# YEIP 05-074 2005

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YMIP 05-074

### FIELD REPORT INDIAN RIVER GOLD PROJECT

Mapping Area approximately centred on :

Latitude: 63<sup>0</sup> 45' 00" Longitutde: 139<sup>0</sup> 14' 00"

> 585 000 mE 7 072 000 mN NAD 83 (Zone 7)

N.T.S. 115 O/14

For:

### BOULDER MINING CORPORATION 800-850 West Hastings St. Vancouver, British Columbia V6C 1E1

By:

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Field Work completed: September 9<sup>th</sup> – October 10<sup>th</sup>, 2005

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October 11, 2005

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### SUMMARY and RECOMMENDATIONS

During the period September 9<sup>th</sup> to October 11, 2005, the author conducted 1:2,000 scale detailed geological mapping, rock sampling, spot radiometric readings and limited soil "testing" along the north edge of Boulder Mining Corp.'s Indian River property. This field report, written in camp, presents the data as 14 geological data maps. All data is digital. This is the first attempt by the company to investigate/record potential for hard rock gold mineralization in concert with it's placer interests.

This field report is written prior to geochemical and petrographic analysis and only outlines possible geologic potential.

Results of the mapping include:

- Identification of numerous potential structural elements on the property ; (geochemistry pending)
- alteration zones, including: severe sericite-quartz alteration at Z-719, pysilicification at 7148; and 20m wide gossanous sericite-quartzite at Z-663 spacial to NW structures
- the "Great White" quartz vein; 1.8m wide, 119/86 has an unknown strike length (covered) and is the largest hydrothermal system mapped this season (geochemistry pending)

Recommendations for the Indian River property include:

1) pre-seasonal *stereo*-air photo and airborne geophysic/structural interpretation. The author suggests purchasing the government release (available digitally):

Stewart River Aeromagnetic Survey Base (GSC OF 3992 EGSD 2001-8, GSC OF 3991 EGSD 2001-7, and GSC OF 4308 EGSD 2002-14)

- A property wide geochemical suvey; careful soil sampling along ridge tops with a bias towards south facing areas. The author suggests consulting with Jeff Bond (YGS Surficial Geologist) based in Whitehorse concerning data available for the Indian River area.
- 3) Follow up on the six points described in Section "HARD ROCK GOLD POTENTIAL Ideas & Thoughts"
- 4) Add to geological base continued detailed geological mapping

### INTRODUCTION

This is a brief field report of geological work conducted on the Indian River property owned by Boulder Mining Corporation during the period September 9<sup>th</sup> to October 11<sup>th</sup>, 2005 by the author. No previous detailed hard rock studies for Boulder Mining Corporation on their Indian River property are known.

There is no attempt to report on/research regional geology, although some recommendations are suggested in this report. The format of this report is strictly geared to reporting the geological data presented on the maps.

### **DIRECTIVES and FOCUS**

After an initial day tour of camp and property, it became clear that two main criterion are needed:

- 1) a digital "base" and framework for collecting and recording hardrock geological data
- 2) a knowledge of the lithology types on the property? What is the relationship between these lithologies, age, structure, alteration and any hard rock gold potential?

Limiting factors:

- 1) time; late start in the field season (September 9, 2005)
- 2) size of property (quartz claims): big approx. 34,250 acres or 17x14 kilometres.
- Access: good E-W road across N edge of property; However most of the property particularly the S half of the property is in swampy ground or covered burn with few trails.
- 4) outcrop exposure; aside from road cuts- very poor (~1%)
- 5) lack of a pre-exsisting geochemical base for the property, limiting areas to prospect

The focus was to obtain as much geological data in the shortest period of time. Focus was put on detailed geological mapping along the E-W road immediately north of Indian River where there is the most continuous outcrop exposure on the property. Occasional visits to the active placer mining pits in the area were also mapped.

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### **PROPERTY HARD ROCK EXPLORATION WORK FOR 2005**

### Introduction

This short field report was written prior to petrographic, or geochemical results. It is a preliminary list of work completed with point form highlights regarding geology only. Maps/figures accompanying this report are in draft/unedited form in the appendices.

### Work Completed

During the field season, September 9<sup>th</sup> to October 11<sup>th</sup>, the following work was achieved:

- 1) Purchase and preparation of digital topographic maps 115 O/14 and O/11.
- 2) GPS survey of local roads, landmarks, etc.
- 3) Collection of geological data from 120 gps surveyed stations (2600-2720)
- 4) Collection of geochemistry data; 75 rock samples, 5 soil samples sent for Au+35 element ICP-MS analysis (Acme Analytical Lab-Vancouver).
- 5) Collection/submittal of samples for petrographic analysis; 10 thin sections, 1 polished thin section (Vancouver Petrographics).
- 6) Digital construction of 14 x 1:2,000 scale geological data maps (dwg files- AutoCad)
- 7) Field report

### **Methodology**

Geological mapping/surveying was achieved using a hand held 12 channel receiver GPS unit (Garmin model 'GPS 60'). Roads and outcrop shapes were tracked wherever possible. Outcrops were designated a field station number with a gps location – notes were taken in a field book and summarized on the detailed geology data maps. Accuracy of the GPS 60 is variable depending on topographic obstacles and satellite coverage at the time of reading. Typical reading accuracy would be +/-8m; ranging +/-5 on open hill tops to +/-20m in gully bottoms.

Geochemistry included: 1) rock sampling focusing on the varied rock lithologies, structural conduits, mineralization, alteration zones and occasional uncovered outcrop in the company's active placer mining pit; and 2) Soils were tested only in one area as a check against rock data of the Indian River Formation. Results are pending.

Radiometrics included spot checks in total counts per second (K + U + Th).

### **Property Geology**

The author refer's the reader to Ryan J.J., and Gordie S.P., 2004 OF 4641 for up to date further readings of the regional geology.



### Structural Elements

North - steep - (Ruby Creek Structure)

Northeast - moderate to steep - found in Indian River Fm and reactivated in Nasina basement rocks.

East to southeasterly - shallow angle shears and thruste (sub)parallel to regional fabric.

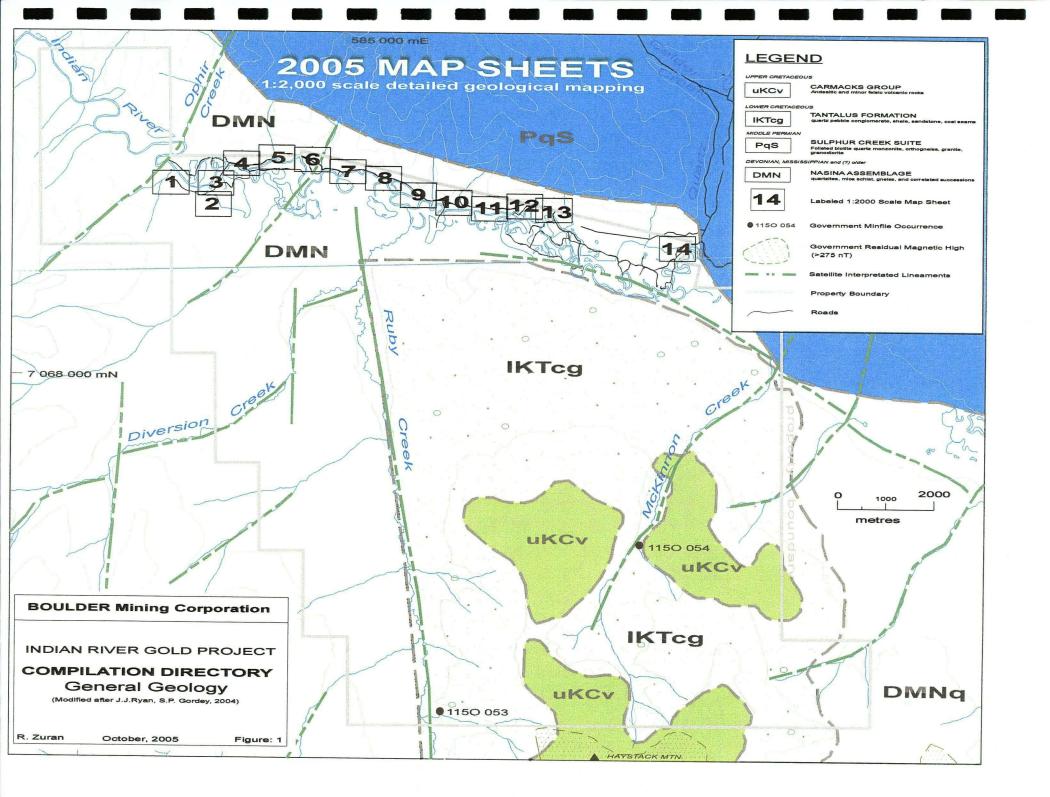
Northwest - moderate to steep - older set out by younger thrusts (younger sets are also observed on the ground)

## **BOULDER Mining Corporation**

INDIAN RIVER GOLD PROJECT SATELLITE IMAGERY Interpretation

R. Zuran

September, 2005



A complete description of all property lithologies with an interpretive structural history is included with Maps 1-14 in APPENDIX 1. Evidence for the structural interpretation is also listed there.

The following is a list of highlights/comments from each map travelling W to E:

*MAP 1* Z-649: a dump (subcrop?) containing yellow-orange rust weathering altered gneiss/schist - contains high density, multi-directional structurally controlled, planar quartz vienlets. Apparently these rocks produced good gold values (H. Veldhuyzen, 2005). This should be re-trenched, properly mapped and sampled. The direction of these veinlets is important as they are rarely seen on the road outcrops along Indian River.

7148 (BM pit): the only significant sulphides found in the 2005 mapping season; fine py dustings (trace to 5%) along fractures and along foliation within a wk-mod silicified chlorite schist. This outcrop produces grains of gold from 10 litres of material (H. Veldhuyzen, 2005). Approximately 150m to the NE is a galena-barite veinlet, now covered.

MAP 2 An interesting contact between a severely altered (leached, bleached, sericitized and oxidized) quartzite at Z-719 and Indian River (IR) sandstone at Z-720. Gold could have dropped out at the edge of the alteration zone. 12 grains of gold were recovered from 10 litres of material near the IKI/DMN contact (H. Veldhuyzen, 2005).

*MAP 3* The same northish IKI/DMN contact passes through this sheet with a mined coal seam at Z-616 (sample # 7102) and low angle faults sectioned at Z-620 (samples #7107, 8).

MAP 4 Unfoliated very coarse grained muscovite-hornblende granitic pegmatite (grn PEG) noted along the tops of outcrop and as float pieces at the bottom of outcrops between Z-633 to Z-652. A prominent grn PEG with local garnets is foliated and sheared (re-activated older structure?) and again sliced by a low angle structure at Z-654.

MAP 5 This area is of particular interest and numerous structures and altered lithologies have been sampled. There are at least 2 sheared/foliated grn PEGs; a family of NW trending SW dipping (mod-steep) faults – one significant with several graphitic slip planes ramping into one at Z-610; several light gossonous (yellow-orange-rusty) sercite quartzite/schist zones; a thrust plane at Z-667; and an antiform in the NE portion of the map.

*MAP* 6 Predominantly young orange sandstone and minor shaley horizons of the IR Fm. The sandstone is immature (imm), fine to medium grained with quartz, lithic and coalified plant debris. There is interpreted - a covered contact with the Nasina Assemblage in the west. At least two spots were examined (about Z-674) for structural kinematics on well preserved slickenside (striation type). Bedding is apparently wheeled around by a set of strike-slip sinistral movements. As one proceeds east of Z-673, the sandstone attitude evens to ESE with a shallow dip to the NNE.

MAP 7 Crossing back over a covered interpreted contact from MAP 6 into Nasina

Assemblage schists, quartzites (DMN1) with possible feldspar in schist/gneiss (DMN6) lithologies in the east. Chlorite rich schistose horizons exhibit shear texture (ie. Z-648). A subtle increase in radioactivity (notably on *Map 8*) perhaps due to the  $K^{40}$  in feldspar, distinguishes DMN1 and DMN6? at the east end of the map.

MAP 8 Notable gentle increase in radioactivity to 240 cps in the gneiss. A relic hypabyssal (?) texture was sampled for petrographic study at Z-687. A cross-cutting quartz vein probably associated with a family of NNE trending steep faults was sampled at 7165. Significant south dipping thrust breccia noted in the east. Weak silica stringers are associated with the cemented breccia of angular laminated quartzite (DMN1) and chlorite phyllite/schist fragments. The thrust separates covered Nasina rocks to the north from chemically unaltered marbles (DNM2) to the south.

*MAP* 9 Predominantly schists and quartzites with minor drag folding and faulting in the east end of the map.

MAP 10 Large quartz vein, 1.8m wide trending ESE, dipping steeply to the southnickmamed " The Great White" is noted in the road cut at Z-676. Numerous large quartz float boulders are in the area. The vein is massive with minor limonite-MnO2 staining in the fractures – no sulphides seen with a hand lens. A shear structure of a similar attitude to the Great White vein (but staggered to the north by 40m), hosts a meta-felsite (meta-rhyolite??) – orange-yellow weathering with a slight increase in radioactivity (200cps)

*MAP 11* Numerous pale subltle interfoliated meta-felsite units and a 'one of a kind' black biotite-fine grain hornblendite ?, meta-basalt? These rocks are observed towards the west end of the map.

MAP 12 Two E-W-ish structures; one containing graphitic charcoal grey fault gouge (7122); the other containing white calcareous gouge (7114) were sampled.

MAP 13 Lone, but structurally busy outcrop (Z-637) with the only 2005 identified young (Er?) hypabyssal rhyolite and older (uKCv?) fine grained sheared and carbonate altered gabbro-basalt. Pronounced N-ish shear fabric noted in gabbro but not in the rhyolite.

*MAP 14* Various fault gouge collected in placer pits and trenches at 7104, 7111, and 7112.

### HARD ROCK GOLD POTENTIAL – Thoughts & Ideas

It is premature at this point to commit to specific gold bearing structures/lithologies before studying the results of the 36 element analysis from the geochemical samples and the petrographic thin sections (results pending); however, some insightful comments can be made based on the 2005 geological mapping, and placer data. Ideas-thought processes are presented in guestion-answer type form.

Is there more than one source for the placer gold?

------ Yes.

At least two distinctly different morphologies of placer gold are reported on the property: 1) fine flat gold grains from the main Indian River system; and 2) equant grains local to the 2005 Boulder Mining Corp.'s active pit area. (H. Veldhuyzen, 2005).

At this stage, without the geochemistry and petrography; the corresponding models that may come to light are:

1) gold grains originating within a specific Nasina lithology – perhaps as disseminations, later under going polyphase deformation coupled with the transposition of layering strain effect and increased regional metamorphic temperature (?). The result of this mechanism - the fine flat gold grain.

2) a younger gold which has not received strain and deformation as (described above) preserving the native gold isotropic dimensions. Suggested sources could include mesothermal vein-type gold with a plumbed intrusive or ultramafic sourced gold associated with a structure.

In either case, the gold has not travelled very far; generally moving at a 2:1 ratio – horizontal movement : vertical movement (H. Veldhuyzen, 2005).

Geological mapping shows that gold grains have been recovered from at least 2 specific Nasina Assemblage bedrock sources from: 1) sample #7148; and 2) approximately 10m east of station Z-720. Geochemistry and petrographic studies are pending.

Could one source be of epithermal origin?

Likely not.

Vein character described in the mapping is variable and includes:

- 1) Foliaform discontinuous varieties: massive, milky-off white glassy -glassy grey coloured quartz typically in quartzites. Minor amounts of off white creamy feldspar were noted in quartz foliatform veinlets hosted in schist and gneiss.
- 2) Cross cutting massive, milky-off white quartz
- 3) Narrow calcite stringers and veinlets (one location: Z-637)

Vein character and composition is inconsistent with epithermal textures - no open

spaces; no comb/cockade textures; no boiling textures - no quartz-carbonate vein composition, no rhodochrosite and no chalcedonic quartz recorded during the 2005 mapping program.

Typically at the Eocene Mount Skukum deposit (Yukon's only producing epithermal gold mine), gold grain size was micron scale; "no seam" electrum – 60% Au, 40% Ag. Gold in the Indian River system is characteristically 15% Ag (D. Mills, H. Veldhuyzen, 2005).

### What geological targets are plausible from the 2005 mapping?

Once again this is dependent on geochemistry and petrographic studies. However suggestions include:

- 1) MAP 1: The structure that is responsible for the high density quartz veining in altered sericite ortho-gneiss at Z-649 should be determined. Trenching and more sampling if necessary.
- 2) MAP 1: Do the results from Z-696 and sample 7148 have a VMS or Besshi style signature? If so can this lithology be traced?
- 3) MAP 2: The size of this intense alteration zone (Z-719) should be determined and more sampling should be conducted to establish if the northish structure is a gold bearing conduit. Field observations suggest that both the young IKI sandstone and the old DMN quartzites are altered to a certain degree making the mineralizing fluids Lower Cretaceous or younger. Landsat imagery reveals that at least the major northish structures are the youngest as well.
- 4) MAPs 4 & 5: Samples from this area, if anomalous, should be followed up as there are numerous potential NW structural conduits proximal to the 20m wide gossan (oxidized light rust orange-yellow weathering muscovite schists and quartzites). In addition, sheared grn PEG appear in some cases to be in older re-activated structures (sample 7130). Is it coincidental that the pegmatite and gossans are spatially related. Does the sampling indicate that the gmPEG relates to the gossanous lithologies. (ie. Boron rich fluids – tourmaline?)
- 5) Numerous additional oxidized light rust orange-yellow weathering muscovite schists and quartzites were observed at sample 7141 (MAP 10), Z-717 (MAPs 10 & 11), sample 7113 (MAP 11). In some cases relic feldspar and a subtle increase in radioactivity was recorded. These units appear to be meta-felsites (parent – rhyolite?) and in some cases spacial to quartz veining. Petrographic studies pending.
- 6) MAP13: station Z-637 has potential regarding younger northish structures associated with at least two episodes of intrusion: Er & GAB.
- 7) "The Great White " quartz vein (Z-676) is 1.8m wide, near vertical, trends ESE and is the largest hydrothermal system mapped to date.

### REFERENCES

Lowery, G.W. 1984. The Stratigraphy and Sedimentology of Siliciclastic Rocks, West-Central Yukon, and their Tectonic Implications. Thesis (Ph.D), University of Calgary, 329p.

Ryan J.J., Gordey, S.P., Stewart River Area (Parts of 115 N/1,2,7,8, and 115O/2-12) Geological Survey of Canada, Open File 4641.

Makepeace, A.J., Gordey, S.P. Yukon Digital Geology. Geological Survey of Canada Yukon Geology Program -Open File D3826, 2 CD set.

### **APPENDIX 1**

ABBREVIATION CODES ROCK SAMPLE DESCRIPTIONS SOIL SAMPLE DESCRIPTIONS PETROGRAPHIC SAMPLES

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codes

ABBREVIATIO		Mineralization Style	Charles and the second	Book Tuno		Structure		Colour		Texture	Service States
Mineralogy				Rock Type			4.5	and the second se	-		6
Almandine	alm	Altered	alt	Argillite	arg	Axial Plane	AP	Beige	bg	fine grain	fig
Biotite	bio	Disseminated	dis	Basalt	bas	Cleavage	CLV	Black	bk	medium grain	
Calcite	cal	Gossan	gos	Gabbro	gab	Deformed	def	Blue	bl	coarse grain	cog
Chlorite	chl	Massive	mas	Gneiss	gne	Fold Axis	FA	Brown	bn	crystalline	xIn
Chlorite	chl	Oxidized	OX	Granite	grn	Foliation	FOL	Buff	bf	immature	imm
Clay	cly	Stain	stn	Granodiorite	grd	Lineation	LIN	Clear	cl		
Epidote	epi	Stringer	str	Limestone	Ist	Slicken Sides	SS	Crystal	cr	hypabyssal	hyp
Feldspar	fel	Trace	tr	Marble	mbl	Gouge	gou	Goldy	go		
Garnet	gar	Vein	vn	Pegmatite	peg	Fault	flt	Green	gn	fossiliferous	fos
Graphite	gra	Veinlet	vnlt	Phyllite	phy	Fracture	frac	Grey	gy		
Hematite	hem			Quartzite	qte	Joint	joi	Indigo	in		
Hornblende	hbl			Rhyolite	rhy	Plane	pl	Not Appli	cana		
Jarosite	jar			Sandstone	sst	Uniform	uni	Olive	ol		
Kaolinite	kao			Schist	sch	Contact	con	Orange	or		
Limonite	lim			Shale	sh	Crenulated	cren	Pink	pi		
Limonite	lim			Gouge	gou	Blocky	blky	Purple	pu		
Mica	mic			· ·				Red	rd		
Muscovite	mus							Silvery	SV		
Oxides	OX							Violet	vi		
Phlogopite	phl					Outcrop	o/c	White	wh		
Pyrite	ру					Subcrop	s/c	Yellow	yw		
Pyrrhotite	poo										
Quartz	qtz										
Schorl	sch										
Sericite	ser										
Tourmaline	tou										
Barite	bar										
Galena	gal								-		

ample	Date	Station	Claim	NTS	NAD 83		Width	Sample	Rock	Rock	DESCRIPTION		
umber	d/m/y	Number	Name		Easting	Northing	(size)	Туре	Туре	Modifier (s)	(colour, texture, mineralogy, atteration, structure)		
	09-Sep-05	Z602	FEN 93	115 0/14	582442	7071655	various	float	PSA	hem stn	side of rd, suspected near con		
	09-Sep-05	Z604	FEN 114	115 0/14	582261	7071971	10m	float	BIT	sub			
	09-Sep-05	Z605	FEN 114	115 0/14	582252	7071995	various	float	SST	fos qtz-mic			
	13-Sep-05		BJM 57	115 0/14	591855	7070664	0.80m	chip	FLT	gy It bg	gy It pale beige cly fit gou, 020/78		
	12-Sep-05	Z618	FEN 95	115 0/14	582335	7072004	40x80cm	chip-panel	SCH	def	area of rolled (folded) def chips of fol mic QTE/SCH with minor yw-rust-wh qtz lenses		
	12-Sep-05		FEN 95	115 0/14	582302	7072007	1.5	chip	QTE	mic	characteristic sample of QTE; clean glassy qtz grains (90%), mic-lim (10%) along fol		
	12-Sep-05	Z620	FEN 95	115 0/14	582317	7072006	3cmx4.80m	chip	FLT	gy	gy cly fit gou (30%), gy PEL chips (60%), dk gy qtz (10%) in low angle 110/10 she; 140 cps		
	12-Sep-05	Z620	FEN 95	115 0/14	582313	7072006	10cmx1.6m	chip	FLT	wh	off wh fig ser (70%), wh fig-meg qtz (30%) in low angle she adjacent 7107; 130 cps		
	12-Sep-05	- 1 - 12	FEN 97	115 0/14	582623	7072449	0.80m	chip	GNE	joi	higher density joint corridor in GNE; minor lim-MnO2 stn on pl frac; 025/90		
	12-Sep-05		FEN 97	115 0/14	582659	7072446	5cmx5.00m	chip	FLT	gy-bn	gy-bn crush-cly gou+pel chips in almost flat she; cuts northish steep structures		
	13-Sep-05	in the state	BJM 57	115 0/14		7070655	0.35m	chip	FLT	It or-bg-bf	cly fit gou w some dk gy spots, x-cuts met fabric, 045/75, 170 cps		
	13-Sep-05		(fraction)	115 0/14		7070710	5cmx3.00m	chip	FLT	wh-gy	It cly geu		
	13-Sep-05		BJM 49	115 0/14		7071529	0.10m	chip	SCH	qtz-ser	yw-or weathering 10cm band of alt SCH within SCH o/c, 150 cps		
7114	15-Sep-05	Z641-a	BJM 50	115 0/14	588743	7071614	0.30m	chip	FLT	wh	v fig wh cal coatings on fine sheared chips, 116/90		
	16-Sep-05	Z645	FEN 113	115 0/14	581382	7072082	various	float	GNE	ortho	numerous multi-directional pl qtz vnits in alt (lim-ser-qtz) GNE		
	16-Sep-05	Z650	FEN 98	115 0/14	582831	7072409	various	float	PEG	gm	numerous float pcs of v cog qtz-fel-hbi PEG, 120 cps		
7117	16-Sep-05	Z654	FEN 98	115 0/14	583068	7072412	0.20m	chip	FLT	gy	she chips of gy GNE + grn PEG, 280/26		
7118	16-Sep-05	Z654	FEN 98	115 0/14	583073	7072404	0.80m	chip	FLT	gm peg	she chips of grn PEG, gar on HW, 327/83, 180 cps		
7119	16-Sep-05	Z637	OFF CLAIMS	115 0/14	589412	7071535	10 m	grab	RHY	qtz-fel por	wk rusty weathering, 10% fig-meg qtz phenos, wkly bleached fel phenos; 360 cps		
7120	16-Sep-05	Z637	OFF CLAIMS	115 0/14	589404	7071536	0.10m	chip	SHE	OF	lim-chips + wk gou in 010/90 she		
7121	16-Sep-05	Z637	OFF CLAIMS	115 0/14	589398	7071541	4.00m	chip	GAB	bn	sheared cal altered fig ophitic, rare cal stringers; 100cps		
7122	17-Sep-05	Z643	BJM 50	115 0/14	588631	7071560	0.60m	chip	FLT	bk	gra bk chips (QTE) within FLT, suspected attitude 270/55, 150 cps		
7123	17-Sep-05	Z657	FEN 98	115 0/14	583160	7072460	10m	grab	PEG	alt grn	arg altered gm PEG (bk tou?) interfol and X-cutting (?) GNE/SCH in buildozed trench		
7124	17-Sep-05	TR.	FEN 69	115 0/14	583303	7072450	12m	grab	GRN	she	wk rusty alt mus (fel-kao) GRN with bio-otz SCH wraps		
7125	18-Sep-05	Z662	FEN 69	115 0/14	583444	7072522	3.20m	chip	QTE	ait	alt ser QTE w wk rust (jar-lim) surface stain - gossan		
7126	18-Sep-05	Z662	FEN 69	115 0/14	583450	7072521	5m	float	QTE	alt	alt ser (tr fig py/poo) QTE w wk rust (jar-lim) surface stain - gossan		
7127	18-Sep-05	Z662	FEN 69	115 0/14	583457	7072520	5.00m	chip	QTE	alt	alt ser QTE w wk rust (jar-lim) surface stain - v fig intergrain mineral- MnO2??		
7128	18-Sep-05	Z662	FEN 69	115 0/14	583481	7072535	0.50m	chip	SCH	chi	she, decomposed SCH w interstitial halotrichite, 138/35		
7129	18-Sep-05	Z662	FEN 69	115 0/14	583496	7072547	0.20m	chip	FLT	gou	wh-It gy-or cly FLT gouge, 138/85		
7130	18-Sep-05	Z662	FEN 69	115 0/14	583503	7072555	0.80m	chip	PEG	she	sheared-faulted grn PEG, alt fel		
7131	18-Sep-05	Z662	FEN 69	115 0/14	583512	7072561	0.10m	chip	FLT	gra	faulted bk gra QTE chips & crush		

