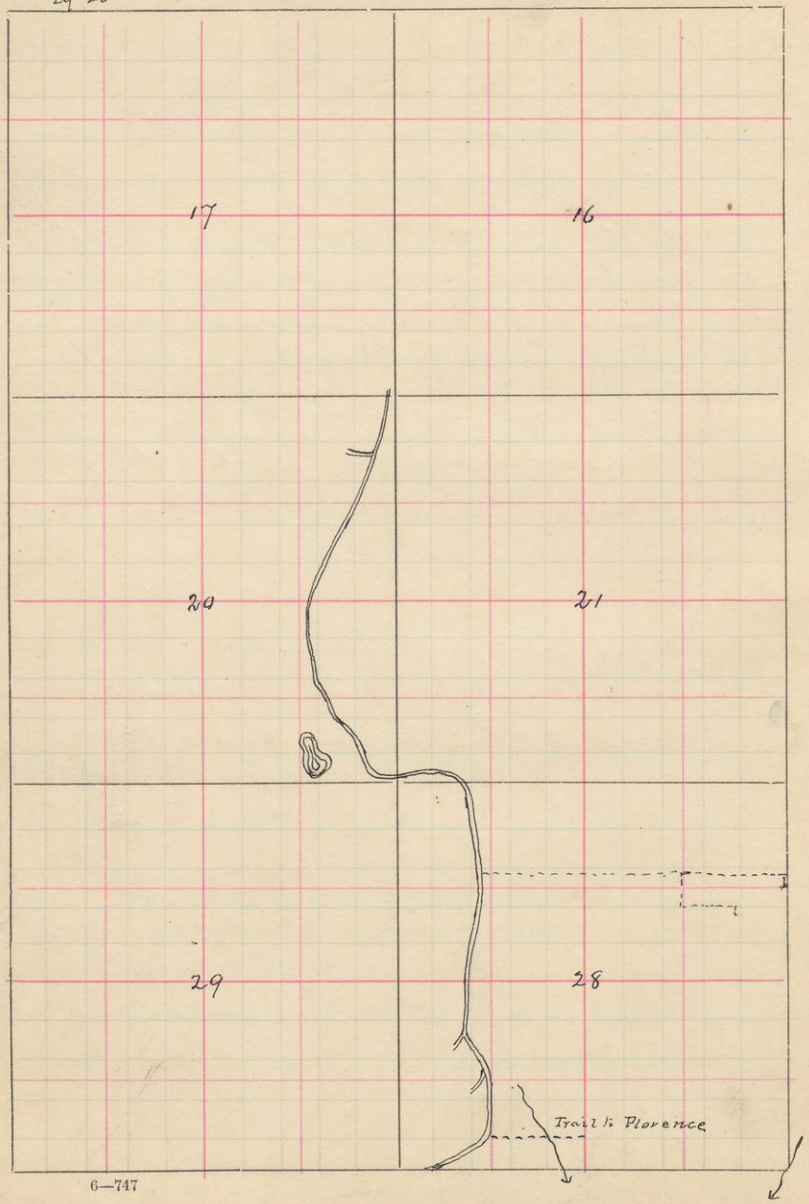
S. 28-30 T. 41 R. 16



Made a trip from Antrim west through Secs. 28, 29 & 30. Saw the chert ledges in Sec 28. The rock is like that at the Dam in every particular. Saw no other rocks on trip. Country is covered with series of low rolling hills trending a little N of E.
Could get no contacts of cherts and limestone with other rocks though this was object of the trip.

Went back of Saunders on hills and found ledge of greenstone conglomerate of the usual type at 340 S 275 E of N W Cor Sec 21 T. 42. R. 34 It forms a rough Exposure on the west side of prominent hill. It contains small and large fragments of dense light gray greenstone in an amygdaloidal schistose matrix.

S. 16 17 20 21 29 28 T. 40 R. 16



6—747

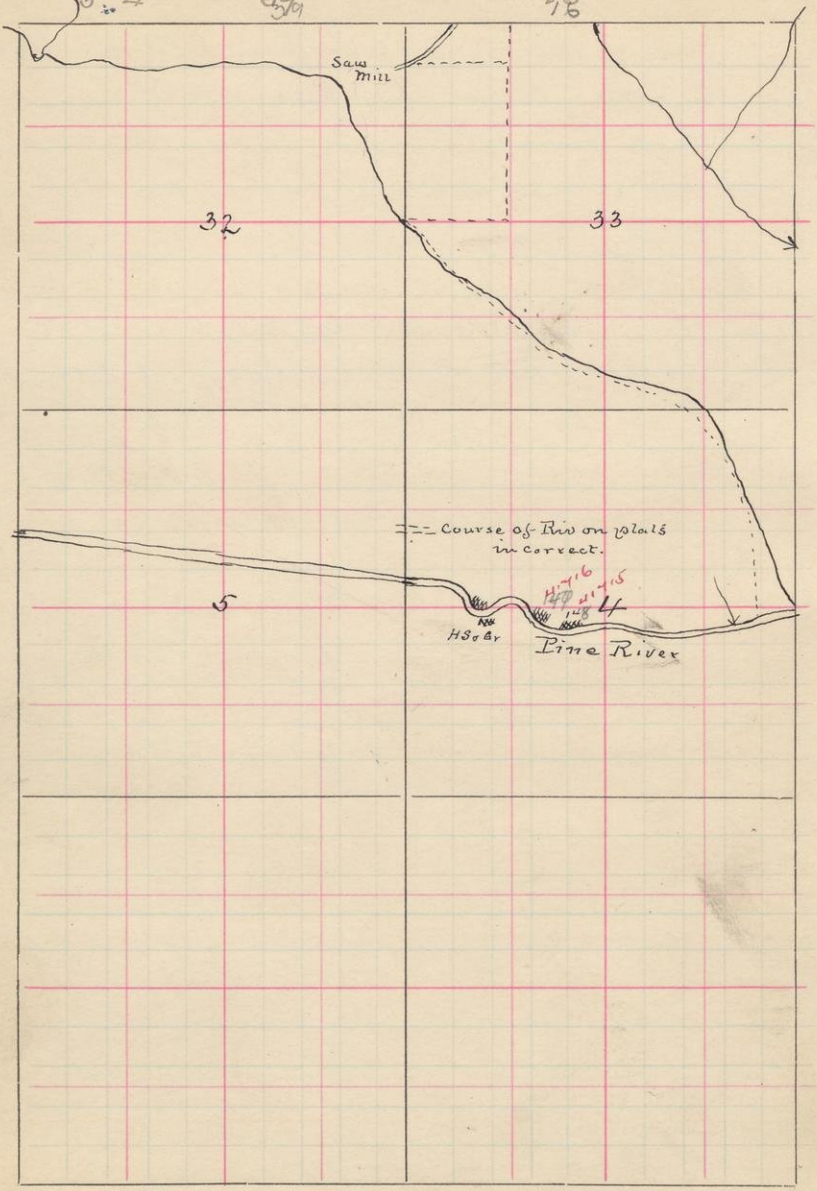
went along road from Tiki's Spring
& Saw mine in Sec 32 T. 40 R. 16.
and down logging road 6 rods
and East along mine and back
along line indicated on map.

At the mine at about 500 E of
Center Sec 3 saw ledge of banded
hornblende schist on opposite bank
Its dip is 75° S. Could not reach
ledge to get specimen

As mine back saw only one rock-
a greenstone in small exposure
top of large hill. It seems like a
coarse basic variety of Gabbro

41-414
48

S. 32 33 5 4 T. 40 39 R. 16 15 16

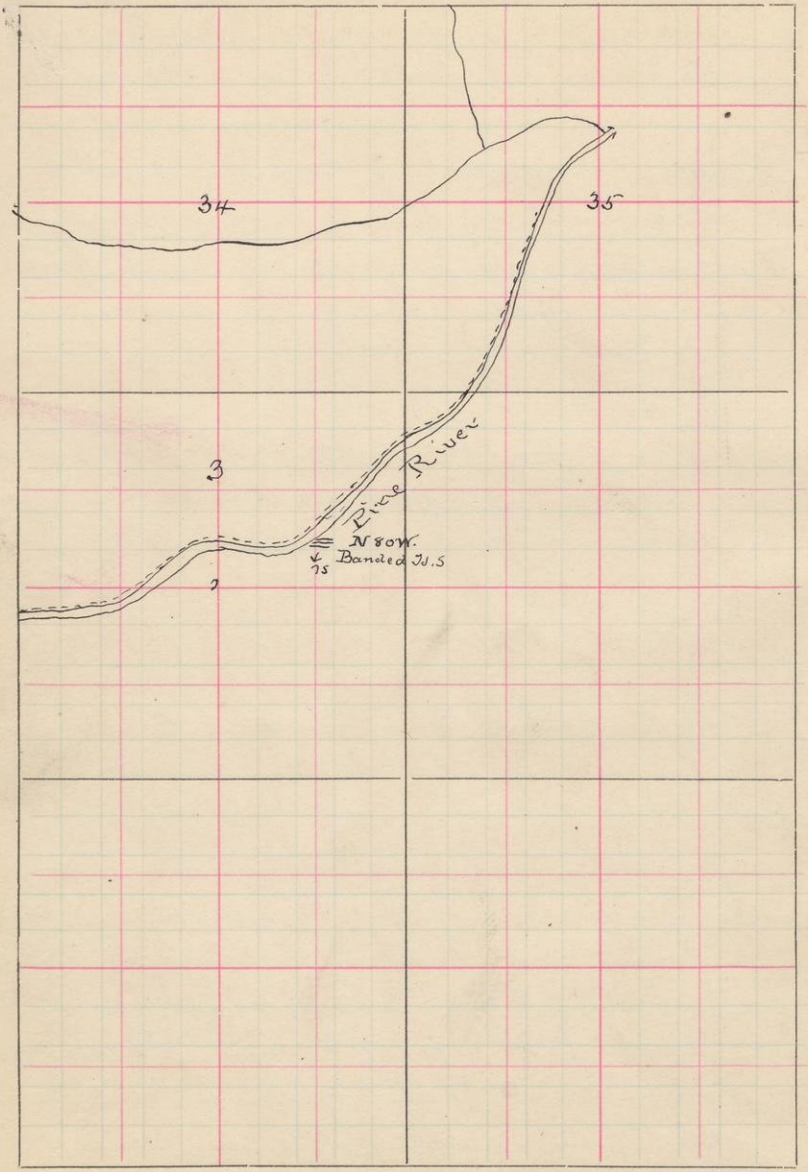


6—747

Went South on Dam logging road
W lines and went West. At about
4000 E of Rec line between Secs 4 & 5
are rapids over a hornblende-schist.
This rock is cut by large pegmatite
dykes some of which include frag-
ments of the schist. The pegmatite
is coarse and contains great crystals
of feldspar 8×4 in.
East from this ledge to at least 900
paces East of same line are three
distinct and separate ledges of
hornblende-schist equally dis-
tant apart.
Specimen of this typical schist
Hornblende schist with bands of
lenticules. Probably an old por-
phyry

