93-M-13W

1967

812846

ATNA PROJECT

REPORT ON

GEOLOGICAL, GEOCHEMICAL, TRENCHING & ASSAYING PROGRAMME

ON THE

ATNA AGREEMENT AREA

SICINTINE LAKE, B.C.

OMINECA MINING DIVISION

UNDER OPTION TO AND WORK DONE BY

CANADIAN SUPERIOR EXPLORATION LIMITED

by

O.E. Leigh and B.H. Kahlert

Claims	-	Atna 1-14	(Record Nos. 48634 - 48647)
		Sic 1-20	(Record Nos. 48603 - 48622)
		Sic 23	(Record No. 48623)
		Sic 25-29	(Record Nos. 48624 - 48628)
		Sic 31	(Record No. 48630)
		Sic 33-34	(Record Nos. 48632 - 48633)
		Cob 1-20, 19	(Record Nos. 53386 - 53404)
		Cob Fraction	(Record No. 54567)
		CM 1- 6	(Record Nos. 43474 - 43479)
		Jan 1-28	(Record Nos. 53726 - 53753)
		Mad 1- 8	(Record Nos. 55075 - 55082)
		[illegible] 20	54506
Location	-	Lat. 55°28'N Long. 127°24'W	
		N.T.S. 93M/14	
		Atna Range, 50 miles north of Hazelton	
		Omineca Mining Division	
Date of Work	-	August 17 - September 18, 1967	

I N D E X

A. GRAHAM PEAK

1. Location & Access

The 45-claim Atna Syndicate molybdenum property is situated approximately 50 miles north of Hazelton in the Omineca Mining Division, B.C. The property extends from the west shore of Sicintine Lake to the eastern slope of Shedin Mtn. on the eastern side of the Atna Range.

The mineralized zones on which work was conducted are located approximately one mile west of the south end of Sicintine Lake, along the crest of Graham Peak (Fig.1). The latter is a north-trending hogs'-back-type mountain with steep slopes (35°-45°) to the east and west. Sicintine Lake lies at an elevation of approximately 3,500 feet while Graham Peak is approximately 6,000 feet above sea level.

2. Property & Claims

The property as optioned from the Atna Syndicate consisted of 45 claims as follows: Atna 1-14 inclusive, Sic 1-20 inclusive, Sic 23 and Sic 25-34 inclusive. Additional staking by Canadian Superior Exploration undertaken to adequately cover the showings included the Cob 1-20 inclusive and the Cob Fraction. Near the end of the season, the Jan 1-28 claims (inclusive) were staked to cover the western extension of the Utah showing and the newly-located Horne showing to the south.

On the western limits of the agreement area, a mineralized showing was suspected to occur at the head of Fal Creek and the Mad 1-8 claims (inclusive) were staked to cover the zone.

At the end of the season, the syndicate paid $100 per claim in lieu of assessment work for the CM 1-6 claims (inclusive) formerly held by M. Martin.

The property within the agreement area now contains 105 claims and one fraction, after having the agreement amended to drop two of the original claims, the Sic 30 and 32 which had overstaked the CM claims.

Appendix I provides a listing of the pertinent data regarding all the above claims in the agreement area. Figure 2 shows the location of the claims and the grouping of the claims for application of assessment work completed in 1967. Appendix I-A is a copy of the official grouping and I-B is a copy of the assessment work filed in accordance with the Atna Syndicate agreement.

3. Work Completed

Using an Atlas Copco drill, Canadian Superior Exploration employees excavated in excess of 200 cubic yards of rock from 13 trenches along the crest of Graham Peak. Seven trenches were located on the Cob #5 claim (79 cu.yds.) and 6 trenches on the Cob #3 claim (134 cu.yds.). From this trenching 34 samples weighing a total of 1,566 lbs. were collected and forwarded for assay determinations of molybdenum, copper, gold, silver and tungsten at Technical Service Laboratories and Coast Eldridge Ltd.

At the same time, a reconnaissance geological map of the mineralized area was prepared using a scale of 1"=200'.

Rock chip samples were collected at 100-foot intervals along the base line, extending from station 0+00 located at the

summit of Graham Peak northward to station 39+00N. These samples were submitted for geochemical analysis.

4. Regional Geology

The Atna Range is situated near the southern extremity of the Bowser Basin. On the eastern side of the Atna mountains the basin is composed of several thousand feet of argillaceous sediments with interbedded greywackes, shales, siltstones and minor quartzite. The argillaceous formations have widespread pyritiferous members. These sediments are probably of Jurassic-Cretaceous age.

Underlying the sediments and to some extent intruding them is a large granitic batholith. Differentiation resulted in various phases of the granitic mass to develop, ranging from granodiorite, quartz-diorite, granite, feldspar, porphyry and probably monzonite. The intrusive sediment contact undulates sharply from near-vertical to horizontal. The larger apophyses of granite may form some mountain peaks, while in nearby valleys the intrusive is overlain by sediments.

The batholith has caused severe folding, faulting and thermal metamorphism to take place in the sediments within 1,000'-1,500' stratigraphically from the contact. Rock faces exposed along deep gorges and steeply-sloping mountain sides near the contact display a number of acid dykes and sills.

Argillaceous sediments within several hundred feet of the intrusive are altered to hornfels of a metamorphic grade decreasing outwards from the contact.

5. Local Geology

The molybdenite showings on Graham Peak occur in two distinct zones within the acid intrusive complex and for descriptive purposes these are referred to as the South and North zones (see Fig.3).

The main sedimentary-granitic contact (sediments lying to the south) occurs 350 feet north of Graham Peak summit, trends east-west and dips steeply to the south-southeast. The sediments in the vicinity of the contact have been intensely altered to a hard, dark, fine-grained hornfels with some accompanying silicification. Along the eastern slopes, hornfels selvages can be observed about six hundred feet below the peak, gradually thickening until about 1,000 feet down slope only hornfels is exposed. A small roof pendant 100 feet wide and 300 feet long across the crest was mapped 1,100 feet north of the main sedimentary-granitic contact.

The south zone occurs mainly within a light blue-gray, medium to coarse-grained granodiorite which is slightly porphyritic. The granodiorite occurs from 350 feet to 700 feet north of the Graham Peak summit and grades northwards into an intensely silicified, coarse-grained porphyritic granite in which quartz veining is abundant. The porphyry is about 800 feet wide and separates the north and south zones. The north zone is also within a granodiorite phase which is 800 feet wide as measured along the crest of the ridge. It is somewhat coarser grained and more porphyritic than the south zone granodiorite and grades northwards into a porphyritic granite about 2,300 feet north of Graham Peak summit. The latter porphyry is unmineralized, is weakly silicified in

comparison to the porphyry separating the north and south zones and is presumed to continue for several thousand feet north of the north zone. Mapping to the west of the crest was limited, for reasons of time, control and topography to a lateral distance of 400'-500' and to the east for about 1,300 feet.

