ASSESSMENT REPORT

on

GEOLOGICAL MAPPING AND PETROGRAPHY

JJ (JUMPING JOSEPHINE) PROPERTY

(JJ 1-15, 17-22, 42 AND EAU 1-6 MINERAL CLAIMS)

TRAIL CREEK MINING DIVISION, B.C.

PREPARED BY:

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NTS:	082E/01E, 082E/08E, 082F/04W, 082F/05W
Trim:	082E.030, 082F.021
Latitude:	49°16'00"
Longitude:	117°59'30"
Owner:	T. Kennedy
Operator:	Kootenay Gold Inc.
Author:	K.P.E. Dunne, P.Geo.
Date:	August 24, 2005

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INTRODUCTION

Introduction and Work Objectives

This document reports the results of a seven day geological field mapping study of the JJ (Jumping Josephine) property conducted by the author between July 24 and July 30, 2004. Report writing was conducted between August 3 and August 6, 2004. The study was requested by Mr. T. Höy, P.Eng, and Mr. J. McDonald of Kootenay Gold Corp., with the objectives of outlining lithologies, distribution of shear zones, veins and alteration and the nature of controlling structures. The work program included:

1. Field mapping of outcrops and roadcuts at 1: 10 000 scale and locally at 1: 1 000 scale.
2. Selective rock sampling for petrographic analyses
3. Hand specimen identification of lithologies, mineralization and alteration
4. Preparation of maps, sections and a report dated August 7, 2004.

Field traverses used existing 1:20 000 Province of BC TRIM maps, BC airphotos (flight line 30BCB99033) and handheld GPS coordinates to locate and plot outcrops. Fieldwork was accomplished with the capable assistance of Mr. C. Kennedy, Prospector and Ms. S. Kennedy.

Revision of the August 7, 2004 report to incorporate results of petrographic analyses was requested by Mr. J. McDonald of Kootenay Gold Inc. The revisions were accomplished between August 16 and 24, 2005. This document is the revised report.

Location and Access

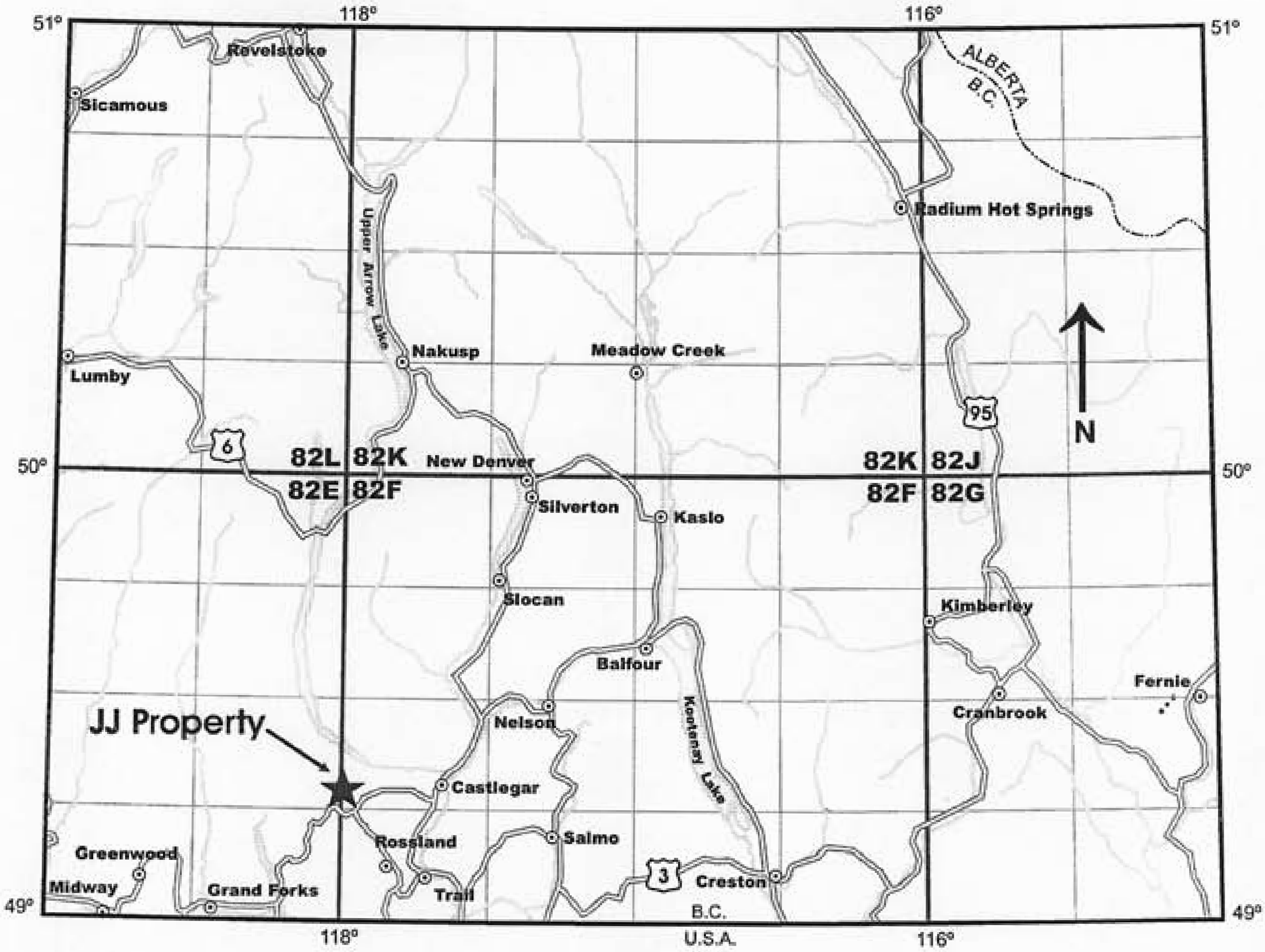
The JJ property is centred at latitude 49°16'00" north and longitude 117°59'30" west, approximately 25 km west of Castlegar in the Trail Creek Mining Division of southeastern British Columbia (Figure 1). The property straddles NTS sheets 082E/01E, 082E/08E, 082F/04W, 082F/05W and BC Trim sheets 082F021 and 082E030. The area is well accessed by logging roads that branch north from Highway 3 just west of the junction 3B to Rossland.

Topography

The property is relatively flat-lying and covers a plateau area with low north trending ridges. The claims cover a relief of about 260 m with elevations ranging from approximately 1300 m to in excess of 1560 m. Big Sheep Creek valley forms the western part of the property area.

Property

This report covers geological mapping of the following contiguous mineral claims – JJ 1 through 15, JJ 17 through 22, JJ 42 and EAU-1 through 6. These claims (Table 1, Figure 2) comprise part of the JJ property.



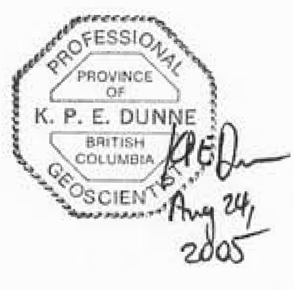


Figure 1: Property Location Map

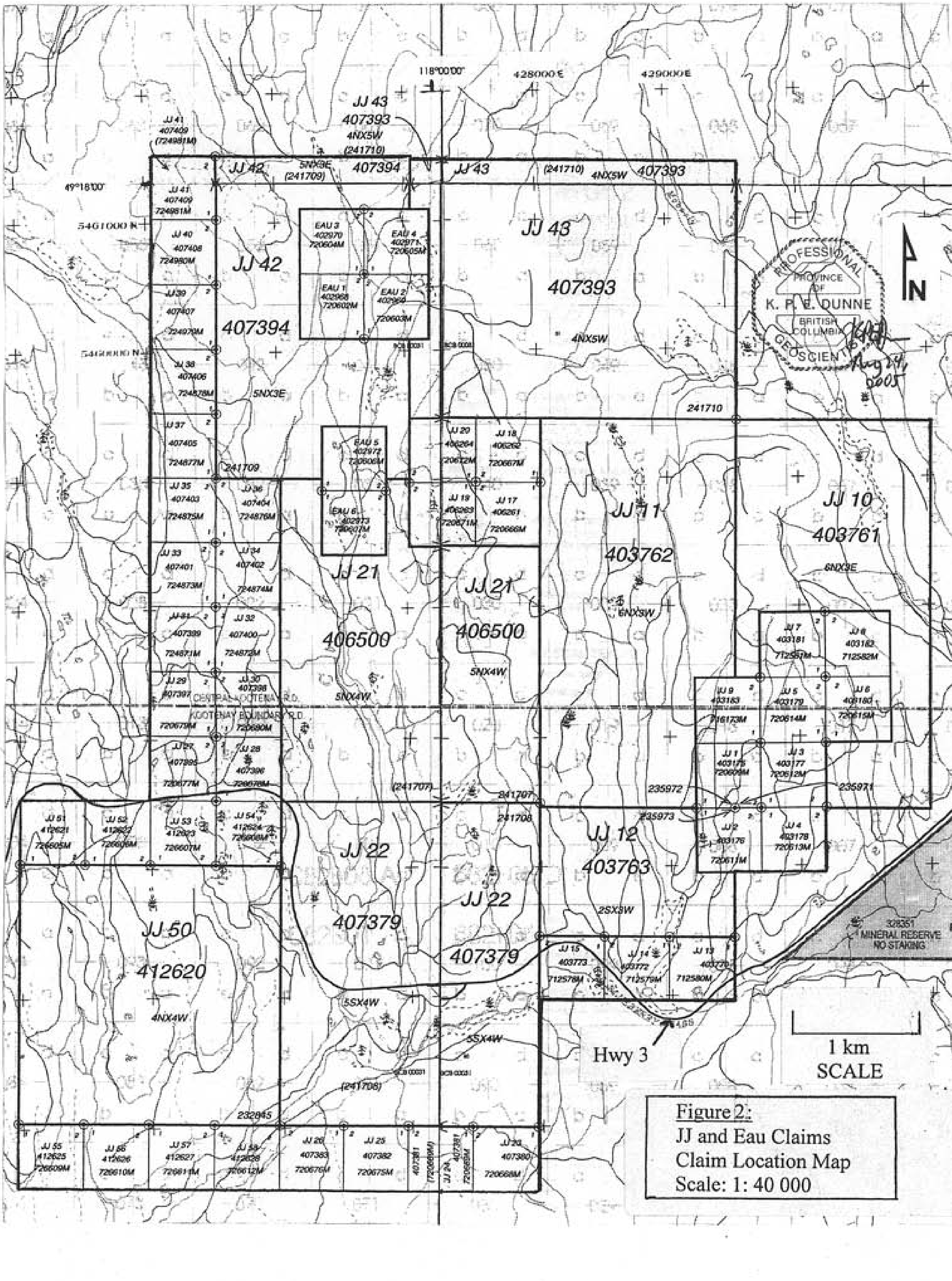


Figure 2:
JJ and Eau Claims
Claim Location Map
Scale: 1: 40 000

Table 1. Claim Data

Claim Name	Tenure Number	Units	Anniversary Date
JJ 1	403175	1	2005/JUN/06
JJ 2	403176	1	2005/JUN/06
JJ 3	403177	1	2005/JUN/06
JJ 4	403178	1	2005/JUN/06
JJ 5	403179	1	2005/JUN/07
JJ 6	403180	1	2005/JUN/07
JJ 7	403181	1	2005/JUN/18
JJ 8	403182	1	2005/JUN/18
JJ 9	403183	1	2005/JUN/22
JJ 10	403761	18	2005/JUL/04
JJ 11	403762	18	2005/JUL/06
JJ 12	403763	6	2005/JUL/07
JJ 13	403770	1	2005/JUL/07
JJ 14	403772	1	2005/JUL/07
JJ 15	403773	1	2005/JUL/07
JJ 17	406261	1	2005/OCT/15
JJ 18	406262	1	2005/OCT/15
JJ 19	406263	1	2005/OCT/15
JJ 20	406264	1	2005/OCT/15
JJ 21	406500	20	2005/NOV/03
JJ 22	407379	20	2005/DEC/16
JJ 42	407394	15	2005/DEC/31
EAU 1	402968	1	2007/MAY/27
EAU 2	402969	1	2007/MAY/27
EAU 3	402970	1	2007/MAY/27
EAU 4	402971	1	2007/MAY/27
EAU 5	402972	1	2007/MAY/27
EAU 6	402973	1	2007/MAY/27

History

Exploration on the JJ property is recorded in the 1970's at the Wewa (Ram, Screeching Cat) claim groups centred at UTM 427000E- 5459700N (Figure 3). The Wewa is reported to be a vein, breccia and stockwork showing with fluorite, chalcopyrite, pyrite and magnetite associated with a fault breccia and a molybdenite-bearing quartz vein (BC Minfile 082FSW349 and 082ESE167).

In 2003, prospectors Tom and Craig Kennedy discovered a gold mineralized quartz vein system with pyrite and traces of arsenopyrite and galena hosted by granodiorite to quartz diorite intrusions called the JJ Main showing (Kennedy, 2004c). The showing was discovered during a regional prospecting program which began as the result of observed argillic and sericitic alteration, sulphides, iron oxides, quartz veining and silicified breccia noted at the EAU claims several kilometers to the northwest (Kennedy, 2004a, b). The JJ main showing (centred at UTM

429805E- 5456820 N) was mapped by T. Höy, P.Eng. in 2003 (Höy, 2003) and visited by G.E. Ray, P. Geol, P.Eng in October of 2003 (Ray, 2003).

The JJ West showing (centred at UTM 427370E-5458726N) was also discovered by prospector Tom Kennedy in 2003. This showing occurs as a number of roughly north-south trending gold mineralized shear zones and quartz veins cutting coarse-grained Coryell intrusions. Detailed description of mineralization at JJ West is included in this report.

The Loto 3 W-Cu ?skarn occurrence (BC Minfile 082FSW228) occurs approximately 4 km north-northwest of JJ Main and is not on the JJ property. The Strawberry Flats Cu-Au skarn and polymetallic vein occurrence (BC Minfile 082FSW340) is approximately 7 km southeast of JJ Main.

REGIONAL GEOLOGY

The JJ property is underlain mainly by intrusive rocks mapped regionally as Middle Jurassic Nelson intrusions that have been intruded by the Middle Eocene Coryell batholith and numerous Tertiary mafic dykes (Little, 1985; Höy and Dunne, 1998). Siliceous clastic and carbonate rocks as well as greenstone of the Late Paleozoic Mount Roberts Formation occur as oldest basement rocks which outcrop approximately 2 to 3 kilometers south and south-east of the property and in the Strawberry Pass area (Little, 1982; Höy and Dunne, 1998; BC Minfile 082FSW340).

Middle Jurassic Nelson intrusions generally range in composition from porphyritic granite, granodiorite, quartz monzonite, monzonite and tonalite (granitoids) with minor diorite (Höy and Dunne, 1998). Rossland monzonite, host for many of the veins of the Rossland Camp, is Middle Jurassic dated at 167.5 ± 0.5 Ma (Hoy and Dunne, 2001). Middle Jurassic plutons including the Nelson batholith, Bonnington and Trail plutons are complex, typically with early alkaline plutonism followed by calcalkaline and finally two mica granite (Höy and Dunne, 1997). Most phases of the Nelson intrusions are 167 to 169 Ma using U-Pb analyses of zircons (Ghosh, 1995); a young coarse megacrystic phase is dated at 161 ± 1 Ma (Ghosh, op. cit.) and an equigranular biotite granite at 158.9 ± 1 Ma (Sevigny and Parrish, 1993). The Slocan, Ainsworth, Ymir, Nelson and Rossland mining camps all occur along the margins of these intrusions, inferring a genetic link (Hoy and Dunne, 2001). Beaudoin et al. (1992) argue that Ag-Pb-Zn vein and replacement deposits of the Kokanee Range (Slocan mining camp) are Eocene related to extensional tectonics.

Little (1982) notes that bodies of granodiorite, quartz monzonite and quartz diorite similar to those of the Nelson Intrusions in this map area have been mapped as far west as Okanagan Lake. Little (op. cit.) describes a small body of Rossland monzonite just west of Blueberry Pass within the JJ property boundary approximately 2 km west south-west of the JJ Main occurrence. However, this was not confirmed by Höy and Dunne (1998).

Middle Eocene Coryell alkaline intrusions comprise batholiths and stocks of coarse-grained porphyritic syenite and lesser granite, diorite and monzonite (Höy and Dunne, 2001). The JJ property falls in the north east part of the Coryell batholith. The batholith covers an area roughly from Lower Arrow lake south to the U.S. border and from just west of Rossland east almost to Christina Lake on the Penticton map sheet (Templeman-Kluit, 1989). The Coryell suite was intruded during regional Eocene extension associated with normal faulting (Arrow Lake fault to the west; Slocan fault to the east), mafic volcanism and hypabyssal intrusions. In fact, Little (1985) notes that much of the area in the vicinity of JJ Main consists of "areas of outcrop almost entirely of dioritic dykes" which is mapped as unit *Tid*. The area just west of the JJ Main zone and south of the JJ West zone is noted as location 338 (Coryell – mafic) on the Geological Survey of Canada compilation of diabase dyke swarms and related units in Canada and adjacent regions (Buchan et al., 2004). A dyke swarm is defined by Buchan et al. (op. cit.) as a set of dykes (emplaced as subvertical sheets) of similar age that typically displays a simple linear, fanning or arcuate geometry.

GEOLOGICAL MAPPING OF THE JJ PROPERTY

Introduction

Geological mapping of the JJ property was undertaken at 1:10 000 scale with emphasis on definition of lithologies, distribution of shear zones, veins and alteration and the nature of controlling structures (Figure 3). Sketches of showings were completed at 1:1 000 scale (Figures 5 and 6). Selective rock sampling for petrographic analyses was undertaken to assist in interpretation of lithologies, mineralization and alteration. A petrographic report by Jeff Harris, Ph. D. is referenced below and included as Appendix A. Photographs referenced in the text are in Appendix B.

Lithologies

The following description of lithologies is based on hand samples and available petrographic analyses (Table 2, Appendix A). Igneous nomenclature is assigned based on estimated percentages of quartz, feldspars and proportion of mafic phases in the rock.

<u>?Nelson Intrusions (mJn)</u>

Four main intrusions are believed to be phases of the ?Middle Jurassic Nelson intrusions: granodiorite/quartz diorite (mJng) host to the JJ Main showing and small Pb-Zn silicified zones, leuco-granite (mJnlg) which may be a subunit of the granodiorite/quartz diorite phase, ?diorite/quartz diorite (mJnd) which occurs on the eastern edge of the map area and hornblende porphyritic granodiorite (mJnhpg) which is virtually unmineralized.

Granodiorite/Quartz Diorite (mJng)

This unit hosts the JJ Main showing and a small Pb-Zn anomaly. It is in contact with hornblende porphyritic granodiorite over much of the northern and southern parts of the map area. The unit is fine to medium-grained, equigranular with dominantly white feldspar (plagioclase dominant, Harris, 2004, Appendix A), approximately 20 to 25% quartz and 10 to 15% mafic minerals including biotite. The rock has no reaction to a pencil magnet. In the vicinity of the JJ Main showing and over many of the northern exposures of granodiorite/quartz diorite on the property, this unit is selectively altered to green-brown, fine-grained sericite which gives the rock a bleached appearance. Locally very fine-grained, mafic, rounded ?diorite inclusions occur within the unit.

