Appendix H: Field notes, in Furer, L.C., and Amoco Oil Co., Data compilation of the 1972 field party, southeast Brooks Range and Fort Yukon, Alaska; Vol 2

Furer, L.C., and Amoco Oil Co.

GMC DATA REPORT 465H

This GMC data report from the Amoco Heritage collection has been made available through funding from the FY2018 USGS National Geological and Geophysical Data Preservation Program, Grant Number G18AP00054. This project report is presented in its original format and has not been reviewed for technical content or for conformity to the editorial standards of DGGS. It should not be used or cited as reviewed data.

2019
State of Alaska
Department of Natural Resources
Division of Geological & Geophysical Surveys
GEOLOGIC MATERIALS CENTER

0014

CF74 0200

July 8th

Staying at Armory in Arctic Village

Meals $10/day/person

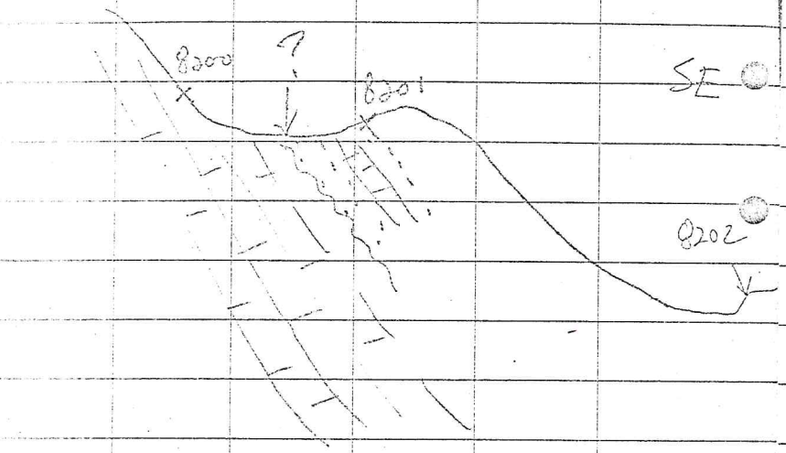
Lodging $7/day/person

Food and accomodation are adequate to good.

Wheeler arrived 12:00

Andy Taylor will work geology on road between Fairbanks and Livengood and check accomodations at Livengood.

Allan Gordon + Tom looking at Skajit + Hollerith



and measuring top at Angry Bee Creek Section

Sta 8200C

Massive, very well, dense dk. grn ls., argill. near top (Skagit) Top of Skagit. Unconf.(?) overlain by ss, sh, + ls. ss, brn-grn, conglomeratic, mod. cs.g., calc. mats, stretched pebbles 8201 LC. Title is very minor. Fractured & brecciated w/ calcite veins Hopefully conodonts will determine if unconf. exists here

Sta 8202 C Dk. grn th. overlain by grn thin-bd dk grn ls.

~~What is the~~

Some shell-hash fragments.

(?) ~~The~~ ~~is~~ ~~unit~~

above the Skagit member

the underlying Dewatto

rocks between the Skagit

and Wiest suggesting

an unconformity. The unit is

prob. no more than

300-500 feet thick (?) -

is unit above the Skagit

July 9th

Glenn is caching 2 barrels of gas on East Fork Chandalar River near mouth of Red Sheep Creek.

8203 Rt Sp, dk gry sh.

Tur-Cret (?) blocky to thin bedded. Terrible mosquitoes!

8204 Lt Chert, volcanic (?) olive green, gray green banded - laminated, x-lam (?) Few hundred feet.

8205 Same as Fall Mtn. locality 6246. Massive lgt. brn.-gry Skagit ls. faulted over Hunt fork(?) Sample from. Thin laminated sh. (slate) with thin ls. beds. The Skagit is dolomitic, brecciated, vuggy, few calcite veins.

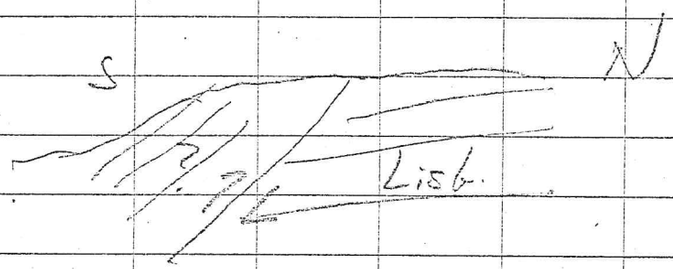
Roll 1, pic 19 massive Skagit with Buffalo mt. pic-20

Allen, Tom, Gordy mentioned stat of Lisb. w/ Gth contacts. Also Sample Kayak on Newaukum.

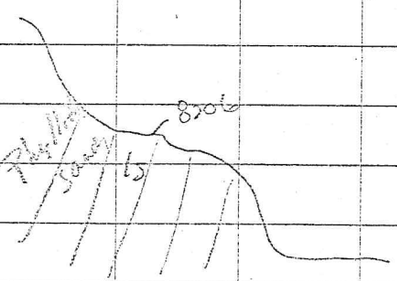
July 15th

Allen Frost + I will look for Dr unit and Sample Nanook – Katak-tunk

Roll 2 pic 1



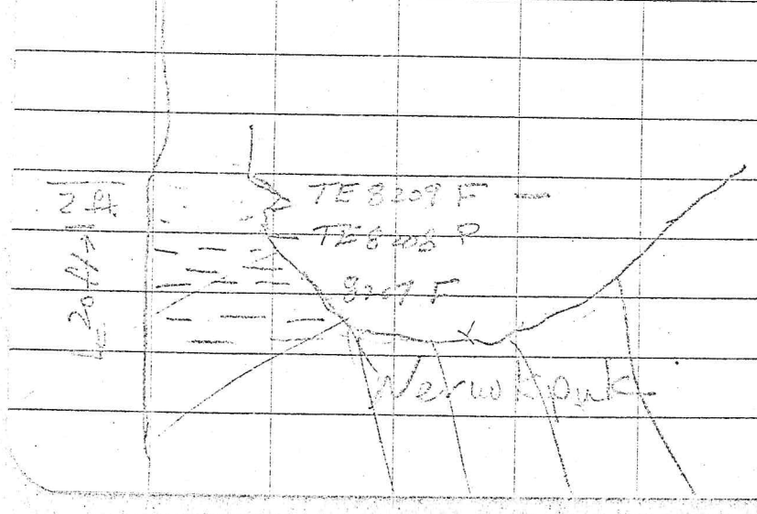
8206 CF Nanuktpalc



Total eclipse of the sun at 10:00 AM at
69° 00¼' N 143° 21' W

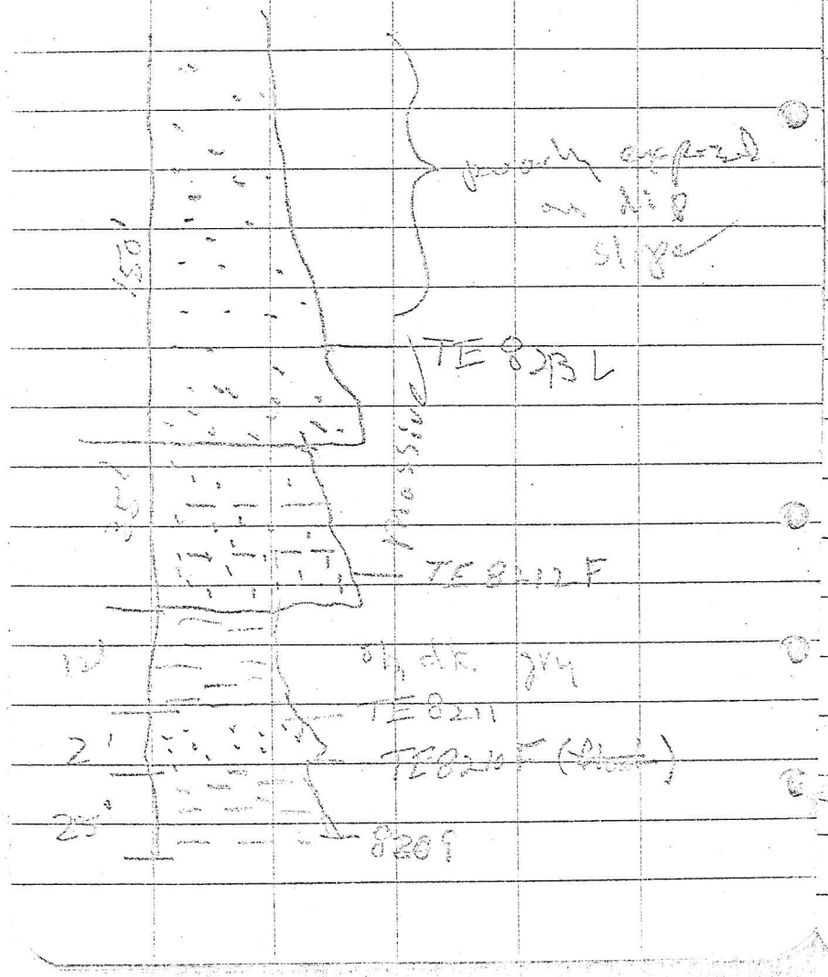
TE 8207F (float) at contact
Network pt - Dr Unit.
Calc silty ss, iron stain
Red slaty sh w/ worm burrows in float

8209, ss, v. fg, very well sorted, medium cal
U. org ll, abnd clasts, "Wartmella"
8209 interbed red + green
phyllitic sh.



Pic 4 + 5 of Newc —
De-Kuyat - Lisburne

6 + 7 also (?)



greenish, lgt. grn, brn-grn to maroon, dense
bent

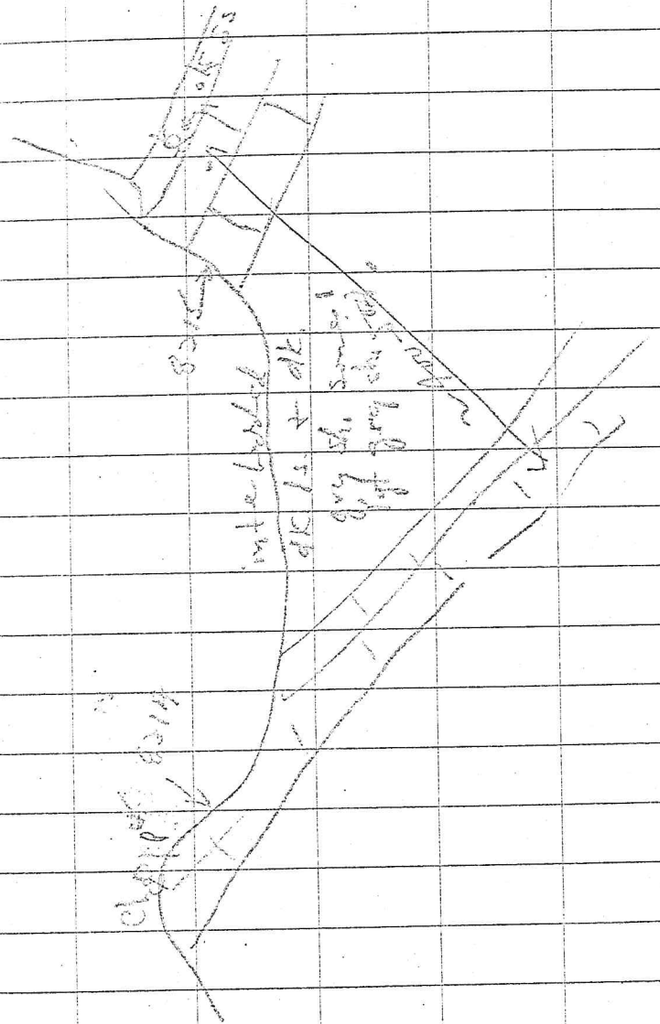
25' sc, grn, brn, f-g, argill, silty
tuffaceous, calcareous w/
interbd grn sh.
12' sh.
2' sdstn Fss, lrn, f-g, calc, pectenoid,
bands and tuffaceous
plants (?)
25' sh, med dk (brn grn
fossile

Total Eclipse section

Strat - 13 (Emsian-Eifelian)

Sequence of shales, silty
limy sd and quartzites
Abdt trans fossils and
lithic clasts indicate
a deep nearshore deposit
This is overlain by
Kungurk fl + CS intervs
Valley Flow. Test
to the north Allen
Conglom the Kungurk where
it rests on clast-phyllite
of the Nerrek Fm.

Fig 11 - Red Slough Ck. Sec
12 N. Red Slough Strat.



Pic 14 Roman & mtr.
looking NE from Bin
Ramsey Town, Notice
Varicolored Nemakit
and Pebble Tuff
in foreground.

Pic 15 (Kamas)

Just below Mbrum E-24 Hanaksut
base 9214 CALS, dk. grey, blk,
"sooty" Dish from (?)
criminid from ½ picrite,
v. fine detr. fus. tuff
floating gtz. crsts.
top 8215 CALS, blk, sooty
↑ dense, micritic
↓
8216 Sr

BDIGCF-18

Nanook ls. sample
20' below base of
Kayak as that base
tree limbs + stumps
(KE-26)?

May have cored twice.
There are thin layers of
sandy calc. silt in this
interval and algal (?)
mats in ls.-dol (?).

BDIG about 40' (abv.
Kayak ls. some dark
argill. beds in ls.
at this level.

Pic 20 Katahdin on left at brown knob hawk on right dip south

Pic 21 Traverse (Left) as in west plunge Sugarloaf in Traverse Valley

Pic 22 Mt. Chamberlain looking south.

Pic 23 Rowe-Tr. on Little dip south in Saddleback Mts.

8219 F-20 Kuto Ktuvak

Del pinal. Also
x-bedded something
that looks like
ostracods (?)
"ripple" surf. higher
in section

82-20C Near fault zone
in lower ⅓ of
Kuto Ktuvak.
Same as Unit m Sect.
F-33.

3221 FDK Cay Is.
Listwanite bands,
Serpentinite's

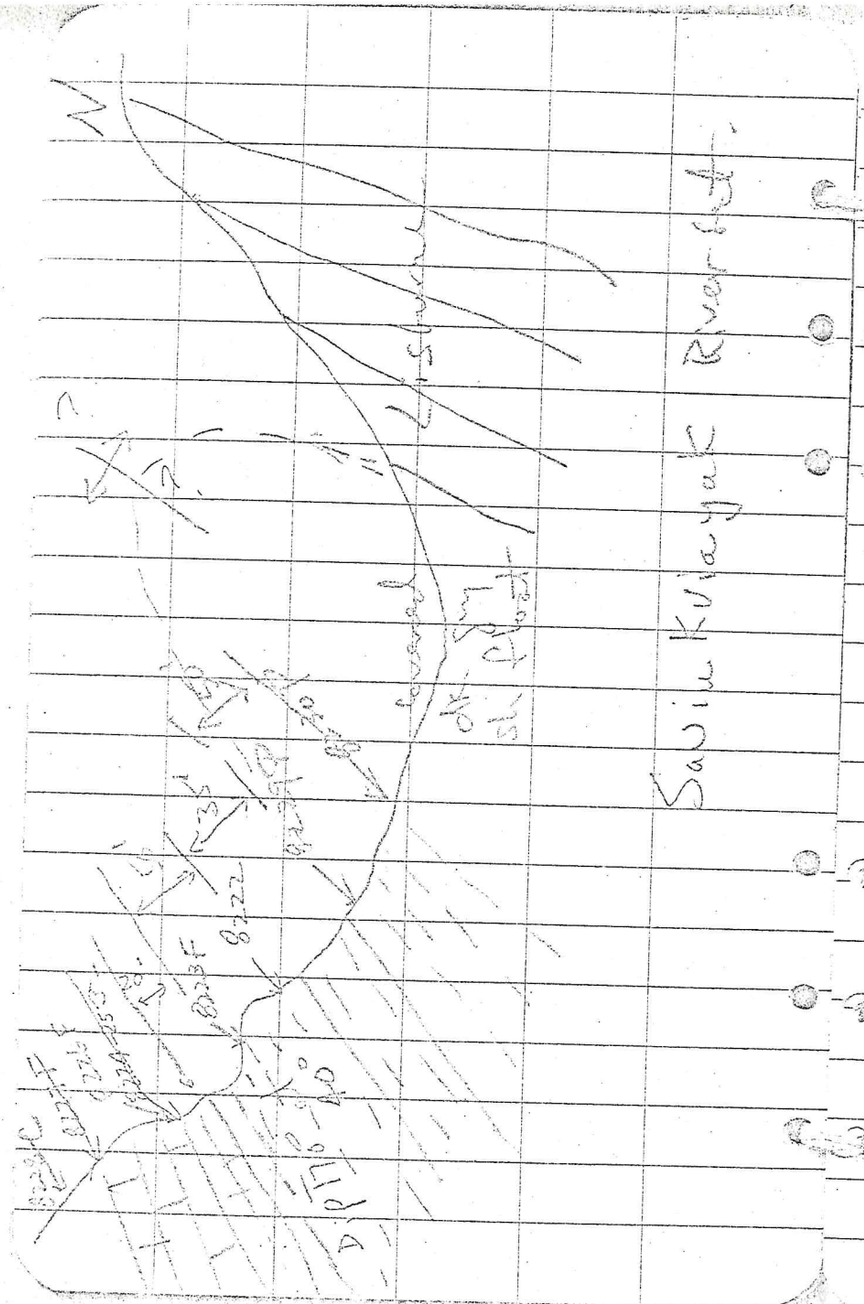
Pic 24 Structure (tilted)
in Listw. above
Spring Creek

Pic 25 Fault blocks
of Listw. strike
dip South

July 11

Allen, Fred + Tom
walking on Skagit - Hurt Hawk
+ Smoke Ck - Wind Rv.
Beautiful section.
Gordon + P will measure
Library in Elusive Lake
Area. No good section

Pic 81 Skagit Bighorn
at Angry Boot Cr.



SR 8222 FP (mega flora)
→ brn s. Kyak sh

SR 8223 F (20' below Lisb)
in sh, dk. gry w/ thin 4-inch beds of dk. gry U. Linq. sh. abnd. brachs, clams, Kyak sh.

8224 F (Lisb) (15' above base lc.) corals, chinoids
8225 Cf - packstn - grainstn, med-dk gry, weas light gry, thin bedded, crinoids.

SR 8226 F (Lisb) 5 ft. above 8224-F, in grainstn

SR 8227 F (in ss ruffle) 10' above 8226

B228 C (15' above B227)
chrinoidal grainstn
Grayson

15' above B228, abundt
chert nodules and
possible replacing
stromatolite. (?) Lg
Mushroom shaped nodules
5"-1 ft.

B228 in dk gry fissile
sh. (trunk)

B230 in dk gn blocky
sh. w/ironstn conc.
and in Plant bottom
Complex B229-31.

B231 (Left) Light gn mostly
gray

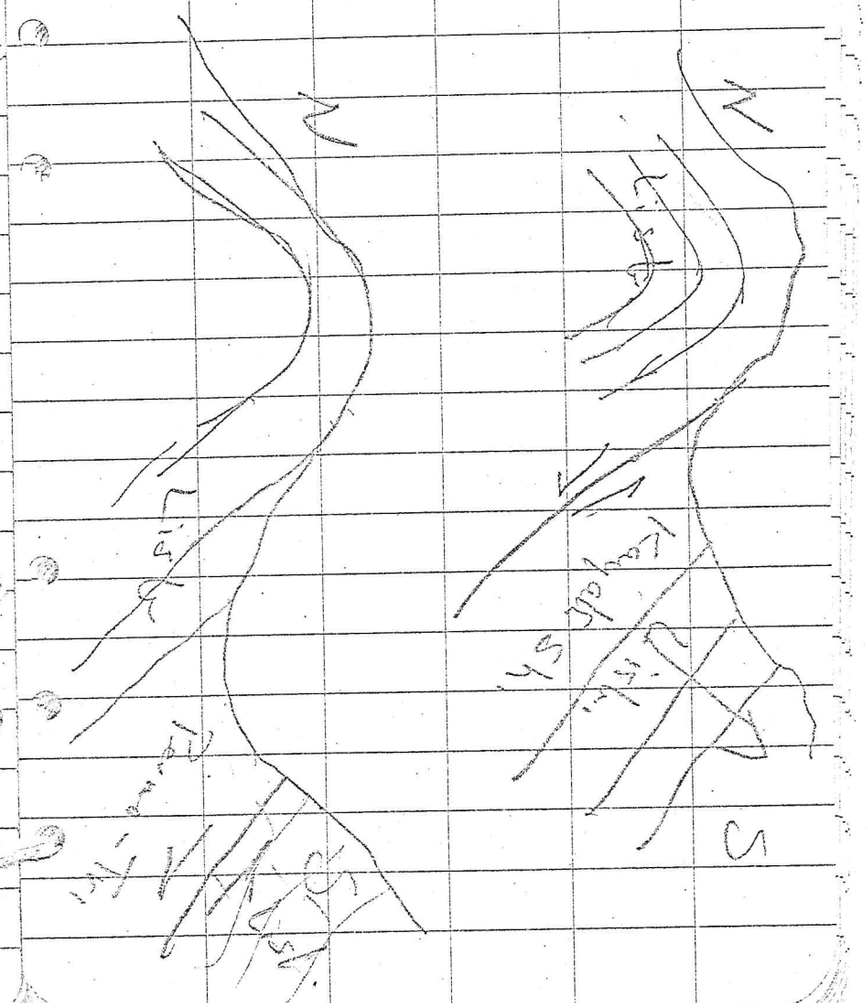
This section 8x22-21 was measured in the south limb of an overturned fold of axis trending N60°E. The kayak is exposed in a saddle at the crest of the fold.

(20)

9S-21E

South of Hurricane River

Two structural options for this county in opposite page Sample 8223 F should solve this problem.



8232 Rdh, clk. [illegible] Arrival
to this [illegible] means
bringing that suggests
this bird's [illegible] English
Brown Towhee, "
Pipilo Fuscus "
as opposed to
the Olive-sided (?) Fly
the west is the
high Sierra. This
endemic is in a
saddle on the south
margin of these
Pleistocene lake area
(low hills) where
bird is thrust
from the Sierra
over the shale
sediments. "Forester"

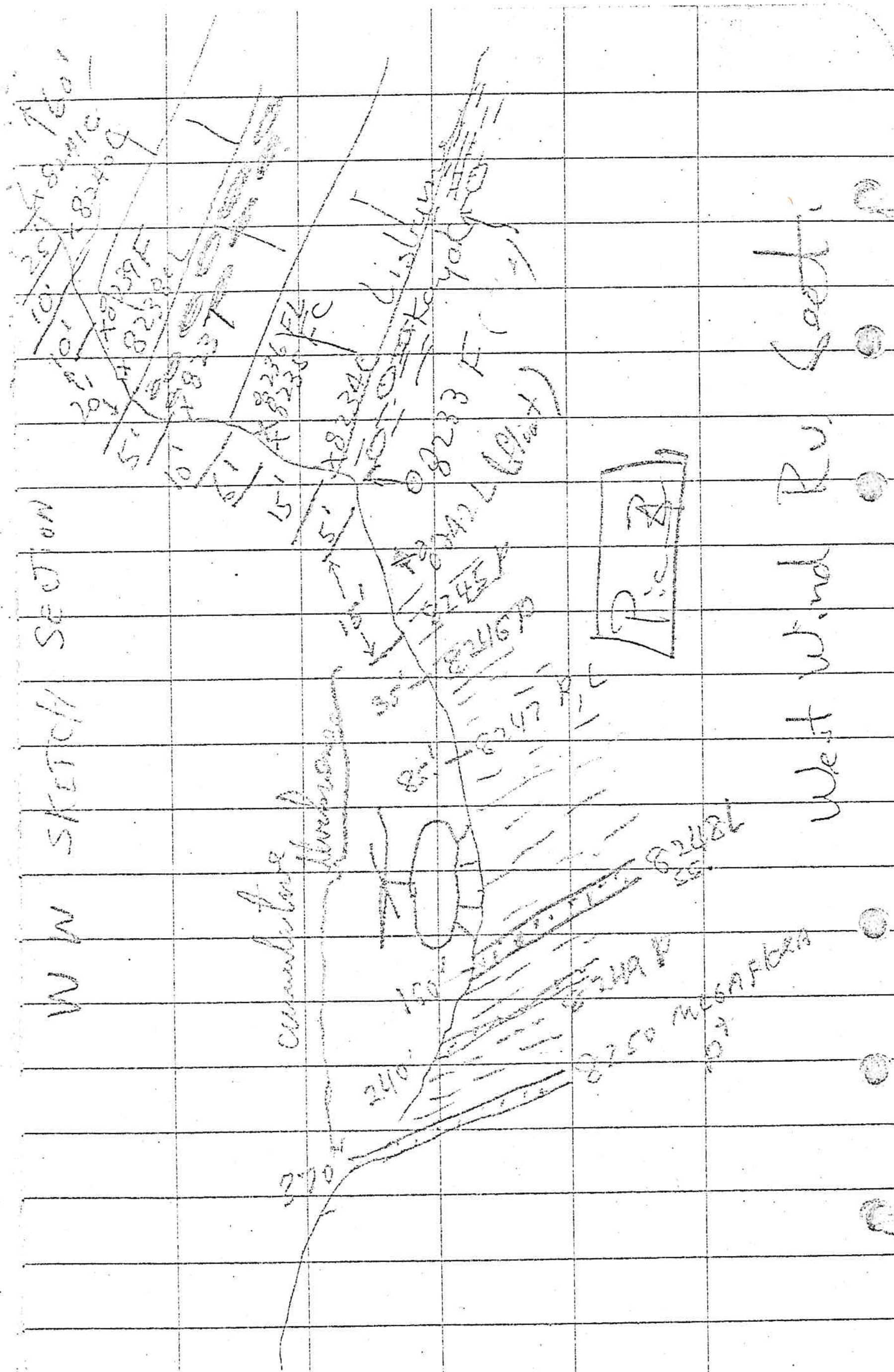
All the lichens in the county lacks even wooded and tree to no massive structure that would support higher mud lumps.

Wed July 12th

Allen, Gordon & I will measure Dev. at your Creek.

Fred & Tom will look for Perma-Bi. north of Arctic Village

Poll 3 pic
Wind Rv Sect.



8233F From conc. in very
top of Kayak.

5' {

8234 dk. gry ankerite just
above brecciated cht.
at base of Lisburne
Excellent exposure of
contact where dk. thin
shale beds w/ some
grade up to thin
ankerite & to
massive ls. within
5 ft. interval
chert lenses & layers w/ crinoids

15' 8235 packstn-grainstn,
med. gry, bryozoans,
Syringopora, crinoids

8236 6' mottled dk. gry mudstn./ls w/
numerous dk. cht. pods
& nodules, corals,

amplexiphrentiids (?) (25)

10' ls, ankerite, med gy/
8237 C w lgt. gry w/ a little
lgt gry chert.
10

5' massive wht - lgt. gry
chert.

8238 C/s, ankerite, med gry
massive, few small
med-gy chert lenses.

8239F ls, ab.

10' ls, med-dk gry, packstn-grnst.
crinoidal, gastro pel (?)
few cht. nodules &
stylolites.

10' 8240 C gravelly-calcarenite, med-grey, wx ljt [illegible] thick (bedded)

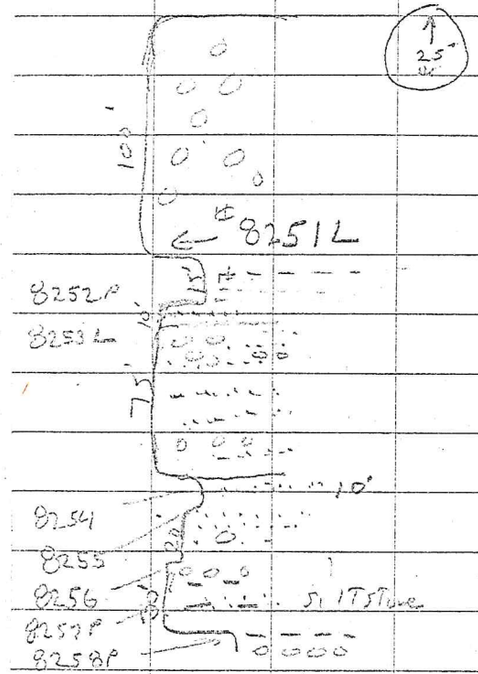
25' ls, med-grey, recrystall packstn w/ abdt. thin chert lenses.

8241 C ls, packstone w/abdt chtz nodules & lenses

60' of ls. above 8241 thick bedded pack. same as 8241 overlain at top.

8) 42 ss: gry-green, carg, cs.
w/ blk cht clasts, pc. w/ thin
w/ plant frag (Chifb.?)
that just below
the iron oh conc.
bed, probably
bed in coarsest interval.
f-g. poorly sorted
chert, glass, cht in
in place rock here is
grn fissile sh overlain
by Grn-red

Top Unit



Dip 130°, 60

8251

Yar Creek Section

YC

Top Unit

100' massive, thick bedded quartzite conglomeratic pebbles > 1" chert pebbles + qtz pebbles + feld spar pebbles.