Continued west to Dam in Sec 2.
Found no ledges except in Sec 1,
at the distance of 100 & 400 paces
East of W line of section. These again
is a great hornblende schist cut
by pegmatite dykes and others
of a porphyry. The granite is

S. 34 35 T. 40+0 3989 R. 16 16

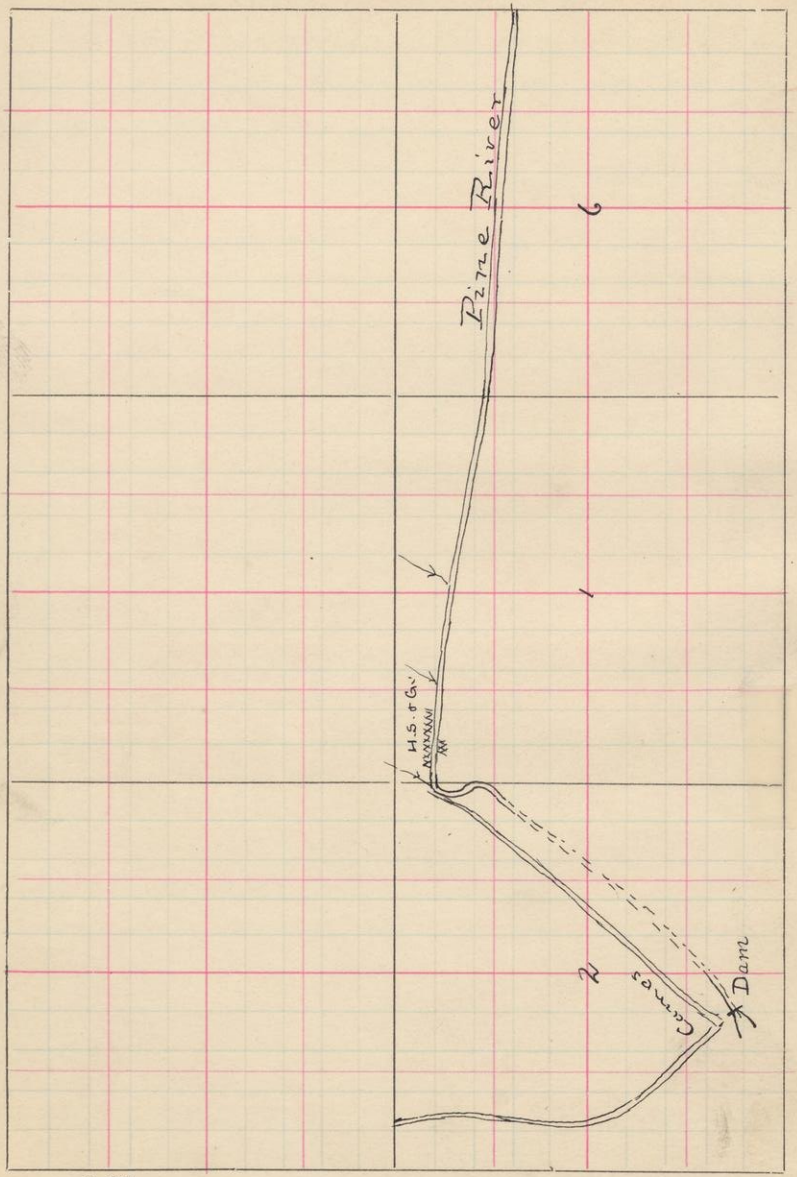


6—747

they much more abundant than it
is further East and contains much
more numerous fragments of the
Schist.

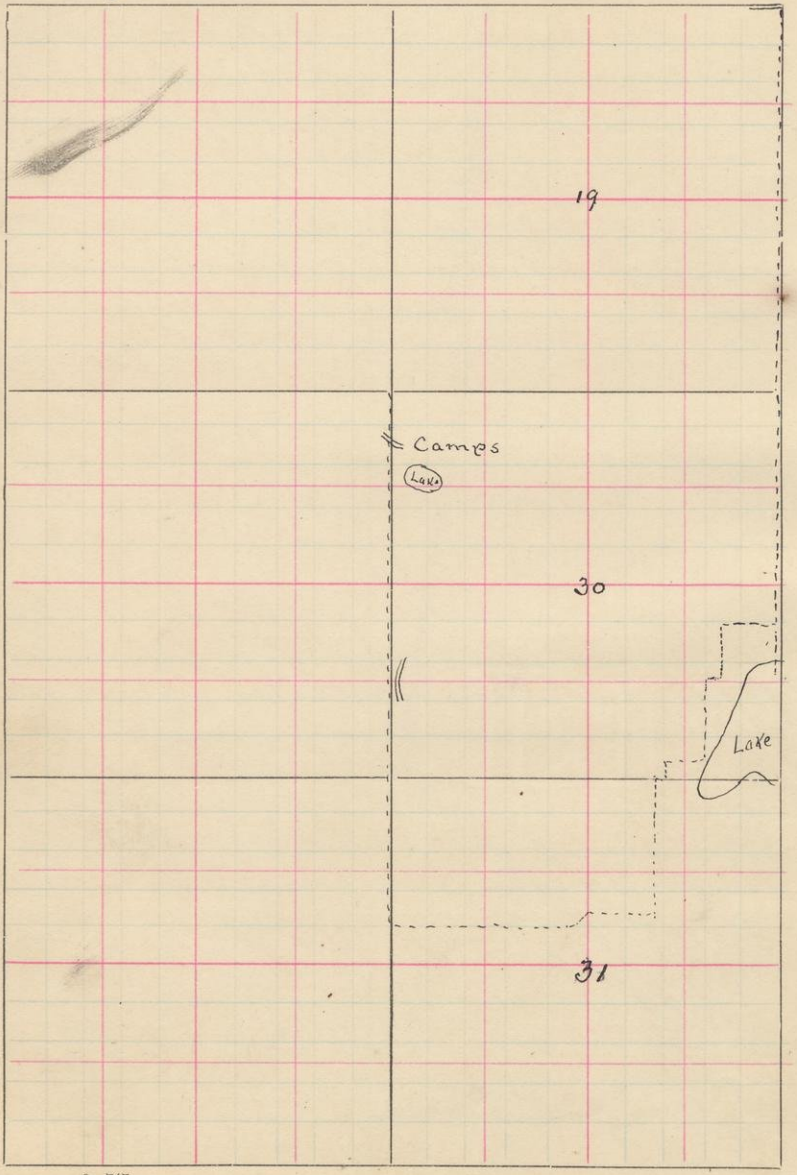
6 39 16

S. 1, 7 T. 39 R. 15



6—747

S. 19 30 31 T. 40 R. 16

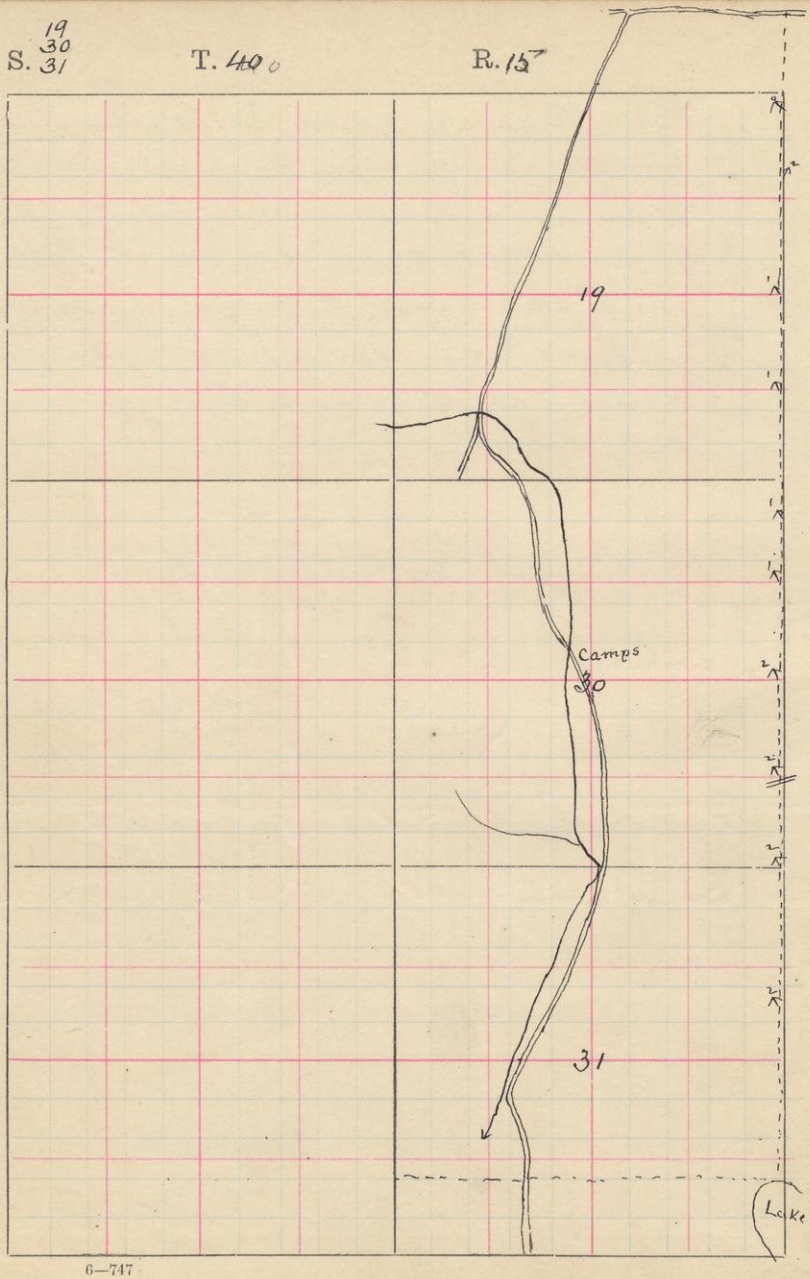


6—747

Ran from road on N sec line 19
South on E. line this Section 2½
miles and back on west line as
far as Camps in Sec 30. Then took
road and went to road running
E. from near Porcupine Lake and
continued to Camps without seeing
any rock.

