

46-875 - 15619

DLW-BC-7

GEOCHEMICAL REPORT
on the
AD00G 7 Mineral Claim
Liard Mining Division
NTS 94-E/11E + 12E
Latitude 57°31'05" North
Longitude 127°34'25" West
British Columbia

November 24, 1986

on behalf of
DELAWARE RESOURCES CORP.
Calgary, Alberta

by

C. H. Aussant, B.Sc., P.Geol.

TAIGA CONSULTANTS LTD.
#100, 1300 - 8th Street S.W.
Calgary, Alberta T2R 1B2

15,619

GEOLOGICAL BRANCH
ASSESSMENT REPORT

FILMED

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MAPS

- 1 Au/Ag Stream Silt Geochemistry 1:10,000

INTRODUCTION

Jempland Construction was contracted by Delaware Resources Corp. to complete a stream silt geochemical sampling program on the ADOOG 7 mineral claim. A total of 52 stream silt samples were collected and analyzed for Au and Ag. This report, completed by Taiga Consultants Ltd. at the request of Delaware, describes the results of this program.

Location and Access

The ADOOG 7 mineral claim is located approximately 520 km northwest of Prince George, B.C., in the Stikine River area (Figure 1) on NTS map-sheet 94-E/11E + 12E. The legal corner post is located at 57°31'05" north latitude and 127°34'25" west longitude. The claim is accessible from Smithers (300 km to the south) to the Sturdee Airstrip via fixed-wing aircraft, then by helicopter to the claim, a distance of approximately 50 km.

Property Status

The ADOOG 7 mineral claim was staked under the modified grid system (Figure 2) and is currently registered in the name of Taiga Consultants Ltd. Relevant claim data are as follows:

<u>Claim Name</u>	<u>No.of Units</u>	<u>Record Number</u>	<u>Date of Record</u>
ADOOG 7	20	3535	May 2, 1986

The ADOOG 7 mineral claim is in the process of being transferred to Delaware Resources Corp.

