

BC Geological Survey  
Assessment Report  
31369

**DAHROUGE GEOLOGICAL CONSULTING**

**2009 EXPLORATION AND FIELDWORK  
ON THE ATLIN CLAIMS**

Atlin Mining Division

Claims:  
ATN 1-11

Geographic Coordinates  
Cover Area From:  
59° 36' to 59°30' N  
133° 42' to 133°12' W

NTS Sheets 104N/5, 6, 11 and 12

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## **1. INTRODUCTION**

The placer claims which are the subject of this report are registered to Jody Dahrouge. They were acquired through Mineral Titles Online between February 4, 2009 and February 9, 2009. 877384 Alberta Ltd. is the operator of the claims and has commissioned Dahrouge Geological Consulting Ltd. (Dahrouge) to conduct exploration for economic placer gold deposits. There are currently eleven, mostly non-contiguous, placer claims in the Atlin Property that cover an area of 3,198 ha. In September 2009, a four man exploration crew completed a prospecting program and collected a total of thirty-nine stream sediment samples. This report will discuss the results of the 2009 exploration program and give a brief interpretation of the results.

A statement of work (Event No. 4467789) has been filed with respect to the exploration described in this report. The total assessment credit has been proportionally divided among the eleven, mostly non-contiguous, claims.

### **1.1 GEOGRAPHIC SETTING**

#### **1.1.1 Location and Access**

The Atlin claims are located on the east side of Atlin lake, within 9 to 28 km from the Atlin community.

Atlin, with a population of around 400, is about 115 km south south-east of Whitehorse, YK along the eastern shore of Atlin lake. It can be accessed by driving south on the Atlin Highway (Highway 7), which forms an intersection with the Alaskan Highway (Highway 1). The economy of the region is mainly driven by mining and exploration. Tourism, fishing and heli-skiing are also major contributors. Due to the long history of placer gold production in the area, each claim in the property has relatively well-developed access.

Claims ATN 8 and ATN 7 can be reached by driving north from Atlin on Highway 7 for approximately 10 km, followed by turning east onto Ruffner Mine Road (Fig.1.3). This road can be followed for roughly 13.5 km, at which point an ATV trail can be used to reach the claim boundaries.

ATN 4 can be reached by following Surprise Lake Road for 19 km, at which point it is accessible by ATV or hiking.

Claims ATN 1, ATN 6, ATN 10, ATN 11, ATN7 and ATN 5 can be reached by following Surprise Lake Road for 5.5 km, then turning southeast on Spruce Creek Road and driving 5 km, 7 km, 11.5

km, 13.5 km, 15 km and 20 km respectively. At this point, the claims can be accessed by ATV or hiking. ATN 2 and ATN 3 can be accessed by truck by following O'Donnel Road south for 32 km and 15.5 km respectively. Road use is not restricted in the area but caution should be exercised due to narrow back roads.

### 1.1.2 Topography, Vegetation and Climate

The topography in the Atlin region consists of rolling hills that slope into U-shaped valleys. Higher elevations reveal semi-rugged mountainous terrains. The elevation of the area varies from 700 m to 1,700 m above sea level. Elevations below 1,400 m play host to multiple types of forest vegetation, such as lodgepole pine, black spruce, scrub birch and aspen. At elevations higher than 1,400 m, the main vegetation is stunted grass and buck brush. In the valleys, mountain alder and willows are common in areas with well-developed drainage.

The Atlin area is characterized by long winters and short summers. Winter conditions are expected from the end of October to the end of April with an average precipitation of 220 mm and an average temperature of -20°C. The summer season has an average temperature of 20°C to 25°C. During the summer months there is considerably less precipitation, averaging around 120 mm.

## 1.2 PROPERTY

The Atlin claims consist of 11 individual, mostly non-contiguous claims (Table 1.1, Fig. 1.3) with a total area of 3198.344 ha. The claims were acquired through Minerals Titles Online by Jody Dahrouge and 877384 Alberta Ltd. during the period of February 4, 2009 to February 9, 2009.

**TABLE 1.1: LIST OF ATLIN CLAIMS**

<b>Tenure Number</b>	<b>Claim Name</b>	<b>Issue Date</b>	<b>Current Expiry Date</b>	<b>Area (ha)</b>
598717	ATN1	2009/Feb/04	2010/Feb/04	163.9703
598719	ATN 2	2009/Feb/04	2010/Feb/04	395.9568
598723	ATN 3	2009/Feb/04	2010/Feb/04	246.7204
598724	ATN 4	2009/Feb/04	2010/Feb/04	81.7404
598725	ATN 5	2009/Feb/04	2010/Feb/04	411.1301
598806	ATN 6	2009/Feb/06	2010/Feb/06	180.4834
598807	ATN 7	2009/Feb/06	2010/Feb/06	147.8187
598808	ATN 8	2009/Feb/06	2010/Feb/06	391.4985
598809	ATN 9	2009/Feb/06	2010/Feb/06	407.6805
598935	ATN 10	2009/Feb/09	2010/Feb/09	393.8249
598936	ATN 11	2009/Feb/09	2010/Feb/09	377.52

### **1.3 HISTORY AND PREVIOUS INVESTIGATIONS**

The Atlin area has been a hub for placer gold exploration and mining for over a hundred years. Hand mining began in the Atlin area in 1898 with the first discovery of yellow gravel, which is often associated with gold mineralization. Surface mining continued until 1903 when the shallow gravel was mined out. Hydraulic and underground mining techniques were then used to recover auriferous pay gravel deposits discovered below 100 feet of sand, gravel and till. Mining in the area slowed substantially in the late 1940's and only sporadic exploration and development has occurred since.

Pay gravels in the Atlin area are of unusually high grade, probably due to the primary source of gold (bedrock) being high grade. In addition, the area seems to have been subjected to extended periods of steady uplift, which is needed in order to concentrate gold at the bottom of creeks. Rich pay gravels horizons usually occur within narrow U-shaped bedrock channels that are often aligned with some sort of tectonic feature. The failure to recognize the U-shaped channel often means the channel has not been fully explored or identified (Kierans, 1984).

Almost all productive creeks in the Atlin camp are underlain by Cache Creek Terrane "Gold Series" rocks, which are further described in Section 3. Shear zones with quartz-hosted gold mineralization can also be a significant source of primary gold; other primary sources may include pyritized and/or argillized alteration zones. The gold particle shape and relative coarseness illustrate a short travel distance from the source; as much of the Atlin gold is notably coarse, it is widely agreed that the bedrock in the Atlin area is locally highly auriferous. A brief summary on the placer mining activity on the major creeks/rivers within/near the Atlin claims is provided below.

#### **1.3.1 Spruce Creek**

Spruce Creek is 23 km long and is one of the largest placer producers in the Atlin camp. It flows west and joins Pine Creek about 4 km east of Atlin. Historic work has been focused in a band near it's midpoint; workings further upstream have tended to be smaller and less successful.

The creek is predominantly underlain by Nakina Formation mafic volcanic rocks and minor exposures of Kedahda Formation at its northern and southern-most point. These lithologies are included in the "Gold Series" mentioned above.

Underground development in the early 1900's led to the majority of the Spruce Creek gold discoveries. Black (1953) reported that, as a rule, the Spruce Creek deposits were richer than

other creeks in the Atlin camp but were covered by a greater thickness of glacial overburden. As a result, the area was predominantly developed using underground methods; hydraulic and surface mining methods were attempted on several occasions, but most ended in failure. The slower pace and higher grades of the deposits allowed miners to work on Spruce Creek for extended periods of time, leading to large production numbers. Two pay channels, the “red” and the “grey” have been identified at Spruce Creek. The red channel sits on the bedrock and is richest at an interval of 1.8 to 2.4 m above bedrock. From 1896 to 1945 it was reported that approximately 7,926,848 grams (254,854 oz) of gold were recovered, making it the largest producer until 1956, when it was surpassed by Pine Creek.

Claims ATN 1, 6, 7, 10, and 11 are all located within a kilometre of the main channel. They are also prospective for the identification of new and/or under-worked channels due to their location along low-lying areas and tributaries.

### **1.3.2 McKee Creek**

McKee Creek is located roughly 6 km southeast of Atlin. It is approximately 12 km in length and drains into Atlin lake at its western end. The creek is primarily underlain by the mafic volcanics of the Nakina Formation; these rocks are included in the “Gold Series” mentioned above. A northeast-trending shear is also believed to exist along McKee Creek, which could also be a source of gold in the placer deposits along the creek. The present-day McKee Creek channel apparently follows this shear, although it has been suggested that auriferous “old channel” diverges at some point (Kierans, 1984). The McKee Creek channel does not fit into the classic “u-shaped channel” described above, although Kierans (1984) suggests that this is simply the result of the main channel not being clearly located and/or defined.

Yellow gravel was first discovered in McKee Creek in 1898 and by 1903 most of the surface gravel had already been mined out; hydraulicking and underground mining were then utilized to mine beneath approximately 100 feet of glacial/fluviol sediments. The creek was mined almost continuously using these methods until 1946. From 1898 to 1945 there have been a reported 1,369,123 grams (44,018 oz) of gold recovered from McKee Creek, making it the 5<sup>th</sup> largest producer in the Atlin area. Additional exploration was performed on McKee Creek in the 1960's, 70's and 80's, however no significant production was recorded. These projects generally focussed on identifying additional channels and deposits, or the “old channel” mentioned above.

The bulk of placer mining on McKee Creek has occurred within a kilometre to the east and northeast of ATN 3, however the eastern parts of the claim have seen significant historic exploration and development and remain highly prospective, although likely at greater depths.

### **1.3.3 Birch Creek**

Birch Creek is a major tributary of Pine Creek and is located approximately 2 km west of Surprise Lake and 15 km northeast of Atlin. The creek is approximately 9 km long and was worked primarily in a 3.5 to 4 km band starting approximately 1 km north of its intersection with Pine Creek. The creek is underlain along its entire length by mafic volcanics of the Nakina Formation and ultramafic rocks belonging to the Atlin Intrusives, except for the northeastern portion, which is very near the contact with the Surprise Lake Batholith. The upper parts of the creek are underlain by some altered limestone, which probably belong to the Kedahda Formation. As with most creeks in the camp, the upper 1.8-2.4 m above bedrock were processed with excellent results. From 1896 to 1945 it was reported that approximately 386,859 grams (12,438 oz) of gold were removed, accomplished mainly by hydraulic mining methods. Birch Creek is known in the Atlin camp for its unusually coarse gold and was the camp's 8<sup>th</sup> largest producer.

Nearly all of the placer mining along Birch Creek has occurred approximately 1 km to the east, within the main channel. As ATN 4 covers higher elevations with only limited thicknesses of quaternary deposits, this claim is probably the least prospective of the claim group.

### **1.3.4 O'Donnel River**

The O'Donnel river is about 40 km long and empties into Atlin Lake. It is approximately 35 km southeast of Atlin and is accessible by a road leading to the abandoned town of O'Donnel. The river is underlain by the clastic sedimentary rocks of the Kedahda Formation and the carbonates of the Horsefeed Formation. There are no known lode deposits in area.

The first discovery of gold in the area was in 1898, but little to no work was done along the river until 1913. At this time, a 3-5 m thick pay streak was discovered above the riverbed; it was worked thoroughly for the next 7 years utilizing both underground and hydraulic techniques. It was reported that approximately 200,770 grams (6,455 oz) of gold were recovered from 1898 to 1945. Recent work includes seismic surveys in the 1970's, however no development or mining has occurred since 1945.

ATN 5 is located approximately 12 km northeast (upstream) from the main historic placer workings along O'Donnel River. There is little information on the O'Donnel River in this area, however, the claim is located at the confluence of Bull Creek, which was reported to have produced over 40,000 grams of gold.



### **1.3.5 Slate (Wilson) Creek**

Slate Creek flows south into O'Donnel River and is located approximately 27 km southeast of Atlin. The creek is approximately 19 km long and has been primarily worked near the midpoint. The creek is mostly underlain by clastic sedimentary rocks of the Kedahda Formation, however to the northwest the creek is underlain by the mafic volcanic flows of the Nakina Formation.

Gold was first discovered in the area in 1898, but the creek remained unworked until 1905. From 1905 to 1921 the creek was worked continuously; it was reported that from 1906 to 1940 there were approximately 48,863 grams (1,571 oz) of gold recovered. There has been very little placer exploration on Slate Creek in recent history.

ATN 2 is located approximately 3 km to the southwest (downstream) in the main channel from the focal point of historic exploration along Slate Creek and is therefore considered highly prospective for the potential of identifying additional pay channels.

### **1.3.6 Volcanic Creek**

Volcanic Creek is about 5 km long and flows west into Fourth of July Creek, which eventually empties into Atlin Lake. The creek is located approximately 25 km northeast of Atlin and is almost entirely underlain by the granites of the 4<sup>th</sup> of July Batholith (Three Sisters Plutonic Intrusion), although portions of its eastern margins cross over into the Kedahda and Nakina Formations. In at least one location the contact between these two units is overprinted by a Tertiary basaltic flow, which are common along Ruby Creek.

Only minor prospecting and development was done from 1901 to 1932. It was reported that approximately 4,820 grams (155 oz) of gold were recovered from 1901 to 1920 and the area has been only sporadically explored since. However, it has been reported that there are extensive fluvial channels overlain by basaltic flows in the area that are similar to those found along Ruby Creek, one of the highest producing placer deposits in the Atlin Camp. Volcanic Creek is relatively underexplored compared to other creek valleys in the area.

Claims ATN 8 and 9 are located near the intersection of Volcanic Creek and Fourth of July Creek. Considering the geology near the headwaters of Volcanic Creek and reports of fluvial channels buried by lava flows, these claims have excellent potential.

## **1.4 PURPOSE OF WORK**

The work that has taken place with regards to this report was undertaken in order to provide information on the presence and quantity/quality of placer gold within the Atlin claims. In addition, the ICP analyses were completed to test for the presence of not only gold, but economic quantities of silver and tungsten as well.

## **1.5 SUMMARY OF WORK**

In 2009, Dahrouge Geological Consulting Ltd., on behalf of Jody Dahrouge and 877384 Alberta Ltd., conducted exploration for placer type gold deposits on the Atlin claims.

From September 13 to September 19, 2009, a four man crew conducted a stream sediment sampling program. On September 19, the crew was reduced to two people for the duration of the project, which was completed on September 22. Throughout the time frame, a total of thirty-nine stream sediment samples were collected at thirty-nine different locations. At each site the stream sediment was sieved through 8 and 12 mesh screens; the remainder was panned down to rid the sample of rock types with low densities. The remaining pan concentrate, usually 30-50 grams of material, was collected in sample bags and shipped to Acme Analytical Laboratories in Vancouver, BC for analysis.

Sample collection sites were determined by observing the strength of water flow in the stream. Samples were collected at sites where there was an observed decrease in the water flow, which could be the result of a change in slope, bend in the stream channel, or interruption of flow due to an obstacle.

Field maps were utilized at a 1:100 000 scale, which displayed all ten claims. A magnetic declination of 22.34° to the east was used during exploration.

Personnel were based in a hotel in the Atlin community. Primary mode of transportation to and from the claims was by a one ton pickup truck, secondary transport was by ATV and by hiking.

## **2. REGIONAL GEOLOGY**

The Atlin claims lie within the Intermontane Belt of the British Columbia interior. The Intermontane Belt consists of multiple distinct terranes; the most relevant to the Atlin area are the Stikinia and Cache Creek terranes. The Stikinia Terrane is the largest complex within the belt and consists of a Devonian to early-mid Jurassic volcanic-plutonic arc assemblage (Currie et al., 1997). The Cache Creek Terrane has a south-southwest trend that is almost continuous through British

Columbia, making it the second largest complex in the Intermontane Belt. The Cache Creek Assemblage consists of four sub-terrane of oceanic and volcanic arc origin (Bloodgood, 1989). Due to faulting, the Mississippian to early Jurassic sub-terrane experience mixtures of various lithologies that can form tectonic melanges, or polymictic breccias (Mihalynuk, 1999). Most of the major drainages in the area are covered by extensive thicknesses of quaternary sands and gravels, which are often the target of placer exploration.

## **2.1 STRATIGRAPHY**

### **2.1.1 Kedahda Formation**

The Kedahda Formation is the oldest stratigraphic unit in the area. It consists of clastic sediments and cherty rock types that range from Mississippian to Permian in age. The chert is highly variable and can be tan, black, or less commonly white, red, or green (Mihalynuk, 1999). The unit forms highly fractured outcrops that are dominantly massive or brecciated. Interlayered wacke can occur as planar beds or discontinuous ribbons or boudins. Radiolarians are visible in outcrop and are usually recrystallized.

### **2.1.2 Horsefeed Formation**

The Horsefeed Formation conformably overlies the Kedahda Formation. It consists of carbonates with a gray to black fresh color and a pale gray, tan or locally orange color on weathered surfaces (Mihalynuk, 1999). Bedding is rarely seen in outcrop. Weathered outcrops usually develop siliceous spicules or wispy black veinlet surfaces with rare observations of bedding.

### **2.1.3 Nakina Formation**

The Nakina Formation is a volcanic-arc formation that ranges in age from Mississippian to Pennsylvanian. The Nakina formation is fine-grained, massive, and is seen in outcrop as either black or mint-green basaltic tuff, a black basaltic flow, or tuffaceous sediments (Mihalynuk, 1999). Rare primary textures in outcrop reveal the local brecciated, pillowed or amygdaloidal nature of the formation. It also tends to have characteristic gabbroic patches that may represent the interiors of flows or large pillows. These are accompanied by widespread networks of feldspar veinlets. Pervasive randomly orientated shears and shear layering are distinct to the Nakina Formation.

