

094600

**ASSESSMENT REPORT**

**for**

**EXPLORATION**

**on the**

**ANNE 1 to 4  
QUARTZ MINING  
CLAIMS  
(YC26740-YC26743)**

**MARSH LAKE,  
YUKON TERRITORY**

**NTS 105 D/8  
ZONE 8  
6704100N, 542450E (NAD27)  
LATITUDE 60-29 N  
LONGITUDE 134-17W**

**between**

**APRIL, 2005  
and APRIL, 2006**

**WHITEHORSE MINING DISTRICT  
YUKON TERRITORY**

**by**

**JOSEPH A. J. CLARKE  
MARSH LAKE, YUKON  
JUNE, 2006**



Costs associated with this report have been approved in the amount of \$ 400.00 for assessment credit under Certificate of Work No. 0027903

H. Sauterick  
Mining Recorder  
Whitehorse Mining District

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## **INTRODUCTION**

This report describes the exploration work carried out on the claims Anne 1-4 from April, 2005 to April, 2006. This work consisted of 3 days of grassroots prospecting and mapping and hand trenching. Total value of work performed is \$800. The property has potential for mesothermal Motherlode gold, PGE, and Rare Earth/gemstone deposits.

Prospecting revealed a small syenite body intruding cherty sediments and mafic volcanics, and several new lamprophyre dykes. Age relationships are not clear to date but it is expected that the lamprophyre dykes may intrude the syenite and may be of possible Tertiary age. Prospecting and trenching revealed moderate sulfide mineralization at the contact a lamprophyre dike intruding cherty sediments of the Cache Creek Group. Trenching in the 2000m listwanite alteration fault zone revealed intense shearing and brecciation of Cache Creek mafic volcanics and cherts. Further trenching in talus is required to enable sampling across this fault zone. Establishment of a baseline and several cross lines has set the stage for future geological mapping and geophysical surveys.

## **LOCATION, AND ACCESS**

The Anne 1-4 claims are located just east of the south entrance of Old Constabulary Subdivision, 65km south of Whitehorse along the Alaska Highway at Marsh Lake. Access is possible by 4-wheeler, snowmachine, or small 4-wheel drive truck to most areas of the claims.

## **TOPOGRAPHY, CLIMATE**

The topography of the immediate area consists of small 50m-100m hills and valleys running parallel to Marsh Lake. The terrain rises gently from Marsh Lake (elev 2200') for an average of 3km NE of the Alaska Highway then rises steeply reaching 5800 ft at the peak of Mt. Mitchie. Several periods of glaciation have rounded the hills and have resulted in moderate to deep deposits of till, clay, and ancient raised beaches. Outcrop exposure is 35% on the property.

The climate of the area varies from a high of +30C in the summer to lows of -40C during the winter. Typical are long hot summers (May to September) with up to 18 hours of daylight and moderate to harsh winters (October to April) with less than 7 hours of daylight.

Black spruce is the most common tree species on the property. These favor the NE side of valleys and are a common indicator of local permafrost. More exposed areas have a mixture of white and black spruce with occasional pine. In the most exposed areas aspen colonies are well established. Willows are abundant in the valleys and low areas. Wildlife

inhabiting the area are typical of the Southern Yukon and include moose, wolves, and various small birds and mammals.

## **EXPLORATION HISTORY**

Hard rock exploration in the Marsh Lake area dates from 1895 on the nearby Rossbank property. Only scattered prospecting was performed until 1988 when exploration activity increased with discovery of the Diamond zone by Bill LeBarge, a geologist with DIAND. The zone is now covered by the Anne 1-4 Claims ( Fig 2.). Further activity was seen on the Bug , Tog, and Rossbank properties. Mr. Gary Reynolds staked the original Mike 1-8 claims in 1989 and filed one years assessment work. The 1994 Jakes Corner Helicopter EM survey revealed several strong EM conductors resulting in the prospector staking the Uchi claims to the 1.5 km to the northeast. Several other claim groups in the area are active.

## **EXPLORATION WORK**

Exploration work consisted of prospecting, further mapping and hand trenching on all 4 claims. Hand trenching focused on the Highway Fault Zone in the area of TR95-1 as indicated in Figure 4. Three cubic meters or material was excavated from this trench (3m wide x 1m long x 1m deep) Other small trenches (aprox. 1x1x1m) were dug to expose small splays and to look for various contacts (see Fig.4,5). This work will credit the Anne 1-4 for 1 years assessment work.

## **REGIONAL GEOLOGY**

The geology of the NE side of Marsh Lake consist of a tectonic assemblage of island arc mafic volcanics, cherts, and up-thrusted and altered ultramafic bodies known collectively as the Cache Creek Group (fig 3). Intruding these are various Cretaceous felsic and mafic bodies. The NW-SE trending Marsh Lake fault is the prominent feature and includes many oblique splay faults forming drainage basins into the lake. These splay fault features are observable at outcrop scale. Latter fresh gabbros, lamprophyre, and diabase dikes are common.

## **PROPERTY GEOLOGY**

Geology of the Anne 1-4 claims consists of an accreted assemblage of oceanic mafic volcanics, cherts, limestone and ancient serpentinitized peridotites intruded by felsic, mafic to ultramafic dykes, pods and sills. These are possible related to mid to late Cretaceous felsic intrusions located 3km to the east.