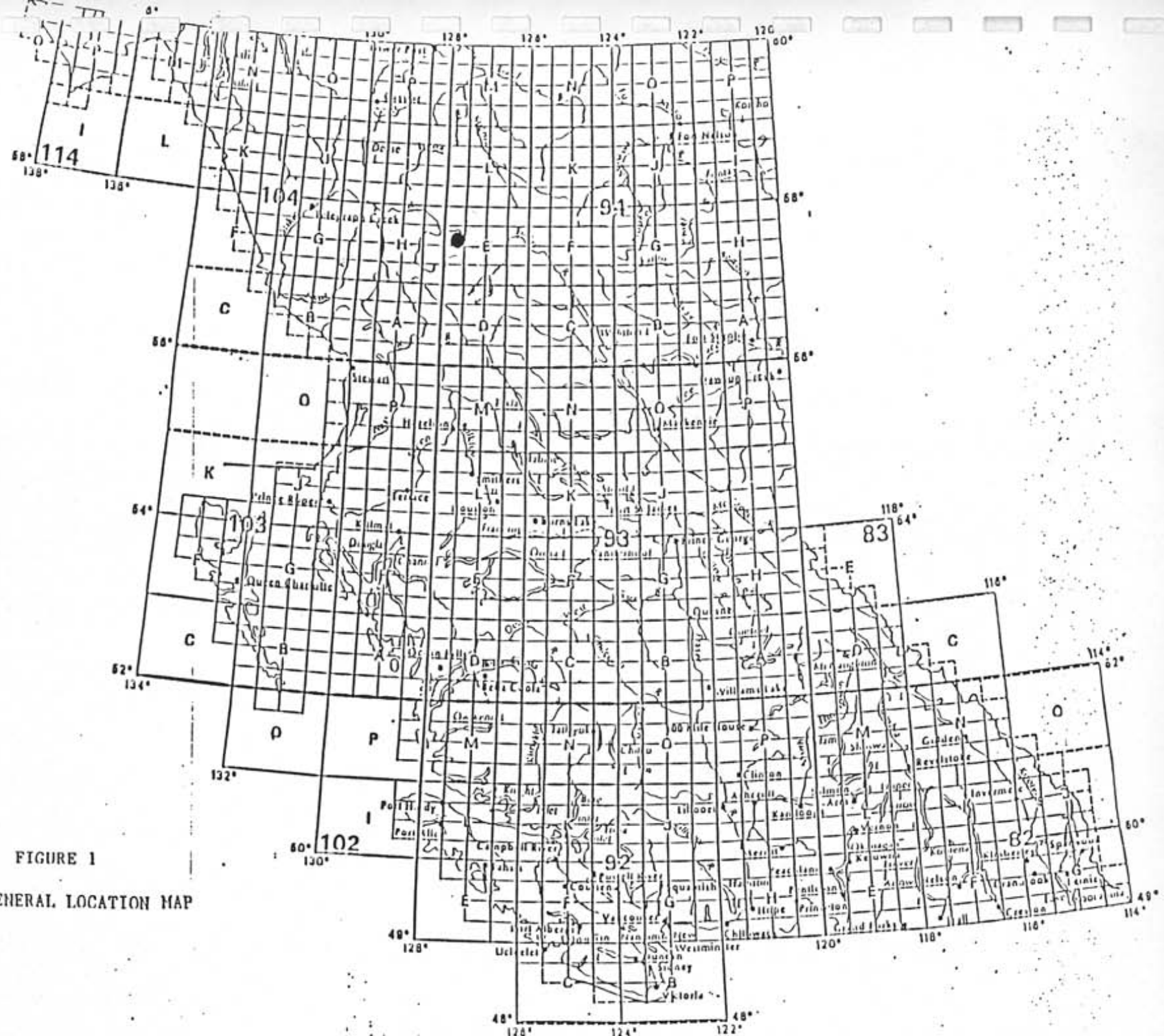


FIGURE 1
GENERAL LOCATION MAP

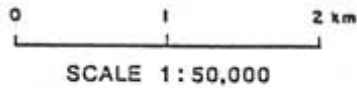
127° 30'



57° 30'

57° 30'

127° 30'



LEGEND

- POSTS PLACED
- X POSTS NOT PLACED
- ⊗ LEGAL CORNER POST (LCP)

LASLUI LAKE 94E/5
MOOSEHORN LAKE 94E/11
SPRUCE HILL 94E/12

TAIGA CONSULTANTS LTD.
F.M.C. #278880

ADOOG 7 STAKED APRIL 19, 1986
ADOOG 8 & 9 STAKED APRIL 18, 1986

Fig. 2 Main location

Physiography/Glaciation

The claim lies within the Cassiar Mountains physiographic subdivision of the Interior Plateau. The region was entirely glaciated and is characterized by wide U-shaped drift-filled major valleys. Incised V-shaped stream valleys occur locally at higher elevations.

Topographic relief within the claim averages about 330 metres, varying from 1730 m ASL in the northeast corner progressively decreasing to 1400 m in the southwest corner.

Previous Work

In 1982, Newmont Exploration conducted geological, geochemical, and geophysical surveys on the ADOO claims located east of the property. No anomalous zones of gold, silver, copper, lead, or zinc geochemistry were identified. In late September 1985, Delaware Resources completed a brief reconnaissance geological mapping, prospecting, and rock/stream silt geochemical sampling program on the surrounding ADOOG 1-6 mineral claims.

REGIONAL GEOLOGY

The regional geology was mapped by the Geological Survey of Canada at a scale of 1:250,000 under the direction of Dr. H. Gabrielse during 1971-1975, with the results published in 1977 as Open File 483.

During 1971 to 1985, the British Columbia Ministry of Energy, Mines and Petroleum Resources carried out a mapping program in the Toodoggone area, with a compilation (Preliminary Map 61) published at a scale of 1:50,000 in 1985. This mapping, carried out under the direction of T. G. Schroeter, details the units of the Toodoggone Volcanics. The following description of the regional geology is excerpted from his 1981 report.