### **2.1.4 Nahlin Suite**

The Nahlin Suite forms lenses that are metres to kilometres in length. The typical lense is medium- to coarse-grained harzburgite that forms in kernels within a fine-grained ground mass of recrystallized harzburgite and serpentine (Mihalynuk, 1999). There may be quartz, carbonate,

mariposite or serpentine alteration along the margins of the lenses. The Nahlin Suite displays many traits that are similar to that of an ophiolite.

### **2.1.5 Atlin Accretionary Complex**

The Atlin Accretionary Complex is made up of metavolcanic and metasedimentary rocks that have been intermingled due to faulting. The unit consists of argillites, cherty argillites, argillaceous cherts and cherts with minor amounts of limestone and greywacke (Dandy, 2005). It can form zones of integrated rocks with a well-developed fabric indicative to that of tectonic melange to tectonic slices. Due to lack of exposed outcrop, no contact relationships have been established.

## **2.2 INTRUSIONS**

### **2.2.1 Three sisters Plutonic Intrusion**

Formerly known as the Fourth of July Batholith, the Three Sisters Plutonic Intrusion is a multi-phase mid-Jurassic intrusion (Ash, 1994). The potassium-feldspar megacrystic granitic phase of this composite pluton is predominate. The typical composition in this area is a pink potassium feldspar megacryst set in a coarse-grained equigranular ground mass of mottled-green to buff-white plagioclase and grey quartz. A recent uranium-lead analysis on a zircon established the age of the intrusion to range from 167 to 172 Ma (Ash, 1994). Biotite from a potash feldspar yielded a potassium-argon ratio that set the age at  $167 \pm 3$  Ma (Ash, 1994).

### **2.2.2 Surprise Lake Batholith**

The Surprise Lake Batholith is a late Cretaceous alkali granite intrusion. It is typically coarse-grained and equigranular. Dominant mineral types include smoky quartz, chalky plagioclase, potassium feldspar and biotite (Ash, 1994). Potassium-argon values from six biotite samples yielded an average age of  $70.6 \pm 3.8$  Ma (Ash, 1994). A recent uranium-lead age analysis indicates an average age of  $83.8 \pm 5$  Ma; this age partially agrees with the K-Ar values.

## **2.3 STRUCTURE**

Brittle deformation is the most assertive structure in the Atlin area. There have been two major fault systems mapped, a series of east-northeast trending faults and a north-trending system (Bloodgood, 1989). The fault systems do not favor any particular lithologies, as evident by truncation of units and localization of intense brittle deformation.

### **3. PROPERTY GEOLOGY**

Due to the vast presence of fluvial and glacial deposits in the drainages, outcrop exposures on the property are rare; therefore, the bedrock geology of the Atlin claims is largely unknown.

#### **3.1 BEDROCK GEOLOGY**

According to Kierans (1984), the most productive creeks in the Atlin camp are underlain by the “Gold Series” rocks of the Cache Creek Terrane, which are intruded by serpentinized ultramafic sills and other bodies. The rocks in this group consist of chert, argillite, conglomerate, limestones and derived quartzite and schist. Kierans (1984) considered the greenstone schists, volcanic greywacke and derived amphibolite to be the most likely primary source rocks for placer gold mineralization in the Atlin camp. These units may be at least partially correlated to the Kedahda and Nakina formations, which underlie nearly most of the Atlin claim group. Only claims ATN 8 and 9 are not underlain by the “Gold Series” lithologies, although the source waters of Volcanic Creek are in contact with mafic lava flows.

#### **3.2 SURFICIAL GEOLOGY**

The surficial deposits on the claims consist of a combination of glacial tills and fluvial deposits. The age of the auriferous gravel channels is still somewhat disputed, as Black (1953) proposes a Tertiary age for the deposits, whereas Aitken (1959) considers them to be Quaternary in age. The Tertiary age is based on the presence of glacial tills overlying these “ancient channels”, whereas the Quaternary age is supported by age-dating of boulders (Proudlock, 1976). Recent work (Kierans, 1984) tends to support the Quaternary age for these deposits, however the possibility of ancient channels in the Atlin area still exists.

At McKee Creek, Proudlock (1976) provides an excellent summary of the placer geology in the area:

“At this site a thick cover of till rests on glaciofluvial deposits which overlay the auriferous channel gravels, the latter two being separated by a layer of large boulders. The underlying bedrock is very weathered and fractured with gold found in fractures to a depth of about four feet. In places, especially in the area of the wash pit, quartz veining is noted.”

#### **3.3 STRUCTURE**

The Atlin area has been affected by multiple phases of faulting and folding. M.A Bloodgood (1989) noted two separate fault systems and a fold. The faults trend north and north-northeast,

whereas the fold has a northwesterly plunge into a broad synform that has a shallow plunge and mesoscopic folds that are weakly developed.

#### 4. RESULTS OF 2009 EXPLORATION

The prospecting and stream sediment sampling were conducted in order to identify the presence and quantity/quality of placer gold within the Atlin claims. Secondary objectives were to map out possible access routes to each individual claim.

Work was distributed across each claim on a proportional basis, depending on the total man hours and samples collected from each claim. The total man hours and number of samples taken are provided in Table 4.1.

**TABLE 4.1: MAN HOURS AND SAMPLES COLLECTED FROM EACH CLAIM**

<b>Tenure Number</b>	<b>Claim Name</b>	<b>Samples Taken</b>	<b>Total man hours</b>
598717	ATN1	3	18
598719	ATN 2	3	43.6
598723	ATN 3	6	27.1
598724	ATN 4	2	9
598725	ATN 5	3	41.11
598806	ATN 6	3	19.9
598807	ATN 7	3	16.3
598808	ATN 8	4	43.1
598809	ATN 9	4	44.8
598935	ATN 10	2	43.3
598936	ATN 11	6	41.5

The thirty-nine pan concentrates collected from the Atlin claims were sent to Acme Analytical Labs Ltd. in Vancouver, British Columbia for analysis. They were analyzed by Fire Assay and ICP-MS methods, which showed many to have only background Au concentrations. Several pan concentrates did return significant Au values (Appendix 3). The most prominent was sample 74213, which was located in claim Atn 1; it returned a value of 57.98 gm/mt Au. Several other samples also returned anomalous values of Au (greater than 1 gm/mt). Though these values do not represent the true Au values (they are pan concentrates), they do indicate areas that should be further investigated in the following years.

## **5. DISCUSSION AND CONCLUSIONS**

Within the Atlin claims, quaternary deposits in the drainages were sampled with the intent to identify a placer gold deposit. A total of thirty-nine samples were taken from the eleven claims. Though many of the samples returned only background Au values, it does not necessarily mean the area is depleted in gold. The samples were relatively small and placer deposits almost always exhibit a strong nugget effect. Taking into consideration the nature of the depositional environment, there is still the possibility of gold-bearing paleostreams within these claims.

The next phase of exploration should consist of revisiting areas with the Au anomalies in the pan concentrates and conducting additional sampling. This would best be accomplished by bringing in heavy equipment to perform bulk sampling near surface or reverse circulation drill rigs to test deeper deposits. Ground geophysics, in particular a magnetometer survey, would also be useful in identifying the presence of metallics in the paleostreams as magnetite is often associated with gold-bearing deposits.

Based on the results of the 2009 exploration, portions of the Atlin claims will be released.

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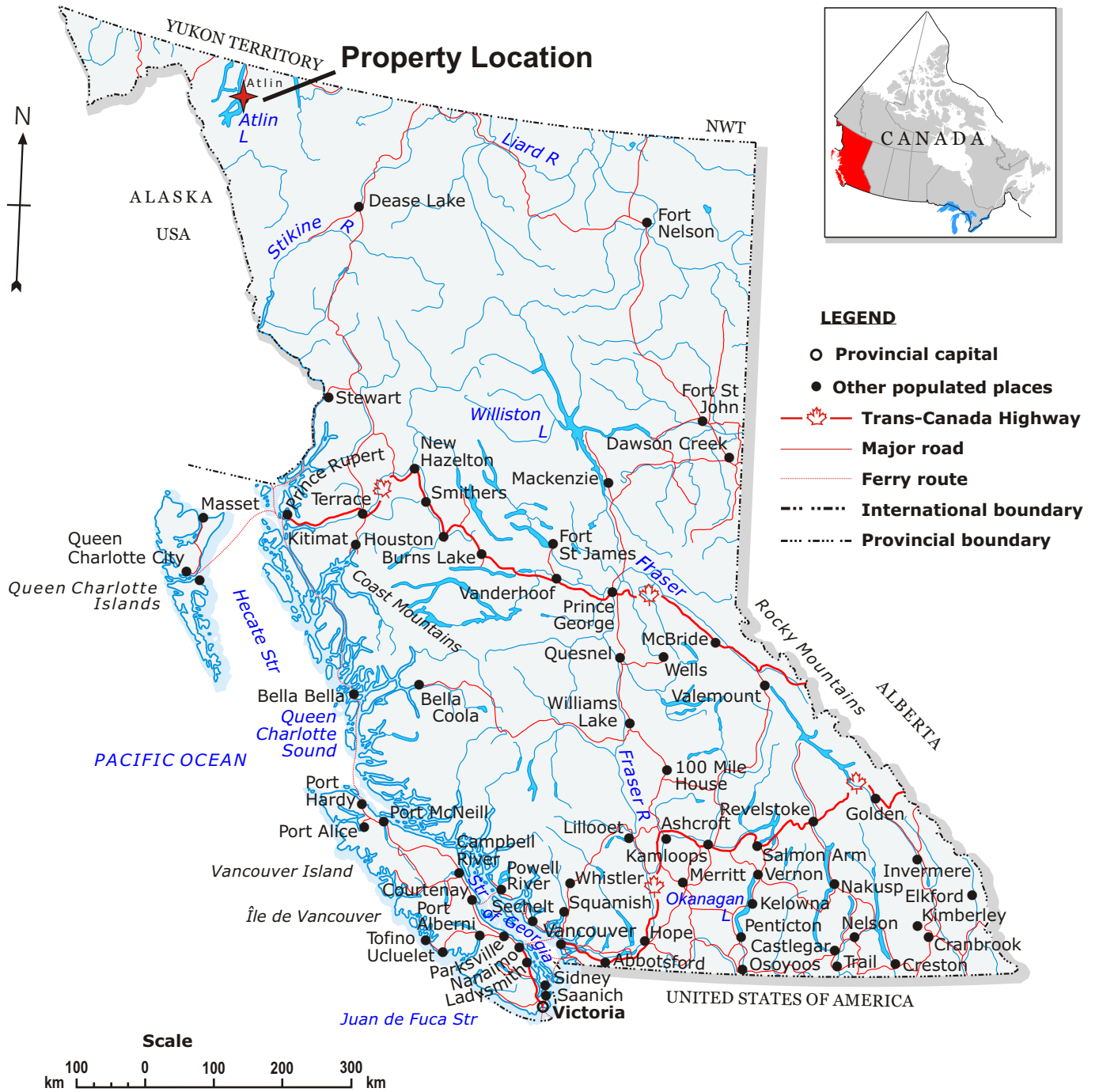
Edmonton, Alberta

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**6.****REFERENCES**

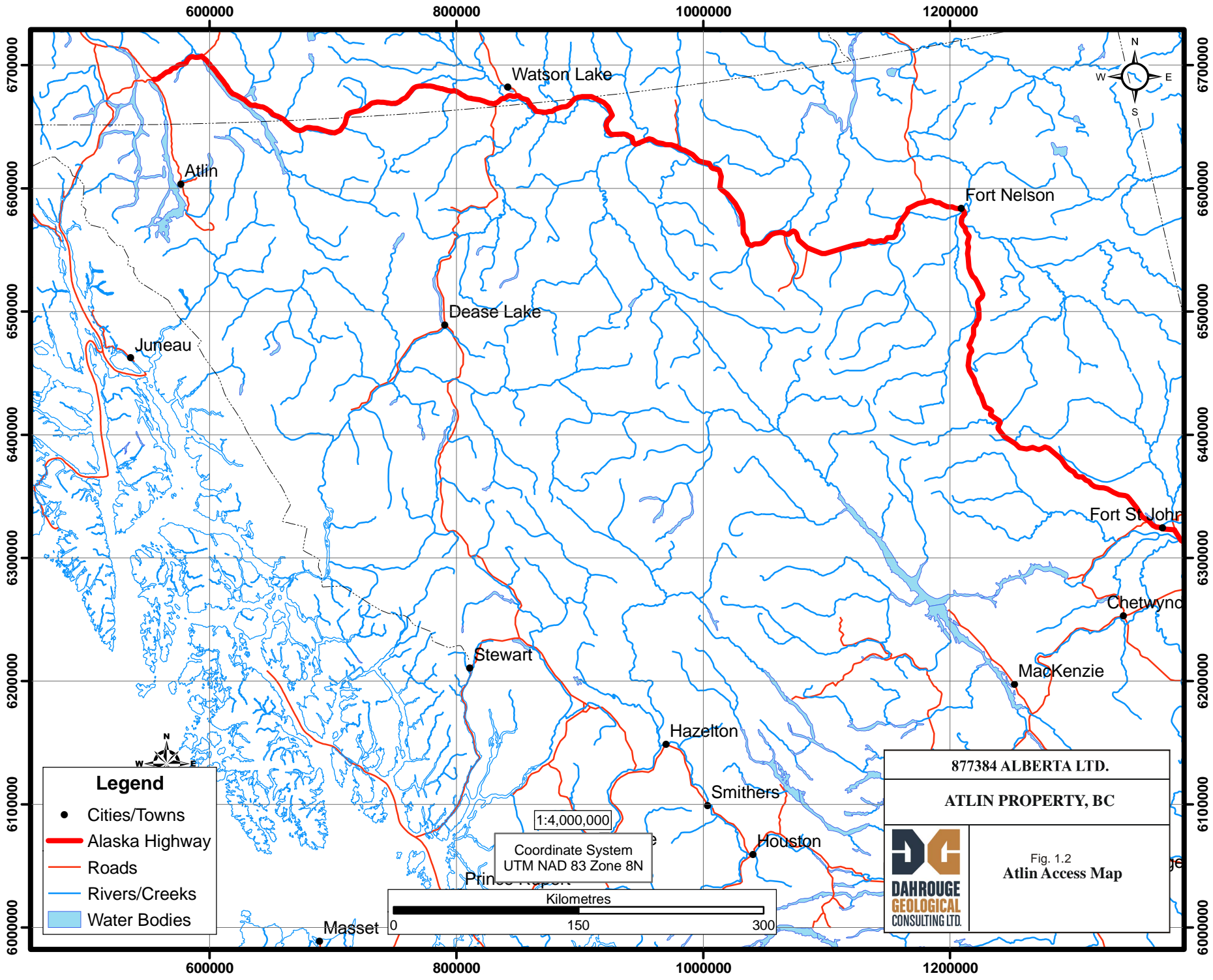
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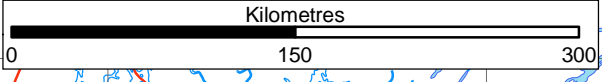
© 2002. Her Majesty the Queen in Right of Canada, Natural Resources Canada.