T. 40 R. 16.

S. 19 30 31 T. 40 R. 15



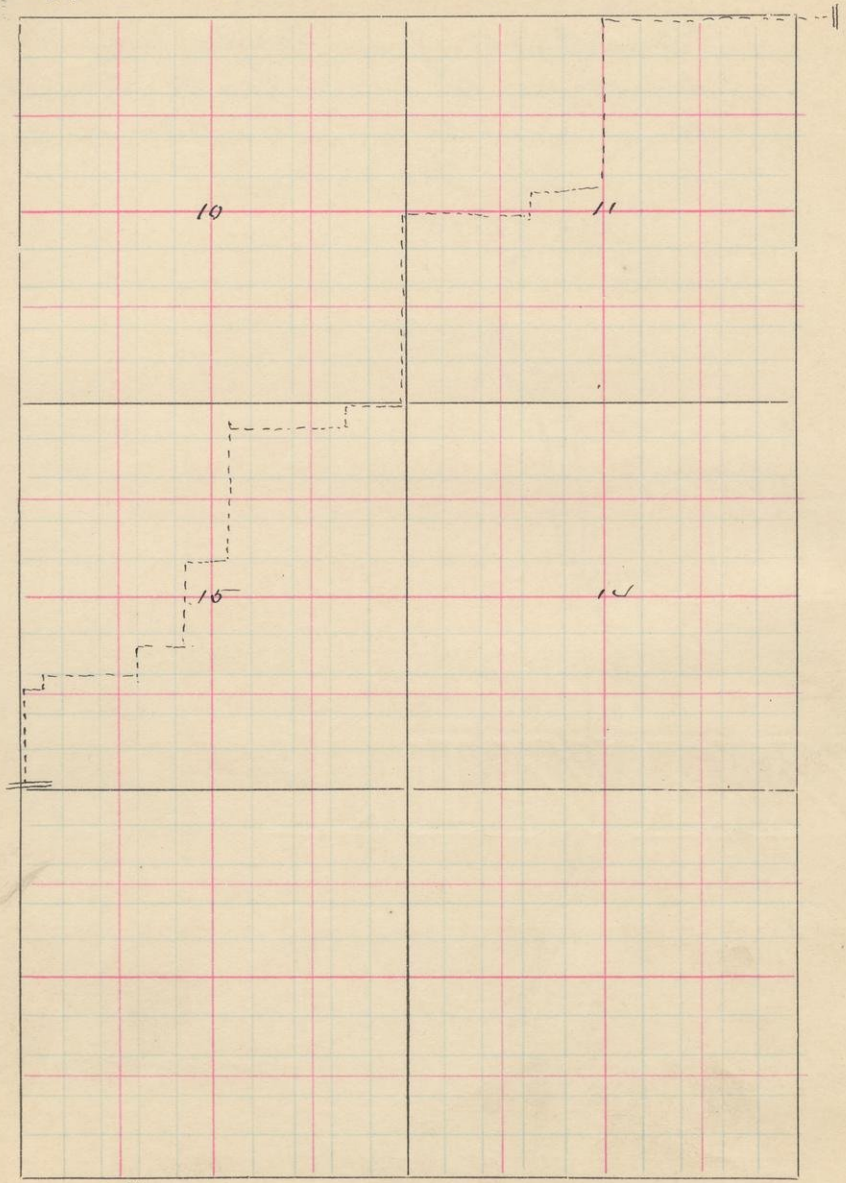
6—747

Ran South from Fooks Dam road
South on E line Sec 19 3 miles
then west to road and North locat-
ing road. No rocks.

T. 210 R. 15.

10. 11

S. 15 14 T. 40 R. 15



From Forks Dam road run N. on W line Sec 15, T 40 R. 15, zig-zagging to NE cor this Section, then N. E & N. to Saunders road 135 paces E of NW cor Sec 12. No rocks.

West East along river from where road crosses it in Sec 6 T. 39 R. 15 to crossing of road from Saunders to Dam. No rocks.

Examined Exposures in Sheridan Hill Secs 17 & 20 T. 42 R. 35 Where many Exposures and great number of pits have been reported at about 250 ft W of N. section line of Sec 17 and 350 ft W of S.E. Cor.

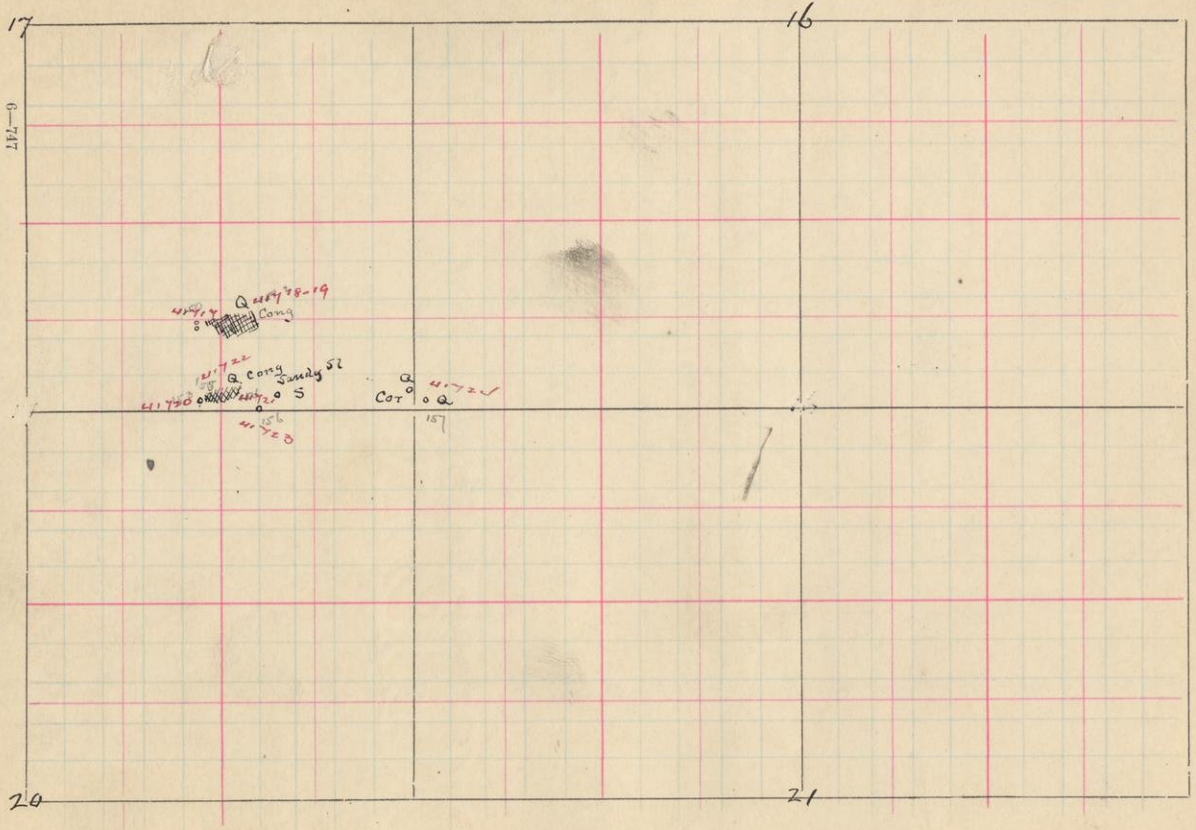
41717 One two pits in a red slate is a very fine grained sandstone with slight bedding. It may be a Potsdam sandstone or a limestone slate

To the East of the pits, on the side of the hill are Exposures of a flinty conglomerate resembling that at Iron Hill in the Tremenheere range. This conglomerate appearance contains no pebbles but those of quartz, quartzite and chert. This seems

41719 to pass into a denser chert, which at times looks as though it might

41720 be in the form of large pebbles, but several specimens Exhibit the agate structure in indicating that it is a secondary substance.

The lime pit in the N. section line 300 W of S E Cor is in Archeria and conglomerate


17
16
20
21
S. 16-17
T. 42
R. 35
6-747
Q Cong
Sandy 52
Cor
Q
157

a little East of the pit is a large ledge ending in a sudden precipice with East. The rocks at the bottom of the precipice are the conglomerates, those underlying these

41721 are calcareous sandstones and apparently there is a gradation between them. It is hardly possible that the conglomerate and the sandstone is Potsdam, but I suspect that the sandstone is a portion of the Dolomite formation at the pit. Some of the rock taken out looks extremely like Potsdam

41722 sandstone, but am inclined to think it is this sandstone with cement leached out.

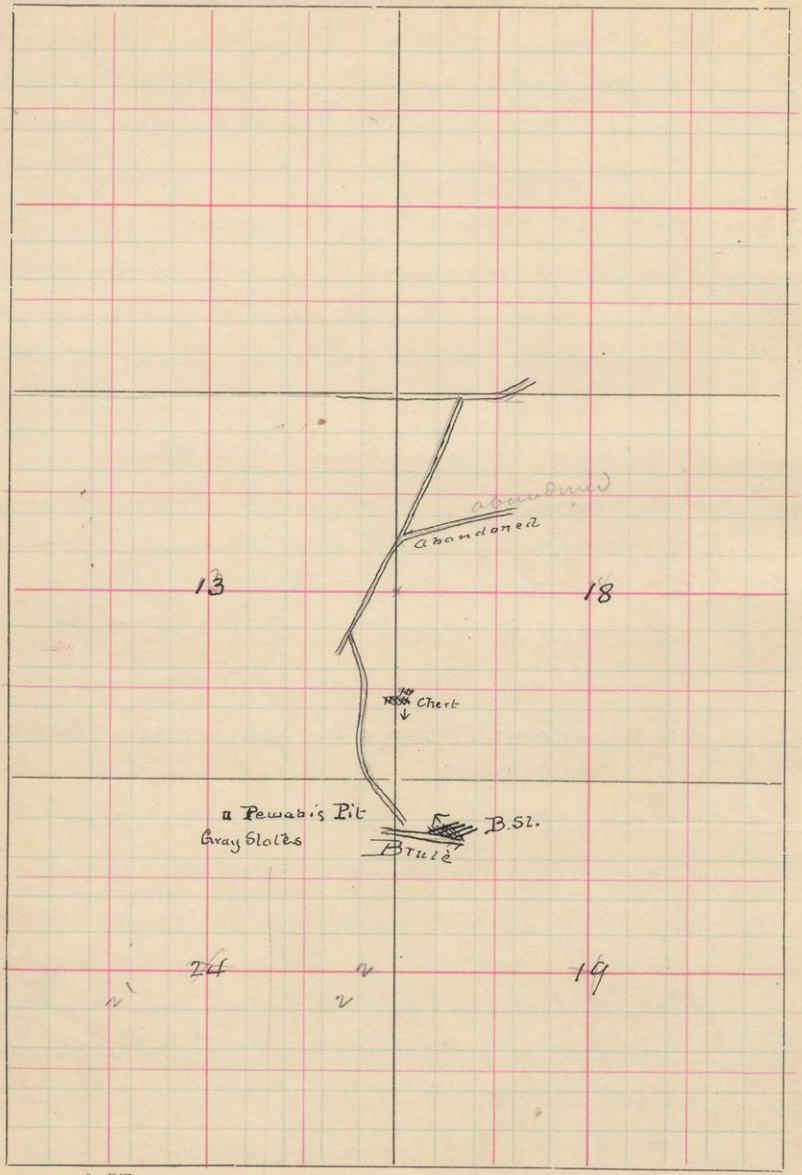
East of this is another pit on the dump of which is a great quantity of white slate and slate mottled white and red. This looks like the Dolomite slate.

41723

At about 20 N 20 E of S 10 Cor Sec 16 a white quartzite cherty conglomerate the same material in another

41724 dump heap. It is quite massive.

S. 18. 19 T. 42 R. 35



6—747

went into D.W. cor Sec 18. T. 42 R 20
in search of Dolomite and to trace
of Trick. Survey. Found the west
line of Sec 18 much cut. Could
not find Rock unless this is
the ledge in the river. Here for
some little distance, just East
of line is a bare exposure of broken
slates in bank that has been used
as a road-way. The rock is a
black shaly slate striking about
N 40 W and dipping NW at a high an-
gle.
On W line of Sec 18 found ledge of chert
quartzite in which the rock is more
or less brecciated but in the whole is
dense like the rock of Sheridan Hill.