## **Structure**

Structure of the property is dominated by two NW trending, steeply dipping splay faults—known as the Highway Fault, and the Pipeline fault. Both parallel the Alaska Highway. A large mafic volcanic package forming a distinct ridge separates the two fault systems by 200–400m may be a horst block thrust up by faulting along Marsh Lake or during Cretaceous intrusion. Similarly the large chert packages that predominate in the valleys formed by fault systems may be graben structures. Oblique splay faults on a smaller scale are common as well as a strong lineament running along the ridge between the two fault systems. Trenching across the Highway Fault revealed brecciation, quartz veining and small scale folding across 20m. The fault zone continues under talus cover. A strong lineament runs NS on the SE corner of the property.

## **Lamprophyre mKl**

Four different lamprophyre bodies intrude have been mapped on the property.

A small (< 1m) EW trending vertical dike intrudes CPu along the west side of the Pipeline Fault. It is of medium to coarse-grained mafic composition containing well rounded, black easily weathered grains of a micaceous mineral up to 2mm in diameter.

A irregular shape body of lamprophyre intrudes or is in part accreted to CPv, mKg, and TJs. It is light colored with large biotite crystals in a potassium feldspar/pyroxene medium grained matrix. Further mapping is required to determine the true attitude of this body.

Two small irregular lamprophyre dikes intrude CPv. One is located on the east side of the large CPv unit between the two fault systems. The are both medium grained with large hypershene megacrysts up to 2cm in size. The seem to follow narrow, recessive areas which appear to be splays off the main faults. Further trenching in these areas is required.

## **Syenite Ksy**

Located at the SE corner of the property is a small body of medium grained syenite. It is feldspar rich with hornblende and biotite mica. This body may be of Cretaceous age and related to the large syenite pegmatite intrusion located ~4 km to the north. It is possible however that the syenite is temporally related to the mKl. Trenching is required to answer this question.

## **Diabase mKd**

Several small (< 1m) diabase dikes occur and have been identified intruding both CPv, CPu, TJs. They appear unaltered and are moderately silicified. The dikes trend EW and

are vertical. Further trenching and mapping of the dikes are required as some may be older representing mafic hypabyssal intrusion within CPv or CPu.

### **Gabbro mKg**

A large irregular gabbro body intrudes CPv and TJs. It is unaltered, medium grained showing a weak columnar structure. Mapping of the contact is required as it is possible this unit may be an interflow intrusion within CPv.

### **Chert TJs**

This unit occurs throughout the property and is conformable with CPv representing seafloor deposition during a long period of volcanic quiescence. The chert is highly silicified well ribboned and varies from light gray-green to dark gray in color. Quartz flooding has resulted in 1-2cm fracture filled veinlets. Hand trenching has revealed an area of brittle fracturing of chert in the center of the property and west of the Highway Fault. This good represents a fault contact with a CPu outcrop to the south. Only the occasional grain of pyrite can be found in this unit except where altered to listwanite near faulted zones where up to 1% pyrite occurs as fine grained brass to silver crystals. A thin bed of blue-gray fine grained silicified tuff is commonly found along these zones and may represent a basal unit of the chert beds or an upper unit of CPv.

### **Mafic Volcanics CPv**

This is the most well exposed unit on the property. It is an uplifted and accreted package of deep sea andesite and basalts. The package itself may represent several separate accreted volcanic sequences. The volcanics are moderately to highly chloritized. Silicification varies from low to locally high. This unit is also well silicified along the hanging wall on the east side of the Highway Fault. Fracture of the unit at right angles has resulted in a stockwork of >1cm quartz veining with an average distance of 5m east of the fault. This is well exposed in trench 95-1. This package also shows weak remnant flow banding and pillow margins.

### **Serpentinized peridotites CPu**

This unit is exposed in several NS predominant narrow outcrops east of the Alaska highway. It is carbonate altered with many bright patches of serpentinite. Quartz veining and mineralization is rare.

### **Limestone CPc**

Dirty light brown limestone is exposed in small outcrops at the north end of the property. It has a shallow dip to the NE. This package may be part of CPv or an older unit. Further investigation for fossils is required to better date this unit. This unit may be covered with overburden in other areas of the property.

