GEOLOGICAL MAPPING ON THE KEYSTONE PROPERTY

Located Claims:

E A 1 to 18	(18 units)	222480
Augy 69 to 76	(8 units)	312793 to 312800
Ruey 05 to 10	(10 units)	333305 to 333314
Rusty = 10 = 10 TL: 1 +0 99	(22 units)	342786 to 342807
Th: 05 to 29	(8 units)	342808 to 342815
	(1 unit)	343139
	(2 unite)	343141 and 343142
led 3 and 4	(94 unite)	344155 to 344178
Bert I to 24	(24 units)	011100 00 000000

Location:

Liard Mining Division N.T.S.:104 J/16 58° 49' 09" N., 130° 41' 11" W. U.T.M.: 6,520,500 N., 431,000 E.

Owner and Optionor:

NU-LITE INDUSTRIES LIMITED 910-510 Burrard Street Vancouver, British Columbia V6C 3A8

Optionee:

GLOBAL TREE TECHNOLOGIES LTD.

910-510 Burrard Street Vancouver, British Columbia V6C 3A8

By:

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

August 10, 1999



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GEOLOGICAL MAPPING ON THE KEYSTONE PROPERTY

SUMMARY

The Keystone property straddles a steep gorge carved by Thibert Creek into the Tanzilla Plateau just west of the northern end of Dease Lake in northwestern British Columbia.

The property comprises 77 located claims (94 claim-units) owned by Nu-Lite Industries Limited of Vancouver British Columbia which has optioned the property to Global Tree Technologies Ltd. also of Vancouver. These claims cover about 2,200 ha (5,434 A) after deducting areas of overlapping claims. Thibert Creek is the site of several active placer gold mines and is accessible via a series of good bush roads that either terminate at Porter Landing at the northern end of Dease Lake or connect with B.C. Highway 37 across a ford through the Dease River at the northern end of the lake.

An eugeosynclinal assemblage of metasedimentary and metavolcanic rocks of the central facies of the Cache Creek terrane are exposed in the southern part of the Keystone property. These rocks are part of the Early Mississippian to Late Triassic-age Kedahda Formation. Structural data indicate that the gabbroic bodies exposed within Kedahda Formation stratigraphy may be sub-volcanic plutons emplaced during basin filling.

These rocks were progressively deformed and metamorphosed to lower amphibolite grade during north-northeastward subduction beneath strata of the Quesnel terrane during the Jurassic Period. The California Creek Stock, exposed near the center of the property, could have been emplaced at that time.

On the property, Quesnel terrane rocks are represented by Shonektaw Formation and esitic meta-volcanics.

During the Early to Middle Cretaceous Period the Thibert Fault was active and developed by both thrusting and transcurrent faulting. Serpentinite bodies were obducted up along the fault plane and subsequently were subjected locally to listwanite alteration. In the western part of the property area, quartz lenses formed locally in low-pressure areas in listwanite near the contact with Kedahda Formation greywacke.

The Keystone showing as described in the 1931 B.C. Minister of Mines' annual report was located on the south bank of Thibert Creek on the Auey 75 claim. It and the J36 lense that was previously drilled were listwanite quartz lenses formed locally from excess alteration fluid. Neither quartz body had any economic mineralization or size potential.

The locations of gold-bearing placer channels and placer mining operations in the Thibert Creek area indicate that the serpentine and listwanite belt along the Thibert Fault is not the source of the placer gold in that area.

Primary gold concentration probably occurred during reorientation of siliceous bedding structures into the first cleavage throughout Kedahda Formation rocks during Jurassic-age deformation. Subsequent gold concentration may have occurred in a tropical weathering profile developed during Tertiary-age erosion. Consequently the whole of the Kedahda Formation outcrop area probably was the source of widely scattered gold particles that subsequently were concentrated in river gravels.

It is concluded that there is no single local source of the placer gold in the Thibert Creek area.

No economic targets were found on the property during the June-July, 1999 mapping program.

GEOLOGICAL MAPPING ON THE KEYSTONE PROPERTY

1.0 INTRODUCTION

1.1 Terms of Reference

The writer was retained by Global Tree Technologies Ltd. through Cassiar East Yukon Expediting Ltd. to map the Cache Creek terrane rocks south of Thibert Creek on the Keystone property. Field work was conducted on the Thibet property from June 25 until July 3, 1999under Approval No.SMI-99-0101139-95. Data analysis and reporting continued intermittently until August 10, 1999.

1.2 Location and Access

The Keystone property straddles a steep gorge carved by Thibert Creek into the Tanzilla Plateau just west of the northern end of Dease Lake in northwestern British Columbia (Figure 1).

The property comprises 77 located claims (94 claim-units) owned by Nu-Lite Industries Limited of Vancouver British Columbia which has optioned the property to Global Tree Technologies Ltd. also of Vancouver. These claims cover about 2,200 ha (5,434 A) after deducting areas of overlapping claims (Figure 2).

The village of Dease Lake, located on B.C. Highway 37, is the closest supply and service centre to the Thibert Creek area. Hotel accommodation, groceries, fuel and helicopter transport are available at Dease Lake. Other camp supplies and equipment would have to be trucked into the area from Smithers, B.C., located on B.C. Highway 16 about 449 km (274 mi) south of Dease Lake. It is about 1,600 km (978 mi) from Vancouver B.C. to Dease Lake via Prince George and Smithers.



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Figure 3 N.T.S.: 104 J/16, JOHN OSTLER; M.Sc, P.Geo. CASSIAR EAST YUKON EXP. LTD.

58° 49' 09" N., 130° 41' 11" W. U.T.M.: 6,520,500 N., 431,000 E.

LIARD M.D., B.C.

AUGUST, 1999

The Keystone property is about 45 km (27.5 mi) north of the Dease Lake airport and is accessible by helicopter, a 15-minute flight one-way. Thibert Creek is the site of several active placer gold mines (Figure 3) and is accessible via a series of good bush roads that either terminate at Porter Landing at the northern end of Dease Lake or connect with B.C. Highway 37 across a ford through the Dease River at the northern end of the lake. The ford is passable during times of low water levels in late summer and autumn and across ice during winter. Roads across the southern part of the property to Boulder Creek were repaired for the 1997 drill program. They are still in generally good condition.

1.3 Terrain and Vegetation

The Keystone property is located a gorge cut into the undulating surface of the Tanzilla Plateau, an eastern subdivision of the Stikine Plateau which occupies the area between the Coast Ranges and Cassiar Mountains of northwestern British Columbia (Figures 2 and 5) (Holland, 1976).

Holland's descriptions of the terrain of the Stikine and Tanzilla plateaus containing the Keystone property-area are as follow:

STIKINE PLATEAU

The Stikine River, between the Coast Mountains on the west and the Cassiar Mountains on the east, drains a large area of dissected plateau country named the Stikine Plateau. On the north the Stikine Plateau merges in the Yukon Plateau along an arbitrary line between Atlin and Teslin Lakes. It is bounded on the west by the Boundary Ranges, on the south by the Skeena Mountains, into which it passes by transition through a progressively more elevated belt of greater dissection ... , and on the east by the Stikine Ranges and the northern Omineca Mountains. For the most part, the Stikine Plateau lies below the level of the surrounding mountains on the west, south and east.

The Stikine Plateau is subdivided into seven units having distinct geographic and geologic characteristics. These are the Thaltan Highland and the Taku, Kawdy, Nahlin, and Tanzilla Plateaus north of the Stikine River and the Klastline and Spatsizi Plateaus to the south.

Holland, S.S.; 1976: p. 49.

Tanzilla Plateau

The Tanzilla Plateau lies east of the Tuya River, north of the Stikine River, and west of the Cassiar Mountains. The plateau is a partly dissected erosion surface ..., which reaches heights of 6,200 feet (1890 m) west of Dease Lake and of 6,348 feet (1935 m) at Snow Peak. The erosion surface was one of low relief and was formed on closely folded sedimentary and volcanic rocks. The plateau is partly dissected by the tributaries of the Dease River flowing northward to the Liard and by the Tuya, Tanzilla and Stikine Rivers. The elevation of Dease Lake and the head of the Tanzilla River at about 2,500 feet (762 m) creates a maximum relief of about 3,850 feet (1,173 m) at Snow Peak.