Hiawatha Mine

According to Mr Selden the Hiawatha ore dips about 72° N. Strikes E-W and pitches 25° W. The hanging wall is graphitic slate, the foot wall a siliceous slate.

The shipping ore is a mixture of limonite and hematite of which latter is secondary.

41726 Some of the ore is a dense, heavy, black material with calcite and siderite-rings.

41727 Some is banded ore looking very much like segregations between slate bands.

41728 Specimen of secondary brecciated limonite.

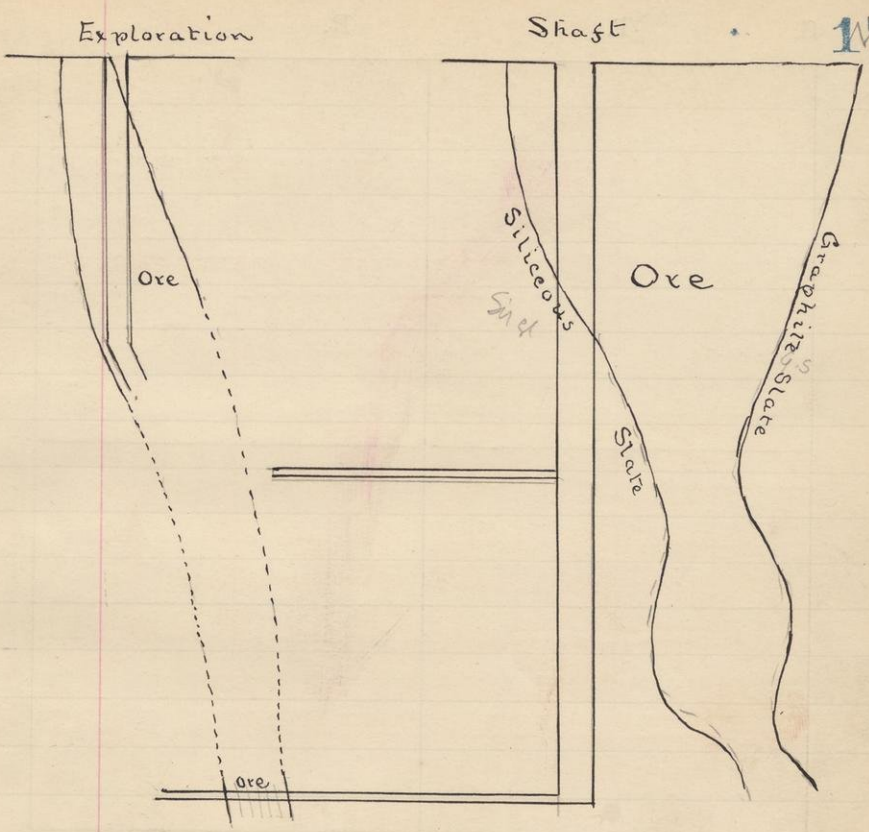
41729 Specimen showing contact of black slate and ore.

41730 Much of the slate in the dump heaps is of a greenish hue and is chloritic, as though decomposed and sheared rock.

41731 This seems to be replaced by ore in crushed and folded portions. Some of the ores show smooth portions of

the green rock has replaced within it. In the process of replacement
41732 a banded ore and white cherty-rock results. The white bands are jointed and fractured, and along the cracks ore deposition takes place the ore originating in the green rock and seeping into the cracks in the white ore. The mass thus
41733 becomes a breccia of white, sharp edged fragments of the white rock
41734 in ore, or in a matrix of ore and green rock.
41735 Large specimen showing gradual transition from banded rock into the breccia.
41736 Fragments of white rock from fragments in the breccia.
41737 Fold

The rocks are much folded. In shape according to Mr Sheldon the form of disposal of beds was obtained at time of sinking



Section N-S through Hiawatha Mine

1 6 Sec. 7 - T. 42 R. 34

12 7

N. W. = N. W.
Baltic Mine -

Gang Shaft

Ore

Shaft

Yonkers 70°

Shaft

Lean ore - Red Jasper

Test pits Jasper or Lean ore
Red Quartz

N. E. = N. W.
Kinney Farm

168 116 266 375 65

Black Quartz

Black Shale E-W

Deep - 80'
Mixed Black Shale & Ore

Test pit

Black Shale
60' - sand

Test pit
Black Shale & Ore

Test pits.
25 Ft Deep 15 to 18 Ft.

Black Shale

Black & Gray Shale

mottled Shale

Test pit
52' Deep. Sand
Gray Shale.

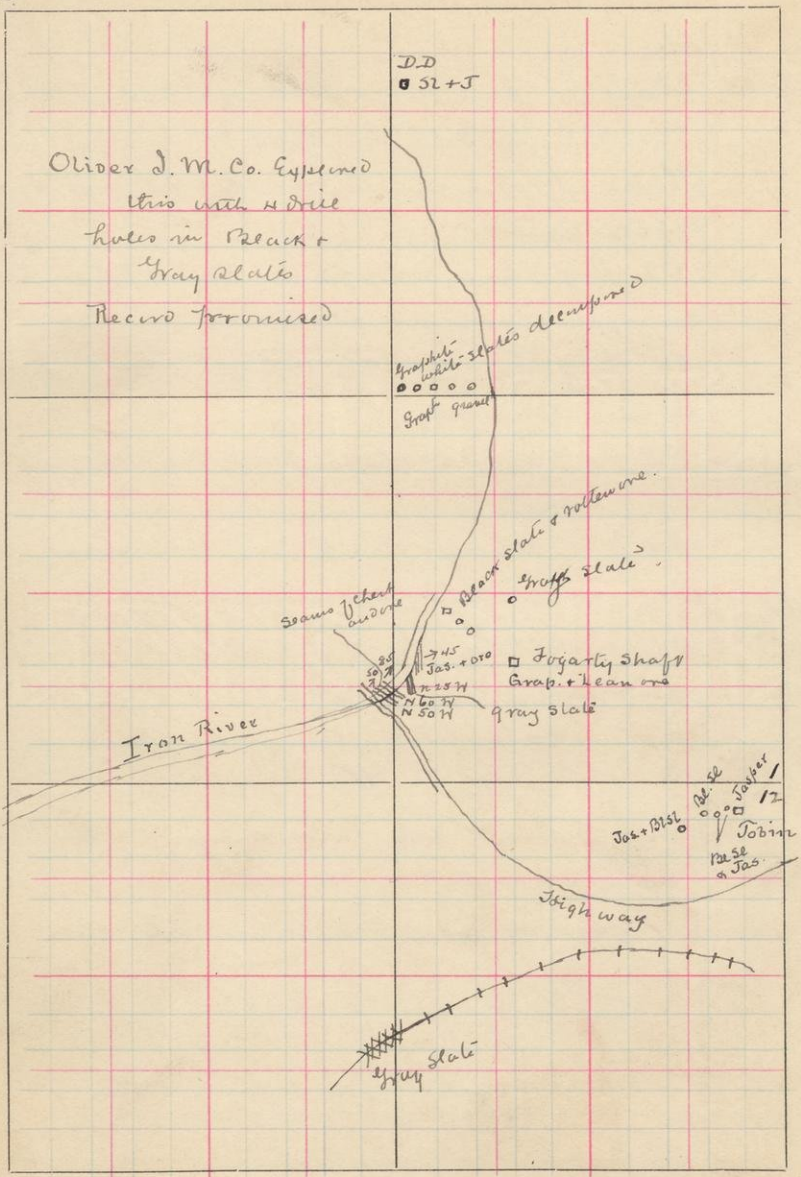
Began examination of region around Iron Rives where are found the Rising Sun, Oaber and other mines.
First went down to Yungs Exploration and the Bailey Mine in Sec 6 & 7 T. 42 R. 35

Yungs Exploration is 60 N. 150 E of S.W. Cor Sec 6. Pit was 125 ft deep at time of visit. Rock is a
41738 Coarse graywacke slate
41739 Some of which contains what look like fragments of ore
There is also mined with this ma
41740 terial some decomposed ore as at other pits
From this place went into the Kinney property - NE of N W Sec 7 and ran up the W. line of this 40 acres Examining pits. The locations and contents of these pits are given in accompanying map.

41741 Black slates from pits in Kinney
41742 property.

41743 Ore
41744 chert 5 from old Shaft near NW
Cor S.E. ¼ NW ¼ Sec 7.
These rocks and black slates are
abundant.
32 S of this Shaft is another pit
in jasper and slate.
65 S of this is the Shaft used for
water supply
150 S. is another pit in black slate
and ~~sand~~.
80 N of Shaft 65 E on Kinney prop-
erty is a pit in
41745 gray slate and
41746 jasper
and 40 N 65 E another pit in
same rocks. The remaining pits
are found in Kinney's lot. They
are located on map.

S. E Sec 1 T. 42 R. 35



6—747

At the Baltic mine in the NW ¼ NW Sec 4 the same rocks are found as on Drum of Skiamarka. Except that the green rock is not so foliated & evident. The breccia is present in quite considerable amounts and lodes are plentiful

Mr Lawrence says that in this mine the dip is 70° E with greystone as hanging and graphitic slate as the foot

At the Fogarty Shaft (which is 350 N. 145 W. S.E cor Sec 1 T. 42 R. 35 - the dip is also about 70° E.

NW of the shaft in the mines are three lodes in a mixed black slate & limonitic rock which in places is cellular and brecciated.

41747

41748 Dober one

41749 Dober one

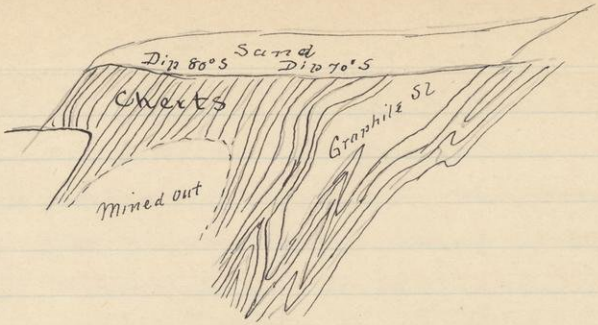
41750 Dober one.

Examined ledges, pits and outcrops on Dober and Riverside properties. There is no open pit at Dobes Mine. The ore is represented by the three foregoing specimens.

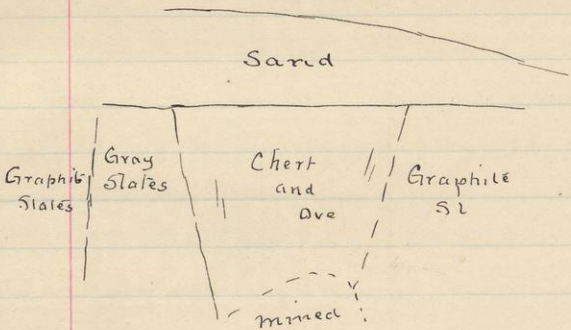
The Isabella pit is open. It is in a very much faulted series of cherts, graphitic slates and what seem the gray slates. Sketch on next page indicates relations of these rocks. On the west side of the pit is a fault in the cherts above the graphitic slates with pitch so far as exposed determining about 20° S.W. (See maps of mines) The south limb of the fault is almost vertical. The north limb is about horizontal.

