2012 PROSPECTING REPORT

ON THE MAMQUAM 6 CLAIM

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FILE NO.

DECEMBER 3, 201

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MINERAL

## IN THE PACIFIC RANGES OF THE COAST MOUNTAINS

92 G/10

BC Geological Survey Assessment Report 33428

## NEW WESTMINSTER MINING DIVISION

122 DEGREES 56 MINUTES 20 SECONDS WEST

**49 DEGREES 40 MINUTES 0 SECONDS NORTH** 

CLAIM: MAMQUAM 6

**TENURE NUMBER: 940531** 

OWNER/OPERATOR: KEN MACKENZIE

AUTHOR: KEN MACKENZIE FMC# 11645

SQUAMISH, B.C.

EVENT NUMBER: 5419954

1

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# MAMQUAM 6 CLAIM INTRODUCTION

The Mamquam 6 claim is located in the Pacific Ranges of the Coast Mountains near the headwaters of the Mamquam River. See Map #1 (the index map) for the location.

The property can be accessed by road from Squamish. Drive south from Squamish on highway 99 to the Mamquam main logging road, which is reached just beyond a bridge over the Stawamus River near the base of the Stawamus Chief (a wellknown rock climbing area). Turn left (east) off the highway and follow the Mamquam Main Forest Service Road, which is marked in miles and in kilometres. Logging trucks or construction vehicles may be present on this road so drive carefully with your lights on and use a radio. The correct frequency is posted. At approximately 2.5 miles the road crosses the Stawamus River, and continues on past a run of the river electrical generating plant, power lines and a reservoir in the Mamquam River (mile 3 to 8). The bridge over Raffuse Creek is being rebuilt at this time and construction equipment and vehicles may be present on the road between Raffuse Creek and Skookum Creek. At mile 9 the road crosses a bridge over the Mamquam River and stays on the north and then the east side of the river until the headwaters are reached.

Just east of the bridge over Skookum Creek there is a new run of the river power plant under construction and some of the large rocks blasted out of the mountain are being used in the bridge replacement at Raffuse Creek.

In 2012 there was logging activity close to the main road around mile 6 and more from the 9 mile bridge to about mile 12. There may be loaded logging trucks coming down the road at any time so be careful.

At mile 15 the road narrows and becomes steep for a short section. If there is evidence of logging trucks on the road I stop there and make more calls than usual on the radio to ensure there are no loaded logging trucks coming down the hill while I'm proceeding up. There is also a fork in the road at mile 15. The main road goes uphill to the left. The other road continues straight ahead but is decommissioned and cross-ditched, and the bridge over the Mamquam River has been removed.

At mile 18 there is a similar junction but this time you should continue straight ahead on the decommissioned, cross-ditched road that soon crosses the Mamquam River near its headwaters. The road is easily drivable with a fourwheel drive vehicle with sufficient clearance. Continue on the main road that parallels and then crosses a branch of the Mamquam flowing from the southwest. Continue uphill until the road splits. One road goes straight ahead and the other goes right (north). Both roads terminate on the property betwean 900 and 1000 metres of elevation.

Take the right fork and head north, roughly contouring around the mountain until an impassible washout is reached.

These roads are illustrated on Map #2 (1:50,000 index map), which shows the property in relationship to the Mamquam River, Raffuse Creek, Clarion Lake, the Stawamus River and the town of Squamish.

There are three trails that begin from this north branch of the road. The first one is found at a low point in the road where a small creek flows through a culvert under the road. This trail descends from the road south of the creek then crosses the creek to travel north along the edge of the logging slash until the forest is entered. The trail then continues downhill beside the small stream until the main creek is reached. The main creek can be easily crossed at this site and the trail ascends the other bank passing over a recently fallen cedar tree which is gradually settling into the hillside. The trail then follows a small gully next to a glacial till slope failure. Once the logging slash is reached, the trail continues along the edge of the forest until an old logging road is encountered. This road can be followed uphill (west) and then north contouring around the mountain.

Just past the north gully creek a new trail has been cleared that climbs uphill through the logged area until the forest is reached. Once within the forest the going is easier, and a marked route leads to the north branch of the north gully creek. This small watercourse can be followed to its end, the low ridge above can be crossed and the trail into the northeast creek can be easily found. This trail is faster than the previous route we used. However, this previous route is also described below.

Near the end of the road above the northeast creek, the original trail enters the logging slash to the west and ascends through a thick growth of blueberries and small trees until the forest is reached again. From this site the trail proceeds north and west a short distance then descends the steep bank into the northeast creek. Once the northeast creek has been reached, proceed downstream a short distance until the first tributary from the north is found. Hike up this creek until the Mamquam 6 claim boundary is crossed.

The old logging road on the other side of the main creek can also be followed downhill (east and then north) until it reaches the lower gossan that contains the north and south gullies.

The other two trails can be accessed by parking before the washout and hiking to the end of the road where there is a turnaround. The first trail leaves the turnaround towards the north and descends steeply into the main creek. The second trail leaves the turnaround towards the west and heads uphill through the logging slash until the forest is reached, where it continues parallel to the main creek until trail creek is reached. The route then continues in trail creek, or parallel to trail creek until sub-alpine glades are encountered. At this point the trail changes direction to the northwest until pass 1350 is reached.