Page 1

Bample	Date	Station	Claim	NTS	NAD 83	NAME OF A DECK O	Width	Sample	Rock	Rock	DESCRIPTION		
Number	d/m/y	Number	Name	NIO	Easting	Northing	(size)	Туре	Туре	Modifier (s)	(colour, texture, mineralogy, atteration, structure)		
and the second second second	20-Sep-05	Z662		115 0/14	583511	7072561	0.70m	chip	QTE	alt	or lim stn QTE, local gra MnO2 on frac pl, HW to gra FLT (7131)		
	20-Sep-05	Z662	FEN 69	115 0/14	583513	7072565	1.60m	chip	SCH	alt	mic(chi)-kao? SCH w 10% or lim stn foliaform gtz lenses		
	20-Sep-05	Z662		115 0/14	583514	7072566	1.00m	chip	SCH	she	wh-or cal-halotrichite-lim coatings on she mic (mus-chl-bio-phl) SCH		
	20-Sep-05			115 0/14	583515	7072569	2.20m	chip	SCH	she	greasy v fig chi-ser she SCH w 10% she seams of it gv & or clv gou		
	20-Sep-05	Z662		115 0/14	583517	7072570	2.00m	chip	SCH	OX			
	20-Sep-05	Z676		115 0/14	587380	7071648	0.80m	chip	SCH	mic	sv-gy (bio-mus-phi-chi) gtz SCH, HW rock to Great White gtz vn, 130 cps		
	21-Sep-05	Z676		115 0/14	587381	7071648	0.90m	chip	VN	qtz	wh-gy-wk rust, lim stn+fig dk impurities, glassy mas qtz vn - "Great White" HW half (1.80m tot tk) 60 cp		
	21-Sep-05	Z676		115 0/14	587382	7071640	0.90m	chip	VN	qtz	milky-glassy wh w local grayer impure areas - "Great White" mas gtz vn - FW half (1.80m tot tk) 60 cp		
					587382	7071650	0.80m		SCH				
	21-Sep-05			115 0/14				chip		mic	siliceous dk gy glassy (bio-mus-phi-chi) qtz SCH, FW rock to Great White qtz vn, 70 cps		
	22-Sep-05	Z678		115 0/14	587464	7071674	1.40m	chip	SCH	mus	bright wh-sv SCH; white sucrosic qtz-fel? Interstitial to streaked glassy qtz; meta-felsite?? 200 cps		
	22-Sep-05			115 0/14	587340	7071673		float	VN	qtz	wh mas frac, wk lim stn in frac - Great White?		
	22-Sep-05			115 0/14	587298		.40x1.20x0.70r	float	VN	qtz	wh mas frac, wk lim stn in frac - rolled down hill from Great White?		
	23-Sep-05	Z679		115 0/14	584122	7072598	2.00m	chip	SST	imm	character sample, or-yw weathering, meg, mic, fos (plant-matter, bk coal), semi-quartoze SST, 140 cps		
	24-Sep-05			115 0/14	585040	7072264	0.60m	chip	SHE	sch	she w chi PHY?SCH in upper half and or-rusty qtz vn crush in lower half, 160 cps		
	25-Sep-05			115 0/14	585548	7072290	0.40m	chip	QTZ	pod	mas lim stn gra (in frac) qtz pod between fol, 210 cps		
7147	27-Sep-05	Z696		115 0/14	581330	7071855	5m	grab	SCH	OX	yw-or (ox) lim stn chl SCH in pit, 160 cps		
7148	27-Sep-05	Z696	FEN 1126	115 0/14	581314	7071860	10m	grab	SCH	wk sil	v fig dustings/dis of py on frac surfaces and between folae, 140 cps		
7149	27-Sep-05	Z698	BJM 67	115 0/14	586080	7072129	4m	grab	BXA	fit	sil qte BXA		
7150	27-Sep-05	Z698	BJM 67	115 0/14	586083	7072122	5m	grab	BXA	flt	clast (angular) supported, sil, QTE, chiPHY/SCH low angle thrust (?) fit BXA		
	27-Sep-05		BJM 47	115 0/14	587546	7071593	0.1	chip	QTZ	vn	milky wh mas frac qtz with lim + wk MnO2 stn + ser-mus along frac; X-cuts the fol		
	01-Oct-05			115 0/11	591511	7059118	10m	float	AND	DOF	hbl-fel AND por flow, wkly - mod magnetic, unaltered, no frac - fresh character sample; Carmacks Gp,		
	01-Oct-05			115 0/14	583518	7072572	2.80m	chip	SCH	ser	or-yw intense lim stn qtz-ser SCH (meta-RHY?)		
	01-Oct-05	Z663		115 0/14	583524	7072575	2.40m	chip	SCH	ser	vw-or it rust lim stn atz-ser SCH/QTE		
	01-Oct-05	Z663		115 0/14	583526	7072576	2.40m	chip	SCH	Ser	yw-or It rust lim stn qtz-ser SCH/QTE, alt fel noted (alt meta-RHY?)		
	01-Oct-05			115 0/14	583532	7072579	10m	grab	SCH	ser	predominantly yw-or ser-gtz SCH		
	01-Oct-05			115 0/14	583540	7072582	2,50m	chip	SCH	ser	vw-or-bn (it rust) ser-atz SCH		
	01-Oct-05			115 0/14	583540	7072582	1.00m	chip	SCH	ser	snow whishe ser (hbl-tou? alt fel?) SCH (meta GRN?)		
					583542	7072582	1.50m	chip	SCH				
	01-Oct-05			115 0/14						ser	gy-bn she phy/SCH, local lim stn		
	01-Oct-05	Z663		115 0/14	583544	7072584	1.60m	chip	FLT	qte	bk gra she (several), off wh milled qte, wh ser-kao cly gou, minor or ox cly gou.		
	01-Oct-05		OFF CLAIMS		583591	7072610	1.20m	chip	SCH	ser	or-yw rust ser-qtz SCH - close (3m) to meta-gm peg		
	01-Oct-05	in more	OFF CLAIMS		583597	7072607	1.00m	chip	PEG	grn	fol-she mus-fel-qtz (hbl-tou?) grn PEG, 145 cps		
	01-Oct-05		OFF CLAIMS		583646	7072622	0.30m	chip	FLT	qte	ser-lim fig interstitial crush to rolled gy qte frag, 110cps		
	01-Oct-05			115 0/14	584352	7072477		float	SH	dk bn-gy	fine decomposed SH chips in a plowed out area		
	01-Oct-05	Z693		115 0/14	585989	7072143	0.20m	chip	QTZ	vn	wh-milly-glassy, x-cutting, mas, lim stn on frac		
7166	01-Oct-05	Z694		115 0/14	585989	7072143	1.00m	chip	SCH	qtz	sv-bn mus-phi-qtz SCH, HW to qtz vn (7165)		
7167	01-Oct-05	Z695	BJM 69	115 0/14	585990	7072143	1.00m	chip	SCH	qtz	or-bn ox lim stn mus-phl-qtz SCH, FW to qtz vn (7165)		
7168	01-Oct-05	Z701	BJM 67	115 0/14	586211	7072078	0.30m	chip	FLT	con	HW con to MBL, decomposed PHY, bk gra cly GOU, lim coated QTE, decomposed chi PHY, MBL		
7169	01-Oct-05	Z717	BJM 48	115 0/14	587741	7071566	0.25m	chip	QTE	ble	ble, lim stn, mus-ser (fel?) QTE - meta-felsite/rhy parent?		
	01-Oct-05	Z717	BJM 48	115 0/14	587746	7071560	0.45m	chip	QTZ	vn	mas, glassy, milky wh, with lim along frac pseudomorphing dk bk mineral (hbl, tou?), minor MnO2		
	03-Oct-05	Z719		115 0/14	582300	7071686	10m	grab	QTE	alt	intense v fig interstitial ser and gtz flooding in a ble, lea & lim stn QTE, 85 cps		
	03-Oct-05		FEN 114	115 0/14	582204	7071722	5m	grab	SST	fos atz	moderate ser alt interstitial to qtz grains, 90 cps		
7173				115 0/14	584627	7070958		grab	SST	alt	off wh alt ser-kao? In imm SST in Sample Pit # 15 - sampled by H. Veldhuyzen		
7174				115 0/14	584896	7071043		grab	SST	OX	imm SST with narrow ble alt along frac fillings - Sample Pit # 25 - sampled by H. Veldhuyzen		
7175				115 0/11		7070285		grab	SST	alt	dk gn imm chl alt (mic) SST - sampled by H. Veldhuyzen		

Sample	Date	Station	Claim	NTS	NAD 83		Colour	Fraction Cly slt san grv 0rg				Fraction			Fraction			Fraction			Comments
Number	d/m/y	Number	Name		Easting	Northing						cly slt san grv Org		ly sit san grv Org							
18419	23-Sep-05	Z679	OFF CLAIMS	115 O/14	584029	7072608	or-It gy & bk	4	4	1	1	0	some bk coal								
18420	23-Sep-05	Z679	OFF CLAIMS	115 0/14	584065		gy-off wh & bk		1	2	1		decomp mic SLT, cly altered								
18421	23-Sep-05	Z679	OFF CLAIMS	115 0/14	584080	7072608		4	3	2	1		decomp dk gy greasy mic SLT, 275 cps								
18422	23-Sep-05	Z679	BJM 63	115 0/14	584106	7072601		2	7	0	1		directly below meg imm SST o/c								
18423	23-Sep-05	Z679	BJM 63	115 0/14	584123	7072594	and a second	3		1	1		directly below meg imm SST o/c								
18424	23-Sep-05	Z679	BJM 63	115 0/14	584144	7072580	31	4	5	0	1		mixed, noted Nasina pebbles/cobbles								

2005BoulderMining-SampleDesc.XLS

Sample	Section	Туре	NTS 115 O/1	4 - NAD 83	<b>Field Name</b>		Questions for Answer
Label	Polished Thin	Thin	Easting	Northing	Rock Type	Modifiers	
Z-663; 7155		X	583526	7072576	SCH	ser	alteration? Parent rock?
Z-637; 7119		X	589412	7071535	RHY	atz-fel por	mineralogy, sulphides?
Z-654; 7118		X	583073	7072404	FLT		mineralogy, black minerals?
Z-687		X	585540	7072370	GNE		meta-intrusive?,meta-hypabyssal? Feldspars?
Z-679		X	584122	7072598	SST		grain composition?, alteration?
Z-649		X	581382	7072082	GNE		alteration? Parent rock?
Z-663; 7158		X	583541	7072582	SCH		alteration? Parent rock?
Z-717-J		X	587809	7071603	AMP		dark fine grain mineralogy? Parent rock?
Z-717-F		X	587757	7071611	SCH		meta-felsite; parent?
Z-694		X	586101	7072175	MBL		mineralogy - impurities?, alteration?
2-696; 7148	X		581314	7071860	SCH		any other sulphides besides py? could this be of volcanic origin? has it been silicified?

CAMPLEO CORDETROOPLOUV

### OCTOBER 11, 2005

### **BOULDER MINING CORPORATION**

800-850 West Hastings Street Vancouver, British Columbia Canada, V6C 1E1 Ph: 604-899-4300

Attn. Jim Grinnell

### **VANCOUVER PETROGRAPHICS**

8080 Glover Rd. Langley, British Columbia Canada, V1M 3S3 Ph: 604-888-1323

Attn. Jim Vinnell

Dear Jim,

Please find enclosed 11 samples for section with accompanying information. We'd like 10 thin sections and 1 polished section as listed. Also we'd like a report on each section with pictures.

These samples are from our gold project in the Klondike region; poly-deformed metamorphic package (except 7119). Most interested in basic mineral make up, particulary alteration minerals and if there's any information regarding the parent rock type (relic textures, etc) would be useful to us.

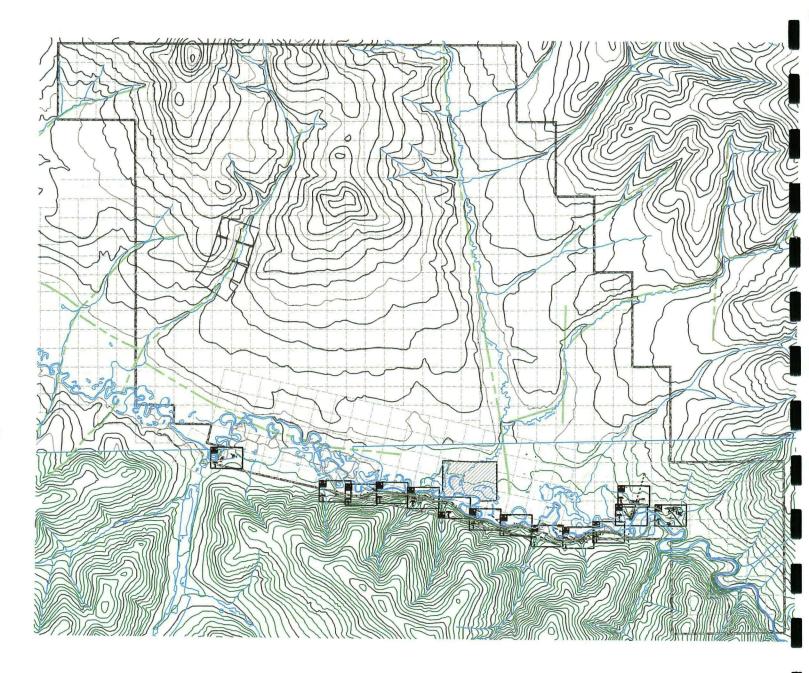
Please send reports, etc. and invoice to Jim Grinnell at Boulder's above address. Thanks very much.

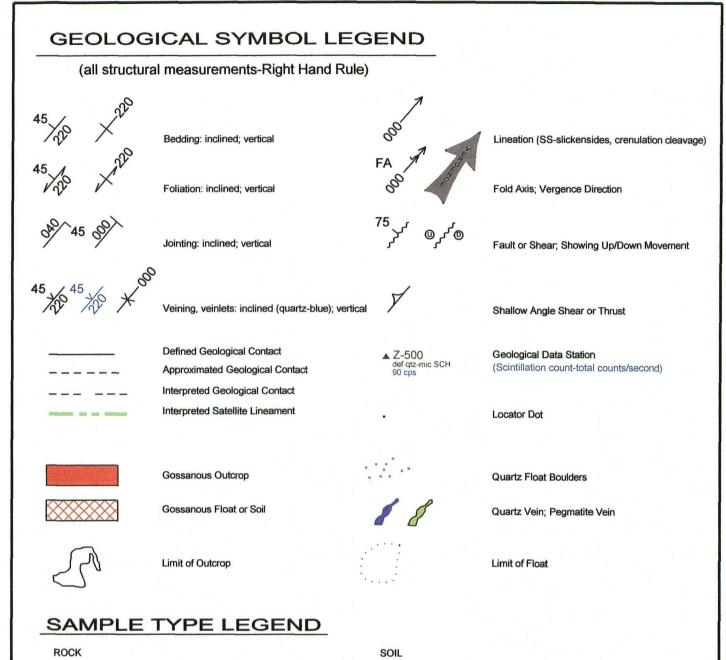
Sincerely, Rick Zuran Consultant Geologist

### **APPENDIX 2**

MAPS 1-14 (Geological Data Maps – 1:2,000 Scale) LITHOLOGY LEGEND (to accompany Maps 1-14) SYMBOLS LEGEND (to accompany Maps 1-14)

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18423

Soil

(2005, field season)

Soil Sample Number

All samples submitted for ICP-MS 36 element (Au+35) analysis.

P	Petrographic Analysis (Thin or Polished Thin Section)
1	Chip
	Grab
$\bigtriangleup$	Float
7154	Rock Sample Number (notes include width, or size)

### OTHER

Property Boundary

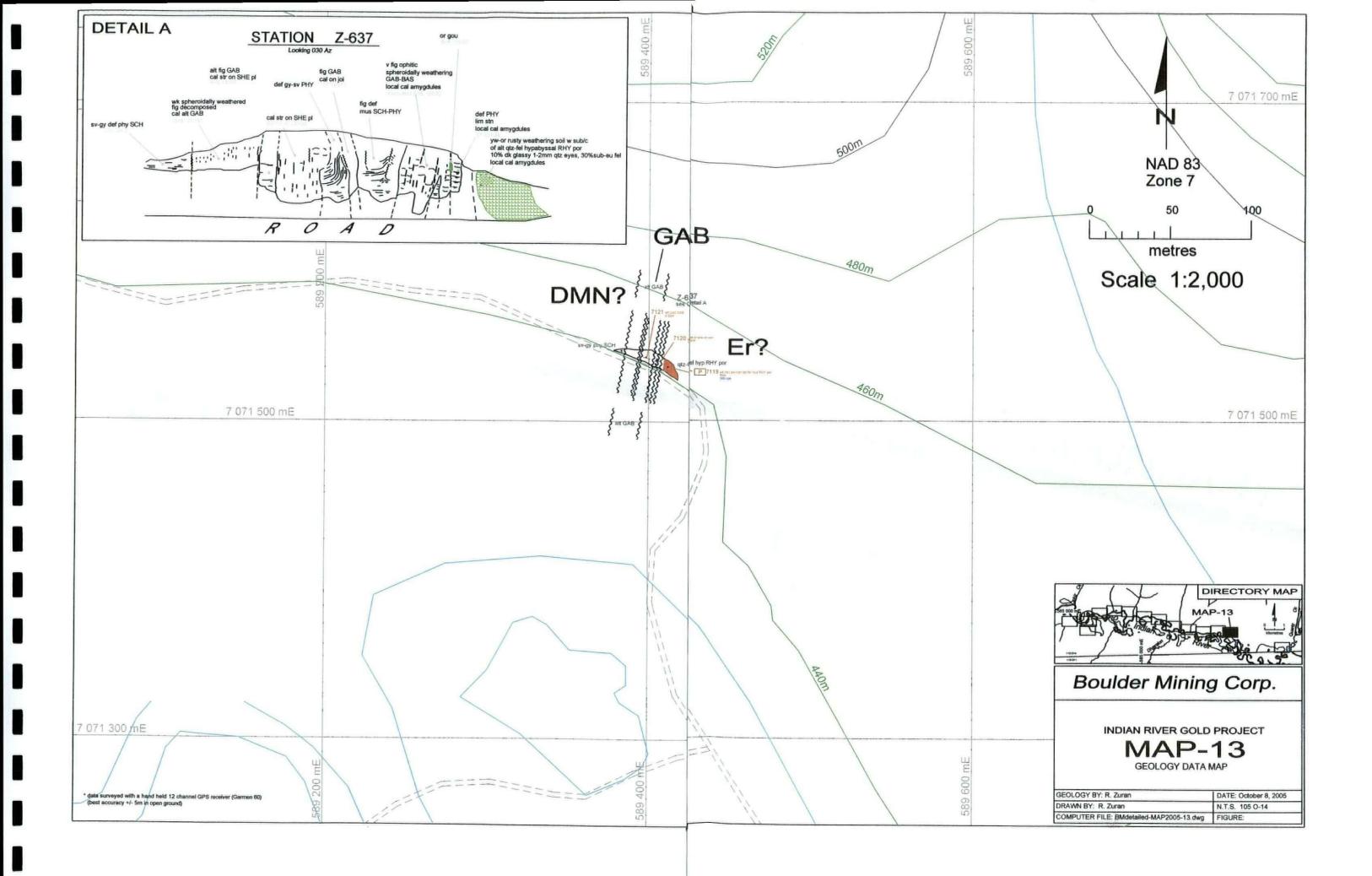
Yukon Quartz Mineral Claim 1500x1500' (claim name & grant number)

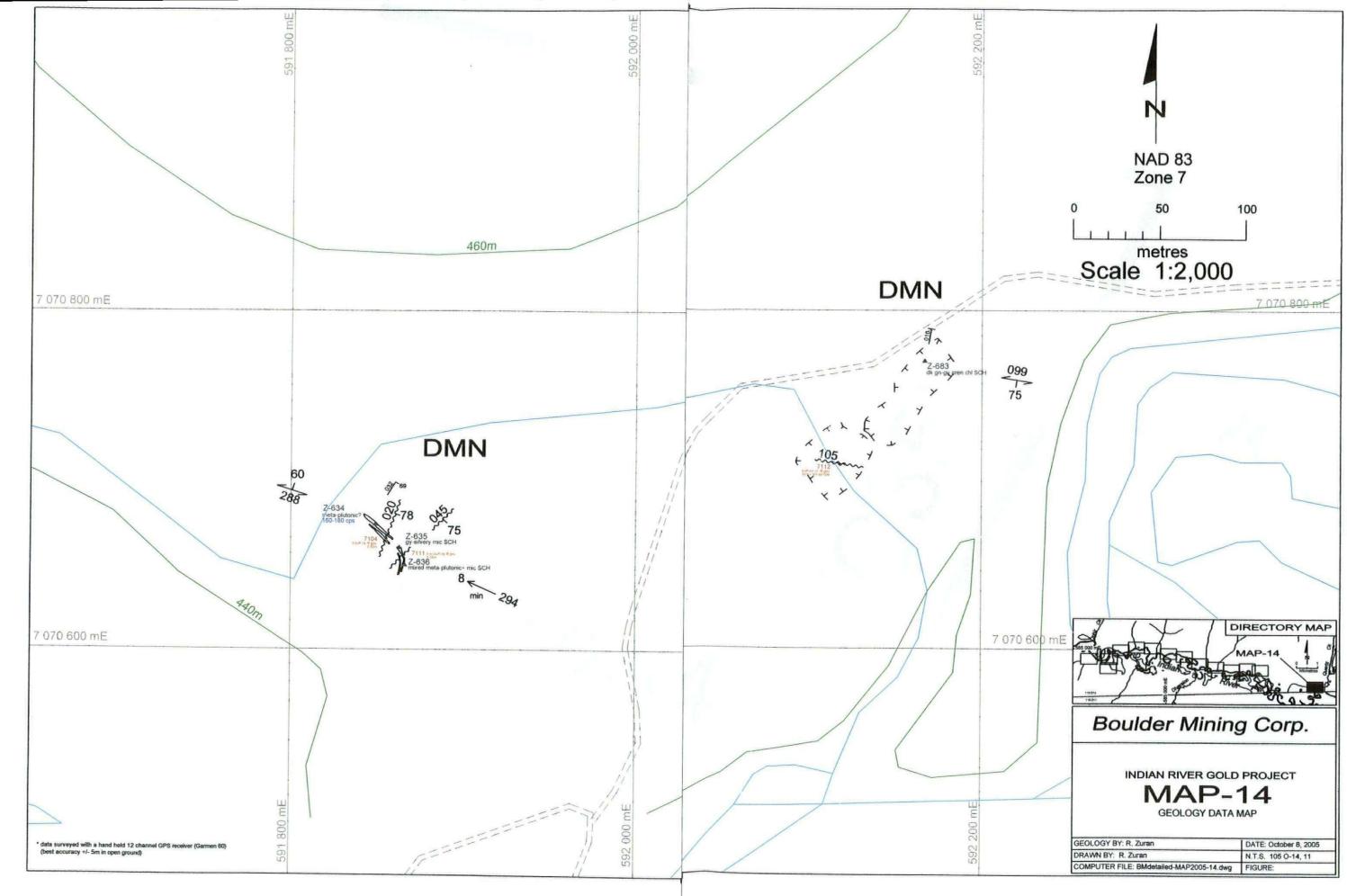
\*to accompany 2005 detailed geology MAPs 1-14

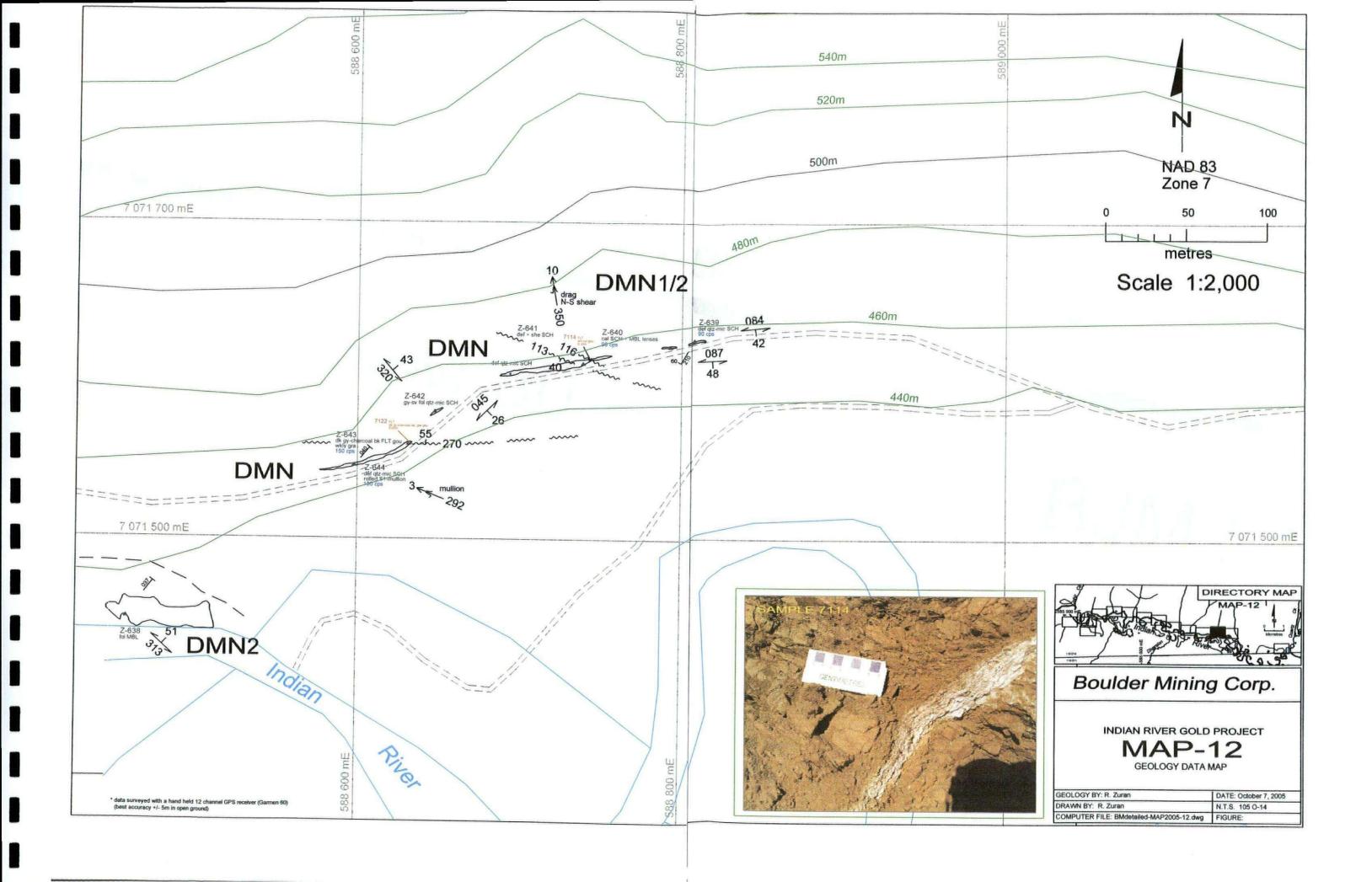
BOULDER MINING CORP.

