DRILL CORE NOTES ON:

- RC Ventures
- Darkhawk
- ADERA

MAGGIE VISIT NOTES

Sept 1970 WJM DRILL LOGS

BEGIN SEPT 1970

MAINLY DRILL LOGS

WJ McMillan

DEPT. of MINES

VICTORIA

CONTENTS

Showery
WJM RJNichols
19SEPT.'70

RC Ventures Hole #1 328/48
(in Bethsaida)

Box 1 42' 78
Local zones of cg bi book concns occur over 1 to 3' at 53' and 68'
Wk sericite altn along fractures

Box 2 70-76 sericite chl. stringers & ck fairly pervasive ser. altn (moderate)

Box 3 a few sericite plugs & local patchy wk altn

129-158 Sheared qtz-pyrite veined Bsda with plag replaced by yellow-brown altn which locally pervasively replaces all but quartz (v at 153 - may be fault gouge).
Sheared & veins predom. @ 30° to core - range 0 to 40°

176-196 Variable sericite-Kaolin(?) & some pink altn - shears at 35-40° to core.

196-200 Chilled zone - "crowded porphyry" with plag phenos & gray groundmass — a few % fm the contact qtz phenos come in & by 204' phenos comprise 60% of the rock

207-213 Fault gouge

Qtz - calcite veins with subrect. red-brn pods (hematite ??) with cpy cores & pyrite pods - pyrite also occurs adj. to the veins in the dike

½" qtz vein @ 30° to core has some cpy & pyrite & hematite?

277 Bottom contact of dike 80° to core, ½" chill zone

Moderate sericite & pink altn continue to 308'

Qtz - pyrite vein ½" @ 290° - 40° to core

332 to 346 Bi → chlorite or sericite - carbonate. Between the mafics are dendritic sericite stringers.

346 - 349 Intense cream - colored altn (kaolin?)

349 - 394 Like 332 to 346 but slightly stronger with local intense kaolin zones

Occasional qtz - pyrite ~~stringer~~ veins

389 - 390 pink aplite dike with qtz phenos @ 40° to core
alt'n from 394 onward is slight to moderate and patchy.

442 - 458 Rel. fresh Bsda

458 - 467 Patchy but locally intense pink + sericite alt'n

@ 467 a qtz vein has massive pyrite
hemo. Cpy occurs as pods outside of vein + cuts the pyrite. Vein 2" wide

478 - 502 Patchy pink + ser. alt'n

490 - 492 Shear fol'n 10 - 40° to core

529 - 531 Qtz - pyrite veins are common @ 30° to core

570 + 575 pink alt'n zones

588 END OF HOLE
(Recovery 95% plus)

(?)

HOLE 2 Drilled 320° @ -50°

0-27 °B

50-71 Zone of moderate to intense cream altn (kaolin ?)

103
110
111
131
133
} Pyrite - Quartz veins and Pyrite pods
Angle with core variable

153-154 Biotite concn - 25%

153, 159 1" aplite veins

174-202 (dike) 4' chill zone, then DIZ then a 4' chill zone to the basal contact.

The c.R./dike contact is subparallel to the core at the top contact

Pyrite stringers @ 0-10° are throughout the dike

Chilled flow layered dike (grayish-yellow) 233 to 235 *

1" dike at 239

Cream altn @ dike borders

240 2 "Pink" aplite like

243 - 259 Sand - to gravel-sized fault gouge

259 - 278 Sericite/kaolinite(?) altn - intense

278 Qtz pods

285 Pyrite

289 → 290 fault gouge

290 - 297 Coarse sand size + smaller fault gouge

297 Hole Lost

(Recovery overall 90%)

RC VENTURES - Hole 3 Trend + dip unknown

0/B 48'

48 - 67 Patchy pink / sericite altn

67 - 68 } Gouge
78 - 79 }
82 - 86 }

89 - 104 Moderate, consistent pink / sericite altn

104 - 140 "Fresh" Bsda

140 - 167 Pink altn - moderate

147 - 149 Sheared, pyrite-rich zone

167 Chilled contact of 1 Dike
2' wide - contact 45° to core

A few qtz stringers, some pyrite veinlets

213 Dike contact @ 50° to core, chill zone ~1" wide. The dike is ~~pink~~ altered to a pink appearance in its core & becomes grayish again 3' from the contact