Map #3 is a 1:20,000 map that shows the roads, trails and place names used on the Mamquam 1-5 claims. To date we have not named any places on the Mamquam 6 claim.

A new logging road has been built to the north of the Mamquam 6 claim which we expect to use for access in the future. At present there is active logging and hauling being done on the road so I've only been up there once. In order to ascend the road I waited at the junction until an empty logging truck was heading uphill and I followed the truck to the end of the road, stopping off the road when the logging truck did in order to let loaded logging trucks pass safely. The road leaves the Mamquam Main Forest Service Road at the 9 mile bridge (NAD 83, 0500261 E, 5507179 N) and continues eastward along the south side of the Mamguam River. The road then heads uphill on the northeast side of Alpen Mountain. At about 19.7 km (0503297 E, 5505215 N) there is a gate that is closed at the end of the day. A short distance beyond the gate the road splits into two branches (0503053 E, 5505320 N). The left branch leads to the east side of the ridge where it comes within 1.5 kilometres of the Mamquam 6 claim. No route or trail has been marked from this road, but it does provide us with an escape route if required. To date all trips into the Mamquam 6 claim have been done by helicopter and having a nearby escape route is very reassuring.

There are numerous deer, black bears and the occasional cougar in the area. The animals use the roads and trails regularly so caution is advised. In addition, elk that have been introduced to the Indian River watershed have now expanded into

the Mamquam River area. Bull elk can be very aggressive in the fall rutting season and should also be considered dangerous.

However, the most dangerous animals encountered in this area are other humans.

Many people drive the roads quickly and recklessly. Although I'm very careful, I've still had near misses with people on ATV's, motorcycles or other vehicles which were travelling at high speeds on the potholed, slippery gravel roads.

Hunters are another special problem. Many hunters are knowledgeable and safety conscious but there are others who seem to shoot indiscriminately in all directions and these people are a major danger. I've even heard of hunters who shoot at a noise in the bush without seeing what they're firing at. Apparently this is called a sound shot.

In addition to the normal wild black bears that I encounter, conservation officers often release problem bears that have been habituated to humans into this area. For some strange reason the Conservation Service thinks this is a safe place to release dangerous bears. These bears are not afraid of humans and view them as a source of food. Habituated bears are no longer accustomed to foraging in the woods and become very hungry and extremely aggressive. All the habituated bears released to date have been black bears. However, my greatest fear is that one day the Conservation Service will release a grizzly bear into the Indian River or the Mamquam River area without public consultation or warnings.

Most of this claim is covered with soil or glacial till so rock outcrops are scarce. As a result, prospecting has mainly been done by following the stream sediment geochemistry and examining creek beds. Outcrops on or near old logging roads have also been prospected. Nearly all the mineralized rock found to 2005 was float, for which no source has been identified. However, since then low grade disseminated chalcopyrite has been Identified in various outcrops of altered quartz diorite and in silicified andesites. High grade chalcopyrite has also been found in a fracture dilation in the south gully. This high-grade chalcopyrite was found by following float to its source. There are two main rock types found on the property, Gambier Group metamorphosed volcanics that contain rhyolites, andesites, cherts, tuffs and volcaniclastics. There are also intrusive rocks such as quartz diorite and granodiorite.

The two areas of metamorphosed volcanic rocks identified in the early 1980's have been found to be more extensive than previously thought. In addition, there are numerous rhyolite, basalt and some porphyry dykes in the area. These are the same rocks that are associated with the Britannia Mine so the model originally used was a volcanogenic massive sulphide type of mineralization. This model still applies, particularly now that a number of silicified mineralized rocks (float) have been found in the glacial till, which probably derive from a feeder zone. However, as more evidence of disseminated chalcopyrite and mineralized quartz veins are found, other models may also apply.

This report covers a total of 8 geochemical samples, 1 soil sample, 5 sediment samples and 2 rock samples.

To date no massive sulphide, feeder zone, porphyry copper or quartz vein deposit of commercial value has been identified on the Mamquam property.

## **HISTORY OF THE MAMQUAM 6 CLAIM**

A detailed history of the Mamquam property was documented in my 2005 prospecting report. Please refer to that report for a more complete summary. This report on the history will provide only a brief description of the property to the end of 2011.

This property was discovered in 1979 using a dithizone field test combined with stream sediment analyses performed in commercial labs. The original model was a volcanogenic massive sulphide type of deposit similar to that found in the nearby Britannia mine. The highest geochemical values found at that time surrounded hill 1504. This area was thought to contain one or more massive sulphide lenses. This interpretation is still considered valid, and has been strengthened now that other types of mineralized rock have been found that indicate the presence of a feeder zone.

In addition, chalcopyrite disseminated in quartz diorite intrusive rocks has been discovered. The significance of this mineralization is unclear at this time, but disseminated mineralization can occur near massive sulphide lenses or it could be an indicator of a porphyry copper occurrence. The cluster of various sized pieces of rock float that appear to be part of a feeder zone found in or near trail creek contain copper, zinc, lead, gold and silver as well as other indicator elements.