"The Toodoggone area lies within the eastern margin of the Intermontane Belt. The oldest rocks exposed are wedges of crystalline limestone more than 150 metres thick that have been correlated with the Asitka Group of Permian age. The next oldest rocks consist of andesitic flows and pyroclastic rocks including augite-tremolite andesite porphyries and crystal and lapilli tuffs that belong to the Takla Group of Late Triassic age. The Omineca intrusions of Jurassic and Cretaceous age (potassium-argon age of 186 to 200 Ma obtained by the Geological Survey of Canada) range in composition from granodiorite to quartz monzonite. Some syenomonzonite bodies and quartz feldspar porphyry dykes may be feeders to the Toodoggone rocks which unconformably overlie the Takla Group. The 'Toodoggone' volcanic rocks (named informally by Carter, 1971) are complexly intercalated volcanic and volcanic-sedimentary rocks of Early and Middle Jurassic age, 500 metres or more in thickness, along the west flank of a northwesterly trending belt of 'basement' rocks at least 90 km in length by 15 km in width (Geological Survey of Canada, Open File 306, replaced by Open Files 483 and 606). A potassium-argon age of 186 ± 6 Ma was obtained by Carter (1971) for a hornblende separate from a sample collected from a volcanic sequence 14 km southeast of Drybrough Peak. Four principal subdivisions of 'Toodoggone' rocks have been recognized:

1. Lower volcanic division -- dominantly pyroclastic assemblage including purple agglomerate and grey to purple dacitic tuffs.
2. Middle volcanic division -- an acidic assemblage including rhyolites, dacites, 'orange' crystal to lithic tuffs, and quartz feldspar porphyries; includes welded tuff. The 'orange' colour of the tuffs resulted from oxidation of the fine-grained matrix while the rock was still hot. A coeval period of explosive volcanism included the formation of 'laharic' units and intrusion of syenomonzonite bodies and dykes. This event was accompanied by explosive brecciation along zones of weakness, predominantly large-scale faults and attendant splays, followed by silicification and deposition of precious and base metals to varying degrees in the breccias.

Rounded fragments of Omineca intrusive rocks are rare components in Toodoggone tuffs.

3. Upper volcanic-intrusive division -- grey to green to maroon crystal tuffs and quartz-eye feldspar porphyries.
4. Upper volcanic-sedimentary division -- lacustrine sedimentary rocks (sometimes varved), stream bed deposits, and possible local fanglomerate deposits and interbedded tuff beds.

Many Toodoggone rocks have a matrix clouded with fine hematite dust implying a subaerial origin; however, some varieties may have accumulated in shallow water. The host rock for mineralization (division 2) is an orange to chocolate brown coloured crystal tuff with varying minor amounts of lithic and vitric ash. Broken crystals of plagioclase and quartz are set in a fine-grained 'hematized' matrix of quartz and feldspar. The exact chemical composition(s) and rock name(s) await chemical analyses. Carter (1971) determined the composition of a suite of rocks collected from the Toodoggone area to range from latites to dacite (less than 30 weight per cent quartz); fused beads gave refractive indices between 1.505 and 1.535. Apatite may be a common accessory mineral.

To the west, Upper Cretaceous to Tertiary pebble conglomerates and sandstones of the Lower Tango Creek Formation of the Sustut Group (Eisbacher, 1971) unconformably overlie both Takla Group volcanic rocks and Toodoggone volcanic rocks.

STRUCTURE

The structural setting was probably the most significant factor in allowing mineralizing solutions and vapours to migrate through the thick volcanic pile in the Toodoggone area. The entire area has been subjected to repeated and extensive normal block faulting from Jurassic to Tertiary time. It is postulated that a northwesterly trending line of volcanic centres along a gold/silver-rich 'province' marks major structural breaks, some extending for 60 km or more (for example, McClair Creek system, Lawyers system). Prominent gossans are often associated with structural zones but many contain only pyrite; sulphides occur as disseminations and fracture fillings in Toodoggone and Takla Group rocks. Thrusting of Asitka Group limestones over Takla Group rocks probably occurred during Middle Jurassic time.