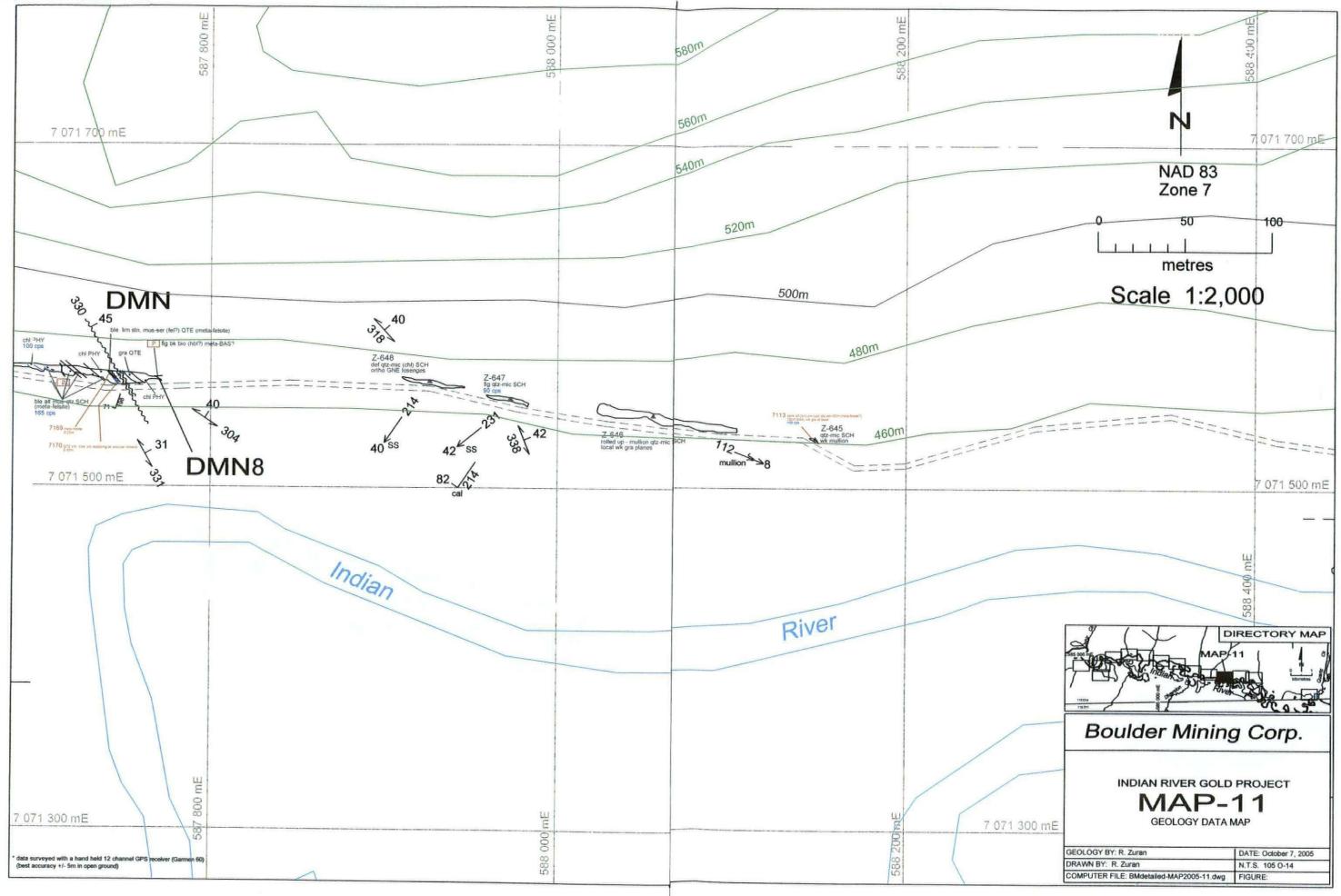
### INDIAN RIVER GOLD PROJECT SYMBOLS LEGEND

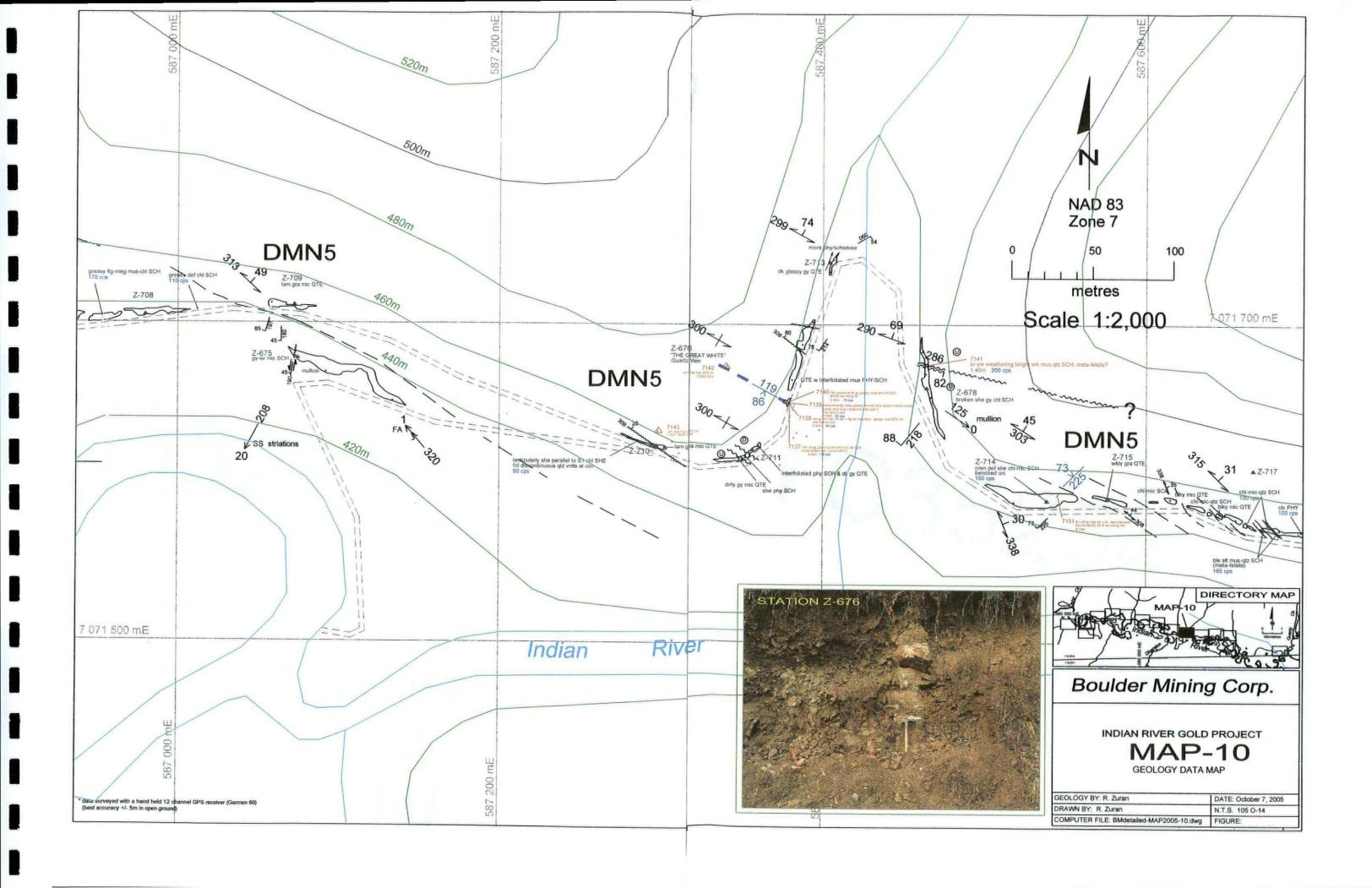
WORK BY: R.Zuran, B.Sc. Geology COMPUTER FILE: BM-symbLEGEND2005.dw DATE: Oct 9, 2005 FIGURE:

