PACIFIC
WATERPROOF

Mining Transit Book

FILLER No. 321

PJ6T-1→

PJ6T-2

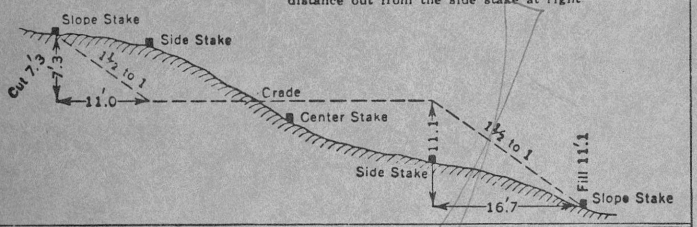
June 21→R

June 19

DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING

Roadway of any Width. Side Slopes 1½ to 1.

In the figure below: opposite 7 under "Cut or Fill" and under .3 read 11.0, the distance out from the side stake at left. Also, opposite 11 under "Cut or Fill" and under .1 read 16.7, the distance out from the side stake at right



Cut or Fill	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	Cut or Fill
	Distance out from Side or Shoulder Stake										
0	0.0	0.2	0.3	0.5	0.6	0.8	0.9	1.1	1.2	1.4	0
1	1.5	1.7	1.8	2.0	2.1	2.3	2.4	2.6	2.7	2.9	1
2	3.0	3.2	3.3	3.5	3.6	3.8	3.9	4.1	4.2	4.4	2
3	4.5	4.7	4.8	5.0	5.1	5.3	5.4	5.6	5.7	5.9	3
4	6.0	6.2	6.3	6.5	6.6	6.8	6.9	7.1	7.2	7.4	4
5	7.5	7.7	7.8	8.0	8.1	8.3	8.4	8.6	8.7	8.9	5
6	9.0	9.2	9.3	9.5	9.6	9.8	9.9	10.1	10.2	10.4	6
7	10.5	10.7	10.8	11.0	11.1	11.3	11.4	11.6	11.7	11.9	7
8	12.0	12.2	12.3	12.5	12.6	12.8	12.9	13.1	13.2	13.4	8
9	13.5	13.7	13.8	14.0	14.1	14.3	14.4	14.6	14.7	14.9	9
10	15.0	15.2	15.3	15.5	15.6	15.8	15.9	16.1	16.2	16.4	10
11	16.5	16.7	16.8	17.0	17.1	17.3	17.4	17.6	17.7	17.9	11
12	18.0	18.2	18.3	18.5	18.6	18.8	18.9	19.1	19.2	19.4	12
13	19.5	19.7	19.8	20.0	20.1	20.3	20.4	20.6	20.7	20.9	13
14	21.0	21.2	21.3	21.5	21.6	21.8	21.9	22.1	22.2	22.4	14
15	22.5	22.7	22.8	23.0	23.1	23.3	23.4	23.6	23.7	23.9	15
16	24.0	24.2	24.3	24.5	24.6	24.8	24.9	25.1	25.2	25.4	16
17	25.5	25.7	25.8	26.0	26.1	26.3	26.4	26.6	26.7	26.9	17
18	27.0	27.2	27.3	27.5	27.6	27.8	27.9	28.1	28.2	28.4	18
19	28.5	28.7	28.8	29.0	29.1	29.3	29.4	29.6	29.7	29.9	19
20	30.0	30.2	30.3	30.5	30.6	30.8	30.9	31.1	31.2	31.4	20
21	31.5	31.7	31.8	32.0	32.1	32.3	32.4	32.6	32.7	32.9	21
22	33.0	33.2	33.3	33.5	33.6	38.8	33.9	34.1	34.2	34.4	22
23	34.5	34.7	34.8	35.0	35.1	35.3	35.4	35.6	35.7	35.9	23
24	36.0	36.2	36.3	36.5	36.6	36.8	36.9	37.1	37.2	37.4	24
25	37.5	37.7	37.8	38.0	38.1	38.3	38.4	38.6	38.7	38.9	25
26	39.0	39.2	39.3	39.5	39.6	39.8	39.9	40.1	40.2	40.4	26
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30	45.0	45.2	45.3	45.5	45.6	45.8	45.9	46.1	46.2	46.4	30
31	46.5	46.7	46.8	47.0	47.1	47.3	47.4	47.6	47.7	47.9	31
32	48.0	48.2	48.3	48.5	48.6	48.8	48.9	49.1	49.2	49.4	32
33	49.5	49.7	49.8	50.0	50.1	50.3	50.4	50.6	50.7	50.9	33
34	51.0	51.2	51.3	51.5	51.6	51.8	51.9	52.1	52.2	52.4	34
35	52.5	52.7	52.8	53.0	53.1	53.3	53.4	53.6	53.7	53.9	35
36	54.0	54.2	54.3	54.5	54.6	54.8	54.9	55.1	55.2	55.4	36
37	55.5	55.7	55.8	56.0	56.1	56.3	56.4	56.6	56.7	56.9	37
38	57.0	57.2	57.3	57.5	57.6	57.8	57.9	58.1	58.2	58.4	38
39	58.5	58.7	58.8	59.0	59.1	59.3	59.4	59.6	59.7	59.9	39
40	60.0	60.2	60.3	60.5	60.6	60.8	60.9	61.1	61.2	61.4	40

