MINNOVA INC.

821978

DATE: April 24, 1991

TO: Ian Pirie, Alex Davidson

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FROM: Dave Heberlein.

SUBJECT: **MOUNT SIDNEY WILLIAMS PROPERTY**

Introduction:

The Mt. Sidney Williams Property is located 87km northwest of Fort St. James (Fig. 1). It contains several recently discovered gold occurrences near the margin of a large body of ultramafic rock on the north slopes of Mt. Sidney Williams. At least seven mineralized zones containing highly anomalous Au and As values have been identified by previous workers. These occurrences lie in or close to areas of strong listwanite alteration that follow northeast and northwest trending faults.

Exploration to date has consisted of reconnaissance mapping, soil sampling, hand trenching and limited diamond drilling. Results of this work are summarized on Figures 3 and 4 and Table A. Strongly anomalous Au and As values in soils and rocks occur over much of the central and eastern parts of the grid. The extent of these anomalies suggests that the area has good potential to host an economic gold deposit. Exploration potential outside of the immediate grid area is also excellent as none of the mineralized zones have been closed off along strike.

The Target:

The principal target on the Mt. Sidney Williams property is a structurally controlled, large tonnage bulk minable gold deposit with a minimum of 500,000 ounces of contained gold. Higher grade, lower tonnage deposits amenable to underground mining are considered to be a viable secondary target.

Location and Access:

Figure 1 shows the location of the claims and regional infrastructure. Access to the property is by helicopter, either from Fort St. James, 87 air-kilometres southeast or Leo Creek, 24 air-kilometres to the north. Good logging road access exists 8km to the north of the grid area. Here, recent logging landings provide good slinging points for mobing and demobing camp and drilling equipment. New logging roads are now under construction to the south and west of Mt. Sidney Williams. These, when finished, will provide road access to the Mid and Money claims (Fig. 2).

Property History:

Exploration in the Mt. Sidney Williams area dates back to the late 1930's and early 40's, when ultramafic bodies in the region were evaluated for their chrome potential. Nine chromite occurrences are present in the area.

Small placer gold operations were active on Van Decar Creek through the 1930's. These were situated down stream from the present area of interest. There is no record of significant gold recovery.

From the 1960's to the late 1970's the ultramafic bodies saw periodic exploration for asbestos, platinum and chrome. The first recorded work on Mt Sidney Williams itself was in 1962 when a small asbestos occurrence was trenched.

Gold was discovered on the north flank of Mt. Sidney Williams in 1986. Lacana Mining Corp. acquired the property and carried out a reconnaissance exploration program consisting of rock, soil and stream sediment sampling the same year. In 1987, Lacana conducted a follow-up sampling program on the listwanite alteration zones and set up a small grid over the area of interest. Viceroy Resource Corporation optioned the property in 1989 and continued exploration with an extensive soil and rock sampling program. This work culminated in a 305m (7 hole) diamond drilling program.

Geological Setting:

Mt. Sidney Williams is situated within 15km wide, northwesterly trending belt of Permian age Cache Creek Group rocks. These consist mainly of deep ocean sediments including: chert, turbidite and rare carbonate. Greenstones are locally abundant in the property area. Cache Creek Gp. rocks are intruded by the felsic to ultramafic Omineca Intrusions and the Permo-Triassic Trembleur Intrusions which include large bodies of hartzburgite, peridotite and dunite.

The Cache Creek Gp. is bordered on the east side by the Pinchi Fault and on the west by the Takla Fault; both major terrain boundaries. Deformation in the Cache Creek Gp. is complex, with at least three documented episodes. Oldest structures are manifest as a strong east-west oriented penetrative fabric which is axial planar to isoclinal folds. South trending chevron folds with

moderate west dipping axial planes deform the earlier fabric. Youngest structures consist of small scale dragfolds and warps related to northwest trending Tertiary faults.

Much of the property is underlain by Cache Creek andesitic to basaltic volcanics and turbiditic sediments. These strike in a northwest direction and dip steeply to the northeast. West of Van Decar Creek young, possibly Quaternary ash deposits mantle the Cache Creek Gp. These are locally derived from a small cinder cone at the northwest corner of the One Eye claim (Fig. 2).

