ORCHIE LAKE PHASE N.T.S. 105-K-01 and 08; 105-J-04

Station	Foliated	Porphyritic	Grain Size	Mafics
3827	-	Y	-	-
3828	-	Y	-	-
3829	-	Y	-	-
4190	N	Y	-	bio, hbl
6015	N	-	-	bio
6016	N	N	-	-
6017	N	N	-	bio
6022	N	Y	coarse	bio
6030	N	N	-	hbl
6031	Y	-	-	hbl
6663	N	-	-	bio
6673	~~Y~~	-	medium	bio
6689	-	-	-	bio
6975	-	Y	-	hbl, bio
6976	-	N	-	hbl, bio

4188) Dk. gray non-calc phyllites (CPP?)

S_1 135 70SW

No lithon struct bounded by thes meta. fol.

4189) Dk. gray → black, rusty pyritic cherts of RR?

S 92 42S

F_1 folds in S_0 seen

~~trend~~ 075 15NE

No time!!

4190) Bio granodiorite to granite of Orchay / Tenas pluton. Subsolvus 2 felds, smoky qtz, bio, minor hb. Dry. Massive, unfoliated w/ kspar phenos weathered into relief

4191) Massive, fabricless, m. dk. green finely [illegible] (<1mm) AKG

No sample

SE Ross River 22 July

6014) Mass, brown, med xline intrusive or basalt? andesites to diorite? Grey (subvole. intrusives). Unit 14? on Sheldon sheet Fabricless. Sample. Tertiary?

6015) Gray, massive brotite gtz diorite to granodiorite. Unit 13? of R & G. Fabricless. Sample

6016) Massive, gray, equigranular intrusive granodiorite of R & G's unit 13. Samples for dating. Minor RK xenoliths

6017) Mass, gray bio. granodiorite of R & G's unit 13 as above Sample, fabricless

6018) Mass., gray, unit 13 R & G bio granodiorite. Fabricless, sample only.

6019) Excellent 360, non-calc musc-chlor phyllite

S_2 158 57 NE

This definite S_2. L_2 076 57 NE

6689

greenish gray qtz feld
bio-grain. diorite - xenoliths
of porphyry like up hill.
I think this is a intrusive!
could be either

6690

dark colored Felds hbl ⊓ - greenish
groundmass locally hematite
stained - andesite vesrs
pre v dacite?

6691

felds hbl qtz ⊓ - like ↑
but w qtz ! lighter green

6692

hbl felds minor qtz ⊓ lt. green
groundmass as 691 -
may be volc - same as rx on
Mtn 5 of Mt Tidal

slight flow alignment of
hbl laths and rare inclusions
of finer relative rx.

(6975) Quartz hb >> bio smokey gtz diorite. Prob. intrusive

(6976) As 6975, quartz hb > bio smokey gtz diorite to granodiorite. More equigran. here w/ eu → subhedral smokey gtz

(6977) Hb porphyry, poss. volc., no bio or feldspar phenos. No hmc

Eolcanol near Jackfish 18 June 79
cloudy warm

6673 (weasel lk)
105/20 N S_1 perp. in

green metavole with good relict rgn text - like SC Lt for color and nature of schistosity - exactly like ϕ metab. - many have some qtz ?? - locally with small rectangular folded phenos also ϕ metavole s of "structure" here

(6673) med grained hol. xtalline intrusive rock - bio granodior? has rock bio patches and eu to sub qtz "needly" phenocrysts typical of 6663.

6674
qtz-bio porphyry with chert inclusions - definite ϕ texture = aquench version of 6673 - flow?

grey rx very to qtz musc chl phyllite and are not good klond sch - could be part of the dildo sequence ? maybe even a selwyn basin derived rock.

(6663)

bio qtz monz or granod. distinctive text with thin ear. bio plates & euh subhed. phenos qtz, in finer qtz r feld matrix ~ very likely intrusive!

6664

115/85N }
105/75N } S_1 ?

350/52W S_0 (not too good)

argillaceous dk grey lst with tiny brach crinoids & other stuff.

6665

6020) dk green to brown, non-calc. v. hard, (siliceous) mafic rock or calc-silicate. Similar to 6014. Rk shows platey foliation / parting or fracturing 137 66NE This could be WJR's calc-silicate unit. Some mauve CS float also seen but none in place. As this unit 14 Tertiary basalts

6021) As 6014, 6020. Suspected rosein brown, vitreous w. xlline Tertiary basalts — Roberts calc-silicates. Massive, no structure. Sample.