M = main crack sample

⊖ = seepage - SP

○ = silt

● = soil

cont. = continued

∴ = therefore

June 20

105 F -9 → 8

PY6T 1 → PY6T 38

R1 float

14 dried up creek

sample sent in = 39R - taken from north side of creek near sample 10

drizzled a bit - not use poncho

June 21

105 F 8

pH's all 7.5 ie green → turquoise

PY6T 39 → 65

39 green = 7.5 pH

43 SP org pH 7.5 side

44 pH 7.5 main

45 " side

pHed red rocks in creek 7.5

46 side pH 7.5 red rocks

47 pH 7.5

48 short SP pH 7.5

50 pH 7.5 blue

51 "

52 "

53 "

54 M pH 7.5

55 pH greeny blue

56 SP pH 7.5 green

57 pH 7.5

58 greeny blue

59 SP pH 7.5

60 S-pH 7.5

Dreadful day ie rained from 10 → 2:30 yucky wet but then SUNSHINE!

June 22

105 F 8

PYGT 66 → 99

gassin in canyon near bottom of creek

- sunny rain @ 4:00 picking up @ 5:00
- got to PU YIPPEE! COLLAPSE

June 23

105 F 8 Grizzle Creek

PYGT 100 → 133

106 SP org

pH's all 7.5

saw Tarmigan + nest ~ 9 eggs
brown + cream

- rust - pyrite in outcrop before lake creek not lake in stream ie sample 126

let off in wrong creek

VERY FRUSTRATING

but creek on was on air photo and only drizzled for ½ hr

- buckbrush terrific at top - creek flowing thru it 12' wide ~ impenetrable

June 24 105 F8

Grizzle Creek continued

PYGT 134 → 174

All pt's 7.5

sunshine all day except rained hard 5:00 → 5:20 ie sitting waiting for chopper in nice grassy field

June 25 Gossin hopping 105F

2nd gossin drop off ie Holly 1st

PYGT 175 → 193 192 SP? ang

next 194 → 203 - missed 196 ie bag in
105 F10 ↳ across from Rob & Peter's pack

next 204 → 224 220 gully
↳ white creek \ 105 F8 222 gully SP up higher

June 26 day in Ross

June 27 105 F 10 Porcupine Creek

PJ6T 225 → 271

- bag 227 ripped put it in bag 228 shell in saved by John Rolls

225 & 230 chopper hopped

⊖ 251 - moose trail

239 Rock gossin

234 S pH orange went green

June 28 McNeil Lake

105 G 5

PJ6T 272 → 303

290 S yellow → light green pH

Plotted

June 29 ~ McNeil Lake

105 G-5

PJ6T 304 → 335

331 ⊖ puddle

Plotted

June 30 105 G-5 to 105 F-8

PJ6T 336 → 368

345 rock fibers anthopholite

- gossins see overlay

105 G 5 PY6T 369 → 413

July 1 - foggy - met Holly at end of day ie saw her smoke - were 200 yards apart for ¾ hr - me trying to light fire ⊂ TP and green, wet buckbrush

384 rock - maropozite

406 JP saw moose

Plotted

105 F 10 PY6T 414 → 458

Plotted

July 2 - cat road

geochem rocks @ 447 and 441

SYN claims after 432

staked by N Brosseau Sept 17/75

Post 1 @ 1500' SE - 1500' L and R

414 S pH 6.5 yellow

431 L Brown ash?

435 ⊙ dried up

436 ⊙ "

452 → 458 went farther than expected so plotted on air photo when got back

452 moose trail - ash?