The graphite slate is in a triangular or wedge shaped mass, pinched out at bottom. The apex of the fault was ore. It is been mined out.

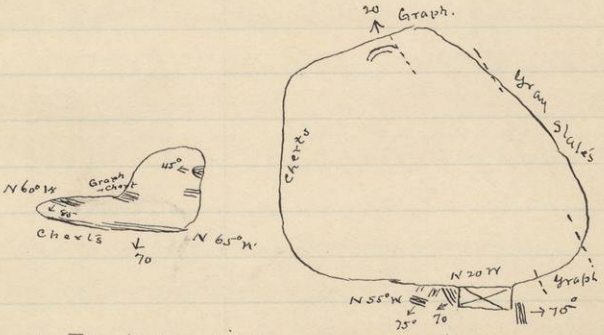
In the little ledge 25 paces from the steps in the pit (direction 30° W; S) are bedded cherts and ores intensely faulted with the upper limb



W. end Isabella Pit



E end Isabella Pit



Plan of Isabella Lode

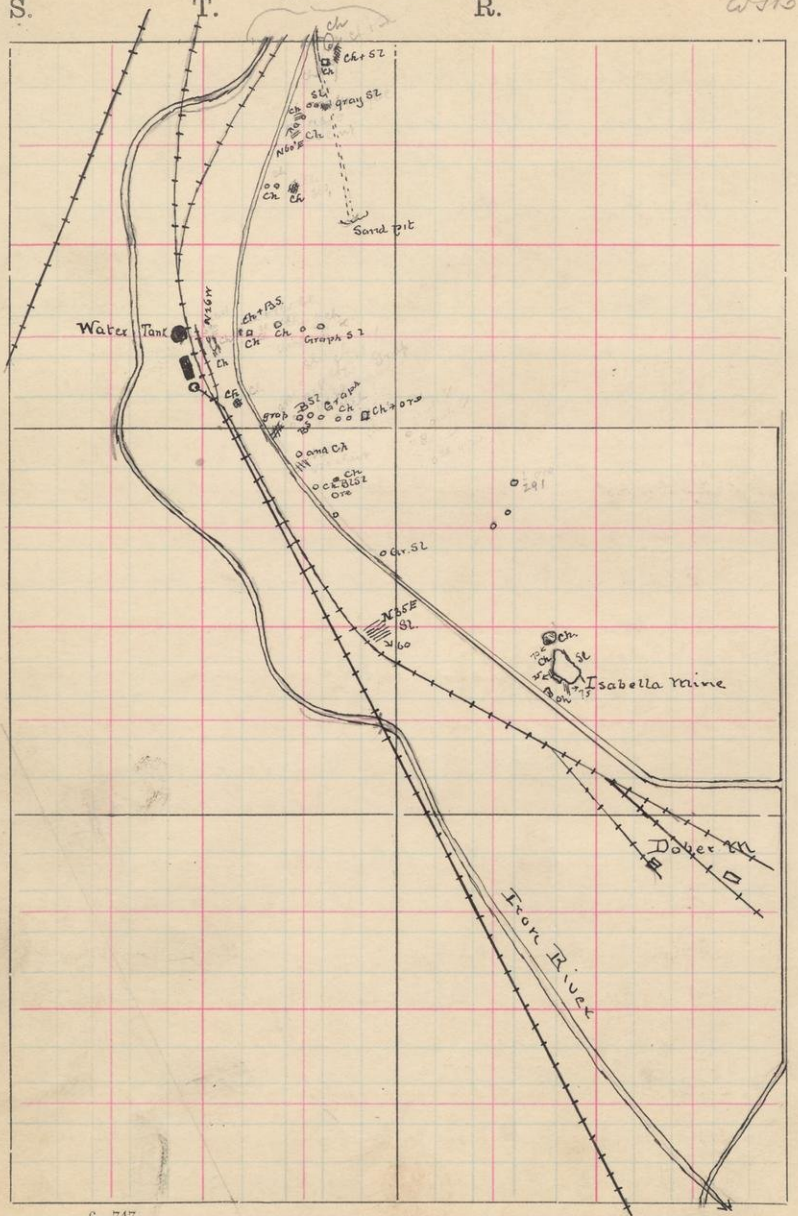
of fold horizontal and limbs steeply inclined. Pitch about 15° N W.
The chert in the pit is the white variety but in the ledge west of Shaft is
41751 of a dark purple color and vitreous.
In addition there is also present here some of the white variety.
At 90 N. 230 W of the ledge S.W of Daniels Shaft is a little hillock of black slate striking apparently N 35 E and dipping 60° S E.
85 N of this is a small pit in gray slate

Pit X 75 West of this and 80 N is pit in gravel

Pit A 25 N W of this in side of road is one in chert one and black slate
45 N of pit X. Chert

Shaft 2 85 N of this is a large Shaft in chert, and one.
62 E. 45 S. pit in rotten slate, chert and gravel.
15 W 30 N of this - graphitic slate
10 W of this " "
18 W of Shaft 2 pit in chert
12 W of this " " "

S. T. R.


Ch
Ch+SZ
gray SZ
N60°E
Ch
Sand pit
Water Tank
N15°W
Ch+BS
Ch
Graph SZ
Ch
Graph
BSZ
Ch+ore
ore
Ch
ore
Gr. SZ
N45°E
SZ.
60
Isabella Mine
Ch
SZ
Dover Mine
Iron River

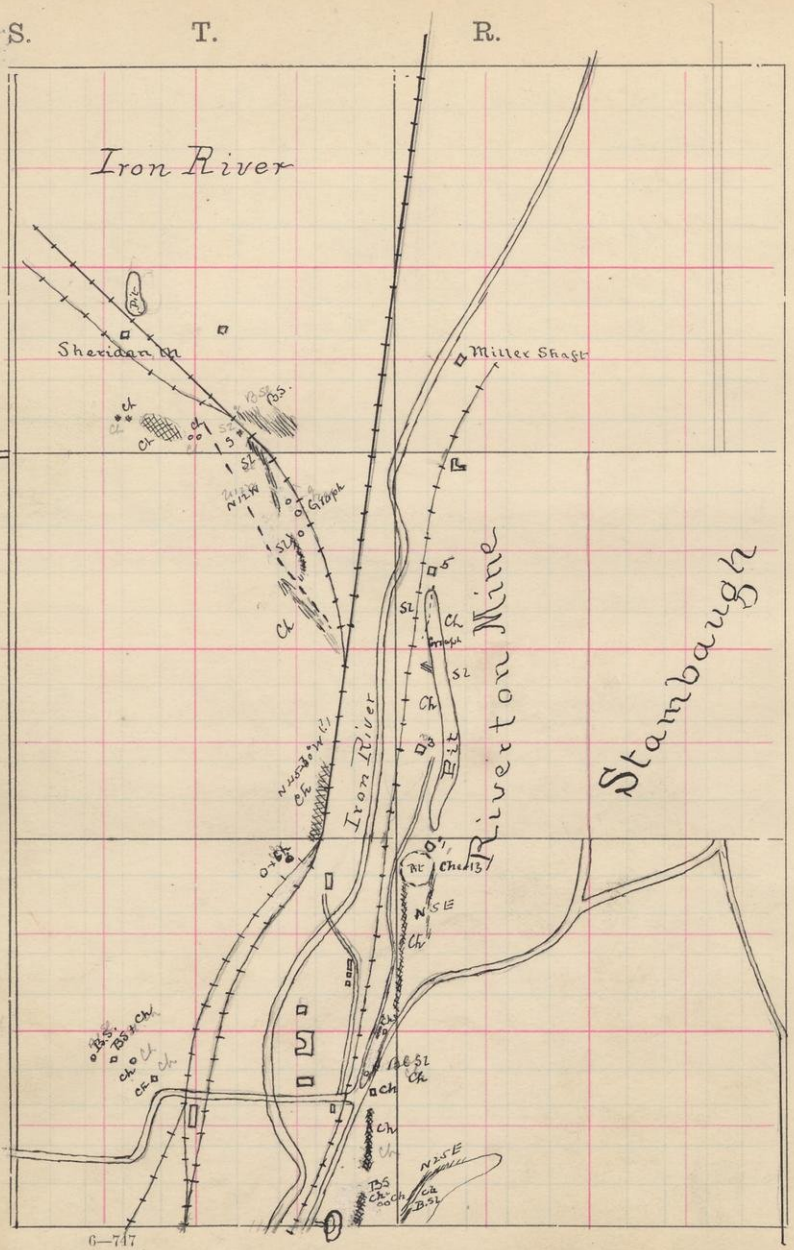
20 W. of last pit is ore in graphite slates
10 W of this ore in black slate
10 W of " " " " " Chert.
15 W of this (95 W of Z) is a trench in graphite slates and a little chert.

25 paces along road from A is a trench with broken ore and chert on sides. Could not get definite record of strike and dip but think strike is N. 35 W.

For location of other pits used door of water tank as datum from which to make records.
Banded chert forms a ledge 65 E. 75 S of this record point. The rocks seem loose. It may be old dump here, but believe that rocks are in place.

Pit B — Pit 36 E 10 S of door of water tank. (Pit 46 feet N.S. 20 ft E of) The west side of this pit is in banded chert striking N. 26 W. At North end of pit the dip on its East side is 80° W,

S. T. R.


Iron River
Sheridan Mt
Miller Shaft
Iron River
Riverton Mine
Stambaugh
Pit
Ch
SL
BS
N 21½ E

6—747

and on west side 80° E.
Pit. 45 E. 20 N from B. on side of road
Chert and black slates
Shaft 65 E. 20 N from B. Black
slate, some chert
92 E. 20 N. from B. Chert
120 E 20 N. " B. Graphite slate
146 E 20 N. " B. Chert
105 E 210 N " B. Little hillock.
Near road. west side broken chert
and possibly little slate.
25 W of last location, pit, same rocks
25 W of last location, pit " "

275 N. 105 E from B. banded ore and
chert. Strike N. 60° E. dip. NW. Contort-
ed band. Strike taken is foreclaimant
strike.
6 paces N of ledge is pit in same rock
10 " N of this is another ledge of
the same rock and a pit 2 paces
East pit.
305 N. 125 E of B. Pit. Slates
305 N 130 E " " "
305 N 138 E " Ledge of gray slate
extending 10 paces East.

Pit C 360 N. 140 E of B. Shaft in chert

10 E of this shaft the pipe line runs a few degrees (2) E of N. along it chert and slates are followed for 26 paces N.
10 paces W. of C. and 26 paces N is an old shaft in pit. The hole is 25 paces N-S and is in chert
For 44 paces further up pipe line chert continues. At this point black slates and chert intermingle and 10 paces further East a ledge outcrops

At 40 paces E of shaft is the mouth of pit in side of hill - which pit passes to the NE into a raving. On NW side of the raving are chert and black slates striking about N 25 E and extending along strike for 40 paces. The chert is the dark colored variety -

41752

60 N 6 E of shaft C are two pits in chert

At 475 N. 175 E of B. begins another outcrop in pike line. It consists of broken chert and extends to 550 N.

