GEOLOGICAL MAPPING
OF THE DEAFIES CREEK PROPERTY

Located Claims:

HAZ 5	**259221(7)**
OK	**259255(9)**

Vernon Mining Division

N.T.S. 82 L/6, 82 L/7

50° 18.6' N., 118° 59' W.

Owner:

SADDLE MOUNTAIN MINING CORPORATION

1500-789 West Pender Street
Vancouver, British Columbia
V6C 1H2

By:

John Ostler, M.Sc., P.Geo.
Consulting Geologist

PROFESSIONAL GEOSCIENTIST — PROVINCE OF BRITISH COLUMBIA — JOHN D. OSTLER

July 5, 1994

CONTENTS

GEOLOGICAL MAPPING OF THE DEAFIES CREEK PROPERTY

SUMMARY

The writer was retained by Saddle Mountain Mining Corporation (formerly Zicton Gold Limited) of Vancouver, B.C. through Cassiar East Yukon Expediting Ltd. to complete geological mapping of the area around and on the Deafies Creek Property during June, 1994.

The Deafies Creek Property is located on the eastern flank of the highland that separates White Valley to the east and Okanagan Valley to the west. This rolling upland area forms part of the southern part of the Shuswap Highland of south-central British Columbia. It comprises two located claims which are owned 100% by Saddle Mountain Mining Corporation. These claims cover 30 claim-units; about 700 ha (1680 A) after deducting areas of overlapping claims.

The property is centred on 50° 18.6' north and 118° 59' west in the Vernon Mining Division of B.C.

The Village of Lumby is the closest settlement to the Deafies Creek Property. It is 22 km (13.4 mi) east of Vernon and 5.5 km (3.4 mi) south of the southern boundary of the Deafies Creek Property. Lumby is about 504 km (307 mi) from the port of Vancouver. Access to the central part of the Deafies Creek Property from Lumby is via the Shuswap Falls, Trinity Creek and Deafies Creek roads. Access to the central area containing the 1993 soil grid and the main trench is via a branch road that diverges uphill from the Deafies Creek road about 2.8 km in from the Trinity Creek road. Four-wheel drive is required only during periods of poor weather.

During the 1994 program, the crew stayed in a motel in Vernon and drove to the property each day.

Elevations on the property range from about 725 m (2380 ft) where Deafies Creek leaves the easterly boundary of the claims to 1220 m (4000 ft) along the western boundary of the property (Figure 2).

Soils in the Deafies Creek valley developed beneath a fir, spruce pine and hemlock forest. About half of the property has been logged within the last 20 years. Generally, soil profiles are sufficiently mature to have distinct undisturbed horizons amenable to meaningful soil survey results.

The Deafies Creek Property adjoins the Lumby Gold Mine Property to the northwest. Exploration on the claims has been focused on finding similar gold-bearing structures to those found at the mine.

The Deafies Creek Property is underlain by a sequence of Triassic-age turbidites, pelites and high-level diorite intrusives that form part of the Slocan Group. These rocks were complexly deformed, metamorphosed and intruded by granitic rocks in the Lumby region. Deformation and metamorphism began with the folding of the Kootenay Arc at the western margin of proto-North America during the Middle Jurassic Period and culminated during the extension of the Shuswap metamorphic terrane during the Late Cretaceous Period.

During the Pleistocene Stage, glacial erosion moulded the current topography of the property-area. Minor Holocene uplift and erosion has exposed some of the older stratigraphy on the property.

The rocks on the Deafies Creek Property contain a record of local basin deepening and filling with eugeosynclinal turbidite deposits. The diorite bodies exposed near both the northern and southern boundaries of the property are coeval plutons to the Triassic-age turbidites that are exposed in the central part of the claims.

Diorite clasts found in conglomerate exposures near the northwestern corner of the OK claim indicate that the diorite intrusion near the northern boundary of the property broke through to surface on the basin floor and contributed clasts to the surrounding sediments. No evidence has been found to indicate that the diorite intrusion located near the southern boundary of the property reached surface.

The airborne electromagnetic anomaly located near Deafies Creek is probably related to a warp in the geomagnetic field caused by the location of a keel of Sicamous Formation sedimentary rocks located between two diorite bodies.

Only one sulphide mineral showing is known to exist on the Deafies Creek Property. It is located in the main trench at the centre of the 1993 soil survey. No economic mineralization was found at this showing.

Most of the area within the Deafies Creek Property is blanketed by a thin but extensive soil cover. A soil survey over the property would be the most useful way to discover if and mineralized areas are located on the claims.

GEOLOGICAL MAPPING
OF THE DEAFIES CREEK PROPERTY

1.0 INTRODUCTION

1.1 Terms of Reference

The writer was retained by Saddle Mountain Mining Corporation (formerly Zicton Gold Limited) of Vancouver, British Columbia through Cassiar East Yukon Expediting Ltd. to complete geological mapping of the area around and on the Deafies Creek Property.

Exploration was conducted on the Deafies Creek Property from June 15 until June 19, 1994. Data compilation and report production continued intermittently until July 5, 1994.

1.2 Location and Access

The Deafies Creek Property is located on the eastern flank of the highland that separates White Valley to the east and Okanagan Valley to the west. This rolling upland area forms part of the southern part of the Shuswap Highland of south-central British Columbia (Figure 1). The property comprises two located claims that cover 30 claim-units; about 700 ha (1680 A) after deducting areas of overlapping claims. This property adjoins the Lumby Gold Mine Property to the northwest.

The claims are centred on 50° 18.6' north and 118° 59' west in the Vernon Mining Division of B.C. (Figure 2).

The City of Vernon is the closest major supply and service centre to the Lumby area and the Deafies Creek Property. Vernon is located near the northern end of Okanagan Lake in Okanagan Valley. It services strong local agricultural and logging industries. Most services required for property exploration and development can be found there. The Village of Lumby is the closest settlement to the Deafies Creek Property. It is 22 km (13.4 mi) east of Vernon and 5.5 km (3.4 mi) south of the southern boundary of the Deafies Creek Property. Lumby is about 504 km (307 mi) from the port of Vancouver. Access to the central part of the Deafies Creek Property from Lumby is via the Shuswap Falls, Trinity Creek and

Deafies Creek roads. Access to the central area containing the 1993 soil grid and the main trench is via a branch road that diverges up hill from the Deafies Creek road about 2.8 km in from the Trinity Creek road. Four-wheel drive is required only during periods of poor weather.

During the 1994 program, the crew stayed in a motel in Vernon and drove to the property each day.

1.3 Terrain and Vegetation

The Deafies Creek Property is located on the eastern flank of the highland that separates White Valley to the east and Okanagan Valley to the west. This rolling upland area forms part of the southern part of the Shuswap Highland of south-central British Columbia (Holland, 1976).

Holland's description of the terrain of Shuswap Highland containing the area around the Deafies Creek Property is as follows:

> The Shuswap Highland ... extends southward from Mahood and Murtle Lakes to the Coldstream Valley east of Vernon, and lies between the Thompson Plateau on the west and the Monashee Mountains on the east. It is 140 miles long and 50 miles wide ...
>
> The Shuswap Highland consists of gentle or moderate sloping plateau areas rising form about 5,000 to over 7,000 feet, dissected by the Clearwater, North Thompson, Adams and Shuswap Rivers and their tributaries into large polygonal upland tracts. The valley sides are commonly steep because of glacial erosion, and the total relief in the uplands is moderate.
>
> ... The high points are progressively lower to the south. Most ridges and summits are rounded, and despite the height of much of the terrain the country lacks the jagged sawtooth profiles of the mountains to the east.
>
> The effects of glaciation in the region were largely to soften and reduce the upland relief while steepening and deepening the valleys. Cirque glaciation on northeastern exposures was a minor feature.
>
> Numerous large lakes, such as Murtle, Adams, Shuswap and Mabel Lakes, occupy some of the major valleys of the area, and these as well as the rather extraordinary pattern of drainage, quite obviously diverted from its preglacial flow are legacies of pleistocene ice occupation.
>
> Holland, S.S.; 1976: pp. 73-74.

The Deafies Creek Property occupies most of the upper part of the Deafies Creek valley (Figure 2).

White Valley contains Bessette Creek, a northeasterly flowing tributary of Shuswap River which enters Mabel Lake about 17 km (10.4 mi) northeast of the claims. Adequate water for mining purposes exists in the property-area; however, use may have to be negotiated with agricultural users located there.

Elevations on the property range from about 725 m (2380 ft) where Deafies Creek leaves the easterly boundary of the claims to 1220 m (4000 ft) along the western boundary of the property (Figure 2).

Soils in the Deafies Creek valley developed beneath a fir, spruce pine and hemlock forest. About half of the property has been logged within the last 20 years. Original forest on the southern part of the claims will be logged soon judging by the fresh timber cruising and new haulage roads located there.

Soils are developed on a relatively thin layer of till and decomposed local bedrock. Presently, the 1993 grid-area is covered with young second growth forest. Off skidder trails, soil profiles are sufficiently mature to have distinct undisturbed horizons amenable to meaningful soil survey results.

Soon, there will not be sufficient available timber on the Deafies Creek Property to support a major mining operation. However, timber is readily available at the sawmills at Lumby.

The property-area usually has mild winters and hot dry summers. Winter snowfall is generally light.

1.4 Property

The Deafies Creek Property comprises the following claims located in the Vernon Mining Division of British Columbia (Figure 2):

Claim Name	Record No.	No. of Units	Record Date
OK	259255(9)	20	September 20, 1985
HAZ 5	259221(7)	10	July 11, 1984

These claims are owned 100% by Saddle Mountain Mining Corporation (formerly Zicton Gold Limited) of Vancouver, British Columbia.

The property boundaries have not been surveyed.

1.5 History of Development around the Lumby Gold Mine

The history of the development of the gold mine at Lumby is most succinctly summarized by Drummond and Howard (1993). The following is paraphrased from their report by the writer.

Mineralization at the southern end of Saddle Mountain adjacent to Lumby, British Columbia was noted in the early 1900s by a local teacher whose prospect workings became known as the Teacher Showing (Figure 3). Fifty years later, the Chaput Logging Company exposed silver-lead-zinc-copper veins during road building for logging on the western slopes of Saddle Mountain. Claims were staked around what later became known as the Mine Showing (Figure 3). F.K. Explorations acquired the property in 1968. The Mine Showing was developed underground and a 50-ton flotation mill was built. From 1968 until 1970 over 1500 tons of concentrate was shipped from the mine to the smelter at Trail, B.C. Alberta Gypsum Ltd. had control of the property from 1971 to 1973 and conducted extensive surface and underground exploration. The mine was operated sporadically by Coast Interior Ventures Ltd. from 1974 until 1979. The capacity of the mill was expanded to 150 tons per day during 1980. Operations terminated in 1981.

The Quinto Mining Corporation acquired the mine and greatly expanded the property during 1983 with the plan to put it back into production based on greatly expanded ore reserves.

That year Quinto outlined co-incident soil and very low frequency electromagnetic (VLF-EM) anomalies on top of Saddle Mountain. The anomalous area was named the Plateau Zone (Figure 3). Trenching of the zone uncovered a gold-bearing shear of significant amounts. Gold was contained sporadically throughout sheared breccia and quartz veins contained within a graphitic host.