Matrix = subangular - rounded chert

YC 8251L at base of unit

15' Dark gray semi fissile

YC 8252P shale

10' Sandstone, f-m gr gray-brn weathers rusty - quartose - 10-15% chert fair sorting clean, thick bedded, hard

YC 8253L qtz pebble conglomerate

→ 1/4" dia dense, hard

75' salt + pepper almost chert

interbedded with grey qtz

Sandstone

YC 8254L Sandstone, fgr - vf gr

10' maroon, qtz, hematite

Thin bedded

"Fining downward"

YC 8255L Sandstone - mc gr

conglomeratic; angular -

20' sub-rounded chert pebbles

grey - brown weathers

maroon - red

matrix poorly rounded

sub angular

qtz veins

YC

8256 L — Conglomerate, shale clasts, blk chert pebbles → 3/4"

Unit 3 ↑

Subrounded, some qtz pebbles

Matrix: c-gr, angular poorly sorted chert, minor qtz

color mod gray,

↓

Interbedded slightly conglomeritic sand stone qtz c-gr, 15% cht, some hematite cement,

qtz veins

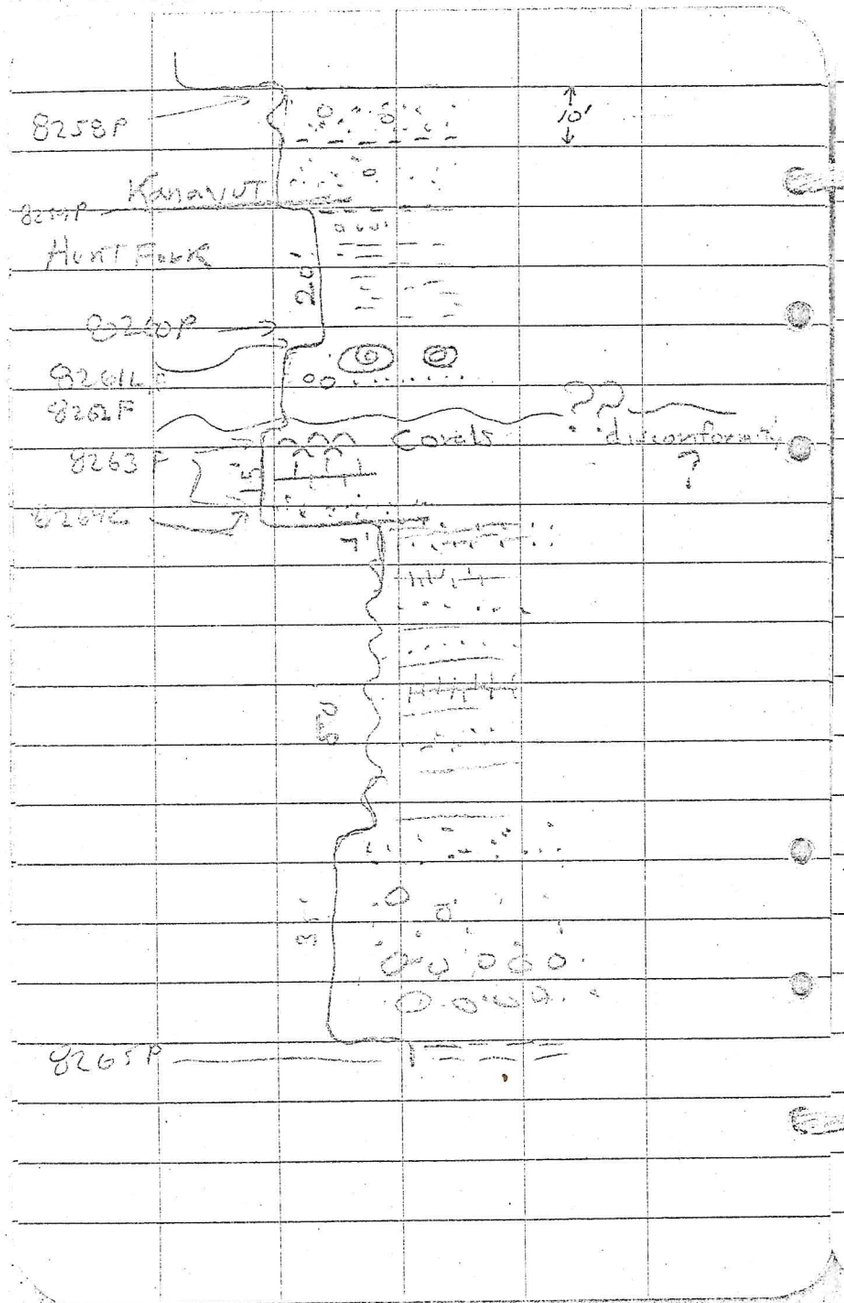
20' from top

8257 P — and several thin beds ang ss/ltstone

finely laminated

8258 P — back shale flaky

congl ss as above



Kanayut / Hunt Fork contact

8259P Contact based on abundance of black shale, absence of conglomerate

300' Total Kanayut measured

8260P Shale, dark gray, thin bedded blocky shale 20'

8261Lf rounded Pisolites → 1" in Brown calcareous sandy matrix 10'

8262F immediately below it conglomerate and SS

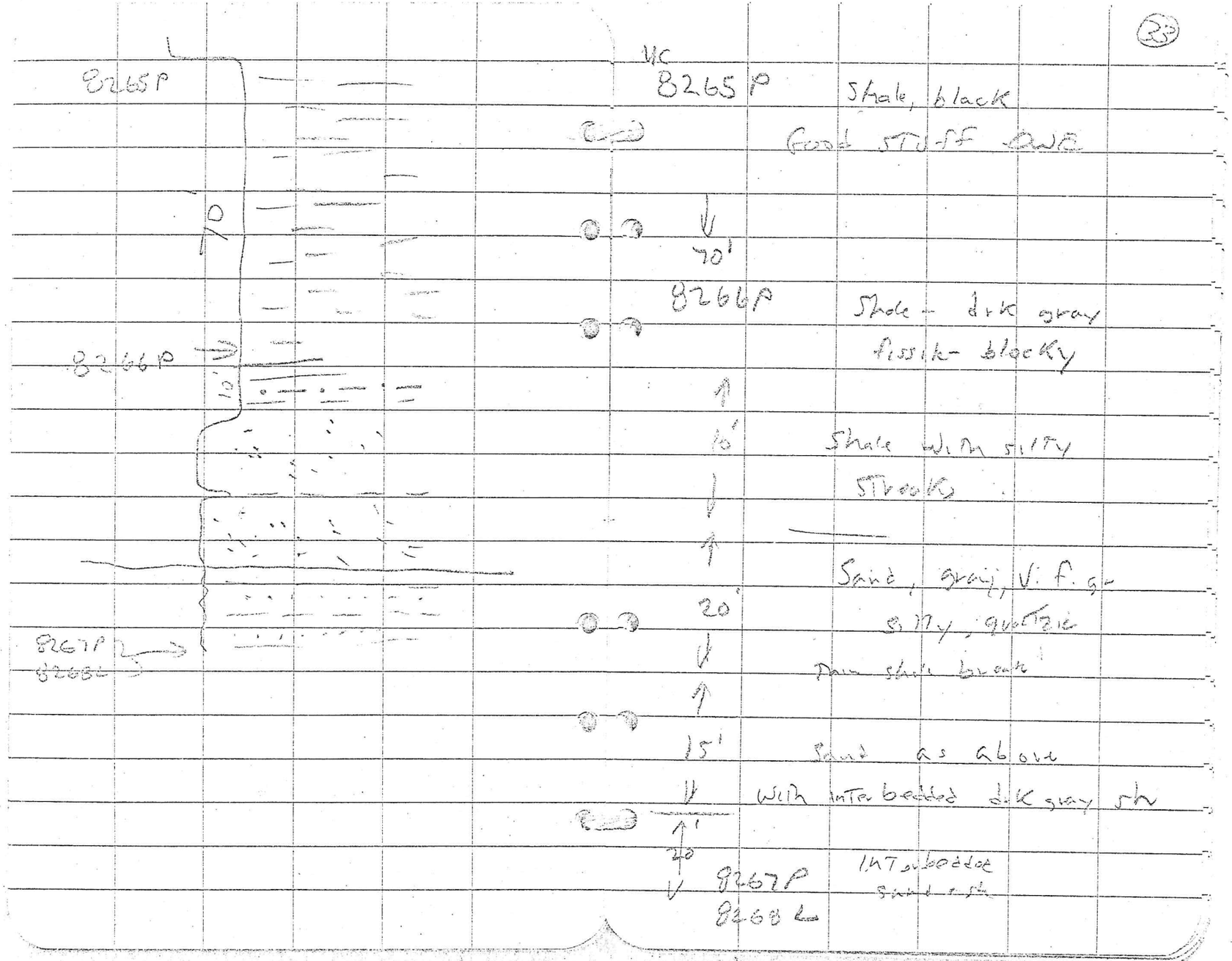
8263F Coraline Ls Fusulinaceae med gray arg coral heads in place Phillipsastrea, crinoids, Stromatoporoids

8264a, F Limestone at base &
Coral beds

Sandstone m. gray v.f. gr
7' clean well sorted slaty
Clayey and
shale black

50' Interbedded shale and
Sands which fow /s beds
to his thinner

10' SS grading into conglomerate
35' or about cht pebbles ~ 1"
in matrix C. ss matrix
& fry. cht + qtz.
V. Thin shale breaks


8265P
8266P
8267P
8268L
VC
8265P
Shale, black
Coal stringer
70'
8266P
Shale - dark gray
flask- blocky
10'
Shale with silty
stringers
Sand, gray, V. f. g-
silty, quartzic
20'
Dark shale brown
15'
Sand as above
with interbedded dk gray sh
1'
20
8267P
8268L
Interbedded
sand + sh

8257
0'

10'

low angle cross bedding

8267 P
8268 C

100'

V

210'

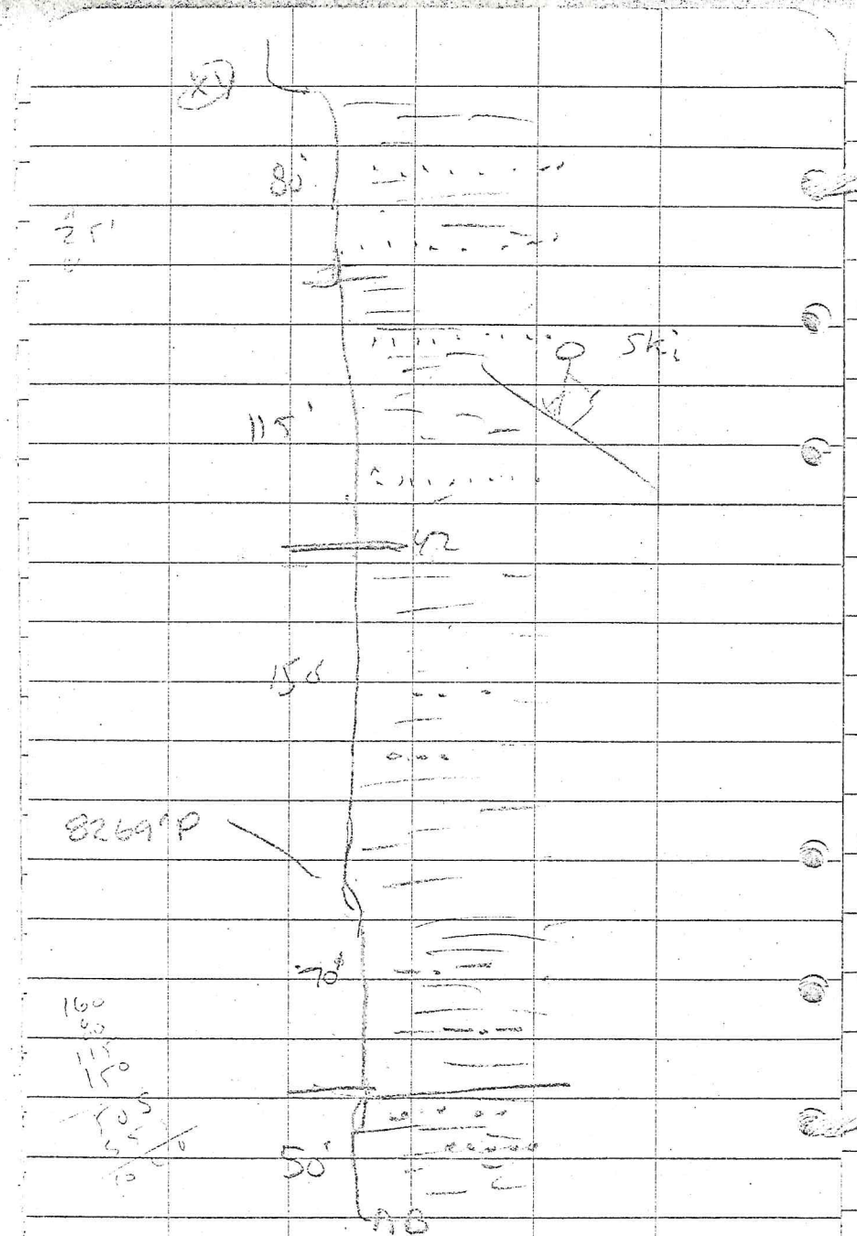
40'

X4 80'

interbedded fgr gray and shale

Sand - fgr - mgr - massive 40' Thick

interbedded shale with sand



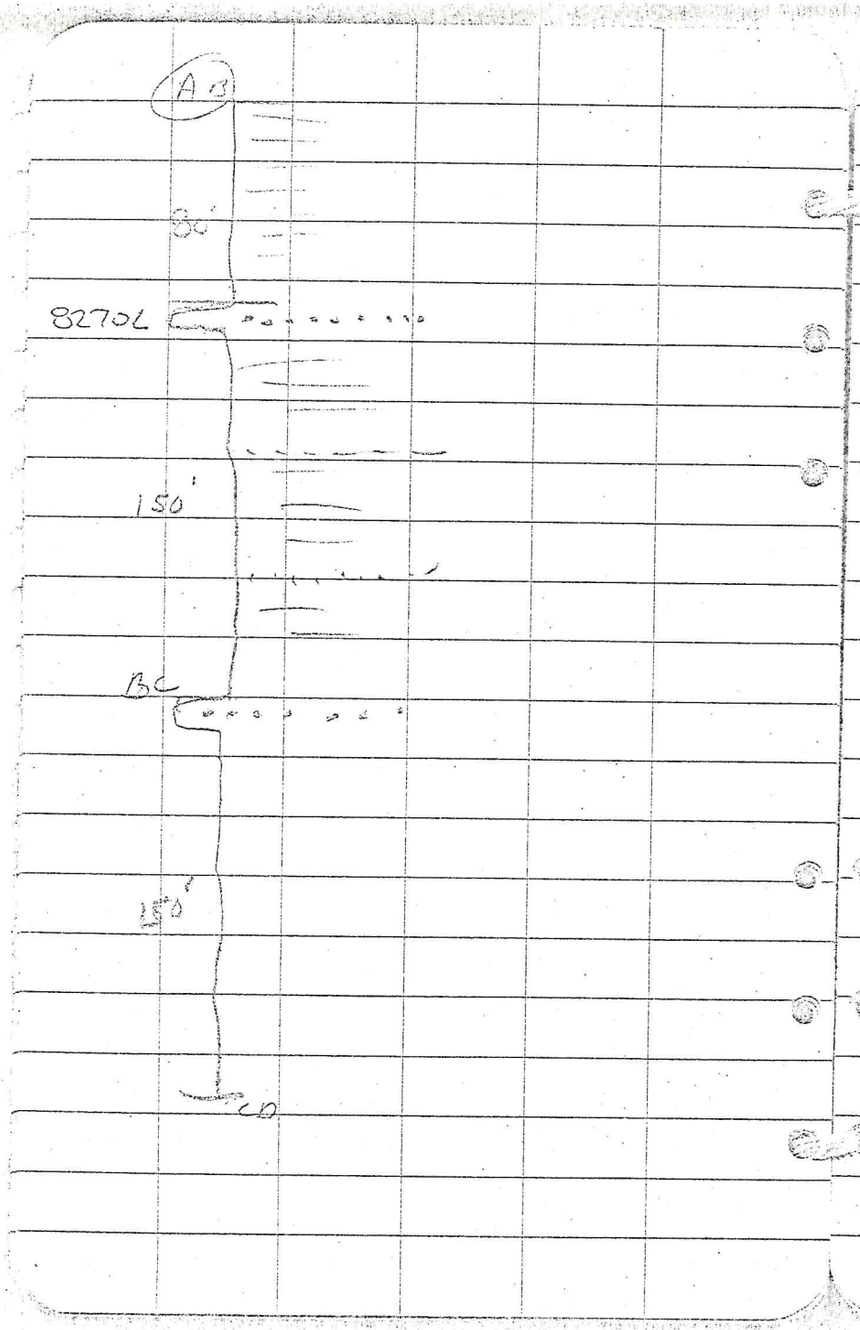
115' shale

42 Interbedded
shale dk gray
Sand gray V f gr,
silty
thinly thick bedded
ripple marks
cross bedd.

150' interbedded shale with
#8269 P minor sand

70' shale with minor silt

50' shale, minor sand units



80' shale,

8270L 10' sand, v.f. gr, dark gray

BC Massive sandstone
15' m gray, f. gr. silty
- fractured with qtz veins

150' shale

TD+

CD

80'

10' Massive chert

150'

8271

300'

8272

Covered

250'

8273

last Sample

Covered to river

500'

430
150
1200
1260
10
2160
210

80' SH

40' SL + 10' Massive chert

8271P

SH 8271P Shale, papery

8272P Shale, black, papery

8273P Shale in

stream, thin bedded unit

Roll3 pic 5-10

folded bottoms in

Hunt fork chile along

Your creek, +

Tonight on top Hunt-

Fork at some locality

east + Your Creek

Eastern

Samples

Box 1 Wrogn Bluff Bear Ck.
Box 2 Magnetic Eclipse July ninth
Box 3
Box 4
Box 5
Box 6
Box 7 W. Mint Rv - Bear Creek
Box 8 Old John Lake

Arctic Village

Six Sacks to Denver

Circle

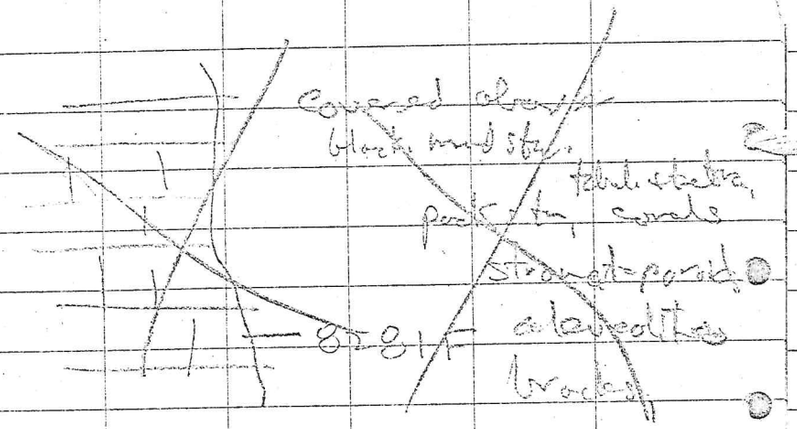
Box 9 - Linear Ridge Nelson Bluff
Box 10 Nelson Bluff Tacoma
Bluff Woodchoppers

Thurs July 13th

- Packing + moving to Circle
- 4 full barrels of fuel left at Arctic Village
- Allen Gordon + I will fly to Old Camp to check fuel oil seep look at Johnston
- Fred Tom + John will fly with equipment to Circle

Samples

8 Boxes to Tulsa.
6 burlap bags to Denver

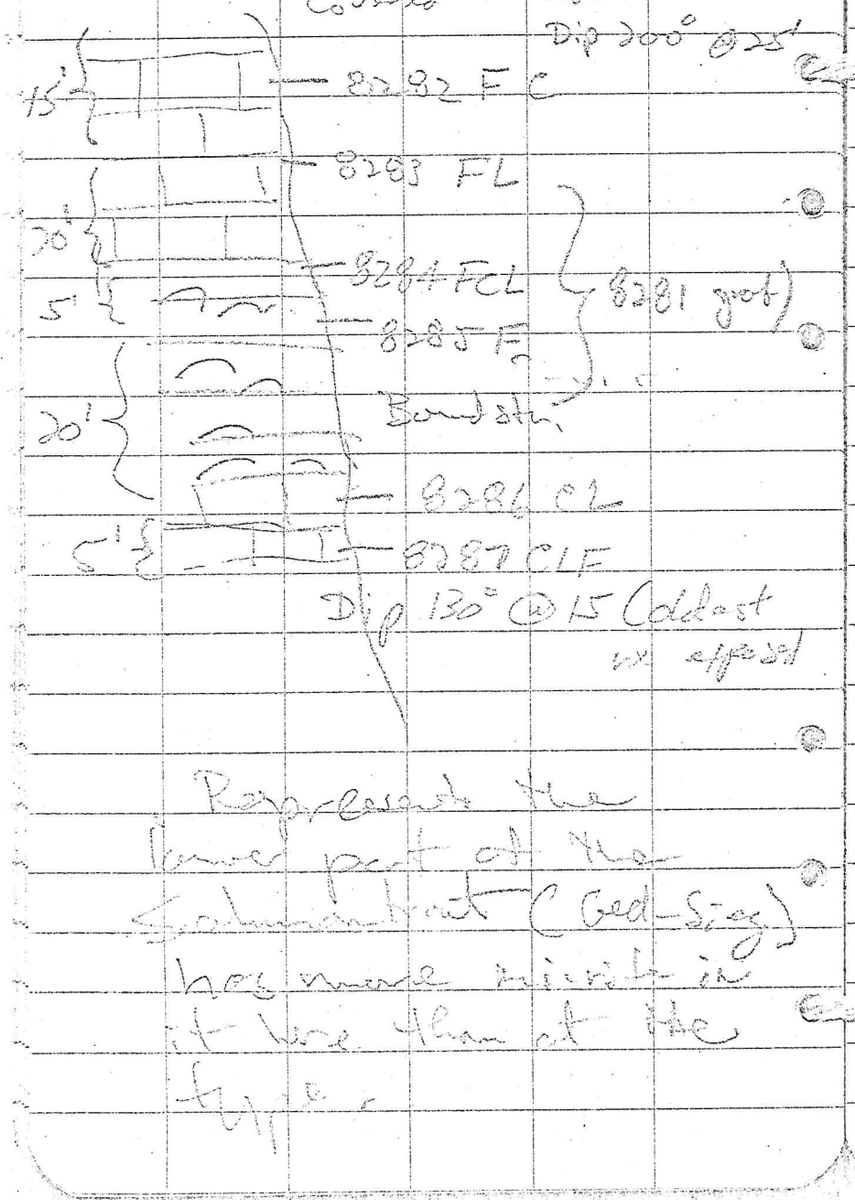


Left Arctic Village
at 9:30 Am.

Call Andy tonight - Travelers Inn.

Call Wy Keever
Send draft receipt to Shaman

40 - 45 hrs. flying at
Arctic Village
Looked at Sahwantoot Ft
Re sampled Linen Ridge
Allen's water
Couldn't find oil seep
Nelsen Bluff
8281 F (Syncl. (Log)



15' 8282 — micritic, dk. gry, trilobites
tent., ostracods

20' 8283 — Wackstn, dk. gry, very
fossil, corals, stromatop.
zones at boundstn w/
mud matrix

5' 8284 — Micrite w/ algal
corals, stroms, stromat.

20' 8285 — Boundstn, dk. gry,
stromat (algal?) corals

8286 — wackstn, w/ brach.s.

8287 — Wackstn, dk. gry, fossiliferous.

Other side Nelson Bluff (#1)

8288C

packstn - grainstn.
cr. noidal, 2 holes"

8x89 FC, aa

thin sect work
w/ emp. freq. of cr. noidal
packstn: omalgm.
grainstn. few brakes
Stromatoporoid in the
dark clasts.

This part represents
Fransion - Eifelian
or upper Sahmontrout
and it is crinoidal
grainstn here

Looks like they cut
thru the timber on
the section lines in
the Little Black River
valley.

July 14th

Have completed move to Circle.

- Use 1 barrel fuel at Old Camp.

Allen, Fred, Tom + Gordon are looking at Wood chopper Vol. and Sil-Dev. at Tocsmas Bluff.

Measured section at Woodchopper

Sampled Tocsmas Bluff Section

July 15

Allen Fuad + brother looked at rocks NW of Nelson Bluff called Mips by Conrad - They thought it is Ord. as at Arnoca J. Quartzite as like Pg Unit outcrop in river near Nelson Bluff.

Afternoon - checked outcrops along Paddle Ck. and Little Black River - they are shales, ss. and conglomerates that look more like Tre Cret. at Kodiak Mt. than any of the Mississippian that we have seen.

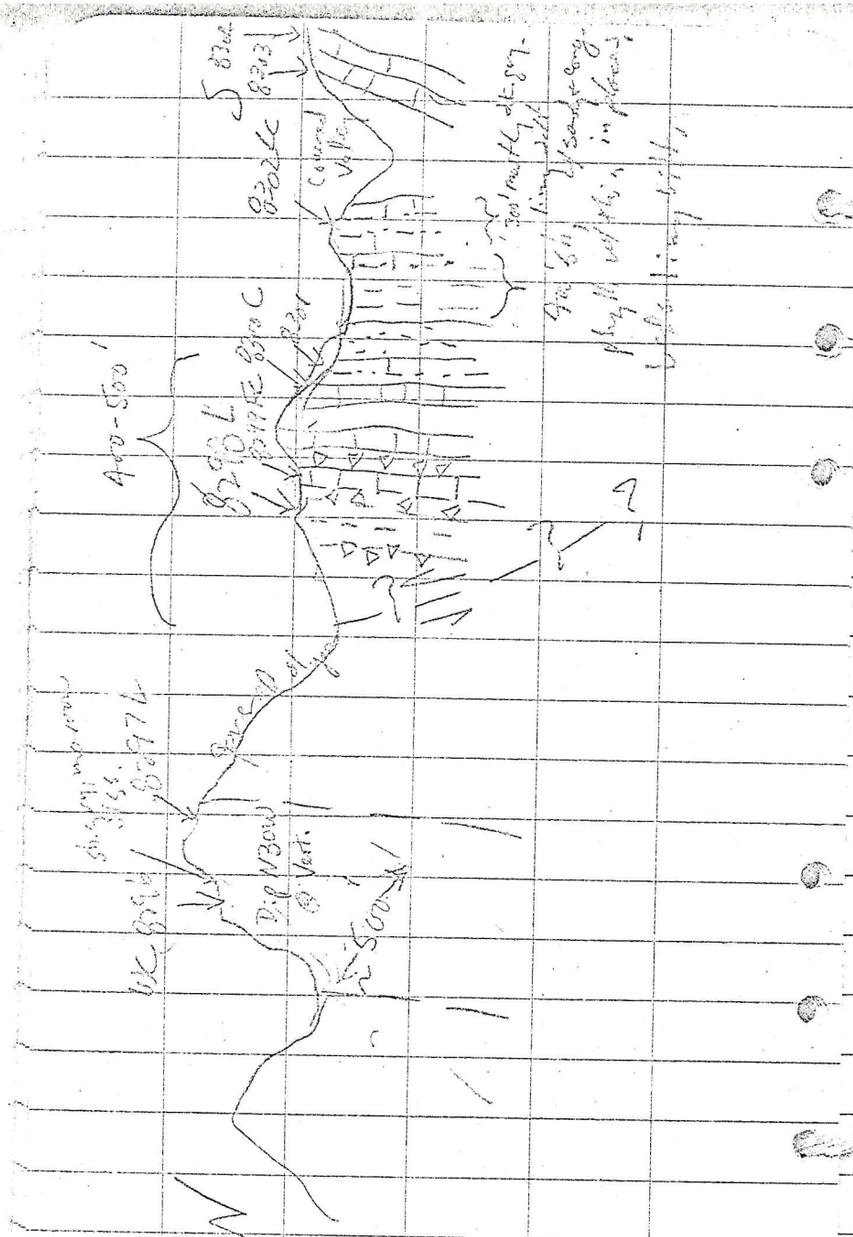
July 16th

Two groups will look at the section in the Cross Mts. John Mayhew will return to Anchorage.

8294L (Boulder Hill)

Cht pebble cong 20% gry cht 10% blk cht, 10% brn-gry cht up to 2½ inch, rnd-subang; matrix cms. ss, poorly sorted

8295CF Ls med-gry w/ brn stalks very fell. Point sample of stromat. or stromatop. (?)(?) Strike N50E dip near vert. looks more like Dev thrm Miss. poss. X-bedding (?)



WC8296P ss, med-gry, f-med-g. poor sort, quartzose w/ thin sh partings; mudstone live. gry-grn

WC8297L ss, med-gry, f-med-g. w/ rare gtz. granules, poorly sort.

WC8298C interbedded grn-gry phyllitic sh & f-med sd, ehl, lamin dk. gry-blk, brn, x-lam.

WC8299F ls, med-dk gry micrite stromatop. strom, prob. Thamnopora (?) w/ interlam of dk. gry ehl highly recrys, silic + fract, x-lam.

WC 8300C - ls, dk. gray
very well cemented (?) (?)
thin bedded - laminated
w/ a, brn-gry

WC 8301C, x-lam lt. gray
ls, v/fg, s/i. Sandy
becomes sandy with
scatt. pebbles ½" just
above thin coal

WC 8302C
Thin interval has been
mostly dk gry-blk. Thin
siltstone that is sandy
in places few scatt.
plant fossils. Contains ½"
pebbles.

WC 8303 @ 5 ft, micrite, med-dk gy, wcm-lft
sm very M, pas 1/16"
strmatop.
Dip N 5°E @ 55°

WC 8304 @ 1, micrite, med-dk gy
to dk gy, wcm-lft gy,
thin-bedded - laminated
w/ dolified & vexy M.

The sequence seems to be younger from South to north and grades from ls. mud at the base upward to thin a sandy interval, to fining siltier carbonate sandy streaks, to interbedded clay-shale (phyllitic) to coarser conglomeratic ss at the top.

9305 P ss, dk. gry, flaky
to platy w/ thin
beds of quartz, bc w/ pyrite
cubes. This is the
sequence that Chevron
has collected Oldhamia
from

1992 Field Notes

Field Notebook: 1972

0014

CF74 0230

Thomas DeKuyper

Sample nos. 8600 - 8999

(Letters preceding numbers indicate measured sections)

Arctic Village: July 7 - 13

(declination 32° E)

Circle July 13 -

7-8-72

#9600 F. (grab) = FCH 760-764
fine-grained, dark-gray, lime boundstone. Fossils including laminar stromatoporoids, Girvanella, Hamaspora, and atrypid brachs.
? Age Givetian - Frasnian

#9601 F. (float)
massive stromatoporoid - Phillipsastraea boundstone indicating Frasnian age

7-8-72

Angry Bee Creek (A.B.)
measuring down

(TOP)
AB8602F, C, L — dark-gray, limestone containing numerous tracks: Sheodosia, Spiroathyppa, Cyatospirifer? Thamnopora, A blue-gray wackestone weathering gray mottled with brown. Surface pitted.

AB 8603 F Colonial coral location same as above.

AB 8604 F, L.
10' below top
Few more tracks."

7-8-72 (3)

dark gray, gray-weathering w/ brown mottling limestone wackestone

AB 8605 F — 15' below top (B) Laminar stromatoporoidal limestone. — Dark gray, weathering gray & brown. (A single 5' bed)

AB 8606 L — 20' below top (Base of massive bed above)

7-8-72

AB 8607 F – 5' below 8606
lime wackestone w/
Shamaspora, gastropods,

AB 8608 F, L – 12' down

→ covered interval

AB 8609 F, L 25' below last
sample,
dark gray to black
medium to fine grained
lime mudstone/wackestone
Acinoplyllum, Shamaspora,
etc.
Weathering dark gray
& brown.
Bedding wavy 4-6"
(Two bags of fossils)

7-8-72 (A)

AB 8610 F, L medium gray
mud/wackestone
(stromatoporoids)
→ 30' below 8609

AB 8611 F, L 15' below 8610
Smithaphyllum?;
Shamaspora, branches.
limestone (wackestone)
lighter gray, becoming
massive.

AB 8612 F, L – 2' lower
stromatoporoids in
laminar, wavy beds
(essentially a boundstone)

7-8-72

AB 8613 F, L
30' thick lime mudstone, dark gray-black, medium-thick-bedded

→ covered interval - 10'

AB 8614 F (float)
Stachyodes, Ipciniopora, Rhinophyllum?, etc. in large block of black ls.

AB 8615 F (float)
Amphipora ss. black ls.

7-8-72 (5)

AB 8616 F, L 60' lower
well-preserved stromatoporoid from a massive 4' bed with Amphipora at the top
— medium-gray, limestone, weathering gray w/ some brown

AB 8617 F 40' lower
nearly at base of buildup
— massively stromatoporoidal mudstone

AB 8618 F 50' lower
(at base of cliff)
massive stromatop.

7-9-72 (6)

Miss – Nerokpuk Section –

(Looking for Devonian Sand)

Spl # 8620 = Miss

520 E, 25° Dip

Angular Unconformity

Spl 8619 = Nerokpuk

N15E, 40° chert + Thin shale

Thin bedded plant bearing shale + coal

chert pebble conglomerate

Nerokpuk } chert + Thin Shale

Spl # 8621 L

chert pebble conglomerate, quartzite matrix

143° 25' 00 68° 58' N

Lisburne Section

JN = July Ninth

Sunny 60°

Spl JN #8626F Permian

10'

#8625 Lf — Contact Lisburne

40'

← #8627F Crinoids in float in Wackestone - packstone

75' ← #JN8628F ± Chert Unit A

- 50' Black shale? in covered interval

200' Covered interval

JN #8629C, L, P

Section Measured Top to Bottom (1)

Spl #8626 JN Siltstone, orange - brown, blocky +

Siltstone, gray Marine with Crinoids brachs: Yakaulevia

#8625 Top Lisburne

Wackestone, dark gray weathering light gray,

Neospirifer

Other Brachs

Crinoids

#8627 = Crinoid in float

~~#8628 = Stratified Nostoc??~~

#8628F Chert Unit A

Wackestone, gray + bedded and white-gray nodular chert

JN #8629 Chert Unit B

2'

JN #8630 C, L, f

3'

JN #8631 C, L, F

20'

50' Dip South 12°

JN #8632 L, C

20'

JN #8633 L, F, f

40'

10' Wackestone

Interbedded packstone

10'

JN #8634 L, F, f

25' mainly wackestones

JN #8635 L, F, C

#8629 = Chert Unit B
packstone, dark gray
weathers light gray
Dip South, 11°

#8630 Packstone 2' below
Chert bed #8629

#8631 Wackestone, dark gray with
brachs + chert

#8632 Mudstone - Wackestone +
chert

#8633 Grainstone? - packstone
gray brachs
bryozoa

#8634 Packstone, gray, fossiliferous
brachiopods

#8635 Packstone, med. gray

JN# 8635

60'

JN# 8636 L, f, C

Mostly

110' Wackestone-

Mudstone

JN# 8637 L, f, C

50'

JN# 8638 F

100'

JN# 8639 F, L, f, C

30'

JN# 8640 L, F, C

80'

JN# 8641 L, F, C

8636 Packstone, c. gr dark gray

8637 "Brilliant Discovery" Packstone

8638 Wackestone, gray with Chaetid branch

8639 - Packstone - "quality Sample"

8640 Grainstone - packstone, gray, w. m crinoids

8641 Packstone, gray-Tan

JN# 8641

1

30'

1

JN# 8642 L, C, f

1

20'

JN# 8643 L, C, P

30'

1

JN# 8644 (?)