July 3rd - in Ross

- plotting...
- regle up late - rd Thoreau on Solitude

plotted

July 4   105 F9 → 10
PY6T 459 → 503
500' spacing
Holly's anomolous grassin - Pb - 174 175 (170 - only 250) 178 SP, 179 (177 - 400 Zn)
460 pH 7.5
461 "
469 "
498 wet moss - not a real SP
485 → 499 under grassins

not done - misplotted

plotted   photo # A12178 375 + 376

July 5   105 G4
PY6T 504 → 568

504 pH 6.5 yellow
505 "
506 yellowy green pH
509 pH 6.5
512 yellow green
514 pH 7.5
515 yellowy green
517 yellow ie pH 6.5
518 sluff
520 pH 7.5
521 "
523 "
524 "
526 yellowy green
527 "
528 pH 6.5
531 pH 7.5
539 slump
543 yellowy green
557 blue green
558 green
559 "
560 "
561 yellowy green
563 clay?
564 pH 7.5
565 yellowy green
566 "
567 "
568 "

plotted photo # 12340-456 and 458

July 6 105 G5 around another mountain
PyGT 569 → 626
for pt's see overlays
* 579 pt# 4.0

583R

plotted photo # 1278814 and 16 ↑ not used on 7th

July 7 mountain continued
105 G6
PyGT 627 → 678

July 8 plotting - Faro for doctor (everybody went

July 9 plotting + foot resting

plotted

photo # 12340-97

July 10 105 F9

PY6T 679 → 735

681 ⊖ bluey green pH 7.5 → 9.0

683 "

685-S- pH 7.5 - rusty creek

687 S pH 7.5

691 pH 6.5

694-S- pH 6.5

696⊖ "

697⊖ "

709 dried SP

714 "

716 "

* → 719 pH 4.0 - rusty creek - gossin at top

725 pH 6.5

July 11 - MM road construction - seeing if road ok to drive drill in

- patched jeans

- got molybdenum sample from old shaft

plotted

photo # A12249-87 and 12238-194

July 12 105 F10

PY6T 736 → 801

737-S dried up

744 dried SP channel

756 pH 6.5

760 rusty breccia soil

761 dried SP channel

* 782 SP pH 4.0

788 pH 7.5

796 pH 6.5

797 "

- poured 3 x in afternoon + rained rest of "

- rolled up sleeves

- staked

- up high - above buck brush most of day

YIPEE!

- great day til started to rain

great walking til 60° grassy finger-head slopes

- traversing high up slope

plotted

photo #A12249-87

July 13 105 F9 - hot & windy - picked up early *!X?!*

PY6T 802 → 853

- rained in afternoon
- prospected 200 Zn creek - not time to prospect 600 Zn creek - incompetent dunk!

Cyprus claim map tracing

July 14 105 F10 200' spring

PY6T 854 → 1001 148 samples!

- wore sweater & - rained a bit but didn't get soaked til 3:30
- showed thru pass?
- sunshine at pick up spot end of day + mosquitoes at

- all SP's before pass were 7.5 except

921 = 6.5
932 pH = 6.5
947 pH = 6.5

} - all other pH's where taken (see sketch from claim map) were 7.5

- lost glove from pocket

July 15

Gossan hopping 1056-5

(A) Plotted PJ6T 1002 → 1026 100' spacing

(B) Plotted 1027 → 1057 " ~~1047~~ missing

(C) Plotted 1060 → 1080 canyon 500' spacing

1063 SP 25 paces pH 6.5

1065 SP 45 " pH 7.5

1067 L 75 paces

1069 L 38 " gully

1072 L 50 paces - gossan above

1074 SP 37 paces pH 7.5

1076 L 50 paces

1080 SP 60 paces rusty pH 7.5

(D) Plotted PJ6T 1081 → 1098 also PJ6D 262 → 283

1083 S pH 7.0

1084 SP "

1086 hump in middle

1090 SP 20 paces pH 7

1091 SP " pH orangy yellow

1092 next hump

1093 same "

1096 L - check underneath talus

1098 S pH 7

PJ6D 262 rocks - no dirt

264 backtracked ~600' and down around hill in middle

PJ6D 265 SP pH 6.5

266 SP pH 7

268 SP pH 7.5

269 " "