## **CONCLUSIONS**

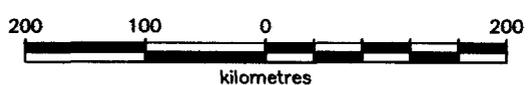
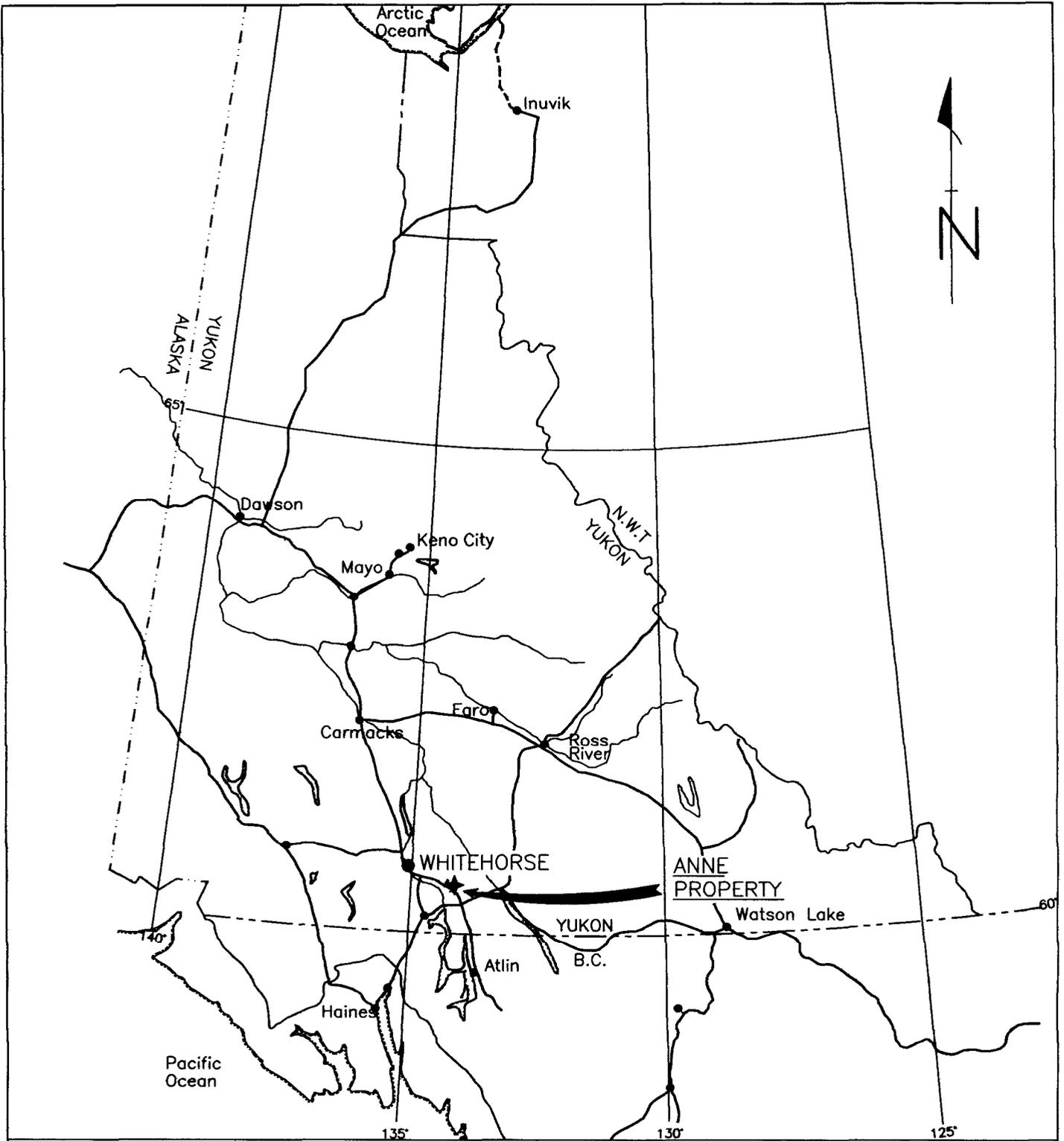
Anomalous gold and pathfinder element assay results from two strong parallel fault systems were obtained in 1995. Zones showing pervasive listwanite alteration in fractured brecciated units similar in mineralogy and age to those in a geological setting similar to Mother Lode style gold camps have been exposed. Mineralization at lamprophyre contacts shows that some metals are in the system. The syenite body may have provided a heat source for hydrothermal fluids and potential mineralization. Further trenching in 2005/2006 indicates the continuous nature of the listwanite alteration in the Highway Fault. This gives significant justification to continue exploring the Anne 1-4 claims next year.

## **RECOMMENDATIONS**

A 1:2500 compilation basemap should be produced for the property. This should be based on airphotos at a scale to 1:5000. Flagged gridlines should be run east and west of the existing Highway Fault BL and the new Pipeline baseline. An EDM survey instrument should be brought in to tie the two baselines together, survey in cultural features and stake out marker pins on prominent outcrops.

Small backhoe trenching should be performed along contact and faulted areas followed by mapping and sampling. Further outcrop mapping at a detailed scale should be conducted with Au+30 element assaying. Soil samples should be taken in overburden covered areas and along the small recessive splays with a sample kept for panning and heavy mineral identification. A VLF-Mag geophysical unit should be used to provide further information on geology, structure and mineralization in overburden covered areas. The cost of this work would be approximately \$10,000 over two seasons.