1

20'

JN# 8645 F, C, L

40'

JN# 8646 L, F

1

20'

1

* JN# 8647 F, C

Stromatolite infilling

1

65'

1

JN# 8648 L, C, F

JN 8642 grainstone - packstone — gray - crinoidal

JN# 8643 Grainstone, crinoidal, pelletoidal?

JN# 8644 Wackestone - Packstone, crinoidal

JN# 8645 Good bryozoa, crinoids, corals

JN# 8646 Wackestone

* JN# 8647 Good fossils

Giganto Productus =

L. Meramec or Chester

Wackestone - packstone

JN# 8648 Wackestone

Lithostrotionella

JN # 8648

20'

JN # 8649 L — Stromatolites

1

25'

JN # 8650 L,F

60'

JN # 8651 L,f,C

125' Covered

JN # 8652 L

50'

JN # 8653 L,C,f

1

100'

---------- Base of Lisburne ??

30' Based on large covered intervals, fewer ls below

First red shale in float

8649 Stromatolites, or laminated ls + chert + dolomite?

8650 "Black Unit"

Avg. lime mudstone with Black nodular cannonball chert

Fenestella bryozoa

8651

8652 Mudstone, black + mudstone, red-tan, dolomitic

8653 Mudstone, blk with large Gastropods

red shale in float

20'

JN 8654 F

20'

JN 8655 C, F, L

50'

JN 8656 L, F

200'

JN 8657 F, L, C

Extreme Numbers — Coral in float

#8654 Coral in float

#8655 Echinoconchus
Brachiopods

#8656 LS, first thought to be coral bed

#8657 Packstone - wackestone + few corals in place

Location:

SW¼ NW¼, T 13S R 20E

Table Mountain Quad.

A.R.O.'s plate of contact from helicopter is #21

FCH's close-up #21 & 19

7-11-72 (13)

Upper Kind River Section

(UW 86)

First step on contact at west end of reef mass

UW 86581 Sandstone (in contact with ? Brassian limestone) Ss. contains much carbonate. Fine-grained, thick-bedded quartzose ss., resting w/ possible disconformity on

UW 86591 sandy carbonate, brecciated/recrystallized (large calcite rhombs throughout.)

8658
UW ~~8660~~ F, C, L

↑
100'
↓

UW 8661 P (higher)

UW 8660 F, C, V Imbedded? carbonate heavy lam of algal psilites, laminar stromatoporoids → 3' below last sample also Stachyodes & tetraxonals. Everything algally-coated. Also blackspots,

Hurst Fork? (or Kayak??)
Very fine grained sandy siltstone & shale; weathers flaggy & muddy (pencil-shaped fragments)

main section

1/4 mi. SE

(measuring down)

UW 8662 F, L TOP

(slide 3-18½ close-up of stromas)

30'

UW 8663 F, C, L

UW 8664 F

appears somewhat ~~massive~~ with Thrombolites, Tetracoralla

15'

UW 8665 F, L

20'

UW 8666 F, L

attention: 4,960

Massive, stromatoporoid boundstone; dark gray, weathering gray and brown.

some massive

Stromatopst in pkgst. matrix with cuspoid columnals, branches in matrix. Somewhat sheared, no bedding apparent.

Massive stromatoporoid boundstone

Stromas, coral?, etc.

bottom stroms. (a bdst.)

30'

UW 8667 F,L

10'

UW 8668 F,L

20'

UW 8669 F,L

10'

UW 8670 F,L

15'

UW 8671 F,L

10'

UW 8772 F, C, L (slide 3-19)

Massive stromatop. bdst.

Massive strom bdst.

Massive strom. bdst.
w/ Stachyodes

Gastropods, strom,
syringoporids 22'.
→ bdst.

Massive strom. bdst.

Sub-spherical stromatop. head (20")
across

8772

↑ 1

2.0

↓

UW8773 F, L

10

Brecciated zone (not sampled)

↑ 50'

↓

UW8674 F, L

20'

UW8675 L, F, C

45'

UW8676 F, L

↑ 20'

UW8677

Rock appears brecciated w/ strom floating in it.

Massive strom. bdst.

? fault?

Massive strom. bdst.

Massive strom. bdst. w/ some fossiliferous matrix

Massive strom bdst.

UW 8677 F, L

Joint sets

1) N63°W, 85°S
2) N37°W, 84° SW
3) N31°W, 81°S

25'

UW8678 F, L, C

20'

UW8679 F, C, L

30'

UW8680 F, L

20' ← rocks stalked blobs here may be source of UW 8683 F (float samples)

UW8681 F, C, L

Massive strom. lst. w/ many crinoid columnals, some gastropods (wkst.?) (B)

Massive stromatoporoid lst. w/ some crinoid columnals → gst. just below.

Crinoidal, brach., pkst. w/ many strom clasts

Massive strom lst. w/ a few crin. columnals

Strom. (massive & button?) heads (Dendrostella?), crinoid columnals; in pkst. (Dark gray weathering gray & brown)

[8681]

UW 8681 F, C, L (cont.)

← Phillipsastraea sp. float indicating Tasmanian above

UW 8683 F (float)
(see note below UW 8680 above)

10'

UW 8682 L, F

40'

UW 8684 F, L

{ large, lenticular masses of calcite quite common & persistent; original cavities?

20'

UW 8685 F, L

25'

UW 8686 F, C, L

(Pkst.?)
Large samples taken at this point including stromatids, rhyncholites, etc. seems to indicate → M. Dev. rather than U. Dev. age.

(Pkst.) crinoids, bracks, stromats abundant.

Massive strom bdst. w/ a few chan. columnals

Massive strom bdst.

Pkst; crinoids, stroms, bracks?

40'

UW8687 F,L

25'

UW8688 F,L

25'

UW8689 F,L

30'

UW8690 F,L
(slide #3-22)

(slide 3-23; measured base of reef, taken from 100' below, looking back up)

→ Base of section ←

660' / Altimeter = 710'

7-11-72

Massive strom. lmst.

~~Floss~~

Strom-bearing crinoidal pkst., not visibly bedded

Massive strom. lmst.

Massive lmst. w/ corals alveolitids, strom.; & branchs in pockets; also crinoid stems abundant.

Altimeter 4,250

Hunt Fork at 4,220

altimeter 4,040

UW8691 P,L
(slide # 3-24)
UW8692 F = same horizon

These samples from a small outcrop of Hunt Fork ? about 200' below last exposure of Skagit reef. A recumbent fold visible in exposure).

Interbedded shale and fine silty sandstone w/ slaty cleavage
→ essentially a phyllite
Bedding: N 18° W, 56° E

compass set wrong:
set for 32° W instead
of 32° E

7-12-72 (32)

Old Cyber Lake Reef (OJ)

Reef clearly sitting in Skagit Shales. Cursive bedding visible on top of mound is most likely original.

OJ 8698 F Grab samples of several pieces from various points in build up.

OJ 8699 F Dark gray, basal ls. rich in Thamnopora, tetracorals, etc.

Basal bed essentially planar, orientation

Mt Richter-Thrasher Mt. Sec.

8693 F, C, L Crinoidal mdst and mdst within 50' of top of Lisburne

8694 F, C, L Medium-gray, mudstone, weathering ~~grayish~~ brown, containing bracks, corals, A large sample taken 1ess, ≈ 20' above contact w/ Lisburne indicates a probable L. Permian, Early Leonardian, age, based on Pumpbirostrothyris, Pterospirifer, & tetracorals.

8495 L shale w/ numerous possible trace fossils

8496 F, C, L Med-gray, coarse, crinoidal packstone within 50' of top of Lisburne.

similar to that of nearby sandstone in Hunt Fork.

ϕJ 8700F Hunt Fork Sh. w/ marine fossils
Section up from bottom

ϕJ 8701F Packstone, gray, with corals, stroms, bioclasts, crinoid columnals. No bedding visible
10'

ϕJ 8702F As above
8'

ϕJ 8703F Pkst. w/ numerous stroms, crin. cols, bioclasts.
10'

ϕJ 8704F Bdst w/ pkst. matrix

12'

ϕJ 8705F Mass. strom bdst. w/ pkst matrix
10'

ϕJ 8706F As above but w/ many laminar strom as opposed to heads
11'

ϕJ 8707F Massive strom bdst
10'

ϕJ 8708F (Oriented up) Massive strom bdst
6'

ϕJ 8709F Massive strom bdst. w/ gastropods

ϕJ 8710F Massive stone
Idst, little or
no matrix.

Top. (88')

DR 8729

7-17-72

Deacon Rock Section (= DR)
on Porcupine River below
Old Ramparts.
(measuring up section = downstream)

⇒

DR 8729 L Limestone, medium to fine-grained, badly fractured and shot through with veins of red calcite. (Sample taken at E most accessible point)
2 kgs. one definitely a breccia: red calcite matrix w/ white, gray, & red ls. clasts.

25'

DR 8730 L, C Medium-gray, dolomitic carb. w/ white (slow to light fluorescence)

100' calcite veins

DR 8731 F, C, L Light gray to tan, slightly dolomitic ls., still somewhat brecciated overlying above dark gray dol. ls. Top a sharp, apparently conformable contact. (N 49° E, 69° NW)

40'

DR 8732 F, C, L Medium-gray, med.-coarse-grained, dolomitic ls., w/ many calcite veins. Overlying above unit by sharp flat apparently conformable contacts. (N 55° E, 75° NW) (Many pebbles along contact)

(35)

↑ 100'
↓ Ls, dolomitic, calcite veins, as above. (N30°E, 84°NW) (not sampled ∴ since massive, not visibly fossiliferous)

50'

DR 8733 C, L Ls, dolomitic, w/ numerous calcite veins.

↑ 15'
↓ Contact (N15°E, 68°NW), apparently disconformable, w/ a 2" silty calcareous interval.

5'

5'

DR 8734 F, L Dark-gray, very sandy Ls. (50% sand & 50% lime matrix) massively bedded. Entire rock intensely sheared and brecciated, w/ extremely abundant calcite veins

75'

Very sandy Ls, as above, but less intensely fractured.

50'

DR 8735 F, C, L Slightly dolomitic, gray & brown mottled, pkst. w/ chert veins (?)

60' } covered interval

10' } DR 8736 L Dark gray, dolomitic carbonate w/ sm fine-grained sand.

140' DR 8737 C, L Light gray, mottled, coarsely (stalline) pkst w/ fine chert (?) veins.

↑ 35
90'
↓

Dark gray, laminated, very sandy, dolomitic ls., as in 8736, above.

↑ 75'
↓

As above, but conglomeratic, no laminations visible.

Possible fault (corrected) approximately N25°E, 80°SE. Bedding ≅ N-S, 25°W.

↑ 90'
↓

As above, still conglomeratic, 5' sil many calcite veins.

↑ 40'
↓

DR 8738 C, L

As above, but lamination visible dipping ± ≅ 10°W
→ Probable fault plane (N10°E, 42°SE)

↑ 75
↓

As above, but less conglomeratic.

↑ 150'
↓

As above, variably conglomeratic and sandy lime (Conglomerate consisting of clasts of sandy lime cemented by calcite.

⟹ obstruction on beach at this point - have to climb around.

↑ 100'
↓

As above, very fine quartz sand sil calcite cement.

↑ 30'
↓

DR 8739 F, C, L (covered)

Light gray micrite/sorbet. w/ many fine calcite veins

⇒ Underlying contact with underlying sandy ls. having mudchips (≈ 4') and several large clasts of the sandy lime contained in the overlying ls. Polaroid DR-1

25'

DR 8740 F Light gray, fine-grained, micritic ls. w/ possible replaced coral.

30'

As above, Retains contact w/ tan sandy complex

erratics. containing large clasts of above light gray micritic ls.

50'

Probable fault plane w/ drag folding. (Polaroid DR-2)

150'

Badly altered, fractured zone due to fault.

DR 8741 F, C, L Medium gray, sandy ls.

60'

As above, but two thin zones of very muggy calcite.

80'

DR 8742 F, C, L Medium gray, dolomitic, sandy ls;

as above

160'

DR 8743 F (float).

As above.

250'

As above

125'

As above.

125'

As above

250'

As above

150'

As above

200'

DR 8744 C, L Medium gray, dolomitic, sandy ls. Sand now more abundant; almost a dolomitic quartzite.

230'

As above

30' covered interval

260'

As above.

75'

DR 8745 F, C, L Sandy ls., as above; bedding: N30°E, 45°SE

200'

As above.

40'

As above, but w/ lighter colored matrix and containing many large angular clasts.

175'

As above, but darker gray and less conglomeratic.

250'

As above.

125'

As above, but slightly sandier

150'

As above, but bedding N10°W, 85°E

45' covered interval

meets section measured by Lloyd Fuller & Fred Hankinson

DR 8746 C, L. Light gray to tan, medium- to coarsely crystalline sandy dolomite.

150'

As above

125'

As above, massive bedding at N20°W, 85°E

205'

as above, but much deformed, sheared

7-18-72

Deacon Rock, Sec. (cont.)

Beginning at approximate river level nearest Deacon Rock, at river level.

50'

DR 8747 F, C, L. Med. gray, sandy, dolomitic ls.; bedding not determinable upon casual examination.

40'

DR 8748 F (float) light gray or pale blue-gray micritic ls. w/ crinoid columnals; abundant

30'

in float, apparently Devonian.

20' } covered interval

— Conglomeratic ls.

30'

DR 8749 F,C,L ls., light gray, wkst., micritic matrix, badly fractured, almost a breccia.

DR 8750 F

5'

DR 8751 F,C,L Pkst., light gray, wf tetracorals, brachiopods.

NOTE: actually, the rock appears to be a conglomerate of light gray wkst. clasts in a light brown wkst. matrix.

⇒ Bedding: N53°E, 32°NW

5'

DR 8752 F,C,L ls., wkst./pkst., no longer conglomeratic; light gray, massively bedded; Thamnopora, tetracorals, Alveolites?, possible stromatoporoids indicate M. Devonian age. and exact equivalent to Salmon trout.

20'

DR 8753 F, C, L Ls., As above tetracorals, numerous crinoid columnals.

30'

DR 8760 F, as above, tetracorals

15'

DR 8754 F, C, L Ls. as above, tetracorals, crinoid columnals

10'

DR 8755 F, C, L As above but more brecciated or conglomeratic w/ light brown siliciclastic matrix; contains tetracorals, stromatoporoids, Thamnopora, Alveolites?

20'

DR 8756 F, L Ls. as above,

wkst./pkst. w/ at least 3 genera of corals, stromatoporoids, crinoid columnals

50'

DR 8757 F, C, L Grst. very light gray, tetracorals, crinoid columnals

5'

DR 8758 F, C, L As above.

20'

DR 8759 F Grst., as above

(8760 follows 8753)

25'

DR 8761 C, L Grst., as above.

15'

DR 8762 F Pkst., conglomeratic, med. gray, tetracorals.

15' ↑ DR 8763 F, C, L Pkst. w/ prob. cavity fillings of lithoclasts/ sandst. Flapst.

40' ↓

60' ↑ — Conglomeratic ls.; clasts of wkst., pkst., & grst. in calcite matrix.

60' ↓ DR 8764 C, L Pkst., dark gray, not conglomeratic.

10' ↕

end of accessible portion.

560' ↑ inaccessible

↓

Ls. conglomerate: clasts of light gray grainstone, ~~and~~ med. gray recrystallized ls., and light gray wkst.

30' ↑

↓ DR 8765 F, C, L Pkst., light tan, w/ clear, recrystallized (?) calcite inclusions.

20' ↑

↓ DR 8766 F, C, L Pkst., med. gray, gastropods, bryozoals.

20'

DR 8767 F, L Pkst., med. gray, grading into light gray wkst., tetracorals, gastropods, crinoid columnals.

10'

DR 8768 F Lm Pkst., w/ tetracorals.

50'

Light brown or tan wkst., as above, w/ many crinoid columnals

40'

Ls., conglomeratic,

50' inaccessible

DR 8769 F, C, L Ls., conglomeratic, w/ clasts of tan pkst./wkst. and med gray wkst. Alveolites?, stromatoporoids?, tetracorals,

85'

Brecciated wkst/pkst., light brown.

125'

Ls. conglomerate w/ light brown pkst., med. gray wkst. clasts

75'

DR 8770 F, C, L Light brown crinoidal pkst.

10'

— ls. conglomerate, as earlier

50'

Light brown, crinoidal pkst.

100'

DR 8771 F, L Light brown crinoidal wkst.

60'

Conglomeratic ls. again

75' } covered interval

5' } Med. gray, wkst.

50' } covered interval

20' conglomeratic ls.

200' } covered interval

20'

DR 8772 F, C, L Light gray crinoidal pkst.,

40'

Light gray crinoidal pkst., as above.

125'

End of accessible section

7-20-72

8773 L ss-cong. Permian (?) NW¼NW¼ T14N R24E

8774 L SS-cong. " SW¼NW¼ T13N R25E

8775 L SS.-cong. " SE¼NE¼ T13N R25E

8776 L ss.-cong. " SE¼SE¼ T14N R 25E

8777 L SS.-cong. " NW¼NW¼ T15N R26E

8778 ss.-cong. " SW¼NE¼ T13N R27E

7-21-72 (37)

Deacon Rock West Section
(= DW)

From the air, entire section appears to dip west at a variable angle for about a mile or more. May be correlatable (unconnectable) to west end of Deacon Rock Section (DR)

Section begins on N bank of Porcupine River at Deacon Rock and westward, presumably up-section. (Dip ≈ 25-30° W)

Light gray rock

Black (iron) 30'

DW 8779 Dolomite, light gray to tan, weathering light brown

150'

10' Intensely brecciated zone w/ some clasts of slightly dolomitic mdst similar to that observed in DR sections.

10' (occasional small bubbles in water)

Mdst. as in clasts above, w/ abundant stylolites

25'

DW 8780 a,b,(c) samples, from seep, apparently coming from about 50-100' upstream

DW 8781 FL Possible algal stromatolites (Polaroid DW-1), light gray and tan bedding

50'

20' ~~Mega~~breccia

Inaccessible portion = 50'

Ls. breccia as above, w/ a mass of massive calcite 15' across.

covered

60'

DW 8782 L Slightly dolomitic mdst., light gray, weathering gray w/ light tan mottling. (Dip ≈ 10-15° W)

60'

— as above

50' ~~Covered~~

— As above, w/ abundant stylolites & possible laminar fenestrae

50'

DW 8783 F, L Light gray, slightly dolomitic, sandst. w/ laminar) fenestrae (oriented dsmpl.) Dip of fenestrae similar) to bedding.

60'

— As above, ~~w/ fenestrae~~ ~~typical~~

50'

— As above, w/ numerous stylolites

40'

~~— Sandstone, DW 8784 L, light gray~~

— As above

10'

DW 8784 L Sandy, dolomitic, ls., medium gray.

150' } covered

— Conglomeratic, clasts of light gray, stromatolitic ls. in light brown, dolomitic, arenitic.

50'

DW 8785 L Light gray sandst.

30'

— As above.

95'

} covered

DW 8786 FL Light gray, stromatolitic (?) and laminar fenestrate mdst.; also oolites w/ pellet(?) nuclei.
→ Indicates very shallow or even supratidal

85'

— Light gray mdst, a few fine laminations visible

20'

— Light gray mdst., laminar fenestral, stylolites, probable stromatolites, very slightly dolomitic.

40

— As above, but not visibly stromatolitic

40'

— Light gray, slightly dolomitic mdst.

30'

— As above

20'

— As above, but locally brecciated

30'

DW 8787 L Sandy, dolomitic, lx., locally brecciated

25'

— As above, but not brecciated

50'

DW 8788 F.L. As above, but w/ strange mottled pattern on weathered.

75'

As above

50'

As above, but lighter gray

50'

As above, but locally brecciated

55'

DW 8789 F.L. Very light gray, sandy, dolomitic lst.

70'

As above.

100'

As above, but partly conglomeratic

60'

As above

85'

As above, (along strike)

160'

As above.

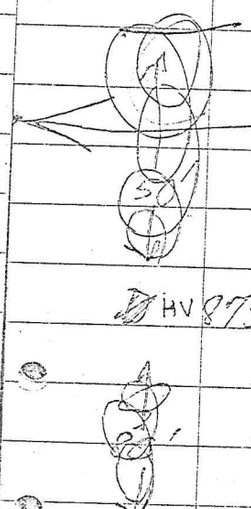
75'

Light gray, sandy, dolomitic lst.

7-21-72 (4b)

Section begins ≃ 1,000 yds. W of oil seep across from Eagle's nest, on N bank of Porcupine River

PROFILE



HV 8791 P, f

HV 8791 P Silty, brownish-black shale, dip ≃ 18° W

as above HV 8792

HV 8792 P, f

as above, but becoming more calcareous

DW 8790 L

as above

End of section

measuring W from bottom up)

25

HV 8793 P, f — Shale, black, silty

30

HV 8794 P, SR (2 bags) (1 bag for Union) — Shale, as above

125 covered

10'

Shale w. 2-3" siltstone interbeds,

2'

HV 8795 L, F, — Grading into dark gray sandy, calcareous siltstone, possible hummocks, brachiopods, massive concretions.

10'

HV 8796 F, L Thin beds of coarse sand w/ brachiopods.

5'

Interbedded shale & siltstone w/ bivalves & brachiopods & other megafossils as in previous samples; very thin-bedded

15'

Black, silty, rooty shale

5'

HV 8797 F, C, L. Ls, dark gray, dipping ≈10° W, ~~platy~~ a crinoidal packstone

w/ tetracorals, brachiopods, quite fetid odor when struck.

3'

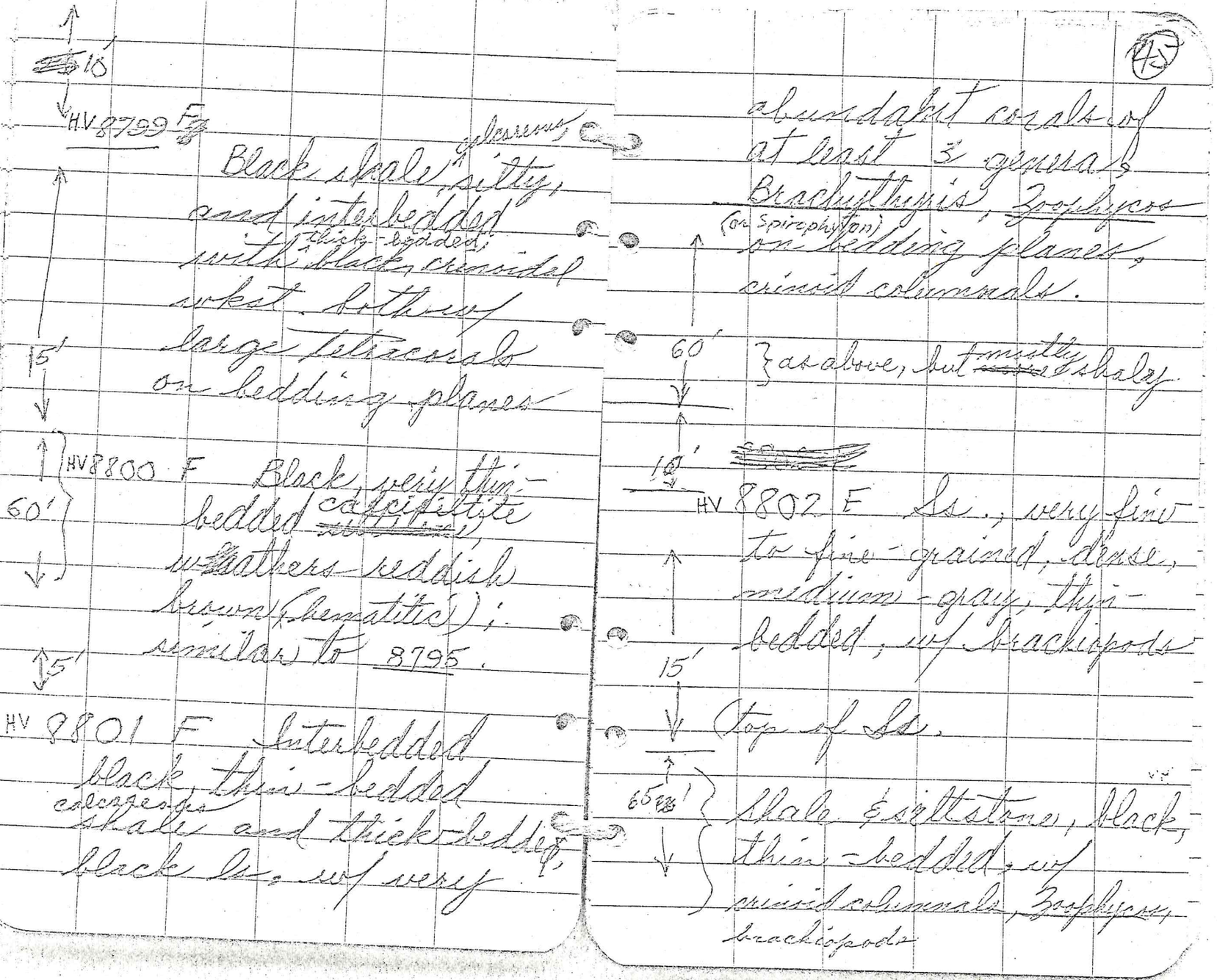
HV 8798 C, L, f, F

Ls, dark gray-black, crinoidal & argillaceous, slightly silty, a calcisiltite.

→ Bedding planes covered w/ fenestrate bryozoa (?) & Spiriferid (?)

→ FCH sap fauna & trace fossils are quite similar to Echooka of North Slope.

→ Corals, however, suggest Miss. (Meramec or Chester)


10'
HV 8799 F
Black shale, silty, and interbedded with thick-bedded, black, cemented orbat. bathers; large lenticonds on bedding planes
15'
60'
HV 8800 F
Black, very thin-bedded calcilutite, weathers reddish brown (hematitic); similar to 8795.
15'
HV 8801 F
Interbedded black, thin-bedded calcareous shales and thick-bedded, black ls., w/ very
abundant corals of at least 3 genera, Brachiopods, Zoophycos (or Spirophyton) on bedding planes, crinoid columnals.
60'
as above, but muddy shaly
10'
HV 8802 F
ls., very fine to fine-grained, dense, medium-gray, thin-bedded, w/ brachiopods
15'
top of ls.
65 Feet
Shale & siltstone, black, thin-bedded, w/ crinoid columnals, Zoophycos, brachiopods

5 ↑
HV 8803 F, L Muddy siltstone, black, thin-bedded, fairly abundant fossils of different kind than Green Canyon section; may be Penn.

125' ↓

} abundant Leptostrophia
} brachiopods

~~top of section~~

→ ¼ mi. W of Station 64 with same dip. Interval is a slough.

7-31-72

Ridge NW of Fossil Peak

Rock is intensely sheared mdst. overlying (?) basalt (Fossil Peak Volcanics). Some of ls appears to be stromatolitic but difficult to be certain.

→ Probable bedding N76E, 85°SE

8-2-72 (F)

8804F (3 bags)

Location is ~~quarry~~ in SE corner of quarry along pipeline dirt-road ≈ 3 mi. W of Last Creek, W of Livengood.

Silt: black, blocky claystone, waxy, non-calcareous, a single bed about 2" thick with chert which is green to black or brown. Grab. The Livengood chert Chert is thin- to thick-bedded.

Graptolites are Diplograptids (Silur Ord.)

8805 P, L Black, pencil-shale, slightly phyllitic, w/ sc. fragments showing compression & molds of wood.
Locatn: Pit on N. side of Elliott highway ~~SE¼~~, ~~SE¼~~, S½ E½ S½ T8N, R4W, Livengood Quadrangle, ~ 2 mi. W. of Tolovana River.

8806 L, P Small pit at N. side of Elliott Highway ~ .9 mi. W of Cleary Creek, SE¼, SW¼, ~~SE¼~~, T8N, R4W, Livengood Quadrangle.
Lithology: Poorly fissile black, platy sh. interbedded w/ poorly sorted, silty, poorly ~~sorted~~ sorted, ss. w/ plant fragments. Sh. contains black chert pebbles, but no evidence of trilobites or other marine fossils.

SW¼SE¼ T9NR1E | 8-2-72
Silverwood Quad.

White Mountains
Windy Gap South Section
(= B WS)

Section begins in Fossil Creek Volcanics at E. end of ridge, extending W from crest of range, presumably, from top to bottom.

WS 8807 L Purplish-green, fine-grained andesite (?)

10'

WS 8808 F, L (Bedding: N 19°E, 47°E) Is, ~~light~~ gray, weathering medium gray, tan, or dark gray, though no macrofossils positively identifiable, rock appears to be a badly recrystallized stromatoporoid bdst.

→ Outcrop is a small lenticular body (patch reef(?)) lying entirely within Fossil Creek volcanics; about 10' thick x 30' long.

5'

WS 8809 F, L Lithology as above; a lenticular body but much smaller and 30' laterally, nearly ~~no~~ strike

40'

WS 8810 F, C, L A small, lenticular ls. body.

(47)

as above, but less completely recrystallized. Here, definitely appears to be a ~~dacite~~ massive ~~lava~~ metaporphyroidal lobe(?); possibly ~~of~~ Thompson! (N. or E. Diamond(?)!)

30'

WS 8811 F, L Massive stromatoporoid lobe(?) of tetraxonids; occurring as a small, recrystallized body within Fossil Creek Volcanics, as above. Degree of recrystallization less than above. (75' wide)

20'

WS 8812 F, L Massive stromatoporoid lobe(?) with a few scattered tetraxonids (Squamosphaerites(?)) Color medium-gray to dark gray as degree of recrystallization continues to decrease.

25'

WS 8813 F, C, L Massive stromatoporoid lobe(?) of tetraxonids; appears to be some ~~dacite~~ rhyolite(?) pkst. matrix.

60'

WS 8814 F, C, L Lenticular bodies (patch reefs(?)) have apparently merged — entire slope is now (a.) apparently mostly a massive stromatoporoid lobe(?) of wkst./pkst. matrix

WS 8815 F Laterally on strike with WS 8810 F, L Abundant colonial tetracorals & stroms.

200' (covered)

WS 8816 F, L (float) A long interval where covered by debris; sample from float.

250' (covered)

WS 8817 F, L Massive, recrystallized stromatoporoid bdst., medium gray; no bedding discernible

33'

WS 8818 F, L Massive strom. bdst; unbedded but growth surface only slightly convolute.

15'

B-3-72

WS 8819 F (float) massive strom. bdst., med. gray, as before; growth surfaces ≈ N30°E, vertical.

20'

WS 8820 F Massive strom. bdst. as above, light to med. gray, unbedded.

40'

WS 8821 F, L Massive strom. bdst, as above.

25'

— As above

8-3-72 (51)

↑ 20'

WS 8822 F,C,L Massive stromat. ldst., med. gray with thin white beads.

↑ 35'

WS 8823 F,L Massive stromat. ldst., as above.

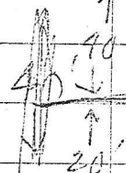
↑ 50'

WS 8824 F,L As above.

↑ 50'

WS 8825 F,C,L Massive stromat. ldst. with tetracorals, brachiopods (?), crinoid columnals.

↑ 40'



↓ 20'

As above

WS 8826 L Dark brown to black basic igneous rock as float.

↑ 75'

WS 8827 L Badly recrystallized stromatoporoid ldst. with much included volcanic debris; medium gray but stained red by iron.

↑ 95'

WS 8828 F,L Massive stromat. ldst., med. gray, completely unbedded but growth surfaces N20°E, 85°E; several joint sets present which may be confused w/ bedding.

8-3-72 (5)

29

40'

WS 8829 F,L Massive strom. bdst with poss. recrystallized Amphiporas.

40'

WS 8830 F,L Massive strom. bdst., light to medium gray.

60' } mostly covered

— As above ~~mostly covered~~

30' } mostly covered

— As above

75' } mostly covered

WS 8831 F,L Light gray, massive strom. bdst.

60'

— As above

40'

WS 8832 F,L As above.

40'

— As above

30'

WS 8833 F,C,L Massive strom bdst., light gray w/ veins of white calcite; rather badly recrystallized.

8-3-72 (54)

↑ 40'

WS 8834 F,L Massive strom. lmst., as above.

↑ 40'

WS 8835 F,L As above.

↑ 45'

WS 8836 F,L Massive strom. lmst., med. gray, unbedded

↑ 35'

WS 8837 F,L As above

↑ 50'

WS 8838 F,L As above.

↑ 40'

As above

↑ 50'

WS 8839 F,L light gray, massive strom lmst.