The company was greatly encouraged by the results of initial exploration at the summit of Saddle Mountain and embarked upon a greatly expanded program of exploration in 1985. That year 10 reverse circulation drill holes and 1396 ft (425 m) comprising 13 diamond drill holes were completed to extend the area of known mineralization. In 1986, exploration comprised geological mapping of the Saddle Mountain area (Kuran, 1986), 2700 m (8856 ft) of NQ diamond drilling and extensive VLF-EM and magnetometer surveys.

Exploration was continued through 1987 with 32 additional reverse circulation and 7 more diamond drill holes totalling 3030 m (9938 ft) of drilling. Geophysical survey coverage of Quinto's property was expanded. New surveys included airborne VLF-EM and magnetometer coverage of the whole property (Figure 3). Several broad anomalies were identified over the area.

During 1987 attention was focused on development, mining and milling considerations. A metallurgical test was conducted by Lakefield Research. In 1988 Kilborn Engineering constructed a computer model of the Plateau Zone comprising 21 vertical sections and a joint venture with Golden Seville Resources Ltd. was negotiated to test a column leach process on the graphitic gold mineralization. Late that year a preliminary production feasibility study was completed by Bechtel Canada.

Underground development at the 808 m level comprising 186 m (610 ft) of 3.05 x 3.66 m (10 x 12 ft) drift and two crosscuts at portal + 140 and 190 m comprising a total of 105 m (344 ft) was driven during 1990 by Sancold Resources Contractors Ltd. for Quinto. Bradley (1990) mapped and sampled the new Plateau Zone workings.

Recently, the potential for graphite and mica production as well as gold production of the mineralization on Quinto's property was studied by Drummond and Howard (1993).

1.6 Previous Work on the Deafies Creek Property

Saddle Mountain Mining Corporation's Saddle Mountain and Deafies Creek properties were staked during the mid-1980s adjacent to The Quinto Mining Corporation's Lumby Property to the east and northwest respectively.

Work by Quinto to put its Lumby gold mine back into production with new ore reserves has been paralleled by development on Saddle

Mountain's properties. The two companies have had a very good working relationship. Often, information has been shared to the benefit of all.

Preliminary prospecting and geophysical work done on the north-central part of the Deafies Creek Property during the early 1980s revealed a quartz outcrop measuring 2 x 3 m (6.6 x 9.8 ft) that was associated with a local geophysical anomaly. Subsequent trenching uncovered a zone of quartz veins and sulphide pods that have been interpreted to be a shear zone (Allen, 1989).

Quinto Mining Corp.'s airborne electromagnetic survey indicated that a broad anomaly extended from Quinto Mining Corp.'s claims westward onto the Deafies Creek Property (Figure 3). It was hoped that the mineralization uncovered by the work in the main trench area was associated with a large mineralized structure that extended beneath the electromagnetic anomaly across the Deafies Creek Property (John Hilton pers. comm.).

Further trenching during 1989 exposed a length of about 25 m (82 ft) of quartz vein containing pods of pyrrhotite with minor chalcopyrite, pyrite, galena and sphalerite (Allen, 1989).

Diamond drill hole OK89-1 was collared about 15 m (50 ft) south of the quartz knob exposed near the eastern end of the main trench (Figure 7). It was drilled at an orientation of $355^{\circ}/-60^{\circ}$ for a length of 61.0 m (200 ft).

The following year, diamond drill hole Z90-2 was collared about 49 m (150 ft) west of DDH OK89-1. It was drilled at an orientation of $005^{\circ}/-65^{\circ}$ for a length of 61.6 m (202 ft) to test the rock beneath the western end of the main trench (Figure 7) (Allen, 1990).

Allen (1989, 1990) reported that no significant economic mineralization was found in either drill hole.

A series of 27 samples were taken from road outcrops of Slocan Group metasediments during the 1991 exploration program (Halliwell and Allen, 1991). Whole rock geochemical analysis conducted on those samples showed them to be typical greywackes and slates.

During the 1992 exploration program, metasedimentary road outcrops were mapped and a very low frequency electromagnetic (VLF-EM) survey was conducted over the area around the main trench. A total of 22 soil samples were taken in the grid-area (Halliwell and Allen, 1992).

Two groups of anomalies were contained within the VLF-EM results. One group was located about 200 m (656 ft) north of the main trench. The writer interpreted these anomalies to be associated with the diorite greywacke contact (Figure 7). The other group of anomalies was located around the main trench.

The 1993 soil survey was conducted over the area covered by the 1992 VLF-EM anomalies. No significant soil anomalies were found in the 1993 survey-area (Ostler, 1993B, Figure 12).

Outcrop and float on the northern part of the property was mapped during the 1993 program. It was learned that the 1993 soil grid-area was located near the margin of a Triassic-age diorite intrusive similar to those mapped on Saddle Mountain located 5 km (3 mi) southeast of the Deafies Creek Property (Ostler, 1993A, 1993B).

1.7 Summary of Present Work

Field work on the Deafies Creek Property was conducted from June 15 until June 19, 1994. Data compilation continued until July 5, 1994. The work was undertaken by:

John Ostler; M.Sc., P.Geo. West Vancouver, B.C.	Consulting Geologist
David R. Jones, B.Sc. Vancouver, B.C.	Geological Technician

The 1994 work program on the Deafies Creek Property included the following:

Geological Work; A. Geological Mapping, 550 ha mapped at a scale of 1:5000 (Figure 7).	8.00 man-days
B. Transportation, expediting, camp set-up, data compilation, drafting and report time	5.50 man-days
Total of the June, 1994 work program	13.50 man-days

1.8 Claims Worked On

During 1994, work was done on the following claims:

Claim Name	Record No.	No. of Units	Current Expiry Date
OK	259255(9)	20	September 20, 1994
HAZ 5	259221(7)	10	July 11, 1994

2.0 GEOLOGY AND GEOPHYSICS

2.1 Regional Geology

The rocks in the area around Lumby were mapped by Jones (1959) as undefined units of the Monashee Group which was assigned to the Shuswap Terrane. Their age; Archean or younger, and correlation with other lithostratigraphic units was unknown. It was thought that they were bounded by two northwesterly trending faults, one of which separated them from Triassic-age Slocan Group rocks to the east.

The Shuswap Metamorphic Complex is exposed just west of the Lumby area.

It was considered by Jones and his contemporaries to be a western extension of the Canadian shield that was in fault contact with adjacent younger rocks. Okulitch (1979) found that along some of the margins of the complex, Mesozoic-age units could be traced into the complex and correlated. Consequently, Okulitch (1979) determined that the Shuswap Metamorphic Complex had a Precambrian-age core that was added to during subsequent orogenic and metamorphic events.

Okulitch (1979) found that the Lumby area was underlain by shale, massive siltstone, conglomerate and tuff (Figure 4). He could not find any evidence of a boundary fault between the Sicamous Formation of the Monashee Group and adjacent Slocan Group rocks and thus assigned everything to the Late Triassic-age Slocan Group.

The Slocan Group rocks near Lumby have been influenced profoundly by their proximity to the Shuswap Metamorphic Complex which has destroyed many sedimentary structures and lithological relationships through conversion of sedimentary and volcanic rocks to phyllites, schists and gneisses. East of the property-area the history of these units has been discerned from extensive exploration.

The Slocan Group rocks form some of the upper part of the Kootenay Arc, which extends in southwestern British Columbia from the U.S. border to northeast of Revelstoke (Douglas et al; 1970).

Kootenay Arc sediments and volcanics were deposited at the western margin of proto-North America in the Cordilleran Geosyncline. Kootenay Arc deposition from Late Proterozoic until Middle Palaeozoic time was in a large eugeosyncline that segregated into smaller sub-basins during the Late Palaeozoic Era. Mesozoic deposition was mostly miogeosynclinal.

The older eugeosynclinal assemblage is exposed mostly in the eastern part of the Kootenay Arc; the younger miogeosynclinal assemblage is exposed mostly in the western part of the Kootenay Arc. The Lumby area is underlain by the Slocan Group which forms part of that miogeosynclinal assemblage.

Read and Wheeler (1976) mapped the Slocan Group over a broad area just northeast of the Lumby area. Their description of the Slocan Group was as follows:

> The Slocan Group lies between the Kuskanax and Nelson Batholiths and extends into Vernon map-area (Jones, 1959), between Thor-Odin and Pinnacles Domes. The group consists of a thick unit of pelitic rocks overlain by approximately 4,000 feet of volcanic rocks. At the base of the group, lenses of conglomerate and sedimentary breccia ... , composed of Kaslo detritus, disconformibly overlie the Kaslo Group. Near the base, limestone ..., up to 100 feet thick, forms layers intercalated with grey argillite, phyllite and fine-grained quartzite ... Near the top of (this) map unit ..., rocks become tuffaceous and pass into meta-andesite and meta-dacite tuffs and flows ..., and augite meta-basalt and meta-andesite flows and tuffs ... Between Columbia River and Slocan Lake, these volcanic rocks core the depressions of the doubly-plunging synclines ... West of Slocan Lake, an increase of metamorphic grade towards Valhalla Dome, which lies south of the map-area, has converted metasedimentary rocks of the Slocan Group to mica schist ... and marble ...
>
> Read, P.B. and Wheeler, J.O.; 1976:
> Descriptive Notes to G.S.C., O.F. 432.

Slocan Group rocks are intruded by a suite of calc-alkalic batholiths and stocks that are part of the Nelson Batholith (Read and Wheeler, 1976). Nelson Batholith intrusions are concordant intrusions elongate parallel to the westerly trend of the country rock. They are dated by Read and Wheeler (1976) as Jurassic to Cretaceous, generally about 164 million years old.

Read and Wheeler (1976) recognized four phases of regional deformation in Kootenay Arc rocks east of the Lumby area.

The first phase of deformation produced rootless isoclinal folds with well-developed, axial plane foliation during the Middle Palaeozoic. This phase of deformation was completed before the Slocan Group was deposited and consequently, has no relevance to the geology of the Saddle Mountain or Deafies Creek properties.

The second and third phases of deformation occurred during the Middle Jurassic Period after deposition of the Slocan Group and early during emplacement of Nelson Batholith intrusions. Read and Wheeler (1976) estimated that these phases of deformation and associated regional metamorphism occurred between 178 and 164 million years ago.

Second and third-phase folds are open to tight folds with a crenulation axial plane cleavage.

Read and Wheeler (1976) recognized a late phase of deformation that produced microscopic kink folds of various orientations in phyllites.

Jurassic-age regional metamorphism in Slocan Group rocks varies from chlorite to biotite sub-facies of the greenschist facies of metamorphism. Locally, Slocan Group rocks are metamorphosed to granulite facies due to contact metamorphism during the emplacement of intrusions related to the Nelson Batholith and anatexis during extension of the Shuswap Metamorphic Complex.