271 " pH 6.5

272 L on left as go up creek

273 L " right opposite 272 in small gully

274 SP pH 7.5

275 " pH 7 in top of creek

277 SP picked up and moved to end of gossan worked backwards for 277 → 283

July 16 Bnob Grid

PBGT L96 BL100 → 00 @ 200' spacing

also put in BL ⊥ Holly

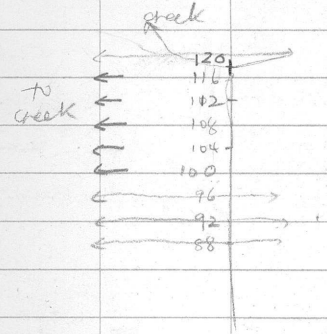
BL 100 → L116 picketed @ 400'

flagged @ 200'

BL 100 → 88 picketed @ 200'

July 17 plotting

Xmas Lake



July 18 Cat. Grid on Bnob

L88 0 → 300

L92 0 → 300 but 280 = 100' from L100-250

July 19 cont. Grid on Brnb

L 108 1000' section

L 116 -1000' end is 398' from Creek

L 108 BL 100 30' towards 90 - talus @ BL 100

L 92 - 280 organic - talus 220 - brick red

CPA grid

July 20 Grid @ end of White Creek

PY6T L 40 BL-100 → 90

L 36 90 → BL 100 - hit BL ~L 37

99' in NE direction 10 60' long line is 92 = talus rock flow ∴ took another sample 60' from 92 toward 94 - called it 92.6'

July 21 Grid @ White Creek cont.

L 32 didn't take BL
took 98 → 90 inclusive

L 28 1016' long
28' to lower side of L 30
ie 172' out
- did it over again - labelled L28b
came back along line 24 - would
have been less than 100' off but
headed for Holly standing on L24 BL
from 96 to BL
- 2 line 24's - from L 0 to 1st
L 24 - labelled that line L24b
↳ L24b 90=silt

L 22 BL → 90

L 18 BL → 95.7 ie 457'

July 22 foggy went to mm - dug drill site

July 24 ~~foggy plotting~~ day off
Peter, Brenda & Mike canoed to
Faro Holly & I looked after
Christopher I took him for a
walk. Read book shopped in
Faro picked up canoeists

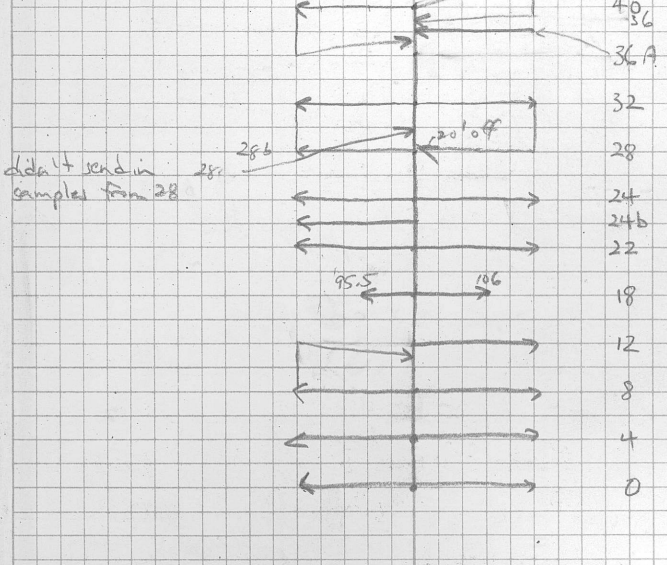
July 25 socked in - plotting - ¼ mile to
inch map of McNeil Lake gossan
hopping area

July 25 QA Grid cont

L 0, L4 out flagging, back
sampling

L8 out flagging + sampling, back
along L 12

L12 = 996' long and 96'
towards L 8 @ BL 100



Holly + I finished early - running on spot, picked up early

Christopher 11 months old today

July 26 Bnob extending grid + straightening lines

L96 = 3670' to creek ie @ 2110' from L0

" claim line crosses @ 2650' 10' above L96 210

" crosses L88 230 + ~50' ie L88-235

L96 150 +40' crosses L92 170 - 60' ie L92-164

L92 160 = 20' contouring from L96 150

L88b BL100 → 260 sampled + flagged crossed claim line @ ~ 250

Holly did L100, 104 108 112 except sample L112400 also L116 needs extending and sampling

July 27 Bnob grid extension cont.