↑ 30'

As above

↑ 40'

WS 8840 F,L Light gray, massive strom. lmst.; rather badly recrystallized, w/ numerous small white calcite veins

↑ 30'

WS 8841 F,L As above

↑ 20'

As above

↓ 45'

~~WS~~ 8842 F, L Massive strom. lmst

↑ 45'

WS 8843 F, L As above

↑ ~~10'~~

WS 8844 F (float) As above

↑ 50'

WS 8845 F, L Massive strom. lmst. with a few scattered tetracorals (favositids)

↑ 30'

WS 8846 F (float) coral head in float

↑ 10'

Contact with basic, green igneous rock

↓ 5'

WS 8847 L Fossil Creek Volcanics (?) In places, almost red, weathering maroon.

↓ 100'

WS 8848 L, Geochron | Greenish basalt (?)

WS 8849 F, C (float) Crinoidal pkst. found in float just above contact.

July 17th

Allen left to return to Tulsa. Fred, Andy, Tom and I will measure section at Deacon Rx. and look at S.S. at mouth Coleson and Eichhorn Creek. The first rainy weather that we've had!

Mouth Coleson

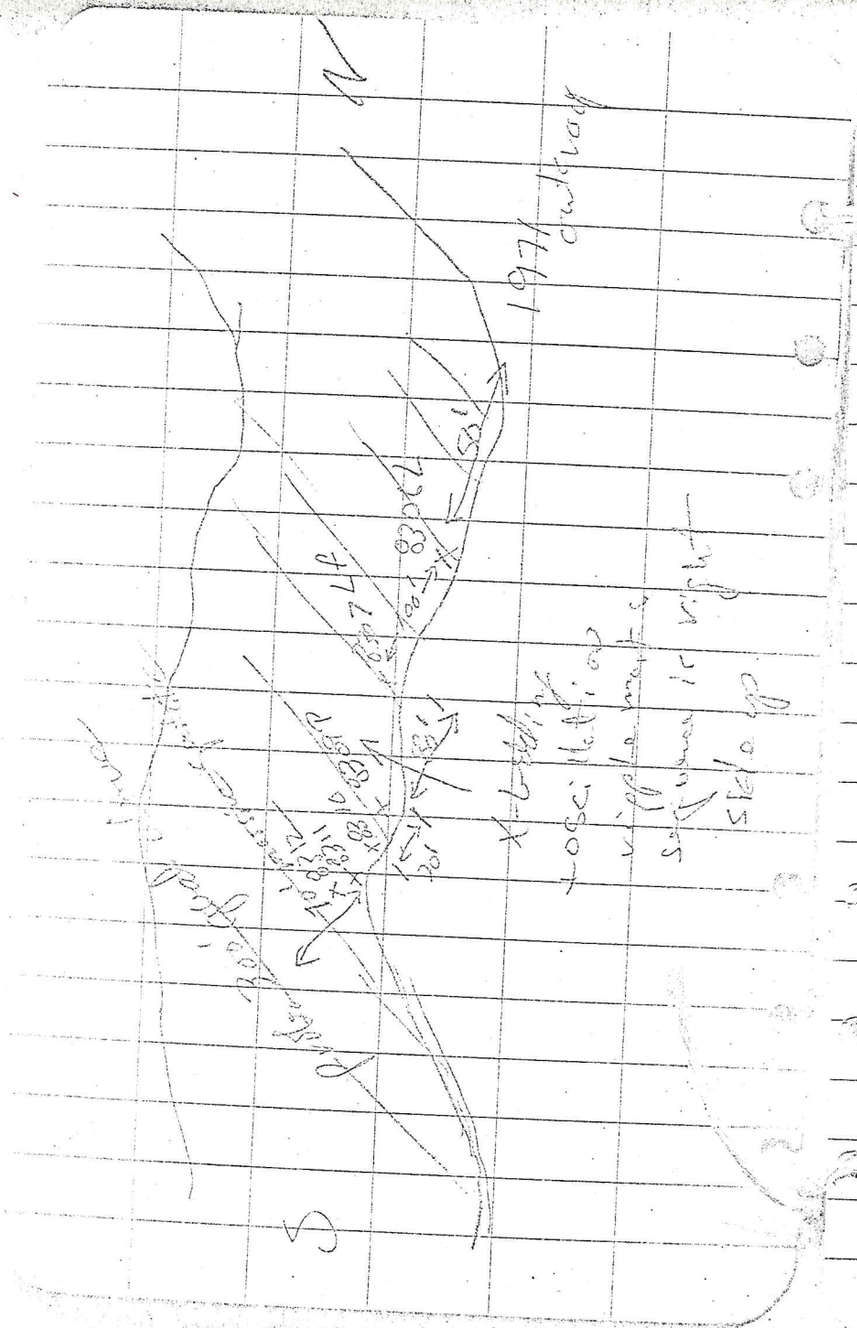
8306'

Dip 150° @ 47

ss, light brn gry f-g, g-fg, thin lam - thin bedded

quartzitic

8302'-f siltstn, gry, wea. rusty gry, argill, sandy, wfra. finite



(52)

8308 PL – ss, ca wl
interbeds of s.lt.stn gray
argill. mica. v. thin
bedded w.a. pyrite
fractures

8309 P s.lt.stn, argill

8310 P s.lt.stn, ca

8311 P quartzite

8312 quartzite, very clean
x bedd. ccc. local
coarse, hard lite
This entire sequence looks
like marine(?) marine.
It is clean, massive in
places and then thinly
laminated w/ mica in others.
Some chl. pebble cong.

in river gravel bgs at Kanawit (?) outcrops upstream.

8313 P on east side of Salem Iron Ore outcrop - about 40' from top of ridge, prob. 4ms - 5ms ft. section below this sample.

8314 Just downstream on east side of Coleman Rd.
ls. dk. gy, > fossil (?)

"Conical buildup"
stromatolitic mounds
3-4" - 1 ft

8316 CP
The quartzite is
probably overlain by dk.
Sandy ls. argill. w/
thin living shale partings
which is intruded
lain by the stromatolitic
ls. (samples 8314-15)

6' { 8315 FC
8314 (Flow)
8' { 8316 CP
+
covered (Cook)?
quartzite

Have not left Dry Fork from old camp to date.

Devon Rock Sect. (Top)

Dip 260° @ 10°

8317C Is lt. tan gray dolomitic fine xgd, rr xy ll, possible stromb

continue section on 10ft

8317C

50'

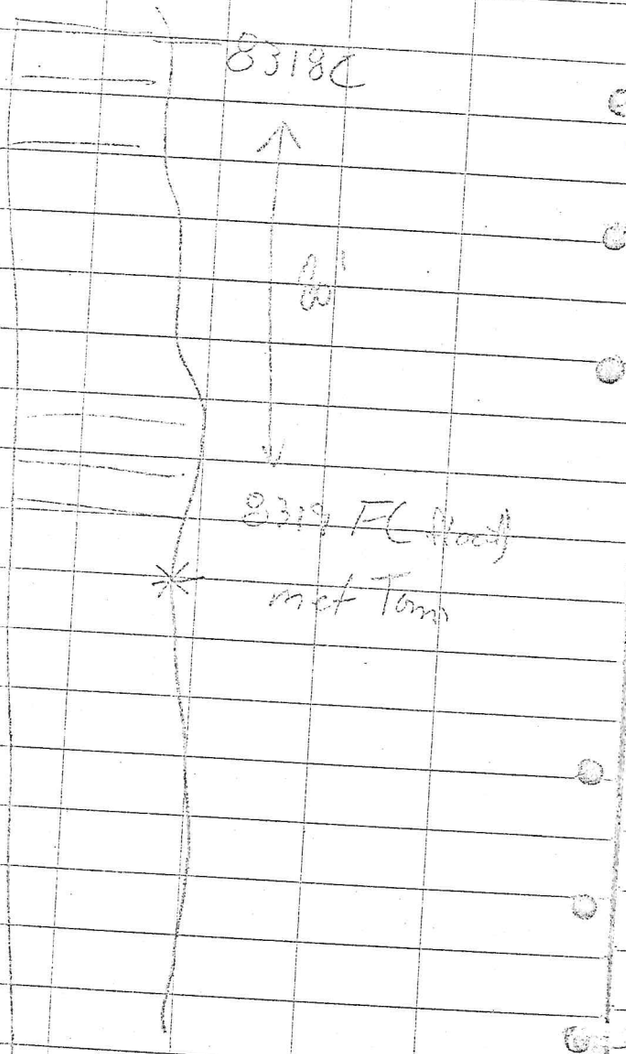
covered slope

40' /s

8320C

100'

8320C /s lgt med gray, dolomitic, rr xy ll, thinly laminated, micritic silty/dk. chert lenses



8318C is, med gry, silty

8318 (flat) gastropods in dk. gry. silty is.

July 18

Finish Deacon Pr. Sect.
(Dev. port)
Look at Mrs. Sandstr.

8321 F Is med cry, mixtc
wet lgt gry w/ thin bands
of dk. gy - blk. cht.
abnt Corals, (tracks, poles (?)
in zones, wackstn, thin-med bd.
prob. about 50' exposed
on hill ridge

8322 CF (From same zone
as 8321.

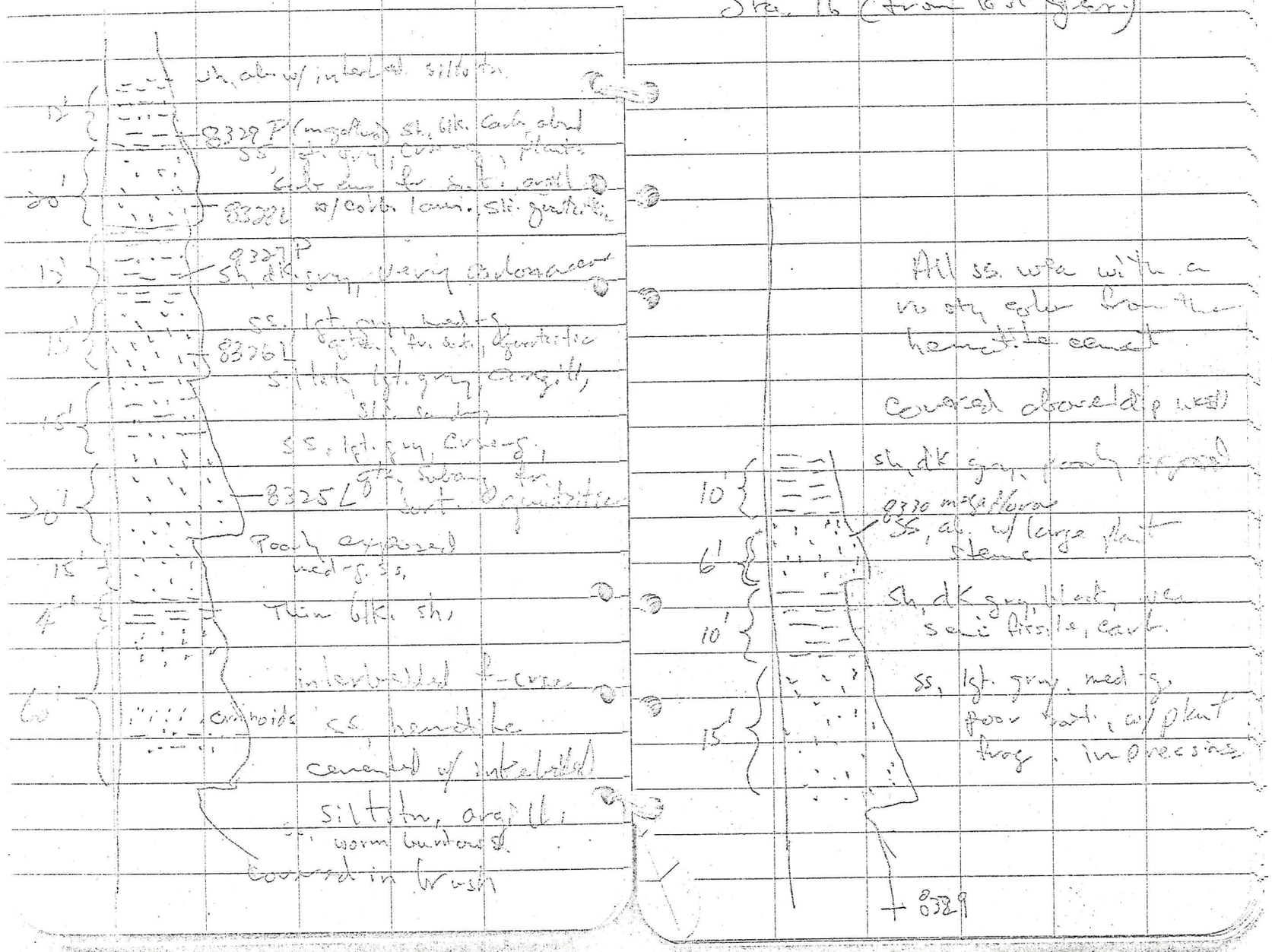
Have used 3½ bbls fuel at
Old Camp to date.

Top of the Deacon Pr.
Section (See T+ Analysis)
Is mostly a crinoidal
grainst that is rich
R corals in places?
(Mid. Dev.) The top is
very bioclastic (tectonic)
There are lots of boulders
in the float (?).

8323 ls, med-gry, wea lgt. gry. Looks like fairly abd of small fossils, ostracods (?), crinoids, small brachs (?) This node is brecciated may be near a fault zone here.

8324 L-SS, lt. brn-gry, f-med-g, quartzose, clean, some hematite cement. Looks like that from "St Paul" at locality 23) from last year. USGS reports Upper Paleozoic fossils from this locality.

Sta. 16 (from last year)



8321 Ft (same as Sta 72 last year)

Crinoids, brach frag.

in SS,

200-300' of interbed. silt/stn, silty mudstn + sandy stn. This doesn't appear to be south the same interval as Sta 14. It is more marine tan CS, it's brn w/ rust wea stain, mdst-gy, contains crin, ost, and a few brachs, v bedded.

Can't find any fossils other than those collected last year.

Pic 5 roll 3

8332-L. (Deep Rock)

Dol. white granular

Soft para(?) Sucrosic(??)

July 19th

Fred, Andy & I will look at south flank of Carp Mtn. and to the west. Tom is plotting section and looking at fossils.

8333 P, gry mudstn intcl w/ mostly crse g to v. crse ss. and cong., calc. pebble cong.

8334 L

8335 Cl

Sequence appears to grade upward from intcl. cong & ss (8334) to a transitional ss - siltstn zone to limy sandstone (8335)

8340 F. is dk gry dolomitic, very well cherted stromatop (?)

Heading southwest along ridge to check Pzo units.

8341 Grn Diorite-Gabbro has a layered appearance as in a segregated sill. Has sediments in This outcrop

8342 Pch, dk gry w/ thin beds siltstone. Could be Biederman Argillite

July 30th

Fred, Tom & Andy will look at rocks around Bear Mt.

Fred has hotdogs Cooper & Conrad visited

July 31st

Measured Moss column and set at John Hamlet Village. Fred checked outcrops with at Porcupine Rv.

Sampled another fossil oil seep.

Study Area
will include spot readings
in Cross Mts
8343 e

is multi-dir. syn
micaites, vs-gall. qtzs
ft grng, lam. - x-lam

9344 l cong. clst. pebble
Th sequence here from
north to south, is
clst pebble cong - Sandstone
cong - clst, sl-sh and
brk to cong. It is
down dip from the ls,
in the west Cross
Mts Section and it
the ls. is older than
the clastics of the

upper in that
section from the
Creek into, either i.s.
overturned anticline
(to the south) on the
South flank, or how
the unit be repeated
by light angle reverse
fault that dip South.

B345L (mega flora)
S&S: Hahn, brn, wea
rusty, mica, load casts,
hematitic wood fragments
w/ rip-up beds along
w/ qtz pebbles up to ½"
most pebbles are qtz
w/ some grn cht.
matrix appears v. sandy
Sorted. This looks

like a continental
Sequence and is
finally no older than
Dev. Some of the
wood frag. are "coalified"
Also pebbles of
schist, s.s.,
Possible petrified
wood (limb)
The cong. constituents
look like river gravel
(channel deposit)
Sideup wear maroon
and variegated
Definitely more marine
and not tall like cong
in the Mts. to the
north.

8346 L Mostly hornfel
(looks like light gray chert)
w/ x-gall, fault, porphy
phenocrysts of hornblend
laths, grains.

8347 L Diorite-Gabbro porph.
Seems to fit x-gal to cm-
xygall, plag xsts
xenoliths - possible
border "chilling".

8348 L White qtz clean ss and
calc. sandstn that is
contact metamorphosed
DI rhomb outlines weathered
out to give excellent
porosity

Cooper & Conrad returned

in afternoon

1.) Reach 25 backup bags

2.) Sample rock at all stops

3.) show them.

Salmon trail ✓

Misc. narrow cross run

Sc. at Colson ✓

Anvil J. (?) ✓

Mid Dan. Creek ✓

Dol at Dacon Pk ✓

Misc. Calc. - Sil ✓

Salmon Village ✓

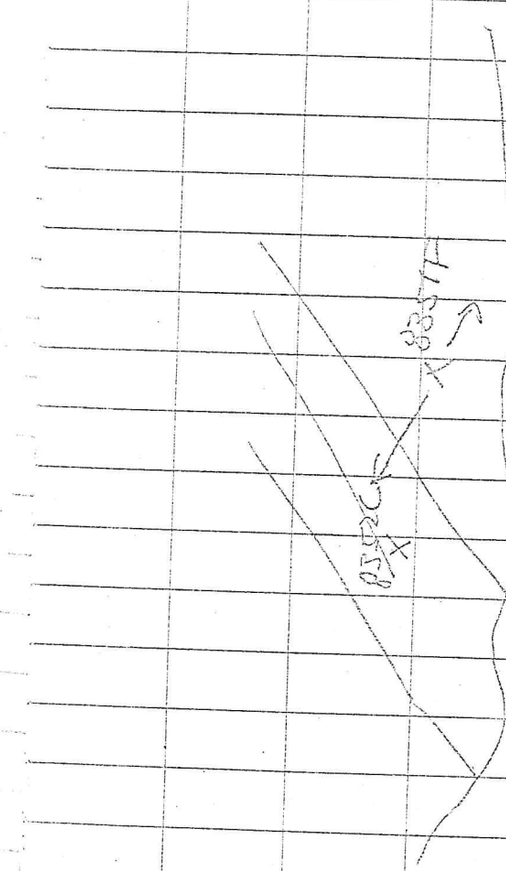
July 28th

Giving Cooper + Conrad
tour at Porcupine Rv. Area.

8349 L (Vel.)
Dating basalt flow
w/ baked scoria and
wood, tuff, zeolites,
flat, about 100 - 200'

SR.
8358 PW Dacite dyke in
upper 300' just below
sandy siltstone. Looks
shelf edge to
me

8357 F 0:1 Seq
L: dk grey f xyll
w/ salt corals, gastropods
trilobites (?), clams



035 C

grading upward right at
Seep 5 to dol lst-lam
Kgal. 50' rock exposed

July 24th
will check early
Paleozoic carbonates at
Lime Peak. Possible to
Victoria Mt.

July 25th
Final Tom + Mindy
will sample 0.1 shale
and Crest at Mation.
Want to Fairbanks to
arrange move to
Hiver Gard

Wing Tree Hotel
Ward Gray

Gear

Western Boots
Sleeping Bags
Shaving Kit
to Northland
in Fairbanks.

1) Ward Gray, Sr. will provide the cook.
2) Cook Name when we arrive Sat.
3) Leave Seven Motors from Travelers Inn
4) Call Chuck Sat. night.

two with bathroom
the 14th
1) Call Chuck ~~Sat, 2nd~~ First 4th
~~Next Sat, 2nd~~
2) Call Marcus Brand
Check with 4:52 - 5:30 OK
Forty Fellows Head Cook + Trunk
about Chris Sunday, noon, 30th
3) ~~Make Hot Sauce~~
~~3 M Fire Control~~
Shut down date on John can help! In ~~Helicopter pilot~~ ~~Fire Chief~~
expert. Work ~~Battalion Chief~~
~~4) Need 3 rolls Extra Chain~~
~~high speed (Hoo)~~
~~3 Nails~~
5) ~~Call Fast Lane~~
~~344-6017~~
~~Carmine or Mrs. Hill Fillion~~
~~Will be three together~~
~~Sat the. Will Cook~~
~~they will meet at the~~

~~Cook transfer sheets~~

~~Cut sheet out~~

~~Andy will go to L A for~~
~~3 days then to Denver~~
~~then to Reno~~

~~Quality Meats pick~~
~~up for Frank~~

~~Cross Christmas~~
~~Bridge closures~~
~~the first letter on~~
~~Driving to work~~
on right side

1) Start on Cobalt

~~X~~ Angle right curve.

~~Pr marks Disc~~
~~Sign the Date~~

~~Date for Future~~

Raw (a) at Frankfurters
~~Sign~~
sides
2 ~~to~~ Smoked Salmon
for 10 + on lockers
Billy

July 26th

Fred, Andy + Tom will look at Carbonate at Steamboat Mt. and at Permian(?) s.s. along Black Rock. It contains amphiphora(?) and gastropods. Ord-Dev.(?), Cond.- excellent oxygen zone.

July 27th

Fresh cuts, I will check Permian u.s. and look. for Penn. NW of Elgin Mt

8353L CU pebble cong, grn, brn, red & tan-brn, small apple green chert grains, coarse matrix, cong. clasts ¼-½" up to 4" dia. Some S.S. pebbles in cong.

8354P DK. grn sh. w/thin (5-6") beds of dk. grn sandy s. Hsh, poss. plant frag.

8355P, aa

8356Pf

This outcrop in stream

Valley suggests (?) that
may underlie some
that is on hill slope.

8357 FL (clayey) ss, med-gy,
wea bxn-fx, fg, gtz,
shadt clams, Bucha
Inoceramus and other
fossils (?) brachs (?)
some skolang (dic
porosity, gentz-tze

8358 FL ss gentz-tze
35' section by altimeter

8359 FLss Grn f-g.,
Quartzose, fos. ?, Frang
fewd stdl mbble pcs.
in places

8360 Pf Sr dk. gy – blk.
clayst. about
250'. Relationship
to SS not known
Prob. underlies it
Clam (?)

8360 F small clams (?)
Bucktia (?)
Looks like Glenn Sh.
Thin sl. dolomitic
bands (3-4")
Dip 135° @ 30°

July 28th

Fred, Tom & I will meet Chet North of Farmington and check mid Dev. NW of Salmon Village

8361 PSv Shale, gn black, (shell molds)

8362 PSv, molds, gn

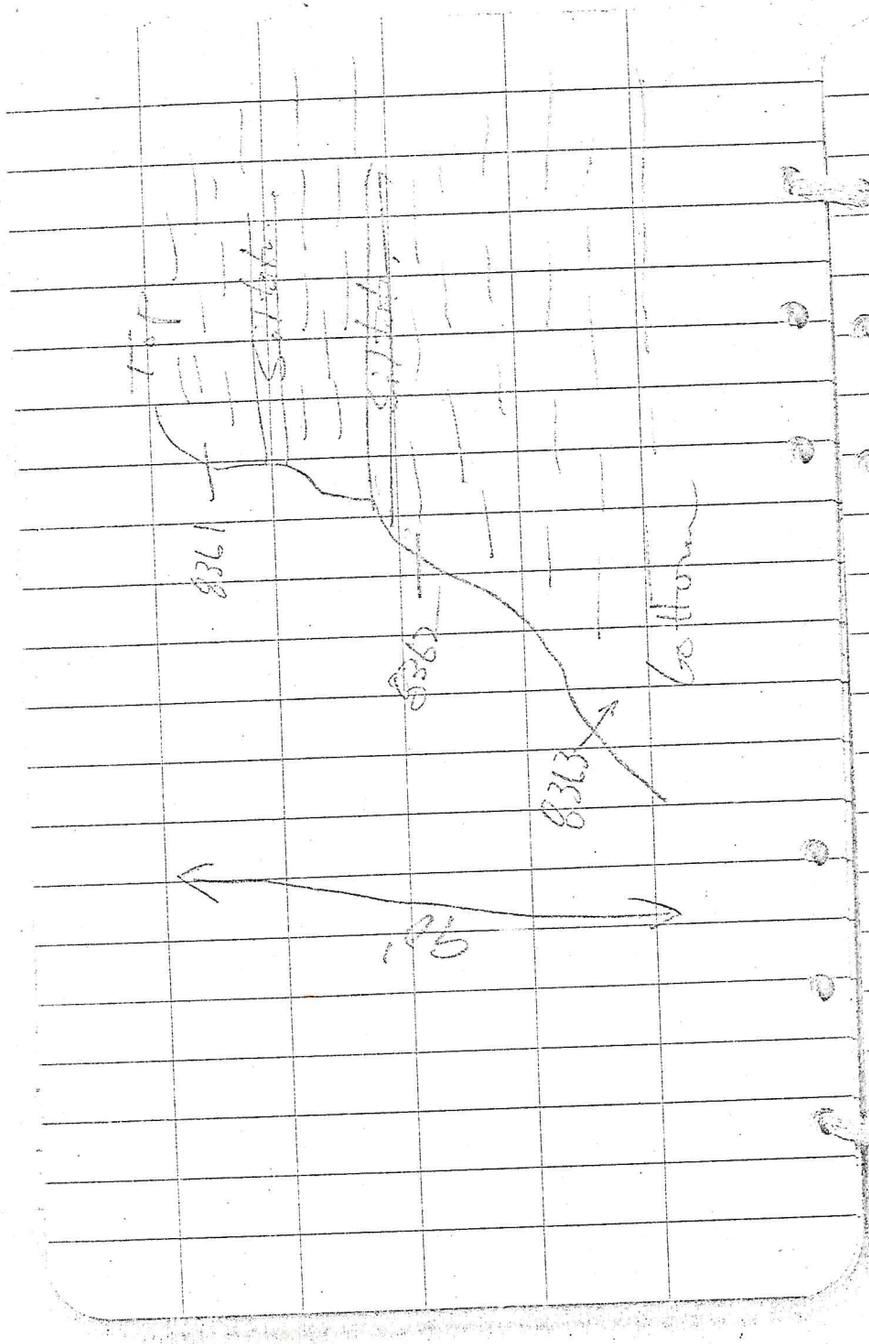
8363 PSv molds gn w/ Gyp. weathering

Tcorn Sh

The above section should be dated to show the carbonization trend toward the basin.

Dip 330° @ 20°

Prob. Jur. or Prec



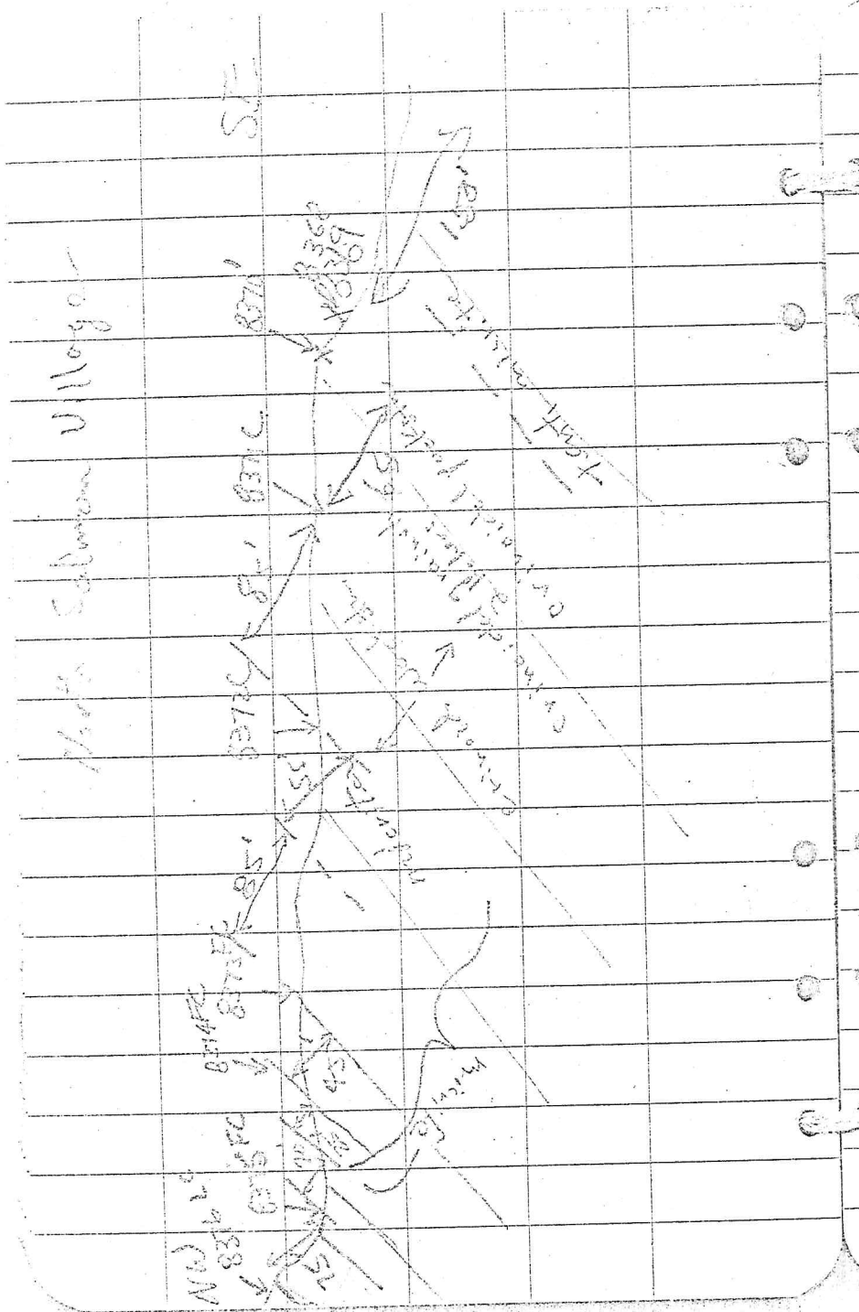
The outcrops projects under Bear Mt. Is it possible that the conglomerate on Bear Mt. is Cretaceous?

8364 F Dol, med. to lt. gray, fine-grained, dense, brittle, orthoceds, Scotia pods tabulate coral 30' exposed,

8365 C, Thermopolis? faulted out.

Thin med-bedded Oppel plicata (?)

about 500' covered to the next outcrop to the NW at Eckmore Village.



8366 L Sh. blk. gray w/ [illegible]

8367 PS+ [illegible] Lds. [illegible] hex. fleshing layer gray shale

Plant 3/8" exposed

8369 F ls. l. blk. gray, visible ostracods

contact (Emsian?)

8369 C

10'

8370 C Crinoidal packstone

8371 C Crin. wackstone

8372 C micrite

8373 F micrite w/ pack. amphiphora.

8374 FC micrite w/ amphiphora (?)

8325 ls lt gy, "sugary" dolomitic(?), pcs. gastro, (narrow casts.

8326 ls, lt gy, oolitic

The lower part of this section has a tentaculite zone overlain by crinoidal packstone as does the top of the Johnson Valley section and thus it is most likely an upward extension of that section.

July 29th.

1) Check outcrops along Rivers south of Cozy Inn.

2) Move to Livengood via Fairbanks.

3) Call Chuck
Send signal to Fred in Anch.
Report Progress.

4) Call Navy Branch to arrange move to Livengood.