6022) Carby xlline, porphyritic bio-granodiorite of RE's unit 13 or simply a smoky qtz-felds porphyry. Massive highly weathered, fabricless unfoliated Sample.

of F_2 folds, not penetrative foln.

S_2 040 37SE
L_2 038 10NE
F_2 038 10NE

✓ 6028) Dense, f.g., siliceous, hard m. → dk gray lam. banded argillites of Road River. Unit scratches steel, is non-calc. Sample

$S_{1/2}$ 075 59SE

Frac. surfs. calc only, PS1/2 foliation, carbonaceous

✓ 6029) 3D; thinly banded, siliceous

S_2 033 18SE
L_2 095 12E

Sample

✓ (6030) Hb dior. to hb-qtz diorite. Massive equigranular no fabric. Fresh hb or py

✓ (6031) Fol^d (flow??) porphyritic hb diorite (see samples)

Foln 145 63NE

320 LX Pacific Rainproof

3827) QF Q - unit 13 R&G

3828) " " " "

3829) " " " "

~~3830~~

3830) South Fork poles

3831) " " "

SE Ross River 22 July

6014) Mass, brown, vitreous med. xlline andesites or basalts to dioritic dry (subvolc. intrusives). Unit 14? on Sheldon sheet Fabricless. Sample. Tertiary?

6015) Gray, massive biotite qtz diorite to granodiorite, Unit 13? of R&G. Fabricless. Sample

6016) Massive, gray, equigranular intrusive granodiorite of R&G's unit 13. Samples for dating. Minor RR xenoliths

6017) Mass, gray bio. granodiorite of R&G's unit 13 as above Sample, fabricless

6018) Mass., gray, unit 13 R&G bio granodiorite. Fabricless, sample only.

6019) Excellent 360, non-calc musc-chlor phyllite

S_2 158 57 NE

This definite S_2. L_2 076 57NE

RESEARCH SAMPLE LOG

PROJECT: Rb/Sr ANVIL BATHOLITH / ANVIL BATHOLITH

UNIT: ORCHIE LAKE PHASE

STATION: AR 16

ROCK NAME: Biotite quartz monzonite

DDH:

DEPTH:

LATITUDE: 62° 07.1'N

LONGITUDE: 132° 15.6'W

HAND SAMPLE: Coarse grained, porphyritic quartz monzonite. Euhedral to subhedral phenocrysts of K-feldspar, plagioclase, quartz in a fine grained K-feldspar-rich matrix. K-feldspar phenocrysts contain numerous inclusions. Phenocrysts are matrix supported. All phenocrysts are roughly the same size.

THIN SECTION: ✓ reject block stained for K-feldspar

POLISHED SECTION:

POLISHED THIN SECTION:

ANALYSIS: ✓ XRF – whole rock for Rb and Sr

PROBE:

XRD:

ISOTOPE: ✓ $^{87}Sr/^{86}Sr$ – whole rock

FOSSIL:

STAINED: ✓ slab stained for K-feldspar

OTHER:

COMMENTS:

Rb = 144.06 ppm

Sr = 235.90 ppm

Rb/Sr = 0.611

$^{87}Sr/^{86}Sr$ = 0.7196

$^{87}Rb/^{86}Sr$ = 1.775

THIN SECTION LOG

Volcanic texture
Rock quite altered

Not suitable

PROJECT: _____

STATION: AR-16

DESCRIBED BY: LCP

DDH: _____ DEPTH: _____ DATE: Nov 9/81

UNIT: _____

ROCK NAME: Biotite quartz monzonite

HAND SAMPLE:

PURPOSE: Rb/Sr

Plag La αL 010
15-17
4-6
16-19

	EST.	POINT CT.
QUARTZ	25	
K-FELDSPAR	20	
PLAGIOCLASE	30	
BIOTITE	25	
CHLORITE	Tr	
PREHNITE	Tr	
OPAQUES	Tr	
APATITE	Tr	
HORNBLENDE	Tr	

COMMENTS:

Euhedral phenocrysts of plagioclase, biotite, quartz in a fine-grained anhedral matrix of quartz + K-feldspar. Slight irregular margins of quartz and plag phenocrysts – have included small matrix grains.

Basically this looks like an attempt to be a volcanic rock.

Plag. phenocrysts abundantly zoned – concentric zoning and twinned. Plag crystals are heavily dusted w/ sericite.

Biotite has prehnite along cluge. Partly altered to chlorite looks similar to dividised pattern.