In the porphyritic granites and porphyritic phases of the granodiorite, phenocrysts are composed of potash feldspar crystals usually ¼-½" in length although coarsely porphyritic phases may have crystals up to 2" in length.

Quartz veins within and adjacent to the mineralized zones are abundant and usually 1" or less in width but vary from discontinuous, barely-visible veinlets up to veins 5" or 6" wide. They are multidirectional, although a prominent set on the north zone strikes approximately N30°E and on the south zone N25°W. At least two periods of quartz-veining were recognized. The later period of milky quartz is barren and cuts through a number of mineralized quartz veins.

Jointing is well developed in the mapped area and is the prominent structure recognized. The dominant pattern strikes N45°E and dips 45° to the northwest. This may account for the relatively smooth west face and ragged bluffs on the east slopes of the ridge. Multidirectional fracturing is also important with respect to mineralization. The most important fracture direction is believed to be 20-40°NE with dips steeply to the NW.

Alteration within the mineralized zones does not appear to be significant. Hornfels has been silicified adjacent to the contact as have some of the porphyritic phases of the intrusive near the mineralized zones. No significant breakdown of the feldspars or the mafic minerals was observed.

6. Mineralization

Molybdenite occurs as very fine flakes in quartz veins and veinlets, as selvages along their edges and along fracture planes. The most prominent mineralized fracture direction appears to be northeast, parallel to the main jointing, particularly in the north zone. One 4" to 6" wide quartz vein containing 10-15% molybdenite was located in each of the north and south zones but such veins are too rare to be of economic significance as far as surface exposures are concerned.

The south zone is about 550 feet wide (as measured along the crest of the ridge), including about 50 feet of hornfels along the south contact. The north zone is about 700 feet wide (see Fig.4). The peripheral 75-100' of the mineralized zones contains only trace amounts of molybdenite, the better values lying within the central 300 feet and 450 feet of the south and north zones respectively. At a lower elevation, mineralization was traced along the eastern slope of the peak between the north and south zones below the central barren porphyritic mass. This has been termed the East zone. Only rarely was molybdenite found in the hornfels, and then only near its contact with granite.

Finely disseminated pyrrhotite, pyrite and a trace of chalcopyrite constitutes up to 4% or 5% of the south zone while the north zone contains a lessor amount. Pyrite is

the dominant sulphide. The south zone is more intensely oxidized and fractured and forms a small saddle along the crest of the mountain. Light brown talus extends about 1,500 feet down the east slope from this zone. Bluffs have prevented a similar feature to the west. However, oxidized talus on both sides of the south zone is much more evident than on the north zone. The trench samples from the south zone showed a much higher degree of oxidation than those from the north zone which probably has some bearing on the lower average grade of MoS_2 in the south zone.

Oxidation has persisted down the major fractures beyond the maximum depth of trenching. Some remnant molybdenite was observed along the walls of several of these fractures. Molybdenum oxide (ochre) was rare, and when observed was usually associated with a vuggy quartz vein.

7. Assay Results

Due to the low level of the assaying results duplicate samples were sent in most cases to two laboratories. Thirty-four samples totalling 1,566 lbs. were collected from 12 trenches on the north and south zones. One trench, S-7, was not sampled since visible mineralization was lacking (see Fig.4).

Fifteen samples from the south zone gave a weighted average of 0.036% MoS_2 (Technical Service Laboratories) and 0.039% MoS_2 (Coast Eldridge Laboratories) by the respective assayers.

The weighted average of all samples on the north zone was 0.080% MoS_2 by T.S.L. (12 samples) and 0.061% MoS_2 by Coast Eldridge (19 samples).

Of significance was trench N-4 on the north zone from which 5 samples assayed by T.S.L. averaged 0.096% MoS_2 and 8 samples by Coast Eldridge averaged 0.085% MoS_2 over a total trench length of 40 feet.

This trench exposed three northeast-trending well mineralized fractures as well as the normal small discontinuous multi-directional fractures. Although weathered and oxidized fractures persisted to the bottom of this trench (about 6'), the rock in general was much fresher than most of the material trenched.

Assays for gold, silver, tungsten and copper ranged from nil to trace amounts. Average assays for each of the trenches are plotted on Fig.4.

Appendix II summarizes all assays obtained to the end of the field season, together with arithmetical and weighted averages of all samples from each zone and three of the more significant trenches.

8. Discussion of Assay Results

Initial molybdenum assays by T.S.L. were considerably less than visual estimates in the field. Grinding and pulverizing techniques were suspected as a source of error. As a result, all available pulverized pulps and grinding rejects were forwarded to Coast Eldridge for check assays as well as 2 additional samples collected from trenches S-5 and 3 samples from N-4. These were considered as rechecks for errors in laboratory sample preparation. These rechecks were all within a

tolerable limit (.02% MoS_2) of the average grade for the respective trenches.

Scatter diagrams for each of the north and south zones were prepared for samples assayed by both firms (see Appendix II-A & B). An arbitrary tolerable limit of variation was assumed to be $\pm$.02% MoS_2. Of 13 samples on the south zone only 2 fall outside these limits (#15328 - difference of .042% MoS_2 and #15329 - difference of .027% MoS_2).

On the north zone 12 samples plotted show a distinctive upward shift of all samples in favour of T.S.L. and 4 samples lie on or close to the .02% spread in favour of T.S.L. One sample is just over this limit and one sample, #15351, has a difference of .061% MoS_2. The arithmetical average of the T.S.L. assays on the north zone is 0.0095% MoS_2 higher than the same 12 samples assayed by Coast Eldridge, whereas the arithmetical average on the south zone is .003% MoS_2 in favour of Coast Eldridge.

Thus excluding samples #15328 and #15351, it is concluded that the assays of both firms are comparable within tolerable limits.

9. Geochemical Rock Sampling

Rock chip samples were collected at 100-foot intervals along the base line from 0+00 to 30+00N. Each sample was composed of a number of ¼-½" chips from outcrop within a 20-30 foot diameter of each station. Visible molybdenite was carefully avoided in the collection of the samples.

Values in parts per million (p.p.m.) for molybdenum and copper are plotted in profile in Appendix III.

Using an arbitrary copper and molybdenum threshold value of 70 p.p.m. respectively, the zones as defined by surface examination are prominently outlined geochemically. The north zone appears to be about 200 feet wider on a geochemical basis than from surface work. Samples at 18N and 19N within the north zone are below the threshold. Sample 20N probably contains a minute amount of MoS_2 and may be considered somewhat erratic (p.p.m. Mo. of 1,000 = 0.1% Mo.).