The Tanzilla Plateau represents a transition between the thoroughly dissected Cassiar Mountains on the east and the little dissected Kawdy and Nahlin Plateaus to the west. It is an area of widely flaring valleys, and rounded ridges and peaks passing eastward into the serrate peaks and higher uplands on the Cassiar Mountains ...

Holland, S.S.; 1976: p. 53.

The property is transected by Thibert Creek and its trubutaries which could provide adequate fresh water for mining purposes (Figures 2 and 3).

Elevations on the property range from 780 m (2,558 ft) above seal level in the Thibert Creek canyon at the eastern boundary of the claims to about 1,300 m (4,264 ft) on the undulating surface of the Tanzilla Plateau in the northwestern part of the property (Figures 2 and 5).

The steep, well-drained slopes of the Thibert Creek canyon host a mixed forest dominated by spruce, pine and poplar trees. The poorly drained plateau areas are covered with black spruce forest, bushy meadows and bogs. All of the claim-area hosts a thick undergrowth of willow and berry bushes. Timber on the property is small and extensive logging would be required to support a mining operation.

Soil development on the property is extremely variable due to great variation in slope. However, in most areas on the claims where soil development is significant, soil profiles are sufficiently mature to have distinct undisturbed horizons amenable to meaningful survey results. Organic soils developed on bogs in the northern and southern parts of the property would not be appropriate for soil surveys. The closest weather station to the property-area is at Dease Lake, British Columbia. Climatic statistics for the Dease Lake station are quoted from Environment Canada as follow:

Average temperature: January, High -13.1°C. July, High 19.2°C Low -22.5°C. Low 5.8°C.

Average annual precipitation: 482 mm of which 227.1 mm (227.1 cm of rain equivalent) falls as snow

Month-end average snow depth in cm:

Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
0	6	23	41	55	59	54	14	0

1.4 Property

The Keystone property comprises 77 located claims (94 claim-units) staked in the Liard Mining Division of British Columbia. These claims cover about 2,200 ha (5,434 A) after deducting areas of overlapping claims (Figure 2). They are owned by Nu-Lite Industries Limited of Vancouver British Columbia which has optioned the property to Global Tree Technologies Ltd. also of Vancouver.

The writer personally inspected some of the posts and lines of the claims comprising the property on June 25 to July 3, 1999. In his opinion, they have been staked in accordance with the laws and regulations of the Province of British Columbia.

The property boundaries of the located claims comprising the Keystone property have not been surveyed.

Claim tenure of the property area is as follows (Figure 2):

Located Claims

Claim	Record	No. of	Record Date	Expiry Date	Owner
Name	Number	Units			
		A			
E.A. 1-18	222480	18	July 18, 1986	July 18, 1999	Nu-Lite Industries
Auey 69	312793	1	Aug. 17, 1992	Aug. 17, 1999	Nu-Lite Industries
Auey 70	312794	1	Aug. 17, 1992	Aug. 17 1999	Nu-Lite Industries
Auey 71	312795	1	Aug. 17, 1992	Aug. 17, 1999	Nu-Lite Industries
Auey 72	312796	1	Aug. 17, 1992	Aug. 17, 1999	Nu-Lite Industries
Auev 73	312797	1	Aug. 17, 1992	Aug. 17, 1999	Nu-Lite Industries
Auev 74	312798	1	Aug. 17, 1992	Aug. 17, 1999	Nu-Lite Industries
Auey 75	312799	1	Aug. 17, 1992	Aug. 17, 1999	Nu-Lite Industries
Auey 76	312800	1	Aug. 17, 1992	Aug. 17, 1999	Nu-Lite Industries
Rustv 1	333305	1	Dec. 20, 1994	Dec. 20, 1999	Nu-Lite Industries
Rusty 2	333306	1	Dec. 20, 1994	Dec. 20, 1999	Nu-Lite Industries
Rusty 3	333307	1	Dec. 20, 1994	Dec. 20, 1999	Nu-Lite Industries
Rusty 4	333308	1	Dec. 20, 1994	Dec. 20, 1999	Nu-Lite Industries
Rusty 5	333309	1	Dec. 20, 1994	Dec. 20, 1999	Nu-Lite Industries
Rusty 6	333310	1	Dec. 20, 1994	Dec. 20, 1999	Nu-Lite Industries
Rusty 7	333311	1	Dec. 20, 1994	Dec. 20, 1999	Nu-Lite Industries
Rusty 8	333312	1	Dec. 20, 1994	Dec. 20, 1999	Nu-Lite Industries
Rusty 9	333313	1	Dec. 20, 1994	Dec. 20, 1999	Nu-Lite Industries
Rusty 10	333314	1	Dec. 20, 1994	Dec. 20, 1999	Nu-Lite Industries
Thi 1	342786	1	Dec. 12, 1995	Dec. 12, 1999	Nu-Lite Industries
Thi 2	342787	1	Dec. 12, 1995	Dec. 12, 1999	Nu-Lite Industries
Thi 3	342788	1	Dec. 12, 1995	Dec. 12, 1999	Nu-Lite Industries
Thi 4	342789	1	Dec. 12, 1995	Dec. 12, 1999	Nu-Lite Industries
Thi 5	342790	1	Dec. 12, 1995	Dec. 12, 1999	Nu-Lite Industries
Thi 6	342791	1	Dec. 12, 1995	Dec. 12, 1999	Nu-Lite Industries
Thi 7	342792	1	Dec. 12, 1995	Dec. 12, 1999	Nu-Lite Industries
Thi 8	342793	1	Dec. 12, 1995	Dec. 12, 1999	Nu-Lite Industries
Thi 9	342794	1	Dec. 12, 1995	Dec. 12, 1999	Nu-Lite Industries
Thi 10	342795	1	Dec. 12, 1995	Dec. 12, 1999	Nu-Lite Industries
Thi 11	342796	1	Dec. 12, 1995	Dec. 12, 1999	Nu-Lite Industries
Thi 12	342797	1	Dec. 12, 1995	Dec. 12, 1999	Nu-Lite Industries
Thi 13	342798	1	Dec. 13, 1995	Dec. 13, 1999	Nu-Lite Industries
Thi 14	342799	1	Dec. 13, 1995	Dec. 13, 1999	Nu-Lite Industries
Thi 15	342800	1	Dec. 13, 1995	Dec. 13, 1999	Nu-Lite Industries
Thi 16	342801	1	Dec. 13, 1995	Dec. 13, 1999	Nu-Lite Industries
Thi 17	342802	1	Dec. 13, 1995	Dec. 13, 1999	Nu-Lite Industries
Thi 18	342803	1	Dec. 13, 1995	Dec. 13, 1999	Nu-Lite Industries
Thi 19	342804	1	Dec. 13, 1995	Dec. 13, 1999	Nu-Lite Industries
Thi 20	342805	1	Dec. 13, 1995	Dec. 13, 1999	Nu-Lite Industries
Thi 21	342806	1	Dec. 13, 1995	Dec. 13, 1999	Nu-Lite Industries
Thi 22	342807	1	Dec. 13, 1995	Dec. 13, 1999	Nu-Lite Industries
Thi 25	342808	1	Dec. 15, 1995	Dec. 15, 1999	Nu-Lite Industries
Thi 26	342809	1	Dec. 15, 1995	Dec. 15, 1999	Nu-Lite Industries
Thi 27	342810	1	Dec. 15, 1995	Dec. 15, 1999	Nu-Lite Industries
Thi 28	342811	1	Dec. 15, 1995	Dec. 15, 1999	Nu-Lite Industries
Thi 29	342812	1	Dec. 15, 1995	Dec. 15, 1999	Nu-Lite Industries
Thi 30	342813	1	Dec. 15, 1995	Dec. 15, 1999	Nu-Lite Industries
Thi 31	342814	1	Dec. 15, 1995	Dec. 15, 1999	Nu-Lite Industries
Thi 32	342815	1	Dec. 15, 1995	Dec. 15, 1999	Nu-Lite Industries
Total units ca	rried forward	66			

.