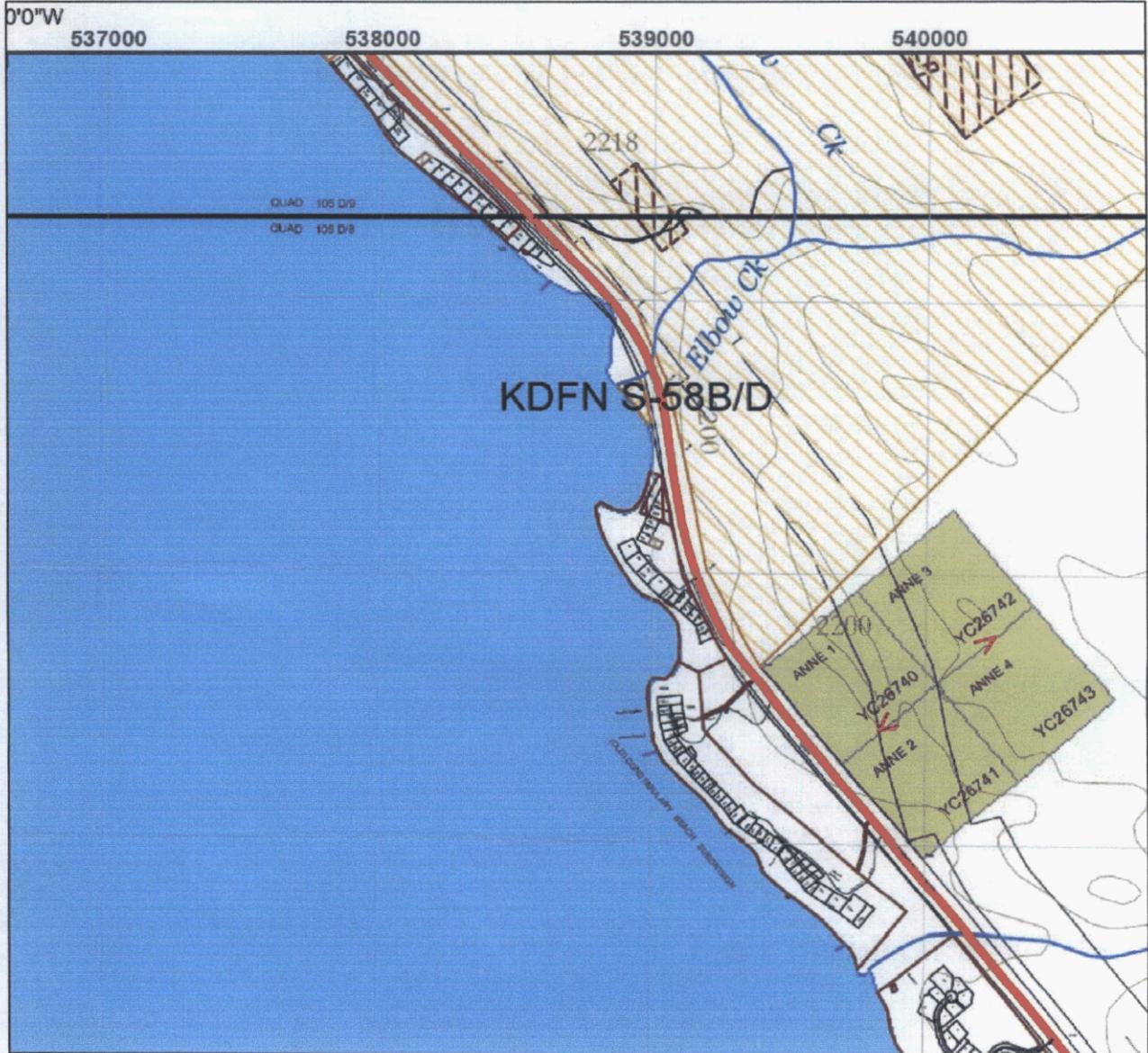
**APPENDIX I****FIGURE 1 to FIGURE 4**



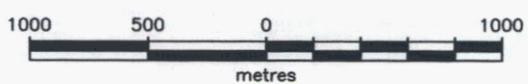
ANNE 1-4 CLAIMS  
 WHITEHORSE MINING DISTRICT, YUKON TERRITORY