The average geochemical values on the south zone and north zone are as follows:

	Stations			Avg.Values ppm		Equiv.Values	
Zone	From	To	Distance	Mo.	Cu.	%MoS2	% Cu.
South	3+00N	8+00N	500'	158.3	110	0.026	.011
North	16+00N	24+00N	800'	253.3*	106.7	0.042*	.011

*includes high value of 1,000 p.p.m. - substituting threshold value of 70 for 1,000 p.p.m. - these figures become 150 and 0.025 respectively - i.e. similar to values for the south zone

The weighted average assay values for the south zone (excluding sample #15327) are .029% MoS_2 and .033% MoS_2 for T.S.L. and Coast Eldridge respectively and 0.014% Cu. One would expect higher assay values where molybdenum is visible in the sample. An explanation may be in the fact that the molybdenite has been incompletely leached from

the sample for assay (and certainly no silicate bonded Mo. is obtained) whereas the geochemical technique has obtained all Mo. including the amount trapped in the molecular structure. The pulverized pulps are understood to have been crushed to about 70-80% -120 mesh. It may be necessary to get a 70-80% -200 mesh pulp for assay in order to free all the molybdenite, particularly from the quartz veins. A finer grind would also run the risk of loss in the pulverizer and in rolling and quartering for assay.

10. Costs Assigned to the Atna Project

1968 Commitment

In accordance with the Atna Agreement, Canadian Superior Exploration are obliged to spend $20,000 on the agreement area by December 31, 1968 in order to keep the agreement in force.

Charges attributable to the programme completed in 1967 are tabulated below as of October 31, 1967:

Salaries & benefits	$ 4,830.17
Contractors & consultants fees (Copco drill, etc.)	820.00
Assaying	999.55
Recording fees	150.00
Prospecting materials & supplies	826.67
Transportation	7,784.28*
Miscellaneous	613.83
Total Charges	$16,024.50

*included in this figure is $1,995.00 spent on helicopter time for reconnaissance of the Atna area

1967 Commitment

The obligation of Canadian Superior Exploration to maintain the Atna agreement consisted of doing assessment work sufficient to keep the original 45 claims (as per Schedule "B") in good standing for the year April 7, 1968 to April 7, 1969 or paying cash ($100 per claim) in lieu thereof.

On November 2, 1967 Canadian Superior filed assessment work of a total value of $6,765 covering 43 of the original 45 claims, plus other claims set out in Appendix I-B. The two claims, Sic 30 and 32, have overstaked the CM claims and will be allowed to lapse as per the supplemental agreement with Mr. S.W. Wright.

11. Conclusions & Recommendations

Trenching and mapping during August and September, 1967 on Graham Peak outlined two zones of low-grade molybdenum mineralization in granodiorite separated by an 800-foot wide barren porphyritic granodiorite. The south zone, which is intensely weathered, averaged approximately 0.03% MoS_2 and the north zone averaged approximately 0.07% MoS_2. Trench N-4 located near the centre of the north zone averaged approximately 0.09% MoS_2, the best value obtained from the trenching programme.

Both zones are well fractured which has promoted weathering and oxidation of the mineralization beyond the depth of the trenching.

Based on the assumption that protore may be present beneath the zone of oxidation Canadian Superior plans to undertake a drill programme during the 1968 field season.

B. RECONNAISSANCE WORK WITHIN THE ATNA AGREEMENT AREA (see Fig.6)

Areas outside of the original Graham Peak showings were examined at various times during the currency of the season's work.

The following is a brief resume of the location, work completed and other observations concerning showings located within or near the boundary of the agreement area.

1. Utah Showing

This showing is exposed in the bed of a deeply-incised stream (Utah Creek) flowing into Silt Creek from the west near the boundary of the CM-1 and 3 claims. Mineralization and rock types are quite similar to that of the Graham showings.

Molybdenite mineralization is exposed from the first outcrop down stream to the most accessible upstream point 400 feet to the west. No mineralization was observed in the cirque above and to the west of the stream.

Five rock chip samples (U-1 to 5) were taken along the fresh rock exposed in the stream bed from east to west and one sample of intensely-weathered material from the edge of the cirque occurring at the head of the stream.

Two rock samples (U-6 and 7) were taken above the head of Utah Creek from a small stream halfway up the cirque. They consisted only of barren porphyritic biotite granite.

A silt sample at the head of Utah Creek (U-9) and one below the lowest exposed mineralization (U-8) were analyzed for Cu. and Mo.

The values obtained for these samples are as follows:

Sample	Type	Location		Cu.ppm	Mo.ppm
U-1	rock chip	Utah Creek elev.	4,125'	) Samples	
U-2	"	" " "	4,175'	) apparently	
U-3	"	" " "	4,200'	) lost by	
U-4	"	" " "	4,300'	) Barringer	
U-5	"	head of Ck. "	4,600'	) laboratory -	
U-6	"	Upper Creek "	4,825'	) search is	
U-7	"	" " "	4,900'	) being	
U-8	silt	base of Utah Ck. showing	4,150')	made.	
U-9	"	head of Utah Ck.	4,600'	140	90

2. Fal Creek

Mineralized float was located at the foot of a lateral moraine on the northwest side of Fal Creek valley and also along the foot of the glacier one mile further up stream. Above the glacier a gossan could be observed along the face of an arête and the Mad group of 8 claims were witnessed from the ridge to cover this. The gossan is inaccessible except through use of proper mountaineering equipment and at the time of our examination an attempt to reach the showing was unsuccessful.

Eleven soil and silt samples were collected from the south-east side of the creek, principally from drainage believed

to originate from the ridge to the south rather than from the gossan mentioned above (samples #2 and #10 are exceptions).

The following values were obtained:-

Sample	Location	Cu.ppm	Mo.ppm
Fal 1	tributary north of Jan #13	20	2
Fal 2	Fal Creek - below #1	155	50
Fal 3	tributary north of Jan #2	238	120
Fal 4	200 feet east of #3	462	200
Fal 5	200 feet east of #4) below stained	275	120
Fal 5A	100 feet east of #5) area	175	120
Fal 6	humus base of slope 200' east of #5A	108	6
Fal 7	silt from stream at base of slope (flooding from main stream - 500 feet east of #6)	125	40
Fal 8	silt from south bank of stream - 500 feet east of #7)	208	40
Fal 9	silt and loam - 250' east of #8 (south slope)	113	10
Fal 10	Fal Creek - 1.5 miles east of glacier	121	30

3. Horne Showing

The Horne showing, discovered by Andrew Horne, is located on the Jan #18 claim.

A zone of medium-grained granodiorite about 1,500 feet wide trends north-south across an east-trending ridge. This zone is lightly gossaned and weakly mineralized with molybdenite and chalcopyrite in ¼ to ½" wide quartz veins on the south side of the mountain near its crest.

Typical sediments of the Atna area are in contact with the intrusive to the east and have been metamorphosed to hornfels near the contact. Adjacent to the west is a narrow hornfels zone succeeded in turn by the main granite mass. A strong fault zone terminates the mineralized granodiorite to the west.

Eleven rock chip samples were collected at 100-foot intervals from east to west about 700 or 800 feet below the mineralized zone and to the south. These samples were taken at the base of an arcuate escarpment and most of the samples were composed of granite. Only sparse mineralization was observed during this traverse.