The work performed from 2005 to 2011 has revealed new anomalous areas that have required additional staking as well as more detailed follow-up. The spring, seep and waterfall survey has been very successful in confirming previous results and extending anomalies to new areas. The various soil and bedrock grids have proven to be extremely good for outlining the gassans and better defining the anomalous areas found with stream geochemistry.

Highly anomalous levels of gold have been found in seven separate areas surrounding hill 1504.

On October 6, 2011, Rick Price and I flew by helicopter to a ridge north of our Mamquam claims 1-5. Our plan was to descend to the upper portions of the creeks draining into the Northeast Creek. We knew there was gold in these creeks below and we were interested to explore for more anomalous levels higher up on the slope. We descended into each creek until we found a suitable site for collecting a sediment sample. The samples were labelled "X" for exploration because they were collected outside our claim boundary.

We hiked eastward until we found the first creek and then returned westward sampling every creek we crossed as we headed towards our pick-up site. The weather forecast was for clear sunny weather but the reality was cloud, mist and occasional drizzle that made our day cold, wet and dangerous. We landed above the clouds and then hiked downhill and eastward to our first sample site. We spent almost all of the day in the mist.

### <u>X 21</u> 0504340 E 5500900 N

This sediment sample was taken from the upper portion of a tributary of the northeast creek. The lower portion of the creek passes through the Mamquam 4 claim.

Significant results for X 21:

Au	0.221	ppm
Al	2.61	%
As	18	ppm
Ba	130	ppm
Ca	0.43	%
Cd	0.5	ppm
Со	15	ppm
Cr	15	ppm
Cu	53	ppm
Mg	0.83	%
Mn	1595	ppm
Мо	6	ppm
Ρ	900	ppm
Pb	85	ppm
Sr	29	ppm
Zn	193	ppm

We climbed out of the creek up the west bank and continued westward until we reached the next creek, which also drains through the Mamquam 4 claim into the northeast creek.

#### <u>X 22</u> 0504094 E 5500900 N

This small creek has two branches that come together near a black dike that forms waterfalls in both branches. We used a light rope to descend the eastern waterfall and found some good sediment in the creek below. Our sample was taken from the first gravel bar below the larger, western waterfall. Significant results for X 22:

Au	0.162	ppm
Al	2.03	%
As	4	ppm
Ba	190	ppm
Ca	0.4	%
Cd	0.9	ppm
Со	10	ppm
Cr	8	ppm
Mg	0.87	%
Mn	915	ppm
Мо	2	ppm
Pb	54	ppm
Sr	24	ppm
Zn	140	ppm

We climbed back up the waterfall we had come down, recovered our rope and hiked up the eastern branch of the creek until we could cross the western branch in order to resume our westward track to the next creek.

#### <u>X 23</u> 0503855 E 5500883 N

The next creek to the west had steep banks which I thought we could descend safely, but I slipped and skidded down the slope into the creek dragging a large rock with me. Rick was more careful and managed to make it down without sliding down the rocky bank. Fortunately I was only scraped up a bit and we obtained our sediment sample from a small pool nearby. Significant results for X 23:

Au 0.046 ppm

Al	2.13	%
As	8	ppm
Ва	250	ppm
Be	0.7	ppm

Ca	0.65	%
Cd	3.7	ppm
Со	12	ppm
Cr	10	ppm
Mg	0.76	%
Mn	2170	ppm
Ρ	1110	ppm
Pb	125	ppm
Sr	32	ppm
Zn	207	ppm

Again, we ascended the western bank of the creek and continued westward to the fourth tributary of the northeast creek.

#### <u>X 24</u> 0503720 E 5500900 N

This sediment sample was taken from the next tributary that flows into the northeast creek.

Significant results for X 24:

Au	0.043	ppm
Ag	1.1	ppm
Al	1.66	%
As	9	ppm
Ba 25	50	ppm
Ca	0.45	%
Cd	2.7	ppm
Cr	11	ppm
Mg	0.54	%
Mn 12	275	ppm
Мо	5	ppm
P 74	40	ppm
Pb 4	52	ppm
Sr 2	20	ppm
Zn 2	67	ppm
		F F

We then continued west and turned south once we were in line with a pass between the Northeast Creek and a branch of Raffuse Creek. Occasionally we could see across the Northeast Creek to the steep slopes on the other side, but more often it was foggy so most of our navigating was done using the GPS. We found the pass easily and hiked into a large flat area that was our pick-up site. We arrived about an hour early and had to wait as the sun set behind the mountain behind us, the temperature dropped quickly and the mist got lower and lower. Right on time the helicopter came up Raffuse Creek under the clouds. We loaded quickly and rapidly flew down Raffuse Creek back to Squamish as the clouds continued to thicken and descend above us. That night it poured rain and we were both very thankful that we did not have to stay out there overnight.

Once the analysis results came back with anomalous gold levels in all four creeks, we decided to stake the area as the Mamquam 6 claim on January 9, 2012.