PROPERTY  
 LOCATION  
 MAP

J. CLARKE, MARSH LAKE, YUKON	DATE: AUGUST, 2006
NTS 105 D/8	DRAWN BY: JC
SCALE: 1:6,000,000	FIGURE 1

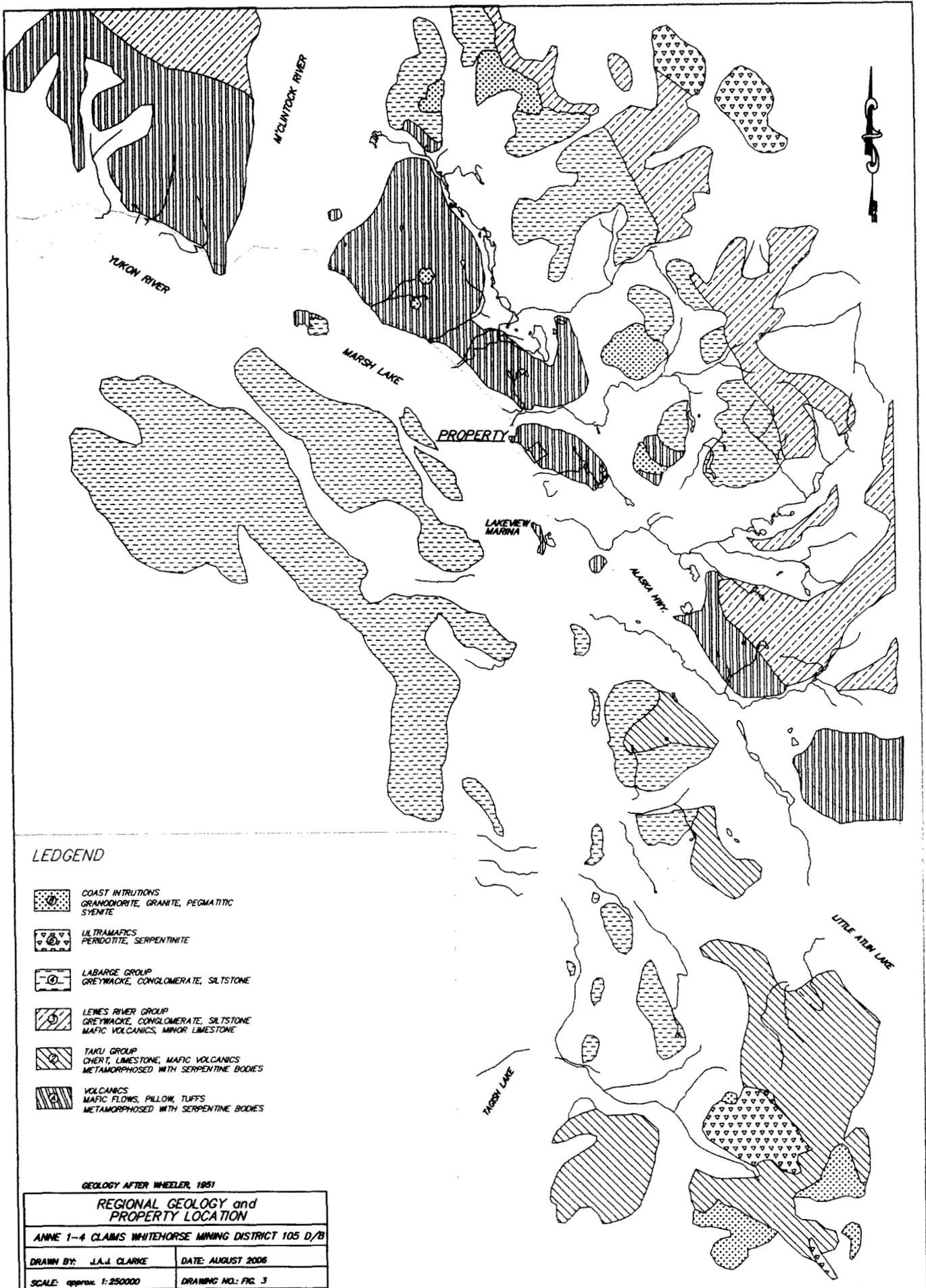


Legend



15 CLAIM #  
YB26526 GRANT#

ANNE 1-4 CLAIMS WHITEHORSE MINING DISTRICT, YUKON TERRITORY			
<h2 style="margin: 0;">CLAIM LOCATION MAP</h2>			
J. CLARKE, MARSH LAKE, YUKON		DATE: AUGUST, 2006	
NTS 105 D/8	DRAWN BY:JC	SCALE: 1:30,000	FIGURE 2



**LEDGEND**

- 
 COAST INTRUSIONS  
 GRANODIORITE, GRANITE, PEGMATITIC  
 SYENITE
- 
 ULTRAMAFICS  
 PERIDOTITE, SERPENTINITE
- 
 LABARGE GROUP  
 GREYWACKE, CONGLOMERATE, SILTSTONE
- 
 LEMES RIVER GROUP  
 GREYWACKE, CONGLOMERATE, SILTSTONE  
 MAFIC VOLCANICS, MINOR LIMESTONE
- 
 TAKU GROUP  
 CHERT, LIMESTONE, MAFIC VOLCANICS  
 METAMORPHOSED WITH SERPENTINE BODIES
- 
 VOLCANICS  
 MAFIC FLOWS, PILLOW, TUFFS  
 METAMORPHOSED WITH SERPENTINE BODIES

GEOLOGY AFTER WHEELER, 1951

**REGIONAL GEOLOGY and  
PROPERTY LOCATION**

ANNE 1-4 CLAIMS WHITEHORSE MINING DISTRICT 105 D/B

DRAWN BY: J.A.J. CLARKE      DATE: AUGUST 2006

SCALE: approx. 1:250000      DRAWING NO.: FIG. 3

LEGEND

CRETACEOUS

- mKd DIABASE; FINE TO MEDIUM GRAINED
- mKsy SYENITE; MEDIUM GRAINED
- mKl LAMPROPHYRE; MEDIUM TO COARSE GRAINED, LOCALLY MUSCOVITE RICH WITH CRYSTALS > 1cm.
- mKg GABBRO; MEDIUM TO COARSE GRAINED WITH FRESH APPEARANCE.