<b>JODY DAHROUGE</b>	
Dahrouge Geological Consulting Ltd. EDMONTON, ALBERTA	
ATLIN PROJECT, NORTHWEST BC	
Figure 1.1 Location Map,	
NM	2009.09



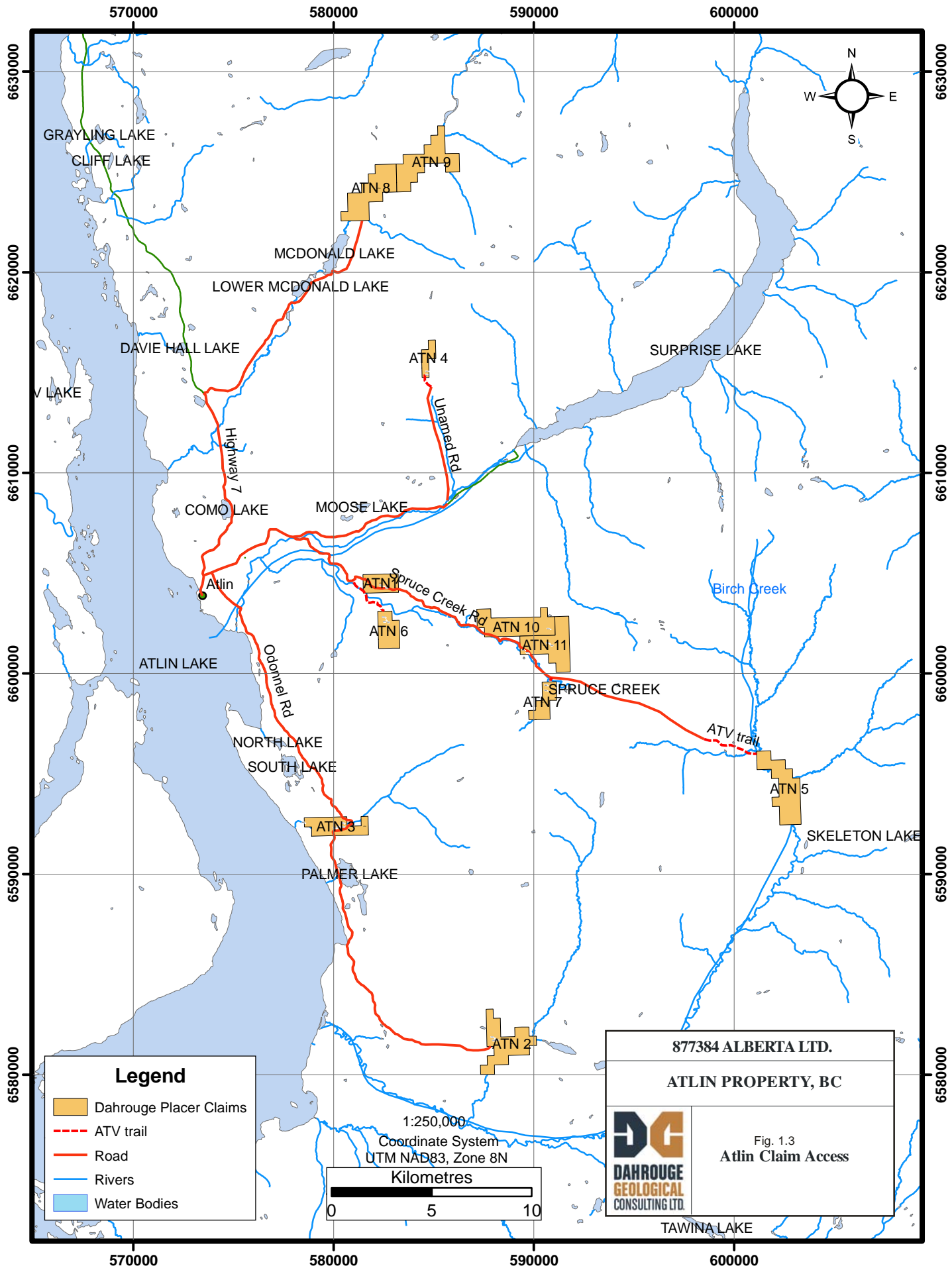
**Legend**

- Cities/Towns
- Alaska Highway
- Roads
- Rivers/Creeks
- Water Bodies



1:4,000,000  
 Coordinate System  
 UTM NAD 83 Zone 8N

877384 ALBERTA LTD.	
ATLIN PROPERTY, BC	
 <b>DAHROUGE          GEOLOGICAL          CONSULTING LTD.</b>	Fig. 1.2 <b>Atlin Access Map</b>



**Legend**

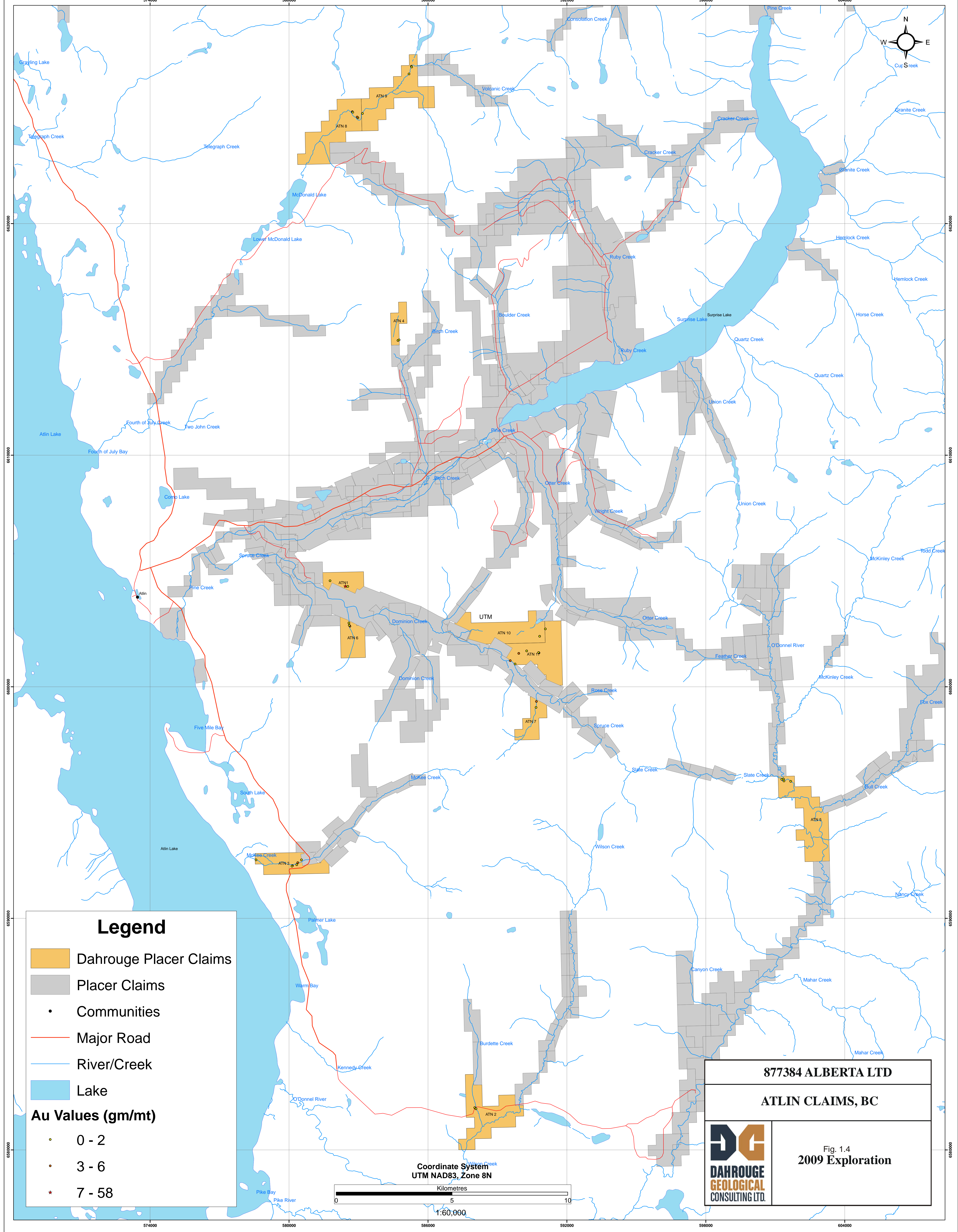
- Dahrouge Placer Claims
- ATV trail
- Road
- Rivers
- Water Bodies

1:250,000  
 Coordinate System  
 UTM NAD83, Zone 8N  
**Kilometres**  
 0      5      10

877384 ALBERTA LTD.  
 ATLIN PROPERTY, BC

**DG**  
 DAHROUGE  
 GEOLOGICAL  
 CONSULTING LTD.

Fig. 1.3  
 Atlin Claim Access



**Legend**

- Dahrouge Placer Claims
  - Placer Claims
  - Communities
  - Major Road
  - River/Creek
  - Lake
- Au Values (gm/mt)**
- 0 - 2
  - 3 - 6
  - 7 - 58

**877384 ALBERTA LTD**

**ATLIN CLAIMS, BC**

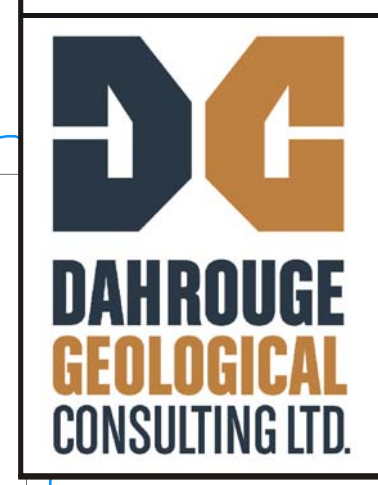
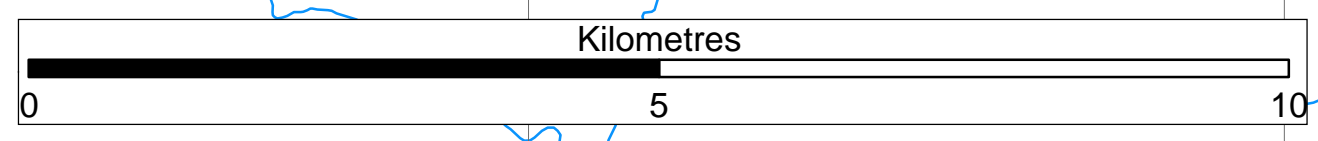
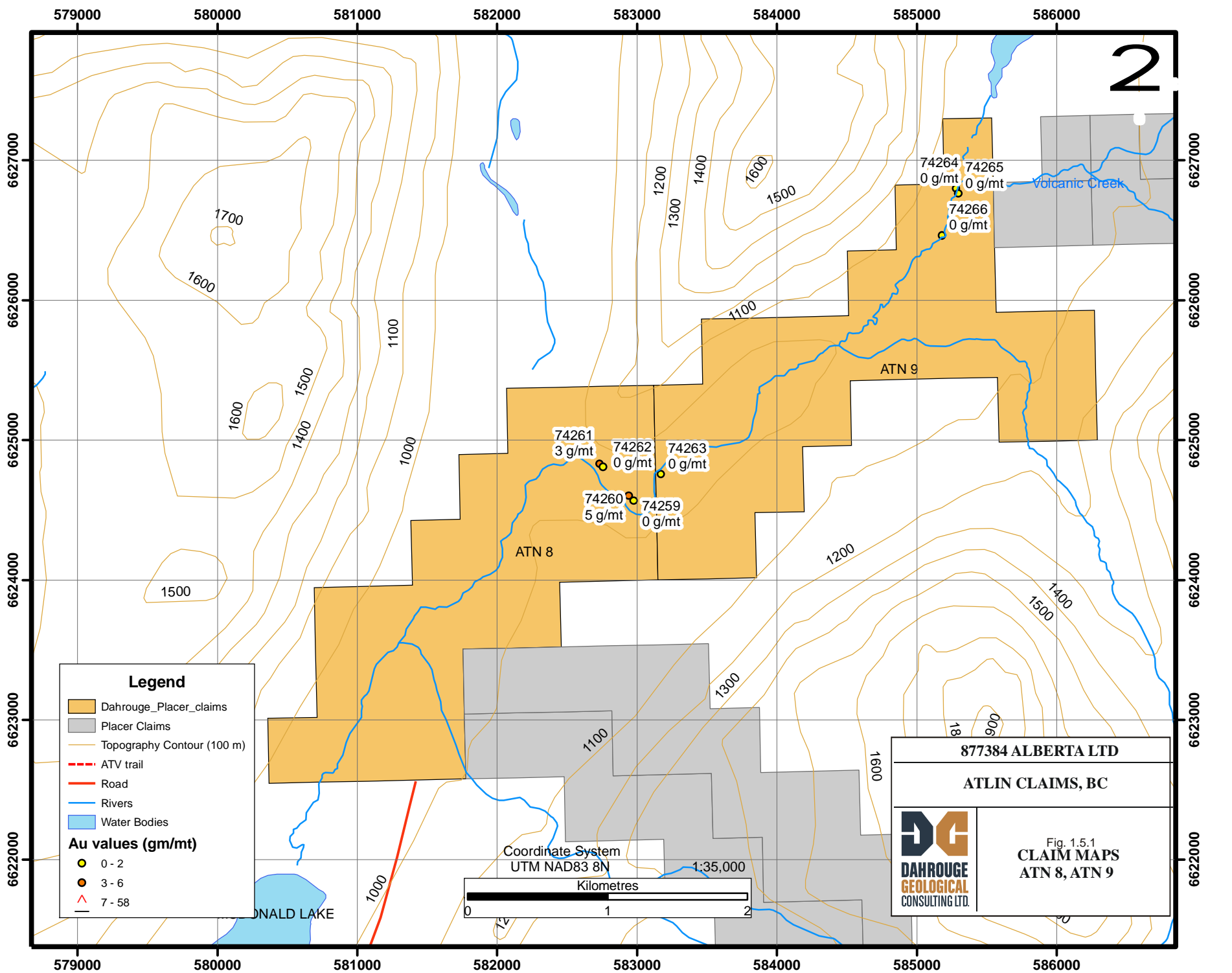


Fig. 1.4  
**2009 Exploration**

Coordinate System  
**UTM NAD83, Zone 8N**



1:60,000



**Legend**

- Dahrouge Placer claims
- Placer Claims
- Topography Contour (100 m)
- ATV trail
- Road
- Rivers
- Water Bodies

**Au values (gm/mt)**

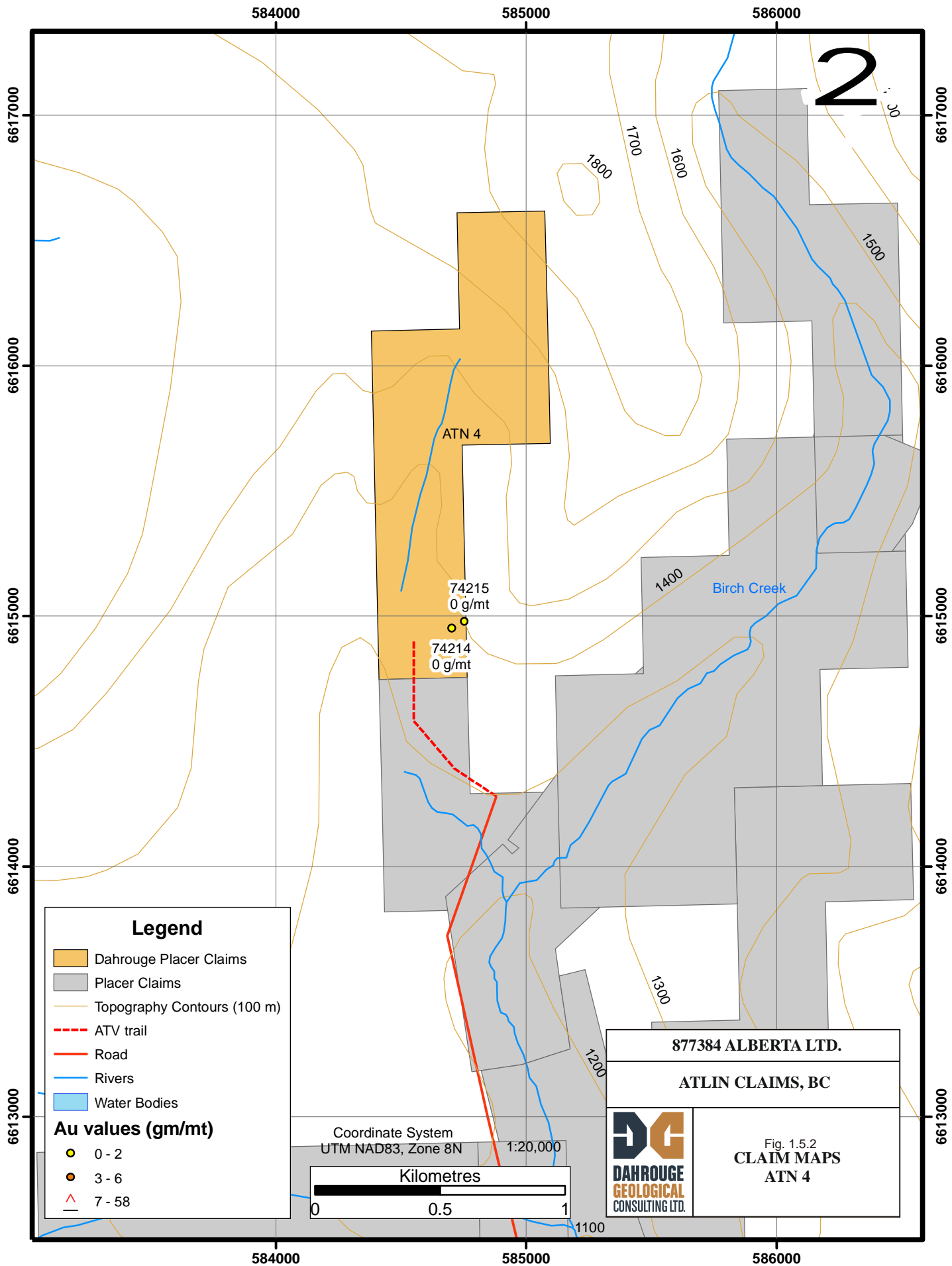
- 0 - 2
- 3 - 6
- 7 - 58

Coordinate System  
UTM NAD83 8N  
1:35,000  
Kilometres

**877384 ALBERTA LTD**

**ATLIN CLAIMS, BC**

**Fig. 1.5.1**  
**CLAIM MAPS**  
**ATN 8, ATN 9**



2

ATN 4

74215  
0 g/mt

74214  
0 g/mt

Birch Creek

877384 ALBERTA LTD.

ATLIN CLAIMS, BC

DAHROUGE  
GEOLOGICAL  
CONSULTING LTD.