Table 2. Petrography Sample Locations

Sample Number	UTM Northing	UTM Easting	Description (see Appendix A for details)
KD24-6	5457387	427265	breccia
KD26-3	5457386	428807	hornblende porphyritic granodiorite
KD31-11	5455101	427370	granodiorite– highway OTC
KD29-5	5456468	428627	leuco-granite with tourmaline-quartz segregations
KD29-11A	5458515	428167	carbonate-sericite altered rock at fault contact
KD27-2	5458707	427379	quartz monzonite at JJ West
KD25-2A	5456845	429969	sericite altered rock from JJ Main with disseminated pyrite
KD25-10B	5456892	429917	sericite altered granodiorite with quartz vein from JJ Main
KD25-14	5457122	429935	pervasively sericite altered rock, with dissem pyrite and arsenopyrite from JJ Main
KD27-4	5458726	427370	silicified, sericite altered rock with quartz veins and disseminated pyrite from JJ West
KD27-4A	5458726	427370	silicified, sericite altered rock from JJ West
KD27-11A	5458720	427290	silicified, sericite altered rock with quartz veins and disseminated pyrite from JJ West
KD26-8A	5458815	429012	microbrecciated syenite ?dyke from Pb-Zn zone
KD24-13	5455217	428569	sericite altered quartz syenite
KD27-28	5458901	426646	silicified, brecciated ?syenite' with disseminated pyrite from the borrow pit

Leuco-Granite (mJnlg)

This unit is distinct and is probably a subunit of unit mJng. It is mapped sandwiched between hornblende porphyritic granodiorite and granodiorite/quartz diorite over a one and a half kilometer area in the southern portion of the map. It comprises fine to medium-grained, equigranular feldspar, quartz (approximately 20 to 30%) and less than 5% mafic phases. Petrographic analysis of sample KD 29-5 indicates approximately equal abundance of plagioclase, K-feldspar and quartz (Appendix A) which would indicate a granite composition. The distinctive feature of this unit are boxy to irregular-shaped black tourmaline-quartz segregations (typically from <1 to 3 cm in size; rarely to 4 cm, Appendix B: photo 2805). Locally the segregations have bleached white haloes. Harris (2004, Appendix A) suggests that the segregations are skeletal/poikilitic megacrysts of tourmaline with incorporated host grains of quartz and lesser plagioclase.

?Diorite/ ?Quartz Diorite (mJnd)

This unit occurs as outcrops in contact, possibly fault contact, with granodiorite/quartz diorite on the eastern edge of the map area (Figure 3). The unit is fine-grained, seriate inequigranular with white feldspar and approximately 50% mafic phases. Up to 20% quartz occurs in some exposures (?quartz diorite). On highway 3 exposure of ?diorite are medium-grained and slightly magnetic with prominent hornblende laths.

Hornblende Porphyritic Granodiorite (mJnhpg)
This unit covers much of the central portion of the map area and is virtually unmineralized. It is distinctive because it is typically medium to coarse-grained with dominantly white feldspar (plagioclase dominant, Harris, 2004, Appendix A), approximately 5 to 7% prismatic hornblende megacrysts (to 1.5 cm size) and locally K-feldspar megacrysts (to 2 cm size). The rock is invariably slightly magnetic and magnetite is associated with hornblende megacrysts (confirmed by Harris, 2004, Appendix A). Translucent quartz comprises approximately 15-20% of the rock. Narrow (10-20cm) coarse-grained hornblende porphyry, pegmatitic and aplitic segregations occur within 200 m of the southern border of this unit. Border phases of this unit, at least where observed (station KD24-11) along its southern margin, are narrow (less than ?10-20 m), fine to medium-grained, ?equigranular, and locally non-magnetic. This unit is believed to intrude earlier mineralized granodiorite/quartz diorite.

Breccia Zones '?Diatreme' (Bx)
Several small breccia zones from approximately 20 to possibly as much as 50 m in size occur as outcrops and clusters of outcrops within both granodiorite/quartz diorite and porphyritic hornblende granodiorite phases of the Nelson Intrusions. Some of the breccia zones have disseminated pyrite, galena ± sphalerite. These breccias comprise typically from 25 to 40%, subangular to subrounded lithic and crystal fragments set in a very fine-grained, recessive weathering medium to dark green matrix. In some outcrops rounded and milled fragments have weathered out of the matrix (Appendix B: Photos 2802 (station KD24-5), 2803 (station KD24-6), 2821(station KD27-17). Lithic fragments are commonly 4 to 5 cm in size (range is from 1cm through to 20cm), medium to coarse grained, granitoid-type (similar to Nelson Intrusions) with scattered, rare, 2-3 cm size, dark, fine-grained ?diorite fragments. Crystal fragments comprise quartz and feldspar which are resistant to weathering and impart a rough knobby surface to the outcrop. Harris (2004, Appendix A) describes sample KD24-6 as a breccia of vari-sized lithic fragments of fresh leucocratic quartz diorite (including crystals and crystal fragments of quartz and plagioclase) in a matrix of compact sericite.

?Coryell Intrusions (mEc)
Three main units are believed to be phases of the ?Middle Eocene Coryell intrusions: quartz syenite/quartz monzonite (host to the JJ West showing), 'border phase ?granite' and hypabyssal intrusions (dykes) of biotite±hornblende-feldspar porphyry which are virtually unmineralized.

Quartz Syenite/Quartz Monzonite (mEc)
Outcrops of coarse-grained quartz syenite/quartz monzonite cover most of the southern and northwestern margins of the JJ property (Figure 3) and host the JJ West and Wewa showings. Geological mapping in the 1970's on the Wewa claims refers to the coarse-grained intrusive phases as 'monzonite'. These exposures were assigned to the Middle Eocene Coryell batholith by both Templeman-Kluit (1989), Little (1985) and Höy and Dunne (1998). It is possible that the northwestern exposures of this unit (Figure 3), including the JJ West area, may be older Nelson age monzonite/quartz monzonite intrusions.

This unit is coarse-grained and inequigranular. Relatively unaltered samples such as KD27-2 and KD24-13 comprise approximately 80% feldspar (to 1.5 cm size), approximately 10% quartz, and up to 5-7% mafic phases (hornblende and biotite). Harris (2004, Appendix A) reports approximately equal proportions of K-feldspar and plagioclase in sample KD27-2 and a K-feldspar: plagioclase ratio of 3:1 for sample KD24-13 which is best described as a quartz syenite rather than a leucogranite (due to the low percentage of quartz). Many of the exposures at JJ West are strongly silicified and sericite-altered (KD 27-4, KD27-4A and KD 27-11A) or in some cases comprise crumbly, incompetent rock (especially exposures at and to the west of JJ West). Typically mafics have been chloritized and feldspars are cloudy due to minor clay alteration.

Border phase ?Granite (mEcbg)
The northeast portion of the map area comprises what appears to be a border phase, possibly of the Coryell, possibly of a larger ?Nelson type pluton to the East. Outcrops comprise 'granite' which varies from inequigranular to hornblende porphyritic with dominantly white feldspar and approximately 20% each of quartz and mafic phases (hornblende>biotite). A resistant ridge of rocks trending approximately E-W occurs in the northeast part of the mapped area in the vicinity of station KD29-16 (Figure 3). In this area, this unit can be termed intrusion breccia as subangular to subrounded blocks and fragments of fine-grained diorite (40% mafic phases) and coarse-grained hornblende-porphyritic granodiorite are trapped as inclusions within the border phase 'granite'. Numerous Coryell dykes and black aphanitic to basaltic dykes cut the border phase 'granite' along the ridge. The 'granite' is locally cut by K-feldspar veins (possibly pegmatitic segregations), ?stockwork and patches of ?secondary K-feldspar have altered the rock. Epidote occurs as fracture infill at this location.

Biotite±hornblende-feldspar porphyry dykes (mEcd)
Dykes of Coryell intrusions occur as resistant knobs and are often topographic high areas on the property. The intrusions are typically pink to pinkish-grey and porphyritic with approximately 30+% coarse-grained K-feldspar phenocrysts (to 1.5cm size), fine to medium-grained mafic phases (hornblende±biotite) typically 5% and virtually no quartz phenocrysts. The groundmass is aphanitic.

Hypabyssal Intrusions –Dykes (Ti)
The JJ property is endowed with an incredible abundance of Tertiary hypabyssal intrusions. These intrusions crosscut Coryell porphyritic dykes. There are probably at least 8 distinct mappable phases at the 1:1 000 or 1:500 scale. Generally all dykes trend roughly north-south (± 20^{o}) with steep to vertical dips (Figure 3). However, west of the Pb-Zn zone a number of dykes are east-west trending. Four of the most abundant, distinctive types of dykes are described below.

'Basalt' dykes (Tib)
These are the most abundant type of dyke on the JJ property. These dykes are typically half to several metres wide. The unit is very fine-grained, green to grey, locally with up to 15% biotite. Dyke margins are quenched. Contacts with host rocks are often altered to orange-brown (?carbonate/jarosite). Sometimes where dykes are thin (< half a metre), the whole unit appears to be an altered, rusty aphanitic "zone", locally with disseminated pyrite. These dyke are generally strongly magnetic.

'Diabase' dykes (Tid)
These rocks are fine-grained, equigranular and could possibly be termed 'micro-diorite'. The dykes are typically 1-2 metres wide. The unit generally comprises approximately 50% mafic phases, including locally needles of hornblende (to 2mm size) and is magnetic. Margins of the dykes locally contain polylithic fragments (xenoliths) derived from vertical ascent through the crust (Appendix B: Station KD27-19 Photo 2824; Station KD 30-4, Photo 2838). Fragments are up to 10 cm size and include rounded silicified white-grey fragments, angular quartz vein fragments (grey), rounded granitic fragments, and at station KD 30-4, gneissic banded fragments.

Mafic aphanitic dykes (Tim)
These dykes are not common. They are typically less than a metre wide. The unit is black, aphanitic and is magnetic.

'Lamprophyre' dykes (Til)
These dykes weather recessively, often recognized by rubble or well-rounded, spalled fragments. The author suspects many 'lamprophyres' are not recognized due to recessive weathering. Hand samples are hard to collect due to crumbly nature of the unit. Unit comprises an abundance of biotite (possibly up to 50%) – characteristic of subclass 'minette'.

Structure
Where possible orientations of dykes, veins, shear zones and locally limonite-coated joints were measured during the course of fieldwork. Generalized orientations for each structural feature are described below. Assembly of a structural database and stereonet evaluation is beyond the scope of the current project.

<u>Faults</u>
Brittle faults are characterized by gouge and breccia fragments developed in a fault zone. Stations KD29-13 (approx. 1 km east of JJ West zone) and KD27-27 (approx. 150 m NE of 'borrow pit') are examples of brittle fault zones. Narrow faults are developed (approx. ½ -2 metres wide) with chloritic fabric defining fault zone boundaries. Breccia fragments include polylithic angular blocks (up to 30cm size, Appendix B: Photo 2833). Fracture sets were not measured in these brittle fault zones.

A number of measured faults and inferred faults (based on offset geological units) are indicated on Figure 3. All faults trend approximately NNW to NW with the exception of a measured fault at location of station KD29-13 which trends NNE with moderate SE dip.

The location of KD30-32 appears to be a large brittle fault zone with a well developed crush breccia and abundant manganese oxide stain. The zone occurs within quartz syenite/quartz monzonite and trends 160/90.

<u>Shear Zones</u>
A number of brittle shear zones characterized by development of gouge fabric, small-scale crush breccia zones, fracture sets and extensional veins occur on the property. Follows are detailed descriptions of these zones:

A number of centimeter to metre-wide brittle shear zones occur at the JJ Main within granodiorite/quartz monzonite with orientations typically from 055 through 070 (see also Höy, 2003). Locally narrow < 1cm to 2 cm extensional quartz veinlet sets occur within the shear zones. Vein sets within the shear zones are spaced apart locally from 2 to 5 cm. The quartz veins comprise crystalline and microcrystalline quartz with limonite-stained vugs.

Brittle shear zones are developed approximately 500m south of the JJ West occurrence adjacent to breccia zones ('?diatremes) within the hornblende porphyritic granodiorite. These shear zones are < 10 cm to 30 cm wide and characterized by gouge and subangular to subrounded breccia fragments in a very fine-grained, green matrix (Appendix B: stations KD27-21, 23; photos 2825, 2826). Orientation of these brittle shear zones are from 065 to 080 with moderate to steep SE dips which is similar to brittle shears at JJ Main.

Silicified shear zones are also developed within quartz monzonite at the JJ West occurrence. These zones are from 10 cm to several meters wide and have north-south orientations (160 to 010) and steep ?east dips. Irregular, limonite stained quartz veinlets from 1-2 cm wide are discontinuous and occur with patchy distribution within the silicified zones.

Dykes

As previously discussed, hypabyssal intrusions, including Coryell porphyry dykes, trend roughly north-south ($\pm 20^{o}$) with steep to vertical dips (Figure 3).

Veins and Joints

A variety of different vein and joint types were noted on the property including:

- quartz veinlets ± disseminated pyrite ± arsenopyrite ± galena
- discontinuous pyritic fractures
- irregular discontinuous epidote ± chlorite veinlets
- rare K-feldspar veinlets
- Fe-oxide coated joints
- Mn-oxide coated joints

Quartz veinlets are generally thin (< 1-2 cm thick) and have strike lengths of 0.5 to 2m. Veins are locally reported to 30 cm thick at the JJ Main showing (Höy, 2003); 25 to 50 cm isolated white "bull quartz" veins occur on the ridge in the vicinity of station KD29-17. Approximately 1 km north of JJ Main, a 6 cm wide coarse quartz vein with ~2% coarse-grained pyrite and boxwork texture (after pyrite) occurs as float within 'diorite' (chip sample G-69 ran over 6g/t Au, unpublished company data).

The typically thin quartz veinlets usually occur as isolated veinlets or as small sets spaced from 2-5cm to 0.5 m apart. Veinlets occur both within and unrelated to shear zones. Veinlets occur in both granodiorite/quartz diorite and quartz syenite/quartz monzonite. Vein orientations vary widely; some parallel shear zone orientations (Figure 3). In well mineralized areas such as JJ Main and JJ West, the extension veins may contain disseminated pyrite ± arsenopyrite ± galena ± other metallic minerals.

Abundant, irregular, discontinuous epidote veining is noted in the vicinity of KD29-16 within border phase ?granite intrusion breccia and at KD27-24 near the contact between quartz monzonite and hornblende porphyritic granodiorite.

K-feldspar veinlets (?pegmatites) are noted on the ridge in the vicinity of KD29-16 within ?border phase 'granite' intrusion breccia and at KD29-7 within hornblende porphyritic granodiorite.

Numerous Fe-oxide and Mn-oxide coated joints and fracture sets occur throughout the property.

Mineralized Zones and Alteration

JJ Main showing

The JJ Main showing occurs as a number of roughly northeast trending shear zones with mineralized quartz veins within fine to medium-grained granodiorite/quartz diorite of the Nelson Intrusions (Figure 4, from Höy, 2003). The author only briefly visited limited exposures at JJ Main during the course of regional geological mapping of the JJ property. Mineralization and alteration at JJ Main have been well described by Höy (2003) and Ray (2003); these works are briefly summarized below.

Höy (op. cit.) describes quartz stockworks, vein-breccias, ladder veining and a series of parallel sheeted veins which occur within the shear zones. Ray (2003) notes that mineralized veins are enveloped by wide zones of pale-coloured and clay-altered granodiorite with minor sericite, pyrite and very thin quartz veinlets. Höy (op. cit.) notes that larger quartz veins (to 30 cm thick) consist of quartz with trace pyrite, arsenopyrite and galena. Maximum assay values of 19 g/t Au were obtained from some veins, although values of up to 2 g/t Au are more common (Höy (2003). Höy (op. cit.) established that mineralization at JJ Main appears spatially associated with Coryell 'syenite' and mafic dykes and inferred that mineralization is Eocene in age.

JJ West showing

The JJ West showing occurs as a number of roughly north-south trending (170 and 010) shear zones of silicified rock and quartz veins cutting coarse-grained ?Coryell or possibly ?Nelson-age quartz monzonite (Figure 5). The shear zones vary from one-half to several metres wide and comprise pervasively silicified rock with traces of disseminated, fine-grained unidentified metallic grains (stations KD27-4,5) cut by irregular 1-2cm white quartz veinlets with limonite-coated vugs and with trace pyrite along fractures (replaced mostly by limonite and possibly jarosite, sample KD27-4, Harris, 2004, Appendix A). Traces of tourmaline are observed disseminated in sericitized and silicified rock in sample KD27-4A from station KD27-04. An anomalous assay value of 200g/t Au was obtained in the vicinity of stations KD27-4 and 5, although values up to 1 g/t Au are more common (Figure 5, unpublished company data). Approximately 3% pyrite occurs disseminated within the shear zone at station KD27-11 (Figure 5, sample KD27-11A, Appendix A). Values of 1049 ppb Au and 7839 ppm As were obtained from a sample taken near this location (C-17, unpublished company data). Quartz veinlets at this location have fine bladed textures (after ?calcite) which occur typically in epithermal systems.

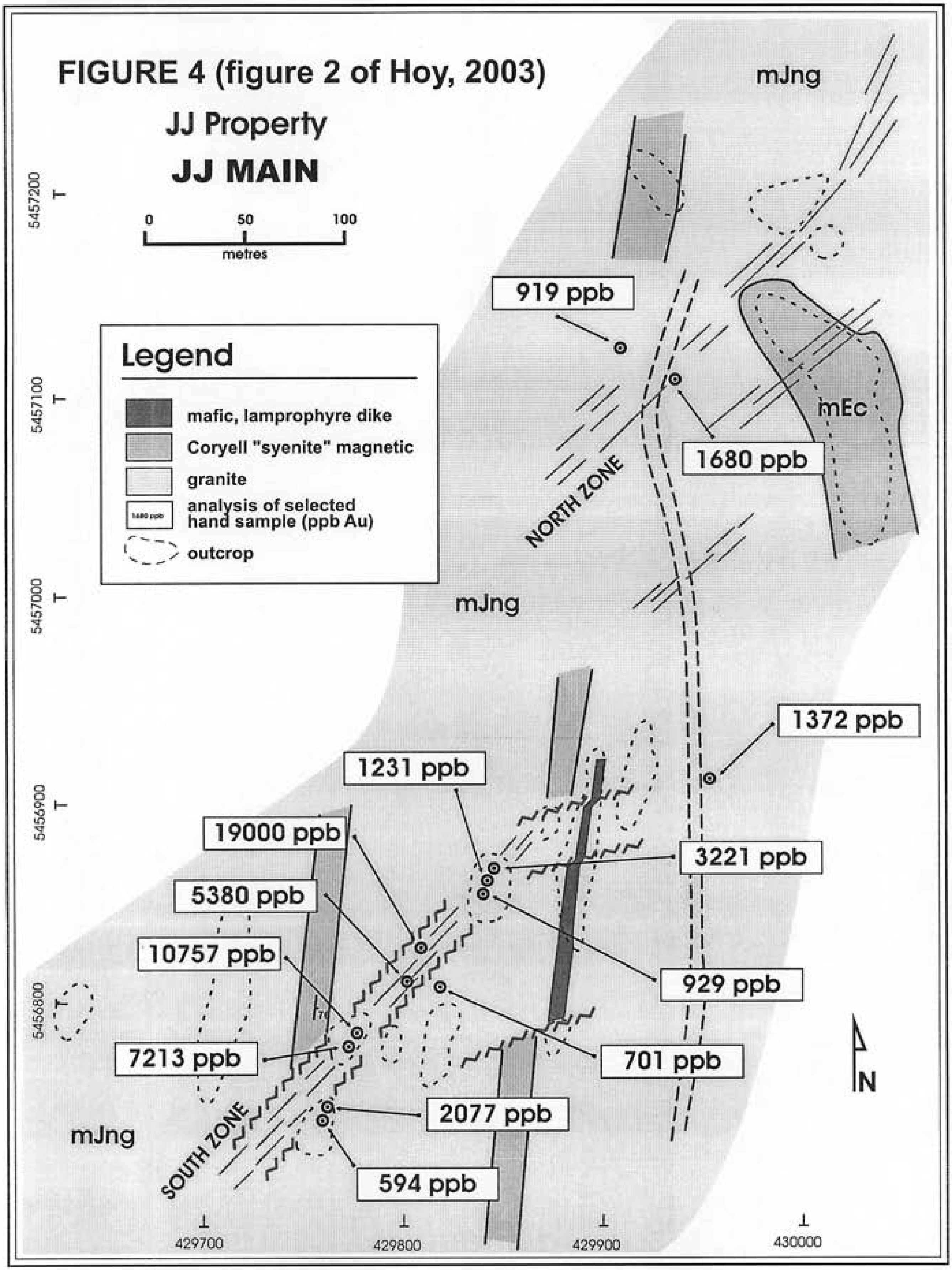


FIGURE 4 (figure 2 of Hoy, 2003)
JJ Property
JJ MAIN
0
50
100
metres
Legend
mafic, lamprophyre dike
Coryell "syenite" magnetic
granite
analysis of selected hand sample (ppb Au)
outcrop
mJng
mEc
NORTH ZONE
SOUTH ZONE
919 ppb
1680 ppb
1372 ppb
1231 ppb
19000 ppb
3221 ppb
5380 ppb
10757 ppb
929 ppb
701 ppb
7213 ppb
2077 ppb
594 ppb
5457200
5457100
5457000
5456900
5456800
429700
429800
429900
430000
N