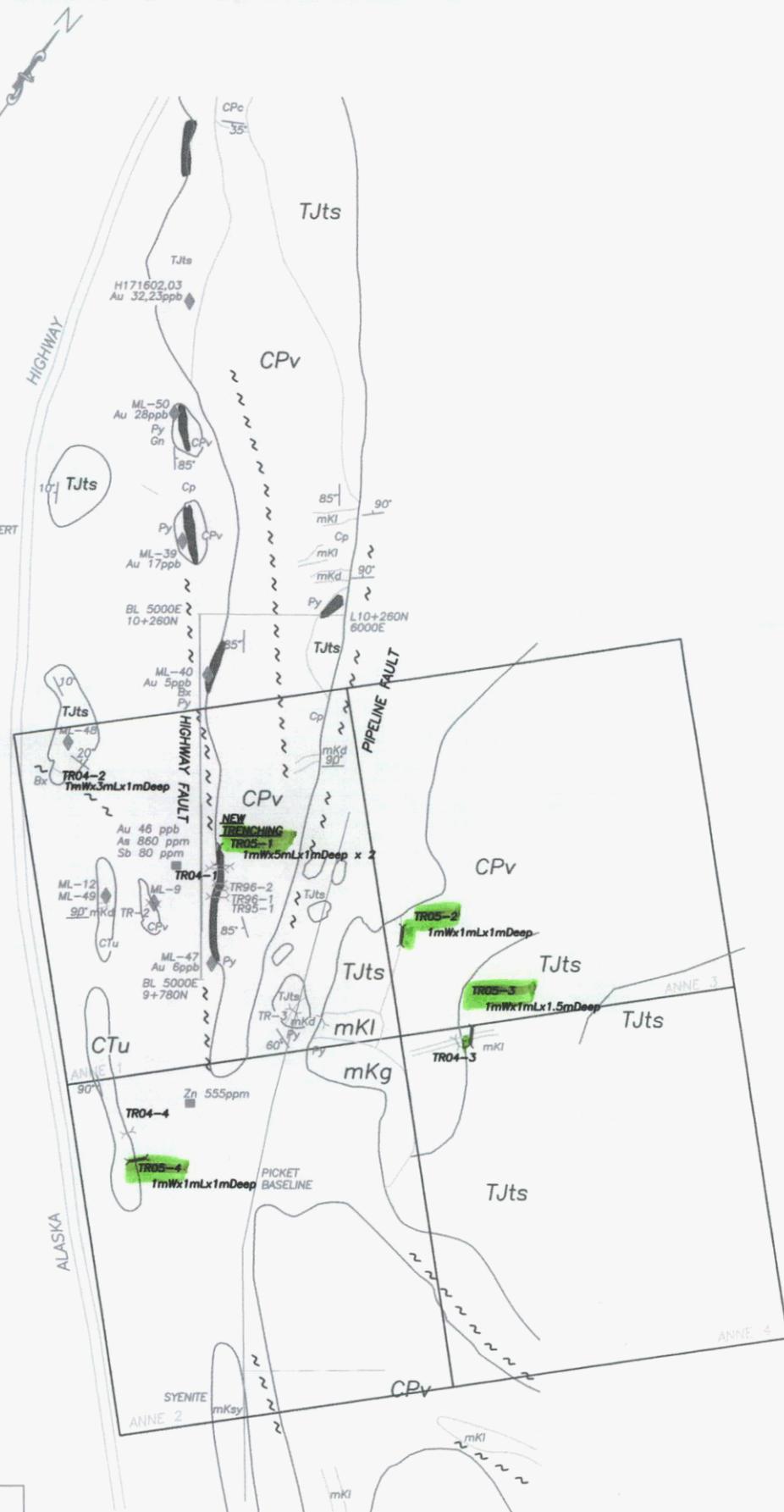
PERMIAN TO TRIASSIC

- TJts CHERT; LIGHT COLORED RIBBON CHERT LOCALLY BRECCIATED AT FAULT CONTACTS.
- CPv MAFIC VOLCANICS; LIGHT TO HEAVY CHLORITE ALTERED, REMNANT FLOW BANDING AND WEAK PILLOW MARGINS.
- CTu SERPENTINIZED PERIDOTITE; VARIABLY ALTERED AND SHEARED.
- CPc LIMESTONE; DIRTY CRYSTALLINE WITH OCC. CHERT CLASTS.

- OUTCROP BOUNDARY
- GEOLOGICAL CONTACT
- TRENCH (HAND)
- LISTWANITE VEINING/BRECCIATION
- ROCK SAMPLE, 1995/96
- SOIL SAMPLE, PRE-1995
- FAULT
- STRIKE AND DIP

MINERALIZATION

- Py PYRITE
- Cp CHALCOPYRITE
- Gn GALENA
- Bx BRECCIA



GEOLOGY AFTER WHEELER, 1951

PROPERTY GEOLOGY

ANNE 1-4 CLAIMS WHITEHORSE MINING DISTRICT 105 D/B

DRAWN BY: J.A.J. CLARKE

DATE: AUGUST 2005

SCALE: approx 1:9000

DRAWING NO.: FIG. 4

LEGEND

PERMIAN TO TRIASSIC

T<sub>ts</sub> CHERT; LIGHT COLORED RIBBON CHERT  
LOCALLY BRECCIATED AT FAULT CONTACTS.

CP<sub>v</sub> MAFIC VOLCANICS; LIGHT TO HEAVY CHLORITE  
ALTERED, REMNANT FLOW BANDING AND WEAK  
PILLOW MARGINS.