At 573 N 180 E. is a shaft in the chert.

From 600 N to Stambaugh road the pike line cuts black slate and chert

613 N. 10 W in W side Stambaugh road is little pit in chert

The same rocks extend to Southern open pit of the Riverton mine.

At 674 N, between the road and the Stambaugh road is a ledge of chert covering an area of 50 ft E-W and 80 ft N-S. The general strike is a little E of N. but rock is much folded The axes of reverse of the folds seem obscure, seem the nearly horizontal, though in one case the fold is apparently a return to the N-S.

At the N. end of the ledge (715 N) the white chert, like that at the Okiawaha and the Baltic are beautifully intermingled and the breccia noted

at these mines is well developed. Here there are several folds and they seem to pitch a little E of N. and at angles of about 20°. which increase to 40° at extreme N end. About 50 paces E of this ledge is a cliff on the side of the hill which is the Southern Extension of the East wall of the Southern Riverton pit. The rocks are broken cherts, striking generally a little E of N.

The Southern Riverton pit is in contorted cherts having thin beaded and pressed into close folds with pitches apparently N.E.

At the Lawyer pit the cherts are well banded and usually contorted but the folds are not sufficient enough to show pitches. On the East side of the pit the rocks seem to be less cherty and more like the gray slates. The main strike is about with trend of pit but there are many divergences

from this.
The west end seems to terminate in gray slate. This cuts across the pit to the W and occupies about 1/2 of W end of pit.
Graphite slates were seen only at one place as a narrow triangular band about 1/10 way from W end of pit. It appeared as though a sharp synclinal fold.

41753
41754
41755 } Riverside ore

41756 Ore with pyrite - Riverside mine

Examined vicinity of Sheridan mine and South to Riverton on west side of Dry River.
The locations of the loops about the shaft are shown on map.

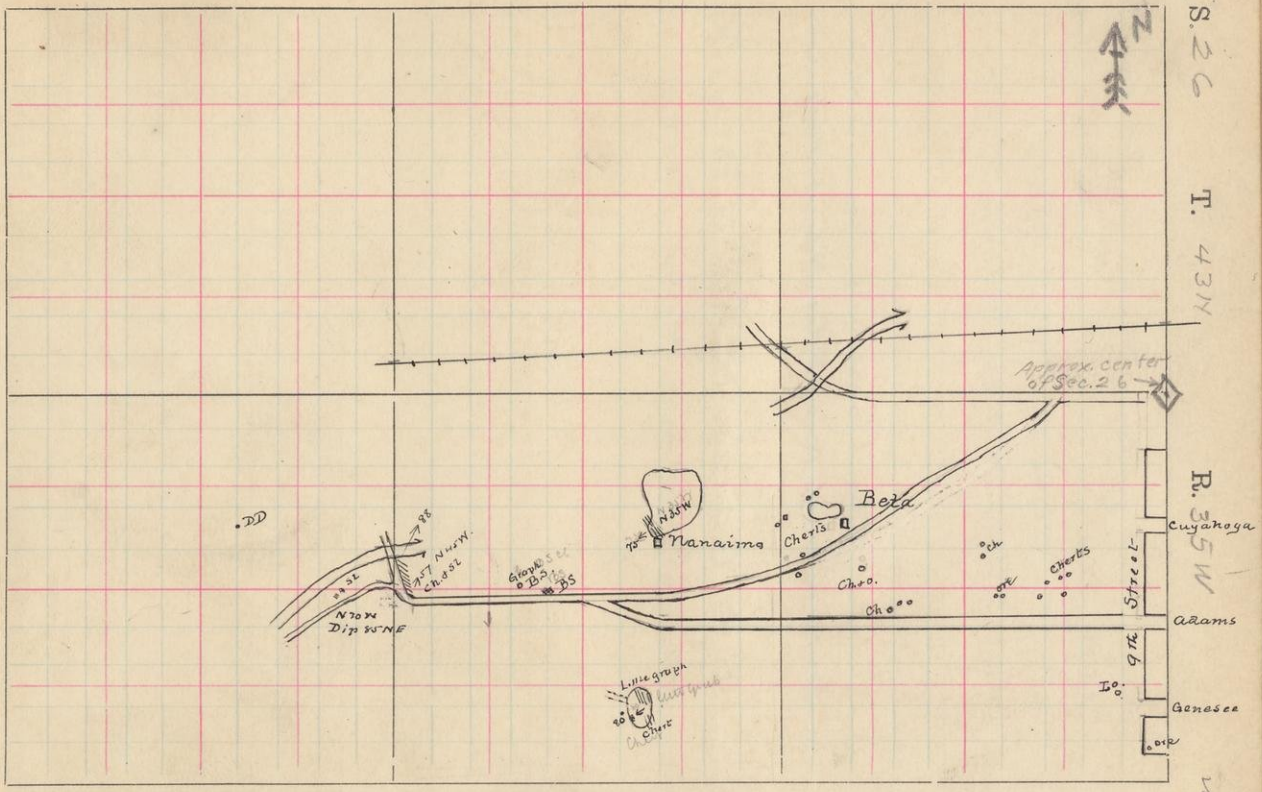
On west side of valley of stream is a little cliff at base of which the Sheridan shaft runs. Black slates and graphitic varieties are exposed as far as 350 S. 250 E of Sheridan shaft where on left of cliff there is a contact between the slates and the chert with the cliffs to the west
The cherts are folded and on their East sides further South they are interbedded with graphite slate

About N of Middle of Southern Riverton Pit and on W side of R.R about 50 paces west of this is a deep pit on chert.

A number of pits in Mr Sheedon's field were located as follows:
45 W. 38 N. of NW Cor R. R. Station at Stambaugh - Shaft in chert.

S. W 18 N of this Shaft is fair in cherts
55 W 20 N " " " another Shaft
in Black slates and cherts
30 W Veins fair in black slates.

Plats of the Riverside and Dober
properties are who sent me at
Waterville.
At the Riverside the dip is 80° W. Hanging is cherts and slates. Foot greenstone slates.


S. 26
T. 43N
R. 35W
N
Approx. center of Sec. 26
Nanaimo
Beta
Cherts
Chert
Cuyahoga
Adams
Genesee
Wis.
Lime grab
Dip 15 NE

Made a detailed Examination of pits and shafts of Nanaimo and Beta mines.
At the Nanaimo the chert and ores are abundant and in one dump near the mine is quite a little graphite slate. Could get no definite information as to conditions in either of these mines.

A number of pits were located and their location indicated on map.
In addition to these the Mackenzie indicated positions of a number of others that were practically unrecognizable.
Locations from NW cor Adams and 9th Sts.

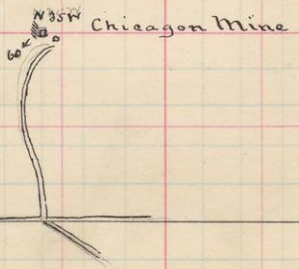
37 N.	45 W	Chert.
38 N	80 W	"
55 N	78 W	"
57 N	88 W	"
45 N	98 W.	"
26 N	109 W	"
26 N	158 W	Ore
90 N	165 W	Chert
106 N	165 W	"

N NW Cor Genesee & 9th Sts. Lean
ine and Chert were found in well
N NW Cor Maple and 9½ St. Ine
was found in well (Mackinnon)

In Southern pit of Hamming a
Rift was put NW. It ran 45° for ine
ine and then struck some other
rock (Mackinnon)

Graphite in foot wall of pits
(Mackinnon)
Mr Mackinnon thinks ine runs
E & S. of Open pit

S. 26 T. 43 R. 34



At the Chicago mine nothing is to be seen except the dump heaps and the edge in west side of pit where the general strike is N 35 W and dip 60°-65° S.W. There is apparently a little of gold in the bedding at this place but a pick will not but it is so indefinitely marked that could get little out of it.
Specimens taken several years ago
No 23682.

The Dimpleken Drill hole in graywacke is 1745 N. 1125 W of E¼ S. Sec 15 T. 2 S R. 35. Drillers reported soapstock. Edge of swamp bordering Iron River

The James shaft is 225 N. 285 W same lines E NE Cor 23 " " " side of great gully Extending N and a little East. A new drill hole is being put down 30 W 20 N of shaft.
The rocks in dumps are a rotten chert, banded chert and one, green decomposed slate, chert breccia and an one cut of iron

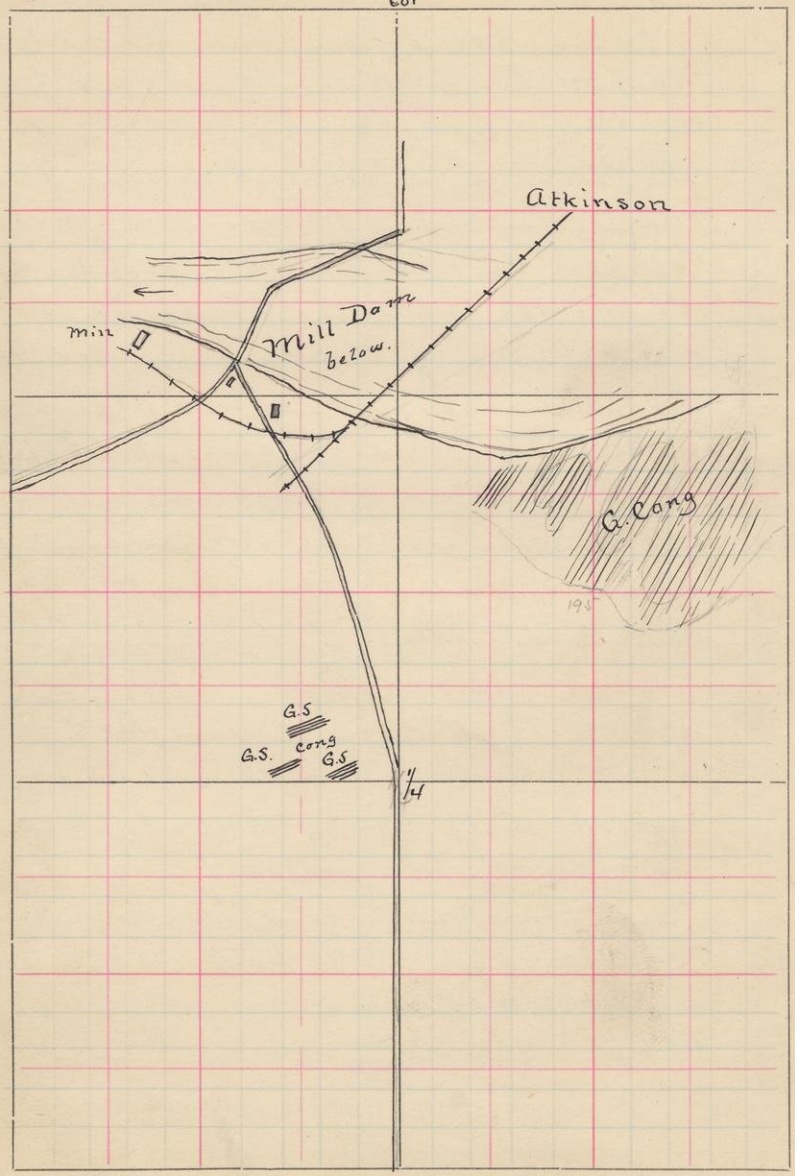
of calcic secondary ore. Marker
Wood have some rocks as found
at Hiawatha mine.