Used 26 bbls gas at Circle

8277' dk gry blocky bnd. sh. well indurated w/ interbeds up to 4'

at ss brn-grn, wea bedding
brn med-g, quartzose
fr. cart hem lite
contact sharp contact
w/ chlde at base. ss.
hard, sericitic
green mineral (glauc?)
dip 210° @ 80°
some low angle lam x-
cutting pre. flow
structure in ss.
8378L 8379P
The unit mapped as
Pcl along Preacher Creek
is green & reddish phyllites
Pcl of Birch Creek Schist

July 30th

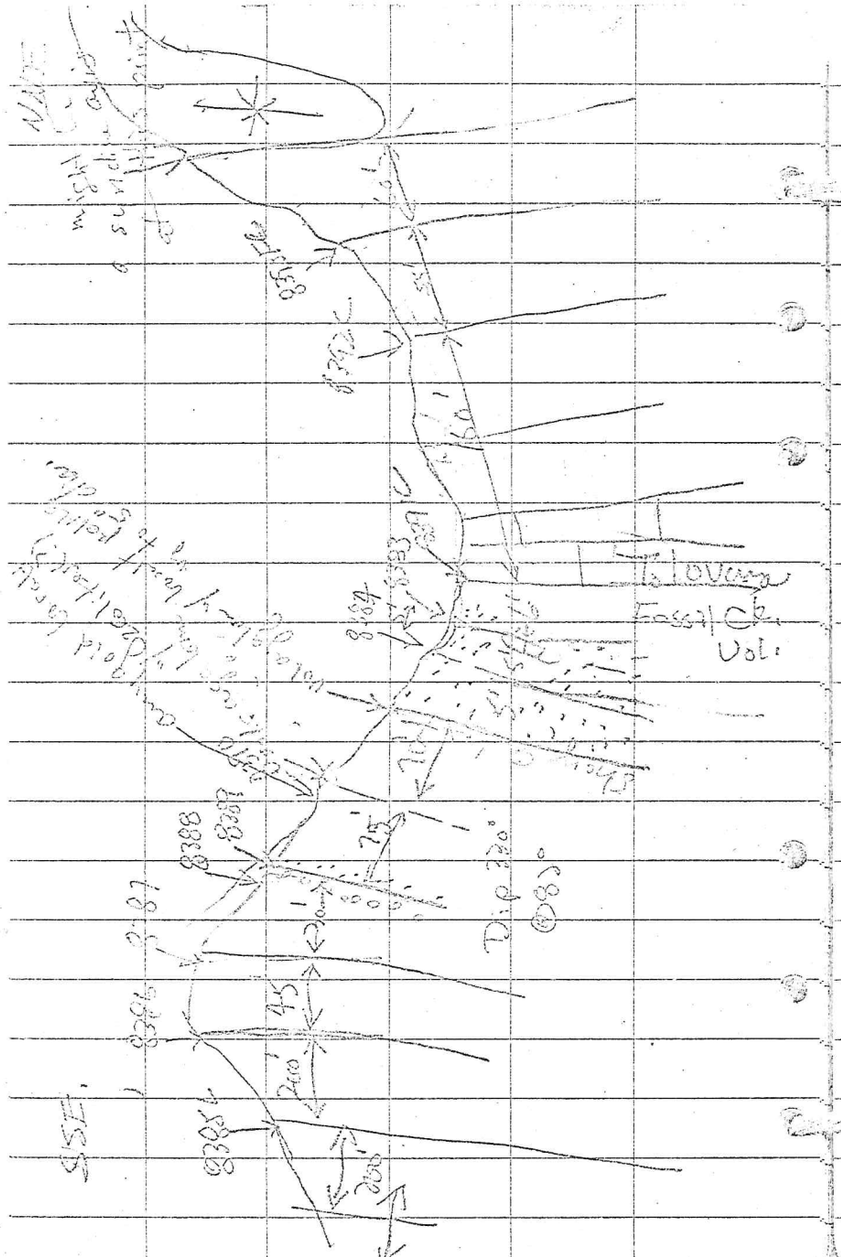
Moving to Livengood

8380 LC

Ls, lt brn gry wea lyr
Sm, Dip 20° @ 34°
faint "pearl chert" (?)
rexygall.

8381 F. para vegall
chert (coal?)

8382 L-Leo. Basic Tuffaceous



July 31st

Will look at Foss. Ck. Vol + Tolovana Ls. in White Mts.

8383 F Dam, small cond. Westerm in bluish position: Fabiania Chaetetes(?), colonial (2' Ft. thick) bm in mat-grain ss, vol. grains + glass, some qtz, tuffaceous

8382 F ss, vol. grains, f-med-g, grn-gry, scatt. yel-b, wea. maroon + green, conds, bryoz, gastro, crinoids.

8385 Locality Vol. agglomerate basalt w/ reef-los, at basalt up to 1" near the crest of an anticline in the Foss. Ck. Vol

8386L Vol pebble cong.
pebbles up to 3"
poorly sorted, pebbles
of basalt scoria,
rhyolite, in tuffaceous
w/ basalt agglomerate

8387L Vol cong.
pebbles up to 1½"
coarse salt, matrix
and basalt matrix

8388L Vol cong w/ <
ls. pebbles

8389L Some vol. ss, just below
w/ calc matrix.

8390L Amygdoid basalt

8391 CL Tolevan ls.
ls, med gry, vfg
lgt. gry micrite.
rexyall

8392 ls, med-gry, wea / lt
gry micrite

8393 FC ls, brn-gry
rexyall, one pass.
Organic structure
section

8394 thin lam dk. gry
calc sh w/ thin
8395 LF 6-8 inch dk gry ls
beds. The limestones
contain laminites and
what appears to be
pre-compaction burrows

deformation the
shales contain streaks
of lam + x-lam. silt/sh.
This unit is in contact
w/ the a shallow intrusive
(Andesite) and there are
sills of the andesite
in the dk. sh + s.
The sh + s. has been
somewhat metamorphosed
by the intrusive.
This sequence is
most likely Cambrian
or Ordovician.

8396L Green basic intrusive
into sh + dirty ss. that
is now semi-schist.

8397 LF A thick sequence of laterally dkt. w-thin interbeds of siltstn, shale, occ. dk. green intrusives are probably sills. This sequence is most likely Pine Sill.

Poss. poorly preserved plant(?) remains

Cal unit

the shallow intrusive
(dacite) The chert
most likely hornfel that
has been baked by
the intrusives They
appear in contact w/
the intrusives
Need to chk the ages
of intrusives to compare
to that at 8397 where
the sequence has less
intrusives but the
other lithology is very
similar

8400 Fe bog w/ scum
that may be oil

1 August

Good weather again will
look at rocks in Mt.
Sobieski Area. Returned
Glenn's truck to Fairbanks

8398 Cl Fsh. dk. gy - blk,
each w/ thin interbeds of
dk. gy - blk. chalky, carbonaceous
lc. Mygood as. ?
looks much like
outcrop 8394 - RT.
Very carbonaceous. Poss.
one disturbed trilobite

8399 L Geo. We crossed a
sequence of siltstone, shale
and then chert, shale, siltstone
w/ many layers of green
basalt (fine x-gill) contd

8404 Cap the hill from 8403, lt. vexyall, however good outcrops show large crinoids, worked to for perfect.

8401

ss, siltstone and shales brn-vgy, wea reddish-brn w/ sandstone (?), talt bioclastic. The shales are parallel-micritic (?) Glass grains in sand, silt + sh

8402 FC

ls, med-gy, wea light gry, highly sheared + vexyall micrite, massive, possible vexyall. stromatop. (?)

8403 FC

Ls med-gy, wea lt. gry on tread w/ 8402 outcrop, boundstone, corals, stromatop, crinoids. Colonial and solitary corals, amphipleura

Still part of transition

looks like "two halves"

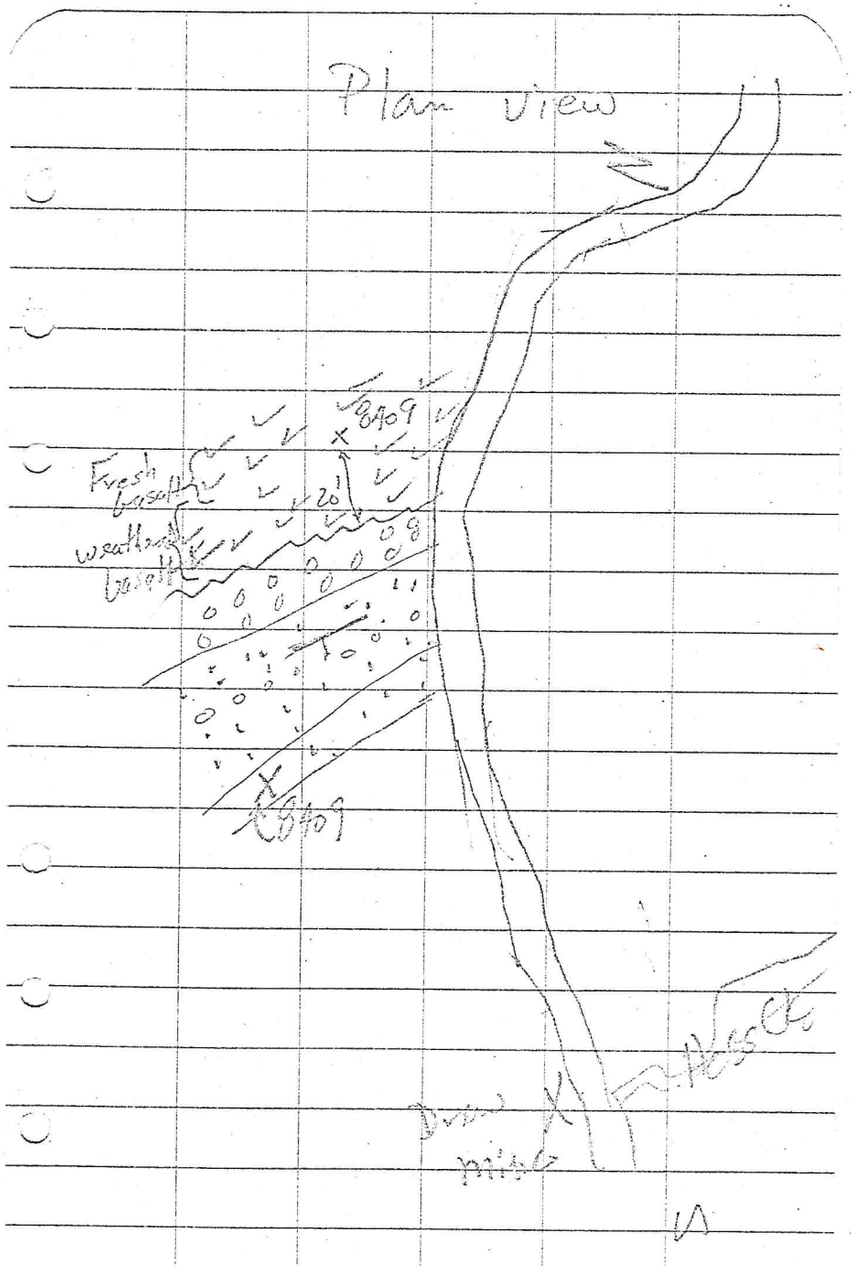
Aug 2

8405 L mega flow(?) SS + SSh sequence (Pzw) poss plant frag in SS, med-grn L-med. Sltst w/ vol frag Greywacke

8406 PSh, dk grn-blk, thinly bd at end of outcrop is hard (baked) shale w/ v. fine-xgl'd dk grn grn ign, cons that is prob. sills in the shale sequence. No evidence that they are volcanic flows. This might be a

8407 (prob L Ig. Coltivo med-crs-x-gd. Much coarser than the Ig at stop 8405. This is prob a stock and the sills + dikes were at least stay. Looks exactly like the stocks at Beaver Trang. stations. Need to compare to Fossil CK Vol. from White Mts.

eugeosynclinal associations
Age unknown - either Permian or Ord (?)(?)


Plan view
Fresh basalt
weathered basalt
20'
Dune sand
Flood

grn ltn green vol and
very fine gtze pebbles
Trough x-bedding
Channel deposit
Pic 25-26 leaf impression
Pic 27 Wood in conq
Pic 28-29 Tert. channel
cutting into Pennsn (?)
basalt.
Pic 29 10' of grn basalt
(right side) above first
basalt, uncon. in
center. 5' channel conq
w/ petrified log at contact
(top) with. Y. bedded
sandstone (5')
8410 (Section (20' below Tert.
plug for contact) Be careful to
with use unweathered piece
analysis of rock for age date

8408 L Type Remnants
Conq 1'S bl brn-grn,
coarse tuffaceous
SS, brn w/ large clasts
grn, vol. (?), very limy,
tuffaceous (?)
8408C Some brick
red shale interbedded
w/ tn. ls.

(Image Plane)
8409 Tert. vol. pebble
Conq w/ gl. grn silt
SS that contains
beautiful leaf impression
(Glenn bar pic) The
conq contains large
wood stems + limbs.
Pebbles are red, grn and

Judy and Tom are measuring section at Talkeetna Limestone at Study Loc.

Aug 3rd

Will finish measuring Talkeetna at Wind Gap South (WS) section. Tom reports patch reefs from this section.

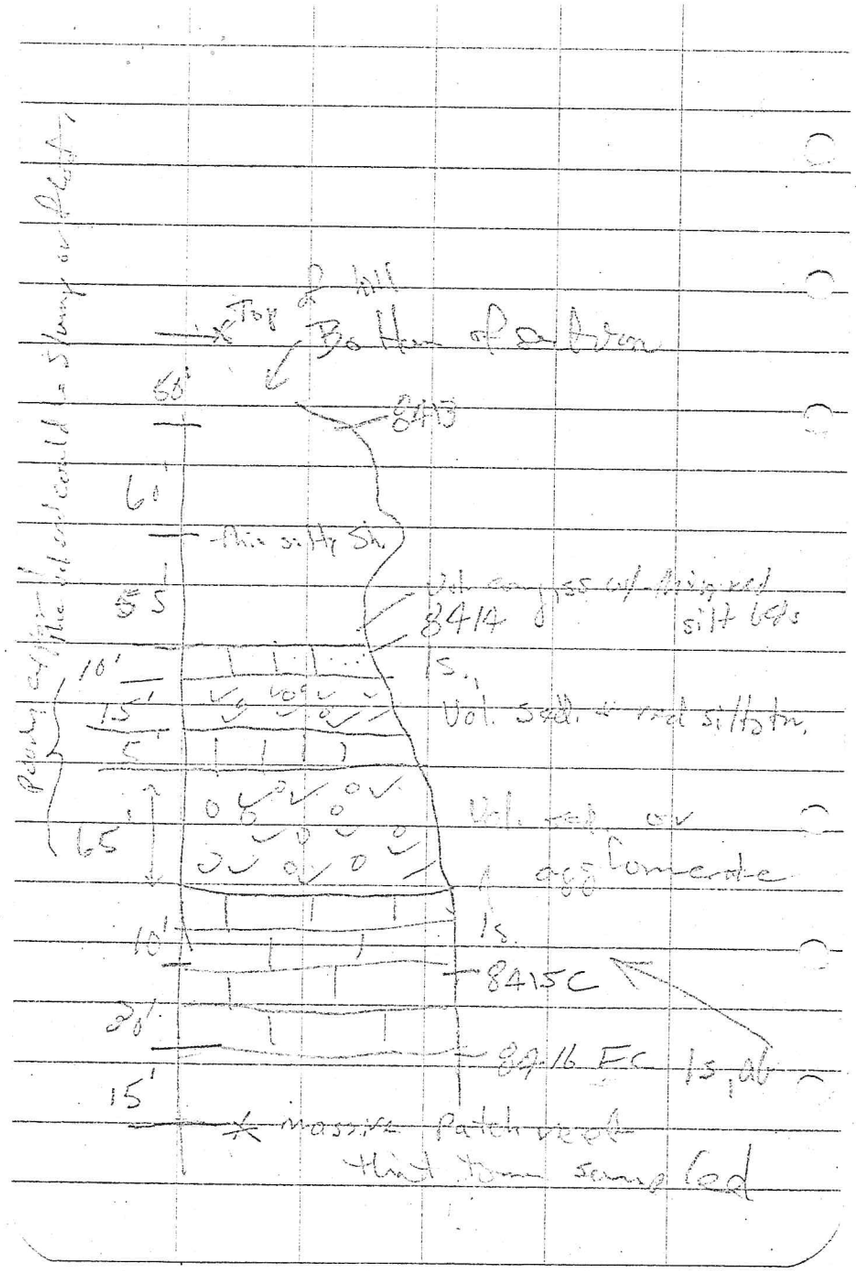
Call Bob Neal - will be in Anchorage Mon 7th Aug.

Supplies Needed
Shipping tags
Bubble Bags
Sample Bags
Wood Boxes
Film.

8411 / Jurassic DK brn. f-xgll. ls. pervious. Don't see any filled burrs here.!!

8412 ? mudstone dk grey, near locality where Chuck & regards plant frag. in pencil shale

Checked all of Chuck's and Chapman's localities near Hungry Dome Caved Limy. The rock is fossile-thin laminated sheets w/ interbedded greywacke and minor thin sandstones. Could find no fossils.


Top of hill
Bottom of section
68'
8415
6'
thin silty Sh
5'5
8414
10'
15'
5'
Vol. sand & red siltstone
65'
Vol. tuff
agg conglomerate
10'
15
8415C
20'
8416 FC
15'
* massive patch reef
thin bedded
Pebbly, silty, thin bedded sandstone
Shale or clay

8416 FC ls, mod. gy micrite w/ poss. corals

Bottom of Windy Gap South section

Fossil Ck Vol.

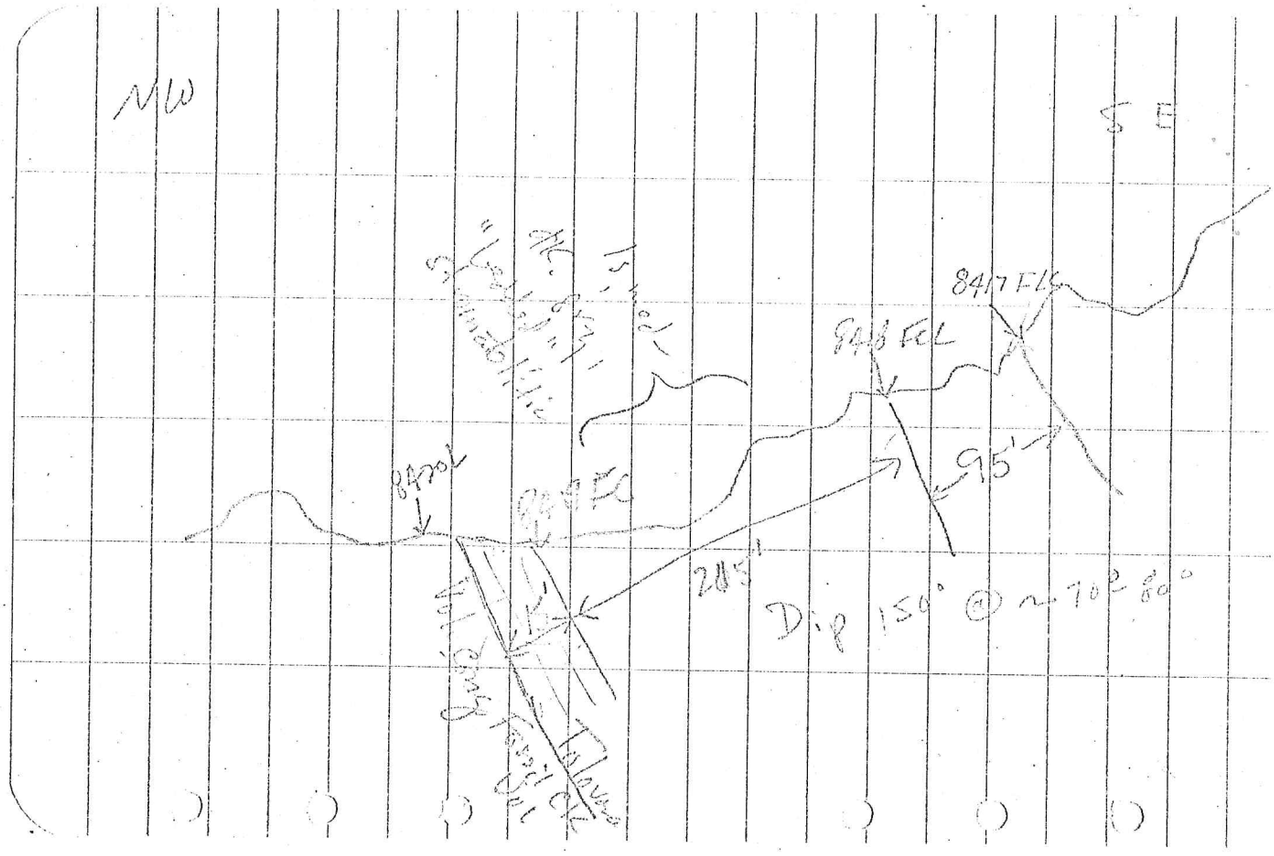
R4134 in Sed. Vol.

ss - cong w/ basalt pebbles + cobbles up to 5 in. l, x-bedded.

8414C ls, micrite mod brn gy when fg gy, slt vo x y all.

Sharp contact with underlying vol cong.

Appears to be an interbedding of ls. and vol. sed rock layer. The ls bed may be lenticular.


NW
SE
84.7 FCL
84.8 FCL
84.9 FCL
95'
205'
Dip 150° @ ~70° - 80°

width is rather than
Vol flow at
Windy Gap South
The is at the base
of the section here
is a slightly different
Pain that not as well
log South
This is at the end
of an at Church
Burton's measured
sections

8417 FLC ls, med-gry, calc(?)
pelletoidal(?), fossil frag.(?)
Thick bedded

8418 FLC ls, bioclastic w/
abund shelled macro
fartcles fusulinids or
forams(?)

8419 FLC ls, med-gry micrite
w/ fossil frag & peloids
Vertical
Vol comp
By strike around creek,
this is the same context
as at the NW end
of Wind Gap South
section, Here there
is Vol comp in context

granite at Victoria mt.

84249 Sh. dk. gry. sli. phyllitic. This is probably the same unit that is phyllite to the east near Victoria Mt. Cut by quartz veins

84250 ls, lgt. gry, vfg whole. Silic. in places. Same ls. as at 84241 but not as silicified. Interbedded w/ quartzite 84242 - 43 (silic.)

84241 ls, med-gry, vfg lgt. gry, micrite, silicified w/ silicified lenses test mm. have less stromatolites interbedded w/ a brn vfg sandy ls or 84242 ling sandstone. and limy brn med sh.

84243 Goshen Granite

The suggestion of your approach Victoria mt. appears to be ls, sandy ls, sh. and sandstone that are more metamorphosed as you approach the

Aug. 4th

Fred returned to Anchorage last night. Andy, Tom and I are looking at ls. north of Mt Schwaka. Measured good section that has notes

Aug. 5th

Will look at more rocks near Mt. Schwatka

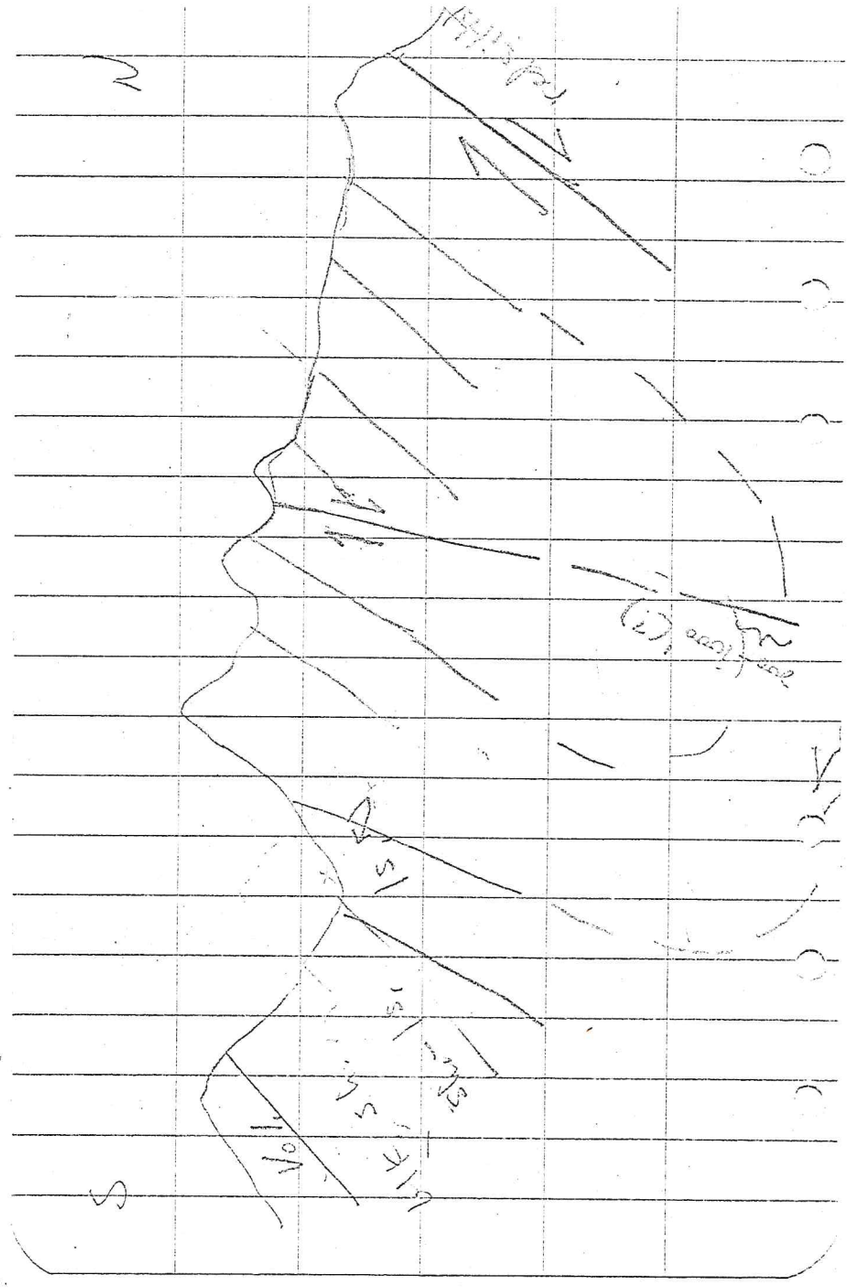
8427 Lt gry, brn, sandy, wea rusty red, cut with qtz veins. The outcrops are all siltst ag however the float contains red, dk gry ls. or some rock that could be float from the top of the hill. It

Check outcrops 8421-26 of Permian section Mule Mtn

is not clear if the silt is structurally below the ls. or in fault contact with it. I believe it is bounded by a fault contact.

Another possibility is that Section North Schwatka is a faulted overturned anticline then the silt here may not be in fault contact but could be younger than the ls.

8428 Fc – ls. float
Found one fossil piece of ls. in silt, intermingled



8433 Lx (coal)
8434 Lmy Dmx Ir

Andy Taylor, Zoologist
Amoco Production Company
Security Life Bldg.
Denver, Colo. 80202.

Field Notes, Alaska
Summer, 1972

If found, please
mail postage-due
to above address.

Andy Taylor ①

Livengood Recconn.

July 7. — 13th

Purposes:

1) Geologic recconn. of highway exposures. Particularly collect fossils for prelim. examination by paleontologists.

2) Check out living accom. in Livengood for subsequent visit by field party.

Methods:

1) Fly to Fairbanks (Travelers Inn)

2) Expediter & rent vehicle. Fred Brough

3) Drive to Livengood, camp

out overnight (1-2 nights).
4) Recom. Geology. Spl. # 9000
5) Contact Charles Snead. Callahan Mining Co.
   1) Cabin available?
      Keys
      Location (Land Helicopter roads etc)
      Water
      Cooking Stove (power?)
      Kerosene lights (fuel?)
      heater
      Refrigerator
      No. beds
      Supplies (nearby store?)
      Cooking gear?
6) Return to Fairbanks, 13th
7) List to Expediter.
8) Call John, Night of 13th
9) Fly To Circle, (13th or 14th)
   Fort Yukon Air Service
   @ Metro Field. If
   necessary; charter 180.

10) Tom Warren's Lodge in Circle.

or

John McKeever meet in Fairbanks night of the ~~13th~~ or afternoon of the 14th. Then Drive to Circle.

S	M	T	W	T	F	S
9	10	11	12	13	14	15

Livengood

July 7 - Friday
Visited McKeever
in office - typ logistics.

July 8 - Obtained
supplies.

July 9 - Read geologic
material.

July 10 - Flew to
Fairbanks. Obtained
tent, camping equipment.
Rented 4-wheel-drive
carryall.

July 11 - Left Fairbanks
for Livengood. Recon.
Geology along "highway".
Camped @ gravel pit
near Spring @ Livengood.

July 12 - Livengood

(5)

Talked to Walter Shivos,
Hillside Store
Livengood. Receives
mail @ P.O. Box 306,
Fairbanks, 99707
Sells weekend supplies, etc.

Calahan Mining Co. Cabin:
- ransacked. Unusable
- large bldg. houses 100
men. Probably not
feasible to use. For
information contact:
Chuck Herbert - Juneau
or Carl Heflinger
Fairbanks, 409 Clay
456-4548
Another house that might
could rent:

Fritz & Maud Fellner
Fairbanks, 456-4166,
Have 2-bedroom w/1 beds,
Furnished, Gas stove
w/propane, Gas lights,
Haul water
no refrigerator,
Need sleeping bags,
Cooler, cooking gear
& utensils. Spring 2.5
miles away, Keep meats
etc, at Hillside Store in permafrost

Tent Camp. - quarry across
road from spring. Need
permission from B.L.M.

Journeyed back towards
Fairbanks. Recom. to eat.
Camped 12 mi. from Livengood.

7/11/72 | Livengood Road (1)

Livengood

Loc. #5 – Ls. gray to BK. thickly bdd. Very finely crystalline. Intensely fractured and veined by calcite. Petroliferous.

9000F – Ls. gray, angl. calc. veins, thin wavy laminae suggestive of algae? Micrite.

9001L – Ls. dark gray, arg. l. micrite.

Good outcrop visible past mile 39, ½ mile off highway.

Loc. #7. near Livengood, just west of Loc. #4. Metamorphics. Phyllitic schist, fgr. hornfels, serpentine, gray mgr. Rhyolite.

9002 – skipped no.

9003L – Qtzite, mgk. gray.

9004L – Serpentine and phyllitic schist.

Loc. # 4.

Poor outcrop. Ss, poorly exposed with weathered fossiliferous Ls. Semi-insitu. Ls, weathered or altered on surface to limonitic clay coming from slope above shallow roadcut.

9005F – Ls. bluish-gray fresh. v lgh. weathering or altered on surface to yel-brn. Fossils.

Mid-Devonian?

Corals, Bryozoans, Brachs, (Japanese) Crinoids.

(All changed to 9005F)

9006F - Ls. fos. A.A.
9007F - A.A.
9008F - A.A.
9009F - A.A.
9010F - A.A.
9011F - A.A.
9012F - A.A.

9013-23 East. (near Mt. Hall Section, Allen Orientation.

9024-58 Biedermann Hall Fred H. notes

Steamboat Mtn Area

Wed. July 26, 72

Andy Taylor (Recorder)
Fred Hamilton, Tom DeKoyer

5-700 feet pitt crop. Not. measured. v. Indr., sandstone.

SB 9059 CL. Dol. light gray. Coarsely xx/line Fnkd Spl. Dol. v. bdy fracs. Fetid odor. Ghost structures and irreg. lamina.

SB 9060 CL. A.A. Fnkd Spl.

SB 9061 CL. A.A. Fnkd Spl.

Down river 1/2 mi. Dol. Float is petrol. odor, v.f. vuggy PR. Looks like Dawson Rock! 200 feet-section.

(Ord.)

small fossil tubes (Eofletcheria?)

Oil staining (?)

Spls. along strike?

½ mi. downstream from chopper (reference chopper)

SB9062C. Dol. A.A.

SB9063F. Gastropods Eofletcheria?

SB9064L. Dol. A.A.

Petrol. V. Vuggy.

Mapped by U.S.G.S. as Ep

↑ 100 yds

100 yds ↓ chopper

SB9065L. Dol. lightly and irregularly mxln. Dark gray V petrol. Light colored V.g. PxP vuggy.