LISTWANITE VEINING/BRECCIATION

◆ ROCK SAMPLE, 1995/96  
ASSAY RESULT Au ppb

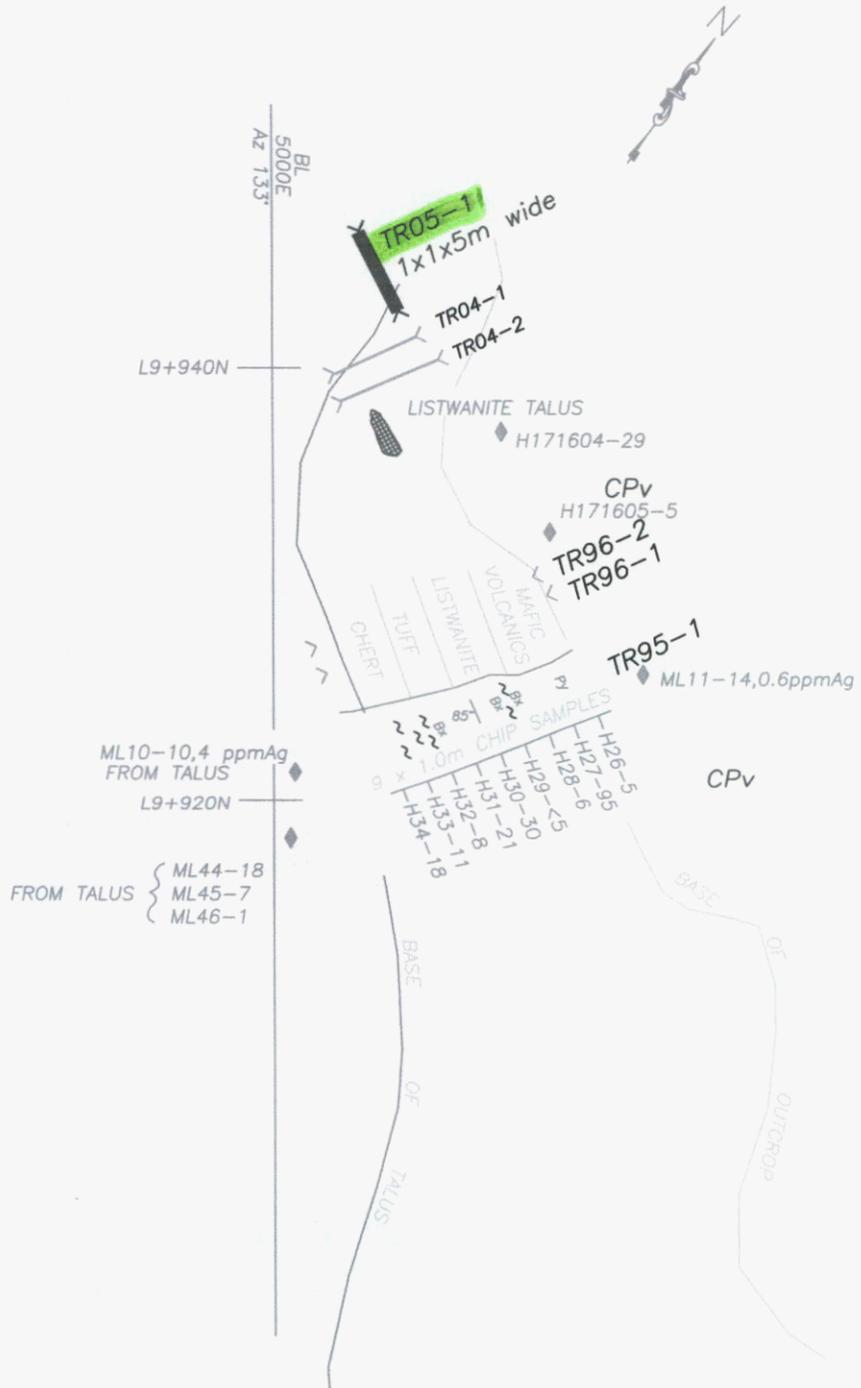
⊥ ROCK CHIP SAMPLE, 1996  
ASSAY RESULT Au ppb  
(H = HEMLO GOLD MINES)

~ FAULT

20° STRIKE AND DIP

MINERALIZATION

Py PYRITE  
Bx BRECCIA



GEOLOGY AFTER WHEELER, 1951

PLAN MAP  
TRENCH TR05-1

ANNE 1-4 CLAIMS WHITEHORSE MINING DISTRICT 105 D/B

DRAWN BY: J.A.J. CLARKE

DATE: AUGUST 2006

SCALE: approx 1:350

DRAWING NO.: FIG. 5

**MINFILE:** 105D 185  
**PAGE:** 1 of 2  
**UPDATED:** 2005/04/27

**YUKON MINFILE  
YUKON GEOLOGICAL SURVEY  
WHITEHORSE**

**MINFILE:** 105D 185  
**NAME:** BRONCO  
**STATUS:** ANOMALY  
**TECTONIC ELEMENT:** CACHE CREEK TERRANE  
**DEPOSIT TYPE:** UNKNOWN

**NTS MAP SHEET:** 105D\8  
**LATITUDE:** 60° 28' 33" N  
**LONGITUDE:** 134° 12' 6" W

**OTHER NAME(S):**  
**MAJOR COMMODITIES:**  
**MINOR COMMODITIES:**  
**TRACE COMMODITIES:**

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**CLAIMS (PREVIOUS & CURRENT)**

BRONCO, DG, GARY, GR, MIKE, NICK, OVID, UCHI, YUDA

**WORK HISTORY**

Staked as Bronco cl 1-10 (YB8141) by N. Horiuchi in Dec/87. N. Horiuchi staked Yuda cl 1-4 (YB27615) 600 m southwest of the Bronco claims in Jun/90 and carried out prospecting, soil sampling and trenching in 1991 and trenching in 1992. Horiuchi also staked the GR 1-20 cl (YB36097) 5 km southeast of the Yuda claims in Jul/91 and carried out hand trenching in 1992.