Today, Toodoggone rocks display broad open folds with dips less than 25°. The Sustut Group sedimentary rocks have relatively flat dips and do not appear to have any major structural disruptions.

EXPLORATION TARGETS

Precious metals exploration activity in the Toodoggone district mainly is focused on the epithermal gold mineralization associated with subaerial Early Jurassic intermediate to acidic volcanism (Toodoggone Volcanics). Gold mineralization found within Late Triassic alkaline andesitic rocks (Takla Group) and in Early Jurassic calc-alkaline volcanic rocks (Hazelton Group) is generally viewed as being in the "root zone" of the epithermal event related to Toodoggone volcanism (e.g., Baker Mine).

The structural settings of these epithermal vein systems are of primary importance in the development of economic gold mineralization within the Toodoggone Volcanics. Faulting and concomitant brecciation form the conduits for ascending gold-bearing hydrothermal solutions and vapours. It is also essential that repeated fault movement and brecciation occur, allowing multiple infusions of hydrothermal solutions.

Both lateral and vertical alteration patterns occur adjacent to these epithermal vein deposits. The outer propylitic zone consists of chlorite, epidote, calcite, and pyrite. This grades inward to an argillic/phyllitic zone consisting of sericite, montmorillonite, illite, and silica. The silicified core zone is comprised of silica, adularia, and/or albite, immediately adjacent to the vein system.

Mineralized zones generally carry abundant hematite and manganese oxides. Native gold, electrum, barite, and minor pyrite occur within these silica-rich zones along with amethystine quartz. Anomalous silver, lead, zinc, and copper values have been found associated with the gold-bearing epithermal vein systems. However, the systems appear to be relatively free of arsenic and antimony.

PROPERTY GEOLOGY

The ADOOG 7 mineral claim is underlain by Lower to Middle Jurassic "Toodoggone Volcanics". Unit 1 of the Adoogatcho Creek Formation underlies the southern half of the claim, and is comprised of numerous ash-flow sheets with intercalated crystal-lithic tuffs. Unit 2 of the Moyez Creek Volcaniclastics underlies the northern portion of the property and is comprised of a diverse assemblage of interbedded air-fall tuff, thin ash-flow sheets, and epiclastic and chemical sedimentary rocks. Unit 6 of the Tuff Peak Formation is the youngest volcanic unit exposed on the property, and is composed of biotite-augite-hornblende plagioclase porphyry flows and some autobrecciated flows and crystal and lapilli tuffs.