The geochemical values in parts per million obtained in these samples are as follows:-

> Samples H-1 to H-11 inclusive have apparently been lost in the Barringer laboratory. A search is being made.

C. RECONNAISSANCE WORK OUTSIDE THE ATNA AGREEMENT AREA (see Fig.6)

1. Con Creek

Silt samples were collected from tributaries flowing northwestward into Con Creek which is roughly parallel to Fal Creek and approximately 2 miles to the north. The samples were collected over a distance of about 1-1½ miles down the valley from the cirque at the headwaters.

The following geochemical values, all of which are low, were obtained proceeding down Con Creek from the cirque:-

Sample	Cu. (ppm)	Mo. (ppm)
Con 1	15	6
Con 2	25	2
Con 2A	30	2
Con 3	26	2
Con 4	6	2
Con 5	34	2
Con 6	35	2
Con 7	40	2
Con 8	38	6
Con 9	34	2
Con 10	22	2

2. Horne West

This showing is located on the divide at the head of Horne Creek above a glacier at an elevation of about 6,500 feet. Typical granodiorite forms the northern part of the ridge and is in contact with hornfels to the south. Acid dykes and sills occur in the sediments near the contact.

About 600 feet of the granodiorite adjacent to the contact is mineralized with disseminated pyrrhotite, pyrite, molybdenite and chalcopyrite.

The topography prevented the determination of the attitude of the zone. The zone was not staked because of the rugged terrain and estimated low grade.

3. Pat Group

The Pat group of 10 claims, 5 miles east of Sicintine Lake at the base of Shelagyote Peak, cover a granodiorite-sedimentary contact. Acid dykes 1-10' wide have been intruded into the sediments in the contact zone. The frequency and width of the dykes decreases northward into the sediments away from the contact. The sediments apparently trend east-west and dip vertically along the contact.

Pyrite with minor molybdenite and chalcopyrite occurs in fractures, quartz veins and in boudinage dykes. Molybdenite was formed in one veinlet about ½" wide along the south contact of the largest dyke. The exposed mineralized zone is about 200 feet wide and 600 feet long. The same zone is exposed again about 1,000 feet to the east. The area between is covered by ice and debris from the overhanging glacier to the west.

A twelve-foot long rock trench was excavated across a five-foot wide dyke and included 3 feet of sediments on each side.

A 40 lb. sample from the dyke gave 0.233% MoS_2, .06% Cu., .01 oz/ton Ag. and a trace of gold. A 39 lb. sample of

hornfels assayed 0.016% MoS_2 and 0.02% Cu.

Data on the Pat claims, staked by B.H. Kahlert on September 16, 1967 and recorded October 4, 1967, is as follows:-

Claim	Tag No.	Record No.	Location Line	Direction Thrown	Other Information
Pat # 1	593447	55065	N30°E	L	#1 post witnessed 1400'
Pat # 2	593448	55066	"	R	" " " "
Pat # 3	593449	55067	"	L	#2 post witnessed 1400'
Pat # 4	593450	55068	"	R	" " " "
Pat # 5	593451	55069	"	L	
Pat # 6	593452	55070	"	R	
Pat # 7	593453	55071	"	L	#2 post witnessed 1490'
Pat # 8	593454	55072	"	R	" " " "
Pat # 9	593455	55073	"	L	
Pat #10	593456	55074	"	L	#2 post witnessed 900'

Other showings known to occur in the area are the Hogan showing, located eight miles south of Graham Peak at the head of a small creek and covered by 10 claims understood to be owned by Hogan Mines, and the MacDonald showing, located about four miles to the west on the west side of the Atna Range.

O.E. Leigh
Toronto
29th November, 1967

ATNA PROJECT

Claim Records & Data

Appendix I

Claim Name	Staking Date	Recording & ~~Expiry~~ Date	Tag No.	Recording No.	Grouping	Direction of Location Line	Direction Thrown	Assessment Work Filed	Other Information	Staker of Group & F.M.C. #	Owner & Free Miner's Certificate #
Atna # 1		7/4/67	810485	48634	North Cob	S40°E	L	1 year		J. Graham	S.W. Wright
# 2		"	86	35	" "	"	R	"		#54056	#64581
# 3		"	87	36	" "	"	L	"		Oct.20/66	May 30/67
# 4		"	88	37	" "	"	R	"		Powell	
# 5		"	89	38	South Cob	"	L	"		River	
# 6		"	810490	39	" "	"	R	"			
# 7		"	91	48640	" "	"	L	"			
# 8		"	92	41	" "	"	R	"			
# 9		"	93	42	" "	"	L	"			
#10		"	94	43	" "	"	R	"			
#11		"	95	44	North Cob	"	L	"			
#12		"	96	45	" "	"	R	"			
#13		"	97	46	" "	"	L	"			
#14		"	98	47	" "	"	R	"			
Sic # 1		7/4/67	810451	48603	North Cob	S40°E	L	1 year		J. Graham	S.W. Wright
# 2		"	52	04	" "	"	R	"		#54056	#64581
# 3		"	53	05	" "	"	L	"		Oct.20/66	May 30/67
# 4		"	54	06	" "	"	R	"		Powell	
# 5		"	55	07	" "	"	L	"		River	
# 6		"	56	08	" "	"	R	"			
# 7		"	57	09	South Cob	"	L	"			
# 8		"	58	48610	" "	"	R	"			
# 9		"	59	11	" "	"	L	"			
#10		"	810460	12	" "	"	R	"			
#11		"	61	13	North Cob	S10°E	L	"			
#12		"	62	14	" "	"	R	"			
#13		"	63	15	" "	"	L	"			
#14		"	64	16	" "	"	R	"			
#15		"	65	17	" "	"	L	"			

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Claim Records & Data
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Appendix I

Claim Name	Staking Date	Recording & Expiry Date	Tag No.	Recording No.	Grouping	Direction of Location Line	Direction Thrown	Assessment Work Filed	Other Information	Staker of Group & F.M.C. #	Owner & Free Miner's Certificate #
Sic #16		7/4/67	810466	48618	North Cob	S10°E	R	1 year		J. Graham	S.W. Wright
#17		"	67	19	South Cob	"	L	"		#54056	#64581
#18		"	68	48620	North Cob	"	R	"		Oct.20/66	May 30/67
#19		"	69	21	South Cob	"	L	"		Powell	
#20		"	810470	22	" "	"	R	"		River	
#23		"	810473	23	North Cob	"	R	"			
#25		"	810475	24	" "	"	L	"			
#26		"	76	25	" "	"	R	"			
#27		"	77	26	" "	"	L	"			
#28		"	78	27	" "	"	R	"			
#29		"	79	28	" "	"	L	"			
#31		"	810481	48630	South Cob	"	L	"			
#33		"	810471	48632	" "	S40°E	L	"			
#34		"	72	33	" "	"	R	"			
Cob # 1	10/8/67	15/8/67	834193		North Cob	S10°E	R	1 year		J. Graham	J. Graham
# 2	"	"	94		" "	"	R	"		#58472	#58472
# 3	"	"	95		" "	"	L	2 years		May 19/67	May 19/67
# 4	"	"	96		" "	"	R	"		Vancouver	Vancouver
# 5	"	"	97		South Cob	South	L	"			
# 6	"	"	98		" "	"	R	"			
# 7	"	"	99		" "	"	L	1 year			
# 8	"	"	834200		" "	"	R	"			
# 9	"	"	834401			"	L				
#10	"	"	02			"	R				
#11	"	"	03			"	L				
#12	"	"	04				R				
#13	"	"	05			North	R				
#14	"	"	06			"	L				
#15	"	"	07			"	R				
#16	"	"	08			"	L				
#17	"	"	09		South Cob	"	R	1 year			