Okulitch (1979) described the structures observed in Slocan assemblage rocks near Lumby as follows:

> Structures in the Sicamous Formation are well-developed at all scales but are variable in their style and mutual relationships throughout the project-area. Bedding and sub-parallel foliation are ubiquitous; the latter is particularly evident although fine laminar compositional layering is also present... Attenuated isoclinal folds are common and these early structures are similar in many respects to those in adjacent older units... Megascopic early folds in the Sicamous Formation on the flanks of the Chase and Silver Star Anticlines are the same as those described in the Silver Creek and Tsalkom Formations.
>
> Late and latest structures present in the Sicamous Formation are for the most part also the same as in adjacent units. Possibly

significant exceptions are latest brittle folds west of Adams Lake that plunge gently east, which are of anomalous orientation, and polyphase folds in Coldstream and Creighton Valleys. These features may be related to major faulting...

Okulitch; A.V.: 1979;
Descriptive Notes to G.S.C.; O.F.637, Map B

Plutonic rocks ranging in age from Ordovician to Cretaceous have been mapped in the area around Lumby and Vernon (Jones, 1959; Okulitch, 1979). Small intrusive plugs of Jurassic-age diorite and Cretaceous-age granite were mapped near some of the peaks near the Deafies Creek and Saddle Mountain properties (Okulitch, 1979). The intrusions have been related to the major orogenic events that have affected the region.

These orogenic events were described by Okulitch (1979) as follows:

The Columbian Orogeny, occurring during the Early Jurassic to Mid-Cretaceous time, was the major event affecting rocks in the project-area. Most of the polyphase ... folding, regional metamorphism and faulting took place at this time. Extensive plutonism accompanied and followed deformation...

Within the project-area, radiometric data ... suggest that closure of the K-Ar isotopic system during waning regional metamorphism and deformation took place at least 130 to 155 MA ago (Early Cretaceous to Middle Jurassic). Early Jurassic rocks were affected by most deformational phases of the orogeny; Early Cretaceous plutons ... are post-tectonic.

Uplifting and erosion followed the Columbian Orogeny. Final cooling of high-grade metamorphic rocks may not have taken place until about 50 MA ago ... or a discrete thermal event, perhaps associated with Eocene plutonic and volcanic rocks affected the Rb-Sr and K-Ar isotopic systems ... Movement along northerly trending faults and latest warping preceded or accompanied extrusion of (Eocene or Oligocene-age volcanics). Numerous feeder dykes followed fracture and fault planes. Such tensional features may be induced by post-orogenic erosion, uplift and cooling of the crust ...

Post-Eocene uplift and faulting took place predominantly in the Shuswap Metamorphic Complex and resulted in erosion of (the Tertiary-age volcanics) and further exposure of the metamorphic terrain.

Okulitch; A.V.; 1979:
Descriptive Notes to G.S.C., O.F.637, Map B

Large cliff-forming outcrops of Tertiary-age flood basalts and andesites are exposed on the eastern part of the Saddle Mountain Property about 8 km east of Lumby (Ostler, 1993A). There, they unconformably overlie Slocan Group metasediments.

The Lumby area underwent significant glaciation during the Pleistocene Stage, producing broad valleys. Late Pleistocene and Recent glacio-fluvial sediments filled White Valley to its present topographic level and a thick mantle of glacial till was deposited on lower hill slopes. A thick apron of glacio-fluvial sediments covers the central part of the Saddle Mountain Property burying Slocan Group rocks located there (Ostler, 1993A).

Interglacial palaeosols uncovered in the trenches at the Deafies Creek Property indicate that the profiles of upper ridge slopes in the White Valley area have been changed little by later Pleistocene glaciation. From fresh Slocan Group rocks beneath the palaeosols it appears that Tertiary-age regoliths were scraped off the hillsides by earlier Pleistocene-age glaciations (Ostler, 1993B).

Recent rejuvenation and valley downcutting occurred along Blue Springs Creek in the southern part of the Saddle Mountain Property resulting in the erosion and exposure of glacio-fluvial stratigraphy there.

The preceding geological history is summarized in a table of geological events and units that accompanies this report (Figure 5).

2.2 Regional Geophysics

An aeromagnetic survey was flown over the Lumby area in 1972 and published in 1973 by Geoterrex Limited. The part of the survey that includes the Saddle Mountain and Deafies Creek properties is available from the Department of Energy, Mines and Resources (G.S.C.) as Map 8502G (Figure 6).

In general, the magnetic profile in the property-areas is rather flat. A significant exception is over the Oligocene to Eocene-age flood basalts exposed in the eastern part of the Saddle Mountain Property. There, an intense magnetic high corresponds with the location of the flood basalts. Mapping in that area indicates that the intensity of the magnetic high is related directly to local basalt thickness (Ostler, 1993A).

The Quinto Mining Corporation conducted an extensive airborne electromagnetic survey over White Valley north of the Village of Lumby (Figure 3). That survey included the Lumby Gold Mine and parts of the Saddle Mountain and Deafies Creek properties. Several anomalies that extended from Quinto's property onto Saddle Mountain's ground were identified. At present, most of the anomalies have not been explored sufficiently.

2.3 Economic Mineralization at the Lumby Gold Mine

Saddle Mountain was named well. It has two rounded peaks which are composed of diorite and its gneissic equivalents. The peaks are separated by a saddle of fine-grained metasedimentary rocks (Ostler, 1993A). The metasediments host mineralized southward dipping shears which are probably thrust faults. Similar structures may exist on the Deafies Creek Property.

The shears contain irregular segregations of quartz and graphite that are associated with disseminated pyrite containing gold. Minor amounts of galena, sphalerite, chalcopyrite, bornite, covelite and arsenopyrite occur with the pyrite.

Gold at the Lumby Gold Mine occurs as fine-grained native gold within pyrite grains and along hairline fractures within the shear zones (Drummond and Howard, 1993).

Underground sampling by Bradley (1990) along the 808 m level revealed the following:

	Width	Average Assay	Assay Range
No.140 Cross-cut	20 m	0.044 oz/ton Au	0.001 to 0.313 oz/ton Au
No.190 Cross-cut	14 m	0.060 oz/ton Au	0.005 to 0.222 oz/ton Au

Bradley (1990) observed that the mineralized rock looked "shiny black". A metallurgical test (Drummond and Howard, 1993) revealed that the mineralized rock contained 5 to 6% graphite and a significant amount of sericite mica. Graphite occurred as 0.1 to 0.3 x 2.5 micron grains interlayered with mica.

Metallurgical tests regarding the recovery of graphite and sericite as concentrate byproducts have been very encouraging. Bench tests using Dow Froth 250 to float off minerals resulted in a concentrate weighing about 15 to 20% of the original sample that contained about 5.35% graphite and 0.136 oz/ton gold. Further flotation with a collector resulted in concentration to 0.98 oz/ton gold. The tails weighed 62.8% of the original sample weight and contained 0.038 oz/ton gold (Drummond and Howard, 1993).

Drummond and Howard (1993) calculated that the average head grade in the Lumby Gold Mine was 0.275 oz/ton and that previous estimates of 0.18 oz/ton obtained from earlier sampling were due to the loss of some of the extremely fine-grained gold during processing.

2.4 Property Geology

2.4(i) Stratigraphy

The oldest rocks exposed on the Deafies Creek Property are metasediments of the Late Triassic-age Sicamous Formation which forms part of the Slocan Group. The writer believes that Slocan Group rocks underlie the whole of the property but are obscured in most areas by a layer of ablation till (Figure 7). Most of the geological data from this area is from float mapping along closely spaced traverses. Sparse outcrop precludes any meaningful stratigraphic study of the area.

Exposures, subcrop and float of Sicamous Formation rocks on and around the property were mapped at a scale of 1:5000 during the 1994 exploration program (Figure 7). There, a assemblage of greywacke, siltstone and pelite containing minor conglomerate was sparsely exposed in a series of road cuts and beneath upturned roots of fallen trees. This rock assemblage has been metamorphosed to slate, phyllite, metagreywacke (Units Gw and Slt, Figure 7).

Diorite is exposed in several small outcrops at the crest of the rounded hill in the north-central part of the property (Unit D, Figure 7). Float mapping indicates that these outcrops are part of an intrusive body that covers at least 150 ha (360 a) on the claims.

Additional diorite exposures are located near the ridge crest just of the southern boundary of the claims. The southern diorite seems to be an elongate body that extends for at least 1200 m (3936 ft) eastward from the southwestern corner of the OK claim (Figure 7).

Similar intrusives at Saddle Mountain; located about 7.4 km (4.6 mi) south-southeast of the Deafies Creek Property, are mapped by Okulitch (1979) (Figure 4) and Jones (1959) as Cretaceous-age granitics. The writer disagrees with that designation.

The cores of the intrusions at Saddle Mountain are granoblastic diorite and quartz diorite. Within 100 m of their margins the granoblastic texture is progressively replaced by a gneissic texture. Near the northern peak of Saddle Mountain, the marginal diorite gneiss is folded within the carbonate and pelitic units around second-phase structures. The central parts of the diorite intrusions contain all of the cleavages found in the sedimentary units (Ostler, 1993A). From this it is concluded that diorite intrusion predated deformation which was dated by Read and Wheeler (1976) to have occurred during the Middle Jurassic Period between 178 and 164 million years ago.

Near the margins of the diorite intrusion located in the northern part of the Deafies Creek Property the writer mapped small outcrops of volcanic breccia containing diorite and Slocan Group sediment clasts (Unit Dag, Figure 7). Slocan Group siltstone outcrops along the power line in the northwestern part of the property contained this conglomerate beds with similar diorite clasts.

The writer concluded that these diorite intrusions were a member of the Late Triassic-age Sicamous Formation. They were emplaced as shallow bodies that commonly reached surface as small volcanic mounds during deposition of Slocan Group sediments.

The writer found no conclusive evidence indicating that the diorite body near the southern boundary of the Deafies Creek Property reached surface and contributed clasts to Sicamous Formation sediments.

An airborne electromagnetic anomaly was found by the 1987 survey to extend into the central part of the Deafies Creek Property (Figure 3). That anomaly may have been related to a warp in the geomagnetic field caused by the location of a keel of Sicamous Formation sedimentary rocks located between two diorite bodies.

Late Tertiary and Pleistocene weathering moulded White Valley to its present shape (Holland, 1976). A thick apron of glacio-fluvial sediments covers the central part of the valley burying Slocan Group rocks located there.

Preglacial soils on the upper slopes like those around Deafies Creek were commonly left in hollows as lithified regoliths between bedrock and Holocene-age soils. Some preglacial regolith was exposed in the trenches in the 1993 soil grid-area.

2.4 (ii) Deformation and Metamorphism of Sicamous Formation Rocks

The Sicamous Formation rocks on the property have been subjected to pervasive polyphase deformation and metamorphism. At Deafies Creek, the writer recognized three phases of deformation (Figure 7).

First-phase structures are mostly outcrop-scale tight to isoclinal folds and small crenulations which are most evident in pelitic strata. Generally, the first cleavage strikes northwest-southeast and is at a low angle to bedding. Most of the metamorphic mineral growth occurred during this phase of deformation. First-phase structures and cleavages have been reoriented by second-phase structures.