L92b 140 + 76' crosses L88 160 ~ 3' away

L92b 220 +48' crosses claim line which goes ~ 100' traversing up hill to post 1 13+14 ; post 2 11 +12 H. Hannigan

L92B goes to 460 +94'

L88b goes to 470

L88b 360 SP area

July 28 Grid near Bnab ie CPA

L 0 flagged out to 115
sampled back
flagged + sampled to 90
chained 400' N then
flagged + sampled L4 back from
90 to BL 100 L4 -972'
long ie short % BL100 and
L4-98

July 29 Chzerpnough staking + finished Bnab
-put in claim line + grid
baseline did from 45 → 0

also went to Bnab + extended
-L116 to 440 beyond that
toward creek not sampled as is
river bed - is L400 +1055 feet to
creek

105 G 5 ~~200' from mouse~~

July 30 Lines along McNeil River near canyon
PYGT 1099 → 1139
1105 SP 77 paces
1109 SP 49 "
1111 SP 39 " pH bluey green
1112 SP 85 " "
500' to 1113
1114 SP 50 paces pH 7.5
1115 S 112 paces from 1113 pH 7.5
1117 SP 15 paces
1122 SP puddle up+back
1125 " dried SP
1127 SP 15 paces
1130 SP 34 paces bluey green
1132 S pH 7.5 62 paces
1133 500'
1134 SP pH bluey green 64 paces
1137 SP 38 paces - org
1138 SP 85 " "

July 31 GSC party
Aug 1 recuperation from party + plotting.

Aug 2 plotting 7001 and Seagull Lakes
¼ mile to 1"

Aug 3 plotted

Anise grid
- Lines 0 +8 done by Ron
- goes 3000' either side of BL
- sample every 400' along BL
- L40-36 bag - org.
- L16-44 - red stuff - ash? yes

did L16 30→60
L24
L32
L40
L48
L56
part of L64
} not charted so have to resample - rats!

1056-5 chest + throat very sore

Aug 4 low gossip by McNeil Lake

pyGT 1140 → 1203

- helicopter late then filter needed Δ17

Peter + Mike staking claims onto mm

1144 SP dried

1147 S

1148 L

1149 S

1150 L

51 S

52 S

60 S

62 SP 18 paces

63 S

68 L

69 L

70 SP 19 paces

73 SP 36 "

74 S dried

75 L

76 SP 30 paces

77 L

81 S

81 L

84 L

85 L

86 L

1187 SP dried 50 paces

1191 L

1192 SP 35 paces

94 L

95 L

96 L

98 L

99 SP 60 paces before canyon

1200 L } in canyon

1201 L }

1202 L

1203 SP 89 paces

Aug 5 too many people for chopper (Glen went out) so I stayed + plotted + recuperated from cold

31 samples for every 6000' line
15 " " " " 3000' "

plotted

Aug 6 Anise Grid cont

L48 BL30 → 60	15
BL60 -52 L56 BL60 → 16	23
L64 BL0 → BL60	31
BL60 - 68	1
L72 BL60 → BL0	31
BL0 76	1
BL0 - L80 ~ on upper cat track not charted	1
	104

L72 BL60 SP³ area
-50 frozen ash? rocky
-27 picket by side of creek 29
by other side 28 in middle
∴ sampled 27 + 29 not 28 =
transported material
-6 upper road ∴ took 5 too
-4 frozen org. ∴ took 3 "

L64 - BL30 in a creek bed - ∴ took 31
-26 creek at 25 + 25 + 26
-8 org
-6 above ash
L64 ~80' short @ BL0 end
L68 BL60 creek from gouge in mountain ~ 30 after BL60 L67

L56 -54 SP³ area
-27 creek right by picket toward 28
-24 no picket

L48 -48 SP³ area
-46 clay
-38 bog clay
-36 org
-34 small creek bog

plotted 105 F 7

Aug 7 Seagull Valley → White Creek

PYGT 1204 - 1272

Mervin Sherman's rocks

Anthopholite ± pyrite

galena in quartz

" " white + grey chert + mostly pyrite

~~filled~~ in spot ± not anthopholite but

ac... ± pyrite in chert rock too

~~grey~~ black volcanic rock ± black mica ± pyrite

1204 SP

L = 5, 6, 7, 8, 9, 10, 12, 13, 15, 17, 20, 21, 23, 24, 25, 27, 28, 36, 47, 48, 51, 52, 54, 56, 61, 63, 64, 65, 67, 68, 69, 70, 71, 72