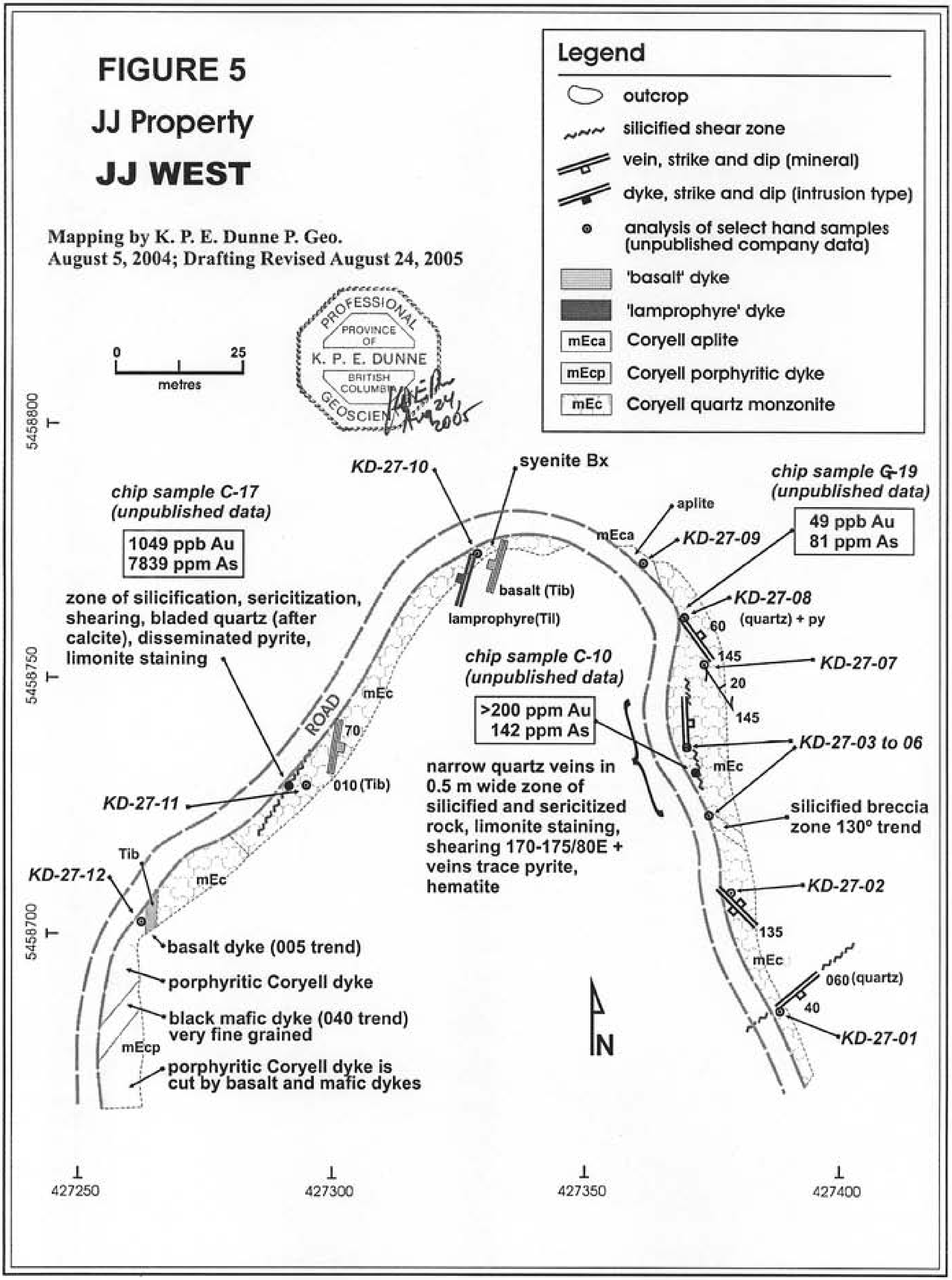


FIGURE 5
JJ Property
JJ WEST
Mapping by K. P. E. Dunne P. Geo.
August 5, 2004; Drafting Revised August 24, 2005
PROFESSIONAL
PROVINCE OF
K. P. E. DUNNE
BRITISH COLUMBIA
GEOSCIENTIST
0
25
metres
Legend
outcrop
silicified shear zone
vein, strike and dip (mineral)
dyke, strike and dip (intrusion type)
analysis of select hand samples (unpublished company data)
'basalt' dyke
'lamprophyre' dyke
mEca Coryell aplite
mEcp Coryell porphyritic dyke
mEc Coryell quartz monzonite
5458800
5458750
5458700
KD-27-10
syenite Bx
chip sample C-17
(unpublished data)
1049 ppb Au
7839 ppm As
zone of silicification, sericitization, shearing, bladed quartz (after calcite), disseminated pyrite, limonite staining
basalt (Tib)
lamprophyre(Til)
aplite
mEca
KD-27-09
chip sample G-19
(unpublished data)
49 ppb Au
81 ppm As
KD-27-08
60
(quartz) + py
145
KD-27-07
20
145
chip sample C-10
(unpublished data)
>200 ppm Au
142 ppm As
ROAD
mEc
70
010 (Tib)
KD-27-11
KD-27-03 to 06
mEc
narrow quartz veins in 0.5 m wide zone of silicified and sericitized rock, limonite staining, shearing 170-175/80E + veins trace pyrite, hematite
silicified breccia zone 130° trend
Tib
KD-27-12
mEc
KD-27-02
135
basalt dyke (005 trend)
porphyritic Coryell dyke
mEc
060 (quartz)
40
black mafic dyke (040 trend) very fine grained
N
KD-27-01
mEcp
porphyritic Coryell dyke is cut by basalt and mafic dykes
427250
427300
427350
427400

The shear zones are enveloped by narrow (up to 1 or 2 metres wide), partly silicified quartz monzonite with irregularly-distributed pyrite aggregate and thin sericite seams. The quartz monzonite retains its coarse-grained texture within the envelopes. Alteration of the quartz monzonite outboard of the envelopes for several metres includes development of selectively pervasive sericite alteration of feldspar, chlorite alteration of mafic phases, disseminated reddish Fe-oxide (after ?pyrite) and heavy limonite-stained fractures. Generally, the quartz monzonite at JJ West is extensively bleached, fractured and limonite-stained resulting, in some areas, in crumbly, incompetent rock.

Numerous north trending basalt and lamprophyre dykes cut the coarse-grained quartz monzonite at JJ West (Figure 5). These mafic dykes and the silicified shear zones have approximately the same trend (Figure 5). It is the opinion of the author that, similar to the JJ Main showing, mineralization in the shear zones cuts the coarse-grained quartz monzonite and is spatially associated with the mafic dykes; the mineralization is inferred to be Eocene in age.

Pb-Zn' zone'
A number of silicified zones with disseminated and stringer pyrite ± pyrrhotite ± galena ± sphalerite occur within sericite altered granodiorite/quartz monzonite approximately 1.5 km east of the JJ West showing. The silicified zones trend roughly north-south and are approximately one-half to 2 metres wide (Figure 6). Small outcrops of breccia comprising fragments 2-4 cm in size cut the granodiorite. Disseminated zones of pyrite ± galena ± sphalerite occur within the breccia. Geochemically these disseminated zones are enhanced in Pb, up to 4000 ppm, and Zn, up to 5900 ppm (unpublished company data).

As-Au 'zone'
The east side of the property has a number of anomalous gold (up to 2400 ppb) and arsenic (up to 9800 ppm) grab samples in a linear north-south trend (unpublished company data). The author did not visit the location of these samples. However, a narrow (2 m thick) silicified zone with 2% disseminated ?pyrite/arsenopyrite was examined at the contact of hornblende porphyritic granodiorite/quartz diorite and quartz syenite/quartz monzonite (station KD 30-18) approximately 1 km to the south.

CONCLUSIONS

The JJ Property comprises two main gold showings: JJ Main and JJ West which are related to brittle shear zones and highly fractured rock healed by quartz veinlets. Numerous small, geochemically anomalous areas (As-Au and Pb-Zn 'zones') and a vein, breccia and stockwork Mo-Cu occurrence (Wewa) occur peripherally.

Lithologies on the property include four main intrusions which are believed to be phases of the ?Middle Jurassic Nelson intrusions: granodiorite/quartz diorite host to the JJ Main showing and small Pb-Zn silicified zones, leuco-granite which may be a subunit of the granodiorite/quartz diorite, ?diorite/quartz diorite which occurs on the eastern edge of the map area and hornblende porphyritic granodiorite which comprises the central part of the property but is virtually unmineralized. ?Middle Eocene Coryell intrusions comprise quartz monzonite host to the JJ

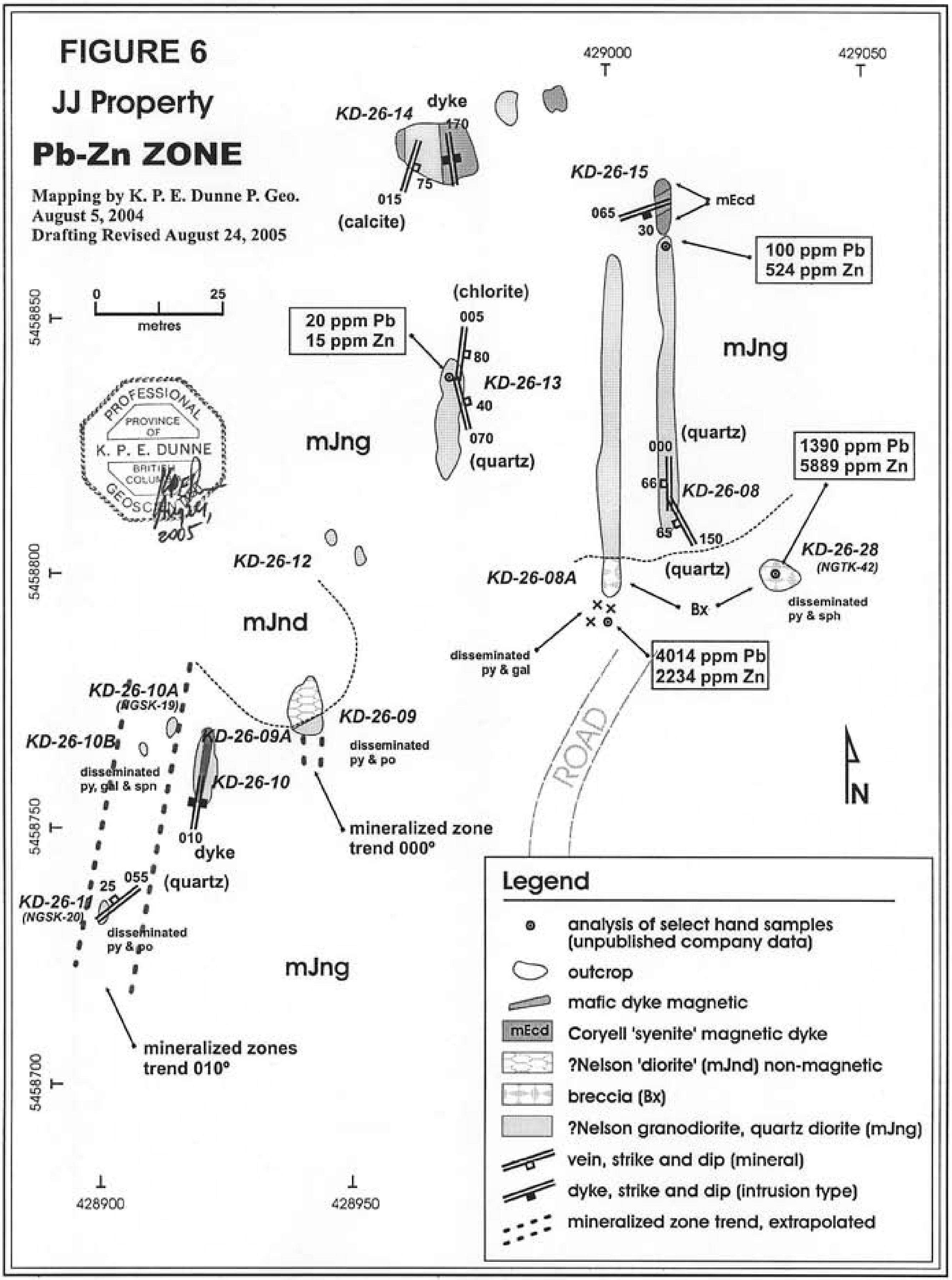


FIGURE 6

JJ Property

Pb-Zn ZONE

Mapping by K. P. E. Dunne P. Geo.
August 5, 2004
Drafting Revised August 24, 2005

West showing and quartz syenite, border phase ?granite and hypabyssal intrusions (dykes) of biotite±hornblende-feldspar porphyry which are virtually unmineralized. At least 4 distinct mafic hypabyssal intrusions cut the Coryell intrusions forming a roughly north-south trending dyke swarm that transects the property.

JJ Main is hosted by granodiorite/quartz diorite of probable middle Jurassic age similar to the Nelson Intrusions. Northeast trending shear zones within the granodiorite/quartz diorite are characterized by typically thin quartz ± pyrite ± arsenopyrite ± galena veinlets with gold values up to 19 g/t (Höy, 2003).

JJ West is hosted by quartz monzonite of probable middle Eocene age which comprises part of the Coryell batholith. Broadly north-south trending silicified shear zones within the quartz monzonite comprise disseminated pyrite ± arsenopyrite and discontinuous, irregular quartz ± pyrite veinlets. This showing has elevated gold values up to 1 g/t and one grab sample of > 200 g/t (unpublished company data).

Mineralization at both showings appears to be Eocene in age, younger than the middle Eocene Coryell Intrusions and related to extensional tectonism that formed hypabyssal mafic feeder dyke swarms to the Marron Formation.

RECOMMENDATIONS

1. Additional 1: 10 000 or 1: 5000 scale ground geological mapping and prospecting of contiguous JJ Property claims to the south and west of the claims in this report. The geological mapping should be accompanied by rock geochemical analyses and additional thin section and polished thin section petrography for selected unit definition and characterization of mineralization, veining and alteration .

2. Assembly of a structural database and detailed structural evaluation of shear zones as well as vein and fracture sets at JJ Main, JJ West and other less mineralized areas on the JJ property.

3. Geophysical ground magnetometer survey to confirm/refine distribution of geological units and major structures (ex. dyke swarms). Geophysical IP survey to detect anomalous zones of disseminated arsenopyrite and pyrite (pending results of additional petrography).

4. Trenching, sampling and detailed mapping of JJ Main and JJ West areas.

Respectfully submitted,

PROFESSIONAL
PROVINCE OF
K. P. E. DUNNE
BRITISH COLUMBIA
GEOSCIENTIST

Aug 24, 2005

K.P.E. Dunne, P. Geo.
Salmon Arm, BC

CITED REFERENCES

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STATEMENT OF EXPENDITURES

Kathryn Dunne P.Geo. was contracted in 2004 to conduct geologic mapping on the JJ group of claims.

During the period of July 24th to July 30th 2004 and August 3rd to 6th Kathryn Dunne completed mapping and report writing on the JJ property. She also had a number of samples cut and sent for petrographic analysis at Vancouver Petrographics.

The total expenditures for this program were:

Professional Services: Geological Mapping 8 days @ $400.00/day	$3200.00
Professional Services: Report Writing 4 days @ $400.00/day	$1600.00
Expenses including travel, accommodation, air photos................................	$1003.83
Professional Services: Petrographic Analysis	$2411.00
Total:	$8214.83

STATEMENT OF QUALIFICATIONS

I, Kathryn P.E. Dunne, of the city of Salmon Arm, province of British Columbia, do hereby certify that:

1. I am an independent consulting geologist, with a business office at 4610 Lakeshore Road NE, Salmon Arm, B.C., Canada, V1E 3N7.

2. I am a graduate in geology, with a BSc in geology from The University of British Columbia (1985).

3. I received my Masters degree in geology from The University of British Columbia, Vancouver, B.C. in 1988.

4. I am a registered member of the Association of Professional Engineers and Geoscientists of the Province of British Columbia (No. 18674).

5. I am a fellow of the Geological Association of Canada and a member of the Society of Economic Geologists.

6. I have practiced my profession as a geologist for approximately17 years: 4 years as geologist with the British Columbia Geological Survey Branch, 3 years as research coordinator at the Mineral Deposit Research Unit housed within the Department of Earth and Ocean Sciences at the University of British Columbia, and 10 years as an independent consultant.

7. The field geological mapping and interpretation of data of this report was undertaken by myself from July 24 to August 6, 2004. Revision of the report to incorporate petrographic analyses was undertaken by myself between August 16 and 24, 2005.

....

Kathryn P.E. Dunne, M.Sc., P.Geo.
Consulting Geologist
August 24, 2005

APPENDIX A

Petrographic Report

Report for: Jim McDonald,
Kootenay Gold Corp.,
156 Bay View Drive S.W.
CALGARY, Alberta
T2V 3N8

Report 040594

September 13, 2004

INTRODUCTION:

15 rock samples, numbered as below, were submitted by Kathryn Dunne. Typical portions of each were prepared as standard thin sections or polished thin sections, as specifically requested.

Sample	Thin section	Polished thin section
KD 24-6	X	X
24-13		X
KD 25-2A		X
25-10B		X
25-14		X
KD 26-3	X	
26-8A		X
KD 27-2	X	
27-4		X
27-4A		X
27-11A		X
27-28		X
KD 29-5	X	
29-11A	X	
KD 31-11	X	

SUMMARY:

All the samples of this suite appear to be leucocratic granitoid intrusives of various kinds. Some are fresh, whilst others are more or less intensely altered. A few are brecciated and/or show veining. Most of the samples contain a little limonite, and a few contain minor disseminated sulfides.

Rock compositions range from granite through quartz monzonite and granodiorite to quartz diorite - the latter being by far the commonest rock type. A single sample appears to be a form of syenite. The petrographic work fails to justify the rather widespread use of "syenite" as a rock name in the field descriptions provided with the sample.
Capsule descriptions based on the optical examinations are as follows:

Sample KD 24-6 is a breccia of vari-sized fragments of rather fresh leucocratic quartz diorite in a matrix of compact sericite.

Sample KD 24-13 is a mediun-grained leucogranite in which the plagioclase shows rather strong pervasive alteration to sericite.

Sample KD 25-2A is a heterogenous rock of uncertain origin. The sectioned portion incorporates part of the contact between a possible dyke or vein of apparent albitite and a hybrid breccia zone. The latter is composed dominantly of fragments of probable altered quartz diorite in a minutely felsitic matrix, together with intermingled albitite.

Sample KD 25-10B is a strongly altered, fine-grained leucocratic granodiorite in which the plagioclase grains are almost totally converted to compact felted sericite. Traces of more or less oxidized pyrite and arsenopyrite are present. The sectioned area is cut by a veinlet of monomineralic quartz.

Sample KD 24-14 is an altered quartz diorite, now consisting of an intergrowth of quartz and compact, minutely felted, sericite (in which the latter is believed to be pseudomorphic after original plagioclase). Minor disseminated arsenopyrite and pyrite are present. The sectioned area includes a veinlet of quartz with pockets of ferruginous material.

Sample KD 26-3 is a fresh granodiorite.

Sample KD 26-8A is a quartz-free rock composed dominantly of K-feldspar. It has the composition of a syenite. It shows distinctive textural features suggestive of rapid cooling - possibly in a minor intrusive. It is extensivly permeated by networks of microbrecciation cemented by chlorite and rutile. The rock is weakly mineralized with disseminated pyrite, sphalerite and galena.

Sample KD 27-2 is a rather fresh, medium-grained quartz monzonite.

Sample KD 27-4 is a strongly altered rock - possibly representing an original quartz diorite. It now consists essentially of a texturally heterogenous mixture of quartz and sericite in which much of the quartz appears to be introduced or redistributed. The sectioned portion is cut by definite veinlets of monomineralic quartz.

Sample KD 27-4A is a probable altered quartz diorite It is similar to KD 25-14, but the sectioned portion lacks the quartz veining and disseminated sulfides noted in that sample.

Sample KD 27-11A is closely similar to 27-4A, but the sectioned area is cut by a quartz veinlet. The rock contains disseminated pyrite.

Sample KD 27-28 is a brecciated and intensely altered rock of uncertain protolithology (but most likely of quartz-poor, feldspar-rich type). It now consists essentially of vari-sized fragments of compact sericite and/or clay, cemented and partially assimilated by introduced quartz. Disseminated pyrite is a minor accessory.

Sample KD 29-5 is a fresh, fine-grained quartz monzonite. It is distinctive for its content of accessory tourmaline, which occurs concentrated as skeletal/poikilitic megacrysts.