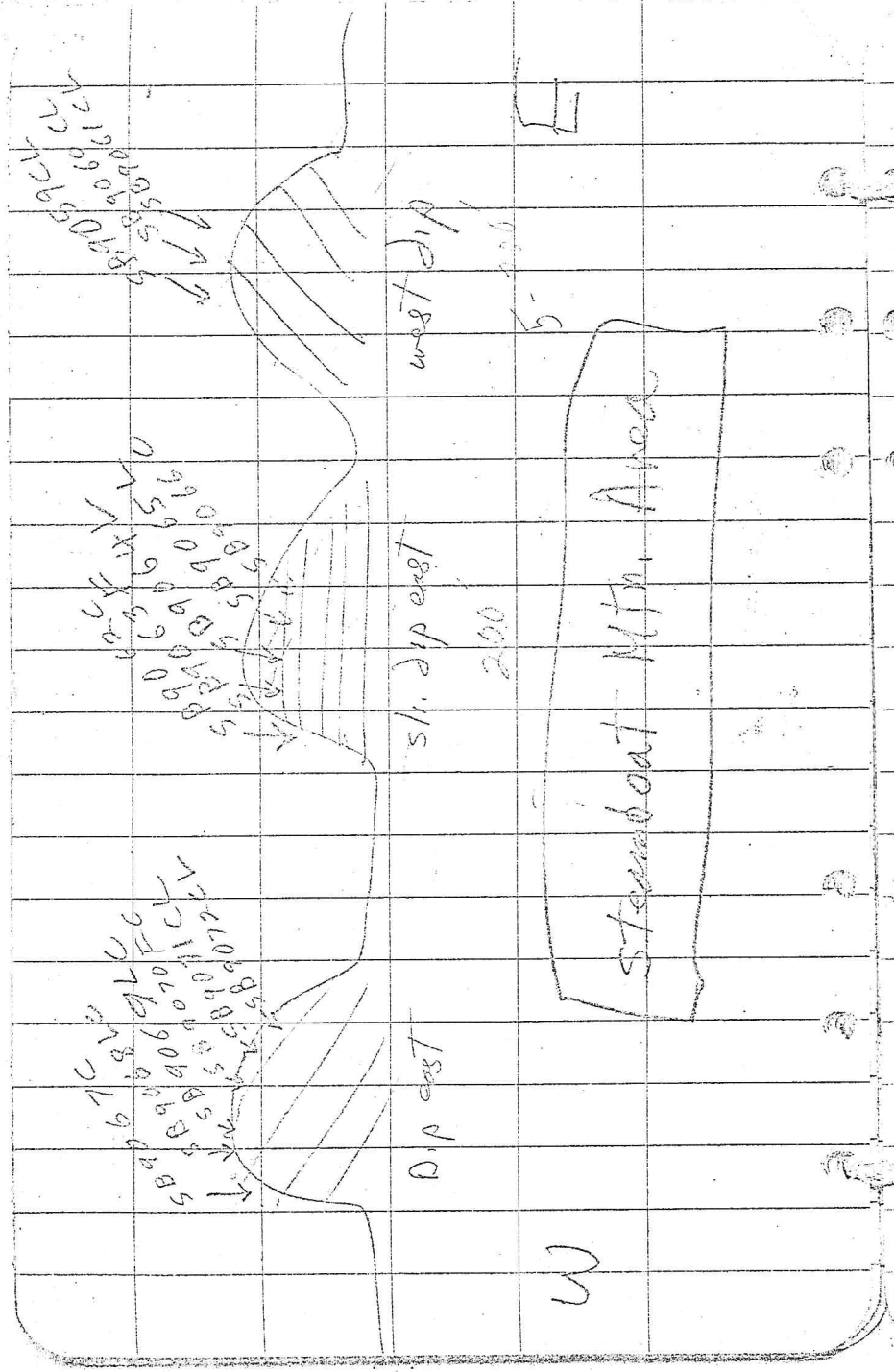
SB9066C. Dol. gray dol.

Covered. 1 mile

0 — SB9067C. Ls. light gray. c. xln. s/l petrol. Dipping east 20°, thickly bdd. thinly lam. Xbeds

30 — SB9068LC. Ls. A.A.

90' — SB9069LC. Ls. A.A.



Ls. is x-lam (ripple-lam) and has texture of "meshed-bird's eye micrite"

290' - SB9070 FC Possible
| biostic Ls. w/ oolites
390' - SB9071 CL. Ls. Light
| gray. vfgr micrite.
420' SB9072 CL. Ls. A.A.

End

M.S. 9073

Mt. Schwaka

Aug. 4, 1931

Taylor (recorder)

Hoyt Furer, Tom DeKayser

weather - clear, sunny, cool,
wind 20-30 mph.

Dip 210° @ 49°

Beginning near middle of section. Down section ?

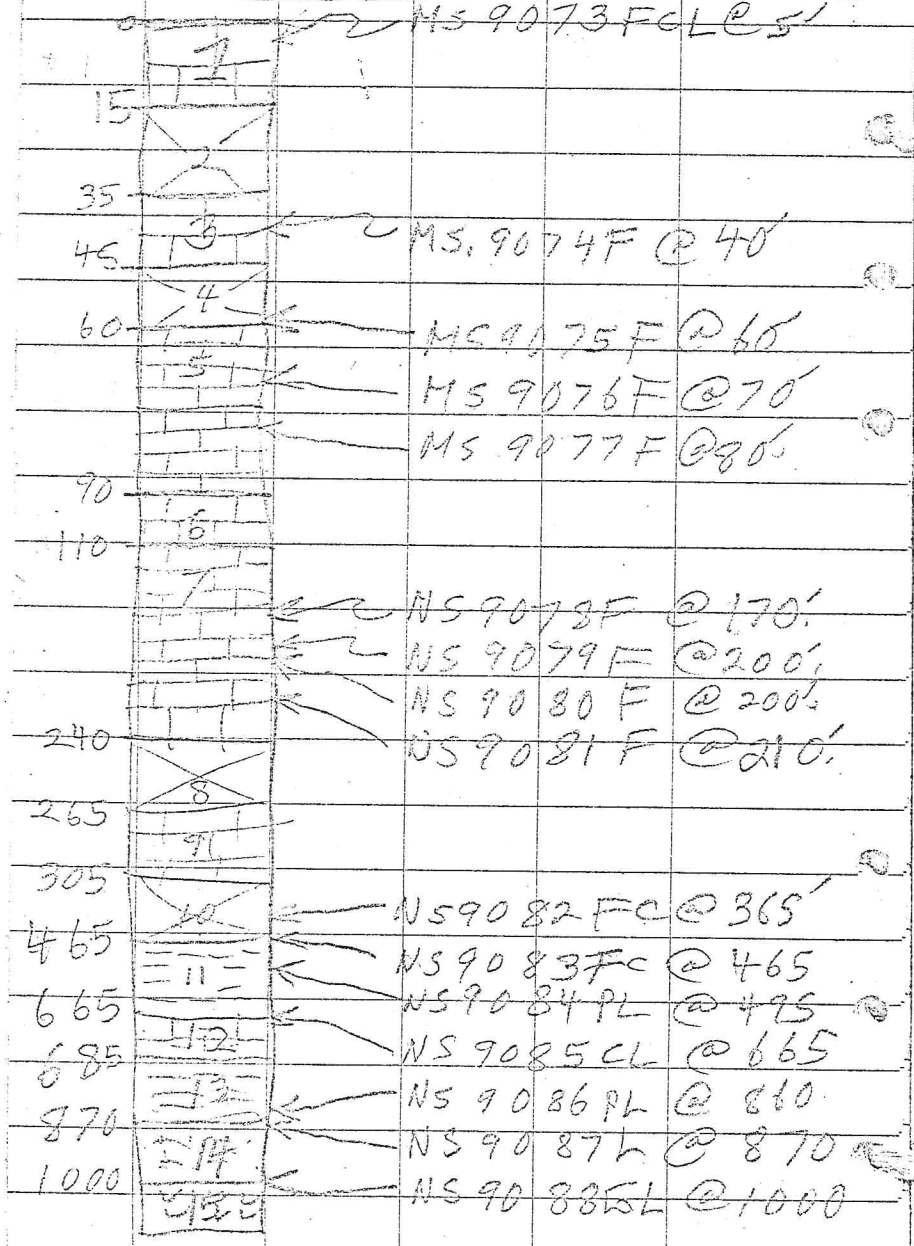
Unit #1 @ 0'. Ls.

NS 9073 FC @ 0' Ls, dark gray, v. fgr. x/l, Massive limestone with corals, stromatoporoids, thamnopora, crinoids, tetracorals, colonial corals (silic.). Pisolites,

Unit #2 @ 15'.

Covered

Lower portion Mt. Schwaka section



NS 9073F CL @ 5'

NS. 9074F @ 40'

NS 9075F @ 60'

NS 9076F @ 70'

NS 9077F @ 80'

NS 9078F @ 170'

NS 9079F @ 200'

NS 9080F @ 200'

NS 9081F @ 210'

NS 9082F CL @ 365'

NS 9083F CL @ 465

NS 9084 PL @ 495

NS 9085 CL @ 665

NS 9086 PL @ 810

NS 9087 L @ 870

NS 9088 SL @ 1000

Unit 3 @ 35'.

Ls, dark gy, boundstn, stromatoporoidal.

NS 9074 @ 40'.

stromatoporoid

Unit 4 @ 45'

covered.

Unit 5 @ 60'

NS 9075F @ 60'

Ls, dark gy, boundstn, Hunt. with Amphipora.

NS 9076F @ 70'.

Ls, Medium gray, vfgr x/n, tetracorals.

thamnopora, favositid corals, stromatoporoid boundstn @ 80'

NS 9077F @ 80'.

Amphipora stromatoporoid boundstn; dark gray, vfgr x/n.

Unit #6 @ 90'.
Ls. light gray, c. x/ln.
sheared zone, f xtal.
Un. #7 @ 110'.
Ls. dark gray, stromatoporoid
or algal stromatolites?
bnstn.
NS9078F @ 170', Ls,
dark gray, amphipora
and stromatoporoid?, Bnstn.
NS9079F @ 200'. Ls,
Stromatoporoid tetracoral bnstn.
NS9080F @ 200'.
Possible alveolites,
NS9081FC @ 210'
Colonial corals (mainly Stromatoporoid)
bnstn. Corals in growth
position (330° up),
show section is over-
turned. Bedding 160° @ 75°

Unit #8 @ 240 – Covered

Unit #9 @ 265'

Ls. Med. gy. Stromatoporoid bnstn.

Unit #10 @ 305'

Covered.

NS 9082 FC @ 365'

Float spl. from exposed rubble pile. Ls. light gray stromatoporoidal bnstn.

NS 9083 FC @ 465'

Ls. stromatoporoid bnstn.

Unit #11 @ 465'

NS 9084 PL @ 495'

Sh. dark gray. Platy to fissile. Looks laminal. Phyllitic.

Unit #12 @ 665

NS 9085 CL @ 665'

Ls. Bk. Arg. Maceous. thinly laym. Vy. shly.

Unit #13 @ 685

NS 9086 PL @ 860

Sh. Bk.

Unit #14 @ 870

NS 9087 L @ 870

Hornfels. Green. Siltstn. Probably baked by volc.

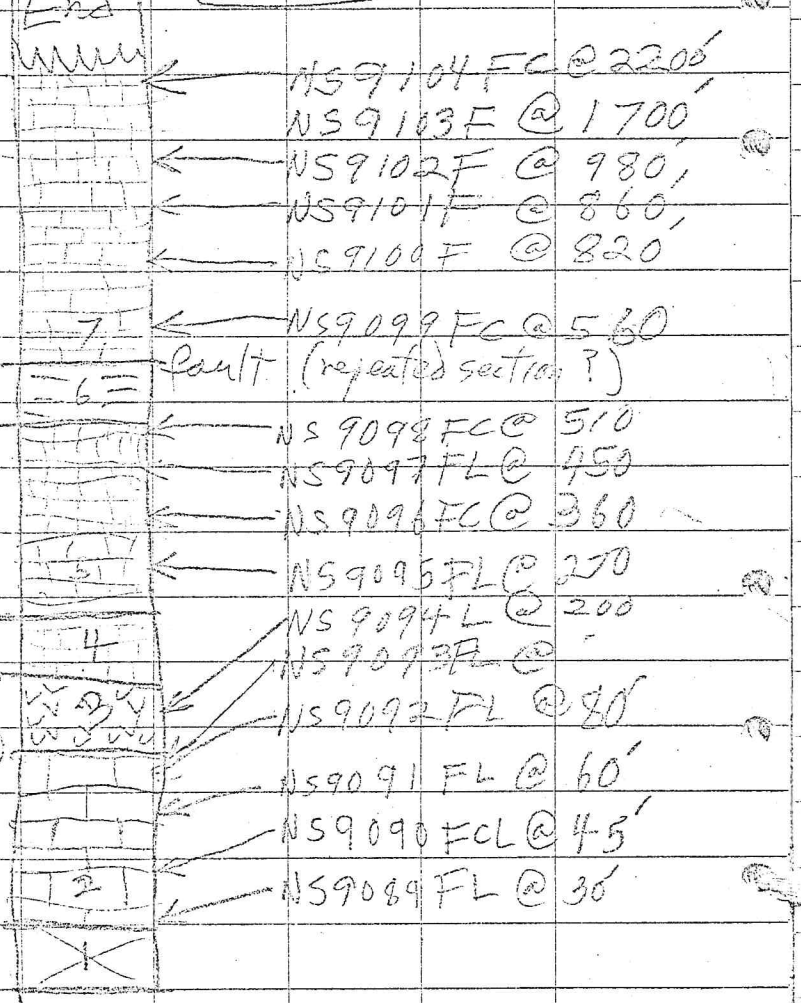
Unit #15

NS 9088 VL @ 1000'

Andesite. green. mgr with plag. & large phenocrysts.

Move to measure upper half of section, start on next page.

upper portion of Mt. Schwaka Section



2nd half of section

Begin near middle section. now go up-section.

From beginning place of mornings section: 0'

Unit #1 @ 0'

Covered for 30'

Unit #2 @ 30'

NS 9089 FL @ 30'

Ls, dark gray. Massive stromatops with scattered tetracorals and amphipora?. Chinoid columnals, Alveolites?

NS 9090 FCL @ 45'

Aulopora, tetracorals, gastropod colonial corals. Stromatops, bnstn

NS 9091 FCL @ 60'

Crinoids, Favositid corals Float. Probably Semi-in-situ.

NS 9092 FL @ 80
crinoid columnals, probable
thrombopora in Stromatop
matrix.
NS 9093 FL @ 100'
Questionable branches in
Stromatop bnstn.
Unit # 3 @ 110'
NS 9094 L @ 200'
Rhyolite, light green.
Unit # 4 @ 210'
Ls. gray, sheared body
Mostly covered for 30 feet.
Unit # 5 @ 240
NS 9095 FL @ 270'
Ls. Massive stromatop
bnstn w/amph. pond.
NS 9096 FEC @ 360'
Ls. Mass. Stromatop bnstn
w/ carnivals.

NS9097F @ 450'
Ls. Moss. stromatop. bnstn
with thamnopora, tetra corals,
NS9098FC @ 510'
Ls. A.A. w/crinoids
Unit # 6 @ 510'
Purple shale, silts. fault
w/slickensides, azurite &
malachite @ 540'
Unit # 7 @ 535
NS9099CF @ 560'
crinoidal wackestone, light
gray, 2-hole crinoids.
NS9100F @ 820'
Amphipora bnstn. tetra corals
Amphipora bnstn @ 920'
NS9101F @ 860'
Stromatops plus favositid corals
many colonial and tetra corals
NS9102F @ 980'
thamnopora @ 1000'

360
500
820

mass. stromatop. bedstone at 1500'

NS9103F @ 1700'

tetracorals, favasiids, colonial corals.

NS9104FC @ 2200'

Stromatops, crinoids.

End Section @ 2250'

2 copies

Allen Ormiston 1972 Field Notes

FCH - in section E-24 (at base) is dark ls unit beneath Kayak (Kayak section south of Eagle Creek) has given no conodonts - check remainder of sample for forams. This may be a lagoonal facies of Kataktuk Ak.

July 8, 1972

8600 F,L

FCH G74 Buildup

Sample from about 250' below top of bioHerm in Hunt Fork from which 1971 samples FCH 760-764 were taken.
Photos - roll 1 shots 25-26 fossils - laminar stroms. Alveolites, Thamnopora, brachiopods, partly recrystallized - widely scattered crinoids - matrix is dark micrite. Upper 200' of this buildup is almost nonfossiliferous dark micrite.

8601 float

Nearby float contains good Phillips Astrea - Frasnian.

Upper Angry Bee Section

Angry Bee Creek

Section measured down from top of buildup to join up with 1971 section. Upper 1/2 of buildup is bedded, lower 1/2 is massive.

8602 F,C.L

About 20' below top of buildup, medium bedded gry limestone (wackestone), weathers gry, mottled with tan. Theodossia, Spinatypa, Thamnopora, Coelites?.

8603 L same strat position -
large colonial coral 2" across in gry packstone - Smithiphyllum?

8604

dark gry wackestone - scattered stromatoporoids - sample 10' below 8602.

8605 5' below 8604 is 5' thick bed of stroms. Laminar sample. Cumulative thickness to base this bed is 40'.

AB
8606 L

40' cumulative below section top black wackestone lith sample.

8607 F

5' below 8606 - well bedded Thamnopora - coral bearing wackestone - fossil sample

AB 8608 F

12' below 8607. Abundant button stroms in limestone - fossil sample.

Covered interval

25' thick

AB 8609 F

Dark micrite, well bedded with abundant Acinophyllum and Thamnopora.

AB 8610 F,L

30' below 8609 - probable stroms in lt gry, thick bedded micritic ls - fossil sample.

AB 8611 F,L

15' below - thick bedded to massive lt gry packstone, large Smithiphyllum?, Thamnopora, brachs.

AB 8612 F

2' below 8611, Stromatoporoids in boundstone - with Thamnopora massive strom bed in 15-20' thick.

AB 8613 L

dark gray mudstone (limestone) about 30' thick - thick bedded to med bedded covered 40'

AB 8614

Stachyodes - rich ~~thick~~ beds - dark mudstone with Thamnopora. IN FLOAT - could not find source.

Next bed

20' of dark mudstone with abundant laminar stromatoporoide massive bedded.

Next bed

Medium bedded dark micrite about 30' thick.

8615 F

Float from 15' down in this bed. Contains abundant Amphipora.

AB 8616 L,F

60' below base last unit Amphipora bearing and massive strom bearing black wackestone massive bedded.

AB 8617 F

Solid laminar stromatoporoids 40' below 8616.

AB 8618 F

50' cliff of solid gray stromatoporoid - massive unbedded cliff. ← Former

---

July 9, 1972

Demarcation quad. 1mi NW of USGS Dev.ss locality. At east edge of ice field unconformable contact between Neroukpuk & Mississippian clastics. Miss. black shales with plants dip SE 120°/35° and overlie directly (plate with DeKeyser landing on ? Dev.) rest on Neroukpuk thin bedded gray cherts interbedded with shale partings (sample 8619) which dips N15°E, 40°.

Plants in Miss. directly above Neroukpuk sample (8620)

8620 P,F - plant frags.

8620 L - Shale Dev.

8619 L Nemokpuk RUO

Section

About 10' Nemokpuk RUO cherts exposed.

8621 L

Miss. - starts with lt gry chert pebble qtzt congl (8621 L) 16' thick.

8620 P,F and 8620 L

Black plant bearing shales fissle - Miss. ? age plants.

8622 P

10' up black plant bearing shales. Looks like calamitids or Miss.

At 30' from 8622 is 18' coal bed overlain by thin congl. ss.

8623 P

Shale sample directly beneath 18" coal bed - sample 80' above last coal bed.

200' more shale est. above - not measured.

Could not find Dev. ss

JN Section

Measured Down Section July 9, 1972 PM

Miss. section JN 8625 - JN 8626 F. Penn (RM) with Yavlovlevia (K).

JN 8625 F Penn. Lisburne (RM) 10' below 8626

Remaining notes by Henderson.

JN 8628 - cherty carbonate with ascoceroid nautiloid?

July 10, 1972 Lat 69° oo' 1/4" Long. 142° 22

Neroukpuk carbonate sample 8206 - probably Dev. C,F photos of total eclipse at 10:01.

Dev. SS Total Eclipse Section

TE 8207 grab of Dev. SS at Neroukpuk contact - calc SS with Warrenella, clams, FLINT

TE 8208 - 20' red and green shale - paly sample BASE

TE 8209 - coquina of shales in calc. shaly siltstone, ~~Venerirla~~ Warrenella etc.

TE 8210 - fossil collection in calc ss at 47' up

SS from fm grained, calc. pectinoids, ~~rhyncks~~ Rhynchs., Warrenella

TE 8211 ichnofossils from same bed.

TE 8212 shaly siltstone with pectinoids

photo roll 2, 35 view of TE Section

8217
8218 conodont samples of Nanook Is. under K in Shublik Mtns.

8219
8220 Section E-33 of Union lower 1/2 of Katakturak conodont samples

Visited Kavik air strip - photographed Kavik well site.

Took shot of Brooks Range from Kavik strip.

8621

Left side Echooka River. Early Miss. with Syringopora, Amplexizaphrentis ~~Amplexopheontes~~, gastropods, F and C.

July 11, 1972 (Locality 6651)

Upper Wind River Section. Measured down from top, roll 4 photo 21 contact between clastics and reef mass. SS rests directly on unbedded reef mass.

WR River SW/NW T13S, R20E, P.S.Mtns. Quad

UW 8658 L

Sample of SS - fine gnd, qtzose SS - rests with possible disconformity on 8659.

8659 L

Sandy carbonate 2' thick.

8660 F C

Ls gray algal pisolites, laminar strom, massive bedding.

UW 8661

Hunt Fork, shales, samples about 100' above 8658 palyn sample.

Moved SE 1/4 mile to top exposed reef mass measuring dol.

UW 8662 F,L

Top of exposed reef - stromatop. boundstone, lt gry, massive Amphipora, various stroms.

Rest of notes by DeKeyser

710' of stromatoporoid reef
marine fossils in underlying Hunt Fork

Roll 4,
photo 25 top of UWR reef and overlying shales
Photo 24 "

photos 20-23 panorama across Upper Wind River Reef. These outcrops are the type section of the Smoke Creek Member of the Hunt Fork Formation (Reef buildups)

NEW NAME

July 12, 1972

Work in Your Creek area

Roll 4 photos 27 and 28 Wind River Section of 1971

Roll 4 Photo 30 - Kayak contact section

Roll 4, photos 33-34 - Your Creek Section, looking down from Top. Dev.

Roll 4, photo in 20's - small isolated bioherm on Smoke Creek

Your Creek Section

Notes by Henderon

Kanayut and Hunt Fork - one thin ls. with Phillipsastraea.

July 12, 1972 AM West Wind River Section

WC NWT 15 S, R21E Phillip Smith Mtns Quad.

Lower part of section measured down from Kayak top:

WW 8245 P,L dark shales, 15' below datum

WW 8246, P,L dark gray shales, 35' below datum

WW 8247 P,L dk greenish shales, weathering platy, 85' below datum

interval has thin SS

WW 8248 L med bed, med grnd., qtz ss, weathers drk gray to brown, 160' below datum

(interbedded shale and sandstone from here down)

WW 8249 L,P dark gry fissle shale, 240' below datum

WW 8250 L, megaflora ferrigenous fn grained, qtz ss, med.bed., poor plant traces - 360' below datum

Your Creek Section

Notes by Henderson - Kanagut - Hunt Fork contact picked on shale volume - upper Hunt Fork has two thin (6" to 6') lime beds, the upper with algal oncolites; the lower with stroms and Phillipsostrea.

July 12, 1972 PM 7060 locality of 1971 reef east of Old John Lake

Photos by DeKeyser of bioherm looking W

Samples 8698-8710

8700-8710 samples of exposed reef from base to top ca. every 10 feet. More packstone at base, more solid strom at top.

Notes by DeKeyser

Dips on ss outcrop indicate they go underneath the shales on the west end of the bioherm and thus must be of Hunt Fork age.

Basal bed of bioherm is a dark coralline ls with Thamnopora, tetracoral.

July 13, 1972 AM

Collected sample from S. halysitoides zone of type Salmontrout.

Roll 5, photos 4,5 closeups of S. halysitoides zone reef.

Visited Linear Ridge to recollect Salmontrout

---

measured up section

LR 8274 F

Warburgella? bed, dark crinoidal ls. one bag -reef beds start 2' above 8274

LR 8275 F 30' up corals in dark ls.

8276 F 30' of cover 30' of rubble above 8275 - sample packstone at base, prominent outcrop.

LR 8277 35' above 8275 gry crinoidal packstone corals

LR 8278 40' above 8277

LR 8279 60' above 8278

old sample bag indicates this horizon sampled by other geologists.

LR 8280 60' above 8279 - 70' below crest of hill.

last sample

July 14, 1972

Takoma Bluff Section

Roll 5 - photo 10 - uppermost beds of section

Red top face SE, dips vertical to 85° S, strike EW

Measured down section

TB 8711

Interbedded dark gry med.bed ostracodal?, ls argill.micrite with small chert pebbles and dark gry shales. Load casts on bed bottoms.
Sampled ls bed for C,L

Cross bedded laminations in ls bed at top.
Rocks resemble some Road River ls and shale sections I have seen.

Unit is 83' by tape

Next unit is 40' covered with shale, drk gry float - no graptolites seen.

TB 8712 L,P

Lt gry, rusty weathering, clay shale, fissle, no fossils seen.
Lith sample + palyn. interbedded with drk gry shale.
Taped 42'

TB 8712 F,C

Interbedded ls and shales as in 8711 - ls samples for 110' taped - interval partly covered

---

Lt gry shale as in 8712 - interbedded with drk gry shale few thin laminated limestones, 40' by tape

---

Covered interval - probably shales 185' taped

~~~~~~possible fault~~~~~~
~~~~~~

TB 8714 L,C

Limestones drk gray to black, argill. micrite
Beds now dip N at 45°, cross lamination in ls suggest beds overturned (see lith sample), bed bottoms also suggest overturning.

Some cross laminations, some planar lamination in these limestones - interbedded shale
80' paced

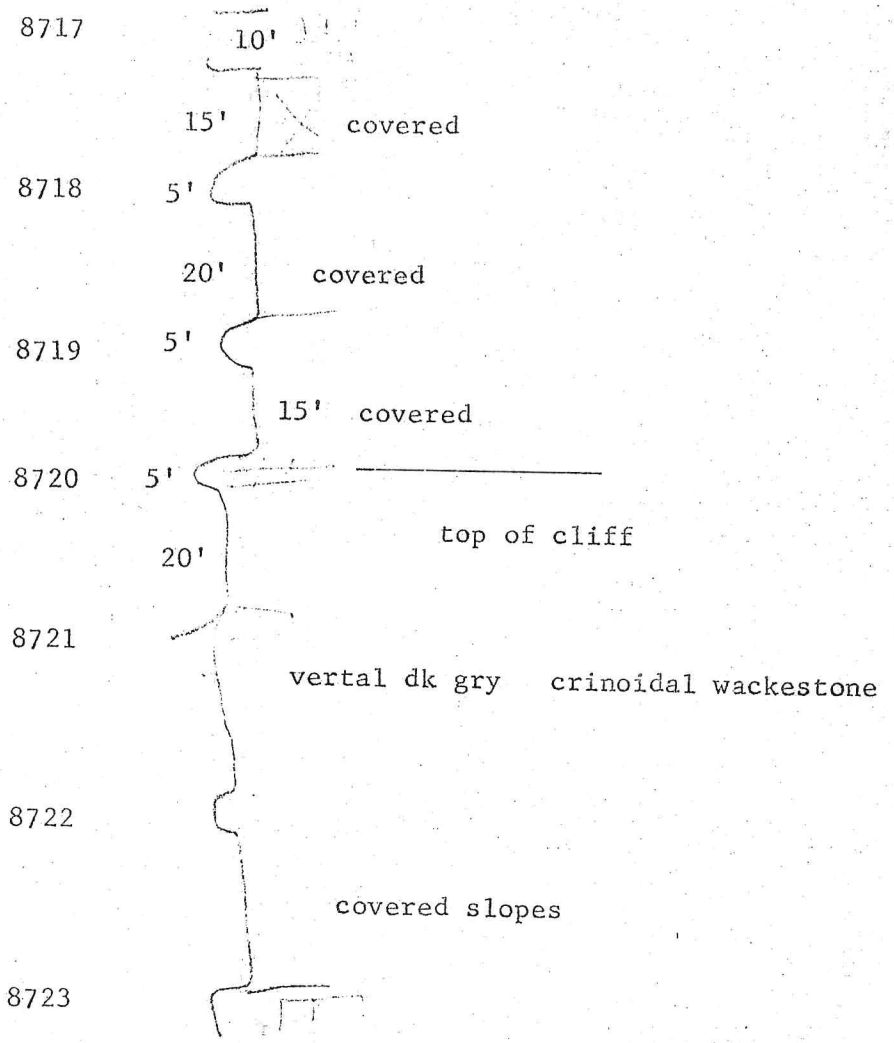
TB 8715 C,F

Ls dark gry, very fine grained, argill. micrite, med bedded, resistant.
Here forming small syncline - section truncated at axis - 40' exposed.

8716 C,F

1/8 mile S of section - massive strom?, ls., lt.gray, sample probably Woodchopper limestone.

Woodchopper Ls. Section (WL)



Woodchopper Limestone Section
(WL) Friday, July 14, 1972

partly cloudy, hot

Overlying? volcanic

unaccessible

underlying volcanics possible

TOP 160' thick

8717 FCL

Wackestone, mottled dark gray and brown, scattered crinoid columnals, med.bedded

WL 8718 FCL

Ls as above but with veins filled with calcite

8719 FCL

Wackestone,med gray, m.bedded; brachs, Thamnopora??

8720 FCL

Packstone, gray, crinoidal, ostrocodes?

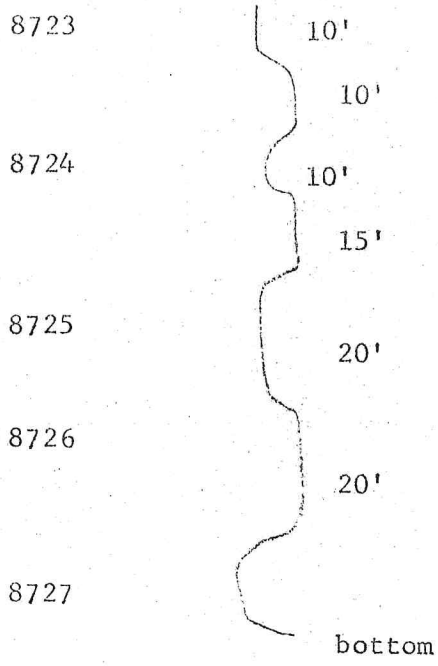
8721 FCL

Packstone, lt gray, crinoidal, vextal wackestone

8722 FCL

Packstone, m.gray, crinoidal, thick bedded

Interval "gorge" and dark gray wackestone



8723 FCL

"Button stromatoporoides"

strom)
crinoid) packstone
bryozoa)

m.gray, cliff forming

8724 F,L

Ls as agove Thamnopora, crinoid, stromb

8725 FCL

Boundstone, lt gray 20' stromatoporid??

8726 FCL

Packstone, strom., coraline, m.gray

8727 FCL

2' below FCH --- 15' to bottom of section = river

8727 = stroms, xystriphyllum

---

covered interval 40'

8728 L

basalt, black, feldspar laths

July 15, 1972

SE 1/4 R21E

bed tops face W, ca, 1000', of rock exposed, dip W about 75°

FCH 789 C

Grab sample near base exposed, brecciated calc. dolomite, porosity

FCH 790 F

stromatolitic?, beds collenia type and LCH type but totally recrystallized to vertically oriented calcite crystals (or Ord.? - middle of exposure)

FCH 791 C

Top of exposure

tan and dark gray interbedded calc. dol. reminiscent of Amoco J section, Ord? - no other fossils seen

FCH 792 L

N side Nelson Lake - beds dip N at 25° - Bedded cherts and chert breccia - Lower Dev SS?

FCH 793 L

On Black River - upstream from Red Bluff

SS lt gry buff, med grained, well sorted and rounded, not badly weathered, lt gry to tan, some red stain, probably hermatites. Conjectured to be some sand as Amoco J - low angle cross stratified - FCH says resembles Canalaska ss and Frozen Calf Mtn - rock has scattered _____, small black grains at at Canalaska, reservoir potential? - glauconite? grains rare.

Dips N 60 W at 55°, paced 280' strat thickness

Roll 5, photos 32 Tert.volcanics along Black River

Photos 33,34,35

at Lat 66° 22' N, Long. 142° 32° W fire

summer 1972 - Paddle Creek area

FCH 794 L

NE T12N R20E
Bedded = volcanoclastics

Volcanic aggomerate and bedded volcanic ss, strikes N 50E, sips S 20°

FCH 795 L Outcrops on Little Black River south to north

Flaggy, thin bedded, buff and maroon ss, no shale seen here - lith sample

SE 1/4 T13N R22E Black River Quad.

FCH 796 L

Sec SE 1/4 T14N R22E

Volcanogenic breccia, matrix very deeply weathered. Clasts are

volcanic SS
matrix is FCH 796L
clastics are FCH 797L

FCH 798 P and FCH 799 L

SE 1/4 T15N R22E Black River Quad.