ATNA PROJECT
Claim Records & Data
...page 3

Appendix I

Claim Name	Staking Date	Recording ~~& Expiry~~ Date	Tag No.	Recording No.	Grouping	Direction of Location Line	Direction Thrown	Assessment Work Filed	Other Information	Staker of Group & F.M.C. #	Owner & Free Miner's Certificate #
Cob #18	10/8/67	15/8/67	834410		South Cob	North	L	1 year		J. Graham	J. Graham
#19	"	"	11		" "	South	R	"		#58472	#58472
#20	24/8/67	6/9/67	12		North Cob	S10°E	L	"		May 19/67	May 19/67
Cob Fr.	"	"	593407		South Cob	n.a.	n.a.	2 years		Vancouver	Vancouver
CM #1	18/8/66	12/9/67	625337	43474	South Cob	S20°E	R	2 years		M. Martin	Sicintine Mines
#2	"	"	38	75	" "	"	L	"		#35028	Limited
#3	"	"	39	76	" "	"	R	"			#65620
#4	"	"	625340	77	" "	"	L	"			Sept.22/67
#5	"	"	41	78	" "	"	R	"			
#6	"	"	42	79	" "	"	L	"			
Jan # 1	5/9/67	20/9/67	593408	53726		South	L			B. Kahlert	Canadian
# 2	"	"	09	27		"	R			#51447	Superior
# 3	"	"	593410	28		"	L			May 1/67	Exploration
# 4	"	"	11	29		"	R			Victoria	Limited
# 5	"	"	12	53730		"	L		#2 post witnessed		#51443
# 6	"	"	13	31		"	R		" " "		May 1/67
# 7	"	"	14	32		"	L		witnessed claim		Victoria
# 8	"	"	15	33		"	R		" "		
# 9	"	"	16	34		North	L		#1 post witnessed		
#10	"	"	17	35		"	R		" " "		
#11	"	"	18	36		"	L		#2 post witnessed		
#12	"	"	19	37		"	R		" " "		
#13	"	"	593420	38		"	L		witnessed claim		
#14	"	"	21	39		"	R		" "		
#15	10/9/67	20/9/67	593437	53740		S80°W	L				
#16	"	"	38	41		"	R				
#17	"	"	39	42		"	L				
#18	"	"	593440	43		"	R				
#19	"	"	41	44		"	L				
#20	"	"	42	45		"	R				

ATNA PROJECT
Claim Records & Data
...page 4

Appendix I

Claim Name	Staking Date	Recording & Expiry Date	Tag No.	Recording No.	Grouping	Direction of Location Line	Direction Thrown	Assessment Work Filed	Other Information	Staker of Group & F.M.C. #	Owner & Free Miner's Certificate #
Jan #21	10/9/67	20/9/67	593443	53746		N80°E	L			B. Kahlert	Canadian
#22	"	"	44	47		"	R			#51447	Superior
#23	"	"	45	48		"	L			May 1/67	Exploration
#24	"	"	46	49		"	R			Victoria	Limited
#25	12/9/67	20/9/67	593422	53750		South	L		witnessed claim		#51443
#26	"	"	23	51		"	R		" "		May 1/67
#27	"	"	24	52		"	L		" "		Victoria
#28	"	"	25	53		"	R		" "		
Mad #1	17/9/67	4/10/67	953457	55075		North	L		#2 post witnessed	B. Kahlert	Canadian
#2	"	"	58	76		"	R		" " "	#51447	Superior
#3	"	"	59	77		"	L		witnessed claim	May 1/67	Exploration
#4	"	"	953460	78		"	R		" "	Victoria	Limited
#5	"	"	61	79		"	L		" "		#51443
#6	"	"	62	80		"	R		" "		May 1/67
#7	"	"	63	81		"	L		" "		Victoria
#8	"	"	64	82		"	R		" "		

Nov 2/67

DEPARTMENT OF MINES AND PETROLEUM RESOURCES

MINERAL ACT

FORM I

THE GOVERNMENT OF THE PROVINCE OF BRITISH COLUMBIA

NOTICE TO GROUP

Mining Division OMINECA Location Extending west from Sicintine Lake 50 miles nrth. of Hazelton B.C. East of the ATNA RANGE

Name of group NORTH COB GROUP

We, the undersigned owners* of the following adjoining mineral claims, desire to group them according to the provisions of the *Mineral Act*:—

NAME OF CLAIM	Record No. or Lot No.	SIGNATURE OF OWNER*	Free Miner's Certicate No.
SIC #1	48603		
SIC #2	48604		
SIC #3	48605		
SIC #4	48606		
SIC #5	48607		
SIC #6	48608		
SIC #11	48613		
SIC #12	48614		
SIC #13	48615		
SIC #14	48616	S.W. Wright	64581
SIC #15	48617		
SIC #16	48618		
SIC #18	48620		
SIC #23	48623		
SIC #25	48624		
SIC #26	48625		
SIC #27	48626		
SIC #28	48627		
SIC #29	48628		
ATNA #1	48634		
ATNA #2	48635		
ATNA #3	48636		
ATNA #4	48637		
ATNA #11	48644		
ATNA #12	48645		
ATNA #13	48646		
ATNA #14	48647		
COB #1 Tag(new)	834193		
COB #2 Tag "	834194		
COB #3 Tag "	834195	John M. Graham	58472
COB #4 Tag "	834196		
COB #~~3~~20 Tag "	834412		
Total 32 claims		[signature] (R.H. DUTTMANN) agent for S.W. Wright J.M. Graham	ST442

* May be signed by agent on behalf of owner.