Sample KD 29-11A is a quartz diorite in which the plagioclase component shows moderately strong alteration to sericite/clay and carbonate. The mafic accessory is hornblende - now largely altered to secondary minerals.

Sample KD 31-11 is a fine-grained granodiorite. It closely resembles KD 25-10B except that it is essentially unaltered, and lacks quartz veining.

Detailed individual sample descriptions, and photomicrographs illustrating some distinctive features, are attached.

J.F. Harris Ph.D.

SAMPLE KD 24-6 QUARTZ DIORITE BRECCIA

Estimated mode

Plagioclase	52
Quartz	15
Sericite	30
Chlorite	trace
Sphene	trace
Opaques	1
Limonite	2

This rock is a breccia of crystal and lithic fragments, ranging in size from about 0.1 - 15.0 mm.

The clasts are angular or sub-angular in shape, and consist of crystals or crystal fragments of fresh to mildly sericitized plagioclase and quartz, and lithic fragments made up of intergrowths of these two minerals - typically on a scale of 0.5 - 2.0 mm.

These clasts seem to be derived by the disaggregation of a single rock type - clearly recognizable as a medium-grained, leucocratic quartz diorite of intrusive igneous aspect.

The clasts occur in non-matching relationship, "floating" in a matrix/interstitial phase composed of non-oriented, minutely felted sericite, speckled with tiny microclasts of quartz and plagioclase, 0.03 - 0.1 mm in size, and disseminations of similar-sized, equant opaques or sub-opaques. The latter appear to consist dominantly of hematite and limonite - though positive identification cannot be made in a standard thin section. Possibly they are pseudomorphs of original sulfides.

Limonite in dispersed form occurs throughout the sericitic matrix as diffuse stains, and clast outlines and rare fracture networks are typically defined by thin limonitic coatings.

Other than the Fe oxides, rare traces of chlorite and sphene are the only mafic constituents present.

The mode of formation of this rock cannot be determined definitively from the petrography. However, the most likely possibility seems to be that it is an explosion breccia or diatreme associated with quartz diorite emplacement.

SAMPLE KD 24-13 LEUCOGRANITE

Estimated mode

K-feldspar	59
Plagioclase	20
Quartz	10
Sericite	10
Monazite	trace
Rutile	trace
Limonite)	1
Hematite)	
Pyrite	trace

The strong yellow cobaltinitrite stain developed on the off-cut of this sample clearly indicates that it contains a major component of K-feldspar.

Thin section examination shows that it is a homogenous rock having a typicaly granitoid intrusive texture. Its grain size ranges from 0.2 - 5.0 mm or more.

The principal constituent is orthoclase - commonly showing incipient perthitic texture. It is typically fresh but for incipient dustings of sericite.

Plagioclase is the major accessory . This occurs as subhedral-anhedral grains similar in size to the K-feldspar, but is more or less strongly and evenly altered to minutely felted sericite.

Quartz is the other accessory. This is much finer grained than the feldspars, forming small pockets and elongate microgranular bodies interstitial to the dominant feldspars. To some degree the quartz concentrates as semi-continuous strings, suggesting incipient remobilization related to microfracturing.

The extremely leucocratic character of this rock is a notable feature. Mafic silicates appear to be totally absent.

The rock contains extremely rare specks of partially oxidized pyrite, plus local clusters of cubic pseudomorphs (now composed of boxwork limonite and hematite) which suggest that pyrite was originally a little more abundant. Flecks, stains and microfracture coatings of limonite are seen sporadically throughout the rock.

No evidence of the disseminated galena and possible Bi mineral noted in the field description could be found in the polished thin section.

SAMPLE KD 25-10B ALTERED GRANODIORITE CUT BY QUARTZ VEINLET

Estimated mode

Host rock	
Quartz	30
Plagioclase	5
K-feldspar	10
Sericite	30
Altered biotite	4
Limonite	1
Arsenopyrite	trace
Pyrite	trace
Veinlet	
Quartz	20

Macroscopic examination of the sectioned portion of this sample shows a quartz veinlet, 4 - 5 mm in thickness, cutting a rock of fine-grained granitoid intrusive aspect.

In thin section the host rock is found to consist of a strongly altered leucocratic granodiorite, in which the plagioclase is almost totally converted to an evenly fine-grained felted aggregate of sericite. Minor remnants of the original feldspar are locally recognizable.

The other principal constituent is quartz, as vari-sized grains and polygranular clumps intergrown with the seritized feldspar. The grain size of this rock is in the range 0.3 - 1.5 mm.

K-feldspar is the most abundant accessory, as sporadic small grains and microgranular clumps. Unlike the plagioclase, this appears essentially unaltered.

The rock, in its present form, is devoid of mafics, but scattered flakes of coarser sericite, typically with inclusions of micron-sized rutile, occur sporadically throughout. These almost certainly represent the altered product of original minor accessory biotite.

The only other constituents are a few sparsely scattered grains of arsenopyrite and lesser pyrite, 0.2 - 0.7 mm in size, now more or less altered to limonite - including a few virtually complete pseudomorphs.

The rock is diffusely stained by limonite, which concentrates along grain boundaries and in a few irregular microfractures.

The quartz veinlet is composed of monomineralic quartz, as an aggregate of anhedral grains 0.2 - 3.0 mm in size. It shows rather irregular, more or less sharp contacts with the host rock, sometimes delineated by a thin selvedge of flaky sericite. There is no observable association of sulfides with the veinlet.

SAMPLE KD 25-14 ALTERED QUARTZ DIORITE

Estimated mode

Quartz	45
Sericite	52
Chlorite	trace
Rutile	1
Arsenopyrite	1
Pyrite	0.5
Limonite	0.5

The stained off-cut corresponding to the sectioned portion of this sample is apparently devoid of feldspars - the white etch characteristic of plagioclase and the yellow stain characteristic of K-feldspar both being essentially absent.

Thin section examination shows that it is of similar appearance to the previous sample (KD 25-10B) except for the absence of K-feldspar.

It consists essentially of an intergrowth of compact, minutely felted sericite - clearly representing the total alteration of original plagioclase - and vari-sized grains and clumps of quartz. The primary grain size of this rock appears to have been in the 0.3 - 3.0 mm range.

As in the previous sample, scattered remnants of original minor biotite are recognizable as vari-sized, sub-prismatic "ghosts" composed of acicular networks and flecks of fine-grained rutile.

Individual, randomly disseminated grains of arsenopyrite and lesser pyrite, 0.1 - 1.0 mm in size, are another minor accessory. These are more abundant than in KD 25-10B, and are essentially unaltered.

The sectioned area includes a rather ill-defined (disrupted?) veinlet of varigranular quartz 4 - 5 mm in thickness. This shows strong strain polarization, and incorporates scattered pockets of what appears to be earthy limonite or ferruginous clay.

SAMPLE KD 26-3 GRANODIORITE

Estimated mode

Plagioclase	54
Quartz	14
K-feldspar	24
Granophyre	1
Hornblende	4
Augite	1.5
Sphene	0.5
Opaques	1

The etched and stained off-cut corresponding to this thin section is of distinctive appearance. It is composed dominantly of plagioclase (white etched), as sharply defined clusters of euhdral prismatic grains. These alternate with areas of K-feldspar (yellow-stained) which is the other major constituent. Quartz (unetched) is of relatively low abundance, occurring mainly as an interstitial component to the clusters of plagioclase grains. Occasional dark (mafic) grains are also present in the latter association.

Thin section examination shows that this rock differs from the preceding three samples (KD 25 series) in being strikingly fresh. The plagioclase forms euhedral grains showing well-developed twinning, with extinction angles suggesting a composition of albite-oligoclase.

The K-feldspar (also completely fresh) is orthoclase, sometimes incipiently perthitic. It is the coarsest grained constituent, forming anhedral grains up to 3.0 mm in size. The overall grain size of the rock ranges from 0.2 - 3.0 mm.

Quartz also exhibits anhedral form and fills interstitally, or moulds around, the clusters of plagioclase euhedra. The same is true of the K-feldspar.

Occasional tiny grains of granophyre are developed along quartz and feldspar contacts.

Mafics consist of fresh hornblende, as grains up to 2.0 mm or so in size, often showing euhedral form; augite, as small subhedral-anhedral grains not exceeding 1.0 mm in size, and often showing limonitic rimming and netting; and rare sphene as tiny euhedra, 0.1 - 0.5 mm in size.

The remaining constituent is an opaque mineral - most likely magnetite - as sparsely disseminated, tiny, sub-equant grains, 0.1 - 0.3 mm in size. These occur within hornblende, and also scattered randomly through the rock.

The relative proportions of K-feldspar and plagioclase in this rock place its composition in the granodiorite field, approaching that of quartz monzonite.

SAMPLE KD 26-8A MICROBRECCIATED SYENITE

Estimated mode

K-feldspar	80
Quartz	1
Sericite	2
Carbonate	3
Chlorite	9
Rutile	3
Sphalerite	0.5
Pyrite	1.3
Galena	0.2

The strong overall yellow cobaltinitrite stain developed on the off-cut distinguishes this rock from all others of the suite.

Thin section examination confirms that it consists essentially of K-feldspar. This exhibits a highly distinctive textural habit, and is traversed by extensive networks of microbrecciation and alteration (see photomicrographs).

The K-feldspar appears to be in the form of a fine-grained, diffuse-margined aggregate, on a scale of 0.1 - 0.5 mm. This often has a feathery, sub-radiate appearance. Textural details are somewhat obscured by an overall turbidity probably resulting from incipient pervasive argillization. Dustings of carbonate are also observable.

In addition, the K-feldspar aggregate is shot through with a recticulate pattern of slender plates of chlorite and/or dust-sized rutile. This appears to be superimposed on (cross-cuts) the primary granularity. The overall texture has the appearance of a primary, magmatic feature, perhaps related to rapid cooling.

Tiny interstitial grains of quartz are a minor to trace accessory in the K-feldspar aggregate.

The latter is extensively penetrated by ramifying networks of microbrecciation or protomylonitization, in which K-feldspar remnants, 0.2 - 0.5 mm in size, are cemented by chlorite and dust-sized rutile.

Carbonate occurs as irregular, small pockets and as hairline veinlets. The latter can be seen to cross-cut the microbrecciated zones.

This rock is weakly mineralized with pyrite, sphalerite and traces of galena. The sulfides occur as tiny disseminated grains, 10 - 200 microns in size, associated with chlorite in microbrecciated zones. There are also scattered, larger, compact clumps of pyrite to 1 or 2 mm in size. Sphalerite is concentrated as occasional hairline veinlets following zones of strong mylonitization.

Sample KD 26-8A cont.

The petrographic work shows that, contrary to the field description, this rock is neither polylithic nor silicified. Rather, it is a fine-grained microbrecciated and altered syenite (possibly a dyke rock).

SAMPLE KD 27-2 QUARTZ MONZONITE

Estimated mode

Quartz	12
Plagioclase	40
K-feldspar	39
Sericite)	3
Clays)	
Biotite	5
Chlorite	1
Hornblende	trace
Rutile	trace
Opaques	trace

The off-cut of this sample has the typical appearance of a granitoid intrusive. It contains a major component of K-feldspar (yellow-stained), partly as rather coarse segregations up to 1 cm or more in size.

Thin section examination shows that this rock is a granular intergrowth of plagioclase and K-feldspar, with accessory quartz and biotite. It has a grain size range of 0.2 - 4.0 mm. For the most part grain shapes are anhedral, though the plagioclase sometimes shows subhedral prismatic form.

The plagioclase shows an even, pervasive, turbidity, produced by mild argillic alteration and sericitization.

The principal mafic accessory is biotite, mainly fresh, but occasionally showing partial alteration to chlorite and dust-sized rutile. Rare small grains of hornblende were also noted.

The K-feldspar is microperthitic orthoclase. It is fresh but for occasional incipient sericitization.

This rock is classifiable as a quartz monzonite, on the basis of the approximately equal modal abundance of plagioclase and K-feldspar.

SAMPLE KD 27-4 SILICIFIED, SERICITIZED ROCK CUT BY QUARTZ VEINS

Estimated mode

Quartz	60
Sericite	34
Plagioclase	4
Rutile	0.5
Limonite	1
Jarosite	trace
Pyrite	trace

The heterogenous appearance of the off-cut of this sample, and the absence of K-feldspar (yellow-stained), clearly distinguishes it from the previous one (KD 27-4).

Thin section examination shows that it is compositionally similar to the KD 25 series samples, being a strongly altered rock consisting essentially of quartz and sericite. The quartz appears partly to be of veniform, superimposed character. In addition, the rock shows evidence of cataclastic deformation.

The sectioned area is bounded at each end by vein-type quartz. This consists of varigranular aggregates of strain-polarized, monomineralic quartz, ranging in grain size up to 3 mm or so. Partial development of comb-texture is recognizable. The veins are locally crosscut by thin fractures or crush zones.

Rare traces of disseminated pyrite, as minute euhedra 2 - 20 microns in size, occur in the marginal portions of the veins.

The area between the two veinlets is occupied by the presumed host rock. This is a mineralogically simple but texturally heterogenous assemblage consisting of a matrix of compact, minutely felted sericite, which forms the host to irregular clumps and elongate bodies of quartz of widely varied grain size. A minor portion of this looks like an original magmatic component, but much of it has the aspect either of disrupted, partially recrystallized veinlets, or is in the form of streaks of minutely fine-grained material of protomylonitic aspect.

The siliceous streaks and veinlet-like remnants show an imperfect concordance with the trend of the two main quartz veins, and appear to indicate extensive cataclastic modification - possibly combined with silicification.

Occasional small, diffuse remnants of probable plagioclase are recognizable within the compact sericite, and there are a few small patches of coarser sericite with rutile inclusions which may represent original accessory biotite. The rock may, therefore, be a protolithic quartz diorite. However, the extent of veining, alteration and deformation makes this uncertain.

Sample KD 27-4 cont.

Sinuous late-stage fractures cut the sericite-quartz assemblage and follow the contact of quartz veins. They contain coatings and vuggy pockets of limonite and possible jarosite - occasionally having the appearance of pseudomorphs after original sulfides.

SAMPLE KD 27-4A ALTERED LEUCOCRATIC QUARTZ DIORITE

Estimated mode

Quartz	59
Sericite	40
Rutile	1
Tourmaline	trace
Limonite	trace

This rock is of similar mineralogy to the previous sample, but lacks the prominent quartz veining and strong cataclastic features.

The rock is mineralogically simple, consisting essentially of two components: quartz and sericite.

The sericite occurs as a compact, decussate (randomly oriented) aggregate in which the constituent flakes typically range up to about 200 microns in length. Tiny specks of rutile occur in interstitial relation to the sericite.

This assmeblage forms a matrix to abundant quartz, as anhedral, subequant grains ranging in size from 0.2 - 1.0 mm - occasionally aggregated as semi-connected clumps up to 2.0 mm or so in size.

Rare traces of tourmaline occur as scattered clusters of tiny grains.

The sectioned area is cut by one or two thin stringers of microgranulation, and by an anastomosing microfracture zone coated by limonite. Overall, however, this rock appears largely undeformed, and its texture is believed to be a relict primary one representing total pervasive sericitization of the plagioclase component in an original quartz diorite. It closely resembles sample KD 25-14.

SAMPLE KD 27-11A SERICITIZED QUARTZ DIORITE CUT BY QUARTZ VEINLET

Estimated mode

Quartz	55
Sericite	42
Rutile	trace
Pyrite	3
Limonite	trace

This is another rock composed essentially of quartz and sericite.

The sectioned portion of the sample incorporates a quartz vein, 5 - 8 mm in thickness, which cuts a lithotype closely similar to the previous sample. This vein runs diagonally from corner to corner of the sectioned area.

The host rock appears identical to that described for KD 27-4A, except that it contains a little fine-grained disseminated pyrite. This takes the form of randomly distributed, subhedral cubic grains, 10 - 250 microns in size, sometimes aggregated as small clumps to 500 microns. In a few cases the pyrite is closely associated with fine-grained rutile.

The quartz vein is an anhedral aggregate ranging widely in grain size from 0.05 - 2.5 mm. It shows strain polarization and crenulate grain boundaries, and appears to be more or less recrystallized. The contacts are irregular and sometimes paralleled by thin hairline stringers of very fine-grained quartz in the host rock.

Pyrite is also present in the quartz vein, as a local, elongate, concentration along one contact. The pyrite appears monomineralic (as with the disseminated type), and occurs as vari-sized, semi-compact clumps, composed of subhedral grains 5 - 400 microns in size. Grain boundaries in these clumps often appear enlarged (leached?), though no associated limonitization is apparent.

SAMPLE KD 29-5 QUARTZ MONZONITE

Estimated mode

Quartz	24
K-feldspar	30
Plagioclase	28
Sericite	3
Clays	1
Biotite)	2
Chlorite)	
Tourmaline	12

The off-cut of this sample has the typical appearance of a rather fine-grained granitoid intrusive. The rock appears fresh and notably leucocratic - except for a couple of segregated clusters of a dark mafic constituent with associated quartz.

Thin section examination shows that it consists essentially of a rather even intergrowth of individual, sub-equant grains of quartz, plagioclase and K-feldspar. The three constituents are of approximately equal abundance, and show a dominant size range of 0.2 - 1.5 mm.

The plagioclase is fresh, but for incipient dustings of sericite. The K-feldspar (microperthitic orthoclase) is likewise fresh but for a faint overall argillic turbidity.

The two macroscopically prominent clusters of dark grains are found to consist of tourmaline. This is a well-crystallized variety, olive green in colour, locally zoned to dark blue. It occurs as reticulate clumps of interconnected grains, ranging in size from 0.1 - 2.0 mm, which, within each cluster, appear to represent single, optically continuous, skeletal/poikilitic megacrysts, 1 - 2 cm in size. The incorporated host grains are dominantly quartz, plus a lesser proportion of smaller grains of plagioclase.

The only other mafic constituents are sparsely scattered, ragged flakes of biotite, partially bleached and altered to chlorite.

SAMPLE KD 29-11A QUARTZ DIORITE

Estimated mode

Quartz	30
Plagioclase	45
Clays)	11
Sericite)	
Carbonate	6
Altered hornblende	6
Apatite	trace
Rutile)	2
Opaques)	

The essential absence of yellow cobaltinitrite stain on the off-cut of this sample indicates that it is another example of the quartz diorite lithotype which is the commonest compositional variant amongst the granitoid intrusives making up this suite.

This rock has a dominant grain size range of 0.2 - 3.0 mm. It consists principally of subhedral prismatic grains of plagioclase, with intergrown quartz as an interstitial phase, and occasionally as coarse poikilitic masses enveloping smaller plagioclase grains.

The plagioclase shows rather weak to moderately strong pervasive alteration to compact dustings of minutely fine-grained sericite and/or clays, often with intimately intergrown carbonate.

Local development is seen of what appears to be a finely microgranular, interstitial phase which shows much stronger carbonate/sericite alteration.

The mafic accessory has grain shapes and relict cleavage which clearly indicate that it originated as hornblende. However, it is now largely altered to pseudomorphs of intimately intergrown secondary biotite, chlorite and sericite.

The remaining constituent is an opaque mineral (most likely magnetite) as randomly scattered grains 0.1 - 0.6 mm in size.

This rock shows no veining or deformational effects. It shows a style of alteration different from that of the intense sericitization affecting most of the quartz diorites of the suite.

SAMPLE KD 31-11 FINE-GRAINED GRANODIORITE

Estimated mode

Quartz	25
K-feldspar	17
Plagioclase	40
Sericite	5
Carbonate	2
Biotite	7
Chlorite	3
Rutile	0.5
Apatite	trace

This is a relatively fine-grained variant of the granitoid intrusives making up this suite.

It has a dominant grain size range of 0.2 - 1.5 mm, although there are scattered, coarser grains of K-feldspar up to 3 or 4 mm in size, which poikilitically incorporate smaller grains of the other constituents.

It is composed principally of a xenomorphic intergrowth of plagioclase, quartz and K-feldspar (in decreasing order of abundance).

The plagioclase occasionally exhibits subhedral form. It typically shows only mild alteration, to light dustings of sericite and lesser carbonate. Rare grains of uncertain origin show total alteration to compact sericite and carbonate.

The K-feldspar (microperthitic orthoclase) is typically completely fresh.

Trace development of granophyre is occasionally observable at quartz feldspar grain boundaries.