218 - 238 Moderate pink + sericite altn, 1' gouge at 222 and qtz ± pyrite veins every foot or so

235 - 237 Sheared Zone

237 - 265 Rel. fresh

265 1' gouge zone @ 45° to core

275 shear zone 1" @ 45° to core

275 - 278 Kaolinized (?) intense

278 - 355 Rel. Fresh bsda - local weak sericite altn

355 End of Hole

(Recovery 90% plus)

~~Note 2 Co~~

Xerox these + logs
for Ted Caldwell -
Cominco
Feb 6/89

#1 DARK HAWK MINES OCT 13/70

NO CORE SPLIT CORE 1.9" ϕ

HOLE 1 0/B 664'

Box 1 (2/3) 664 - ~~680~~ 714 at 676 is a 3 inch tectonic Bx zone in amyg. dk gray Kamloops volc rock which is cut by white zeolite veinlets

Granitic inclusions are fairly common.

Hb needle por. needles in plane at 30° to core

Some of the inclusions are fairly large but they are too altered to classify them.

714 - 731 Similar Rock

Tectonic Bx 6" @ 729

731 - 751 Bx at 742 30° to core

→745

751 - 768 752 - 753 Gouge @ 50° to core

Strike 45° to axis

Sample 1-742

NOTE 819 → onward May be pebble cgl rather than volc bx — u may be a cg version of the "cgl" seen in hole 2.

Oct 17/70
If it is, one will have to explain why it is very much better consolidated than the other cgl.

Abundant evidence of post-lava movement

768 - 783 Local pebbly zones and some "alteration breccias" (where altn leaves islands of fresh mat'l

sample 1 - 795

Still Hb needle volc with Guachon? fraps and white, soft veins (zeolite? gypsum??)

By 819 the rock is a subtle volc bx and from 833 where the contact has angle 30 - 40° to the core it is volc bx with crumbly matrix and many volc. + granitic fragments — most fraps 1" or less across.

sample 1 - 835

Volc fraps vary fm Hb por. to laminated tuff(?) to Hb Fs por like that in Arlington core to a reddish lava

New bx continues to 906 where a very soft sheared looking matl which is predominantly granitic debris (a fossil C horizon) — then gives way to granitic rock at 931 feet — the granitic rock (as expected) has rubbly zones common in it in box 16 (934-953) — It is Bethlehem granodiorite with 15% mafics and scattered cg hb with finer mafics between them phenos. Through Box 17 the rock has a fine network of cracks. (continues to EOH)

1000 EOH

Recovery 95%+

NONE OF THE CORE IS SPLIT

DARK HAWK HOLE #2

#2

to 548 o/b

NO CORE SPLIT

548-570

Gougy, rubbly mat'l derived from mat'l with qtz eyes, intense argillic altn + qtz vnlts.

Bsda?

Continues to 577 where it grades into a very immature sediment (pebbly arkose or greywke) with local carbonaceous (coaly) layers at 60° to core - it is almost unconsolidated

Sample 2-572

Most of the core to here was split

Coal layers every foot or so from 593 → 598 sampled for possible spore analysis age. The "coal" may be derived from layers of compressed leaves

611 - 632 local conglomeratic and silty zones occur in the immature arkose

632 - 652 Coaly or carbon-rich layers 644 - 645, 648, 650

652 - 684 The finer grained beds & coal layers have numerous dessication cracks in them.

coaly layers 652 - 3 intermittent to ~~658~~ 663

706 → Layering ∠ ~ 70° to core now

Similar beds with local finer & coarser zones & carbonaceous zones continue to [some thinly laminated silts (turbidites?) in 731 → 753

773 - 799 Some "goupy" zones & laminated silt at 793 has angle 55° to the core

Dark Hawk #2

switched to core @ 1½° at 790

810 Laminae 40° to core

841 Laminae 50° to core

more (silty) silty zones here

872 Pebble Conglomerate/Silt contact 55° to core

906 Laminae 45° to core

Rock as before - even to the coaly layers

Proportion of fg layers continues to increase downward

967 Laminae in coal 50° to core

Silty layer in cgl 50° to core

1030 Layering 45° to core

1084 EOH Still in silts & pebbly arkosic seds with coal layers.

EOH

DARK HAWK #3

DDH #3

LOST IN O/B ?