X 2	3 SEDIME	NT 🤇
Au	0.046	ppm
AI	2.13	%
As	8	ppm
Ba	250	ppm
Be	0.7	ppm
Ca	0.65	%
Cd	3.7	ppm
Со	12	ppm
Cr	10	ppm
Mg		%
	2170	ppm
1.18	1110	ppm
	125	ppm
Sr	32	ppm 🖌
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X 22	SEDIMEN	л
Au	0.162	ppm
AI	2.03	%
As	4	ppm
Ba 1	90	ppm
Ca	0.4	%
Cd	0.9	ppm
Со	10	ppm
Cr	8	ppm
Mg	0.87	%
Mn 9	)15	ppm
iMo	2	ppm
Pb	54	ppm
Sr	24	ppm
Zn 1	L40	ppm

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# ANALYSIS RESULTS FOR ALL SAMPLES COLLECTED ON THE MAMQUAM 6 CLAIM PRIOR TO STAKING ON January 9, 2012



### S: MACKENZIE, KEN PO BOX 641 **GARIBALDI HIGHLANDS BC VON 1TO**

Page: 1 Finalized Date: 8- JEC- 2011 This copy reported on 13- DEC- 2011 Account: MACKEN

#### CERTIFICATE VA11241761

Project: D.L.X,M

P.O. No.:

This report is for 22 Sediment samples submitted to our lab in Vancouver, BC, Canada on 16-NOV-2011.

The following have access to data associated with this certificate: KEN MACKENZIE

	SAMPLE PREPARATION	
ALS CODE	DESCRIPTION	
WEI- 21	Received Sample Weight	
LOG- 22	Sample login - Rcd w/o BarCode	
SCR- 41	Screen to - 180um and save both	× .
	ANALYTICAL PROCEDUR	ES
ALS CODE	DESCRIPTION	INSTRUMENT
Au- AA23	Au 30g FA- AA finish	AAS
ME- ICP41	35 Element Aqua Regia ICP- AES	ICP- AES

To: MACKENZIE, KEN PO BOX 641 GARIBALDI HIGHLANDS BC VON 1TO

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.



Colin Ramshaw, Vancouver Laboratory Manager



ALS Canada Ltd.

2103 Dollarton Hwy North Vancouver 8C V7H 0A7

Phone: 604 984 0221 Fax: 604 984 0218 www.alsglobal.com

#### To: MACKENZIE, KEN PO BOX 641 GARIBALDI HIGHLANDS BC VON 1TO

#### Page: 2 - A Total # Pages: 2 (A - C) Finalized Date: 8- DEC- 2011 Account: MACKEN

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Project: D.L.X,M

Method Analyte Sample Description   WE+ 21 Units UNIS LOR   Au-AA23 WE-ICP41   ME-ICP41 ME-ICP41   ME-ICP41 As   ME-ICP41 B   ME-ICP41 B <th>4E-1CP41 ME-1CP41 Cu Fe ppm % 1 0.01</th>	4E-1CP41 ME-1CP41 Cu Fe ppm % 1 0.01
X·21 0.66 0.221 <0.2	
X-24 0.66 0.043 1.1 1.66 9 <10 250 <0.5 <2 0.45 2.7 8 11	53 2.77 16 2.45 24 2.14
	37 3.01

ALS Canada Ltd.

(ALS)

Minerals

2103 Dollarton Hwy North Vancouver BC V7H 0A7 Phone: 604 984 0221 Fax: 604 984 0218 www.alsglobal.com

#### J: MACKENZIE, KEN PO BOX 641 GARIBALDI HIGHLANDS BC VON 1TO

je: 2 - B Total # Pages: 2 (A - C) Finalized Date: 8- DEC- 2011 Account: MACKEN

Project: D.L.X,M

Minera	IS								Ĺ	C		CATE O	F ANAL	YSIS	VA112	41761	
Sample Description	Method Analyte Units LOR	ME- ICP41 Ga ppm 10	ME- ICP41 Hg ppm 1	ME- ICP41 K % 0.01	ME-ICP41 La ppm 10	ME- ICP41 Mg % 0.01	ME- ICP41 Mn ppm S	ME-ICP41 Mo ppm 1	ME- ICP4 1 Na % 0.01	ME- ICP41 Ni ppm 1	ME- ICP41 P ppm 10	ME- ICP41 Pb ppm 2	ME- ICP41 S % 0.01	ME- ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1	ME- ICP4 Sr ppm 1	
X-21 X-22 X-23		10 10 10	1 <1 <1	0.08 0.07 0.0 <del>6</del>	10 10 10	0.83 0.87 0.78 0.54	1595 915 2170	6 2 1 5	0.01 0.01 0.01	13 6 8 8	900 870 1110 740	85 54 125 452	0.03 0.02 0.07	42 42 42 42 42 42 42 42 42 42 42 42 42 4	2 1 2 2	29 24 32 20	
X- 24		<10	<1	0.05	10	U,64	1275	5	0.01		740	+02	0.04	- <b>-</b>	-	••	
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ALS) Minerals

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ALS Canada Ltd. 2103 Dollarton Hwy North Vancouver BC V7H 0A7 Phone: 604 984 0221 Fax: 604 984 0218 www.alsglobal.com S: MACKENZIE, KEN PO BOX 641 GARIBALDI HIGHLANDS BC VON 1TO

#### je: 2 - C Total # Pages: 2 (A - C) Finalized Date: 8- DEC- 2011 Account: MACKEN

Project: D.L.X,M

Minerals						CERTIFICATE OF ANALYSIS	VA11241761			
Sample Description	Method Analyte Units LOR	ME- ICP41 Th ppm 20	ME- ICP41 Ti % 0.01	ME- ICP41 Ti ppm 10	ME- ICP41 U ppm 10	ME-ICP41 V ppm 1	ME- ICP41 W ppm 10	ME-ICP41 Zn ppm 2		
X- 21 X- 22 X- 23		<20 <20 <20	0.04 0.02 0.01	<10 <10 <10	<10 <10 <10	37 24 29	<10 <10 <10	193 140 207		
X- 24		<20	0.02	<10	<10	30	<10	287		
						· .				

