

## B. TODD PROPERTY:

## SUMMARY:

The Todd Creek Property is located in the Stewart Gold Camp in Northwestern British Columbia, about 35 km north-northeast of the town of Stewart (Figure 1). The 23 mining claims (Figure 2, Table 1) are concentrated in the Todd Creek valley about 10 km north of the Stewart Highway. The claims comprise 430 claim units that cover 107.5 square kilometres. The Todd Creek Property is owned by Geofund, a small group of investors and geologists. Geofund is the nominee and business agent of Geofund. An interested party can obtain a 100% interest by making escalating option payments totalling \$200,000 and by funding work conditions of \$1.2 M.

Much of the Todd Creek Property is underlain by volcanic and pyroclastic rocks of the Jurassic Age Hazelton Group that elsewhere in the Stewart camp hosts the Red Mountain, Silbak-Premier and Eskay Creek gold deposits. The apparent attributes of the Todd geological environment, like Red Mountain, are epitomized by a large colour anomaly (Orange Mountain) associated with iron oxide and clay alteration.

Such gossans elsewhere in the Camp have proven to be particularly prospective when associated with strong alteration (including silica, pyrite, jarosite/alunite, chlorite, sericite, epidote, bemaite, etc.) and with polymetallic signatures often including arsenic, zinc, lead, cadmium, boron, manganese, etc., with or without gold, copper, barium etc. Structurally controlled gold and/or polymetallic mineralization is often found within such haloes. Polymetallic geochemical signatures with or without anomalous gold can evidence blind, auriferous deposits and careful evaluation of such signatures is required since gold mineralization often has a plunging ore shoot morphology that constitutes a difficult drill target.

The auriferous potential of the Todd Creek property is somewhat evidenced by the historical work of Noranda on some of the at least 12 gold and base metal showings located in the vicinity of Orange Mountain. On the South Zone, still held by Noranda, a deposit totalling 207,000 t grading 5.48 g Au/t has been outlined. The deposit is contiguous with and is surrounded by the Todd property.

Noranda diamond drill intersections on a number of the gold targets on the Todd property returned significant results that include:

## NORTH ZONE:

	3.47 g Au/t	0.75% Cu over	31.85 m
incl	14.47 g Au/t	2.06% Cu over	5.95 m
	2.83 g Au/t	0.58% Cu over	1.95 m
	3.95 g Au/t	0.22% Cu over	2.00 m
	3.43 g Au/t	0.73% Cu over	1.70 m
	6.21 g Au/t	0.60% Cu over	1.75 m

**FALL CREEK ZONE:**

6.72 g Au/t over 1.45 m  
 12.10 g Au/t over 1.25 m  
 2.73 g Au/t and 0.59% Cu over 13.00 m  
 incl 5.41 g Au/t and 0.50% Cu over 5.25 m  
 4.34 g Au/t over 2.00 m  
 3.94 g Au/t over 7.90 m  
 incl 4.71 g Au/t over 4.75 m

**The Ice Creek and Fall Creek Zones offer immediate follow-up drill targets based on the historical Noranda work. As indicated in the following table, the Noranda drilling did intersect evidence of the polymetallic halos that are associated with most of the Stewart Camp bulk tonnage gold mineralization:**

HOLE NO.:	ANALYTICAL VALUE:		CORE LENGTH: (m)	COMMENTS:
	GOLD (ppb)	COPPER (ppm)		
45	430	400	48.65	As, Zn N.A.
46	519	500	52.25	As, Zn N.A.
47	1330	3890	31.50	As, Zn N.A.
incl.	2730	5900	13.00	
48	1270	1190	27.85	As, Zn N.A.
incl.	3940	3100	7.90	
49	609		17.90	with anomalous As, Cu, Zn
53	119		61.80	with anomalous As and some anomalous Cu
54	186		36.20	with anomalous As and some anomalous Cu
55	424		103.00	with anomalous As
incl.	1840		10.85	
56	153	239	16.10	
	449	630	6.40	
58	221		22.10	at end of hole with avg of 111 ppm As

The available drilling results as referenced above provide rather specific rationale for follow-up drilling: economic gold mineralization is often haloed with anomalous gold and zinc; arsenic and copper increase toward the ore zone and often show direct, positive correlation with ore grade gold values. Ore zones often exhibit plunge morphologies, and once they have been intersected the relative location of holes to ore in the alteration zone can be established usually by geochemical signatures from up to 12 elements, but by usually relying solely on Cu, Zn, As, and Au. Initially, at least two holes on any section where the halo has been intersected are required to establish apparent plunges and direction to ore.

The encouraging intersections on the Fall Creek and Ice Creek Grids have never been followed-up and IP anomalies that were drill tested in a reconnaissance way by Noranda provide further insights into follow-up drill targets. With this rationale in mind, at least 8 holes comprising about 1500 m are required to follow-up the results outlined above.

A \$200,000, Phase 1 exploration program was carried out by Geofine in 1994. The work included the compilation of the available historical data; the regional aerial reconnaissance of alteration zones and the staking of an additional 11 claims; a Geonex Aerodat helicopter borne radiometric, conventional EM and gradiometer survey; the reconnaissance geological and geochemical evaluation of a number of reconnaissance targets; the restoration of Grid A on the North Zone and an initial evaluation of the historical mineralization; the initial evaluation of the Noranda Grid B mineralization on the North Zone; and, the establishing of a new 11 km grid on the North (C Grid), Fall Creek and Ice Creek Zones and the carrying out of geology and geochemical surveys as weather conditions allowed.

The Geonex Aerodat survey was successful in identifying apparent zones of potassic alteration which, in most areas, correspond to the gossan zones observed in the field. The gradiometer survey was useful in outlining structure and apparent geological contacts. Five general target areas are interpreted from the survey data and numerous individual targets are delineated via the potassium channel anomalies, magnetic trends, apparent structural junctions and weak EM anomalies. Based on the positive results of the survey, 10 new claims were staked to encompass the extension of existing targets and the location of new ones.