In Aug/94 R. Berdahl staked Gary 1-6 cl (YB47294) 2 km southwest. Horiuchi carried out 1 224 cu m of trenching on the GR claims in Oct/94.

In Mar/95 J. Clarke staked Uchi 1-2 (YB57479) on the southeast end of the Gary claims and carried out prospecting and sampling in Aug/95. Clarke added Uchi cl 3-4 (YB66545) to the southeast in Jan/96, restaked the Gary claims as Uchi cl 5-10 (YB66547) at the same time and added Uchi cl 11-12 (YB66629) in Mar/96. He carried out prospecting in 1996 and 1997 and hand trenched in 1997.

R. Hamel staked Nick cl 1-14 (YB66657) on the north boundary of the Uchi claims in Apr/96. In Aug/97, C. Kuntz staked Ovid cl 1-10 (YC08047) on the west boundary of the Uchi claims and Clarke partially restaked the Nick claims as Uchi cl 25-28 (YC08247).

In Aug/2001 J. Clarke staked Uchi cl 1-4 (YC19337), 2 km southwest of the occurrence. All previously staked Uchi claims had by this time expired. Clark carried out a small prospecting program over the following year.

**GEOLOGY**

The claims cover the faulted contact between Permian to Triassic metavolcanic rocks of the Cache Creek Group, and Jurassic Laberge Group sedimentary rocks of the Whitehorse Trough. The fault trace is marked by a linear belt of carbonatized ultramafic bodies and quartz-carbonate-chrome mica alteration ('listwanite').

Quartz veins and stockwork in the hanging wall volcanic rocks returned anomalous As, Sb, Ag, Cu and Au values. A close-spaced fracture cleavage extends outward from the contact tens of metres into the hanging wall.

Clarke staked the claims to cover several strong EM conductors revealed in a 1994 government funded airborne geophysical survey. The exploration program was cursory in nature and was carried out to verify the geophysical survey results. Clarke collected three samples from sheared chert of which one sample assayed 29 ppb Au. Clark's work in 1996 confirmed the presence of ultramafic volcanics and cherts both of which are common to listwanite deposits and the 1997 trenching revealed a number of fault structures containing weak sulfide mineralization.

Clarke's 2001-2002 prospecting program was focused at trying to locate the trace of airborne geophysical anomalies reported in the 1994 government geophysical survey. Although numerous small showings containing disseminated pyrite were identified, none returned anomalous mineralization.

#### **REFERENCES**

CLARKE, J., Apr/96. Assessment Report #093418 by J. Clarke.

CLARKE, J., Jan/97. Assessment Report \*#093660 by J. Clarke.

CLARKE, J., Mar/97. Assessment Report #093596 by J. Clarke.

CLARKE, J., Jul/98. Assessment Report #093876 by J. Clarke.

CLARKE, J. Feb/03. Assessment Report #094357 by J. Clarke.

DIGHEM I POWER, 1994. Airborne EM and MAG Surveys, Jakes Corner Project. DIAND Open File 1994-10 (G).

HUNT, J.A. et al., 1995. Interpretive geology of the Jakes Corner geophysical survey area (105C/5, 105D/8 and 9). Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada Open File 1995-7 (G). 1:50 000 scale map and report.

**APPENDIX II****STATEMENT OF EXPENDITURES****Prospecting, Mapping, and Hand Trenching  
2005/2006**

Fuel/Supplies:	\$50.00
Personnel: Joseph Clarke, prospector 3 days \$250/day (mapping, hand-trenching, prospecting)	\$750.00
<b>TOTAL COST</b>	<b><u>\$800.00</u></b>

**APPENDIX III****STATEMENT OF QUALIFICATIONS**

I, Joseph A. J. Clarke, of Marsh Lake Yukon Territory with mailing address of General Delivery, Whitehorse, Yukon hereby certify:

That I have graduated from the Haileybury School of Mines in 1985 with a diploma in Mining Engineering Technology;

That I have been engaged in prospecting in the Yukon on a full time basis since May of 1993 and have been engaged in prospecting and in the mineral industry for 20 years elsewhere in Canada;

That I have a commitment to prospect in a gentlemanly manner with respect for others who use the land.

Signed at Whitehorse, Yukon Territory on the 12 day of Oct., 2006.



Joseph A. J. Clarke



**APPENDIX IV****ACKNOWLEDGMENTS**

Assessment Report 092965 by Gary Reynolds

The Liswanite-Lode Gold Association of British Columbia  
Ash and Arksey  
Geological Fieldwork 1989, paper 1990-1

Airborne EM and MAG Survey  
Jakes Corner Project  
DIAND Open File 1994 - 10 (G)  
by Dighem I Power

Notes to Prospectors - Jakes Corner  
Dighem Survey Interpretation  
DIAND Open File 1995 - 12 (G)  
by M.A. Power Msc, Amerok Geophysics

Special thanks for geological discussions with the staff of the MDA and DIAND offices in Whitehorse, the staff at Aurum Geological and local prospectors.