DARK HAWK #4

DDH #4

650 ONWARD NOT SPLIT

475 O/B

475-496 Bsda - rubble

-513 It begins to look like O/C and has cpy in it. Whether it is Bsda(6) or contact Bethlehem (5) I'm not sure - Favor 6 [Sample 513]

-539 Slight argillic altn, local E + some cpy - grade V lg. Local large qtz eyes suggest 6 but mafics are all fg

-557 Almost the entire box is gouge - MoS on slip face at 556. (sub parallel to core) [Sample 543]

557 - 573 Fairly massive
558 - 560
561 - 562
563 - 566
Otherwise all gouge
* to core unknown

573 - 588 Some cpy, some qtz veining
A4 = I ! A1 = I1 A2 = I1

again the mafics are not "right"
for Bsda samp6

588 - 607 Some cpy, bn, V1 Grade V/g
A1 = I1 A2 = I2
Bsda ?

607 - 625 Intermittent gouge 1-2' wide throughout
Some cpy, V1, V2
A1 = I2-3

625 - 649 Like 607 - 625

649 - 671 Mud to 675 then carbonaceous siltstone
sampled

671-691 Silty to arkosic to coaly sediments

Layering 75° to core

691-713 Siltstone predominates

sample at 692

Layering 85° to core

713-728.5 —EOH—

716 Sandy siltstone with carbon-rich layers @ 60° to core

Sample

—EOH—

OCT 14/70

DARK HAWK #5

NO CORE SPLIT #5

554 – 565 Bi qtz Plag porphyry – bi → ser Plag emerald green due to ser. altn

sample 557 D1

Very gougy but may be wtrg rather than faulting

– 582 Porphyry continues

sample 568

Rare cg anhedral pink hb phenos occur (<1%)

– 598 Leucocratic in general with mainly plag phenos — possibly equivalent to D3, D5 or Bethlehem's leucocratic Bethlehem like phase

Some ~~leuco~~ euhedral hb phenos.

Some qtz veining but overall massive (no well devel. fracture)

– 614 Altn intensity varies, producing apparent leuco zones (mafic 2%) which are probably more representative of the true composn of the porphyry.

Pyrite assoc. w. qtz veins & Altn more intense near veins

45° to core.

614-630 Altn less in general, some qtz eyes [sampled @ 620]

-646 Intense sericitic altn and shearing at 50° to core [641 Sample]

-662 a more mafic variety of rock has sneaked in on the middle of the intense altn [Sample 653] Bethlehem gd?

-678 [677 Sample]
Bethlehem gd - local intense sericite altn. + chlorite altn of ferromagnesian minerals

-694 Bethlehem gd - Local intense altn.

-709 Better + better Bethlehem down the hole [Sample 703]
Minor gouge at 708

-725 714 Chilled contact of porphyry dike - like that in the beginning of the hole
*Qtz Es porphyry (crowded) [Sample 718]

Gouge Zones 720, 725

725-941 Continues in porphyry

Plag. Phenos pinkish or yellow-white in a green matrix (argillic altn)

NOT SERICITIZED

-758 Local intense sericite altn

-775 Gougy zones 760, 770 @ 30° to core
- accompanied by qtz - MoS_2 (?) veins.
- local intense sericite altn

-785 almost all gouge - occasional 1' competent zones

sample 796

-800 Chilled zone ~2' wide and dike gives way to sericite-chlorite altered Bethlehem g.d.

Gouge 792 - 794

-816 800 → 809 Tan bi plag. porphyry contact 30° to core ?? sample 805
A thin version of what we've already seen

-831 Bethlehem g.d.

Gouge 829 - 829

-847 833-834 Emerald green altn of plag Bethlehem g.d.

-866 Bethlehem gd

-884 Classic " " - very massive

Bethlehem g-d.