A total of 656 samples was collected during the Phase 1 program that comprised 365 rock and talus, 123 stream sediment, 140 soil, and 28 check samples. Based on Geofine's discovery experience in the Stewart Camp, that includes the Red Mountain deposit, reconnaissance geological and geochemical surveys on Orange Mountain were successful in delineating geochemical signatures suggestive of the proximity of gold mineralization. For example, the majority of arsenic, lead and zinc values for the 65 rock samples and for the 25 stream sediment samples are considered to be very anomalous. Barium is rather ubiquitous in the Amarillo Zone, suggestive of a higher level in the hydrothermal system. The follow-up of specific polymetallic signatures that include anomalous gold is recommended.

The follow-up of the potassium channel anomaly on the American Creek Zone in the Virginia Creek Target Area resulted in the discovery of anomalous gold values ranging up to 262 ppb in float samples associated with silicified and finely pyritized mafic volcanic rocks. Follow-up of the apparently new target is recommended in conjunction with follow-up activities on the large radiometric anomaly.

Noranda's Mid Zone Target Area contains prospective alteration that may represent the southern extension of the Fall Creek and Ice Creek Zones. Phase 1 surveys in the Yellow Bowl Zone discovered apparently new mineralization with a strong arsenic-gold-copper correlation. Anomalous gold, arsenic and copper values have been obtained over fairly wide widths in chip samples: 512 ppb, 1150 ppm and 1510 ppm, respectively, over 4 m; and, 209 ppb, 500 ppm and 3410 ppm, respectively, over 5 m. Gold and copper values returned in chip samples ranged up to 1.67 g Au/t and 9.8% Cu over 1 m. Most of the stream sediment samples have anomalous gold and copper values, suggesting a large target area.

Initial work on the new Grid C on the North Zone located anomalous gold values ranging up to 1310 ppb in float rocks and 648 ppb in in-situ samples of altered pyroclastic rocks near the Base Line. On the east side of the Base Line an interesting soil gold anomaly, as partially outlined by the 50 ppb contour, transcends the A Zone, suggesting additional targets.

Initial sampling of the historical mineralization on the A Zone returned positive gold and copper values. Forty-eight rock samples have average gold, arsenic, copper, lead and zinc contents of 1683 ppb, 537 ppm, 3125 ppm, 130 ppm and 466 ppm, respectively. Twenty-one percent of the rock samples have gold contents over 1150 ppb. Compilation of the Noranda historical data suggests that the targets remain open and that additional drilling is warranted.

Initial sampling of historical mineralization on the B Zone of the North Zone also returned encouraging results. Twenty eight rock samples have average gold, arsenic, copper, lead and zinc values of 1778 ppb, 630 ppm, 12648 ppm, 49 ppm and 123 ppm, respectively. Individual composite samples returned up to 2207 ppb gold, 1130 ppm arsenic, and 22800 ppm copper over a width of 6.5 m. A sample of a large angular massive sulfide boulder returned 4490 ppb gold and 6.03% copper. Two samples of altered (silicified, sulfidized, chloritized, sericitized) angular float boulders had gold contents of 4700 and 4800 ppb gold and copper contents of 16308 ppm and 7400 ppm, respectively. One stream sample taken at the north limit of

the Geofine sampling returned 94 ppb gold and 775 ppm copper, indicating further potential to the north. The Grid C and B Zone areas are considered particularly prospective since Noranda did not carry out geophysical surveys or soil sampling to fully evaluate the auriferous environment.

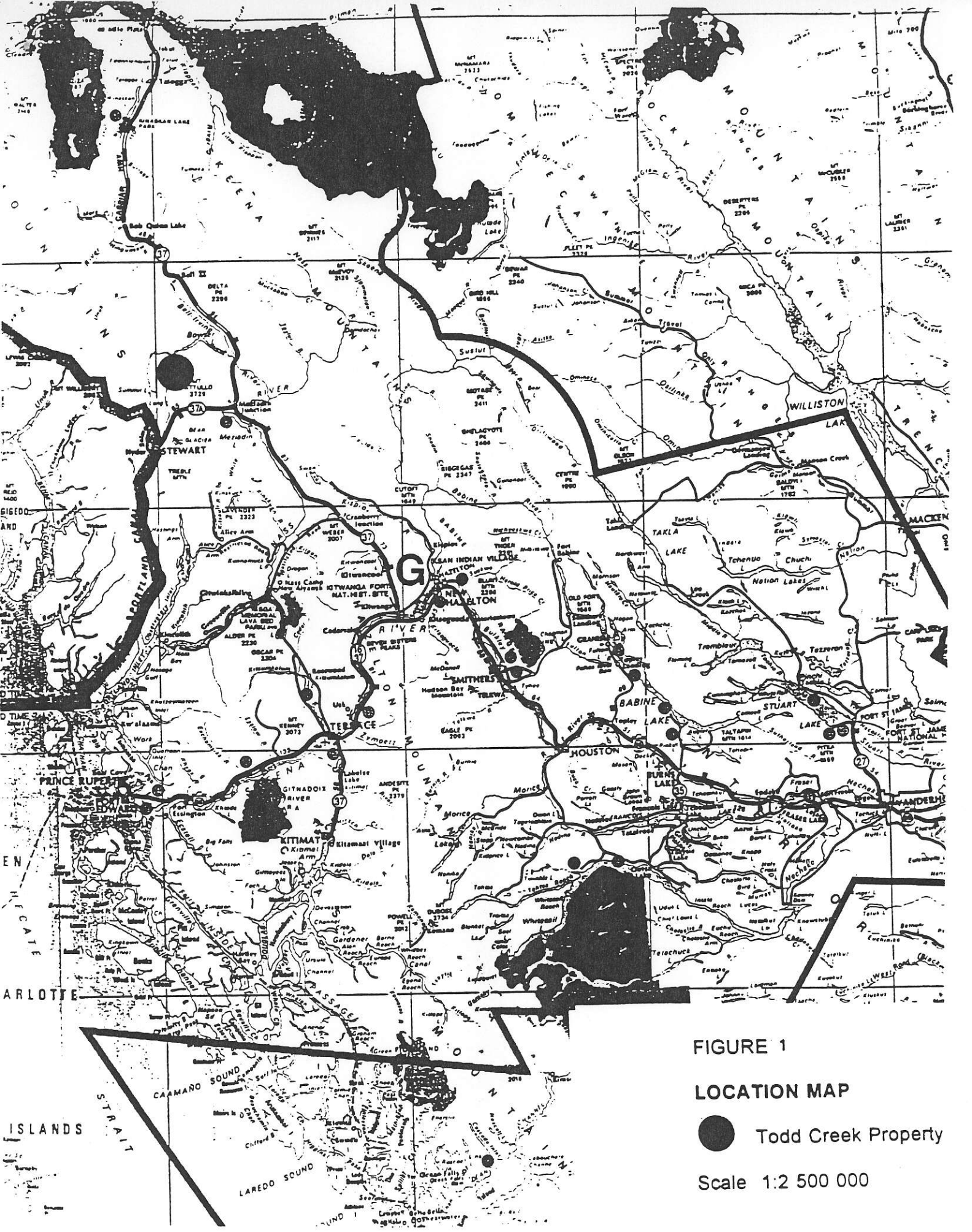
Work carried out on the Fall Creek and Ice Creek Zones was limited by snow conditions of an early winter and by the steep conditions that prohibited the expansion of the Noranda grid. However, the anomalous gold contents (up to 304 ppb) of stream sediment samples collected on the Zones confirm the importance of the target area; and, along with the