Hartzburgite and dunite intrude the Cache Creek Gp. in the central and eastern claim area. The limit of the ultramafic body is not well defined. There is good evidence to suggest that its west boundary is a fault that follows Van Decar Creek.

The ultramafic is body is extensively altered. Large areas of jadeite and actinolite are developed at the headwaters of Van Decar Creek. Superimposed on this alteration are numerous zones of strong carbonate-chlorite-mariposite or "listwanite". These alteration zones follow east-west, northeast and northwest trending fault zones.

Mineralization:

Seven zones of gold mineralization occur on the property. These are illustrated in Figure 3. All are spatially associated with areas of strong listwanite alteration (shown in red stipples on Fig. 3). The Upper, Middle, Camp and Lower Zones line up on a strong topographic linear. This traverses the eastern part of the grid in a northwesterly direction. In the central grid area, the RJS and Stibnite zones lie on or close to east-northeast trending

linears (faults?). These are defined by Cu, As and Au values in soils and by the main Van Decar Creek drainage.

The extent of these structures and associated alteration zones is not known. North of the grid area, except for some creek gullies, outcrop is obscured by glacial till and solifluction deposits. To the south little work has been done to identify the mineralized structures. This is mainly due to the extreme topography and widespread talus deposits that effectively mask the bedrock.

Most of the mineralized occurrences lie close to the faulted, west contact of the ultramafic intrusion. Here, the ultramafic rocks are strongly altered to jadeite, and listwanite. Local areas of silicification also occur.

All of the listwanite zones are gold bearing. The best values from reconnaissance chip sampling are shown in Figure 4. Highest gold values occur in areas of pervasive silicification and quartz stockworking within the listwanite zones. Table A below summarizes the best results to date:

Table A. Summary of Results

	Au ppb	Au g/t	As ppm	Width	Source
Camp Zone	**2960**		**6270**	**7.6m***	**DDH 3 0-7.6m**
	14860		12218	1.0m*	8.2-9.2m
(or	**4095**		**6567**	**9.2m***	**0-9.2m)**
	3336		3962	0.6m*	23.2-23.8m
	1321		1722	0.9m*	DDH 1 48.8-49.7m
	4526		**4892**	**2.1m***	**DDH 4 3.7-5.8m**
	5170		6809	0.9m*	8.9-9.8m
	3620		3314	-	Chip Sample.
	3780		1693	-	"
	3560		2988	-	"
Upper Zone		**26.24**		**2.7m**	**Channel Sample**
	1500		1584	3.1m*	DDH 5 16.2-19.3m
	5830		9480	0.5m*	DDH 6 6.9-7.3m
	2241		**1667**	**2.4m***	**15.0-17.4m**
	1130		2087	0.8m*	29.4-30.2m
	1290		1284	1.1m*	32.9-34.0m
	1260		1104	3.1m*	37.5-40.6m
Upper Zone	5067		806	0.6m*	DDH 7 4.9-5.5m
Middle Zone	3070		492	-	Grab Sample
RJS Zone	**1070**		**749**	**3.0m**	**Chip**
Stibnite Zone	2690		2694	1.1*	DDH 2 47.9-49.0m

* APPARENT WIDTH ONLY.

Summary and Recommendations:

The Mt Sidney Williams Property contains several structurally controlled gold occurrences. These lie close to the faulted west margin of a large Permian ultramafic body. Listwanite alteration spatially associated with the gold occurrences appears to follow northwest and east-northeast trending faults. In the Cache Creek Gp. rocks west of the Van Decar Creek, the latter structures are visible as strong linear trends in the copper soil geochemistry. One of the gold occurrences, the Stibnite Zone lies on one of these structures outside the ultramafic body.

The mineralized zones are typified by a strong Au-As association. Gold values exceeding 1000 ppb and As values over 1000 ppm are widespread on the property. Ore grades over minable widths are indicated in at least two locations (i.e. the Camp Zone and Upper Zone).

Exploration of the mineralized zones to date has aimed at defining the contacts of younger norite intrusions that were thought, to be the cause of the alteration. Consequently, trenches and drill holes were not oriented to test the altered structures. At least four of the drill holes (3, 4, 5 and 6) were drilled parallel to the structures, the others were drilled at oblique angles to them.