1211 SP 58 paces

14 SP 5 paces

16 SP 47 "

18 SP

19 SP pH 7.0

22 SP 35 paces

26 SP 25 paces

29 SP 40 "

30 SP pH blue green

31 SP

32 SP 34 paces

33 SP

34 SP

35 SP 20 paces pH 7.0

1237 SP 59 paces

38 SP

39 "

40 SP 87 paces

41 SP 58 "

42 SP

43 SP 25 paces

44 SP

45 SP 25 paces pH 7.5

46 SP

49 SP 40 paces

1250 SP stuff

1253 60 paces turned

55 SP 60 paces

57 SP 5 paces

58 SP 34 "

59 SP

60 SP 77 paces

62 SP 64 paces

66 SP

Aug 8 Sunday - in Ross

claim forms

my plotting

Aug 9 Chzerprough Grid

- BL runs @ 330° so cross lines are at 240° or 60°
- L44 - 31 + 40' crosses claim line posts 2-13 and post 1-14 are 75' down along claim line toward L48

L44 - 38 SP³ area
- 28 talus - small sample
didn't take BL20
L40 - 31 + 30' toward 32 = claim line

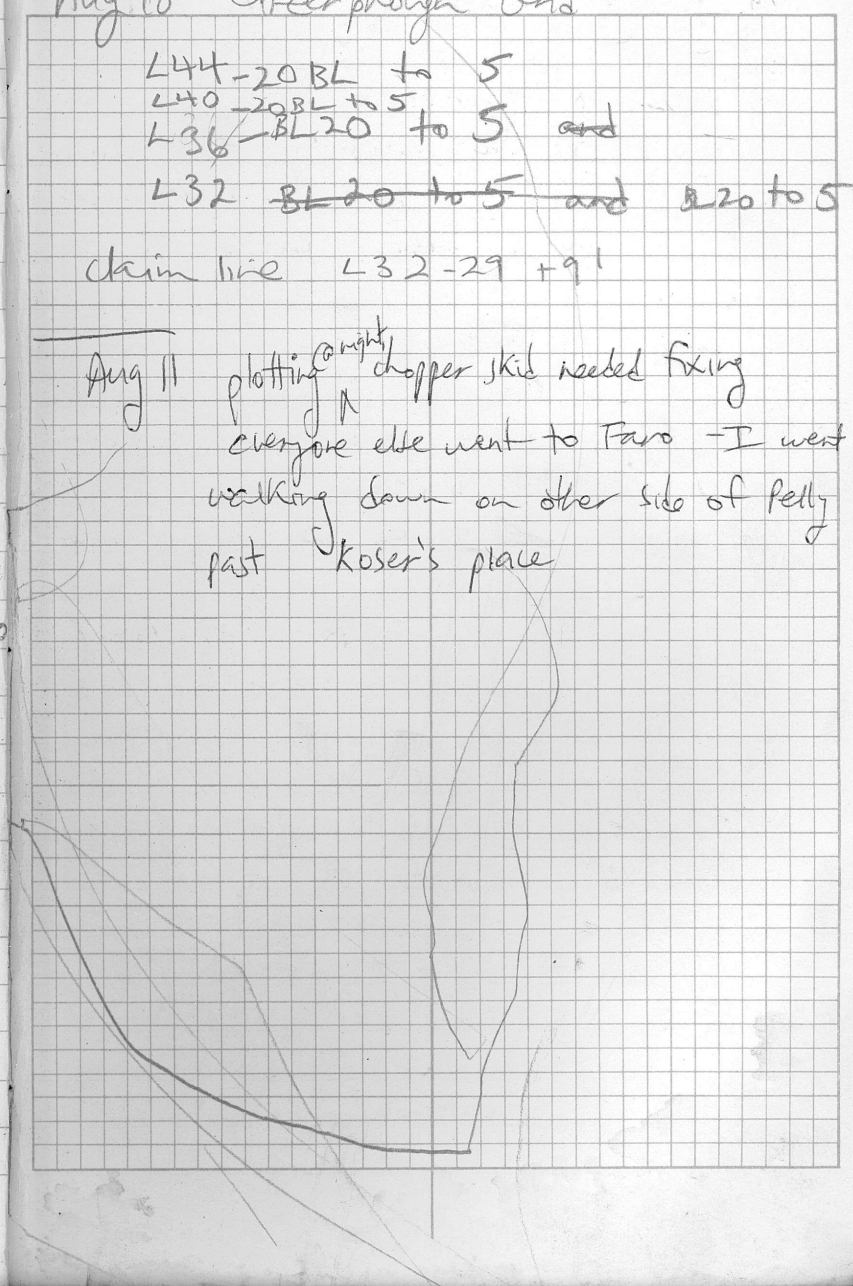
L44 @ 40, L36 put in to 60 not 50

Aug 10 Chzerprough Grid

L44 - 20 BL to 5
L40 - 20 BL to 5
L36 - BL 20 to 5 ~~and~~
L32 ~~BL 20 to 5 and~~ BL 20 to 50

claim line L32 - 29 + 9'