anomalous gold contents of rock samples (up to 4.0 g Au/t in float samples and 13.2 grams in narrow chip samples) collected along the east edge of the Ice Creek Glacier, provide an area of focus at least 300 m long for detailed follow-up activities.

Historical exploration on the Fall Creek and Ice Creek Zones had located strong soil and IP anomalies associated with extensive zones silicified and sulfidized agglomerates and mafic volcanic rocks of the Unik River Formation. Noranda drilling was initially successful as noted by the Fall Creek and Ice Creek Zone intersections reported above. However, the intersections were never followed-up but they did generate additional follow-up targets via the delineation of wide pyritic haloes that contain encouraging geochemical signatures over core lengths of up to 103 m. In the Stewart Camp, such signatures are often indicative of the proximity of significant gold mineralization.

The proposed, 1995 Phase 2 program totals \$600,000 and includes the provision for 1800 m of diamond drilling. The drill evaluation is recommended to initially focus on the follow-up (1000 m) of the most prospective drill intersections and geochemical haloes outlined by the historical Noranda work on the Fall Creek and Ice Creek Zones. The drill program would also initially allocate 800 m to existing drill targets and new targets outlined via IP, gradiometer, geological and geochemical surveys that are proposed on an expanded (15 km) Grid C on the North Zone. Systematic drilling, initially utilizing shallow holes to ascertain plunge morphologies, is recommended. Quantitative multi-element analyses are proposed to delineate geochemical signatures that can often indicate proximity to ore shoots.

Detailed follow-up surveys are proposed on the Amarillo Zone of the Orange Mountain Target Area and on the Yellow Bowl Zone of the Mid Zone Target Area. The 1994 reconnaissance activities would be expanded in each of the above areas and would also focus on evaluating the potential of weak EM anomalies, historical geochemical anomalies and the anomalous gold mineralization referenced above that are associated with the potassium channel anomaly in the Virginia Creek Target Area. The reconnaissance evaluation of a number of interesting weak EM anomalies is proposed in the Northeast Target Area. The most prospective of the unexplored regional alteration zones are also recommended for follow-up.