41757 The chert is a well banded flinty-
variety in some places, but this, on
exposed surfaces gets porous and
looks as though partially dis-
solved - as if calcareous cement
had been washed out leaving
a sandy white mass behind.

41758 In a number of specimens the two
chert appear interbanded, one
and red jasper replacing the sand
rock laterally.

On the Boyington farm Dec 13.
T. 43 N R. 3 W. are two large pits
one of which had already been
located by Clements.
In both are slabs. one is
41759 220 N. 240 E. of S'W post Dec 13
and the other at
41760 480 N. on side of road

S8/9 T. 44 R. 35



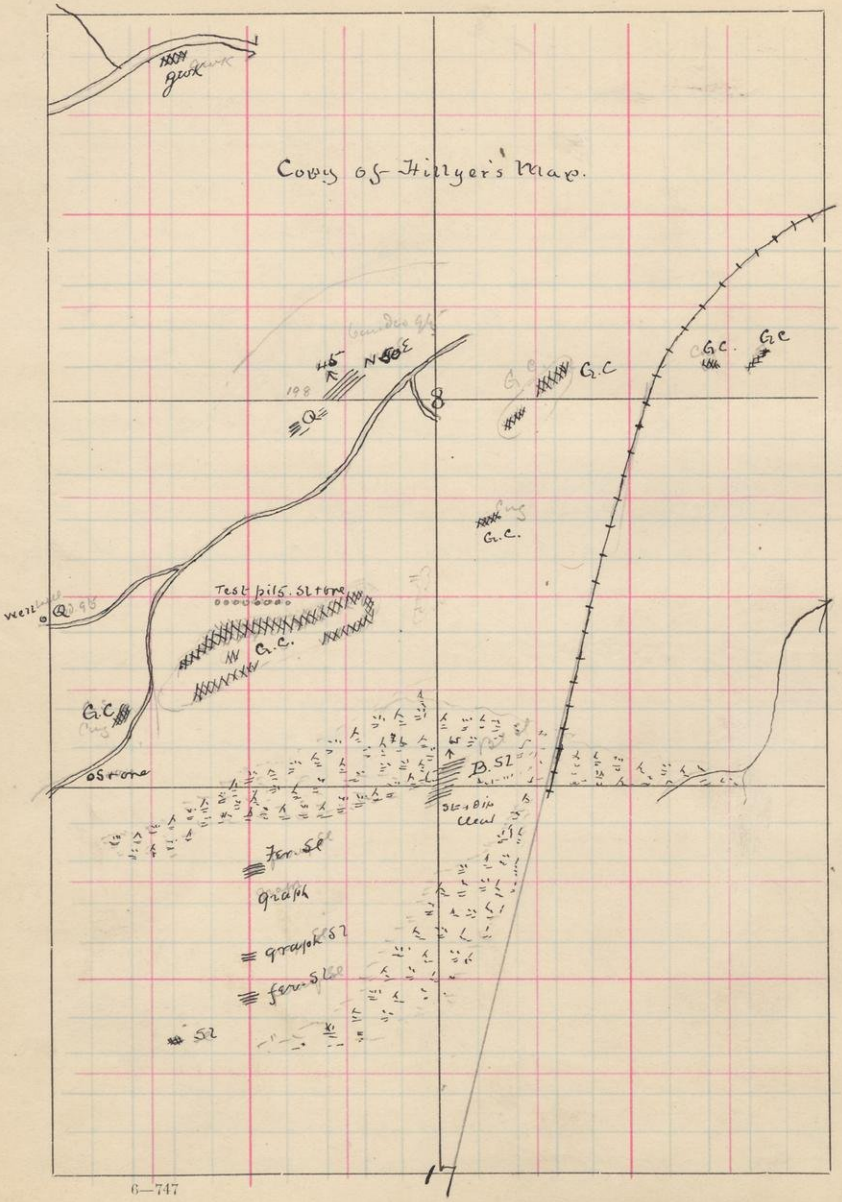
6—747

At Atkinson Ground topography and roads a little different from their mapping on Bow River Sheet. Some of the roads are evidently new. The main road which is mapped as turning E from Rec line at W¼ Sec 21, continues North to ½ post between 8 & 9, then runs W of North 41 chs. as on opposite page.

In the SW of NW Sec 9 there are several great knobs of greenish conglomerate, the fragments being large and angular

4/7/61 Two specimens of fragments.
The rock is like that elsewhere in the district and here it is beautifully developed.

S. 8 T. 44 R. 35


Copy of Hillyer's Map.
Creek
N 45° E
198
8
G.C.
G.C.
G.C.
G.C.
G.C.
Test pits. Stone
well
198
N
G.C.
G.C.
O Stone
B. Sl
Sl. & Bit
Clevl
Fer. Sl
Graph
graph Sl
fer. Sl
Sl
17

Examined near the test pits in the center of SW ¼ Sec 8 T 44 R. 35, located on Hillyer map on opposite page and located with respect to the conglomerate and to each other on map a few pages beyond, where strikes are given as observed.

The Northernmost and Easternmost of 41764 pits is in slates some of which are graphitic. The bedding apparently strikes N 80 E and the dip (schistosity) is N. 85°. The bedding is probably flatter, but this point cannot be determined positively.

The ore pits are in a chimney - looking schreus material and a porous black chert ore.

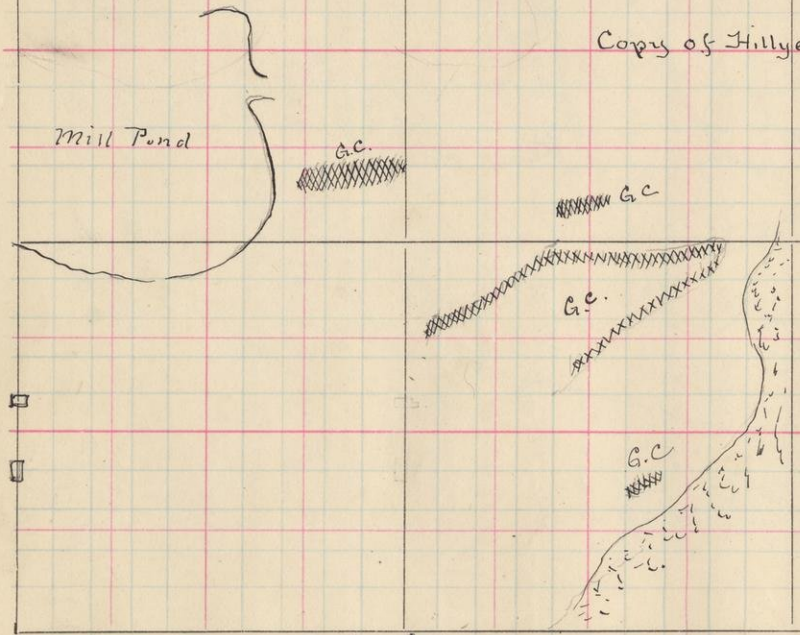
41764 3 In one pit the ore beds are apparently composed of some fragmental rock - the fragments being ore, chert and quartz. But more work may definitely defined.

The pits are in a plain separated from the conglomeratic greenstone to the South by a swamp about 50 paces wide.

N 1/4

S. 9 T. 44 R. 33

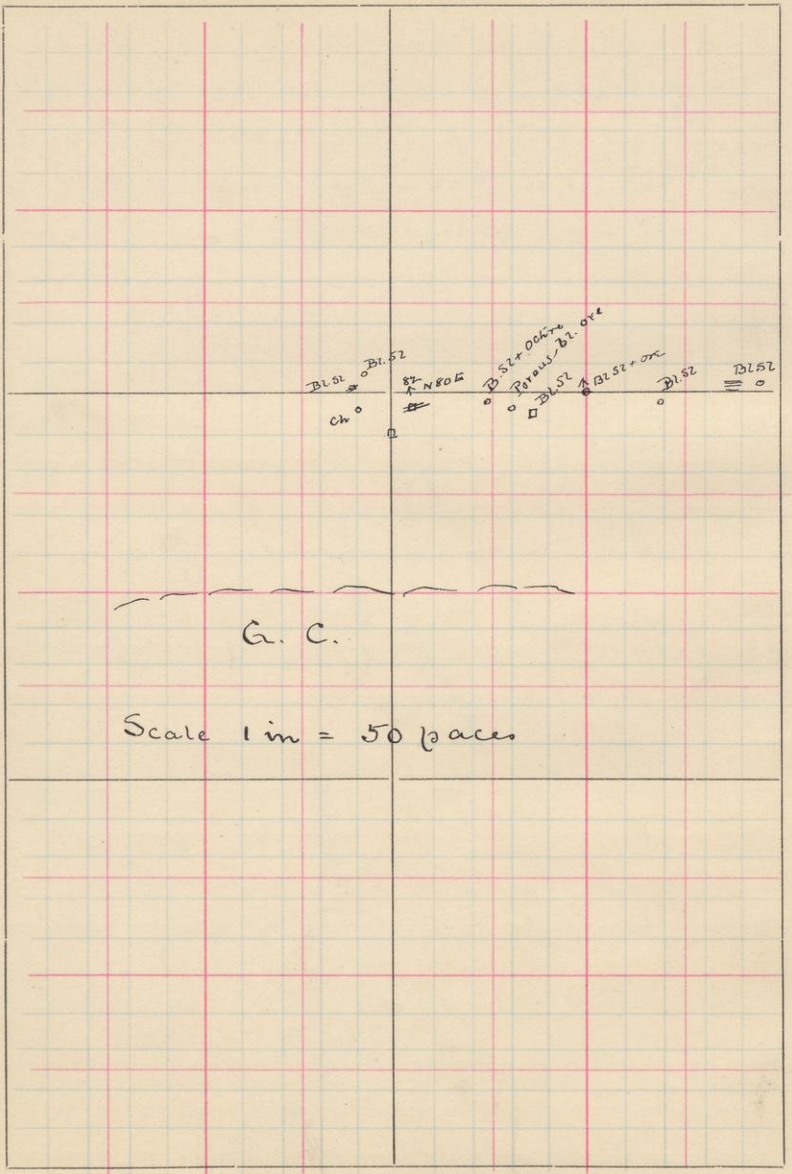
Copy of Hillyer's Map.



In the new Dike Road, just west of Custer Sec 8. is an isolated mass knob composed of bare rock. This is a beautifully banded quartz-ite and graywacke

1 - 417664

S.W 8 T. 44 R. 35


Bl. 52
Bl. 52
Ch
87
N 80 E
B. 52 + Ochre
Bl. 52
Bl. 52 + Ore
Bl. 52
Bl. 52
G. C.
Scale 1 in = 50 paces

In a well 600 paces N. 50 ft W of Corner 24, 25, 19 & 30. Cherty Dolomite was Encountered by James Burgess, Penrabis Diamond Drill Man. T. 42 R. 35 & 34 W.