Schedule I-A-i

Nov. 2/67

DEPARTMENT OF MINES AND PETROLEUM RESOURCES

MINERAL ACT

FORM I

THE GOVERNMENT OF THE PROVINCE OF BRITISH COLUMBIA

NOTICE TO GROUP

Mining Division OMINECA Location Extending west from Sicintine Lake 50 miles north of Hazelton B.C ~~East of the ATNA ROAD~~

Name of group SOUTH CoB GROUP

We, the undersigned owners* of the following adjoining mineral claims, desire to group them according to the provisions of the *Mineral Act*:—

NAME OF CLAIM	Record No. or Lot No.	SIGNATURE OF OWNER*	Free Miner's Certicate No.
CoB #5 Tag	834197		
CoB #6 Tag	834198		
CoB Fraction Tag	593407		
CoB #7 Tag	834199	John M Graham	58472
CoB #8 Tag	834200		
CoB #17 Tag	834409		
CoB #18 Tag	834410		
CoB #19 Tag	834411		
SIC #7	48609		
SIC #8	48610		
SIC #9	48611		
SIC #10	48612		
SIC #17	48619		
SIC #19	48621		
SIC #20	48622		
SIC #31	48630	S.W. Wright	64581
SIC #33	48632		
SIC #34	48633		
ATNA #5	48638		
ATNA #6	48639		
ATNA #7	48640		
ATNA #8	48641		
ATNA #9	48642		
ATNA #10	48643		
CM #1	43474		
CM #2	43475		
CM #3	43476	Sicintine Mines Limited	65620
CM #4	43477		
CM #5	43478		
CM #6	43479		
		R.H. Dujardin	51442
		(R.H. DUJARDIN)	
		agent for John M Graham	
		S.W. Wright	
		Sicintine Mines Ltd.	

* May be signed by agent on behalf of owner.

also agent for :- NOV 2/67
* John M. Graham
3953 William Street, North Burnaby B.C.
Free Miners Cert. No :- 58472
Date issued :- May 19th, 1967

AND

* Sicintine Mines Limited
Suite 301, 550 Burrard Street
Vancouver B.C
Free Miners Cert. No. :- 65620
Date issued :- Sept. 22, 1967

THE GOVERNMENT OF THE PROVINCE OF BRITISH COLUMBIA

DEPARTMENT OF MINES AND PETROLEUM RESOURCES

MINERAL ACT
FORM B

Affidavit on Application for Certificate of Work

I, Raymond A. Dujardin (Name.) Agent for * S.W. Wright (Name.)

12 Kingsgarden Road (Address.) 2236 Bellevue Avenue (Address.)

Toronto 18 Ontario West Vancouver B.C

Free Miner's Certificate No. 51442 Free Miner's Certificate No. 64581

Date issued May 1st 1967 Date issued May 30th, 1967

make oath and say:— SOUTH COB GROUP (3 CLAIMS) consisting of :-

I have done, or caused to be done, work on the COB 5, COB 6, COB Fraction, COB 7, COB 8, COB 17 to 19, SIC 7 to 10, SIC 17, SIC 19 SIC 20, SIC 31 SIC 33 SIC 34, ATNH 5 to 10, CM 1 to 6 Mineral Claim(s) TAG 834197, TAG 834198, TAG 513407, TAG 834199, TAG 834200, TAGS 834409 to 834411,

Record No.(s) 48609 to 48612, 48619, 48621, 48622, 48630, 48632, 48633, 48638 to 48643, 43474 to 43479.

situate at Sicintine Lake, 50 miles N. of Hazelton, East of Atna Range, Lat 57°00N Long 127°22'W

in the OMINECA Mining Division, to the value of at least

3300 one ~~hundred~~ dollars, since the 7th 15th 6th 13th day of April August September September, 1967 1967 1967 1967

The following is a detailed statement of such work:—

(Set out full particulars of the work done in the twelve months in which such work is required to be done.)

Seven trenches excavated in fresh rock by blasting with Forcite - 900 lbs of samples collected & assayed. Trench dimensions as follows.

	LENGTH	WIDTH	DEPTH	CUBIC FEET REMOVED	
S1	20'	x 5'	x 6	600	
S2	25'	x 7'	x 3	525	
S3	20'	x 8'	x 6	960	Total
S4	18'	x 4'	x 4	288	3625 cu.ft.
S5	20'	x 7'	x 6	840	
S6	22'	x 5'	x 2	220	
S7	8'	x 6'	x 4	192	

All situated on the COB 5 claim.

Work cost $3365 to be applied as follows :- 1 certificate work for each of claims listed above ; excess work to be applied to COB 5, COB 6, COB Fraction & additional 3 c.d.w's and a total of 33 c.d.w's.

That I have not and will not use the work declared herein in any way for the purposes of obtaining tax exemption on a Crown-granted mineral claim under the terms of the *Taxation Act*.

SWORN and subscribed to at.....

this.....day of.....

19....., before me—

*.....

.....

* This affidavit may be taken by a person empowered to take affidavits by the *Evidence Act* of British Columbia.

0

RECEIVED NOV 2 - 1967 VANCOUVER, B.C.

* also agent for :- John M. Graham 3953 William Street North Burnaby, B.C. Free Miners Cert. No. : 58472 Date issued : May 17th, 1967

Nov 2/67

THE GOVERNMENT OF THE PROVINCE OF BRITISH COLUMBIA

DEPARTMENT OF MINES AND PETROLEUM RESOURCES

MINERAL ACT

FORM B

Affidavit on Application for Certificate of Work

* see also above

I, R. A. DUJARDIN (Name.) Agent for S. W. WRIGHT (Name.)

12 Kingsgarden Road (Address.) Toronto 18, Ontario — 2236 Bellevue Avenue (Address.) West Vancouver, B.C.

Free Miner's Certificate No. 51442 — Free Miner's Certificate No. 64581

Date issued May 1st, 1967 — Date issued May 30th 1967

make oath and say:—

I have done, or caused to be done, work on the NORTH COB GROUP (32 claims) consisting of :- SIC 1 to 6, SIC 11 to 16, SIC 18, SIC 23, SIC 25 to 29, ATNA 1 to 4, ATNA 11 to 14, COB 1 to 4, COB 20 Mineral Claim(s)

Record No.(s) 48603 to 48608, 48613 to 48618, 48620, 48623, 48624 to 48628, 48634 to 48637, 48644 to 48647, [illegible] 834173 to 834176, TAG NO. 834412

situate at [illegible] Lake, [illegible] east of the Atna Range Lat. 56°00'N Long. 127°22'W

in the Omineca Mining Division, to the value of at least ~~one~~ 3400 hundred dollars, since the ~~15th~~ 7th day of ~~August~~ April, 1967 — 6th September 1967

The following is a detailed statement of such work:—

(Set out full particulars of the work done in the twelve months in which such work is required to be done.)

[illegible] excavated [illegible] 1000 lbs [illegible] assayed.

		LENGTH		FEET WIDTH		DEEP	CUBIC FEET EXCAVATED
Trench dimensions :-	N1	10'	x	4'	x	3'	120
	N2	10'	x	6'	x	3'	180
	N3	25'	x	5'	x	4'	500
	N4	30'	x	5'	x	4'	600
	N5	10'	x	10'	x	3'	300
	N6	30'	x	4'	x	3½'	420

Total 2120 feet³ of rock excavated.