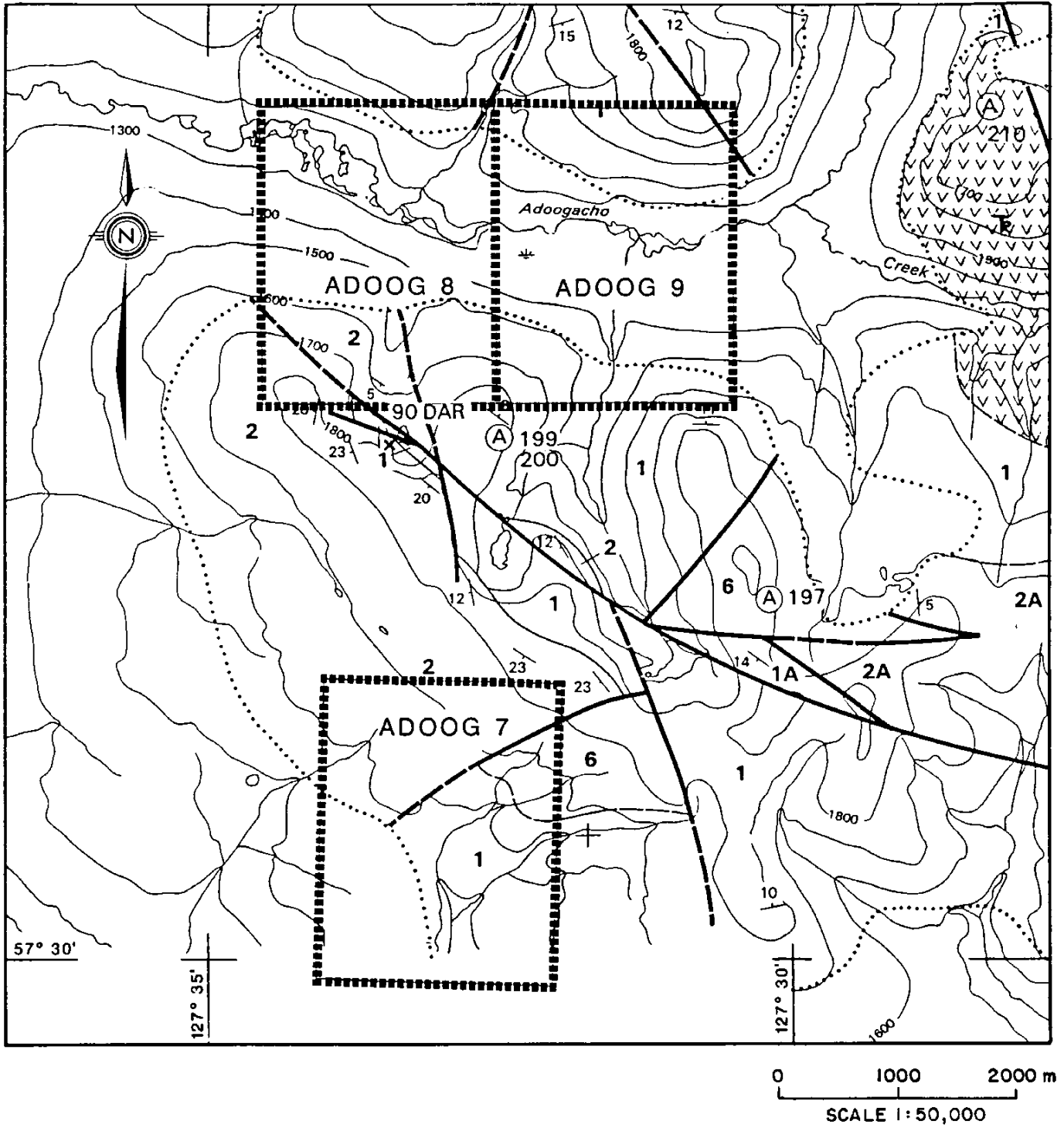
Figure 3 shows the property geology (from Preliminary Map 61, B.C. Min. of Energy, Mines & Petroleum Resources, 1985).

1986 EXPLORATION PROGRAM

*Composite sample
taken from active
channel, roughly
silver.*

A reconnaissance stream silt geochemical sampling program was carried out on the ADOOG 7 mineral claim from September 27 to October 3, 1986. A total of 52 silt samples were collected and forwarded to Bondar-Clegg in Vancouver, B.C. for Au and Ag geochemical analysis. Analytical procedures and results are presented in the Appendix. Map 1 shows the sample locations and results.

No anomalous silver values were obtained from the samples. Seven sites returned detectable gold values (detection limited 5 ppb) ranging from 10 to 100 ppb. Six of these samples were collected from two creeks draining the east portion of the property, with only one of these returning greater than 20 ppb. This site (100 ppb) occurs at the eastern edge of the property. The source responsible for the elevated values has yet to be defined in the limited amount of work completed. Follow-up detailing in this area is recommended.