Most of the major structures in the Deafies Creek area are related to the second phase of deformation. A regional-scale second-phase syncline mapped by Okulitch (1979) (Figure 4) in the Deafies Creek area may have been the result of deepening of the sedimentary keel located in the central property-area. This could have been caused by compression between the two diorite bodies located at the northern and southern property boundaries.

A syncline exposed in greywacke and slate near the southwestern corner of the Haz 5 claim (Figure 7) is probably a minor fold on the southern limb of the regional syncline proposed by Okulitch (1979).

The second-phase cleavage in the Deafies Creek area strikes northwest and dips either north or south. Some of the variation in its orientation may be due to subsequent brittle deformation. This cleavage is defined by micaceous development. Metamorphic mineral development associated with the second phase of deformation is less pervasive than that developed during the first phase.

The third phase of deformation is recorded as a northeasterly striking, steeply dipping fracture cleavage.

In general, metamorphic mineral development indicates that biotite grade of the greenschist facies of regional metamorphism was achieved in Sicamous Formation rocks.

2.4 (iii) Exposed Economic Mineralization

Only one sulphide mineral showing is known to exist on the Deafies Creek Property. It is located in the main trench at the centre of the 1993 soil survey (Figure 7). Two outcrops are exposed in the trench. The easterly outcrop hosts an east-west striking, steeply dipping, 50 cm (1.6 ft) thick white quartz vein in bleached greywacke. The westerly outcrop contains a 20 cm (0.6 ft) thick white quartz vein that is oriented $121^\circ/65^\circ$ NW. There is a small amount of rust on this vein due to hematite staining where it is in contact with a indurated preglacial regolith. No economic mineralization is evident in either vein.

A small pile of massive pyrrhotite cobbles is located just south of the easterly outcrop in the trench. Such mineralization is not exposed in outcrop.

Composite chip samples taken of the two veins and the massive pyrrhotite mineralization contained no economic mineralization (Ostler, 1993B).

3.0 CONCLUSIONS AND RECOMMENDATIONS

3.1 Conclusions

The Deafies Creek Property is underlain by a sequence of Triassic-age turbidites, pelites and high-level diorite intrusives that form part of the Sicamous Formation of the Slocan Group.

These rocks were complexly deformed, metamorphosed and intruded by granitic rocks in the Lumby region. Deformation and metamorphism began with the folding of the Kootenay Arc at the western margin of proto-North America during the Middle Jurassic Period and culminated during the extension of the Shuswap metamorphic terrane during the Late Cretaceous Period.

The stratigraphy on the Deafies Creek Property is mostly covered by a thin mantle of ablation till and soil. Consequently, float mapping and soil survey are the most useful exploration techniques to use in this area.

The rocks on the Deafies Creek Property contain a record of local basin deepening and filling with eugeosynclinal turbidite deposits. The diorite bodies exposed near both the northern and southern boundaries of the property are coeval plutons to the Triassic-age turbidites that are exposed in the central part of the claims.

Diorite clasts found in conglomerate exposures near the northwestern corner of the OK claim indicate that the diorite intrusion near the northern boundary of the property broke through to surface on the basin floor and contributed clasts to the surrounding sediments. No evidence has been found to indicate that the diorite intrusion located near the southern boundary of the property reached surface.

The airborne electromagnetic anomaly located near Deafies Creek is probably related to a warp in the geomagnetic field caused by the location of a keel of Sicamous Formation sedimentary rocks located between two diorite bodies.

Only one sulphide mineral showing is known to exist on the Deafies Creek Property. It is located in the main trench at the centre of the 1993 soil survey. No economic mineralization was found at this showing.

3.2 Recommendations

Most of the area within the Deafies Creek Property is blanketed by a thin but extensive soil cover. A soil survey over the property would be the most useful way to discover if and mineralized areas are located on the claims.

West Vancouver,
British Columbia
July 5, 1994

John Ostler, M.Sc., P.Geo.
Consulting Geologist

4.0 REFERENCES

Allen, A.R.; 1990: Diamond Drilling Report: The Lumby Property Vernon Mining Division, B.C. DD Hole Z90-2 on the OK Claim; B.C. Assessment Rept. No. 20363, 7 p. 5 fig.

Allen, A.R.; 1989: Diamond Drilling Report on the Lumby Property Vernon Mining Division; B.C. Assessment Rept. No. 18932, 8 p. 2 fig.

Allen, A.R.; 1987 (Revised): Report on the Lumby Property Vernon Mining Division, British Columbia; Rept. to Zicton Gold Ltd, 11 p. 8 fig.

Bradley, M.; 1990: Report on Chip/Channel Sampling and Geological Mapping of the 140 East and 190 East Cross-cuts, 808 m Level Underground, Chaput 5 Claim: Report to The Quinto Mining Corporation.

Douglas, R.J.W. et al.; 1970: Geology and Economic Minerals of Canada; Dept. Energy, Mines and Res., Economic Geology Rept. No.1, pp. 367-420.

Drummond, A.D. and Howard, D.A.; 1993: Report on the Exploration Potential of the Muscovite-Graphite-Gold Deposit of the Quinto Mining Corporation; Report to The Quinto Mining Corporation.

Halliwell, D.R. and Allen, A.R.; 1992: Geology, Geophysics and Geochemistry Report: The Lumby Property, Claims OK, HAZ 5; B.C. Assessment Rept. No. 22554, 17 p. 11 fig.

Halliwell, D.R. and Allen, A.R.; 1991: Geology and Prospecting Report, The Lumby Property, OK and Haz 5 Claims; B.C. Assessment Rept. No. 21561, 10 p. 6 fig.

Holland, S.S.; 1976: Landforms of British Columbia, A Physiographic Outline; B.C. Min. Energy, Mines and Petr. Res., Bull. 48, pp. 73-74.

Jones, A.G.; 1959: Vernon Map-area, British Columbia; Geol. Surv. Canada, Mem. 296.

Kuran, D.L.; 1986: Report on the Lumby Project; Report to The Quinto Mining Corporation.

Okulitch, A.V.; 1979: Thompson-Shuswap-Okanagan Map-area, British Columbia; Geol Surv. Canada, Open File 637, 5 maps.

Ostler, John; 1993A: Geological and Geochemical Exploration on the B.S 3 and Hol 3 Claims of the Saddle Mountain Property; B.C. Assessment Rept. No. 22937, 34 p. 16 fig.

Ostler, John; 1993B: Geological and Geochemical Report on the Deafies Creek Property; B.C. Assessment Rept. No. 22954, 27 p. 12 fig.

Read, P.B. and Wheeler, J.O.;1976: Geology: Lardeau West-half, British Columbia; Geol. Surv. Canada, Open File 432, 1 map + notes.

5.0 ITEMIZED COST STATEMENT FOR THE JUNE, 1994 EXPLORATION PROGRAM

Wages:		
J. Ostler; M.Sc., P.Geo.		
6.0 days @ $300/day	$ 1,800.00	
David R. Jones, B.Sc.		
4.5 days @ $225/day	$ 1,012.50	
	$ 2,812.50	$ 2,812.50
Transport:		
Truck;		
1 1-ton 4X4 pick-up, 5/30 month		
accumulated @ $2400/month	$ 400.00	
Gasoline and oil	$ 128.04	
Highway tolls	$ 20.00	
	$ 548.04	$ 548.04
Camp and Equipment:		
Survey and sampling supplies	$ 1.37	$ 1.37
Crew Costs:		
Hotel	$ 233.28	
Meals in Transit	$ 249.55	
Long distance telephone	$ 13.01	
	$ 495.84	$ 495.84
Report Production:		
Drafting; 10 hours @ $25/hr	$ 250.00	
Copy of text, maps and diagrams	$ 120.13	
Report covers	$ 10.51	
	$ 380.64	$ 380.64
Cost of June, 1994 work		**$ 4,238.39**
G.S.T.; 7% of $4,238.39		$ 296.69
Total Cost of June, 1994 work		**$ 4,535.08**

APPENDIX A

CERTIFICATE OF QUALIFICATION

I, John Ostler, of 2224 Jefferson Avenue in the City of West Vancouver, Province of British Columbia do hereby certify:

That I am a consulting geologist with business address at 2224 Jefferson Avenue, West Vancouver, British Columbia;

That I am a graduate of the University of Guelph in Ontario where I obtained my Bachelor of Arts degree in Geography (Geomorphology) and Geology in 1973 and that I am a graduate of Carleton University of Ottawa, Ontario where I obtained my Master of Science degree in Geology in 1977;

That I am licensed to practice as a Professional Geoscientist by the Association of Professional Engineers and Geoscientists of British Columbia and as a Professional Geologist by the Association of Professional Engineers, Geologists and Geophysicists of Alberta, and that I am a Fellow of the Geological Association of Canada;

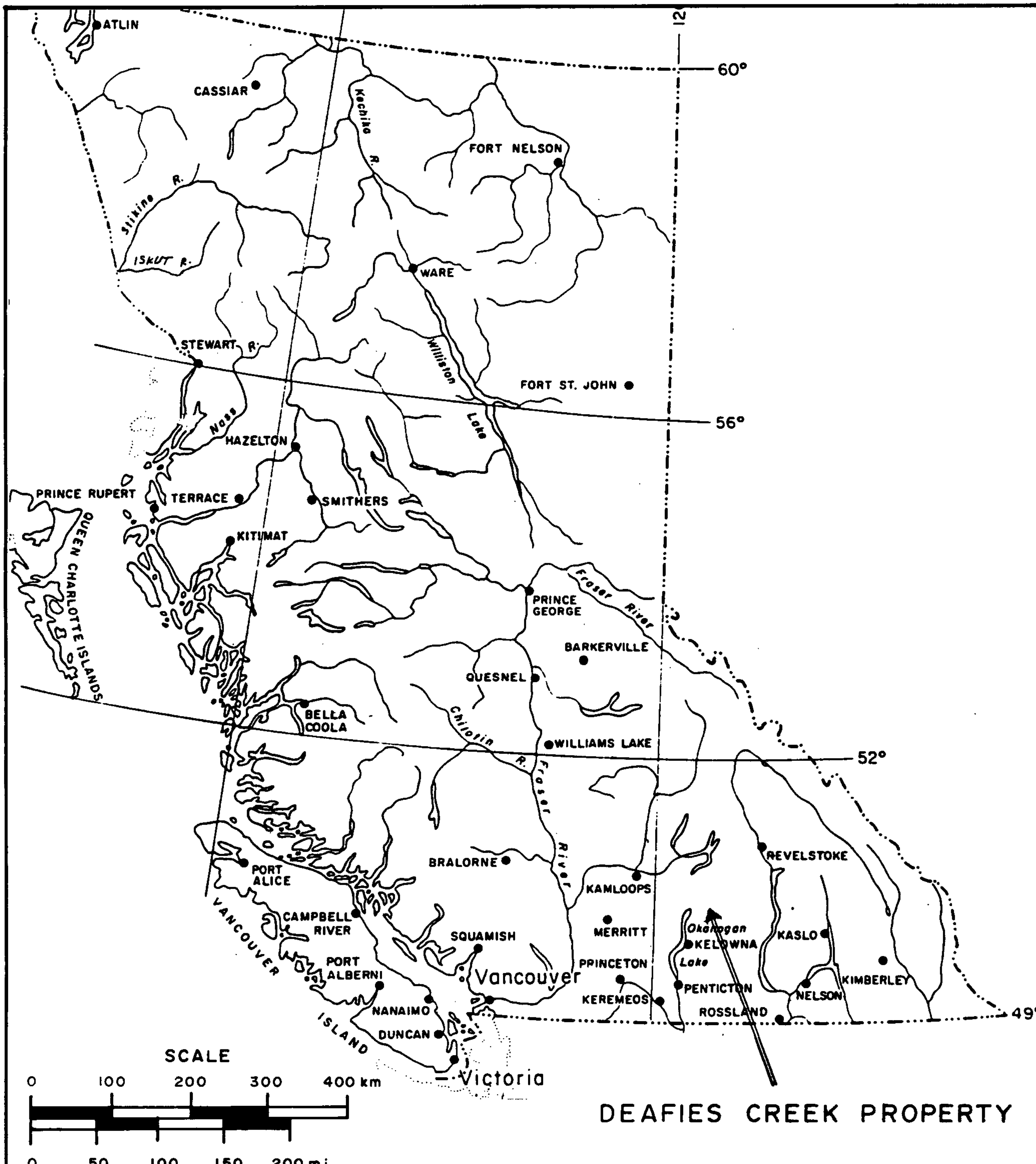
That I have been engaged in the study and practice of the geological profession for over 20 years;

That this report is based on data in literature and a personal examination of the Deafies Creek Claim Group located in the Vernon Mining Division of British Columbia conducted on June 15 to 19, 1994;

That I have no interest in the Deafies Creek Property nor in the securities of Saddle Mountain Mining Corporation nor do I expect to receive any.