Total cost of $3488 for above work to be applied as follows :-

1 cert. of work for each of claims listed — 32 c. of w's ($3200)

Excess not to be applied to COB 3 and COB 4 [illegible] 2 c of w's ($200)

Total 34 c of w's ($3400)

That I have not and will not use the work declared herein in any way for the purposes of obtaining tax exemption on a Crown-granted mineral claim under the terms of the *Taxation Act*.

SWORN and subscribed to at..................

this.......... day of..................

19......., before me—

*..................

* This affidavit may be taken by a person empowered to take affidavits by the *Evidence Act* of British Columbia.

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ATNA PROJECT
Trenching & Assays
South Zone

Appendix II-A-i

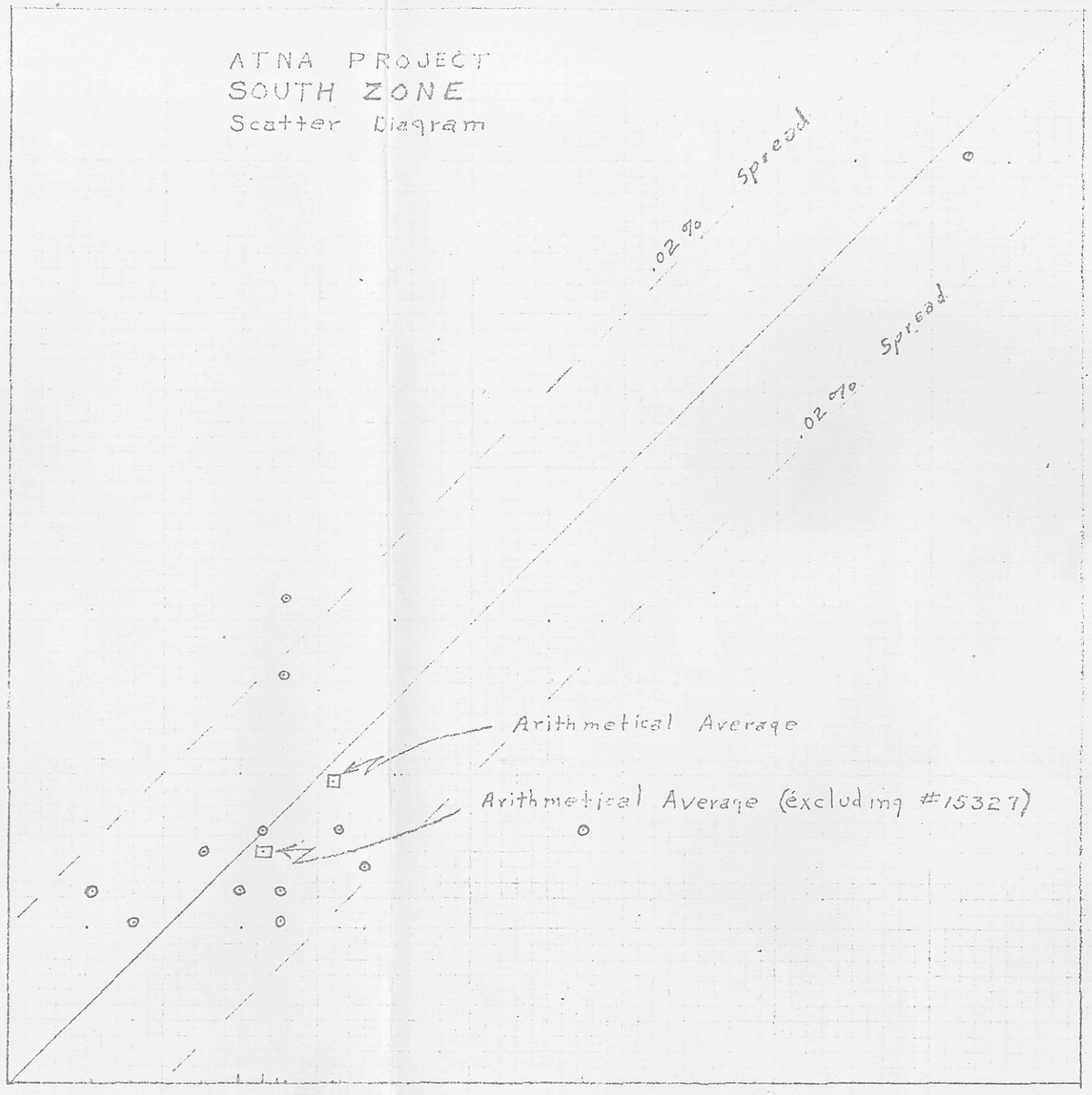
Assay No.	Trench	Weight Lbs.	Dimension & Type	Assays T.S.L. Au. oz./t	Ag. oz./t	Cu. %	MoS_2 %	WO_3 %	Coast Eldridge Cu. %	MoS_2 %	WO_3 %	Remarks
15331	S-1	34	17.5' - Chip	Tr.	Tr.	.02	.028	-	-	.046	-	
15330	S-2	29	25' - Chip	Tr.	Tr.	.02	.033	-	-	.043	-	
15329	S-3	20	10' (South) - Chip	Tr.	Tr.	.02	.063	-	-	.036	-	
15327	S-3	39	10' (North) - Chip	Tr.	Tr.	.02	.121	-	-	.125	-	(Quartz vein)
15328	S-3	21	10' (North) - Muck	Tr.	Tr.	.02	.033	-	-	.075	-	Shovelled muck
15337	S-3	54	10'x6' South - Panel Chip	Tr.	.12	.02	.033	-	-	.033	-	
15332	S-4	62	12' - Chip	Tr.	Tr.	.02	.025	-	-	.035	-	Weathered
15334	S-5	42	8'5" (South) - Chip	Tr.	Tr.	.01	.025	-	-	.030	-	
15364	S-5	50	8'6"x3'x4' (South) - Chip	-	-	-	-	-	.02	.033	-	Resampling
15335	S-5	32	5'3" (North) - Chip	Tr.	.10	.01	.030	-	-	.025	-	
15365	S-5	41	7' (North) - Chip	-	-	-	-	-	.02	.050	Tr.	Resampling
15336	S-5	75	14'x6' Panel - Chip	Tr.	.10	.01	.021	-	-	.035	-	
15333	S-5	58	-	Tr.	Tr.	.02	.021	-	-	.016	-	Two boulders, 7 fractures
15338	S-6	30	20' (South)	Tr.	.15	.01	.053	-	-	.035	-	
15339	S-6	54	8'6"x6' (North) - Panel	Tr.	.10	.01	.025	-	-	.011	-	
		641	Arithmetical Average				.039			.042		
			Arithmetical Average (excluding #15327)				.030			.033		
			Weighted Average (based on weight)				.036			.039		
			Weighted Average (excluding #15327)				.029			.033		
			Arithmetical Average - S-5				.024			.031		
			Weighted Average - S-5				.023			.031		