Located Claims continued

Claim	Record	No. of	Record Date	Expiry Date	Owner
Name	Number	Units			
Total units car	ried forward	66			
Ted 1	343139	1	Jan. 18, 1996	Jan. 18, 2000	Nu-Lite Industries
Ted 2	343140	1	Jan. 18, 1996	Jan. 18, 2000	Nu-Lite Industries
Ted 3	343141	1	Jan. 18, 1996	Jan. 18, 2000	Nu-Lite Industries
Ted 4	343142	1	Jan. 18, 1996	Jan. 18, 2000	Nu-Lite Industries
Bert 1	344155	1	Mar. 5, 1996	Mar. 5, 2000	Nu-Lite Industries
Bert 2	344156	1	Mar. 5, 1996	Mar. 5, 2000	Nu-Lite Industries
Bert 3	344157	1	Mar. 5, 1996	Mar. 5, 2000	Nu-Lite Industries
Bert 4	344158	1	Mar. 5, 1996	Mar. 5, 2000	Nu-Lite Industries
Bert 5	344159	1	Mar. 5, 1996	Mar. 5, 2000	Nu-Lite Industries
Bert 6	344160	1	Mar. 5, 1996	Mar. 5, 2000	Nu-Lite Industries
Bert 7	344161	1	Mar. 5, 1996	Mar. 5, 2000	Nu-Lite Industries
Bert 8	344162	1	Mar. 5, 1996	Mar. 5, 2000	Nu-Lite Industries
Bert 9	344163	1	Mar. 5, 1996	Mar. 5, 2000	Nu-Lite Industries
Bert 10	344164	1	Mar. 5, 1996	Mar. 5, 2000	Nu-Lite Industries
Bert 11	344165	1	Mar. 5, 1996	Mar. 5, 2000	Nu-Lite Industries
Bert 12	344166	1	Mar. 5, 1996	Mar. 5, 2000	Nu-Lite Industries
Bert 13	344167	1	Mar. 6, 1996	Mar. 6, 2000	Nu-Lite Industries
Bert 14	344168	1	Mar. 6, 1996	Mar. 6, 2000	Nu-Lite Industries
Bert 15	344169	1	Mar. 6, 1996	Mar. 6, 2000	Nu-Lite Industries
Bert 16	344170	1	Mar. 6, 1996	Mar. 6, 2000	Nu-Lite Industries
Bert 17	344171	1	Mar. 6, 1996	Mar. 6, 2000	Nu-Lite Industries
Bert 18	344172	1	Mar. 6, 1996	Mar. 6, 2000	Nu-Lite Industries
Bert 19	344173	1	Mar. 5, 1996	Mar. 5, 2000	Nu-Lite Industries
Bert 20	344174	1	Mar. 5, 1996	Mar. 5, 2000	Nu-Lite Industries
Bert 21	344175	1	Mar. 5, 1996	Mar. 5, 2000	Nu-Lite Industries
Bert 22	344176	1	Mar. 5, 1996	Mar. 5, 2000	Nu-Lite Industries
Bert 23	344177	1	Mar. 5, 1996	Mar. 5, 2000	Nu-Lite Industries
Bert 24	344178	1	Mar. 6, 1996	Mar. 6, 2000	Nu-Lite Industries
Total number	of units	94			I

Note: The work reported upon herein will be filed for assessment credit to extend the expiry dates of some of the above claims.

1.5 Previous Exploration and development of the Keystone Property Area

Early exploration of the Thibert Creek area was summarized by Gorc and MacArthur

(1984) as follows:

Placer gold was first discovered, in what is now Thibert Creek in 1873. This discovery was made by a member of a party of prospectors led by Henry Thibert, about three miles (4.8 km) above the mouth of Thibert Creek near Delure Creek. Other areas draining into and near Thibert Creek were soon found to contain gold. The creeks that were actively mined as well as Thibert and Delure included Boulder, Defot, Mosquito, Porcupine and Vowell creeks. The production from these creeks is recorded as being more than 70,000 ounces (2,000 kg) up until 1949. Most production occurred before the Klondike gold rush lured away most of the local prospectors. There have been short periods of intensive work since then and presently there are a few placer operations active in the area.

About two-thirds of the gold production was from Thibert Creek where economic gold placers are restricted to rock benches 5 to 200 feet (1.5 m to 61 m) above the present stream channel.

It has been reported that concentrates from the Thibert Creek placer operations contained about 2 oz/ton platinum.

Gore. D. and MacArthur, R.; 1984: pp. 2-3.

The Keystone showing, presently located on the Auey 75 claim (Figure 5, sample site J41) was explored during the early 1930's and was reported upon by a provincial government geologist in 1931 as follows:

Keystone This group of eight claims on Thibert creek, below Berry creek, is owned by Homer Ficklin, of Porter Landing. Open-cutting and stripping has exposed a zone of quartz stringers in quartz porphyry, in which the owner reports gold values of up to \$5.50 across a width of 40 feet (12.2 m). During the winter it is planned to drive a crosscut 20 feet long to intersect the vein vertically below the surface showings. A group of claims is also being prospected by Homer Ficklin on Delore (probably Delure) Creek.

B.C. Min. Mines, Ann. Rept.; 1931: p. A 53.

The quartz stringers observed by the writer in the southern bank of Thibert Creek on the Auey 75 claim accurately fit the 1931 description of the Keystone showing. The stringer zone is hosted in quartz-magnesite-fuchsite (mariposite) altered rocks which in 1931 could have been called a quartz porphyry. Evidence of the trench that was described in the 1931 report has been subsequently lost to river erosion. However, a wide, straight horse trail diverges from the main Thibert Creek trail about 100 m west of the quartz stringers and descends the steep slope toward them, indicating that a significant amount of work requiring horse transport of supplies was done in the area of the quartz stringers. The writer is confident that these quartz stringers are the Keystone showing.

It is unlikely that the provincial geologist actually visited the Keystone showing, and probably the promotors description of the showing was reported. The 40 foot (12.2 m) width reported by Homer Ficklin was actually the length of the stringer zone. The true width of the stringer zone was a maximum of 2 m (6.6 ft).

Dark grey, somewhat smokey quartz fills the stringers; each one being less than 0.5 m (1.6 ft) thick. A composite chip sample taken during the 1999 exploration program (Samples J041-1 and J041-2) (Appendix 'A') reveals that the Keystone showing contains no significant economic mineralization. Homer Ficklin's talk of driving a tunnel beneath \$5.50/ton gold mineralization seems to have been more talk than gold.

No further hard rock exploration is known to have occurred in the Thibert Creek area until the 1970s when several major mining companies conducted regional reconnaissance programs in the Dease Lake area looking for porphyry copper deposits (Gorc and MacArthur, 1984).

Noranda Exploration Company, Limited conducted a program of rock, silt and soil geochemistry on and around a group of claims located just north of Thibert Creek (Gorc and MacArthur, 1984). Some moderate anomalies were defined by the 1984 survey, but in general, results seemed to have been mildly negative.

Equity Silver Mines Ltd. acquired claims and conducted an exploration program in the Thibert Creek area from 1987 to 1988. Part of that program was conducted along Thibert Creek between Berry Creek and Five Mile Gulch on ground now covered by the western part of the Keystone property. R.C.R. Robertson (1988) described that program as follows: The 1987 work consisted of compilation of the data from ... Noranda's 1983-84 results. Detailed prospecting and rock sampling with some limited geological mapping, were carried out in a number of areas ... largely determined by anomalous results in Noranda's program of rock and soil sampling or by the presence of altered ultramafic rocks along the Thibert fault in areas known to produce placer gold. A limited amount of backhoe and hand trenching was carried out in the Boulder Creek-Berry Creek area ... The old Keystone showing has not been located and is believed to be covered by placer tailings in the area immediately east of the Berry Creek-Thibert Creek junction. A ...hole (500 fect, 152.4 m) was drilled south from near the Boulder Creek-Thibert Creek junction to test serpentinite, quartz veins and a veined black shale unit (which carried up to 0.018 oz/ton gold in a backhoe pit).