## SUMMARY OF WORK PERFORMED ON THE MAMQUAM 6 CLAIM IN 2012

On September 8, 2012, Rick Price and Rainer Schwarz flew by helicopter to the Mamquam 6 claim, they landed in an open area to the southwest of hill 1526 and hiked to the creek that we had previously sampled as X 21. A repeat sample was taken as M 264.

#### <u>M 264</u> 0504333 E 5500913 N

A sediment sample was taken from this creek that was very difficult to obtain. The creek bed was almost dry and no pool with fine sediment in gravel could be found so the sample was taken from on or below the rocks lying in the creek bed. Two errors were made while collecting the sample. The first error was the location. We had previously sampled just below this site on October 6, 2011. The plan was to pass by this creek and sample the next one to the east. The second error occurred as we emptied the gold pan of the sediments collected. A slip was made and the heavy material in the bottom of the pan was lost. More material amounting to about one third of the previous sample was screened and saved, but this probably doesn't make up for the lost heavy minerals and metals.

Significant results for M 264:

Au	0.083	ppm
Al	2.25	%
As	8	ppm
Ba 1	50	ppm
Ca	0.5	%
Cd	0.9	ppm
Mn 12	240	ppm
Мо	8	ppm
P 9	10	ppm
Pb	77	ppm
Sr	29	ppm
Zn 2	48	ppm

Rainer and Rick then headed eastward to the next small creek.

#### <u>M 265</u> 0504682 E 5500985 N

This sediment sample was obtained from the next creek to the east. The stream was of moderate size with no canyon or steep walls. No difficulties were experienced.

Significant results for M 265:

0.062	ppm
0.4	ppm
2.12	%
5	ppm
260	ppm
0.53	%
3.8	ppm
1555	ppm
14	ppm
940	ppm
212	ppm
38	ppm
188	ppm
	2.12 5 260 0.53 3.8 1555 14 940 212 38

<u>M 266</u> 0505068 E 5501189 N

We continued contouring around the mountain to the east and found another small creek that ran through a swampy area in the meadows. We could see the edge of the forest not far below that marked the upper edge of the previous logged area.

Significant results for M 266:

Al	2.04	%
Ва	120	ppm
Ca	0.58	%
Mg	0.94	%
Ρ1	250	ppm
Pb	45	ppm
Sr	43	ppm

Once again we headed eastward around the mountain until the next small creek was found.

#### <u>M 267</u> 0505051 E 5501366 N

At this site we found another small creek that was partly dry. It was difficult to obtain a sediment sample, but one was found by exercising diligence and hard work. The bedrock nearby was quartz diorite.

Significant results for M 267:

Au	0.005	ppm
Al	3.93	%
As	7	ppm
Ва	230	ppm
Be	0.6	ppm
Са	1.88	%
Cd	1.9	ppm
Mn	2230	ppm
Ρ	1650	ppm
Pb	31	ppm
Sr	116	ppm
Zn	94	ppm

<u>M 268</u> 0504721 E 5501602 N

Further to the east there was a larger creek with rocky banks, more rock float and a steady water flow. A good sediment sample was obtained and some of the rock float was examined and carried back to Squamish (but none was sampled). The rock float consisted of quartz diorite with or without pyrite, and a piece of light coloured, fine-grained dyke rock with finely disseminated pyrite. The dyke was also porphyritic with small black phenocrysts seen in the matrix. Significant results for M 268:

Au	0.007	ppm
As	3	ppm
Ba	100	ppm
Са	0.39	%
Mn	801	ppm
Ρ	950	ppm
Pb	22	ppm

Sr	31	ppm
Zn	88	ppm

After collecting this sample we prospected uphill to the top of hill 1526 which was our pick-up site. We did not have enough time to examine this area thoroughly but did note a number of dykes cutting through the rocks. The helicopter arrived on time in clear weather and the flight back was easy and enjoyable. However, as soon as the helicopter took off we saw fresh logging with a new road high on the ridge to the north. The road appeared close to our northern boundary and we thought it could provide quick and easy access to the property.

On September 10, 2012, I drove to the 9 mile bridge (approximately 13 kilometres) and waited until an empty logging truck came to ascend the road. My radio was not working so I travelled behind the logging truck, pulling off the road when he did in order to let loaded logging trucks pass by safely. I followed the truck until it reached the loading area, but I soon realized that I was not on the road we had seen from the helicopter so I descended to where I had passed another pickup truck parked below.

The site supervisor was there and he told me that the other branch took off from the main road just below us and that no loaded logging trucks were coming downhill from their other work site on the opposite side of the ridge. I drove over there, parked well below the work area and hiked through the work site. Once beyond the danger zone I continued a further kilometer up a good road to its end. I took a GPS reading at the end of the road, looked for the best way to build a trail to our Mamquam 6 claim and then headed back along the road taking GPS readings on the way down to my truck .While driving downhill, I continued taking readings at major switchbacks, junctions and the gate until I reached the 9 mile bridge.