**FIGURE 1**  
**LOCATION MAP**  
 ● Todd Creek Property  
 Scale 1:2 500 000



ADMINISTRATIVE AREAS  
MINING DIVISIONS: GREENA

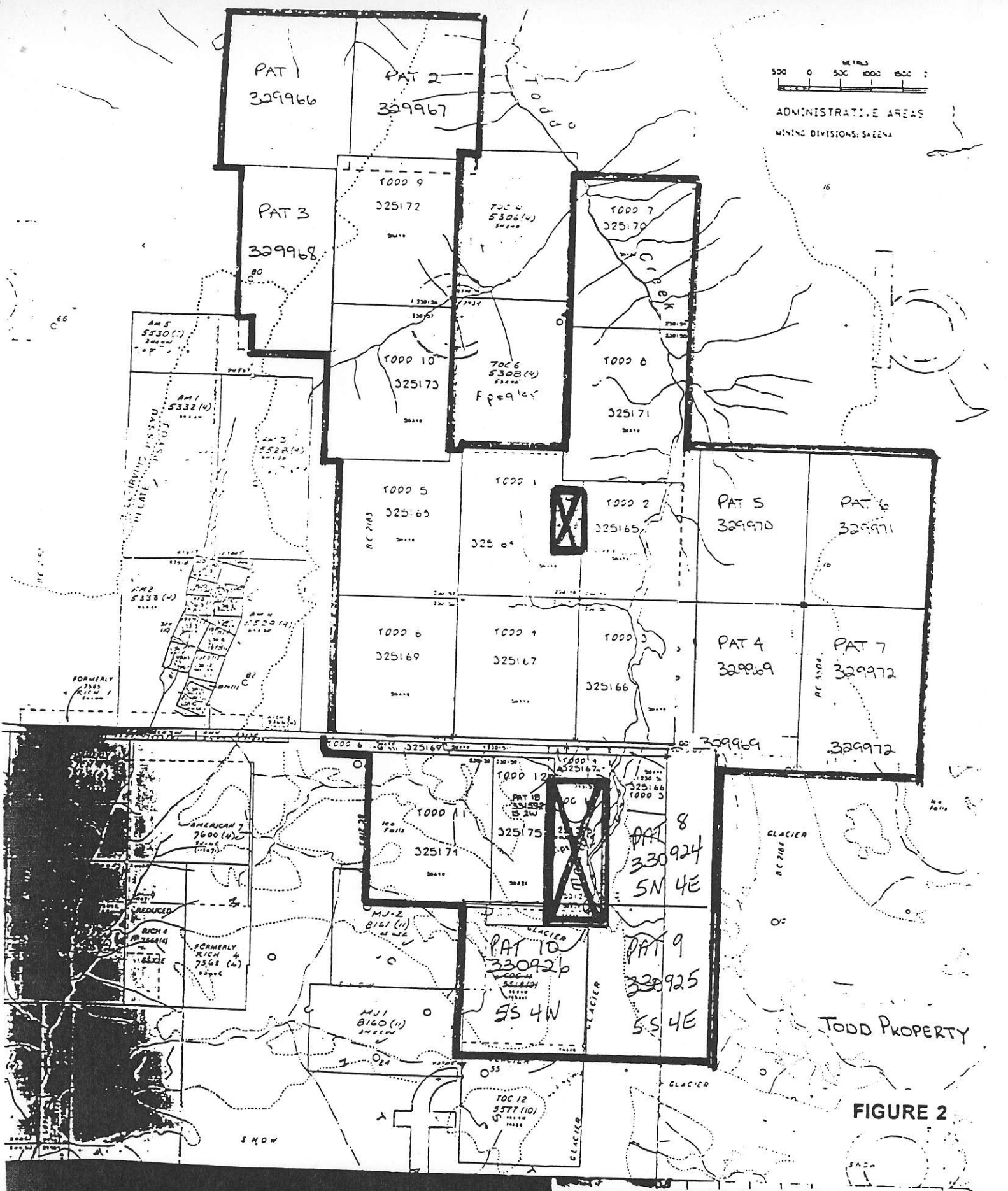


FIGURE 2

August 3, 1995

TABLE 1  
TODD CREEK PROPERTY  
LIST OF CLAIMS

NAME	TAG NO	RECORD	UNITS	STAKED	EXPIRY
TODD 1	230148	325164	20	April 17/94	April 17/98
TODD 2	230149	325165	20	April 17/94	April 17/98
TODD 3	230150	325166	20	April 17/94	April 17/98
TODD 4	230151	325167	20	April 17/94	April 17/98
TODD 5	230152	325168	20	April 17/94	April 17/98
TODD 6	230153	325169	20	April 17/94	April 17/98
TODD 7	230154	325170	20	April 17/94	April 17/98
TODD 8	230155	325171	20	April 17/94	April 17/98
TODD 9	230156	325172	20	April 17/94	April 17/98
TODD 10	230157	325173	20	April 17/94	April 17/98
TODD 11	230158	325174	15	April 17/94	April 17/98
TODD 12	230159	325175	15	April 17/94	April 17/98
PAT 1	219257	329966	20	Aug 17/94	Aug 17/98
PAT 2	219258	329967	20	Aug 17/94	Aug 17/98
PAT 3	219259	329968	18	Aug 17/94	Aug 17/98
PAT 4	219260	329969	20	Aug 17/94	Aug 17/98
PAT 5	229769	329970	20	Aug 17/94	Aug 17/98
PAT 6	228963	329971	20	Aug 17/94	Aug 17/98
PAT 7	228964	329972	20	Aug 17/94	Aug 17/98
PAT 8	232055	320924	20	Sept 26/94	Sept 26/98
PAT 9	232056	330925	20	Sept 26/94	Sept 26/98
PAT 10	232057	330926	20	Sept 26/94	Sept 26/98
PAT 18	225929	331592	2	Sept 28/94	Sept 26/98

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430



NORANDA EXPLORATION CO. LTD.  
DIAMOND DRILL LOG

PROPERTY : Todd Creek  
HOLE No. : NTC-98-58

PAGE 1 3

INTERVAL (m)		MAJOR/MINOR UNITS	DESCRIPTION	SAMPLE NUMBER	INTERVAL (m)		SAMPLE WIDTH	GEOCHEMICAL SAMPLES							
FROM	TO				FROM	TO		Cu ppm	Pb ppm	Zn ppm	Ag ppm	As ppm	Au ppb		
76.30	93.75	3a	ANDESITIC TUFF -med to dk grn to maroon f grain matrix -perv sa (1 mm) fsp phenos; perv rounded to irreg patches of white to yellowish (ep?) alt material to 3 mm -colouration more delineated, less mottled -frac with si infill common (1.5/m)												
93.75	95.50	3a	ANDESITIC TUFF -dk grn f grain matrix, chl alt perv -rk fairly homo although 95.2-95.5 more mottled -py content increased, diss by 2%	036292	93.75	95.50	1.75	461	3	70	.2	8	13		
95.50	96.15	3a	ANDESITIC TUFF -as for 93.75-95.5 -more frac, mottling, vns; diss spec here	036293	95.50	96.15	0.65	93	2	50	.1	6	8		
96.15	105.00	3a	ANDESITIC TUFF -med grn to grey, fairly homo with slight localized mottling; prv slight to mod chl alt -perv f to med grain py, diss and as frac /vn infill -mottled tex, clastic material increasing below 104 m	036294 036295 036295	96.15 99.15 102.15	99.15 102.15 105.00	3.00 3.00 2.85	29 26 14	3 6 15	25 24 26	.3 .9 .8	139 256 215	110 550 350		
105.00	118.25	3a	ANDESITIC TUFF -med grn to grey, more volcaniclastics -105.0-107.0 m int frac; rock fragmented -py still perv though more diss -chl alt slight to mod mostly within phenos -some mottled tex present esp towards bottom of hole	036297 036298 036299 036300 038125	105.00 108.00 111.00 114.00 117.00	108.00 111.00 114.00 117.00 118.25	3.00 3.00 3.00 3.00 1.25	13 6 31 8 7	12 10 8 6 8	30 21 28 33 37	.3 .2 .3 .4 .1	83 50 27 42 45	210 145 181 86 40		
			END OF HOLE												

~ 22111

221 ppb Au  
111.3 ppm As / 22.1 m

NORANDA EXPLORATION CO. LTD.  
DIAMOND DRILL LOG

PROPERTY : Todd Creek  
HOLE No. : NTC-90-56  
Grid System :  
Collar Eastings : 20570.000  
Collar Northings : 20090.000  
Collar Elevations : 1335.000  
Collar Bearing : 90.00  
Grid Baseline : 0.00

Collar Inclination : -45.00  
Grid Bearing : 90.00  
Final Depth : 94.20  
Claim No. : TDC 8,9