The mafic accessory is biotite, as scattered, small grains and grain clusters interstitial to the dominant quartz and feldspars. It shows partial alteration to chlorite and flecks of rutile.

The sectioned area is transected by a few carbonate-filled microfractures.

The ratio of K-feldspar to plagioclase establishes the composition of this rock as a granodiorite.

SAMPLE KD 27-28

ALTERED SYENITE OR LEUCODIORITE, BRECCIATED, SILICIFIED AND CEMENTED BY QUARTZ

Estimated mode

Altered feldspar	50
Quartz	45
Rutile	trace
Pyrite	4
Limonite	1

The off-cut of this sample is of heterogenous, contorted/fragmented appearance, and its character is not clearly apparent from macroscopic observations.

Thin section examination reveals that it is a brecciated and intensely altered rock of uncertain protolithology.

It is composed essentially of two components; vari-sized fragments of an altered brecciated host, and a cementing and partially replacing phase of quartz.

The fragments represented in the thin section range in size from 2 cm or so down to tiny remnants of 10 - 20 microns. They consist essentially of compact, minutely fine-grained sericite and/or clays. Some of the larger fragments contain a few grains of quartz which could be primary remnants, but it appears that this rock must originally have consisted largely of feldspars. A relict hypidiomophic granular texture, on a scale of about 0.2 - 2.0 mm, is locally recognizable within the sericite/clay .

The cementing phase is quartz, mainly as microgranular, incipiently comb-textured aggregates, of grain size 30 - 150 microns. This is typically speckled with more or less abundant, vari-sized, small remnants of the altered host, exhibiting varied stages of assimilation/replacement by the siliceous phase.

Small pockets and veniform bodies of slightly coarser quartz, of grain size to 0.4 mm, occur within the areas of fine pervasive silicification (the brownish limonite-stained area of the slide). There are also some well-defined ramifying veinlets of comb-textured quartz up to 2 or 3 mm in thickness: these are mainly developed in the other half of the slide, bounding a single, large, altered host rock fragment which, for some reason, is limonite-free.

The remaining constituent of the rock is pyrite, as disseminated euhedral grains 30 - 500 microns in size. These occur mainly as vari-sized, more or less compact clusters in the area of fine silicification and small host remnants. The pyrite sometimes shows marginal oxidation to limonite. Limonite is also present as occasional areas of vuggy cellular boxworks, and in the form of diffuse staining. No sulfides other than pyrite were seen.

SAMPLE KD 25-2A

POSSIBLE ALBITITE IN CONTACT WITH ALTERED BRECCIATED ROCK

Estimated mode

Plagioclase	71
Sericite	18
Quartz	10
Limonite	1
Pyrite	trace

The sectioned portion of this sample incorporates a homogenous, fine-grained, aplite-like unit in contact with a brecciated/hybrid zone.

The former consists essentially of a microgranular aggregate of an untwinned, lath-like, low birefringent mineral of low R.I. which, judging from the whitish etch developed on the off-cut, is most likely albite. This constituent is not definitively identifiable by optical examination, but could be confirmed by means of an XRD scan. The randomly-oriented crystals making up this aggregate (see photomicrograph) are typically about 100 microns in length (occasionally up to 300 microns) and 10 - 30 microns in cross section.

Other constituents of this lithotype are fine-grained interstitial sericite, and evenly disseminated specks and tiny clusters, 10 - 50 microns in size, of a sub-opaque material - probably limonite. The latter locally concentrates as angular/elongate clumps up to several mm in size. These are mainly developed adjacent to the contact zone, and may represent modified xenolithic material.

The suspected albitite body is cut by rare hairline veinlets of quartz - sometimes mantled by concentrations of the disseminated limonite.

The remainder of the slide consists of a heterogenous mixture of several different components. These include vari-sized fragments of what appears to be a strongly altered quartz diorite, similar to KD 25-14 (composed of intergrowths of quartz, compact sericite and probable altered biotite, on a scale of 0.5 - 2.0 mm), set in a minutely felsitic matrix speckled with much smaller remnants of the probable diorite. Patches of decussate-textured rock, similar to that making up the supposed albitite vein or dyke, are also present within this hybrid zone, as are occasional drusy quartz segregations with limonite and rare tiny remnants of pyrite.

Genetic relationships within this sample are unclear.

PHOTOMICROGRAPHS

All photos are of typical fields by cross-polarized light at a scale of 1 cm = 170 microns, except where otherwise stated.

SAMPLE KD 24-6

Neg. 542-0A: Typical field of breccia. Left side of field covers part of a large clast of quartz diorite. Darker grey is plagioclase, dusted with sericite (pastel colours); light grey and olive colour is quartz. Remainder of field shows vari-sized fragments of plagioclase (lamellar twinning) and quartz (smooth white and greys) in a matrix of minutely fine-grained, compact sericite (tan, pastel colours). Black (opaque) grains are rutile or Fe oxides.

SAMPLE KD 24-13

Neg. 542-1A: Typical field of leucogranite. Shows rather strong alteration of the plagioclase to compact felted sericite (pastel colours; right half of field) and essential absence of alteration in K-feldspar (grey; left half of field). Whitish grey area intergrown in right half of field is quartz. Black areas are Fe oxides or voids (from plucking of the soft sericite in slide preparation).

SAMPLE KD 25-2A

Neg. 542-2A: Typical field of the probable albitite component, composed of a fine-grained aggregate of feldspars (white, greys) and interstitial sericite (tan colours). This area is transected by a hairline veinlet of quartz (top left to bottom right).

Neg. 542-3A: Scale 1 cm = 85 microns. Same subject as 542 2A, but at higher magnification to show detail. Note elongate prismatic form of some of the albite. Black (opaque) grains (e.g. upper left centre; lower right) are disseminated limonite.

Neg. 542-4A: Example of the breccia/hybrid component. Shows part of a relatively large fragment of altered quartz diorite (left half of field) composed of quartz (grey, pale yellow) and compact sericite (tan colour). Upper right is an area of felsitic matrix packed with smaller altered lithic fragments.

SAMPLE KD 25-10B

Neg. 542-5A: Typical area of altered granodiorite. Clear grey grains are quartz. Speckled tan/pastel-coloured aggregate is compact sericite, representing altered plagioclase. The coarser patch of sericite (colours; lower left) is probable altered biotite. The speckled grey/black area at top left is K-feldspar.

SAMPLE KD 25-14

Neg. 542-6A: Altered quartz diorite, consisting of an intergrowth of quartz (greys) and totally sericitized plagioclase (fine tan/pastel-coloured aggregates). Colours (centre; upper left) are coarser sericite representing original biotite. Intergrown dark specks and laminae in the latter are rutile.

Neg. 542-7A: Reflected light. Shows disseminated arsenopyrite (whiter grains, left) and pyrite (creamy grain, top right) in altered quartz diorite.

SAMPLE KD 26-3

Nef. 542-8A: Example of fresh granodiorite. Field includes subhedral plagioclase (greys, showing lamellar twinning), quartz (white), K-feldspar (darker grey; top right and bottom right, showing incipient perthitic texture) and hornblende (orange/brown, showing cleavage).

SAMPLE KD 26-8A

Neg. 542-9A: Plane-polarized light. Shows distinctive texture in syenite, consisting of an aggregate of K-feldspar (turbid, brownish) shot through with lamellar chlorite (light green) and rutile (sub-opaque; black).

Neg. 542-10A: Same field as 542 9A, but in cross-polarized transmitted light. Shows fine, somewhat diffuse/feathery granularity in the K-feldspar. Tan-coloured areas are light dustings of sericite and carbonate alteration.

Neg. 542-11A: Plane-polarixed transmitted light. Similar K-feldspar aggregate to 542-9A, but with a superimposed network of microbrecciation (right half of field) cemented by chlorite (greenish) and rutile (black).

Neg. 542-12A: Same field as 542-11A, but in cross-polarized light. Shows microbrecciated areas (right and upper left) unbrecciated syenite remnants (lower left; top centre). Field includes a cross-cutting veinlet of carbonate (tan colour, centre).

Neg. 542-13A: Reflected light. Shows disseminated sulfides in syenite. Battleship grey is sphalerite, in small-scale intergrowth with pyrite (cream colour) e.g. bottom right, and with galena (greyish white) e.g. bottom left and top.

SAMPLE KD 27-2

Neg. 542-14A: Typical field of fresh quartz monzonite. Grey grains showing weakly developed lamellar twinning (e.g. bottom left; extreme right) are plagioclase. Mottled grey and dark grains (perimeter of field) are K-feldpsar; smooth white and beige grains are quartz; brownish striated area (centre) is incipiently altered biotite.

SAMPLE KD 27-4

Neg. 542-15A: The right half of this field shows altered quartz diorite showing probable relict primary textures. Greys are quartz; pastel colours are compact sericite after original plagioclase. The left half of the field includes part of a vein of comb-textured quartz (greys/black). Note anastomosing fracture zone infilled by limonite (dark brown) paralleling the vein contact.

SAMPLE KD 27-4A

Neg. 542-16A: Lower half of field shows typical altered quartz diorite (relict quartz intergrown with compact felted sericite pseudomorphous after original plagioclase). Upper half is cut by a thin zone of microgranulation and silicification.

SAMPLE KD 27-11A:

Neg. 542-17A: Reflected light. Shows fine-grained disseminated pyrite (cream colour) in altered quartz diorite.

SAMPLE KD 27-28

Neg. 542-18A: Vein-type quartz (centre) cementing brecciated altered rock. The latter - presumably of original fine-grained feldspathic composition - is now converted to minutely felted, compact sericite/clays.

Neg. 542-19A: Similar subject to 542-18A. In this case the altered host contains patches of quartz (greys) of apparent relict character - suggesting derivation from a quartz diorite protolith. The quartz-free variant illustrated in 542-18A is the more dominant one.

Neg. 542-20A: Area of small altered remnants (tan colour) intimately cemented by fine-grained quartz (greys). The black area is a cluster of pyrite (opaque).

SAMPLE KD 29-5

Neg. 542-21A: Part of a skeletal/poikilitic megacryst of tourmaline (green, flecked with colours), with intergrown quartz (smooth greys; white, black) and plagioclase (mottled greys).

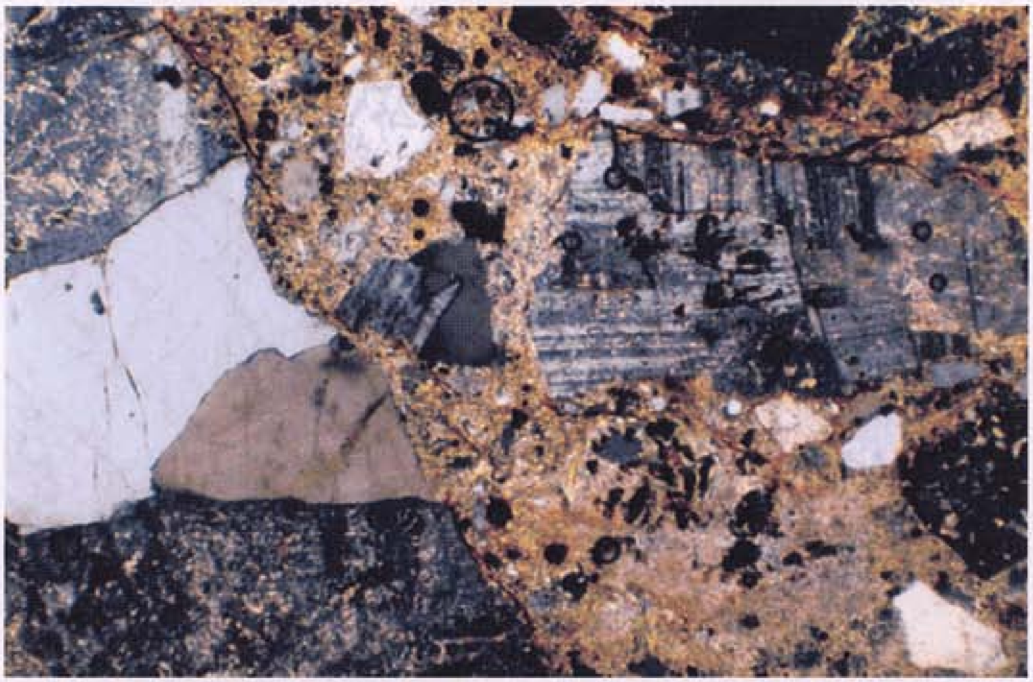
SAMPLE KD 29-11A

Neg. 542-22A: Quartz diorite, showing subhedral grains of plagioclase (greys; speckled with fine-grained sericite and carbonate) and quartz (smooth surfaced white and beige). Greenish area at upper left is altered hornblende. Tan-coloured microgranular area at lower right is the strongly carbonated interstitial phase. Black (opaque) grains at centre are probable magnetite.

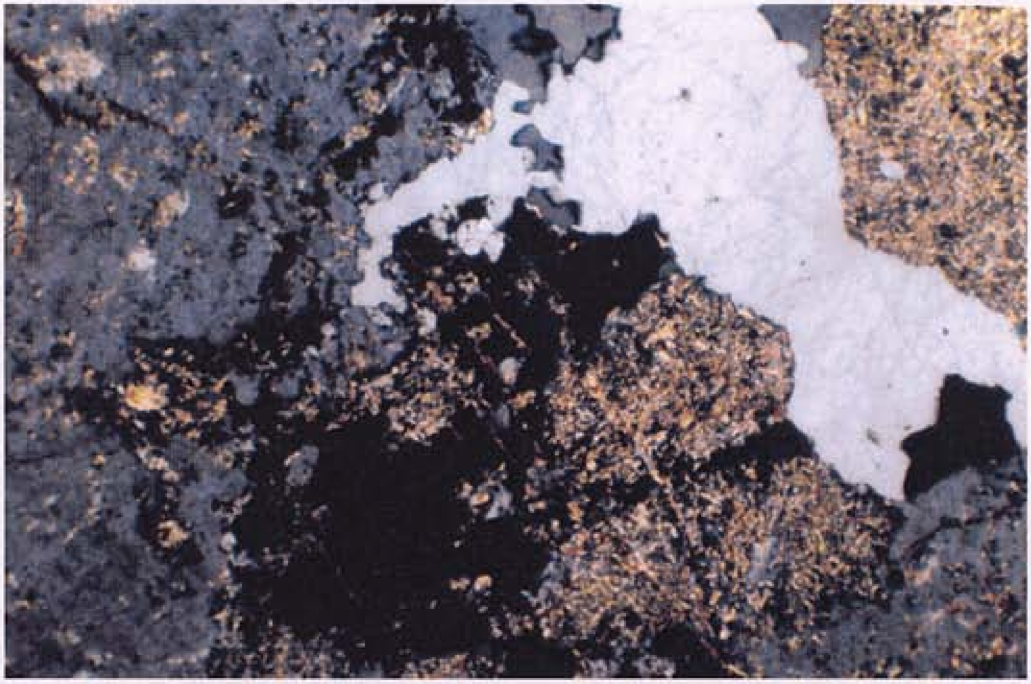
SAMPLE KD 31-11

Neg. 542-23A: Typical field of fine-grained granodiorite, showing near-fresh character. Dusty greys, showing lamellar twinning, are plagioclase. Smooth surfaced greys are quartz. Darkest areas are K-feldspar. Olive brown flakes at centre are biotite. Minor development of granophyre can be seen at upper right centre (circled).

Neg. 542-24A: Another field, with plagioclase showing stronger carbonate/sericite alteration (pinkish tan, centre). This field also includes a cross-cutting hairline veinlet of carbonate (tan colour; upper left centre).



SAMPLE KD 24-6   Neg. 542-0A



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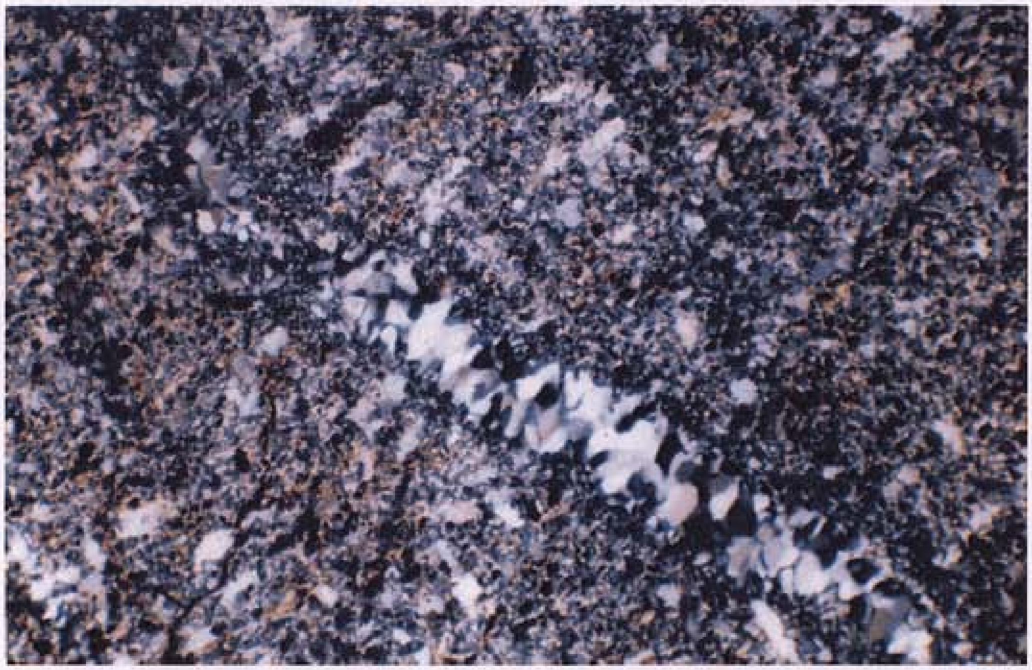

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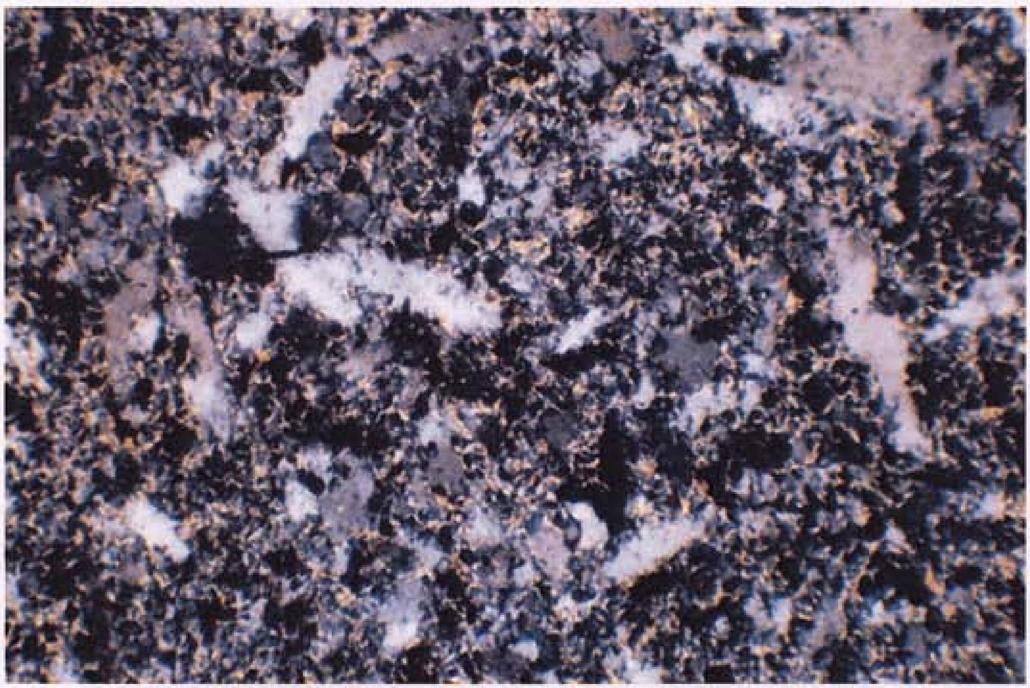