Robertson, R.C.R.; 1988: pp. 8-9.

Robertson believed that the altered ultramafic rocks along Thibert Creek were the source of most of the placer gold found in the area. However, no economic hard rock mineral concentrations were found during the 1987-1988 program.

Robertson's 1988 assessment report was reformated, probably for a company financing by J.E. Wallis in 1989. The two reports contain the same geologic information.

Nu-Lite Industries Limited acquired the claims now comprising the Keystone property in the 1990s and conducted a very-low-frequency electromagnetic survey south of Thibert Creek along a 7,800 m (4.84 mi) long east-west base line (Kowalchuk, 1997). That survey was successful in defining the locations of gabbro, peridotite and serpentinized equivalents along the Thibert Fault.

Nu-Lite returned to the Keystone property during 1998 to conduct a diamond drilling program near the mouth of Boulder Creek on the eastern part of the Auey 73 claim (Kowalchuk, 1998) (Figure 5). The drill program comprised 4 holes totaling 648 m (2,126 ft) of core from two drill sites. One of the drill sites was the same as that used by Equity Silver Mines during the 1987 drill program Robertson (1988).

Two of the 1998 drill holes were oriented to penetrate the down-dip extension of a 2 m (6.56 ft) thick white quartz lens that was exposed by trenching about 20 m (65 ft) west of Boulder Creek about 110 m (361 ft) south of its confluence with Thibert Creek.

That location is the writer's sample station J36 (Figure 5, Appendix 'A'). The J36 lense

comprises white quartz containing traces of green fuchsite (mariposite) and no sulphides or economic mineralization. The lens is exposed for about 6 m (19.7 ft) in listwanite.

Kowalchuk (pers. comm.) speculated that the quartz lens could be an exposed part of the Keystone showing and that the showing could be part of an extensive trend hosting a series of quartz veins and lenses. The 1998 drilling confirmed that the J36 lens was one of a group of quartz-filled structures occupying a plane sub-parallel with that of the Thibert Fault located near the boundary between Kedahda Formation metasediments and listwanite.

1.6 Summary of Present Work

Field work on the Keystone property comprised geological mapping conducted from June 25 to July 3, 1999. Data compilation continued intermittently until August 10, 1999. The work was conducted by:

John Ostler; M.Sc., P.Geo. West Vancouver, B.C.	Consulting Geologist
Jeff Briggs Duncan, B.C.	Geological Technician

The June-July, 1999 work program on the Keystone property included the following:

A. Geological mapping (Figure 5).	18.0 man-days
B. Transportation, expediting, camp set-up	8.00 man-days
C. Data compilation and report production	<u>13.5 man-days</u>
Total time spent during the current work program	39.5 man-days

1.7 Claims Worked On

During the June-July, 1999 program, work was done on the following claims:

Claim Name	Record Number	No. of Units	Record Date	Expiry Date	Owner
FA 1 10	000 190	T 19	Tul. 18 1086	L July 18 1990	Nu Lite Industries
Auey 69-76	312793-312800	8	Aug. 17, 1992	Aug. 17, 1999	Nu-Lite Industries
Rusty 2. 4. 6	333306, 08, 10	3	Dec. 20, 1994	Dec. 20, 1999	Nu-Lite Industries
Thi 14-32	342799-342815	18	Dec. 13-15, 1995	Dec. 13-15, 1999	Nu-Lite Industries
Ted 3	343141	1	Jan. 18, 1996	Jan. 18, 2000	Nu-Lite Industries
		48			

2.0 GEOLOGY

2.1 Regional Geology

The Thibert Creek area is mapped as part of the northeastern quadrant of the Dease Lake Map Sheet: Map 1908A (Figure 4), by the Geological Survey of Canada (Gabrielse, 1998). In that area the northwesterly trending Thibert Fault separates parts of the Cache Creek terrane, formerly known as the Atlin terrane, to the southwest from part of Quesnellia to the northeast. The fault is exposed in the Thibert Creek canyon in the area containing the Keystone property and divides the property area into two distinct structural domains.

From Late Palaeozoic to Middle Mesozoic time, Quesnellia and the adjacent Cache Creek terrane were deposited in island arc and open basin environments respectively. Both were located west of ancestral North America. The tectonic settings of both terranes was summarized by H. Gabrielse (1998) as follow:

The ... rocks of Quesnellia suggest an island arc setting during Late Triassic to possibly Late Jurassic time. One possibility is that the Nazcha Formation was deposited in a forearc environment coeval with the formation of the Inklin Formation farther southwest as an accretionary wedge above a northward dipping. Early Jurassic subduction zone ... Polarity of the Late Triassic subduction zone is unknown ... By Middle Jurassic time the Sylvester Allochthon and possibly Quesnellia had been emplaced onto ancestral North America.

Gabrielse, H.; 1998: p. 48.



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Figure 4A

Legend to Figure 4

CACHE CREEK TERRANE

	CACHE CHEEK TERHANE
JURASSIC	R JURASSIC (may be in part. Middle Jurassic)
١L	InixLIN FORMATION: penetratively cleaved, phyllitic state, greywacke, pebble and cobble congromerate; JkL, diamichte, possibly Kurcho Formation in part
TRIASSIC	R TRIASSIC
uTS	SINWA FORMATION: Immestone. commonly argulaceous and lead
LOWE	B TRIASSIC
	KUTCHO FORKIATION: basallo: to rhyokic schist (flows, brecoa, crystal juli), fine gravned vokcanic sediments, basic schist, conglomerate (may be basal Inklin Formation, in part), 1% ku, undivided Kutcho, Inklin, and possibly Cache Creek rock.
MISSISSIPPI	IAN TO TRIASSIC CACHE CREEK COMPLEX (MPy - MTK)
MTK	KEDAHDA FORMATION: chert, cherty arguinte, minor arguitte, sutstone and volcan sandstone, minor volcam: nocks and metamorphosed equivalents: Milksv sediments and volcarucs, undivided; Milkgw, greywacke, state, chert, may be entir of Late Tnessic age
PERMIAN	
(*) P T (**	TESLIN FORMATION. massive imesione, minor malic volcanics
	FRENCH RANGE FORMATION undivided; basail, tull, aggiomerale, minor chert. argilite
UPPER MISS	SISSIPPIAN TO PERMIAN
МРн	HORSEFEED FORMATION: Immesione, dolomitic limestone
11.5	L-mestone, age unknown
MPv	Mafe volcanics, greensione, age unknown
MPga	Coarse grained to pegmeteic gabbro, donte
	Pendolite, dunite, pyroxenite, generally serpentinized; locally includes pods of nephrite jade and small bodies of latwanite, rodingite, and latc
	QUESNELLIA
LOWEN JUN	NAZCHA FORMATION: greywacke, congiomerate, shale, siate, siltstone, Sinemuri and possibly younger
TRIASSIC	
	RIASSIC
LICL	four DAKES FLOTON: normalinar granditione, normaliende dionie, commonly housted, may be in part of Early Jurassic age
LTgd	Foxated hornblende granodiorite, age uncertain
UPPER	TRIASSIC
	Lumezione
utsh	SHONEK TAW FORMATION: sugite porphys, leidspar porphys, tuff, aggiomerate, pyrozenia, mmor shale, altistone, and graywacke; may include some LTgd. TJSHN, urdnyded Shoneklaw and Nazcha formations
CAMBRIAN A	ANCESTRAL NORTH AMERICA
S. Mart	Undivided pyritic, homfelsic slate, ergilite, sittstone, quartzite, micaceous quartzite.
	schist, limestone; variably metamorphosed; mainly Cambrian to Mississippian(?)