Work Proposal:

To test the gold potential of the Mt. Sidney Williams property the following work is recommended for the 1991 season:

- Geophysical coverage (Mag, IP and VLF) of the 1990 grid area to identify the position and orientations of the potentially mineralized structures; to locate zones of hydrothermal alteration and disseminated sulphide mineralization.

- Detailed geological mapping and lithogeochemical sampling to determine the extents and geometry of the gold bearing zones.

- Reconnaissance mapping and sampling off the 1990 grid to cover potential strike extensions of the known mineralized structures.

- A diamond drill program (2000m) to test the most promising targets.

A budget of $350K is proposed for the 1991 field season (attached).

DAVE HEBERLEIN
SENIOR PROJECT GEOLOGIST

PROJECT BUDGET FORECAST
1991

PROJECT NAME: Mt. Sidney Williams PROJECT NO. 671

GEOLOGY				
12 Hrs Helicopter	Salaries	$77,050		
	Travel Expenses	$1,500		
	Contract Payments	$0		
	Field Expenses	$27,400		
	Other	$1,800		
	Analyses	$10,950	$118,700	31%
GEOPHYSICS				
Mag,IP,VLF – 35 km	Salaries	$0		
	Travel Expenses	$0		
	Contract Payments	$20,000		
	Field Expenses	$0	$20,000	5%
GEOCHEMISTRY				
600 Soils	Salaries	$7,200		
300 Rock	Travel Expenses	$500		
60 Assays	Contract Payments	$0		
	Field Expenses	$0		
	Analyses	$19,500	$27,200	7%
DRILLING				
1000 m	Salaries	$7,100		
	Travel Expenses	$1,000		
	Contract Payments	$130,000		
	Field Expenses	$30,000		
	Analyses	$7,500	$175,600	45%
Line Cutting			$6,000	2%
Trenching			$0	0%
Hotels and Meals			$10,500	3%
Option Payments			$25,000	6%
Property Maintenance			$5,000	1%
Other			$0	0%
	TOTAL DIRECT EXPENDITURES		$388,000	