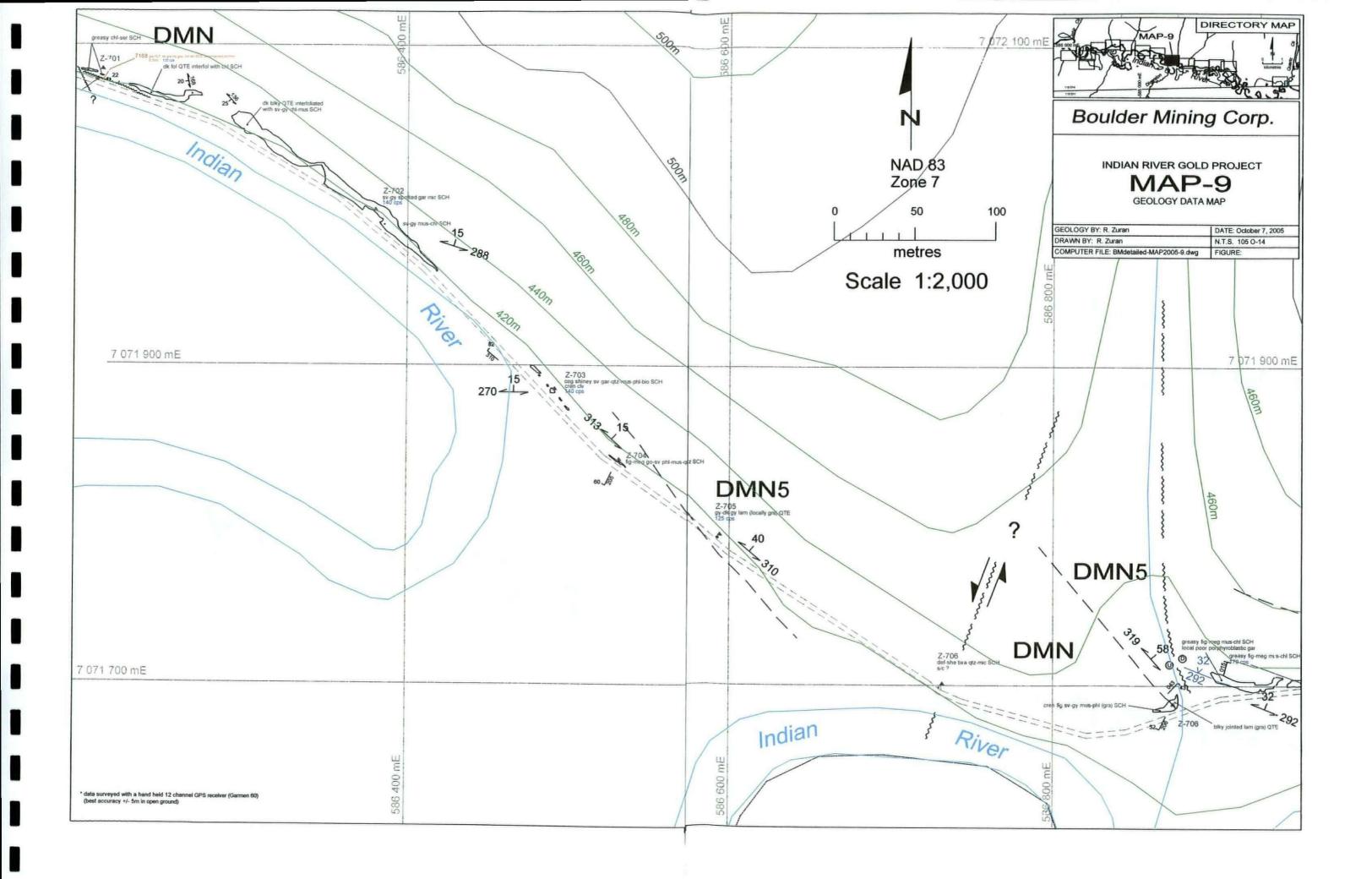


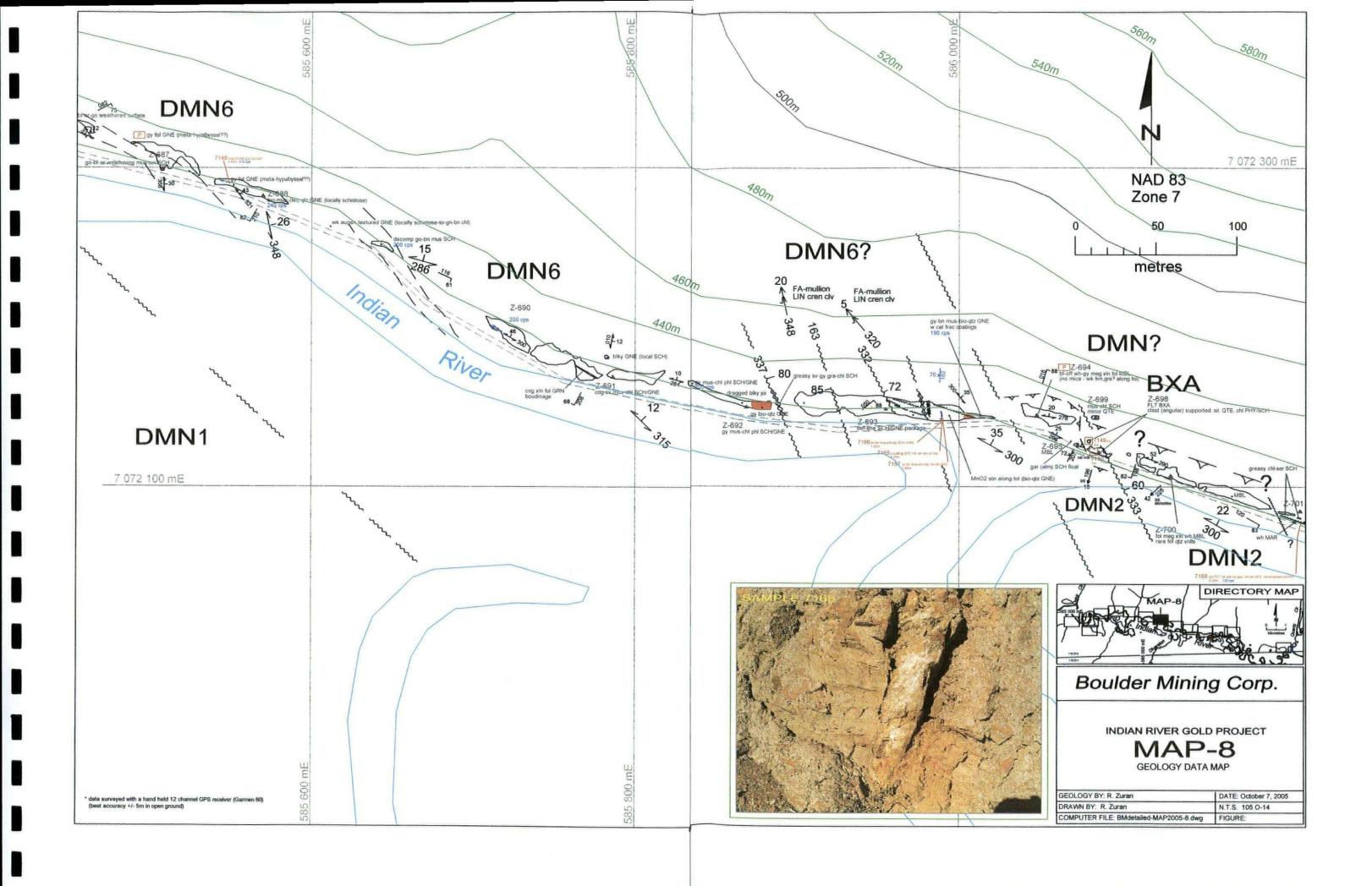


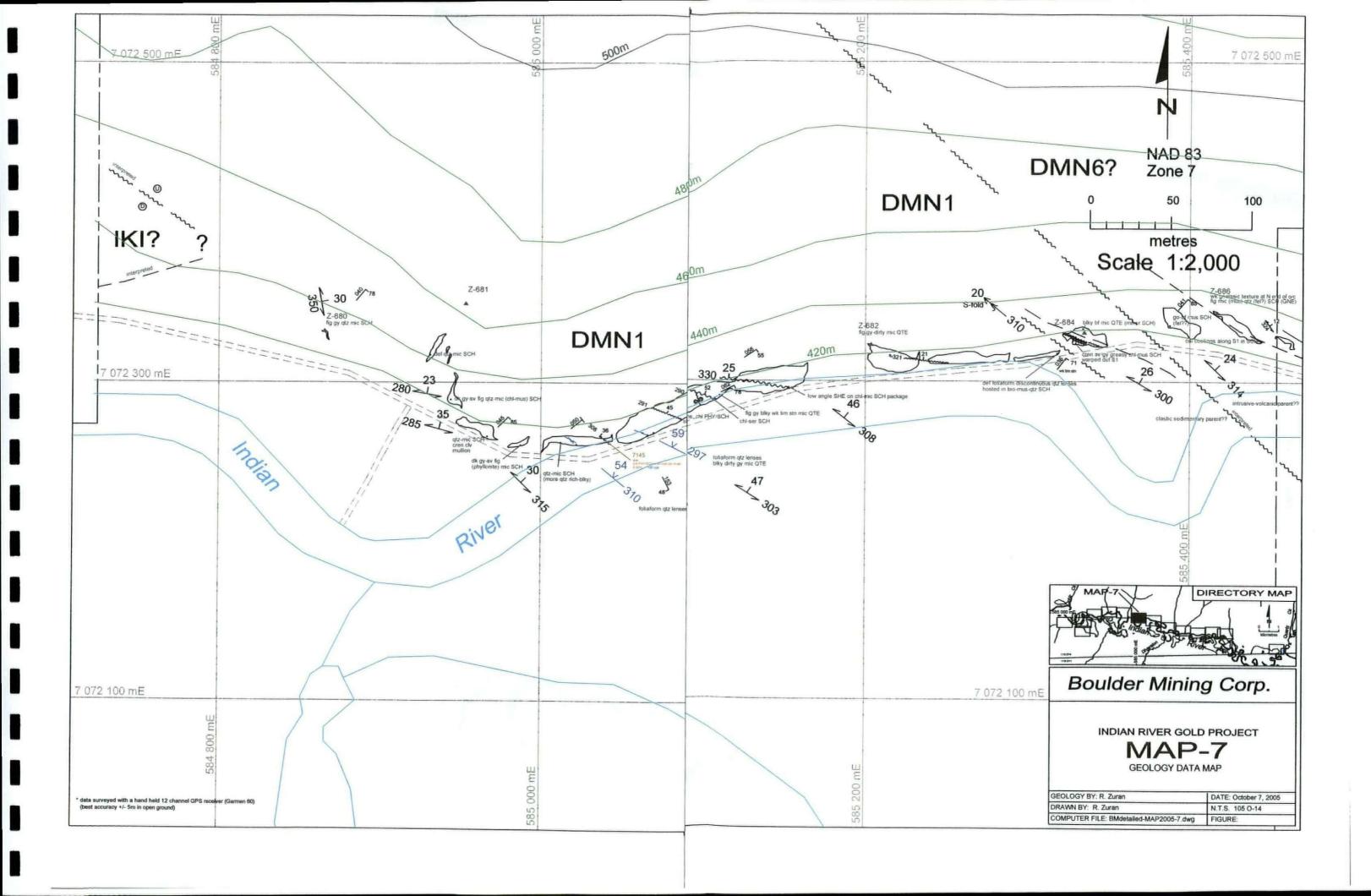


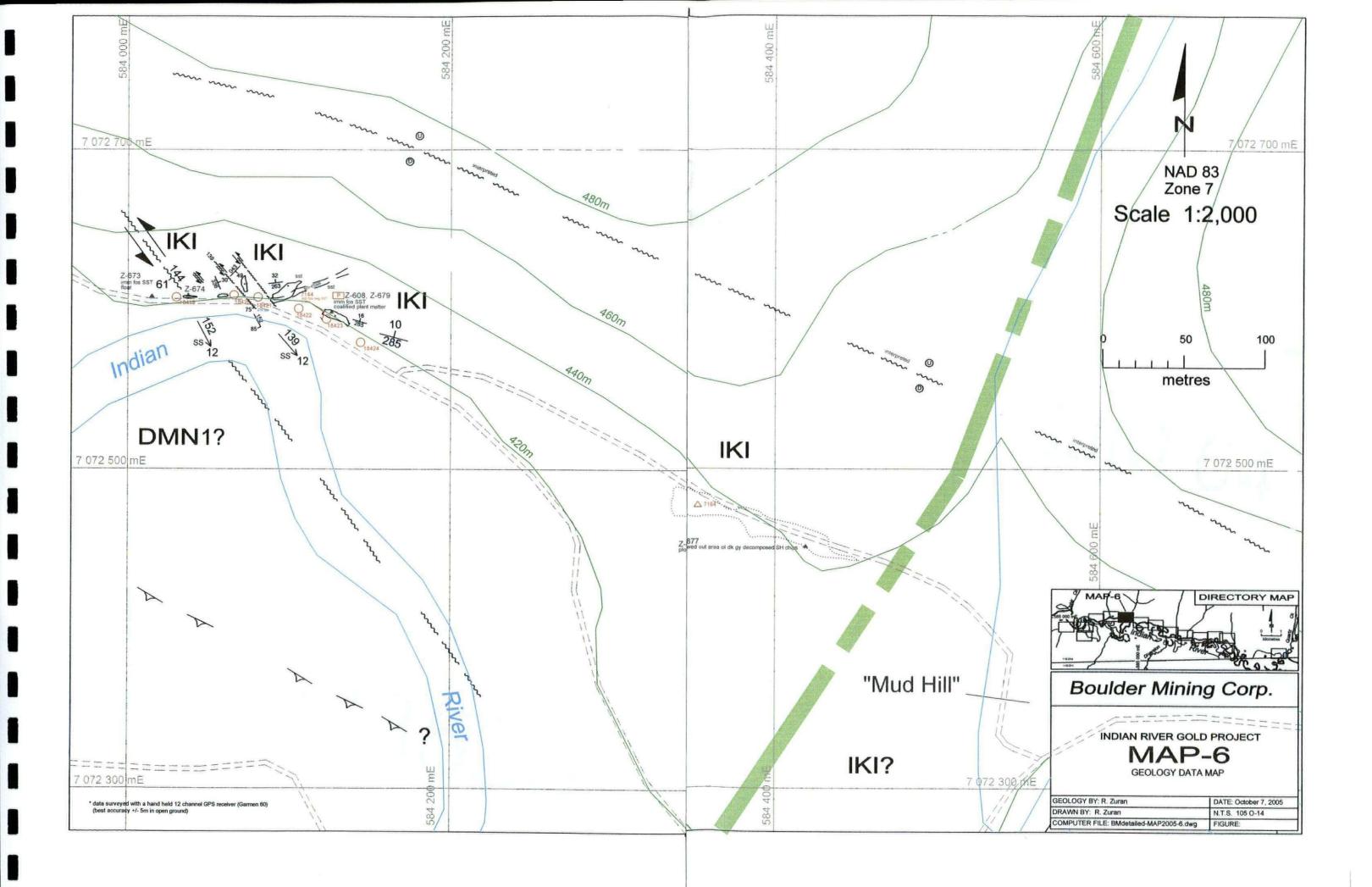


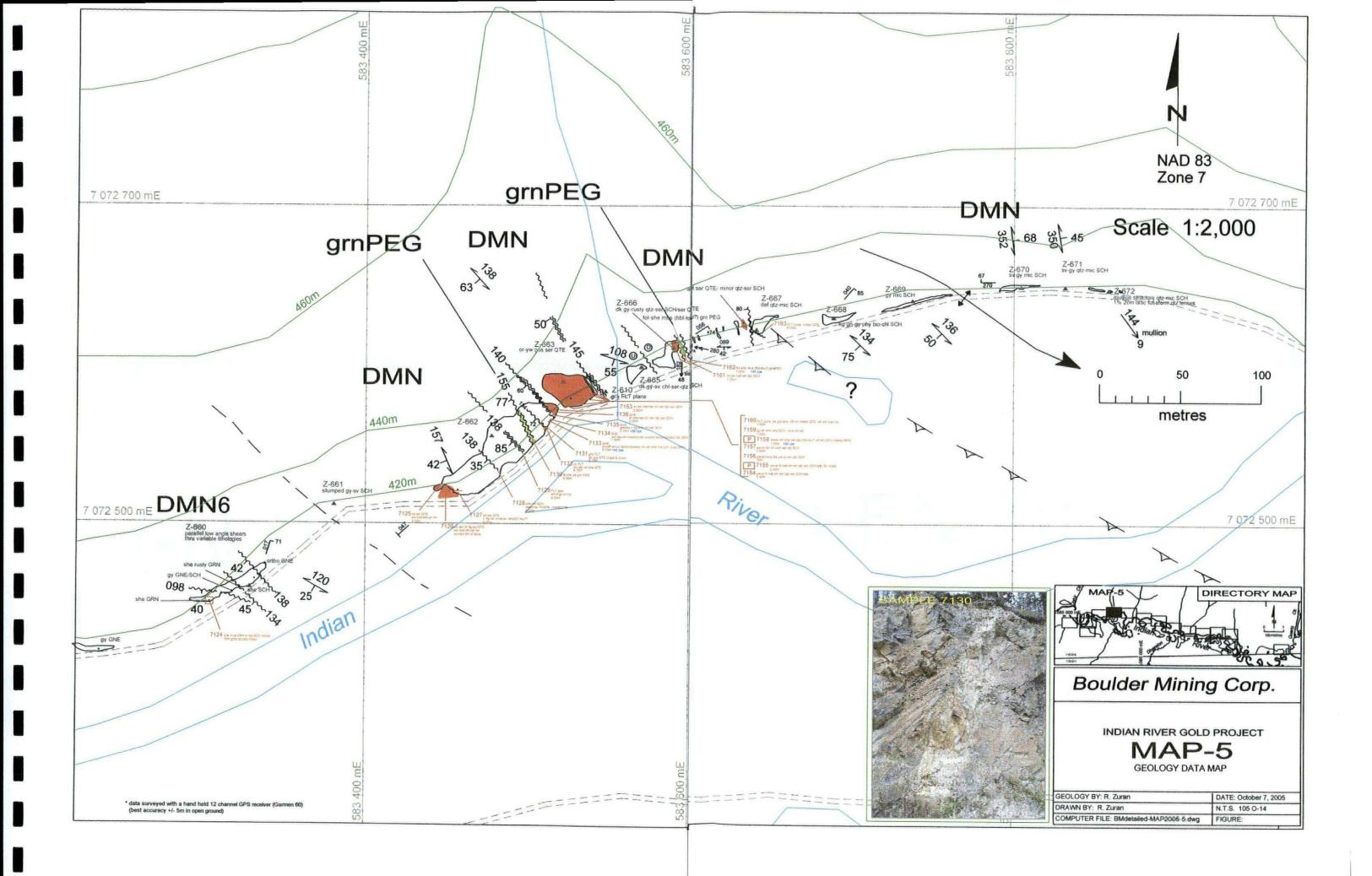


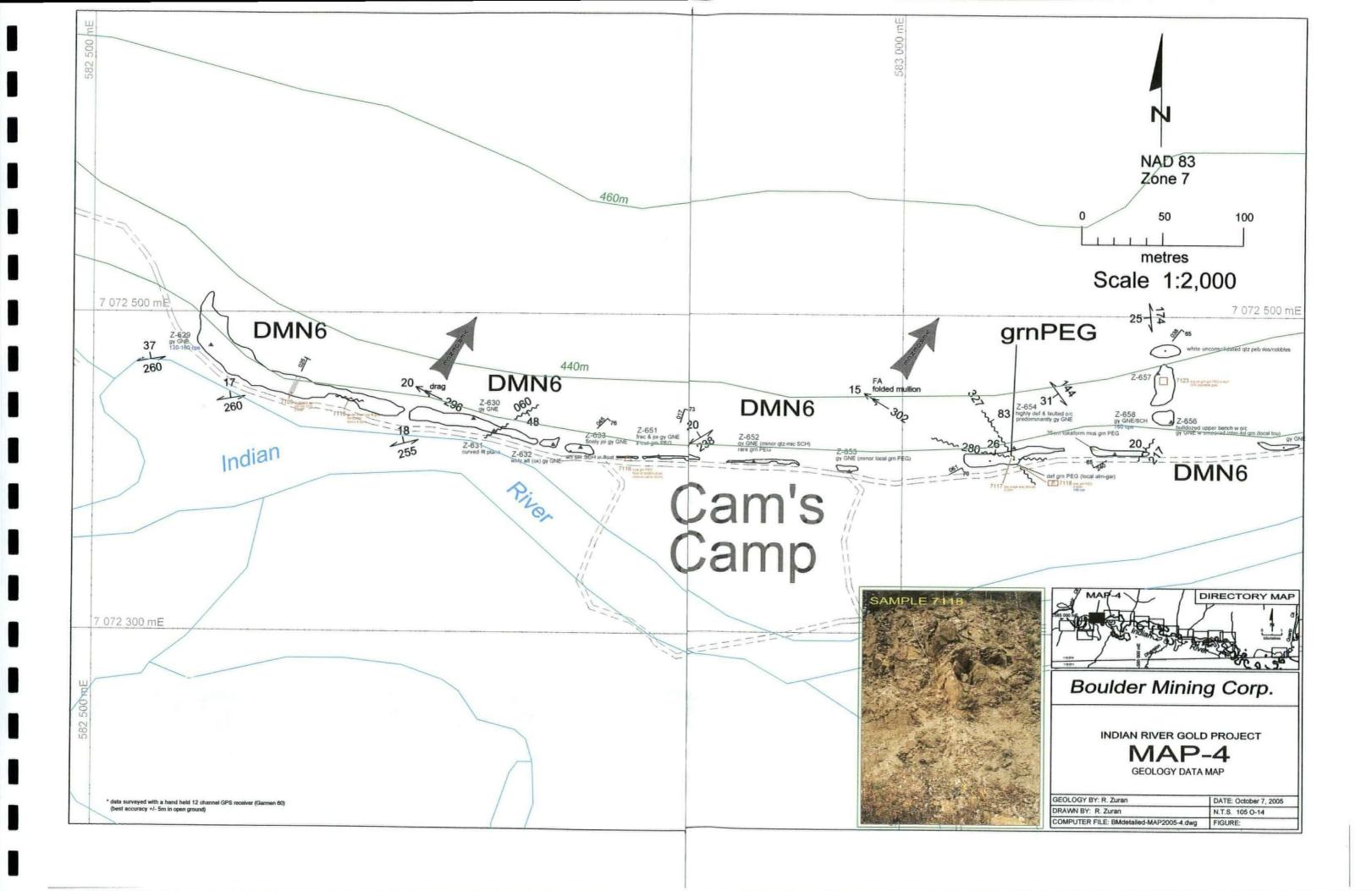


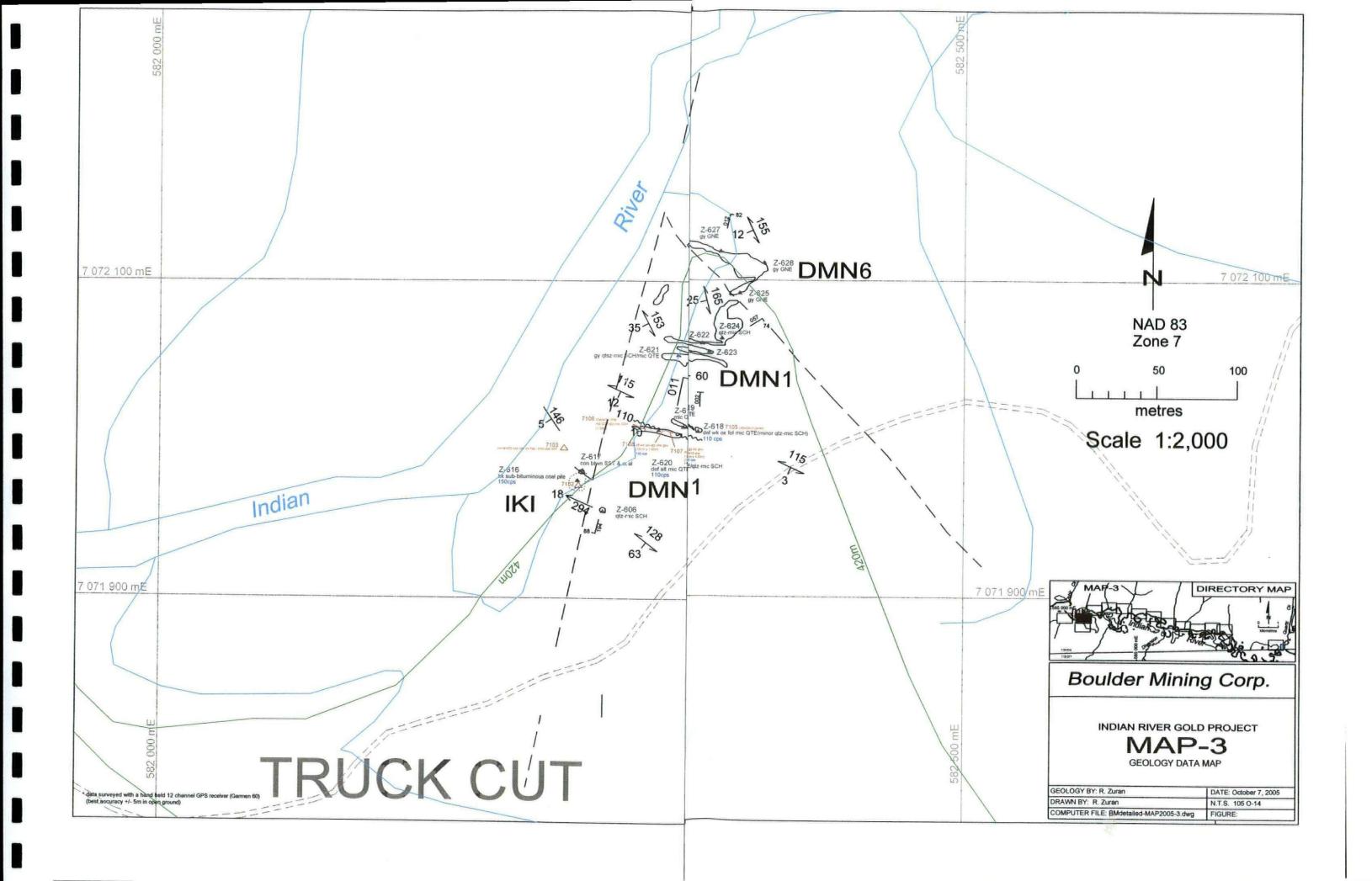


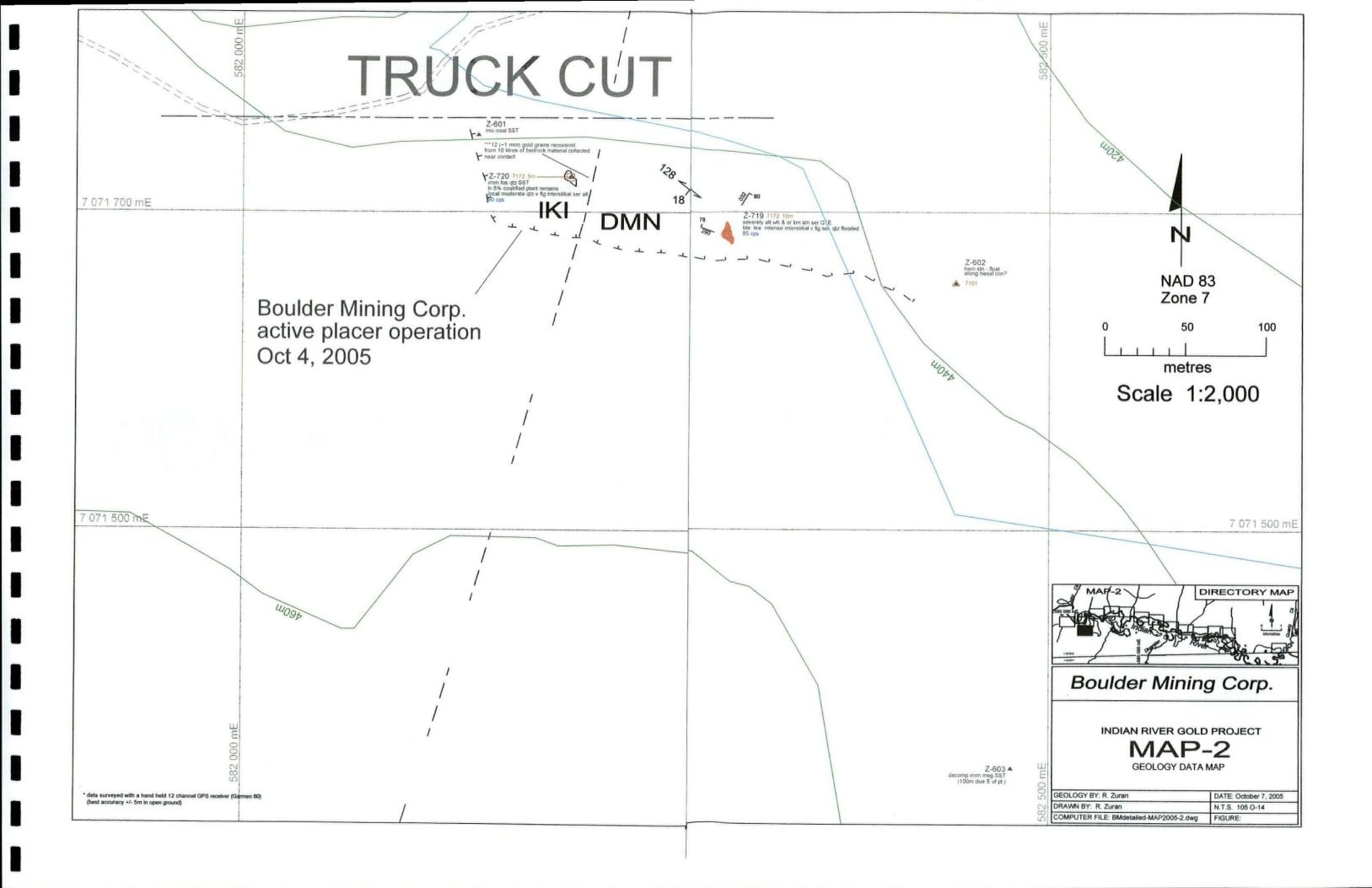


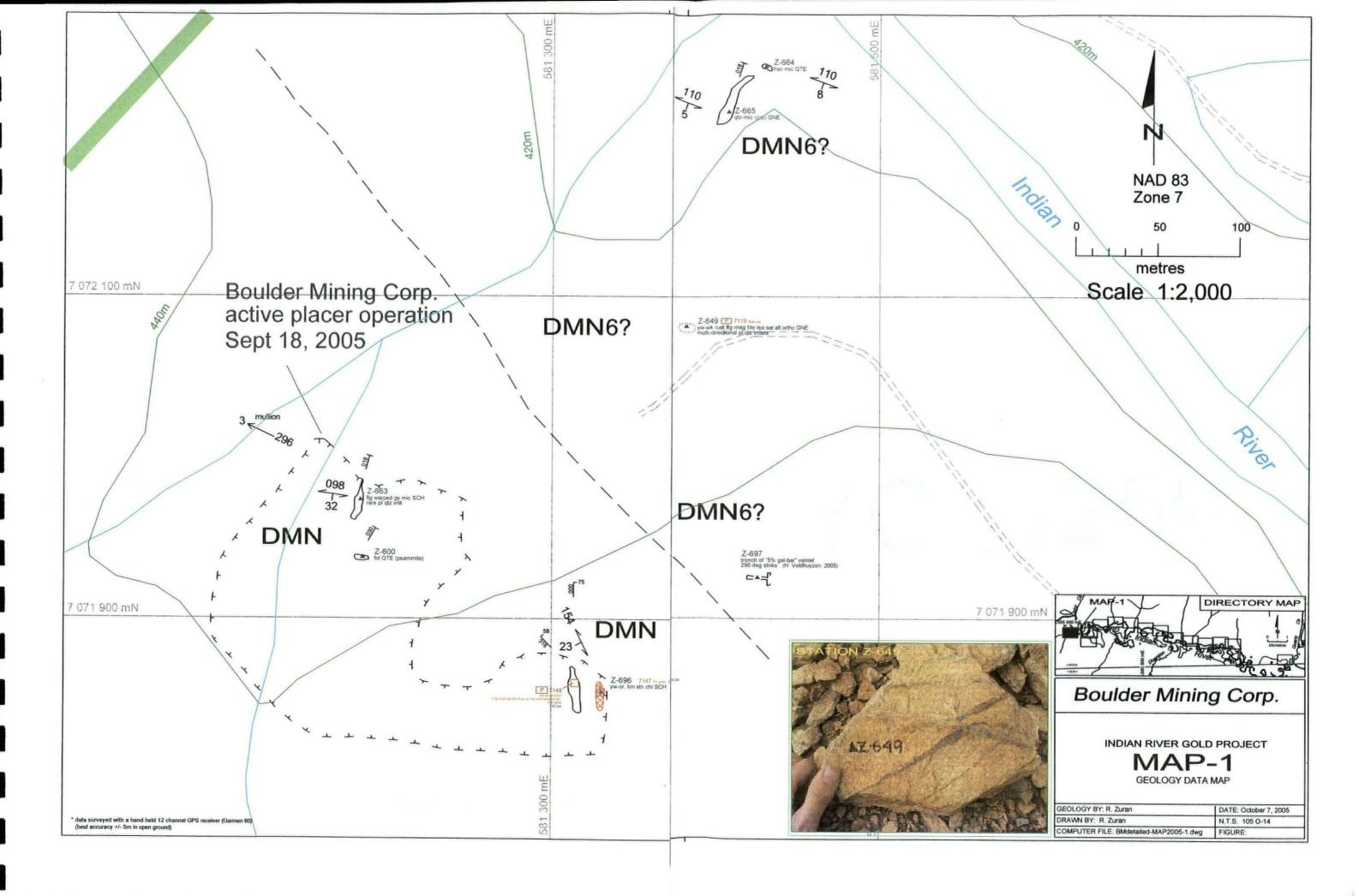


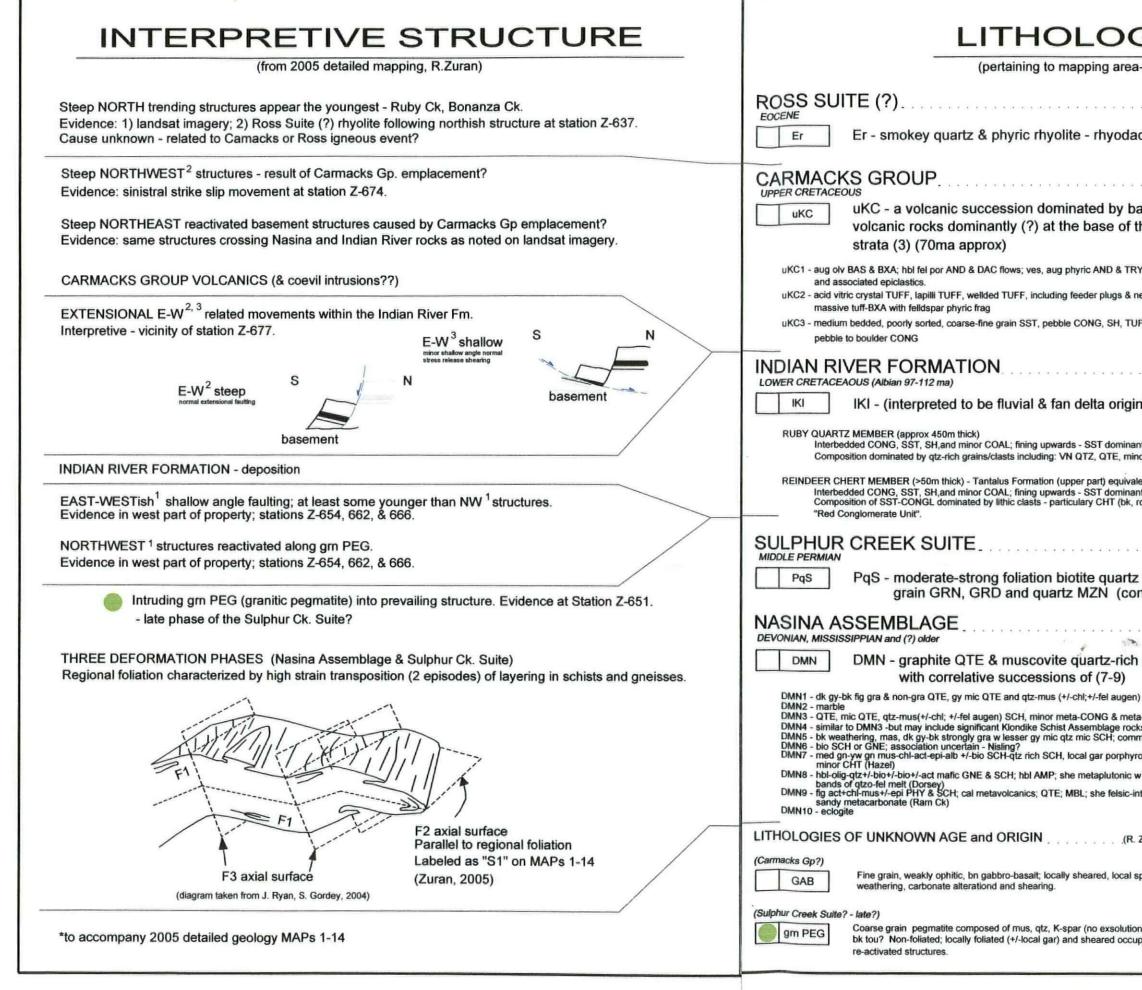












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a-2005)		
	(modified aft	er J. Ryan, S. Gordey, 2004)
acite stock	s & dykes, and pos	sible rare flows.
	(modified after	er Makepeace, S. Gordey, 1999)
	anic strata (1), but ir ssion (2) and locally	
RY; minor sandy	y TUFF, gm boulder CONG, /	AGG,
necks; felsic vo	olcanic flow rocks a& qtz-fel F	POR; green & purple
JFF, COAL; ma	assive to thick bedded locally	derived GRN or QTE
******	(modified aft	er G. Lowey, 1984)
in)		
ant, commonly I nor SCH, and C		me: "White Conglokmerate Unit".
alent ? int, commonly t rd, gy & gn) &	bioturbated. volcanic rocks (felsic & basic	; hence synomonous name :
******	(modified after	er Makepeace, S. Gordey, 1999)
	ite GNE (Sulphur C rrow foliated myloni	k orthoGNE), coarse ites of Ram Stock)
- 1- 1	(modified after	er Makepeace, S. Gordey, 1999)
n SCH (1),	(3-5), and (6)	
n) SCH, local g	ar, minor stretched meta-CO	NG & meta-GRT
ta-GRT-but ma cks.	y include significant Nisling A	S\$.
	alternating It & dk gy colour la	
	yw banded bio +/- mag SCH TE and mus+/-bio+/-olig+/-ge	
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upying relic	WORK BY: R.Zuran, B.Sc. Geology	COMPUTER FILE: BM-lithLEGEND2005.dwg FIGURE:
and the second second	DATE: Oct 9, 2005	riourte

# STATEMENT OF QUALIFICATIONS

I, Rick J. Zuran, B.Sc., with a business address of 1016-510 West Hastings Steet, Vancouver, BC, V68 1M8, Canada, do certify that:

- 1. I am a graduate of the University of British Columbia with a Bachelor Degree in Geological Sciences (1988).
- 2. I have been engaged in mineral /field exploration since 1977.
- 3. I have been associated as an employee or consultant with the following universities, companies or government departments:

University of Ottawa University of British Columbia Denison Mines Ltd. Anaconda Canada Expl. Ltd. Selco Ltd. BP Minerals Ltd. OBI Resources Ltd. Anglo American Archer Cathro and Associates (1981) Ltd. Mt. Skukum Gold Mining Corp. Total Energold Corp. North American Metals Corp. Kennecott Canada Inc. Aurum Geological Consultants Inc. Yukon Territorial Government Indian and Northern Affairs Canada

- 4. I am a member of the Yukon Chamber of Mines.
- 5. I am employed by Archer Cathro and Associates (1981) Ltd.
- 5. I have no direct or indirect interest in the properties or securities owned by Boulder Mining Corporation, nor do I expect to receive any.
- 6. The work described in this report is based on field work conducted September 9<sup>th</sup> to October 11, 2005 conducted by myself.
- 7. I am the author of this report.