Geology by M. Gaborelse. J. W.H. Monger, S.L. Learning, R.G. Anderson, and H.W. Tugoer on "Operation Desses". 1977 to 1963. H. Gabrielse. 1961 and 1967; J.G. Souther. 1961. J. W.H. Monger 1965. H. Gabrielse. J.G. Souther, and E.F. Rostos on "Operation Skinne". 1956 and 1953. Includes information from Holdatun Range by B.W. Domming and C.H. Leeto, Falcohorbidge Vicel Kinnes LLI. from the Grand Cargon of the Stilme River by B. Readtion the Level Vicentian Range area by T.S. Hamilton on contacts north of Egnat Cargo by R.T. Beil: contacts of the Katelsta Pillicoh by the Bhints Columbia Geological Survey, and on the distribution of several plutons by G.W. Manard, T. Lisle, and E. Ostensoe

Figure 4A

Legend to Figure 4 Continued

Geological boundary (defined, approximate, assumed)		
Boundary of surficial deposits	. / -	
Bedding, top known (inclined, vertical)	.	°≯
Bedding, top unknown (inclined)		¥
Foliation (inclined, vertical)	• • • • • • • •	"Z X
Fault, unknown sense of displacement (defined, approximate)		
Fault, extension (solid circle on downthrown side; defined, approximate)	t	<u> </u>
Fault, extension (assumed projection under younger deposits)	·	
Fault, contraction (teeth on upthrust side; defined, approximate or assumed)		
Fault, contraction (assumed projection under younger deposits)		* * *
Fault, strike-slip (arrows indicate direction of relative movement; defined, approximate)	<u> </u>	₩-
Fault, strike-slip (assumed projection under younger deposits)		- = = -
Dextral strike-slip fault, on cross-sections only (displacement into section, out of section)		
Anticline (defined, overturned)		
Syncline (defined)		
Lineation (plunging)		
Radiometric date method, mineral,age (in millions of years)	· · · · · · · · ·	Kh341±7•
Method: Potassium argon, K; rubidium strontium, R; uranium-lead, U Mineral: Biotite, b; hornblende, h; muscovite, m; whole rock, w; zircon, z		~
Fossil locality		F
Cross-section line	*_	P
Mineral occurrence		^{Cu} X

MINERALS

Asbestos				•	asb	
Copper					.Cu	
Gold (plac	e	r,).		Aup	

Jade (lode) J Molybdenum . . . Mo Tungsten W Four distinct assemblages comprise the Cache Creek terrane and each reflects a different tectonic environment. The Cache Creek Complex clearly indicates an oceanic environment which persisted, at least locally, from the Early Mississippian to Late Triassic. The central facies belt ... remained a predominantly deep water succession throughout its history. The flanking facies belts developed platformal sequences of limestone, probably on volcanic plateaus ... Subduction related to the (Kutcho volcanic) arc presumably led to the demise of the oceanic environment in the latest Triassic or earliest Jurassic.

Gabrielse, H.; 1998: p. 53.

Quesnellia in the Thibert Creek area is represented by the Late Triassic Shonektaw

Formation, a succession of intermediate volcanic rocks. The central oceanic facies of the Cache

Creek terrane is represented by the Mississippian to Triassic Kedahda Formation (Figure 4).

Both rock units were described by R.C.R. Robertson (1988) as follow:

Shonektaw Formation

... The formation consists of augite andesite and basalt ... fine-grained, greenish volcanic rocks. The greenish colour is suggestive of small amounts of chlorite and perhaps epidote. Several exposures are fractured and sheared with small amounts of iron staining.

Robertson, R.C.R.; 1988: pp. 4-5.

Kedahda Formation

... this formation consists of very schistose quartzite and lesser black, platy argillite ... These rocks contain numerous coarse-grained white quartz lenses within a 200 m to 400 m (656 to 1,312 ft) wide band south of the Thibert Fault. Such lenses range up o 30 cm (1 ft) in width and 6 m (19.7 ft) in length but are generally much smaller. Only rare or trace sulphides were noted within these lenses. No alteration was noted adjacent to the lenses.

Robertson, R.C.R.; 1988: pp. 3-4.

Jurassic and Cretaceous-age, variably foliated, felsic intrusions were mapped within the

Quesnel terrane on and around the northern part of the Keystone property (Figure 4). Their

structural relationships with the rest of the Quesnel terrane are unclear.

Small bodies of ultramafic rock ranging in original composition from gabbro to peridotite

occur within the Cache Creek succession and along bounding faults like the Thibert Fault. It

is generally believed that these are alpine type ultramatics that have been faulted into place during Cretaceous-age thrusting.

Cross-sections by Gabrielse (1998, p. 97.) indicate that the Thibert and Kutcho faults which separate the Cache Creek terrane from Quesnellia were active from the Early to Middle Cretaceous Period. The Thibert Fault seems to have both sub-vertical and dextral components of movement. Ultramafic rocks associated with the Thibert Fault were described by Gabrielse (1998) as follows:

In many places the ultramafic rocks have been altered to assemblages of talc, carbonate and quartz characterized by buff-brown weathering. These alteration products, called listwanite, appear to mark fault zones, particularly within ultramafic bodies along their contacts.

... A conspicuous quartz-carbonate alteration zone associated with lenses of serpentinite marks the Thibert Fault along Thibert Creek ...

Gabrielse, H.; 1998: pp. 53-54.

Major structures including the Thibert Fault were disrupted by northerly to easterly striking transcurrent faults of uncertain age. The writer suspects that they were active from Late Cretaceous to Eocene time.

Weathering, erosion and unroofing of the area occurred during the Late Tertiary Period, resulting in the establishment of much of the drainage system that is present today. Probably, deep weathering and soil development in a sub-tropical environment was responsible for the accretion of gold into flakes and nuggets. Gold was released from the Cache Creek stratigraphy and deposited in river channels west of Dease Lake. However, erosion was insufficient to produce white channel gravels such as those deposited north of Dawson City, Yukon or in California.

Pleistocene glaciation rounded off the hills of the area and filled in the deeper valleys. Some of the placer gold was redistributed in sub-glacial and glaciofluval sediments. Recent isostatic rebound has resulted in the down cutting of many of the river channels around Dease Lake producing canyons that host most of the rock outcrop in the area.

A table of geological events and lithological units in the Thibert Creek area is as follows:

FIGURE 6

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TABLE OF GEOLOGICAL EVENTS AND LITHOLOGICAL UNITS IN THE THIBERT CREEK AREA

Time	Formation or Event
Recent 0.01-0 m.v.	valley rejuvenation, down cutting of stream gullies
Pleistocene 1.6-0.01 my.	glacial erosion and deposition, removal of Tertiary-age regolith, deposition till and related sediments at lower elevations, redeposition of placer gold in melt-water channels
Eocene to Pliocene 57-1.6 m.y.	erosion and unroofing of the rocks in the Dease Lake area, development gold flakes in weathering profiles and subsequent deposition in river gravels
Late Cretaceous to Eocene 97-57 m.y.	disruption of stratigraphy by northerly to easterly striking transcurrent faults, onset of regional erosion
Early to Middle Cretaceous 146-97 m.y.	thrust and transcurrent faulting: Development of the Thibert and Kutcho fault systems, emplacement and serpentinization of ultramafic rocks, subsequent quartz- carbonate-fuchsite (mariposite) alteration of ultramafics, minor folding and crenulation of older rocks near thrust planes
Jurassic 208-146 m.y.	deformation of Cache Creek and Quesnel rocks in a northeastward dipping subduction zone, progressive deformation and regional metamorphism of Kedahda and Shonektaw Formation rocks, emplacement of felsic intrusions, minor concentration of gold in quartz ribbons parallel with first cleavage
Late Triassic to Late Jurassic 223-146 m.y	Quesnel terrane formed as an island arc east of the Cache Creek ocean basin, development of Nazcha Formation sediments in a forearc environment and Shonektaw Formation andesitic volcanics, local felsic to intermediate intrusion
Early Mississippian to Late Triassic 362-208 m.y.	Cache Creek Complex deposited in an open ocean basin, Kedahda Formation flysche sediments and mafic volcanics deposited
	m.y. = million years ago

ſ

2.2 Property Geology

During the June-July, 1999 exploration program most of the Keystone property south of Thibert Creek was mapped at a scale of 1:10,000. Generally, rock outcrops in that area are confined to areas of stream channel steepening by recent erosion in and near the Thibert Creek canyon. That area hosts Cache Creek rocks and the ultramafic assemblage south of the Thibert Fault.