Minor K-feldspar as large phenocrysts w/ inclusions of other minerals.

THIN SECTION LOG

PROJECT: _____

STATION: _____ DESCRIBED BY: _____

DDH: 77-X-09 DEPTH: 498.7 DATE: _____

UNIT: Dixon Creek Dyke

HAND SAMPLE: Altered variant of the Dixon Creek dyke

PURPOSE:

	EST.	POINT CT.

COMMENTS:

Subhedral to rounded quartz phenocrysts in an altered matrix. Quartz phenos. show undulatory extinction and strain textures. Typically phenos. are not embayed.

Euhedral feldspar is totally filled by sericite dust. Coarser muscovite flakes look like altered biotite. Abundant carbonate also present.

locally have worming feldspar partly rimming quartz phenocrysts.

THIN SECTION LOG

PROJECT: _____

STATION: _____ DESCRIBED BY: _____

DDH: 77-X-09 DEPTH: 516.4 DATE: _____

UNIT: Dixon Creek Dyke

HAND SAMPLE: relatively unaltered version of same Dixon Creek dyke of sample 77-X-09: 498.7

PURPOSE:

Biotite pleochroism
pale tan
deep walnut brown

	EST.	POINT CT.

COMMENTS:

Quartz + plagioclase phenocrysts in a fine-grained matrix of quartz-feldspar-biotite. Plag phenos uncommonly show albite twinning — all have a sericite dusting. Quartz phenos are euhedral — commonly embayed.

Matrix biotite all altered to chlorite. The few biotites existing as inclusions in quartz phenos. have a deep walnut brown pleochroism.

Irregular carbonate locally in matrix.

Equigranular

THIN SECTION LOG

PROJECT: _____

STATION: _____ DESCRIBED BY: _____

DDH: 79-X-04 DEPTH: 521.2 DATE: _____

UNIT: Dixon Creek dyke

Sharp contact between coarse-grained and fine-grained phase of dyke.

HAND SAMPLE:

PURPOSE:

Biotite pleochroism
pale tan
deep walnut brown but with reddish tint.

	EST.	POINT CT.

COMMENTS:

Coarse-grained

Phenocrysts of plag + quartz in fine-grained matrix. All phenos euhedral. Plag. shows complex concentric zoning and abundant albite twinning. Matrix biotite largely altered to chlorite. Heavy sericite dusting in feldspars — especially in matrix.

Fine-grained

All grains roughly same size. Much of biotite still fresh (unaltered). Abundant myrmekitic intergrowth of feldspar + quartz.

THIN SECTION LOG

PROJECT: _____

STATION: _____ DESCRIBED BY: _____

DDH: 79-X-04 DEPTH: 521.8 DATE: _____

UNIT: Dixon Creek dyke

HAND SAMPLE: fine-grained phase of dyke

PURPOSE:

Biotite pleochroism
tan
deep brown w/ reddish tinge

	EST.	POINT CT.

COMMENTS:

Intergrown euhedral quartz and feldspar. No foliation. F-equigranular.

Feldspar typically untwinned. - has extensive sericite dusting.

Biotite locally altered to chlorite. Some minor epidote as alteration material.

Extensive myrmekite.

THIN SECTION LOG

PROJECT: _____

STATION: _____ DESCRIBED BY: _____

DDH: 79-X-04 DEPTH: 534.8 DATE: _____

UNIT: Dixon Creek dyke

Coarse-grained phase.

HAND SAMPLE:

PURPOSE:

	EST.	POINT CT.

COMMENTS:

Euhedral to subhedral phenocrysts of quartz + feldspar in a fine-grained matrix. Matrix biotite totally altered to chlorite. Feldspars have heavy sericite dusting. Epidote also present as alteration product of mafics.

THIN SECTION LOG

PROJECT: _____

STATION: _____ DESCRIBED BY: _____

DDH: 79-X-04 DEPTH: 539.6 DATE: _____

UNIT: DIXON CREEK dyke

Transitional zone to outer margin of dyke.

HAND SAMPLE:

PURPOSE:

Hbl pleochroism
green
brown (green tint)

	EST.	POINT CT.

COMMENTS:

Euhedral phenocrysts of plagioclase, quartz, hornblende in fine-grained matrix.

Matrix contains biotite which is almost completely altered to chlorite. Quartz phenos commonly embayed. Plag phenos commonly albite twinned with complex zoning.

Phenos occur as clusters. Hbl as inclusions in quartz.