GEOLOGY MAP

FIGURE 3

GEOLOGICAL LEGEND
(units appearing on Property Geology, Figure 3)

UPPER CRETACEOUS

- K SUSTUT GROUP (Tango Creek Formation)
polymictic conglomerate, sandstone, shale, carbonaceous mudstone

LOWER TO MIDDLE JURASSIC "Toodoggone Volcanics"

- 6 TUFF PEAK FORMATION
pale purple, grey, green biotite augite hornblende plagioclase porphyry flows
- 5 McCLAIR CREEK FORMATION
purple, lavender, grey, and rarely grey-green, fine- to medium-grained, plagioclase porphyritic flows, includes some lapilli tuff and breccia.
- 2 MOYEZ CREEK VOLCANICLASTICS
conglomerate with some granitic clasts, graded, cross-bedded greywacke, well-bedded crystal tuff, epiclastic sediments, local laminated calcareous silt.
- 2A crystal tuffs in thin well-layered units, some epiclastic sandstone and mudstone.
- 1 ADOOGATCHO CREEK FORMATION
pale reddish grey to dark red-brown quartzose biotite hornblende phyric ash flows.
- 1A crystal ash tuff, lapilli tuff, and rare agglomerate with interspersed epiclastic beds, tuffaceous sediments and minor conglomerate.
- 1B quartzose plagioclase porphyry, jointed, domal intrusion(?) of homogeneous appearing grey to green chloritized and epidote altered rock containing abundant inclusions of Takla volcanics.

UPPER TRIASSIC






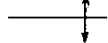

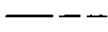


- TAKLA GROUP
Dark green augite porphyry basalt flows and breccias with lesser fine-grained andesite to basalt flows and minor interbedded siltstone, tuffaceous sediments and chert.

INTRUSIVE ROCKS

LOWER JURASSIC (dykes, sills, small plugs)

- G biotite hornblende diorite/gabbro

SYMBOLS

-  layering
-  43 mineral occurrence (with file number)
-  radiometric date sample site (age in Ma)
-  Barium, quartz vein
-  synform
-  antiform
-  main outcrop areas
-  geologic contact (defined, assumed)
-  fault (observed, inferred)
-  claim boundary

SUMMARY AND RECOMMENDATIONS

Four man days were spent exploring the claim block which is underlain by Lower to Middle Jurassic "Toodoggone Volcanics". The Toodoggone volcanics form a belt 5 to 20 km wide and 100 km long, which hosts a number of precious and base metals occurrences.

The exploration program completed consisted of detailed stream silt sampling of all the streams draining the claim block. Elevated Au-in-silt values were obtained from the creeks draining the eastern portion of the property, one site returning a value of 100 ppb Au.

A program consisting of reconnaissance prospecting and geological mapping should be completed over the entire claim block.

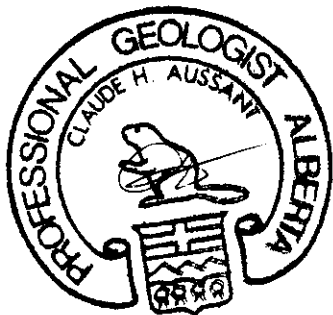
CERTIFICATE

I, Claude Henry Aussant, of 31 Templebow Way N.E. in the City of Calgary in the Province of Alberta, do hereby certify that:

1. I am a Consulting Geologist with the firm of Taiga Consultants Ltd. with offices at Suite 100, 1300 - 8th Street S.W., Calgary, Alberta.
2. I am a graduate of the University of Calgary, B.Sc. Geology (1976), and I have practised my profession continuously since graduation.
3. I am a member in good standing of the Association of Professional Engineers, Geologists and Geophysicists of Alberta; and I am a Fellow of the Geological Association of Canada.
4. I do not own or expect to receive any interest (direct, indirect, or contingent) in the property described herein nor in the securities of DELAWARE RESOURCES CORP., in respect of services rendered in the preparation of this report.

DATED at Calgary, Alberta, this 24th day of November, A.D. 1986.