Fig. 1.5.2  
CLAIM MAPS  
ATN 4

584000

585000

586000

6617000

6617000

6616000

6616000

6615000

6615000

6614000

6614000

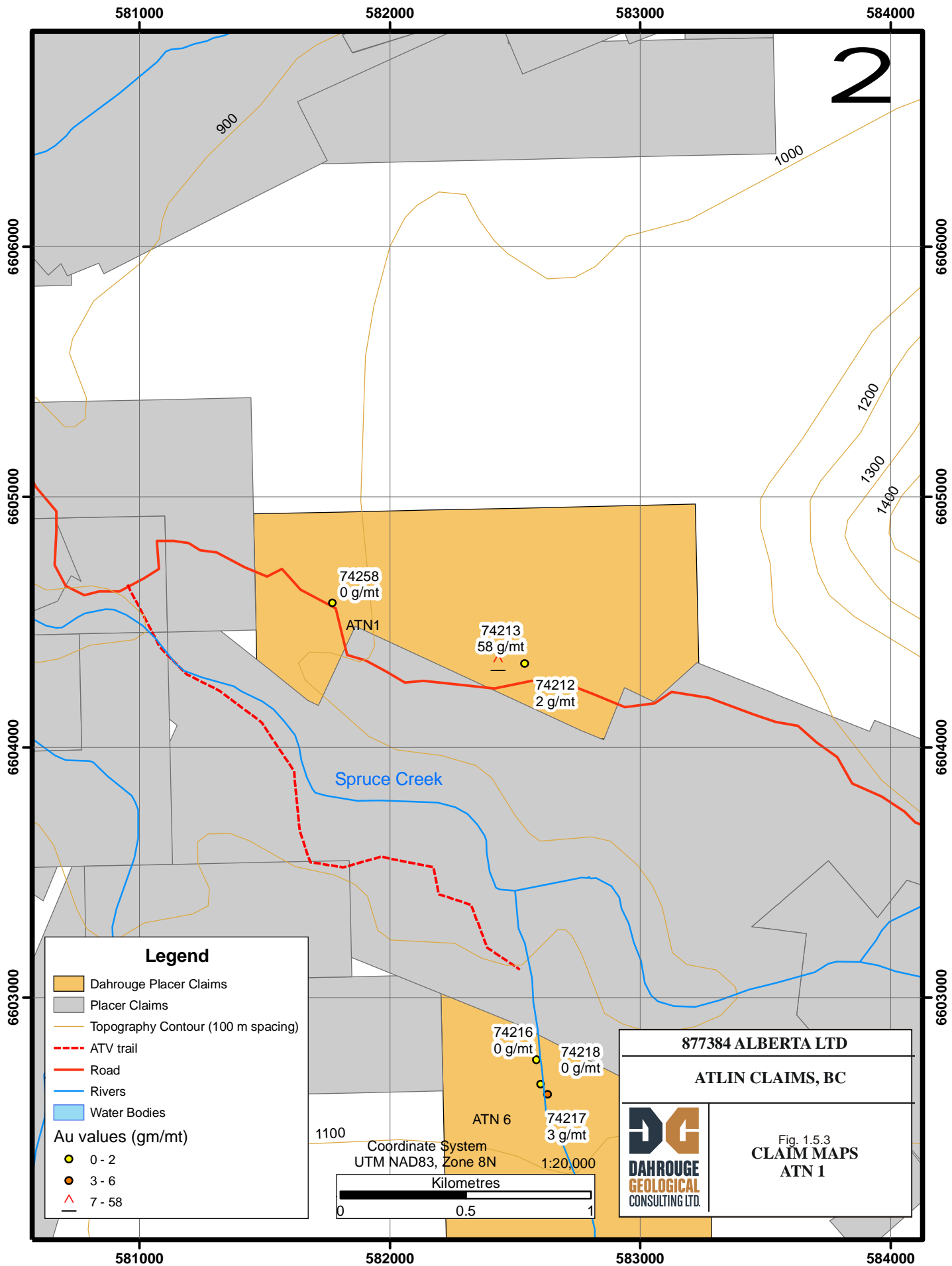
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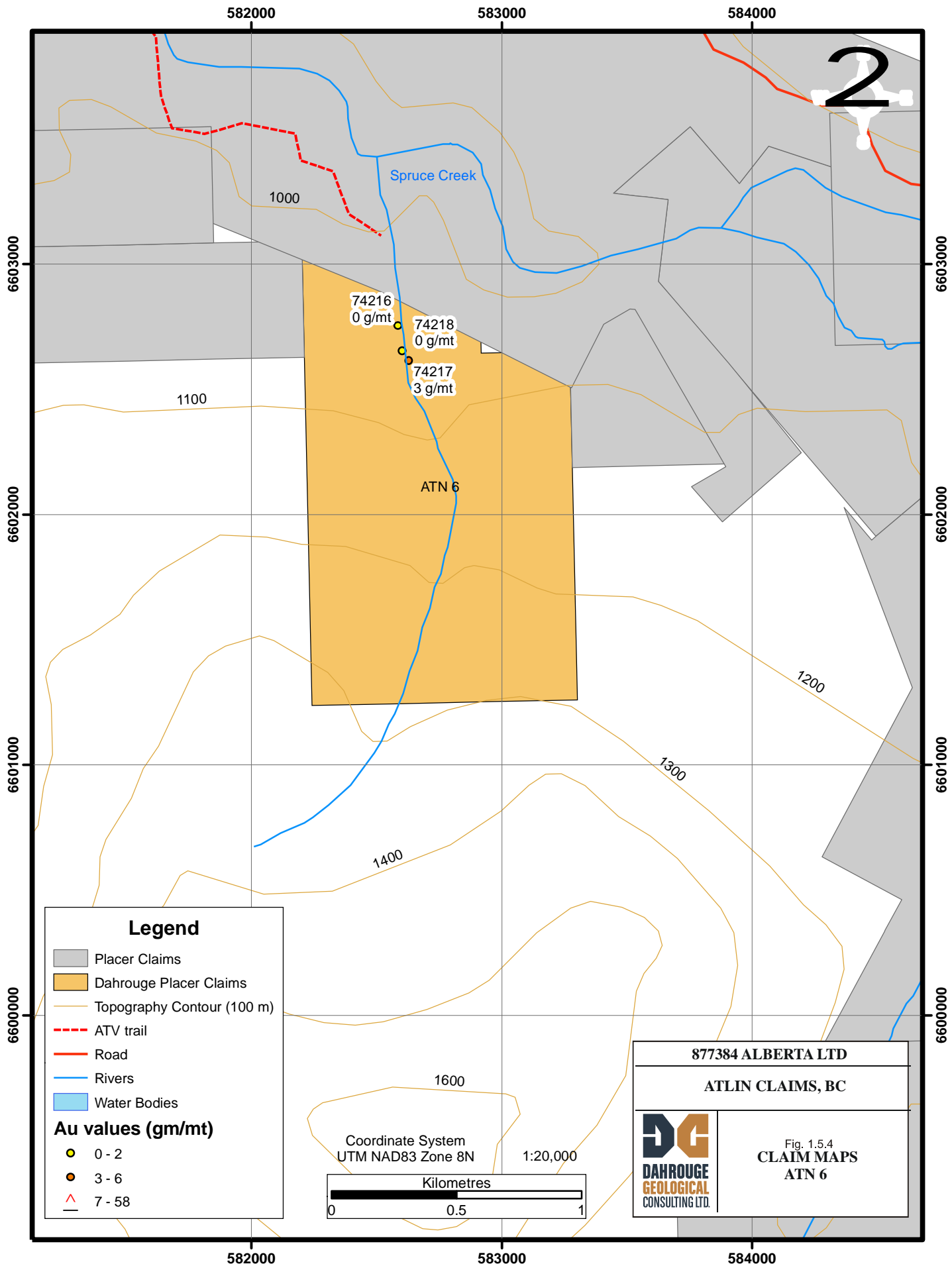
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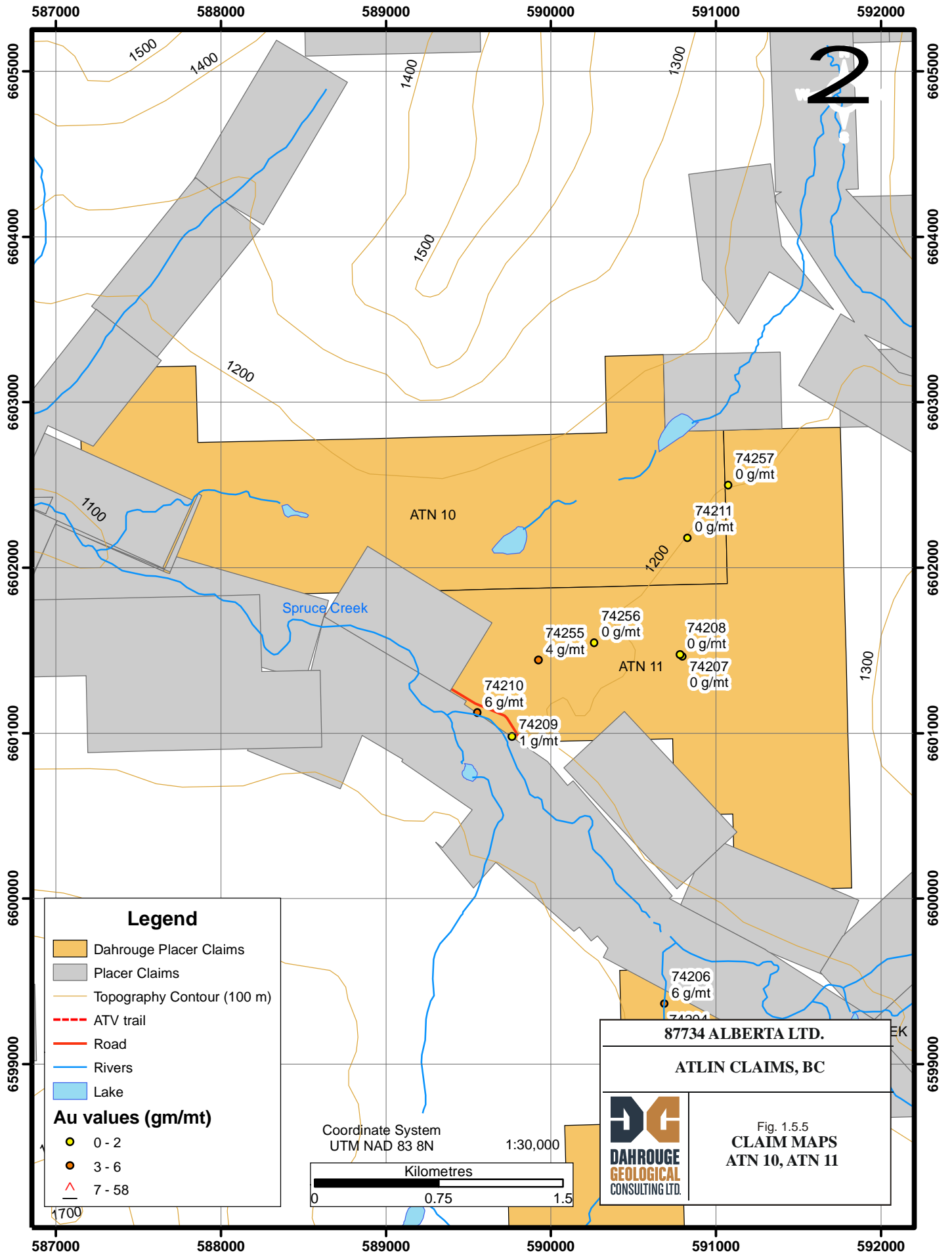
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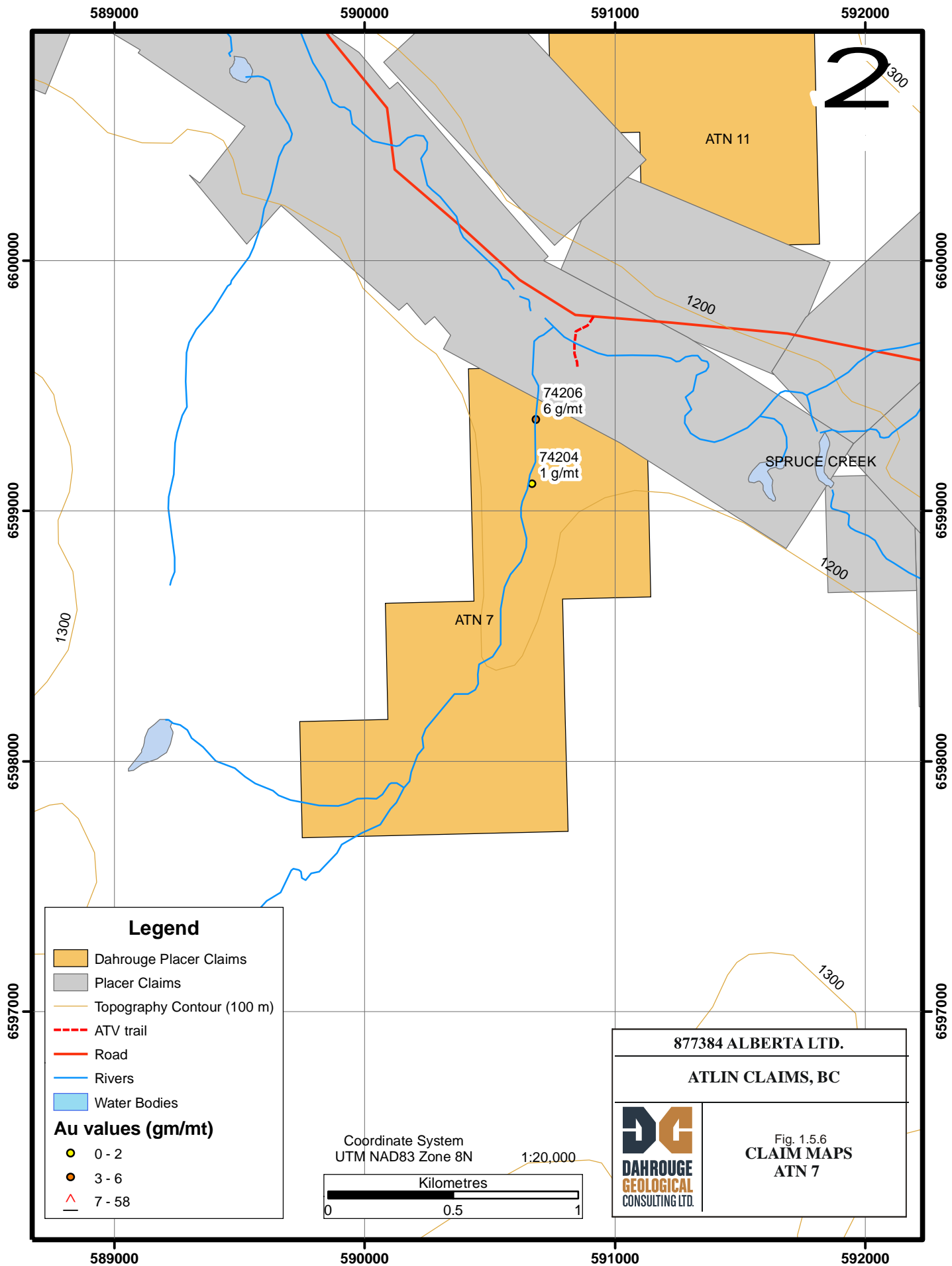
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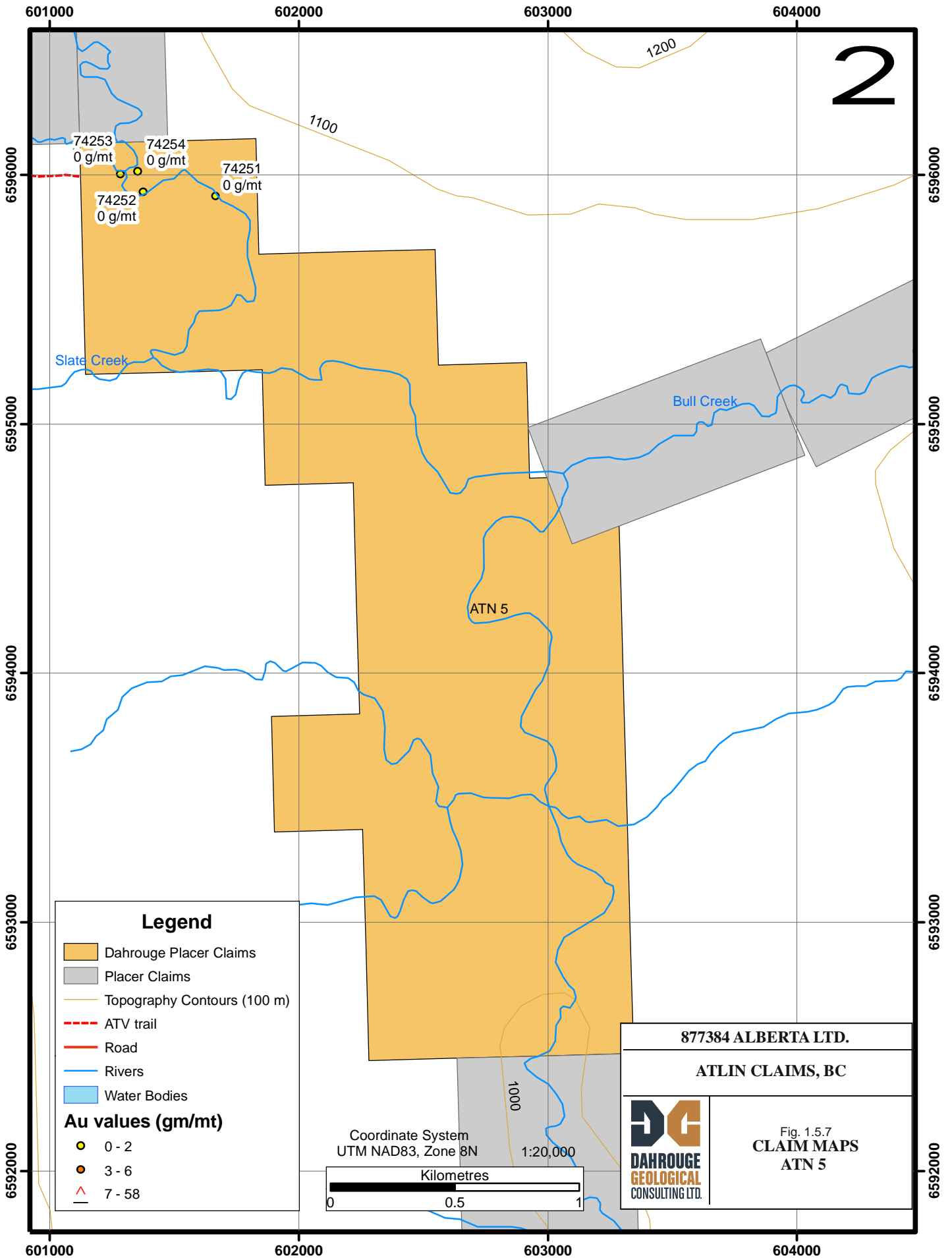