The rocks south of the Thibert Fault have been given a higher exploration priority than the Quesnel terrane rocks north of the fault because all of the placer gold recovered from the Thibert Creek area came from channel deposits developed on Cache Creek stratigraphy. Quesnel rocks seemed to produce no placer gold and consequently, were assumed to be unlikely to be mineralized.

2.2.1 Stratigraphy

Kedahda Formation: Early Mississippian to Late Triassic

Rocks of the Kedahda Formation comprise most of the rock outcrops south of the Thibert Fault in the property area. These rocks are typical of the distal open basin assemblage of the central facies belt in the Cache Creek terrane as described by Gabrielse (1998).

The best sectional exposure of these rocks is at Boulder Creek. There, a coarsening upward flyschoid sequence is defined by a basal unit of carbonaceous pelite graduating upward through thin fine-grained greywacke beds into coarser and thicker cross-bedded and graded turbidite beds. About 90% of this section comprises silty turbidite beds less than 10 cm (4 in) thick. The section is punctuated by an andesitic to basaltic layer containing mostly fine-grained water-laid tuffs and volcanogenic sediments which are difficult to distinguish through subsequent metamorphism which has turned these rocks into grey to black phyllites tending to schists.

Deformation of this section makes an accurate calculation of the true thickness of the Boulder Creek section impossible.

California Creek Stock: Triassic to Jurassic

This intrusion is exposed in a 0.25 km² area on the southern side of Thibert Creek across from its confluence with California Creek in the central part of the Keystone property. It ranges in composition from diorite in its most western mapped exposures to granodiorite in its most eastern mapped exposures (Figure 5). It is possible that the California Creek Stock was originally a granodioritic intrusion that was contaminated by absorbed volcanic and sedimentary rocks of andesitic composition near its boundaries and the mapped exposures of it are part of its western margin. High water in Thibert Creek and steep unstable bluffs in that area precluded further mapping during the June-July, 1999 program. The true extent of the stock and its boundary relations remain unknown. The California Creek stock has similar cleavages to those in the adjacent Kedahda Formation stratigraphy. It is assumed to have intruded the Kedahda Formation before the onset of Jurassic-age penetrative deformation and regional metamorphism.

Shonektaw Formation: Late Triassic to Late Jurassic

The Thibert Fault is located on the south side of Thibert Creek in a small part of the Auey claims (Figure 5). Exposures of Shonektaw Formation volcanic rocks are exposed between the fault and the creek. These exposures are of mauve-weathering and esitic flows and volcanic breccias. In some outcrops, poorly preserved pillows attest to the submarine deposition of these rocks.

Ultramafic rocks and altered equivalents, serpentinite and listwanite: Triassic to Cretaceous

Ultramafic rocks with compositions ranging from peridotite to gabbro have been reported in the Thibert Creek area (Gorc and MacArthur, 1984; Robertson, 1988). Such rocks were mapped at Boulder Creek and south of the settling ponds about 1 km (0.6 mi) west of Delure Creek (Figure 5). In both places these rocks were composed of a generally even mixture of pyroxene and calcic plagioclase, defining them as gabbro. At Boulder Creek an elongate north-south trending gabbro body is either fault-bounded or intruded into Kedahda Formation greywacke. Contact relations in that area have been obscured by subsequent deformation and metamorphism. The contact relations of the gabbros west of Delure Creek are not well exposed.

All ultramafic rocks exposed near the Thibert Fault between Delure and Berry Creeks have been pervasively altered (Figures 4 and 5). Alteration takes two forms: pervasive serpentinization or quartz-carbonate-fuchsite (mariposite) alteration.

Serpentinization is responsible for the total destruction of all pre-existing rock textures, replacing them with a contorted, waxy, platy texture. Serpentinites are a distinctive green and contain a small quantity of white talc streaks. They are recessive weathering and commonly form muddy blue screes.

Listwanite is a light grey rock made up of quartz, magnesite (MgCO₃) with thin white quartz veins and stringers. This rock type contains highly variable amounts of brilliant green fuchsite {mariposite, a chromium muscovite: $K_2Al_4(Si_9Cr_2O_{20})(OH,F)_4$ } that can turn the rock emerald green. The magnesium carbonate weathers a characteristic buff-brown making this rock unit very distinctive in outcrop. Listwanite forms tabular units in serpentinite and appear to be the result of subsequent alteration of serpentinite bodies. Listwanite units are oriented parallel with the sub-vertical Thibert Fault plane. Differences in cleavage orientations in serpentinite and listwanite outcrops (section 2.2.2, this report) provide further evidence that it was a later alteration product derived from serpentinite.

The feature of the Kedahda Formation stratigraphy that interested hard rock explorationists in the Thibert Creek area the most was the tendency for quartz lenses to form in that unit near the Thibert fault-plane (Gorc and MacArthur, 1984) (Robertson, 1988, section 2.1, this report).

Current mapping reveals that both the Keystone showing and the J36 lens are two such quartz lenses. On the western part of the Keystone property these lenses form by the deposition of excess quartz developed during listwanite formation and are deposited in lowpressure areas in listwanite near its contact with fine-grained, thinly bedded Kedahda Formation greywacke. These lenses are barren quartz blowouts with no economic potential.



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2.2.2 Deformation and Metamorphism

Structural mapping of the rocks south of Thibert Creek revealed that three distinct tectonic events occurred in that area: progressive deformation and regional metamorphism, thrust faulting with associated emplacement and alteration of ultramafic rocks, and brittle transcurrent faulting.

Kedahda Formation turbidites and volcanics show abundant evidence of a single phase of progressive deformation and regional metamorphism that is interpreted to have been related to Triassic to Jurassic-age subduction of the Cache Creek terrane beneath Quesnel terrane rocks. Poles to bedding planes of Kedahda Formation rocks in the Keystone property area cluster in a single group around a sub-vertical average. This indicates that bedding is complexly crenulated but ubiquitously nearly flat-lying (Figure 7). Bedding planes in this area have an average orientation of 256°/18°N. The anticlines that were mapped in Boulder Creek and at Five Mile Gulch (Figure 5) were both open warps the forms of which are consistent with the results of bedding plane measurements.

The first cleavage is the most outstanding planar structure in Kedahda Formation rocks. The average orientation of the first cleavage is 111°/59°S. (Figure 7). Such an orientation would be produced by north-northeast-south-southwest compression. That compression orientation is consistent with the northeasterly subduction of the Cash Creek rocks beneath Quesnellia as described by Gabrielse (1998).

Reorientation of silty laminae from bedding planes into a plethora of siliceous wisps inclined parallel with the local first cleavage plane partially obliterates bedding features in pelitic strata. In those outcrops, deflection of the first cleavage through graded beds is to most reliable indicator of bedding attitudes.

Development of the first cleavage coincided with lower amphibolite grade regional metamorphism. Initial concentration of gold later available to placer gravels probably occurred during this metamorphic event by the same mechanism that disrupted and reoriented silty layers into siliceous structures along the first cleavage plane. Some previous workers in the Thibert Creek area believed that the source of the placer gold in that area was the serpentine and listwanite belt along the Thibert Fault. The locations of gold-bearing placer channels and operations indicates that the source of placer gold is the whole of the Kedahda Formation outcrop area and not the serpentine belt along the fault (Figures 3 and 5). Collection of gold during development of the first cleavage throughout Kedahda Formation rocks is a mechanism that would enable the whole stratigraphy to be a gold source for the placer channels.

Strain hardening during metamorphism and first cleavage development precluded the development of subsequent intense cleavages. The second and third cleavages are minor in their effect on Kedahda Formation rocks compared with the first cleavage. They occur in all strata but are only easy to measure in pelitic outcrops.

The average orientations for the second and third cleavages respectively are: 083°/63°S. and 100°/68°S. (Figure 8). These cleavages probably formed separately in response to a change in the orientation of the greatest compressive stress from northeast to northwest and back to northeast during subduction.

The fourth cleavage in Kedahda Formation rocks is a fracture cleavage oriented at an average of 200°/78° W. (Figure 9). It postdates the apex of regional metamorphism in these rocks and probably is related to northeasterly to northwesterly trending transcurrent faults that disrupt the stratigraphy throughout the map area (Figure 5).