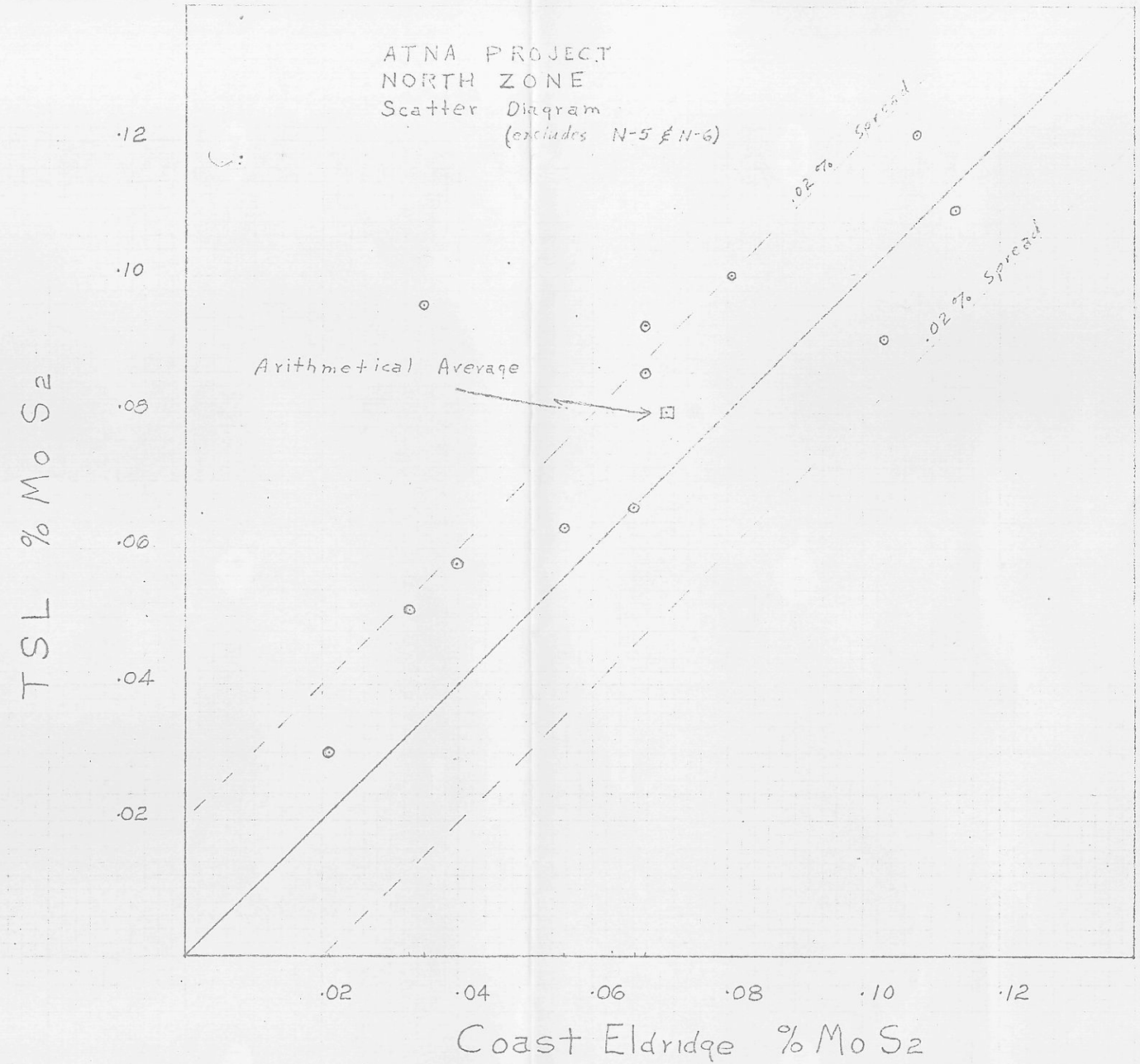
ATNA PROJECT
Trenching & Assays
North Zone

Appendix II-A-ii

Assay No.	Trench	Weight Lbs.	Dimension & Type	Assays T. S. L. Au. oz./t	Ag. oz./t	Cu. %	MoS_2 %	WO_3 %	Coast Eldridge Cu. %	MoS_2 %	WO_3 %	Remarks
15342	N-1	40	8'x4' Panel	Tr.	Tr.	.02	.030	-	-	.021	-	
15340	N-2	20	3'x6' South - Panel	Tr.	Tr.	.02	.100	-	-	.081	-	
15341	N-2	46	4'x5' North - Panel	Tr.	Tr.	.03	.051	-	-	.033	-	
15343	N-3	54	20' South - Chip	Tr.	Tr.	.02	.086	-	-	.068	-	
15344	N-3	59	15'x3' South - Panel	Tr.	Tr.	.03	.093	Tr.	-	.068	-	
15353	N-3	59	8' North - Chip	-	-	.02	.058	nil	-	.040	-	2' overlap with
15354	N-3	65	8' - Muck	-	-	.02	.063	.02	-	.056	-	south samples
15345	N-4	51	11'4"x3' South - Panel	Tr.	Tr.	.03	.091	-	-	.103	-	
15346	N-4	54	11'4" South - Chip	Tr.	Tr.	.06	.121	Tr.	-	.108	-	
15347	N-4	41	12' North - Panel	Tr.	Tr.	.03	.110	.02	-	.113	-	
15355	N-4	36	30' Chip - North South portion	-	-	-	-	-	.03	.083	Tr.	Resampling
15356	N-4	40	Grabs from dump	-	-	-	-	-	.03	.100	Tr.	Resampling
15351	N-4	55	10' East West portion	-	-	.03	.096	nil	-	.035	-	
15352	N-4	55	10'x3' - Panel - E-W portion	-	-	.03	.066	nil	-	.066	-	
15357	N-4	36	10' E-W portion - Chip	-	-	-	-	-	.03	.083	Tr.	Resampling
15360	N-5	49	10' - Chip	-	-	-	-	-	.02	.033	Tr.	Quartz vein
15361	N-5	52	10'x5'x3' - Panel	-	-	-	-	-	.02	.050	Tr.	Quartz vein
15362	N-6	51	12' - Channel - East End	-	-	-	-	-	.02	.033	Tr.	
15363	N-6	62	16' - Channel - West End	-	-	-	-	-	.02	.033	Tr.	
		925	Arithmetical Average				.080			.063		
			Weighted Average (based on weight)				.080			.061		
			Arithmetical Average - N-3				.075			.058		
			Weighted Average - N-3 (based on weight)				.074			.058		
			Arithmetical Average - N-4				.097			.086		
			Weighted Average - N-4 (based on weight)				.096			.085		

ATNA PROJECT
SOUTH ZONE
Scatter Diagram




ATNA PROJECT
NORTH ZONE
Scatter Diagram
(excludes N-5 & N-6)
.02 % Spread
.02 % Spread
Arithmetical Average
TSL % Mo S2
.12
.10
.08
.06
.04
.02
.02
.04
.06
.08
.10
.12
Coast Eldridge % Mo S2

APPENDIX III

GEOCHEMICAL ROCK CHIPS