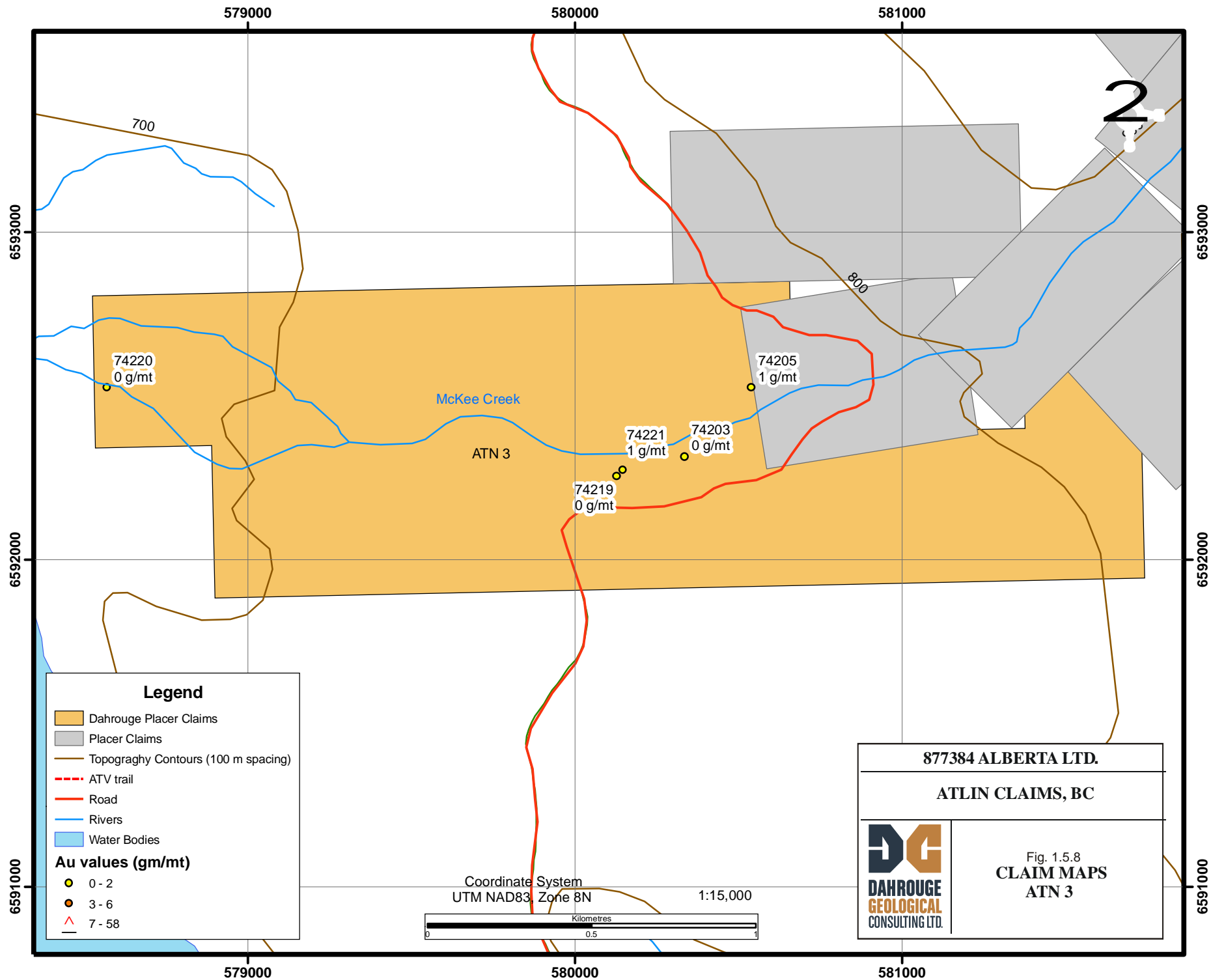


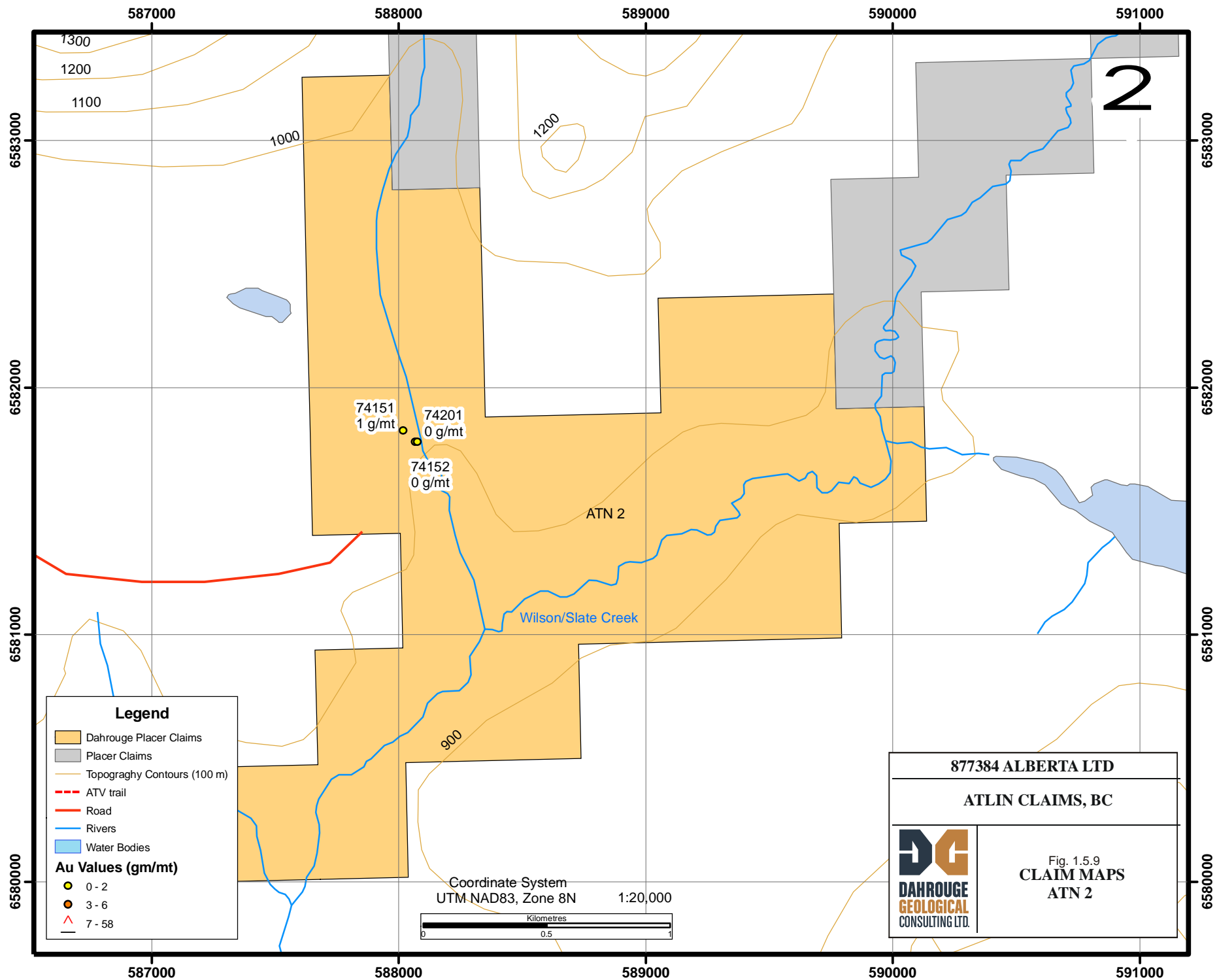












2

74151  
1 g/mt

74201  
0 g/mt

74152  
0 g/mt

ATN 2

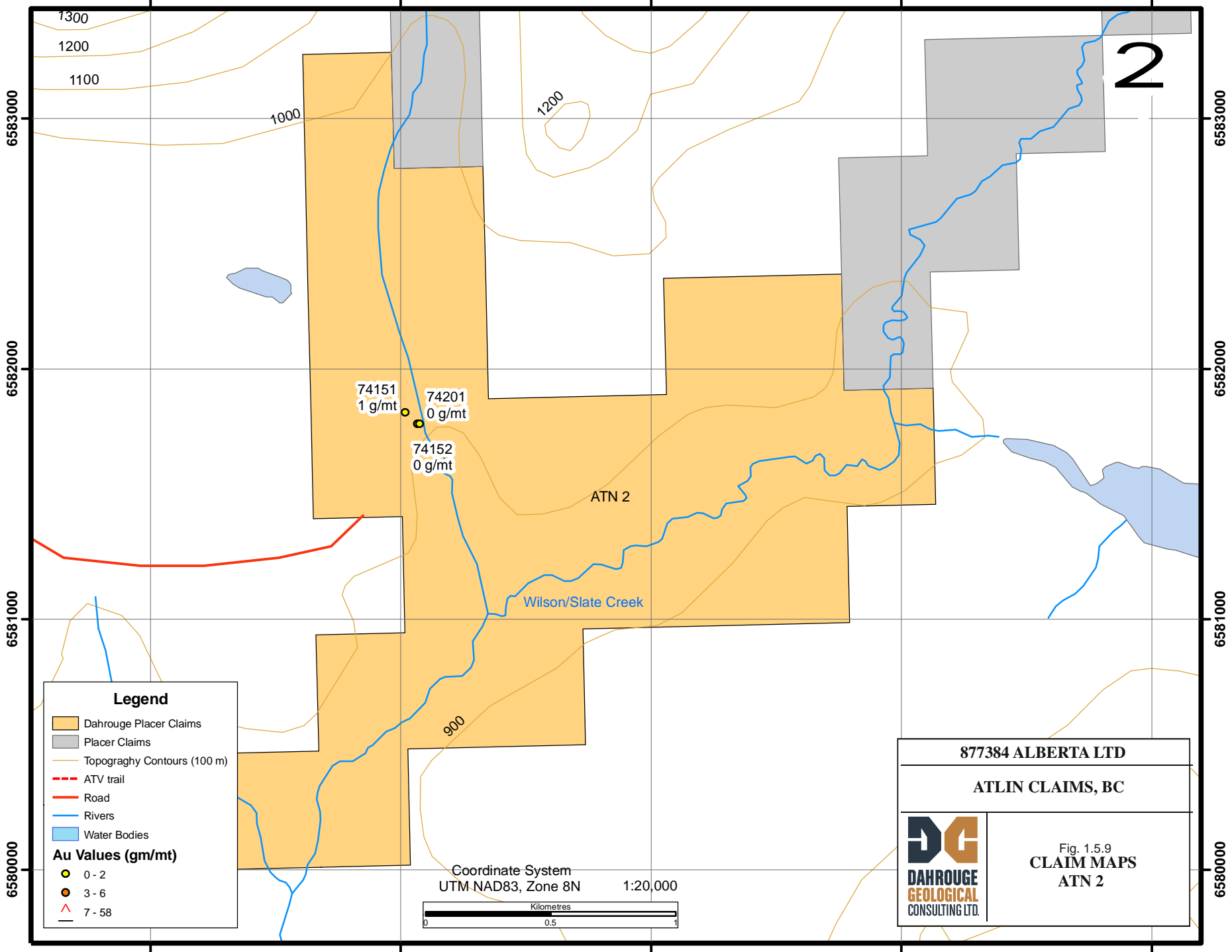
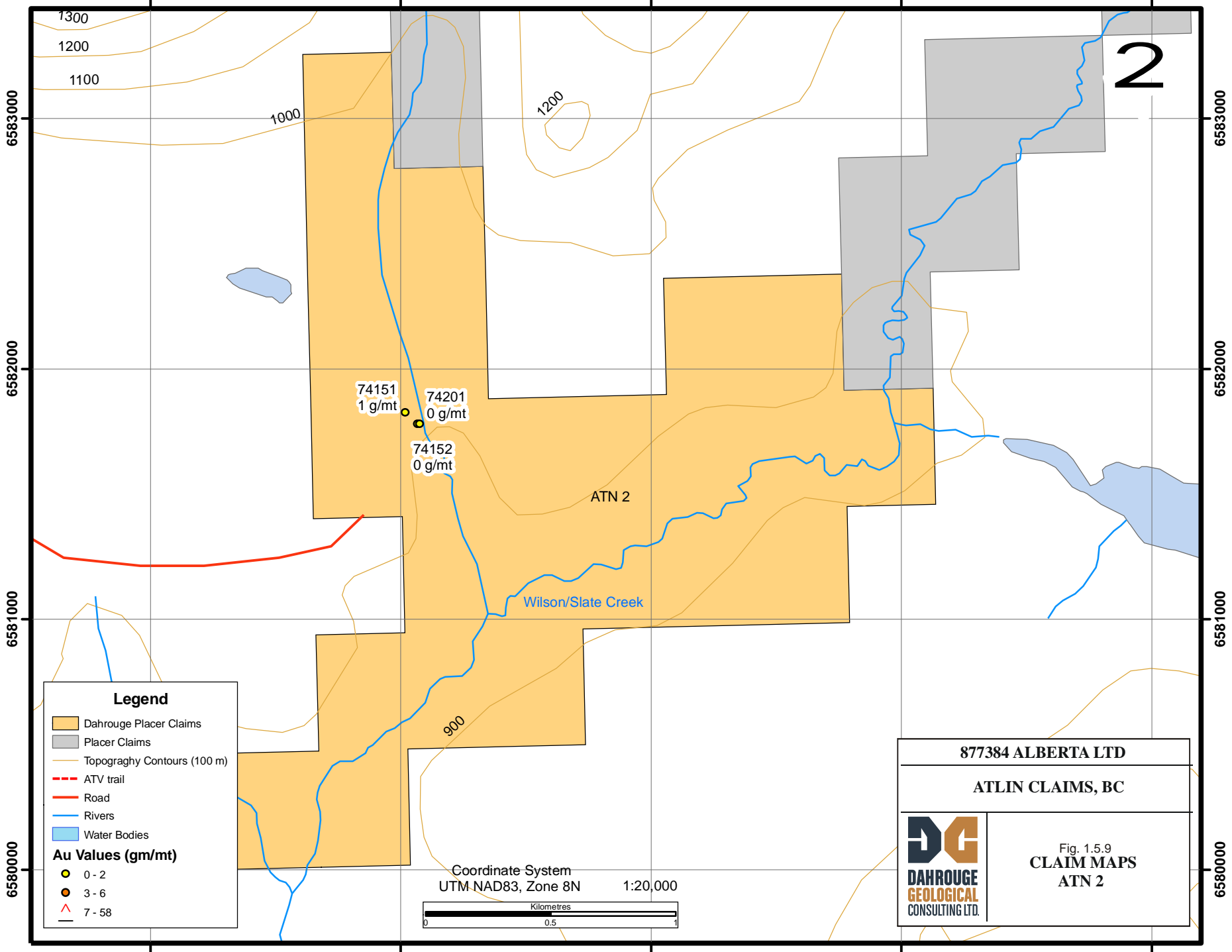
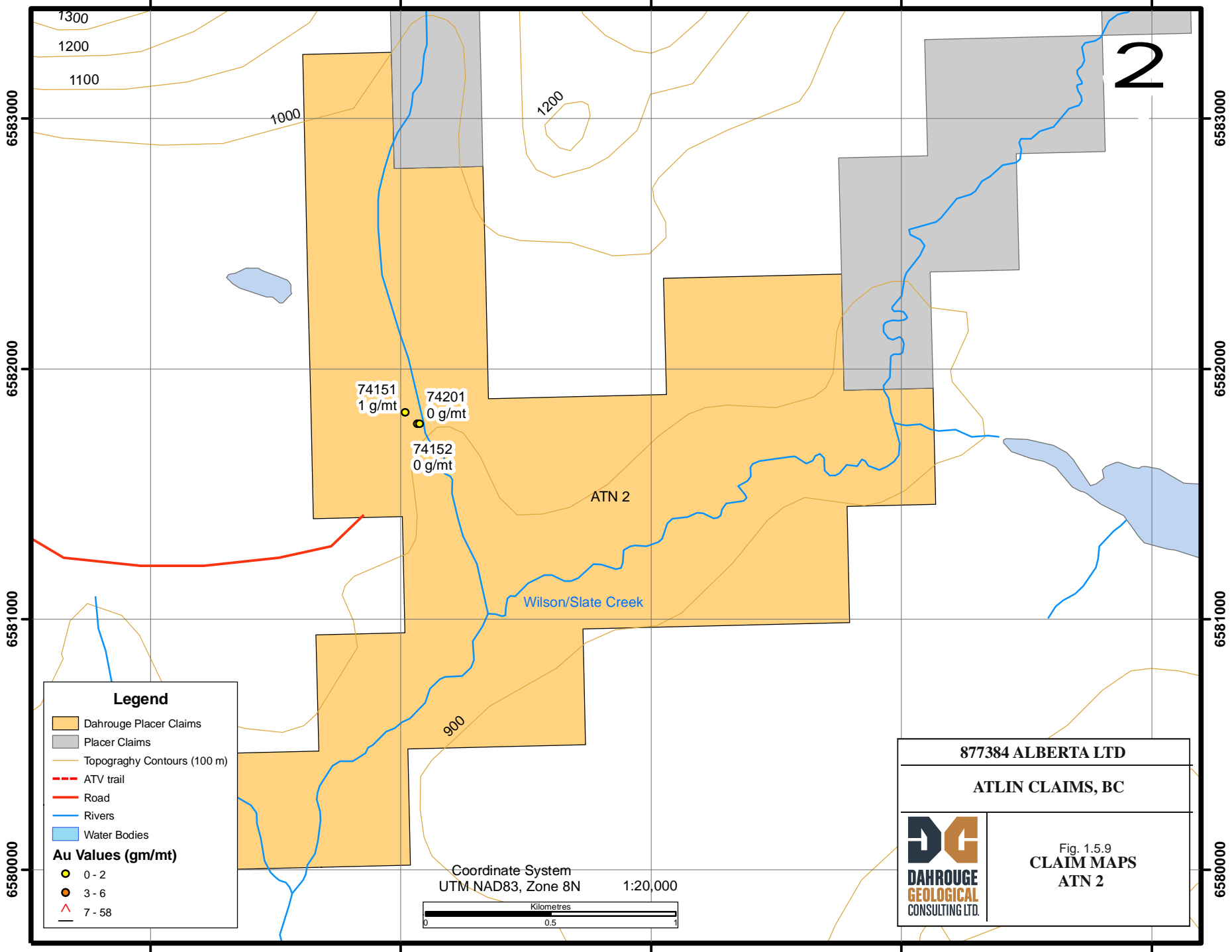
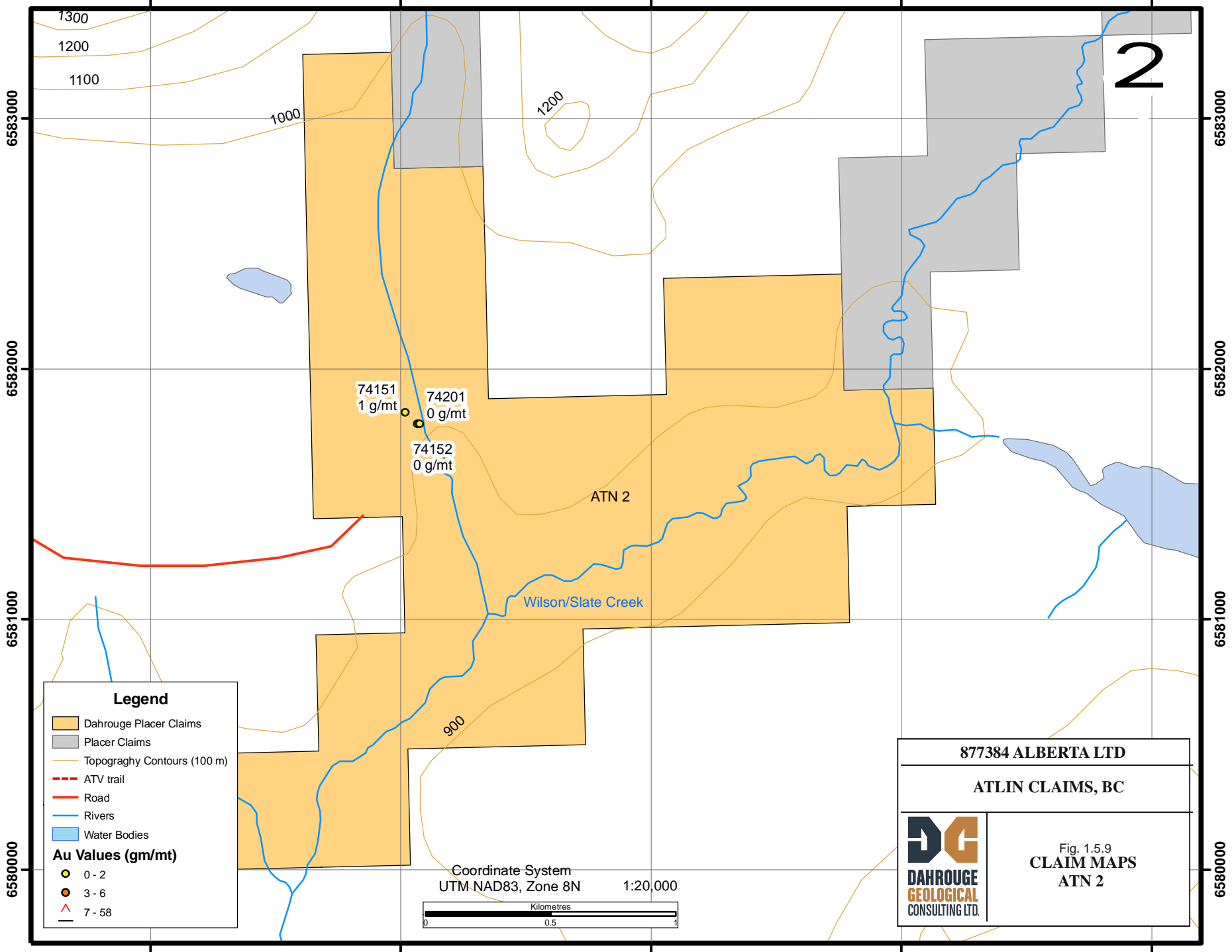
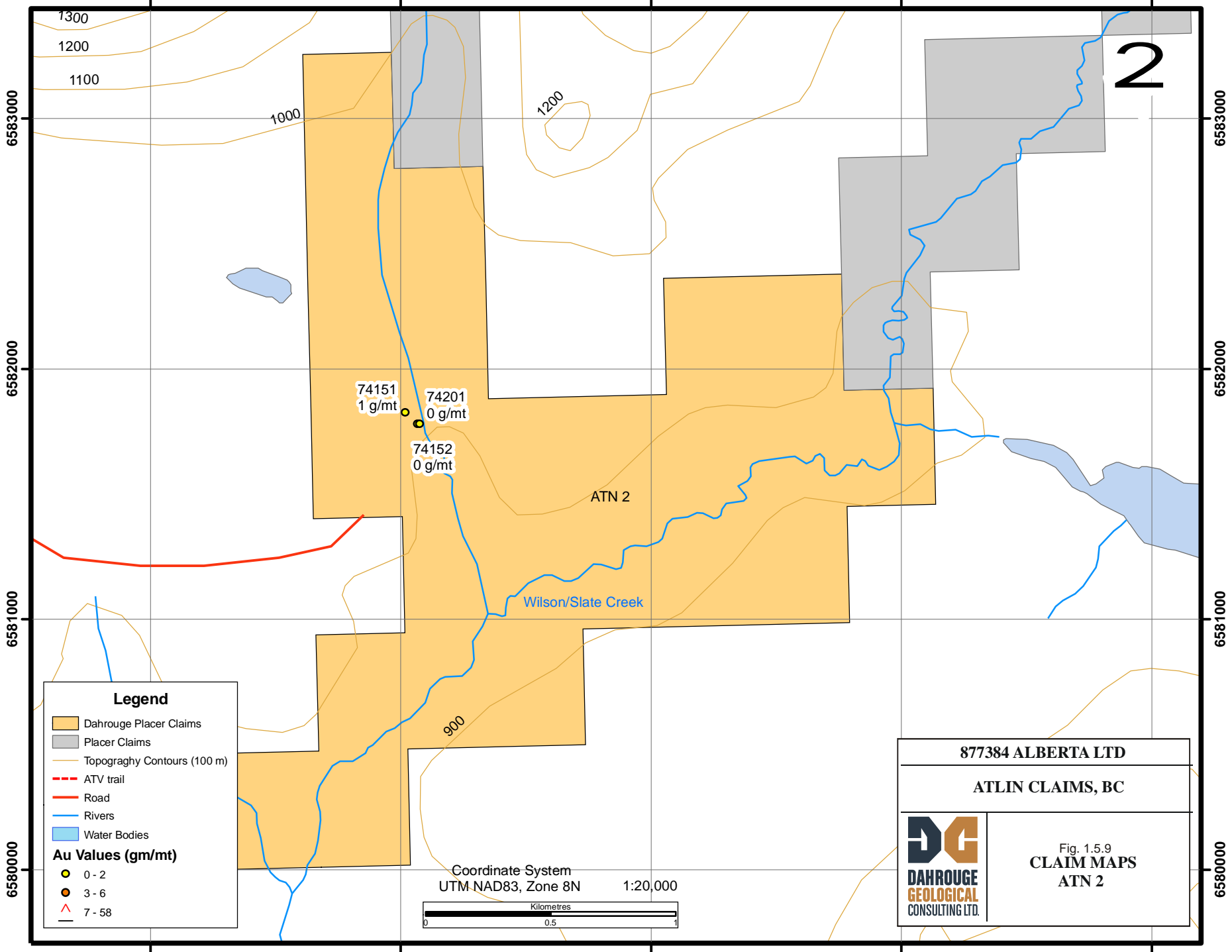
Wilson/Slate Creek

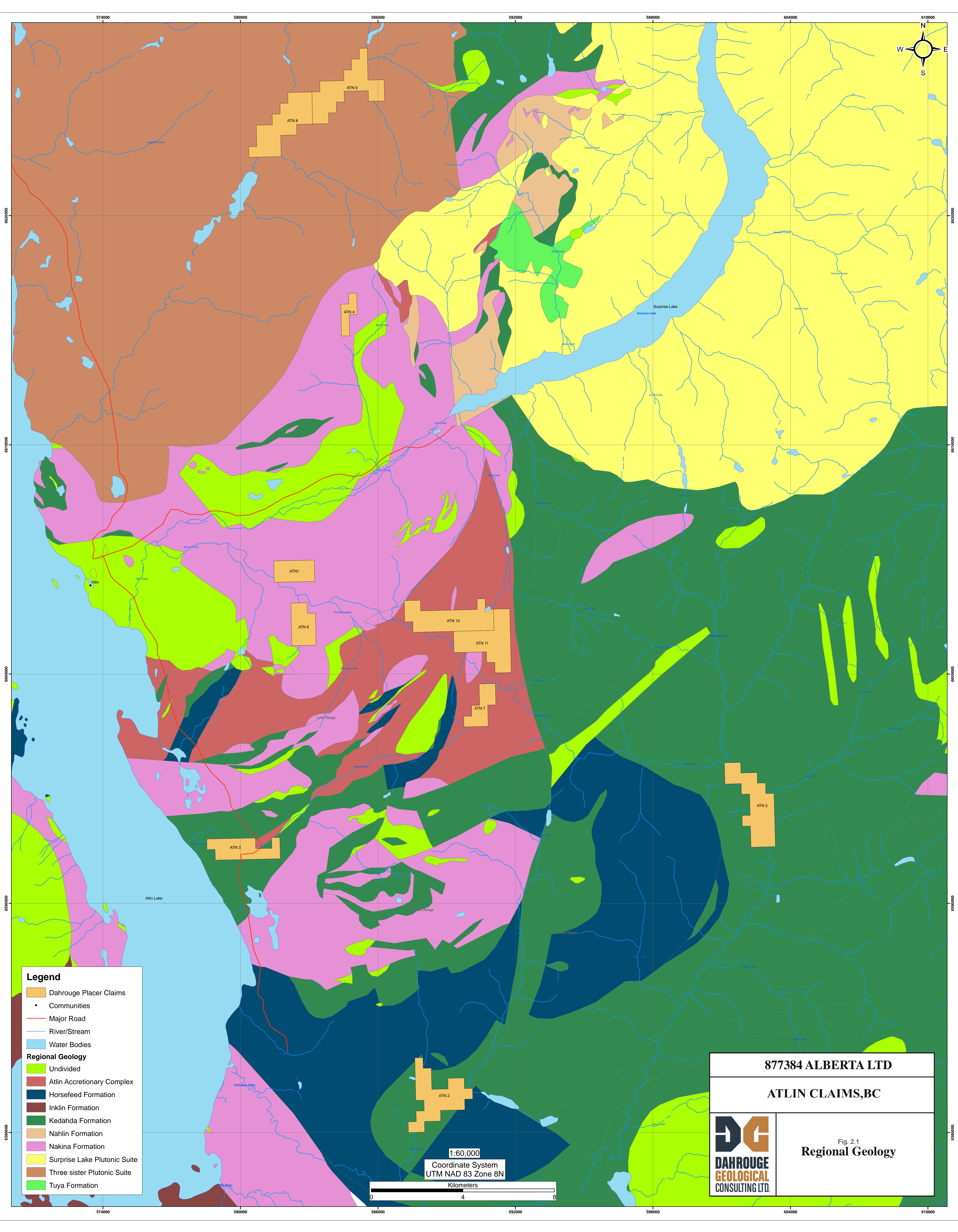
900

1000

1200

1300  
1200  
1100





**Legend**

- Dahrouge Placer Claims
- Communities
- Major Road
- River/Stream
- Water Bodies

**Regional Geology**

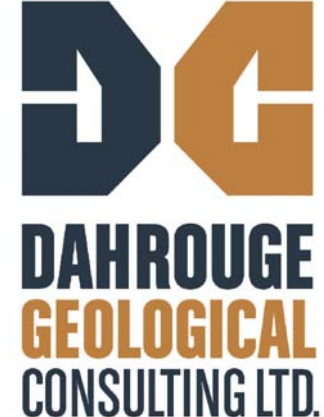
- Undivided
- Atlin Accretionary Complex
- Horsefeed Formation
- Inklin Formation
- Kedahda Formation
- Nahlin Formation
- Nakina Formation
- Surprise Lake Plutonic Suite
- Three sister Plutonic Suite
- Tuyá Formation

**877384 ALBERTA LTD**

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**ATLIN CLAIMS, BC**

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**DAHROUGE  
GEOLOGICAL  
CONSULTING LTD.**

Fig. 2.1  
**Regional Geology**

1:60,000  
Coordinate System  
UTM NAD 83 Zone 8N  
Kilometers

**APPENDIX 1: ITEMIZED COST STATEMENT****a) Personnel**

Andy Hoffman, geologist

10.00 days field work and travel Sept 13-22

Prospecting and stream sediment sampling

31.87 days additional sample panning, project planning & field preparations,  
communications, review & interpret data, research, reporting

---

41.87 days @ \$ 420.00

\$ 17,585.40

Mike Hodge, assistant

11.00 days field work and travel Sept 13-23

Prospecting and stream sediment sampling

---

11.00 days @ \$ 465.00

\$ 5,115.00

Bob Dahrouge, assistant

7.00 days field work and travel Sept 13-19

Prospecting and stream sediment sampling

---

7.00 days @ \$ 250.00

\$ 1,750.00

Ollie Fedorous, assistant

7.00 days field work and travel Sept 13-19

Prospecting and stream sediment sampling

---

7.00 days @ \$ 250.00

\$ 1,750.00

Neil McCallum, geologist

---

2.30 days Project planning and supervision

2.30 @ \$ 580.00

\$ 1,334.00

Wayne McGuire, draftsman

---

0.30 days Create field maps and acquire air photos

0.30 days @ \$ 575.00

\$ 172.50

Patrick Kluczny, geologist

---

2.70 days Create maps, reporting & editing

2.70 days @ \$ 520.00

\$ 1,404.00

Becky Partridge, assistant

---

5.50 days Additional panning of samples, shipping samples, data entry

5.50 days @ \$ 465.00

\$ 2,557.50

William Miller, assistant

---