Aug 11 plotting @ night chopper skid needed fixing
everyone else went to Faro - I went walking down on other side of Petty past Koser's place



Aug ~~12~~ Chzerpnough Grid cont.

- L 28 BL 20 to 5
- L 24 BL 20 to 5 - cliff at 13 to 12 so cut thread @ 13 and estimated 100' to 12
- L 28-50 is good 400' from L 32-50

Friday Aug 13 went to Dawson
Rob Carne came
Aug - dance by Yukon River - band like Rolling Stones - didn't go in
also went to Palace Grand
guy on unicycle
Aug 14 in Dawson - museum
1st World war gun
afternoon - Holly Mike Rob went building raft
- went to Diamond tooth Gerdies won $8.50 Holly won $1.60 Brenda won $4.40 - saw Chris Perrin + Bub → vet school
Aug 15 - raft race - Holly Mike, Rob came in 12th
- drove home

Aug 16 Chzerpnough Grid cont

- L 36 BL 20 → 50 ~ 200' from L 32 ie L 32-50 = 200' from L 32-48 ie L 36 = 200' shorter than L 32

L 44 → 40 500' apart @ 60
L 40 → 36 ~ 400'

did L 32 BL 20 → 5
L 20 BL 20 → 5 then BL 20 → 30 crossed claim line @ L 29
L 24 BL 20 → 30 crossed claim line @ L 29 + 10'

sample L 28 BL 20
L 36 BL 20 to 50 crossed claim line @
L 36 crosses claim line @ 30+79'

Aug 17 Anise Grid

did L80 BL30 to BL62 17
L84 BL60
88 BL60 to 26 18
96 BL60 to 22 20
BL60-L100
104 BL60 to 20 21
112 BL60 to 18 22
23
120 L120+89 - BL80+47 to L120-16
= creek a silt sample

- L112 - BL60 to -18 took L112-33
because L112-32 was frozen - very org.
creek @ 17 toward 16
- L104 -38 frozen
L104 BL30 @ 30+77' toward 29
- L96 -60+51'
L96 BL30 @ 30+91'3"
creek @ 21 minus 10' - toward 22
- L88 BL30 @ 28+93'8'
creek @ 25+10' toward 24
L80 BL60 sample was L80+87'8" - 62+33
L80 BL30 @ 31+44'

Clynometer - set white line to 90° - read red arrow for degrees of dip and strike

- Zn goes farther - Pb stays around
- quartz scratches glass
- Barite - heavy, soft, doesn't fiz, white ie looks like quartz
- shelite - flouresses = Tungsten

Aug 18 Anise grid
L 128 BL60 to 18
L 136 BL60 to 14
L 144 BL60 to 39
L 152 BL60 to 45
L 160 BL60 to 46

Holly finished her lines on Chzerpnaugh I
finished Anise

L160 - 59+6'
L152 - 60 minus 40' : 60 in stream
-45 on lake bottom fan
L144 - 40 just before stream - stream ½ 40 and 39
L144 - 39 on lake bottom fan
L136 - 40 frozen org
creek @ 12 ½ 12+13

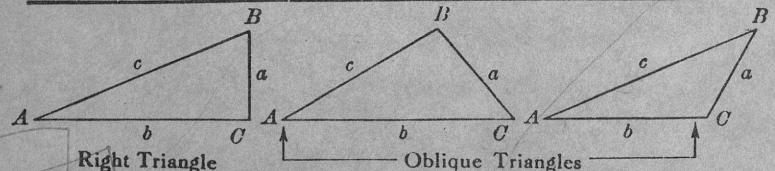
L 128 took 59 - seems like long way ½ 60 and 58
-46 = spy area
creek @ 16 toward 17