Dated at West Vancouver, British Columbia this 5th day of July, 1994.

John Ostler, M.Sc., P.Geo.
Consulting Geologist



N.

PROFESSIONAL GEOSCIENTIST
PROVINCE OF BRITISH COLUMBIA
J. D. OSTLER

Figure 1

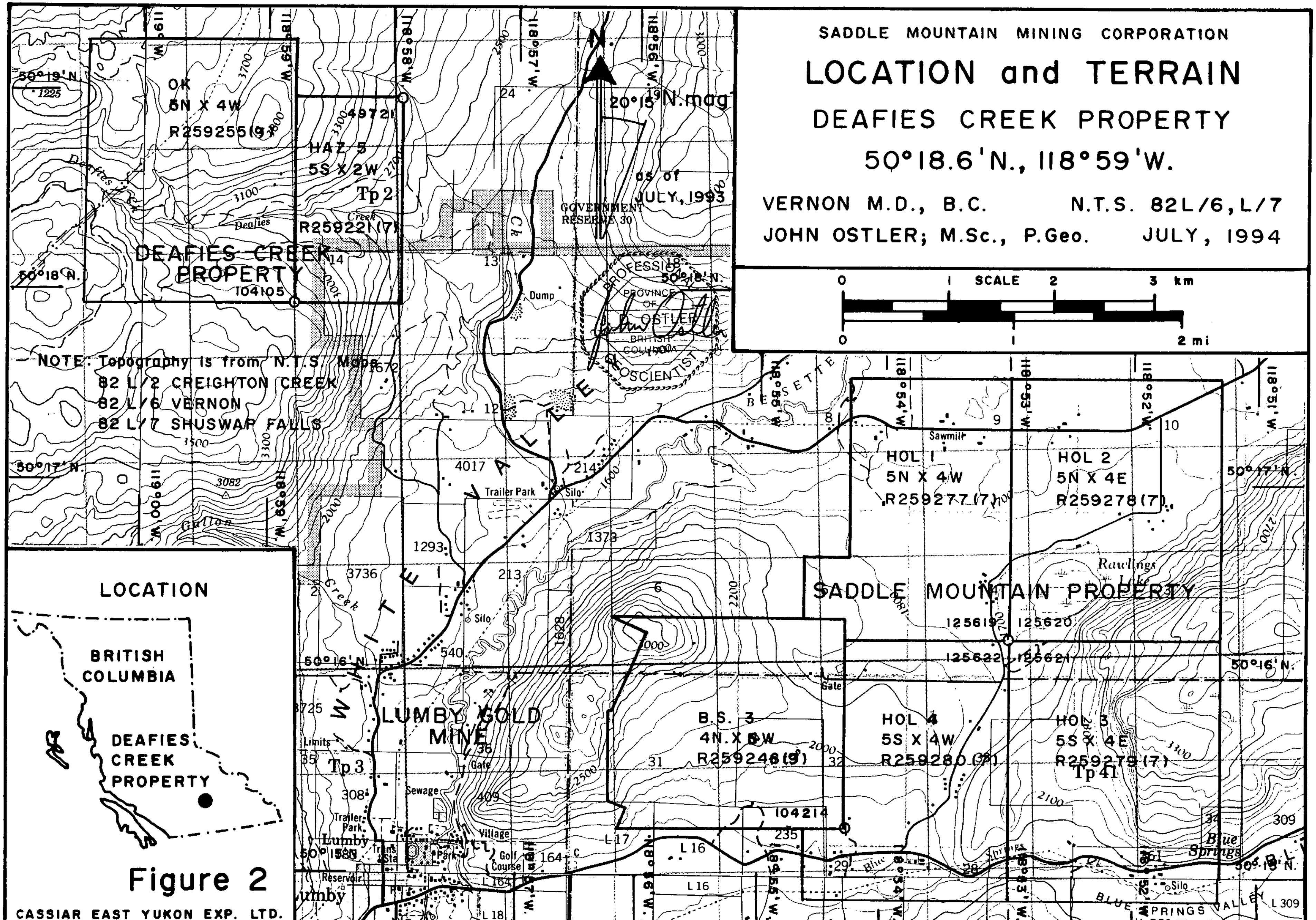
CASSIAR EAST YUKON EXP. LTD.

SADDLE MOUNTAIN MINING CORPORATION

GENERAL LOCATION
DEAFIES CREEK PROPERTY
50°18.6'N., 118°59'W.

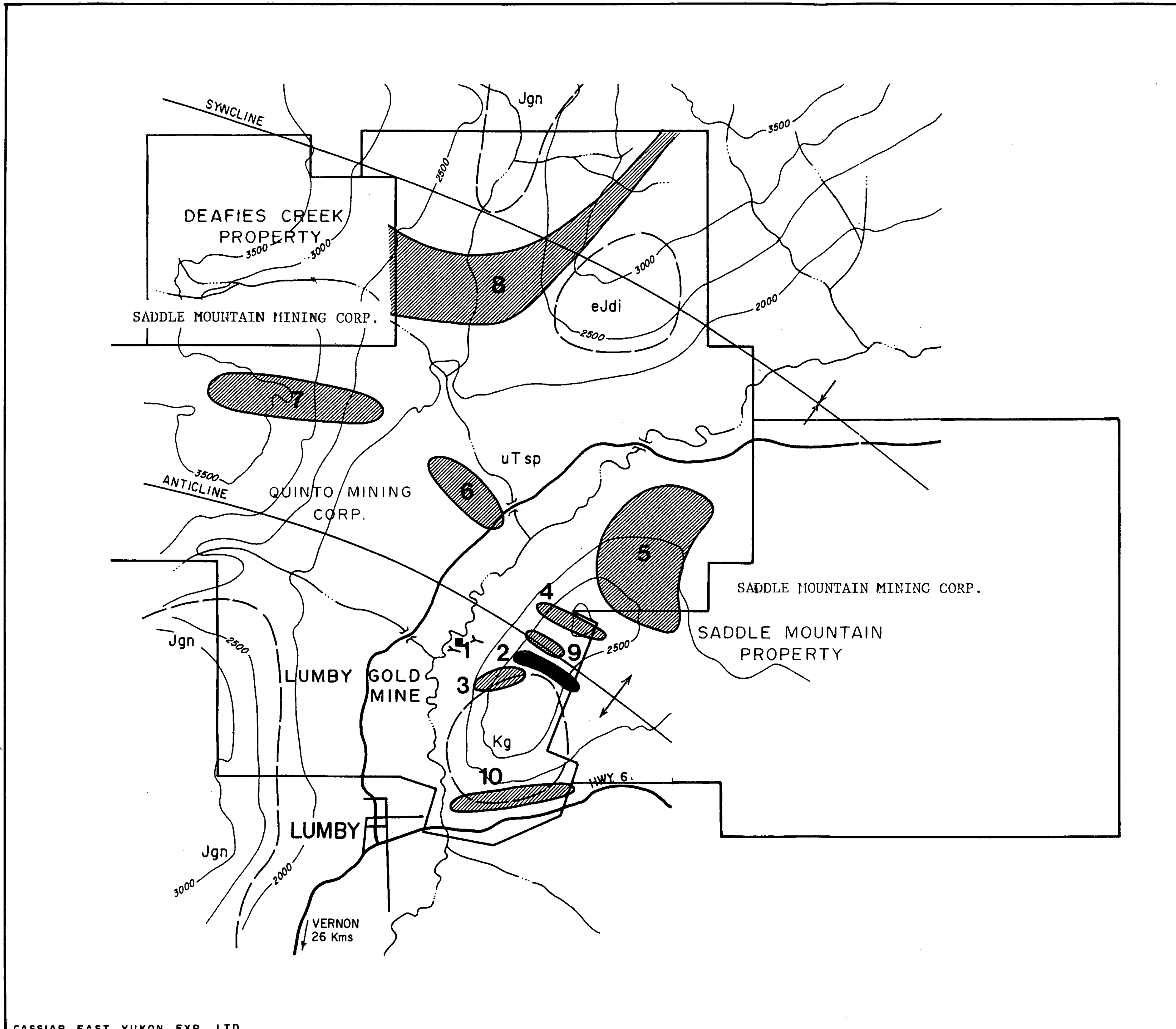
VERNON M.D., B.C. N.T.S. 82L/6, L/7

JOHN OSTLER; M.Sc., P.Geo. JULY, 1994



SADDLE MOUNTAIN MINING CORPORATION
LOCATION and TERRAIN
DEAFIES CREEK PROPERTY
50°18.6'N., 118°59'W.
VERNON M.D., B.C.
N.T.S. 82L/6, L/7
JOHN OSTLER; M.Sc., P.Geo.
JULY, 1994
SCALE
0 1 2 3 km
0 1 2 mi
20°15' N.mag
as of JULY, 1993
NOTE: Topography is from N.T.S. Maps
82 L/2 CREIGHTON CREEK
82 L/6 VERNON
82 L/7 SHUSWAP FALLS
OK
5N X 4W
R259255(9)
HAZ 5
5S X 2W
R259221(7)
DEAFIES CREEK PROPERTY
104105
GOVERNMENT RESERVE 30
HOL 1
5N X 4W
R259277(7)
HOL 2
5N X 4E
R259278(7)
SADDLE MOUNTAIN PROPERTY
125619
125620
125622
125621
B.S. 3
4N X 5W
R259246(9)
HOL 4
5S X 4W
R259280(7)
HOL 3
5S X 4E
R259279(7)
104214
LUMBY GOLD MINE
WHITE VALLEY
BESSETTE
Lumby
Blue Springs
BLUE SPRINGS VALLEY
Rawlings Lake
Trailer Park
Sawmill
Dump
Silo
Sewage
Golf Course
Village Park
Reservoir
PROFESSIONAL PROVINCE OF J. OSTLER BRITISH COLUMBIA GEOSCIENTIST
LOCATION
BRITISH COLUMBIA
DEAFIES CREEK PROPERTY
CASSIAR EAST YUKON EXP. LTD.