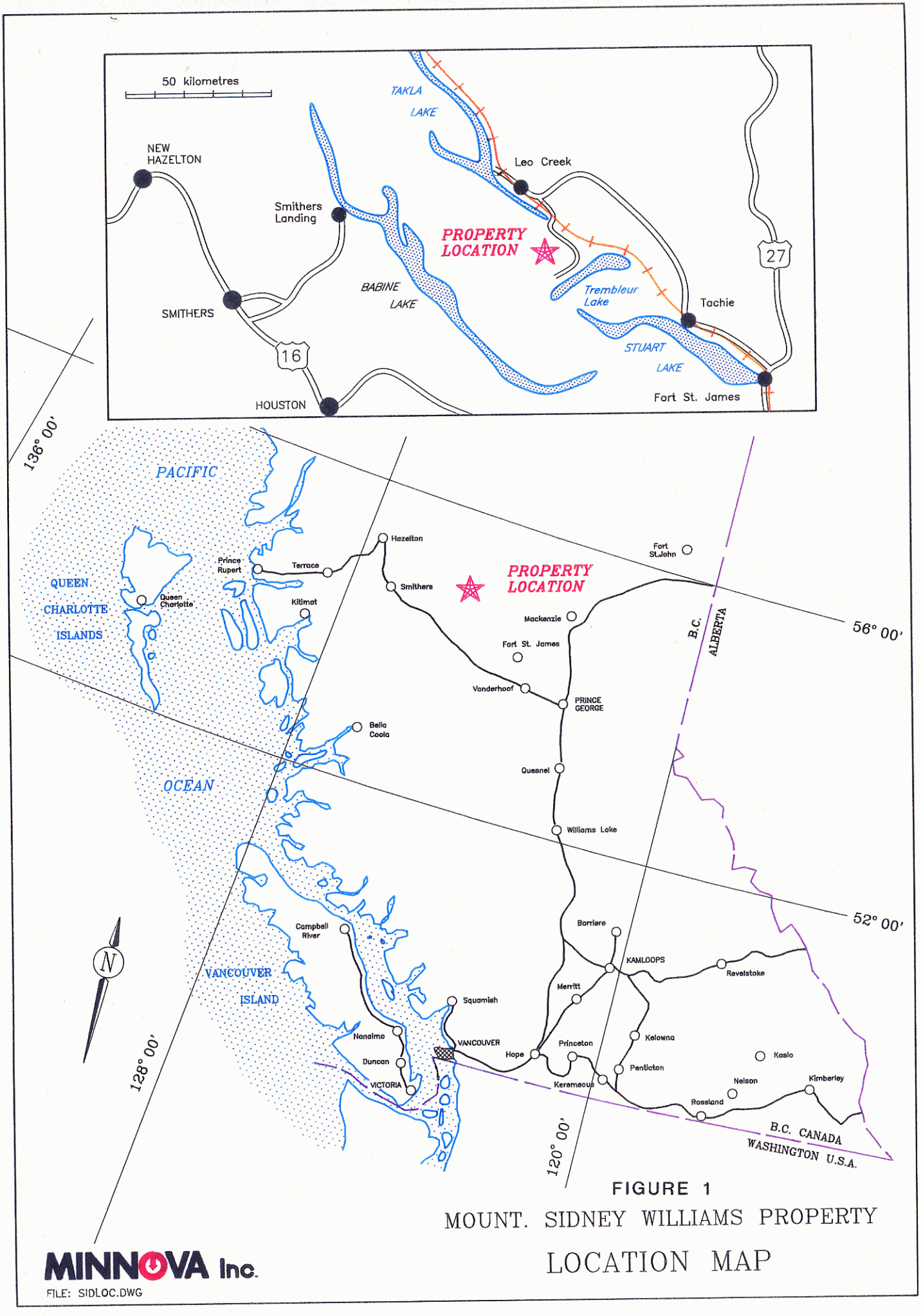

FIGURE 1

MOUNT. SIDNEY WILLIAMS PROPERTY

LOCATION MAP