258 Ross River Blake 870 mm
925 Mayo
821 45

- $FeSO_4$ goes blue ☆ zinc zap
shiny oily looking shale - scraps easily - not galeena which scraps into hard flakes
- mica soft ie not metal ie not mineral
- filitic limestone - luster to shale or kacheka
- travertine - $FeSO_4$ fizzy white looking but
- manipozite - looks like Cu in whole rock but not blue enough, also " " Monte but too greeny blue has Cr in it
- "puratite" - looks like pyrite (FeS_2) but is magnetic
pyrite is never magnetic
$FeS_{(1+x)}$
- blow on rocks ∴ (1.) natural colour shows up better
(2) Sulfides stay shiny but mica dulls
- Arsenopyrite - arsnic in pyrite - looks like galeena ☆ silver in it ie fine grained galena
also has olive green coloured stuff ☆ it called scorodite
fresh cut surface is very light coloured
also heavy like galena
- good indicator of gold
- anthopholite fibrous rock also gets foamy
{ tremolite 1% Pb } look alike Fe, replace one another
{ paromorphite 20% Pb } Mg
yellow fibery

Aug 26

TRIGONOMETRIC FORMULÆ



Solution of Right Triangles

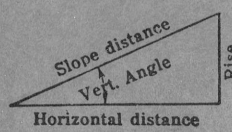
For Angle A. $\sin = \frac{a}{c}$, $\cos = \frac{b}{c}$, $\tan = \frac{a}{b}$, $\cot = \frac{b}{a}$, $\sec = \frac{c}{b}$, $\operatorname{cosec} = \frac{c}{a}$

Given	Required	
a, b	A, B, c	$\tan A = \frac{a}{b} = \cot B, c = \sqrt{a^2 + b^2} = a\sqrt{1 + \frac{b^2}{a^2}}$
a, c	A, B, b	$\sin A = \frac{a}{c} = \cos B, b = \sqrt{(c+a)(c-a)} = c\sqrt{1 - \frac{a^2}{c^2}}$
A, a	B, b, c	$B = 90° - A, b = a \cot A, c = \frac{a}{\sin A}$.
A, b	B, a, c	$B = 90° - A, a = b \tan A, c = \frac{b}{\cos A}$.
A, c	B, a, b	$B = 90° - A, a = c \sin A, b = c \cos A$,

Solution of Oblique Triangles

Given	Required	
A, B, a	b, c, C	$b = \frac{a \sin B}{\sin A}$, $C = 180° - (A + B)$, $c = \frac{a \sin C}{\sin A}$
A, a, b	B, c, C	$\sin B = \frac{b \sin A}{a}$, $C = 180° - (A + B)$, $c = \frac{a \sin C}{\sin A}$
a, b, C	A, B, c	$A + B = 180° - C$, $\tan \frac{1}{2}(A - B) = \frac{(a-b)\tan \frac{1}{2}(A+B)}{a+b}$, $c = \frac{a \sin C}{\sin A}$
a, b, c	A, B, C	$s = \frac{a+b+c}{2}$, $\sin \frac{1}{2}A = \sqrt{\frac{(s-b)(s-c)}{bc}}$, $\sin \frac{1}{2}B = \sqrt{\frac{(s-a)(s-c)}{ac}}$, $C = 180° - (A + B)$
a, b, c	Area	$s = \frac{a+b+c}{2}$, area $= \sqrt{s(s-a)(s-b)(s-c)}$
A, b, c	Area	area $= \frac{bc \sin A}{2}$
A, B, C, a	Area	area $= \frac{a^2 \sin B \sin C}{2 \sin A}$

REDUCTION TO HORIZONTAL



Horizontal distance = Slope distance multiplied by the cosine of the vertical angle. Thus: slope distance = 319.4 ft. Vert. angle = 5° 10′. From Table, Page IX. cos 5° 10′ = .9959. Horizontal distance = 319.4 × .9959 = 318.09 ft.

Horizontal distance also = Slope distance minus slope distance times (1 − cosine of vertical angle). With the same figures as in the preceding example, the following result is obtained. Cosine 5° 10′ = .9959. 1 − .9959 = .0041. 319.4 × .0041 = 1.31. 319.4 − 1.31 = 318.09 ft.

When the rise is known, the horizontal distance is approximately:—the slope distance less the square of the rise divided by twice the slope distance. Thus: rise = 14 ft., slope distance = 302.6 ft. Horizontal distance = $302.6 - \frac{14 \times 14}{2 \times 302.6} = 302.6 - 0.32 = 302.28$ ft.