PAGE : 1

Logged by : Brian Pelletier  
Date : July 29, 1990 - July 30, 1990  
Downhole Survey : Acid test  
Drilled By : Silverton Drilling  
Core Size : 86

INTERVAL (m)		MAJOR/MINOR UNITS	DESCRIPTION	SAMPLE NUMBER	INTERVAL (m)		SAMPLE WIDTH	GEOCHEMICAL SAMPLES					
FROM	TO				FROM	TO		Cu	Pb	Zn	Ag	As	Au
								DDM	DDM	DDM	DDM	DDM	DDM
0.00	94.20	3											
0.00	2.74		OVERBURDEN										
2.74	14.15	3b	ANDESITIC VOLCANICLASTIC -dk grn f grain matrix; chl alt hbl phenos to 1 mm; rare rounded to ang clasts of porphyritic volc rk, often bleached, to 2 cm; frags with weathered/oxidized halos common; perv chl alt -sl alt mostly as vns/vnlts -13.0-13.1 m; si py +/- coy vn, weathered	036193 036194	5.10 12.65	8.10 14.15	3.00 1.50	390 437	25 10	87 75	1.1 .2	27 7	115 330
													449 ppb Au / 6.4m
													153 ppb Au / 16.1m
14.15	19.05	3b	ANDESITIC VOLCANICLASTIC -dk grn f grain matrix, perv chl alt inc hbl phenos -frac/brecciation zones with si (coy) +/- cc at 14.5-14.7 m and 16.0-18.4 m -rk appears slightly mottled, lighter/bleached grn patches to 4 cm surrounded by dk grn matrix	036195 036196 036197	14.15 15.65 17.15	15.65 17.15 19.05	1.50 1.50 1.90	477 925 671	8 8 8	76 114 96	.3 .2 .2	9 5 4	510 670 320
19.05	62.10	3a	ANDESITE TUFF -as for 14.15-19.05 m -less fracturing, less mottled, porph tex -perv chl alt including hbl phenos with variable patches of increased si alt -si vn at 22.6 contains brecciated frags of si, weathered/hem material present -sulfides restricted primarily to coy and py in vns, only trace diss py -51.0-51.95 m; chl cc coy patches to 2 mm -54.0-54.2 m; mottled patches of si chl coy alt	036198 036199 036200 036201 036202 036203 036204 036205 036206 036207 036208 036209 036210 036211	21.20 24.20 27.20 30.55 32.05 33.55 35.05 36.55 38.05 41.05 44.05 47.05 51.55 54.55	24.20 27.20 30.55 32.05 33.55 35.05 36.55 38.05 41.05 44.05 47.05 51.55 54.55	3.00 3.00 3.35 1.50 1.50 1.50 1.50 1.50 3.00 3.00 3.00 1.50 3.00 3.00	196 107 20 452 572 93 117 352 295 504 110 293 756 3332	2 2 3 9 7 10 2 2 3 11 2 4 2 2	45 47 45 39 47 63 52 98 61 61 54 53 147 53	.2 .1 .1 .3 .2 .1 .1 .3 .2 .2 .1 .1 .2 .4	6 2 2 2 2 2 3 2 2 4 2 2 5 20	15 11 9 8 13 18 12 13 14 14 8 37 19 17

NORANDA EXPLORATION CO. LTD.  
DIAMOND DRILL LOG

PROPERTY : Todd Creek  
HOLE No. : NTC-90-56

PAGE : 2

INTERVAL (m)		MAJOR/KIND UNITS	DESCRIPTION	SAMPLE NUMBER	INTERVAL (m)		SAMPLE WIDTH	GEOCHEMICAL SAMPLES					
FROM	TO				FROM	TO		Cu ppm	Pb ppm	Zn ppm	Ag ppm	As ppm	Au ppb
62.10	63.85	3b	ANDESITIC VOLCANICLASTIC -dk grn matrix with dk grn to black ang chl volc frags -oerv chl si alt also abun si vns -coarse grain (4 mm) cpy to 5% locally, py 2% -63.6-63.8 m; brecc zone of si cpy chl, cpy locally to 10%	036212	54.55	57.55	3.00	340	7	40	.1	16	22
				036213	57.55	60.55	3.00	957	3	59	.5	21	330
				036214	60.55	62.10	1.55	454	2	89	.1	0	19
				036215	62.10	63.85	1.75	10490	10	32	1.1	24	71
63.85	66.55	5	INTERMEDIATE DYKE -med grn homo porph sa (1 mm) along hbl phenos in a f grain matrix; hbl phenos chl alt	036216	63.85	66.55	2.70	82	2	60	.1	2	4
66.55	66.80	3b	ANDESITIC VOLCANICLASTIC -as for 62.1-63.85 m -cpy localized to si vns av 1%, locally to 5%	036217	66.55	68.80	2.25	1095	0	77	.2	17	67
68.00	70.65	3a	ANDESITIC TUFF -mottled dk grn to buff grn; int chl alt; mod to int si alt -py massive locally to 10%, cpy locally to 5%; si stringers common; minor hbl	036218	68.00	70.65	1.85	6905	44	55	1.2	400	590
70.65	94.20	3b	ANDESITIC VOLCANICLASTIC -med to dk grn; ang clasts of chl alt to 3 cm; minor vning, minor frac	036219	70.65	73.65	3.00	12	9	45	.1	9	11
				036220	73.65	76.65	3.00	48	5	37	.1	2	9
				036221	80.50	82.00	1.50	264	2	69	.2	4	19
			END OF HOLE										

153 ppb Au / 16.10m

NORANDA EXPLORATION CO. LTD.  
DIAMOND DRILL LOG

PROPERTY : Todd Creek  
HOLE No. : NTC-90-55  
Grid System :  
Collar Eastings : 20102.000  
Collar Northings : 19854.000  
Collar Elevations : 1405.000  
Collar Bearing : 90.00  
Grid Baseline : 0.00

Collar Inclination : -45.00  
Grid Bearing : 90.00  
Final Depth : 143.00  
Claim No. : TOC 8,9

PAGE : 1

Logged by : Brian Pelletier  
Date : July 27, 1990 - July 28, 1990  
Downhole Survey : Acid test  
Drilled By : Silverton Drilling  
Core Size : 86