Figure 2



LEGEND

ADITS, MILL

TARGET ZONE

1. MINE ZONE; Ag, Pb, Zn, Cu, Au VEINS
2. PLATEAU ZONE; Au VEINS, PROPOSED MINING
3. CONTACT ZONE; Ag-Au VEIN, Au SOIL ANOMALY
4. CLIFF ZONE; Au VEINS, Au SOIL, GROUND/AIRBORNE VLF/EM ANOMALY
5. SADDLE NORTH ZONE; AIRBORNE EM ANOMALY
6. COOPER'S ZONE; 10-30 m WIDE QUARTZ/SULPHIDE VEIN
7. DEAFIES ZONE; AIRBORNE VLF ANOMALY
8. VANCE ZONE; AIRBORNE EM ANOMALY
9. SADDLE ZONE; Au SOIL, GROUND EM ANOMALY, Au FLOAT
10. TEACHERS ZONE; Zn, As, Ag, Au VEINS, Au SOIL, AIRBORNE VLF ANOM.

GEOLOGY

Kg	GRANODIORITE
Jgn	GRANITE, QUARTZ MONZONITE
eJdi	DIORITE
uTsp	VOLCANICS AND SEDIMENTS

NOTE: This figure is adapted from Allen, 1987 Revised, Figure 8.

N.

20°15' N. mag.

as of July 1, 1993

PROFESSIONAL GEOSCIENTIST, PROVINCE OF BRITISH COLUMBIA, J. D. OSTLER

Figure 3

SCALE

0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 km

0 0.5 1.0 1.5 2.0 2.5 mi

SADDLE MOUNTAIN MINING CORPORATION

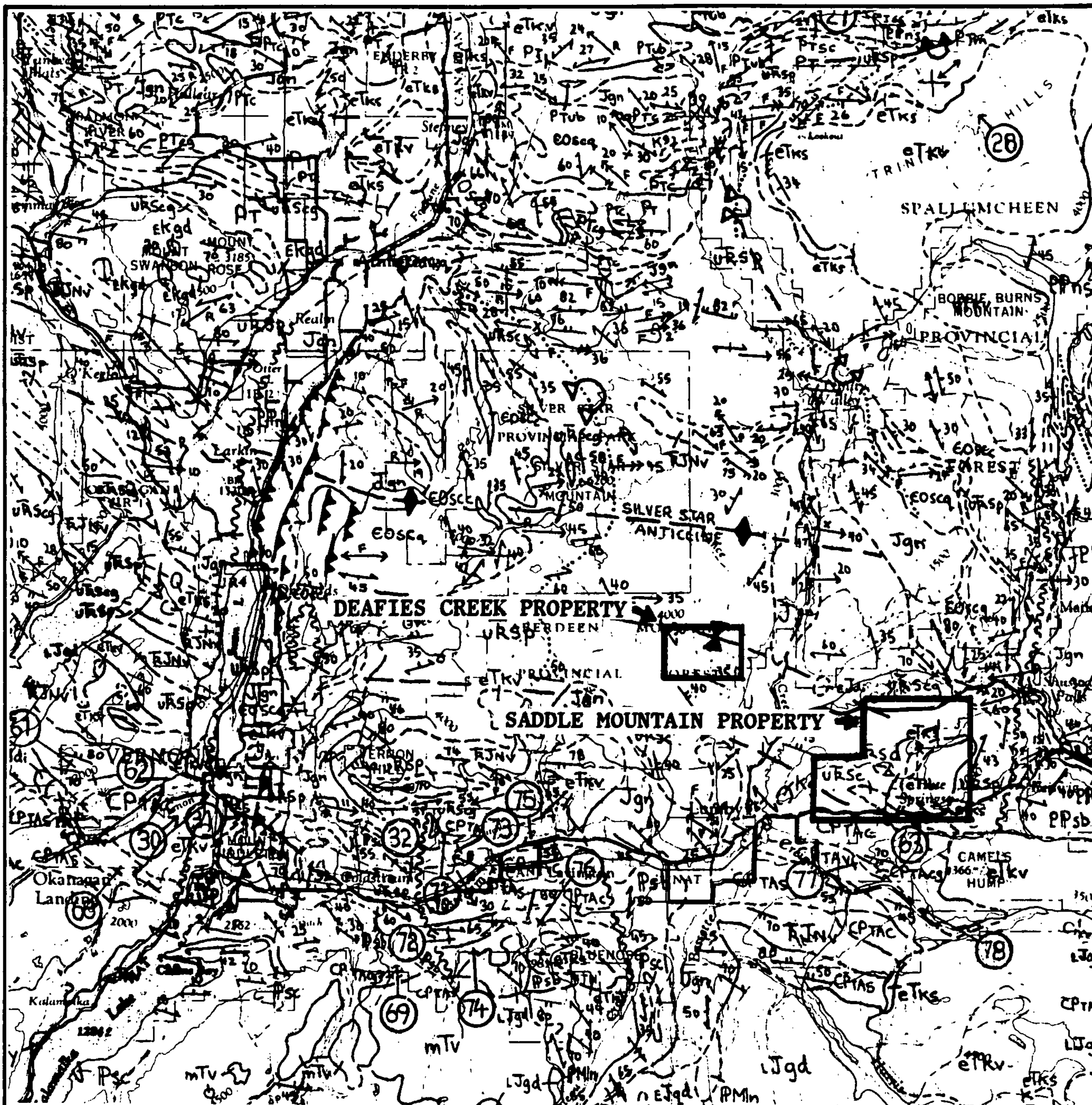
AIRBORNE ELECTROMAGNETIC SURVEY

DEAFIES CREEK PROPERTY

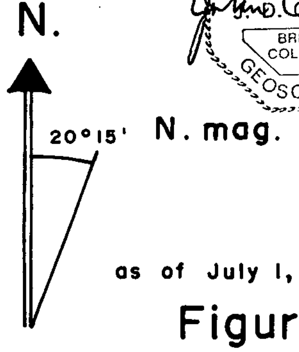
50°18.6'N., 118°59'W.

VERNON M.D., B.C. N.T.S. 82L/6, L/7

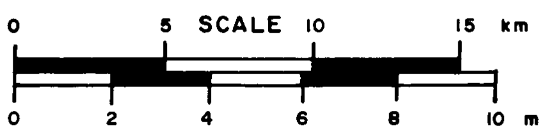
JOHN OSTLER; M.Sc., P.Geo. JULY, 1994



NOTE: For legend, see Figure 4A



PROFESSIONAL GEOSCIENTIST PROVINCE OF BRITISH COLUMBIA J.W.D. OSTLER



as of July 1, 1993

Figure 4

CASSIAR EAST YUKON EXP. LTD.

SADDLE MOUNTAIN MINING CORPORATION

REGIONAL GEOLOGY from G.S.C. OPEN FILE 637

DEAFIES CREEK PROPERTY

50°18.6'N., 118°59'W.

VERNON M.D., B.C. N.T.S. 82L/6,L/7

JOHN OSTLER; M.Sc., P.Geo. JULY, 1994

FIGURE 4A
LEGEND TO FIGURE 4
(UPPER PART)

PHANEROZOIC

CENOZOIC

TERTIARY OR QUATERNARY

PLIOCENE OR PLEISTOCENE

TQs	CONGLOMERATE (NEAR VERNON); BASALTIC ARENITE, BRECCIA, RUBBLE, CONGLOMERATE (ALONG NORTH THOMPSON AND CLEARWATER RIVERS).

TERTIARY

MIOCENE AND/OR PLIOCENE (MAY INCLUDE PLEISTOCENE)

mTv	PLATEAU LAVA; OLIVINE BASALT, ANDESIDE, RELATED ASH AND BRECCIA; BASALTIC ARENITE; MINOR BASAL SEDIMENTS; (MAY INCLUDE YOUNGER VALLEY BASALTS).

EOCENE AND (?) OLIGOCENE

KAMLOOPS GROUP (PRINCETON GROUP IN SOUTHWEST CORNER; SKULL HILL FORMATION ALONG NORTH THOMPSON RIVER).

eTkv	ANDESITE, BASALT, DACITE, TRACHYTE FLOWS AND DYKES, BRECCIA, TUFF, AGGLOMERATE.

KAMLOOPS GROUP (CHU CHUA FORMATION ALONG NORTH THOMPSON RIVER; TRANQUILLE BEDS NEAR WESTERNMOST SOUTH THOMPSON RIVER; INCLUDES UNIT Tcg ON MAP A).

eTks	SANDSTONE, CONGLOMERATE, SHALE; MINOR COAL, TUFF ARKOSE.

UNCONFORMITY

PALEOCENE OR EOCENE

pTy	SYENITE, GRANITE; MINOR MONZONITE, SHONKINITE.

MESOZOIC

CRETACEOUS

Kg	GRANITE, GRANODIORITE; LESSER QUARTZ MONZONITE AND QUARTZ DIORITE.

BALDY BATHOLITH AND SATELLITIC STOCKS.

Kqm	QUARTZ MONZONITE, GRANODIORITE; MINOR PEGMATITE.

EARLY CRETACEOUS

SALMON ARM, DEEP CREEK, NISCONLITH AND SCOTCH CREEK PLUTONS.

EKgd	GRANODIORITE, GRANITE, QUARTZ MONZONITE; MINOR DIORITE, GABBRO, QUARTZ, DIORITE.

RAFT BATHOLITH

EKqm	QUARTZ MONZONITE, GRANODIORITE; MINOR PEGMATITE AND DIORITE.

JURASSIC OR CRETACEOUS

(hatched)	SYENITE AND FELSITE DYKES.

JURASSIC

Jgn	MASSIVE AND FOLIATED, SYNTECTONIC PEGMATITE, APLITE, LEUCOCRATIC GRANITE AND QUARTZ MONZONITE BORDERING AND WITHIN SHUSWAP METAMORPHIC COMPLEX AND OKANAGAN PLUTONIC AND METAMORPHIC COMPLEX; SILVER STAR INTRUSIONS; (MAY INCLUDE ORTHOGNEISS OF PALAEOZOIC AND PROTEROZOIC AGES).

LATE JURASSIC

VALHALLA PLUTONIC ROCKS

LJgd	GRANODIORITE, GRANITE; MINOR GABBRO, DIORITE, QUARTZ DIORITE.

EARLY JURASSIC

LONG RIDGE PLUTON

EJg	FOLIATED, LINEATED GRANITE (MAY INCLUDE PALAEOZOIC PLUTONIC ROCKS).

NELSON PLUTONIC ROCKS; THUYA BATHOLITH AND SATELLITIC STOCKS.

EJgd	QUARTZ DIORITE, GRANODIORITE; MINOR DIORITE, GRANITE, AMPHIBOLITE, GABBRO AND ULTRAMAFIC ROCKS.
EJdi	DIORITE; MINOR QUARTZ DIORITE AND GABBRO.
EJy	SYENITE AND MONZONITE.