1.10 days Research, create report maps

1.10 days @ \$ 400.00

\$ 440.00

Christopher Oldham, assistant

---

2.40 days Additional panning of samples, data entry

2.40 days @ \$ 400.00

\$ 960.00

Judy Smith, receptionist

---

0.20 days Scanning documents, prepare shipping forms

0.20 days @ \$ 250.00

---

\$ 50.00**\$ 33,118.40**

**FIELD WORK SUMMARY:****Atlin Prospecting and Stream Sediment Sampling**

Claims ATN 1 thru 11; 3198.344 hectares

39 stream sediment samples collected, access routes mapped

Field Personnel: A. Hoffman, M. Hodge, B. Dahrouge, O. Fedorous

**b) Food and Accommodation**

35 man-days @ \$ 30.56 accommodations	\$ 1,069.50	
35 man-days @ \$ 58.50 meals and groceries	\$ 2,047.50	
		\$ 3,117.00

**c) Transportation**

Vehicles: 4x4 Vehicle Rental (13 days @ \$80/day)	\$ 1,040.00	
Mileage for B. Dahrouge personal truck	\$ 2,796.15	
ATV rental (2 quads @ \$125/day for 9 days)	\$ 2,250.00	
ATV rental (2 quads @ \$125/day for 10 days)	\$ 2,500.00	
Trailer Rental (\$50/day for 9 days)	\$ 450.00	
Trailer Rental (\$25/day for 10 days)	\$ 250.00	
Maintenance/Repairs	\$ 118.74	
Fuel	\$ 1,436.68	
		\$ 10,841.57

**d) Instrument Rental**

Satellite Phone	\$ 214.29	
I-com radios(48.00x4)	\$ 274.29	
ArcGIS software rental	\$ 467.25	
		\$ 955.82

**e) Drilling**

n/a

**f) Analyses**ACME Analytical Laboratories  
(39 stream sediment samples)

39 samples @ \$ 3.15 preparation fee	\$ 122.85	
39 samples @ \$ 32.40 sample analysis	\$ 1,263.60	
		\$ 1,386.45

**g) Other**

Courier and Shipping	\$ 9.36	
Disposable Supplies	\$ 1,056.79	
Telephone Charges	\$ 49.96	
Prints and copies	\$ 38.97	
Plots - E-size	\$ 131.25	
		\$ 1,286.33

**Total****\$ 50,705.57**



## APPENDIX 2: ANALYTICAL LABORATORY INFORMATION AND TECHNIQUES

### Name and Address of the Lab:

Acme Analytical Laboratories LTD.  
1020 Cordova Street East,  
Vancouver, BC. V6A 4A3

### Sample Preparation, Procedures, Reagents, Equipment, etc.:

For the Fire Assay sample preparation the sample is dried (60°C) and the sieved at –80 mesh ASTM. Splits of 30g are then weighed and placed into a fire assay crucible. A charge comprising fluxes, litharge and a Ag inquant is custom mixed for each sample. Fusing at 1050°C for 1 hour liberates Au, Ag, Pt, Pd and Rh. The Pb button is recovered after cooling and cupelled at 950°C to render an Ag ±Au ±Pt ±Pd dore bead. After weighing, the bead is parted in HNO<sub>3</sub> leaving Au sponge. Adding HCL dissolves the sponges.