INTERVAL (m)		MAJOR/MINOR UNITS	DESCRIPTION	SAMPLE NUMBER	INTERVAL (m)		SAMPLE WIDTH	GEOCHEMICAL SAMPLES												
FROM	TO				FROM	TO		Cu ppm	Pb ppm	Zn ppm	Ag ppm	As ppm	Au ppb							
0.00	143.00	3																		
0.00	2.35		OVERBURDEN																	
2.35	3.55	3b	ANDESITIC VOLCANICLASTIC -dk grey to lt mottled grn, f grain matrix; si ser alt mod to int -dk patches to 3 cm (tetrahedrite ?) -diss f grain py to 2 %	036115	2.35	3.55	1.20													
3.55	11.59	3a	ANDESITIC TUFF -buff grey to med grn; mottled tex with f grain matrix, tiny ((1 mm) phenos -abun si vns, vnls perv; perv f grain py at 3%, massive py in patches to 3 mm	036122 036123 036124 036125 036126 036116	3.55 5.20 6.70 8.20 9.70 11.57	5.20 6.70 8.20 9.70 11.57 13.05	1.65 1.50 1.50 1.50 1.87 1.48	16 44 27 53 43	8 12 11 18 12	33 25 30 26 50	0.5 0.5 0.4 0.6 0.5	86 112 128 257 227	104 250 200 1960 290 37							
11.59	13.05	3a	ANDESITE TUFF -less grn, more buff coloured, less mottled appearance, more massive with more distinct porphyritic tex -f-med grain diss cubic py 2-3% -mod to int fracturing with qtz infill																	
13.05	15.00	3a	ANDESITE TUFF -buff grey/brown to grey -slightly more mottled appearance; less porphyritic, more massive, increased frac with si infilling -f grain diss py with rare py stringers	036127	13.05	15.00	1.95	24	9	38	0.1	81	48							
15.00	16.45	3a	ANDESITIC TUFF -darker grey, more homo colour, slightly less massive, more mottled, more porph tex; less vning; si ser alt still mod to int	036117	15.00	16.45	1.45							136						

~ 100m

incl  
1.84 g Au/t  
10.85 m

424 ppb Au / 103m



NORANDA EXPLORATION CO. LTD.  
DIAMOND DRILL LOGS

PROPERTY : Todd Creek  
HOLE No. : NTC-98-55

PAGE : 3

INTERVAL (m)		MAJOR/MINOR UNITS	DESCRIPTION	SAMPLE NUMBER	INTERVAL (m)		SAMPLE WIDTH	GEOCHEMICAL SAMPLES												
FROM	TO				FROM	TO		Cu ppm	Pb ppm	Zn ppm	Ag ppm	As ppm	Au ppm							
			-lt grn chl patches (1%)																	
37.65	39.30	3a	ANDESITIC TUFF -homo grn/grey, mod si by alt, weak poron tex, mass by to 10% locally, av 4%	036119	37.65	39.30	1.65													136
39.30	59.05	3a	ANDESITIC TUFF -grey-grn, f grain matrix with sm (1 mm) fsp (?) phenos -si frac infill at 39.8 m: rounded frags of more bleached material av 2 cm wide -f grain mass by + diss py: 2% -bleaching increasing slightly with depth rk appears more mottled, buff coloured -less vning/si infilled frags	036140 036141 036142 036143 036144 036145 036146 036147 036148	39.30 42.80 42.80 43.80 46.80 49.80 52.80 55.80 57.30	40.80 42.30 43.80 46.80 49.30 52.80 55.80 57.30	1.50 1.50 1.50 3.00 3.00 3.00 3.00 1.50 1.75	52 2 7 7 3 6 7 9 9	10 8 6 86 8 19 8 15 10	31 35 27 36 26 19 22 21 18	0.1 0.1 0.1 0.3 0.1 0.2 0.1 0.3 0.2	51 41 56 59 95 139 109 98 142	52 40 58 74 98 250 480 10300 121							
59.05	68.65	3a	ANDESITIC TUFF -as for 54.56-59.25 -coarse grain by locally to 6%	036122	59.05	68.65	1.60													990
68.65	66.15	3a	ANDESITIC TUFF -as for 59.05-68.66 -slightly more angular volcanoclastic frags; becoming slightly more bleached with depth; si alt/infill more int	036149 036150 036151 036152 036153	68.65 62.15 63.65 65.15 66.65	62.15 63.65 65.15 66.65	1.50 1.50 1.50 1.50 1.50	15 8 2 6 9	15 15 13 9 11	23 27 26 18 15	0.2 0.2 0.1 0.2 0.6	144 286 147 169 132	480 350 111 67 66							
66.15	78.75	3a	ANDESITIC TUFF -more massive, less frags/fract; bleaching more int -mottled buff grn to grey, f grain matrix with sm fso phenos -f to med grain (2 mm) diss by often with narrow halos of bleached material -mass by vns common (1.5/m)	036154 036155	68.15 69.65	69.95 78.90	1.80 1.25	6 9	6 12	24 19	0.1 0.1	83 131	20 18							
78.75	72.30	3a	ANDESITIC TUFF -med grn; more homo; sm fso phenos in a f grain matrix	036121	78.75	72.30	1.55													78
72.30	98.15	3a	ANDESITIC TUFF -med grn to mottled grey or buff	036156 036157	72.30 73.80	73.80 75.30	1.50 1.50	7 9	10 12	8 8	0.1 0.1	72 114	47 66							