Gabrielse (1998) suggested that the Thibert Fault was active during the Early to Middle Cretaceous Period and that the ultramafic rocks were emplaced at that time. The results of cleavage measurements of ultramafic rocks south of Thibert Creek suggests that they have had a complex history.

Serpentinite bodies are restricted to the area adjacent to the Thibert Fault and are assumed to have been emplaced as obducted slices along it. Cleavages in from the serpentine bodies are quite variable and their poles plot in a diffuse trimodal pattern (Figure 10). Such a pattern would be consistent with the rotation of these rocks through a plane oriented at 044[°]70[°]SE. which is almost at right angles to the assumed plane of the Thibert Fault. This pattern could be the result of the rotation of the serpentine bodies up along an arcuate thrust plane after serpentinization and cleavage development. Consequently it is deduced that serpentinization and cleavage development occurred at depth before final emplacement of these ultramafic bodies.

Poles to cleavage planes measured in listwanite outcrops are dispersed but tend to form an orthogonal pattern. This could be the result of listwanite alteration occurring late during faulting after the host serpentinite bodies have ceased moving along the fault plane.

Gabbroic rocks near the head of Boulder Creek and near the settling ponds west of Delure Creek contain all of the cleavages found in the surrounding Kedahda Formation turbidites and volcanics. This indicates that the gabbro bodies may have been sub-volcanic intrusions beneath the floor of the Cache Creek eugeosyncline and possibly are not related to the serpentinites and listwanites exposed along the Thibert Fault.

Fracture cleavages in the California Creek Stock also are similar to those in the Kedahda Formation metasediments and metavolcanics hinting that that intrusion may have been emplaced during the the tectonic event that produced the first cleavage and amphibolite grade metamorphic mineral assemblage in the Kedahda Formation.

The affinities of both the gabbroic bodies and the California Creek Stock remain tentative due to insufficient data.

Disruption of the stratigraphy south of Thibert Creek suggests that there was a late episode of brittle northeasterly to northwesterly trending transcurrent faulting in the property area (Figure 5). This deformation could have been responsible for development of the fourth cleavage in Kedahda Formation rocks (Figure 9).

3.0 CONCLUSIONS

Mapping on the Keystone property reveals that the rocks in the property area are a typical local example of the geology common to the Dease Lake area in general.

An eugeosynclinal assemblage of metasedimentary and metavolcanic rocks of the central facies of the Cache Creek terrane are exposed in the southern part of the property. These rocks are part of the Early Mississippian to Late Triassic-age Kedahda Formation. Structural data indicate that the gabbroic bodies exposed within Kedahda Formation stratigraphy may be sub-volcanic plutons emplaced during basin filling.

These rocks were progressively deformed and metamorphosed to lower amphibolite grade during north-northeastward subduction beneath strata of the Quesnel terrane during the Jurassic Period. The California Creek Stock could have been emplaced at that time.

On the property, Quesnel terrane rocks are represented by Shonektaw Formation andesitic meta-volcanics.

During the Early to Middle Cretaceous Period the Thibert Fault was active and developed by both thrusting and transcurrent faulting. Serpentinite bodies were obducted up along the fault plane and subsequently were subjected locally to listwanite alteration. In the western part of the property area, quartz lenses formed locally in low-pressure areas in listwanite near the contact with Kedahda Formation greywacke.

The Keystone showing as described in the 1931 B.C. Minister of Mines' annual report was located on the south bank of Thibert Creek on the Auey 75 claim. It and the J36 lense that was previously drilled were listwanite quartz lenses formed locally from excess alteration fluid. Neither quartz body had any economic mineralization or size potential.

The locations of gold-bearing placer channels and placer mining operations in the Thibert Creek area indicate that the serpentine and listwanite belt along the Thibert Fault is not the source of the placer gold in that area.

Primary gold concentration probably occurred during reorientation of siliceous bedding structures into the first cleavage throughout Kedahda Formation rocks during Jurassic-age deformation. Subsequent gold concentration may have occurred in a tropical weathering profile developed during Tertiary-age erosion. Consequently the whole of the Kedahda Formation outcrop area probably was the source of widely scattered gold particles that subsequently were concentrated in river gravels.

It is concluded that there is no single local source of the placer gold in the Thibert Creek area.

No economic targets were found on the property during the June-July, 1999 mapping program.

John Ostler

West Vancouver, British Columbia August 10, 1999

John Ostler: M.Sc., P.Ge Consulting Geologist

4.0 ITEMIZED COST STATEMENT: JUNE-JULY, 1999 WORK

Wages:		
Geologist	\$ 5,200.00 \$ 5,400.00	
Geological Technician		
Field work; 13 days @ \$250/day	<u>\$ 3,250.00</u>	
	\$13,8500.00	\$ 13,850.00
Transport:		
Truck rental: 0.5 month @ 3200/month	\$ 1,600.00	
Gasoline and oil	\$ 300.00	
Helicopter: 2.9 hours @ \$730/hour + fuel	<u>\$_2,404.10</u>	
	\$ 4,382.34	\$ 4,382.34
Camp Supplies and Communication:		
Satellite phone: 1 month @ \$1,500/month	\$ 843.81	
Fly camp rental including tools and chain saw:		
0.5 month @ \$800/month	\$ 400.00	
Naphtha, sample bags and camp supplies	\$ 63.10	
Field maps and blow-ups of map sections	<u>\$ 78.99</u>	
	\$ 1,272.09	\$1,272.09
Crew Costs in Transit:		
Hotel	\$ 382.32	
Camp food	\$ 349.73	
Restaurant food	<u>\$333.03</u>	
	\$ 1,065.08	\$ 1,065.08
Assay and Analysis:		
7 rocks: 32-element icp + gold determinations.	\$ 166.12	\$ 166.12
Report Production Costs:		
Copy of text and map scale changes.	\$ 121.00	
Report covers	<u>\$ 15.00</u>	
	\$ 136.00	<u>\$ 136.00</u>
		\$20,871.63
G.S.T.: 7% of \$20,561.63		<u>\$ 1,439.31</u>
Total Cost of June-July, 1999 work		\$22,310.94

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B.C. Minister of Mines, Annual Reports:

1931: p. A 53.

APPENDIX 'A'

1999 Rock Assays and Soil Analyses:

Methods and Results



Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers 212 Brooksbank Ave., North Vancouver British Columbia, Canada V7J 2C1 PHONE: 604-984-0221 FAX: 604-984-0218

To: CASSIAR EAST YUKON EXPEDITING LTD.

2224 JEFFERSON AVE. WEST VANCOUVER, BC V7V 2A8

A9922156

1

Comments: ATTN: JOHN OSTLER

CERTIFICATE

A9922156

(DYQ) - CASSIAR EAST YUKON EXPEDITING LTD.

Project: P.O. # : THIBERT

Samples submitted to our lab in Vancouver, BC. This report was printed on 19-JUL-1999.

SAMPLE PREPARATION												
CHEMEX	NUMBER SAMPLES	DESCRIPTION										
205 226 3202 229	7 7 7 7 7	Geochem ring to approx 150 mesh 0-3 Kg crush and split Rock - save entire reject ICP - AQ Digestion charge										
* 110												

The 32 element ICP package is suitable for trace metals in soil and rock samples. Elements for which the nitric-aqua regia digestion is possibly incomplete are: Al, Ba, Be, Ca, Cr, Ga, K, La, Mg, Na, Sr, Ti, T1, W.