For the 1DX, the dried and sieved sample is then split into 0.5g pulps. An aqua regia solution of equal parts concentrated ACS grade HCL, HNO<sub>3</sub> and De-mineralised H<sub>2</sub>O is added to each sample to leach for one hour in a heating block or hot water bath (>95°C). After cooling the solution is made up to final volume with 5% HCl. Sample weight to solution volume is 1 g per 20 ml. Solutions are then aspirated into a Perkin Elmer Elan 6000/9000 ICP mass spectrometer and analysed for 36 elements: Ag, Al, As, Au, B, Ba, Bi, Ca, Cd, Co, Cr, Cu, Fe, K, La, Mg, Mn, Mo, Na, Ni, P, Pb, Ni, S, Sb, Sc, Se, Ti, Sr, Th, Ti, U, V, W, Zn.

### Quality Control Procedures:

QA/QC protocol incorporates granite or quartz sample-prep blank(s) carried through all stages of preparation and analysis as the first sample(s) in the job. Typically an analytical batch will be comprised of 34-36 client samples, a pulp duplicate to monitor analytical precision, a reagent blank to measure background and an aliquot of Certified Reference Material (CRM) or Inhouse Reference Material to monitor accuracy. In the absence of suitable CRMs Inhouse Reference Materials are prepared and certified against internationally certified reference materials such as CANMET and USGS standards where possible and will be externally verified at a minimum of 3 other commercial laboratories. The ICP spectrometer is calibrated with two certified reference materials prior to analyzing a batch of samples.



1020 Cordova St. East Vancouver BC V6A 4A3 Canada  
 Phone (604) 253-3158 Fax (604) 253-1716

Acme Analytical Laboratories (Vancouver) Ltd.

www.acmelab.com

**Client:** Dahrouge Geological Consulting  
 18 - 10509 - 81 Ave  
 Edmonton AB T6E 1X7 Canada

Submitted By: Andy Hoffman  
 Receiving Lab: Canada-Vancouver  
 Received: November 17, 2009  
 Report Date: December 09, 2009  
 Page: 1 of 3

CERTIFICATE OF ANALYSIS

VAN09005683.1

CLIENT JOB INFORMATION

Project: Atlin  
 Shipment ID:  
 P.O. Number 00341  
 Number of Samples: 39

SAMPLE DISPOSAL

RTRN-PLP Return  
 RTRN-RJT Return

SAMPLE PREPARATION AND ANALYTICAL PROCEDURES

Method Code	Number of Samples	Code Description	Test Wgt (g)	Report Status	Lab
P200	39	Pulverize to 85% passing 200 mesh			VAN
G603+G612	39	Fire Assay Ag Au by gravimetric finished	30	Completed	VAN
7AR	39	1:1:1 Aqua Regia digestion ICP-ES analysis	1	Completed	VAN
1DX1	39	1:1:1 Aqua Regia digestion ICP-MS analysis	0.5	Completed	VAN

ADDITIONAL COMMENTS

Acme does not accept responsibility for samples left at the laboratory after 90 days without prior written instructions for sample storage or return.

Invoice To: Dahrouge Geological Consulting  
 18 - 10509 - 81 Ave  
 Edmonton AB T6E 1X7  
 Canada

CC:



This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only. All results are considered the confidential property of the client. Acme assumes the liabilities for actual cost of analysis only. \*\* asterisk indicates that an analytical result could not be provided due to unusually high levels of interference from other elements.



Acme Analytical Laboratories (Vancouver) Ltd.  
 1020 Cordova St. East Vancouver BC V6A 4A3 Canada  
 Phone (604) 253-3158 Fax (604) 253-1716

www.acmelab.com

Client: **Dahrouge Geological Consulting**  
 18 - 10509 - 81 Ave  
 Edmonton AB T6E 1X7 Canada

Project: Atlin  
 Report Date: December 09, 2009

Page: 2 of 3 Part 1

CERTIFICATE OF ANALYSIS

VAN09005683.1

Method	WGHT	G6	G6	7AR	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	
Analyte	Wgt Ag	Grav Au	Grav	Ag	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	
Unit	kg	gm/mt	gm/mt	gm/mt	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	
MDL	0.01	5	0.17	2	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.1	0.5	0.1	1	0.1	0.1	
74151	Sediment	0.04	17	1.05	<2	2.1	71.6	29.4	90	<0.1	159.5	24.4	844	5.29	8.7	0.8	1.4	2.3	34	0.6	1.2
74152	Sediment	0.04	18	<0.17	<2	3.0	79.8	6.4	91	<0.1	164.0	25.2	814	7.00	9.7	0.8	1.5	2.7	30	0.5	0.9
74201	Sediment	0.03	41	<0.17	<2	3.4	143.1	11.4	110	0.1	196.2	35.8	1060	10.11	18.3	0.8	10.5	2.6	33	0.5	1.6
74202	Sediment	0.14	10	3.00	<2	1.7	208.1	13.0	73	0.1	246.5	45.3	726	7.78	32.8	0.4	65.6	1.4	22	0.2	1.0
74203	Sediment	0.03	14	<0.17	3	1.4	267.7	14.2	79	<0.1	235.8	40.4	797	6.92	21.4	0.4	7.3	1.6	31	0.2	0.9
74204	Sediment	0.05	<5	0.56	<2	0.8	12.8	22.8	59	<0.1	51.1	9.8	422	2.63	2.5	0.3	1.4	1.5	25	0.1	0.2
74205	Sediment	0.03	8	0.86	<2	2.1	416.0	17.3	77	0.2	350.6	57.0	767	9.77	55.8	0.5	40.4	2.3	26	0.3	1.5
74206	Sediment	0.04	<5	6.03	<2	1.0	17.4	3.0	66	10.8	82.2	13.0	472	3.61	3.9	0.4	57595	1.8	27	0.2	0.4
74207	Sediment	0.07	<5	<0.17	<2	2.0	31.9	4.4	53	0.1	81.6	11.0	319	2.68	4.6	0.6	2.1	2.7	19	0.2	0.3
74208	Sediment	0.05	6	<0.17	<2	1.6	19.1	3.1	39	<0.1	48.0	7.9	356	2.19	2.9	0.5	5.3	3.5	26	0.1	0.2
74209	Sediment	0.04	<5	0.85	<2	1.4	23.3	3.1	50	<0.1	241.3	23.8	506	4.75	4.8	0.5	13.4	2.3	23	0.3	0.6
74210	Sediment	0.04	<5	5.79	<2	2.4	33.7	7.6	70	3.3	217.0	24.8	649	5.48	9.5	0.6	37981	2.8	24	0.3	1.1
74211	Sediment	0.02	24	<0.17	<2	1.3	15.9	4.1	73	<0.1	52.4	8.6	365	2.74	4.3	0.5	1.9	2.1	26	0.2	0.3
74212	Sediment	0.02	<5	2.00	<2	1.7	11.1	3.6	31	<0.1	55.0	7.5	361	2.49	3.1	0.7	73.1	4.3	39	0.1	0.3
74213	Sediment	0.03	<5	57.98	<2	0.8	10.7	4.0	35	4.9	40.5	7.6	427	2.27	2.7	0.7	96511	6.2	35	<0.1	0.3
74214	Sediment	0.01	I.S.	I.S.	<2	2.7	27.6	5.8	55	0.2	268.6	29.6	704	10.70	8.7	0.9	1849	5.2	36	0.2	0.8
74215	Sediment	0.02	I.S.	I.S.	<2	0.9	49.6	4.3	45	0.2	152.7	24.3	516	4.98	8.8	0.4	4313	2.2	25	0.3	0.5
74216	Sediment	0.01	I.S.	I.S.	<2	2.3	20.9	3.4	79	<0.1	513.1	49.6	859	9.10	3.7	0.5	63.1	3.2	37	0.2	0.1
74217	Sediment	0.02	28	2.79	<2	1.0	22.1	3.0	60	1.5	481.4	42.7	587	6.82	6.9	0.3	3331	2.1	22	0.2	0.6
74218	Sediment	0.03	<5	<0.17	<2	1.2	22.0	3.1	69	<0.1	671.7	59.6	702	9.60	6.2	0.4	175.7	2.0	20	0.1	0.3
74219	Sediment	0.02	9	<0.17	<2	3.6	209.5	8.0	82	0.1	343.3	45.1	872	12.30	35.2	1.0	552.0	6.3	35	0.2	1.7
74220	Sediment	0.02	11	<0.17	<2	2.2	25.8	5.5	55	<0.1	169.0	21.0	696	8.97	6.3	0.7	5.6	3.9	42	<0.1	0.5
74221	Sediment	0.03	<5	0.90	<2	3.5	78.0	6.4	71	<0.1	282.2	31.5	823	12.75	16.4	0.9	15.3	6.7	32	0.2	0.8
74251	Sediment	0.04	<5	<0.17	<2	1.8	20.8	4.0	58	<0.1	37.0	8.2	536	3.19	7.0	0.7	2.4	3.8	25	0.3	0.5
74252	Sediment	0.03	8	<0.17	<2	2.0	24.6	4.1	55	<0.1	39.1	8.1	486	3.16	6.5	0.8	1.8	4.1	25	0.2	0.5
74253	Sediment	0.06	<5	<0.17	<2	0.7	9.8	2.3	39	<0.1	17.9	5.0	192	1.39	2.2	0.4	104.4	2.2	20	0.2	0.2
74254	Sediment	0.03	<5	<0.17	<2	1.8	20.9	3.9	57	<0.1	28.4	7.4	464	2.65	6.3	0.7	2.5	4.1	28	0.2	0.5
74255	Sediment	0.04	<5	3.78	<2	1.0	14.1	3.7	68	<0.1	89.6	11.6	367	2.83	2.8	0.4	92.4	3.1	26	0.2	0.3
74256	Sediment	0.03	<5	<0.17	<2	2.9	30.1	4.9	63	<0.1	131.9	17.9	450	4.41	10.4	0.6	9.4	2.3	26	0.3	0.7
74257	Sediment	0.02	<5	<0.17	<2	5.0	42.1	7.7	93	0.2	186.9	25.7	668	8.18	13.6	0.9	185.6	4.6	30	0.4	1.1

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.



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Project: Atlin  
 Report Date: December 09, 2009

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**CERTIFICATE OF ANALYSIS**

**VAN09005683.1**

Method	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	
Analyte	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	
Unit	ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	
MDL	0.1	2	0.01	0.001	1	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.01	0.05	1	0.5	
74151	Sediment	0.2	112	1.36	0.081	12	336	2.24	342	0.275	<20	1.97	0.018	0.08	1.2	0.07	4.9	<0.1	0.49	7	1.8
74152	Sediment	0.2	170	1.15	0.070	12	356	1.86	121	0.263	<20	1.56	0.012	0.08	0.9	0.11	4.3	<0.1	0.67	7	1.6
74201	Sediment	0.6	233	1.16	0.073	17	540	1.63	38	0.330	<20	1.51	0.017	0.07	3.7	0.13	4.7	0.2	1.36	7	2.9
74202	Sediment	<0.1	209	1.15	0.058	8	543	1.54	33	0.189	<20	1.24	0.010	0.04	0.6	0.06	5.7	0.2	1.54	5	2.6
74203	Sediment	<0.1	159	1.37	0.056	11	527	1.69	39	0.248	<20	1.40	0.017	0.06	0.1	0.03	6.5	0.2	1.21	5	1.8
74204	Sediment	<0.1	53	0.54	0.050	8	145	1.06	95	0.159	<20	1.31	0.016	0.08	0.1	<0.01	2.7	<0.1	<0.05	3	<0.5
74205	Sediment	0.2	258	1.19	0.056	16	589	1.37	16	0.239	<20	1.13	0.015	0.05	1.0	0.04	6.0	0.3	2.04	5	2.9
74206	Sediment	<0.1	67	0.58	0.045	10	300	1.02	109	0.167	<20	1.30	0.024	0.10	0.1	0.04	2.7	<0.1	<0.05	3	<0.5
74207	Sediment	<0.1	49	0.42	0.036	14	183	0.84	170	0.116	<20	0.95	0.014	0.08	1.3	0.02	2.7	<0.1	<0.05	3	<0.5
74208	Sediment	<0.1	52	0.60	0.048	22	169	0.57	146	0.153	<20	0.91	0.020	0.08	0.1	0.05	2.7	<0.1	<0.05	3	<0.5
74209	Sediment	<0.1	85	0.68	0.049	14	719	1.42	117	0.146	<20	1.00	0.020	0.07	1.1	0.08	3.3	<0.1	0.10	3	<0.5
74210	Sediment	0.3	93	0.64	0.053	13	683	1.16	145	0.135	<20	1.09	0.022	0.10	1.1	0.06	3.2	<0.1	<0.05	4	<0.5
74211	Sediment	0.1	61	0.51	0.029	14	194	0.56	196	0.128	<20	0.99	0.038	0.12	<0.1	0.02	3.0	0.1	<0.05	3	<0.5
74212	Sediment	<0.1	60	0.93	0.078	25	180	0.80	166	0.173	<20	1.08	0.066	0.11	3.4	0.01	4.1	<0.1	<0.05	4	<0.5
74213	Sediment	<0.1	71	0.96	0.084	43	245	0.65	106	0.221	<20	1.04	0.026	0.08	4.2	0.10	3.7	<0.1	<0.05	3	<0.5
74214	Sediment	0.2	264	0.93	0.038	33	1128	1.28	100	0.255	<20	1.49	0.084	0.08	2.4	0.02	5.0	<0.1	<0.05	7	<0.5
74215	Sediment	<0.1	122	0.88	0.044	12	332	1.57	75	0.240	<20	2.16	0.085	0.07	0.8	0.01	6.3	<0.1	<0.05	7	0.6
74216	Sediment	<0.1	144	1.06	0.025	26	2432	1.69	115	0.269	<20	1.41	0.091	0.11	3.0	<0.01	5.4	<0.1	<0.05	5	<0.5
74217	Sediment	<0.1	103	0.62	0.026	15	1481	1.64	68	0.155	<20	1.20	0.043	0.06	2.7	<0.01	3.9	<0.1	<0.05	4	<0.5
74218	Sediment	<0.1	119	0.60	0.026	14	2179	1.64	63	0.156	<20	1.02	0.037	0.06	5.6	<0.01	3.9	<0.1	<0.05	4	<0.5
74219	Sediment	0.1	359	1.27	0.061	45	845	1.14	169	0.292	<20	1.11	0.029	0.06	0.9	0.10	6.1	<0.1	0.62	6	<0.5
74220	Sediment	0.1	353	1.32	0.060	28	666	1.21	72	0.327	<20	1.38	0.056	0.08	0.3	<0.01	5.3	<0.1	<0.05	7	<0.5
74221	Sediment	<0.1	483	1.18	0.062	49	900	0.97	152	0.358	<20	0.92	0.016	0.04	0.2	0.08	5.3	<0.1	0.19	7	<0.5
74251	Sediment	0.2	73	0.55	0.046	20	148	0.45	206	0.123	<20	0.85	0.022	0.12	0.2	0.02	2.9	<0.1	<0.05	4	<0.5
74252	Sediment	0.1	76	0.58	0.050	21	142	0.47	226	0.137	<20	0.86	0.038	0.13	0.2	0.03	2.9	<0.1	0.06	4	<0.5
74253	Sediment	<0.1	31	0.38	0.043	11	56	0.36	203	0.059	<20	0.72	0.013	0.11	<0.1	0.01	1.7	<0.1	<0.05	3	<0.5
74254	Sediment	0.1	59	0.58	0.050	19	106	0.45	254	0.114	<20	0.92	0.042	0.15	<0.1	0.02	2.9	<0.1	<0.05	4	<0.5
74255	Sediment	<0.1	69	0.75	0.047	21	376	1.00	96	0.197	<20	1.10	0.038	0.08	0.2	<0.01	3.8	<0.1	<0.05	4	<0.5
74256	Sediment	0.2	73	0.76	0.042	13	391	0.85	167	0.120	<20	0.96	0.028	0.10	0.2	0.06	3.3	<0.1	<0.05	4	<0.5
74257	Sediment	0.4	142	0.65	0.038	26	736	0.73	260	0.189	<20	1.02	0.044	0.15	<0.1	0.02	4.1	<0.1	<0.05	5	<0.5