-903 891 Zeolite vein sample
902.5 3" aplite 35° to core

-921 1" aplite 35° to core @ 916
Some zeolite

-939 Bethlehem gd

-956 Bethlehem gd zeolite veins

-968 (EOH) aplite 2" 35° to core
Bethlehem gd

— EOH —

DARK HAWK #7 "7"

NO CORE SPLIT

9B 786' → "Chonzon" to 798 (appx)
then Bethlehem g.d.

804 → Switched to smaller core at 813'
Bethlehem gd - altn + veining minimal

821 → Bethlehem gd
Gouge at 30° to core 822-823

838 → Cpy in one qtz-ep. vein at 10° to core
Bethlehem gd sample 856

856 → Bethlehem gd

874 → Bethlehem gd

892 → Intense sericite altn then gouge 899 → 910
Low ∠ to core ?

912 → Olive green sericitized Bethlehem gd with intermittent pebbly zones

928 → same as 892 - 912

998 → 959-963 Gouge
- rock as in 892-912

965 EOH

-EOH-

DARK HAWK #8

#8

NO CORE SPLIT

0 - 733 O/B (smaller core)

733 - 758 Bethlehem gd with occasional vfg hb phenos (<1%) a few qtz-ep veins

758 - 779 } Bethlehem gd
- 797 }

797 - 833 " " with local sericite alt'n

833 - 852 Bethlehem gd

- 870 " " 861 Sample

- 889 " "

- 908 " " very local A4

- 924 " "

EOH

Dark Hawk #9 #9

NO CORE SPLIT

0-692 O/B

-710 Conglomerate with silty layers at 35→50° to core

-728 Local coal layers 35° apprx to core

Pebble to coarse sand-sized fragments in the sediments. Uncommon thin laminated zones.

-746 737 Layer 35° to core

Same rocks to 783

where a thin black argillite 1" wide is at 80-90° to core - a 1' wide similar zone at 788 is similarly at a high ∠ to core but laminae + a silt layer in cgl are at 50° to core.

798 - 815 813 dark argillite zone at 25° to core

Sampled

Mud zone 803-5

- 832 cgl - siltstne contact 55° to core at 820'

- 851 argillite sampled at 840' otherwise mostly siltstne + pebble cgl

- 867 865 Bedding 60° to core

Mud zones 853 + 863

- 873 (EOH) Same rock types continue

EOH

DARK HAWK #10

#10

0 - 133 O/B — Large core NOT SPLIT

133 - 151 BETHLEHEM G.D.

-170 " "

Local ½" ø hb xls - 1%

-192 180 - switched to small core Bethlehem gd

-211 " "

-228

-246 " "

-266 sampled 236

Sericitic altn (produces yellow-green plag) moderate in places

-284 Bethlehem gd - local vcg hb xls

-302 Pink zeolite veins // to core Heulandite?

-320 some moderate per altn, some pink altn (A4)

sample 311

-338 sericitic altn moderate

-357 Bethlehem gd" "

-375 "

375 – 394 Bethlehem gd

394 – 411 aplite ¼" @ 30° to core at 410' in Bethlehem gd

430
447
466
483
502
519
} Bethlehem gd
local sericite altn
local pink altn
Sample 449'

514 – 6" of aplite at 20° to core sample

531.5 EOH

sample @528

EOH

DARK HAWK # 11

#11

Large core at start

0 - 243 O/B

- 268 SPLIT CORE
Bethlehem - one qtz vein w. MoS2 seen
~~280~~ Some shearing + fairly intense pervasive altn

- 280 altn continues

- 299 Fresh unaltered rock
Bethlehem qd with 1 quartz - bornite veins at 35° to core

- 322 Gouge 312
316-317

- 338 Some pervasive zones (near faults) sample

329 Qtz - ep ± cpy ± bn veinlets 30° to core — uncommon sample
Also got bn + chlorite coating some joints
GRADE v/g-

A4 = Pink altn
I1 = weakly developed

11

338 - 356 Chlorite on joints in common
Qtz veins rare
Still Bethlehem gd
- 372 - Local gougy zones
Some intense sericite altn

Box 8 - 390 One qtz - bn vein Assay

9 390 - 400 Several chlorite veinlets with bn cores at 20° to core
Sericite altn wk → mod.