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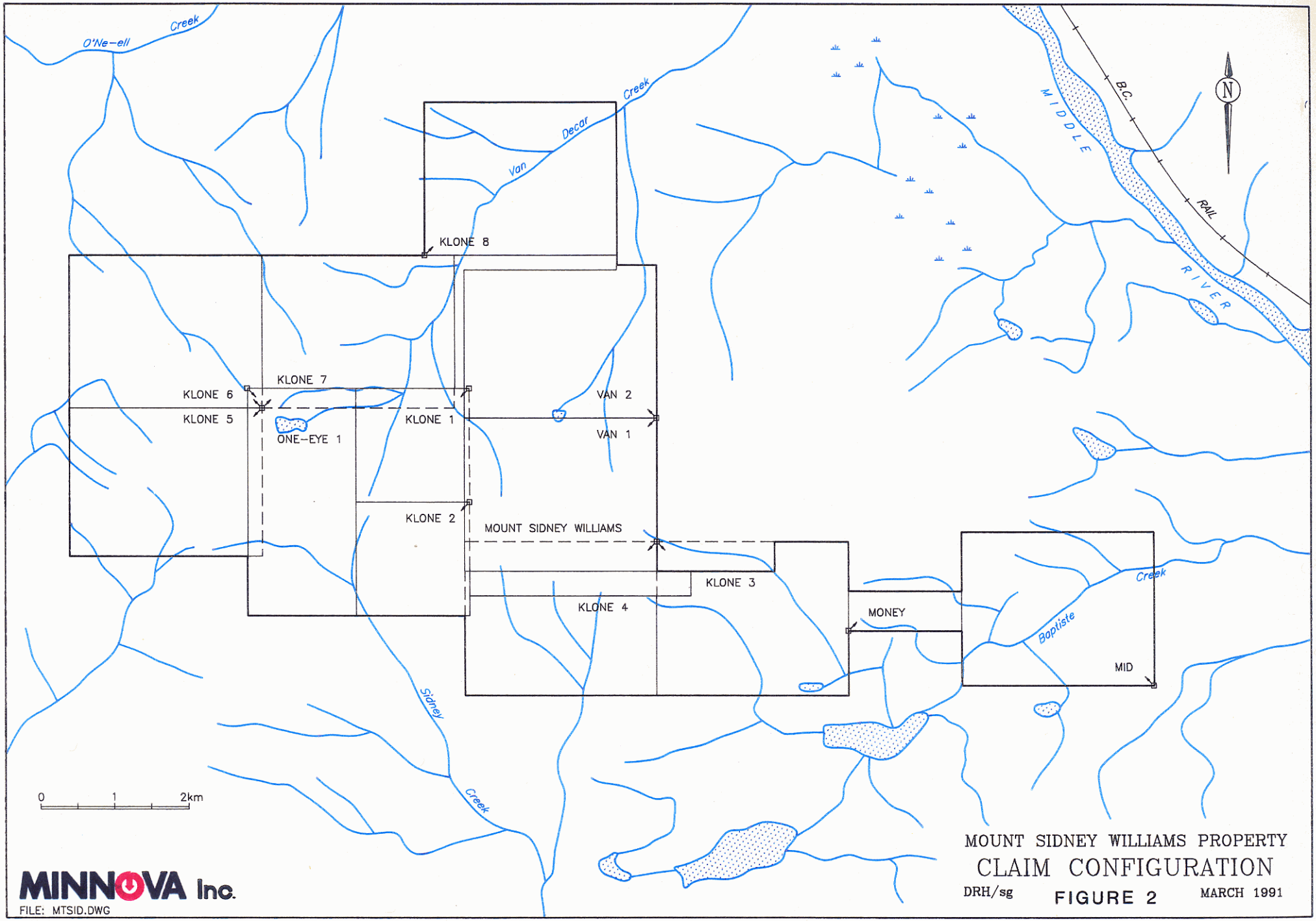
FILE: SIDLOC.DWG