On arriving home I plotted the new road on a 1:20,000 map, (NAD 83) so we could find the best route to the claim.

On our second helicopter traverse to the claim, Rick Price, Richard Scott and I flew back to the same area on September 14, 2012. We landed on a lower ridge near 1449 and then prospected the float and outcrop above the cliffs. The rock was a mixture of andesite and altered quartz diorite. The quartz diorite was the main rock found and it showed chlorite alteration of the mafic minerals as well as quartz-epidote alteration of the felsic minerals. Quartz and/or epidote veins were

26.

occasionally present but no significant sulphides were found. We then contoured to the west of hill 1526 where we found a small stream that seeped from the hillside. We sampled the wet soil of the spring.

### <u>M 272</u> 0503824 E 5501363 N

This was a wet soil sample obtained from a spring on the west side of hill 1526. The soil was a medium brown with small roots present. The sample was taken from a hole about 15 centimetres deep.

Significant results for M 272:

Ag	0.4	ppm
Al	4.4	%
As	63	ppm
Ba	340	ppm
Be	1.3	ppm
Ca	0.68	%
Со	19	ppm
La	40	ppm
Mn	2910	ppm
Mo	6	ppm
<b>P</b> :	1780	ppm
Pb	14	ppm
Sr	26	ppm

We continued contouring around the hill and then hiked onto the top where we found various dykes cutting through the rocks. The largest dyke was coloured a light gray and was fractured into thin sections that broke easily. It appeared to be a recent dyke and no sulphides were found. Two other iron-stained dykes were examined and sampled. They were composed of andesite with variable amounts of pyrite.

#### <u>M 273</u> 0503929 E 5501665 N

This bedrock sample was from an iron-stained dyke found on the flat area near the top of hill 1526. It was difficult to find fresh rock, but ultimately we were able to get through the weathered material and found a good sample. There was pyrite in the fractures and disseminated throughout the rock, which was also cut by the occasional small quartz vein. Significant results for M 273:

Ag	0.2	ppm
Al	2.27	%
As	41	ppm
Bi	2	ppm
Ca	0.63	%
Fe	6.92	%
Mg	1.14	%
Mn S	ppm	
Mo	22	ppm
P 1!	540	ppm

<u>M 274</u> 0503856 E 5501531 N

Another rusty dyke was found to the south on a small ridge. A good sample of fresh rock was obtained fairly easily. The rock was an andesite that contained pyrite in the fractures and disseminated in the rock.

Significant results for M 274:

Al	1.81	%
As	15	ppm
Fe	4.24	%
Sb	3	ppm





#### CONCLUSION

The Mamquam 6 claim has been shown to have anomalous levels of gold in seven out of eight creeks measured to date. The highest gold levels are in the five creeks that lie to the south of hill 1449 and hill 1526. The strike length of the gold anomaly found in these five creeks is over one kilometre. Although these creeks drain the base areas of hills 1449 and 1526, the source of the gold does not appear to be the upper rocks that outcrop on the two hills.

Other anomalous indicator elements include cadmium, lead, zinc, manganese and molybdenum. The highest cadmium level was found in sample M 265 (3.8 ppm), the highest lead (452 ppm) and zinc (267 ppm) levels occurred in sample X 24, the highest manganese (2910 ppm) was in sample M 272 and the highest molybdenum (22 ppm) was found in M 273.

The copper levels measured on this claim were unexpectedly low with only sample X 2.1 showing an anomalous level (53 ppm). These results are unusual because the other Mamquam claims frequently return high copper levels.

It is clear that more exploration is required in order to better define the anomalies discovered on this claim.

## MAMQUAM 6 PROSPECTING REPORT ITEMIZED COST STATEMENT FOR 2012

#### SCHEDULE

FOOD COSTS/PERSON/DAY VEHICLE TO MAMQUAM	\$15.00 \$125.00	
VEHICLE TO VANCOUVER PROSPECTORS/DAY		\$70.00 \$550.00
PROSPECTORS/DAT		\$550.00
ROAD A	ND TRAIL CLEARING (PRORATED)	
PROSPECTORS 3.94	4 DAYS @ \$550	\$2,167.00
VEHICLE 3.5	7 TRIPS @ \$125	\$446.25
FOOD 3.94	4 DAYS @ \$15	\$59.10
	PROSPECTING EXPENSES	
PROSPECTORS 5 D	AYS @ \$550	\$2,750.00
HELICOPTER 8-S	EP-2012	\$1,007.00
HELICOPTER 14-	SEP-2012	\$881.22
SAMPL	ES TO ALS-NORTH VANCOUVER	
<b>1 TRIP PRORATED FOR THE N</b>	UMBER OF SAMPLES:	
PROSPECTOR 0.5	DAY @ \$550 x 0.24	\$132.00
VEHICLE 1 TI	RIP @ \$70 x 0.24	\$16.80
	REPORT PREPARATION	
2012 PROSPECTING REPORT	5.875 DAYS @ \$550	\$3,231.25
	OTHER EXPENSES	
ANALYSES 9-OCT-2012	8 @ \$36.64	\$293.12
STAKING FEES	9-JAN-2012	\$200.74
PHOTOCOPIES	NOV-DEC-2012	\$11.38
TOTAL		\$11,195.86