ANALYTICAL PROCEDURES												
CHEMEX CODE	NUMBER SAMPLES	DESCRIPTION	METHOD	DETECTION LIMIT	UPPER LIMIT							
2118 2119	777	Ag ppm: 32 element, soil & rock	ICP-AES	0.2	100.0							
2120	7	As pom: 32 element, soil & rock	ICP-NES	0.01	10000							
557	7	B DDm: 32 element, rock & soil	TCP-AES	10	10000							
2121	7	Ba ppm: 32 element, soil & rock	ICP-AES	10	10000							
2122	7	Be ppm: 32 element, soil & rock	ICP-AES	0.5	100.0							
2123	7	Bi ppm: 32 element, soil & rock	ICP-AES	2	10000							
2124	7	Ca %: 32 element, soil & rock	ICP-AES	0.01	15.00							
2125	2	Cd ppm: 32 element, soil & rock	ICP-AES	0.5	500							
2126	2	Co ppm: 32 element, soil & rock	ICP-AES	1	10000							
2127	2	Cr ppm: 32 element, soil & rock	ICP-AES	1	10000							
2128	2	Cu ppm: 32 element, soil & rock	ICP-AES	1	10000							
2150	2	Fe %: 32 element, soil & rock	ICP-AES	0.01	15.00							
2130	4	Ga ppm: 32 element, soll & rock	ICP-AES	10	10000							
2122	4	Hg ppm: 32 element, soll & rock	ICP-AES	1	10000							
2151	4	A 31 34 Glement, Soll & FOCK	ICP-AES	0.01	10.00							
2134	- '-	Ma V. 22 element, soil & rock	ICP-AES	10	10000							
2135		My wi SA Glement, Soll & FOCK	ICP-AES	0.01	15.00							
2136	7	Mo nume 32 element soil & rock	ICP-ARS	5	10000							
2137	7	Na %: 32 alement soil 5 rock	ICP-NRS	A 01	10000							
2138	7	Ni nom: 32 element, soil & rock	ICP-ARS	0.01	10.00							
2139	7	P ppm: 32 element, soil & rock	TCD-NES	10	10000							
2140	7	Pb ppm: 32 element, soil & rock	TCP-ARS	2	10000							
551	7	S %: 32 element, rock & soil	TCP-AES	0 01	5 00							
2141	7	Sb ppm: 32 element, soil & rock	TCP-ARS	2	10000							
2142	7	SC DDm: 32 elements, soil & rock	ICP-AES	1	10000							
2143	7	Sr ppm: 32 element, soil & rock	ICP-AES	1	10000							
2144	7	Ti %: 32 element, soil & rock	ICP-AES	0.01	10.00							
2145	7	T1 ppm: 32 element, soil & rock	ICP-AES	10	10000							
2146	7	U ppm: 32 element, soil & rock	ICP-AES	10	10000							
2147	7	V ppm: 32 element, soil & rock	ICP-AES	1	10000							
0110 1	7	W ppm: 32 element, soil & rock	ICP-AES	10	10000							
4148		7m mmm, 37 alamant and a mant	TOD NEC	~								



Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers 212 Brooksbank Ave.. North Vancouver British Columbia, Canada V7J 2C1 PHONE: 604-984-0221 FAX: 604-984-0218

To: CASSIAR EAST YUKON EXPEDITING LTD.

2224 JEFFERSON AVE. WEST VANCOUVER, BC V7V 2A8

THIBERT

Comments: ATTN: JOHN OSTLER

Page Number : 1-A Total Pages :1 Certificate Date: 19-JUL-1999 Invoice No. :19922156 P.O. Number DYQ Account

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SAMPLE	PREP	λg	Al	As	B	Ba	Be	Bi	Ca	Cđ	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn
	CODE	ppm	%	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	%	ppm
J003-1 J007-1 J017-1 J034-1 J036-1	205 226 205 226 205 226 205 226 205 226 205 226	0.2 < 0.2 < 0.2 < 0.2 < 0.2 < 0.2	0.29 0.42 0.05 0.03 0.05	6 < 2 370 18 18	< 10 < 10 < 10 < 10 < 10 < 10	630 60 160 60 70	< 0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5	< 2 < 2 < 2 < 2 < 2 < 2 < 2	0.15 1.74 1.66 0.21 0.61	0.5 < 0.5 < 0.5 < 0.5 < 0.5 < 0.5	8 3 46 74 2	214 218 358 347 302	80 10 4 < 1 2	1.85 0.95 3.63 3.78 0.69	< 10 < 10 < 10 < 10 < 10 < 10	< 1 < 1 3 1 < 1	0.11 0.03 0.01 0.01 0.02	< 10 < 10 < 10 < 10 < 10 < 10	0.10 0.28 11.75 14.30 0.37	200 1040 735 510 195
J041-1	205 226	< 0.2	0.09	6	< 10	270	< 0.5	< 2	0.29	< 0.5	1	296	8	0.69	< 10	< 1	0.03	< 10	0.14	170
J041-2	205 226	< 0.2	0.15	10	10	190	< 0.5	< 2	1.60	0.5	1	349	6	1.29	< 10	< 1	0.05	< 10	0.65	480

Project :



Chemex Labs Ltd. Analytical Chemists * Geochemists * Registered Assayers

PHONE: 604-984-0221 FAX: 604-984-0218

North Vancouver

V7J 2C1

212 Brooksbank Ave.,

British Columbia, Canada

To: CASSIAR EAST YUKON EXPEDITING LTD.

CEDTIEICATE OF ANALVEIC

CERTIFICATION:

2224 JEFFERSON AVE. WEST VANCOUVER, BC V7V 2A8

Page Number : 1-B Total Pages : 1 Certificate Date: 19-JUL-1999 Invoice No. :19922156 P.O. Number Account :DYQ

THIBERT Project :

Comments: ATTN: JOHN OSTLER

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SAMPLE	PREP CODE	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	S %	Sb ppm	Sc ppm	Sr ppm	Ti %	T1 ppm	. U ppm	V ppm	W ppm	Zn ppm			
J003-1 J007-1 J017-1 J034-1 J036-1	205 226 205 226 205 226 205 226 205 226 205 226	3 < 2 1 < < 1 < 4 <	<pre>< 0.01 0.03 < 0.01 < 0.01 < 0.01 < 0.01</pre>	17 11 632 959 20	110 50 < 10 10 10	18 10 8 4 40 <	0.07 0.01 0.04 0.26 0.01	< 2 < 2 2 2 2 < 2	3 1 5 5 < 1	38 < 143 < 74 < 19 < 78 <	0.01 0.01 0.01 0.01 0.01	< 10 < 10 < 10 < 10 < 10 < 10	< 10 < 10 < 10 < 10 < 10 < 10	7 10 14 9 4	< 10 < 10 < 10 < 10 < 10 < 10	104 36 28 18 16			
J041-1 J041-2	205 226 205 226	3 < 6 <	0.01 0.01	8 10	130 910	6 < < 2 <	0.01 0.01	< 2 < 2	1 1	39 < 245 <	0.01 0.01	< 10 < 10	< 10 < 10	6 28	< 10 < 10	24 58			
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Chemex Labs Ltd.

Analytical Chemists * Geochemists * Registered Assayers 212 Brooksbank Ave., North Vancouver British Columbia, Canada V7J 2C1 PHONE: 604-984-0221 FAX: 604-984-0218 To: CASSIAR EAST YUKON EXPEDITING LTD.

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Project : THIBERT Comments: ATTN: JOHN OSTLER Page Number : 1 Total Pages : 1 Certificate Date: 26-JUL-1999 Invoice No. : 19923756 P.O. Number : Account : DYQ

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J04 J04	1-1 1-2		244 244		< 5 < 5														
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DYQ) - CASSIAR EAST YUKON EXPEDITING LTD.							J	CHEMEX CODE	EMEX NUMBER ODE SAMPLES DESCRIPTION METHO						DETECTION UPPER LIMIT LIMIT				
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HEMEX CODE	NUMBER SAMPLES		DESCRIPTION																
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CERTIFICATION: December 2010

APPENDIX 'B'

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 registered as a Professional Geoscientist with the Association of Professional Engineers and Geoscientists of British Columbia and that I am registered as a Professional Geologist with 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 25 years:

That this report is based on data in literature and an mapping on the Keystone property located near Dease Lake on the Tanzilla Plateau of northwestern British Columbia personally conducted from June 25 to July 3, 1999;

That I have no interest in the Keystone property nor in the securities of Nu-Lite Industries Limited or Global Tree Technologies Ltd., nor do I expect to receive any.

John Ostler

CGeo.

West Vancouver, British Columbia August 10, 1999

John Ostler; M.Sc., P.Ged **Consulting Geologist**