MINNOVA Inc.

FILE: MTSID.DWG

MOUNT SIDNEY WILLIAMS PROPERTY

CLAIM CONFIGURATION

DRH/sg FIGURE 2 MARCH 1991

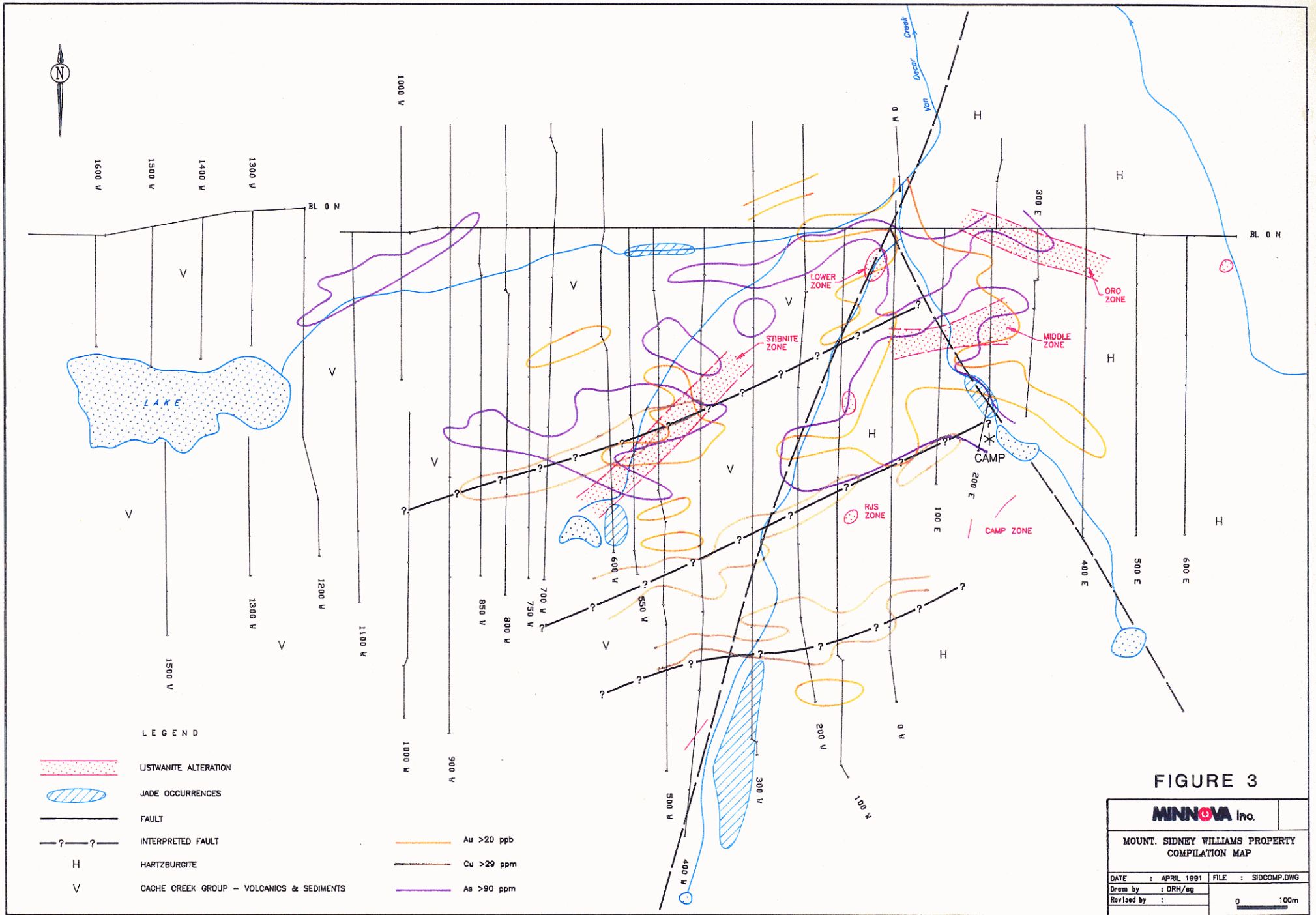


FIGURE 3

MINNOVA Inc.

MOUNT. SIDNEY WILLIAMS PROPERTY
COMPILATION MAP

DATE	: APRIL 1991	FILE	: SIDCOMP.DWG
Drawn by	: DRH/sg		
Revised by	:		