Respectfully submitted,



Claude H. Aussant

 Claude H. Aussant, P.Geol., F.GAC



PERMIT TO PRACTICE TAIGA CONSULTANTS LTD.	
Signature	<i>James W. Wain</i>
Date	<i>December 16/86</i>
PERMIT NUMBER: P 2809	
The Association of Professional Engineers, Geologists and Geophysicists of Alberta	

BIBLIOGRAPHY

- Gabrielse, H.; Dodds, C.J.; Mansy, J.L.; Eisbacher, G.H. (1977): Geology of Toodoggone River [94-E] and Ware West Half [94-F]; Geol.Surv.Cda., Open File 483
- Schroeter, T.G. (1981): Toodoggone River [94-E]; B.C. Min.Energy,Mines,Petro. Res.; Geological Fieldwork 1980, pp.6-7
- (1985): Geology of the Toodoggone River Area, NTS 94-E; B.C. Min.Energy,Mines,Petro.Res.; Prelim.Map 61

APPENDIX

Summary of Personnel

Summary of Expenditures

Certificates of Analysis

Analytical Techniques

SUMMARY OF PERSONNEL

<u>Name / Address</u>	<u>Position</u>	<u>Dates</u>	<u>Man Days</u>
Grant Paulson 745 Falkener Crescent Prince George, B.C.	Supervisor	Sep.27-Oct.3	2
Bruce Hiller P. O. Box 578 Prince George, B.C.	Labourer	Sep.27-Oct.3	2

SUMMARY OF EXPENDITURES

Pre-Field		\$ 100.00
Field Personnel	4 man days @ \$225/diem	900.00
Fixed-wing support		357.00
Helicopter		880.00
Accommodations	2 days @ \$75/diem	150.00
Geochemical Analyses	52 samples @ \$9.65 Au	501.80
FM-radio rental		25.00
4x4 truck rental		30.00
Disposable field supplies		16.75
Freight		45.00
Telephone		5.00
Photocopying		20.00
Fuel		30.00
Post-field compilation		508.50
Handling charges on third-party billings		<u>355.28</u>
		<u>\$3,924.33</u>

REPORT: 126-5306

PROJECT: NONE GIVEN

PAGE 1

SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Au PPB	SAMPLE NUMBER	ELEMENT UNITS	Ag PPM	Au PPB
SI 86AD00G7 000BA		0.4	<5	SI 86AD00G7G 009		0.2	<5
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REPORT: 126-5306 (COMPLETE)

REFERENCE INFO:

CLIENT: TAIGA CONSULTANTS LTD.
 PROJECT: NONE GIVEN

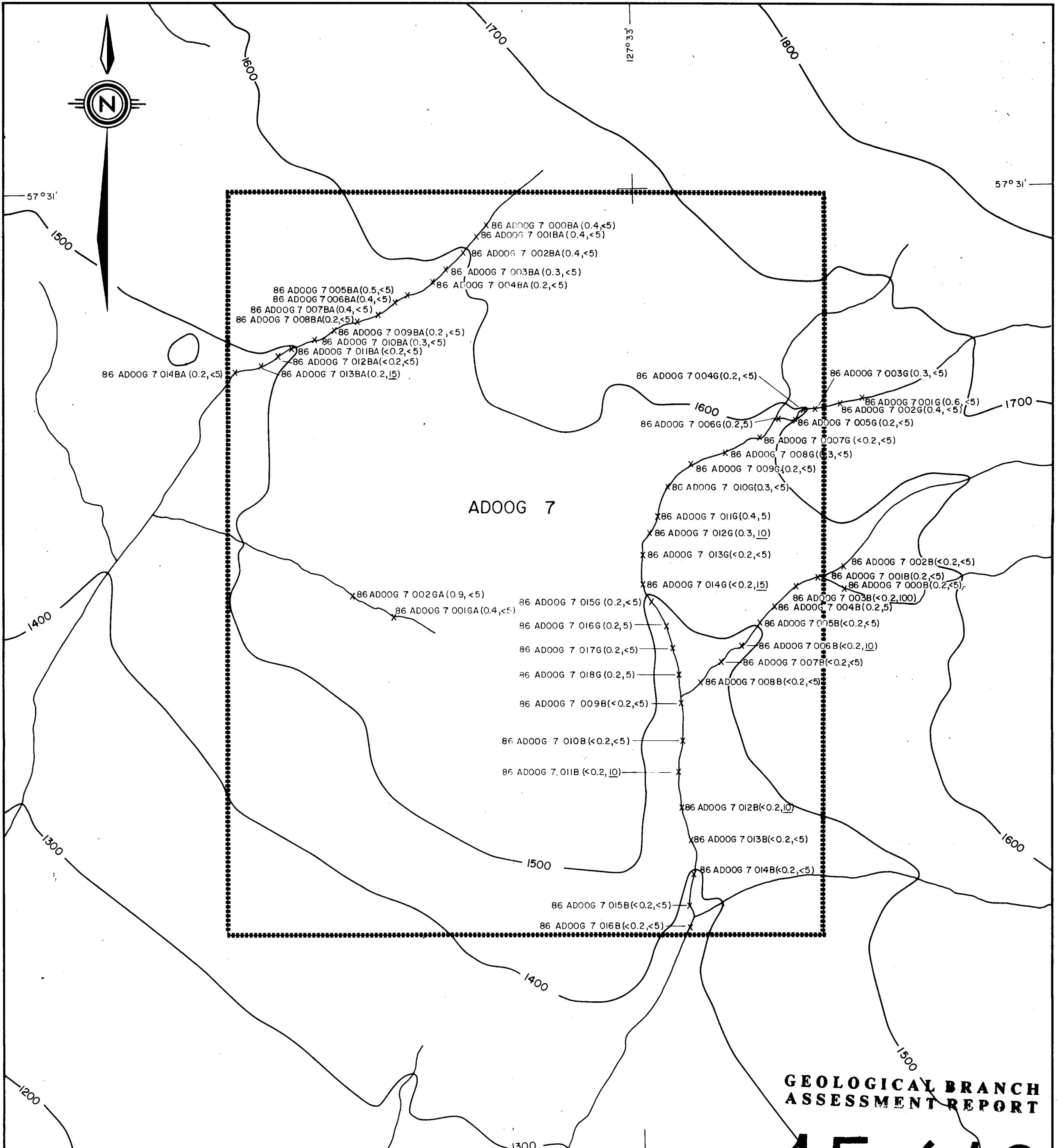
SUBMITTED BY: G PAULSON
 DATE PRINTED: 14-OCT-86

ORDER	ELEMENT	NUMBER OF ANALYSES	LOWER DETECTION LIMIT	EXTRACTION	METHOD
1	Ag Silver	176	0.2 PPM	HNO3-HCL HOT EXTR	Atomic Absorption
2	Au Gold - Fire Assay	176	5 PPB	FIRE-ASSAY	Fire Assay AA

SAMPLE TYPES	NUMBER	SIZE FRACTIONS	NUMBER	SAMPLE PREPARATIONS	NUMBER
S SOILS	176	1 -80	176	DRY, SEIVE -80	176

REPORT COPIES TO: MR. JIM DAVIS
 TAIGA CONSULTANTS LTD
 MR. G. PAULSON

INVOICE TO: TAIGA CONSULTANTS LTD



**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

15,619

SAMPLE No. Ag(ppm),Au(ppb)
X 86 ADOOG 7 016G(0.2,5)

DELAWARE RESOURCES CORP.	
ADOOG 7 MINERAL CLAIM	
STREAM SILT GEOCHEMISTRY Ag, Au AND SAMPLE LOCATIONS	
DATE DECEMBER, 1986.	NTS 94 E/II E. & 12 E
PROJECT DLW-BC-7	MAPPED/ DRAWN BY C. AUSSANT
SCALE 1:10,000	0 100 200 300 m
TAIGA CONSULTANTS LTD	MAP 1