Dated at Whitehorse, Yukon Territory this  $\frac{1/2}{2}$  day of October, 2005.

Respectfully submitted. un

Rick J. Zuran, B.Sc.

ADDENDUM - A: Rock and Soil Analytical Results

As a follow up to the

Indian River Gold Project Report

By: Rick J. Zuran ARCHER CATHRO & ASSOCIATES (1981) LTD.

For :

Boulder Mining Corporation Suite 800 – 850 West Hastings Street Vancouver, B.C., V6C 1E1

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		<b>X</b> Regular	<b>RUSH</b> by this d	date: /	1	Submittal Date: 11/10 / 2005
te de la companya de la companya			Rick Zuran	Project: Ind	ian River	PO #:
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	BOULDER MI		ORATION	Company:		
1	300-850 West			Address:		
	/ancouver, Bri		<u> </u>			
, <del></del>	John McAdam			Attn:		,,,
	604-899-4300		-899-4303	Phone:	·······	Fax:
		Diskette	Modem X Fax: 60	04-899-430	3 X F-mail	jmcadam@bouldermining.com
		District				<u> </u>
Type of	Number of	Sa	mple Sequence	Prep	Analytical Packag	ge Remarks
Sample	Samples		From - To	Code	or Elements Want	ted (ie. Specify package options)
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SOIL	6	18	419 - 18424	SS80	GROUP 1DX (ICP (35 + Au)	P-MS) 36 elements; 30 g sample
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**Maccept the terms and conditions printed on the reverse of this form and hereby** request Acme Analytical Laboratories Ltd. to conduct the above specified analyses.

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(Must be signed for analysis to start)

ACME ANALYTICAL LABORATORIES LTD. (ISO 9001 Accredited Co.) 852 E. HASTINGS ST. VANCOUVER BC V6A 1R6 PHONE (604

PHONE (604) 253-3158 FAX (604) 253-1716

acky Wan

GEOCHEMICAL ANALYSIS CERTIFICATE

y kaj	Boulder Mining Corp. PROJECT Indian River File # A506887	Page
	800 - 850 it Montings St. Vancouver BC V6C 151 Submitted by: Pick Zuran	, 이상 영향은 소리가 영향을 받았다.

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	7106 7107 7108 7109 7110	2.5 .7 1.1	36.1 9.0 44.3	7.7 21.6 5.7	28 8 89	.2 <.1 < 1	5.4 2.0 34.0	2.2 .9 6.4	153 32 158	2.13 .49 2.88	2.7 3 .5 <.5 1	.1 2 .8 .4 <	.39 .62 .56	.2 .5 .8	20 <. 14 <. 4 .	1 . 1 . 1 .	8.3 1.1 2.1	36 3 50	.20 .07 .14	.090 .022 .067	21 8 19	20.3 4.8 37.0	.53 .10 .53	65 89 87	.005 .004 .091	21 1 11	.03 . .50 . .54 .	008 009 011	.32 .20 .49	.1 .01 .1<.01 .1<.01 .1 .01 .1 .03	1.5 .6 2.1	.2 .3 .1 .0 .2<.0	33 71 55	1.0 .5 .9	4.36
	7111 7112 7113 7114 7115	3.5 1.5 3	5.2 32.1 56.2	10.2 9.5 7.5	23 44 132	<.1 .2 <.1	1.6 11.5 73.7	1.5 1.6 35.6	275 29 697	.65 1.41 6.13	1.25 3.53 1.2	.7 < .0 .9 1	.5 13 .5 9 .9	.5 .4 .5	24 . 13 . 27	2. 1. 4.	1.2 1.1 2.1	1 6 190 :	.46 09 1.15	.005 .038 .078	22 4 6	1.6 6.7 206.6 2	.17 .03 2.46	313 242 495	.001 .001 .120	2 <1 <1 3	.52 . .43 . .24 .1	008 023 050	.29 · .14 .49	<.1 .11 <.1<.01 .1 .12 .1 .02 <.1<.01	1.1 .8 22.6	.1 .0 <.1 .0	8 1 7 1 5 10	<.5 1.2 <.5	2.95 2.56 2.98 2.36 2.99
	7116 7117 7118 7119 RE 7119	.9 .2 4 4	1.6	14.5 4.3 23.4	55 3 63	.2 <.1 2	11.2 .7 3.0	4.0 .3 3.0	160 218 303	1.53 .27 1.49	<.51	.1 8 .6 2 .3 4	.6 8 .2 1 .9 34	.6 .7 .0	10 . 2 <. 7 .	1 . 1 < .: 1	31.0 1.5 5.4	41 1 4	.18 .12 .17	.075 .049 .020	18 3 47	31.8 6.5 4.8	.31 .01 .07	144 10 80<	.091 .002 .001	1 1 1	.87 . .24 . .40 .	011 038 012	.50 .11 .19	.3 .01 .2 .01 .2<.01 .1 .16 .1 .15	2.7 .8 3.1	.6 .0 .1<.0 .1<.0	63 51 51	1.4 <.5 <.5	1.99
	7120 7121 7122 7123 7124	.8 2.0 2	28.3 45.0 16.7	6.3 11.2 9.7	93 120 40	<.1 .2 <.1	50.1 35.7 9.6	28.7 10.4 3.1	692 571 155	5.51 3.50 1.04	10.31 .81 .5	.0 < .5 < .6 3	5 1 5 12 0 1	.41 .4 .4	00 . 13 . 4 .	2 .	1.3 2.3 1.2	119 2 35 10	2.18 .51 .05	.241 .089 .016	22 32 4	98.7 2 18.5 11.3	2.19 .42 .06	232 150 48	.085 .026 .018	12 21 3	.17 . .04 . .32 .	218 009 003	.27 • .37 .13	.1 .27 <.1 .06 .1 .03 .1 .01 .1<.01	12.9 4.2 1.4	.3<.0 .3<.0	58 53 51	<.5 .7 <.5	2.60 5.10 3.99 2.86 2.96
	7125 7126 7127 7128 7129	1.0 1.4	2.4	20.9 15.6 10 1	10 8 106	.4 .4 < 1	.9 13.6	15 4	18 11 423	.38	3.8 2.0 7	.32	0 5 1 5 4	.5 .5 .7	6 <. 4	1.	5.1 3.2	4 7 74	.06 .01 .30	.007 .017 .109	1 5 15	13.8 11.5 28.7 2	.01 .01 2.95	27 69 738	.001 .002 .245	<1 1 1 3	.09 .0 .17 .0 .82 .0	003 008 071 2	.06 .13 2.23 •	<.1 .03 .3 .05 .1 .18 <.1 .02 .1 .19	.6 .6 12.5	.1 .0 .1 .0 .1 .0 .4 .0 .7 .1	7 <1 7 <1 8 12	.8 1.1 .8	2.17 2.55 2.77
	7130 7131 7132 7133 STANDARD DS6	1.1 .7 1.0	10.6	4.1 5.3 9.0	334 103 115	<.1 <.1 <.1	72.4 22.8 44.7	26.5 6.2 22.9	909 980	3.22 1.60 4.36	<.52 <.51 1.2	.2 1 .1 .9	1 7 9 5 6 5	.6 .1 .2	11 . 8 . 51 .	34.1 13.0	2.2 5.1 2.2	15 8 121	.11 .05 L.35	.036 .027 .071	21 17 16	12.9 15.2 203.3 2	.08 .06 2.39	78 46 921	.004 .005 .189	2 1 1 3	.41 . .29 . .10 .	006 002 049 1	.12 .10 .70	.1 .02 .2 .30 .2 .30 .1 .01 3.5 .22	3.0 1.7 15.6	.5<.0 .5<.0 .4<.0	51 51 58	<.5 <.5 <.5	2.82 2.17 3.05 4.69

GROUP 1DX - 30.0 GM SAMPLE LEACHED WITH 180 ML 2-2-2 HCL-HNO3-H20 AT 95 DEG. C FOR ONE HOUR, DILUTED TO 600 ML, ANALYSED BY ICP-MS. (>) CONCENTRATION EXCEEDS UPPER LIMITS. SOME MINERALS MAY BE PARTIALLY ATTACKED. REFRACTORY AND GRAPHITIC SAMPLES CAN LIMIT AU SOLUBILITY - SAMPLE TYPE: Rock R150 <u>Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.</u>

DATE RECEIVED: OCT 24 2005 DATE REPORT MAILED: / FA Data |

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Boulder Mining Corp. PROJECT Indian River FILE # A506887

 Page 2

 Na K W Hg Sc T1 S G

ACME ANALYTICAL

Data AFA

ACME ANALYTICAL																																					
SAMPLE#	Mo ppm										e As S ppm			Th ppm						Ca %		La ppm	Cr ppm	Mg %	Ba ppm	Ti %∣	B A opm	1 %			W H pm pp	5			Ga S ppm p		ample kg
7134 7135 7136 7137 7138	1.0 1.7	39. 146. 90	8 7 6 21 1 7	.52.	215 299 19	.1 5	59.7 58.6	29.7 15.0 24.0	1780 712 880	) 3.78 2 2.77 ) 5 53	3 3.5 7 1.7 3 2 2	1.7 6.4 2.6	7.8 11.1 3.6	8.7 10.5 7.3	31 6 24	1.0 1.6 .2	1.8 2.0 .1	.2 .2 .3	19 15 147	. 34 . 30 . 48	.041 .048 .176	17 28 22	15.5 10.9 54.5	.45 .10 1.60	79 83 969	.001 .001 .288	2 .4 2 1.2 1 2.5	17 .0 24 .0 57 .0	108 103 135 1	.17 .19 .81	.1 .1 .1 .0 .1 .0	6 4. 5 4. 1 10	.0. .5. .8.	.2 .09 1 .11 .8<.05	9 < 1 1 1 2 11 1 <	.U .3 .6	3.48 2.64 3.23
7139 7140 7141 7142 7143	1.2 5.6 .5	116	8 2 0 10 3	.6 .7 .2	28 < 25	<.1 2 .2 <.1	21.2 3.8 2.1	7.8 4.0	1192 192 139	2 1.19 2 .70 3 .39	1.3 1.2	1.1 1.8 .4	1.9 126.6 1.0	1.1 13.5 <.1	6 10 1	.1 2. 2.>	<.1 .1 .1	.1 7.9 <.1	20 2 1	.05 .24 .01	.013 .007 .003	3 43 <1	23.9 10.0 18.0	.18 .04 .01	250 128 20	.016 .001 .001	1 .0 2 .3 1 .2 <1 .0 <1 .0	36 .0 25 .0 22 .0	103 129 101	.16 < .12 .01 <	:.1 .0 .1 .0 :.1<.0	1 3. 2 . 1 .	.0 .5 .1 <.	1<.05 1<.05 1<.05	<pre>&lt;1 &lt; 2 &lt; 5 &lt;1 &lt; &lt;1 &lt; &lt;1 &lt; &lt;1 &lt; 5 &lt;1 &lt; 5 &lt;1 &lt; 5 &lt;1 &lt; &lt; &lt;1 &lt; &lt;</pre>	.5 .9 .5	2.21 3.02 2.78
7144 7145 7146 7147 RE 7147	.9 .4 1 0	42. 7.	9 11 4 20 9 13	.41	.20 44 < 33	.2 4 <.1 2	40.3 20.3 27 1	12.9 4.9	362 2887 236	2 3.52 7 1.06 5 3.07	2 4.0 5 2.9 7 4 6	1.9 1.3 2.8	9.2 1.6 2.4	15.8 1.5 10.2	6 13 11	.2 .2 .1	.4 .5 .2	.2 .1 .2	53 8 45	.19 .47 .20	.106 .038 .081	46 15 15	37.3 14.3 31.8	.65 .09 .55	271 122 207	.181 .002 .157	1 .3	52 .0 39 .0 36 .0	10 1 04 09	01 .06 < .85	1 .0. 1 .0: 1 .0. 1 .0	$   \begin{array}{ccc}     1 & 3 \\     1 & 1 \\     1 & 2   \end{array} $	.0 .4 <. .6	.5<.05 .1<.05 .5 .13	552	.3 .5 .7	2.77 2.68 3.10 3.33
7148 7149 7150 7151 7152	.4 .5 1 1	48. 68. 2	81 39 8	.0 .7 2 4	42 27 6 <	.4] .87 <1	14.3 70.1 4.2	2.7 12.0	358 1296 112	3.63 53.00 2.42	47	1.1 1.5 .1	<.5 .9 1.7	.6 2.4 .1	5 9 1	.1 1.1 .1	.1 .4 .1	<.1 .1 <.1	7 28 4	.20 .05 .01	.083 .017 .003	2 4 1	16.8 17.8 15.7	.02 .04 .06	64 104 15	.002 .003 .002	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	L7 .0 33 .0 L0 .0	101 102 103	.04 .08 < .01	1<.0. 1.1.0 1<.0.	1 2 3 1	.8 <. .0 . .3 <.	.1<.05 .1<.05 .1<.05	5 <1 < 5 1 5 <1 <	.5 .7 .5	2.99
7153 7154 7155 7156 7157	2.0	16. 46	8 81 5 62 4 11	.3 .3 1	87 28 62	.9 .5 3	5.7 4.2 7.6	1.3	145 54	5 2.6	20	1.2 .9 1.3	4.3 2.2 1.6	8.9 4.9 5.4	23 30 16	.1 .1 < 1	1.6 1.1	.6 .3 .4	21 11 15	.06 .03 .03	.049 .040 .053	13 9 12	19.8 12.8 19.3	.13 .02 .20	165 149 74	.012 .002 .020	2 .9 2 .9 1 .3 1 .4 1 .9	51 .0 30 .0 46 .0	)10 )08 )09	.41 .35 .34	.1 .4 .3 .3 .2 .1	51 81 41	.9. .1. .8.	.7 .55 .3 .47 .3 .39	5 32 7 12 9 22	.0 .2 .5	
7158 7159 7160 7161 7162	3.6 12.7 2.7	54. 126. 41	6 5 3 11 4 11	.41 .14 4	.20 45 37	.1 2	22.2 76.6 4 7	6.8 9.4 2.9	298 793 217	3 2.32 3 2.94 7 1.83	4 2.1 3 1.9	2.6 3.9 3.2	1.4 2.6 2.9	1.9 5.5	16 40 50	.3 4.6 .1	.4 2.3 2.6	.2 .4 : .3	85 112 39	.12 .60 .11	.060 .045 .058	16 4 16	31.3 22.0 19.4	.64 .21 .38	212 82 94	.081 .001 .040	2 .3 1 1.2 2 .3 1 .6 2 .2	25 .0 32 .0 57 .0	12 102 106	.65 .08 .46	.1 .0 .2 .1 .1 .4	12 75 52	.7. .6. .2.	.3 .07 .1 .13 .7 .32	7 4 3 14 2 31	.6 .8 .6	1.95 3.85
7163 7164 7165 7166 STANDARD DS6	2.4 .2	38. 2. q	825 22 19	.51 .0 8	.15 5 < 49 <	.25 <.1	55.1 1.9	17.1	2887 78 411	8.46 3.30 1.20	5 11.3 3 1.0 3 3 1	3.3 .1 1.0	.8 5. <.5	12.1 .3 17.7	49 3 11	.6 <.1	.7 .1	.5 <.1 .1	51 2 1 9	2.06 .14 .49	.797 .002 .066	21 2 40	37.8 10.5 14.4	.38 .01 .12	343 12 93	.008 .001 .033	1 .2 2 2.1 <1 .0 1 .9 17 1.9	LO .0 )3 .0 55 .0	126 102 116	.22 < .02 < .33 <	<.1 .1 <.1<.0 <.1<.0	8 8 $     1 1$	.9 .2<. .5	.2<.05 .1<.05 .1<.05	5 71 5 < 1 < 1 5 1	.3 .5 .5	2.02 2.78

Sample type: Rock R150. Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of the analysis only.

Boulder Mining Corp. PROJECT Indian River FILE # A506887

ACHE ANALYTICAL

Data AFA

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SAMPLE#	Mo ppm	Cu ppm	Pb ppm		-	Ni ppm	Co ppm	Мn ppm	Fe %	As ppm	U ppm	Au ppb		Sr ppm		Sb ppm p	Bi pm pp	V m	Ca %	PLa %ppm			Ba ppm	11 %	B ppm	A I %	Na %			ig Sc om ppn			opm ppm	Sample kg
7167	6	15.1	15.0	108	1 1	57	67	714 2	00	8 2	12	< 5	14 2	q	3	3	2 1	2	42 .0	)40 38	15.1	. 16	92	.027	2	.57	.014	.31 <	1.0	1 2.8	.2	<.05	2 2.4	2.36
7168								853			2.5	.0	2 7	27	5	.8	1 5	8 1	20 1	L26 14	25.5	5.38	969	.006	2	.51	.004	.14 <	1.0	7 4.9	.2	<.05	21.4	2.68
7169		46.8			1		3.8										.0			011 22						.34	.025	.16	1.0	3.5	5.1	<.05	1 1.2	2,32
		40.0			.1			÷ .						-			.1																	2.19
7170 7171				-	. –			38						_			.9		.01 .0	002 7	11.6	5 .01	19	.002	ī	.14	.002	.04 <	1.0	.9	<.1	<.05	<1 <.5	2.04
7172	3	1.6	46	5 -	< 1	17	.4	14	.25	3.4	.3	1.8	.5	4	<.1	1.2	.1	3	.01 .0	)01 1	6.9	9.01	64	.001	1	.15	.002	.08 <	1.0	6.5	5 <.1	<.05	<1 <.5	2.31
7173								134 1											.05 .0	008 5	18.2	2.17	63	.003	1	. 66	. 005	.06 <	1.0	)6 2.1	<.1	<.05	3 <.5	1.02
7174								248											.15 .0	008 6	24.3	3.28	277	.006	11	. 37	,006	.11 <	1.0	)2 3.5	5 .1	<.05	5 <.5	.63
7175		10.0	5 9	52.	< 1 3	85	13.0	7126	20	4 3	4	<.5	3.4	81	.3	.2	.1 2	2 11	.24 .0	031 15	23.0	.38	452	.005	1	.93	.009	.10 <	.1.2	26 3.8	3.1	<.05	3 <.5	2.24
STANDARD DS6	.0	12/ 2	20.0	111	2 3	24 6	10.8	717	84	20 7	6 6	46 7	29	40	60	3 4 5	0 5	6	86 0	78 13	186.2	2.59	165	.081	16 1	.93	.073	.14 3	6.2	24 3.2	2 1.8	<.05	6 4.7	-

Sample type: Rock R150.

	ANAI (ISO									8	e en e	e. Ha Eoch					영화는	승수의	같은 것		GA ICA	n ngangar Tinggangar		PH	ONE	(60	4)25	3-3	158	<b>F</b> A	X (6	504)	253	-17	16
						Bo	oulo	<u>ler</u>	<u>Mi</u> 800	<u>nin</u> - 85	ug ( 0 W.	Corp Hastir	<u> </u>	<u>ROJ</u> , V	EC1 ancou	' <u>I</u> ver	ndi sc v	.an 60 1	<u>Ri</u> E1	ver Submi	F tted			A5 Zura		388								L	Τ
SAMPLE#	Mo	Cu ppm	Pb ppm	Zn ppm		Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppb p				Bi ppm	V ppm	Ca %		La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W Ppm	Hg ppm	Sc ppm		S %	Ga ppm	Se ppm
G-1 18419 18420 18421 18422	2.7	1.8 33.9 2.1 27.7 21.0	7.7	46 99 10 89 48	.3 .2 .4		.8 11.3	250 18 232	1.24 .27 1.26		3.6 .9 2.5	<.5 3 7.7 2 1.4 1 3.4 6 1.2 4	.9 1 .1 .5 1	4 .4 4 .1 0 .4	<.1 4.6 4.7 2.6 1.6	.2 .1 .3	25 4 15	.23 .04 .14		4 2 13	69.1 14.8 2.8 7.0 6.1	.08 .03	61 28< 58	.112 .001 .001 .003 .001	1 1 1 1	.16 .06 .14	.051 .003 .002 .005 .004	.08 .06 .15	.1 .1 .1	.01 .33 .23 .14 .11	5.9 .4 3.9	.1 .1 .3	<.05 <.05 <.05 <.05 <.05	4 1 <1 1 1	<.5 1.6 10.5 1.2 .7
18423 18424 STANDARD	1	15.0 17.9 121.5	14.7	53	.2		7.4	163	1.41	9.7	2.7	2.0 4 2.3 4 46.7 2	.0 1	1.2	1.4 1.0 3.4	.2	10	.12	.007 .004 .076	7	6.7 7.0 182.4	.05	53	.003 .001 .080	1 1 16	.17		.09 .09 .14	.1	.11 .08 .23	4.0	.1	<.05 <.05 <.05	1 1 6	.6 .6 4.2

Standard is STANDARD DS6.

GROUP 1DX - 30.00 GM SAMPLE LEACHED WITH 180 ML 2-2-2 HCL-HNO3-H20 AT 95 DEG. C FOR ONE HOUR, DILUTED TO 600 ML, ANALYSED BY ICP-MS. (>) CONCENTRATION EXCEEDS UPPER LIMITS. SOME MINERALS MAY BE PARTIALLY ATTACKED. REFRACTORY AND GRAPHITIC SAMPLES CAN LIMIT AU SOLUBILITY. - SAMPLE TYPE: Soil SS80 60C Nov15/2005

Data FA

DATE RECEIVED: OCT 24 2005 DATE REPORT MAILED:



ADDENDUM - B: Vancouver Petrographics Report

As a follow up to the

# Indian River Gold Project Report

By: Rick J. Zuran ARCHER CATHRO & ASSOCIATES (1981) LTD.

For :

Boulder Mining Corporation Suite 800 – 850 West Hastings Street Vancouver, B.C., V6C 1E1



# Vancouver Petrographics Ltd.

8080 GLOVER ROAD, LANGLEY, B.C. V1M 3S3 PHONE: 604-888-1323 • FAX: 604-888-3642 email: vanpetro@vanpetro.com Website: www.vanpetro.com

Report 050821 for

Jim Grinell Boulder Mining Corp. 800-850 West Hastings Street Canada, V6C 1E1

November 15, 2005

**Project: Klondike Gold** 

Samples:

Z-663; 7155 Z-637; 7119 Z-717-F Z-687 Z-654; 7118 Z-717-J Z-663; 7158 Z-649 Z-679 Z-694 Z-694

# **Photographic Notes:**

The scanned sections show the gross textural features of the sections; these features are seen much better on the digital image than on the printed image. Sample numbers are shown in or near the top left of the photos and photo numbers at or near the lower left. The letter in the lower right-hand corner indicates the lighting conditions: P = plane light, X = plane light in crossed nicols, R = reflected light. Locations of digital photographs (by photo number) are shown on the scanned sections. Descriptions of individual photographs are given at the end of the report.

# Summary

Sample Z-663-7155 contains relic, granulated megacrysts of K-feldspar and plagioclase set in a groundmass of quartz, accessory white mica (sericite) and minor epidote. Plagioclase and K-feldspar crystals display moderate alteration to quartz-sericite. Abundant veinlets and replacement patches are of quartz, sericite and cryptocrystalline jarosite.

Sample Z-637-7119 is a metamorphosed quartz monzonite that contains 15-20% relic megacrysts and crystal aggregates of quartz, K-feldspar, and graphic intergrowths of plagioclase and quartz, in which plagioclase was altered moderately to sericite. These are set in a K-feldspar-rich groundmass. Muscovite forms minor pseudomorphs after biotite.

Sample Z-717-F is mylonitic feldspar-quartz gneiss (protolith quartz monzonite) containing commonly twinned, relic K-feldspar megacrysts that are set in a fine-grained groundmass of quartz and white mica. Much of the mica defines a pervasive foliation and "drapes" K-feldspar relics. Quartz in polycrystalline relics displays undulose extinction. Hematite fills micro fractures in local, amorphous patches.

Sample Z-687 contains relic quartz, predominantly composite crystals, set in a quartz-rich groundmass with interstitial biotite and muscovite, which define a penetrative foliation. Late muscovite porphyroblasts overprint the foliation. Microcrystalline aggregates of quartz and of K-feldspar and composite megacrysts may represent grain-size reduction or dynamic recrystallization during progressive shear.

Sample Z-654-7118 contains relic, albite twinned, plagioclase megacrysts and garnet porphyroblasts in a foliated quartz-mica groundmass. Plagioclase megacrysts were intensity granulated.