SMALL CORE Now

10 400 - 421 SPLIT
401 - 409 Gougy
Qtz + Qtz - ep veinlets are present but not prominent
occasional bn po
sample 410
Mafics chloritized

11 421 - 443 NOT SPLIT after 425'
Bethlehem gd A4 = I1

Core split from
15 -> 25
and 65 -> 75

12 443-462 Bethlehem gd
a few gouges zones
462-480
@473 aplite - 1" wide
~~a few~~ ↓ ft ↑ of core split in the box
Ten (465-475)
- 503 Rel massive, rel. fresh
Bethlehem g.d.
- 522 515-525 SPLIT
— 1E — 10' in 50' are split —
- 541 Bethlehem gd
- 572 565-575 Split
- 597 Bethlehem gd

611 Variation in mafic
content suggests folds
in the gd is at ~~45°~~
to the core
Very local ~~#~~ around
fractures
sample 679

Zeolite occurs around 700'

At 742 still in rel. fresh classic Bethlehem gd

799 → 808 } Pebbly gouge zones
808 → 809
817 } in Bethlehem gd

Local gouge (pebbly) zones
820 - 835
Intermittant
889 - 914 ft Rubbly zones
914 - 925 mud → pebble gouge
some MoS_2-rich slips sub-parallel to core
925 - 935 ft Rubbly zones

Zeolite coatings on fractures at low & high angles to core

Continue

992 [sample] a leucocratic pink area (dike ??) crosses the core at 30° and is 6" wide

Rel. fresh Bethlehem gd with occasional zones of AQ contains to 100Z (EOH)

— EOH —

DARK HAWK #12

#12

Range Core
NOT SPLIT

0 - 341 O/B

341 - 348 C "HORIZON"

348 → onward Bethlehem gd

sample at 356

Hb → chl

Bi fresh

Plag → ser.

Local pink veining at 35° to core

421 Rock slightly less altered here — changed over to small core

Fairly general but weak A4

sample @ 426

437 Aplite 3" @ 35° to core

484 → 488
545
550
556
576
} Gouge - pebble - size in Bethlehem gd

589 Foln 40-50° to core

Bethlehem g-d

continues to 657.6

EOH

Bethlehem texture, mainly size of mafics and mafic conch somewhat variable in the last few hundred feet.

— EoH —

DARK HAWK #13

#13

0-242 O/B then Bethlehem gd

CORE NOT SPLIT
LARGE SIZE AT START

287-288 Rubbly zone

Bey 300 pink alt has intensity 1 (weak) No longer evident by 350'

343 Qtz - Bn ± MoS_2 veinlet at 30° to core. Bn > Cpy

Sample @ 366

Below 400 the rock is a bit more altered

433 EOH

Bethlehem all the way

-EOH-

DARK HAWK #14

0/B to 666 then Bethlehem granodiorite

683-693 Gouge

702 Hole ends in rel. fresh Bethlehem

[Samples]

— EOH —

#15 LOST ?

DARK HAWK #16

0-397 9B then Bethlehem granodiorite NOT SPLIT LARGE CORE

sample @ 437

some chlorite veining at high & to core

479 1" aplite at 70° to core

517 sample of veined Bethlehem with pink altn

547 Mafic layer 50° to core

545 aplite 1" 70° to core

around 550 ~~560~~ Qtz-Ep + chl veining becomes common

Most 0 → 30° to core

sample

Some Ht = Ir near 565

Zones of veining, pink altn + fresh Bethlehem gd are interspersed to EOH at 615

— EOH —

Mamit Lake Mining

George ~~Sara~~
Saare

Drilled ~~near~~ ~~East~~ West side
of Mamit Lake

— TN Claims
lots of Qtz) SKUTHUCK

ADERA

A1 = 599' Bethlehem gd

A2 = 601' Bethlehem gd

AA3 = 240 Bethlehem gd

AA4 = 240' Bethlehem gd

Maggie

with Dave Miller
22 Oct 70
Cloudy, Cold

NW strike / 50SW dip M1
argillite w. chert nodules & cherty argillite

M2 tuff

M3 andesitic tuffs

slaty → cherty arg & tuffac. and predom.