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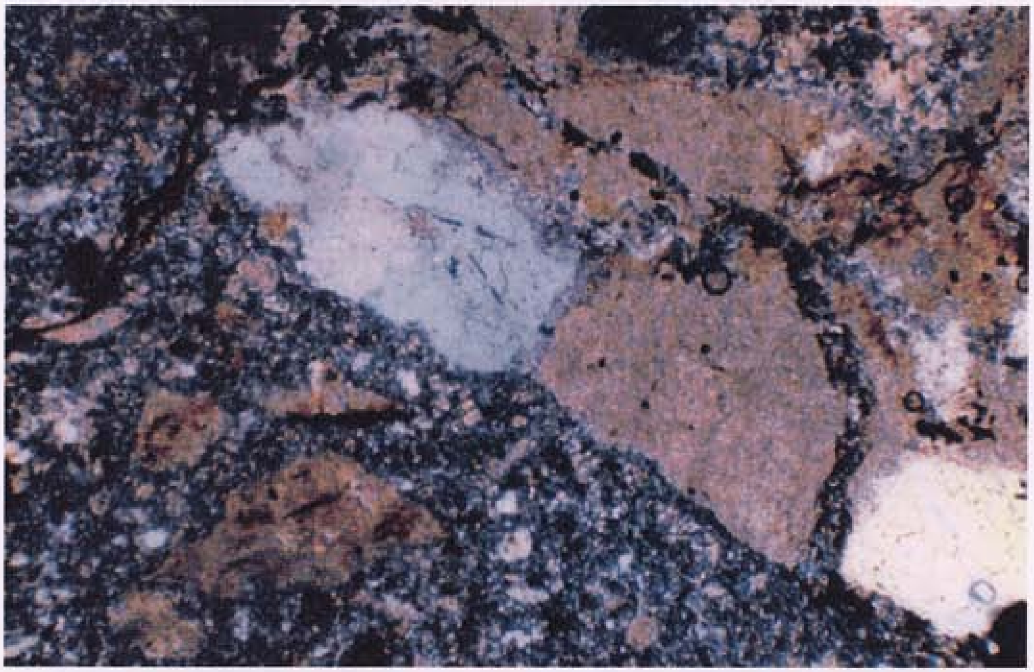
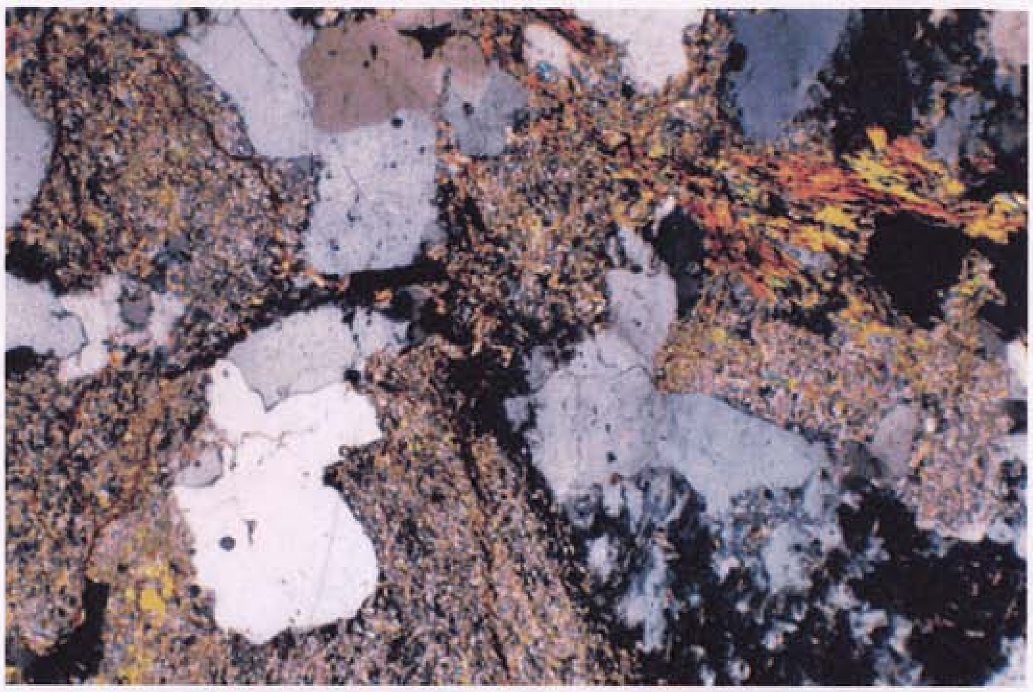
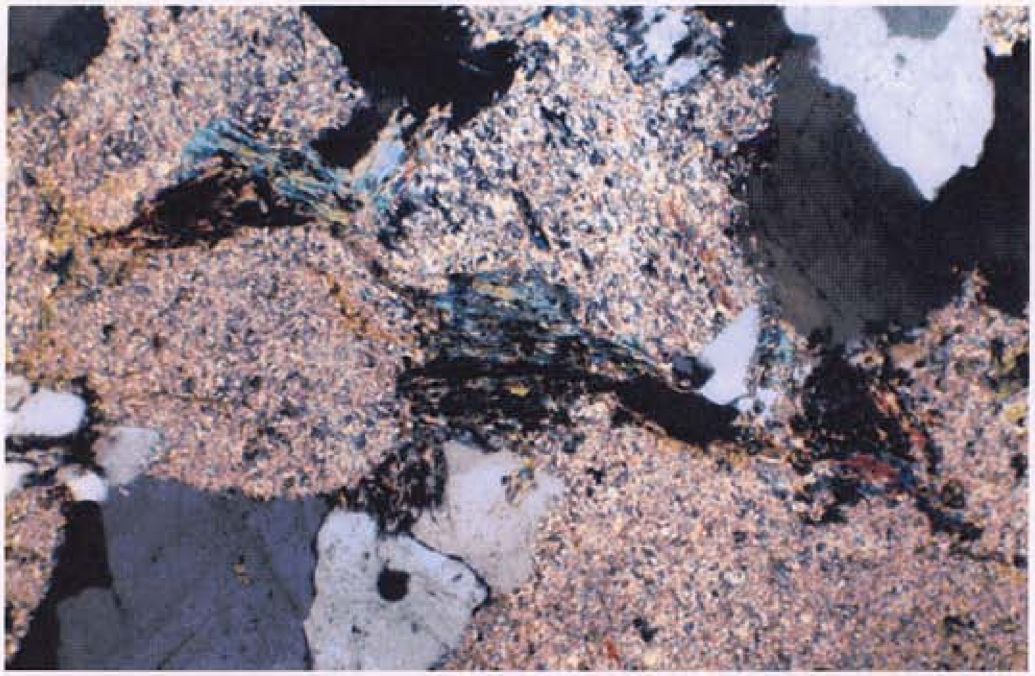