INTRUSIVE CONTACT

TRIASSIC AND JURASSIC

UPPER TRIASSIC AND LOWER JURASSIC

NICOLA GROUP (POSSIBLY INCLUDES SLOCAN GROUP NEAR SOUTHEAST EDGE OF AREA).

TRJNv	ANDESITE AND BASALT FLOW ROCKS, PORPHYRITIC AUGITE ANDESITE, BRECCIA, TUFF, AGGLOMERATE, GREENSTONE, CHLORITIC PHYLLITE; MINOR ARGILLITE, LIMESTONE, SERICITIC SCHIST.

UPPER TRIASSIC

KARNIAN AND NORIAN

NICOLA GROUP

uTRNs	BLACK SHALE, ARGILLITE, CONGLOMERATE, LIMESTONE, SILTSTONE; MINOR TUFF AND PHYLLITE.
uTRNc	LIMESTONE

FIGURE 4A
LEGEND TO FIGURE 4
(MIDDLE PART)

Slocan Group

Sicamous Formation

uTRsc	Sericitic, graphitic and argillaceous limestone; calcareous phyllite, argillite.
uTRsp	Shale, argillite, massive siltstone, phyllite, tuff and calcareous pelite; minor conglomerate, limestone, greenstone, chloritic phyllite and andalucite -, staurolite - and kyanite - bearing schist.
uTRscg	Conglomerate.

PALAEOZOIC AND MESOZOIC

Okanagan Plutonic and Metamorphic Complex (may include metamorphic equivalents of unit CPTA and/or older rocks, and Triassic gneissic granite).

PMn	Hornblende and biotite gneiss, paragneiss; minor schist, marble, quartzite and amphibolite.
PMnm	Dioritic gneiss, amphibolite.
IPsc	Marble.
IPsb	Quartz mica schist.

PALAEOZOIC

Permian and (?) Pennsylvanian

Kaslo Group

Pkvb	Massive and foliated greenstone, chloritic phyllite, amphibolite; minor ultramafic rocks.
Pkub	Serpentinized ultramafic rocks.

Slide Mountain Group

Fennell Formation

PF	Pillow lava flows, massive and foliated greenstone, greenschist, argillaceous chert; minor amphibolite, limestone, breccia.
PFt	Chert
PFp	Argillite, siltstone
PFcg	Conglomerate
PFub	Serpentinized ultramafic rocks.

Tsalkom Formation

PT	Greenstone, chlorite phyllite, amphibolite; minor black shale, limestone, marble.
PTub	Serpentinized ultramafic rocks.
PTc	Massive, white limestone.
PTcg	Foliated and stretched quartz pebble conglomerate.
PTm	Amphibolitic gneiss.
PTsc	Grey, diopsidic marble.

Carboniferous and Permian (may include Triassic)

Chesterian - Morrowan and Wolfcampian-Guadalupian (may include Karnian - Norian).

Thompson Assemblage (may include unit uTRNs).

CPTA	Undivided.
CPTAs	Siliceous argillite, volcaniclastic sandstone, quartzite, siltstone; minor limestone, sheared conglomerate, breccia and greenstone.
CPTAv	Greenstone, tuff.
CPTAc	Massive, crystalline white and grey limestone; minor chert pebble conglomerate, argillaceous limestone and chert.
CPTAcg	Conglomerate with limestone matrix.

Carboniferous

Milford Group

CMss	Siltstone, sandstone, shale; minor quartz granule conglomerate.
CMsp	Black shale, argillite; minor sandstone.
CMvd	Greenstone, chloritic phyllite.

Mississippian

Osagean - Meramecian

Milford Group

MMc	Fine grained grey limestone; minor dolomite and shale.
MMcg	Granule to boulder conglomerate, some with limestone and greenstone clasts.

Mississippian (?) or older

Old Dave Intrusions (includes ultramafic rocks associated with units COEbv and TRJNv).

Pub	Serpentinite and serpentinized ultramafic rocks; minor pyroxenite and peridotite.

Chapperon Group

IPCv	Chloritic phyllite, greenstone, micaceous schist; minor limestone and ultramafic rocks.

Devonian

Late Devonian

Mount Fowler Batholith, South Fosthall Pluton.

lDgn	Foliated and lineated leucocratic granite, granitic feldspar porphyry, quartz monzonite, granodiorite, minor pegmatite and quartz diorite.

FIGURE 4A
LEGEND TO FIGURE 4
(LOWER PART)

ORDOVICIAN
LATE ORDOVICIAN
LITTLE SHUSWAP GNEISS

lOgn	LEUCORATIC GRANITE GNEISS, QUARTZ MONZONITE GNEISS, GRANODIORITE GNEISS; MINOR DIORITE GNEISS.

CAMBRIAN AND ORDOVICIAN
EAGLE BAY FORMATION

ЄOEBva	FOLIATED ACID VOLCANIC ROCKS, CHERT, SILICEOUS PHYLLITE; SHEARED AND ALTERED QUARTZ FELDSPAR PORPHYRY AND/OR QUARTZ GRANULE CONGLOMERATE; GNEISSIC ACID IGNEOUS ROCKS NEAR SHUSWAP LAKE.
ЄOEBV	GREENSTONE, CHLORITIC PHYLLITE; MINOR AGGLOMERATE, SERICITIC PHYLLITE, QUARTZITE, LIMESTONE AND TUFF.
ЄOEBq	SERICITIC, SILICEOUS PHYLLITE, SERICITIC QUARTZITE, QUARTZ BIOTITE SCHIST, QUARTZ BIOTITE GARNET SCHIST; MINOR TUFF AND LAYERS OF UNITS ЄOEBV, ЄOEBc.
ЄOEBp	BLACK ARGILLITE, ARGILLACEOUS PHYLLITE, SHALE; MINOR LIMESTONE.
ЄOEBc	MASSIVE WHITE CRYSTALLINE LIMESTONE, DARK GREY FOLIATED LIMESTONE; MINOR LIMESTONE WITH CHERT NODULES.
ЄOEBcg	CONGLOMERATE, SOME WITH BLACK QUARTZ CLASTS; MINOR BRECCIA AND AGGLOMERATE.

TSHINAKIN LIMESTONE MEMBER

ЄOEBT	MASSIVE WHITE CRYSTALLINE LIMESTONE; MINOR GREENSTONE AND GREENSCHIST.

SILVER CREEK FORMATION

ЄOscq	QUARTZ BIOTITE, SERICITE AND GARNET SCHIST; MINOR QUARTZO-FELDSPATHIC BIOTITE GNEISS, PEGMATITE, AMPHIBOLITE, MARBLE.

CHASE QUARTZITE MEMBER

ЄOscc	QUARTZITE, SILICEOUS MARBLE, CRYSTALLINE LIMESTONE; MINOR PELITIC SCHIST.

PROTEROZOIC AND PALAEOZOIC (MAY INCLUDE ARCHAEAN)
SHUSWAP METAMORPHIC COMPLEX

PPns	UNDIVIDED: GRANITOID GNEISS, PARAGNEISS, SCHIST; MINOR QUARTZITE, MARBLE, AMPHIBOLITE.
PPsb	QUARTZ MICA SCHIST, COMMONLY GARNET-AND SILLIMANITE-BEARING.
PPsq	QUARTZITE; MINOR PELITIC SCHIST.
PPsc	MARBLE, DIOPSIDIC MARBLE; MINOR CALCIUM SILICATE GNEISS AND AMPHIBOLITE.
PPm	AMPHIBOLITE, AMPHIBOLITIC GNEISS, MINOR HORNBLENDE BIOTITE SCHIST.
PPsqc	SILICEOUS MARBLE, CALCAREOUS QUARTZITE, CALCIUM SILICATE GNEISS; MINOR PELITIC SCHIST.
PPgdn	GRANODIORITE, DIORITE AND TONALITE GNEISS; AUGEN GNEISS.

GEOLOGICAL BOUNDARIES (APPROXIMATE, ASSUMED).

FAULTS

MYLONITE ZONES (TEETH ON HANGING WALL).
THRUST FAULTS (APPROXIMATE, ASSUMED; TEETH ON HANGING WALL).
HIGH ANGLE FAULTS (APPROXIMATE, ASSUMED).

PLANAR STRUCTURES

BEDDING (TOPS KNOWN: INCLINED, OVERTURNED).
BEDDING (TOPS UNKNOWN: HORIZONTAL, INCLINED, VERTICAL).
FOLIATION, SCHISTOSITY; GNEISSIC LAYERING OR CLEAVAGE (HORIZONTAL, INCLINED, VERTICAL): EARLIEST OR ONLY OBSERVED.
AXIAL PLANES (INCLINED, VERTICAL) OF MESOSCOPIC FOLDS OBSERVED TO HAVE DEFORMED BEDDING: EARLIEST OR ONLY OBSERVED.
AXIAL PLANES (INCLINED, VERTICAL) OF LATER MESOSCOPIC FOLDS OBSERVED TO HAVE DEFORMED BEDDING, FOLIATION OR PRE-EXISTING STRUCTURES.
AXIAL PLANES (INCLINED, VERTICAL) OF LATEST MESOSCOPIC FOLDS OBSERVED TO HAVE DEFORMED BEDDING AND TWO PHASES OF PRE-EXISTING STRUCTURES.

LINEAR STRUCTURES

LINEATIONS (PLUNGING, HORIZONTAL) FORMED BY FOLD AXES (F), BEDDING/FOLIATION INTERSECTION (X), MINERAL ALIGNMENT OR RODDING (R) AND BOUDINAGE AXES (A); (UNDETERMINED LINEATIONS NOT LABELLED): EARLIEST OR ONLY OBSERVED.
LINEATIONS (PLUNGING, HORIZONTAL) OBSERVED TO BE ASSOCIATED WITH LATE FOLDS OR SUPERIMPOSED UPON PRE-EXISTING STRUCTURES.
LINEATIONS (PLUNGING, HORIZONTAL) OBSERVED TO BE ASSOCIATED WITH LATEST FOLDS OR SUPERIMPOSED UPON TWO PHASES OF PRE-EXISTING STRUCTURES.

FOLDS

EARLY AXIAL TRACE (ANTIFORM: UPRIGHT, OVERTURNED OR RECUMBENT).
EARLY AXIAL TRACE (SYNFORM: UPRIGHT, OVERTURNED OR RECUMBENT).
LATE AXIAL TRACE (ANTIFORM, SYNFORM).