0 100m

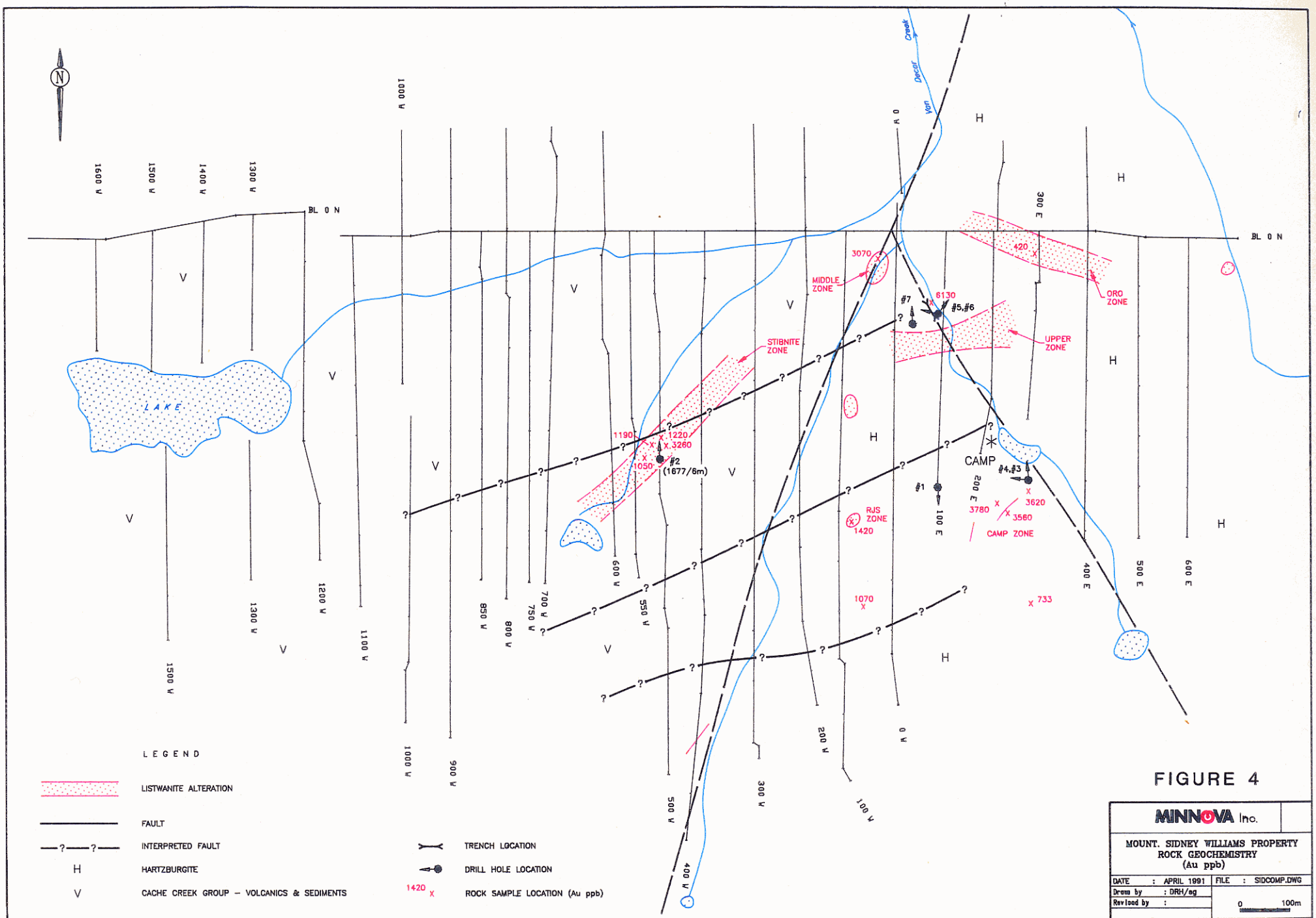


FIGURE 4

MINNOVA Inc.

MOUNT. SIDNEY WILLIAMS PROPERTY
ROCK GEOCHEMISTRY
(Au ppb)

DATE	: APRIL 1991	FILE	: SIDCOMP.DWG
Drawn by	: DRH/sg		
Revised by	:		

0 100m

Lotus File
MtSid

PROJECT BUDGET FORECAST
1991

PROJECT NAME: Mt. Sidney
Williams

PROJECT NO. 671

GEOLOGY				
12 Hrs Helicopter	Salaries	$53,250		
	Travel Expenses	$0		
	Contract Payments	$0		
	Field Expenses	$26,000		
	Other	$1,800		
	Analyses	$8,450	$89,500	36%
GEOPHYSICS				
Mag,IP,VLF				
- 35km	Salaries	$0		
	Travel Expenses	$0		
	Contract Payments	$14,125		
	Field Expenses	$0	$14,125	6%
GEOCHEMISTRY				
600 Soils				
300 Rock	Salaries	$7,200		
60 Assays	Travel Expenses	$500		
	Contract Payments	$0		
	Field Expenses	$0		
	Analyses	$12,025	$19,725	8%
DRILLING				
1000m	Salaries	$7,150		
	Travel Expenses	$500		
	Contract Payments	$65,000		
	Field Expenses	$15,000		
	Analyses	$3,500	$91,150	36%
Line Cutting	g		$0	0%
Trenching			$0	0%
Hotels and Meals			$10,500	4%
Option Payments			$25,000	10%
Property Maintenance			$0	0%
Other			$0	0%
	TOTAL DIRECT EXPENDITURES		$250,000	

PROJECT NAME: PROJECT NO.:

		Days:	$/day		
Geology:	Dave Heberlein	30	$220	$6,600	
	Ursula	120	$200	$24,000	
	(Steve Blower ?)	90	$135	$12,150	
	John James	50	$95	$4,750	
	Dave Gregr	50	$115	$5,750	
	Cook	0	$150	$0	$53,250

Geophysics:		Number	Cost/km	Total	
	PEM	0	$350	$0	
	MAG	25	$45	$1,125	
	VLF	25	$40	$1,000	
	Airborne	0	$100	$0	
	I.P	10	$1,200	$12,000	
					$14,125

Geochemistry:		Number	Cost/unit	Total	
	Salaries:	60	$120	$7,200	
	# Lithos	250	$25	$6,250	
	# Geochem	0	$15	$0	
	# Soils	925	$13	$12,025	
	# HM	0	$100	$0	
	# Stream Seds	0	$13	$0	
	# Assays	55	$40	$2,200	$20,475

Drilling:

	Metres	Cost/m	TOTAL	
Salaries:			$7,150	
Travel Expenses			$500	
Contract Costs:	1000	$65	$65,000	
Field Expenses	(Helicopter)		$15,000	~21 hrs
Analyses			$3,500	$91,150

	km	Cost/km		
Line Cutting:	0	$400	$0	
Staking:	0	$150	$0	
	hrs	Cost/Hr		
Trenching:	0	$120	$0	