NGRANDA EXPLORATION CO. LTD.  
DIAMOND DRILL LOG

PROPERTY : Todd Creek  
HOLE No. : NTC-92-54

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INTERVAL (m)		MAJOR/MINOR UNITS	DESCRIPTION	SAMPLE NUMBER	INTERVAL (m)		SAMPLE WIDTH	GEOCHEMICAL SAMPLES					
FROM	TO				FROM	TO		Cu ppm	Pb ppm	Zn ppm	Ag ppm	As ppm	Au ppm
90.20	92.15	3a	ALTERATION ZONE -zone of highly si alt volcanic rk; new vning/alt prevalent; chl alt mod. int locally -rk highly frac with si vning/replacement int and perv -cubic diss by 2-3%, also cov, locally to 10% at 91.25-91.5 m	038200	87.00	88.50	1.50	44	5	50	.1	20	145
				038201	88.50	90.20	1.70	62	7	42	.1	21	420
				038202	90.20	91.20	1.00	195	3	14	.1	46	33
				038203	91.20	92.15	0.95	8567	3	33	.5	28	650
92.15	105.40	3a	ANDESITE TUFF -as for 1.15-90.20 m -si alt generally more int -94.0-95.0 m: patchy pink new (?) alt to 2 m; diss by generally coarser grain (to 3 mm)	038204	92.15	93.65	1.50	24	3	29	.2	9	17
				038205	93.65	96.65	3.00	23	4	24	.1	16	50
				038206	96.65	99.65	3.00	16	4	37	.1	19	31
				038207	99.65	102.65	3.00	7	2	47	.1	57	51
				038208	102.65	105.65	3.00	16	3	43	.1	62	39
038209	105.65	109.40	3.75	151	2	56	.1	29	21				
105.40	122.40	3a	ANDESITE TUFF -perv si alt, generally int; si cc +/- by vns common (1/m); frac zones common -112.2-112.3 m: cov locally to 15% -variable si alt of matrix gives sm scale mottled tex in some intervals	038210	109.40	112.40	3.00	150	4	31	.3	100	40
				038211	112.40	115.40	3.00	1007	5	20	.4	133	46
				038212	115.40	118.40	3.00	17	7	31	.1	146	46
				038213	118.40	122.40	2.00	41	11	40	.1	85	52
120.40	123.20	3a	ALTERATION/BRECCIATION ZONE -si alt and si frac infills perv and int -by vns/frac infills also perv, by 5%, cov 1-2% -locally alt locally int	038214	120.40	121.90	1.50	1045	8	17	.6	304	540
				038215	121.90	123.20	1.30	1769	10	34	.5	97	2470
123.20	130.60	3a	ANDESITE TUFF -homo med grn, a few slightly bleached intervals; si cc vns common (3/m) -by conc primarily in vnlts	038216	123.20	126.20	3.00	26	5	51	.1	40	15
				038217	126.20	129.20	3.00	60	2	60	.1	16	9
END OF HOLE													

~ 36 ppm

186 ppb Au / 36.2m

NORANDA EXPLORATION CO. LTD.  
DIAMOND DRILL LOG

PROPERTY : Tood Creek  
HOLE No. : NTC-98-53  
Grid System :  
Collar Eastings : 20328.000  
Collar Northings : 20049.000  
Collar Elevations : 1360.000  
Collar Bearing : 98.00  
Grid Baseline : 0.00

Collar Inclination : -45.00  
Grid Bearing : 98.00  
Final Depth : 139.90  
Claim No. : TOC 8,9

PAGE : 1

Logged by : Brian Pelletier  
Date : July 25, 1990 - July 26, 1990  
Downhole Survey : Acid test  
Drilled By : Silverton Drilling  
Core Size : 86

INTERVAL (m)		MAJOR/MINOR UNITS	DESCRIPTION	SAMPLE NUMBER	INTERVAL (m)		SAMPLE WIDTH	BEDCHEMICAL SAMPLES											
FROM	TO				FROM	TO		Cu ppm	Pb ppm	Zn ppm	Ag ppm	As ppm	Au ppm						
0.00	139.90	3																	
0.00	2.65		OVERBURDEN																
2.65	15.50	3a	ANDESITE TUFF	038218	4.00	7.00	3.00	96	7	63	.1	9	13						
			-homo med grn; ss ((1 mm) phenos of si alt perv	038219	7.00	10.00	3.00	20	5	54	.1	12	3						
			-iger (to 4 mm) mostly sub-ang phenos of chl alt also common	038220	10.00	13.00	3.00	175	6	45	.1	24	21						
			-2 or 3 intervals of dyke rk to 1 m wide containing distinctive ang frags of si alt material to 4 mm	038221	13.00	15.50	2.50	50	11	49	.1	33	18						
			-f grain diss dy; weak fol. @45 CA																
15.50	25.25	5	INTERMEDIATE DYKE																
			-homo blue grey, f grain rk																
			-sub ang to ang frags of chl alt to 5 mm																
25.25	36.70	3a	ANDESITE TUFF	038222	25.25	28.25	3.00	64	7	251	.1	27	3						
			-med grn f grain matrix; perv mod si alt, some intervals contain abundant irreg	038223	28.25	31.25	3.00	26	6	56	.2	21	7						
			si alt patches to 5 mm; "spotty" tex	038224	31.25	34.25	3.00	6	7	47	.1	22	8						
			-these intervals often associated with pinkish maroon colouration (hem alt ?)	038225	34.25	37.25	3.00	316	6	42	.1	29	46						
			-sub-ang patches chl alt to 3 mm common	038226	37.25	38.70	1.45	59	4	65	.1	29	7						
			-perv f grain diss dy																
38.70	42.40	3a	INTERMEDIATE DYKE																
			-as for 15.5-25.25 m																
			-perv rounded to sub ang patches of more int si alt																
42.40	83.00	3a	ANDESITE TUFF	038227	42.40	43.40	3.00	83	5	54	.1	24	8						
			-med grn to grey, f grain matrix with perv ss ((1 mm) phenos of chl, si alt in varying proportions	038228	43.40	46.40	3.00	236	5	32	.2	61	28						
				038229	46.40	47.90	1.50	96	10	19	.1	57	85						
				038230	47.90	49.40	1.50	57	9	26	.1	104	86						