Sample Z-717-J is schist that contains chlorite, biotite, and abundant sphene in a groundmass of plagioclase and quartz. Biotite porphyroblasts were altered moderately to chlorite. Plagioclase was altered moderately to sericite and commonly was granulated. Quartz commonly forms sub-mosaic patches and displays weak undulose extinction.

**Z-663-7158** contains relic megacrysts of tourmaline and K-feldspar and sub-mosaic domains of quartz that are set in a foliated, very fine-grained sub-mosaic groundmass of quartz and lesser muscovite. K-feldspar megacrysts and crystal patches show ragged, tartan-twins and were intensely granulated. Quartz domains have undulose extinction and were granulated moderately. Muscovite is concentrated moderately in lenses parallel to foliation and is intergrown with quartz.

Sample Z-649 is a foliate dominated by very fine-grained quartz and K-feldspar with interstitial, parallel muscovite plates/patches, which define a subtle foliation. Disseminated sphene is common and zircon is rare. Dusty hematite forms local patches in the groundmass.

Sample Z-679 is a cataclastite that contains composite crystals of quartz set in a quartz-plagioclase groundmass with accessory muscovite. Plagioclase displays moderate sericite alteration. Muscovite and rare chlorite form interstitial, disseminated, unoriented patches. Disseminated hematite blebs are common in the groundmass.

**Sample Z-694** is a marble composed of a mosaic of equant, interlocking grains of twinned calcite intergrown with less abundant, smaller, interstitial grains of calcite. Muscovite forms disseminated flakes. The protolith was a layered, limestone with trace amounts of clay minerals.

Sample Z-696-7148 is quartz-mica schist that is dominated by bands of submosaic quartz containing patches and disseminated lenses of muscovite and biotite. Micas are concentrated in a few, lenses that are sub-parallel to foliation. Sphene forms anhedral masses, commonly within mica-rich bands. Microcrysts of hematite are finely disseminated. Minor graphite forms clusters of flakes that outline tight shear folds. Rare chalcopyrite forms anhedral blebs.

David Trippett 1-(425)-501-0959 avitripp@gmail.com

#### Sample Z-663-7155

# K-feldspar and Plagioclase Schist; Veinlets of Quartz, Muscovite/Sericite alteration

Relic, granulated megacrysts of K-feldspar and plagioclase are set in a groundmass of quartz, accessory white mica (sericite) and minor epidote. Plagioclase and K-feldspar crystals display alteration moderately to quartz-sericite. Abundant veinlets and replacement patches are of quartz, sericite and fine-grained jarosite.

mineral	percentage	main grain size range (mm)
Quartz	38-40%	0.1-1.5
K-feldspar	27-29	0.5-2.0
Plagioclase	10-12	0.5-2.0
Epidote	Trace	
VEINLET		
Mica (Sericite)	9-11	0.1-1.0
Quartz	3-5	
Jarosite	6-8	< .01-Cryptocrystalline

K-feldspar forms granulated megacrysts, some of which show tartan twinning and patchy cores.

Muscovite/Sericite intergrowths are common within K-feldspar crystals and many are parallel to cleavage.

Plagioclase forms granulated crystals and crystal clusters distinguished by albite and Carlsbad twinning. They were replaced moderately to highly by disseminated flakes of sericite/muscovite. Some crystals were replaced moderately by muscovite/sericite intergrowths parallel to cleavage in plagioclase.

In the groundmass, quartz forms aggregates of roughly equant, interlocking grains that display undulose extinction.

Muscovite/Sericite forms disseminated grains mainly within plagioclase-quartz aggregates.

Muscovite/Sericite/Quartz and Jarosite form abundant veinlets up to 0.05 mm wide, most of which are subparallel to foliation.

Moderate sericite alteration overprints the feldspar megacrysts.

#### Sample Z-637-7119

# **Metamorphosed Quartz Monzonite**

(The original rock was medium to coarse grained as represented by the megacrysts)

The sample is a metamorphosed quartz monzonite that contains 15-20% relic megacrysts and crystal aggregates of quartz, K-feldspar, graphic intergrowths of plagioclase and quartz (in which plagioclase was altered moderately to sericite), and minor flakes of biotite (altered to pseudomorphic muscovite). These are set in a groundmass dominated by K-feldspar, Quartz with minor muscovite/sericite and hematite.

mineral	percentage	main grain size range (mm)
MEGACRYSTS		
K-feldspar	28-30%	0.5-2.0
Quartz	18-20	0.1-1.5
Biotite porphyroblasts	7-8	0.5-1.0
Plagioclase	6-7	0.5-2.0
GROUNDMASS		
K-Feldspar	18-20	
Quartz	8-10	0.1-1.5
Plagioclase	3-5	0.5-2.0
Biotite/Muscovite	2-3	0.5-1.0
Hematite	2-3	0.3-0.05

K-feldspar forms relic megacrysts distinguished by cleavage and rare hematite intergrowths as well as rare tartan twinning. Sericite and muscovite intergrowths occur commonly within K-feldspar crystals parallel to cleavage.

Quartz forms coarse, euhedral, disseminated megacrysts.

Plagioclase forms relic, Carlsbad-twinned crystals and crystal clusters that are tabular in habit. They were replaced wholly by sericite.

Muscovite replaces biotite porphyroblasts.

The groundmass is dominated by K-feldspar (see stained off-cut) with disseminated, anhedral grains of muscovite/sericite and fine-grained, disseminated quartz.

Plagioclase forms fine disseminated crystal patches.

Hematite forms interstitial, anhedral masses up to 0.4 mm across.

Biotite forms anhedral grains that were replaced completely by pseudomorphic muscovite and patches of hematite.

#### Sample Z-717-F

# Mylonitic K-Feldspar-Quartz Gneiss K-feldspar megacrysts

The sample is mylonitic K-feldspar-quartz gneiss (protolith quartz monzonite?) that contains relic, commonly twinned, K-feldspar megacrysts and polycrystalline relics of quartz in a fine-grained groundmass of quartz and white mica. Mica defines a pervasive foliation that "drapes" K-feldspar megacrysts. Hematite fills micro fractures in local, amorphous patches.

mineral	percentage	main grain size range (mm)
RELICS		
K-feldspar	32-35%	3.0-7.0
Aggregate Quartz	13-15	1.0-2.0
GROUNDMASS		
Quartz	33-35	0.05-0.005
K-feldspar	8-10	0.5-0.05
Muscovite/Sericite	8-10	0.2-0.7
Zircon	trace	.03
Apatite	trace	.1
VEINS		
Hematite	<1%	Amorphous, Cryptocrystalline

K-feldspar forms relic megacrysts, many of which are twinned and altered moderately to sericite and contain common mineral inclusions of mica. K-feldspar megacrysts display no internal deformation but were rotated slightly during shear.

Quartz forms composite relic crystals or polycrystalline aggregates that display undulose extinction and sutured boundaries, likely formed during dynamic recrystallization.

In the groundmass, quartz forms roughly equant, interlocking aggregates intergrown intimately with similar grains of muscovite.

Muscovite forms disseminated, interstitial flakes that define a penetrative foliation that is draped around K-feldspar megacrysts.

K-feldspar is abundant in the groundmass as evidenced from the yellow stain on the off-cut block.

Zircon and apatite form rare subhedral crystals-

Hematite fills discontinuous, late, sub-parallel micro-fractures that crosscut foliation and also forms amorphous patches and "dusty" staining near these micro-fractures.

# Quartz-Mica Schist; Quartz relics

Relic, predominantly composite crystals of quartz are set in a groundmass of quartz with interstitial biotite and muscovite and minor feldspars. Lenses and seams of biotite and muscovite define a penetrative foliation that is overprinted by muscovite porphyroblasts. Microcrystalline aggregates of quartz and K-feldspar may represent grain-size reduction or dynamic recrystallization during progressive shear.

mineral	percentage	main grain size range (mm)
RELICS		
Quartz	8-10%	1.0-2.0
K-feldspar	2-3	0.1-0.2
GROUNDMASS		
Quartz	60-62	0.05-0.01
Biotite	10-12	0.1-0.5
Muscovite	6-8	0.1-0
K-feldspar	3-4	0.1-0.01
Plagioclase	3-4	0.1-0.5
Semi-opaque	1	0.1
Zircon	0.1	Up to 0.04
Apatite	Trace	0.05

Quartz forms composite or polycrystalline, megacrystic aggregates 1-2 mm long that display undulose extinction and sutured boundaries.

K-feldspar forms composite patches, most likely a result of dynamic recrystallization and grainsize reduction during shear.

In the groundmass, quartz forms aggregates of roughly equant, interlocking grains.

Biotite and Muscovite form interstitial flakes that are concentrated in regular bands and form folia up to 1 mm long in the groundmass.

Plagioclase forms disseminated grains that were altered weakly in patches to sericite.

K-feldspar forms fine-grained, disseminated patches in the groundmass.

Zircon and apatite form rare scattered subhedral single crystals.

Semi-opaque minerals (most likely leucoxene) form disseminated patches up to 0.1mm.

#### Sample Z-654-7118

# Plagioclase-Quartz-Muscovite-Garnet Schist

Relic megacrysts of plagioclase and porphyroblasts of garnet are set in a foliated groundmass of quartz and white mica. Plagioclase megacrysts were intensity granulated.

mineral RELICS/PORPHYROBLASTS	percentage	main grain size range (mm)
Plagioclase	42-44%	3.0-7.0
Garnet	5-7	4.0-2.0
GROUNDMASS		
Quartz	33-35	0.05-1.5
Muscovite	12-14	0.01-1.2
REPLACEMENT		
Quartz	2-3	0.01-0.05
K-feldspar	0.8	0.03-0.05

Plagioclase forms relic, albite-twinned megacrysts, many of which were altered moderately to patches of sericite and disseminated flakes of muscovite.

Garnet forms porphyroblasts, many of which contain inclusions of quartz and mica intergrowths along fractures.

In the groundmass, quartz forms aggregates of roughly equant slightly interlocking to submosaic grains that display weak undulose extinction. Quartz is intimately intergrown with muscovite "folia" and patchy sericite.

Muscovite forms disseminated, anhedral, interstitial grains and unoriented patches up to1 mm across. It also is concentrated in irregular unoriented muscovite flakes within feldspar and forms folia within quartz, defined by interstitial and intracrystalline flakes. Muscovite folia are draped around garnet grains.

Rarely, K-feldspar and quartz replace plagioclase in irregular patches.

#### Sample Z-717-J

# Biotite/Chlorite-Quartz-Plagioclase-Actinolite-Sphene Schist

Biotite/chlorite and abundant sphene are set in a groundmass of plagioclase and quartz. Biotite porphyroblasts were altered to pseudomorphic chlorite. Plagioclase was altered to sericite and much of it was granulated. Quartz is common in sub-mosaic patches and displays weak undulose extinction.

mineral	percentage	main grain size range (mm)
Biotite	43-45%	0.08-0.2
Quartz	18-22	0.1-0.2
Plagioclase	16-18	0.1-0.5
Actinolite	7-8	0.4-0.3
Sphene	4-6	0.01-0.03
Biotite megacrysts	4-5	1.0-3.0
Opaque	2-3	0.05-0.3
Zircon	Trace	0.05

Biotite forms a few megacrysts that overprint the foliation and are pseudomorphed by chlorite.

Chlorite forms flakes, coarsely intergrown with and commonly replacing primary biotite. Pleochroism is from light to medium yellowish green.

Quartz forms disseminated grains and a few patches interstitial to chlorite and biotite. Quartz forms sub-mosaic patches of interlocking, equant grains many of which are associated with altered plagioclase.

Plagioclase forms patchy, granulated masses within the groundmass. These relict grains are altered strongly to sericite and many display a cloudy appearance.

Actinolite forms subhedral prismatic crystals with pleochroism from pale to light green; it is intergrown coarsely with chlorite.

Sphene forms, disseminated anhedral crystals mainly associated with chlorite as an alteration product of biotite.

Opaque minerals form disseminated, anhedral to cryptocrystalline patches. Hematite also forms reddish "staining" associated with patches of altered plagioclase and quartz.

Zircon forms rare, subhedral crystals.

#### Sample Z-663-7158

# Tourmaline-bearing Quartz-Muscovite-Feldspar Schist Relic Quartz and K-feldspar

Relic megacrysts of tourmaline and K-feldspar and sub-mosaic domains of quartz are set in a foliated, very fine-grained sub-mosaic groundmass of quartz and lesser muscovite. K-feldspar megacrysts and crystal patches show ragged, tartan-twinned crystals and were strongly granulated. Quartz domains have undulose extinction and were granulated moderately. Muscovite is concentrated moderately in lenses parallel to foliation that is intergrown with quartz.

mineral	percentage	main grain size range (mm)
RELIC MEGACRYSTS		
Quartz	38-40%	0.01-0.07; 0.1-0.4
K-feldspar	5-7	0.3-2.4
Tourmaline	3-4	1.0-2.0
GROUNDMASS		
Quartz	32-34%	0.01-0.07; 0.1-0.4
Muscovite	13-15	0.01-0.3
Plagioclase	4-6	0.1
Sphene	Trace	Cryptocrystalline

Quartz forms coarse grained, sub-mosaic "domains" or bands up to 1.5 mm with weak undulose extinction.

K-feldspar forms ragged, patchy, tartan-twinned relict crystals that were granulated strongly and contain ragged inclusions of muscovite.

Tourmaline forms megacrysts that have light yellow/green to medium/dark green pleochroism. Muscovite is common along fractures in tourmaline.

In the groundmass, quartz forms aggregates of roughly equant interlocking to sub-mosaic grains that contain folia of muscovite parallel to foliation.

Muscovite forms wispy lenses that define the foliation and also is intergrown in the sub-mosaic quartz groundmass.

Plagioclase forms composite crystal patches with muscovite/sericite flakes as selvages between plagioclase grains.

Sphene forms rare, disseminated cryptocrystalline blebs.

# K-feldspar-Quartz-Muscovite Schist Quartz Veinlet

Scattered composite crystal patches of quartz are set in a groundmass dominated by K-feldspar, with much less abundant quartz and interstitial, parallel muscovite flakes/lenses, which define a subtle foliation, and minor rutile. Dusty hematite is present locally in the groundmass

mineral	percentage	main grain size range (mm)
MEGACRYSTS Quartz	15-17	0.2-1.5
AGGREGATES Quartz	32-35	0.1-0.2
GROUNDMASS		
K-feldspar	37-39	0.3-0.5
Muscovite	5-7	0.1-0.2
Hematite	2-3	Cryptocrystalline
Rutile	0.8	0.1-0.2
Zircon	Trace	0.05
Tourmaline	Trace	0.2
Apatite	.1	0.1
VEINLET		
Quartz	2-3	
Rutile	<0.1	

Quartz forms large-grained, composite crystal patches that display weak undulose extinction. Quartz forms an aggregate of sub-mosaic to interlocking equant grains.

In the groundmass, K-feldspar forms fine-grained, interlocking, sub-mosaic crystals; its presence is seen best in the stained off-cut block.

Muscovite forms disseminated, subparallel flakes that define a subtle foliation.

Rutile forms single crystals disseminated about the groundmass.

Zircon form disseminated subhedral crystals.

Tourmaline forms pleochroic green, elongate subhedral crystals.

Apatite forms rare subhedral crystals.

Quartz forms a prominent crosscutting veinlet with interlocking crystals up to 1.5 mm in width. Rutile forms disseminated clusters of subhedral crystals within the quartz veinlet

Hematite forms patchy staining commonly associated with quartz veinlets and patchy muscovite.

# Quartz-Plagioclase-Muscovite Cataclastite

Highly granulated, composite crystals of quartz are set in a groundmass of quartz and plagioclase with accessory muscovite patches. Plagioclase displays sericite alteration. Muscovite forms interstitial, disseminated, unoriented patches. Chlorite forms minor patches associated with muscovite. Disseminated hematite blebs are common in the groundmass.

mineral	percentage	main grain size range (mm)
RELICS	• •	
Quartz	45-47%	0.04-2.2
Plagioclase	20-22%	0.01-2.0
GROUNDMASS		
Quartz	20-22	0.1
Muscovite	5-7%	0.03-0.3
Hematite	2-3%	0.06-0.2
Zircon	.1%	Up to 0.05
Tourmaline	Trace	0.1
Chlorite	2-3%	0.05

Quartz forms composite crystal patches, many of which have undulose extinction and underwent cataclastic deformation.

Plagioclase forms fine-grained, highly granulated, interlocking, sub-mosaic crystals up to 2 mm in width.

In the groundmass, quartz forms fine sub-mosaic to interlocking, equant grains.

Muscovite forms flakes and crystal patches, most of which are disseminated and do not define a foliation.

Chlorite forms patches associated with muscovite that are interstitial to quartz and plagioclase. Zircon forms disseminated subhedral crystals.

Hematite forms patchy staining commonly associated patchy muscovite.

# **Slightly Micaceous Marble.**

The sample is dominated by calcite that occurs in bands up to 2 mm thick that are distinguished by grain size. Coarser-grained bands, which occupy 65% of the sample, consist of a mosaic of equant, twinned calcite grains with much less abundant finer interstitial patches of calcite. Finer-grained bands consist of subrounded calcite grains. The bands probably represent original sedimentary layers with different original textures. Muscovite forms disseminated flakes.

mineral	percentage	main grain size range (mm)
Calcite	99%	0.01-2.0
Muscovite	1-2%	0.03-0.3

Coarser grained calcite bands contain equant, interlocking twinned grains up to 2 mm with 35% interstitial grains of calcite averaging 0.1 mm in diameter. In general, the different grain size crystals are segregated into alternating, mm-scale bands.

Finer grained bands consist of roughly equant, "rounded" calcite grains Muscovite forms scattered flakes parallel to the calcite bands.

#### Sample Z-696-7148

# **Banded Quartz-Muscovite-Biotite Schist**

Banded layers of patchy muscovite and biotite are interlayered with bands of quartz in a groundmass of sub-mosaic quartz grains. Micas are predominantly interstitial to quartz and also form scattered lenses that are sub-parallel to foliation. Sphene forms anhedral aggregates, mainly within mica-rich bands. Microcrysts of hematite are disseminated finely. Minor graphite forms clusters of flakes that outline tight shear folds. Rare chalcopyrite forms anhedral blebs.

mineral	percentage	main grain size range (mm)
Quartz	72-75%	0.1-0.5
Muscovite	13-15%	0.07-0.4
Biotite	9-11%	0.1-0.3
Sphene	2-3%	Cryptocrystalline
Hematite	1-2%	< .01
Graphite	0.1%	<.01
Pyrite	Trace	0.1
Apatite	Trace	0.1-0.15
Tourmaline	Trace	0.05-0.1
Chalcopyrite	Trace	0.1-0.2

Quartz forms bands of interlocking to sub-mosaic crystals that commonly contain inclusions of micas, many of which are intergrown with minor selvages or seams of mica.

Muscovite and Biotite form flakes crystals that generally are concentrated in foliation bands with biotite. A few, disseminated grains of biotite up to 0.5 mm long are sub-parallel to the dominant fabric and display variable pale green-brown pleochroism

Sphene forms anhedral, cryptocrystalline masses, up to 0.5 mm typically, within mica-rich bands. Hematite forms finely disseminated, anhedral patches.

Chalcopyrite forms rare, disseminated anhedral "blebs", commonly intergrown coarsely with pyrite.

Graphite is present in fine, disseminated flakes, which form into tight folds within the groundmass. These graphite folds are present in discreet patches 1-2 mm across, and have amplitudes of 0.5 mm.

Tourmaline forms rare, disseminated, subhedral, hexagonal crystals with pleochroism from pale to medium green.

Apatite forms rare, colourless, disseminated, subhedral crystals.

# List of Photographs (page 1 of 2)

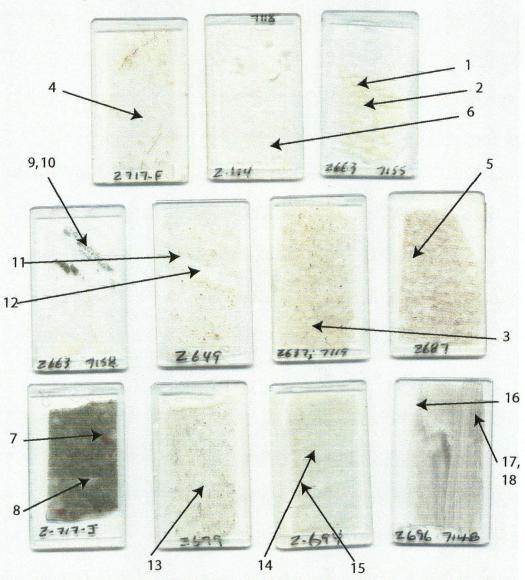
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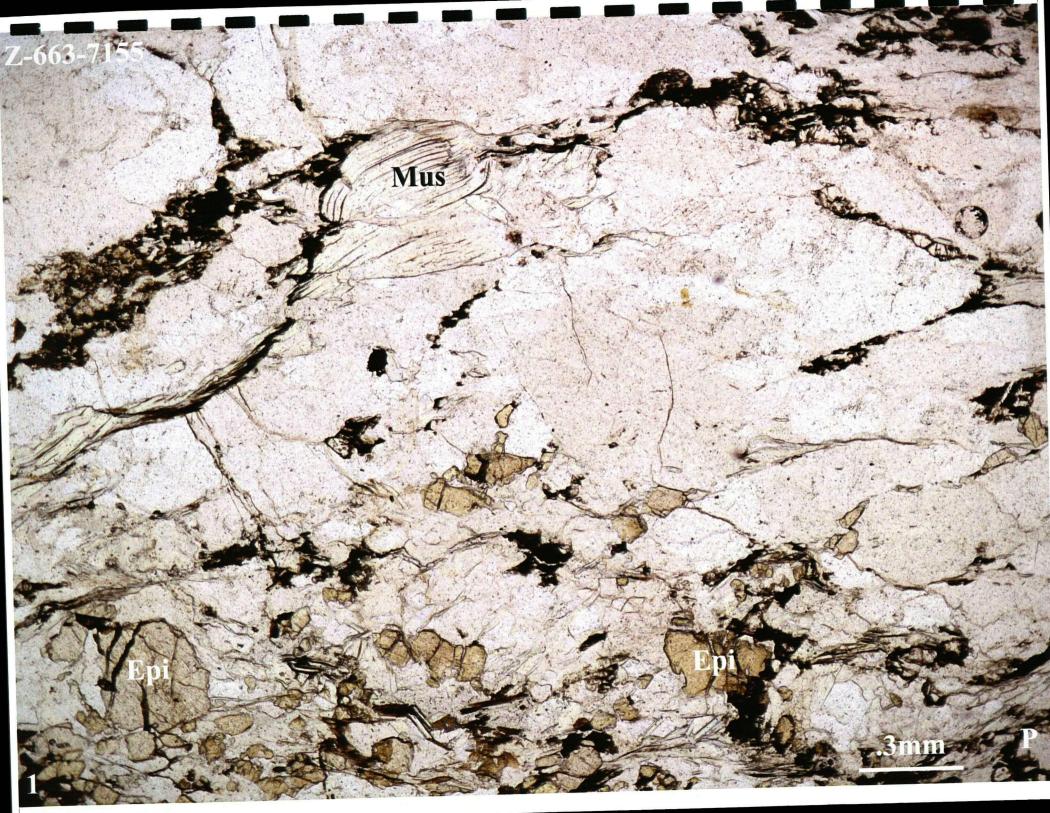
Photo Sample	Description
01 Z-663-7155	patches of epidote and muscovite in a granulated groundmass of quartz and feldspar; relict, granulated crystals of K-feldspar and plagioclase in a groundmass of quartz and accessory muscovite.
02 Z-663-7155	same as above, crossed nicols
03 Z-637-7119	crystals of quartz and K-feldspar in a groundmass of K-feldspar and plagioclase/quartz; muscovite forms pseudomorphs after biotite; patchy sericite replaces plagioclase.
04 Z-717-F	patch containing a rotated, twinned K-feldspar grain enclosed in relict crystals of granulated quartz and K-feldspar and set in a quartz/feldspar groundmass; mica flakes define a prominent foliation.
05 Z-687	relict quartz, predominantly composite crystals, set in a groundmass of quartz with interstitial biotite and muscovite, which define a penetrative foliation; late muscovite porphyroblasts overprint the foliation.
06 Z-654-7118	albite-twinned, granulated, relict plagioclase megacrysts in a quartz-mica groundmass; muscovite defines the foliation. K-feldspar megacrysts with tartan twinning were granulated and have ragged outlines; quartz forms composite crystal "domains", produced by grain-size reduction due to shear of larger quartz grains.
07 Z-717-J	the prominent fuzzy, tan and gray patch in the middle is sericite alteration of plagioclase; to the bottom left, a biotite crystal is replaced partly by pseudomorphic chlorite; the upper right corner is occupied by masses of oriented chlorite flakes, which define the foliation.
O8 Z-717-J	biotite crystal showing advanced state of pseudomorphic replacement by chlorite; chlorite also forms a green, foliated crystal mass that contains fine, disseminated sphene; plagioclase was altered to tan, "fuzzy" sericite.
09 Z-663-7158	prominent green tourmaline crystals in a quartz rich band in prominently alternating layers of muscovite/quartz and muscovite/K-feldspar
10 Z-663-7158	same slide as above, polarized light.
11 Z-649	rutile in a quartz veinlet.