In E-W ¼ Line Sec 24 T. 42 R 35, 500 ft W of ¼ stake is a Limestone Ledge of the same rock

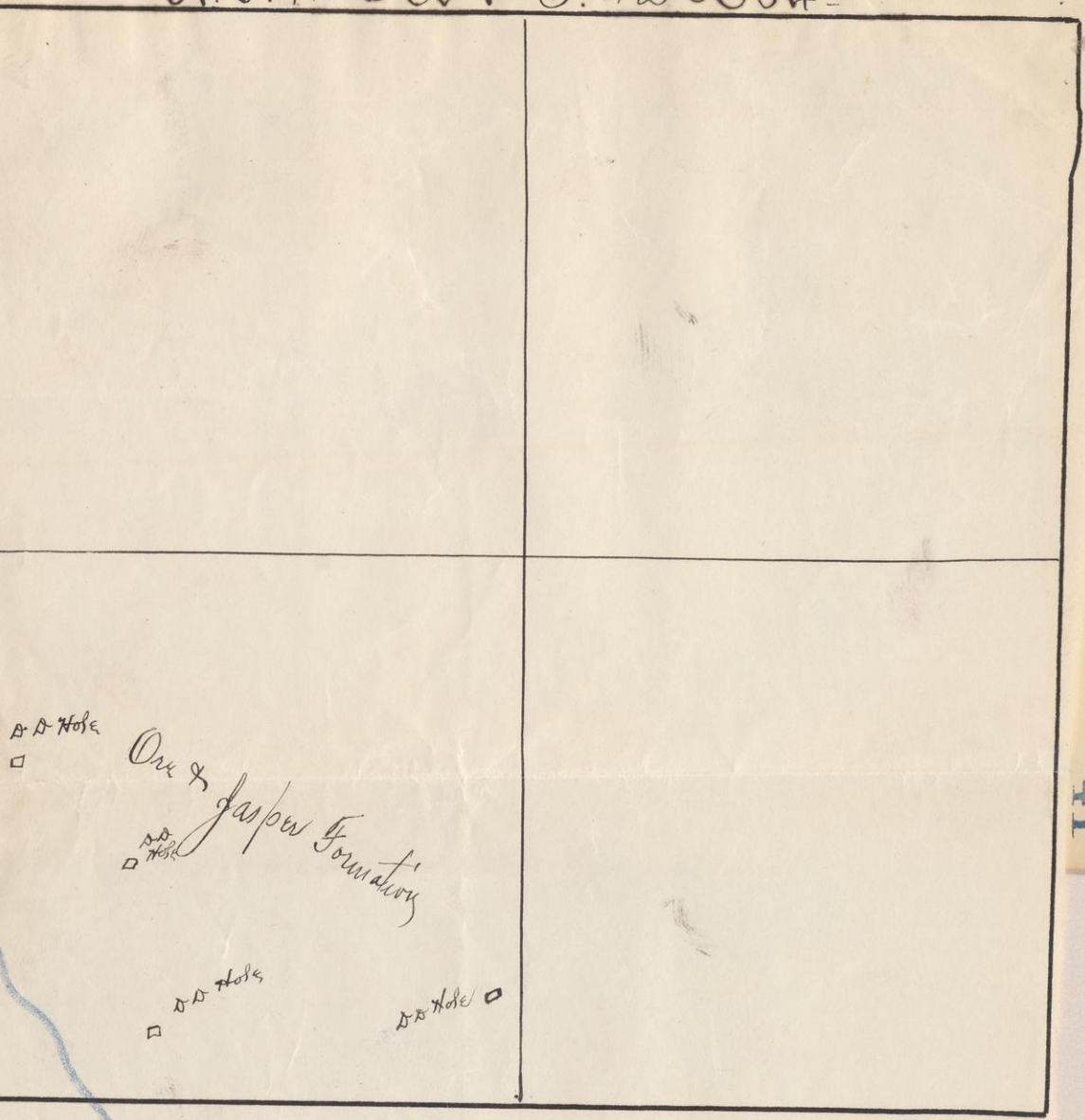
Limestone Ledge is on the land of Axel Peterson in Centre Sec 24, Same Line.

S. T. R.

Jumbo Expl.

6—747

N.E. 1/4 Sec 1. T. 42 R 34 =



41

S. T. T. 42 N. R. 35 W.

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

Red Quartz Sheridan Hill

Red Quartz Lime Stone

Greenstone Outcrop

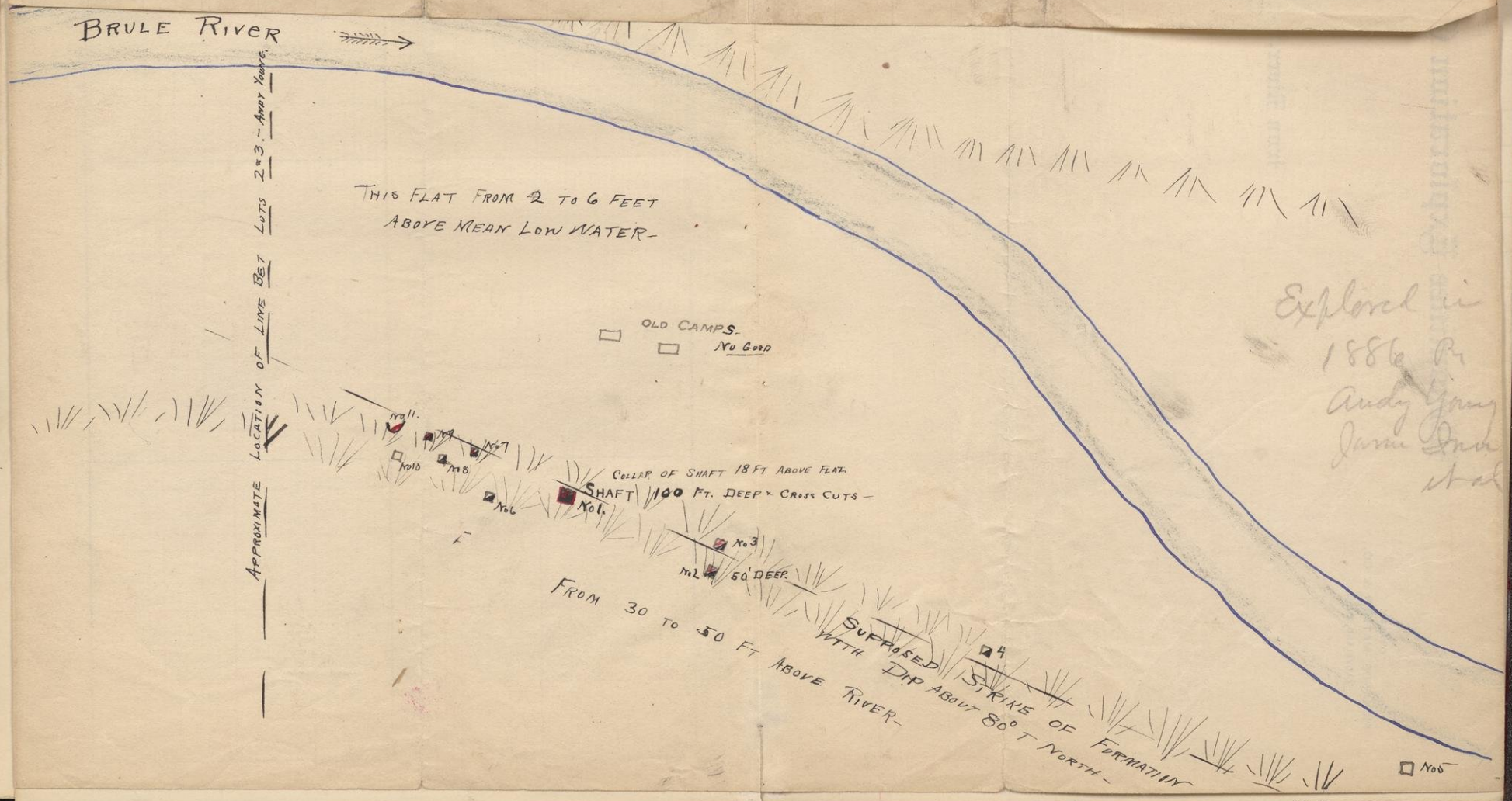
Land owned by Axel Peterson

Test Pits Quartz Slate Lot 3 & 4 Sec 19

6—747

Printed and for sale by L. P. Crary, Marquette, Mich.

AGENT:
CHARLES E. LAWRENCE,
AMASA, MICHIGAN.



SKETCH OF INNIS MINE AT JUMBO ON C. N. W. Ry.

MINE ON LOT 2 SEC 20 T 41 N. R 16 W FLORENCE CO. WIS.

G. L. W JAN 3 1900.

SCALE 100 FT = 1 INCH.

N

S

UNDERS 2 MILES.

C. N. W. Ry.

LEDGE

BRULE RIVER

APPROXIMATE LOCATION OF LINE BET LOTS 2 & 3. - ANDY YOUNG

THIS FLAT FROM 2 TO 6 FEET ABOVE MEAN LOW WATER.

OLD CAMPS. NO GOOD

No 11. No 9 No 7 No 10 No 8 No 6

COLLAR OF SHAFT 18 FT ABOVE FLAT.

SHAFT 100 FT. DEEP & CROSS CUTS.

No 1.

No 3

No 2 50' DEEP.

FROM 30 TO 50 FT ABOVE RIVER.

SUPPOSED STRIKE OF FORMATION WITH DIP ABOUT 80° T NORTH.

No 4

No 5

Explored in 1886 By Andy Young Jamie Innis Stal

Blank Pages

45-57

Skipped

Addresses of Supt. Engineers &c
in Florence - Iron River district

Supt J.S. Wall, Oxbow & Riverside Mines
Stambaugh, Mich

Fred Roberts, M.E. ditto.
Crystal Falls, Mich

C.E. Lawrence, Baltic Mine
Amasa, Mich

Supt. Young, Hiawatha Mine
Iron River, Mich

D. C. Mackinnon, Beta & Hamamino
Mines, Iron River, Mich.

Supt E.W. Hopkins, Commonwealth Mine
Commonwealth, Wis

W.W. Noyes, Florence, Wis

Jas. Burgess, % Penoka Iron Co.
Iron Mountain, Mich

W.H. Belden, Iron River, Mich.

John Redshaw, Commonwealth, Mass
John Williams, Fall River, Mass
Higgins, Commonwealth, Mass
Sullivan, Florence, Mass

S. E. 1/4 Sec. 1 - T. 42 - R. 35

S. E. 1/4 Sec. 1 - T. 42 - R. 35

D.D. Hole Slate & Jasper.

Oliver I. M. Co explored this 1/4 = D. Drill = 4 Holes Black & Gray slate

158.

Graphite

gravel

Slates Pit

gravel

Slates Pit

white clay, slate, Graphite slate

Graphite

Black slate Graphite

Fogarty =

Shaft

Black Slate, Graphite

Lean ore

Seam of chert N 50° W

Iron River

1 = 6

12 = 7

County Highway

Black Slate and jasper

Shaft.

Jasper

Jasper

N. W. 1/4 of N. E. Sec 12 - T. 42 R. 35

Gray Slates outcrop