Sugbraywacke + mudstone

dips N 20W at 50°

probably K

Subgraywacke ss, med grained, gry chert clasts and gray laminated mudstone.

FCH 800 L

E 1/2 T17N R21E Black River Quad

Lam.mudstone and subgraywacke as in 8290 and 8291

FCH 801 P

palyn from this outcrop drps ca. 20° W

July 16, 1972 East Crazy Mountains

Section measured going down section

Beds dip steeply S at ca 70°, strike E-W. Lloyd reports this section actually dips north as seen further west. Thus section goes up

Resistant sheared carbonates

EC 9013 L,C

Ls, med.grey, med bed?, vert.fracture L,C Ca 45' thick

Covered 50'

EC 901 L,C

Ls as above, fairly unfractured, small round white structures may be fossils.

Covered ca 18'

laminated orange buff mudstone float

EC 9015 L

Covered 660'

EC 9016 L

Maroon and orgin buff laminated mudstone or argillite - in float, lith sample.

Covered interval (shale valley?)

1320'

EC 9017 L,C,F

Top of conspicuous dolomite hogback dips SE at about 55°. Dense med grey micritic dolomite with calcite veinlets, possible tentacs? - chert blebs and C,F
Amphipora? - sample

EC 9018 C

Same bed

Unit is 60' thick - probably Devonian - looks like Seknak River Section of St.Lawrence

EC 9019 L

At 180' down. float contains weathered, possibly volcano clastic

EC 9020 C,L

Dark gry dense, med.bed, dolomite, silty mottled with lt gray - 40'
below ~~8300~~ 9019

PARTLY COVERED

170' of solifluction lobes with dark dolomite

EC 9021 C,L

drk gry, mottled dolomite with vague fossil outline - C,L sample

340' of dolomite and rare - poor exposure

EC 9022 C,F

At least 60' (dip uncertain) of ridge forming, gry resistant, crinoidal limestone and med bedded

C,F

EC 9023 F

20' lower, possible two holer, Chaetetes sp. A. - rocks are Devonian

9/6/00

1/2 day — wheeler arrived @ 12:5
work w/ Hagen, Burrell Rio Creek Sections
— Furer & Hankinson —

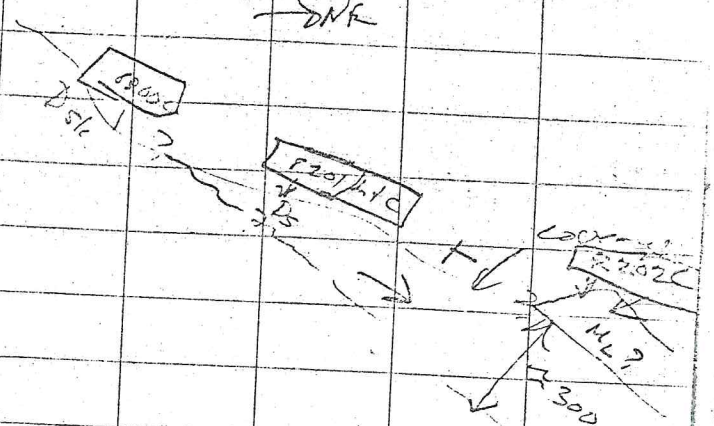
location Loc 8200 — 8201

— This location is the contact between the Dsk & Ds unit. 8200 = top of Dsk unit dk gy nodular Ls, Dkst, sheared & fractured w/ calcite veins. Interpret contact (fracture zone) to be roughly 50' interval due zone.

Ls, ss, ss (calc @ bottom) & silty Ls, & pebble conglom (mostly conglom is stretched). Need thin sections.

ss & Conglom of Ls. 8207 is from Lo-at top - vf gr plast. dk gy, w/ poss corals & brachiopods barely discernable; this unit cap is separated by Dsk by ~5' of ss, Sh, & peb Cong. I think that this Ds interval is very possibly Mk equiv & that Miss (poss Mississippian) overlies Dsk (Frasnian) — a very good possibility.

3 caps



the silty sh & silty Ls & sh is maroon & green (possibly due to some tectonism & pale oxidized algae mat). If this is a thin section of Dkg-Dk Mk w/ a slight unconformity when it would fit into the CrowNest Cr-to Wind R. section (thinning to E & right to SE.) ?!!!

- Davis Peterson, agree w/ my interp.
that the rocks are encased in shale
no doubt.

6/9/72 - Wheeler in AM central 2
hills on Granodiorite opposite Red Sheep Cr.
took Grivston, Dickason & Henderson off
to look at massive E-W Dextral fault on NW
then look @ Mt. section - supposedly
hydrothermal. Beh

Temp 20°C Clr, hot, no wind.
Lots of mesquites.
at 3:PM Turner & Hutchinson off
to look at E-C outcrops at Christmas

[8203 P+Sh (2 bags)]
- poorly exposed outcrop
- sh, thin bed to mthin beds, dk gy, to
dk brn & grn. shale, - in a predominately
ig terrain.

[8204 L+f] - Chert to Si.
sh, H grn to lt gy - all grade gy
to gyh grn. thn bedded, & thn lam.
& color banded. - some micro-f.
x laminations. Generally very evenly
bedded & banded, looks like a pelagic
sediments. Could be radiolarian chert
U.S.G.S. : Three Fs ~ 250-300'
of this exposed.

[8205 L+C] Some 1971 stop 6246
- Sky + fault over Ds unit.
yes, very probably fault zone, we will
not find base of Sky.

6/12/72. 20°C, Clr. Vis unlim

Furer, Ormiston, Hawkinson — to

Dev 5s on mn Nk then to Kavik to

Elusive Lake

143°22 69°00' 10" @ 13 hrs.

Observed total eclipse of the sun. Very

dk + total eclipse for 2 mins.

Nk 8206 CdF ← in middle to top

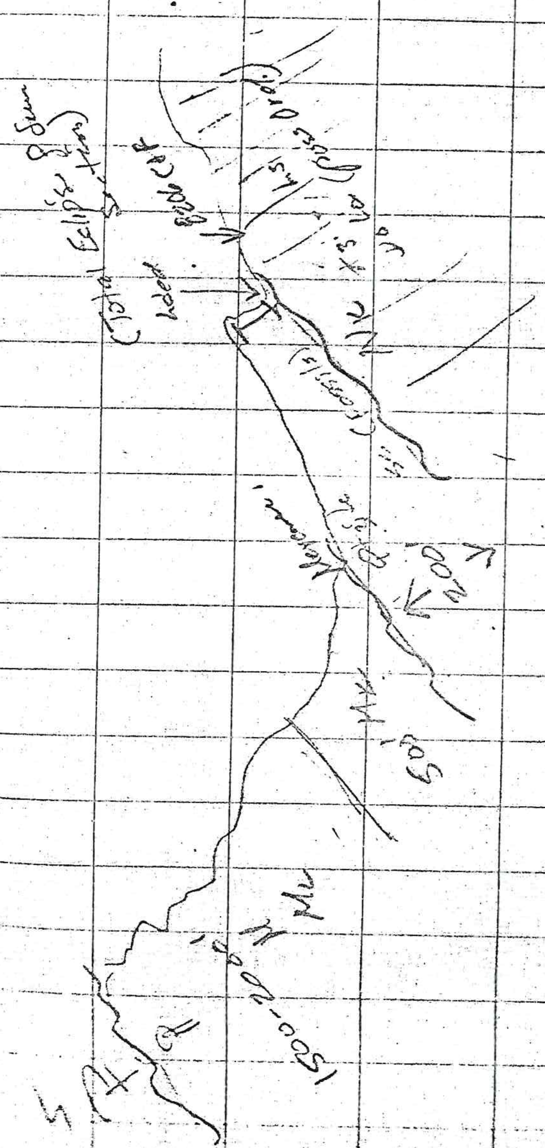
of Nk. older carb - rust colored,

Ls — med gy, micritic, thin bdd +

thinly lam.

TE section :

basal Ts, calc, abd fossils, brn



Lloyd, let me know asap
when we get a date on
this sample.

Stopped Wash 1973 - E-27

at Ikialpak section + sampled

Ls below Mx - Ls dk gy, sandy

w/ abd floating qtz grns, well rnd'd

vf-f grns. ≈ 200-300' of Ls

underlying Mx 8215c - 8216c

E-26 correct

Stopped at 90' thk Mx (select 26?)

1 Sample Marshall 8217-8218

Stopped E-33 where

RE 230 (Giveton) Stringer reglet

was found 1972. Searched for

more fossils. No luck.

8219 - 8220

@ 5:15 PM 6/10/72 passed over

Kavik w.11 - stacked.

(Ferrer said gas well).

ate, old road construction

equipment at Kavik - presumably to

build road to Beli. wk.

8221 F-1 f - on Echooka River

just N from Cache Creek Lake -

these isolated outcrops ~~thought to be Cret by Leo~~ - only a guess

is probably Early Mississ - Syringopora

corals, dk Ls & gn, minute sil chert

nodules - a dk facies compared to

the surrounding Mx outcrops

6/11/77 - 22°C Cl. high scattering
Dakota Formation, Hardinsburg Jd @ 8:20
for location of ECH 695-96, FCH 697-99.
to measure good Dkt & Dkt. on west
fork Wind River T 35, R 20E area

Upper Wind R. section

Top contact Rdl' sltst 2/ of contact of gtz-ite
Dkt and gtz-ite. on top of Dkt
below
∴ -710' thk bisher in
our Dkt measures
5/st & sh.

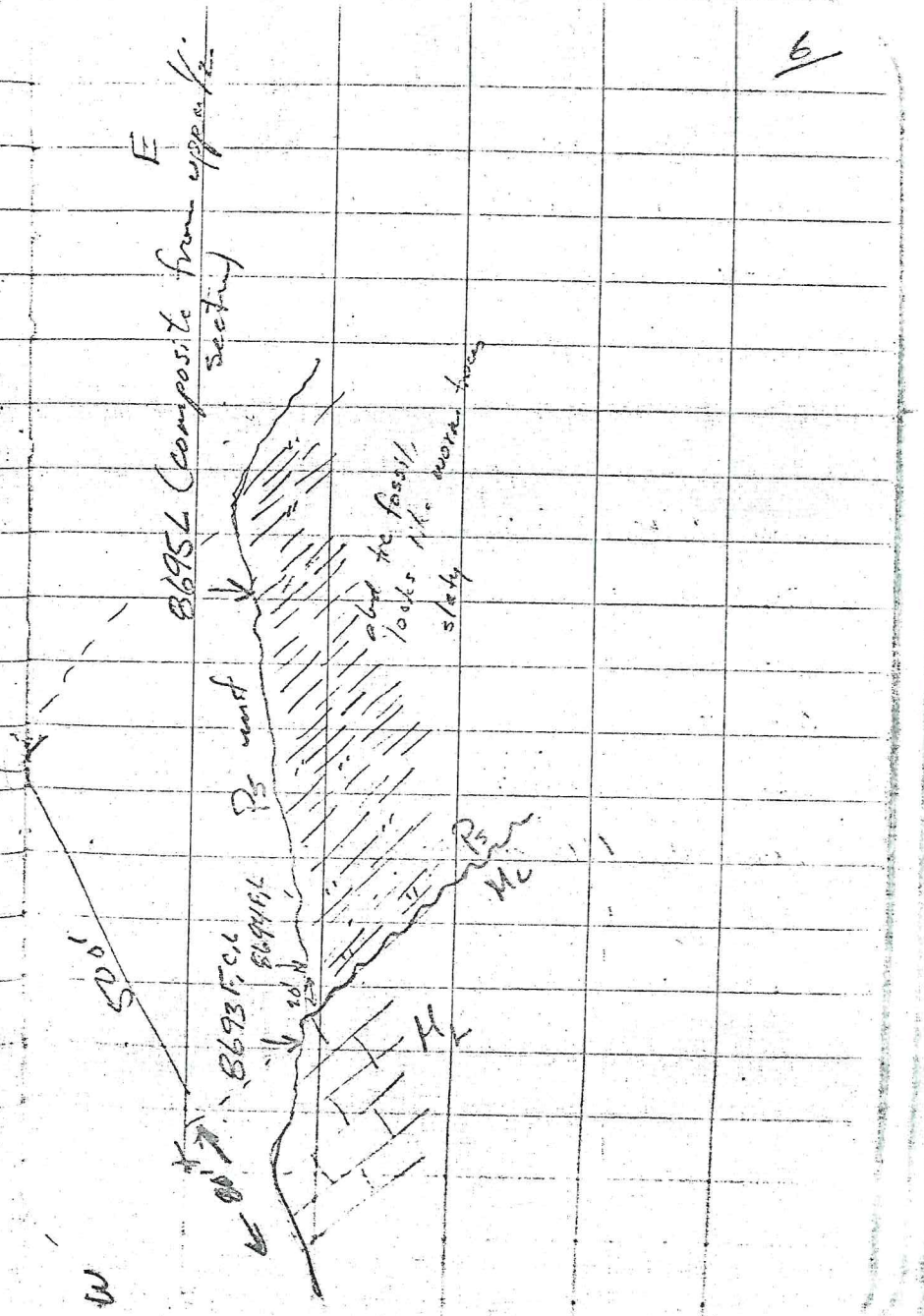
8660 FCH, etc

-Farrer, Henderson off to find Mc
section in Sag Lake area. - fire lookout.
They have a couple of good observations to
the Mc

6/12/72 High @ Hamid, 23°, very warm.
Dennis Finn, Henderson off @ 8:24
for Four Creek to measure Dip section.
Hutchinson, DeKeyser off @ 12:20 PM
to look at Dk Trps north of
Arctic Village.

1. Fossil Locality 5, Arctic Quad.
M_L = Ls, f. grn muddy - Mdst, crinoidal,
brachs, bryozoa, fenestrate bl. chert beds
bryozoa bl. chert beds, chl blebs oval
stems ≈ 9" in dia - possibly silurian
coral heads, Mdst dk grey, dense, v.f. grn
- See sketch

8693 F.C.4 20' below contact
8694 F.L. Limestone beds
8695 L - See diagram



Location #5 (Fossil Collection #5 by USGS continued)

PPz

- basal lens limy slst & sh. + crinoidal
Ls, dkgy, platy weathg, thin bedded, argillaceous
gastro, brachs, corals, Lam impressions, Tentaculites
Thin silty sh. blk - dk gy. [fossils rare]
Dominantly slst & silty sh. w/ gn cast,
platy, & silty, abd trace fossils resembling
worm tracks.

Stopped @ Loc 67, PPz on ML
(Fossil Locations on Aerial Photo)

8696 F, C, L, ML
Ls, med-lt gy, crinoidal pkst.
Top 50' of ML w/ assurance.

7/

6/12/22 - Warm, humid.

- Fuller, Ormiston, Wheeler, Henderson off at 9PM for Old Camp.

Hankerson, John Sullivan, Dekoyen off at 12:30 on Twin Beech Charter with all gear - for Circle Hot Springs. We have the 3 Jons, all our personal gear and 6 gas crates 3 racks and 6 beverly bags of rods.

Ben Hotel bill for 7 people for room & board at Arctic Village is $704.00 - Not bad.

6/14/72 18°C @ high;

Pit boom at 8:20

Allen Orr, Ostrom & DeKeyser - on Pen in

Tahsonic Bluffs - ls, lt. thin - not headed.

Hankinson & Henderson - off to Dwy, Dail

SH 785 Rad Basalt, f-crgn, porphyritic

hd dense, green gy, weathers

occ mega botryoidal texture

FCH 786 E, C, L

Ls, Bdst (stromatoporoid), Dominantly

a crinoidal phst-lstst. corals,

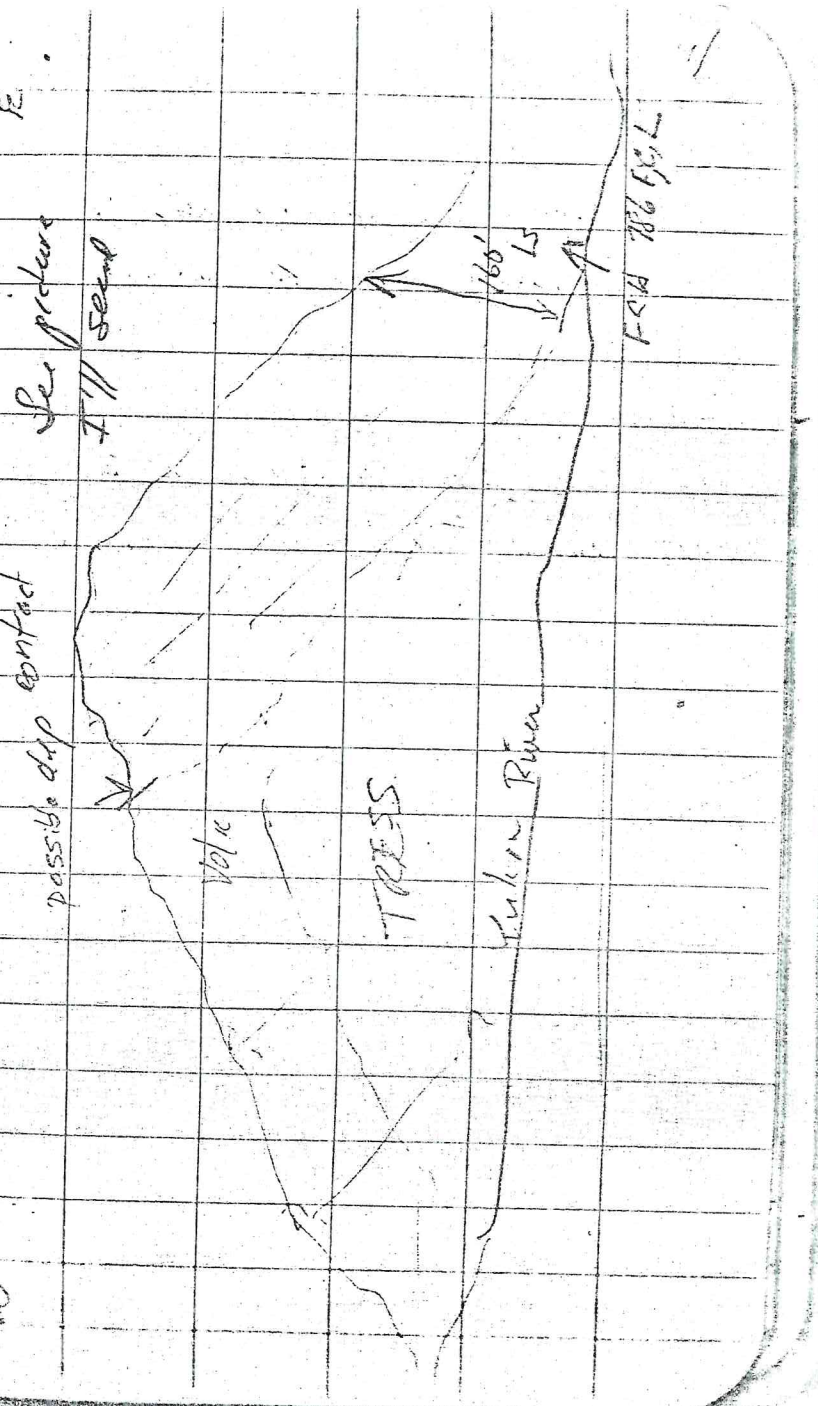
dk gy, Difficult to determine amount

of stems, alveolites? common?

stems up to ½" dia.

branchs, stachyodes

Approx 160 ft (altimeter) - poss good contact w/ volcanics below?



FCH 7274 Dolom. t, m-dgy brn f-grn, Interlaminated chert & dolo. Chert commonly 1/4" thk, dolo m-t variable 1/4" to 2" weathers dk gy & blk. very fine/aphanitic lithology to Namoork @ E-23, -Also, Congl. dolo pebble, & cl gr calcarenite,

1a/

6/15/72 - work in Cumming's ridge area

FCH 788P - supposedly same outcrop as C116 collected by Conrad Bm Soil.

Henderson, Hankinson Formation

Loc 24 for 1971 - Conrad called this Mbr. - RIE,

Dolomite & Ls. - abd stromatolites (colonia) & broad flat structures

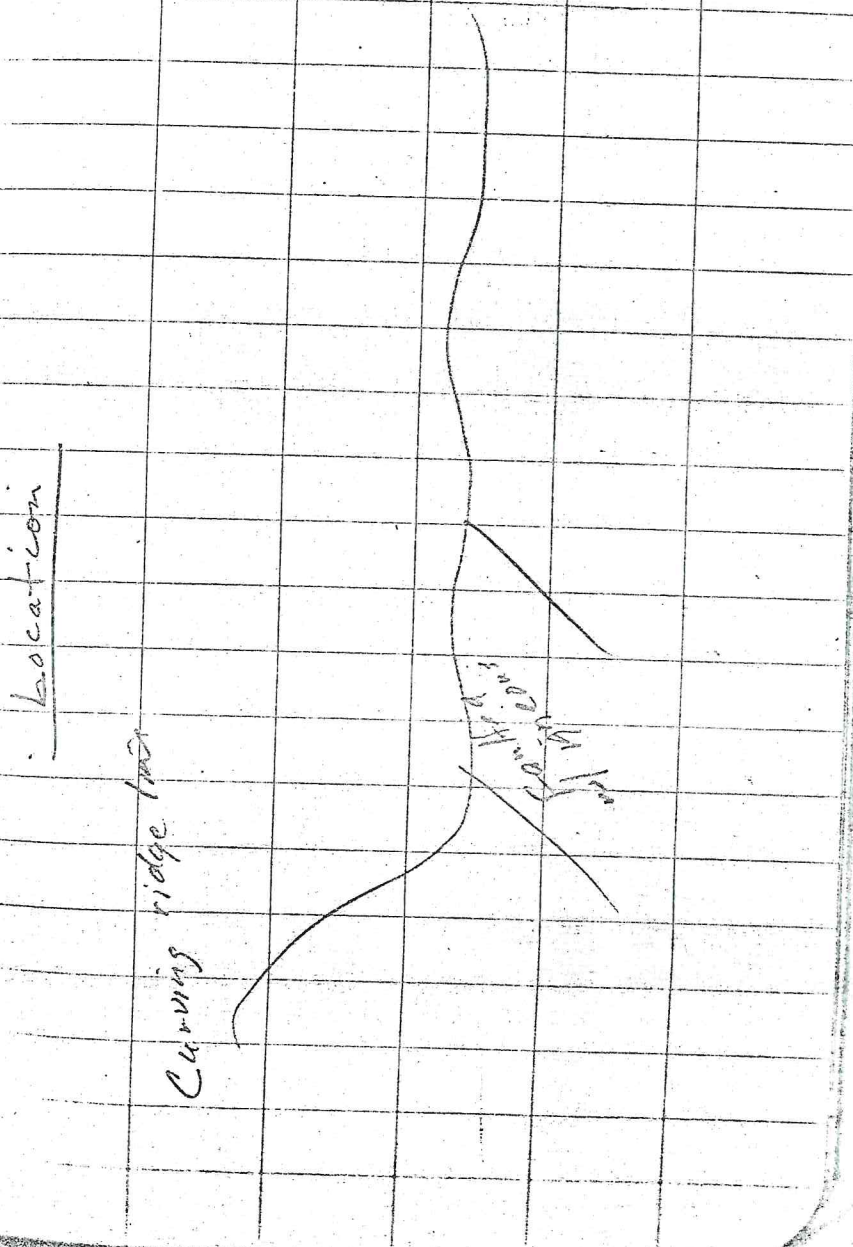
Roll #1 frame 36. Outcrop 40 ± 1000', Dips 70° W, outcrop is extremely brecciated - with good fracture and vuggy porosity.

FCH 789C Base of bottom

FCH 789B Ls. top

FCH 790 C.C. FCH - middle, stromat

" (office specimen)



July 93 4. Dw? Nilsen Lake

[82FCH 792L] Chert pebble cgl. angular - prob. biogenic sour bedded md gy chert pebbles up to 1½" poorly sorted; hematitic matrix. Possibly calc (calc clasts or matrix?) Dip in N 20°

FCH 793

[82FCH 793L] ← Ss, vf. & gr. well sorted, H gy - buff - similar. Very siliceous looks like Ss and Conglomerate & Pg unit of Bradley at Foggy. Calc. 2.5 Ang. Unc. N60°W 55°W ≈ 280' exposed

Time 2:15 No. Pinto

2 miles south of Arctic Circle

≈ 1500 acres burned & still burning - 2 major areas of fire

Location 66°22'N 143°32'W

T8N, R20E SW¼

Wind - 5-10 WSW

FCH 794L Pzv

[82FCH 794L] - volcaniclastic, grn f-coarse. Strikes N50°E. 20° dip looks lenticular (mud), brecciated. Feldspar weathering out on bedding

FCH 795L

[82FCH 795L] PEu

Ss, H buff formation, thin bed flaggy

FCH 796 P,L

[82FCH 796 P,L] - Volcanic agglomerate - looks very round w/ cobble angular volcanic & "mud" matrix

[82FCH 797L] - float vol. for lith

FCH 797L

~~8290 P~~ - Shale, dk gy fissile

~~8291 L~~ + Ss, subgywke

FCH 7992 + Cong.

N20°W @ 50°

gy/w ols cretaceous

FCH 800, 801 LP.

~~8293~~ : Ss, shaly + gywke.

very simi. for the previous stop

Cretaceous ?

John McKeever + Andy arrived today

6/16/72 5000 ⊕, cool.

McKeever + Henderson to leave today

Today - study Crazy Mtns.

Furer, Harkinson, Dekeyse to go first

8294c Cgl, chert, clast well rounded & ang poorly sorted clasts up to 2½" - qtzite (breaks across grains). Composite is dom varied chert, & silicified lam sh. ch is lt gy, md gy, dk gy, lt. brn, gn.

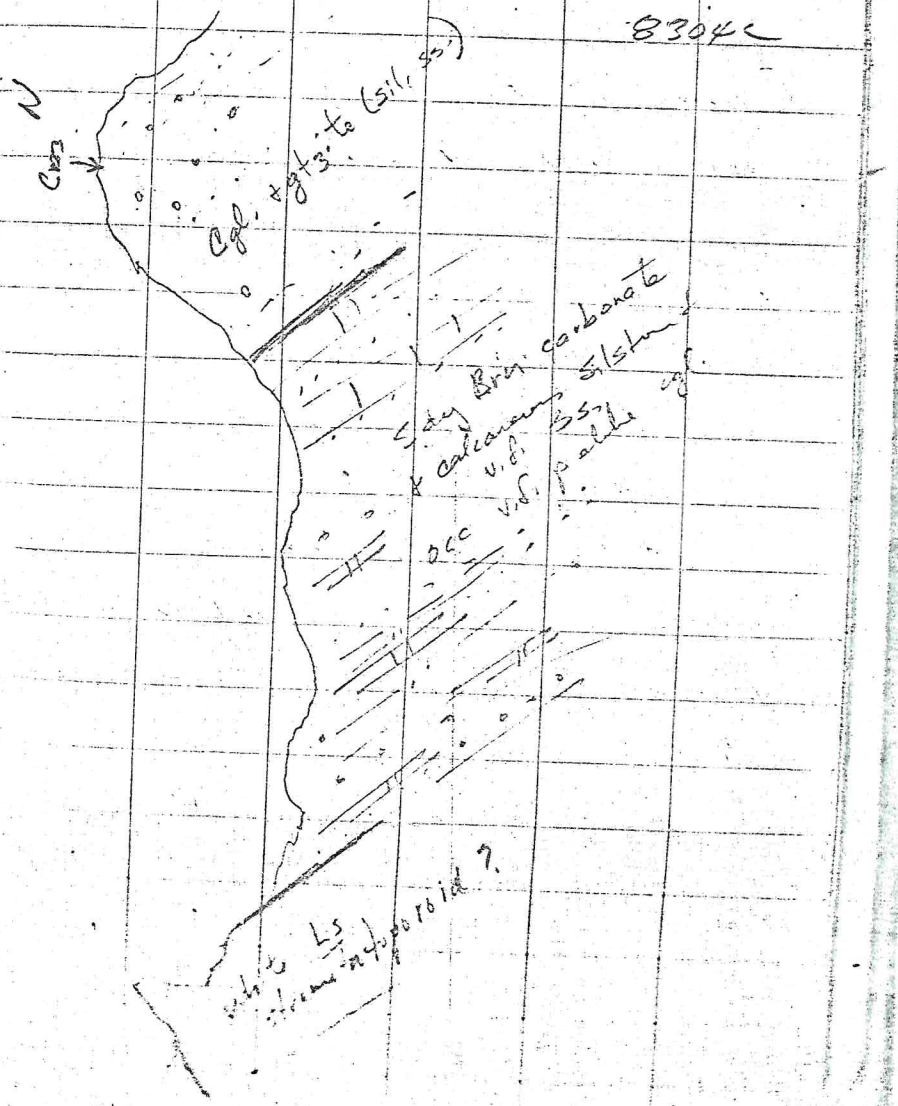
8295 F, C

Carbonate, md gy lt. no fossils evident - however, outcrop is badly fractured & apparently recryst. X-laminated N50°E vertical. Possible ?? ghost stromatoporoid structure. Negative evidence indicates unsuitable rock for Mississ.

Benchmark Crag (Crazy Mtns)

- started @ top & walked south dip was 45° & quite variable.

8304c



occ thin beds of arg silts & vf gr sndy

occ interbed silty sandst

8305P shale (metamorphosed slate)

Furers location to look for

old Kamia (No Mask)

Rained in PM throughout

most of nite. Played bridge.

6/17/72 50° @, 11°C

wind 180°.

Taylor, Dekeyser, Furer, Hankinson

off @ 8:30 for Deacon Rock.

Taylor & Dekeyser to measure

Deacon Rock section. Hankinson &

Furer to recon & spot samples.

Colem 2 SS. 150° dip @ 47° south side of

R. 8306L 50' fm -MC (Mountain View

& 8312 Rd

thn bedded ss, vf-fgr, silic, tuffaceous, lith,

w/ X-lam, load cast, cut & fill,

oscillation ripple marks.

8315

Mouth of Coleen River
Sketch

16

6/18/72 Cl. 2°C

off @ 8:10. Furey, Taylor, DeKeyser, & Hankinson to Deacon Rock area.

Taylor - DeKeyser - walked the P.R. upstream from Deacon Rd. & found Eifelian (or Delle) Grnst & Bdst (Thamnopora, Crinoidal (2 kinds) probably a little younger than Falmouth. very significant anyway. [I would say for point my NW reef edge of the Falmouth in a N/S trend in the valley to the NW of Frenchs Calf Mtn.] Don't believe it myself.

8324 etc:

8321-22 F, C, Ls, med gy, thin bdd, dense hd, abdnt large brachiopods & coral, probably late Hamilton?

8323 F, C, f Ls, crinoidal, med gy very fetid hd with probably fair abdc to Atrypa.

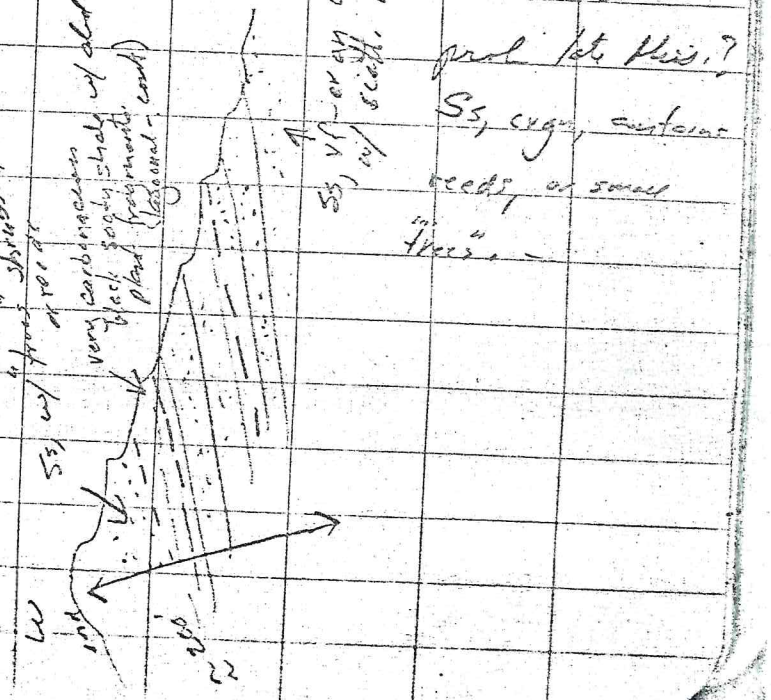
8324 C

53 vf-f gn, well sorted, well rnded, frosted qtz grains, looks like Sh 33 & 91 of 1971 - is this Devonian or younger.