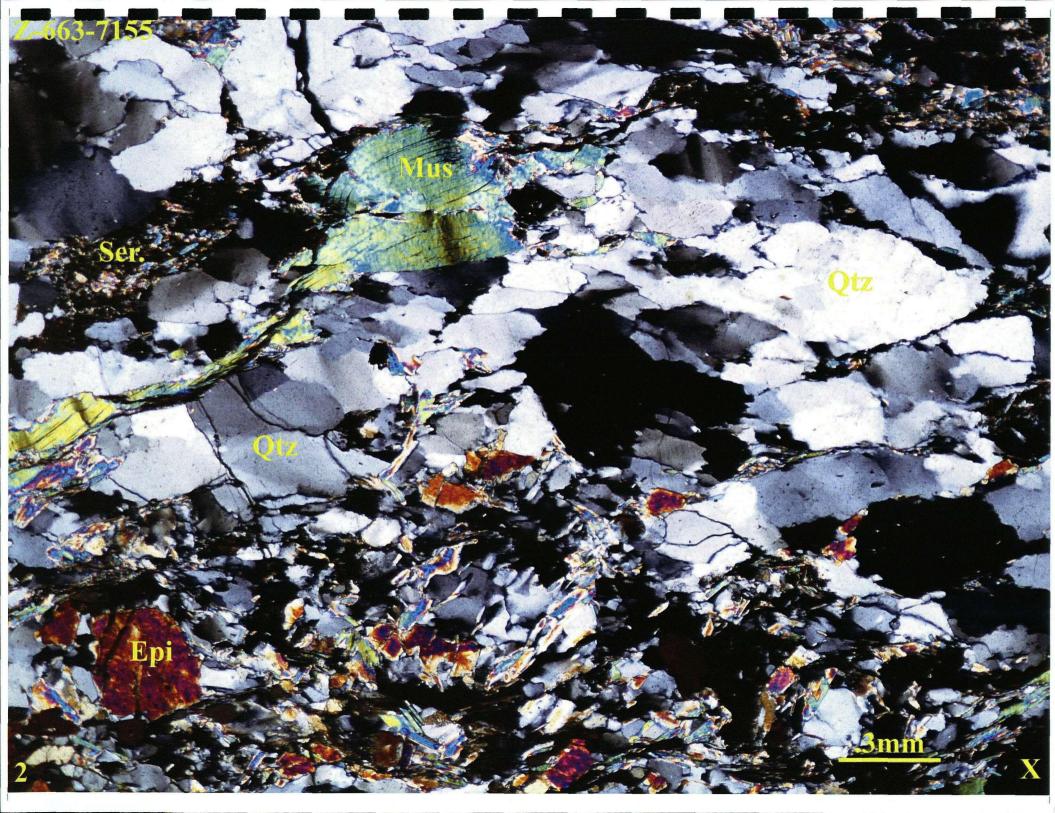
# List of Photographs (page 2 of 2)

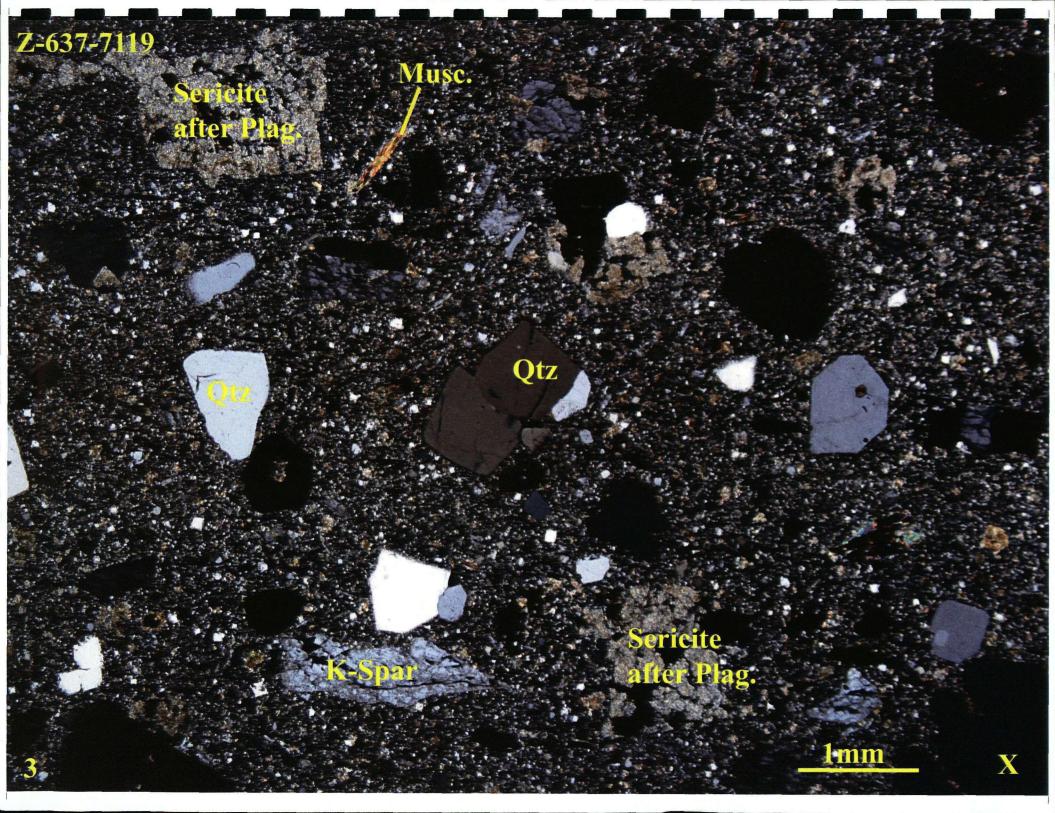
Photo Sample	Description
12 Z-649	quartz veinlet with fine rutile rimming crystals (of quartz?); the upper half of this photo is typical of the groundmass of this sample, which consists mainly of highly granulated quartz and plagioclase; muscovite forms a weak foliation.
13 Z-679	quartz and plagioclase in a cataclastic matrix; muscovite forms randomly oriented patches. The small plagioclase "domain" in the center of the slide is probably a relic as evidenced by the highly granulated appearance of this crystal.
14 Z-694	twinned, equant grains of calcite with disseminated, flakes of muscovite.
15 Z-649	marble displaying ~2-mm-scale bands alternating between coarse, twinned calcite grains and fine, rounded calcite grains, perhaps relicts of sedimentary structures.
16 Z-696-7148	chalcopyrite nodule in a groundmass of quartz-muscovite.
17 Z-696-7148	foliated, and finely folded quartz and muscovite; muscovite flakes and composite quartz "stringers" define foliation
18 Z-696-7148	higher power (10x) view of above plate showing plagioclase altered to patches of sericite and segregations of quartz and muscovite.

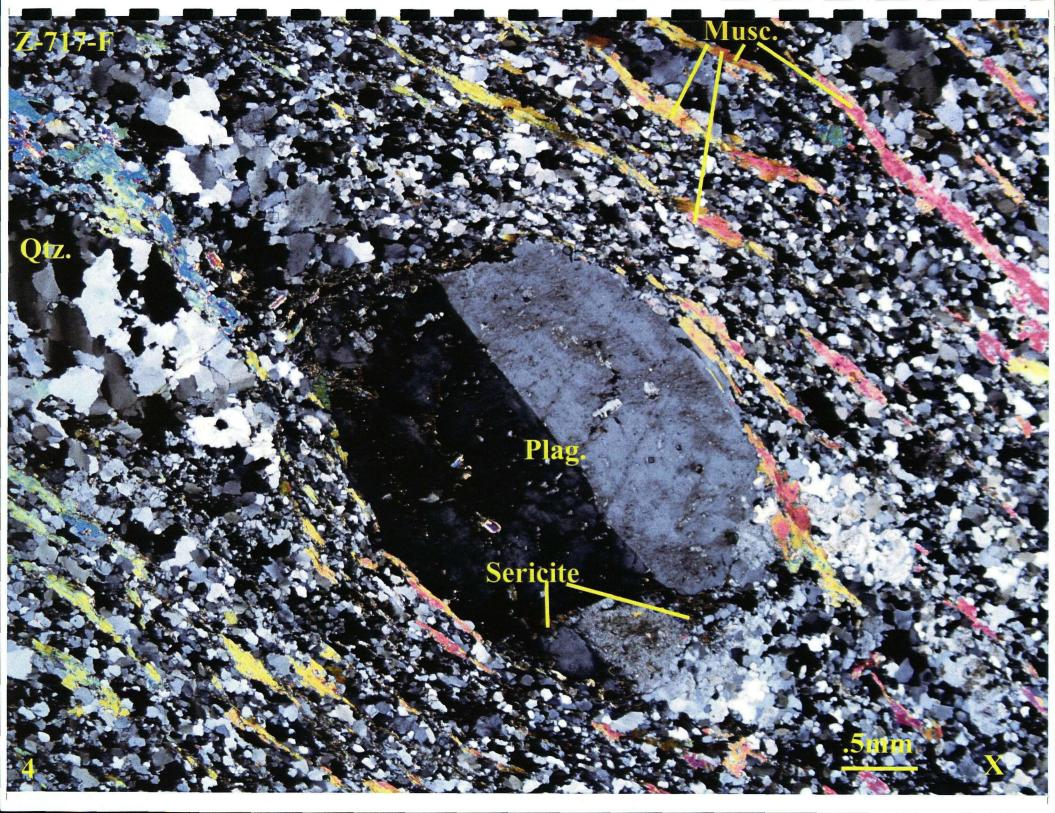


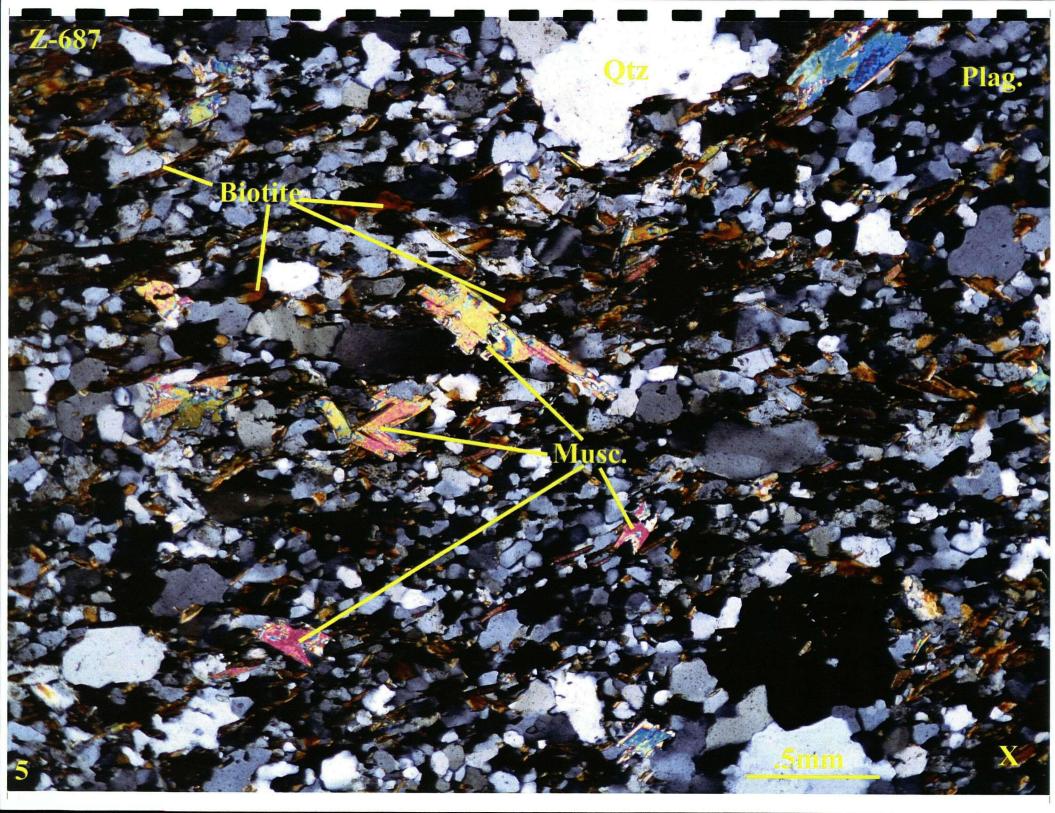
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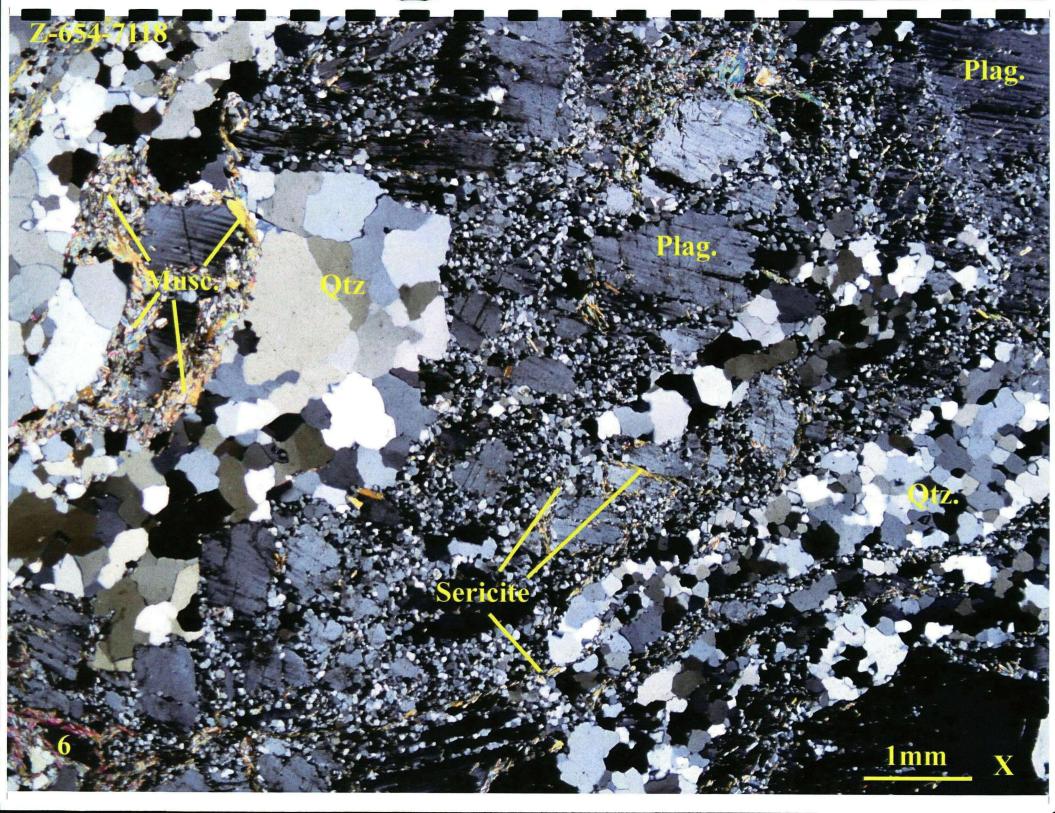