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CERTIFICATE OF ANALYSIS

VAN09005683.1

Method	WGHT	G6	G6	7AR	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX		
Analyte	Wgt	Ag	Grav	Au	Grav	Ag	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb
Unit	kg	gm/mt	gm/mt	gm/mt	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm
MDL	0.01	5	0.17	2	0.1	0.1	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.1	0.5	0.1	1	0.1	0.1
74258	Sediment	0.04	<5	<0.17	<2	1.9	21.5	4.6	66	<0.1	246.8	27.3	586	6.11	7.0	0.5	81.9	2.8	26	0.2	0.6	
74259	Sediment	0.08	<5	<0.17	<2	1.4	10.7	9.1	49	<0.1	38.5	7.1	282	1.55	8.6	2.5	4.4	17.7	27	0.4	0.2	
74260	Sediment	0.05	<5	5.09	<2	7.7	17.7	17.6	52	5.9	85.8	11.7	436	7.63	8.9	7.9	64764	75.6	27	0.5	0.7	
74261	Sediment	0.05	<5	2.53	<2	8.4	11.0	12.2	53	0.2	81.6	13.1	456	8.65	17.0	8.7	12.4	71.6	27	0.5	0.4	
74262	Sediment	0.05	<5	<0.17	<2	5.9	17.2	15.0	58	0.2	78.6	12.1	453	6.80	9.9	9.5	4.5	78.3	34	0.6	0.6	
74263	Sediment	0.03	I.S.	I.S.	<2	11.1	11.9	14.8	59	<0.1	41.6	8.7	441	4.03	11.2	10.8	1.9	76.6	38	0.6	0.6	
74264	Sediment	0.06	<5	<0.17	<2	18.0	20.1	10.0	49	<0.1	84.3	14.2	373	4.39	7.8	4.3	3.2	30.4	34	0.3	0.4	
74265	Sediment	0.05	<5	<0.17	<2	5.9	31.9	13.8	71	<0.1	152.5	23.0	489	5.05	11.9	5.6	2.2	39.5	35	0.6	0.5	
74266	Sediment	0.03	9	<0.17	<2	11.5	43.3	24.1	75	0.2	141.7	22.9	546	5.50	16.3	4.0	2.7	27.1	44	0.6	0.7	



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Project: Atlin  
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**CERTIFICATE OF ANALYSIS**

**VAN09005683.1**

Method	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	
Analyte	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	
Unit	ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	
MDL	0.1	2	0.01	0.001	1	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.05	1	1	0.5	
74258	Sediment	0.3	103	0.69	0.021	18	1084	1.14	109	0.182	<20	0.94	0.017	0.07	0.1	0.03	3.5	<0.1	<0.05	4	<0.5
74259	Sediment	0.6	39	0.94	0.231	71	64	0.62	65	0.091	<20	0.67	0.046	0.07	25.1	<0.01	2.8	<0.1	<0.05	3	<0.5
74260	Sediment	2.5	212	0.97	0.204	230	325	0.55	55	0.092	<20	0.54	0.046	0.07	>100	*	2.4	<0.1	<0.05	5	<0.5
74261	Sediment	2.5	309	0.95	0.225	219	426	0.50	55	0.127	<20	0.52	0.041	0.06	>100	<0.01	2.4	<0.1	<0.05	7	<0.5
74262	Sediment	2.6	178	1.05	0.241	221	315	0.61	59	0.149	<20	0.64	0.047	0.07	>100	<0.01	2.6	<0.1	<0.05	7	<0.5
74263	Sediment	4.3	115	1.20	0.218	183	193	0.60	59	0.159	<20	0.65	0.055	0.08	>100	<0.01	2.9	0.1	<0.05	5	<0.5
74264	Sediment	5.5	112	0.81	0.147	58	137	1.19	70	0.134	<20	0.72	0.053	0.10	>100	<0.01	2.5	0.1	<0.05	4	<0.5
74265	Sediment	7.8	117	0.92	0.192	66	177	2.09	54	0.167	<20	0.78	0.048	0.09	>100	<0.01	2.6	0.2	<0.05	5	<0.5
74266	Sediment	42.4	136	0.94	0.173	52	140	2.25	72	0.159	<20	0.90	0.083	0.13	>100	<0.01	3.4	0.3	<0.05	5	0.5



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Project: Atlin

Report Date: December 09, 2009

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# QUALITY CONTROL REPORT

VAN09005683.1

Method	WGHT	G6	G6	7AR	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	
Analyte	Wgt Ag	Grav Au	Grav	Ag	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	
Unit	kg	gm/mt	gm/mt	gm/mt	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	
MDL	0.01	5	0.17	2	0.1	0.1	0.1	1	0.1	0.1	0.1	1	0.01	0.5	0.1	0.5	0.1	1	0.1	0.1	
Pulp Duplicates																					
74206	Sediment	0.04	<5	6.03	<2	1.0	17.4	3.0	66	10.8	82.2	13.0	472	3.61	3.9	0.4	57595	1.8	27	0.2	0.4
REP 74206	QC		<5	5.18	<2																
74262	Sediment	0.05	<5	<0.17	<2	5.9	17.2	15.0	58	0.2	78.6	12.1	453	6.80	9.9	9.5	4.5	78.3	34	0.6	0.6
REP 74262	QC		I.S.	I.S.																	
74263	Sediment	0.03	I.S.	I.S.	<2	11.1	11.9	14.8	59	<0.1	41.6	8.7	441	4.03	11.2	10.8	1.9	76.6	38	0.6	0.6
REP 74263	QC				<2																
Reference Materials																					
STD AGPROOF	Standard		89	<0.17																	
STD CDN-ME-3	Standard		273	10.04																	
STD CDN-ME-3	Standard		246	9.56																	
STD CDN-ME-3	Standard		277	9.73																	
STD DS7	Standard				20.2	87.3	56.9	355	0.8	53.0	9.0	548	2.14	47.1	4.0	45.4	3.9	63	5.5	3.7	
STD DS7	Standard				19.7	99.3	65.7	375	0.7	50.6	8.8	569	2.25	47.1	5.3	66.0	4.5	73	6.1	5.3	
STD OREAS45PA	Standard				0.9	585.0	14.4	99	0.5	268.4	98.3	982	15.43	3.0	0.9	71.2	5.1	11	<0.1	0.1	
STD OREAS45PA	Standard				1.2	560.4	17.2	113	0.2	285.0	104.3	1076	16.21	4.0	1.1	33.5	6.2	14	<0.1	0.3	
STD R4A	Standard			86																	
STD R4A	Standard			85																	
STD R4A	Standard			87																	
STD R4A	Standard			87																	
STD R4A Expected				86																	
STD AGPROOF Expected		100	0																		
STD CDN-ME-3 Expected		276	9.97																		
STD DS7 Expected					20.5	109	70.6	411	0.9	56	9.7	627	2.39	48.2	4.9	70	4.4	69	6.4	4.6	
STD OREAS45PA Expected					0.9	600	19	119	0.3	281	104	1130	16.559	4.2	1.2	43	6	14	0.09	0.13	
BLK	Blank			<2																	
BLK	Blank			<2																	
BLK	Blank		<5	<0.17																	
BLK	Blank		<5	<0.17																	



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**Project:** Atlin  
**Report Date:** December 09, 2009

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QUALITY CONTROL REPORT

VAN09005683.1

Method	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	
Analyte	Bi	V	Ca	P	La	Cr	Mg	Ba	Ti	B	Al	Na	K	W	Hg	Sc	Tl	S	Ga	Se	
Unit	ppm	ppm	%	%	ppm	ppm	%	ppm	%	ppm	%	%	%	ppm	ppm	ppm	ppm	%	ppm	ppm	
MDL	0.1	2	0.01	0.001	1	1	0.01	1	0.001	20	0.01	0.001	0.01	0.1	0.01	0.1	0.05	1	0.5		
Pulp Duplicates																					
74206	Sediment	<0.1	67	0.58	0.045	10	300	1.02	109	0.167	<20	1.30	0.024	0.10	0.1	0.04	2.7	<0.1	<0.05	3	<0.5
REP 74206	QC																				
74262	Sediment	2.6	178	1.05	0.241	221	315	0.61	59	0.149	<20	0.64	0.047	0.07	>100	<0.01	2.6	<0.1	<0.05	7	<0.5
REP 74262	QC																				
74263	Sediment	4.3	115	1.20	0.218	183	193	0.60	59	0.159	<20	0.65	0.055	0.08	>100	<0.01	2.9	0.1	<0.05	5	<0.5
REP 74263	QC																				
Reference Materials																					
STD AGPROOF	Standard																				
STD CDN-ME-3	Standard																				
STD DS7	Standard	3.7	78	0.92	0.069	12	203	0.90	359	0.104	40	0.91	0.093	0.38	3.8	0.19	2.6	3.9	0.18	5	2.9
STD DS7	Standard	4.4	73	0.97	0.077	14	199	0.96	370	0.125	31	1.00	0.103	0.41	3.7	0.17	2.4	4.0	0.25	5	3.1
STD OREAS45PA	Standard	0.1	249	0.20	0.030	13	895	0.07	166	0.116	<20	2.88	0.008	0.06	<0.1	0.02	38.8	<0.1	<0.05	15	<0.5
STD OREAS45PA	Standard	0.2	212	0.23	0.033	16	778	0.11	172	0.147	<20	3.39	0.011	0.07	<0.1	0.02	42.1	<0.1	<0.05	17	<0.5
STD R4A	Standard																				
STD R4A	Standard																				
STD R4A	Standard																				
STD R4A	Standard																				
STD R4A Expected																					
STD AGPROOF Expected																					
STD CDN-ME-3 Expected																					
STD DS7 Expected		4.5	84	0.93	0.08	12	179	1.05	370	0.124	39	0.959	0.089	0.44	3.4	0.2	2.5	4.2	0.19	5	3.5
STD OREAS45PA Expected		0.18	221	0.2411	0.034	16.2	873	0.095	187	0.124		3.34	0.011	0.0665	0.011	0.03	43	0.07	0.03	16.8	0.54
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				
BLK	Blank																				

This report supersedes all previous preliminary and final reports with this file number dated prior to the date on this certificate. Signature indicates final approval; preliminary reports are unsigned and should be used for reference only.





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Project: Atlin

Report Date: December 09, 2009

Page: 2 of 2 Part 1

QUALITY CONTROL REPORT

VAN09005683.1

		WGHT	G6	G6	7AR	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX	1DX				
		Wgt	Ag	Grav	Au	Grav	Ag	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	
		kg	gm/mt	gm/mt	gm/mt	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppb	ppm	ppm	ppm	ppm	
		0.01	5	0.17	2	0.1	0.1	0.1	1	0.1	0.1	0.1	0.1	0.1	1	0.01	0.5	0.1	0.5	0.1	1	0.1	0.1	
BLK	Blank		<5	<0.17																				
BLK	Blank					<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.1	<0.5	<0.1	<1	<0.1	<0.1	<0.1
BLK	Blank		<5	<0.17																				
BLK	Blank					<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	<0.1	<1	<0.01	<0.5	<0.1	<0.5	<0.1	<1	<0.1	<0.1	<0.1	<0.1
Prep Wash																								
G1	Prep Blank	<0.01	24	<0.17	<2	<0.1	2.2	2.3	42	<0.1	3.8	4.3	565	2.12	<0.5	1.5	<0.5	3.6	53	<0.1	<0.1	<0.1	<0.1	<0.1
G1	Prep Blank	<0.01	6	<0.17	<2	0.1	1.6	2.3	42	<0.1	4.1	4.5	567	2.10	<0.5	1.5	<0.5	3.6	54	<0.1	<0.1	<0.1	<0.1	<0.1



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QUALITY CONTROL REPORT

VAN09005683.1

		1DX Bi ppm 0.1	1DX V ppm 2	1DX Ca % 0.01	1DX P % 0.001	1DX La ppm 1	1DX Cr ppm 1	1DX Mg % 0.01	1DX Ba ppm 1	1DX Ti % 0.001	1DX B ppm 20	1DX Al % 0.01	1DX Na % 0.001	1DX K % 0.01	1DX W ppm 0.1	1DX Hg ppm 0.01	1DX Sc ppm 0.1	1DX Tl ppm 0.1	1DX S % 0.05	1DX Ga ppm 1	1DX Se ppm 0.5	
BLK	Blank																					
BLK	Blank	<0.1	<2	<0.01	<0.001	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	
BLK	Blank																					
BLK	Blank	<0.1	<2	<0.01	<0.001	<1	<1	<0.01	<1	<0.001	<20	<0.01	<0.001	<0.01	<0.1	<0.01	<0.1	<0.1	<0.05	<1	<0.5	
Prep Wash																						
G1	Prep Blank	<0.1	41	0.54	0.080	8	12	0.59	237	0.132	<20	0.99	0.086	0.51	<0.1	<0.01	2.1	0.3	0.05	5	<0.5	
G1	Prep Blank	<0.1	42	0.55	0.080	8	12	0.61	244	0.133	<20	1.00	0.086	0.50	0.1	<0.01	2.1	0.4	<0.05	5	<0.5	

## **APPENDIX 4: STATEMENT OF QUALIFICATIONS**

The field work described in this report was supervised by Jody Dahrouge.

J.R. Dahrouge is a geological consultant with Dahrouge Geological Consulting Ltd. based in Edmonton, Alberta. He obtained degrees in geology and computing science from the University of Alberta, Edmonton in 1988 and 1994, respectively. He has more than 10 years of experience in mineral exploration. He is a member of the Canadian Institute of Mining and Metallurgy and is registered as P. Geol. with the Association of Professional Engineers, Geologists, and Geophysicists of Alberta.

Andy Hoffman is a geological consultant with Dahrouge Geological Consulting Ltd. based in Edmonton, Alberta. He obtained a degree in geology from the University of Alberta, Edmonton in 2009 and has been employed in the mineral exploration industry since. He is registered as a Geol. I.T. with the Association of Professional Engineers, Geologists, and Geophysicists of Alberta.

## APPENDIX 5: PROPORTION OF EXPENDITURES ASSIGNED TO TENURES

Total Assessment Expenditures:	\$	50,705.57
Total Sample Costs:	\$	1,386.45
Cost Per Sample:	\$	35.55
<b>Assessment Expenditures minus Sample Costs:</b>	<b>\$</b>	<b>49,319.12</b>

**Total Man-Hours (fieldwork only):** **347.71**

Tenure Name	Tenure No.	Size (ha)	No. of Samples Collected	Sample Costs	Man-Hours on Tenure	Percentage of Total Man-Hours	Proportion of Expenditures <sup>1</sup>	Total Expenditures <sup>2</sup>	Required Expenditures	Excess Expenditures <sup>3</sup>
ATN1	598717	163.9703	3	\$ 106.65	35.91	10.3%	\$ 5,093.47	\$ 5,200.12	\$ 1,639.70	\$ 3,453.76
ATN 2	598719	0	3	\$ 106.65	0	0.0%	\$ -	\$ 106.65	\$ -	\$ -
ATN 3	598723	246.7204	6	\$ 213.30	54	15.5%	\$ 7,659.35	\$ 7,872.65	\$ 2,467.20	\$ 5,192.15
ATN 4	598724	0	2	\$ 71.10	0	0.0%	\$ -	\$ 71.10	\$ -	\$ -
ATN 5	598725	0	3	\$ 106.65	0	0.0%	\$ -	\$ 106.65	\$ -	\$ -
ATN 6	598806	98.4438	3	\$ 106.65	21.5	6.2%	\$ 3,049.56	\$ 3,156.21	\$ 984.44	\$ 2,065.12
ATN 7	598807	114.9689	3	\$ 106.65	25	7.2%	\$ 3,546.00	\$ 3,652.65	\$ 1,149.69	\$ 2,396.31
ATN 8	598808	228.3813	4	\$ 142.20	50	14.4%	\$ 7,091.99	\$ 7,234.19	\$ 2,283.81	\$ 4,808.18
ATN 9	598809	224.5979	4	\$ 142.20	53.5	15.4%	\$ 7,588.43	\$ 7,730.63	\$ 2,245.98	\$ 5,342.45
ATN 10	598935	246.1453	2	\$ 71.10	53.9	15.5%	\$ 7,645.17	\$ 7,716.27	\$ 2,461.45	\$ 5,183.71
ATN 11	598936	246.2208	6	\$ 213.30	53.9	15.5%	\$ 7,645.17	\$ 7,858.47	\$ 2,462.21	\$ 5,182.96
<b>TOTAL:</b>			<b>39</b>	<b>\$ 1,386.45</b>	<b>347.71</b>	<b>100%</b>	<b>\$ 49,319.12</b>	<b>\$ 50,705.57</b>	<b>\$ 15,694.49</b>	<b>\$ 33,624.63</b>

<sup>1</sup> Total assessment expenditures excluding sample costs

<sup>2</sup> Total expenditures on each tenure including sample costs and proportioned expenditures

<sup>3</sup> Excess expenditures assigned to PAC account