& BFR rock.

8325

Sh 16 for 1971



This sequence appears to be a transgressive reactivation in prob Ht Kis.?

stop again @ 5½ 22 (Ord)

≈ 20' section exposed, base = SS, yellowish gray, s½, thin bedded w/ fissile, greenish gray shale & silty recessive w/ abd biotite markings. Entire section in this interbedded silty SS & silty mudst w/ scattered zones of ammonites and brachiopods

6/19/72 High broken, 19°C. Furer, Taylor, Hankinson off @ 8:45 for Crazy Mtns. Dekayser in camp looking @ fossils & plotting up sections

8335 I, C, E : dk reddish pebble congl. & SS, dk, v-c gn to grn'ish, & very calcareous SS -

8339 L, C | LS, med dk gy, thinly lamin & X-laminated, No visible fossils, interbedded w/ maroon & green shale - possible very shallow water platform facies - looks something like the Gossage @ Salmon Village section - probably doubtful

8340 L, C : LS, AB, The sequence is ≈ 200-300' of LS overlying the maroon & gn shale (strata)

8341 - Pzc, gabbroic to diorite, some outcrop appears bedded (picture) Roll #2 #6, looks like sill to me.

8342 P Sh, bl, sooty, & thin bedded silty dk brn (Furer says Bicknell Fm) It is significant that if this is Bicknell it is the farthest / NW outcrop so far (We are all grateful thinking)

6/20/72 0540 overcast, 10°C, All three outcrop pc: 8773, 8774, 8775,
Fuller stayed in camp. Hankinson, DeKeyser, Taylor off @ 8:00 to Bear Mtn. & vicinity.

8773L P_s, Ss, Cgl, lt gy red, maroon

8774L P_s Ss, Cgl. } red, brn, gy

8775L P_s Ss, Cgl.

8776L P_s Ss, Cg.

8777L P_s red bed, interbedded cgl ss & cgl, evenly 1½'
str. dips 20° @ 240°

8778 Cgl. lt, gy chert clasts up to 1½". Ch clasts predominate wit except no red clasts

(The P_s cong. has a character istic reddish color — clasts range in size from fine pebble to cobble up to 2"-3" generally ½ - 1" thru. Composition of clasts are chert (lt gy, brn, sm lt), red, rdish brn, + angular clasts of qtzite, slate,

6/20/72 cont.

Conrad & Cooper arrived @ 6:30 PM.

6/21/72.

Conrad, Cooper & Furer off at 8:30 AM in 207 to recon divergent area. Hankinson DeKeyser & Taylor off at 8:30 for Deacon Rock to look @ carbonate unit along R + Hankinson to a few spot locations to the north.

WX - Broken @ 2,000', scattered 6-10,000

Temp 13°C. Sunny

FCH 802 L,C Dolomite, md gy, hd, dense, evenly laminated, alternates H light cream to md gy banding up. Looks like a bioherm ~~mud~~ originally very clearly laminae also. Entire is vertical. Again, looks like "Nonosh" type carbonate. Entire objs ≈ 90° to w. Strike NS.

FCH 803 L,C Same as 802 LH

FCH 804 F,C,L LS, md gy, faintly laminated. Suggestions of stromatoporoids.

* Downstream from Deacon Rock we measured carbonates all dipping W. - then a covered interval of ≈ 1600' - then we discovered a beautiful Mississippian section - abundant fossils ! see DeKeyser's notes

6/23/72 Clr, 18°C, warm sunny. Ewan, Taylor, Hankinson off @ 8:15 AM for Crazy Mtns.

B343C - E. End Crazy Mtns. Ls, md gy, micritic, lam's clay + X-lam. hd, dense, No visible fossils.

8344

B345 Megaflora & Lith Cgl - qtz, schist, fragments, poorly sorted, load casts, clasts, wood + plant fragments, petrified wood, etc. Outcrop is hill to reddish - much hematite & Fe oxides, Unquestionably a fluvial deposit. in probable Deer Lk Miss fm. However Composition unlike Composition to that of other Deer cgl. + could be Miss.

B346C Horsfeld (below cliff) in ? assoc w/ qtz hornblende diorite. (Livingood chert?)

B348C qtzite, vf-fgn white clean well sorted, well rnded, silicified w/ vuggy porosity in some samples probably due to weathering pyrite + glauc.?. This was a very good SS.

6/23/72 — Copper & Conrad - recon & familiarization ride — No work.

6/24/72 Clr, Sunny, Cool 8°C,
Surver, Taylor, Dekeyser & Hankinson DJ
at 8 AM for Lime Peak & Victoria Mtn
areas — Lime Peak is granite. Ran into
high winds, overflow White Mtns velocity
to Livergood & back to Circle City,
No geology today

6/25/72, High broken to scattered, Sunny warm 10°C. Taylor, DeKinsey, Hanlon, df @ 8'07 Ave for Eagle area — to sample Biederman argillite, Kaibel Graywacke, Keenan Offit, & Triassic near Watson.

Start sect. # 9024

Biederman Bluff Section

- start at 1st outcrop prominent outcrop along brook south of small creek.

detailed representation stratigraphy of Intermediate Argillite

TOP (Section continues downward)

9025 PtSt

~10'

9026L

SAS with excellent flame structures convolute bedding slst beds appear on this interval

20'

9027 PtSt

30'

9028 PtSt

80

9029 PtSt

139

15'

slst, dk gy, lt gy, ripple laminated, ship contact top & bottom. Very characteristic penetrative convolute bedding (convolute laminae) slst is slt calc or dolomitic

slt is mod calc & dk colored thicker slst beds are graded from slst to shale, up section

Deposits are apparently a deep deposit marine environment

Shales show cleavage 30° to bedding which may or may not be original N-lamination

Top surface of slst beds are undulatory (ripple) & bottom surface is load & flute. slst breaks along convolute bedding surfaces which are micaceous.

Whole section is obviously very cyclic.

In units & sequence, slt beds are not thicker than 2½" or so same for siltstone beds.

fault - unknown displacement sample ~5' away from fault.

9030 PtSv 170' — (Sample 30' downhill from here)

? 195' — Sequence is same as above section. Occ. use see saw horizontal laminations

9031 PtSv 200' — (Sample 3-10' from fault) Sequence appears to be good strata - mostly lam w/ occ 1/4"-2" slst. beds. Occ dy pebble. Occ marcasite concretions

9032 PtSv 215' — Terminated section here — Purpose is to evaluate carbonization in Apgilite - Near & away from faults. Occ (very rare) 3" ss, sil. vf. gr. lenticular beds.

Keeler Apgilite Outcrop — type @ area

KP sec 129 for 1971

Start at top of steel section.

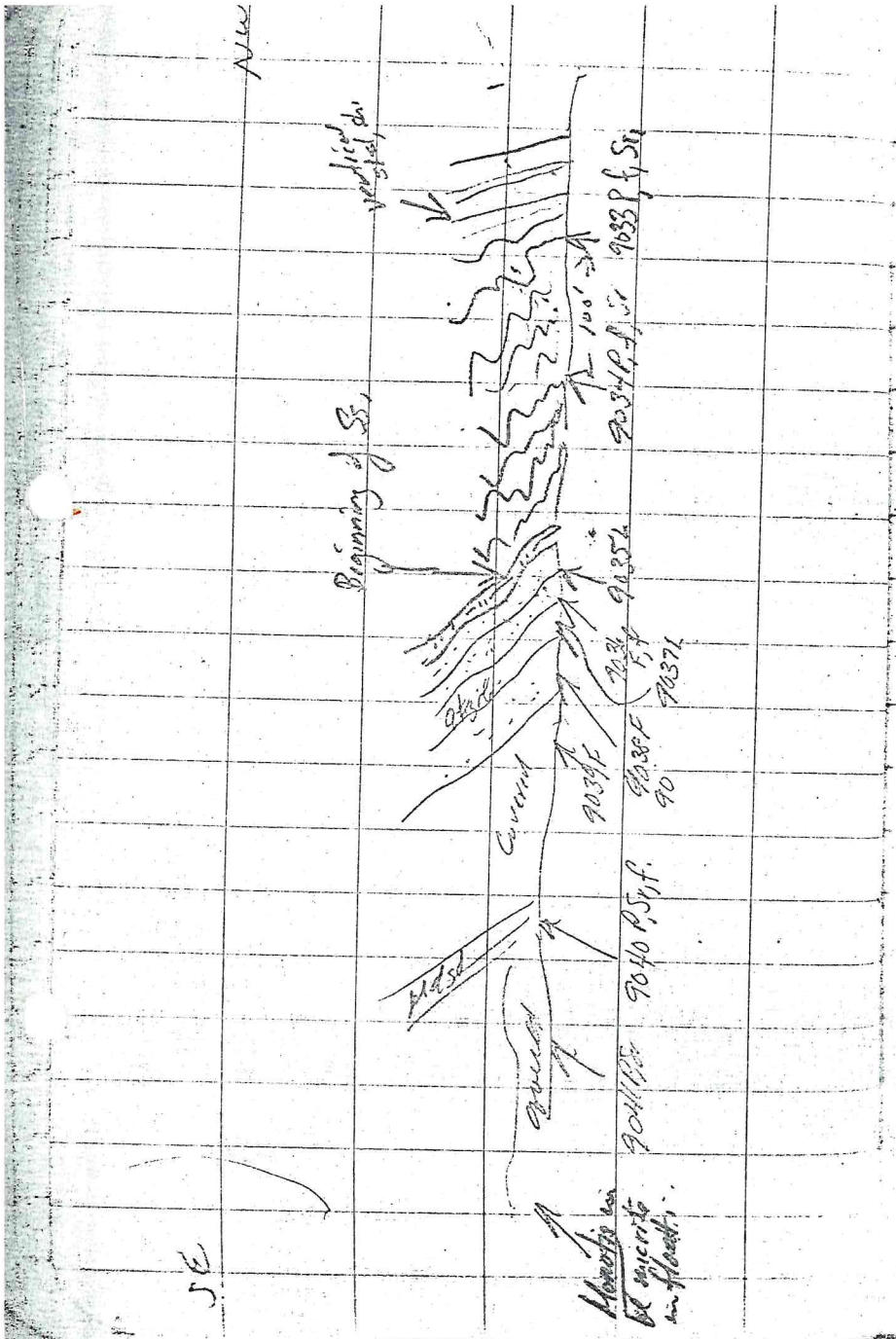
9033 PtSv (float, but immediately below outcrop) Mdst, silty, dk gy, micaceous, sandy (in part phyllitic), iron calc. (structurally complex zone, small marcasite balls, calcite veins decomposed to Fe oxide. Fractured) platy fragments.

9034 PtSv, SAS as above w/ irregular concretions up to 1½'.

9035 L Slst, sdy, dk gy, w/ Fe concretions

9036 Ef As above INOCERAMUS (up to 6")

9037 L Pt slt, vf-Mgy, vitreous ss section grades down section from the argy, silty ss to apgilite - Sample 2 6' below top of apgilite



9038F ~~a~~ bas. of glst mid. in float probably from glst - steep talus slope

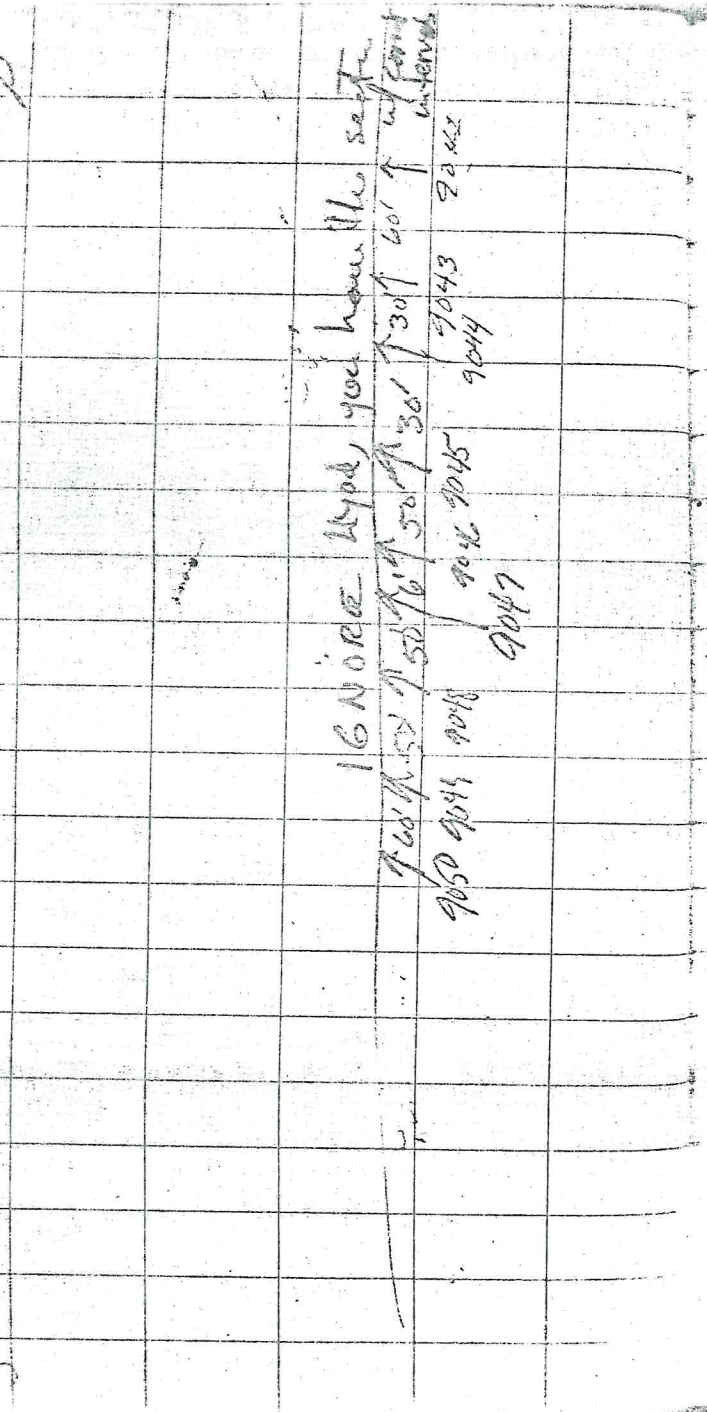
Ss, Sh, f, Inaccum, clays.

9039F - ~~Ss~~ in float - found a Hind Fe ammonite

9040 P, Ss & S, Float, but probably from West outcrops 0636

9041 P, Ss. (float.

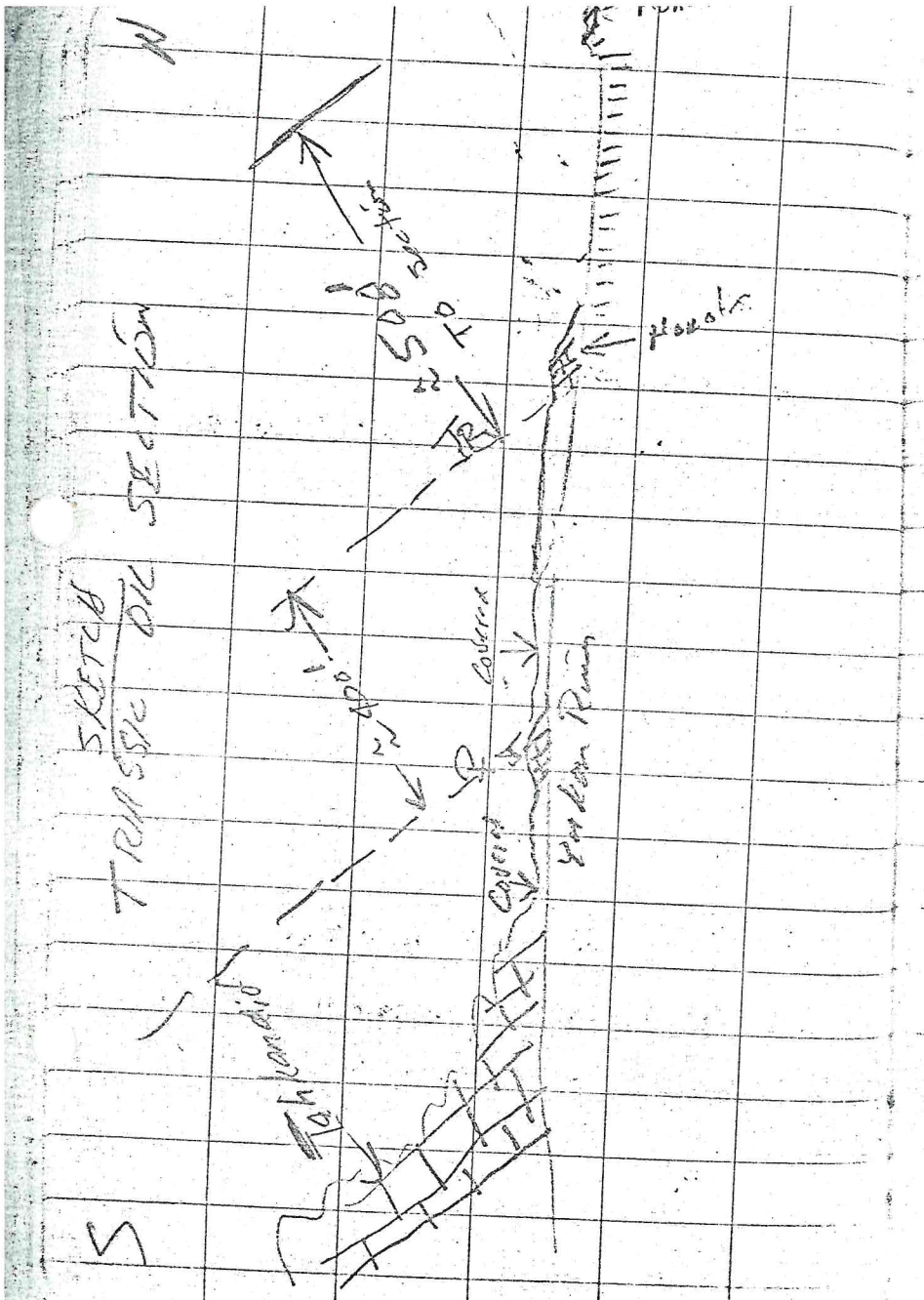
Shale - bk probably underlies sequence normally



THASIC OIC SECTION-TO 24.
Start top of Section at Brier Creek #1 Fed.

9042	P, Sv	0'	Sh, blk, carb
9043	P, Sv	60'	near vertical, petrolif. (very) sl. slty.
9044	F, :	70'	Ls, dk gy, vf gr.
9044	P, Sv		shd Manotis.
9045	P, Sv	220'	Shale bl. slty. bed still near vertical
9046	P, Sv	170'	clyst, gy-tan, weathers brown,
9047	P, Sv.	176'	Sh-clyst - intermediate lithology between 9048 & 9046.
9648	P, Sv,	225'	Sh- mdst. brn-bl
9649	P, Sv	965'	Mdst; dl. brn

9050	Sv, P	325'	Mdst, dk brn gy.
9051	P, Sv	375'	Mdst. Dig as for same.
9052	P, Sv.	425'	Shly Mdst. dk brn (Monotis) to gy. float nearby.
9053	P, Sv	460'	Shly Mdst, beds still near vertical.
9054 P 9054 F	P, Sv	490'	LS, dk brn, oil saturated coquina of Monotis.
9055 F 9055 Sv		497	FS above last additional fauna diversity.
9056	Sv	503'	LS, mx gy std dense rare Monotis, distinct change in lithotype.



9057SV 50½' Ls, dense, and gy
load f outcrops
— which dips N ≈ 30° - Same as Tabkaeidit Fm outcropping ¼ mi stratigraphically upstream.

9058E — Ls, wh, gnstn, wavy bdd, and blue grsly xtln, Tabkaeidit Member breccia - Sample taken at top of last exposed Tabkaeidit.

Furer — west FAL to Hauge gp
Move to Diagonal and have piece of metal taken out of bank

6/26/72 Clr, 18°C, warm, sunny
Visibility unlimited.
Hodgenson, Taylor DeKeyser. off to
Steamboat Mtn area. (River staying
to allow hand to heal)
PCP unit: Dolomite, lt gy, f Ls
crystalline, vuggy porosity, faint
laminae & possible plant fossils -
Samples 6059-72 Fr F, C, L.
Abundant Dolomite of vuggy porosity
fair to good, petroliferous odor
(strong acid) w/ some stromatolites,
Gastropods, Foraminifera?, Bryozoa?,
Coralline, Excellent reservoir rock.
We probably have the
right, vuggy dolomite, fossils, &
hydrocarbon presence.

T. DeKeyser says possibly this is a
Middle Dev Jauna, He & Allen
have studied similar fossils
of Mid Dev in Tulsa

Funeral, Taylor & Hankinson
off @ 8:30 to E. of Yukon to low ridge
att. Paleogeog. – Devel. of Ordovician / Silurian (volcanic arc) transition – returned home – airborne again @ 10:25.

8353L For L Dun: Conglomerate
Slope. Comp.: cobble size to fgn poorly sorted, angular to rounded, chert arc gl/stk, chert (gy), bl, gy (rare) pink, red, red sandy, lt gy lam chert

8354-56P Sh, bl. sooty, thinly + evenly laminated, ± s/st + ss, vf-med gr. bl – gl @ 15% bl (burrowed or vol?) (lag wacke?) + occ fg pebbly ss/st beds 4"-6" thk.

8357F,L Ss, vf-med gr, wd, dense, limonite, Paleozoic lagoon – Buchia, Inoceramus, + other clams.

8358F,G Ss, gl/gn to AS w/ Buchia poorly preserved 500–1000± ss section, md. bedded, very significant ss, v vf-fgn, well sorted, ± calcareous reservoir sd.

8360P,SL ± 30' of Mdst, bl dk gy
8360F w/ rhythmic thin beds of s/l calc bl dense mdst with quiz lens, Paleozoic pass at base. – Petrology w/ ss inclusions. LCF shales it is Glen Shale. Possible because it may underlie ss.

Dips SE 25°

7/28/72 High 68°F-ish 20°C. Sunny.
Furer, DeKeyser, Hankinson off @ 8:15
for Salmon Village, Nelson Bay area.
330° @ 15-20°
8361-62, 63 Pf Sh
90' of excellent outcrop of Mud sh
61 top
62 bu.
63 bu
- dk gy-blk w/ abd gypsum
crystals in fractures & joints.
? - what is the significance of
the gypsum xtals in dk gy
shly mdst.

8364-65 F, C. - M. Dev. Carbonate
outcrop very significant - tie to
Salmon Village section
- Dolomite thin bedded,
dk-med gy, ostracods, stromat-
pora, brachiopods, Amphipora?,
tetracorals, gastropods, Looks
like a reef, more to the beds
reef over. Dips to the north.
continuous w/ Salmon Village section.
Ostracods are very abundant
in some beds - not quite a
coquina.

8366 Pf, Sr - L Jr. Mdst, shly,
possibly graptolitic & Sh, dk gy
Mdst - calc - sh, soft sh.

FRANK & MARY WARREN
CIRCLE CITY, ALASKA

*

[S368-76] M. Dev. Eifelian
Elevation? Lns. + Ddo.
Ddo - dk ag, hd, dense, oolitic,
tentaculites, occ. brachs, some
burrow casts, (See sketch
section of LCF. Environment
is very shallow H2O, subtidal to
mainly supratidal to top
of section. Water shallowing
up section. Good
correlation w/ postulated
M. Dev. Reefs.
Some cumoidal pkst - gnstn.

~25% clay / Ready. - excellent food
+ fossils.

7/29/72 - Warm, hazy (fire smoke)
18°C. Departed Circle City
at 9:08. Furer, Taylor, Hankinson,
Dekuyper & Sullivan driving trucks
to FAI.
We will look @ geology along
Preacher Creek on the way to FAI.
8377-29 Pj Sst. Bl sty Mdst, &
interbed Ss (f exp) & Slst -
very similar to previous temp area
def in Kb. Looks like Kb
more than any other unit
so far.
[Strength - Tintina effect? So far
I think its prob mostly vertical
stretching in Cretaceous rocks
are set w a cleavage w/ much
lateral movement - Paleozoic
@ Eagle are unlike white Kbs.

7/30/72 72°C hot, very hazy,
local cumulus buildups.
We spent the night at the
Travelers Inn. Tom, John taking
vehicles to Livengood.
Furer, Taylor, Hankinson off at
10:15. Fly YUKON FLYING SER, had
A/C contaminated fuel - had to
refuel @ Interntl.
8381F - Ls, med brn-gy, birdseye
micrite. No trace of fossils but
could suggest this
8382 Radiometric igneous

7/3/72 15°C Thick haze - smoke

visibility 1/2 - 2mi

Turner, Taylor, DeKeyser, Hawkinson

ff @ 9Am for white Mtns.

8384-92 white Mtns — Fossil

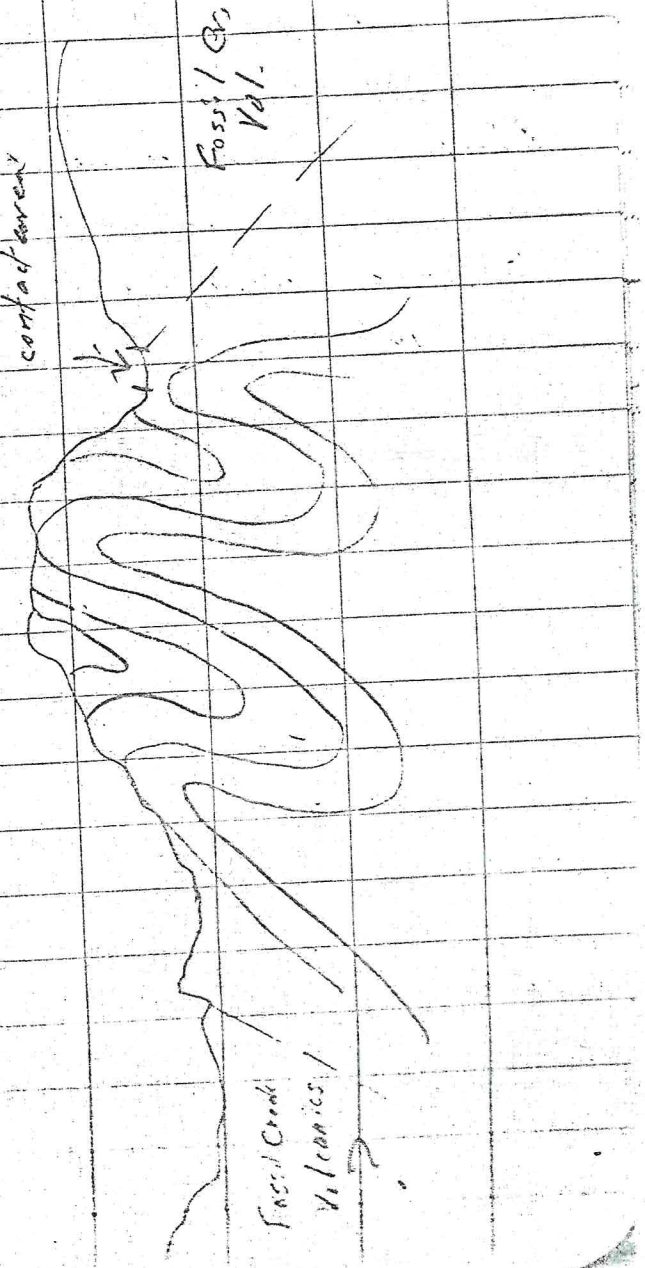
Peak area

Talkeetna Ls, Ls, mdst gy- micrite, extremely sheared

Coralline patch biostrom 6' Volcanic SS,

Volcanic conglomerate of occ Ls clasts, & older vol. clasts, occ, granite

top maybe unconformity



Looks Cal, OCC, & DST units.
- Not very impressive.

8/4/72 - Clr, warm, no haze. 12°C
: airborne @ 8:30 hrs.
- Furer, DeKeyser & Hankinson
off to Schwatka Mtn.

8398 C, L, F) Ls, lt. sooty, carbonaceous
+. M shale, : supposedly Cr.
looks like a restricted marine
shelf in lagoonal environment.
Looks somewhat similar to
8394, etc in OE. cc unit on
Willow Creek.

8402 F probably stromatoporoids

*

8403 F, C, L. Ls, Bdst, & Pkst,
8404 F
3 spec. coral (fasciculate, horned),
Phillipastraea, Thamnopora, Amphipora, Crinoids,
Stromatoporids, this is very probably
Alveolites?
a reef - Lodis Frasnian.
*-[Crinoids intimately assoc with Stromat
gpreeds - very similar to the upper
Wind River section.] This section
contains volcanics & many L
assoc. w/ vol. & be somewhat
correlative with the Wood Upper Ogden
[& Indian ageport & access in
this Frasnian sequence are they
restricted to Lower Dev & Eifelian?]
FRASNIAN REEF IN
SCHWATKA MTN

8/2/72, Cr, sunny 70°C

Furon - Hankinson ff & NW to spot check Rampart Group, & Taylor, Dekeyser - ff w/ track to sample road fossil locality

8405, 8406 D] Ss, gwke, md gy, md-fine gr. & Sh, lt. w/ lt intrusions (Eugeosynclinal)

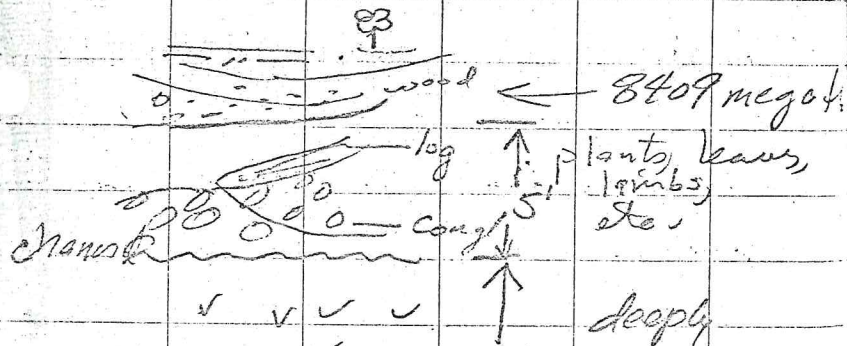
8407 Cochran] Igneous ... sl. more acidic than gabbro. Looks like similar to Cr gy Mt. rocks.

Rampart Group

Ls, varied lithotypes - commonly a limestone gwacke - gy-brn vf & vc-gr. w/ clay clasts, vol., & qtz clasts. Could call it a calcareous gywacke. It is very tuffaceous with faint bedding. Definite contemporaneous volcanic activity. Observed no fossils. Some Ls, is very lt & md gy w/ bits of volcanic detritus. All has a blocky weathering habit. Had green mud? clasts. Jct. Lead maroon & red clay st.

S F-TV contact

Definite Tertiary Continental overlying deeply weathered outcrop dips SW 15°



outcrop of igneous to W. of Tert/Igne. collection - igneous is ever gn, grn, & appears to 8411 Goochron be bedded! & quite similar to the Circle Volcanic outcrop just SE of Circle City. (The one w/ picture). This was the location that Brooks said there were yellow sands, we did not find any.

8412P. Sh, Cl. blocky fracture, occ spirit tubes.

8/3/72 14°C Clr, Sunny, Starts of wind.

1st boat - Taylor & DeKeyser off @ 8:30 for White Mtns. + Hamilton. + Fenner following @ 9:15.

(Yesterday, Taylor & DeKeyser found reefs & abundant fossils in Tolovana Ls & significantly volcanic detritus interbedded in Ls around reefoid material. - A typical Hawaiian situation.

- Windy Cap Section N.S.
- a tightly folded synclinal with coralline facies immediately above & interbedded w/ lg volcanics (which are augite bearing) & Ls, less volcanic.
In center of syncline the rock is all strongly [illegible]
I.e. all reefal. - Interesting that probably the entire White Mtns & the Granite Mtns is a reef trend & it just broke right at the carbonate reef edge.
Saylor 8843 etc. There is one real doubt that the volcanics & Ls form a continuous sequence.
The sequence of carbonate is quite similar to the Wisconsin area & could form the carbonate platform on the south side of the basin & wrap around to the east & north to the Porcupine Arch area.

- Windy Gap section & contacts
of Dst & Fck - contemporaneous
vol congl. deposition w/ carbonates
However, age of volcanics is much
older,