65101  
119 ppb Au / 61.8m  
As

NORANDA EXPLORATION CO. LTD.  
DIAMOND DRILL LOG

PROPERTY : Todd Creek  
HOLE No. : NTC-90-53

PAGE : 2

INTERVAL (m)		MAJOR/MINOR UNITS	DESCRIPTION	SAMPLE	INTERVAL (m)		SAMPLE	GEOCHEMICAL SAMPLES					
FROM	TO			NUMBER	FROM	TO	WIDTH	Cu	Pb	Zn	Ag	As	Au
								ppm	ppm	ppm	ppm	ppm	ppb
			-intensity and style of alt variable,	038231	49.40	52.40	3.00	42	10	52	.1	50	62
			intervals of int si alt snow mottled	038230	52.40	53.90	1.50	894	9	42	.2	54	230
			tex, intervals of abun irreg si chl	038233	53.90	56.90	3.00	37	10	40	.1	47	31
			patches show more spotty tex	038234	56.90	58.40	1.50	12	3	32	.1	46	20
			-si vns/vnlts common; many int fractured	038235	58.40	59.90	1.50	14	3	32	.1	54	30
			intervals; 69.5-83.8 m: int si alt	038236	59.90	61.40	1.50	206	3	33	.3	79	210
			-coy (1 %	038237	61.40	64.40	3.00	249	7	30	.1	40	95
				038238	64.40	67.40	3.00	306	3	20	.1	39	94
				038239	67.40	68.90	1.50	266	3	23	.1	50	122
				038240	68.90	70.40	1.50	407	6	17	.2	52	320
				038241	70.40	73.40	3.00	382	2	10	.2	47	92
				038242	73.40	76.40	3.00	140	3	30	.1	76	200
				038243	76.40	79.40	3.00	270	3	17	.1	44	400
				038244	79.40	82.40	3.00	159	2	14	.3	73	127
				038245	82.40	83.80	1.40	849	9	30	.5	135	320
83.80	85.60	3a	ANDESITE TUFF	038246	83.80	86.80	3.00	16	3	42	.1	65	25
			-med grn to grey f grain matrix	038247	85.80	89.50	2.80	31	3	43	.1	60	87
			-marked tex change from 48.40-83.80 m	038248	85.40	91.40	2.00	208	9	30	.4	123	104
			-si chl alt still perv but as phenos to										
			2 mm, less visible matrix alt, fewer										
			vns/vnlts: phenos perv and locally										
			abun giving rx slightly granular tex										
			-some intervals of more bleached rock,										
			many vns have sm alt halos										
85.60	93.15	3a	ANDESITE TUFF	038249	91.40	93.15	1.75	8	6	54	.2	66	123
			-med to dk grn, si chl alt in matrix, less										
			as phenos: tex less granular										
			-si vns 1/m; bleached intervals prominent										
			(1/m), av 30-50 cm width										
			-by perv f grain										
93.15	96.20	3o	ANDESITIC VOLCANICLASTIC	038250	93.15	96.20	3.05	229	6	42	.2	77	79
			-rounded to sub ang volc frags to 2 mm in										
			a f grain med grn matrix										
			-rk up to 75% volcaniclastic material										
			locally, most frags appear andesitic										
96.20	103.90	3a	ANDESITIC TUFF	038276	96.20	99.20	3.00	99	5	34	.5	71	135
			-med grn to grey; alt generally med, out	038277	99.20	102.20	3.00	16	2	23	.2	60	45
			more int si alt in some intervals gives	038278	102.20	105.20	3.00	9	5	20	.5	82	43

NORANDA EXPLORATION CO. LTD.  
DIAMOND DRILL LOG

PROPERTY : TODD CREEK  
HOLE No. : NTC-9A-49

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INTERVAL (m)		MAJOR/MINOR UNITS	DESCRIPTION	SAMPLE NUMBER	INTERVAL (m)		SAMPLE WIDTH	Cu ppm	Pb ppm	Zn ppm	Ag ppm	GEOCHEMICAL SAMPLES				
FROM	TO				FROM	TO						As ppm	Au ppb	ppb		
38.45	36.98	3a	ANDESITE -As for 8.00-11.35 -mottled lt green to dk green matrix; si cc patches/infillings to 5 mm -f grain disseminated by 1% -31.15-31.35: howe lt green, f grain matrix; hbl phenos to 1 mm, mostly elongate 10% chl alt; sub-euhedral cc frags; tr diss py, hairline py vn rimming cc si vn -31.78-31.88: cc si py vn @35 CA -31.35-36.98: As for 38.45-31.15 -numerous si cc stringers (2/m); massive py patches to 6mm, up to 3% locally, also py stringers													
36.98	38.95	5	INTERMEDIATE DYKE -dk green blue to reddish, f grain, cc alt matrix; hbl fso phenos to 1mm; cc si stringers and patches to 2mm conc in reddish matrix -mod magnetism													
38.55	73.57	3a	ANDESITE -As for 38.45 to 36.9 -fewer cc si vnlt (1/m); local massive py stringers/patches to 2 cm, up to 5% locally, also f grain diss py 1% -68.25-68.35: py (coy) vnlt	036056 036057 036058 036059 036060 036061 036062	61.55 63.05 63.85 64.55 66.05 67.55 69.05 70.55 72.05	63.05 64.55 66.05 67.55 69.05 70.55 72.05 73.57	1.50 1.50 1.50 1.50 1.50 1.50 1.50 1.52	57 12 108 0.2 17 28	14 141 38 92 72 0.5 23 71 74 68 77	22 68 45 123 23 71 48 74 68 77	0.4 0.4 0.7 0.5 0.5 0.3 0.1 0.1 0.3 0.5 0.6	17 22 45 23 71 48 74 68 77	28 68 123 71 74 68 77			
73.57	78.39	3a	ANDESITE -f green, dk green to grey, chl si alt matrix with hbl phenos to 2 mm -locally abundant otz stringers @45 CA and patches to 4 mm -rare py vnlt, patches to 2 mm, also f grain diss py (2%) with trace py	036063 036064 036065 036066 036067	72.05 73.57 75.10 76.60 78.39	73.57 75.10 76.60 78.39	1.52 1.53 1.50 1.79	168 9 73 0.1 62 114	13 105 30 280 0.5 38 87	55 161 87 980	0.3 0.5 0.3 0.6 0.6	55 161 87 980				
78.39	79.45	3a	ANDESITE -f grain, dk green, chl alt matrix; chl anhedral hbl phenos to 3 mm	036054	78.39	79.45	1.06	6754	78	178	3.7	166	7540			

609 ppb Au / 17.9 m

~ 19 m