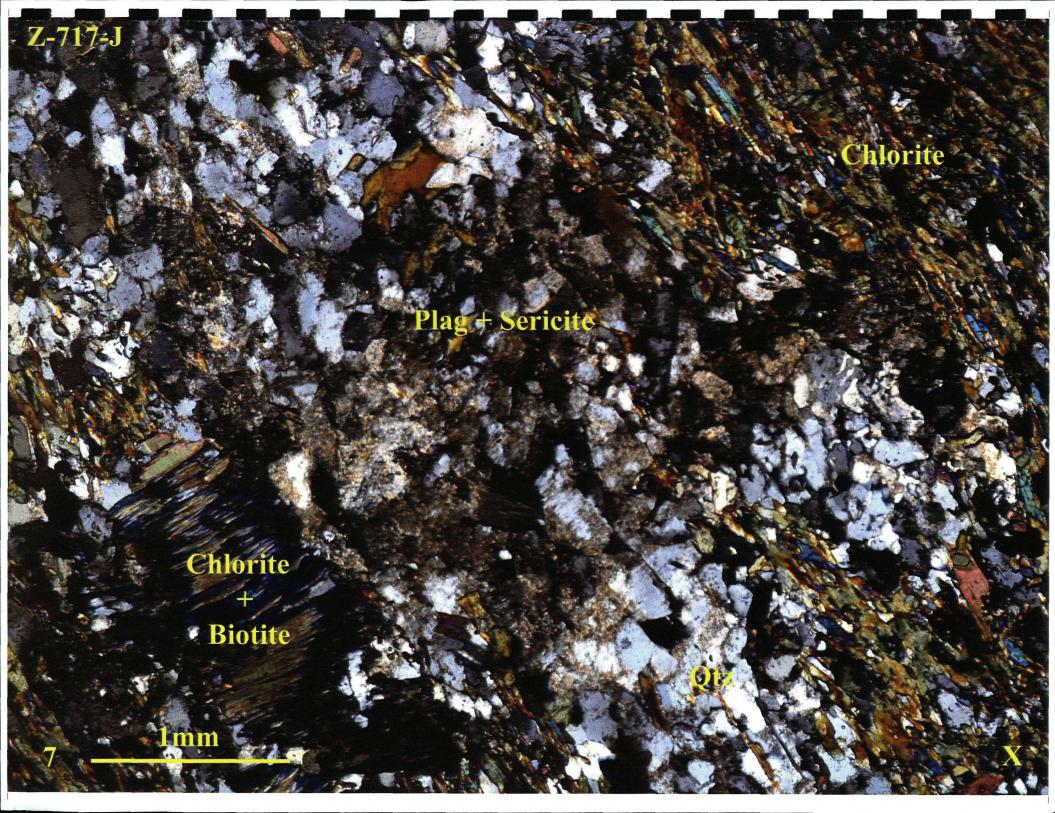


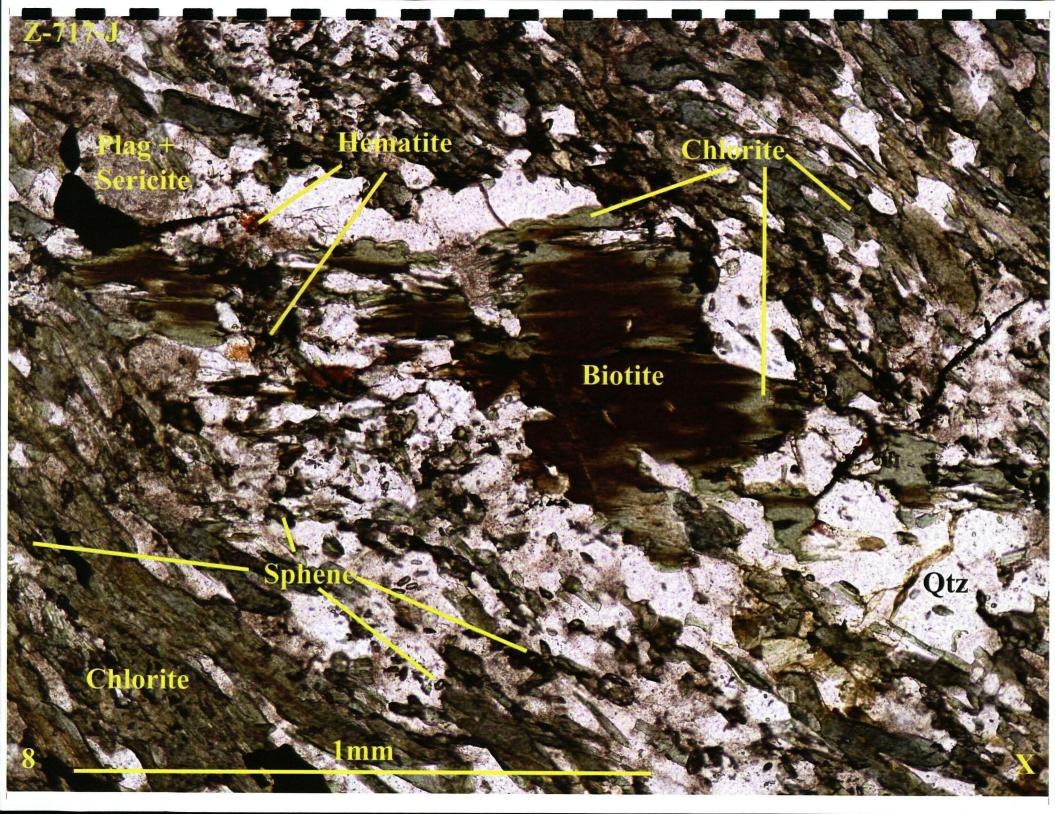


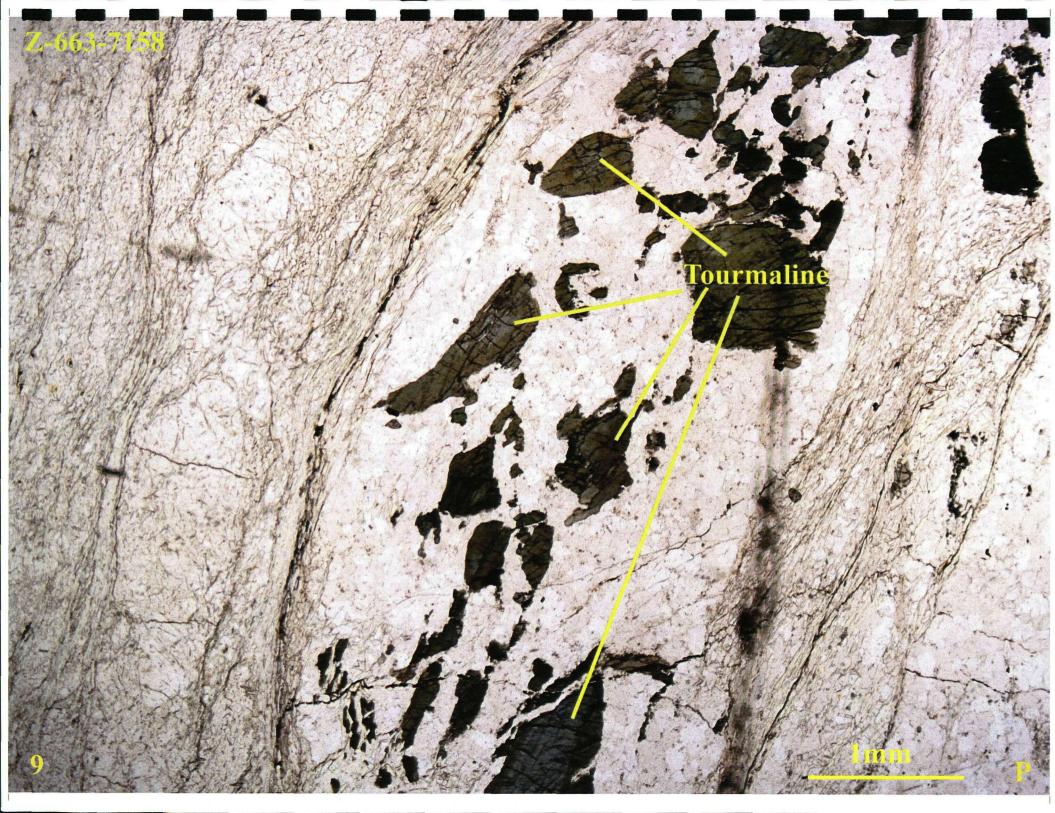


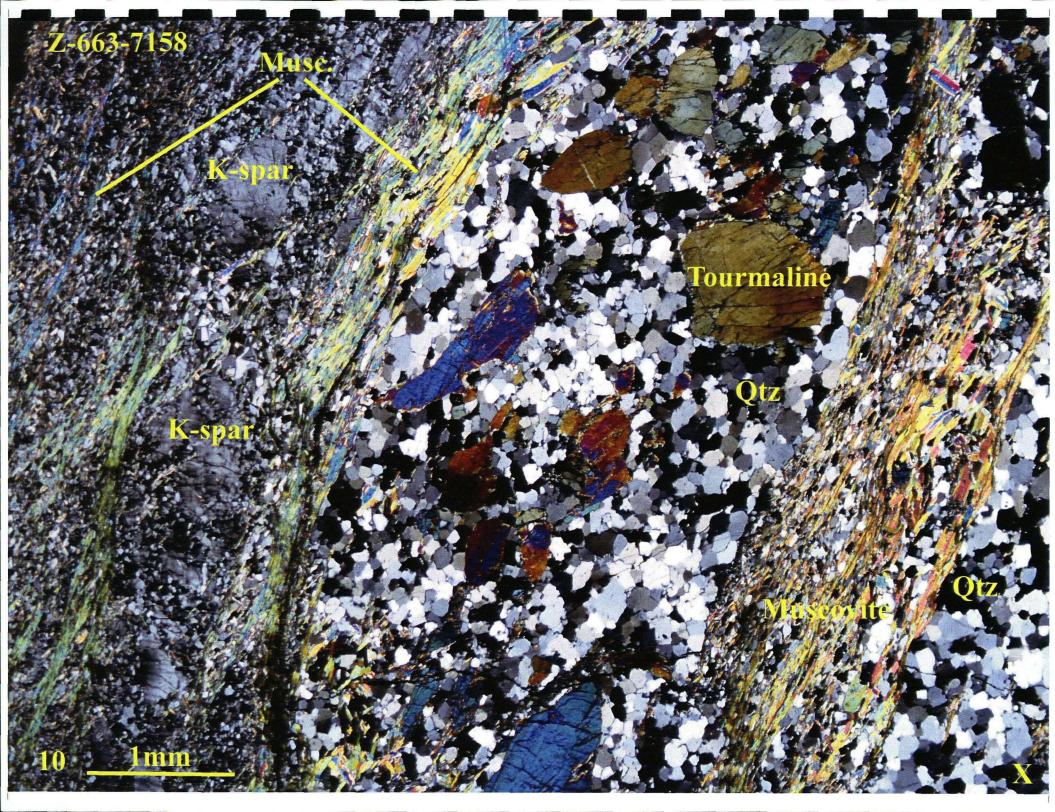


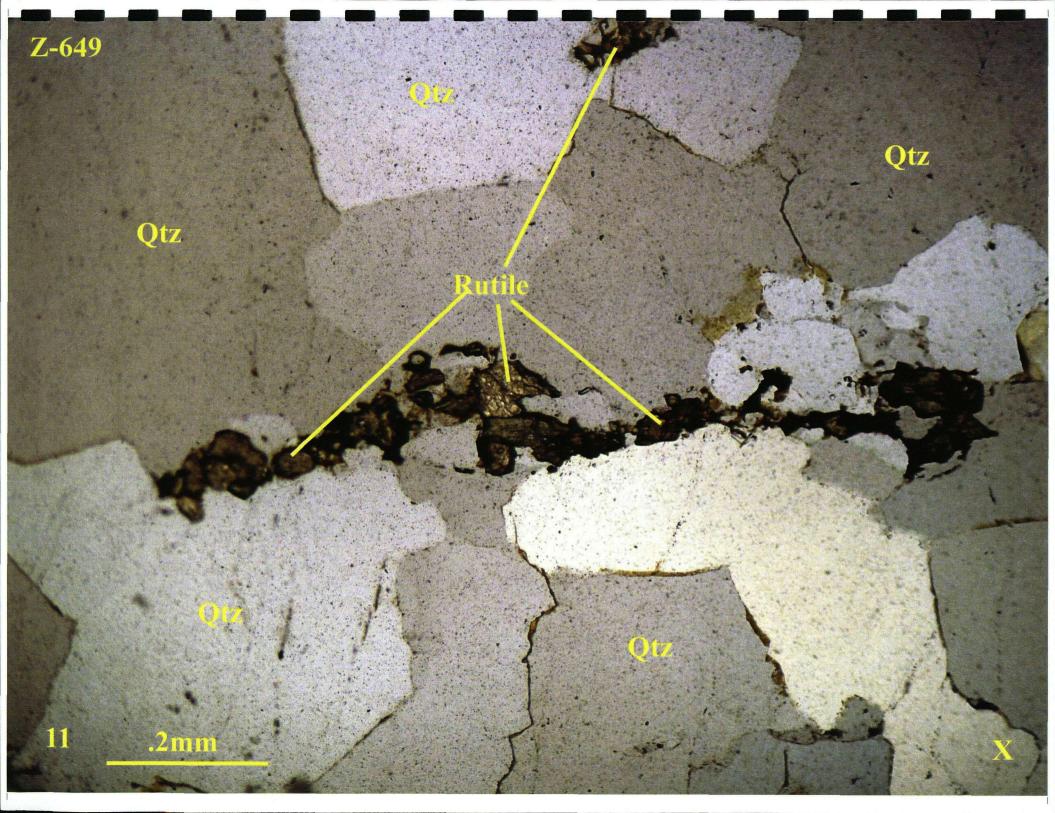


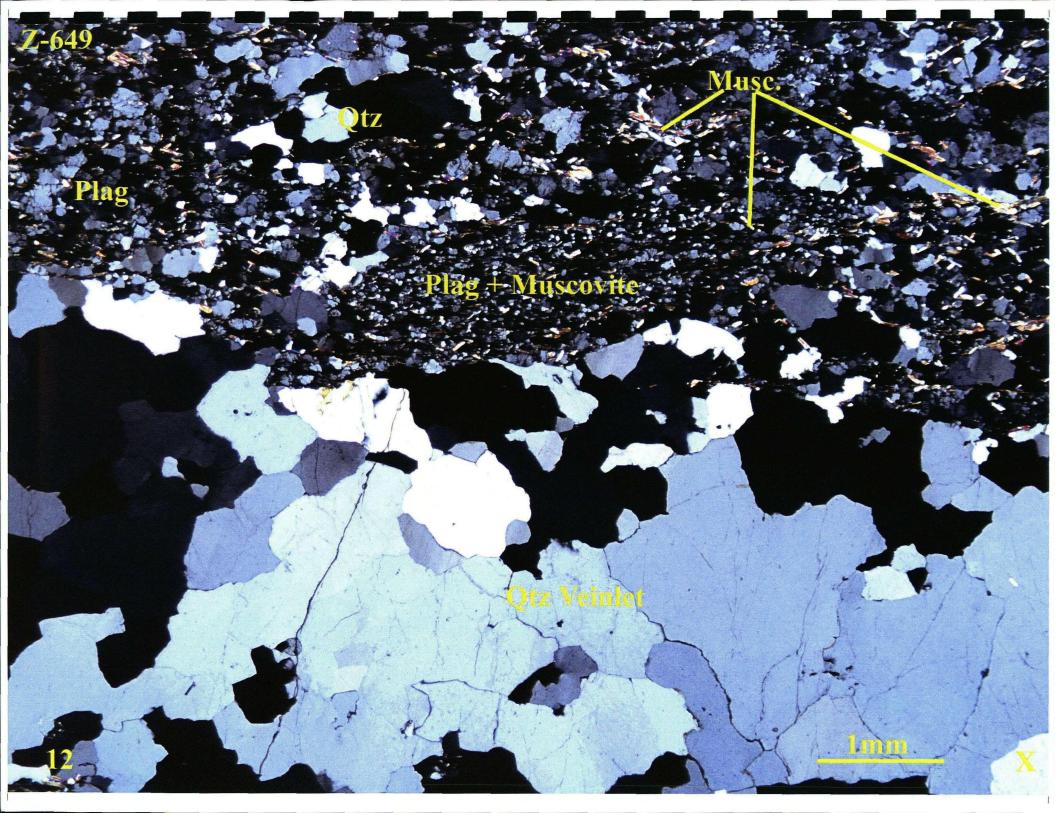


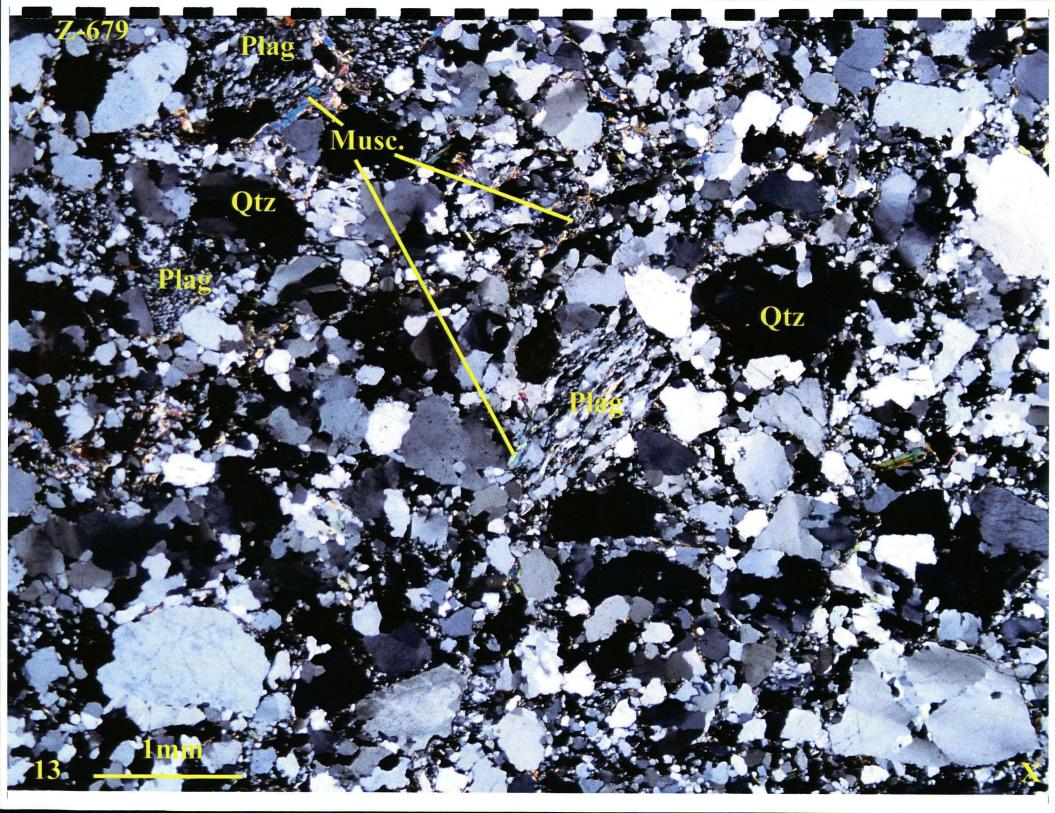


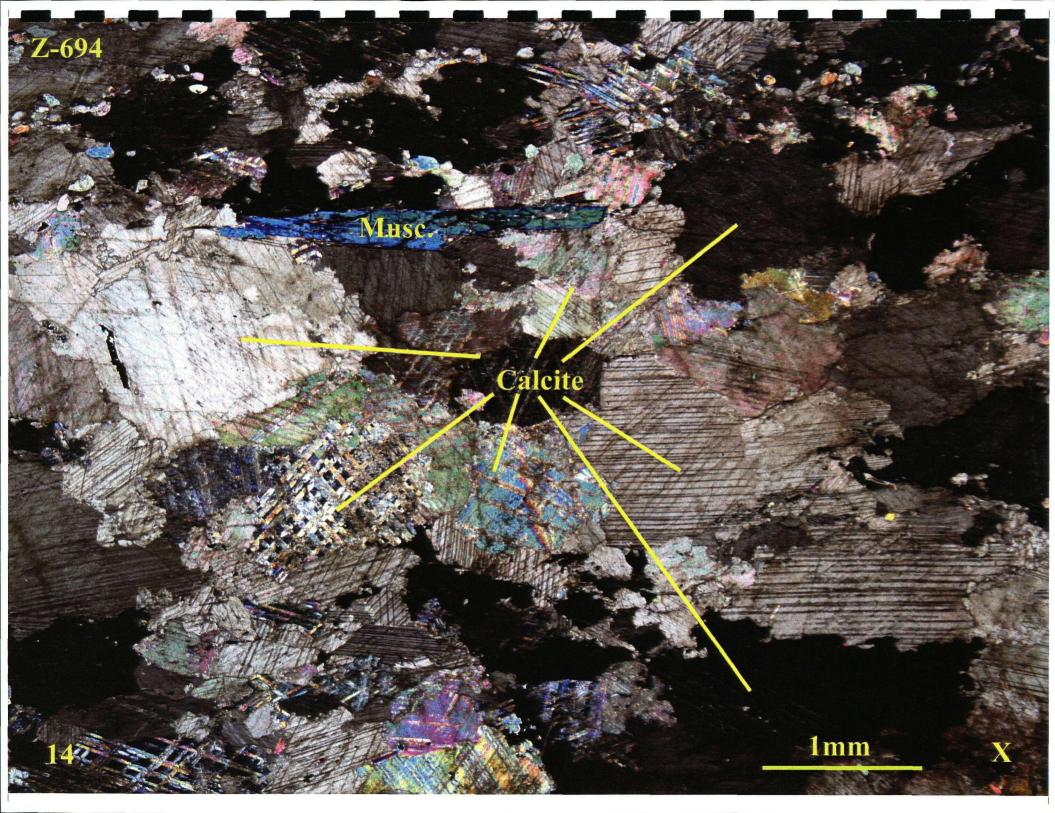


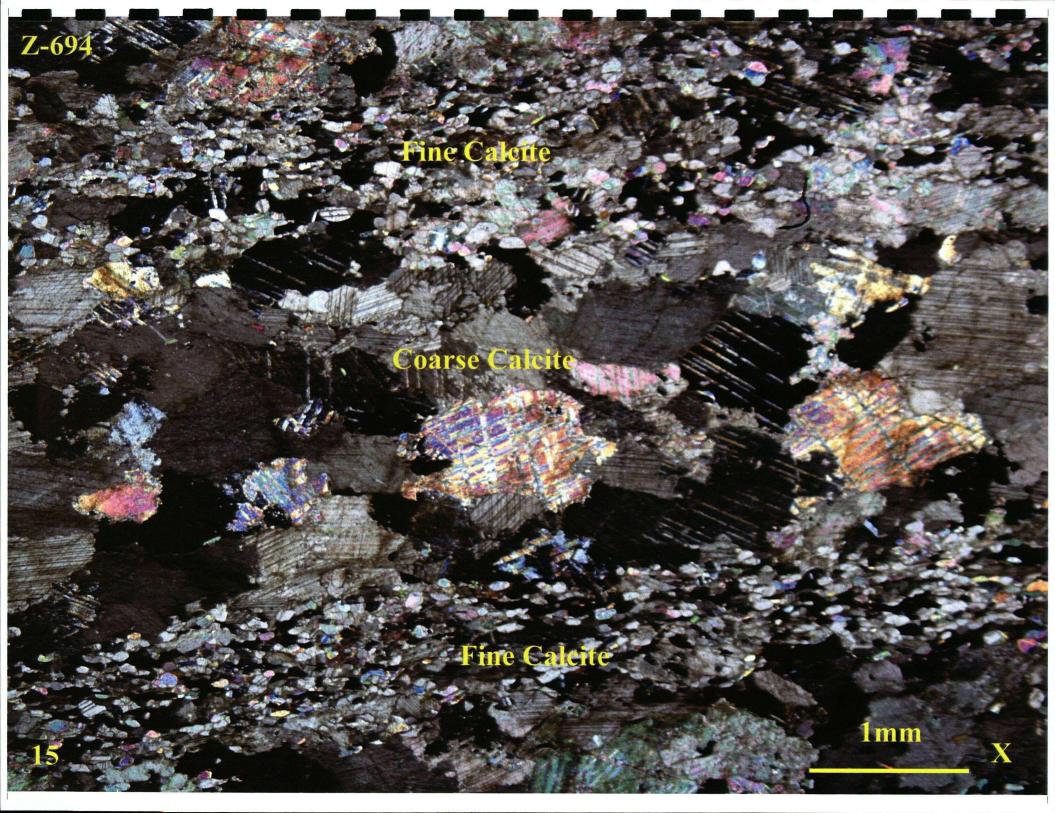


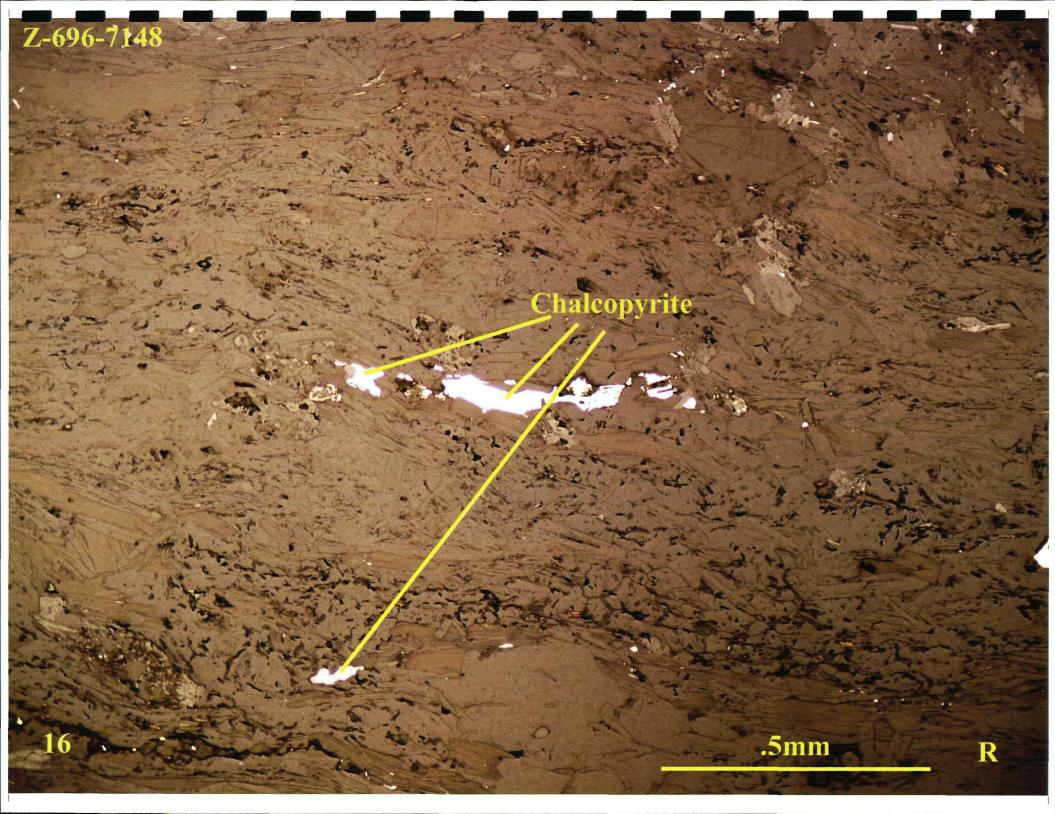


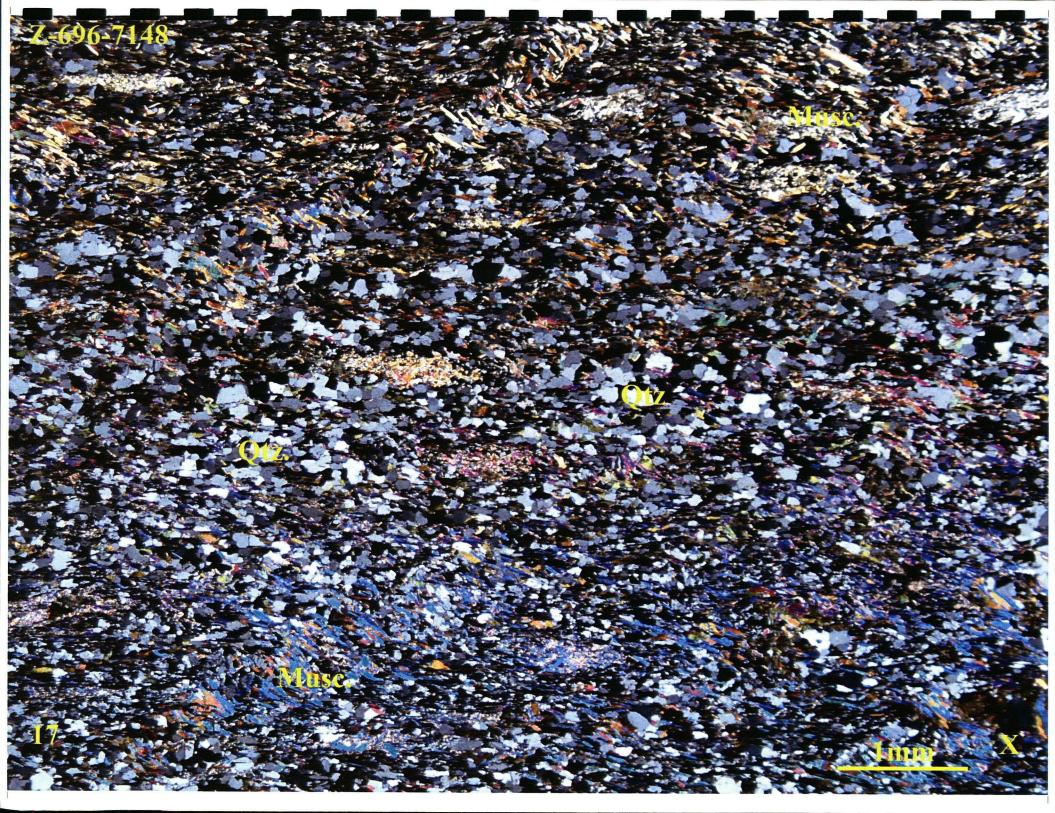


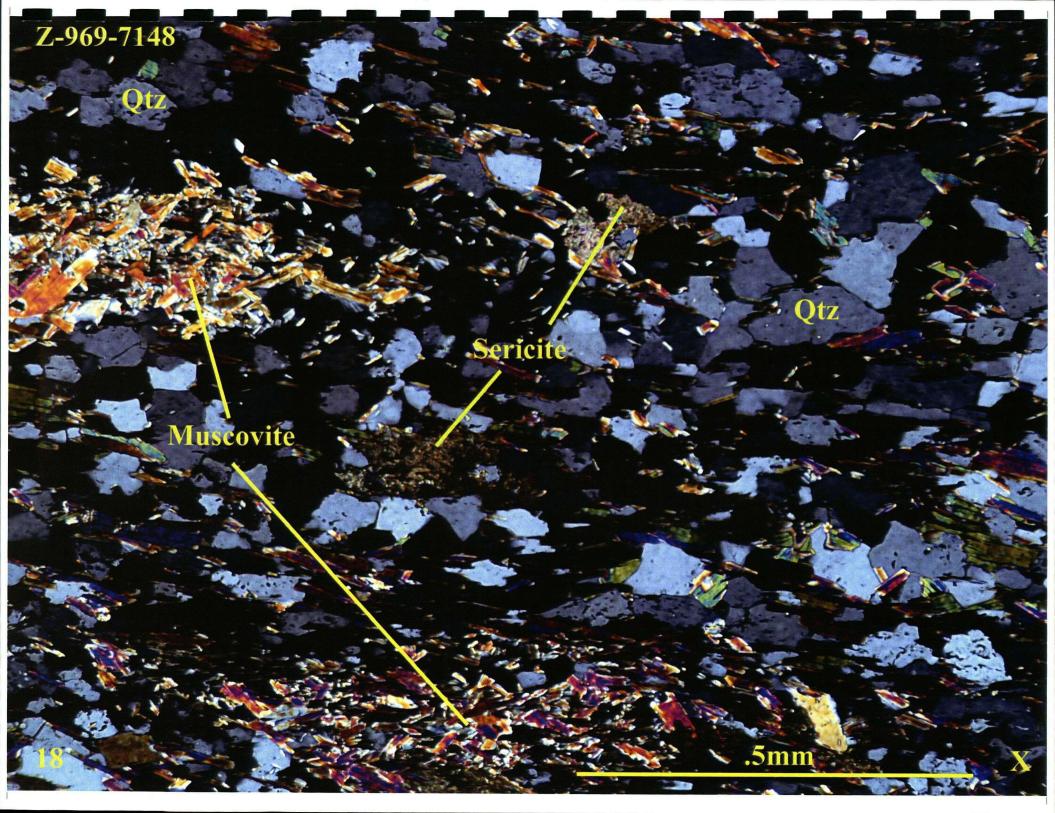












ADDENDUM - C: Receipts for Work Performed

As a follow up to the

## Indian River Gold Project Report

By: Rick J. Zuran ARCHER CATHRO & ASSOCIATES (1981) LTD.

For :

Boulder Mining Corporation Suite 800 – 850 West Hastings Street Vancouver, B.C., V6C 1E1

4	ACME ANALYTICAL LABORATORIES LTD. 852 East Hastings,, Vancouver, B.C., CANADA V6A 1R6 Phone: (604) 253-3158 Fax: (604) 253-1716 Our GST # 100035377 RT		<b>£</b> £	
	BOULDER MINING CORP. 800 - 850 W. Hastings St. Vancouver, BC V6C 1E1	Inv.#: <b>A506887</b> Date: Nov 25 2005		
QTY	ASSAY	PRICE	AMOUNT	
75	GROUP 1DX (30 gm) @ R150 - ROCK @ SS80 - SOIL @	17.25 5.40 1.65	1397.25 405.00 9.90	
	RXCR - 133.68 kg @ \$0.90/kg RXS - 133.68 kg @ \$0.40/kg		1812.15 120.31 53.47	
	GST Taxable 7.00% GST		1985.93 139.02	
	CAD \$		2124.95	
Sampl	t: Indian River es submitted by Rick Zuran A506887 & A506888 - SHIPPING CHARGE TO COME			
	Please pay last amount shown. Return one copy of this invoice with paym TERMS: Net two weeks. 1.5 % per month charged on overdue accounts.	ent.	[ COPY 2 ]	

## ARCHER, CATHRO & ASSOCIATES (1981) LIMITED 1016 – 510 West Hastings Street Vancouver, B.C. V6B 1L8

Telephone: 604-688-2568

Fax: 604-688-2578

In Account With Boulder Mining Corporation October 31, 2005

To invoice for the services of Rick Zuran September 8 to October 12, 2005 - 35 days at \$640/day GST (R100247667)

\$22,400.00 1,568.00

\$23,968.00

Indian River HardRat

OKtopus Am



## Vancouver Petrographics Ltd.

8080 GLOVER ROAD, LANGLEY, B.C. V1M 3S3 PHONE: 604-888-1323 - FAX: 604-888-3642 email: vanpetro@vanpetro.com Website: www.vanpetro.com

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BILL TO			S	HIP TO				
Boulder Mining Corporation Rick Zuran 800-850 W Hastings Street Vancouver, BC V6C 1E1				Boulder Mining Corporation Rick Zuran 800-850 W Hastings Street Vancouver, BC V6C 1E1				
							Rock saws	
P.O. NO.	TERMS	SHIP DATE	SHIP VIA	A PF	ROJECT	FOR		
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 We appreciate your prompt payment.
 GST
 121.38

 PST
 0.00

 TOTAL
 Can\$1,855.38