GEOCHRONOLOGIC SAMPLE SITE

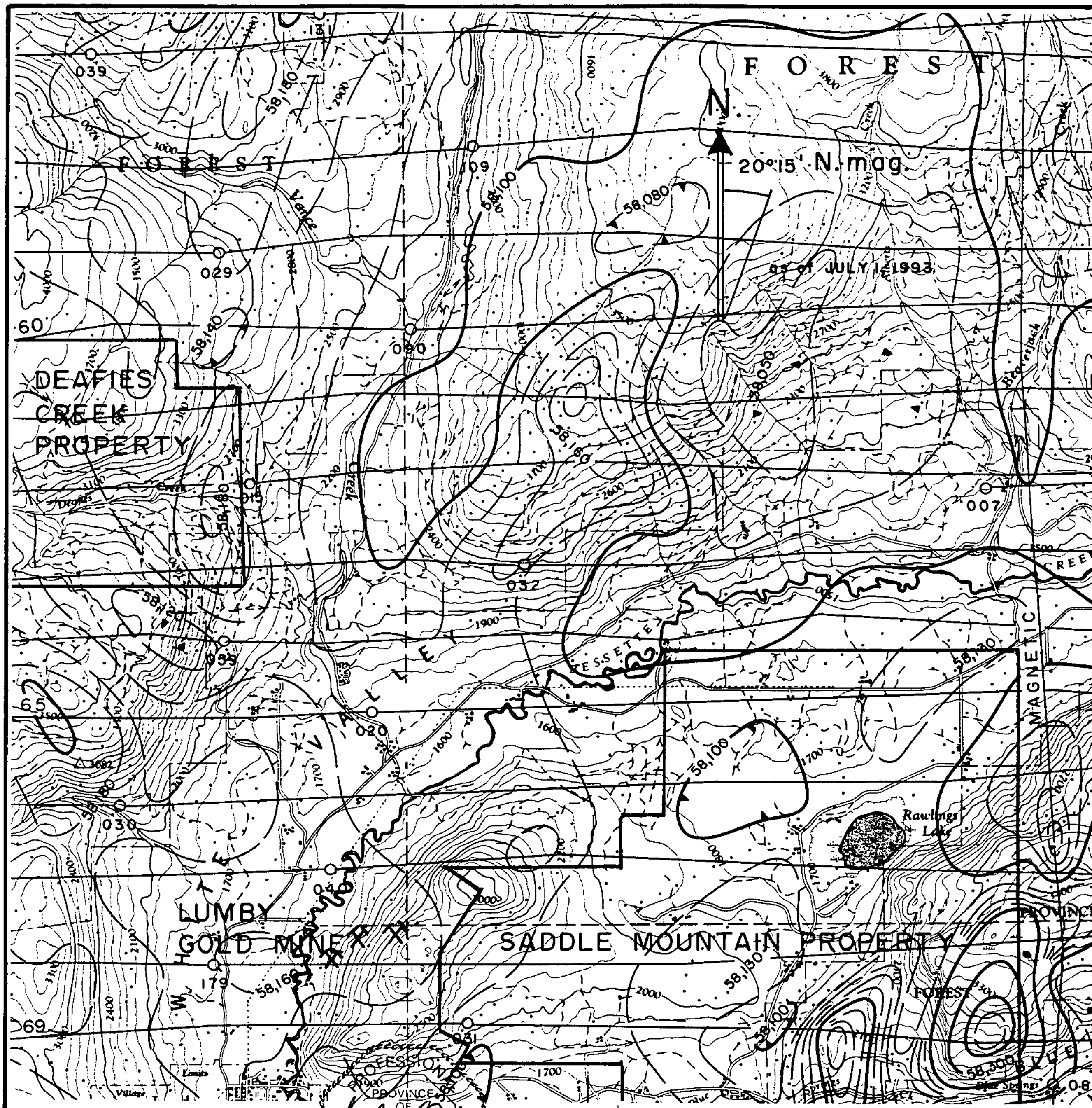
PALAEONTOLOGIC SAMPLE
RADIOMETRIC SAMPLE

FIGURE 5

TABLE OF GEOLOGICAL EVENTS AND LITHOLOGICAL UNITS IN THE LUMBY AREA

Time	Formation or Event
Pleistocene to Recent	-valley rejuvenation
Eocene to Pleistocene	-erosion of the Shuswap Highland and broadening of valleys, -deposition of glacial sediments
Eocene	-brittle deformation and development of north-east striking fracture cleavage
Oligocene to Eocene	-extrusion of flood basalts and andesites
Palaeocene to Oligocene	-erosion of stratigraphy in the property-area unroofing during the Oligocene Stage
Jurassic to Palaeocene	-enlargement of Shuswap Metamorphic Complex (173 to 50 m.y*) -anatexis and metasomatism of Slocan Group rocks -intrusion of granitic to dioritic plutons -thrust faulting and development of gold-bearing shear zones
Triassic to Jurassic	-folding and metamorphism of Slocan Group rocks (173 to 164 m.y.*) resulting in: 1. development of structures and cleavages of the first and second phases of deformation; equivalent to Read and Wheeler's (1976) second and third phases 2. middle greenschist regional metamorphism
Triassic	-deposition of the Slocan Group a coarsening-upward, basin-filling sequence of variably carbonaceous pelite, variably calcareous siltstone and greywacke intruded by shallow dioritic bodies some of which reached surface

* million years ago



LEGEND

ISOMAGNETIC LINES (absolute total field)

500 gammas
100 gammas
20 gammas
10 gammas
Magnetic depression

Flight lines 15 687

Flight altitude 1000 feet above ground level

Figure 6

CASSIAR EAST YUKON EXP. LTD.

SCALE

0 1 2 3 4 5 km

0 1 2 3 mi

SADDLE MOUNTAIN MINING CORPORATION

AEROMAGNETISM: E.M.R. MAP 8502G

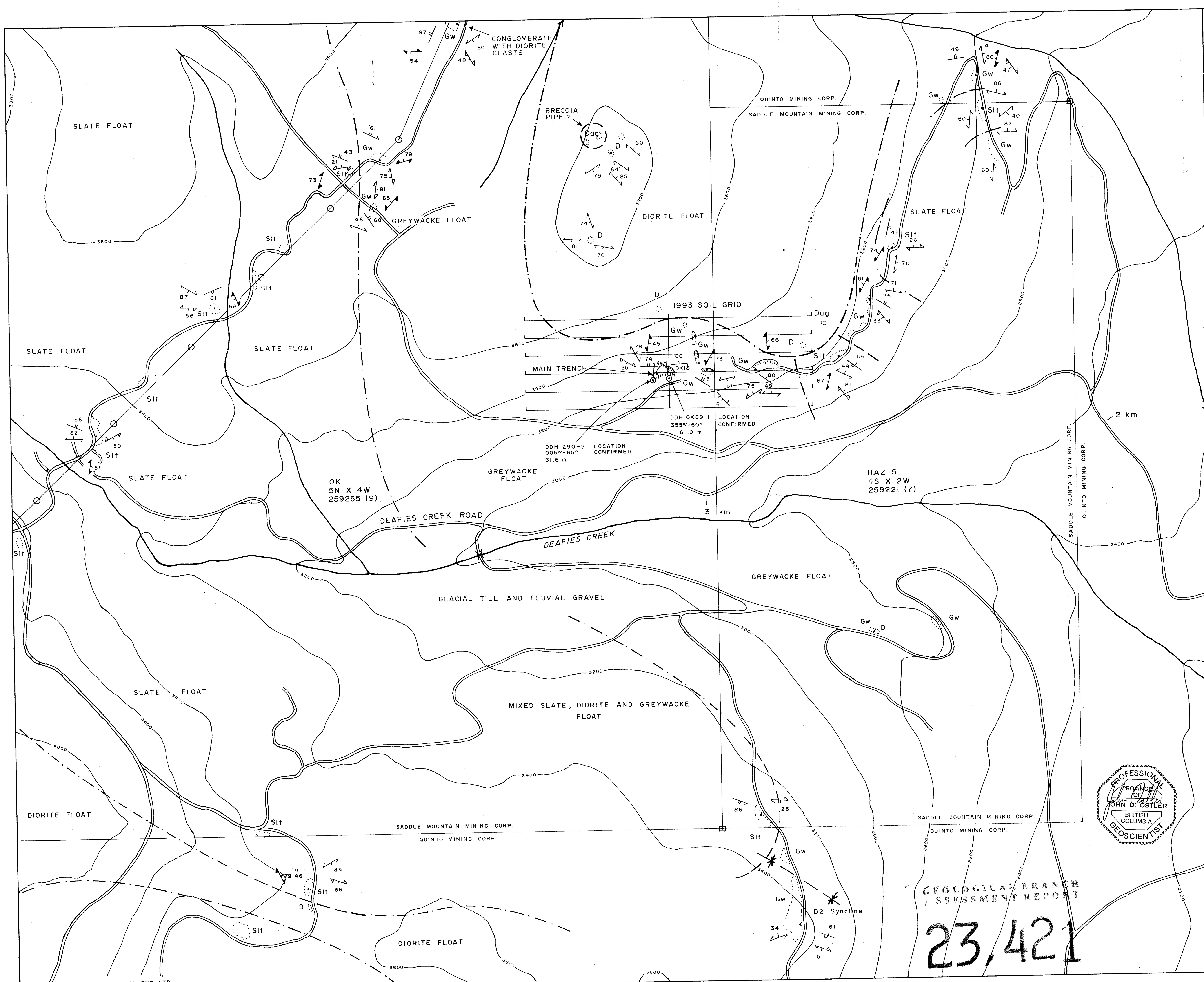
DEAFIES CREEK PROPERTY

50° 18.6'N., 118° 59'W.

VERNON M.D., B.C. N.T.S. 82L/6, L/7

JOHN OSTLER; M.Sc., P.Geo. JULY, 1994

PROVINCE OF BRITISH COLUMBIA J. D. OSTLER GEOSCIENTIST



LEGEND

TABLE OF LITHOLOGIC UNITS

AGE	FORMATION AND LITHOLOGY
Triassic	Slocan Group; Sicamous Formation
D	diorite intrusions
Dag	agglomerate and breccia with diorite and sedimentary clasts in diorite matrix
Slt	slate and phyllite; variably carbonaceous, black weathering to dark grey
Gw	greywacke with minor slate, conglomerate and tuff.

STRUCTURE

Geological contact: defined, approximate, assumed

Bedding: upright, overturned, tops unknown, parallel with cleavage

Cleavage: first, second, third

Vein attitude

TOPOGRAPHY

Topographic contour (2300, elevation in feet)

Road or skidder trail

Property boundary (QUINTO MINING CORP. / ZICTON GOLD LTD.)

Limit of outcrop

Trench (cut, fill)

Creek

Diamond drill hole: DDH OK89-1 ← number; 355°/-60° ← orientation; 61.0 m ← length

Rock assay location DK 18

SCALE

0 50 100 150 200 250 300 350 400 450 500 metres

0 250 500 750 1000 1250 1500 feet

N.

20° 15' N. mag.

Magnetic declination for the western margin of N.T.S. Map 82 L/7 as of July 1, 1993. Declination decreases 7.9' annually.

Figure 7

PROFESSIONAL PROVINCE OF JOHN D. OSTLER BRITISH COLUMBIA GEOSCIENTIST

GEOLOGICAL BRANCH ASSESSMENT REPORT

23,421

SADDLE MOUNTAIN MINING CORPORATION

GEOLOGY AROUND DEAFIES CREEK

DEAFIES CREEK PROPERTY

50°18.6'N., 118°59'W.

VERNON M.D., BRITISH COLUMBIA — N.T.S. L/6, L/7

JOHN OSTLER; M.Sc., P.Geo. — JULY, 1994