M4 First evidence of oxidation

M5 agglom, sl. arg & t

gradually each gets more & more intense —

M6 event. nature of CR masked

M7 Qtz - Ser rock

then deeply wthd & leached qtz monzo then rock like M7 again (M8)

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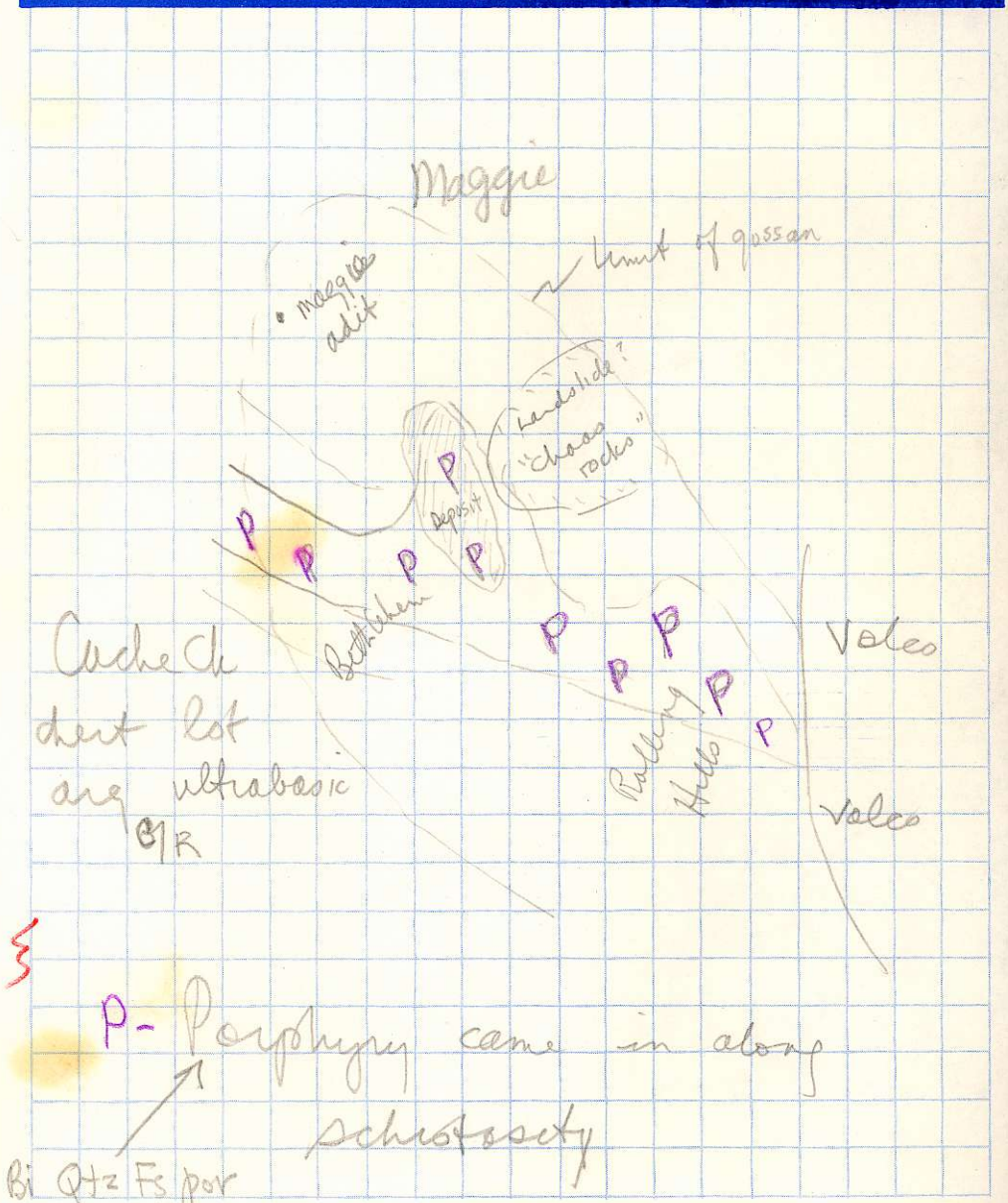

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Silicified siltstone? M9 tuff?

M10 ~~andesite~~ flow?