# **APPENDIX A**

# **AUTHOR'S QUALIFICATIONS**

# K.R. MacKenzie, B.Sc., M.D.

Dr. MacKenzie is a retired physician who graduated from the University of British Columbia in 1963 with a B.Sc. in Chemistry and Mathematics. Geology 105 was taken as part of his undergraduate studies. He spent three summers working for the Geological Survey of Canada under Dr. J.O. Wheeler. After graduating from U.B.C. in 1968 with a medical degree, Dr. MacKenzie continued to prospect as a hobby and after retiring from Medicine in 1998, the prospecting hobby evolved into a business venture.

#### Recent reading by the author includes:

THE ROCKS AND MINERALS OF THE WORLD by C. Sorrell and G. Sandstrom

**EXPLORATION AND MINING GEOLOGY** by William C. Peters

ORE DEPOSITS by C.F. Park and R.A. MacDiarmid

A FIELD GUIDE TO ROCKS AND MINERALS by Pough

THE GEOCHEMISTRY OF GOLD AND ITS DEPOSITS by R.W. Boyle

CASE HISTORIES OF MINERAL DISCOVERIES, VOLUME 3, PORPHYRY COPPER, MOLYBDENUM AND GOLD DEPOSITS, VOLCANOGENIC DEPOSITS (MASSIVE SULPHIDES), AND DEPOSITS IN LAYERED ROCK by V.F. Hollister, Editor

PORPHYRY COPPER AND MOLYBDENUM DEPOSITS; WEST-CENTRAL B.C. by N.C. Carter

GEOLOGY OF THE PORPHYRY COPPER DEPOSITS OF THE WESTERN HEMISPHERE by Victor F. Hollister

ATLAS OF ALTERATION by A.J.B. Thompson and J.F.H. Thompson, Editors

ORE MINERAL ATLAS by Dan Marshall, C.D. Anglin and Hamid Mumin

PORPHYRY DEPOSITS OF THE CANADIAN CORDILLERA by A. Sutherland Brown, Editor

THE GEOLOGY OF ORE DEPOSITS by John M. Guilbert and Charles F. Park, Jr.

GEOCHEMISTRY OF HYDROTHERMAL ORE DEPOSITS by H.L. Barnes

**GEOCHEMISTRY** by Arthur H. Brownlow

FIELD GEOPHYSICS by John Milsom

XXIV INTERNATIONAL GEOLOGICAL CONGRESS; COPPER AND MOLYBDENUM DEPOSITS OF THE WESTERN CORDILLERA by C.S. Ney and A. Sutherland Brown

PRINCIPLES OF GEOCHEMICAL PROSPECTING by H.E. Hawkes

GEOCHEMICAL EXPLORATION by R.W. Boyle and J.I. Mcgerrigle

THE ELEMENTS by John Elmsley

<u>GREAT MINING CAMPS OF CANADA 5. BRITANNIA MINES, BRITISH COLUMBIA</u> Geoscience Canada, September 2011, Volume 38 Number 3. By W.G. Smitheringale **APPENDIX B** 

# ANALYSIS RESULTS FOR ALL SAMPLES

## **COLLECTED ON THE MAMQUAM 6 CLAIM**

**DURING 2012** 



#### P: MACKENZIE, KEN PO BOX 641 GARIBALDI HIGHLANDS BC VON 1T0

#### CERTIFICATE VA12230333

Project: M

P.O. No.:

This report is for 9 Rock samples submitted to our lab in Vancouver, BC, Canada on 29-SEP-2012.

The following have access to data associated with this certificate:

KEN	MAC

	SAMPLE PREPARATION	
ALS CODE	DESCRIPTION	
WEI-21	Received Sample Weight	
LOG-22	Sample login - Rcd w/o BarCode	
CRU-31	Fine crushing – 70% <2mm	
SPL-21	Split sample – riffle splitter	
PUL-31	Pulverize split to 85% <75 um	
	ANALYTICAL PROCEDURES	
	DECOURTION	INICTRUMENT

ALS CODE	DESCRIPTION	INSTRUMENT	
ME-ICP41	35 Element Aqua Regia ICP-AES	ICP-AES	
Au-AA23	Au 30g FA–AA finish	AAS	

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To: MACKENZIE, KEN PO BOX 641 GARIBALDI HIGHLANDS BC VON 1T0

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.