THIN SECTION LOG

PROJECT: _____

STATION: _____ DESCRIBED BY: _____

DDH: 79-X-04 DEPTH: 540.6 DATE: _____

UNIT: Dixon Creek dyke

---

transitional zone to outer margin of dyke.

HAND SAMPLE:

PURPOSE:

	EST.	POINT CT.

COMMENTS:

Plag + hornblende euhedral phenocrysts in fine-grained matrix. Biotite in matrix altered to epidote + chlorite. Feldspar has heavy sericite dusting. Minor local alteration of hbl. to chlorite.

One rounded phenocryst of quartz.

Plag. phenocrysts complexly twinned and concentrically zoned. Hbl has biotite inclusions

THIN SECTION LOG

PROJECT: _____

STATION: _____ DESCRIBED BY: _____

DDH: 79-X-04 DEPTH: 541.1 DATE: _____

UNIT: Dixon Creek dyke

HAND SAMPLE: Transitional zone to outer margin of dyke

PURPOSE:

Biotite glomerocrysts
tan
deep walnut brown

	EST.	POINT CT.

COMMENTS:

Phenocrysts of hbl + plag - euhedral in fine-grained microlitic matrix

Rock comparatively fresh.

Minor very rounded quartz phenocrysts. More abundant hbl and finer grained & more microlitic than inner part of dyke.

Sericite dusting in matrix.

THIN SECTION LOG

PROJECT: _____

STATION: _____ DESCRIBED BY: _____

DDH: 79-X-04 DEPTH: 541.7 DATE: _____

UNIT: _____

Contact Dixon Creek dyke & phyllite

HAND SAMPLE:

PURPOSE:

Biotite pleochroism rich ~~red-brown~~ red-brown.

	EST.	POINT CT.

COMMENTS:

Very fine grained reddish brown matrix. Phenocrysts of quartz, plagioclase, hornblende, biotite. Quartz very rounded. Other grains are euhedral.

Matrix grain size much smaller than farther in.

Quartz vein separates dyke from phyllite.

Phyllite foliation broken & disrupted next to dyke.

THIN SECTION LOG

PROJECT: _____

STATION: _____ DESCRIBED BY: _____

DDH: 79-X-05 DEPTH: 573.4 DATE: _____

UNIT: Dixon Creek dyke

HAND SAMPLE: Altered equigranular dyke

PURPOSE:

	EST.	POINT CT.

COMMENTS:

Phenocrysts of plagioclase + quartz in fine-grained matrix. Feldspars have a heavy sericite dusting. Quartz phenos. rounded and embayed.

Abundant carbonate present.

Biotite altered to opaques.

THIN SECTION LOG

PROJECT: _____

STATION: _____ DESCRIBED BY: _____

DDH: 79-X-05 DEPTH: 579.9 DATE: _____

UNIT: Dixon Creek dyke

HAND SAMPLE: Equigranular dyke

PURPOSE:

Biotite pleochroism red. brown

	EST.	POINT CT.

COMMENTS:

Quartz and plagioclase phenocrysts in equigranular fine-grained matrix.

Quartz generally subhedral — commonly embayed.

Plag typically has heavy sericite dusting.

Biotite commonly altered, to chlorite ± epidote.

Large K-spar phenocryst embays plag euhedral grains.

THIN SECTION LOG

PROJECT: _____

STATION: _____ DESCRIBED BY: _____

DDH: 79-X-05 DEPTH: 584.3 DATE: _____

UNIT: Dixon Creek dyke

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dyke - gradational to outer margin

HAND SAMPLE:

PURPOSE:

Biotite pleochroism red brown

Hbl. pale brown greenish brown

	EST.	POINT CT.

COMMENTS:

Euhedral phenocrysts of hornblende, plag., minor biotite.

Subrounded phenocrysts of quartz.

Matrix looks microlitic Contains abundant, fine, irregular carbonate.

THIN SECTION LOG

PROJECT: _____

STATION: _____ DESCRIBED BY: _____

DDH: 79-TIE-01 DEPTH: 264.5 DATE: _____

UNIT: ANVIL PLUTON

HAND SAMPLE:

PURPOSE:

Biotite pleochroism
pale tan
red brown

	EST.	POINT CT.
Plagioclase		
K-feldspar		
Quartz		
Biotite		
Muscovite		

COMMENTS:

Augen of feldspar in matrix of ribbon-sutured, recrystallized quartz.

Biotite subparallel quartz filtn. in most cases.

Only minor muscovite.

Sericite dusting in feldspars.