SAMPLE KD 25-2A Neg. 542-4A

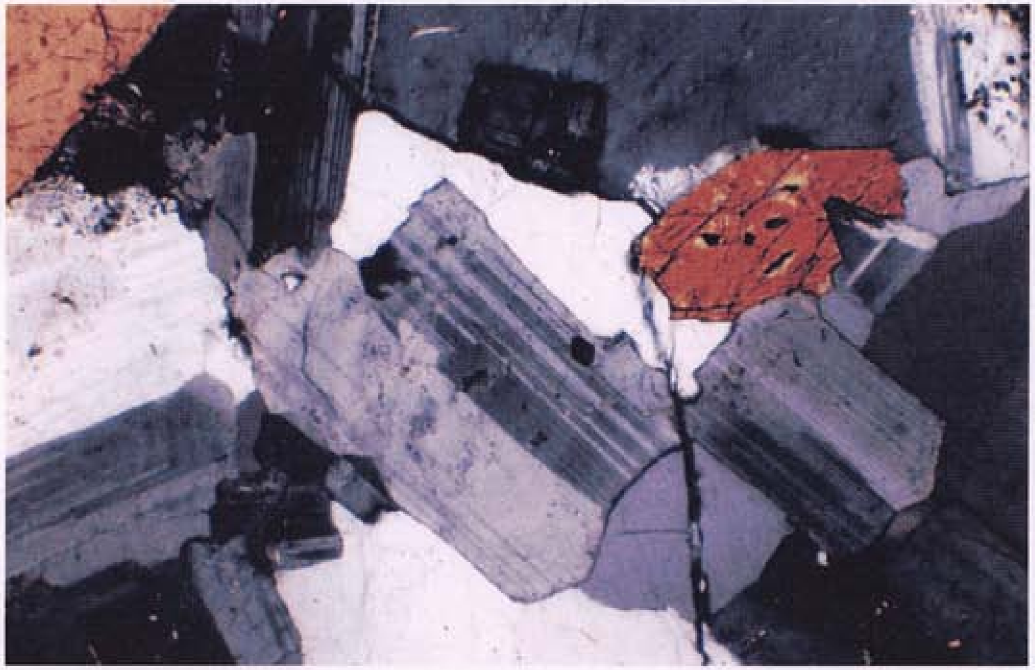


SAMPLE KD 25-10B Neg. 542-5A

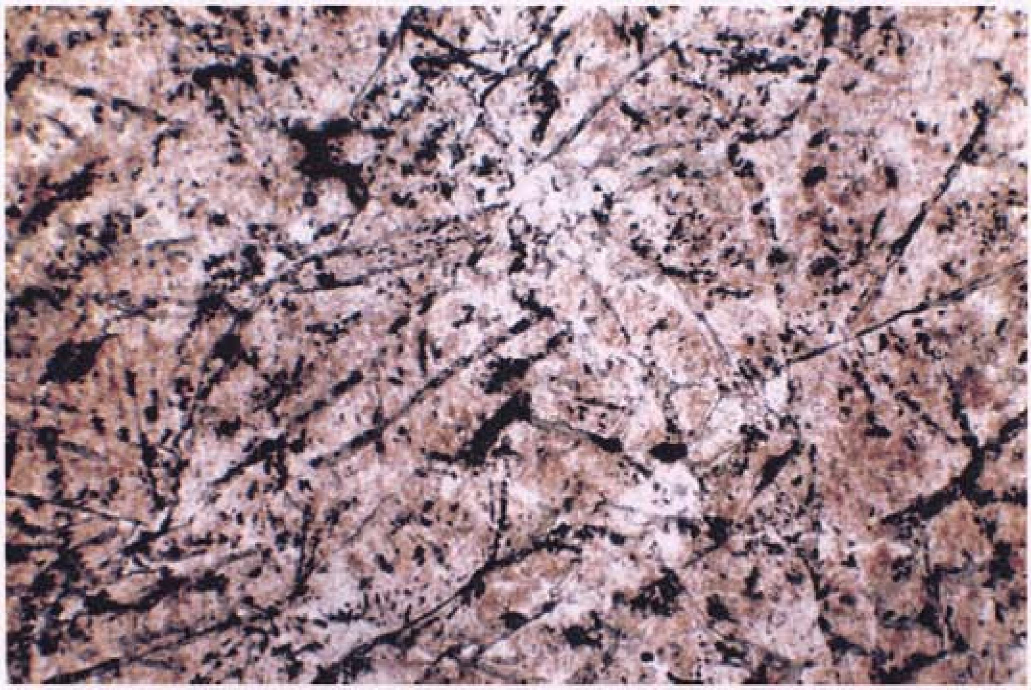


SAMPLE KD 25-14 Neg. 542-6A

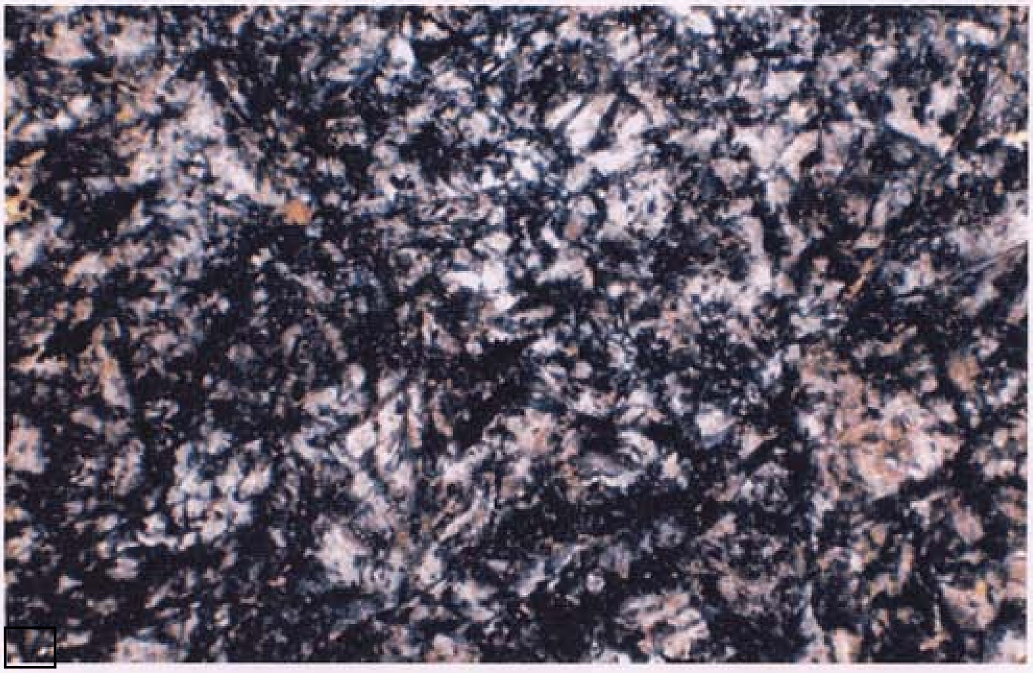
SAMPLE KD 25-14 Neg. 542-7A



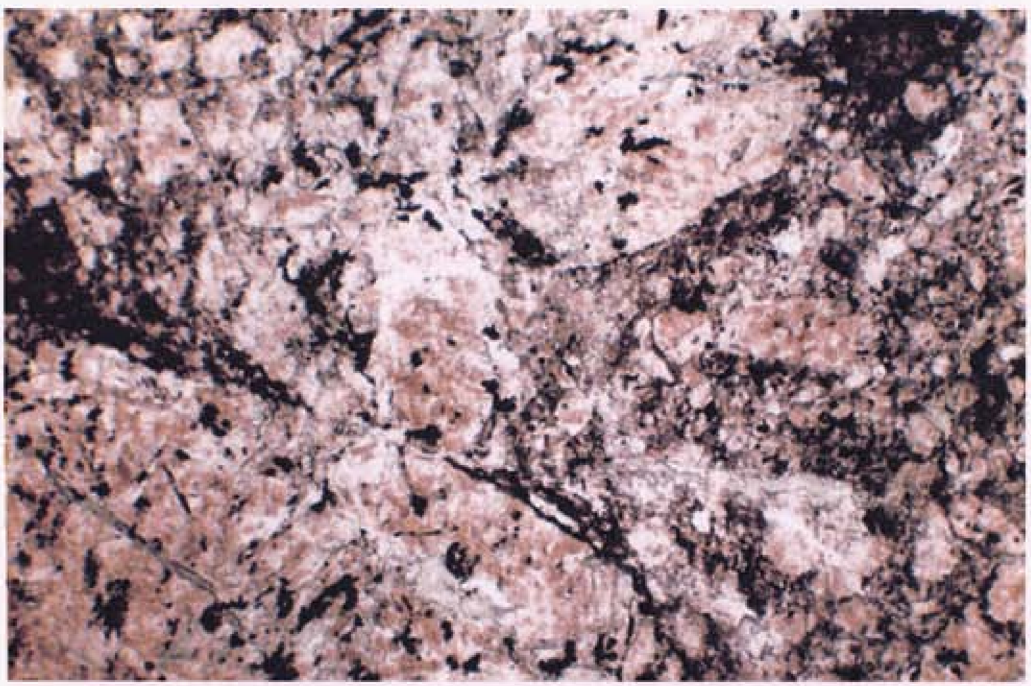
SAMPLE KD 26-3   Neg. 542-8A



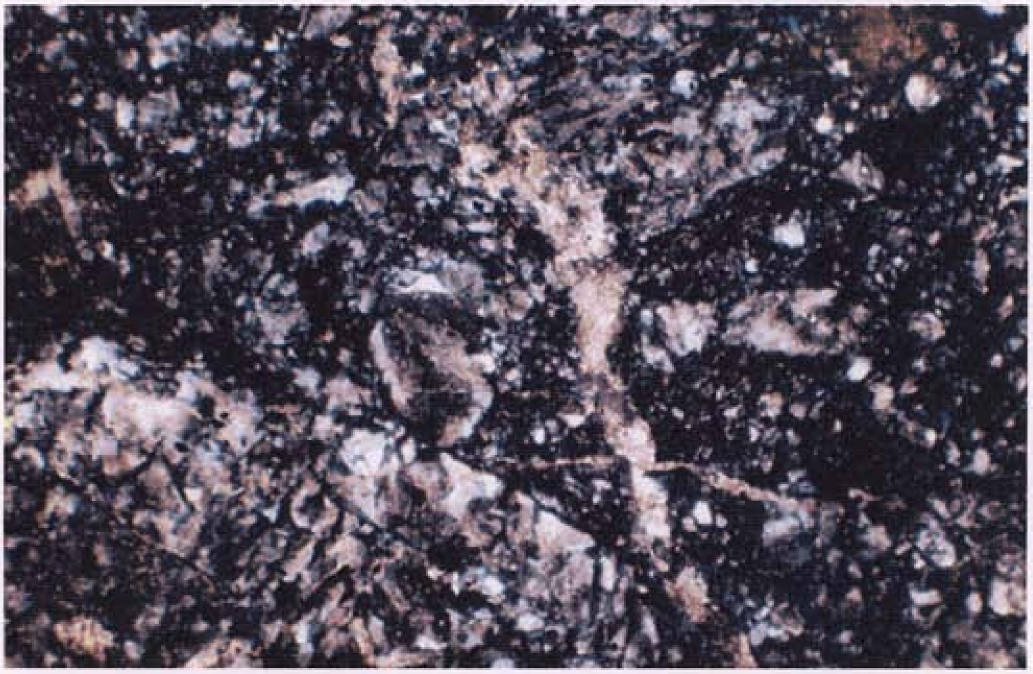
SAMPLE KD 26-8A   Neg. 542-9A



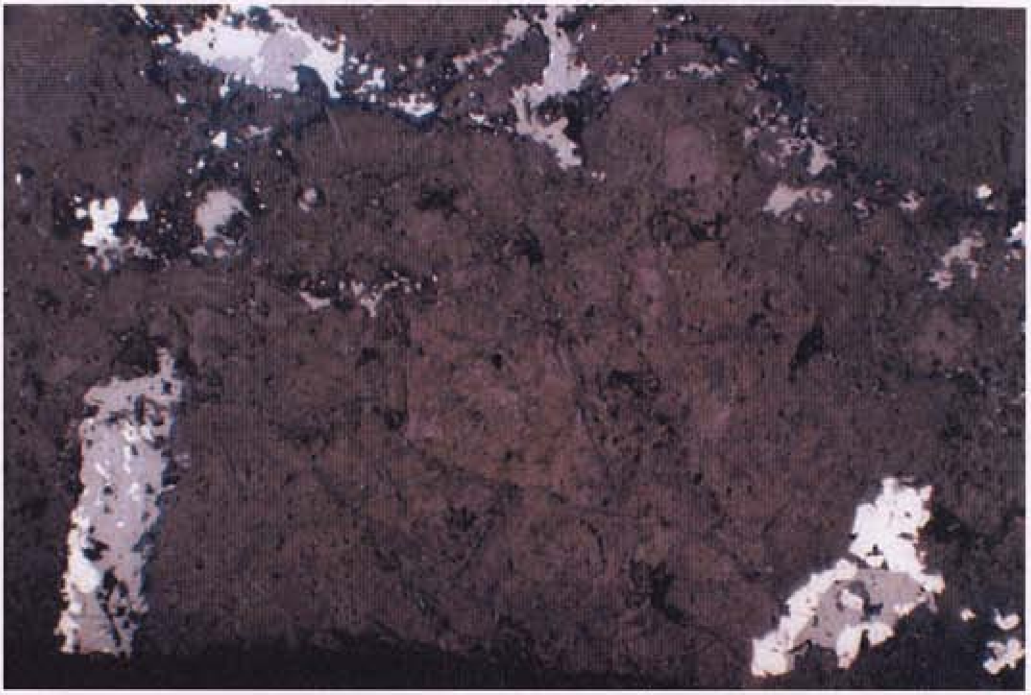
SAMPLE KD 26-8A   Neg. 542-10A



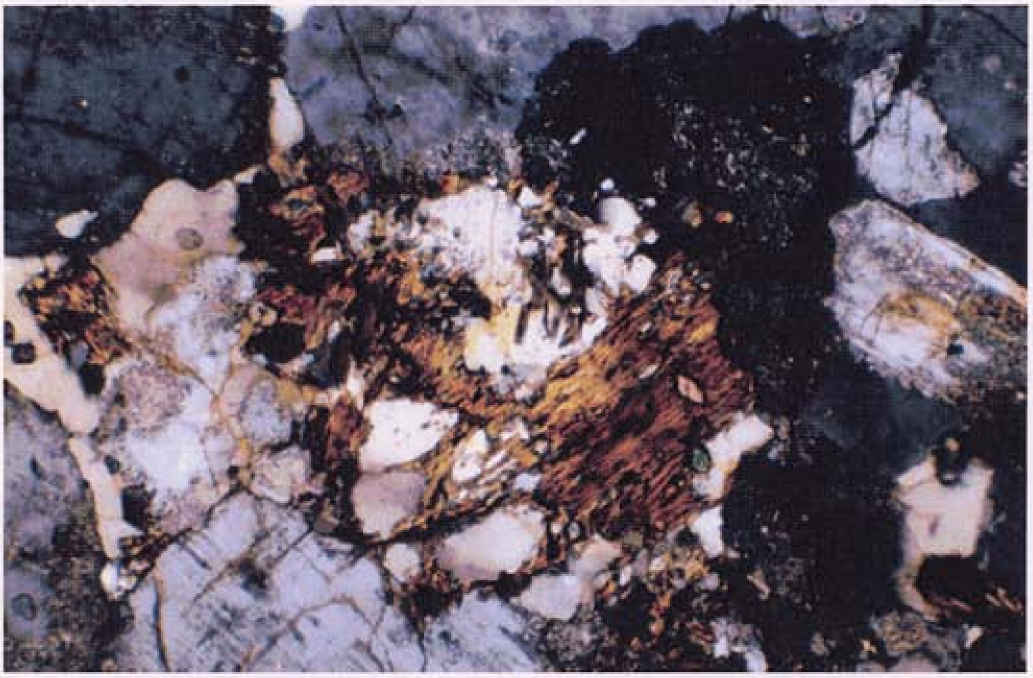
SAMPLE KD 26-8A   Neg. 542-11A



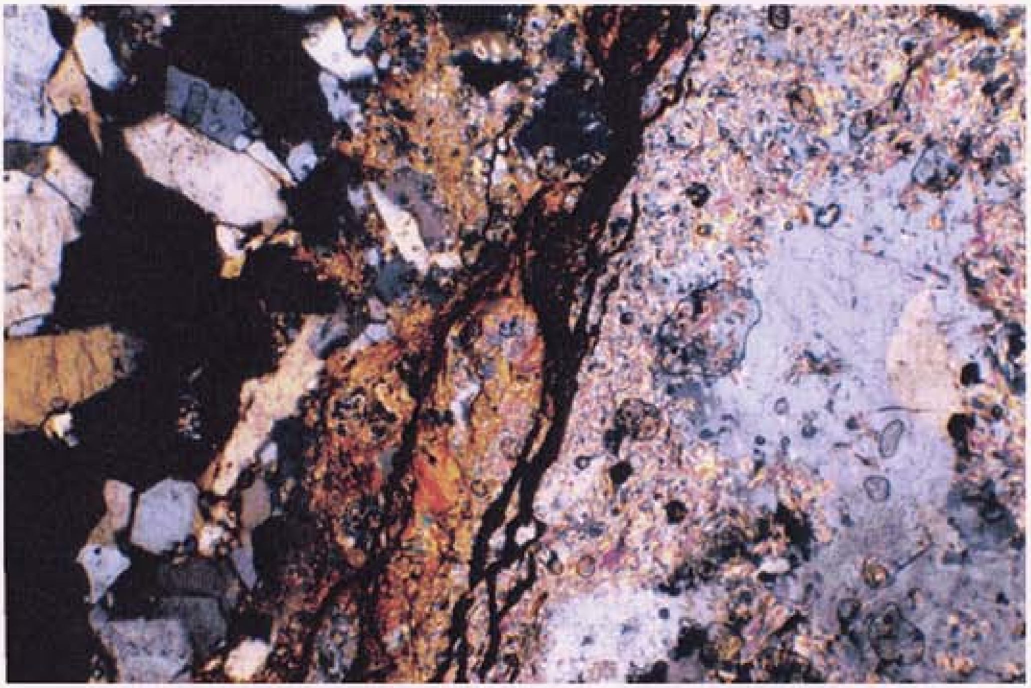
SAMPLE KD 26-8A   Neg. 542-12A



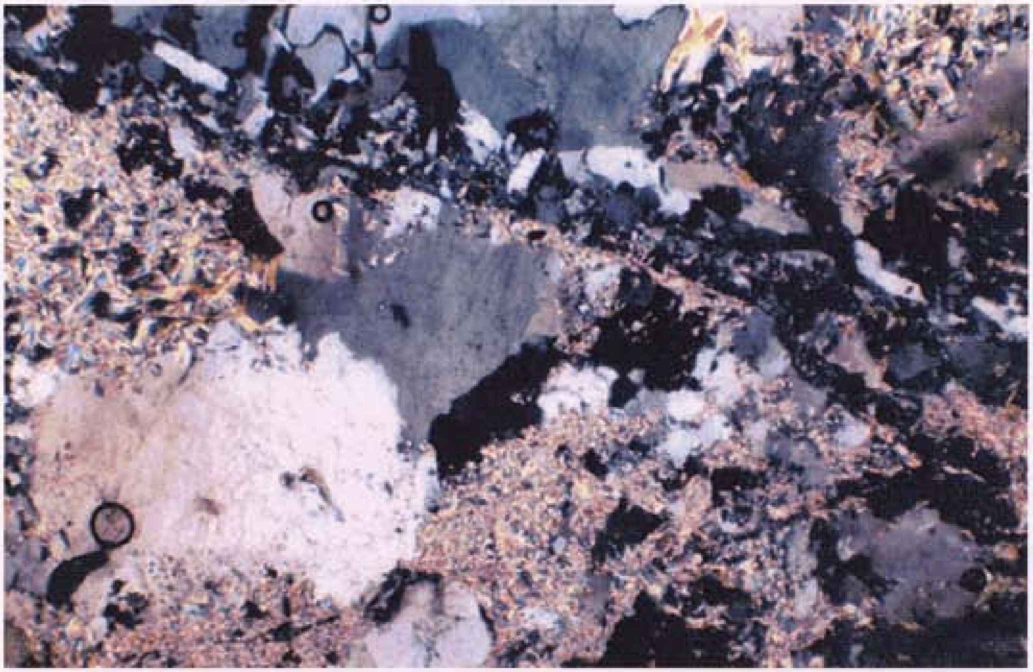
SAMPLE KD 26-8A   Neg. 542-13A



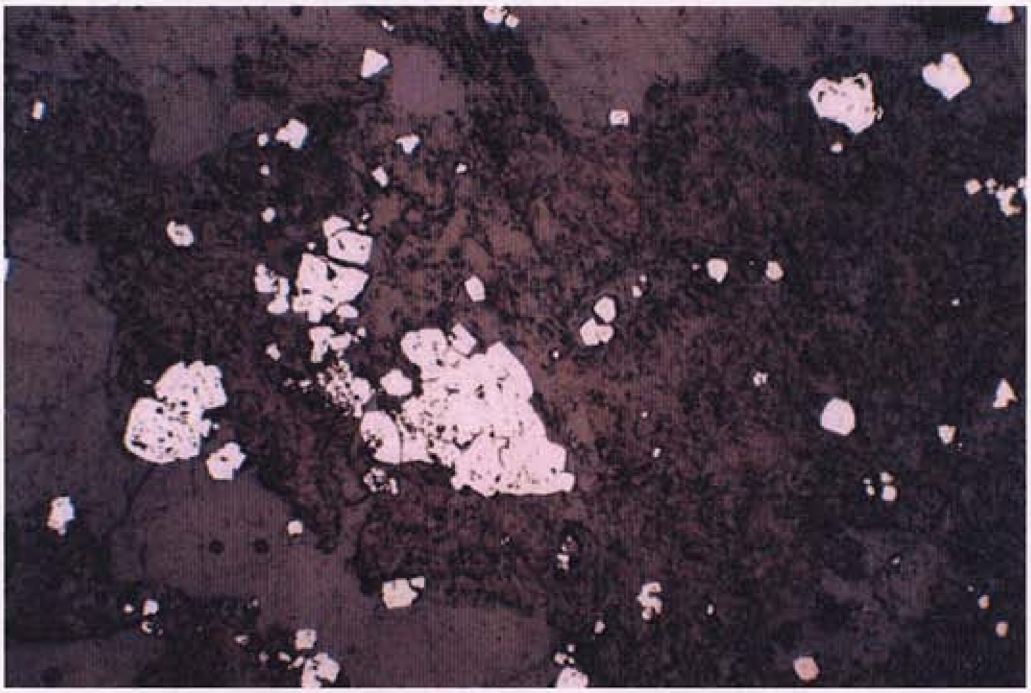
SAMPLE KD 27-2 Neg. 542-14A



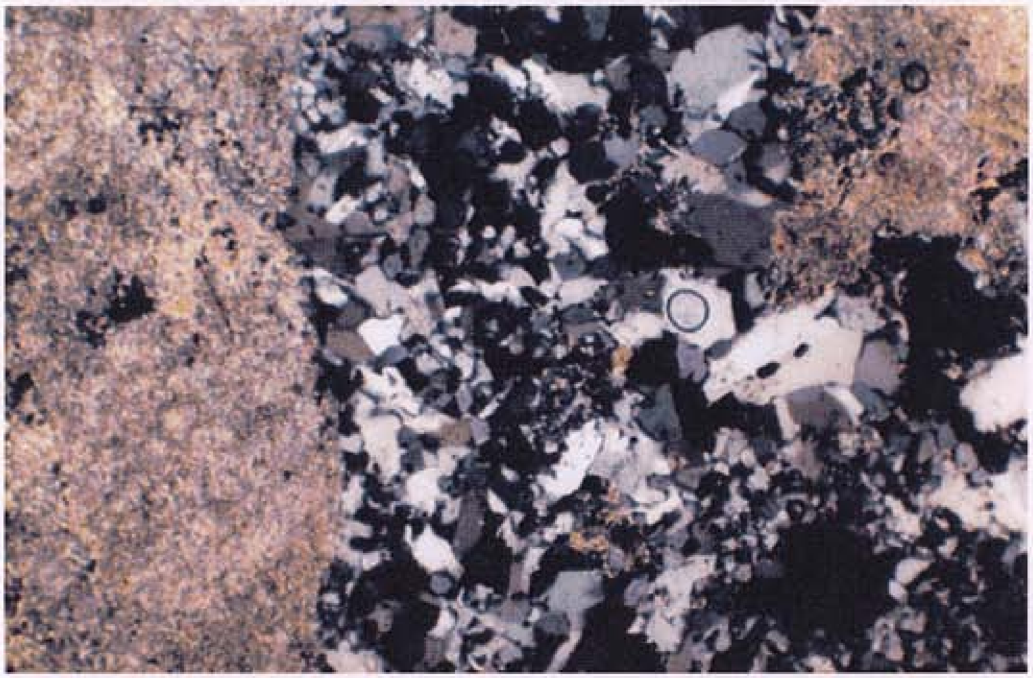
SAMPLE KD 27-4 Neg. 542-15A



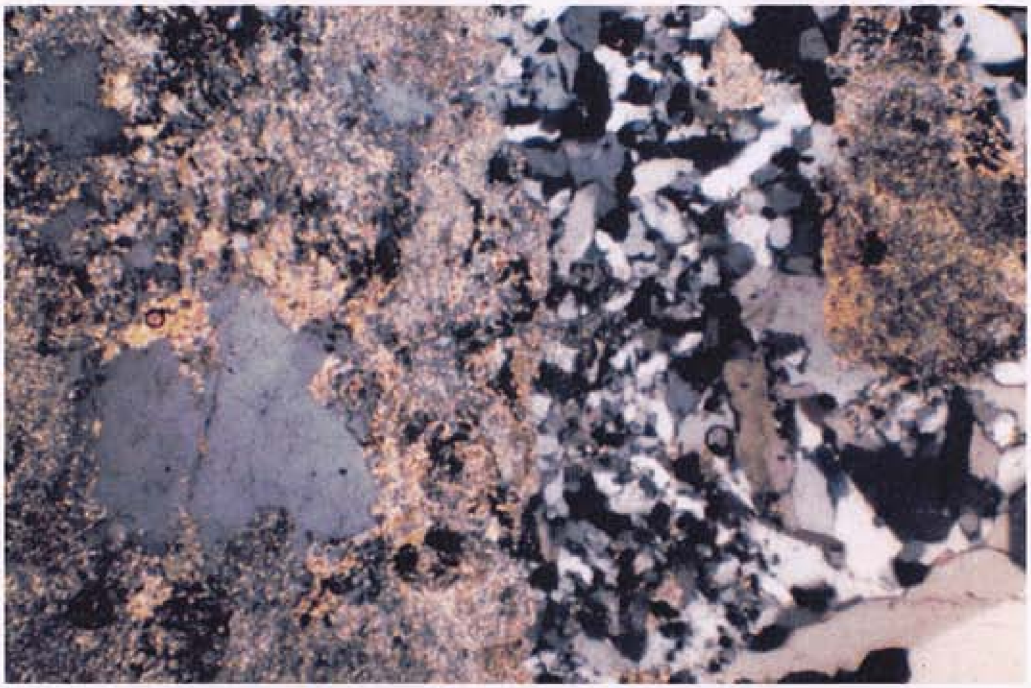
SAMPLE KD 27-4A   Neg. 542-16A



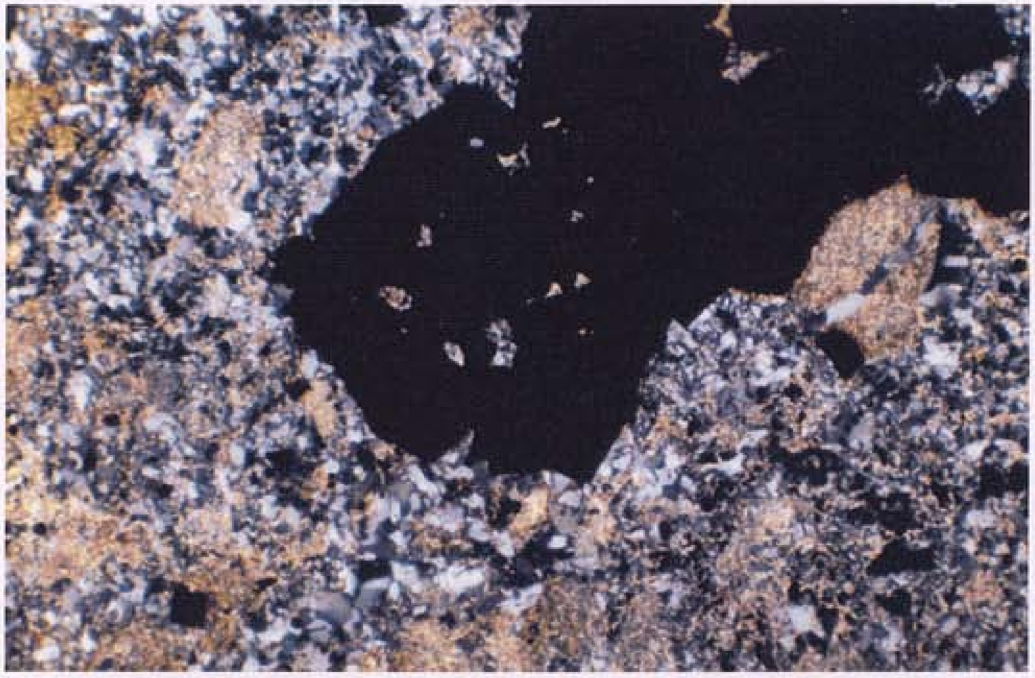
SAMPLE KD 27-11A: Neg. 542-17A



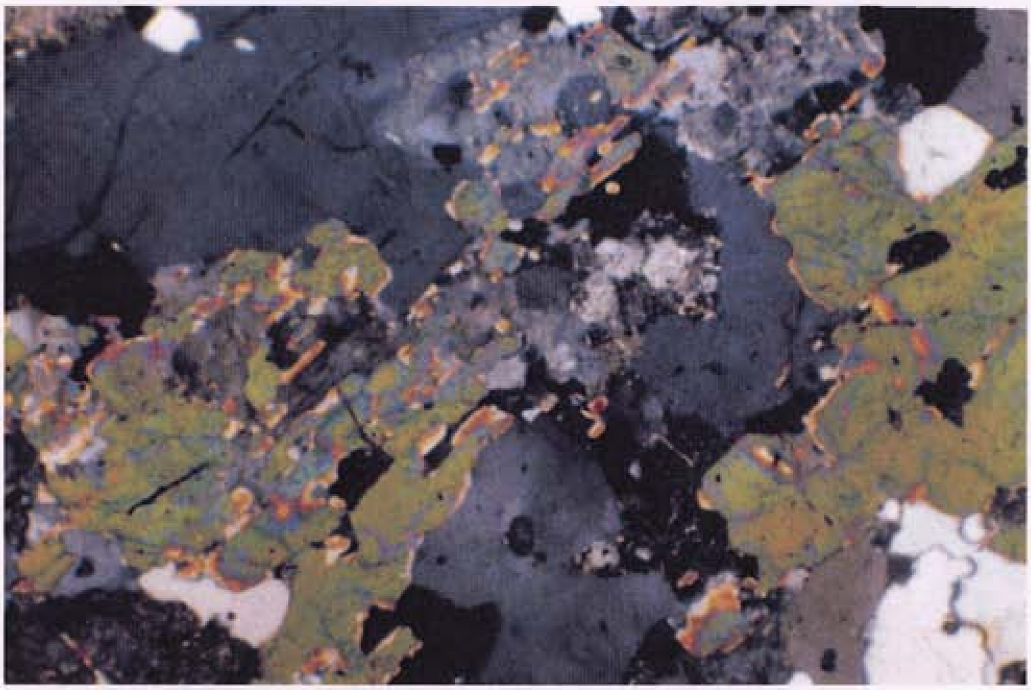
SAMPLE KD 27-28 Neg. 542-18A



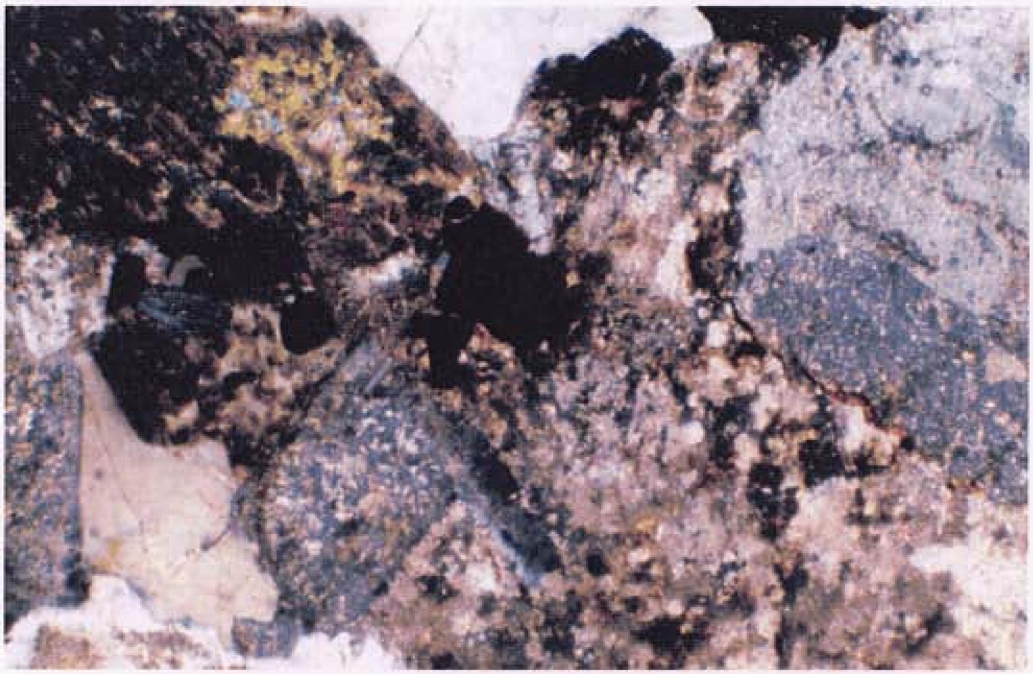
SAMPLE KD 27-28 Neg. 542-19A



SAMPLE KD 27-28 Neg. 542-20A

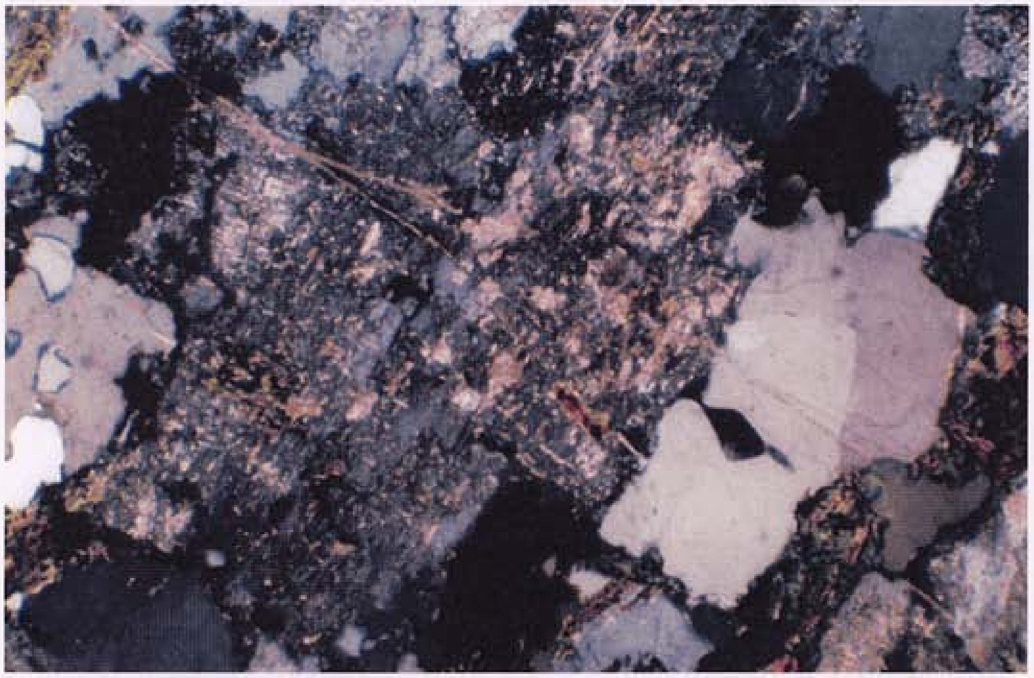


SAMPLE KD 29-5 Neg. 542-21A



SAMPLE KD 29-11A Neg. 542-22A

SAMPLE KD 31-11   Neg. 542-23A



SAMPLE KD 31-11   Neg. 542-24A

APPENDIX B

Photographs

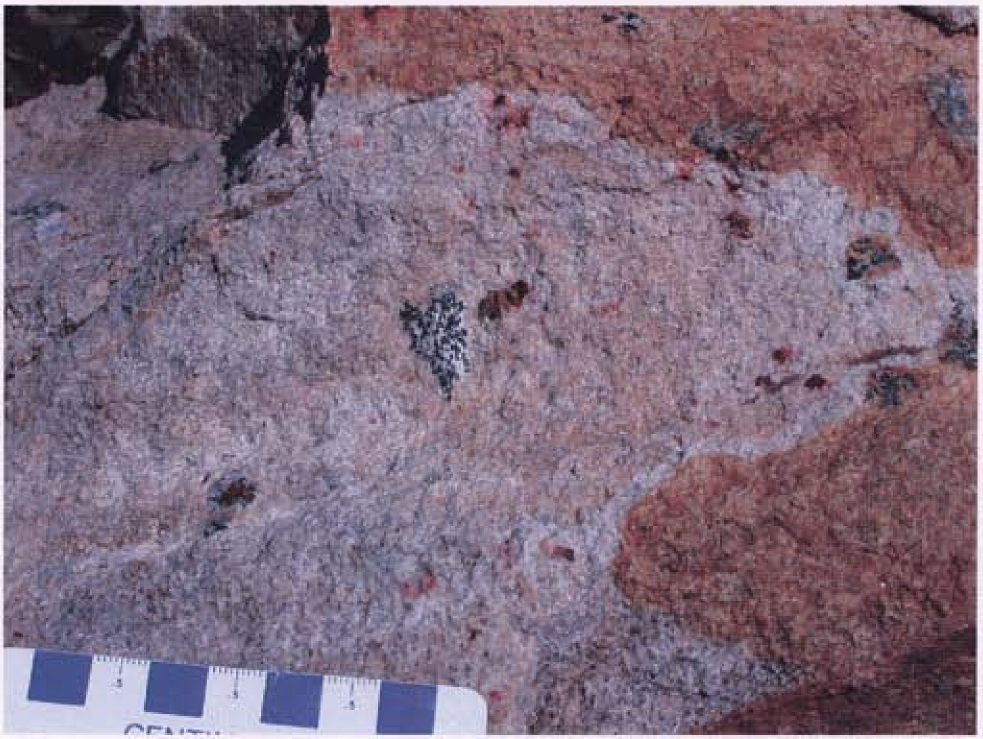


Photo 2805; station KD 24-14: Boxy to irregular-shaped tourmaline-quartz segregations (?skeletal/poikilitic megacrysts). FOV ~18cm.

Photo 2802; station KD 24-5: Breccia with rounded fragments. FOV~40cm.

Photo 2803; station KD 24-6: Breccia with rounded fragments. FOV ~1.5m

Photo 2821; station KD 27-17: Breccia with resistant fragments and recessive matrix giving rough knobby surface to the outcrop. FOV ~35cm

Photo 2824; station KD 27-19: Dyke margin with polylithic fragments (xenoliths). FOV~30cm.

Photo 2838; station KD 30-4: Boulder of dyke with polylithic fragments (xenoliths). FOV ~1.1m.

Photo 2833; station KD 29-13: Fault zone with polylithic angular blocks. FOV ~ 2.1m