Colin Ramshaw, Vancouver Laboratory Manager



o: MACKENZIE, KEN PO BOX 641 GARIBALDI HIGHLANDS BC VON 1T0 Page: 2 – A Total # 1 ;: 2 (A – C) Finalized Date: 9-OCT-2012 Account: MACKEN

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Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt. kg 0.02	Au-AA23 Au ppm 0.005	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1	ME-ICP41 Fe % 0.01
M-273 M-274		1.00 1.24	<0.005 <0.005	0.2 <0.2	2.27 1.81	41 15 .	<10 <10	50 90	<0.5 <0.5	2 <2	0.63 0.22	<0.5 <0.5	4 4	3 3	36 15	6.92 4.24
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1–273 1–274		10 10	<1 <1	0.19 0.26	10 10	1.14 0.61	917 575	22 <1	0.04 0.05	<1 2	1540 470	9 9	2.31 0.93	<2 3	2 2	14 12
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ample Description	Method Analyte Units LOR	ME-ICP41 Th ppm 20	ME-ICP41 Ti % 0.01	ME-ICP41 Tl ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2	
N-273 N-274		<20 <20	0.02 <0.01	<10 <10	<10 <10	33 21	<10 <10	50 32	
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#### ነ: MACKENZIE, KEN PO BOX 641 GARIBALDI HIGHLANDS BC VON 1T0

#### CERTIFICATE VA12230334

#### Project: M

P.O. No.:

This report is for 10 Sediment samples submitted to our lab in Vancouver, BC, Canada on 29-SEP-2012.

The following have access to data associated with this certificate:

	SAMPLE PREPARATION	
ALS CODE	DESCRIPTION	
WEI-21	Received Sample Weight	
LOG-22	Sample login – Rcd w/o BarCode	
SCR-41	Screen to -180um and save both	
	ANALYTICAL PROCEDUR	ES
ALS CODE	DESCRIPTION	INSTRUMENT
Au-AA23	Au 30g FA–AA finish	AAS
ME-ICP41	35 Element Aqua Regia ICP-AES	ICP-AES



To: MACKENZIE, KEN PO BOX 641 GARIBALDI HIGHLANDS BC VON 1T0

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

Signature:

Colin Ramshaw, Vancouver Laboratory Manager

): MACKENZIE, KEN PO BOX 641

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ALS Canada Ltd. 2103 Dollarton Hwy North Vancouver BC V7H 0A7 Phone: 604 984 0221 Fax: 604 984 0218 www.alsglobal.com

(ALS)

Minerals

Project: M

CERTIFICATE	OF A	NALYSIS	VA12230334

Sample Description	Method Analyte Units LOR	WEI-21 Recvd Wt. kg 0.02	Au-AA23 Au ppm 0.005	ME-ICP41 Ag ppm 0.2	ME-ICP41 Al % 0.01	ME-ICP41 As ppm 2	ME-ICP41 B ppm 10	ME-ICP41 Ba ppm 10	ME-ICP41 Be ppm 0.5	ME-ICP41 Bi ppm 2	ME-ICP41 Ca % 0.01	ME-ICP41 Cd ppm 0.5	ME-ICP41 Co ppm 1	ME-ICP41 Cr ppm 1	ME-ICP41 Cu ppm 1	ME-ICP41 Fe % 0.01
M-264 M-265 M-266 M-267 M-268		1.60 1.50 1.52 1.44 1.68	0.083 0.062 <0.005 0.005 0.007	0.2 0.4 <0.2 <0.2 <0.2	2.25 2.12 2.04 3.93 1.43	8 5 2 7 3	<10 <10 <10 <10 <10	150 260 120 230 100	0.5 0.5 <0.5 0.6 <0.5	<2 <2 <2 <2 <2 <2 <2	0.50 0.53 0.58 1.88 0.39	0.9 3.8 <0.5 1.9 <0.5	11 9 9 8 7	9 5 6 3 5	27 30 22 12 17	2.59 1.91 2.17 2.13 1.80
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Sample Description	Method Analyte Units LOR	ME-ICP41 Ga ppm 10	ME-ICP41 Hg ppm 1	ME-ICP41 K % 0.01	ME-ICP41 La ppm 10	ME-ICP41 Mg % 0.01	ME-ICP41 Mn ppm 5	ME-ICP41 Mo ppm 1	ME-ICP41 Na % 0.01	ME-ICP41 Ni ppm 1	ME-ICP41 P ppm 10	ME-ICP41 Pb ppm 2	ME-ICP41 S % 0.01	ME-ICP41 Sb ppm 2	ME-ICP41 Sc ppm 1	ME-ICP41 Sr ppm 1
M-264 M-265 M-266 M-267 M-268		10 10 10 10 <10	1 1 <1 1 <1	0.07 0.05 0.04 0.09 0.04	10 10 10 10 <10	0.79 0.59 0.94 0.65 0.77	1240 1555 588 2230 , 801	8 14 <1 1 1	0.01 0.01 0.01 0.01 0.01	8 4 5 5 3	910 940 1250 1650 950	77 212 45 31 22	0.05 0.06 0.02 0.04 <0.01	<2 <2 <2 <2 <2 <2 <2	2 1 3 1 1	29 38 43 116 31
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Sample Description	Method Analyte Units LOR	ME-ICP41 Th ppm 20	ME-ICP41 Ti % 0.01	ME~ICP41 Ti ppm 10	ME-ICP41 U ppm 10	ME-ICP41 V ppm 1	ME-ICP41 W ppm 10	ME-ICP41 Zn ppm 2		
M-264 M-265 M-266 M-267 M-268		<20 <20 <20 <20 <20 <20	0.03 0.02 0.10 0.04 0.04	<10 <10 <10 <10 <10	<10 10 <10 <10 <10	32 27 43 21 26	<10 <10 <10 <10 <10	248 188 95 94 88		
M-272		<20	0.03	<10	<10	26	<10	48		
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