Photo 2825; station KD 27-21: Narrow shear zones are characterized by gouge and subangular to subrounded breccia fragments in a very fine-grained matrix. FOV ~ 50cm.

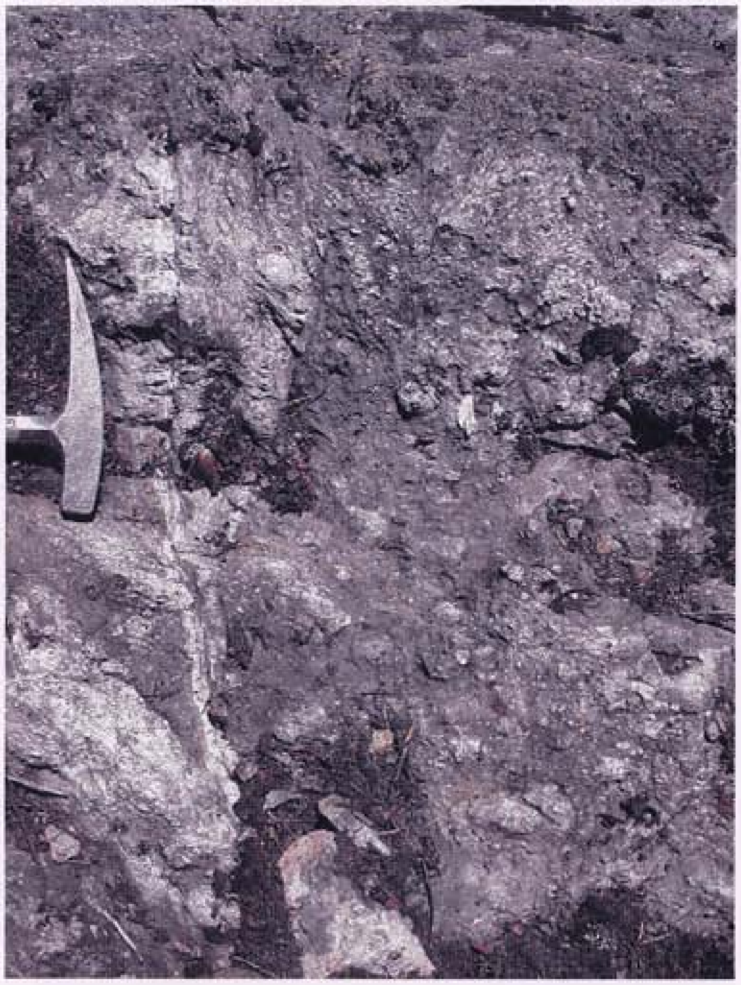
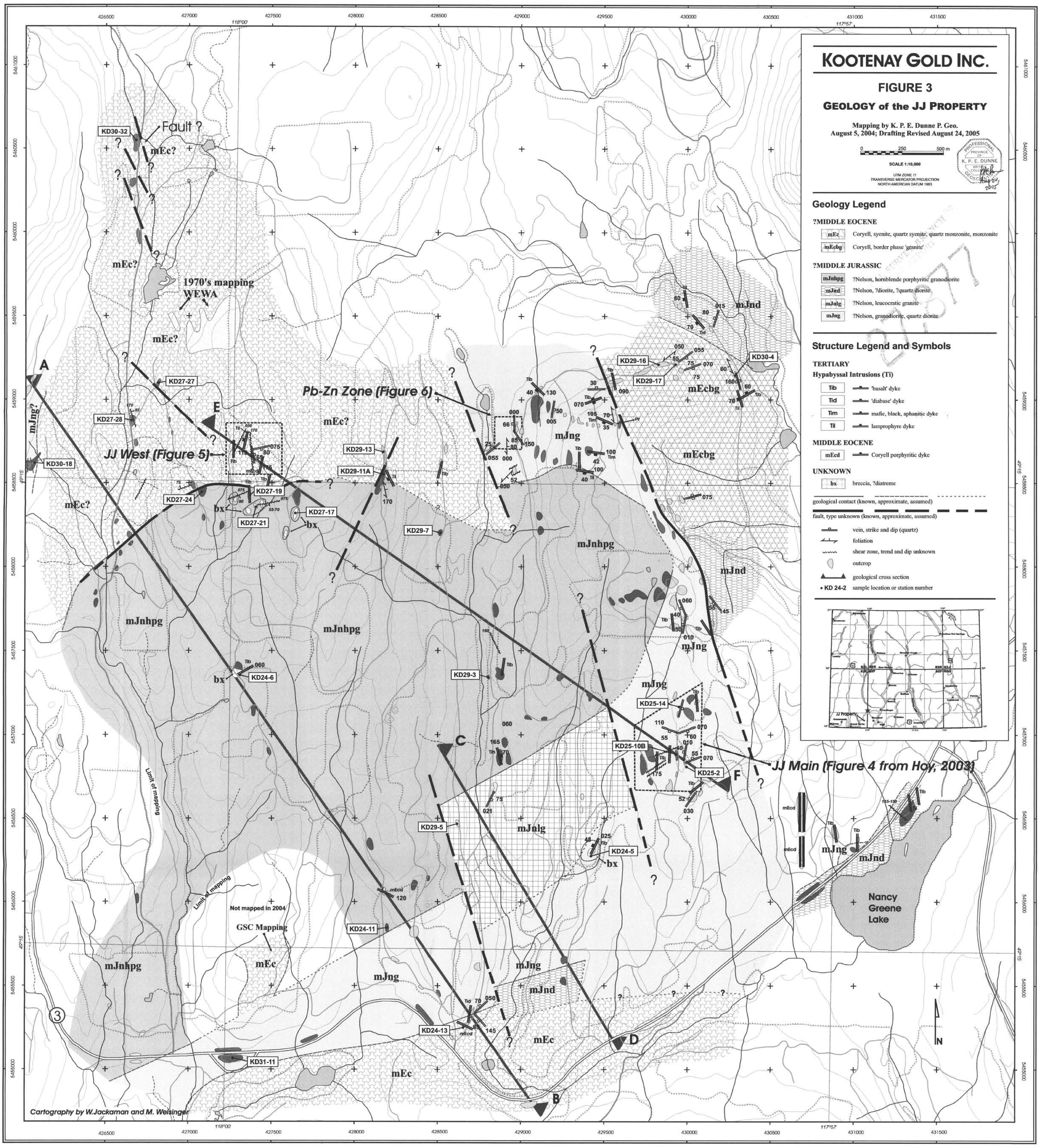
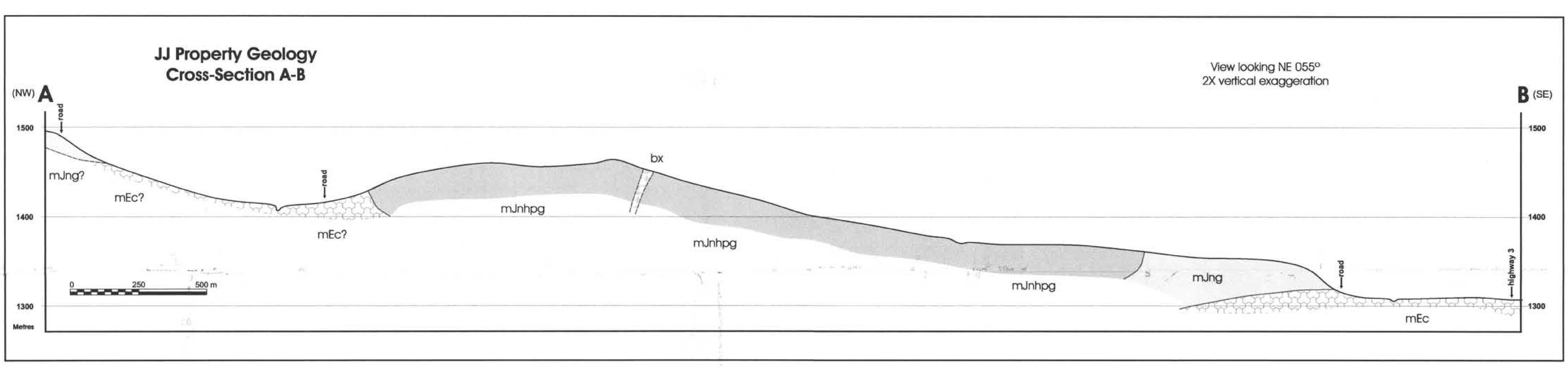
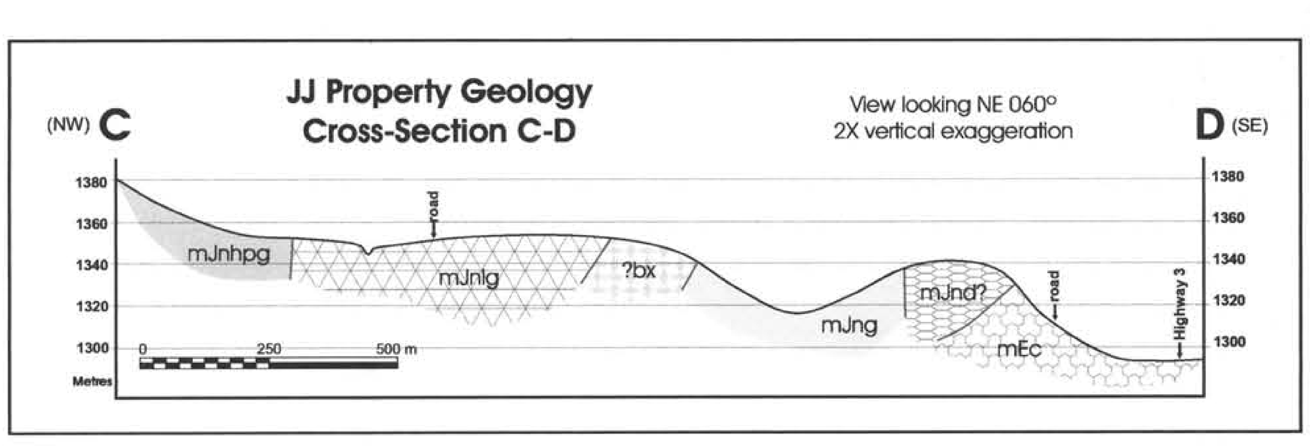
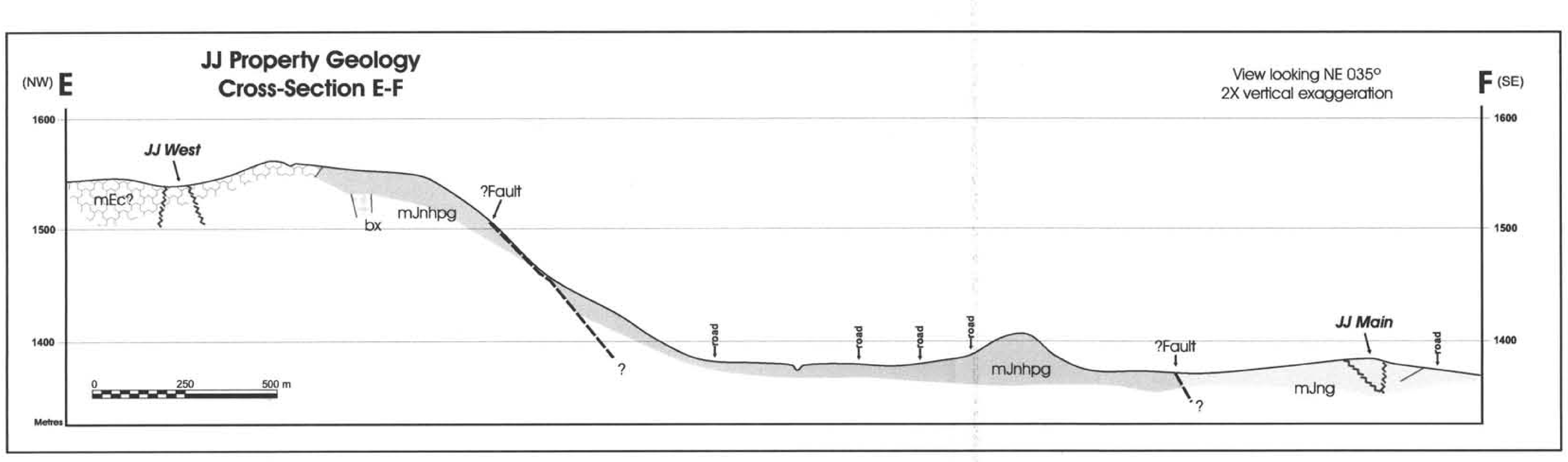


Photo 2826; station KD 27-23: Shear zone with gouge and subangular to subrounded breccia fragments in a very fine-grained matrix. FOV ~ 50cm


KOOTENAY GOLD INC.
FIGURE 3
GEOLOGY of the JJ PROPERTY
Mapping by K. P. E. Dunne P. Geo.
August 5, 2004; Drafting Revised August 24, 2005
SCALE 1:10,000
UTM ZONE 11
TRANSVERSE MERCATOR PROJECTION
NORTH AMERICAN DATUM 1983
Geology Legend
?MIDDLE EOCENE
mEc Coryell, syenite, quartz syenite, quartz monzonite, monzonite
mEcbg Coryell, border phase 'granite'
?MIDDLE JURASSIC
mJnhpg ?Nelson, hornblende porphyritic granodiorite
mJnd ?Nelson, ?diorite, ?quartz diorite
mJnlg ?Nelson, leucocratic granite
mJng ?Nelson, granodiorite, quartz diorite
Structure Legend and Symbols
TERTIARY
Hypabyssal Intrusions (Ti)
Tib 'basalt' dyke
Tid 'diabase' dyke
Tim mafic, black, aphanitic dyke
Til lamprophyre dyke
MIDDLE EOCENE
mEcd Coryell porphyritic dyke
UNKNOWN
bx breccia, ?diatreme
geological contact (known, approximate, assumed)
fault, type unknown (known, approximate, assumed)
vein, strike and dip (quartz)
foliation
shear zone, trend and dip unknown
outcrop
geological cross section
• KD 24-2 sample location or station number
Fault ?
1970's mapping WEWA
Pb-Zn Zone (Figure 6)
JJ West (Figure 5)
JJ Main (Figure 4 from Hoy, 2003)
Limit of mapping
Not mapped in 2004
GSC Mapping
Nancy Greene Lake
Cartography by W.Jackaman and M. Weisinger


JJ Property Geology
Cross-Section A-B
View looking NE 055°
2X vertical exaggeration
(NW) A
B (SE)
mJng?
mEc?
bx
mJnhpg
mJng
mEc
road
highway 3
Metres


JJ Property Geology
Cross-Section C-D
View looking NE 060°
2X vertical exaggeration
(NW) C
D (SE)
mJnhpg
mJnlg
?bx
mJnd?
mJng
mEc
road
highway 3
Metres


JJ Property Geology
Cross-Section E-F
View looking NE 035°
2X vertical exaggeration
(NW) E
F (SE)
JJ West
mEc?
bx
mJnhpg
?Fault
JJ Main
mJng
road
Metres